

Practice: 657 - Wetland Restoration

Scenario: #3 - Depression Sediment Removal and Ditch Plug

Scenario Description: A Depressional HGM class wetland is to be restored. The tract size is 15 acres, and the actual wetland size is 10 acres. The site is a recharge depression, fed only from surface runoff. Resource Concerns are: 4-SOIL QUALITY DEGRADATION - Organic matter depletion, 11- WATER QUALITY DEGRADATION - Excess nutrients in surface and ground waters, 12 - WATER QUALITY DEGRADATION - Pesticides transported to surface and ground waters, 16 - WATER QUALITY DEGRADATION - Excessive sediment in surface waters, 18 - DEGRADED PLANT CONDITION - Undesirable plant productivity and health, 19 - DEGRADED PLANT CONDITION, Inadequate structure and composition, 22- INADEQUATE HABITAT FOR FISH AND WILDLIFE - Habitat degradation.

Before Situation: The wetland has been converted to agricultural production, and the tract drained with a surface ditch. The ditch is 4' average depth, and 12 feet average width. The wetland receives surface runoff from an adjacent upland watershed, and ponds water on a shallow perched layer. The watershed has been converted from native to agricultural landuse, and the resultant soil erosion has deposited 6" of sediment in the bottom of the depression.

After Situation: The ditch has been plugged by the installation of a 50' long section of compacted clay fill, and the deposition has been removed down to the original topsoil layer. A herbaceous plant community has been seeded. Facilitative practices include Conservation Cover. Restoration of hydrology and plant community functions will improve the WATER QUALITY and DEGRADED PLANT CONDITION concerns listed above. The hydrologic and vegetative practices will address the SOIL QUALITY DEGRADATION and INADEQUATE HABITAT FOR FISH AND WILDLIFE concerns.

Scenario Feature Measure: Acres of Tract

Scenario Unit: Acre

Scenario Typical Size: 15

Total Scenario Cost: \$17,095.57

Scenario Cost/Unit: \$1,139.70

Cost Details

Component Name	Id	Description	Unit	Cost	Qty	Total
----------------	----	-------------	------	------	-----	-------

Equipment Installation

Earthfill, Roller Compacted	49	Earthfill, roller or machine compacted, includes equipment and labor	Cubic Yard	\$3.72	89	\$331.41
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	\$1.97	8067	\$15,894.89

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	\$434.63	2	\$869.26
-------------------------------	------	--	------	----------	---	----------

Practice: 657 - Wetland Restoration

Scenario: #6 - Aquaculture Pond Levee Breach

Scenario Description: Levee Breach - minimum 50 ft. base with 6:1 side slope (includes mobilization, equipment and labor to cut breach and spread spoil along levee). An Aquaculture Pond tract on a large floodplain is to be restored to a wetland and reconnected to the floodplain. It has been converted to aquacultural production by clearing of woody vegetation, land leveling and building levees. The total levee breach is 500 feet. Resource Concerns are: 19 - DEGRADED PLANT CONDITION, Inadequate structure and composition, 22- INADEQUATE HABITAT FOR FISH AND WILDLIFE - Habitat degradation.

Before Situation: Levee construction for aquaculture production has reduced floodplain size and eliminated floodplain function in impacted area. The conversion to aquaculture was achieved by filling and leveling of backswamp, side channel, and/or oxbow features which formerly ponded water, provided floodplain storage, and/or provided floodplain filtering. The site no longer has access to floodwater and does not function as part of the floodplain.

After Situation: A minimum breach of 50 feet at the base (varying top widths) will be used to allow the floodplain hydrologic access into and out of the existing aquaculture pond bottoms in order to restore floodplain wetland functions. Levee breaches will be installed in sizes and amounts where needed to restore floodplain and wetland function. Levee breaches are typically installed with 6:1 side slopes to provide easy maintenance and deter animal burrowing. Bottom widths are wide (min. 50') to allow adequate floodplain function, maintenance, and deter beaver dam activity. Breaches are typically installed with heavy equipment to address the resource problem of impaired hydrological function.

Scenario Feature Measure: <Unknown>

Scenario Unit: Each

Scenario Typical Size: 8

Total Scenario Cost: \$10,909.92

Scenario Cost/Unit: \$1,363.74

Cost Details

Component Name	Id	Description	Unit	Cost	Qty	Total
----------------	----	-------------	------	------	-----	-------

Equipment Installation

Earthfill, Roller Compacted	49	Earthfill, roller or machine compacted, includes equipment and labor	Cubic Yard	\$3.72	945	\$3,518.92
Excavation, clay, large equipment, 1500 ft	1217	Bulk excavation of clay with scrapers with average haul distance of 1500 feet. Includes equipment and labor.	Cubic Yard	\$5.85	945	\$5,532.94

Labor

Supervisor or Manager	234	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	\$39.85	3	\$119.54
-----------------------	-----	--	------	---------	---	----------

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	\$434.63	4	\$1,738.53
-------------------------------	------	--	------	----------	---	------------

Practice: 657 - Wetland Restoration

Scenario: #7 - Levee Breach _ DS

Scenario Description: Levee Breach - minimum 50 ft. base with 6:1 side slope (includes mobilization, equipment and labor to cut breach and spread spoil along levee). A levee on a large floodplain is to be breached to restore a wetland. It has been converted to agricultural production by clearing of woody vegetation, land leveling and building levees. The levee size is 1000 feet. Resource Concerns are: 19 - DEGRADED PLANT CONDITION, Inadequate structure and composition, 22- INADEQUATE HABITAT FOR FISH AND WILDLIFE - Habitat degradation.

Before Situation: This practice will be applied on existing levees impacting the restoration of the hydrological functions of wetlands.

After Situation: A minimum breach of 50 feet will be used to restore wetland function. This is typically installed with heavy equipment to address the resource problem of impaired hydrological function.

Scenario Feature Measure: number of breaches

Scenario Unit: Each

Scenario Typical Size: 1

Total Scenario Cost: \$2,688.84

Scenario Cost/Unit: \$2,688.84

Cost Details

Component Name	Id	Description	Unit	Cost	Qty	Total
----------------	----	-------------	------	------	-----	-------

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	\$27.99	12	\$335.82
Supervisor or Manager	234	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	\$39.85	4	\$159.39

Equipment Installation

Dozer, 140 HP	927	Track mounted Dozer with horsepower range of 125 to 160. Equipment and power unit costs. Labor not included.	Hour	\$110.36	12	\$1,324.36
---------------	-----	--	------	----------	----	------------

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	\$434.63	2	\$869.26
-------------------------------	------	--	------	----------	---	----------

Practice: 657 - Wetland Restoration

Scenario: #8 - Levee Demolition - DS

Scenario Description: Demolition of Levee - 10 ft. top and 2:1 side slope. A levee on a large floodplain is to be demolished to restore a wetland. It has been converted to agricultural production by clearing of woody vegetation, land leveling and building levees. The levee size is 1000 feet. Resource Concerns are: 19 - DEGRADED PLANT CONDITION, Inadequate structure and composition, 22- INADEQUATE HABITAT FOR FISH AND WILDLIFE - Habitat degradation.

Before Situation: This practice will be applied by removing existing levees which impede the restoration of the hydrological functions of wetlands.

After Situation: This is typically installed with heavy equipment to address the resource problem of impaired hydrological function.

Scenario Feature Measure: 1000 ft of levee

Scenario Unit: Each

Scenario Typical Size: 1

Total Scenario Cost: \$10,480.49

Scenario Cost/Unit: \$10,480.49

Cost Details

Component Name	Id	Description	Unit	Cost	Qty	Total
----------------	----	-------------	------	------	-----	-------

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	\$27.99	96	\$2,686.59
Supervisor or Manager	234	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	\$39.85	15	\$597.72

Equipment Installation

Backhoe, 80 HP	926	Wheel mounted backhoe excavator with horsepower range of 60 to 90. Equipment and power unit costs. Labor not included.	Hour	\$49.88	24	\$1,197.06
Dozer, 105 HP	1320	Track mounted Dozer with horsepower range of 90 to 125. Equipment and power unit costs. Labor not included.	Hour	\$75.09	24	\$1,802.12
Truck, dump, 8 CY	1401	Dump truck for moving bulk material. Typically capacity is 12 ton or 8 cubic yards. Includes equipment only.	Hour	\$51.22	48	\$2,458.48

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	\$434.63	4	\$1,738.53
-------------------------------	------	--	------	----------	---	------------

Practice: 657 - Wetland Restoration

Scenario: #9 - Microhydrology - dump spoil - DS

Scenario Description: Pond/Serpentine excavation and dumping within 100 ft., creating mound from spoil (typically 1.2 acre pond or 750 ft. serpentine). Serpentine typical size is 50' bottom, 3:1 s/s 3' deep, yeilding 4916 c.y. of spoil.

Before Situation: This practice is typically conducted on hydrologically impaired degraded wetlands where slough type habitat has been removed.

After Situation: This is typically installed with heavy euipment to address the resource problem of impaired hydrological function and lacking wetland habatit.

Scenario Feature Measure: 750' of serpentine

Scenario Unit: Acre

Scenario Typical Size: 1.2

Total Scenario Cost: \$8,793.86

Scenario Cost/Unit: \$7,328.22

Cost Details

Component Name	Id	Description	Unit	Cost	Qty	Total
----------------	----	-------------	------	------	-----	-------

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	\$27.99	76	\$2,126.88
Supervisor or Manager	234	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	\$39.85	20	\$796.96

Equipment Installation

Backhoe, 80 HP	926	Wheel mounted backhoe excavator with horsepower range of 60 to 90. Equipment and power unit costs. Labor not included.	Hour	\$49.88	38	\$1,895.35
Dozer, 80 HP	929	Track mounted Dozer with horsepower range of 60 to 90. Equipment and power unit costs. Labor not included.	Hour	\$58.85	38	\$2,236.14

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	\$434.63	4	\$1,738.53
-------------------------------	------	--	------	----------	---	------------

Practice: 657 - Wetland Restoration

Scenario: #10 - Microhydrology haul spoil - DS

Scenario Description: Pond/Serpentine excavation and dumping greater than 200 ft., creating mound from spoil (typically 1.2 acre pond or 750 ft. serpentine). Serpentine typical size is 50' bottom, 3:1 s/s 3' deep, yeilding 4916 c.y. of spoil.

Before Situation: This practice is typically conducted on hydrologically impaired degraded wetlands where slough type habitat has been removed.

After Situation: This is typically installed with heavy euipment to address the resource problem of impaired hydrological function and lacking wetland habatit.

Scenario Feature Measure: 750' of serpentine

Scenario Unit: Acre

Scenario Typical Size: 1.2

Total Scenario Cost: \$11,145.58

Scenario Cost/Unit: \$9,287.98

Cost Details

Component Name	Id	Description	Unit	Cost	Qty	Total
----------------	----	-------------	------	------	-----	-------

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	\$27.99	101	\$2,826.51
Supervisor or Manager	234	Labor involving supervision or management activities. Includes crew supervisors, foremen and farm/ranch managers time required for adopting new technology, etc.	Hour	\$39.85	10	\$398.48

Equipment Installation

Backhoe, 80 HP	926	Wheel mounted backhoe excavator with horsepower range of 60 to 90. Equipment and power unit costs. Labor not included.	Hour	\$49.88	38	\$1,895.35
Dozer, 80 HP	929	Track mounted Dozer with horsepower range of 60 to 90. Equipment and power unit costs. Labor not included.	Hour	\$58.85	25	\$1,471.14
Truck, dump, 8 CY	1401	Dump truck for moving bulk material. Typically capacity is 12 ton or 8 cubic yards. Includes equipment only.	Hour	\$51.22	38	\$1,946.30

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	\$434.63	6	\$2,607.79
-------------------------------	------	--	------	----------	---	------------