

CONSERVATION PRACTICE PHYSICAL EFFECTS WORKSHEET

STATE	Pennsylvania	FIELD OFFICE	Any	DATE	
PRACTICE: Fish Passage 396		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		Removing obstructions to natural flows will decrease streambank erosion.		
Shoreline	Slight to Substantial Improvement		If a dam is removed, shoreline erosion upstream of dam should decrease.		
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	Not Applicable		Not applicable.		
WATER - QUANTITY					
Rangeland Hydrologic Cycle	Not Applicable		Not applicable.		
Excessive Seepage	Not Applicable		Not applicable.		
Excessive Runoff, Flooding, or Ponding	Slight to Substantial Worsening		If action to provide fish passage is removal of a dike or levy, temporary inundation of floodplain will occur seasonally.		
Excessive Subsurface Water	Not Applicable		Not applicable.		
Drifted Snow	Not Applicable		Not applicable.		
Inadequate Outlets	Slight Improvement		Installing larger outlets for fish passage will also drain area more quickly.		

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	Removing barriers will increase sediment transport downstream.
Reduced Storage of Water Bodies by Sediment Accumulation	Moderate to Substantial Worsening	If a dam is removed for fish passage, water storage will be eliminated and sediment will move downstream.
Aquifer Overdraft	Not Applicable	Not applicable.
Insufficient Flows in Water Courses	Slight to Substantial Improvement	Assuring sufficient instream flows for fish passage will increase instream flows.
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	Slight to Substantial Improvement	Excessive water temperatures are an ecological barrier to fish passage; riparian restoration associated with improving fish passage increases stream shading important for maintaining cool water.
• 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	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	Moderate to Substantial Improvement	Barrier removal improves passage for fish to access food and habitat.
Inadequate Cover/Shelter	Moderate to Substantial Improvement	Improving fish passage opens up additional habitat for fish to seek cover and shelter.
Inadequate Water	Moderate to Substantial Improvement	Restoring fish passage to critical aquatic habitats in a watershed decreases the risk of inadequate water for aquatic species.
Inadequate Space	Moderate to Substantial Improvement	Providing fish passage increases the amount of space available to fish.
Habitat Fragmentation	Moderate to Substantial Improvement	Fish habitat is reconnected.
Imbalance Among and Within Populations	Moderate to Substantial Improvement	Providing fish passage throughout a watershed will generally improve population distribution.
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.	Not applicable.
Capital – Change in Equipment	Negligible	
Capital - Total Investment Cost	Negligible to slight.	
Capital – Annual Cost	Negligible	
Capital – Credit and Farm Program Eligibility	Situational.	
Labor - Labor	Slight increase	Slight increase during installation of practice.
Labor – Change in Management Level	Not applicable.	
Risk - Yield	Not applicable.	Not applicable.
Risk - Flexibility	Not applicable.	Not applicable.
Risk - Timing	Not applicable.	Not applicable.
Risk – Cash Flow	Slight Increase	Slight increase due to installation costs.
Profitability – Change in Profitability	Slight decrease due to installation costs.	Slight decrease due to installation costs.
HUMAN - CULTURAL		
Cultural Resources and/or Historic Properties Present or Suspected to be PRESENT	Slight to Substantial Increase	Construction impacts.
HUMAN – ENERGY		
Depletion of Fossil Fuel Resources	Not Applicable	Not Applicable
Underutilization of Non-Fossil Energy Resources	Not Applicable	Not applicable.

Human Considerations Explanation

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