

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Obstruction Removal 500		Baseline Setting:			
		Appropriate Land Use(s): All Land Uses			
RESOURCES, CONSIDERATIONS AND CONCERNS	PHYSICAL EFFECTS		RATIONALE		
SOIL - EROSION					
Sheet and Rill	Neutral		The action requires that appropriate erosion control practices will be applied on disturbed areas.		
Wind	Neutral		The action requires that appropriate erosion control practices will be applied on disturbed areas.		
Ephemeral Gully	Neutral		The action requires that appropriate erosion control practices will be applied on disturbed areas.		
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.		
SOIL – CONDITION					
Organic Matter Depletion	Not Applicable		Not applicable.		
Rangeland Site Stability	Not Applicable		Not applicable.		
Compaction	Slight Worsening		Equipment used in removing obstructions will tend to increase compaction in travel areas.		
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	Neutral		Erosion control practices are required.		
WATER – QUANTITY					
Rangeland Hydrologic Cycle	Not Applicable		Not applicable.		
Excessive Seepage	Not Applicable		Not applicable.		

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Obstruction Removal 500		Baseline Setting:			
		Appropriate Land Use(s): All Land Uses			
RESOURCES, CONSIDERATIONS AND CONCERNS	PHYSICAL EFFECTS	RATIONALE			
Excessive Runoff, Flooding, or Ponding	Not Applicable	Not applicable.			
Excessive Subsurface Water	Not Applicable	Not applicable.			
Drifted Snow	Slight to Moderate Improvement	The action may remove obstruction that catches snow.			
Inadequate Outlets	Slight to Moderate Improvement	The action may remove obstacles blocking outlets.			
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	The action maybe be used to remove sediment.			
Reduced Storage of Water Bodies by Sediment Accumulation	Slight to Substantial Improvement	The action maybe be used to remove sediment.			
Aquifer Overdraft	Not Applicable	Not applicable.			
Insufficient Flows in Water Courses	Slight Improvement	The action may remove obstacles blocking inlets to the water course.			
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	Not Applicable	Not applicable.			
• Excessive Suspended Sediment and Turbidity	Not Applicable	Not applicable.			
• 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)	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:					

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Obstruction Removal 500		Baseline Setting:			
		Appropriate Land Use(s): All Land Uses			
RESOURCES, CONSIDERATIONS AND CONCERNS	PHYSICAL EFFECTS	RATIONALE			
• CO ₂ (Carbon Dioxide)	Neutral	Carbon is released if the obstruction materials are burned.			
• N ₂ O (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	Slight Worsening	Construction activities increase particulates. Mitigation and appropriate timing are part of practice design.			
Undesirable Air Movement	Not Applicable	Not applicable.			
Adverse Air Temperature	Not Applicable	Not applicable.			
PLANTS – SUITABILITY					
Plants not Adapted or Suited	Not Applicable	Not applicable.			
PLANTS - CONDITION					
Productivity, Health, and Vigor	Not Applicable	Not applicable.			
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	Not Applicable	Not applicable.			
Forage Quality and Palatability	Not Applicable	Not applicable.			
Wildfire Hazard	Not Applicable	Not applicable.			
ANIMALS - FISH AND WILDLIFE					
Inadequate Food	Not Applicable	Not applicable.			
Inadequate Cover/Shelter	Slight to Moderate Worsening	Debris removal may remove habitat used for cover/shelter by wildlife.			
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.			

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Obstruction Removal 500		Baseline Setting:			
		Appropriate Land Use(s): All Land Uses			
RESOURCES, CONSIDERATIONS AND CONCERNS		PHYSICAL EFFECTS		RATIONALE	
<ul style="list-style-type: none"> 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		Not Applicable		Not applicable.	
Inadequate Shelter		Slight Worsening		The action may remove structures used for shelter.	
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		Not applicable.		Moderate to substantial increase.	
Capital – Change in Equipment		0		Substantial.	
Capital - Total Investment Cost		Substantial.		Slight to moderate.	
Capital – Annual Cost		0		Situational.	
Capital – Credit and Farm Program Eligibility		0		Negligible to slight.	
Labor - Labor		0		Slight to moderate increase.	
Labor – Change in Management Level		0		Not applicable.	
Risk - Yield		Not applicable.		Not applicable.	
Risk - Flexibility		Not applicable.		Not applicable.	
Risk - Timing		Not applicable.		Moderate Decrease	
Risk – Cash Flow		Situational. Negligible to moderate decrease in risk due to management of biogas.		Moderate Increase	
Profitability – Change in Profitability		Situational. Negligible to moderate increase in profitability where biogas is put to profitable use.		0.01	
HUMAN - CULTURAL					
Cultural Resources and/or Historic Properties Present or Suspected to be PRESENT		Not applicable.		No	
HUMAN – ENERGY					
Depletion of Fossil Fuel Resources		Not Applicable		No	
Underutilization of Non-Fossil Energy Resources		Practice facilitates methane collection for renewable fuel use.		Yes	

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.

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Forage Harvest Management 511		Baseline Setting:			
		Appropriate Land Use(s): Crop, Hay			
RESOURCES, CONSIDERATIONS AND CONCERNS	PHYSICAL EFFECTS	RATIONALE			
SOIL - EROSION					
Sheet and Rill	Slight to Substantial Improvement	Maintaining a vigorous vegetative cover will reduce soil detachment by water.			
Wind	Slight to Substantial Improvement	Maintaining a vigorous vegetative cover will reduce soil detachment by wind.			
Ephemeral Gully	Slight to Moderate Improvement	Maintaining a vigorous vegetative cover will reduce soil detachment by water.			
Classic Gully	Not Applicable	Not applicable.			
Streambank	Not Applicable	Not applicable.			
Shoreline	Not Applicable	Not applicable.			
Irrigation Induced	Slight Improvement	Improved protective vegetative cover			
Mass Movement	Not Applicable	Not applicable.			
Road, Roadsides, and Construction Sites	Not Applicable	Not applicable.			
SOIL – CONDITION					
Organic Matter Depletion	Slight Improvement	There will be an increase in vegetative cover and deeper root systems that may increase soil organic material.			
Rangeland Site Stability	Not Applicable	Not applicable.			
Compaction	Moderate to Substantial Improvement	There will be improved root development, litter accumulation, increased biological activity and decrease number of mechanical operations.			
Subsidence	Not Applicable	Not applicable.			
Contaminants:					
• Salts and other Chemicals	Slight Improvement	Infiltration and plant uptake will increase due to improved cover and plant vigor.			
• Animal Waste and other Organics - N	Slight to Moderate Improvement	There will be a greater use of N by more vigorous plants.			
• Animal Waste and other Organics - P	Slight to Moderate Improvement	There will be a greater use of P by more vigorous plants.			
• Animal Waste and other Organics - K	Slight to Moderate Improvement	There will be a greater use of K by more vigorous plants.			
• Commercial Fertilizer - N	Slight to Moderate Improvement	There will be a greater use of N by more vigorous plants.			
• Commercial Fertilizer - P	Slight to Moderate Improvement	There will be a greater use of P by more vigorous plants.			

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Forage Harvest Management 511		Baseline Setting:			
		Appropriate Land Use(s): Crop, Hay			
RESOURCES, CONSIDERATIONS AND CONCERNS	PHYSICAL EFFECTS	RATIONALE			
• Commercial Fertilizer – K	Slight to Moderate Improvement	There will be a greater use of K by more vigorous plants.			
• Residual Pesticides	Slight to Substantial Improvement	Improved vegetative cover and vigor of desired plants that hinder pests invasions reduce need for additional pesticide applications.			
Damage from Sediment Deposition	Slight Improvement	Increased vegetative cover will reduce runoff and sediment yield.			
WATER – QUANTITY					
Rangeland Hydrologic Cycle	Not Applicable	Not Applicable			
Excessive Seepage	Slight to Moderate Improvement	There is potential for a decrease in seep flow because of increased utilization of soil moisture, however there may be slight worsening due to increased infiltration, especially during dormant season.			
Excessive Runoff, Flooding, or Ponding	Slight to Moderate Improvement	Runoff will be reduced and infiltration increased.			
Excessive Subsurface Water	Slight Improvement	There will be an increase in plant uptake.			
Drifted Snow	Not Applicable	Not applicable.			
Inadequate Outlets	Slight Improvement	Improved plant cover decreasing runoff.			
Inefficient Water use on Irrigated Land	Slight Improvement	Improved forage management improves water use efficiency.			
Inefficient Water use on Non-Irrigated Land	Slight Improvement	Improved forage management improves water use efficiency.			
Reduced Capacity of Conveyances by Sediment Deposition	Not Applicable	Not applicable.			
Reduced Storage of Water Bodies by Sediment Accumulation	Slight Improvement	Slight improvement because of decreased sediment load.			
Aquifer Overdraft	Slight Improvement	Improved vigor of plant community increases infiltration rate.			
Insufficient Flows in Water Courses	Slight Improvement	Forage Management will increase cover and improve infiltration, enhancing interflow.			
WATER – QUALITY					
In Groundwater:					
• Harmful Levels of Pesticides	Slight to Moderate Improvement	Managing for desirable plant health and vigor reduces the need for pesticide applications.			

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Forage Harvest Management 511		Baseline Setting:			
		Appropriate Land Use(s): Crop, Hay			
RESOURCES, CONSIDERATIONS AND CONCERNS	PHYSICAL EFFECTS	RATIONALE			
• Excessive Nutrients and Organics	Slight to Moderate Improvement	The action improves plant vigor and increases nutrient uptake.			
• Excessive Salinity	Slight Improvement	Improved management and plant health and vigor may increase uptake of salts.			
• Harmful Levels of Heavy Metals	Slight Improvement	Improved management and plant health and vigor can increase uptake of heavy metals.			
• Harmful Levels of Pathogens	Slight Improvement	Improved management, plant health and vigor improves soil microbial activity, which competes with pathogens.			
• Harmful Levels of Petroleum	Not Applicable	Not applicable.			
In Surface Water:					
• Harmful Levels of Pesticides	Slight to Moderate Improvement	Managing for desirable plant health and vigor reduces the need for pesticide applications.			
• Excessive Nutrients and Organics	Slight to Moderate Improvement	Improved management and plant health and vigor reduces nutrients and organics used.			
• Excessive Suspended Sediment and Turbidity	Slight to Moderate Improvement	Vegetation is managed to maintain health and vigor of plants, protecting soils from erosion.			
• Excessive Salinity	Slight Improvement	Dense plant cover will improve infiltration and reduce runoff.			
• Harmful Levels of Heavy Metals	Slight Improvement	Improved plant density, health and vigor will marginally improve plant uptake.			
• Harmful Temperatures	Not Applicable	Not applicable.			
• Harmful Levels of Pathogens	Slight Improvement	Management improves vegetative cover, decrease runoff, and increased soil microbiological activity.			
• Harmful Levels of Petroleum	Neutral	Negligible amounts of petroleum products may be dropped from mechanical harvest equipment w/no effect on surface water.			
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		Not Applicable	Not applicable.		
Excessive Greenhouse Gas:					
• CO ₂ (Carbon Dioxide)		Not Applicable	Not applicable.		

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Forage Harvest Management 511		Baseline Setting:			
		Appropriate Land Use(s): Crop, Hay			
RESOURCES, CONSIDERATIONS AND CONCERNS	PHYSICAL EFFECTS	RATIONALE			
• N ₂ O (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	Not Applicable	Not applicable.			
PLANTS – SUITABILITY					
Plants not Adapted or Suited	Slight to Substantial Improvement	Plants are managed to optimize the composition of adapted and suited species.			
PLANTS - CONDITION					
Productivity, Health, and Vigor	Moderate to Substantial Improvement	Plants are managed to maintain optimal productivity and health.			
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	Improved cover, health and vigor of plant community reduces opportunity for invasion.			
Forage Quality and Palatability	Moderate to Substantial Improvement	Management of plant community will increase quality and palatability of forage.			
Wildfire Hazard	Moderate to Substantial Improvement	Harvesting reduces fuel load buildup.			
ANIMALS - FISH AND WILDLIFE					
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	Improved plant cover, health and vigor decrease fragmentation increasing space depending on species of concern.			

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Forage Harvest Management 511		Baseline Setting:			
		Appropriate Land Use(s): Crop, Hay			
RESOURCES, CONSIDERATIONS AND CONCERNS	PHYSICAL EFFECTS	RATIONALE			
Habitat Fragmentation	Slight to Substantial Improvement	Improved plant cover, health and vigor decrease fragmentation depending on species of concern.			
Imbalance Among and Within Populations	Slight Improvement	Timing of harvest and stubble height support optimum populations.			
Threatened and Endangered Fish and Wildlife Species:					
<ul style="list-style-type: none"> Fish and Wildlife Species Listed or Proposed for Listing Under the Endangered Species Act 	Not Applicable	Not applicable.			
<ul style="list-style-type: none"> Declining Species, Species of Concern 	Not Applicable	Not applicable.			
ANIMALS – DOMESTIC					
Inadequate Quantities and Quality of Feed and Forage	Moderate to Substantial Improvement	Improved management will improve quantity and quality of feed and forage.			
Inadequate Shelter	Not Applicable	Not applicable.			
Inadequate Stock Water	Not Applicable	Not applicable.			
Stress and Mortality	Slight to Substantial Improvement	Improved forage quality and quantity reduces animals illness or death from disease, parasites, insects, poisonous plants, or other factors.			
HUMAN – ECONOMICS					
Land - Change in Land Use	Not applicable.	Not applicable.			
Land – Land in Production	Not applicable.	Moderate to substantial increase.			
Capital – Change in Equipment	0	Substantial.			
Capital - Total Investment Cost	Substantial.	Slight to moderate.			
Capital – Annual Cost	0	Situational.			
Capital – Credit and Farm Program Eligibility	0	Negligible to slight.			
Labor - Labor	0	Slight to moderate increase.			
Labor – Change in Management Level	0	Not applicable.			
Risk - Yield	Not applicable.	Not applicable.			
Risk - Flexibility	Not applicable.	Not applicable.			
Risk - Timing	Not applicable.	Moderate Decrease			
Risk – Cash Flow	Situational. Negligible to moderate decrease in risk due to management of biogas.	Moderate Increase			
Profitability – Change in Profitability	Situational. Negligible to moderate increase in profitability where biogas is put to profitable use.	0.01			
HUMAN - CULTURAL					

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Forage Harvest Management 511		Baseline Setting:			
		Appropriate Land Use(s): Crop, Hay			
RESOURCES, CONSIDERATIONS AND CONCERNS	PHYSICAL EFFECTS		RATIONALE		
Cultural Resources and/or Historic Properties Present or Suspected to be PRESENT	Not applicable.		No		
HUMAN – ENERGY					
Depletion of Fossil Fuel Resources	Not Applicable		No		
Underutilization of Non-Fossil Energy Resources	Practice facilitates methane collection for renewable fuel use.		Yes		

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.

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Pasture & Hay Planting 512		Baseline Setting:			
		Appropriate Land Use(s): Hay, Pasture			
RESOURCES, CONSIDERATIONS AND CONCERNS	PHYSICAL EFFECTS		RATIONALE		
SOIL - EROSION					
Sheet and Rill	Moderate to Substantial Improvement		Establishment of adapted species increases vegetative cover and reduces erosion potential. During the establishment period, there may be a slight to moderate risk of erosion, depending on seedbed preparation, seeding method, and species planted.		
Wind	Moderate to Substantial Improvement		Establishment of adapted species increases vegetative cover and reduces erosion potential. During the establishment period, there may be a slight to moderate risk of erosion, depending on seedbed preparation, seeding method, and species planted.		
Ephemeral Gully	Moderate to Substantial Improvement		Establishment of adapted species increases vegetative cover and reduces erosion potential. During the establishment period, there may be a slight to moderate risk of erosion, depending on seedbed preparation, seeding method, and species planted.		
Classic Gully	Slight Improvement		There will be an increase of vegetative cover and reduced runoff in the watershed in the long-term.		
Streambank	Not Applicable		Not applicable.		
Shoreline	Not Applicable		Not applicable.		
Irrigation Induced	Slight to Substantial Improvement		There will be an improvement of protective vegetative cover and reduced runoff.		
Mass Movement	Neutral		The increase in vegetation enhances soil binding by root mass and removal of soil moisture by increased transpiration. There may be a slight worsening because of increase in infiltration.		
Road, Roadsides, and Construction Sites	Not Applicable		Not applicable.		
SOIL – CONDITION					

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Pasture & Hay Planting 512		Baseline Setting:			
		Appropriate Land Use(s): Hay, Pasture			
RESOURCES, CONSIDERATIONS AND CONCERNS	PHYSICAL EFFECTS	RATIONALE			
Organic Matter Depletion	Moderate to Substantial Improvement	There will be enhanced biomass production, root development, litter accumulation, increased biological activity, and/or reduced tillage if associated with change in land use.			
Rangeland Site Stability	Not Applicable	Not applicable.			
Compaction	Moderate to Substantial Improvement	There will be enhanced biomass production, root development, litter accumulation, increased biological activity, and/or reduced tillage if associated with change in land use.			
Subsidence	Not Applicable	Not applicable.			
Contaminants:					
<ul style="list-style-type: none"> • Salts and other Chemicals 	Slight to Substantial Improvement	Site planted to adapted species could contribute to the reduction of saline seep areas. There would be a negligible decrease of selenium, boron, and heavy metals because of very limited uptake by pasture plants.			
<ul style="list-style-type: none"> • Animal Waste and other Organics - N 	Moderate to Substantial Improvement	There will be increased N use by grasses and/or legumes. There may be a slight potential for increased leaching because of improved infiltration.			
<ul style="list-style-type: none"> • Animal Waste and other Organics - P 	Moderate to Substantial Improvement	There will be increased P use by grasses and/or legumes. There may be a slight potential for increased leaching because of improved infiltration.			
<ul style="list-style-type: none"> • Animal Waste and other Organics - K 	Moderate to Substantial Improvement	There will be increased K use by grasses and/or legumes. There may be a slight potential for increased leaching because of improved infiltration on sandy soils.			
<ul style="list-style-type: none"> • Commercial Fertilizer - N 	Moderate to Substantial Improvement	There will be increased N use by grasses and/or legumes. There may be a slight potential for increased leaching because of improved infiltration.			

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Pasture & Hay Planting 512		Baseline Setting:			
		Appropriate Land Use(s): Hay, Pasture			
RESOURCES, CONSIDERATIONS AND CONCERNS		PHYSICAL EFFECTS	RATIONALE		
• Commercial Fertilizer – P		Moderate to Substantial Improvement	There will be increased P use by grasses and/or legumes. There may be a slight potential for increased leaching because of improved infiltration.		
• Commercial Fertilizer – K		Moderate to Substantial Improvement	There will be increased K use by grasses and/or legumes. There may be a slight potential for increased leaching because of improved infiltration on sandy soils.		
• Residual Pesticides		Slight to Moderate Improvement	Proper seedbed preparation and the establishment of a healthy, vigorous stand will reduce pesticide use in general. There may be a slight potential for increased leaching because of improved infiltration.		
Damage from Sediment Deposition		Slight to Moderate Improvement	There will be a reduction in erosion due to increased cover and reduced overland flow depending on management.		
WATER – QUANTITY					
Rangeland Hydrologic Cycle		Not Applicable	Not Applicable		
Excessive Seepage		Neutral	There will be an increase in plant uptake and transpiration in the long-term. There may be a slight to moderate increase in seepage because of increased infiltration.		
Excessive Runoff, Flooding, or Ponding		Slight to Moderate Improvement	There will be an increase in cover and infiltration, reducing runoff and overland flow.		
Excessive Subsurface Water		Slight Improvement	There will be increased plant uptake and transpiration depending on the species selected.		
Drifted Snow		Not Applicable	Not applicable.		
Inadequate Outlets		Slight Improvement	Needed capacity of outlets is reduced due to decreased runoff.		
Inefficient Water use on Irrigated Land		Not Applicable	Not applicable.		
Inefficient Water use on Non-Irrigated Land		Slight to Moderate Improvement	The plant species selected will be adapted to meet the seasonal distribution of moisture.		

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Pasture & Hay Planting 512		Baseline Setting:			
		Appropriate Land Use(s): Hay, Pasture			
RESOURCES, CONSIDERATIONS AND CONCERNS		PHYSICAL EFFECTS	RATIONALE		
Reduced Capacity of Conveyances by Sediment Deposition		Slight Improvement	Reduced erosion due to increased vegetative cover, reduced runoff, and increased infiltration.		
Reduced Storage of Water Bodies by Sediment Accumulation		Slight to Moderate Improvement	Reduced erosion due to increased vegetative cover, reduced runoff, and increased infiltration.		
Aquifer Overdraft		Neutral	Plant species will be selected that are adapted to the amount, frequency, and availability of water, whether on irrigated or non-irrigated lands.		
Insufficient Flows in Water Courses		Slight Improvement	Selection of adapted species will increase cover and improve infiltration, enhancing interflow.		
WATER – QUALITY					
In Groundwater:					
• Harmful Levels of Pesticides		Slight to Moderate Improvement	The action increases soil organic matter and biological activity.		
• Excessive Nutrients and Organics		Slight to Moderate Improvement	Permanent vegetation will take up excess nutrients.		
• Excessive Salinity		Slight Improvement	There will be an increase in plant uptake when adapted plant species are used. There is the slight potential for leaching of salts into ground water because of increased infiltration.		
• Harmful Levels of Heavy Metals		Slight Improvement	Certain plant species can take up heavy metals. Increased infiltration may increase the potential of heavy metal movement to groundwater.		
• Harmful Levels of Pathogens		Slight Improvement	Increased soil microbial activity will enhance competition with pathogens.		
• Harmful Levels of Petroleum		Not Applicable	Not applicable.		
In Surface Water:					
• Harmful Levels of Pesticides		Slight to Moderate Improvement	The action decreases runoff and erosion.		
• Excessive Nutrients and Organics		Slight to Moderate Improvement	Permanent vegetation will uptake excess nutrients.		

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Pasture & Hay Planting 512		Baseline Setting:			
		Appropriate Land Use(s): Hay, Pasture			
RESOURCES, CONSIDERATIONS AND CONCERNS	PHYSICAL EFFECTS	RATIONALE			
• Excessive Suspended Sediment and Turbidity	Slight to Moderate Improvement	There will be improved vegetative cover with a reduction of runoff and sedimentation.			
• Excessive Salinity	Slight Improvement	Dense vegetation will increase infiltration and reduce runoff. Planting of pasture species in recharge areas may reduce movement of salts to seep areas and surface waters.			
• Harmful Levels of Heavy Metals	Slight to Moderate Improvement	Increased uptake by some pasture plants and reduced erosion and runoff may reduce off-site movement of heavy metals attached to sediment.			
• Harmful Temperatures	Not Applicable	Not applicable.			
• Harmful Levels of Pathogens	Slight Improvement	The improved vegetative cover and increased soil microbiological activity will reduce movement of pathogens, however a land use change to pasture may increase potential pathogen levels.			
• Harmful Levels of Petroleum	Not Applicable	Not applicable.			
AIR – QUALITY					
Particulate Matter less than 10 Micrometers in Diameter (PM 10)	Slight to Moderate Improvement	Establishing permanent vegetation reduces the potential for generation of particulates by wind erosion.			
Particulate Matter less than 2.5 Micrometers in Diameter (PM 2.5)	Slight to Moderate Improvement	Establishing permanent vegetation reduces the potential for generation of particulates by wind erosion.			
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	Vegetation removes CO ₂ from the air and stores it in the form of carbon in the plants and soil.			
• N ₂ O (Nitrous Oxide)	Not Applicable	Not applicable.			
• CH ₄ (Methane)	Not Applicable	Not applicable.			

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Pasture & Hay Planting 512		Baseline Setting:			
		Appropriate Land Use(s): Hay, Pasture			
RESOURCES, CONSIDERATIONS AND CONCERNS	PHYSICAL EFFECTS	RATIONALE			
Ammonia (NH ₃)	Slight Worsening	NH3 emissions may increase with fertilizer application.			
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.			
PLANTS – SUITABILITY					
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	Plants are selected and managed to maintain optimal productivity and health.			
Threatened or Endangered Plant Species:					
<ul style="list-style-type: none"> Plant Species Listed or Proposed for Listing Under the Endangered Species Act 	Not Applicable	Not applicable.			
<ul style="list-style-type: none"> 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	Substantial Improvement	The selection of adapted plant species will have adequate nutritive value and palatability for the intended use.			
Wildfire Hazard	Not Applicable	Not applicable.			
ANIMALS - FISH AND WILDLIFE					
Inadequate Food	Slight to Substantial Improvement	Planted species provide food for certain species.			
Inadequate Cover/Shelter	Slight to Substantial Improvement	Plant species are selected that are well-adapted and compatible to the site and provide cover for wildlife.			
Inadequate Water	Not Applicable	Not applicable.			
Inadequate Space	Slight Improvement	Selection of adapted species may accommodate species of interest.			
Habitat Fragmentation	Not Applicable	Not applicable.			
Imbalance Among and Within Populations	Slight Improvement	Increase forage supply and cover.			

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Pasture & Hay Planting 512		Baseline Setting:			
		Appropriate Land Use(s): Hay, Pasture			
RESOURCES, CONSIDERATIONS AND CONCERNS	PHYSICAL EFFECTS	RATIONALE			
Threatened and Endangered Fish and Wildlife Species:					
<ul style="list-style-type: none"> 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.			
<ul style="list-style-type: none"> 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	Substantial Improvement	Plant species will be selected that accommodate seasonal livestock production and nutritional needs.			
Inadequate Shelter	Not Applicable	Not applicable.			
Inadequate Stock Water	Not Applicable	Not applicable.			
Stress and Mortality	Slight to Substantial Improvement	Improved forage cultivars will improve livestock health.			
HUMAN – ECONOMICS					
Land - Change in Land Use	Not applicable.	Not applicable.			
Land – Land in Production	Not applicable.	Moderate to substantial increase.			
Capital – Change in Equipment	0	Substantial.			
Capital - Total Investment Cost	Substantial.	Slight to moderate.			
Capital – Annual Cost	0	Situational.			
Capital – Credit and Farm Program Eligibility	0	Negligible to slight.			
Labor - Labor	0	Slight to moderate increase.			
Labor – Change in Management Level	0	Not applicable.			
Risk - Yield	Not applicable.	Not applicable.			
Risk - Flexibility	Not applicable.	Not applicable.			
Risk - Timing	Not applicable.	Moderate Decrease			
Risk – Cash Flow	Situational. Negligible to moderate decrease in risk due to management of biogas.	Moderate Increase			
Profitability – Change in Profitability	Situational. Negligible to moderate increase in profitability where biogas is put to profitable use.	0.01			
HUMAN - CULTURAL					
Cultural Resources and/or Historic Properties Present or Suspected to be PRESENT	Not applicable.	No			
HUMAN – ENERGY					
Depletion of Fossil Fuel Resources	Not Applicable	No			

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Pasture & Hay Planting 512		Baseline Setting:			
		Appropriate Land Use(s): Hay, Pasture			
RESOURCES, CONSIDERATIONS AND CONCERNS		PHYSICAL EFFECTS	RATIONALE		
Underutilization of Non-Fossil Energy Resources		Practice facilitates methane collection for renewable fuel use.	Yes		

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.

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Pipeline 516		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	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.			
SOIL – CONDITION					
Organic Matter Depletion	Not Applicable	Not applicable.			
Rangeland Site Stability	Neutral	Short term increase along pipeline route.			
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	Not Applicable	Not applicable.			
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	Not Applicable	Not applicable.			

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Pipeline 516		Baseline Setting:			
		Appropriate Land Use(s): All Land Uses			
RESOURCES, CONSIDERATIONS AND CONCERNS	PHYSICAL EFFECTS	RATIONALE			
Reduced Storage of Water Bodies by Sediment Accumulation	Not Applicable	Not applicable.			
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	Not Applicable	Not applicable.			
• Excessive Suspended Sediment and Turbidity	Not Applicable	Not applicable.			
• 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)	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 ₂ (Carbon Dioxide)	Not Applicable	Not applicable.			
• N ₂ O (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	Not Applicable	Not applicable.			
PLANTS – SUITABILITY					
Plants not Adapted or Suited	Not Applicable	Not applicable.			
PLANTS - CONDITION					
Productivity, Health, and Vigor	Slight to Moderate Improvement	Available water to facilitate grazing management improves growth and vigor of plants.			

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Pipeline 516		Baseline Setting:			
		Appropriate Land Use(s): All Land Uses			
RESOURCES, CONSIDERATIONS AND CONCERNS	PHYSICAL EFFECTS	RATIONALE			
Threatened or Endangered Plant Species:					
<ul style="list-style-type: none"> Plant Species Listed or Proposed for Listing Under the Endangered Species Act 	Not Applicable	Not applicable.			
<ul style="list-style-type: none"> Declining Species, Species of Concern 	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.			
ANIMALS - FISH AND WILDLIFE					
Inadequate Food	Not Applicable	Not applicable.			
Inadequate Cover/Shelter	Not Applicable	Not applicable.			
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:					
<ul style="list-style-type: none"> 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.			
<ul style="list-style-type: none"> 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	Not Applicable	Not applicable.			
Inadequate Shelter	Not Applicable	Not applicable.			
Inadequate Stock Water	Substantial Improvement	Pipeline facilitates the distribution of water to livestock.			
Stress and Mortality	Moderate to Substantial Improvement	Pipelines facilitate the distribution and availability of water reducing stress and mortality.			
HUMAN – ECONOMICS					
Land - Change in Land Use	Not applicable.	Not applicable.			
Land – Land in Production	Not applicable.	Moderate to substantial increase.			
Capital – Change in Equipment	0	Substantial.			
Capital - Total Investment Cost	Substantial.	Slight to moderate.			
Capital – Annual Cost	0	Situational.			

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Pipeline 516		Baseline Setting:			
		Appropriate Land Use(s): All Land Uses			
RESOURCES, CONSIDERATIONS AND CONCERNS	PHYSICAL EFFECTS	RATIONALE			
Capital – Credit and Farm Program Eligibility	0	Negligible to slight.			
Labor - Labor	0	Slight to moderate increase.			
Labor – Change in Management Level	0	Not applicable.			
Risk - Yield	Not applicable.	Not applicable.			
Risk - Flexibility	Not applicable.	Not applicable.			
Risk - Timing	Not applicable.	Moderate Decrease			
Risk – Cash Flow	Situational. Negligible to moderate decrease in risk due to management of biogas.	Moderate Increase			
Profitability – Change in Profitability	Situational. Negligible to moderate increase in profitability where biogas is put to profitable use.	0.01			
HUMAN - CULTURAL					
Cultural Resources and/or Historic Properties Present or Suspected to be PRESENT	Not applicable.	No			
HUMAN – ENERGY					
Depletion of Fossil Fuel Resources	Not Applicable	No			
Underutilization of Non-Fossil Energy Resources	Practice facilitates methane collection for renewable fuel use.	Yes			

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.

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Pond Sealing or Lining, Flexible Membrane 521A		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	Not Applicable	Not applicable.			
Shoreline	Slight Improvement	Banks are protected by liners that extend above the water line.			
Irrigation Induced	Not Applicable	Not applicable.			
Mass Movement	Not Applicable	Not applicable.			
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	Slight Improvement	Lining decreases contamination immediately below the pond.			
• Animal Waste and other Organics - N	Slight Improvement	Lining decreases contamination immediately below the pond used to store animal waste.			
• Animal Waste and other Organics - P	Slight Improvement	Lining decreases contamination immediately below the pond used to store animal waste.			
• Animal Waste and other Organics - K	Slight Improvement	Lining decreases contamination immediately below the pond used to store animal waste.			
• Commercial Fertilizer - N	Slight Improvement	Lining decreases contamination immediately below the pond used to store animal waste.			
• Commercial Fertilizer – P	Slight Improvement	Lining decreases contamination immediately below the pond used to store animal waste.			
• Commercial Fertilizer – K	Slight Improvement	Lining decreases contamination immediately below the pond used to store animal waste.			
• Residual Pesticides	Not Applicable	Not applicable.			
Damage from Sediment Deposition	Not Applicable	Not applicable.			
WATER – QUANTITY					
Rangeland Hydrologic Cycle	Not Applicable	Not applicable.			
Excessive Seepage	Slight Improvement	Reduction in seepage due to less water seeping from ponds.			

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Pond Sealing or Lining, Flexible Membrane 521A		Baseline Setting:			
		Appropriate Land Use(s): All Land Uses			
RESOURCES, CONSIDERATIONS AND CONCERNS	PHYSICAL EFFECTS	RATIONALE			
Excessive Runoff, Flooding, or Ponding	Not Applicable	Not applicable.			
Excessive Subsurface Water	Slight to Moderate Improvement	Reduced seepage from the pond will result in less contribution to the ground water, particularly in the immediate area of the pond.			
Drifted Snow	Not Applicable	Not applicable.			
Inadequate Outlets	Not Applicable	Not applicable.			
Inefficient Water use on Irrigated Land	Slight to Substantial Improvement	Retention of water in pond will allow more optimal use of water.			
Inefficient Water use on Non-Irrigated Land	Slight to Substantial Improvement	Retention of water in pond will allow more optimal use of water.			
Reduced Capacity of Conveyances by Sediment Deposition	Not Applicable	Not applicable.			
Reduced Storage of Water Bodies by Sediment Accumulation	Not Applicable	Not applicable.			
Aquifer Overdraft	Slight Worsening	Liner will reduce the potential for seepage and recharge of the aquifer.			
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	Slight to Substantial Improvement	The action will retain a substantial amount of contaminants in the pond. The magnitude of the effect will depend on the integrity of the pond before lining.			
• Excessive Salinity	Slight to Substantial Improvement	The action prevents contaminants in the pond from moving below the pond to the groundwater.			
• Harmful Levels of Heavy Metals	Slight Improvement	The action limits seepage to prevent leaching of heavy metals from the pond.			
• Harmful Levels of Pathogens	Slight to Substantial Improvement	The action limits seepage to prevent leaching of pathogens from the pond.			
• Harmful Levels of Petroleum	Not Applicable	Not applicable.			
In Surface Water:					
• Harmful Levels of Pesticides	Not Applicable	Not applicable.			
• Excessive Nutrients and Organics	Slight to Moderate Improvement	Liners reduce or prevent seepage losses from waste storage ponds, reducing the delivery of nutrients to surface water.			

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Pond Sealing or Lining, Flexible Membrane 521A		Baseline Setting:			
		Appropriate Land Use(s): All Land Uses			
RESOURCES, CONSIDERATIONS AND CONCERNS	PHYSICAL EFFECTS	RATIONALE			
• Excessive Suspended Sediment and Turbidity	Not Applicable	Not applicable.			
• 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)	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 ₂ (Carbon Dioxide)	Not Applicable	Not applicable.			
• N ₂ O (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	Not Applicable	Not applicable.			
PLANTS – SUITABILITY					
Plants not Adapted or Suited	Not Applicable	Not applicable.			
PLANTS - CONDITION					
Productivity, Health, and Vigor	Slight Improvement	Available water to facilitate grazing management improves growth and vigor of plants.			
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	Not Applicable	Not applicable.			
Forage Quality and Palatability	Not Applicable	Not applicable.			
Wildfire Hazard	Not Applicable	Not applicable.			
ANIMALS - FISH AND WILDLIFE					
Inadequate Food	Not Applicable	Not applicable.			
Inadequate Cover/Shelter	Not Applicable	Not applicable.			
Inadequate Water	Slight Improvement	Duration of water in pond is extended.			

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Pond Sealing or Lining, Flexible Membrane 521A		Baseline Setting:			
		Appropriate Land Use(s): All Land Uses			
RESOURCES, CONSIDERATIONS AND CONCERNS	PHYSICAL EFFECTS	RATIONALE			
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:					
<ul style="list-style-type: none"> 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.			
<ul style="list-style-type: none"> 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	Not Applicable	Not applicable.			
Inadequate Shelter	Not Applicable	Not applicable.			
Inadequate Stock Water	Moderate to Substantial Improvement	Lining will prolong availability of water for livestock.			
Stress and Mortality	Slight to Substantial Improvement	Reliable water supply decreases stress on animals.			
HUMAN – ECONOMICS					
Land - Change in Land Use	Not applicable.	Not applicable.			
Land – Land in Production	Not applicable.	Not applicable.			
Capital – Change in Equipment	0	Substantial.			
Capital - Total Investment Cost	Substantial.	Slight increase.			
Capital – Annual Cost	0	Situational.			
Capital – Credit and Farm Program Eligibility	0	Negligible			
Labor - Labor	0	Slight increase.			
Labor – Change in Management Level	0	Slight Decrease			
Risk - Yield	Negligible to slight decrease due to reduction of seepage losses.	Substantial Decrease			
Risk - Flexibility	Substantial decrease due to reduction of seepage losses.	Moderate Increase			
Risk - Timing	Moderate increase - practice should be applied prior to excessive seepage losses.	Slight to Moderate Increase			
Risk – Cash Flow	Slight to moderate increase due to application costs.	Situational			
Profitability – Change in Profitability	Moderate decrease to substantial increase.	0.03			
HUMAN - CULTURAL					

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Pond Sealing or Lining, Flexible Membrane 521A		Baseline Setting:			
		Appropriate Land Use(s): All Land Uses			
RESOURCES, CONSIDERATIONS AND CONCERNS	PHYSICAL EFFECTS		RATIONALE		
Cultural Resources and/or Historic Properties Present or Suspected to be PRESENT	Not applicable.		No		
HUMAN – ENERGY					
Depletion of Fossil Fuel Resources	On freshwater ponds water loss is prevented, saving energy associated with pumping		No		
Underutilization of Non-Fossil Energy Resources	Not Applicable		No		

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.

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Pond Sealing or Lining, Soil Dispersant 521B		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	Not Applicable		Not applicable.		
Shoreline	Slight Improvement		Banks are protected by liners that extend above the water line.		
Irrigation Induced	Not Applicable		Not applicable.		
Mass Movement	Not Applicable		Not applicable.		
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	Neutral		Lining decreases contamination immediately below the pond, but salts often used as dispersants can migrate below the pond.		
• Animal Waste and other Organics - N	Slight Improvement		Lining decreases contamination immediately below the pond used to store animal waste.		
• Animal Waste and other Organics - P	Slight Improvement		Lining decreases contamination immediately below the pond used to store animal waste.		
• Animal Waste and other Organics - K	Slight Improvement		Lining decreases contamination immediately below the pond used to store animal waste.		
• Commercial Fertilizer - N	Slight Improvement		Lining decreases contamination immediately below the pond used to store animal waste.		
• Commercial Fertilizer – P	Slight Improvement		Lining decreases contamination immediately below the pond used to store animal waste.		
• Commercial Fertilizer – K	Slight Improvement		Lining decreases contamination immediately below the pond used to store animal waste.		
• Residual Pesticides	Not Applicable		Not applicable.		
Damage from Sediment Deposition	Not Applicable		Not applicable.		
WATER – QUANTITY					
Rangeland Hydrologic Cycle	Not Applicable		Not applicable.		

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Pond Sealing or Lining, Soil Dispersant 521B		Baseline Setting:			
		Appropriate Land Use(s): All Land Uses			
RESOURCES, CONSIDERATIONS AND CONCERNS	PHYSICAL EFFECTS	RATIONALE			
Excessive Seepage	Slight Improvement	Reduction in seepage due to less water seeping from ponds.			
Excessive Runoff, Flooding, or Ponding	Not Applicable	Not applicable.			
Excessive Subsurface Water	Slight to Moderate Improvement	Reduced seepage from the pond will result in less contribution to the ground water, particularly in the immediate area of the pond.			
Drifted Snow	Not Applicable	Not applicable.			
Inadequate Outlets	Not Applicable	Not applicable.			
Inefficient Water use on Irrigated Land	Slight to Substantial Improvement	Retention of water in pond will allow more optimal use of water.			
Inefficient Water use on Non-Irrigated Land	Slight to Substantial Improvement	Retention of water in pond will allow more optimal use of water.			
Reduced Capacity of Conveyances by Sediment Deposition	Not Applicable	Not applicable.			
Reduced Storage of Water Bodies by Sediment Accumulation	Not Applicable	Not applicable.			
Aquifer Overdraft	Slight Worsening	Liner will reduce the potential for seepage and recharge of the aquifer.			
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	Slight to Substantial Improvement	Liner will retain a substantial amount of contaminants in the pond. The magnitude of the effect will depend on the integrity of the pond before lining.			
• Excessive Salinity	Slight to Substantial Improvement	The action prevents contaminants in the pond from moving below the pond to the groundwater.			
• Harmful Levels of Heavy Metals	Slight Improvement	The action limits seepage to prevent leaching of heavy metals from the pond.			
• Harmful Levels of Pathogens	Slight to Substantial Improvement	The action limits seepage to prevent leaching of pathogens from the pond.			
• Harmful Levels of Petroleum	Not Applicable	Not applicable.			
In Surface Water:					
• Harmful Levels of Pesticides	Not Applicable	Not applicable.			

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Pond Sealing or Lining, Soil Dispersant 521B		Baseline Setting:			
		Appropriate Land Use(s): All Land Uses			
RESOURCES, CONSIDERATIONS AND CONCERNS	PHYSICAL EFFECTS	RATIONALE			
<ul style="list-style-type: none"> • Excessive Nutrients and Organics 	Slight to Moderate Improvement	Liners reduce or prevent seepage losses from waste storage ponds, reducing the delivery of nutrients to surface water.			
<ul style="list-style-type: none"> • Excessive Suspended Sediment and Turbidity 	Not Applicable	Not applicable.			
<ul style="list-style-type: none"> • Excessive Salinity 	Not Applicable	Not applicable.			
<ul style="list-style-type: none"> • Harmful Levels of Heavy Metals 	Not Applicable	Not applicable.			
<ul style="list-style-type: none"> • Harmful Temperatures 	Not Applicable	Not applicable.			
<ul style="list-style-type: none"> • Harmful Levels of Pathogens 	Not Applicable	Not applicable.			
<ul style="list-style-type: none"> • 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	Not Applicable	Not applicable.			
Excessive Greenhouse Gas:					
<ul style="list-style-type: none"> • CO₂ (Carbon Dioxide) 	Not Applicable	Not applicable.			
<ul style="list-style-type: none"> • N₂O (Nitrous Oxide) 	Not Applicable	Not applicable.			
<ul style="list-style-type: none"> • CH₄ (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	Not Applicable	Not applicable.			
PLANTS – SUITABILITY					
Plants not Adapted or Suited	Not Applicable	Not applicable.			
PLANTS - CONDITION					
Productivity, Health, and Vigor	Slight Improvement	Available water to facilitate grazing management improves growth and vigor of plants.			
Threatened or Endangered Plant Species:					
<ul style="list-style-type: none"> • Plant Species Listed or Proposed for Listing Under the Endangered Species Act 	Not Applicable	Not applicable.			
<ul style="list-style-type: none"> • Declining Species, Species of Concern 	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.			
ANIMALS - FISH AND WILDLIFE					

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Pond Sealing or Lining, Soil Dispersant 521B		Baseline Setting:			
		Appropriate Land Use(s): All Land Uses			
RESOURCES, CONSIDERATIONS AND CONCERNS	PHYSICAL EFFECTS	RATIONALE			
Inadequate Food	Not Applicable	Not applicable.			
Inadequate Cover/Shelter	Not Applicable	Not applicable.			
Inadequate Water	Slight Improvement	Duration of water in pond is extended.			
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:					
<ul style="list-style-type: none"> 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.			
<ul style="list-style-type: none"> 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	Not Applicable	Not applicable.			
Inadequate Shelter	Not Applicable	Not applicable.			
Inadequate Stock Water	Moderate to Substantial Improvement	Lining will prolong availability of water for livestock.			
Stress and Mortality	Slight to Substantial Improvement	Reliable water supply decreases stress on animals.			
HUMAN – ECONOMICS					
Land - Change in Land Use	Not applicable.	Not applicable.			
Land – Land in Production	Not applicable.	Not applicable.			
Capital – Change in Equipment	0	Substantial.			
Capital - Total Investment Cost	Substantial.	Slight increase.			
Capital – Annual Cost	0	Situational.			
Capital – Credit and Farm Program Eligibility	0	Negligible			
Labor - Labor	0	Slight increase.			
Labor – Change in Management Level	0	Slight Decrease			
Risk - Yield	Negligible to slight decrease due to reduction of seepage losses.	Substantial Decrease			
Risk - Flexibility	Substantial decrease due to reduction of seepage losses.	Moderate Increase			
Risk - Timing	Moderate increase - practice should be applied prior to excessive seepage losses.	Slight to Moderate Increase			
Risk – Cash Flow	Slight to moderate increase due to application costs.	Situational			

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Pond Sealing or Lining, Soil Dispersant 521B		Baseline Setting:			
		Appropriate Land Use(s): All Land Uses			
RESOURCES, CONSIDERATIONS AND CONCERNS	PHYSICAL EFFECTS	RATIONALE			
Profitability – Change in Profitability	Moderate decrease to substantial increase.	0.05			
HUMAN - CULTURAL					
Cultural Resources and/or Historic Properties Present or Suspected to be PRESENT	Not applicable.	No			
HUMAN – ENERGY					
Depletion of Fossil Fuel Resources	On freshwater ponds water loss is prevented, saving energy associated with pumping	No			
Underutilization of Non-Fossil Energy Resources	Not Applicable	No			

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.

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Pond Sealing or Lining, Bentonite Sealant 521C		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	Not Applicable	Not applicable.			
Shoreline	Slight Improvement	Banks are protected by liners that extend above the water line.			
Irrigation Induced	Not Applicable	Not applicable.			
Mass Movement	Not Applicable	Not applicable.			
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	Slight Improvement	Lining decreases contamination immediately below the pond.			
• Animal Waste and other Organics - N	Slight Improvement	Lining decreases contamination immediately below the pond used to store animal waste.			
• Animal Waste and other Organics - P	Slight Improvement	Lining decreases contamination immediately below the pond used to store animal waste.			
• Animal Waste and other Organics - K	Slight Improvement	Lining decreases contamination immediately below the pond used to store animal waste.			
• Commercial Fertilizer - N	Slight Improvement	Lining decreases contamination immediately below the pond used to store animal waste.			
• Commercial Fertilizer – P	Slight Improvement	Lining decreases contamination immediately below the pond used to store animal waste.			
• Commercial Fertilizer – K	Slight Improvement	Lining decreases contamination immediately below the pond used to store animal waste.			
• Residual Pesticides	Not Applicable	Not applicable.			
Damage from Sediment Deposition	Not Applicable	Not applicable.			
WATER – QUANTITY					
Rangeland Hydrologic Cycle	Not Applicable	Not applicable.			
Excessive Seepage	Slight Improvement	Reduction in seepage due to less water seeping from ponds.			

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Pond Sealing or Lining, Bentonite Sealant 521C		Baseline Setting:			
		Appropriate Land Use(s): All Land Uses			
RESOURCES, CONSIDERATIONS AND CONCERNS	PHYSICAL EFFECTS	RATIONALE			
Excessive Runoff, Flooding, or Ponding	Not Applicable	Not applicable.			
Excessive Subsurface Water	Slight to Moderate Improvement	Reduced seepage from the pond will result in less contribution to the ground water, particularly in the immediate area of the pond.			
Drifted Snow	Not Applicable	Not applicable.			
Inadequate Outlets	Not Applicable	Not applicable.			
Inefficient Water use on Irrigated Land	Slight to Substantial Improvement	Retention of water in pond will allow more optimal use of water.			
Inefficient Water use on Non-Irrigated Land	Slight to Substantial Improvement	Retention of water in pond will allow more optimal use of water.			
Reduced Capacity of Conveyances by Sediment Deposition	Not Applicable	Not applicable.			
Reduced Storage of Water Bodies by Sediment Accumulation	Not Applicable	Not applicable.			
Aquifer Overdraft	Slight Worsening	Liner will reduce the potential for seepage and recharge of the aquifer.			
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	Slight to Moderate Improvement	The action reduces the potential for seepage.			
• Excessive Salinity	Slight to Substantial Improvement	The action prevents contaminants in the pond from moving below the pond to the groundwater.			
• Harmful Levels of Heavy Metals	Slight Improvement	The action limits seepage to prevent leaching of heavy metals from the pond.			
• Harmful Levels of Pathogens	Slight to Substantial Improvement	The action limits seepage to prevent leaching of pathogens from the pond.			
• Harmful Levels of Petroleum	Not Applicable	Not applicable.			
In Surface Water:					
• Harmful Levels of Pesticides	Not Applicable	Not applicable.			
• Excessive Nutrients and Organics	Slight to Moderate Improvement	Liners reduce or prevent seepage losses from waste storage ponds, reducing the delivery of nutrients to surface water.			
• Excessive Suspended Sediment and Turbidity	Not Applicable	Not applicable.			
• Excessive Salinity	Not Applicable	Not applicable.			
• Harmful Levels of Heavy Metals	Not Applicable	Not applicable.			

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Pond Sealing or Lining, Bentonite Sealant 521C		Baseline Setting:			
		Appropriate Land Use(s): All Land Uses			
RESOURCES, CONSIDERATIONS AND CONCERNS	PHYSICAL EFFECTS	RATIONALE			
• 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)	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 ₂ (Carbon Dioxide)	Not Applicable	Not applicable.			
• N ₂ O (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	Not Applicable	Not applicable.			
PLANTS – SUITABILITY					
Plants not Adapted or Suited	Not Applicable	Not applicable.			
PLANTS - CONDITION					
Productivity, Health, and Vigor	Slight Improvement	Available water to facilitate grazing management improves growth and vigor of plants.			
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	Not Applicable	Not applicable.			
Forage Quality and Palatability	Not Applicable	Not applicable.			
Wildfire Hazard	Not Applicable	Not applicable.			
ANIMALS - FISH AND WILDLIFE					
Inadequate Food	Not Applicable	Not applicable.			
Inadequate Cover/Shelter	Not Applicable	Not applicable.			
Inadequate Water	Slight Improvement	Duration of water in pond is extended.			
Inadequate Space	Not Applicable	Not applicable.			
Habitat Fragmentation	Not Applicable	Not applicable.			
Imbalance Among and Within Populations	Not Applicable	Not applicable.			

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Pond Sealing or Lining, Bentonite Sealant 521C		Baseline Setting:			
		Appropriate Land Use(s): All Land Uses			
RESOURCES, CONSIDERATIONS AND CONCERNS	PHYSICAL EFFECTS	RATIONALE			
Threatened and Endangered Fish and Wildlife Species:					
<ul style="list-style-type: none"> 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.			
<ul style="list-style-type: none"> 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	Not Applicable	Not applicable.			
Inadequate Shelter	Not Applicable	Not applicable.			
Inadequate Stock Water	Moderate to Substantial Improvement	Lining will prolong availability of water for livestock.			
Stress and Mortality	Slight to Substantial Improvement	Reliable water supply decreases stress on animals.			
HUMAN – ECONOMICS					
Land - Change in Land Use	Not applicable.	Not applicable.			
Land – Land in Production	Not applicable.	Not applicable.			
Capital – Change in Equipment	0	Substantial.			
Capital - Total Investment Cost	Substantial.	Slight increase.			
Capital – Annual Cost	0	Situational.			
Capital – Credit and Farm Program Eligibility	0	Negligible			
Labor - Labor	0	Slight increase.			
Labor – Change in Management Level	0	Slight Decrease			
Risk - Yield	Negligible to slight decrease due to reduction of seepage losses.	Substantial Decrease			
Risk - Flexibility	Substantial decrease due to reduction of seepage losses.	Moderate Increase			
Risk - Timing	Moderate increase - practice should be applied prior to excessive seepage losses.	Slight to Moderate Increase			
Risk – Cash Flow	Slight to moderate increase due to application costs.	Situational			
Profitability – Change in Profitability	Moderate decrease to substantial increase.	0.03			
HUMAN - CULTURAL					
Cultural Resources and/or Historic Properties Present or Suspected to be PRESENT	Not applicable.	No			
HUMAN – ENERGY					

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Pond Sealing or Lining, Bentonite Sealant 521C		Baseline Setting:			
		Appropriate Land Use(s): All Land Uses			
RESOURCES, CONSIDERATIONS AND CONCERNS	PHYSICAL EFFECTS		RATIONALE		
Depletion of Fossil Fuel Resources	On freshwater ponds water loss is prevented, saving energy associated with pumping		No		
Underutilization of Non-Fossil Energy Resources	Not Applicable		No		

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.

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Pond Sealing or Lining, Compacted Clay Treatment 521D		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	Not Applicable	Not applicable.			
Shoreline	Slight Improvement	Banks are protected by liners that extend above the water line.			
Irrigation Induced	Not Applicable	Not applicable.			
Mass Movement	Not Applicable	Not applicable.			
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	Slight Improvement	Lining decreases contamination immediately below the pond.			
• Animal Waste and other Organics - N	Slight Improvement	Lining decreases contamination immediately below the pond used to store animal waste.			
• Animal Waste and other Organics - P	Slight Improvement	Lining decreases contamination immediately below the pond used to store animal waste.			
• Animal Waste and other Organics - K	Slight Improvement	Lining decreases contamination immediately below the pond used to store animal waste.			
• Commercial Fertilizer - N	Slight Improvement	Lining decreases contamination immediately below the pond used to store animal waste.			
• Commercial Fertilizer – P	Slight Improvement	Lining decreases contamination immediately below the pond used to store animal waste.			
• Commercial Fertilizer – K	Slight Improvement	Lining decreases contamination immediately below the pond used to store animal waste.			
• Residual Pesticides	Not Applicable	Not applicable.			
Damage from Sediment Deposition	Not Applicable	Not applicable.			
WATER – QUANTITY					
Rangeland Hydrologic Cycle	Not Applicable	Not applicable.			
Excessive Seepage	Slight Improvement	Reduction in seepage due to less water seeping from ponds.			

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Pond Sealing or Lining, Compacted Clay Treatment 521D		Baseline Setting:			
		Appropriate Land Use(s): All Land Uses			
RESOURCES, CONSIDERATIONS AND CONCERNS	PHYSICAL EFFECTS	RATIONALE			
Excessive Runoff, Flooding, or Ponding	Not Applicable	Not applicable.			
Excessive Subsurface Water	Slight to Moderate Improvement	Reduced seepage from the pond will result in less contribution to the ground water, particularly in the immediate area of the pond.			
Drifted Snow	Not Applicable	Not applicable.			
Inadequate Outlets	Not Applicable	Not applicable.			
Inefficient Water use on Irrigated Land	Slight to Substantial Improvement	Retention of water in pond will allow more optimal use of water.			
Inefficient Water use on Non-Irrigated Land	Slight to Substantial Improvement	Retention of water in pond will allow more optimal use of water.			
Reduced Capacity of Conveyances by Sediment Deposition	Not Applicable	Not applicable.			
Reduced Storage of Water Bodies by Sediment Accumulation	Not Applicable	Not applicable.			
Aquifer Overdraft	Slight Worsening	Liner will reduce the potential for seepage and recharge of the aquifer.			
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	Slight to Moderate Improvement	The action reduces the potential for seepage.			
• Excessive Salinity	Moderate Improvement	The action prevents contaminants in the pond from moving below the pond to the groundwater.			
• Harmful Levels of Heavy Metals	Slight Improvement	The action limits seepage to prevent leaching of heavy metals from the pond.			
• Harmful Levels of Pathogens	Slight to Substantial Improvement	The action limits seepage to prevent leaching of pathogens from the pond.			
• Harmful Levels of Petroleum	Not Applicable	Not applicable.			
In Surface Water:					
• Harmful Levels of Pesticides	Not Applicable	Not applicable.			
• Excessive Nutrients and Organics	Slight to Moderate Improvement	Liners reduce or prevent seepage losses from waste storage ponds, reducing the delivery of nutrients to surface water.			
• Excessive Suspended Sediment and Turbidity	Not Applicable	Not applicable.			
• Excessive Salinity	Not Applicable	Not applicable.			
• Harmful Levels of Heavy Metals	Not Applicable	Not applicable.			

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Pond Sealing or Lining, Compacted Clay Treatment 521D		Baseline Setting:			
		Appropriate Land Use(s): All Land Uses			
RESOURCES, CONSIDERATIONS AND CONCERNS	PHYSICAL EFFECTS		RATIONALE		
• 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)	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 ₂ (Carbon Dioxide)	Not Applicable		Not applicable.		
• N ₂ O (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	Not Applicable		Not applicable.		
PLANTS – SUITABILITY					
Plants not Adapted or Suited	Not Applicable		Not applicable.		
PLANTS - CONDITION					
Productivity, Health, and Vigor	Slight Improvement		Available water to facilitate grazing management improves growth and vigor of plants.		
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	Not Applicable		Not applicable.		
Forage Quality and Palatability	Not Applicable		Not applicable.		
Wildfire Hazard	Not Applicable		Not applicable.		
ANIMALS - FISH AND WILDLIFE					
Inadequate Food	Not Applicable		Not applicable.		
Inadequate Cover/Shelter	Not Applicable		Not applicable.		
Inadequate Water	Slight Improvement		Duration of water in pond is extended.		
Inadequate Space	Not Applicable		Not applicable.		
Habitat Fragmentation	Not Applicable		Not applicable.		
Imbalance Among and Within Populations	Not Applicable		Not applicable.		

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Pond Sealing or Lining, Compacted Clay Treatment 521D		Baseline Setting:			
		Appropriate Land Use(s): All Land Uses			
RESOURCES, CONSIDERATIONS AND CONCERNS	PHYSICAL EFFECTS	RATIONALE			
Threatened and Endangered Fish and Wildlife Species:					
<ul style="list-style-type: none"> 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.			
<ul style="list-style-type: none"> 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	Not Applicable	Not applicable.			
Inadequate Shelter	Not Applicable	Not applicable.			
Inadequate Stock Water	Moderate to Substantial Improvement	Lining will prolong availability of water for livestock.			
Stress and Mortality	Slight to Substantial Improvement	Reliable water supply decreases stress on animals.			
HUMAN – ECONOMICS					
Land - Change in Land Use	Not applicable.	Not applicable.			
Land – Land in Production	Not applicable.	Not applicable.			
Capital – Change in Equipment	0	Substantial.			
Capital - Total Investment Cost	Substantial.	Slight increase.			
Capital – Annual Cost	0	Situational.			
Capital – Credit and Farm Program Eligibility	0	Negligible			
Labor - Labor	0	Slight increase.			
Labor – Change in Management Level	0	Slight Decrease			
Risk - Yield	Negligible to slight decrease due to reduction of seepage losses.	Substantial Decrease			
Risk - Flexibility	Substantial decrease due to reduction of seepage losses.	Moderate Increase			
Risk - Timing	Moderate increase - practice should be applied prior to excessive seepage losses.	Slight to Moderate Increase			
Risk – Cash Flow	Slight to moderate increase due to application costs.	Situational			
Profitability – Change in Profitability	Moderate decrease to substantial increase.	0.03			
HUMAN - CULTURAL					
Cultural Resources and/or Historic Properties Present or Suspected to be PRESENT	0	0			
HUMAN – ENERGY					
Depletion of Fossil Fuel Resources	0	0			

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Pond Sealing or Lining, Compacted Clay Treatment 521D		Baseline Setting:			
		Appropriate Land Use(s): All Land Uses			
RESOURCES, CONSIDERATIONS AND CONCERNS		PHYSICAL EFFECTS	RATIONALE		
Underutilization of Non-Fossil Energy Resources		0	0		

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.

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Prescribed Grazing 528		Baseline Setting:			
		Appropriate Land Use(s): Crop, Grazed Forest, Grazed Range, Hay, Headquarters, Native or Naturalized Pasture, Natural Area, Pasture, Recreation, Water, Watershed Protection, Wildlife			
RESOURCES, CONSIDERATIONS AND CONCERNS	PHYSICAL EFFECTS	RATIONALE			
SOIL - EROSION					
Sheet and Rill	Moderate to Substantial Improvement	Improving the health and vigor of plant communities will increase vegetative cover and/or water infiltration and decrease erosion by water.			
Wind	Moderate to Substantial Improvement	Improving the health and vigor of plant communities will increase vegetative cover and decrease erosion by wind.			
Ephemeral Gully	Moderate to Substantial Improvement	Improving the health and vigor of plant communities will increase vegetative cover and/or water infiltration and decrease erosion by water.			
Classic Gully	Slight to Moderate Improvement	There will be decreased overland flow, enhanced vegetation cover.			
Streambank	Slight to Substantial Improvement	There will be enhancement of protective riparian vegetation.			
Shoreline	Slight to Substantial Improvement	There will be enhancement of protective shoreline vegetation.			
Irrigation Induced	Slight to Moderate Improvement	There will be an improvement in vegetative cover.			
Mass Movement	Neutral	There will be improved stability of soil profile by root systems of the more vigorous plant communities.			
Road, Roadsides, and Construction Sites	Not Applicable	Not applicable.			
SOIL – CONDITION					
Organic Matter Depletion	Moderate to Substantial Improvement	There will be an increase in vegetative cover, deeper root systems, increased soil organic material and biological activity, and improved nutrient cycling.			
Rangeland Site Stability	Moderate to Substantial Improvement	There will be an increase in vegetative cover, deeper root systems, increased soil organic material and biological activity, and improved nutrient cycling.			

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Prescribed Grazing 528		Baseline Setting:			
		Appropriate Land Use(s): Crop, Grazed Forest, Grazed Range, Hay, Headquarters, Native or Naturalized Pasture, Natural Area, Pasture, Recreation, Water, Watershed Protection, Wildlife			
RESOURCES, CONSIDERATIONS AND CONCERNS	PHYSICAL EFFECTS	RATIONALE			
Compaction	Slight to Substantial Improvement	Soil bulk density decreases on long-term basis because of an increase in vegetative cover, deeper root systems, and increased soil organic material. There may be a slight increase in bulk density in the short term on intensively managed grazing systems.			
Subsidence	Not Applicable	Not applicable.			
Contaminants:					
<ul style="list-style-type: none"> Salts and other Chemicals 	Slight to Moderate Improvement	There will be increased vigor of plant community in recharge areas which may uptake salts, however a slight worsening may be possible in areas where intensive grazing systems are implemented.			
<ul style="list-style-type: none"> Animal Waste and other Organics - N 	Slight to Moderate Improvement	There will be a greater use of N by more vigorous plants.			
<ul style="list-style-type: none"> Animal Waste and other Organics - P 	Slight to Moderate Improvement	There will be a greater use of P by more vigorous plants.			
<ul style="list-style-type: none"> Animal Waste and other Organics - K 	Slight to Moderate Improvement	There will be a greater use of K by more vigorous plants.			
<ul style="list-style-type: none"> Commercial Fertilizer - N 	Slight to Moderate Improvement	There will be a greater use of N by more vigorous plants.			
<ul style="list-style-type: none"> Commercial Fertilizer - P 	Slight to Moderate Improvement	There will be a greater use of P by more vigorous plants.			
<ul style="list-style-type: none"> Commercial Fertilizer - K 	Slight to Moderate Improvement	There will be a greater use of K by more vigorous plants.			
<ul style="list-style-type: none"> Residual Pesticides 	Slight to Moderate Improvement	Vigorous plants are more resistant to pest pressure.			
Damage from Sediment Deposition	Slight to Substantial Improvement	There will be an increase in vegetative cover, reducing runoff, erosion, and sediment yield.			
WATER – QUANTITY					
Rangeland Hydrologic Cycle	Moderate Worsening	Restoration and/or maintenance of the function and structure of the ecological site.			

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Prescribed Grazing 528		Baseline Setting: Appropriate Land Use(s): Crop, Grazed Forest, Grazed Range, Hay, Headquarters, Native or Naturalized Pasture, Natural Area, Pasture, Recreation, Water, Watershed Protection, Wildlife			
RESOURCES, CONSIDERATIONS AND CONCERNS		PHYSICAL EFFECTS	RATIONALE		
Excessive Seepage		Neutral	There is potential for a decrease in seep flow because of increased utilization of soil moisture, however there may be slight worsening due to increased infiltration, especially during dormant season.		
Excessive Runoff, Flooding, or Ponding		Slight to Moderate Improvement	Runoff will be reduced and infiltration increased due to improved vegetative cover.		
Excessive Subsurface Water		Slight Improvement	There will be an increase in plant uptake.		
Drifted Snow		Not Applicable	Not applicable.		
Inadequate Outlets		Slight Improvement	Runoff will be reduced and infiltration increased due to improved vegetative cover.		
Inefficient Water use on Irrigated Land		Slight Worsening	Grazing animals causes difficulty in scheduling irrigations.		
Inefficient Water use on Non-Irrigated Land		Slight to Moderate Improvement	There will be increased infiltration, increased available water, and extended interflow yield.		
Reduced Capacity of Conveyances by Sediment Deposition		Slight to Moderate Improvement	There will be a decrease in sediment loads due to reduced runoff, greater water infiltration, and increased cover.		
Reduced Storage of Water Bodies by Sediment Accumulation		Slight Improvement	There will be a decrease in sediment loads due to reduced runoff, greater water infiltration, and increased cover.		
Aquifer Overdraft		Neutral	Improved vigor of plant community increases infiltration rate and evapotranspiration.		
Insufficient Flows in Water Courses		Neutral	Improved vigor of plant community increases infiltration rate and evapotranspiration.		
WATER – QUALITY					
In Groundwater:					
<ul style="list-style-type: none"> Harmful Levels of Pesticides 		Slight to Moderate Improvement	Managing for desirable plant health and vigor reduces the need for pesticide applications.		

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Prescribed Grazing 528		Baseline Setting:			
		Appropriate Land Use(s): Crop, Grazed Forest, Grazed Range, Hay, Headquarters, Native or Naturalized Pasture, Natural Area, Pasture, Recreation, Water, Watershed Protection, Wildlife			
RESOURCES, CONSIDERATIONS AND CONCERNS	PHYSICAL EFFECTS	RATIONALE			
• Excessive Nutrients and Organics	Slight Improvement	The action increases plant vigor and uptake of nutrients.			
• Excessive Salinity	Slight Improvement	The action results in increased vigor of plant community which may increase contaminant uptake.			
• Harmful Levels of Heavy Metals	Slight Improvement	The action results in increased vigor of plant community, which may increase uptake of metals.			
• Harmful Levels of Pathogens	Slight Improvement	The action may increase soil microbial activity enhancing competition with pathogens.			
• Harmful Levels of Petroleum	Not Applicable	Not applicable.			
In Surface Water:					
• Harmful Levels of Pesticides	Slight to Moderate Improvement	Managing for desirable plant health and vigor reduces runoff, erosion, and the need for pesticide applications.			
• Excessive Nutrients and Organics	Slight Improvement	The action increases plant vigor and uptake of nutrients.			
• Excessive Suspended Sediment and Turbidity	Slight to Substantial Improvement	Management will result in increased plant vigor and cover, decreasing sediment yields.			
• Excessive Salinity	Slight to Moderate Improvement	The action reduces soil surface evaporation, increases infiltration and reduces runoff.			
• Harmful Levels of Heavy Metals	Slight Improvement	Improved plant growth reduces runoff and increases uptake.			
• Harmful Temperatures	Neutral	The action protects soil and water quality.			
• Harmful Levels of Pathogens	Slight Improvement	Reduced runoff, grazing management, and properly placed and designed watering facilities will reduce risk of movement of pathogens in surface waters.			
• Harmful Levels of Petroleum	Not Applicable	Not applicable.			
AIR – QUALITY					
Particulate Matter less than 10 Micrometers in Diameter (PM 10)	Slight to Moderate Improvement	Improved vegetative cover reduces the generation of particulates.			
Particulate Matter less than 2.5 Micrometers in Diameter (PM 2.5)	Slight to Moderate Improvement	Improved vegetative cover reduces the generation of particulates.			

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Prescribed Grazing 528		Baseline Setting:			
		Appropriate Land Use(s): Crop, Grazed Forest, Grazed Range, Hay, Headquarters, Native or Naturalized Pasture, Natural Area, Pasture, Recreation, Water, Watershed Protection, Wildlife			
RESOURCES, CONSIDERATIONS AND CONCERNS	PHYSICAL EFFECTS	RATIONALE			
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 to Moderate Improvement	Improved vegetative cover removes CO ₂ from the air and stores it in the form of carbon in the plants and soil.			
• N ₂ O (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	Neutral	Proper management will spread livestock, reducing manure concentrations.			
Reduced Visibility	Slight to Moderate Improvement	Reduction in particulates due to improved ground cover.			
Undesirable Air Movement	Not Applicable	Not applicable.			
Adverse Air Temperature	Not Applicable	Not applicable.			
PLANTS – SUITABILITY					
Plants not Adapted or Suited	Moderate to Substantial Improvement	Grazing management is implemented to create or maintain the desired plant community.			
PLANTS - CONDITION					
Productivity, Health, and Vigor	Substantial Improvement	Improved plant and animal management enhances growing conditions 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.			

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Prescribed Grazing 528		Baseline Setting:			
		Appropriate Land Use(s): Crop, Grazed Forest, Grazed Range, Hay, Headquarters, Native or Naturalized Pasture, Natural Area, Pasture, Recreation, Water, Watershed Protection, Wildlife			
RESOURCES, CONSIDERATIONS AND CONCERNS	PHYSICAL EFFECTS	RATIONALE			
Noxious and Invasive Plants	Moderate to Substantial Improvement	Management will increased health and vigor and competition by desirable plants which will decrease noxious and invasive plants.			
Forage Quality and Palatability	Moderate to Substantial Improvement	Management of plant community will increase quality and palatability of forage species.			
Wildfire Hazard	Slight to Substantial Improvement	Management of plant communities reduces fuel loads.			
ANIMALS - FISH AND WILDLIFE					
Inadequate Food	Slight to Substantial Improvement	Management enhances production and diversity of the plant community including food species.			
Inadequate Cover/Shelter	Slight to Substantial Improvement	Management enhances production and diversity of cover/shelter conditions/			
Inadequate Water	Not Applicable	Not applicable.			
Inadequate Space	Moderate to Substantial Improvement	Management can restore desired habitats/space.			
Habitat Fragmentation	Moderate to Substantial Improvement	Management can restore and reconnect desired habitats/space.			
Imbalance Among and Within Populations	Slight to Substantial Improvement	Stocking rates are determined with the intent of maintaining or enhancing wildlife habitat.			
Threatened and Endangered Fish and Wildlife Species:					
<ul style="list-style-type: none"> 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.			
<ul style="list-style-type: none"> 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	Substantial Improvement	Livestock numbers are in balance with available feed and forage that meets nutritional and productive needs for the kinds and classes of livestock.			

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Prescribed Grazing 528		Baseline Setting:			
		Appropriate Land Use(s): Crop, Grazed Forest, Grazed Range, Hay, Headquarters, Native or Naturalized Pasture, Natural Area, Pasture, Recreation, Water, Watershed Protection, Wildlife			
RESOURCES, CONSIDERATIONS AND CONCERNS	PHYSICAL EFFECTS	RATIONALE			
Inadequate Shelter	Slight to Substantial Improvement	Grazing management considers location of animals and available shelter(s) throughout the year.			
Inadequate Stock Water	Not Applicable	Not applicable.			
Stress and Mortality	Moderate to Substantial Improvement	Management results in nutritive forage, reduction and avoidance of poisonous plant, and disruption of pest cycles which improves livestock health.			
HUMAN – ECONOMICS					
Land - Change in Land Use	Not applicable.	Not applicable.			
Land – Land in Production	Not applicable.	Slight Increase.			
Capital – Change in Equipment	0	Not applicable.			
Capital - Total Investment Cost	Not applicable.	Negligible			
Capital – Annual Cost	0	Situational.			
Capital – Credit and Farm Program Eligibility	0	Slight to moderate increase			
Labor - Labor	Slight to moderate increase to move livestock between pastures.	Slight increase			
Labor – Change in Management Level	Slight increase to determine when to move livestock and manage forage.	Slight to Moderate Decrease			
Risk - Yield	Slight to moderate decrease from improved health, extended grazing period, improved forage.	Slight to Moderate Increase			
Risk - Flexibility	Slight to moderate increase because of increased management.	Substantial Increase			
Risk - Timing	Substantial increase - practice must be applied according to forage needs.	Slight to Moderate Decrease			
Risk – Cash Flow	Slight to moderate decrease due to higher yields and reduced costs.	Slight to moderate increase.			
Profitability – Change in Profitability	0	0			
HUMAN - CULTURAL					
Cultural Resources and/or Historic Properties Present or Suspected to be PRESENT	Not applicable.	No			
HUMAN – ENERGY					
Depletion of Fossil Fuel Resources	Not Applicable	No			
Underutilization of Non-Fossil Energy Resources	Not Applicable	No			

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.

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Pumping Plant 533		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	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.			
SOIL – CONDITION					
Organic Matter Depletion	Not Applicable	Not applicable.			
Rangeland Site Stability	Not Applicable	There will be an increase in vegetative cover, deeper root systems, increased soil organic material and biological activity, and improved nutrient cycling.			
Compaction	Not Applicable	Not applicable.			
Subsidence	Slight to Substantial Improvement	Maintaining water levels reduces opportunity for organic material oxidation, however, if the pump is used as a drainage tool, the oxidation and resulting subsidence may increase.			
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	Not Applicable	Not applicable.			
WATER – QUANTITY					
Rangeland Hydrologic Cycle	Not Applicable	Not applicable.			
Excessive Seepage	Slight to Moderate Improvement	Provide drainage by the removal of groundwater.			
Excessive Runoff, Flooding, or Ponding	Slight to Moderate Improvement	Provides drainage by the removal of surface water.			

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Pumping Plant 533		Baseline Setting:			
		Appropriate Land Use(s): All Land Uses			
RESOURCES, CONSIDERATIONS AND CONCERNS	PHYSICAL EFFECTS	RATIONALE			
Excessive Subsurface Water	Slight to Moderate Improvement	Provide drainage by the removal of groundwater.			
Drifted Snow	Not Applicable	Not applicable.			
Inadequate Outlets	Slight to Moderate Improvement	Pump can be used to transfer water to other outlets.			
Inefficient Water use on Irrigated Land	Slight to Substantial Improvement	Provides control for better water distribution.			
Inefficient Water use on Non-Irrigated Land	Slight to Substantial Improvement	Provides control for better water distribution.			
Reduced Capacity of Conveyances by Sediment Deposition	Not Applicable	Not applicable.			
Reduced Storage of Water Bodies by Sediment Accumulation	Not Applicable	Not applicable.			
Aquifer Overdraft	Slight Improvement	Pumps can be used to recharge aquifers. Worsening if used to withdraw water			
Insufficient Flows in Water Courses	Neutral	Pumps can be used to supplement insufficient flows or withdraw water from water course.			
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	Slight Worsening	Spills are possible where petroleum is used.			
In Surface Water:					
• Harmful Levels of Pesticides	Not Applicable	Not applicable.			
• Excessive Nutrients and Organics	Not Applicable	Not applicable.			
• Excessive Suspended Sediment and Turbidity	Not Applicable	Not applicable.			
• 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)	Not Applicable	Not applicable.			
Particulate Matter less than 2.5 Micrometers in Diameter (PM 2.5)	Not Applicable	Not applicable.			

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Pumping Plant 533		Baseline Setting:			
		Appropriate Land Use(s): All Land Uses			
RESOURCES, CONSIDERATIONS AND CONCERNS	PHYSICAL EFFECTS	RATIONALE			
Excessive Ozone	Slight to Moderate Improvement	Replacement of older pumping plants with more efficient internal combustion engines or electric motors will reduce emissions of ozone precursors, however, new placement of internal combustion engines will result in increase in emission of ozone precursors.			
Excessive Greenhouse Gas:					
<ul style="list-style-type: none"> CO₂ (Carbon Dioxide) 	Slight to Substantial Improvement	Replacement of older pumping plants with more efficient internal combustion engines or electric motors will reduce CO ₂ emissions, however, new placement of internal combustion engines will result in an increase in CO ₂ emissions.			
<ul style="list-style-type: none"> N₂O (Nitrous Oxide) 	Not Applicable	Not applicable.			
<ul style="list-style-type: none"> CH₄ (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	Slight Improvement	Replacement of older pumping plants with more efficient internal combustion engines or electric motors will reduce fine particulate and precursor emissions causing reduced visibility. New placement of internal combustion engines will result in reduced visibility.			
Undesirable Air Movement	Not Applicable	Not applicable.			
Adverse Air Temperature	Not Applicable	Not applicable.			
PLANTS – SUITABILITY					
Plants not Adapted or Suited	Not Applicable	Not applicable.			
PLANTS - CONDITION					
Productivity, Health, and Vigor	Slight to Substantial Improvement	Increased water availability enhances plant growth, health and vigor.			
Threatened or Endangered Plant Species:					
<ul style="list-style-type: none"> Plant Species Listed or Proposed for Listing Under the Endangered Species Act 	Not Applicable	Not applicable.			

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Pumping Plant 533		Baseline Setting:			
		Appropriate Land Use(s): All Land Uses			
RESOURCES, CONSIDERATIONS AND CONCERNS	PHYSICAL EFFECTS	RATIONALE			
<ul style="list-style-type: none"> Declining Species, Species of Concern 	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.			
ANIMALS - FISH AND WILDLIFE					
Inadequate Food	Not Applicable	Not applicable.			
Inadequate Cover/Shelter	Not Applicable	Not applicable.			
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:					
<ul style="list-style-type: none"> 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.			
<ul style="list-style-type: none"> 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	Not Applicable	Not applicable.			
Inadequate Shelter	Not Applicable	Not applicable.			
Inadequate Stock Water	Substantial Improvement	Pumping plants facilitates the distribution of water to livestock.			
Stress and Mortality	Moderate to Substantial Improvement	Structures facilitate the distribution and availability of water reducing stress and mortality.			
HUMAN – ECONOMICS					
Land - Change in Land Use	Not applicable.	Not applicable.			
Land – Land in Production	Not applicable.	Slight Increase.			
Capital – Change in Equipment	0	Not applicable.			
Capital - Total Investment Cost	Not applicable.	Negligible			
Capital – Annual Cost	0	Situational.			
Capital – Credit and Farm Program Eligibility	0	Slight to moderate increase			
Labor - Labor	Slight to moderate increase to move livestock between pastures.	Slight increase			

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Pumping Plant 533		Baseline Setting:			
		Appropriate Land Use(s): All Land Uses			
RESOURCES, CONSIDERATIONS AND CONCERNS	PHYSICAL EFFECTS	RATIONALE			
Labor – Change in Management Level	Slight increase to determine when to move livestock and manage forage.	Slight to Moderate Decrease			
Risk - Yield	Slight to moderate decrease from improved health, extended grazing period, improved forage.	Slight to Moderate Increase			
Risk - Flexibility	Slight to moderate increase because of increased management.	Substantial Increase			
Risk - Timing	Substantial increase - practice must be applied according to forage needs.	Slight to Moderate Decrease			
Risk – Cash Flow	Slight to moderate decrease due to higher yields and reduced costs.	Slight to moderate increase.			
Profitability – Change in Profitability	0	0			
HUMAN - CULTURAL					
Cultural Resources and/or Historic Properties Present or Suspected to be PRESENT	Not applicable.	No			
HUMAN – ENERGY					
Depletion of Fossil Fuel Resources	Not Applicable	No			
Underutilization of Non-Fossil Energy Resources	Not Applicable	No			

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.

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Grazing Land Mechanical Treatment 548		Baseline Setting:			
		Appropriate Land Use(s): Grazed Forest, Grazed Range, Native or Naturalized Pasture, Pasture			
RESOURCES, CONSIDERATIONS AND CONCERNS		PHYSICAL EFFECTS	RATIONALE		
SOIL - EROSION					
Sheet and Rill		Slight to Substantial Improvement	Increased surface roughness and improved vegetation cover will increase infiltration, reduce runoff, reduce soil movement.		
Wind		Slight to Moderate Improvement	An increase in vegetative cover and surface roughness decreases erosion by wind.		
Ephemeral Gully		Slight to Substantial Improvement	An increase in surface cover and infiltration reduces soil erosion by water.		
Classic Gully		Slight Improvement	Slight improvement because of increased infiltration and decreased overland flow into gully.		
Streambank		Slight Improvement	Erosion on streambanks reduced due to increased infiltration and reduced runoff.		
Shoreline		Slight Improvement	Erosion on streambanks reduced due to increased infiltration and reduced runoff.		
Irrigation Induced		Slight Improvement	Increased infiltration reduces runoff.		
Mass Movement		Slight Worsening	Improved infiltration causes instability.		
Road, Roadsides, and Construction Sites		Not Applicable	Not applicable.		
SOIL – CONDITION					
Organic Matter Depletion		Slight to Moderate Improvement	Improved plant vigor and productivity increases organic matter.		
Rangeland Site Stability		Moderate to Substantial Improvement	Fracture compacted soil layers and improve soil permeability, reduce water runoff and increase infiltration, break up sod-bound conditions and thatch to increase plant vigor, and renovate and stimulate plant community for greater productivity.		
Compaction		Moderate to Substantial Improvement	Altering the site with mechanical means will decrease compaction.		
Subsidence		Not Applicable	Not applicable.		
Contaminants:					

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Grazing Land Mechanical Treatment 548		Baseline Setting:			
		Appropriate Land Use(s): Grazed Forest, Grazed Range, Native or Naturalized Pasture, Pasture			
RESOURCES, CONSIDERATIONS AND CONCERNS		PHYSICAL EFFECTS	RATIONALE		
• Salts and other Chemicals		Slight Improvement	Increased porosity and increased infiltration may decrease salts and other chemicals through leaching.		
• Animal Waste and other Organics - N		Neutral	Effects vary, because of mineralization and leaching.		
• Animal Waste and other Organics - P		Slight Worsening	Effects vary, because of mineralization.		
• Animal Waste and other Organics - K		Neutral	Effects vary, because of mineralization and leaching (sandy soils).		
• Commercial Fertilizer - N		Neutral	Effects vary, because of mineralization and leaching.		
• Commercial Fertilizer - P		Slight Worsening	Effects vary, because of mineralization.		
• Commercial Fertilizer - K		Neutral	Effects vary, because of mineralization and leaching (sandy soils).		
• Residual Pesticides		Not Applicable	Not applicable.		
Damage from Sediment Deposition		Slight to Moderate Improvement	Reduced runoff due to increased infiltration decreases erosion..		
WATER – QUANTITY					
Rangeland Hydrologic Cycle		Substantial Improvement	Fracture compacted soil layers and improve soil permeability, reduce water runoff and increase infiltration.		
Excessive Seepage		Slight Worsening	Increased water infiltration, dependant on subsoil characteristics.		
Excessive Runoff, Flooding, or Ponding		Slight to Moderate Improvement	Increased infiltration and decreased runoff.		
Excessive Subsurface Water		Slight Worsening	Increased infiltration.		
Drifted Snow		Not Applicable	Not applicable.		
Inadequate Outlets		Slight to Moderate Improvement	Increased infiltration and decreased surface runoff.		
Inefficient Water use on Irrigated Land		Slight to Moderate Improvement	Increased water infiltration and improved plant, soil, moisture, and air relationships.		
Inefficient Water use on Non-Irrigated Land		Slight to Moderate Improvement	Increased water infiltration and improved plant, soil, moisture, and air relationships.		
Reduced Capacity of Conveyances by Sediment Deposition		Slight Improvement	Increased infiltration and decreased erosion.		

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Grazing Land Mechanical Treatment 548		Baseline Setting:			
		Appropriate Land Use(s): Grazed Forest, Grazed Range, Native or Naturalized Pasture, Pasture			
RESOURCES, CONSIDERATIONS AND CONCERNS		PHYSICAL EFFECTS		RATIONALE	
Reduced Storage of Water Bodies by Sediment Accumulation		Slight Improvement		Increased infiltration and decreased erosion.	
Aquifer Overdraft		Not Applicable		Not applicable.	
Insufficient Flows in Water Courses		Not Applicable		Not applicable.	
WATER – QUALITY					
In Groundwater:					
• Harmful Levels of Pesticides		Slight to Moderate Worsening		The action increases infiltration and deep percolation.	
• Excessive Nutrients and Organics		Slight Worsening		The action increases the potential for infiltration and leaching.	
• Excessive Salinity		Neutral		The action increases infiltration and leaching but also increases plant growth and uptake.	
• Harmful Levels of Heavy Metals		Slight Worsening		The action improves infiltration and increase the potential for leaching. However, plant growth and uptake are increased.	
• Harmful Levels of Pathogens		Slight Worsening		The action improves infiltration and increase the potential for leaching. However, plant growth and microbial activity are also increased.	
• Harmful Levels of Petroleum		Not Applicable		Not applicable.	
In Surface Water:					
• Harmful Levels of Pesticides		Slight to Moderate Improvement		The action reduces runoff.	
• Excessive Nutrients and Organics		Slight to Moderate Improvement		Modifications to soil conditions will increase infiltration and reduce runoff. Improved plant growth will better utilize nutrients, decreasing the potential for losses in runoff.	
• Excessive Suspended Sediment and Turbidity		Slight to Moderate Improvement		Soil disturbance increases infiltration and decreases runoff.	
• Excessive Salinity		Slight to Moderate Improvement		The action increases infiltration and decreases runoff.	
• Harmful Levels of Heavy Metals		Slight Improvement		Improved vegetation growth increases vigor of ground cover that can increase heavy metal uptake and reduces runoff.	
• Harmful Temperatures		Not Applicable		Not applicable.	
• Harmful Levels of Pathogens		Slight to Moderate Improvement		Slight to moderate improvement because of increased infiltration and decreased runoff.	

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Grazing Land Mechanical Treatment 548		Baseline Setting:			
		Appropriate Land Use(s): Grazed Forest, Grazed Range, Native or Naturalized Pasture, Pasture			
RESOURCES, CONSIDERATIONS AND CONCERNS		PHYSICAL EFFECTS	RATIONALE		
<ul style="list-style-type: none"> Harmful Levels of Petroleum 		Not Applicable	Not applicable.		
AIR – QUALITY					
Particulate Matter less than 10 Micrometers in Diameter (PM 10)		Slight to Moderate Worsening	Equipment operations can generate particulate emissions.		
Particulate Matter less than 2.5 Micrometers in Diameter (PM 2.5)		Slight Worsening	Equipment operations can generate particulate emissions.		
Excessive Ozone		Neutral	There is a short-term increase in vehicle emissions and ozone precursors from site preparation equipment.		
Excessive Greenhouse Gas:					
<ul style="list-style-type: none"> CO₂ (Carbon Dioxide) 		Slight Improvement	Improved vegetative cover removes CO ₂ from the air and stores it in the form of carbon in the plants and soil.		
<ul style="list-style-type: none"> N₂O (Nitrous Oxide) 		Not Applicable	Not applicable.		
<ul style="list-style-type: none"> CH₄ (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		Not Applicable	Not applicable.		
PLANTS – SUITABILITY					
Plants not Adapted or Suited		Slight to Substantial Improvement	Site is modified to enhancing suited and desired species.		
PLANTS - CONDITION					
Productivity, Health, and Vigor		Moderate to Substantial Improvement	Site is modified to enhance the health and vigor of desired species.		
Threatened or Endangered Plant Species:					
<ul style="list-style-type: none"> Plant Species Listed or Proposed for Listing Under the Endangered Species Act 		Not Applicable	Not applicable.		
<ul style="list-style-type: none"> Declining Species, Species of Concern 		Not Applicable	Not applicable.		
Noxious and Invasive Plants		Slight Worsening	Undesired plants can colonize newly treated areas.		
Forage Quality and Palatability		Moderate to Substantial Improvement	Treatments will increase quality and palatability of forage.		
Wildfire Hazard		Not Applicable	Not applicable.		
ANIMALS - FISH AND WILDLIFE					

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Grazing Land Mechanical Treatment 548		Baseline Setting:			
		Appropriate Land Use(s): Grazed Forest, Grazed Range, Native or Naturalized Pasture, Pasture			
RESOURCES, CONSIDERATIONS AND CONCERNS		PHYSICAL EFFECTS	RATIONALE		
Inadequate Food		Slight to Moderate Improvement	Plant production and species diversity will provide food for wildlife.		
Inadequate Cover/Shelter		Slight to Moderate Improvement	Plant production and species diversity will provide cover/shelter for wildlife.		
Inadequate Water		Slight Improvement	Slight improvement because of improved water quality, less erosion, and enhanced interflows.		
Inadequate Space		Not Applicable	Not applicable.		
Habitat Fragmentation		Not Applicable	Not applicable.		
Imbalance Among and Within Populations		Neutral	Slight improvement is possible because of increased productivity and species diversity.		
Threatened and Endangered Fish and Wildlife Species:					
<ul style="list-style-type: none"> 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.		
<ul style="list-style-type: none"> 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	Treatment improves plant production and species diversity.		
Inadequate Shelter		Not Applicable	Not applicable.		
Inadequate Stock Water		Not Applicable	Not applicable.		
Stress and Mortality		Slight Improvement	Improved forage quantity and quality improves animal condition and reduces stress.		
HUMAN – ECONOMICS					
Land - Change in Land Use		Not applicable.	Not applicable.		
Land – Land in Production		Not applicable.	Slight Increase.		
Capital – Change in Equipment		0	Not applicable.		
Capital - Total Investment Cost		Not applicable.	Negligible		
Capital – Annual Cost		0	Situational.		
Capital – Credit and Farm Program Eligibility		0	Slight to moderate increase		
Labor - Labor		Slight to moderate increase to move livestock between pastures.	Slight increase		

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Grazing Land Mechanical Treatment 548		Baseline Setting:			
		Appropriate Land Use(s): Grazed Forest, Grazed Range, Native or Naturalized Pasture, Pasture			
RESOURCES, CONSIDERATIONS AND CONCERNS		PHYSICAL EFFECTS	RATIONALE		
Labor – Change in Management Level		Slight increase to determine when to move livestock and manage forage.	Slight to Moderate Decrease		
Risk - Yield		Slight to moderate decrease from improved health, extended grazing period, improved forage.	Slight to Moderate Increase		
Risk - Flexibility		Slight to moderate increase because of increased management.	Substantial Increase		
Risk - Timing		Substantial increase - practice must be applied according to forage needs.	Slight to Moderate Decrease		
Risk – Cash Flow		Slight to moderate decrease due to higher yields and reduced costs.	Slight to moderate increase.		
Profitability – Change in Profitability		0	0		
HUMAN - CULTURAL					
Cultural Resources and/or Historic Properties Present or Suspected to be PRESENT		Not applicable.	No		
HUMAN – ENERGY					
Depletion of Fossil Fuel Resources		Not Applicable	No		
Underutilization of Non-Fossil Energy Resources		Not Applicable	No		

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.

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Range Planting 550		Baseline Setting:			
		Appropriate Land Use(s): Graze Forest, Grazed Range, Native or Naturalized Pasture, Watershed Protection, Wildlife			
RESOURCES, CONSIDERATIONS AND CONCERNS		PHYSICAL EFFECTS		RATIONALE	
SOIL - EROSION					
Sheet and Rill		Moderate to Substantial Improvement		Establishment of adapted species increases vegetative cover and reduces erosion potential. During the establishment period, there may be a slight to moderate risk of erosion, depending on seedbed preparation, seeding method, and species planted.	
Wind		Moderate to Substantial Improvement		Establishment of adapted species increases vegetative cover and reduces erosion potential. During the establishment period, there may be a slight to moderate risk of erosion, depending on seedbed preparation, seeding method, and species planted.	
Ephemeral Gully		Moderate to Substantial Improvement		Establishment of adapted species increases vegetative cover and reduces erosion potential. During the establishment period, there may be a slight to moderate risk of erosion, depending on seedbed preparation, seeding method, and species planted.	
Classic Gully		Slight to Substantial Improvement		Establishment of adapted species increases vegetative cover and reduces erosion potential. During the establishment period, there may be a slight to moderate risk of erosion, depending on seedbed preparation, seeding method, and species planted.	
Streambank		Slight to Moderate Improvement		Establishment of adapted species increases vegetative cover and reduces erosion potential. During the establishment period, there may be a slight to moderate risk of erosion, depending on seedbed preparation, seeding method, and species planted.	

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Range Planting 550		Baseline Setting:			
		Appropriate Land Use(s): Graze Forest, Grazed Range, Native or Naturalized Pasture, Watershed Protection, Wildlife			
RESOURCES, CONSIDERATIONS AND CONCERNS	PHYSICAL EFFECTS	RATIONALE			
Shoreline	Slight to Moderate Improvement	Establishment of adapted species increases vegetative cover and reduces erosion potential. During the establishment period, there may be a slight to moderate risk of erosion, depending on seedbed preparation, seeding method, and species planted.			
Irrigation Induced	Not Applicable	Not applicable.			
Mass Movement	Neutral	The increase in vegetation enhances soil binding by root mass and removal of soil moisture by increased transpiration. There may be a slight worsening because of increase in infiltration.			
Road, Roadsides, and Construction Sites	Not Applicable	Not applicable.			
SOIL – CONDITION					
Organic Matter Depletion	Moderate to Substantial Improvement	There will be enhanced root development, litter accumulation, increased biological activity, and/or reduced tillage if associated with change in land use.			
Rangeland Site Stability	Moderate to Substantial Improvement	There will be enhanced root development, litter accumulation, increased biological activity.			
Compaction	Moderate to Substantial Improvement	Enhanced root development, litter accumulation, increased biological activity, and/or reduced tillage may improve soil structure.			
Subsidence	Slight Improvement	There will be enhanced root development increasing soil stability. There may be slight initial increase because of soil disturbing operations during seedbed preparation and establishment that may increase oxidation of organic matter.			
Contaminants:					

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Range Planting 550		Baseline Setting:			
		Appropriate Land Use(s): Graze Forest, Grazed Range, Native or Naturalized Pasture, Watershed Protection, Wildlife			
RESOURCES, CONSIDERATIONS AND CONCERNS	PHYSICAL EFFECTS	RATIONALE			
<ul style="list-style-type: none"> Salts and other Chemicals 	Slight Improvement	Site planted to adapted species could contribute to the reduction of saline seep areas. There would be a negligible decrease of selenium, boron, and heavy metals because of very limited uptake by pasture plants.			
<ul style="list-style-type: none"> Animal Waste and other Organics - N 	Slight to Moderate Improvement	There will be increased N use by vigorously growing grasses and/or legumes. There may be a slight potential for increased leaching because of improved infiltration.			
<ul style="list-style-type: none"> Animal Waste and other Organics - P 	Slight to Moderate Improvement	There will be increased P use by vigorously growing grasses and/or legumes. There may be a slight potential for increased leaching because of improved infiltration.			
<ul style="list-style-type: none"> Animal Waste and other Organics - K 	Slight to Moderate Improvement	There will be increased K use by vigorously growing grasses and/or legumes. There may be a slight potential for increased leaching because of improved infiltration on sandy soils.			
<ul style="list-style-type: none"> Commercial Fertilizer - N 	Slight to Moderate Improvement	There will be increased N use by vigorously growing grasses and/or legumes. There may be a slight potential for increased leaching because of improved infiltration.			
<ul style="list-style-type: none"> Commercial Fertilizer - P 	Slight to Moderate Improvement	There will be increased P use by vigorously growing grasses and/or legumes. There may be a slight potential for increased leaching because of improved infiltration.			
<ul style="list-style-type: none"> Commercial Fertilizer - K 	Slight to Moderate Improvement	There will be increased K use by vigorously growing grasses and/or legumes. There may be a slight potential for increased leaching because of improved infiltration on sandy soils.			

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Range Planting 550		Baseline Setting:			
		Appropriate Land Use(s): Graze Forest, Grazed Range, Native or Naturalized Pasture, Watershed Protection, Wildlife			
RESOURCES, CONSIDERATIONS AND CONCERNS	PHYSICAL EFFECTS	RATIONALE			
<ul style="list-style-type: none"> Residual Pesticides 	Slight to Substantial Improvement	Proper seedbed preparation and the establishment of a healthy, vigorous stand will reduce pesticide use in general. There may be a slight potential for increased leaching because of improved infiltration.			
Damage from Sediment Deposition	Slight to Substantial Improvement	There will be a reduction in erosion due to increased cover and reduced overland flow depending on management.			
WATER – QUANTITY					
Rangeland Hydrologic Cycle	Moderate to Substantial Improvement	Establishment of adapted species increases vegetative cover and reduces erosion potential. During the establishment period, there may be a slight to moderate risk of erosion, depending on seedbed preparation, seeding method, and species planted.			
Excessive Seepage	Neutral	There will be an increase in plant uptake and transpiration in the long-term. There may be a slight to moderate increase in seepage because of increased infiltration depending on the species selected.			
Excessive Runoff, Flooding, or Ponding	Slight to Moderate Improvement	There will be an increase in cover and infiltration, reducing runoff and overland flow.			
Excessive Subsurface Water	Neutral	There will be an increase in plant uptake and transpiration in the long-term. There may be a slight to moderate increase in seepage because of increased infiltration depending on the species selected.			
Drifted Snow	Not Applicable	Not applicable.			
Inadequate Outlets	Slight Improvement	There will be an increase in cover and infiltration, reducing runoff and overland flow.			
Inefficient Water use on Irrigated Land	Not Applicable	Not applicable.			
Inefficient Water use on Non-Irrigated Land	Slight to Substantial Improvement	The plant species selected will be adapted to meet the seasonal distribution of moisture.			

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Range Planting 550		Baseline Setting:			
		Appropriate Land Use(s): Graze Forest, Grazed Range, Native or Naturalized Pasture, Watershed Protection, Wildlife			
RESOURCES, CONSIDERATIONS AND CONCERNS	PHYSICAL EFFECTS	RATIONALE			
Reduced Capacity of Conveyances by Sediment Deposition	Moderate to Substantial Improvement	There will be an increase in protective vegetative cover, reduced runoff, and increased infiltration resulting in less sediment transport.			
Reduced Storage of Water Bodies by Sediment Accumulation	Slight to Moderate Improvement	There will be an increase in protective vegetative cover, reduced runoff, and increased infiltration resulting in less sediment transport.			
Aquifer Overdraft	Neutral	Plant species will be selected that are adapted to the amount, frequency, and availability of water, whether on irrigated or non-irrigated lands.			
Insufficient Flows in Water Courses	Slight to Moderate Improvement	Selection of adapted species will increase cover and improve infiltration, enhancing interflow.			
WATER – QUALITY					
In Groundwater:					
• Harmful Levels of Pesticides	Slight to Moderate Improvement	The action increases soil organic matter and biological activity.			
• Excessive Nutrients and Organics	Slight to Moderate Improvement	Permanent vegetation will uptake excess nutrients.			
• Excessive Salinity	Slight Improvement	There will be an increase in plant uptake when adapted plant species are used. There is the slight potential for leaching of salt into ground water because of increased infiltration.			
• Harmful Levels of Heavy Metals	Slight Improvement	Certain plant species can take up heavy metals. Increased infiltration may increase the potential of heavy metal movement to groundwater.			
• Harmful Levels of Pathogens	Slight Improvement	Increased soil microbial activity will enhance competition with pathogens.			
• Harmful Levels of Petroleum	Not Applicable	Not applicable.			
In Surface Water:					
• Harmful Levels of Pesticides	Slight to Moderate Improvement	The action decreases runoff and erosion.			

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Range Planting 550		Baseline Setting:			
		Appropriate Land Use(s): Graze Forest, Grazed Range, Native or Naturalized Pasture, Watershed Protection, Wildlife			
RESOURCES, CONSIDERATIONS AND CONCERNS	PHYSICAL EFFECTS	RATIONALE			
• Excessive Nutrients and Organics	Slight Improvement	Improving vegetative cover will reduce runoff and erosion, and reduce the delivery of organics and nutrients to surface water.			
• Excessive Suspended Sediment and Turbidity	Slight to Substantial Improvement	There will be improved vegetative cover with a reduction of runoff and sedimentation.			
• Excessive Salinity	Slight Improvement	Dense vegetation will increase infiltration and reduce runoff. Planting of range species in recharge areas may reduce movement of salts to seep areas and surface waters.			
• Harmful Levels of Heavy Metals	Slight to Moderate Improvement	Improved plant growth reduces runoff and increases uptake.			
• Harmful Temperatures	Neutral	The action protects soil and water quality.			
• Harmful Levels of Pathogens	Slight Improvement	The improved vegetative cover and increased soil microbiological activity will reduce movement of pathogens, however a land use change to pasture may increase potential pathogen levels.			
• Harmful Levels of Petroleum	Not Applicable	Not applicable.			
AIR – QUALITY					
Particulate Matter less than 10 Micrometers in Diameter (PM 10)	Slight to Moderate Improvement	Establishing permanent vegetation reduces the potential for generation of particulates by wind erosion.			
Particulate Matter less than 2.5 Micrometers in Diameter (PM 2.5)	Slight to Moderate Improvement	Establishing permanent vegetation reduces the potential for generation of particulates by wind erosion.			
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 to Moderate Improvement	Vegetation removes CO ₂ from the air and stores it in the form of carbon in the plants and soil.			

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Range Planting 550		Baseline Setting:			
		Appropriate Land Use(s): Graze Forest, Grazed Range, Native or Naturalized Pasture, Watershed Protection, Wildlife			
RESOURCES, CONSIDERATIONS AND CONCERNS	PHYSICAL EFFECTS	RATIONALE			
• N ₂ O (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	Slight to Moderate Improvement	Reduction in particulates due to improved ground cover.			
Undesirable Air Movement	Not Applicable	Not applicable.			
Adverse Air Temperature	Not Applicable	Not applicable.			
PLANTS – SUITABILITY					
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	Plants are selected and managed to maintain optimal productivity and health.			
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	Substantial Improvement	Selected plant species will have adequate nutritive value and palatability for the intended use.			
Wildfire Hazard	Not Applicable	Not applicable.			
ANIMALS - FISH AND WILDLIFE					
Inadequate Food	Slight to Substantial Improvement	Plant species are selected that are well-adapted and compatible to the site and provide food for wildlife.			
Inadequate Cover/Shelter	Slight to Substantial Improvement	Plant species are selected that are well-adapted and compatible to the site and provide cover for wildlife.			
Inadequate Water	Not Applicable	Not applicable.			

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Range Planting 550		Baseline Setting: Appropriate Land Use(s): Graze Forest, Grazed Range, Native or Naturalized Pasture, Watershed Protection, Wildlife			
RESOURCES, CONSIDERATIONS AND CONCERNS	PHYSICAL EFFECTS	RATIONALE			
Inadequate Space	Moderate to Substantial Improvement	Planting can restore desired habitats/space.			
Habitat Fragmentation	Moderate to Substantial Improvement	Planting can restore and reconnect desired habitats/space.			
Imbalance Among and Within Populations	Slight to Moderate Improvement	Increase forage supply and cover.			
Threatened and Endangered Fish and Wildlife Species:					
<ul style="list-style-type: none"> 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.			
<ul style="list-style-type: none"> 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	Substantial Improvement	Plant species will be selected that accommodate seasonal livestock production and nutritional needs.			
Inadequate Shelter	Not Applicable	Not applicable.			
Inadequate Stock Water	Not Applicable	Not applicable.			
Stress and Mortality	Slight to Substantial Improvement	Improved forage cultivars will improve livestock health.			
HUMAN – ECONOMICS					
Land - Change in Land Use	Not applicable.	Not applicable.			
Land – Land in Production	Not applicable.	Slight Increase.			
Capital – Change in Equipment	0	Not applicable.			
Capital - Total Investment Cost	Not applicable.	Negligible			
Capital – Annual Cost	0	Situational.			
Capital – Credit and Farm Program Eligibility	0	Slight to moderate increase			
Labor - Labor	Slight to moderate increase to move livestock between pastures.	Slight increase			
Labor – Change in Management Level	Slight increase to determine when to move livestock and manage forage.	Slight to Moderate Decrease			
Risk - Yield	Slight to moderate decrease from improved health, extended grazing period, improved forage.	Slight to Moderate Increase			
Risk - Flexibility	Slight to moderate increase because of increased management.	Substantial Increase			
Risk - Timing	Substantial increase - practice must be applied according to forage needs.	Slight to Moderate Decrease			

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Range Planting 550		Baseline Setting:			
		Appropriate Land Use(s): Graze Forest, Grazed Range, Native or Naturalized Pasture, Watershed Protection, Wildlife			
RESOURCES, CONSIDERATIONS AND CONCERNS	PHYSICAL EFFECTS	RATIONALE			
Risk – Cash Flow	Slight to moderate decrease due to higher yields and reduced costs.	Slight to moderate increase.			
Profitability – Change in Profitability	0	0			
HUMAN - CULTURAL					
Cultural Resources and/or Historic Properties Present or Suspected to be PRESENT	Not applicable.	No			
HUMAN – ENERGY					
Depletion of Fossil Fuel Resources	Not Applicable	No			
Underutilization of Non-Fossil Energy Resources	Not Applicable	No			

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.

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Irrigation Regulating Reservoir 552		Baseline Setting: Appropriate Land Use(s): Crop, Forest, Grazed Forest, Grazed Range, Hay, Headquarters, Mined, Native or Naturalized Pasture, Natural Area, Pasture, Recreation, Urban, Watershed Protection, Wildlife			
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		Slight to Substantial Improvement		Due to stabilization gully from embankment construction.	
Streambank		Slight Improvement		Reduced peak flows downstream from reservoir.	
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.	
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		Sediment contained in tailwater return flows is trapped in the reservoir.	
WATER – QUANTITY					
Rangeland Hydrologic Cycle		Not Applicable		Not applicable.	
Excessive Seepage		Slight Worsening		Possible seepage from Reservoir.	
Excessive Runoff, Flooding, or Ponding		Slight to Moderate Improvement		Peak flows are reduced.	
Excessive Subsurface Water		Slight Worsening		Seepage from reservoir.	
Drifted Snow		Not Applicable		Not applicable.	
Inadequate Outlets		Slight Improvement		Regulated downstream flows.	

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Irrigation Regulating Reservoir 552		Baseline Setting: Appropriate Land Use(s): Crop, Forest, Grazed Forest, Grazed Range, Hay, Headquarters, Mined, Native or Naturalized Pasture, Natural Area, Pasture, Recreation, Urban, Watershed Protection, Wildlife			
RESOURCES, CONSIDERATIONS AND CONCERNS		PHYSICAL EFFECTS	RATIONALE		
Inefficient Water use on Irrigated Land		Slight to Substantial Improvement	Reservoir allows better control and use of water.		
Inefficient Water use on Non-Irrigated Land		Not Applicable	Not applicable.		
Reduced Capacity of Conveyances by Sediment Deposition		Slight to Substantial Improvement	Sediment is trapped in reservoir.		
Reduced Storage of Water Bodies by Sediment Accumulation		Neutral	Limited sediment deposited in reservoir.		
Aquifer Overdraft		Slight Improvement	Seepage from the reservoir impacts recharge.		
Insufficient Flows in Water Courses		Slight Worsening	Water is used for irrigation reduces flows in water courses.		
WATER – QUALITY					
In Groundwater:					
• Harmful Levels of Pesticides		Slight to Moderate Improvement	Seepage that may contain pesticide residues is controlled .		
• 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		Slight to Moderate Improvement	The action retains pesticide residues for degradation.		
• Excessive Nutrients and Organics		Slight to Moderate Improvement	When used to store irrigation tailwater, sediments and sediment-attached nutrients settle out.		
• Excessive Suspended Sediment and Turbidity		Not Applicable	Not applicable.		
• 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		Neutral	May increase because of aquatic animal feed or decaying vegetation.		
• Harmful Levels of Petroleum		Not Applicable	Not applicable.		
AIR – QUALITY					
Particulate Matter less than 10 Micrometers in Diameter (PM 10)		Not Applicable	Not applicable.		

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Irrigation Regulating Reservoir 552		Baseline Setting: Appropriate Land Use(s): Crop, Forest, Grazed Forest, Grazed Range, Hay, Headquarters, Mined, Native or Naturalized Pasture, Natural Area, Pasture, Recreation, Urban, Watershed Protection, Wildlife			
RESOURCES, CONSIDERATIONS AND CONCERNS	PHYSICAL EFFECTS	RATIONALE			
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 ₂ (Carbon Dioxide)	Not Applicable	Not applicable.			
• N ₂ O (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	Not Applicable	Not applicable.			
PLANTS – SUITABILITY					
Plants not Adapted or Suited	Not Applicable	Not applicable.			
PLANTS - CONDITION					
Productivity, Health, and Vigor	Slight to Substantial Improvement	Increased water availability and access enhances plant growth, health and vigor.			
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	Not Applicable	Not applicable.			
Forage Quality and Palatability	Not Applicable	Not applicable.			
Wildfire Hazard	Not Applicable	Not applicable.			
ANIMALS - FISH AND WILDLIFE					
Inadequate Food	Not Applicable	Not applicable.			
Inadequate Cover/Shelter	Not Applicable	Not applicable.			
Inadequate Water	Slight Improvement	Water will be temporarily available in the reservoir.			
Inadequate Space	Slight Worsening	Reservoirs reduce existing space used by wildlife.			
Habitat Fragmentation	Neutral	Reservoirs are typically limited in extent.			
Imbalance Among and Within Populations	Slight Improvement	Reservoirs and adjacent areas provide variety and diversity for wildlife communities.			
Threatened and Endangered Fish and Wildlife Species:					

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Irrigation Regulating Reservoir 552		Baseline Setting: Appropriate Land Use(s): Crop, Forest, Grazed Forest, Grazed Range, Hay, Headquarters, Mined, Native or Naturalized Pasture, Natural Area, Pasture, Recreation, Urban, Watershed Protection, Wildlife			
RESOURCES, CONSIDERATIONS AND CONCERNS		PHYSICAL EFFECTS	RATIONALE		
<ul style="list-style-type: none"> 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.		
<ul style="list-style-type: none"> 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		Not Applicable	Not applicable.		
Inadequate Shelter		Not Applicable	Not applicable.		
Inadequate Stock Water		Moderate to Substantial Improvement	Reservoirs can also provide stock water.		
Stress and Mortality		Moderate to Substantial Improvement	Available water reduces stress and mortality.		
HUMAN – ECONOMICS					
Land - Change in Land Use		Not applicable.	Not applicable.		
Land – Land in Production		Not applicable.	Slight Increase.		
Capital – Change in Equipment		0	Not applicable.		
Capital - Total Investment Cost		Not applicable.	Negligible		
Capital – Annual Cost		0	Situational.		
Capital – Credit and Farm Program Eligibility		0	Slight to moderate increase		
Labor - Labor		Slight to moderate increase to move livestock between pastures.	Slight increase		
Labor – Change in Management Level		Slight increase to determine when to move livestock and manage forage.	Slight to Moderate Decrease		
Risk - Yield		Slight to moderate decrease from improved health, extended grazing period, improved forage.	Slight to Moderate Increase		
Risk - Flexibility		Slight to moderate increase because of increased management.	Substantial Increase		
Risk - Timing		Substantial increase - practice must be applied according to forage needs.	Slight to Moderate Decrease		
Risk – Cash Flow		Slight to moderate decrease due to higher yields and reduced costs.	Slight to moderate increase.		
Profitability – Change in Profitability		0	0		
HUMAN - CULTURAL					
Cultural Resources and/or Historic Properties Present or Suspected to be PRESENT		Not applicable.	No		
HUMAN – ENERGY					

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Irrigation Regulating Reservoir 552		Baseline Setting: Appropriate Land Use(s): Crop, Forest, Grazed Forest, Grazed Range, Hay, Headquarters, Mined, Native or Naturalized Pasture, Natural Area, Pasture, Recreation, Urban, Watershed Protection, Wildlife			
RESOURCES, CONSIDERATIONS AND CONCERNS		PHYSICAL EFFECTS		RATIONALE	
Depletion of Fossil Fuel Resources		Not Applicable		No	
Underutilization of Non-Fossil Energy Resources		Not Applicable		No	

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.

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Drainage Water Management 554		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		Slight to Moderate Improvement		Control of water surface elevations keeps the soil surface moist and prevents soil detachment by wind.	
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.	
SOIL – CONDITION					
Organic Matter Depletion		Slight to Moderate Improvement		Maintaining water table in the root zone decreases oxidation of organic matter. Lowering water table can increase oxidation in certain situations.	
Rangeland Site Stability		Not Applicable		Not applicable.	
Compaction		Slight Worsening		Moist soil surface is susceptible to equipment compaction.	
Subsidence		Slight to Moderate Improvement		Reducing oxidation of organic matter will reduce the opportunity for subsidence.	
Contaminants:					
• Salts and other Chemicals		Neutral		If the water table is kept high, salt build up may occur.	
• Animal Waste and other Organics - N		Moderate to Substantial Improvement		Elevated water tables promote denitrification.	
• Animal Waste and other Organics - P		Neutral		Not applicable.	
• Animal Waste and other Organics - K		Neutral		Not applicable.	
• Commercial Fertilizer - N		Moderate to Substantial Improvement		Elevated water tables promote denitrification.	
• Commercial Fertilizer – P		Neutral		Not applicable.	
• Commercial Fertilizer – K		Neutral		Not applicable.	
• Residual Pesticides		Neutral		Managing the water table may or may not have an effect on pesticide activity or degradation.	
Damage from Sediment Deposition		Not Applicable		Not applicable.	
WATER – QUANTITY					

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Drainage Water Management 554		Baseline Setting:			
		Appropriate Land Use(s): All Land Uses			
RESOURCES, CONSIDERATIONS AND CONCERNS	PHYSICAL EFFECTS	RATIONALE			
Rangeland Hydrologic Cycle	Not Applicable	Not applicable.			
Excessive Seepage	Slight Improvement	Water table is managed to prevent excessive seepage.			
Excessive Runoff, Flooding, or Ponding	Slight to Moderate Worsening	Runoff is controlled to create ponding or flooding conditions.			
Excessive Subsurface Water	Slight to Moderate Improvement	Subsurface water is managed to limit periods of saturation compatible with the present or intended land use.			
Drifted Snow	Not Applicable	Not applicable.			
Inadequate Outlets	Slight Improvement	Water is released in a controlled fashion thereby relieving pressure on outlets			
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	Not Applicable	Not applicable.			
Reduced Storage of Water Bodies by Sediment Accumulation	Not Applicable	Not applicable.			
Aquifer Overdraft	Slight Improvement	Water tables managed to recharge aquifer.			
Insufficient Flows in Water Courses	Slight Improvement	Water is held longer on the fields resulting in sustained flows in water courses.			
WATER – QUALITY					
In Groundwater:					
• Harmful Levels of Pesticides	Slight to Moderate Improvement	Drainage increases aerobic pesticide degradation in the root zone during the periods when crops are growing.			
• Excessive Nutrients and Organics	Slight Worsening	The action increases groundwater elevation which moves it closer in proximity to nutrients. This increases the potential to contaminate groundwater.			
• Excessive Salinity	Not Applicable	Not applicable.			
• Harmful Levels of Heavy Metals	Neutral	Changing the soil water level can affect soil chemistry, which can increase the solubility of some metals. This may make them more or less susceptible to leaching.			

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Drainage Water Management 554		Baseline Setting:			
		Appropriate Land Use(s): All Land Uses			
RESOURCES, CONSIDERATIONS AND CONCERNS	PHYSICAL EFFECTS	RATIONALE			
• Harmful Levels of Pathogens	Slight Improvement	The action will alter the timing and possibly amount of drainage. Holding water in root zone may contribute to pathogen die-off.			
• Harmful Levels of Petroleum	Not Applicable	Not applicable.			
In Surface Water:					
• Harmful Levels of Pesticides	Slight to Moderate Improvement	Drainage reduces runoff and erosion.			
• Excessive Nutrients and Organics	Slight Improvement	The rate of water release is slower than under natural conditions, allowing more time for some nutrients in solution to volatilize and for sediment-attached nutrient to settle out.			
• Excessive Suspended Sediment and Turbidity	Not Applicable	Not applicable.			
• Excessive Salinity	Neutral	The action can reduce the rate at which salt-contaminated water is released, but has no effect on the amount of salt.			
• Harmful Levels of Heavy Metals	Slight to Moderate Improvement	Water releases are controlled giving less opportunity for heavy metal-laden sediment to enter surface water.			
• Harmful Temperatures	Slight Worsening	The action increases retention time of storm water.			
• Harmful Levels of Pathogens	Slight Improvement	Water releases are controlled giving less opportunity to enter surface water			
• Harmful Levels of Petroleum	Slight Improvement	Water releases are controlled giving less opportunity to enter surface water			
AIR – QUALITY					
Particulate Matter less than 10 Micrometers in Diameter (PM 10)	Slight to Moderate Improvement	The action keeps the soil surface moist reducing the potential for wind erosion.			
Particulate Matter less than 2.5 Micrometers in Diameter (PM 2.5)	Slight to Moderate Improvement	The action keeps the soil surface moist reducing the potential for wind erosion.			
Excessive Ozone	Not Applicable	Not applicable.			
Excessive Greenhouse Gas:					
• CO ₂ (Carbon Dioxide)	Slight Improvement	Provides for conditions to promote plant growth.			
• N ₂ O (Nitrous Oxide)	Not Applicable	Not applicable.			
• CH ₄ (Methane)	Not Applicable	Not applicable.			

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Drainage Water Management 554		Baseline Setting:			
		Appropriate Land Use(s): All Land Uses			
RESOURCES, CONSIDERATIONS AND CONCERNS	PHYSICAL EFFECTS	RATIONALE			
Ammonia (NH ₃)	Slight Improvement	Provides for conditions to promote soil aeration			
Chemical Drift	Not Applicable	Not applicable.			
Objectionable Odors	Not Applicable	Not applicable.			
Reduced Visibility	Slight Improvement	Maintains soil moisture to reduce the potential for wind erosion.			
Undesirable Air Movement	Not Applicable	Not applicable.			
Adverse Air Temperature	Not Applicable	Not applicable.			
PLANTS – SUITABILITY					
Plants not Adapted or Suited	Not Applicable	Not applicable.			
PLANTS - CONDITION					
Productivity, Health, and Vigor	Slight to Moderate Improvement	Drainage provides conditions for optimum plant growth.			
Threatened or Endangered Plant Species:					
<ul style="list-style-type: none"> Plant Species Listed or Proposed for Listing Under the Endangered Species Act 	Not Applicable	Not applicable.			
<ul style="list-style-type: none"> Declining Species, Species of Concern 	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.			
ANIMALS - FISH AND WILDLIFE					
Inadequate Food	Not Applicable	Not applicable.			
Inadequate Cover/Shelter	Not Applicable	Not applicable.			
Inadequate Water	Slight to Moderate Improvement	Seasonal flooding provides water for some species.			
Inadequate Space	Slight to Moderate Improvement	Seasonal flooding provides habitat for some species.			
Habitat Fragmentation	Not Applicable	Not applicable.			
Imbalance Among and Within Populations	Not Applicable	Not applicable.			
Threatened and Endangered Fish and Wildlife Species:					
<ul style="list-style-type: none"> 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.			
<ul style="list-style-type: none"> Declining Species, Species of Concern 	Neutral	Activities are designed, installed, and mitigated to an extent to maintain or enhance species of concern.			
ANIMALS – DOMESTIC					

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Drainage Water Management 554		Baseline Setting:			
		Appropriate Land Use(s): All Land Uses			
RESOURCES, CONSIDERATIONS AND CONCERNS	PHYSICAL EFFECTS	RATIONALE			
Inadequate Quantities and Quality of Feed and Forage	Moderate to Substantial Improvement	Optimum moisture is maintained for forage production.			
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	Not applicable.	Slight Increase.			
Capital – Change in Equipment	0	Not applicable.			
Capital - Total Investment Cost	Not applicable.	Negligible			
Capital – Annual Cost	0	Situational.			
Capital – Credit and Farm Program Eligibility	0	Slight to moderate increase			
Labor - Labor	Slight to moderate increase to move livestock between pastures.	Slight increase			
Labor – Change in Management Level	Slight increase to determine when to move livestock and manage forage.	Slight to Moderate Decrease			
Risk - Yield	Slight to moderate decrease from improved health, extended grazing period, improved forage.	Slight to Moderate Increase			
Risk - Flexibility	Slight to moderate increase because of increased management.	Substantial Increase			
Risk - Timing	Substantial increase - practice must be applied according to forage needs.	Slight to Moderate Decrease			
Risk – Cash Flow	Slight to moderate decrease due to higher yields and reduced costs.	Slight to moderate increase.			
Profitability – Change in Profitability	0	0			
HUMAN - CULTURAL					
Cultural Resources and/or Historic Properties Present or Suspected to be PRESENT	Not applicable.	No			
HUMAN – ENERGY					
Depletion of Fossil Fuel Resources	Not Applicable	No			
Underutilization of Non-Fossil Energy Resources	Not Applicable	No			

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.

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Rock Barrier 555		Baseline Setting:			
		Appropriate Land Use(s): Crop, Hay, Pasture			
RESOURCES, CONSIDERATIONS AND CONCERNS	PHYSICAL EFFECTS	RATIONALE			
SOIL - EROSION					
Sheet and Rill	Substantial Improvement	Slope length is shortened therefore reducing erosion by water.			
Wind	Not Applicable	Not applicable.			
Ephemeral Gully	Substantial Improvement	The slope length of the concentrated flow channel is shortened.			
Classic Gully	Neutral	May reduce sediment in runoff water which tends to increase gully erosion, but will also decrease runoff peaks			
Streambank	Neutral	May reduce sediment in runoff water which tends to increase gully erosion, but will also decrease runoff peaks			
Shoreline	Not Applicable	Not applicable.			
Irrigation Induced	Not Applicable	Not applicable.			
Mass Movement	Slight Improvement	Barrier will act as a buttress and drain for slopes.			
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 Worsening	Barrier and bench terrace will encourage soil deposition.			
WATER – QUANTITY					
Rangeland Hydrologic Cycle	Not Applicable	Not applicable.			
Excessive Seepage	Slight Improvement	Barrier will act as drain.			

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Rock Barrier 555		Baseline Setting:			
		Appropriate Land Use(s): Crop, Hay, Pasture			
RESOURCES, CONSIDERATIONS AND CONCERNS	PHYSICAL EFFECTS	RATIONALE			
Excessive Runoff, Flooding, or Ponding	Not Applicable	Not applicable.			
Excessive Subsurface Water	Slight Improvement	Barrier will act as drain.			
Drifted Snow	Slight to Moderate Improvement	The barrier will trap snow upwind of structures and animal concentration areas.			
Inadequate Outlets	Slight Improvement	Barriers shorten slope length reduce runoff			
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 Improvement	Barrier will reduce runoff and help retain sediment.			
Reduced Storage of Water Bodies by Sediment Accumulation	Slight Improvement	Barrier will reduce erosion as well as retaining sediment.			
Aquifer Overdraft	Slight Improvement	Barrier will tend to infiltrate water.			
Insufficient Flows in Water Courses	Neutral	Barrier retard water and may lead to decreased surface water flows.			
WATER – QUALITY					
In Groundwater:					
• Harmful Levels of Pesticides	Not Applicable	Not applicable.			
• Excessive Nutrients and Organics	Not Applicable	Not applicable.			
• Excessive Salinity	Slight Worsening	Infiltrating water behind barriers could leach salts from the profile when present.			
• 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 Moderate Improvement	Benching will reduce slopes and erosion.			
• Excessive Salinity	Slight Improvement	Barriers should increase infiltration of water and any dissolved chemical.			
• Harmful Levels of Heavy Metals	Neutral	Barriers should increase infiltration of water and any dissolved chemical. Chemicals attached to deposited sediments will not reach surface waters.			
• Harmful Temperatures	Not Applicable	Not applicable.			

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Rock Barrier 555		Baseline Setting:			
		Appropriate Land Use(s): Crop, Hay, Pasture			
RESOURCES, CONSIDERATIONS AND CONCERNS	PHYSICAL EFFECTS	RATIONALE			
<ul style="list-style-type: none"> Harmful Levels of Pathogens 	Slight Improvement	Barriers should increase infiltration of water and any associated pathogens. Pathogens attached to deposited sediments will not reach surface waters			
<ul style="list-style-type: none"> 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	Not Applicable	Not applicable.			
Excessive Greenhouse Gas:					
<ul style="list-style-type: none"> CO₂ (Carbon Dioxide) 	Neutral	Terracing promotes vegetative growth that removes CO ₂ from the air and stores it in the form of carbon in the plants and soil.			
<ul style="list-style-type: none"> N₂O (Nitrous Oxide) 	Not Applicable	Not applicable.			
<ul style="list-style-type: none"> CH₄ (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	Slight Improvement	A barrier oriented perpendicular to erosive winds can minimize soil erosion by wind.			
Undesirable Air Movement	Slight Improvement	Walls create turbulence and slows undesired, leeward winds.			
Adverse Air Temperature	Not Applicable	Not applicable.			
PLANTS – SUITABILITY					
Plants not Adapted or Suited	Not Applicable	Not applicable.			
PLANTS - CONDITION					
Productivity, Health, and Vigor	Slight Improvement	Site modification will reduce erosion and enhance the health and vigor of desired species.			
Threatened or Endangered Plant Species:					
<ul style="list-style-type: none"> Plant Species Listed or Proposed for Listing Under the Endangered Species Act 	Not Applicable	Not applicable.			
<ul style="list-style-type: none"> Declining Species, Species of Concern 	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.			

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Rock Barrier 555		Baseline Setting:			
		Appropriate Land Use(s): Crop, Hay, Pasture			
RESOURCES, CONSIDERATIONS AND CONCERNS	PHYSICAL EFFECTS	RATIONALE			
ANIMALS - FISH AND WILDLIFE					
Inadequate Food	Not Applicable	Not applicable.			
Inadequate Cover/Shelter	Not Applicable	Not applicable.			
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:					
<ul style="list-style-type: none"> 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.			
<ul style="list-style-type: none"> 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	Not Applicable	Not applicable.			
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	Not applicable.	Slight Increase.			
Capital – Change in Equipment	0	Not applicable.			
Capital - Total Investment Cost	Not applicable.	Negligible			
Capital – Annual Cost	0	Situational.			
Capital – Credit and Farm Program Eligibility	0	Slight to moderate increase			
Labor - Labor	Slight to moderate increase to move livestock between pastures.	Slight increase			
Labor – Change in Management Level	Slight increase to determine when to move livestock and manage forage.	Slight to Moderate Decrease			
Risk - Yield	Slight to moderate decrease from improved health, extended grazing period, improved forage.	Slight to Moderate Increase			
Risk - Flexibility	Slight to moderate increase because of increased management.	Substantial Increase			
Risk - Timing	Substantial increase - practice must be applied according to forage needs.	Slight to Moderate Decrease			

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Rock Barrier 555		Baseline Setting:			
		Appropriate Land Use(s): Crop, Hay, Pasture			
RESOURCES, CONSIDERATIONS AND CONCERNS	PHYSICAL EFFECTS	RATIONALE			
Risk – Cash Flow	Slight to moderate decrease due to higher yields and reduced costs.	Slight to moderate increase.			
Profitability – Change in Profitability	0	0			
HUMAN - CULTURAL					
Cultural Resources and/or Historic Properties Present or Suspected to be PRESENT	Not applicable.	No			
HUMAN – ENERGY					
Depletion of Fossil Fuel Resources	Not Applicable	No			
Underutilization of Non-Fossil Energy Resources	Not Applicable	No			

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.

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Row Arrangement 557	Baseline Setting:				
	Appropriate Land Use(s): Crop				
RESOURCES, CONSIDERATIONS AND CONCERNS	PHYSICAL EFFECTS		RATIONALE		
SOIL - EROSION					
Sheet and Rill	Slight to Substantial Improvement		Rows are arranged in direction, grade, and length to reduce erosion		
Wind	Slight Improvement		Adding roughness to the soil across the prevailing wind direction reduces saltation.		
Ephemeral Gully	Slight to Substantial Improvement		Rows are arranged in direction, grade, and length to reduce erosion		
Classic Gully	Neutral		The action not installed in gully area		
Streambank	Neutral		Reduced erosion and sediment load can create water energy/stream bank erosion from runoff		
Shoreline	Not Applicable		Not applicable.		
Irrigation Induced	Slight to Substantial Improvement		Rows are arranged in direction, grade, and length to reduce erosion.		
Mass Movement	Not Applicable		Not applicable.		
Road, Roadsides, and Construction Sites	Not Applicable		Not applicable.		
SOIL – CONDITION					
Organic Matter Depletion	Slight Improvement		Reduced erosion reduces loss of organic material in sediments		
Rangeland Site Stability	Not Applicable		Not applicable.		
Compaction	Not Applicable		Not applicable.		
Subsidence	Not Applicable		Not applicable.		
Contaminants:					
• Salts and other Chemicals	Slight Improvement		Improved moisture control may result in leaching of contaminants below the root zone		
• Animal Waste and other Organics - N	Slight Improvement		Will reduce soil erosion, reducing N losses.		
• Animal Waste and other Organics - P	Slight Improvement		Will reduce soil erosion and runoff, reducing P losses.		
• Animal Waste and other Organics - K	Slight Improvement		Will reduce soil erosion, reducing K losses.		
• Commercial Fertilizer - N	Slight Improvement		Will reduce soil erosion, reducing N losses.		
• Commercial Fertilizer – P	Slight Improvement		Will reduce soil erosion and runoff, reducing P losses.		

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Row Arrangement 557		Baseline Setting:			
		Appropriate Land Use(s): Crop			
RESOURCES, CONSIDERATIONS AND CONCERNS	PHYSICAL EFFECTS	RATIONALE			
• Commercial Fertilizer – K	Slight Improvement	Will reduce soil erosion, reducing K losses.			
• Residual Pesticides	Neutral	Improved moisture control may result in leaching of soluble pesticides below the root zone			
Damage from Sediment Deposition	Slight to Moderate Improvement	Reduced erosion will result in less sediment available for deposition			
WATER – QUANTITY					
Rangeland Hydrologic Cycle	Not Applicable	Not applicable.			
Excessive Seepage	Slight Worsening	Row arrangement may result in more infiltration.			
Excessive Runoff, Flooding, or Ponding	Slight to Moderate Improvement	Correct row arrangement provides better drainage control.			
Excessive Subsurface Water	Slight Worsening	Row arrangement may result in more infiltration.			
Drifted Snow	Not Applicable	Not applicable.			
Inadequate Outlets	Not Applicable	Not applicable.			
Inefficient Water use on Irrigated Land	Moderate to Substantial Improvement	Row arrangement with proper grade and length improves irrigation efficiency.			
Inefficient Water use on Non-Irrigated Land	Moderate to Substantial Improvement	Row arrangement with proper grade and length improves water capture.			
Reduced Capacity of Conveyances by Sediment Deposition	Slight Improvement	Reduced erosion and sediment for off site transport.			
Reduced Storage of Water Bodies by Sediment Accumulation	Slight Improvement	Reduced erosion and sediment for off site transport.			
Aquifer Overdraft	Slight Improvement	Better use of rainfall and irrigation water will reduce overdraft.			
Insufficient Flows in Water Courses	Slight Improvement	Improve infiltration enhances interflow.			
WATER – QUALITY					
In Groundwater:					
• Harmful Levels of Pesticides	Slight Worsening	The action increases infiltration.			
• Excessive Nutrients and Organics	Slight to Moderate Improvement	The action facilitates the removal of surface runoff, thus reducing percolation of water and nutrients.			
• Excessive Salinity	Neutral	Increased percolation may move soluble salts into groundwater.			
• Harmful Levels of Heavy Metals	Not Applicable	Not applicable.			
• Harmful Levels of Pathogens	Not Applicable	Not applicable.			

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Row Arrangement 557		Baseline Setting:			
		Appropriate Land Use(s): Crop			
RESOURCES, CONSIDERATIONS AND CONCERNS	PHYSICAL EFFECTS	RATIONALE			
• Harmful Levels of Petroleum	Not Applicable	Not applicable.			
In Surface Water:					
• Harmful Levels of Pesticides	Slight Improvement	The action reduces runoff and erosion.			
• Excessive Nutrients and Organics	Slight to Moderate Worsening	The action facilitates the removal of surface runoff, thus increasing the potential for surface water contamination by organics and nutrients.			
• Excessive Suspended Sediment and Turbidity	Slight to Moderate Improvement	Reduced slope and water velocity will reduce erosion.			
• Excessive Salinity	Neutral	The action can increase percolation, which reduces the runoff of soluble salts. The action can also increase surface drainage, which moves contaminants from the site.			
• Harmful Levels of Heavy Metals	Neutral	Collected runoff may discharge into surface water.			
• Harmful Temperatures	Not Applicable	Not applicable.			
• Harmful Levels of Pathogens	Slight Improvement	Retarding surface water flow will reduce transport of pathogens			
• 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	Not Applicable	Not applicable.			
Excessive Greenhouse Gas:					
• CO ₂ (Carbon Dioxide)	Neutral	Improved production and vegetative density removes CO ₂ from the air and stores it in the form of carbon in the plants and soil.			
• N ₂ O (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	Neutral	Reduction in wind erosion potential and fugitive dust			
Undesirable Air Movement	Not Applicable	Not applicable.			
Adverse Air Temperature	Not Applicable	Not applicable.			
PLANTS – SUITABILITY					

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Row Arrangement 557		Baseline Setting:			
		Appropriate Land Use(s): Crop			
RESOURCES, CONSIDERATIONS AND CONCERNS	PHYSICAL EFFECTS	RATIONALE			
Plants not Adapted or Suited	Not Applicable	Not applicable.			
PLANTS - CONDITION					
Productivity, Health, and Vigor	Slight Improvement	Conserving moisture and reduced erosion will improve plant productivity and health.			
Threatened or Endangered Plant Species:					
<ul style="list-style-type: none"> Plant Species Listed or Proposed for Listing Under the Endangered Species Act 	Not Applicable	Not applicable.			
<ul style="list-style-type: none"> Declining Species, Species of Concern 	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.			
ANIMALS - FISH AND WILDLIFE					
Inadequate Food	Not Applicable	Not applicable.			
Inadequate Cover/Shelter	Not Applicable	Not applicable.			
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:					
<ul style="list-style-type: none"> 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.			
<ul style="list-style-type: none"> 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	Not Applicable	Not applicable.			
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	Not applicable.	Slight Increase.			
Capital – Change in Equipment	0	Not applicable.			
Capital - Total Investment Cost	Not applicable.	Negligible			

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Row Arrangement 557		Baseline Setting:			
		Appropriate Land Use(s): Crop			
RESOURCES, CONSIDERATIONS AND CONCERNS	PHYSICAL EFFECTS		RATIONALE		
Capital – Annual Cost	0		Situational.		
Capital – Credit and Farm Program Eligibility	0		Slight to moderate increase		
Labor - Labor	Slight to moderate increase to move livestock between pastures.		Slight increase		
Labor – Change in Management Level	Slight increase to determine when to move livestock and manage forage.		Slight to Moderate Decrease		
Risk - Yield	Slight to moderate decrease from improved health, extended grazing period, improved forage.		Slight to Moderate Increase		
Risk - Flexibility	Slight to moderate increase because of increased management.		Substantial Increase		
Risk - Timing	Substantial increase - practice must be applied according to forage needs.		Slight to Moderate Decrease		
Risk – Cash Flow	Slight to moderate decrease due to higher yields and reduced costs.		Slight to moderate increase.		
Profitability – Change in Profitability	0		0		
HUMAN - CULTURAL					
Cultural Resources and/or Historic Properties Present or Suspected to be PRESENT	Not applicable.		No		
HUMAN – ENERGY					
Depletion of Fossil Fuel Resources	Not Applicable		No		
Underutilization of Non-Fossil Energy Resources	Not Applicable		No		

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.

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Roof Runoff Structure 558		Baseline Setting:			
		Appropriate Land Use(s): Headquarters			
RESOURCES, CONSIDERATIONS AND CONCERNS		PHYSICAL EFFECTS	RATIONALE		
SOIL - EROSION					
Sheet and Rill		Slight Improvement	Roof runoff is collected and conveyed to a safe outlet.		
Wind		Not Applicable	Not applicable.		
Ephemeral Gully		Slight to Substantial Improvement	Roof runoff is collected and conveyed to a safe outlet.		
Classic Gully		Slight Improvement	Roof runoff is collected and conveyed to a safe outlet.		
Streambank		Slight Improvement	Roof runoff is collected and conveyed to a safe outlet.		
Shoreline		Not Applicable	Not applicable.		
Irrigation Induced		Not Applicable	Not applicable.		
Mass Movement		Neutral	Collected water no longer available to saturate soil profile which potentially promotes 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		Neutral	Drier soils in high traffic areas around buildings may decrease compaction potential.		
Subsidence		Not Applicable	Not applicable.		
Contaminants:					
<ul style="list-style-type: none"> • Salts and other Chemicals 		Neutral	Where practice is used to increase infiltration, the percolating water has the potential to remove contaminants from the soil profile.		
<ul style="list-style-type: none"> • Animal Waste and other Organics - N 		Neutral	Not applicable.		
<ul style="list-style-type: none"> • Animal Waste and other Organics - P 		Neutral	Not applicable.		
<ul style="list-style-type: none"> • Animal Waste and other Organics - K 		Neutral	Not applicable.		
<ul style="list-style-type: none"> • Commercial Fertilizer - N 		Neutral	Not applicable.		
<ul style="list-style-type: none"> • Commercial Fertilizer – P 		Neutral	Not applicable.		
<ul style="list-style-type: none"> • Commercial Fertilizer – K 		Neutral	Not applicable.		

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Roof Runoff Structure 558		Baseline Setting:			
		Appropriate Land Use(s): Headquarters			
RESOURCES, CONSIDERATIONS AND CONCERNS	PHYSICAL EFFECTS	RATIONALE			
<ul style="list-style-type: none"> Residual Pesticides 	Neutral	Where practice is used to increase infiltration, the percolating water has the potential to remove contaminants from the soil profile.			
Damage from Sediment Deposition	Slight Improvement	Potential for reduced erosion with practice installation will reduce sedimentation.			
WATER – QUANTITY					
Rangeland Hydrologic Cycle	Not Applicable	Not applicable.			
Excessive Seepage	Slight Improvement	Water collected And conveyed to surface outlet will have limited opportunity to infiltrate.			
Excessive Runoff, Flooding, or Ponding	Slight Worsening	Collecting and conveying roof runoff away from buildings to an outlet will tend to reduce opportunity for infiltration at the site.			
Excessive Subsurface Water	Slight Improvement	Water collected And conveyed to surface outlet will have limited opportunity to infiltrate.			
Drifted Snow	Not Applicable	Not applicable.			
Inadequate Outlets	Neutral	If inadequate outlets are a problem this practice will have a neutral effect .			
Inefficient Water use on Irrigated Land	Not Applicable	Not applicable.			
Inefficient Water use on Non-Irrigated Land	Slight to Substantial Improvement	Collected water can be used to increase available water for other uses.			
Reduced Capacity of Conveyances by Sediment Deposition	Slight Improvement	Potential for reduced erosion with practice installation will reduce sedimentation.			
Reduced Storage of Water Bodies by Sediment Accumulation	Slight Improvement	Potential for reduced erosion with practice installation will reduce sedimentation.			
Aquifer Overdraft	Slight Improvement	Infiltration of collected roof runoff will increase aquifer recharge.			
Insufficient Flows in Water Courses	Slight to Moderate Improvement	Directing collected water to water courses will increase flows.			
WATER – QUALITY					
In Groundwater:					

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Roof Runoff Structure 558		Baseline Setting:			
		Appropriate Land Use(s): Headquarters			
RESOURCES, CONSIDERATIONS AND CONCERNS	PHYSICAL EFFECTS		RATIONALE		
• Harmful Levels of Pesticides	Not Applicable		Not applicable.		
• Excessive Nutrients and Organics	Slight to Moderate Improvement		The action collects and disposes of runoff which could transport nutrients to 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	Slight to Moderate Improvement		Roof runoff is diverted away from fuel storage areas.		
In Surface Water:					
• Harmful Levels of Pesticides	Not Applicable		Not applicable.		
• Excessive Nutrients and Organics	Slight to Moderate Improvement		The action keeps excess runoff water out of concentrated livestock areas. The degree of impact depends on the portion of contamination associated with the roof runoff.		
• Excessive Suspended Sediment and Turbidity	Slight Improvement		Water from roof is delivered to stable outlet, minimizing surface erosion.		
• Excessive Salinity	Slight to Moderate Improvement		The action diverts water from barnyard and feedlot areas, where it could pick up salts from manure.		
• Harmful Levels of Heavy Metals	Neutral		Heavy metals are rarely associated with manure. Roof runoff is diverted away from manure areas.		
• Harmful Temperatures	Not Applicable		Not applicable.		
• Harmful Levels of Pathogens	Slight to Substantial Improvement		Roof runoff diverted away from manure areas. Degree of impact depends on the portion of contamination associated with the roof runoff.		
• 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	Not Applicable		Not applicable.		
Excessive Greenhouse Gas:					
• CO ₂ (Carbon Dioxide)	Not Applicable		Not applicable.		
• N ₂ O (Nitrous Oxide)	Not Applicable		Not applicable.		
• CH ₄ (Methane)	Not Applicable		Not applicable.		
Ammonia (NH ₃)	Not Applicable		Not applicable.		

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Roof Runoff Structure 558		Baseline Setting:			
		Appropriate Land Use(s): Headquarters			
RESOURCES, CONSIDERATIONS AND CONCERNS	PHYSICAL EFFECTS	RATIONALE			
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.			
PLANTS – SUITABILITY					
Plants not Adapted or Suited	Not Applicable	Not applicable.			
PLANTS - CONDITION					
Productivity, Health, and Vigor	Not Applicable	Not applicable.			
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	Not Applicable	Not applicable.			
Forage Quality and Palatability	Not Applicable	Not applicable.			
Wildfire Hazard	Not Applicable	Not applicable.			
ANIMALS - FISH AND WILDLIFE					
Inadequate Food	Not Applicable	Not applicable.			
Inadequate Cover/Shelter	Not Applicable	Not applicable.			
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	Not Applicable	Not applicable.			
• Declining Species, Species of Concern	Not Applicable	Not applicable.			
ANIMALS – DOMESTIC					
Inadequate Quantities and Quality of Feed and Forage	Not Applicable	Not applicable.			
Inadequate Shelter	Not Applicable	Not applicable.			
Inadequate Stock Water	Slight to Substantial Improvement	Roof runoff can be diverted for stock water use.			
Stress and Mortality	Not Applicable	Not applicable.			
HUMAN – ECONOMICS					
Land - Change in Land Use	Not applicable.	Not applicable.			
Land – Land in Production	Not applicable.	Slight Increase.			

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Roof Runoff Structure 558		Baseline Setting:			
		Appropriate Land Use(s): Headquarters			
RESOURCES, CONSIDERATIONS AND CONCERNS	PHYSICAL EFFECTS	RATIONALE			
Capital – Change in Equipment	0	Not applicable.			
Capital - Total Investment Cost	Not applicable.	Negligible			
Capital – Annual Cost	0	Situational.			
Capital – Credit and Farm Program Eligibility	0	Slight to moderate increase			
Labor - Labor	Slight to moderate increase to move livestock between pastures.	Slight increase			
Labor – Change in Management Level	Slight increase to determine when to move livestock and manage forage.	Slight to Moderate Decrease			
Risk - Yield	Slight to moderate decrease from improved health, extended grazing period, improved forage.	Slight to Moderate Increase			
Risk - Flexibility	Slight to moderate increase because of increased management.	Substantial Increase			
Risk - Timing	Substantial increase - practice must be applied according to forage needs.	Slight to Moderate Decrease			
Risk – Cash Flow	Slight to moderate decrease due to higher yields and reduced costs.	Slight to moderate increase.			
Profitability – Change in Profitability	0	0			
HUMAN - CULTURAL					
Cultural Resources and/or Historic Properties Present or Suspected to be PRESENT	Not applicable.	No			
HUMAN – ENERGY					
Depletion of Fossil Fuel Resources	Not Applicable	No			
Underutilization of Non-Fossil Energy Resources	Not Applicable	No			

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.

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Access Road 560		Baseline Setting: Access road does not exist on the planning unit or is just a driving path.			
		Appropriate Land Use(s): All Land Uses			
RESOURCES, CONSIDERATIONS AND CONCERNS	PHYSICAL EFFECTS	RATIONALE			
SOIL - EROSION					
Sheet and Rill	Not Applicable	Not applicable.			
Wind	Neutral	Winds acting on the road edges that are routinely graded may cause saltation, creep, and suspension of soil particles.			
Ephemeral Gully	Slight Improvement	Road will intercept runoff and break up gullies. A slight worsening may occur from runoff water in side-road drainage ditches.			
Classic Gully	Slight Worsening	Water control structures will concentrate flows in drainage ditches.			
Streambank	Not Applicable	Not applicable.			
Shoreline	Not Applicable	Not applicable.			
Irrigation Induced	Not Applicable	Not applicable.			
Mass Movement	Slight Worsening	Embankment grading steepens slopes.			
Road, Roadsides, and Construction Sites	Slight Worsening	Road built according to standards will have slopes stabilized during and after construction.			
SOIL – CONDITION					
Organic Matter Depletion	Not Applicable	Not applicable.			
Rangeland Site Stability	Not Applicable	Not applicable.			
Compaction	Slight to Moderate Improvement	Traffic is confined to road areas.			
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	Neutral	Travel ways are designed to minimize sedimentation.			
WATER – QUANTITY					

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Access Road 560		Baseline Setting: Access road does not exist on the planning unit or is just a driving path.			
		Appropriate Land Use(s): All Land Uses			
RESOURCES, CONSIDERATIONS AND CONCERNS	PHYSICAL EFFECTS	RATIONALE			
Rangeland Hydrologic Cycle	Not Applicable	Not applicable.			
Excessive Seepage	Not Applicable	Not applicable.			
Excessive Runoff, Flooding, or Ponding	Slight Worsening	Road will create ponding opportunities.			
Excessive Subsurface Water	Not Applicable	Not applicable.			
Drifted Snow	Slight to Moderate Worsening	Roads create landscape breaks increasing snow trapping and drifting.			
Inadequate Outlets	Slight to Moderate Improvement	Drainage control structures will improve outlet conditions			
Inefficient Water use on Irrigated Land	Slight to Moderate Improvement	Road will provide better farm and irrigation equipment access.			
Inefficient Water use on Non-Irrigated Land	Not Applicable	Not applicable.			
Reduced Capacity of Conveyances by Sediment Deposition	Not Applicable	Not applicable.			
Reduced Storage of Water Bodies by Sediment Accumulation	Not Applicable	Not applicable.			
Aquifer Overdraft	Not Applicable	Not applicable.			
Insufficient Flows in Water Courses	Slight Worsening	Road intercepts runoff and has no outlet or water could be conveyed to another water course.			
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	Slight Worsening	Concentration of traffic increases the likelihood of petroleum spills on road.			
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 Improvement	Interception of runoff.			
• Excessive Salinity	Not Applicable	Not applicable.			
• Harmful Levels of Heavy Metals	Not Applicable	Not applicable.			
• Harmful Temperatures	Not Applicable	Not applicable.			

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Access Road 560		Baseline Setting: Access road does not exist on the planning unit or is just a driving path.			
		Appropriate Land Use(s): All Land Uses			
RESOURCES, CONSIDERATIONS AND CONCERNS	PHYSICAL EFFECTS	RATIONALE			
• Harmful Levels of Pathogens	Neutral	Potential for slight increase in surface runoff where access road used for haul road for manure distribution.			
• Harmful Levels of Petroleum	Slight Worsening	Concentration of traffic increases the likelihood of petroleum spills on road.			
AIR – QUALITY					
Particulate Matter less than 10 Micrometers in Diameter (PM 10)	Slight to Moderate Worsening	Vehicular traffic on farm roads can contribute to fugitive dust.			
Particulate Matter less than 2.5 Micrometers in Diameter (PM 2.5)	Slight to Moderate Worsening	Vehicular traffic on farm roads can contribute to fugitive dust.			
Excessive Ozone	Not Applicable	Not applicable.			
Excessive Greenhouse Gas:					
• CO ₂ (Carbon Dioxide)	Not Applicable	Not applicable.			
• N ₂ O (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	Moderate to Substantial Improvement	Reduce fugitive dust emissions			
Undesirable Air Movement	Neutral	Roads are designed to minimize funneling and increase in wind speeds through windbreaks.			
Adverse Air Temperature	Not Applicable	Not applicable.			
PLANTS – SUITABILITY					
Plants not Adapted or Suited	Substantial Improvement	Adapted and suited species are selected for this practice by reference to Critical Area Planting, 342.			
PLANTS - CONDITION					
Productivity, Health, and Vigor	Slight to Moderate Improvement	Improved access increases ability to manage stands.			
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 Worsening	Roads may provide an environment for weeds.			
Forage Quality and Palatability	Not Applicable	Not applicable.			

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Access Road 560		Baseline Setting: Access road does not exist on the planning unit or is just a driving path.			
		Appropriate Land Use(s): All Land Uses			
RESOURCES, CONSIDERATIONS AND CONCERNS	PHYSICAL EFFECTS	RATIONALE			
Wildfire Hazard	Moderate to Substantial Improvement	Roads provide firebreaks and access to sites for fuel reduction activities.			
ANIMALS - FISH AND WILDLIFE					
Inadequate Food	Not Applicable	Not applicable.			
Inadequate Cover/Shelter	Not Applicable	Not applicable.			
Inadequate Water	Not Applicable	Not applicable.			
Inadequate Space	Slight to Moderate Worsening	Roads reduce and fragment space.			
Habitat Fragmentation	Slight Worsening	Roads fragment plant communities to some degree.			
Imbalance Among and Within Populations	Not Applicable	Not applicable.			
Threatened and Endangered Fish and Wildlife Species:					
<ul style="list-style-type: none"> 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.			
<ul style="list-style-type: none"> 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	Not Applicable	Not applicable.			
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	Not applicable.	Slight Increase.			
Capital – Change in Equipment	0	Not applicable.			
Capital - Total Investment Cost	Not applicable.	Negligible			
Capital – Annual Cost	0	Situational.			
Capital – Credit and Farm Program Eligibility	0	Slight to moderate increase			
Labor - Labor	Slight to moderate increase to move livestock between pastures.	Slight increase			
Labor – Change in Management Level	Slight increase to determine when to move livestock and manage forage.	Slight to Moderate Decrease			
Risk - Yield	Slight to moderate decrease from improved health, extended grazing period, improved forage.	Slight to Moderate Increase			

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Access Road 560		Baseline Setting: Access road does not exist on the planning unit or is just a driving path.			
		Appropriate Land Use(s): All Land Uses			
RESOURCES, CONSIDERATIONS AND CONCERNS	PHYSICAL EFFECTS		RATIONALE		
Risk - Flexibility	Slight to moderate increase because of increased management.		Substantial Increase		
Risk - Timing	Substantial increase - practice must be applied according to forage needs.		Slight to Moderate Decrease		
Risk – Cash Flow	Slight to moderate decrease due to higher yields and reduced costs.		Slight to moderate increase.		
Profitability – Change in Profitability	0		0		
HUMAN - CULTURAL					
Cultural Resources and/or Historic Properties Present or Suspected to be PRESENT	Not applicable.		No		
HUMAN – ENERGY					
Depletion of Fossil Fuel Resources	Not Applicable		No		
Underutilization of Non-Fossil Energy Resources	Not Applicable		No		

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.

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Heavy Use Area Protection 561		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	Establishment of vegetative cover, surfacing with suitable materials, or installing needed structures will provide needed cover to protect area from soil erosion.			
Wind	Slight to Substantial Improvement	The surface is protected from erosion by establishing vegetative cover, by surfacing with suitable materials, and/or by installing needed structures.			
Ephemeral Gully	Slight to Substantial Improvement	The surface is protected from erosion by establishing vegetative cover, by surfacing with suitable materials, and/or by installing needed structures.			
Classic Gully	Not Applicable	Not applicable.			
Streambank	Slight to Substantial Improvement	Erosion on streambanks due to heavy use is controlled.			
Shoreline	Slight to Substantial Improvement	Erosion on streambanks due to heavy use is controlled.			
Irrigation Induced	Not Applicable	Not applicable.			
Mass Movement	Not Applicable	Not applicable.			
Road, Roadsides, and Construction Sites	Slight to Substantial Improvement	Erosion due to heavy use is controlled.			
SOIL – CONDITION					
Organic Matter Depletion	Neutral	If vegetation is used to protect the site, organic matter may be increased. If some other material is used to protect the site, organic matter will be decreased or unchanged.			
Rangeland Site Stability	Slight to Substantial Improvement	The stabilization of areas frequently and intensively used by people, animals or vehicles			
Compaction	Slight Worsening	If non vegetated material is used to protect the site, compaction of the site is normally mandated. If vegetation is used to protect the site, compaction may or may not change depending on methods used to establish vegetation.			
Subsidence	Not Applicable	Not applicable.			
Contaminants:					
• Salts and other Chemicals	Not Applicable	Not applicable.			

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Heavy Use Area Protection 561		Baseline Setting:			
		Appropriate Land Use(s): All Land Uses			
RESOURCES, CONSIDERATIONS AND CONCERNS	PHYSICAL EFFECTS	RATIONALE			
• 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	Runoff and sediment are collected and properly disposed of.			
WATER – QUANTITY					
Rangeland Hydrologic Cycle	Slight to Substantial Improvement	Runoff and sediment are reduced and infiltration is increased.			
Excessive Seepage	Not Applicable	Not applicable.			
Excessive Runoff, Flooding, or Ponding	Neutral	Impermeable surfaces will cause increased runoff.			
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 Moderate Improvement	Protection decreases erosion and runoff.			
Reduced Storage of Water Bodies by Sediment Accumulation	Slight to Moderate Improvement	Protection decreases erosion and runoff			
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	Slight Improvement	Paving areas used by vehicles keeps petroleum spills off the soil.			
In Surface Water:					
• Harmful Levels of Pesticides	Not Applicable	Not applicable.			

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Heavy Use Area Protection 561		Baseline Setting:			
		Appropriate Land Use(s): All Land Uses			
RESOURCES, CONSIDERATIONS AND CONCERNS	PHYSICAL EFFECTS	RATIONALE			
<ul style="list-style-type: none"> Excessive Nutrients and Organics 	Slight Improvement	Protection will provide a decrease in runoff and erosion that may transport soluble and sediment-attached nutrients.			
<ul style="list-style-type: none"> Excessive Suspended Sediment and Turbidity 	Slight to Moderate Improvement	Protection can reduce erosion and sediment.			
<ul style="list-style-type: none"> Excessive Salinity 	Not Applicable	Not applicable.			
<ul style="list-style-type: none"> Harmful Levels of Heavy Metals 	Not Applicable	Not applicable.			
<ul style="list-style-type: none"> Harmful Temperatures 	Not Applicable	Not applicable.			
<ul style="list-style-type: none"> Harmful Levels of Pathogens 	Slight to Moderate Improvement	Enables better runoff management			
<ul style="list-style-type: none"> Harmful Levels of Petroleum 	Slight to Moderate Improvement	Enables better runoff management			
AIR – QUALITY					
Particulate Matter less than 10 Micrometers in Diameter (PM 10)	Slight to Moderate Improvement	Stabilizing high-traffic areas can reduce the amount of dust generated from human, animal and vehicular traffic.			
Particulate Matter less than 2.5 Micrometers in Diameter (PM 2.5)	Slight to Moderate Improvement	Stabilizing high-traffic areas can reduce the amount of dust generated from human, animal and vehicular traffic.			
Excessive Ozone	Not Applicable	Not applicable.			
Excessive Greenhouse Gas:					
<ul style="list-style-type: none"> CO₂ (Carbon Dioxide) 	Neutral	If used, vegetation removes CO ₂ from the air and stores it in the form of carbon in the plants and soil.			
<ul style="list-style-type: none"> N₂O (Nitrous Oxide) 	Not Applicable	Not applicable.			
<ul style="list-style-type: none"> CH₄ (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	Slight Improvement	Fugitive dust control from heavily used areas.			
Undesirable Air Movement	Not Applicable	Not applicable.			
Adverse Air Temperature	Not Applicable	Not applicable.			
PLANTS – SUITABILITY					
Plants not Adapted or Suited	Not Applicable	Not applicable.			
PLANTS - CONDITION					
Productivity, Health, and Vigor	Slight to Substantial Improvement	If vegetation is selected, it will be maintained at optimal growing conditions for the intended purpose.			

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Heavy Use Area Protection 561		Baseline Setting:			
		Appropriate Land Use(s): All Land Uses			
RESOURCES, CONSIDERATIONS AND CONCERNS	PHYSICAL EFFECTS	RATIONALE			
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	Management of the area controls undesired plants.			
Forage Quality and Palatability	Not Applicable	Not applicable.			
Wildfire Hazard	Not Applicable	Not applicable.			
ANIMALS - FISH AND WILDLIFE					
Inadequate Food	Not Applicable	Not applicable.			
Inadequate Cover/Shelter	Not Applicable	Not applicable.			
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	Not Applicable	Not applicable.			
• Declining Species, Species of Concern	Not Applicable	Not applicable.			
ANIMALS – DOMESTIC					
Inadequate Quantities and Quality of Feed and Forage	Not Applicable	Not applicable.			
Inadequate Shelter	Not Applicable	Not applicable.			
Inadequate Stock Water	Not Applicable	Not applicable.			
Stress and Mortality	Slight to Substantial Improvement	Protected areas create conditions that reduce stress and disease.			
HUMAN – ECONOMICS					
Land - Change in Land Use	Not applicable.	Not applicable.			
Land – Land in Production	Not applicable.	Slight Increase.			
Capital – Change in Equipment	0	Not applicable.			
Capital - Total Investment Cost	Not applicable.	Negligible			
Capital – Annual Cost	0	Situational.			
Capital – Credit and Farm Program Eligibility	0	Slight to moderate increase			
Labor - Labor	Slight to moderate increase to move livestock between pastures.	Slight increase			
Labor – Change in Management Level	Slight increase to determine when to move livestock and manage forage.	Slight to Moderate Decrease			

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Heavy Use Area Protection 561		Baseline Setting:			
		Appropriate Land Use(s): All Land Uses			
RESOURCES, CONSIDERATIONS AND CONCERNS	PHYSICAL EFFECTS		RATIONALE		
Risk - Yield	Slight to moderate decrease from improved health, extended grazing period, improved forage.		Slight to Moderate Increase		
Risk - Flexibility	Slight to moderate increase because of increased management.		Substantial Increase		
Risk - Timing	Substantial increase - practice must be applied according to forage needs.		Slight to Moderate Decrease		
Risk – Cash Flow	Slight to moderate decrease due to higher yields and reduced costs.		Slight to moderate increase.		
Profitability – Change in Profitability	0		0		
HUMAN - CULTURAL					
Cultural Resources and/or Historic Properties Present or Suspected to be PRESENT	Not applicable.		No		
HUMAN – ENERGY					
Depletion of Fossil Fuel Resources	Not Applicable		No		
Underutilization of Non-Fossil Energy Resources	Not Applicable		No		

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.

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Recreation Area Improvement 562		Baseline Setting:			
		Appropriate Land Use(s): Recreation			
RESOURCES, CONSIDERATIONS AND CONCERNS	PHYSICAL EFFECTS	RATIONALE			
SOIL - EROSION					
Sheet and Rill	Moderate to Substantial Improvement	Improvement in vegetative cover will reduce erosion from water.			
Wind	Moderate to Substantial Improvement	Improvement in vegetative cover will reduce erosion from wind.			
Ephemeral Gully	Moderate to Substantial Improvement	Improvement in vegetative cover will reduce erosion from water.			
Classic Gully	Slight Improvement	Improved vegetative cover will reduce runoff causing erosion.			
Streambank	Slight Improvement	Improved vegetative cover will reduce runoff causing erosion.			
Shoreline	Slight Improvement	Improved vegetative cover will reduce runoff causing erosion.			
Irrigation Induced	Not Applicable	Not applicable.			
Mass Movement	Not Applicable	Not applicable.			
Road, Roadsides, and Construction Sites	Not Applicable	Not applicable.			
SOIL – CONDITION					
Organic Matter Depletion	Slight to Substantial Improvement	Soil organic matter concerns will decrease when improved vegetative cover is provided and traffic is controlled			
Rangeland Site Stability	Not Applicable	Not applicable.			
Compaction	Slight to Moderate Improvement	The soil compaction concern will decrease as vegetative cover improves and traffic is controlled			
Subsidence	Not Applicable	Not applicable.			
Contaminants:					
• Salts and other Chemicals	Slight to Moderate Improvement	Establishment of salt tolerant species will reduce the salinity concern			
• 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 Substantial Improvement	Erosion control provided by improved vegetative cover will reduce damage from deposition			

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Recreation Area Improvement 562		Baseline Setting:			
		Appropriate Land Use(s): Recreation			
RESOURCES, CONSIDERATIONS AND CONCERNS	PHYSICAL EFFECTS	RATIONALE			
WATER – QUANTITY					
Rangeland Hydrologic Cycle	Not Applicable	Not applicable.			
Excessive Seepage	Not Applicable	Not applicable.			
Excessive Runoff, Flooding, or Ponding	Slight to Moderate Improvement	Improved vegetative cover will reduce runoff, flooding, or ponding on the recreation area.			
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	Substantial Improvement	Improved vegetative cover will decrease sedimentation concerns.			
Reduced Storage of Water Bodies by Sediment Accumulation	Slight to Moderate Improvement	Improved vegetative cover will decrease sedimentation concerns.			
Aquifer Overdraft	Not Applicable	Not applicable.			
Insufficient Flows in Water Courses	Not Applicable	Not applicable.			
WATER – QUALITY					
In Groundwater:					
• Harmful Levels of Pesticides	Slight to Moderate Improvement	The action increases soil organic matter and biological activity.			
• 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 decreases runoff and erosion.			
• Excessive Nutrients and Organics	Not Applicable	Not applicable.			
• Excessive Suspended Sediment and Turbidity	Moderate to Substantial Improvement	Reduced runoff and erosion will reduce the concern about sediment and turbidity in surface water			
• Excessive Salinity	Not Applicable	Not applicable.			
• Harmful Levels of Heavy Metals	Not Applicable	Not applicable.			
• Harmful Temperatures	Neutral	Shade provided by trees and shrubs may moderate stream temperatures.			

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Recreation Area Improvement 562		Baseline Setting:			
		Appropriate Land Use(s): Recreation			
RESOURCES, CONSIDERATIONS AND CONCERNS	PHYSICAL EFFECTS	RATIONALE			
<ul style="list-style-type: none"> Harmful Levels of Pathogens 	Neutral	Pathogen-creating actions are mitigated during practice design.			
<ul style="list-style-type: none"> Harmful Levels of Petroleum 	Neutral	Not applicable.			
AIR – QUALITY					
Particulate Matter less than 10 Micrometers in Diameter (PM 10)	Slight Improvement	Enhanced ground cover will reduce particulate generation.			
Particulate Matter less than 2.5 Micrometers in Diameter (PM 2.5)	Slight Improvement	Increased ground cover will reduce particulate matter generation.			
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:					
<ul style="list-style-type: none"> CO₂ (Carbon Dioxide) 	Slight to Moderate Improvement	Enhanced ground cover will improve carbon storage in soils and in biomass, however, the removal of trees will reduce carbon storage in biomass.			
<ul style="list-style-type: none"> N₂O (Nitrous Oxide) 	Not Applicable	Not applicable.			
<ul style="list-style-type: none"> CH₄ (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	Slight Improvement	Enhanced ground cover will reduce generation and trap particulates, improving visibility.			
Undesirable Air Movement	Not Applicable	Not applicable.			
Adverse Air Temperature	Moderate to Substantial Improvement	Tall vegetation provides shade and moderates temperatures.			
PLANTS – SUITABILITY					
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	Plants are selected and managed to maintain optimal productivity and health.			
Threatened or Endangered Plant Species:					

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Recreation Area Improvement 562		Baseline Setting:			
		Appropriate Land Use(s): Recreation			
RESOURCES, CONSIDERATIONS AND CONCERNS	PHYSICAL EFFECTS	RATIONALE			
<ul style="list-style-type: none"> 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.			
<ul style="list-style-type: none"> 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	Slight to Substantial Improvement	Activities reduce and isolate fuel loads.			
ANIMALS - FISH AND WILDLIFE					
Inadequate Food	Slight to Moderate Improvement	Plant species are selected that are well-adapted and compatible to the site and provide food for wildlife.			
Inadequate Cover/Shelter	Slight to Moderate Improvement	Plant species are selected that are well-adapted and compatible to the site and provide cover for wildlife.			
Inadequate Water	Slight to Moderate Improvement	Improvement activities can include the creation of a wildlife watering source.			
Inadequate Space	Slight to Moderate Worsening	Increased recreation use and disturbance reduces habitat availability.			
Habitat Fragmentation	Slight Worsening	Recreational use generally increases disturbance and fragmentation to plant communities.			
Imbalance Among and Within Populations	Not Applicable	Not applicable.			
Threatened and Endangered Fish and Wildlife Species:					
<ul style="list-style-type: none"> 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.			
<ul style="list-style-type: none"> Declining Species, Species of Concern 	Neutral	Activities are designed, installed, and mitigated to an extent to maintain or enhance species of concern.			
ANIMALS - DOMESTIC					

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Recreation Area Improvement 562		Baseline Setting:			
		Appropriate Land Use(s): Recreation			
RESOURCES, CONSIDERATIONS AND CONCERNS	PHYSICAL EFFECTS	RATIONALE			
Inadequate Quantities and Quality of Feed and Forage	Not Applicable	Not applicable.			
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	Not applicable.	Slight Increase.			
Capital – Change in Equipment	0	Not applicable.			
Capital - Total Investment Cost	Not applicable.	Negligible			
Capital – Annual Cost	0	Situational.			
Capital – Credit and Farm Program Eligibility	0	Slight to moderate increase			
Labor - Labor	Slight to moderate increase to move livestock between pastures.	Slight increase			
Labor – Change in Management Level	Slight increase to determine when to move livestock and manage forage.	Slight to Moderate Decrease			
Risk - Yield	Slight to moderate decrease from improved health, extended grazing period, improved forage.	Slight to Moderate Increase			
Risk - Flexibility	Slight to moderate increase because of increased management.	Substantial Increase			
Risk - Timing	Substantial increase - practice must be applied according to forage needs.	Slight to Moderate Decrease			
Risk – Cash Flow	Slight to moderate decrease due to higher yields and reduced costs.	Slight to moderate increase.			
Profitability – Change in Profitability	0	0			
HUMAN - CULTURAL					
Cultural Resources and/or Historic Properties Present or Suspected to be PRESENT	Not applicable.	No			
HUMAN – ENERGY					
Depletion of Fossil Fuel Resources	Not Applicable	No			
Underutilization of Non-Fossil Energy Resources	Not Applicable	No			

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.

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Recreation Land Grading and Shaping 566		Baseline Setting:			
		Appropriate Land Use(s): Recreation			
RESOURCES, CONSIDERATIONS AND CONCERNS		PHYSICAL EFFECTS		RATIONALE	
SOIL - EROSION					
Sheet and Rill		Neutral		The action requires that appropriate erosion control practices will be applied on disturbed areas.	
Wind		Neutral		The action requires that appropriate erosion control practices will be applied on disturbed areas.	
Ephemeral Gully		Neutral		The action requires that appropriate erosion control practices will be applied on disturbed areas.	
Classic Gully		Moderate to Substantial Improvement		Gully will be stabilized by grading and reshaping for recreation.	
Streambank		Slight to Moderate Improvement		Streambanks will be stabilized by grading and reshaping for recreation.	
Shoreline		Slight to Substantial Improvement		Shorelines will be stabilized by grading and reshaping for recreation.	
Irrigation Induced		Not Applicable		Not applicable.	
Mass Movement		Neutral		Not applicable.	
Road, Roadsides, and Construction Sites		Not Applicable		Not applicable.	
SOIL – CONDITION					
Organic Matter Depletion		Slight Improvement		Soil organic matter concerns will decrease when improved vegetative cover is provided and traffic is controlled. There will be a temporary increase in the problem as organic material oxidizes during construction.	
Rangeland Site Stability		Not Applicable		Not applicable.	
Compaction		Neutral		Initial increase in compaction due to construction equipment will be followed by a decrease in compaction due to the effect of improved vegetative cover.	
Subsidence		Not Applicable		Not applicable.	
Contaminants:					
• Salts and other Chemicals		Not Applicable		Not applicable.	
• Animal Waste and other Organics - N		Not Applicable		Not applicable.	

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Recreation Land Grading and Shaping 566		Baseline Setting:			
		Appropriate Land Use(s): Recreation			
RESOURCES, CONSIDERATIONS AND CONCERNS	PHYSICAL EFFECTS	RATIONALE			
• 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	Erosion control provided by improved vegetative cover will reduce damage from deposition.			
WATER – QUANTITY					
Rangeland Hydrologic Cycle	Not Applicable	Not applicable.			
Excessive Seepage	Not Applicable	Not applicable.			
Excessive Runoff, Flooding, or Ponding	Slight to Moderate Improvement	Creates a more uniform surface and removal of depressions will eliminate ponding.			
Excessive Subsurface Water	Not Applicable	Not applicable.			
Drifted Snow	Not Applicable	Not applicable.			
Inadequate Outlets	Slight to Moderate Improvement	Grading and shaping may be designed to channel water and provide adequate outlets.			
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	Not Applicable	Not applicable.			
Reduced Storage of Water Bodies by Sediment Accumulation	Not Applicable	Not applicable.			
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	Not Applicable	Not applicable.			

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Recreation Land Grading and Shaping 566		Baseline Setting:			
		Appropriate Land Use(s): Recreation			
RESOURCES, CONSIDERATIONS AND CONCERNS	PHYSICAL EFFECTS	RATIONALE			
<ul style="list-style-type: none"> Excessive Suspended Sediment and Turbidity 	Slight to Moderate Improvement	Reduced runoff and erosion will reduce the concern about sediment and turbidity in surface water			
<ul style="list-style-type: none"> Excessive Salinity 	Not Applicable	Not applicable.			
<ul style="list-style-type: none"> Harmful Levels of Heavy Metals 	Not Applicable	Not applicable.			
<ul style="list-style-type: none"> Harmful Temperatures 	Neutral	The action protects soil and water quality.			
<ul style="list-style-type: none"> Harmful Levels of Pathogens 	Not Applicable	Not applicable.			
<ul style="list-style-type: none"> Harmful Levels of Petroleum 	Neutral	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	Not Applicable	Not applicable.			
Excessive Greenhouse Gas:					
<ul style="list-style-type: none"> CO₂ (Carbon Dioxide) 	Slight Worsening	Some carbon may be lost due to soil disturbance.			
<ul style="list-style-type: none"> N₂O (Nitrous Oxide) 	Not Applicable	Not applicable.			
<ul style="list-style-type: none"> CH₄ (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	Slight Improvement	Increased ground cover will reduce particulate matter generation. However, particulate matter and ozone precursors will increase during practice installation.			
Undesirable Air Movement	Not Applicable	Not applicable.			
Adverse Air Temperature	Not Applicable	Not applicable.			
PLANTS – SUITABILITY					
Plants not Adapted or Suited	Not Applicable	Not applicable.			
PLANTS - CONDITION					
Productivity, Health, and Vigor	Slight to Substantial Improvement	Site modification will enhance the health and vigor of desired species.			
Threatened or Endangered Plant Species:					
<ul style="list-style-type: none"> 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.			

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Recreation Land Grading and Shaping 566		Baseline Setting:			
		Appropriate Land Use(s): Recreation			
RESOURCES, CONSIDERATIONS AND CONCERNS	PHYSICAL EFFECTS	RATIONALE			
<ul style="list-style-type: none"> 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 Worsening	Grading and shaping activities eliminate or reduce food species.			
Inadequate Cover/Shelter	Slight to Moderate Worsening	Grading and shaping activities eliminate or reduce cover/shelter.			
Inadequate Water	Not Applicable	Not applicable.			
Inadequate Space	Slight to Moderate Worsening	Increased recreation use and disturbance reduces habitat availability.			
Habitat Fragmentation	Slight Worsening	Recreational use generally increases disturbance and fragmentation to plant communities.			
Imbalance Among and Within Populations	Not Applicable	Not applicable.			
Threatened and Endangered Fish and Wildlife Species:					
<ul style="list-style-type: none"> 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.			
<ul style="list-style-type: none"> 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	Not Applicable	Not applicable.			
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	Not applicable.	Slight Increase.			
Capital – Change in Equipment	0	Not applicable.			
Capital - Total Investment Cost	Not applicable.	Negligible			

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Recreation Land Grading and Shaping 566		Baseline Setting:			
		Appropriate Land Use(s): Recreation			
RESOURCES, CONSIDERATIONS AND CONCERNS		PHYSICAL EFFECTS		RATIONALE	
Capital – Annual Cost		0		Situational.	
Capital – Credit and Farm Program Eligibility		0		Slight to moderate increase	
Labor - Labor		Slight to moderate increase to move livestock between pastures.		Slight increase	
Labor – Change in Management Level		Slight increase to determine when to move livestock and manage forage.		Slight to Moderate Decrease	
Risk - Yield		Slight to moderate decrease from improved health, extended grazing period, improved forage.		Slight to Moderate Increase	
Risk - Flexibility		Slight to moderate increase because of increased management.		Substantial Increase	
Risk - Timing		Substantial increase - practice must be applied according to forage needs.		Slight to Moderate Decrease	
Risk – Cash Flow		Slight to moderate decrease due to higher yields and reduced costs.		Slight to moderate increase.	
Profitability – Change in Profitability		0		0	
HUMAN - CULTURAL					
Cultural Resources and/or Historic Properties Present or Suspected to be PRESENT		Not applicable.		No	
HUMAN – ENERGY					
Depletion of Fossil Fuel Resources		Not Applicable		No	
Underutilization of Non-Fossil Energy Resources		Not Applicable		No	

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.

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Recreation Trail and Walkway 568		Baseline Setting:			
		Appropriate Land Use(s): Forest, Grazed Forest, Grazed Range, Native or Naturalized Pasture, Natural Area, Recreation, Water, Watershed Protection, Wildlife			
RESOURCES, CONSIDERATIONS AND CONCERNS		PHYSICAL EFFECTS		RATIONALE	
SOIL - EROSION					
Sheet and Rill		Neutral		Pathways may direct travel away from erosion prone areas.	
Wind		Neutral		Pathways may direct travel away from erosion prone areas.	
Ephemeral Gully		Neutral		Pathways may direct travel away from erosion prone areas.	
Classic Gully		Moderate to Substantial Improvement		Recreational traffic is diverted away from problem area and can facilitate healing of gully.	
Streambank		Slight to Substantial Improvement		Recreational traffic is diverted away from problem area and can facilitate healing.	
Shoreline		Slight to Substantial Improvement		Recreational traffic is diverted away from problem area and can facilitate healing.	
Irrigation Induced		Not Applicable		Not applicable.	
Mass Movement		Slight Improvement		Directing Recreational traffic away from sensitive area will promote vegetative cover.	
Road, Roadsides, and Construction Sites		Slight to Substantial Improvement		Directing Recreational traffic away from sensitive area will promote vegetative cover.	
SOIL – CONDITION					
Organic Matter Depletion		Not Applicable		Not applicable.	
Rangeland Site Stability		Not Applicable		Not applicable.	
Compaction		Slight to Moderate Improvement		Controlled traffic confines compaction to a more limited area.	
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		Not Applicable		Not applicable.	

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Recreation Trail and Walkway 568		Baseline Setting:			
		Appropriate Land Use(s): Forest, Grazed Forest, Grazed Range, Native or Naturalized Pasture, Natural Area, Recreation, Water, Watershed Protection, Wildlife			
RESOURCES, CONSIDERATIONS AND CONCERNS		PHYSICAL EFFECTS		RATIONALE	
WATER – QUANTITY					
Rangeland Hydrologic Cycle		Not Applicable		Not applicable.	
Excessive Seepage		Not Applicable		Not applicable.	
Excessive Runoff, Flooding, or Ponding		Slight to Moderate Improvement		Managed Recreational traffic increases vegetative cover.	
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		Slight Improvement		Managed Recreational traffic increases vegetative cover.	
Reduced Capacity of Conveyances by Sediment Deposition		Slight to Moderate Improvement		Managed Recreational traffic increases vegetative cover and improves erosion control.	
Reduced Storage of Water Bodies by Sediment Accumulation		Slight to Moderate Improvement		Managed Recreational traffic increases vegetative cover and improves erosion control.	
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		Not Applicable		Not applicable.	
• Excessive Suspended Sediment and Turbidity		Slight to Moderate Improvement		Suspended sediment and turbidity in surface water will decrease due to controlled traffic and reduced erosion	
• Excessive Salinity		Not Applicable		Not applicable.	
• Harmful Levels of Heavy Metals		Not Applicable		Not applicable.	
• Harmful Temperatures		Not Applicable		Not applicable.	

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Recreation Trail and Walkway 568		Baseline Setting: Appropriate Land Use(s): Forest, Grazed Forest, Grazed Range, Native or Naturalized Pasture, Natural Area, Recreation, Water, Watershed Protection, Wildlife			
RESOURCES, CONSIDERATIONS AND CONCERNS		PHYSICAL EFFECTS	RATIONALE		
• Harmful Levels of Pathogens		Slight to Moderate Worsening	The risk of increasing pathogens in surface water may increase due to heavy equestrian traffic in close proximity to water bodies		
• Harmful Levels of Petroleum		Neutral	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		Not Applicable	Not applicable.		
Excessive Greenhouse Gas:					
• CO ₂ (Carbon Dioxide)		Not Applicable	Not applicable.		
• N ₂ O (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		Slight Improvement	Trails are surfaced or maintained to decrease dust.		
Undesirable Air Movement		Not Applicable	Not applicable.		
Adverse Air Temperature		Not Applicable	Not applicable.		
PLANTS – SUITABILITY					
Plants not Adapted or Suited		Substantial Improvement	Adapted and suited species are selected for this practice for erosion control.		
PLANTS - CONDITION					
Productivity, Health, and Vigor		Moderate to Substantial Improvement	When species are selected, they will be maintained at optimal conditions for the intended purpose.		
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.		

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Recreation Trail and Walkway 568		Baseline Setting: Appropriate Land Use(s): Forest, Grazed Forest, Grazed Range, Native or Naturalized Pasture, Natural Area, Recreation, Water, Watershed Protection, Wildlife			
RESOURCES, CONSIDERATIONS AND CONCERNS		PHYSICAL EFFECTS	RATIONALE		
Noxious and Invasive Plants		Slight Worsening	Trails may provide an environment for weeds.		
Forage Quality and Palatability		Not Applicable	Not applicable.		
Wildfire Hazard		Slight to Moderate Improvement	Trails provide firebreaks and access to sites for fuel reduction activities.		
ANIMALS - FISH AND WILDLIFE					
Inadequate Food		Slight to Moderate Worsening	Construction and maintenance activities eliminate or reduce food species.		
Inadequate Cover/Shelter		Slight to Moderate Worsening	Construction and maintenance activities eliminate or reduce cover/shelter.		
Inadequate Water		Not Applicable	Not applicable.		
Inadequate Space		Slight to Moderate Worsening	Increased recreation use and disturbance reduces habitat availability.		
Habitat Fragmentation		Slight Worsening	Recreational use generally increases disturbance and fragmentation to plant communities.		
Imbalance Among and Within Populations		Not Applicable	Not applicable.		
Threatened and Endangered Fish and Wildlife Species:					
<ul style="list-style-type: none"> 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.		
<ul style="list-style-type: none"> 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		Not Applicable	Not applicable.		
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		Not applicable.	Slight Increase.		
Capital – Change in Equipment		0	Not applicable.		
Capital - Total Investment Cost		Not applicable.	Negligible		

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Recreation Trail and Walkway 568		Baseline Setting: Appropriate Land Use(s): Forest, Grazed Forest, Grazed Range, Native or Naturalized Pasture, Natural Area, Recreation, Water, Watershed Protection, Wildlife			
RESOURCES, CONSIDERATIONS AND CONCERNS		PHYSICAL EFFECTS	RATIONALE		
Capital – Annual Cost		0	Situational.		
Capital – Credit and Farm Program Eligibility		0	Slight to moderate increase		
Labor - Labor		Slight to moderate increase to move livestock between pastures.	Slight increase		
Labor – Change in Management Level		Slight increase to determine when to move livestock and manage forage.	Slight to Moderate Decrease		
Risk - Yield		Slight to moderate decrease from improved health, extended grazing period, improved forage.	Slight to Moderate Increase		
Risk - Flexibility		Slight to moderate increase because of increased management.	Substantial Increase		
Risk - Timing		Substantial increase - practice must be applied according to forage needs.	Slight to Moderate Decrease		
Risk – Cash Flow		Slight to moderate decrease due to higher yields and reduced costs.	Slight to moderate increase.		
Profitability – Change in Profitability		0	0		
HUMAN - CULTURAL					
Cultural Resources and/or Historic Properties Present or Suspected to be PRESENT		Not applicable.	No		
HUMAN – ENERGY					
Depletion of Fossil Fuel Resources		Not Applicable	No		
Underutilization of Non-Fossil Energy Resources		Not Applicable	No		

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.

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Runoff Management System 570		Baseline Setting:			
		Appropriate Land Use(s): All Land Uses			
RESOURCES, CONSIDERATIONS AND CONCERNS	PHYSICAL EFFECTS	RATIONALE			
SOIL - EROSION					
Sheet and Rill	Neutral	The action does not control erosion on the construction site but collects the runoff and prevents resource problems downstream.			
Wind	Not Applicable	Not applicable.			
Ephemeral Gully	Slight to Moderate Improvement	Erosion and sediment control features are a part of the practice			
Classic Gully	Neutral	Classic gullies on site are not a common feature of development site; off site gullies will receive controlled flows.			
Streambank	Slight Improvement	Stream banks on and off site will benefit from controlled flows.			
Shoreline	Not Applicable	Not applicable.			
Irrigation Induced	Not Applicable	Not applicable.			
Mass Movement	Not Applicable	Not applicable.			
Road, Roadsides, and Construction Sites	Moderate to Substantial Improvement	Erosion controlled on site by reducing runoff.			
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 Substantial Improvement	Control of runoff from disturbed sites will reduce erosion and subsequent deposition.			
WATER – QUANTITY					
Rangeland Hydrologic Cycle	Not Applicable	Not applicable.			

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Runoff Management System 570		Baseline Setting:			
		Appropriate Land Use(s): All Land Uses			
RESOURCES, CONSIDERATIONS AND CONCERNS	PHYSICAL EFFECTS	RATIONALE			
Excessive Seepage	Neutral	Any effect will tend to be an increase in seepage because of controlled runoff that may increase infiltration.			
Excessive Runoff, Flooding, or Ponding	Slight to Moderate Improvement	Runoff is to be controlled on the site itself.			
Excessive Subsurface Water	Neutral	Any effect will tend to be an increase in seepage because of controlled runoff that may increase infiltration.			
Drifted Snow	Not Applicable	Not applicable.			
Inadequate Outlets	Slight Improvement	Amount of runoff is regulated and controlled to reduce impact on outlets.			
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 Moderate Improvement	Erosion and sediment controlled on site reduces sediment off site.			
Reduced Storage of Water Bodies by Sediment Accumulation	Slight to Moderate Improvement	Erosion and sediment controlled on site reduces sediment off site.			
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	Neutral	There could be some water contaminants on site, but overall impact of practice will be small. The action tends to increase on site infiltration/reduce runoff to off site.			
• Harmful Levels of Heavy Metals	Neutral	There could be some water contaminants on site, but overall impact of practice will be small. The action tends to increase on site infiltration/reduce runoff to off site.			
• Harmful Levels of Pathogens	Neutral	There could be some water contaminants on site, but overall impact of practice will be small. The action tends to increase on site infiltration/reduce runoff to off site.			

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Runoff Management System 570		Baseline Setting:			
		Appropriate Land Use(s): All Land Uses			
RESOURCES, CONSIDERATIONS AND CONCERNS	PHYSICAL EFFECTS	RATIONALE			
<ul style="list-style-type: none"> Harmful Levels of Petroleum 	Slight to Moderate Worsening	Construction activities are conducive to fuel spills, and practice increases opportunity for infiltration of soluble contaminants.			
In Surface Water:					
<ul style="list-style-type: none"> Harmful Levels of Pesticides 	Not Applicable	Not applicable.			
<ul style="list-style-type: none"> Excessive Nutrients and Organics 	Not Applicable	Not applicable.			
<ul style="list-style-type: none"> Excessive Suspended Sediment and Turbidity 	Slight to Moderate Improvement	Controlling erosion and runoff will reduce off-site sediment.			
<ul style="list-style-type: none"> Excessive Salinity 	Neutral	There could be some water contaminants on site, but overall impact of practice will be small. The action tends to increase on site infiltration/reduce runoff to off site.			
<ul style="list-style-type: none"> Harmful Levels of Heavy Metals 	Not Applicable	Not applicable.			
<ul style="list-style-type: none"> Harmful Temperatures 	Neutral	Controlled runoff could increase temperature on site, but will be little impact off site			
<ul style="list-style-type: none"> Harmful Levels of Pathogens 	Neutral	There could be some water contaminants on site, but overall impact of practice will be small/			
<ul style="list-style-type: none"> Harmful Levels of Petroleum 	Slight Worsening	Construction activities are conducive to fuel spills			
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	Not Applicable	Not applicable.			
Excessive Greenhouse Gas:					
<ul style="list-style-type: none"> CO₂ (Carbon Dioxide) 	Not Applicable	Not applicable.			
<ul style="list-style-type: none"> N₂O (Nitrous Oxide) 	Not Applicable	Not applicable.			
<ul style="list-style-type: none"> CH₄ (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	Not Applicable	Not applicable.			
PLANTS – SUITABILITY					
Plants not Adapted or Suited	Not Applicable	Not applicable.			
PLANTS - CONDITION					
Productivity, Health, and Vigor	Not Applicable	Not applicable.			

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Runoff Management System 570		Baseline Setting:			
		Appropriate Land Use(s): All Land Uses			
RESOURCES, CONSIDERATIONS AND CONCERNS	PHYSICAL EFFECTS	RATIONALE			
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	Not Applicable	Not applicable.			
Forage Quality and Palatability	Not Applicable	Not applicable.			
Wildfire Hazard	Not Applicable	Not applicable.			
ANIMALS - FISH AND WILDLIFE					
Inadequate Food	Not Applicable	Not applicable.			
Inadequate Cover/Shelter	Not Applicable	Not applicable.			
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	Not Applicable	Not applicable.			
• Declining Species, Species of Concern	Not Applicable	Not applicable.			
ANIMALS – DOMESTIC					
Inadequate Quantities and Quality of Feed and Forage	Not Applicable	Not applicable.			
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	Not applicable.	Slight Increase.			
Capital – Change in Equipment	0	Not applicable.			
Capital - Total Investment Cost	Not applicable.	Negligible			
Capital – Annual Cost	0	Situational.			
Capital – Credit and Farm Program Eligibility	0	Slight to moderate increase			
Labor - Labor	Slight to moderate increase to move livestock between pastures.	Slight increase			
Labor – Change in Management Level	Slight increase to determine when to move livestock and manage forage.	Slight to Moderate Decrease			

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Runoff Management System 570		Baseline Setting:			
		Appropriate Land Use(s): All Land Uses			
RESOURCES, CONSIDERATIONS AND CONCERNS	PHYSICAL EFFECTS		RATIONALE		
Risk - Yield	Slight to moderate decrease from improved health, extended grazing period, improved forage.		Slight to Moderate Increase		
Risk - Flexibility	Slight to moderate increase because of increased management.		Substantial Increase		
Risk - Timing	Substantial increase - practice must be applied according to forage needs.		Slight to Moderate Decrease		
Risk – Cash Flow	Slight to moderate decrease due to higher yields and reduced costs.		Slight to moderate increase.		
Profitability – Change in Profitability	0		0		
HUMAN - CULTURAL					
Cultural Resources and/or Historic Properties Present or Suspected to be PRESENT	Not applicable.		No		
HUMAN – ENERGY					
Depletion of Fossil Fuel Resources	Not Applicable		No		
Underutilization of Non-Fossil Energy Resources	Not Applicable		No		

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.

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Spoil Spreading 572		Baseline Setting:			
		Appropriate Land Use(s): All Land Uses			
RESOURCES, CONSIDERATIONS AND CONCERNS	PHYSICAL EFFECTS	RATIONALE			
SOIL - EROSION					
Sheet and Rill	Neutral	Erosion and sediment control features are a part of the practice			
Wind	Neutral	Erosion and sediment control features are a part of the practice			
Ephemeral Gully	Neutral	Erosion and sediment control features are a part of the practice			
Classic Gully	Slight to Moderate Improvement	Spoils are used for grading and stabilizing gullies.			
Streambank	Not Applicable	Not applicable.			
Shoreline	Not Applicable	Not applicable.			
Irrigation Induced	Not Applicable	Not applicable.			
Mass Movement	Neutral	Careful placement of spoil adds to soil mass stability.			
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	Slight Worsening	If practice is used to create roadways, trails, or other traffic areas, heavy machinery and traffic will increase compaction.			
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	Not Applicable	Not applicable.			
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.			

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Spoil Spreading 572		Baseline Setting:			
		Appropriate Land Use(s): All Land Uses			
RESOURCES, CONSIDERATIONS AND CONCERNS	PHYSICAL EFFECTS	RATIONALE			
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	Not Applicable	Not applicable.			
Reduced Storage of Water Bodies by Sediment Accumulation	Not Applicable	Not applicable.			
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	Not Applicable	Not applicable.			
• Excessive Suspended Sediment and Turbidity	Slight to Moderate Improvement	Sediment originating from spoil no longer reaches water bodies.			
• 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)	Not Applicable	Not applicable.			
Particulate Matter less than 2.5 Micrometers in Diameter (PM 2.5)	Neutral	Not applicable.			
Excessive Ozone	Not Applicable	Not applicable.			
Excessive Greenhouse Gas:					
• CO ₂ (Carbon Dioxide)	Neutral	Some carbon may be lost due to soil disturbance.			
• N ₂ O (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.			

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Spoil Spreading 572		Baseline Setting:			
		Appropriate Land Use(s): All Land Uses			
RESOURCES, CONSIDERATIONS AND CONCERNS	PHYSICAL EFFECTS	RATIONALE			
Adverse Air Temperature	Not Applicable	Not applicable.			
PLANTS – SUITABILITY					
Plants not Adapted or Suited	Moderate to Substantial Improvement	Plants selected are adapted and suited.			
PLANTS - CONDITION					
Productivity, Health, and Vigor	Slight to Moderate Improvement	Proper plant selection, nutrient modification, and management improves plant growth and vigor.			
Threatened or Endangered Plant Species:					
<ul style="list-style-type: none"> Plant Species Listed or Proposed for Listing Under the Endangered Species Act 	Not Applicable	Not applicable.			
<ul style="list-style-type: none"> Declining Species, Species of Concern 	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.			
ANIMALS - FISH AND WILDLIFE					
Inadequate Food	Slight Worsening	Any food species are covered by spoil.			
Inadequate Cover/Shelter	Slight Worsening	Any cover is covered by spoil.			
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:					
<ul style="list-style-type: none"> 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.			
<ul style="list-style-type: none"> 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	Established vegetation on spoils 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					

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Spoil Spreading 572		Baseline Setting:			
		Appropriate Land Use(s): All Land Uses			
RESOURCES, CONSIDERATIONS AND CONCERNS	PHYSICAL EFFECTS	RATIONALE			
Land - Change in Land Use	Not applicable.	Not applicable.			
Land – Land in Production	Not applicable.	Slight Increase.			
Capital – Change in Equipment	0	Not applicable.			
Capital - Total Investment Cost	Not applicable.	Negligible			
Capital – Annual Cost	0	Situational.			
Capital – Credit and Farm Program Eligibility	0	Slight to moderate increase			
Labor - Labor	Slight to moderate increase to move livestock between pastures.	Slight increase			
Labor – Change in Management Level	Slight increase to determine when to move livestock and manage forage.	Slight to Moderate Decrease			
Risk - Yield	Slight to moderate decrease from improved health, extended grazing period, improved forage.	Slight to Moderate Increase			
Risk - Flexibility	Slight to moderate increase because of increased management.	Substantial Increase			
Risk - Timing	Substantial increase - practice must be applied according to forage needs.	Slight to Moderate Decrease			
Risk – Cash Flow	Slight to moderate decrease due to higher yields and reduced costs.	Slight to moderate increase.			
Profitability – Change in Profitability	0	0			
HUMAN - CULTURAL					
Cultural Resources and/or Historic Properties Present or Suspected to be PRESENT	Not applicable.	No			
HUMAN – ENERGY					
Depletion of Fossil Fuel Resources	Not Applicable	No			
Underutilization of Non-Fossil Energy Resources	Not Applicable	No			

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.

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Spring Development 574		Baseline Setting: Appropriate Land Use(s): Forest, Grazed Forest, Grazed Range, Hay, Headquarters, Mined, Native or Naturalized Pasture, Natural Area, Pasture, Recreation, Urban, Water, Watershed Protection, Wildlife			
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		Slight Improvement		Collection of water reduces runoff.	
Streambank		Slight Improvement		Spring development removes seeps and flows that keep stream banks saturated and easily erodible.	
Shoreline		Not Applicable		Not applicable.	
Irrigation Induced		Not Applicable		Not applicable.	
Mass Movement		Slight Improvement		Spring development removes seeps and flows that keep slopes saturated and available for mass wasting.	
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		Slight Worsening		Increased animal traffic around developed water source will increase compaction potential especially if the soil is moist.	
Subsidence		Not Applicable		Not applicable.	
Contaminants:					
• Salts and other Chemicals		Not Applicable		Not applicable.	
• Animal Waste and other Organics - N		Slight to Moderate Improvement		Better water distribution allows less animal concentration.	
• Animal Waste and other Organics - P		Slight to Moderate Improvement		Better water distribution allows less animal concentration.	
• Animal Waste and other Organics - K		Slight to Moderate Improvement		Better water distribution allows less animal concentration.	
• Commercial Fertilizer - N		Slight to Moderate Improvement		Better water distribution allows less animal concentration.	
• Commercial Fertilizer – P		Slight to Moderate Improvement		Better water distribution allows less animal concentration.	
• Commercial Fertilizer – K		Slight to Moderate Improvement		Better water distribution allows less animal concentration.	
• Residual Pesticides		Not Applicable		Not applicable.	
Damage from Sediment Deposition		Not Applicable		Not applicable.	

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Spring Development 574		Baseline Setting: Appropriate Land Use(s): Forest, Grazed Forest, Grazed Range, Hay, Headquarters, Mined, Native or Naturalized Pasture, Natural Area, Pasture, Recreation, Urban, Water, Watershed Protection, Wildlife			
RESOURCES, CONSIDERATIONS AND CONCERNS		PHYSICAL EFFECTS	RATIONALE		
WATER – QUANTITY					
Rangeland Hydrologic Cycle		Not Applicable	Not applicable.		
Excessive Seepage		Slight to Moderate Improvement	Water collected and removed from site.		
Excessive Runoff, Flooding, or Ponding		Slight Improvement	Water collected and removed from site.		
Excessive Subsurface Water		Slight to Moderate Improvement	Subsurface water collected and removed from the site.		
Drifted Snow		Not Applicable	Not applicable.		
Inadequate Outlets		Not Applicable	Not applicable.		
Inefficient Water use on Irrigated Land		Slight to Moderate Improvement	Provides a dependable supply of water allowing improved management.		
Inefficient Water use on Non-Irrigated Land		Slight to Moderate Improvement	Provides a dependable supply of water allowing improved management.		
Reduced Capacity of Conveyances by Sediment Deposition		Not Applicable	Not applicable.		
Reduced Storage of Water Bodies by Sediment Accumulation		Not Applicable	Not applicable.		
Aquifer Overdraft		Neutral	By definition springs are at the land surface, not in aquifer.		
Insufficient Flows in Water Courses		Slight Worsening	Spring flows diverted from water courses.		
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		Not Applicable	Not applicable.		
• Excessive Suspended Sediment and Turbidity		Slight Improvement	Water development will decrease livestock trampling in wet areas and nearby streams.		
• Excessive Salinity		Slight Improvement	Spring flows provide some dilution effect.		

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Spring Development 574		Baseline Setting: Appropriate Land Use(s): Forest, Grazed Forest, Grazed Range, Hay, Headquarters, Mined, Native or Naturalized Pasture, Natural Area, Pasture, Recreation, Urban, Water, Watershed Protection, Wildlife			
RESOURCES, CONSIDERATIONS AND CONCERNS		PHYSICAL EFFECTS	RATIONALE		
• Harmful Levels of Heavy Metals		Slight to Moderate Improvement	Spring flows are typically better quality than surface flows allowing opportunity for dilution. Effect depends on the proportion of one flow to the other.		
• Harmful Temperatures		Neutral	Springs are cooler than surface water and their proximity to streams moderates stream temperatures, via hyporheic exchange. Development of springs may decrease amount of hyporheic water in channel. .		
• Harmful Levels of Pathogens		Slight Improvement	Spring flows are typically better quality than surface flows allowing opportunity for dilution. Effect depends on the proportion of one flow to the other.		
• Harmful Levels of Petroleum		Slight Improvement	Spring flows are typically better quality than surface flows allowing opportunity for dilution. Effect depends on the proportion of one flow to the other.		
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		Not Applicable	Not applicable.		
Excessive Greenhouse Gas:					
• CO ₂ (Carbon Dioxide)		Not Applicable	Not applicable.		
• N ₂ O (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		Not Applicable	Not applicable.		
PLANTS – SUITABILITY					
Plants not Adapted or Suited		Not Applicable	Not applicable.		
PLANTS - CONDITION					

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Spring Development 574		Baseline Setting: Appropriate Land Use(s): Forest, Grazed Forest, Grazed Range, Hay, Headquarters, Mined, Native or Naturalized Pasture, Natural Area, Pasture, Recreation, Urban, Water, Watershed Protection, Wildlife			
RESOURCES, CONSIDERATIONS AND CONCERNS		PHYSICAL EFFECTS	RATIONALE		
Productivity, Health, and Vigor		Slight to Moderate Improvement	Available water to facilitate irrigation or grazing management improves growth and vigor of plants.		
Threatened or Endangered Plant Species:					
<ul style="list-style-type: none"> 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.		
<ul style="list-style-type: none"> 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		Not Applicable	Not applicable.		
Forage Quality and Palatability		Not Applicable	Not applicable.		
Wildfire Hazard		Not Applicable	Not applicable.		
ANIMALS - FISH AND WILDLIFE					
Inadequate Food		Not Applicable	Not applicable.		
Inadequate Cover/Shelter		Not Applicable	Not applicable.		
Inadequate Water		Moderate to Substantial Improvement	Provides water for terrestrial species.		
Inadequate Space		Slight to Moderate Improvement	Additional habitat/space is available once spring water is available.		
Habitat Fragmentation		Slight to Moderate Improvement	Multiple spring developments can reconnect habitats.		
Imbalance Among and Within Populations		Slight Improvement	Management is designed to minimize limiting factors.		
Threatened and Endangered Fish and Wildlife Species:					
<ul style="list-style-type: none"> 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.		
<ul style="list-style-type: none"> 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 to Substantial Improvement	Improved distribution of animals makes forage more readily available to livestock.		
Inadequate Shelter		Not Applicable	Not applicable.		

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Spring Development 574	Baseline Setting:				
	Appropriate Land Use(s): Forest, Grazed Forest, Grazed Range, Hay, Headquarters, Mined, Native or Naturalized Pasture, Natural Area, Pasture, Recreation, Urban, Water, Watershed Protection, Wildlife				
RESOURCES, CONSIDERATIONS AND CONCERNS	PHYSICAL EFFECTS		RATIONALE		
Inadequate Stock Water	Substantial Improvement		The spring increases the quality and quantity of water for livestock.		
Stress and Mortality	Moderate to Substantial Improvement		Available water reduces stress and mortality.		
HUMAN – ECONOMICS					
Land - Change in Land Use	Not applicable.		Not applicable.		
Land – Land in Production	Not applicable.		Slight Increase.		
Capital – Change in Equipment	0		Not applicable.		
Capital - Total Investment Cost	Not applicable.		Negligible		
Capital – Annual Cost	0		Situational.		
Capital – Credit and Farm Program Eligibility	0		Slight to moderate increase		
Labor - Labor	Slight to moderate increase to move livestock between pastures.		Slight increase		
Labor – Change in Management Level	Slight increase to determine when to move livestock and manage forage.		Slight to Moderate Decrease		
Risk - Yield	Slight to moderate decrease from improved health, extended grazing period, improved forage.		Slight to Moderate Increase		
Risk - Flexibility	Slight to moderate increase because of increased management.		Substantial Increase		
Risk - Timing	Substantial increase - practice must be applied according to forage needs.		Slight to Moderate Decrease		
Risk – Cash Flow	Slight to moderate decrease due to higher yields and reduced costs.		Slight to moderate increase.		
Profitability – Change in Profitability	0		0		
HUMAN - CULTURAL					
Cultural Resources and/or Historic Properties Present or Suspected to be PRESENT	Not applicable.		No		
HUMAN – ENERGY					
Depletion of Fossil Fuel Resources	Not Applicable		No		
Underutilization of Non-Fossil Energy Resources	Not Applicable		No		

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.

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Animal Trails and Walkways 575		Baseline Setting: Animal trail or walkway does not exist.			
		Appropriate Land Use(s): Crop, Forest, Grazed Forest, Grazed Range, Hay, Headquarters, Native or Naturalized Pasture, Natural Area, Pasture, Recreation, Water, Watershed Protection, Wildlife			
RESOURCES, CONSIDERATIONS AND CONCERNS		PHYSICAL EFFECTS		RATIONALE	
SOIL - EROSION					
Sheet and Rill		Neutral		Concentration of animal movement facilitates management and conservation of vegetation and soil resources in the entire management unit. Erosion may increase on the trail itself. Effect will vary depending on slope, soil texture, and amount of traffic.	
Wind		Neutral		Concentration of animal movement facilitates management and conservation of vegetation and soil resources in the entire management unit. Erosion may increase on the trail itself. Effect will vary depending on slope, soil texture, and amount of traffic.	
Ephemeral Gully		Neutral		Concentration of animal movement facilitates management and conservation of vegetation and soil resources in the entire management unit. Erosion may increase on the trail itself. Effect will vary depending on slope, soil texture, and amount of traffic.	
Classic Gully		Neutral		Animal traffic is diverted away from problem area and can facilitate healing of gully.	
Streambank		Neutral		Animal traffic is diverted away from problem area and can facilitate healing.	
Shoreline		Neutral		Animal traffic is diverted away from problem area and can facilitate healing.	
Irrigation Induced		Not Applicable		Not applicable.	
Mass Movement		Neutral		Directing animals away from sensitive area will promote vegetative cover. Effect will vary depending on slope, soil texture, and amount of traffic.	

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Animal Trails and Walkways 575		Baseline Setting: Animal trail or walkway does not exist.			
		Appropriate Land Use(s): Crop, Forest, Grazed Forest, Grazed Range, Hay, Headquarters, Native or Naturalized Pasture, Natural Area, Pasture, Recreation, Water, Watershed Protection, Wildlife			
RESOURCES, CONSIDERATIONS AND CONCERNS		PHYSICAL EFFECTS		RATIONALE	
Road, Roadsides, and Construction Sites		Neutral		Directing animals away from sensitive area will promote vegetative cover. Effect will vary depending on slope, soil texture, and amount of traffic.	
SOIL – CONDITION					
Organic Matter Depletion		Neutral		Improved animal distribution contributes to more even utilization of vegetation.	
Rangeland Site Stability		Neutral		Improved animal distribution contributes to more efficient and uniform utilization of vegetation.	
Compaction		Slight to Substantial Improvement		Concentration of animal traffic reduces potential for soil compaction to a more restricted area.	
Subsidence		Not Applicable		Not applicable.	
Contaminants:					
• Salts and other Chemicals		Not Applicable		Not applicable.	
• Animal Waste and other Organics - N		Neutral		Improved animal distribution contributes to more even manure distribution.	
• Animal Waste and other Organics - P		Neutral		Improved animal distribution contributes to more even manure distribution.	
• Animal Waste and other Organics - K		Neutral		Improved animal distribution contributes to more even manure distribution.	
• 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		Not Applicable		Not applicable.	
WATER – QUANTITY					
Rangeland Hydrologic Cycle		Neutral		Improved animal distribution contributes to more efficient and uniform utilization of vegetation.	
Excessive Seepage		Not Applicable		Not applicable.	
Excessive Runoff, Flooding, or Ponding		Neutral		Managed animal movement will increase vegetative cover by facilitating management of vegetation in the entire management unit.	

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Animal Trails and Walkways 575		Baseline Setting: Animal trail or walkway does not exist.			
		Appropriate Land Use(s): Crop, Forest, Grazed Forest, Grazed Range, Hay, Headquarters, Native or Naturalized Pasture, Natural Area, Pasture, Recreation, Water, Watershed Protection, Wildlife			
RESOURCES, CONSIDERATIONS AND CONCERNS		PHYSICAL EFFECTS		RATIONALE	
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		Neutral		Managed animal movement will increase vegetative cover by facilitating management of vegetation in the entire management unit.	
Reduced Capacity of Conveyances by Sediment Deposition		Neutral		Managed animal movement will increase vegetative cover and improve erosion control by facilitating management of vegetation and soil resources in the entire management unit.	
Reduced Storage of Water Bodies by Sediment Accumulation		Neutral		Managed animal movement will increase vegetative cover, improve erosion control, and reduce sedimentation by facilitating management of vegetation and soil resources in the entire management unit.	
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		Neutral		Potential for increased runoff exists if animal traffic is too intense, too frequent, or unmanaged. Effect will vary depending on proximity to water.	

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Animal Trails and Walkways 575		Baseline Setting: Animal trail or walkway does not exist.			
		Appropriate Land Use(s): Crop, Forest, Grazed Forest, Grazed Range, Hay, Headquarters, Native or Naturalized Pasture, Natural Area, Pasture, Recreation, Water, Watershed Protection, Wildlife			
RESOURCES, CONSIDERATIONS AND CONCERNS		PHYSICAL EFFECTS	RATIONALE		
<ul style="list-style-type: none"> Excessive Suspended Sediment and Turbidity 		Neutral	Traffic will be managed/controlled, contributing to increased vegetation over all and erosion control. Effect will vary depending on proximity to water.		
<ul style="list-style-type: none"> Excessive Salinity 		Not Applicable	Not applicable.		
<ul style="list-style-type: none"> Harmful Levels of Heavy Metals 		Not Applicable	Not applicable.		
<ul style="list-style-type: none"> Harmful Temperatures 		Not Applicable	Not applicable.		
<ul style="list-style-type: none"> Harmful Levels of Pathogens 		Neutral	An increase is possible if used for intense concentrated traffic. Effect will vary depending on proximity to water.		
<ul style="list-style-type: none"> 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		Not Applicable	Not applicable.		
Excessive Greenhouse Gas:					
<ul style="list-style-type: none"> CO₂ (Carbon Dioxide) 		Not Applicable	Not applicable.		
<ul style="list-style-type: none"> N₂O (Nitrous Oxide) 		Not Applicable	Not applicable.		
<ul style="list-style-type: none"> CH₄ (Methane) 		Not Applicable	Not applicable.		
Ammonia (NH ₃)		Not Applicable	Not applicable.		
Chemical Drift		Not Applicable	Not applicable.		
Objectionable Odors		Neutral	Proper management reduces particulate generation.		
Reduced Visibility		Neutral	Reduce fugitive dust emissions		
Undesirable Air Movement		Not Applicable	Not applicable.		
Adverse Air Temperature		Not Applicable	Not applicable.		
PLANTS – SUITABILITY					
Plants not Adapted or Suited		Neutral	Adapted and suited species are selected for this practice by reference to Critical Area Planting, 342.		
PLANTS - CONDITION					
Productivity, Health, and Vigor		Neutral	Managing/controlling traffic improves plant vigor, health, and productivity.		
Threatened or Endangered Plant Species:					

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Animal Trails and Walkways 575		Baseline Setting: Animal trail or walkway does not exist.			
		Appropriate Land Use(s): Crop, Forest, Grazed Forest, Grazed Range, Hay, Headquarters, Native or Naturalized Pasture, Natural Area, Pasture, Recreation, Water, Watershed Protection, Wildlife			
RESOURCES, CONSIDERATIONS AND CONCERNS		PHYSICAL EFFECTS	RATIONALE		
<ul style="list-style-type: none"> Plant Species Listed or Proposed for Listing Under the Endangered Species Act 		Neutral	Controlled access may reduce harmful impacts to threatened and endangered plants if present.		
<ul style="list-style-type: none"> Declining Species, Species of Concern 		Neutral	Controlled access may reduce harmful impacts to threatened and endangered plants if present.		
Noxious and Invasive Plants		Slight Worsening	Trails may provide an environment for weeds.		
Forage Quality and Palatability		Neutral	Managing/controlling traffic improves plant vigor, health, and productivity.		
Wildfire Hazard		Neutral	Trails provide firebreaks and access to sites for fuel reduction activities.		
ANIMALS - FISH AND WILDLIFE					
Inadequate Food		Not Applicable	Not applicable.		
Inadequate Cover/Shelter		Not Applicable	Not applicable.		
Inadequate Water		Not Applicable	Not applicable.		
Inadequate Space		Slight Worsening	Trails reduce and fragment space.		
Habitat Fragmentation		Slight Worsening	Trails fragment plant communities to some degree.		
Imbalance Among and Within Populations		Not Applicable	Not applicable.		
Threatened and Endangered Fish and Wildlife Species:					
<ul style="list-style-type: none"> 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.		
<ul style="list-style-type: none"> 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		Neutral	Improved distribution of animals makes forage more readily available to livestock.		
Inadequate Shelter		Not Applicable	Not applicable.		
Inadequate Stock Water		Neutral	Access to water is facilitated.		
Stress and Mortality		Slight Improvement	Ease of movement will reduce stress		
HUMAN – ECONOMICS					
Land - Change in Land Use		Not applicable.	Not applicable.		

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Animal Trails and Walkways 575		Baseline Setting: Animal trail or walkway does not exist.			
		Appropriate Land Use(s): Crop, Forest, Grazed Forest, Grazed Range, Hay, Headquarters, Native or Naturalized Pasture, Natural Area, Pasture, Recreation, Water, Watershed Protection, Wildlife			
RESOURCES, CONSIDERATIONS AND CONCERNS		PHYSICAL EFFECTS	RATIONALE		
Land – Land in Production		Not applicable.	Slight Increase.		
Capital – Change in Equipment		0	Not applicable.		
Capital - Total Investment Cost		Not applicable.	Negligible		
Capital – Annual Cost		0	Situational.		
Capital – Credit and Farm Program Eligibility		0	Slight to moderate increase		
Labor - Labor		Slight to moderate increase to move livestock between pastures.	Slight increase		
Labor – Change in Management Level		Slight increase to determine when to move livestock and manage forage.	Slight to Moderate Decrease		
Risk - Yield		Slight to moderate decrease from improved health, extended grazing period, improved forage.	Slight to Moderate Increase		
Risk - Flexibility		Slight to moderate increase because of increased management.	Substantial Increase		
Risk - Timing		Substantial increase - practice must be applied according to forage needs.	Slight to Moderate Decrease		
Risk – Cash Flow		Slight to moderate decrease due to higher yields and reduced costs.	Slight to moderate increase.		
Profitability – Change in Profitability		0	0		
HUMAN - CULTURAL					
Cultural Resources and/or Historic Properties Present or Suspected to be PRESENT		Not applicable.	No		
HUMAN – ENERGY					
Depletion of Fossil Fuel Resources		Not Applicable	No		
Underutilization of Non-Fossil Energy Resources		Not Applicable	No		

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.

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Stream Crossing 578		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	Slight to Substantial Improvement		Crossing will prevent sloughing and erosion due to traffic on streambanks.		
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.		
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 Improvement		The action is intended to reduce streambank traffic and resulting erosion.		
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.		

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Stream Crossing 578		Baseline Setting:			
		Appropriate Land Use(s): All Land Uses			
RESOURCES, CONSIDERATIONS AND CONCERNS	PHYSICAL EFFECTS	RATIONALE			
Reduced Capacity of Conveyances by Sediment Deposition	Not Applicable	Not applicable.			
Reduced Storage of Water Bodies by Sediment Accumulation	Slight Improvement	Crossing will prevent stream bottom sediment from displacement.			
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 Worsening	The crossing allows animals easier access to stream, which may result in the deposit of animal waste in the stream.			
• Excessive Suspended Sediment and Turbidity	Slight to Moderate Improvement	Crossing will prevent stream bank erosion and stream bottom sediment displacement.			
• 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	Moderate Worsening	Animals have access to stream			
• 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	Not Applicable	Not applicable.			
Excessive Greenhouse Gas:					
• CO ₂ (Carbon Dioxide)	Not Applicable	Not applicable.			
• N ₂ O (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.			

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Stream Crossing 578		Baseline Setting:			
		Appropriate Land Use(s): All Land Uses			
RESOURCES, CONSIDERATIONS AND CONCERNS	PHYSICAL EFFECTS	RATIONALE			
Undesirable Air Movement	Not Applicable	Not applicable.			
Adverse Air Temperature	Not Applicable	Not applicable.			
PLANTS – SUITABILITY					
Plants not Adapted or Suited	Not Applicable	Not applicable.			
PLANTS - CONDITION					
Productivity, Health, and Vigor	Not Applicable	Not applicable.			
Threatened or Endangered Plant Species:					
<ul style="list-style-type: none"> Plant Species Listed or Proposed for Listing Under the Endangered Species Act 	Not Applicable	Not applicable.			
<ul style="list-style-type: none"> Declining Species, Species of Concern 	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.			
ANIMALS - FISH AND WILDLIFE					
Inadequate Food	Not Applicable	Not applicable.			
Inadequate Cover/Shelter	Not Applicable	Not applicable.			
Inadequate Water	Not Applicable	Not applicable.			
Inadequate Space	Not Applicable	Not applicable.			
Habitat Fragmentation	Neutral	Effect is negligible.			
Imbalance Among and Within Populations	Not Applicable	Not applicable.			
Threatened and Endangered Fish and Wildlife Species:					
<ul style="list-style-type: none"> 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.			
<ul style="list-style-type: none"> 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 to Substantial Improvement	Improved distribution of animals makes forage more readily available to livestock.			
Inadequate Shelter	Not Applicable	Not applicable.			
Inadequate Stock Water	Slight to Substantial Improvement	Crossings facilitate access to water.			
Stress and Mortality	Moderate to Substantial Improvement	Crossings provide easy use of available water and allow for safe crossing, reducing stress and harm to livestock.			

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Stream Crossing 578		Baseline Setting:			
		Appropriate Land Use(s): All Land Uses			
RESOURCES, CONSIDERATIONS AND CONCERNS	PHYSICAL EFFECTS		RATIONALE		
HUMAN – ECONOMICS					
Land - Change in Land Use	Not applicable.		Not applicable.		
Land – Land in Production	Not applicable.		Slight Increase.		
Capital – Change in Equipment	0		Not applicable.		
Capital - Total Investment Cost	Not applicable.		Negligible		
Capital – Annual Cost	0		Situational.		
Capital – Credit and Farm Program Eligibility	0		Slight to moderate increase		
Labor - Labor	Slight to moderate increase to move livestock between pastures.		Slight increase		
Labor – Change in Management Level	Slight increase to determine when to move livestock and manage forage.		Slight to Moderate Decrease		
Risk - Yield	Slight to moderate decrease from improved health, extended grazing period, improved forage.		Slight to Moderate Increase		
Risk - Flexibility	Slight to moderate increase because of increased management.		Substantial Increase		
Risk - Timing	Substantial increase - practice must be applied according to forage needs.		Slight to Moderate Decrease		
Risk – Cash Flow	Slight to moderate decrease due to higher yields and reduced costs.		Slight to moderate increase.		
Profitability – Change in Profitability	0		0		
HUMAN - CULTURAL					
Cultural Resources and/or Historic Properties Present or Suspected to be PRESENT	Not applicable.		No		
HUMAN – ENERGY					
Depletion of Fossil Fuel Resources	Not Applicable		No		
Underutilization of Non-Fossil Energy Resources	Not Applicable		No		

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.

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
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.	

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Streambank and Shoreline Protection 580		Baseline Setting:			
		Appropriate Land Use(s): All Land Uses			
RESOURCES, CONSIDERATIONS AND CONCERNS	PHYSICAL EFFECTS	RATIONALE			
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.			

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Streambank and Shoreline Protection 580		Baseline Setting:			
		Appropriate Land Use(s): All Land Uses			
RESOURCES, CONSIDERATIONS AND CONCERNS	PHYSICAL EFFECTS	RATIONALE			
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 ₂ O (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 – SUITABILITY					
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					

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Streambank and Shoreline Protection 580		Baseline Setting:			
		Appropriate Land Use(s): All Land Uses			
RESOURCES, CONSIDERATIONS AND CONCERNS	PHYSICAL EFFECTS		RATIONALE		
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:					
<ul style="list-style-type: none"> 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.		
<ul style="list-style-type: none"> 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	Not applicable.		Slight Increase.		
Capital – Change in Equipment	0		Not applicable.		
Capital - Total Investment Cost	Not applicable.		Negligible		
Capital – Annual Cost	0		Situational.		
Capital – Credit and Farm Program Eligibility	0		Slight to moderate increase		

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Streambank and Shoreline Protection 580		Baseline Setting:			
		Appropriate Land Use(s): All Land Uses			
RESOURCES, CONSIDERATIONS AND CONCERNS		PHYSICAL EFFECTS	RATIONALE		
Labor - Labor		Slight to moderate increase to move livestock between pastures.	Slight increase		
Labor – Change in Management Level		Slight increase to determine when to move livestock and manage forage.	Slight to Moderate Decrease		
Risk - Yield		Slight to moderate decrease from improved health, extended grazing period, improved forage.	Slight to Moderate Increase		
Risk - Flexibility		Slight to moderate increase because of increased management.	Substantial Increase		
Risk - Timing		Substantial increase - practice must be applied according to forage needs.	Slight to Moderate Decrease		
Risk – Cash Flow		Slight to moderate decrease due to higher yields and reduced costs.	Slight to moderate increase.		
Profitability – Change in Profitability		0	0		
HUMAN - CULTURAL					
Cultural Resources and/or Historic Properties Present or Suspected to be PRESENT		Not applicable.	No		
HUMAN – ENERGY					
Depletion of Fossil Fuel Resources		Not Applicable	No		
Underutilization of Non-Fossil Energy Resources		Not Applicable	No		

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.

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Open Channel 582		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	Slight to Substantial Improvement	Stabilized channel bottom and sides.			
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.			
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 Improvement	Channel intercepts runoff that might otherwise cause deposition			
WATER – QUANTITY					
Rangeland Hydrologic Cycle	Not Applicable	Not applicable.			
Excessive Seepage	Slight Improvement	Water conveyance reduces seepage.			
Excessive Runoff, Flooding, or Ponding	Substantial Improvement	Channel capacity accommodates runoff and reduces flooding and ponding.			
Excessive Subsurface Water	Slight to Substantial Improvement	Provides suitable outlets and facilitates drainage.			
Drifted Snow	Not Applicable	Not applicable.			
Inadequate Outlets	Substantial Improvement	Provides adequate outlet capacity.			

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Open Channel 582		Baseline Setting:			
		Appropriate Land Use(s): All Land Uses			
RESOURCES, CONSIDERATIONS AND CONCERNS	PHYSICAL EFFECTS	RATIONALE			
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 Moderate Improvement	Improved channel conveyance is more efficient mechanism for sediment transport.			
Reduced Storage of Water Bodies by Sediment Accumulation	Slight to Moderate Worsening	Improved channel conveyance is more efficient mechanism for carrying sediment to water bodies.			
Aquifer Overdraft	Not Applicable	Not applicable.			
Insufficient Flows in Water Courses	Slight to Substantial Improvement	Improved channels will increase flows to other water courses.			
WATER – QUALITY					
In Groundwater:					
• Harmful Levels of Pesticides	Not Applicable	Not applicable.			
• Excessive Nutrients and Organics	Neutral	Rapid removal of water off site has the potential to decrease infiltration, thus decreasing contamination of ground water.			
• Excessive Salinity	Neutral	Rapid removal of water off site has the potential to decrease infiltration, thus decreasing contamination of ground water.			
• 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 Worsening	Rapid removal of water off site has the potential to decrease infiltration, thus increasing contamination of surface water.			
• Excessive Suspended Sediment and Turbidity	Neutral	Change in alignment, capacity, and velocity will cause a temporary increase in sediments and turbidity.			
• Excessive Salinity	Not Applicable	Not applicable.			
• Harmful Levels of Heavy Metals	Slight Worsening	Rapid movement of water off site will tend to move contaminants in surface water.			

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Open Channel 582		Baseline Setting:			
		Appropriate Land Use(s): All Land Uses			
RESOURCES, CONSIDERATIONS AND CONCERNS	PHYSICAL EFFECTS	RATIONALE			
<ul style="list-style-type: none"> Harmful Temperatures 	Neutral	The action conveys water quickly and will not result in increased surface water temperatures.			
<ul style="list-style-type: none"> Harmful Levels of Pathogens 	Not Applicable	Not applicable.			
<ul style="list-style-type: none"> 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	Not Applicable	Not applicable.			
Excessive Greenhouse Gas:					
<ul style="list-style-type: none"> CO₂ (Carbon Dioxide) 	Not Applicable	Not applicable.			
<ul style="list-style-type: none"> N₂O (Nitrous Oxide) 	Not Applicable	Not applicable.			
<ul style="list-style-type: none"> CH₄ (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	Not Applicable	Not applicable.			
PLANTS – SUITABILITY					
Plants not Adapted or Suited	Not Applicable	Not applicable.			
PLANTS - CONDITION					
Productivity, Health, and Vigor	Not Applicable	Not applicable.			
Threatened or Endangered Plant Species:					
<ul style="list-style-type: none"> Plant Species Listed or Proposed for Listing Under the Endangered Species Act 	Not Applicable	Not applicable.			
<ul style="list-style-type: none"> Declining Species, Species of Concern 	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.			
ANIMALS - FISH AND WILDLIFE					
Inadequate Food	Neutral	Constructing or improving channels may increase or decrease food for fish and wildlife.			
Inadequate Cover/Shelter	Neutral	Constructing or improving channels may increase or decrease cover/shelter for fish and wildlife.			

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Open Channel 582		Baseline Setting:			
		Appropriate Land Use(s): All Land Uses			
RESOURCES, CONSIDERATIONS AND CONCERNS	PHYSICAL EFFECTS	RATIONALE			
Inadequate Water	Slight to Moderate Worsening	Flow through the channel is accelerated reducing slow-water habitat.			
Inadequate Space	Neutral	Constructing or improving channel may increase or decrease food and habitat for fish and wildlife depending on species and the vegetation of the stabilized channel..			
Habitat Fragmentation	Slight to Moderate Worsening	Constructing channels will fragment vegetation and habitats.			
Imbalance Among and Within Populations	Neutral	Constructing or improving channel may increase or decrease food and habitat for fish and wildlife depending on species and the vegetation of the stabilized channel..			
Threatened and Endangered Fish and Wildlife Species:					
<ul style="list-style-type: none"> 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.			
<ul style="list-style-type: none"> 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	Not Applicable	Not applicable.			
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	Not applicable.	Slight Increase.			
Capital – Change in Equipment	0	Not applicable.			
Capital - Total Investment Cost	Not applicable.	Negligible			
Capital – Annual Cost	0	Situational.			
Capital – Credit and Farm Program Eligibility	0	Slight to moderate increase			
Labor - Labor	Slight to moderate increase to move livestock between pastures.	Slight increase			
Labor – Change in Management Level	Slight increase to determine when to move livestock and manage forage.	Slight to Moderate Decrease			

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Open Channel 582		Baseline Setting:			
		Appropriate Land Use(s): All Land Uses			
RESOURCES, CONSIDERATIONS AND CONCERNS	PHYSICAL EFFECTS	RATIONALE			
Risk - Yield	Slight to moderate decrease from improved health, extended grazing period, improved forage.	Slight to Moderate Increase			
Risk - Flexibility	Slight to moderate increase because of increased management.	Substantial Increase			
Risk - Timing	Substantial increase - practice must be applied according to forage needs.	Slight to Moderate Decrease			
Risk – Cash Flow	Slight to moderate decrease due to higher yields and reduced costs.	Slight to moderate increase.			
Profitability – Change in Profitability	0	0			
HUMAN - CULTURAL					
Cultural Resources and/or Historic Properties Present or Suspected to be PRESENT	Not applicable.	No			
HUMAN – ENERGY					
Depletion of Fossil Fuel Resources	Not Applicable	No			
Underutilization of Non-Fossil Energy Resources	Not Applicable	No			

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.

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Channel Stabilization 584	Baseline Setting: Planning unit includes a channel that is not stable.				
	Appropriate Land Use(s): Crop, Forest, Grazed Forest, Grazed Range, Hay, Headquarters, Mined, Native or Naturalized Pasture, Natural Area, Pasture, Recreation, Urban, Watershed Protection, Wildlife				
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	Slight to Substantial Improvement		The action stabilizes channel to prevent further erosion.		
Streambank	Slight to Substantial Improvement		Stabilizes channel to prevent further degradation and improves bank stabilization.		
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.		
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		Stabilizing the channel may increase its transport capacity.		
WATER – QUANTITY					
Rangeland Hydrologic Cycle	Not Applicable		Not applicable.		
Excessive Seepage	Slight to Moderate Improvement		Reduced channel degradation improves ground water levels in floodplains, riparian areas, and wetlands.		
Excessive Runoff, Flooding, or Ponding	Not Applicable		Not applicable.		
Excessive Subsurface Water	Not Applicable		Not applicable.		

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Channel Stabilization 584		Baseline Setting: Planning unit includes a channel that is not stable.			
		Appropriate Land Use(s): Crop, Forest, Grazed Forest, Grazed Range, Hay, Headquarters, Mined, Native or Naturalized Pasture, Natural Area, Pasture, Recreation, Urban, Watershed Protection, Wildlife			
RESOURCES, CONSIDERATIONS AND CONCERNS		PHYSICAL EFFECTS	RATIONALE		
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 Improvement	Stabilizing the channel can help improve sediment transport and reduce deposition.		
Reduced Storage of Water Bodies by Sediment Accumulation		Slight Improvement	Stabilizing the channel reduces channel erosion.		
Aquifer Overdraft		Not Applicable	Not applicable.		
Insufficient Flows in Water Courses		Slight to Moderate Improvement	The action can be used to manage surface water levels in floodplains, riparian areas, and wetlands		
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		Not Applicable	Not applicable.		
• Excessive Suspended Sediment and Turbidity		Slight Improvement	Maintaining stable channels usually results in decreased suspended sediment.		
• Excessive Salinity		Not Applicable	Not applicable.		
• Harmful Levels of Heavy Metals		Not Applicable	Not applicable.		
• Harmful Temperatures		Slight Improvement	The action design addresses stream water quality and fish habitat, which includes stream temperature.		
• 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)		Not Applicable	Not applicable.		

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Channel Stabilization 584		Baseline Setting: Planning unit includes a channel that is not stable.			
		Appropriate Land Use(s): Crop, Forest, Grazed Forest, Grazed Range, Hay, Headquarters, Mined, Native or Naturalized Pasture, Natural Area, Pasture, Recreation, Urban, Watershed Protection, Wildlife			
RESOURCES, CONSIDERATIONS AND CONCERNS		PHYSICAL EFFECTS	RATIONALE		
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 ₂ (Carbon Dioxide)		Not Applicable	Not applicable.		
• N ₂ O (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		Not Applicable	Not applicable.		
PLANTS – SUITABILITY					
Plants not Adapted or Suited		Moderate to Substantial Improvement	When species are selected, they are adapted and suited.		
PLANTS - CONDITION					
Productivity, Health, and Vigor		Slight to Substantial Improvement	Plants are selected and managed to maintain optimal productivity and health.		
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	Noxious and invasive plants are removed from streambank and replaced with stabilization species.		
Forage Quality and Palatability		Not Applicable	Not applicable.		
Wildfire Hazard		Not Applicable	Not applicable.		
ANIMALS - FISH AND WILDLIFE					
Inadequate Food		Slight Improvement	The stabilized channel traps and provides more food for fish.		
Inadequate Cover/Shelter		Slight Improvement	The stabilized channel provides more cover/shelter for fish.		
Inadequate Water		Slight Improvement	The stabilized channel provides more and deeper pools.		

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Channel Stabilization 584	Baseline Setting: Planning unit includes a channel that is not stable.				
	Appropriate Land Use(s): Crop, Forest, Grazed Forest, Grazed Range, Hay, Headquarters, Mined, Native or Naturalized Pasture, Natural Area, Pasture, Recreation, Urban, Watershed Protection, Wildlife				
RESOURCES, CONSIDERATIONS AND CONCERNS	PHYSICAL EFFECTS	RATIONALE			
Inadequate Space	Slight to Moderate Improvement	Stabilized channels increase suitable space for fish.			
Habitat Fragmentation	Slight to Moderate Improvement	Stabilized channels that previously fragmented the stream system increase connectivity.			
Imbalance Among and Within Populations	Not Applicable	Not applicable.			
Threatened and Endangered Fish and Wildlife Species:					
<ul style="list-style-type: none"> 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.			
<ul style="list-style-type: none"> 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	Not Applicable	Not applicable.			
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	Not applicable.	Slight Increase.			
Capital – Change in Equipment	0	Not applicable.			
Capital - Total Investment Cost	Not applicable.	Negligible			
Capital – Annual Cost	0	Situational.			
Capital – Credit and Farm Program Eligibility	0	Slight to moderate increase			
Labor - Labor	Slight to moderate increase to move livestock between pastures.	Slight increase			
Labor – Change in Management Level	Slight increase to determine when to move livestock and manage forage.	Slight to Moderate Decrease			
Risk - Yield	Slight to moderate decrease from improved health, extended grazing period, improved forage.	Slight to Moderate Increase			
Risk - Flexibility	Slight to moderate increase because of increased management.	Substantial Increase			
Risk - Timing	Substantial increase - practice must be applied according to forage needs.	Slight to Moderate Decrease			

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Channel Stabilization 584		Baseline Setting: Planning unit includes a channel that is not stable.			
		Appropriate Land Use(s): Crop, Forest, Grazed Forest, Grazed Range, Hay, Headquarters, Mined, Native or Naturalized Pasture, Natural Area, Pasture, Recreation, Urban, Watershed Protection, Wildlife			
RESOURCES, CONSIDERATIONS AND CONCERNS		PHYSICAL EFFECTS		RATIONALE	
Risk – Cash Flow		Slight to moderate decrease due to higher yields and reduced costs.		Slight to moderate increase.	
Profitability – Change in Profitability		0		0	
HUMAN - CULTURAL					
Cultural Resources and/or Historic Properties Present or Suspected to be PRESENT		Not applicable.		No	
HUMAN – ENERGY					
Depletion of Fossil Fuel Resources		Not Applicable		No	
Underutilization of Non-Fossil Energy Resources		Not Applicable		No	

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.

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Stripcropping 585		Baseline Setting:			
		Appropriate Land Use(s): Crop			
RESOURCES, CONSIDERATIONS AND CONCERNS	PHYSICAL EFFECTS	RATIONALE			
SOIL - EROSION					
Sheet and Rill	Moderate to Substantial Improvement	When applied on or near the contour, this practice reduces runoff velocities, thus reducing the detachment and transport capacity of overland flow. Additional credit is given for the sediment trapped and retained on the slope by the non-erosive strips.			
Wind	Moderate to Substantial Improvement	Stripcropping reduces the "L" factor value of WEQ. The amount of erosion reduction depends on strip width, vegetative cover and strip orientation in relation to the direction of erosive winds.			
Ephemeral Gully	Moderate to Substantial Improvement	Stripcropping can reduce ephemeral gully erosion by decreasing runoff velocity and volume			
Classic Gully	Slight Improvement	Reduces runoff causing erosion in the gully.			
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.			
SOIL - CONDITION					
Organic Matter Depletion	Slight to Moderate Improvement	Perennial crops in the alternating strips can add organic matter to the soil. Reduced erosion reduces organic matter loss.			
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.			

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Stripcropping 585		Baseline Setting:			
		Appropriate Land Use(s): Crop			
RESOURCES, CONSIDERATIONS AND CONCERNS	PHYSICAL EFFECTS	RATIONALE			
• 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	Moderate to Substantial Improvement	Alternating strips of erosion-resistant vegetation reduce soil erosion and the resulting soil deposition.			
WATER – QUANTITY					
Rangeland Hydrologic Cycle	Not Applicable	Not applicable.			
Excessive Seepage	Slight to Moderate Worsening	Increased water infiltration that may move laterally to a seep area, particularly during fallow periods.			
Excessive Runoff, Flooding, or Ponding	Slight Improvement	Drifting snow traps results in increased water infiltration which will slightly reduce the potential for flooding or ponding.			
Excessive Subsurface Water	Slight Worsening	Drifting snow trapped results in increased infiltration which could contribute to excess subsurface water.			
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	Slight Improvement	Drifting snow trapped results in increased water infiltration and greater water storage in the profile.			
Reduced Capacity of Conveyances by Sediment Deposition	Moderate to Substantial Improvement	Reduces soil erosion and resulting off-site sediment deposition.			
Reduced Storage of Water Bodies by Sediment Accumulation	Slight to Moderate Improvement	Reduces soil erosion and resulting off-site sediment deposition.			
Aquifer Overdraft	Not Applicable	Not applicable.			
Insufficient Flows in Water Courses	Not Applicable	Not applicable.			
WATER – QUALITY					
In Groundwater:					
• Harmful Levels of Pesticides	Neutral	The action increases infiltration which may be offset by increased soil organic matter and biological activity .			

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Stripcropping 585		Baseline Setting:			
		Appropriate Land Use(s): Crop			
RESOURCES, CONSIDERATIONS AND CONCERNS	PHYSICAL EFFECTS	RATIONALE			
• Excessive Nutrients and Organics	Slight Worsening	The action reduces the velocity of runoff and traps drifting snow resulting in increased water infiltration which could move nutrients and organics to groundwater.			
• Excessive Salinity	Slight Worsening	Stripcropping may reduce the velocity of runoff and trap drifting snow resulting in increased water infiltration which could move salts to groundwater.			
• Harmful Levels of Heavy Metals	Slight Worsening	The action reduces the velocity of runoff and traps drifting snow, increasing water infiltration and potentially moving soluble metals to groundwater.			
• Harmful Levels of Pathogens	Slight Worsening	The action reduces the velocity of runoff and traps drifting snow, increasing water infiltration and potentially moving pathogens to groundwater.			
• Harmful Levels of Petroleum	Neutral	Stripcropping reduces the velocity of runoff and traps drifting snow increasing water infiltration, and potentially moving available petroleum residues to groundwater.			
In Surface Water:					
• Harmful Levels of Pesticides	Slight to Moderate Improvement	The action reduces runoff and erosion and traps adsorbed pesticides.			
• Excessive Nutrients and Organics	Slight to Substantial Improvement	Stripcropping decreases soil erosion by wind and water and may increase water infiltration, thereby reducing the transport of nutrients and organics to surface water.			
• Excessive Suspended Sediment and Turbidity	Slight to Substantial Improvement	Reduces erosion, slows water and wind velocities, increases infiltration.			

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Stripcropping 585		Baseline Setting:			
		Appropriate Land Use(s): Crop			
RESOURCES, CONSIDERATIONS AND CONCERNS	PHYSICAL EFFECTS	RATIONALE			
<ul style="list-style-type: none"> Excessive Salinity 	Slight Improvement	Stripcropping slows runoff and can increase water, thereby reducing the potential for transport of salts to surface water.			
<ul style="list-style-type: none"> Harmful Levels of Heavy Metals 	Slight to Substantial Improvement	The action decreases soil erosion by wind and water and may increase water infiltration, thereby reducing the potential for transport of heavy metals to surface water.			
<ul style="list-style-type: none"> Harmful Temperatures 	Not Applicable	Not applicable.			
<ul style="list-style-type: none"> Harmful Levels of Pathogens 	Slight Improvement	Stripcropping decreases soil erosion by wind and water and may increase water infiltration, thereby reducing the potential for transport of pathogens to surface water			
<ul style="list-style-type: none"> Harmful Levels of Petroleum 	Not Applicable	Not applicable.			
AIR – QUALITY					
Particulate Matter less than 10 Micrometers in Diameter (PM 10)	Slight to Substantial Improvement	Vegetated strips provide ground cover and reduces wind erosion.			
Particulate Matter less than 2.5 Micrometers in Diameter (PM 2.5)	Slight to Substantial Improvement	Vegetated strips provide ground cover and reduces wind erosion.			
Excessive Ozone	Not Applicable	Not applicable.			
Excessive Greenhouse Gas:					
<ul style="list-style-type: none"> CO₂ (Carbon Dioxide) 	Neutral	CO ₂ emissions are decreased if equipment travel is reduced.			
<ul style="list-style-type: none"> N₂O (Nitrous Oxide) 	Not Applicable	Not applicable.			
<ul style="list-style-type: none"> CH₄ (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	Slight Improvement	Reduction in wind erosion potential and fugitive dust			
Undesirable Air Movement	Not Applicable	Not applicable.			
Adverse Air Temperature	Not Applicable	Not applicable.			
PLANTS – SUITABILITY					
Plants not Adapted or Suited	Not Applicable	Not applicable.			
PLANTS - CONDITION					
Productivity, Health, and Vigor	Slight to Substantial Improvement	Reduced erosion will improve site potential to enhance plant productivity and health.			
Threatened or Endangered Plant Species:					

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Stripcropping 585		Baseline Setting:			
		Appropriate Land Use(s): Crop			
RESOURCES, CONSIDERATIONS AND CONCERNS	PHYSICAL EFFECTS	RATIONALE			
<ul style="list-style-type: none"> Plant Species Listed or Proposed for Listing Under the Endangered Species Act 	Not Applicable	Not applicable.			
<ul style="list-style-type: none"> Declining Species, Species of Concern 	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.			
ANIMALS - FISH AND WILDLIFE					
Inadequate Food	Slight to Moderate Improvement	Food for wildlife is improved because of proximity of strips to one another.			
Inadequate Cover/Shelter	Slight to Moderate Improvement	Cover for wildlife is improved because of proximity of strips to one another.			
Inadequate Water	Not Applicable	Not applicable.			
Inadequate Space	Slight Improvement	Strip provides only limited additional space for most species.			
Habitat Fragmentation	Slight Improvement	Strips can connect adjacent habitats to a limited degree.			
Imbalance Among and Within Populations	Not Applicable	Not applicable.			
Threatened and Endangered Fish and Wildlife Species:					
<ul style="list-style-type: none"> 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.			
<ul style="list-style-type: none"> 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	Not Applicable	Not applicable.			
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	Not applicable.	Slight Increase.			
Capital - Change in Equipment	0	Not applicable.			
Capital - Total Investment Cost	Not applicable.	Negligible			
Capital - Annual Cost	0	Situational.			

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Stripcropping 585		Baseline Setting:			
		Appropriate Land Use(s): Crop			
RESOURCES, CONSIDERATIONS AND CONCERNS	PHYSICAL EFFECTS	RATIONALE			
Capital – Credit and Farm Program Eligibility	0	Slight to moderate increase			
Labor - Labor	Slight to moderate increase to move livestock between pastures.	Slight increase			
Labor – Change in Management Level	Slight increase to determine when to move livestock and manage forage.	Slight to Moderate Decrease			
Risk - Yield	Slight to moderate decrease from improved health, extended grazing period, improved forage.	Slight to Moderate Increase			
Risk - Flexibility	Slight to moderate increase because of increased management.	Substantial Increase			
Risk - Timing	Substantial increase - practice must be applied according to forage needs.	Slight to Moderate Decrease			
Risk – Cash Flow	Slight to moderate decrease due to higher yields and reduced costs.	Slight to moderate increase.			
Profitability – Change in Profitability	0	0			
HUMAN - CULTURAL					
Cultural Resources and/or Historic Properties Present or Suspected to be PRESENT	Not applicable.	No			
HUMAN – ENERGY					
Depletion of Fossil Fuel Resources	Not Applicable	No			
Underutilization of Non-Fossil Energy Resources	Not Applicable	No			

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.

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Structure for Water Control 587		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	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	Slight Improvement	Structure used for better control and removal of water.			
SOIL – CONDITION					
Organic Matter Depletion	Not Applicable	Not applicable.			
Rangeland Site Stability	Not Applicable	Not applicable.			
Compaction	Not Applicable	Not applicable.			
Subsidence	Neutral	If used to manage water tables, this practice may increase or decrease organic matter oxidation.			
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	Controlling the rate of water movement will reduce the transport of sediment onto sensitive areas.			
WATER – QUANTITY					
Rangeland Hydrologic Cycle	Not Applicable	Not applicable.			
Excessive Seepage	Not Applicable	Not applicable.			
Excessive Runoff, Flooding, or Ponding	Slight to Moderate Improvement	Structure used for flow control, or level regulation of water.			
Excessive Subsurface Water	Not Applicable	Not applicable.			
Drifted Snow	Not Applicable	Not applicable.			
Inadequate Outlets	Not Applicable	Not applicable.			

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Structure for Water Control 587		Baseline Setting:			
		Appropriate Land Use(s): All Land Uses			
RESOURCES, CONSIDERATIONS AND CONCERNS	PHYSICAL EFFECTS	RATIONALE			
Inefficient Water use on Irrigated Land	Slight to Moderate Improvement	Provides control for better water distribution.			
Inefficient Water use on Non-Irrigated Land	Slight to Moderate Improvement	Provides control for better water distribution.			
Reduced Capacity of Conveyances by Sediment Deposition	Slight to Moderate Improvement	Controls velocity and enhances sediment transport and trapping.			
Reduced Storage of Water Bodies by Sediment Accumulation	Slight to Moderate Improvement	Controls velocity and enhances sediment transport and trapping.			
Aquifer Overdraft	Not Applicable	Not applicable.			
Insufficient Flows in Water Courses	Slight to Moderate Improvement	Structure allows better management of water which can enhance flows in water courses.			
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	Not Applicable	Not applicable.			
• Excessive Suspended Sediment and Turbidity	Slight Improvement	Decrease in water velocity will result in reduction in suspended sediments.			
• Excessive Salinity	Not Applicable	Not applicable.			
• Harmful Levels of Heavy Metals	Not Applicable	Not applicable.			
• Harmful Temperatures	Slight Improvement	The action is used to control water releases and regulate surface water temperature.			
• 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)	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 ₂ (Carbon Dioxide)	Not Applicable	Not applicable.			
• N ₂ O (Nitrous Oxide)	Not Applicable	Not applicable.			
• CH ₄ (Methane)	Not Applicable	Not applicable.			

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Structure for Water Control 587		Baseline Setting:			
		Appropriate Land Use(s): All Land Uses			
RESOURCES, CONSIDERATIONS AND CONCERNS	PHYSICAL EFFECTS		RATIONALE		
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	Not Applicable		Not applicable.		
PLANTS – SUITABILITY					
Plants not Adapted or Suited	Not Applicable		Not applicable.		
PLANTS - CONDITION					
Productivity, Health, and Vigor	Not Applicable		Not applicable.		
Threatened or Endangered Plant Species:					
<ul style="list-style-type: none"> Plant Species Listed or Proposed for Listing Under the Endangered Species Act 	Not Applicable		Not applicable.		
<ul style="list-style-type: none"> Declining Species, Species of Concern 	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.		
ANIMALS - FISH AND WILDLIFE					
Inadequate Food	Not Applicable		Not applicable.		
Inadequate Cover/Shelter	Not Applicable		Not applicable.		
Inadequate Water	Slight to Moderate Improvement		Degree of effect is determined by the species whose aquatic habitat is improved and the extent to which connectivity of habitats is provided.		
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:					
<ul style="list-style-type: none"> 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.		
<ul style="list-style-type: none"> 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	Not Applicable		Not applicable.		

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Structure for Water Control 587		Baseline Setting:			
		Appropriate Land Use(s): All Land Uses			
RESOURCES, CONSIDERATIONS AND CONCERNS	PHYSICAL EFFECTS	RATIONALE			
Inadequate Shelter	Not Applicable	Not applicable.			
Inadequate Stock Water	Slight Improvement	Captured water in structures can supplement stock water.			
Stress and Mortality	Not Applicable	Not applicable.			
HUMAN – ECONOMICS					
Land - Change in Land Use	Not applicable.	Not applicable.			
Land – Land in Production	Not applicable.	Slight Increase.			
Capital – Change in Equipment	0	Not applicable.			
Capital - Total Investment Cost	Not applicable.	Negligible			
Capital – Annual Cost	0	Situational.			
Capital – Credit and Farm Program Eligibility	0	Slight to moderate increase			
Labor - Labor	Slight to moderate increase to move livestock between pastures.	Slight increase			
Labor – Change in Management Level	Slight increase to determine when to move livestock and manage forage.	Slight to Moderate Decrease			
Risk - Yield	Slight to moderate decrease from improved health, extended grazing period, improved forage.	Slight to Moderate Increase			
Risk - Flexibility	Slight to moderate increase because of increased management.	Substantial Increase			
Risk - Timing	Substantial increase - practice must be applied according to forage needs.	Slight to Moderate Decrease			
Risk – Cash Flow	Slight to moderate decrease due to higher yields and reduced costs.	Slight to moderate increase.			
Profitability – Change in Profitability	0	0			
HUMAN - CULTURAL					
Cultural Resources and/or Historic Properties Present or Suspected to be PRESENT	Not applicable.	No			
HUMAN – ENERGY					
Depletion of Fossil Fuel Resources	Not Applicable	No			
Underutilization of Non-Fossil Energy Resources	Not Applicable	No			

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.

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Cross Wind Ridges 589A		Baseline Setting: Cropland field is subject to wind erosion and has soils that are stable enough to sustain effective ridges and cloddiness.			
		Appropriate Land Use(s): Crop			
RESOURCES, CONSIDERATIONS AND CONCERNS	PHYSICAL EFFECTS	RATIONALE			
SOIL - EROSION					
Sheet and Rill	Not Applicable	Not applicable.			
Wind	Moderate to Substantial Improvement	Adding roughness to the soil across the prevailing wind direction reduces saltation.			
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.			
SOIL – CONDITION					
Organic Matter Depletion	Slight Improvement	Reduced wind erosion decreases organic matter loss.			
Rangeland Site Stability	Not Applicable	Not applicable.			
Compaction	Neutral	Equipment weight during ridge establishment may increase soil compaction under certain conditions of soil moisture			
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 Improvement	Cross wind ridges reduce soil erosion from wind and the resulting soil 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.			

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Cross Wind Ridges 589A		Baseline Setting: Cropland field is subject to wind erosion and has soils that are stable enough to sustain effective ridges and cloddiness.			
		Appropriate Land Use(s): Crop			
RESOURCES, CONSIDERATIONS AND CONCERNS	PHYSICAL EFFECTS	RATIONALE			
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	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.			
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	Slight Improvement	The action reduces soil erosion from wind.			
• Excessive Nutrients and Organics	Slight 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	Ridges 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.			
AIR – QUALITY					
Particulate Matter less than 10 Micrometers in Diameter (PM 10)	Slight to Moderate Improvement	Surface roughness oriented perpendicular to the erosive wind direction will reduce wind erosion.			

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Cross Wind Ridges 589A		Baseline Setting: Cropland field is subject to wind erosion and has soils that are stable enough to sustain effective ridges and cloddiness.			
		Appropriate Land Use(s): Crop			
RESOURCES, CONSIDERATIONS AND CONCERNS	PHYSICAL EFFECTS	RATIONALE			
Particulate Matter less than 2.5 Micrometers in Diameter (PM 2.5)	Slight to Moderate Improvement	Surface roughness oriented perpendicular to the erosive wind direction will reduce wind erosion.			
Excessive Ozone	Not Applicable	Not applicable.			
Excessive Greenhouse Gas:					
• CO ₂ (Carbon Dioxide)	Not Applicable	Not applicable.			
• N ₂ O (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	Slight to Moderate Improvement	Reduces fugitive dust emissions			
Undesirable Air Movement	Neutral	Ridges disrupt the saltation process but do not slow winds.			
Adverse Air Temperature	Not Applicable	Not applicable.			
PLANTS – SUITABILITY					
Plants not Adapted or Suited	Not Applicable	Not applicable.			
PLANTS - CONDITION					
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	Not Applicable	Not applicable.			
Forage Quality and Palatability	Not Applicable	Not applicable.			
Wildfire Hazard	Not Applicable	Not applicable.			
ANIMALS - FISH AND WILDLIFE					
Inadequate Food	Not Applicable	Not applicable.			
Inadequate Cover/Shelter	Not Applicable	Not applicable.			
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:					

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Cross Wind Ridges 589A		Baseline Setting: Cropland field is subject to wind erosion and has soils that are stable enough to sustain effective ridges and cloddiness.			
		Appropriate Land Use(s): Crop			
RESOURCES, CONSIDERATIONS AND CONCERNS	PHYSICAL EFFECTS	RATIONALE			
<ul style="list-style-type: none"> 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.			
<ul style="list-style-type: none"> 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	Not Applicable	Not applicable.			
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	0	Slight decrease			
Land – Land in Production	0	Negligible			
Capital – Change in Equipment	0	Not applicable.			
Capital - Total Investment Cost	0	Slight to moderate increase.			
Capital – Annual Cost	0	Situational.			
Capital – Credit and Farm Program Eligibility	0	Slight to moderate increase			
Labor - Labor	Slight to moderate increase, more time required for tillage operations.	Slight increase.			
Labor – Change in Management Level	0	Slight Decrease			
Risk - Yield	Slight decrease due to reduction of wind blown sediment.	Slight to Moderate Increase			
Risk - Flexibility	Slight to moderate due to following designed row pattern.	Negligible			
Risk - Timing	0	Slight Increase			
Risk – Cash Flow	Slight increase due to fuel and labor requirements.	Situational			
Profitability – Change in Profitability	Slight decrease or increase.	0.05			
HUMAN - CULTURAL					
Cultural Resources and/or Historic Properties Present or Suspected to be PRESENT	Not applicable.	No			
HUMAN – ENERGY					
Depletion of Fossil Fuel Resources	Not applicable.	No			
Underutilization of Non-Fossil Energy Resources	Not applicable.	No			

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.

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Cross Wind Trap Strips 589C		Baseline Setting: Crop field is subject to wind erosion.			
		Appropriate Land Use(s): Crop			
RESOURCES, CONSIDERATIONS AND CONCERNS	PHYSICAL EFFECTS	RATIONALE			
SOIL - EROSION					
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.			
SOIL – CONDITION					
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.			
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.			

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Cross Wind Trap Strips 589C		Baseline Setting: Crop field is subject to wind erosion.			
		Appropriate Land Use(s): Crop			
RESOURCES, CONSIDERATIONS AND CONCERNS	PHYSICAL EFFECTS	RATIONALE			
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	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.			
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	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.			
AIR – QUALITY					
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.			

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Cross Wind Trap Strips 589C		Baseline Setting: Crop field is subject to wind erosion.			
		Appropriate Land Use(s): Crop			
RESOURCES, CONSIDERATIONS AND CONCERNS	PHYSICAL EFFECTS	RATIONALE			
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)	Not Applicable	Not applicable.			
• N ₂ O (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	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.			
PLANTS – SUITABILITY					
Plants not Adapted or Suited	Substantial Improvement	Plants selected are adapted and suited.			
PLANTS - CONDITION					
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.			
ANIMALS - FISH AND WILDLIFE					
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.			

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Cross Wind Trap Strips 589C		Baseline Setting: Crop field is subject to wind erosion.			
		Appropriate Land Use(s): Crop			
RESOURCES, CONSIDERATIONS AND CONCERNS	PHYSICAL EFFECTS	RATIONALE			
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:					
<ul style="list-style-type: none"> 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.			
<ul style="list-style-type: none"> 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	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.			
HUMAN – ECONOMICS					
Land - Change in Land Use	0	Slight decrease			
Land – Land in Production	0	Negligible			
Capital – Change in Equipment	0	Moderate.			
Capital - Total Investment Cost	0	Slight increase.			
Capital – Annual Cost	0	Situational.			
Capital – Credit and Farm Program Eligibility	0	Slight to moderate increase			
Labor - Labor	Slight to moderate increase, more time required for tillage operations.	Slight increase.			
Labor – Change in Management Level	0	Slight Increase			
Risk - Yield	Slight increase from land use conversion, slight increase from reduction of wind sediment.	Slight Increase			
Risk - Flexibility	Slight increase due to incorporating strips into cropping system.	Substantial Increase			
Risk - Timing	Substantial increase - strips must be established prior to critical erosion period.	Slight Increase			
Risk – Cash Flow	Slight increase due to establishment costs.	Situational			

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Cross Wind Trap Strips 589C		Baseline Setting: Crop field is subject to wind erosion.			
		Appropriate Land Use(s): Crop			
RESOURCES, CONSIDERATIONS AND CONCERNS	PHYSICAL EFFECTS	RATIONALE			
Profitability – Change in Profitability	Slight decrease or increase.	0.05			
HUMAN - CULTURAL					
Cultural Resources and/or Historic Properties Present or Suspected to be PRESENT	Historic properties in agricultural context can be protected from erosion.	No			
HUMAN – ENERGY					
Depletion of Fossil Fuel Resources	Not applicable.	No			
Underutilization of Non-Fossil Energy Resources	Not applicable.	No			

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.

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	Washington	FIELD OFFICE	Any	DATE	4/13/2009
PRACTICE: Nutrient Management 590	Baseline Setting:				
	Appropriate Land Use(s): Crop, Forest, Grazed Forest, Grazed Range, Hay, Headquarters, Mined, Native or Naturalized Pasture, Natural Area, Pasture, Recreation, Urban, Watershed Protection, Wildlife				
RESOURCES, CONSIDERATIONS AND CONCERNS	PHYSICAL EFFECTS		RATIONALE		
SOIL - EROSION					
Sheet and Rill	Slight to Moderate Improvement		Optimum nutrition builds optimum residue to reduce erosion. Application and tillage methods impacts surface residue and soil disturbance affecting erosion.		
Wind	Slight to Moderate Improvement		Optimum nutrition builds optimum residue to reduce erosion. Application and tillage methods impacts surface residue and soil disturbance affecting erosion.		
Ephemeral Gully	Neutral		Application and tillage methods impacts surface residue and soil disturbance affecting erosion.		
Classic Gully	Not Applicable		Not applicable.		
Streambank	Not Applicable		Not applicable.		
Shoreline	Not Applicable		Not applicable.		
Irrigation Induced	Slight to Moderate Improvement		Optimum nutrition builds optimum residue to reduce erosion. Application and tillage methods impacts surface residue and soil disturbance affecting erosion.		
Mass Movement	Not Applicable		Not applicable.		
Road, Roadsides, and Construction Sites	Not Applicable		Not applicable.		
SOIL – CONDITION					
Organic Matter Depletion	Slight to Moderate Improvement		Optimum nutrient supply maintains and improves biomass production.		
Rangeland Site Stability	Neutral		Soil disturbance to incorporate fertilizer loosens the soil and buries surface residue which can increase erosion. Other application methods do not contribute to erosion.		
Compaction	Slight to Moderate Worsening		Field operations on moist soils can cause soil compaction.		
Subsidence	Not Applicable		Not applicable.		
Contaminants:					
• Salts and other Chemicals	Slight to Moderate Improvement		Decreased excess nutrients results in reduced salts and other contaminants.		

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	Washington	FIELD OFFICE	Any	DATE	4/13/2009
PRACTICE: Nutrient Management 590	Baseline Setting:				
	Appropriate Land Use(s): Crop, Forest, Grazed Forest, Grazed Range, Hay, Headquarters, Mined, Native or Naturalized Pasture, Natural Area, Pasture, Recreation, Urban, Watershed Protection, Wildlife				
RESOURCES, CONSIDERATIONS AND CONCERNS	PHYSICAL EFFECTS		RATIONALE		
• Animal Waste and other Organics - N	Slight to Moderate Improvement		Proper application results in reduced risks of contamination from N.		
• Animal Waste and other Organics - P	Slight to Moderate Improvement		Proper application results in reduced risks of contamination from P.		
• Animal Waste and other Organics - K	Slight to Moderate Improvement		Proper application results in reduced risks of contamination from K.		
• Commercial Fertilizer - N	Slight to Moderate Improvement		Proper application results in reduced risks of contamination from N.		
• Commercial Fertilizer - P	Slight to Moderate Improvement		Proper application results in reduced risks of contamination from P.		
• Commercial Fertilizer - K	Slight to Moderate Improvement		Proper application results in reduced risks of contamination from K.		
• Residual Pesticides	Not Applicable		Not applicable.		
Damage from Sediment Deposition	Slight Improvement		Better vegetative growth results in less erosion.		
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 to Moderate Improvement		Optimum nutrient supply maintains optimum production and improves water use efficiency.		
Inefficient Water use on Non-Irrigated Land	Slight to Moderate Improvement		Optimum nutrient supply maintains optimum production and improves water use efficiency.		
Reduced Capacity of Conveyances by Sediment Deposition	Not Applicable		Not applicable.		
Reduced Storage of Water Bodies by Sediment Accumulation	Not Applicable		Not applicable.		
Aquifer Overdraft	Not Applicable		Not applicable.		
Insufficient Flows in Water Courses	Not Applicable		Not applicable.		
WATER – QUALITY					
In Groundwater:					

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	Washington	FIELD OFFICE	Any	DATE	4/13/2009
PRACTICE: Nutrient Management 590	Baseline Setting:				
	Appropriate Land Use(s): Crop, Forest, Grazed Forest, Grazed Range, Hay, Headquarters, Mined, Native or Naturalized Pasture, Natural Area, Pasture, Recreation, Urban, Watershed Protection, Wildlife				
RESOURCES, CONSIDERATIONS AND CONCERNS	PHYSICAL EFFECTS		RATIONALE		
• Harmful Levels of Pesticides	Not Applicable		Not applicable.		
• Excessive Nutrients and Organics	Substantial Improvement		The amount and timing of nutrient application are balanced with plant needs.		
• Excessive Salinity	Slight Improvement		Proper nutrient application should reduce salinity if nutrient source contains salts.		
• Harmful Levels of Heavy Metals	Slight to Moderate Improvement		The action limits the total amount of heavy metals that can be applied to a site ensuring that harmful levels are not leached to groundwater.		
• Harmful Levels of Pathogens	Slight Improvement		The action limits the amount of manure that can be applied thus preventing harmful levels of pathogens.		
• Harmful Levels of Petroleum	Not Applicable		Not applicable.		
In Surface Water:					
• Harmful Levels of Pesticides	Not Applicable		Not applicable.		
• Excessive Nutrients and Organics	Substantial Improvement		Source, amount, timing, and method of application are managed to maximize nutrient use efficiency by the crop and to minimize the potential for nutrient losses in leaching and runoff.		
• Excessive Suspended Sediment and Turbidity	Neutral		Proper nutrient application will minimize losses due to runoff.		
• Excessive Salinity	Slight Improvement		Proper nutrient application should reduce salinity if nutrient source contains salts.		
• Harmful Levels of Heavy Metals	Slight to Substantial Improvement		Changing pH will alter the solubility of metals. The action will reduce the application rate of heavy metals if required.		
• Harmful Temperatures	Not Applicable		Not applicable.		
• Harmful Levels of Pathogens	Slight Improvement		Decrease application of pathogens if nutrient source contains pathogens.		
• 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 proper application of nutrients can reduce the production of particulates.		

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	Washington	FIELD OFFICE	Any	DATE	4/13/2009
PRACTICE: Nutrient Management 590	Baseline Setting:				
	Appropriate Land Use(s): Crop, Forest, Grazed Forest, Grazed Range, Hay, Headquarters, Mined, Native or Naturalized Pasture, Natural Area, Pasture, Recreation, Urban, Watershed Protection, Wildlife				
RESOURCES, CONSIDERATIONS AND CONCERNS	PHYSICAL EFFECTS	RATIONALE			
Particulate Matter less than 2.5 Micrometers in Diameter (PM 2.5)	Slight to Substantial Improvement	The proper application of nutrients can reduce the production of particulates and minimize volatilization losses during and immediately after application.			
Excessive Ozone	Slight to Substantial Improvement	There is a decrease in potential ozone precursor emissions.			
Excessive Greenhouse Gas:					
• CO ₂ (Carbon Dioxide)	Slight Improvement	Management of nutrients optimizes the storage of soil carbon.			
• N ₂ O (Nitrous Oxide)	Slight Improvement	Reduction in N in waste results in less N volatilization			
• CH ₄ (Methane)	Slight to Moderate Improvement	Proper nutrient management reduces methane production.			
Ammonia (NH ₃)	Slight to Moderate Improvement	Proper nutrient management reduces NH ₃ production.			
Chemical Drift	Not Applicable	Not applicable.			
Objectionable Odors	Moderate to Substantial Improvement	Proper management and application/incorporation reduces volatilization, VOCs, and particle transport.			
Reduced Visibility	Slight to Moderate Improvement	Reduction in fine particulate matter and ozone precursors			
Undesirable Air Movement	Not Applicable	Not applicable.			
Adverse Air Temperature	Not Applicable	Not applicable.			
PLANTS – SUITABILITY					
Plants not Adapted or Suited	Slight to Substantial Improvement	Nutrients and soil amendments are optimized to enhance suited and desired species.			
PLANTS - CONDITION					
Productivity, Health, and Vigor	Slight to Substantial Improvement	Nutrients and soil amendments are optimized to enhance health and vigor of desired species.			
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	Not Applicable	Not applicable.			

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	Washington	FIELD OFFICE	Any	DATE	4/13/2009
PRACTICE: Nutrient Management 590	Baseline Setting:				
	Appropriate Land Use(s): Crop, Forest, Grazed Forest, Grazed Range, Hay, Headquarters, Mined, Native or Naturalized Pasture, Natural Area, Pasture, Recreation, Urban, Watershed Protection, Wildlife				
RESOURCES, CONSIDERATIONS AND CONCERNS	PHYSICAL EFFECTS	RATIONALE			
Forage Quality and Palatability	Moderate to Substantial Improvement	Proper management will increase quality and palatability of forage.			
Wildfire Hazard	Not Applicable	Not applicable.			
ANIMALS - FISH AND WILDLIFE					
Inadequate Food	Slight Improvement	Management enhances production of any food species planted.			
Inadequate Cover/Shelter	Slight Improvement	Management enhances cover/shelter conditions.			
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:					
<ul style="list-style-type: none"> 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.			
<ul style="list-style-type: none"> 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	Nutrients are managed to ensure optimal production and nutritive value of the forage used by livestock.			
Inadequate Shelter	Not Applicable	Not applicable.			
Inadequate Stock Water	Slight to Moderate Improvement	Management improves livestock water quality.			
Stress and Mortality	Slight to Substantial Improvement	Management results in nutritive forage improving livestock health.			
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.				

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	Washington	FIELD OFFICE	Any	DATE	4/13/2009
PRACTICE: Nutrient Management 590	Baseline Setting:				
	Appropriate Land Use(s): Crop, Forest, Grazed Forest, Grazed Range, Hay, Headquarters, Mined, Native or Naturalized Pasture, Natural Area, Pasture, Recreation, Urban, Watershed Protection, Wildlife				
RESOURCES, CONSIDERATIONS AND CONCERNS	PHYSICAL EFFECTS	RATIONALE			
Labor - Labor	Negligible				
Labor – Change in Management Level	Slight increase	Slight increase to take soil test, calibrate equipment, apply accurate rates, keep records.			
Risk - Yield	Slight Decrease	Slight decrease due to more effective use of nutrients.			
Risk - Flexibility	Slight Increase	Slight increase due to closer management of nutrient use.			
Risk - Timing	Substantial Increase	Substantial increase - practice must be applied in an effective manner.			
Risk – Cash Flow	Slight Decrease	Slight decrease due to 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 associated with nitrogen fertilizers may be increased or decreased depending on the farm nutrient balance/budget.			
Underutilization of Non-Fossil Energy Resources	Slight to Substantial Decrease	When nitrogen needs of the crop can be supplied by organic sources, accounting for these sources in the farm nutrient budget will save embodied energy.			

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.

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Amendments for Treatment of Agricultural Waste 591		Baseline Setting: Untreated manure and/or other agricultural wastes are being applied to the land.			
		Appropriate Land Use(s): Headquarters			
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	Not Applicable	Not applicable.			
Shoreline	Not Applicable	Not applicable.			
Irrigation Induced	Neutral	Some chemicals such as PAM used as amendments could reduce irrigation induced erosion when the waste stream is surface irrigated			
Mass Movement	Not Applicable	Not applicable.			
Road, Roadsides, and Construction Sites	Not Applicable	Not applicable.			
SOIL – CONDITION					
Organic Matter Depletion	Slight Improvement	Using amendments could create high organic residues that when land applied could increase soil organic matter in excess of the application of untreated manure			
Rangeland Site Stability	Not Applicable	Not applicable.			
Compaction	Not Applicable	Not applicable.			
Subsidence	Not Applicable	Not applicable.			
Contaminants:					
• Salts and other Chemicals	Neutral	Could be slight worsening to slight improvement depending on whether salts are concentrated or removed from the land applied waste stream			
• Animal Waste and other Organics - N	Slight to Moderate Improvement	Using amendments allows the manipulation of the waste stream to reduce nitrogen concentrations			
• Animal Waste and other Organics - P	Slight to Moderate Improvement	Using amendments allows the manipulation of the waste stream to reduce phosphorus concentrations			
• Animal Waste and other Organics - K	Slight to Moderate Improvement	Using amendments allows the manipulation of the waste stream to reduce potassium concentrations			
• Commercial Fertilizer - N	Not Applicable	Not applicable.			
• Commercial Fertilizer – P	Not Applicable	Not applicable.			

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Amendments for Treatment of Agricultural Waste 591		Baseline Setting: Untreated manure and/or other agricultural wastes are being applied to the land.			
		Appropriate Land Use(s): Headquarters			
RESOURCES, CONSIDERATIONS AND CONCERNS		PHYSICAL EFFECTS	RATIONALE		
• Commercial Fertilizer – K		Not Applicable	Not applicable.		
• Residual Pesticides		Not Applicable	Not applicable.		
Damage from Sediment Deposition		Not Applicable	Not applicable.		
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		Neutral	Some amendments such as PAM could alter the intake rates of soils receiving an altered waste stream,		
Drifted Snow		Not Applicable	Not applicable.		
Inadequate Outlets		Not Applicable	Not applicable.		
Inefficient Water use on Irrigated Land		Slight Improvement	Altered waste stream with minimum solids will be compatible with irrigation needs		
Inefficient Water use on Non-Irrigated Land		Not Applicable	Not applicable.		
Reduced Capacity of Conveyances by Sediment Deposition		Not Applicable	Not applicable.		
Reduced Storage of Water Bodies by Sediment Accumulation		Not Applicable	Not applicable.		
Aquifer Overdraft		Neutral	Altered waste stream with minimum solids will be compatible with irrigation needs		
Insufficient Flows in Water Courses		Neutral	Altered waste stream with minimum solids will be compatible with irrigation needs		
WATER – QUALITY					
In Groundwater:					
• Harmful Levels of Pesticides		Not Applicable	Not applicable.		
• Excessive Nutrients and Organics		Slight to Substantial Improvement	Amendments are often used to remove nutrients and organics from the waste stream		
• Excessive Salinity		Slight to Moderate Improvement	Amendments can be used to alter the waste stream to remove salts, metals, and some pathogens.		
• Harmful Levels of Heavy Metals		Slight to Moderate Improvement	Amendments can be used to alter the waste stream to remove salts, metals, and some pathogens.		
• Harmful Levels of Pathogens		Slight to Moderate Improvement	Amendments can be used to alter the waste stream to remove salts, metals, and some pathogens.		
• Harmful Levels of Petroleum		Not Applicable	Not applicable.		

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Amendments for Treatment of Agricultural Waste 591		Baseline Setting: Untreated manure and/or other agricultural wastes are being applied to the land.			
		Appropriate Land Use(s): Headquarters			
RESOURCES, CONSIDERATIONS AND CONCERNS		PHYSICAL EFFECTS	RATIONALE		
In Surface Water:					
• Harmful Levels of Pesticides		Not Applicable	Not applicable.		
• Excessive Nutrients and Organics		Slight to Substantial Improvement	Amendments are often used to remove nutrients and organics from the waste stream		
• Excessive Suspended Sediment and Turbidity		Not Applicable	Not applicable.		
• Excessive Salinity		Slight to Moderate Improvement	Amendments can be used to alter the waste stream to remove salts, metals, and some pathogens.		
• Harmful Levels of Heavy Metals		Slight to Moderate Improvement	Amendments can be used to alter the waste stream to remove salts, metals, and some pathogens.		
• Harmful Temperatures		Not Applicable	Not applicable.		
• Harmful Levels of Pathogens		Slight to Moderate Improvement	Amendments can be used to alter the waste stream to remove salts, metals, and some pathogens.		
• Harmful Levels of Petroleum		Not Applicable	Not applicable.		
AIR – QUALITY					
Particulate Matter less than 10 Micrometers in Diameter (PM 10)		Slight Improvement	Some amendments may result in less dust and other particulate matter		
Particulate Matter less than 2.5 Micrometers in Diameter (PM 2.5)		Moderate to Substantial Improvement	Amendments can be very effective in reducing emissions such as ammonia fraction		
Excessive Ozone		Not Applicable	Not applicable.		
Excessive Greenhouse Gas:					
• CO ₂ (Carbon Dioxide)		Slight Improvement	Amendments may have an impact on the release of a number of manure constituents, however, one would not normally use the amendment specifically on this air contaminant		
• N ₂ O (Nitrous Oxide)		Slight Improvement	Amendments may have an impact on the release of a number of manure constituents, however, one would not normally use the amendment specifically on this air contaminant		

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Amendments for Treatment of Agricultural Waste 591		Baseline Setting: Untreated manure and/or other agricultural wastes are being applied to the land.			
		Appropriate Land Use(s): Headquarters			
RESOURCES, CONSIDERATIONS AND CONCERNS		PHYSICAL EFFECTS	RATIONALE		
<ul style="list-style-type: none"> CH₄ (Methane) 		Slight Improvement	Amendments may have an impact on the release of a number of manure constituents, however, one would not normally use the amendment specifically on this air contaminant		
Ammonia (NH ₃)		Moderate to Substantial Improvement	A number of amendments are very successful in reducing ammonia emissions from manure such as chicken litter		
Chemical Drift		Not Applicable	Not applicable.		
Objectionable Odors		Moderate to Substantial Improvement	A number of amendments are very successful in reducing odor emissions from manure		
Reduced Visibility		Not Applicable	Not applicable.		
Undesirable Air Movement		Not Applicable	Not applicable.		
Adverse Air Temperature		Not Applicable	Not applicable.		
PLANTS – SUITABILITY					
Plants not Adapted or Suited		Not Applicable	Not applicable.		
PLANTS - CONDITION					
Productivity, Health, and Vigor		Slight Improvement	Amendments can alter the waste stream to better meet the needs of the plant		
Threatened or Endangered Plant Species:					
<ul style="list-style-type: none"> Plant Species Listed or Proposed for Listing Under the Endangered Species Act 		Not Applicable	Not applicable.		
<ul style="list-style-type: none"> Declining Species, Species of Concern 		Not Applicable	Not applicable.		
Noxious and Invasive Plants		Not Applicable	Not applicable.		
Forage Quality and Palatability		Slight Improvement	Amendments can alter the waste stream to better meet the needs of the plant		
Wildfire Hazard		Not Applicable	Not applicable.		
ANIMALS - FISH AND WILDLIFE					
Inadequate Food		Not Applicable	Not applicable.		
Inadequate Cover/Shelter		Not Applicable	Not applicable.		
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.		

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Amendments for Treatment of Agricultural Waste 591		Baseline Setting: Untreated manure and/or other agricultural wastes are being applied to the land.			
		Appropriate Land Use(s): Headquarters			
RESOURCES, CONSIDERATIONS AND CONCERNS		PHYSICAL EFFECTS		RATIONALE	
Threatened and Endangered Fish and Wildlife Species:					
<ul style="list-style-type: none"> Fish and Wildlife Species Listed or Proposed for Listing Under the Endangered Species Act 		Not Applicable		Not applicable.	
<ul style="list-style-type: none"> Declining Species, Species of Concern 		Not Applicable		Not applicable.	
ANIMALS – DOMESTIC					
Inadequate Quantities and Quality of Feed and Forage		Neutral		Amendments could favorably alter the waste stream to better provide the needs of growing feed and forage, but this would be minor impact	
Inadequate Shelter		Not Applicable		Not applicable.	
Inadequate Stock Water		Slight Improvement		Some amendments are used to treat the waste stream to the point water can be reused by livestock	
Stress and Mortality		Slight to Substantial Improvement		Suppressing emissions of ammonia and other manure constituents may well improve overall animal health and reduce mortality	
HUMAN – ECONOMICS					
Land - Change in Land Use		Not applicable.		Not applicable.	
Land – Land in Production		Not applicable.		Negligible to slight increase.	
Capital – Change in Equipment		0		Slight to moderate.	
Capital - Total Investment Cost		0		Slight to moderate increase.	
Capital – Annual Cost		0		Situational.	
Capital – Credit and Farm Program Eligibility		0		Slight to moderate increase	
Labor - Labor		Situational. Slight to moderate increase, depending on volume of treatment and equipment used.		Negligible	
Labor – Change in Management Level		0		Not applicable.	
Risk - Yield		Not applicable.		Slight Decrease	
Risk - Flexibility		Negligible to slight decrease due to environmental and manure-handling benefits.		Not applicable.	
Risk - Timing		Not applicable.		Slight Increase	
Risk – Cash Flow		Slight increase due to implementation cost.		Slight to Moderate Increase	

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Amendments for Treatment of Agricultural Waste 591		Baseline Setting: Untreated manure and/or other agricultural wastes are being applied to the land.			
		Appropriate Land Use(s): Headquarters			
RESOURCES, CONSIDERATIONS AND CONCERNS		PHYSICAL EFFECTS		RATIONALE	
Profitability – Change in Profitability		Negligible to moderate increase due to potential for lower engery costs related to ventilation requirements and sale of agricultural byproducts.		0	
HUMAN - CULTURAL					
Cultural Resources and/or Historic Properties Present or Suspected to be PRESENT		0		0	
HUMAN – ENERGY					
Depletion of Fossil Fuel Resources		0		0	
Underutilization of Non-Fossil Energy Resources		0		0	

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.

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Feed Management 592		Baseline Setting:			
		Appropriate Land Use(s): Headquarters			
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	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.		
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	Slight to Moderate Improvement		Reducing the amount of nutrients excreted in manure can reduce the potential for over-application of N on land to which the manure is applied.		
• Animal Waste and other Organics - P	Slight to Moderate Improvement		Reducing the amount of nutrients excreted in manure can reduce the potential for over-application of P on land to which the manure is applied.		
• Animal Waste and other Organics - K	Slight to Moderate Improvement		Reducing the amount of nutrients excreted in manure can reduce the potential for over-application of K on land to which the manure is applied.		
• Commercial Fertilizer - N	Slight to Moderate Improvement		Reducing the amount of nutrients excreted in manure can reduce the potential for over-application of N on land to which the manure is applied.		
• Commercial Fertilizer - P	Slight to Moderate Improvement		Reducing the amount of nutrients excreted in manure can reduce the potential for over-application of P on land to which the manure is applied.		

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Feed Management 592		Baseline Setting:			
		Appropriate Land Use(s): Headquarters			
RESOURCES, CONSIDERATIONS AND CONCERNS	PHYSICAL EFFECTS	RATIONALE			
<ul style="list-style-type: none"> Commercial Fertilizer – K 	Slight to Moderate Improvement	Reducing the amount of nutrients excreted in manure can reduce the potential for over-application of K on land to which the manure is applied.			
<ul style="list-style-type: none"> Residual Pesticides 	Not Applicable	Not applicable.			
Damage from Sediment Deposition	Not Applicable	Not applicable.			
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	Not Applicable	Not applicable.			
Reduced Storage of Water Bodies by Sediment Accumulation	Not Applicable	Not applicable.			
Aquifer Overdraft	Not Applicable	Not applicable.			
Insufficient Flows in Water Courses	Not Applicable	Not applicable.			
WATER – QUALITY					
In Groundwater:					
<ul style="list-style-type: none"> Harmful Levels of Pesticides 	Not Applicable	Not applicable.			
<ul style="list-style-type: none"> Excessive Nutrients and Organics 	Slight to Moderate Improvement	The action reduces the amount of nutrients excreted in manure which reduces the potential for over-application on the land.			
<ul style="list-style-type: none"> Excessive Salinity 	Not Applicable	Not applicable.			
<ul style="list-style-type: none"> Harmful Levels of Heavy Metals 	Not Applicable	Not applicable.			
<ul style="list-style-type: none"> Harmful Levels of Pathogens 	Neutral	The action does not reduce the amount of manure produced by livestock, only the nutrient content. The same amount of manure will be applied as before the use of this practice.			
<ul style="list-style-type: none"> Harmful Levels of Petroleum 	Not Applicable	Not applicable.			
In Surface Water:					
<ul style="list-style-type: none"> Harmful Levels of Pesticides 	Not Applicable	Not applicable.			

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Feed Management 592		Baseline Setting:			
		Appropriate Land Use(s): Headquarters			
RESOURCES, CONSIDERATIONS AND CONCERNS	PHYSICAL EFFECTS	RATIONALE			
<ul style="list-style-type: none"> Excessive Nutrients and Organics 	Slight to Moderate Improvement	Reducing the amount of nutrients excreted in manure can reduce the potential for over-application of nutrients on land which the manure is applied, thus reducing the potential for loss to surface waters.			
<ul style="list-style-type: none"> Excessive Suspended Sediment and Turbidity 	Not Applicable	Not applicable.			
<ul style="list-style-type: none"> Excessive Salinity 	Not Applicable	Not applicable.			
<ul style="list-style-type: none"> Harmful Levels of Heavy Metals 	Not Applicable	Not applicable.			
<ul style="list-style-type: none"> Harmful Temperatures 	Not Applicable	Not applicable.			
<ul style="list-style-type: none"> Harmful Levels of Pathogens 	Neutral	The action does not reduce the amount of manure produced by livestock, only the nutrient content. The same amount of manure will be applied as before the use of this practice.			
<ul style="list-style-type: none"> 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)	Slight to Moderate Improvement	Proper nitrogen levels in feed can reduce the amount of ammonia in manure that is available for volatilization.			
Excessive Ozone	Not Applicable	Not applicable.			
Excessive Greenhouse Gas:					
<ul style="list-style-type: none"> CO₂ (Carbon Dioxide) 	Not Applicable	Not applicable.			
<ul style="list-style-type: none"> N₂O (Nitrous Oxide) 	Slight Improvement	Reduction in N in waste results in less N volatilization			
<ul style="list-style-type: none"> CH₄ (Methane) 	Slight to Moderate Improvement	Proper nutrient input causes reduction in methane production			
Ammonia (NH ₃)	Slight to Substantial Improvement	Proper nutrient management reduces NH ₃ production.			
Chemical Drift	Not Applicable	Not applicable.			
Objectionable Odors	Slight to Moderate Improvement	Reduces fine particulate and VOC.			
Reduced Visibility	Slight to Moderate Improvement	Reduction in fine particulate emissions.			
Undesirable Air Movement	Not Applicable	Not applicable.			
Adverse Air Temperature	Not Applicable	Not applicable.			
PLANTS – SUITABILITY					
Plants not Adapted or Suited	Not Applicable	Not applicable.			
PLANTS - CONDITION					

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Feed Management 592		Baseline Setting:			
		Appropriate Land Use(s): Headquarters			
RESOURCES, CONSIDERATIONS AND CONCERNS	PHYSICAL EFFECTS	RATIONALE			
Productivity, Health, and Vigor	Not Applicable	Not applicable.			
Threatened or Endangered Plant Species:					
<ul style="list-style-type: none"> Plant Species Listed or Proposed for Listing Under the Endangered Species Act 	Not Applicable	Not applicable.			
<ul style="list-style-type: none"> Declining Species, Species of Concern 	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.			
ANIMALS - FISH AND WILDLIFE					
Inadequate Food	Not Applicable	Not applicable.			
Inadequate Cover/Shelter	Not Applicable	Not applicable.			
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:					
<ul style="list-style-type: none"> Fish and Wildlife Species Listed or Proposed for Listing Under the Endangered Species Act 	Not Applicable	Not applicable.			
<ul style="list-style-type: none"> Declining Species, Species of Concern 	Not Applicable	Not applicable.			
ANIMALS – DOMESTIC					
Inadequate Quantities and Quality of Feed and Forage	Substantial Improvement	Feed and forage are in balance to ensure nutritional requirements of livestock.			
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	Not applicable.	Negligible to slight increase.			
Capital – Change in Equipment	0	Slight to moderate.			
Capital - Total Investment Cost	0	Slight to moderate increase.			
Capital – Annual Cost	0	Situational.			
Capital – Credit and Farm Program Eligibility	0	Slight to moderate increase			
Labor - Labor	Situational. Slight to moderate increase, depending on volume of treatment and equipment used.	Negligible			
Labor – Change in Management Level	0	Not applicable.			

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Feed Management 592		Baseline Setting:			
		Appropriate Land Use(s): Headquarters			
RESOURCES, CONSIDERATIONS AND CONCERNS	PHYSICAL EFFECTS	RATIONALE			
Risk - Yield	Not applicable.	Slight Decrease			
Risk - Flexibility	Negligible to slight decrease due to environmental and manure-handling benefits.	Not applicable.			
Risk - Timing	Not applicable.	Slight Increase			
Risk – Cash Flow	Slight increase due to implementation cost.	Slight to Moderate Increase			
Profitability – Change in Profitability	Negligible to moderate increase due to potential for lower energy costs related to ventilation requirements and sale of agricultural byproducts.	0			
HUMAN - CULTURAL					
Cultural Resources and/or Historic Properties Present or Suspected to be PRESENT	0	0			
HUMAN – ENERGY					
Depletion of Fossil Fuel Resources	0	0			
Underutilization of Non-Fossil Energy Resources	0	0			

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.

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
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 pests are managed and/or applying mitigation techniques.		
Contaminants:					
• Salts and other Chemicals	Not Applicable		Not applicable.		

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Pest Management 595		Baseline Setting:			
		Appropriate Land Use(s): All Land Uses			
RESOURCES, CONSIDERATIONS AND CONCERNS	PHYSICAL EFFECTS	RATIONALE			
• 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	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.			

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Pest Management 595		Baseline Setting:			
		Appropriate Land Use(s): All Land Uses			
RESOURCES, CONSIDERATIONS AND CONCERNS	PHYSICAL EFFECTS	RATIONALE			
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 CO ₂ by ground disturbing activities is decreased by changing the way pests are managed and/or applying mitigation techniques.			

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Pest Management 595		Baseline Setting:			
		Appropriate Land Use(s): All Land Uses			
RESOURCES, CONSIDERATIONS AND CONCERNS	PHYSICAL EFFECTS	RATIONALE			
• N ₂ O (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 – SUITABILITY					
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.			

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Pest Management 595		Baseline Setting:			
		Appropriate Land Use(s): All Land Uses			
RESOURCES, CONSIDERATIONS AND CONCERNS	PHYSICAL EFFECTS	RATIONALE			
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:					
<ul style="list-style-type: none"> 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.			
<ul style="list-style-type: none"> 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.			

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	WASHINGTON	FIELD OFFICE	ALL	DATE	9/2008
PRACTICE: Pest Management 595		Baseline Setting:			
		Appropriate Land Use(s): All Land Uses			
RESOURCES, CONSIDERATIONS AND CONCERNS	PHYSICAL EFFECTS	RATIONALE			
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.	Negligible to slight increase.			
Capital – Change in Equipment	0	Slight to moderate.			
Capital - Total Investment Cost	0	Slight to moderate increase.			
Capital – Annual Cost	0	Situational.			
Capital – Credit and Farm Program Eligibility	0	Slight to moderate increase			
Labor - Labor	Situational. Slight to moderate increase, depending on volume of treatment and equipment used.	Negligible			
Labor – Change in Management Level	0	Not applicable.			
Risk - Yield	Not applicable.	Slight Decrease			
Risk - Flexibility	Negligible to slight decrease due to environmental and manure-handling benefits.	Not applicable.			
Risk - Timing	Not applicable.	Slight Increase			
Risk – Cash Flow	Slight increase due to implementation cost.	Slight to Moderate Increase			
Profitability – Change in Profitability	Negligible to moderate increase due to potential for lower energy costs related to ventilation requirements and sale of agricultural byproducts.	0			
HUMAN - CULTURAL					
Cultural Resources and/or Historic Properties Present or Suspected to be PRESENT	0	0			
HUMAN – ENERGY					
Depletion of Fossil Fuel Resources	0	0			
Underutilization of Non-Fossil Energy Resources	0	0			

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.