

**Practice: 645 - Upland Wildlife Habitat Management**

**Scenario: #4 - Monitoring, Management, No Foregone Income - No Training Required, Low Intensity and Low Complexity**

**Scenario Description:**

Setting is any lands with the potential to provide upland wildlife habitat and that potential is not currently being captured. The identified upland wildlife habitat limiting factors can be restored, enhanced or created, with the application of this practice alone, or in combination with other supporting and facilitating practices. Monitoring will be used to determine if the conservation system meets or exceeds the minimum quality criteria for the targeted wildlife. Management will be implemented based on the findings of the habitat assessment and monitoring. Upland wildlife habitat management and monitoring needed to treat the resource concerns requires no training, no qualitative data assessment, no water quality monitoring and is low in complexity and intensity. Examples of prescribed monitoring, include but are not limited to: photo points taken, use documentation by livestock, regeneration/breeding success, completing an annual management records log, documenting wildlife sightings, documenting location and species of invasive plants and condition of vegetative and structural treatments. No decision or treatment associated with this practice or facilitating practices will require income foregone. The planner will specify locations and identify the methods to the customer who will implement the monitoring and management plan. Facilitating practices may include but not limited to: 314, 315, 327, 342, 380, 384, 390, 391, 422, 472, 490, 511, 528, 550, 612, 647, 650, 654, 660, 666.

**Before Situation:**

Existing degraded plant conditions and resulting inadequate habitat for fish and wildlife have resulting in low use of the area by target and associated upland wildlife species.

**After Situation:**

Based on the results of a State-approved upland wildlife habitat assessment process, the application of upland wildlife habitat management efforts and prescribed monitoring have been implemented. With the application of this practice alone, or in combination with other supporting and facilitating practices, the inadequate upland wildlife habitat conditions have addressed. Monitoring has maximized the benefits of the needed upland wildlife habitat treatment efforts.

**Scenario Feature Measure:** Acres Managed and Monitored

**Scenario Unit:** Acre

**Scenario Typical Size:** 100

**Scenario Cost:** \$1,586.43

**Scenario Cost/Unit:** \$15.86

**Cost Details (by category):**

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
<b>Equipment/Installation</b>						
Satellite imagery, aerial photography, infrared	966	Infrared imagery	Acre	\$0.16	100	\$16.00
All terrain vehicles, ATV	965	Includes equipment, power unit and labor costs.	Hour	\$30.24	4	\$120.96
Tractor, agricultural, 60 HP	963	Agricultural tractor with horsepower range of 50 to 90. Equipment and power unit costs. Labor not included.	Hour	\$23.09	16	\$369.44
Mower, Bush Hog	940	Equipment and power unit costs. Labor not included.	Hour	\$50.01	16	\$800.16
Truck, Pickup	939	Equipment and power unit costs. Labor not included.	Hour	\$36.60	4	\$146.40
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	\$43.67	1	\$43.67
<b>Labor</b>						
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	\$18.70	4	\$74.80
<b>Materials</b>						
Miscellaneous, containers, traps, etc.	298	Pheromone Traps, Culture container with lid. Includes materials and shipping only.	Each	\$3.75	4	\$15.00

**Practice: 645 - Upland Wildlife Habitat Management**

**Scenario: #10 - Establish Annual Vegetation - Broadcast w/ Fertilization (FI)**

**Scenario Description:**

This scenario covers all upland habitats, that are not covered under 643 for the establishment of annual (non-persistent) vegetation on all land uses. This scenario is utilized when habitat assessment indicates Inadequate Habitat for Fish or Wildlife-habitat degradation. The typical size range for this scenario is 5 to 50 acres. This scenario would be applied on any land use where habitats are utilized by targeted species. This practice scenario is typically used to reduce soil erosion, reduce soil quality degradation, improve water quality and develop wildlife habitat as part of a habitat management system. Often times this scenario is utilized to temporarily provide cover or forage while permanent vegetation is being established. Vegetation will be established utilizing conventional methods including disking, herbicide application and broadcast seeding. Fertilization will be required and will be completed in response to a soil test.

**Before Situation:**

A habitat assessment (using State Office approved habitat assessment method, protocol or tool) has indicated a need to establish annual (non-persistent) vegetation to bring one or more habitat limiting factors of inadequate habitat for fish and wildlife, up to planning criteria. An evaluation of the site has indicated resource concerns are present, or may become present during the implementation of the habitat management system planned. Resource concerns identified may include soil erosion with visible rills present resulting in sediment moving offsite into surface water degrading water quality. Soil quality (soil organic matter) declines over time as a result of tillage practices, low residue, and long periods of bare soil. Air quality may be impacted during field operations by the creation of particulates. The current system provides little to no wildlife habitat with habitat limiting factors such as quality, quantity and continuity of forage, cover, shelter and space being identified.

**After Situation:**

Planning unit is adequately covered with annual (non-persistent) vegetation. As a result of installation soil erosion, water/sediment runoff, and/or dust emissions have been eliminated. Plants sown provide cover and forage for target species. Forage may include the vegetation itself or promote an abundance of beneficial insects. This scenario does not apply to plantings for forage production or critical area plantings and vegetation established under this scenario will remain unharvested.

**Scenario Feature Measure:** Area planted

**Scenario Unit:** Acre

**Scenario Typical Size:** 25

**Scenario Cost:** \$5,024.96

**Scenario Cost/Unit:** \$201.00

**Cost Details (by category):**

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
<b>Equipment/Installation</b>						
Seeding Operation, Broadcast, Ground	959	Broadcast seed via ground operation. May require post tillage operation to incorporate seed. Includes equipment, power unit and labor costs.	Acre	\$11.73	25	\$293.25
Tractor, agricultural, 60 HP	963	Agricultural tractor with horsepower range of 50 to 90. Equipment and power unit costs. Labor not included.	Hour	\$23.09	8	\$184.72
Fertilizer, ground application, dry bulk	950	Dry bulk fertilizer application performed by ground equipment. Includes equipment, power unit and labor costs.	Acre	\$6.32	25	\$158.00
Chemical, ground application	948	Chemical application performed by ground equipment. Includes equipment, power unit and labor costs.	Acre	\$5.72	25	\$143.00
Tillage, Primary	946	Includes heavy disking (offset) or chisel plow. Includes equipment, power unit and labor costs.	Acre	\$15.47	25	\$386.75
<b>Labor</b>						
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	\$18.70	8	\$149.60
Equipment Operators, Light	232	Includes: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12", Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers	Hour	\$20.08	8	\$160.64
<b>Materials</b>						
Potassium, K2O	74	K2O supplied by Muriate Of Potash. Price is not per pound of total product applied, no conversion is needed.	Pound	\$0.32	1000	\$320.00

**Materials**

Two Species Mix, Cool Season Annual (1 grass and 1 legume)	2314	Cool season annual grass and legume mix. Includes material and shipping only.	Acre	\$50.33	25	\$1,258.25
Herbicide, Glyphosate	334	A broad-spectrum, non-selective systemic herbicide. Refer to WIN-PST for product names and active ingredients. Includes materials and shipping only.	Acre	\$15.83	25	\$395.75
Nitrogen (N), Ammonium Nitrate	69	Price per pound of N supplied by Ammonium Nitrate. Price is not per pound of total product applied, no conversion is needed.	Pound	\$0.89	1250	\$1,112.50
Phosphorus, P2O5	73	Price per pound of P2O5 supplied by Superphosphate. Price is not per pound of total product applied, no conversion is needed.	Pound	\$0.37	1250	\$462.50

**Practice: 645 - Upland Wildlife Habitat Management**

**Scenario: #11 - Establish Annual Vegetation - Broadcast; No Fertilization (FI)**

**Scenario Description:**

This scenario covers all upland habitats, that are not covered under 643 for the establishment of annual (non-persistent) vegetation on all land uses. This scenario is utilized when habitat assessment indicates Inadequate Habitat for Fish or Wildlife-habitat degradation. The typical size range for this scenario is 5 to 50 acres. This scenario would be applied on any land use where habitats are utilized by targeted species. This practice scenario is typically used to reduce soil erosion, reduce soil quality degradation, improve water quality and develop wildlife habitat as part of a habitat management system. Often times this scenario is utilized to temporarily provide cover or forage while permanent vegetation is being established. Vegetation will be established utilizing conventional methods including disking, herbicide application and broadcast seeding. Fertilization will NOT be required.

**Before Situation:**

A habitat assessment (using State Office approved habitat assessment method, protocol or tool) has indicated a need to establish annual (non-persistent) vegetation to bring one or more habitat limiting factors of inadequate habitat for fish and wildlife, up to planning criteria. An evaluation of the site has indicated resource concerns are present, or may become present during the implementation of the habitat management system planned. Resource concerns identified may include soil erosion with visible rills present resulting in sediment moving offsite into surface water degrading water quality. Soil quality (soil organic matter) declines over time as a result of tillage practices, low residue, and long periods of bare soil. Air quality may be impacted during field operations by the creation of particulates. The current system provides little to no wildlife habitat with habitat limiting factors such as quality, quantity and continuity of forage, cover, shelter and space being identified.

**After Situation:**

Planning unit is adequately covered with annual (non-persistent) vegetation. As a result of installation soil erosion, water/sediment runoff, and/or dust emissions have been eliminated. Plants sown provide cover and forage for target species. Forage may include the vegetation itself or promote an abundance of beneficial insects. This scenario does not apply to plantings for forage production or critical area plantings and vegetation established under this scenario will remain unharvested. Fertilization will NOT be required.

**Scenario Feature Measure:** Area planted

**Scenario Unit:** Acre

**Scenario Typical Size:** 25

**Scenario Cost:** \$2,971.96

**Scenario Cost/Unit:** \$118.88

**Cost Details (by category):**

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
<b>Equipment/Installation</b>						
Tillage, Primary	946	Includes heavy disking (offset) or chisel plow. Includes equipment, power unit and labor costs.	Acre	\$15.47	25	\$386.75
Chemical, ground application	948	Chemical application performed by ground equipment. Includes equipment, power unit and labor costs.	Acre	\$5.72	25	\$143.00
Seeding Operation, Broadcast, Ground	959	Broadcast seed via ground operation. May require post tillage operation to incorporate seed. Includes equipment, power unit and labor costs.	Acre	\$11.73	25	\$293.25
Tractor, agricultural, 60 HP	963	Agricultural tractor with horsepower range of 50 to 90. Equipment and power unit costs. Labor not included.	Hour	\$23.09	8	\$184.72
<b>Labor</b>						
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	\$18.70	8	\$149.60
Equipment Operators, Light	232	Includes: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12", Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers	Hour	\$20.08	8	\$160.64
<b>Materials</b>						
Two Species Mix, Cool Season Annual (1 grass and 1 legume)	2314	Cool season annual grass and legume mix. Includes material and shipping only.	Acre	\$50.33	25	\$1,258.25
Herbicide, Glyphosate	334	A broad-spectrum, non-selective systemic herbicide. Refer to WIN-PST for product names and active ingredients. Includes materials and shipping only.	Acre	\$15.83	25	\$395.75

**Practice: 645 - Upland Wildlife Habitat Management**

**Scenario: #12 - Establish Annual Vegetation - Drill w/ Fertilization (FI)**

**Scenario Description:**

This scenario covers all upland habitats, that are not covered under 643 for the establishment of annual (non-persistent) vegetation on all land uses. This scenario is utilized when habitat assessment indicates Inadequate Habitat for Fish or Wildlife-habitat degradation. The typical size range for this scenario is 5 to 50 acres. This scenario would be applied on any land use where habitats are utilized by targeted species. This practice scenario is typically used to reduce soil erosion, reduce soil quality degradation, improve water quality and develop wildlife habitat as part of a habitat management system. Often times this scenario is utilized to temporarily provide cover or forage while permanent vegetation is being established. Establishment of vegetation will require methods including light disking, herbicide applicaiton and use of seed drill for planting. Fertilization will be required and will be completed in response to a soil test.

**Before Situation:**

A habitat assessment (using State Office approved habitat assessment method, protocol or tool) has indicated a need to establish annual (non-persistent) vegetation to bring one or more habitat limiting factors of inadequate habitat for fish and wildlife, up to planning criteria. An evaluation of the site has indicated resource concerns are present, or may become present during the implementation of the habitat management system planned. Resource concerns identified may include soil erosion with visible rills present resultging in sediment moving offsite into surface water degrading water quality. Soil quality (soil organic matter) declines over time as a result of tillage practices, low residue, and long periods of bare soil. Air quality may be impacted during field operations by the creation of particulates. The current system provides little to no wildlife habitat with habitat limiting factors such as quality, quantity and continuity of forage, cover, shelter and space being identified.

**After Situation:**

Planning unit is adequately covered with annual (non-persistent) vegetation. As a result of installation soil erosion, water/sediment runoff, and/or dust emissions have been eliminated. Plants sown provide cover and forage for target species. Forage may include the vegetation itself or promote an abundance of beneficial insects. This scenario does not apply to plantings for forage production or critical area plantings and vegetation established under this scenario will remain unharvested.

**Scenario Feature Measure:** Area planted

**Scenario Unit:** Acre

**Scenario Typical Size:** 25

**Scenario Cost:** \$4,842.46

**Scenario Cost/Unit:** \$193.70

**Cost Details (by category):**

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
<b>Equipment/Installation</b>						
Chemical, ground application	948	Chemical application performed by ground equipment. Includes equipment, power unit and labor costs.	Acre	\$5.72	25	\$143.00
Fertilizer, ground application, dry bulk	950	Dry bulk fertilizer application performed by ground equipment. Includes equipment, power unit and labor costs.	Acre	\$6.32	25	\$158.00
Seeding Operation, No Till/Grass Drill	960	No Till drill or grass drill for seeding. Includes equipment, power unit and labor costs.	Acre	\$19.90	25	\$497.50
Tractor, agricultural, 60 HP	963	Agricultural tractor with horsepower range of 50 to 90. Equipment and power unit costs. Labor not included.	Hour	\$23.09	8	\$184.72
<b>Labor</b>						
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	\$18.70	8	\$149.60
Equipment Operators, Light	232	Includes: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12", Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers	Hour	\$20.08	8	\$160.64
<b>Materials</b>						
Two Species Mix, Cool Season Annual (1 grass and 1 legume)	2314	Cool season annual grass and legume mix. Includes material and shipping only.	Acre	\$50.33	25	\$1,258.25
Phosphorus, P2O5	73	Price per pound of P2O5 supplied by Superphosphate. Price is not per pound of total product applied, no conversion is needed.	Pound	\$0.37	1250	\$462.50

**Materials**

Potassium, K <sub>2</sub> O	74	K <sub>2</sub> O supplied by Muriate Of Potash. Price is not per pound of total product applied, no conversion is needed.	Pound	\$0.32	1000	\$320.00
Herbicide, Glyphosate	334	A broad-spectrum, non-selective systemic herbicide. Refer to WIN-PST for product names and active ingredients. Includes materials and shipping only.	Acre	\$15.83	25	\$395.75
Nitrogen (N), Ammonium Nitrate	69	Price per pound of N supplied by Ammonium Nitrate. Price is not per pound of total product applied, no conversion is needed.	Pound	\$0.89	1250	\$1,112.50

**Practice: 645 - Upland Wildlife Habitat Management**

**Scenario: #13 - Establish Annual Vegetation - Drill; No Fertilization (FI)**

**Scenario Description:**

This scenario covers all upland habitats, that are not covered under 643 for the establishment of annual (non-persistent) vegetation on all land uses. This scenario is utilized when habitat assessment indicates Inadequate Habitat for Fish or Wildlife-habitat degradation. The typical size range for this scenario is 5 to 50 acres. This scenario would be applied on any land use where habitats are utilized by targeted species. This practice scenario is typically used to reduce soil erosion, reduce soil quality degradation, improve water quality and develop wildlife habitat as part of a habitat management system. Often times this scenario is utilized to temporarily provide cover or forage while permanent vegetation is being established. Establishment of vegetation will require methods including light disking, herbicide applicaiton and use of seed drill for planting. Fertilization will NOT be required.

**Before Situation:**

A habitat assessment (using State Office approved habitat assessment method, protocol or tool) has indicated a need to establish annual (non-persistent) vegetation to bring one or more habitat limiting factors of inadequate habitat for fish and wildlife, up to planning criteria. An evaluation of the site has indicated resource concerns are present, or may become present during the implementation of the habitat management system planned. Resource concerns identified may include soil erosion with visible rills present resultgng in sediment moving offsite into surface water degrading water quality. Soil quality (soil organic matter) declines over time as a result of tillage practices, low residue, and long periods of bare soil. Air quality may be impacted during field operations by the creation of particulates. The current system provides little to no wildlife habitat with habitat limiting factors such as quality, quantity and continuity of forage, cover, shelter and space being identified.

**After Situation:**

Planning unit is adequately covered with annual (non-persistent) vegetation. As a result of installation soil erosion, water/sediment runoff, and/or dust emissions have been eliminated. Plants sown provide cover and forage for target species. Forage may include the vegetation itself or promote an abundance of beneficial insects. This scenario does not apply to plantings for forage production or critical area plantings and vegetation established under this scenario will remain unharvested. Fertilization will NOT be required.

**Scenario Feature Measure:** Area planted

**Scenario Unit:** Acre

**Scenario Typical Size:** 25

**Scenario Cost:** \$2,789.46

**Scenario Cost/Unit:** \$111.58

**Cost Details (by category):**

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
<b>Equipment/Installation</b>						
Seeding Operation, No Till/Grass Drill	960	No Till drill or grass drill for seeding. Includes equipment, power unit and labor costs.	Acre	\$19.90	25	\$497.50
Tractor, agricultural, 60 HP	963	Agricultural tractor with horsepower range of 50 to 90. Equipment and power unit costs. Labor not included.	Hour	\$23.09	8	\$184.72
Chemical, ground application	948	Chemical application performed by ground equipment. Includes equipment, power unit and labor costs.	Acre	\$5.72	25	\$143.00
<b>Labor</b>						
Equipment Operators, Light	232	Includes: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12", Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers	Hour	\$20.08	8	\$160.64
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	\$18.70	8	\$149.60
<b>Materials</b>						
Two Species Mix, Cool Season Annual (1 grass and 1 legume)	2314	Cool season annual grass and legume mix. Includes material and shipping only.	Acre	\$50.33	25	\$1,258.25
Herbicide, Glyphosate	334	A broad-spectrum, non-selective systemic herbicide. Refer to WIN-PST for product names and active ingredients. Includes materials and shipping only.	Acre	\$15.83	25	\$395.75

**Practice: 645 - Upland Wildlife Habitat Management**

**Scenario: #14 - Snag Creation**

**Scenario Description:**

Create snags from existing live trees to provide nesting, foraging, perching, thermal cover, and display habitat for target species such as cavity nesting birds (woodpeckers, songbirds, wood duck, etc), small mammals (shrew, chipmunk, flying squirrel, bats, etc.), amphibians and reptiles and bumble bees. Trees must be at least 12" DBH. Resulting snag will be a minimum of 25' tall. Snag creation method is girdling 3' deep with a chainsaw.

**Before Situation:**

A 15 acre operation managing for quail and other small game habitat. Shrubby/woody escape cover is often the missing habitat component for bobwhite quail and other small game in fields managed for early successional wildlife. These structures are targeted for areas that lack sufficient snag habitat conditions to support viable populations of targeted species. Insufficient cavity nests, foraging, and perching habitat exists on the planning unit. Existing snag habitat is lacking or not well distributed.

**After Situation:**

Installation of wildlife structures (downed trees/snags) bring the identified deficient habitat limiting factors up to planning criteria. Snag creation enhances the overall habitat condition for numerous terrestrial species. These structures/features enhance habitat and improve species survivability. By providing cavity nesting sites, invertebrate foraging area, perching/hunting opportunities, and thermal cover/escape cover, larger open spaces are more effectively used by cavity nesting birds and pollinators, amphibians, reptiles, and small mammals. Increased cover reduces predation. Facilitating practices may include but not limited to: Watering Facility (614), Wetland Creation (658), Wetland Restoration (657), Wetland Enhancement (659), Early Successional Habitat Management/Development (647), Prescribed Burning (338), Restoration and Management of Rare and Declining Habitats (643), and Conservation Cover (327).

**Scenario Feature Measure:** Area of acres

**Scenario Unit:** Acre

**Scenario Typical Size:** 15

**Scenario Cost:** \$659.11

**Scenario Cost/Unit:** \$43.94

**Cost Details (by category):**

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
<b>Equipment/Installation</b>						
Chainsaw	937	Equipment and power unit costs. Labor not included.	Hour	\$5.66	8	\$45.28
Tractor, agricultural, 120 HP	962	Agricultural tractor with horsepower range of 90 to 140. Equipment and power unit costs. Labor not included.	Hour	\$47.06	6	\$282.36
Truck, Pickup	939	Equipment and power unit costs. Labor not included.	Hour	\$27.39	1	\$27.39
<b>Labor</b>						
Equipment Operators, Light	232	Includes: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12", Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers	Hour	\$21.00	8	\$168.00
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	\$17.01	8	\$136.08