

Practice: 399 - Fishpond Management

Scenario: #1 - Invasive Weed Species - Chemical

Scenario Description:

Chemical application to existing fishpond to remove invasive or undesired vegetation. Typically use Diquat dibromide or other appropriate herbicide. Chemical control will be applied by a certified pesticide applicator per state code. Resource concerns addressed include: Degraded Plant Condition - Excessive plant pest pressure; Degraded Plant Condition - Inadequate structure and composition; Inadequate Habitat for Fish and Wildlife - Habitat degradation.

Before Situation:

Existing fishpond is negatively impacted by invasive vegetation. Invasive vegetation is reducing availability of resources for desired fish species.

After Situation:

Chemical application has been completed to manage the invasive vegetation. Resource concerns have been addressed. Participant will follow Operation and Maintenance guidance to ensure control has been achieved through regular monitoring and will address any negative impacts to ensure an invasion does not occur again within the lifespan of the practice.

Scenario Feature Measure: Acre of pond managed

Scenario Unit: Acre

Scenario Typical Size: 1

Scenario Cost: \$536.57

Scenario Cost/Unit: \$536.57

Cost Details (by category):

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Equipment/Installation						
Truck, Pickup	939	Equipment and power unit costs. Labor not included.	Hour	\$38.19	2	\$76.38
Labor						
Skilled Labor	230	Labor requiring a high level skill set: Includes carpenters, welders, electricians, conservation professionals involved with data collection, monitoring, and or record keeping, etc.	Hour	\$39.49	4	\$157.96
Materials						
Herbicide, Diquat dibromide	1820	Aquatic herbicide and plant growth regulator. Refer to WIN-PST for product names and active ingredients. Includes materials and shipping only.	Gallon	\$125.58	1	\$125.58
Mobilization						
Mobilization, small equipment	1138	Equipment <70 HP but can't be transported by a pick-up truck or with typical weights between 3,500 to 14,000 pounds.	Each	\$176.65	1	\$176.65

Practice: 399 - Fishpond Management

Scenario: #2 - Habitat Structures

Scenario Description:

Fishpond lacks a diversity of habitat to provide adequate habitat for desired fish species. Creation of habitat structures as recommended by conservation planner or other individual with appropriate credentials. Suggested improvements will determine type of structure needed, number of structures, density and location of structures. Habitat structures are typically submerged or emergent. Structures may include log cribs, rock piles, log and rock cribs, pipe and timber cribs, conifer cribs, PVC-tree structures, gravel spawning beds, catfish cages, concrete blocks stacked and filled with sticks or cuttings or plastic barrels filled with sand and sticks. Resource Concerns addressed include: Inadequate Habitat for Fish and Wildlife - Habitat degradation. Practice installation may also address: Water Quality Degradation - Elevated water temperatures.

Before Situation:

Existing fish pond lacks sufficient habitat diversity to provide optimum conditions for desired fish species.

After Situation:

Habitat structures within fishpond are appropriate for desired fish species. Typical installation in 1 ac pond: 12 structures of 1 fish crib and 4 concrete blocks, with woody material placed within crib. Resource concerns have been addressed. Participant will follow Operation and Maintenance guidance to ensure created habitat is maintained and continues to provide the benefits to the resources.

Scenario Feature Measure: Acre of pond managed

Scenario Unit: Acre

Scenario Typical Size: 1

Scenario Cost: \$6,448.55

Scenario Cost/Unit: \$6,448.55

Cost Details (by category):

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Equipment/Installation						
Truck, Pickup	939	Equipment and power unit costs. Labor not included.	Hour	\$38.19	12	\$458.28
Chainsaw	937	Equipment and power unit costs. Labor not included.	Hour	\$6.46	8	\$51.68
Labor						
General Labor	231	Labor performed using basic tools such as power tool, shovels, and other tools that do not require extensive training. Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	\$24.48	144	\$3,525.12
Materials						
Fish Crib, corrugated plastic, modular	2163	Corrugated plastic fish crib measuring 48" wide x 60" long x 48" high. Materials and shipping only.	Each	\$149.80	12	\$1,797.60
Block, concrete	253	Concrete block, hollow, normal weight, 3500 psi. Includes both full and partial sizes. Material only	Each	\$1.79	48	\$85.92
Mobilization						
Mobilization, small equipment	1138	Equipment <70 HP but can't be transported by a pick-up truck or with typical weights between 3,500 to 14,000 pounds.	Each	\$176.65	3	\$529.95

Practice: 399 - Fishpond Management

Scenario: #3 - Aerator, surface

Scenario Description:

Aerator added to existing fishpond to obtain desired oxygen levels. Typically 1 aerator needed per pond. Certain oxygen levels in the fishpond are needed for optimum vegetation, habitat and water quality. Oxygen levels and size of aerator needed are determined by a conservation planner, engineer or per existing supported data. Aerator planning and placement specifications can be found in "AEN-3: Aeration of ponds used in aquaculture". Resource concerns addressed include: Inadequate Habitat for Fish and Wildlife - Habitat degradation; Water Quality Degradation - Elevated water temperature.

Before Situation:

Existing fishpond has insufficient levels of oxygen available for desired fish species in pond. Habitat and water quality degraded, as well as health of the fish population.

After Situation:

Aerator sized appropriately for fishpond has been established and oxygen is at an optimum level. Participant will follow Operation and Maintenance guidance to ensure aerator maintained to continually provide appropriate oxygen levels for fishpond.

Scenario Feature Measure: Acre of pond managed

Scenario Unit: Acre

Scenario Typical Size: 1

Scenario Cost: \$1,528.16

Scenario Cost/Unit: \$1,528.16

Cost Details (by category):

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Equipment/Installation						
Truck, Pickup	939	Equipment and power unit costs. Labor not included.	Hour	\$38.19	2	\$76.38
Labor						
General Labor	231	Labor performed using basic tools such as power tool, shovels, and other tools that do not require extensive training. Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	\$24.48	2	\$48.96
Materials						
Aerator, pond, 1 hp	1708	1 hp Aerator for pond or tank with less than 10 acres of surface area. Materials only.	Each	\$1,204.51	1	\$1,204.51
Post, Steel T, 1.33 lbs, 10'	17	Steel Post, Studded 10' - 1.33 lb. Includes materials and shipping only.	Each	\$10.83	2	\$21.66
Mobilization						
Mobilization, small equipment	1138	Equipment <70 HP but can't be transported by a pick-up truck or with typical weights between 3,500 to 14,000 pounds.	Each	\$176.65	1	\$176.65

Practice: 399 - Fishpond Management

Scenario: #4 - Aerator, subsurface

Scenario Description:

Aerator added to existing fishpond to obtain desired oxygen levels. Typically 1 aerator needed per pond. Certain oxygen levels in the fishpond are needed for optimum vegetation, habitat and water quality. Oxygen levels and size of aerator needed are determined by a conservation planner, engineer or per existing supported data. Aerator planning and placement specifications can be found in "AEN-3: Aeration of ponds used in aquaculture". Resource concerns addressed include: Inadequate Habitat for Fish and Wildlife - Habitat degradation; Water Quality Degradation - Elevated water temperature. Associated Practice: Critical Area Planting - 342

Before Situation:

Existing fishpond has insufficient levels of oxygen available for desired fish species in pond. Habitat and water quality degraded, as well as health of the fish population.

After Situation:

Aerator sized appropriately for fishpond has been established and oxygen is at an optimum level. Participant will follow Operation and Maintenance guidance to ensure aerator maintained to continually provide appropriate oxygen levels for fishpond.

Scenario Feature Measure: Acre of pond managed

Scenario Unit: Acre

Scenario Typical Size: 1

Scenario Cost: \$3,565.74

Scenario Cost/Unit: \$3,565.74

Cost Details (by category):

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Equipment/Installation						
Excavation, Common Earth, side cast, small equipment	48	Bulk excavation and side casting of common earth with hydraulic excavator with less than 1 CY capacity. Includes equipment and labor.	Cubic yard	\$2.36	8	\$18.88
Truck, Pickup	939	Equipment and power unit costs. Labor not included.	Hour	\$38.19	2	\$76.38
Labor						
General Labor	231	Labor performed using basic tools such as power tool, shovels, and other tools that do not require extensive training. Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	\$24.48	4	\$97.92
Materials						
Pipe, PVC, 3", SCH 40	977	Materials: - 3" - PVC - SCH 40 - ASTM D1785	Foot	\$2.86	50	\$143.00
Aerator - subsurface	1821	Aeration system, ponds, subsurface air. Includes shipping.	Each	\$2,876.26	1	\$2,876.26
Mobilization						
Mobilization, small equipment	1138	Equipment <70 HP but can't be transported by a pick-up truck or with typical weights between 3,500 to 14,000 pounds.	Each	\$176.65	2	\$353.30

Practice: 399 - Fishpond Management

Scenario: #5 - Planting Native Vegetation

Scenario Description:

Native, aquatic vegetation will be established by plugs and or tubers. Both emergent and submerged vegetation will be established using hand tools or other small equipment as needed. Vegetation will be established to ensure appropriate cover for desired fish species. Plants will be established at a rate, location and density as prescribed by the conservation planner or other resource. A typical setting will plant between 2-5 aquatic plants per 10 SF. This scenario may include replacing of non desired plants with appropriate native plants. Resource Concerns addressed include: Degraded Plant Condition - Excessive plant pest pressure; Inadequate Habitat for Fish and Wildlife - Habitat degradation. Practice installation may also address: Water Quality Degradation - Elevated water temperatures.

Before Situation:

Established fish pond which has had insufficient vegetation for desired fish species. Vegetation consists either primarily of non-desired plants or is not of a density to provide adequate cover for fish species. Fishpond is typically 1 acre in size, 1/4 acre of fishpond will receive native vegetation restoration.

After Situation:

Vegetation in fishpond is of a density and composition that is suitable for desired fish species. Vegetation is native plants. Resource concerns have been addressed. Participant will follow Operation and Maintenance guidelines to ensure established plants will thrive. If plant die-off occurs prior to lifespan of practice, participant is required to re-establish vegetation to NRCS Standards and Specifications.

Scenario Feature Measure: Acre of vegetation planted

Scenario Unit: Acre

Scenario Typical Size: 1

Scenario Cost: \$3,502.39

Scenario Cost/Unit: \$3,502.39

Cost Details (by category):

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Equipment/Installation						
Truck, Pickup	939	Equipment and power unit costs. Labor not included.	Hour	\$38.19	2	\$76.38
Labor						
General Labor	231	Labor performed using basic tools such as power tool, shovels, and other tools that do not require extensive training. Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	\$24.48	32	\$783.36
Materials						
Native Aquatic Plants, Emergent or Submerged	2336	Native aquatic emergent or submerged. All required materials for establishing vegetation. Includes material and shipping.	Each	\$1.37	1800	\$2,466.00
Mobilization						
Mobilization, small equipment	1138	Equipment <70 HP but can't be transported by a pick-up truck or with typical weights between 3,500 to 14,000 pounds.	Each	\$176.65	1	\$176.65

Practice: 399 - Fishpond Management

Scenario: #6 - Depth Management

Scenario Description:

Management of existing fishpond by excavation or placement of material to create deep open water. Fishpond currently does not provide optimum habitat for desired species. Excavated material will either be relocated within fish pond, or sited appropriately so as to not cause any negative environmental effects. Changes to depth will be based upon recommendations by conservation planner or other individual with appropriate credentials. Resource Concerns addressed include: Inadequate Habitat for Fish and Wildlife - Habitat degradation.

Practice installation may also address: Water Quality Degradation - Elevated water temperatures. Associated Practice (if required): Critical Area Planting - 342

Before Situation:

Existing fish pond lacks sufficient depth, diversity of depth or desired bottom structure to provide optimum habitat for desired fish species.

After Situation:

Depth and bottom structure of fishpond are appropriate for desired fish species. Resource concerns have been addressed. Participant will follow Operation and Maintenance guidance to ensure created habitat is maintained and continues to provide the benefits to the resources.

Scenario Feature Measure: Acre of pond managed

Scenario Unit: Acre

Scenario Typical Size: 1

Scenario Cost: \$23,923.86

Scenario Cost/Unit: \$23,923.86

Cost Details (by category):

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Equipment/Installation						
Hauling, bulk, highway truck	1615	Hauling of bulk earthfill, rockfill, waste or debris. One-way travel distance using fully loaded highway dump trucks (typically 16 CY or 20 TN capacity). Includes equipment and labor for truck only. Does not include cost for loading truck.	Cubic Yard Mile	\$0.33	1200	\$396.00
Truck, dump, 18 CY	1400	Dump truck for moving bulk material. Typically capacity is 25 ton or 18 cubic yards. Includes equipment only.	Hour	\$124.54	100	\$12,454.00
Excavation, common earth, wet, side cast, large equipment	1228	Bulk excavation and side casting of wet common earth with hydraulic excavator or dragline with greater than 1 CY capacity. Includes equipment and labor.	Cubic Yard	\$4.32	1200	\$5,184.00
Water management, Flooding & dewatering	969	Includes equipment, power unit and labor costs.	Acre Foot	\$232.61	4	\$930.44
Labor						
Equipment Operators, Heavy	233	Includes: Cranes, Hydraulic Excavators >=50 HP, Dozers, Paving Machines, Rock Trenchers, Trenchers >=12", Dump Trucks, Ag Equipment >=150 HP, Scrapers, Water Wagons.	Hour	\$33.69	100	\$3,369.00
General Labor	231	Labor performed using basic tools such as power tool, shovels, and other tools that do not require extensive training. Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	\$24.48	24	\$587.52
Mobilization						
Mobilization, large equipment	1140	Equipment >150HP or typical weights greater than 30,000 pounds or loads requiring over width or over length permits.	Each	\$501.45	2	\$1,002.90

Practice: 399 - Fishpond Management

Scenario: #7 - Depth Management, Littoral Shelf

Scenario Description:

Management of existing fishpond by excavation or placement of material to create deep open water and creation of littoral shelves. Fishpond currently does not provide optimum habitat for desired species. Excavated material will either be relocated within fish pond, or sited appropriately so as to not cause any negative environmental effects. Changes to depth will be based upon recommendations by conservation planner or other individual with appropriate credentials. Resource Concerns addressed include: Inadequate Habitat for Fish and Wildlife - Habitat degradation. Practice installation may also address: Water Quality Degradation - Elevated water temperatures. Associated Practice (if required): Critical Area Planting - 342

Before Situation:

Existing fish pond lacks sufficient depth, diversity of depth or desired bottom structure to provide optimum habitat for desired fish species.

After Situation:

Depth and bottom structure of fishpond are appropriate for desired fish species. Resource concerns have been addressed. Participant will follow Operation and Maintenance guidance to ensure created habitat is maintained and continues to provide the benefits to the resources.

Scenario Feature Measure: Acre of pond managed

Scenario Unit: Acre

Scenario Typical Size: 1

Scenario Cost: \$25,430.28

Scenario Cost/Unit: \$25,430.28

Cost Details (by category):

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Equipment/Installation						
Water management, Flooding & dewatering	969	Includes equipment, power unit and labor costs.	Acre Foot	\$232.61	4	\$930.44
Hydraulic Excavator, 1 CY	931	Track mounted hydraulic excavator with bucket capacity range of 0.8 to 1.5 CY. Equipment and power unit costs. Labor not included.	Hour	\$117.15	8	\$937.20
Excavation, common earth, wet, side cast, large equipment	1228	Bulk excavation and side casting of wet common earth with hydraulic excavator or dragline with greater than 1 CY capacity. Includes equipment and labor.	Cubic Yard	\$4.32	1200	\$5,184.00
Truck, dump, 18 CY	1400	Dump truck for moving bulk material. Typically capacity is 25 ton or 18 cubic yards. Includes equipment only.	Hour	\$124.54	100	\$12,454.00
Hauling, bulk, highway truck	1615	Hauling of bulk earthfill, rockfill, waste or debris. One-way travel distance using fully loaded highway dump trucks (typically 16 CY or 20 TN capacity). Includes equipment and labor for truck only. Does not include cost for loading truck.	Cubic Yard Mile	\$0.33	1200	\$396.00
Labor						
General Labor	231	Labor performed using basic tools such as power tool, shovels, and other tools that do not require extensive training. Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	\$24.48	24	\$587.52
Equipment Operators, Heavy	233	Includes: Cranes, Hydraulic Excavators >=50 HP, Dozers, Paving Machines, Rock Trenchers, Trenchers >=12", Dump Trucks, Ag Equipment >=150 HP, Scrapers, Water Wagons.	Hour	\$33.69	108	\$3,638.52
Materials						
Aggregate, river rock	1834	Well graded, rounded mineral substrates derived from local riverine settings. Includes materials and local delivery	Ton	\$29.97	10	\$299.70
Mobilization						
Mobilization, large equipment	1140	Equipment >150HP or typical weights greater than 30,000 pounds or loads requiring over width or over length permits.	Each	\$501.45	2	\$1,002.90

Practice: 399 - Fishpond Management

Scenario: #8 - Littoral Shelf

Scenario Description:

Management of existing fishpond by creation of littoral shelf. Fishpond currently does not provide optimum habitat for desired species. Changes to depth will be based upon recommendations by conservation planner or other individual with appropriate credentials. Resource Concerns addressed include: Inadequate Habitat for Fish and Wildlife - Habitat degradation. Practice installation may also address: Water Quality Degradation - Elevated water temperatures. Associated Practice (if required): Critical Area Planting - 342

Before Situation:

Existing fish pond lacks sufficient depth, diversity of depth or desired bottom structure to provide optimum habitat for desired fish species.

After Situation:

Depth and bottom structure of fishpond are appropriate for desired fish species. Resource concerns have been addressed. Participant will follow Operation and Maintenance guidance to ensure created habitat is maintained and continues to provide the benefits to the resources.

Scenario Feature Measure: Acre of pond managed

Scenario Unit: Acre

Scenario Typical Size: 1

Scenario Cost: \$3,549.66

Scenario Cost/Unit: \$3,549.66

Cost Details (by category):

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Equipment/Installation						
Hydraulic Excavator, 1 CY	931	Track mounted hydraulic excavator with bucket capacity range of 0.8 to 1.5 CY. Equipment and power unit costs. Labor not included.	Hour	\$117.15	8	\$937.20
Water management, Flooding & dewatering	969	Includes equipment, power unit and labor costs.	Acre Foot	\$232.61	4	\$930.44
Labor						
General Labor	231	Labor performed using basic tools such as power tool, shovels, and other tools that do not require extensive training. Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	\$24.48	24	\$587.52
Equipment Operators, Heavy	233	Includes: Cranes, Hydraulic Excavators >=50 HP, Dozers, Paving Machines, Rock Trenchers, Trenchers >=12", Dump Trucks, Ag Equipment >=150 HP, Scrapers, Water Wagons.	Hour	\$33.69	8	\$269.52
Materials						
Aggregate, river rock	1834	Well graded, rounded mineral substrates derived from local riverine settings. Includes materials and local delivery	Ton	\$29.97	10	\$299.70
Mobilization						
Mobilization, medium equipment	1139	Equipment with 70-150 HP or typical weights between 14,000 and 30,000 pounds.	Each	\$262.64	2	\$525.28