

**Practice:** 644 - Wetland Wildlife Habitat Management

**Scenario:** #2 - Wetland Wildlife Habitat Monitoring and Management, Low Intensity and Complexity

**Scenario Description:** This scenario is applied to wetlands on landuse types including those with wildlife as a modifier, where any resource concern is identified for wildlife, and where low intensity and complexity of monitoring or management will treat the identified resource concern. Only 1-2 monitoring efforts are needed and each requiring less than 2 people and 4 hours per effort. The adaptive management actions such as cutting of limbs that are impeding access of birds into nest boxes, replacing damaged fence markers, cleaning of nest structures and debris around other structures requires only hand labor and less than 8 hours labor per year.

**Before Situation:** Wetland wildlife habitat is deficient due to the absence of annual monitoring and adaptive management actions of low intensity and complexity.

**After Situation:** Wildlife habitat is improved by implementation of annual adaptive management actions of low intensity and complexity.

**Scenario Feature Measure:** Monitoring efforts and adaptive management actions

**Scenario Unit:** Acre

**Scenario Typical Size:** 160

**Total Scenario Cost:** \$654.37

**Scenario Cost/Unit:** \$4.09

**Cost Details**

Component Name	Id	Description	Unit	Cost	Qty	Total
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**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	\$21.71	7	\$151.96
Specialist Labor	235	Labor requiring a specialized skill set: Includes Agronomists, Foresters, Biologists, etc. to provide additional technical information during the planning and implementation of the practice. Does not include NRCS or TSP services.	Hour	\$104.47	4	\$417.87

**Equipment Installation**

Chainsaw	937	Equipment and power unit costs. Labor not included.	Hour	\$4.30	1	\$4.30
Rangeland/grassland field monitoring kit	967	Miscellaneous tools needed to complete rangeland/grassland monitoring. Materials may include camera, clippers, plot frame, scale, tape measure, etc. Includes materials and shipping only.	Each	\$48.10	1	\$48.10
Truck, Pickup	939	Equipment and power unit costs. Labor not included.	Hour	\$21.43	1.5	\$32.14

**Practice:** 644 - Wetland Wildlife Habitat Management

**Scenario:** #3 - Habitat Monitoring and Management, Medium Intensity and Complexity

**Scenario Description:** This scenario is applied to wetland areas located on all landuse types including those with wildlife as a modifier, where any resource concern is identified for wildlife, and where medium intensity and complexity of monitoring or management will treat the identified resource concern. Two or three monitoring efforts are needed and each requiring less than 2 people and less than 8 hours per effort. Two or three adaptive management efforts are required (such as cutting of limbs that are impeding access of birds into nest boxes, replacing damaged fence markers, cleaning of nest structures and debris around other structures). The adaptive mgmt requires hand labor and the occasional use of light equipment. A crew of 2 is needed for the hand labor efforts and the crew will require less than 16 total hours of labor per mgmt effort. Mowing of roads and trail is required to provide access for monitoring and management.

**Before Situation:** Wetland wildlife habitat is deficient due to the absence of annual monitoring and adaptive management actions of medium intensity and complexity.

**After Situation:** Wetland wildlife habitat is improved by implementation of annual adaptive management actions of medium intensity and complexity.

**Scenario Feature Measure:** Monitoring efforts and adaptive management actions

**Scenario Unit:** Acre

**Scenario Typical Size:** 160

**Total Scenario Cost:** \$2,045.91

**Scenario Cost/Unit:** \$12.79

**Cost Details**

Component Name	Id	Description	Unit	Cost	Qty	Total
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**Labor**

Equipment Operators, Light	232	Includes: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12", Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers	Hour	\$23.59	5	\$117.93
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	\$21.71	20	\$434.18
Specialist Labor	235	Labor requiring a specialized skill set: Includes Agronomists, Foresters, Biologists, etc. to provide additional technical information during the planning and implementation of the practice. Does not include NRCS or TSP services.	Hour	\$104.47	10	\$1,044.68

**Equipment Installation**

Chainsaw	937	Equipment and power unit costs. Labor not included.	Hour	\$4.30	4	\$17.18
Mower, Bush Hog	940	Equipment and power unit costs. Labor not included.	Hour	\$51.06	5	\$255.28
Rangeland/grassland field monitoring kit	967	Miscellaneous tools needed to complete rangeland/grassland monitoring. Materials may include camera, clippers, plot frame, scale, tape measure, etc. Includes materials and shipping only.	Each	\$48.10	1	\$48.10
Truck, Pickup	939	Equipment and power unit costs. Labor not included.	Hour	\$21.43	6	\$128.57

**Practice:** 644 - Wetland Wildlife Habitat Management

**Scenario:** #4 - Habitat Monitoring and Management, High Intensity and Complexity

**Scenario Description:** This scenario is applied to all landuse types including those with wildlife as a modifier, where any resource concern is identified for wildlife, and where high intensity and complexity of monitoring or management will treat the identified resource concern. Two - four monitoring efforts are needed and each requiring less than 2 people and less than 8 hours per effort. The adaptive management actions (2 - 5 efforts) such as cutting of limbs that are impeding access of birds into nest boxes, replacing damaged fence markers, cleaning of nest structures and debris around other structures requires hand labor and light equipment, requiring a 2-person crew less than 1 day per effort.

**Before Situation:** Wetland wildlife habitat is deficient due to the absence of annual monitoring and adaptive management actions of high intensity and complexity.

**After Situation:** Wetland wildlife habitat is improved by implementation of annual adaptive management actions of high intensity and complexity.

**Scenario Feature Measure:** Monitoring efforts and adaptive management actions

**Scenario Unit:** Acre

**Scenario Typical Size:** 80

**Total Scenario Cost:** \$2,476.58

**Scenario Cost/Unit:** \$30.96

**Cost Details**

Component Name	Id	Description	Unit	Cost	Qty	Total
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**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	\$28.82	4	\$115.26
Equipment Operators, Light	232	Includes: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12", Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers	Hour	\$23.59	3	\$70.76
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	\$21.71	20	\$434.18
Specialist Labor	235	Labor requiring a specialized skill set: Includes Agronomists, Foresters, Biologists, etc. to provide additional technical information during the planning and implementation of the practice. Does not include NRCS or TSP services.	Hour	\$104.47	10	\$1,044.68

**Equipment Installation**

Chainsaw	937	Equipment and power unit costs. Labor not included.	Hour	\$4.30	8	\$34.36
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	\$111.88	4	\$447.50
Mower, Bush Hog	940	Equipment and power unit costs. Labor not included.	Hour	\$51.06	3	\$153.17
Rangeland/grassland field monitoring kit	967	Miscellaneous tools needed to complete rangeland/grassland monitoring. Materials may include camera, clippers, plot frame, scale, tape measure, etc. Includes materials and shipping only.	Each	\$48.10	1	\$48.10
Truck, Pickup	939	Equipment and power unit costs. Labor not included.	Hour	\$21.43	6	\$128.57

**Practice:** 644 - Wetland Wildlife Habitat Management

**Scenario:** #5 - Development of Shallow Micro-Topographic Features with Normal Farming Equipment.

**Scenario Description:** This typical scenario is installed on non-forested wetlands, including openlands prior to tree planting. The purpose is to increase plant species richness and diversity, create micro-habitats for invertebrates, increase water infiltration and reduce run-off. The area is plowed to loosen the soil. Then the soil is excavated with normal farming equipment (e.g. tractor and box-blade) to a depth of 2-6 inches and immediately deposited. This lowering and raising of a box-blade restores the original micro-topographic features (6' X 6' depressions and mounds) common to most landscapes and landforms prior to clearing, tilling, and annual mowing. Restoration of shallow but frequent micro-topographic features has been lost by the smoothing action of tillage, mowing and the original land-clearing. This scenario is typically implemented for ecosystem restoration projects such as prairie restoration and range-land restoration, and particularly on moderately well-drained soils.

**Before Situation:** Micro-topographic features have been eliminated by past conversion to agriculture and/or past cultural practices. This has resulted in the lack of micro-soil moisture gradients within the field. The opportunity for plant species richness and diversity is minimal. Water storage potential is absent. Water rapidly runs off the field after rains and snow melt, carrying nutrients, solids and surface organic materials. No micro-ponding sites are available for invertebrate use.

**After Situation:** Shallow micro-depressions and mounds are numerous. This varied micro-topographic features provided varied moisture gradients required for high plant species richness and diversity. Wildlife habitat is improved. Water conservation is increased, increasing vegetative production. Water quality is improved as the micro-depressions capture sediments, nutrients and manure. Over time, the micro-depressions become more nutrient rich than the micro-highs, further increasing plant species richness.

**Scenario Feature Measure:** hours of tractor use

**Scenario Unit:** Acre

**Scenario Typical Size:** 20

**Total Scenario Cost:** \$808.67

**Scenario Cost/Unit:** \$40.43

**Cost Details**

Component Name	Id	Description	Unit	Cost	Qty	Total
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**Labor**

Equipment Operators, Light	232	Includes: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12", Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers	Hour	\$23.59	6	\$141.51
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**Equipment Installation**

Tillage, Primary	946	Includes heavy disking (offset) or chisel plow. Includes equipment, power unit and labor costs.	Acre	\$16.33	20	\$326.64
Tractor, agricultural, 120 HP	962	Agricultural tractor with horsepower range of 90 to 140. Equipment and power unit costs. Labor not included.	Hour	\$56.75	6	\$340.52

**Practice:** 644 - Wetland Wildlife Habitat Management

**Scenario:** #6 - Development of Deep Micro-Topographic Features with Heavy Equipment.

**Scenario Description:** This typical scenario is installed on non-forested wetlands (or open land prior to tree planting), where micro-topographic features have been removed by past farming and/or ranching cultural practices. The purpose is to increase plant species richness and diversity, create micro-habitats for invertebrates, increase water infiltration and reduce run-off. The area is plowed 2 weeks prior to excavation to kill existing vegetation and allow for proper dirt work. Then the soil is excavated with track equipment (dozer) to a depth of 6-12 inches and immediately deposited. This lowering and raising of a dozer -blade restores the original deep micro-topographic features (10' X10' depressions and mounds) common to many landscapes and landforms prior to the lands conversion to agricultural lands. This scenario it typically implemented for ecosystem restoration projects such as wetland restoration (herbaceous or prior to planting of woody species), prairie restoration and range-land restoration. It is most commonly applied to well-drained soils as the purpose is for the micro-depression to pond water for short duration (less than 7 days).

**Before Situation:** Micro-topographic features have been eliminated by past conversion to agriculture and/or past cultural practices. This has resulted in the lack of micro-soil moisture gradients within the field. The opportunity for plant species richness and diversity is minimal. Water storage potential is absent. Water rapidly runs off the field after rains and snow melt, carrying nutrients, solids and surface organic materials. No micro-ponding sites are available aquatic dependent invertebrates. Vertebrate wildlife habitat is lacking diversity.

**After Situation:** Deep (6" - 12" depth) micro-depressions and mounds are numerous. These varied micro-topographic features provide varied moisture gradients required for development of high plant species richness and diversity. Wildlife habitat is improved. Water conservation is increased, increasing vegetative production. Water quality is improved as the micro-depressions capture sediments, nutrients and manure. Over time, the micro-depressions become more nutrient rich than the micro-highs, further increasing plant species richness.

**Scenario Feature Measure:** Hours

**Scenario Unit:** Acre

**Scenario Typical Size:** 20

**Total Scenario Cost:** \$2,183.34

**Scenario Cost/Unit:** \$109.17

**Cost Details**

Component Name	Id	Description	Unit	Cost	Qty	Total
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**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	\$28.82	8	\$230.53
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**Equipment Installation**

Dozer, 200 HP	928	Track mounted Dozer with horsepower range of 160 to 250. Equipment and power unit costs. Labor not included.	Hour	\$190.96	6	\$1,145.76
Tillage, Primary	946	Includes heavy disking (offset) or chisel plow. Includes equipment, power unit and labor costs.	Acre	\$16.33	20	\$326.64

**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	\$480.42	1	\$480.42
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**Practice:** 644 - Wetland Wildlife Habitat Management

**Scenario:** #7 - Topographic Feature Creation, Low

**Scenario Description:** The setting is all landuses, but typically is on lands used for the production of forest products grazing and/or fish and wildlife where the slope gradient is less than two percent and soils that are not excessively drained. The State-approved habitat evaluation or appraisal found that a limiting factor for wetland wildlife is the absence of sufficient variability in microtopographic relief in the area. The construction of topographic features will provide for diverse soil hydrologic conditions needed to treat the degraded plant condition and/or inadequate habitat for wetland wildlife. Excavated spoil is spread adjacent to excavation or moved to designated locations but not compacted. This scenario is for earthwork, not associated with habitat structures or any other national standard (e.g. Wetland Restoration (657), Wetland Enhancement (659), Wetland Creation (658), and Dike (356)). Facilitating practices may include Structure for Water Control (587).

**Before Situation:** The site lacks sufficient micro- and macrotopographic features needed for optimal wetland wildlife habitat for target species. Typically the site has been previously manipulated and utilized for agricultural, livestock or forest production. With the loss of hummocks, depressions and other topographic features scattered throughout the site, both plant and animal species that are dependent on the microenvironments created by these features are no longer present or are in decline within the planning unit.

**After Situation:** As a result of the installation, the topographic relief needed to provide the varied wetland wildlife habitat needs is provided.

**Scenario Feature Measure:** Acres of constructed features

**Scenario Unit:** Acre

**Scenario Typical Size:** 10

**Total Scenario Cost:** \$8,942.53

**Scenario Cost/Unit:** \$894.25

**Cost Details**

Component Name	Id	Description	Unit	Cost	Qty	Total
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**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	\$28.82	56	\$1,613.68
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**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	\$121.99	56	\$6,831.40
Satellite imagery, aerial photography, infrared	966	Infrared imagery	Acre	\$0.17	100	\$17.04

**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	\$480.42	1	\$480.42
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**Practice:** 644 - Wetland Wildlife Habitat Management

**Scenario:** #8 - Topographic Feature Creation, High

**Scenario Description:** The setting is all landuses, but typically is on lands used for the production of forest products grazing and/or fish and wildlife where the slope gradient is less than two percent and soils that are not excessively drained. The State-approved habitat evaluation or appraisal found that a limiting factor for wetland wildlife is the absence of sufficient variability in microtopographic relief in the area. The construction of topographic features will provide for diverse soil hydrologic conditions needed to treat the degraded plant condition and/or inadequate habitat for wetland wildlife. Excavated spoil is needed to further enhance macrotopographic relief by placing and compacting the fill in strategic areas. This scenario is for earthwork, not associated with habitat structures or any other national standard (e.g. Wetland Restoration (657), Wetland Enhancement (659), Wetland Creation (658), and Dike (356)). Facilitating practices may include Structure for Water Control (587).

**Before Situation:** The site lacks sufficient micro- and macrotopographic features needed for optimal wetland wildlife habitat for target species. Typically the site has been previously manipulated and utilized for agricultural, livestock or forest production. With the loss of hummocks, depressions and other topographic features scattered throughout the site, both plant and animal species that are dependent on the microenvironments created by these features are no longer present or are in decline within the planning unit.

**After Situation:** As a result of the installation, the topographic relief needed to provide the varied wetland wildlife habitat needs is provided.

**Scenario Feature Measure:** Acres of constructed features

**Scenario Unit:** Acre

**Scenario Typical Size:** 10

**Total Scenario Cost:** \$17,705.78

**Scenario Cost/Unit:** \$1,770.58

**Cost Details**

Component Name	Id	Description	Unit	Cost	Qty	Total
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**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	\$121.99	56	\$6,831.40
Earthfill, Roller Compacted	49	Earthfill, roller or machine compacted, includes equipment and labor	Cubic Yard	\$4.08	2150	\$8,763.25
Satellite imagery, aerial photography, infrared	966	Infrared imagery	Acre	\$0.17	100	\$17.04

**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	\$28.82	56	\$1,613.68
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**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	\$480.42	1	\$480.42
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**Practice:** 644 - Wetland Wildlife Habitat Management

**Scenario:** #9 - Management and monitoring only, foregone income

**Scenario Description:** Site management will include managing/monitoring the site to provide food and cover for wetland wildlife species on cropland. Annual vegetation (crops or other annual vegetation) will be allowed to establish and persist during critical nesting and brood rearing seasons and will remain standing (not harvested) until migratory species have left the site. The setting is on lands used for the production of crops where the slope gradient is less than two percent and soils that are not excessively drained. The State-approved habitat evaluation or appraisal found that a limiting factor for wetland wildlife is the absence of sufficient cover and food in the area. The manipulation of existing cover will be accomplished thru mechanical methods to provide a diverse vegetation mosaic with in and adjacent to the existing wetland addressing inadequate habitat for wetland wildlife. Where this occurs on cropped fields, annual crops will be lost for one growing season (foregone income is included).

**Before Situation:** The site lacks sufficient and diverse cover and food needed for optimal wetland wildlife habitat or target species. Typically the site has been previously manipulated and utilized for agricultural. With the loss of abundant and diverse cover and food throughout the site, both plant and animal species that are dependent on these elements are no longer present or are in decline within the planning unit.

**After Situation:** Agricultural crop or annual vegetation has been allowed to persist providing needed food and cover essential for identified species. Crops and annual vegetation will not be harvested during the critical seasons as identified by the habitat evaluation. As a result of the installation, adequate habitat needs have been provided.

**Scenario Feature Measure:** Acres of Wetland Wildlife Cover and Food

**Scenario Unit:** Acre

**Scenario Typical Size:** 10

**Total Scenario Cost:** \$4,663.60

**Scenario Cost/Unit:** \$466.36

**Cost Details**

Component Name	Id	Description	Unit	Cost	Qty	Total
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**Equipment Installation**

Tillage, Primary	946	Includes heavy disking (offset) or chisel plow. Includes equipment, power unit and labor costs.	Acre	\$16.33	10	\$163.32
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**Foregone Income**

FI, Corn Dryland	1959	Dryland Corn is Primary Crop	Acre	\$453.83	5	\$2,269.13
FI, Soybeans Dryland	1961	Dryland Soybeans is Primary Crop	Acre	\$446.23	5	\$2,231.15