

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

**Scenario:** #1 - Habitat Monitoring and Management, Very-Low Intensity and Complexity

**Scenario Description:** This scenario is applied to wetlands within all landuse types including those with wildlife as a modifier, where any resource concern is identified for wildlife, and where very-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 16 hours of labor per year.

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

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

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

**Scenario Unit:** Acre

**Scenario Typical Size:** 640

**Total Scenario Cost:** \$666.71

**Scenario Cost/Unit:** \$1.04

**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	\$23.74	10	\$237.36
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	\$102.74	3	\$308.23

**Equipment Installation**

Chainsaw	937	Equipment and power unit costs. Labor not included.	Hour	\$4.30	2	\$8.61
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	\$21.47	3	\$64.41

**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:** Area of Monitoring efforts and adaptive management actions

**Scenario Unit:** Acre

**Scenario Typical Size:** 160

**Total Scenario Cost:** \$558.99

**Scenario Cost/Unit:** \$3.49

**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	\$23.74	7	\$166.15
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	\$102.74	3	\$308.23

**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	\$21.47	1.5	\$32.21

**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:** Area of Monitoring efforts and adaptive management actions

**Scenario Unit:** Acre

**Scenario Typical Size:** 160

**Total Scenario Cost:** \$2,071.90

**Scenario Cost/Unit:** \$12.95

**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	\$23.96	5	\$119.81
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	\$23.74	20	\$474.73
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	\$102.74	10	\$1,027.42

**Equipment Installation**

Chainsaw	937	Equipment and power unit costs. Labor not included.	Hour	\$4.30	4	\$17.22
Mower, Bush Hog	940	Equipment and power unit costs. Labor not included.	Hour	\$51.16	5	\$255.80
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	\$21.47	6	\$128.83

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

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

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

**Scenario Unit:** Acre

**Scenario Typical Size:** 80

**Total Scenario Cost:** \$2,547.02

**Scenario Cost/Unit:** \$31.84

**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	\$39.93	4	\$159.74
Equipment Operators, Light	232	Includes: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12", Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers	Hour	\$23.96	3	\$71.89
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	\$23.74	20	\$474.73
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	\$102.74	10	\$1,027.42

**Equipment Installation**

Chainsaw	937	Equipment and power unit costs. Labor not included.	Hour	\$4.30	8	\$34.43
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	\$112.10	4	\$448.41
Mower, Bush Hog	940	Equipment and power unit costs. Labor not included.	Hour	\$51.16	3	\$153.48
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	\$21.47	6	\$128.83

**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:** Area of topographic feature

**Scenario Unit:** Acre

**Scenario Typical Size:** 20

**Total Scenario Cost:** \$812.28

**Scenario Cost/Unit:** \$40.61

**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	\$23.96	6	\$143.78
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**Equipment Installation**

Tillage, Primary	946	Includes heavy disking (offset) or chisel plow. Includes equipment, power unit and labor costs.	Acre	\$16.36	20	\$327.29
Tractor, agricultural, 120 HP	962	Agricultural tractor with horsepower range of 90 to 140. Equipment and power unit costs. Labor not included.	Hour	\$56.87	6	\$341.21

**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 deep 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:** Area of topographic feature

**Scenario Unit:** Acre

**Scenario Typical Size:** 20

**Total Scenario Cost:** \$2,276.22

**Scenario Cost/Unit:** \$113.81

**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	\$39.93	8	\$319.47
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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	\$191.34	6	\$1,148.06
Tillage, Primary	946	Includes heavy disking (offset) or chisel plow. Includes equipment, power unit and labor costs.	Acre	\$16.36	20	\$327.29

**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	\$481.39	1	\$481.39
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**Practice:** 644 - Wetland Wildlife Habitat Management

**Scenario:** #17 - Establishment of seasonal wildlife forage or cover on non-cropland

**Scenario Description:** The habitat assessment identifies the need to provide seasonal forage or cover for target wildlife species or guild. This habitat need will be met through the establishment of annual plants by planting of seed. The typical scenario will occur on areas supporting perennial herbaceous vegetation, not currently in cropland. Due to existing dense vegetation, these area will need to be mowed 2-3 weeks prior to disking (primarily disking), then followed by a light disking. Seed bed preparation will be furthered by firming the seed bed by cultipacking the site. Mixed fertilizer is required to establish planted wildlife forage. A seed mix consisting of annuals is typical for this activity.

**Before Situation:** The existing habitat has an excess of herbaceous perennial habitat suitable for cover, but is lacking high quality forage seasonal forage, or the cover conditions is too thick and establishment of annuals create a diverse cover condition for the target wildlife species.

**After Situation:** The availability of high-quality seasonal forage for the target wildlife species is provided and target wildlife health is improved, and populations are increased.

**Scenario Feature Measure:** acre

**Scenario Unit:** Acre

**Scenario Typical Size:** 10

**Total Scenario Cost:** \$1,430.84

**Scenario Cost/Unit:** \$143.08

**Cost Details**

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

Cultipacking	1100	Includes equipment, power unit and labor costs.	Acre	\$8.28	10	\$82.78
Mower, Bush Hog	940	Equipment and power unit costs. Labor not included.	Hour	\$51.16	3	\$153.48
Seeding Operation, No Till/Grass Drill	960	No Till drill or grass drill for seeding. Includes equipment, power unit and labor costs.	Acre	\$21.05	10	\$210.48
Tillage, Light	945	Includes light disking (tandem) or field cultivator. Includes equipment, power unit and labor costs.	Acre	\$10.98	20	\$219.64
Tillage, Primary	946	Includes heavy disking (offset) or chisel plow. Includes equipment, power unit and labor costs.	Acre	\$16.36	10	\$163.65

**Materials**

Five Species Mix, Cool Season, Annual Grasses and Legumes	2320	Cool season, introduced grass and legume mix. Includes material and shipping only.	Acre	\$60.08	10	\$600.81
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**Practice:** 644 - Wetland Wildlife Habitat Management

**Scenario:** #18 - Establishment of annuals for wildlife on cropland, with FI

**Scenario Description:** The habitat assessment identified the need to provide seasonal forage or cover for target wildlife species or guild. This identified habitat need will be met through the establishment of annual vegetation by planting of seed. This typical scenario is that this activity will occur on cropland, but outside of the normal cropping season. Thus, income will not be foregone. Seed bed preparation will be furthered by firming the seed bed by cultipacking the site. The only fertilizer need is N as this is cropland and P and K levels are sufficient.

**Before Situation:** Cropland that fails to provide adequate wildlife habitat (forage and/or cover) seasonally for the target wildlife species..

**After Situation:** The availability of high-quality seasonal forage for the target wildlife species is provided and target wildlife health and populations are increased.

**Scenario Feature Measure:** acre

**Scenario Unit:** Acre

**Scenario Typical Size:** 10

**Total Scenario Cost:** \$4,467.48

**Scenario Cost/Unit:** \$446.75

**Cost Details**

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

Cultipacking	1100	Includes equipment, power unit and labor costs.	Acre	\$8.28	10	\$82.78
Seeding Operation, No Till/Grass Drill	960	No Till drill or grass drill for seeding. Includes equipment, power unit and labor costs.	Acre	\$21.05	10	\$210.48
Tillage, Light	945	Includes light disking (tandem) or field cultivator. Includes equipment, power unit and labor costs.	Acre	\$10.98	10	\$109.82

**Materials**

Five Species Mix, Cool Season, Annual Grasses and Legumes	2320	Cool season, introduced grass and legume mix. Includes material and shipping only.	Acre	\$60.08	10	\$600.81
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**Foregone Income**

FI, Corn Dryland	1959	Dryland Corn is Primary Crop	Acre	\$346.36	10	\$3,463.58
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**Practice:** 644 - Wetland Wildlife Habitat Management

**Scenario:** #19 - Establishment of annual vegetation on cropland, without FI

**Scenario Description:** The habitat assessment identifies the need to provide seasonal forage or cover for target wildlife species or guild, outside of the cropping season. This habitat deficiency will be met through the establishment of annual vegetation by planting of seed following harvest. The typical scenario is that this activity will occur on cropland. Seed bed preparation will be light disking followed by firming the seed bed by cultipacking. Mixed fertilizer is required to establish planted wildlife forage.

**Before Situation:** The existing habitat is cropland, lacking high quality forage seasonal forage or the cover conditions created by the planting of annual vegetative species outside of the cropping season.

**After Situation:** The area is cropped to a cash-crop and then during the non-crop season, wildlife habitat is enhanced by planting high-quality seasonal forage for seasonal cover. Target wildlife individual's health and populations are increased.

**Scenario Feature Measure:** acre

**Scenario Unit:** Acre

**Scenario Typical Size:** 10

**Total Scenario Cost:** \$1,003.90

**Scenario Cost/Unit:** \$100.39

**Cost Details**

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

Cultipacking	1100	Includes equipment, power unit and labor costs.	Acre	\$8.28	10	\$82.78
Seeding Operation, No Till/Grass Drill	960	No Till drill or grass drill for seeding. Includes equipment, power unit and labor costs.	Acre	\$21.05	10	\$210.48
Tillage, Light	945	Includes light disking (tandem) or field cultivator. Includes equipment, power unit and labor costs.	Acre	\$10.98	10	\$109.82

**Materials**

Five Species Mix, Cool Season, Annual Grasses and Legumes	2320	Cool season, introduced grass and legume mix. Includes material and shipping only.	Acre	\$60.08	10	\$600.81
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