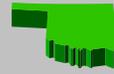


ECONOMIC COST DATA

Cost Data

Practice Name:	Comprehensive Nutrient Management Plan	
Practice Code:	102	
Activity Type:	102.4 - Waste Storage and Handling - Dairy, Swine, Beef	
Typical Implementation Scenario		
<p>This practice consists of development of a Comprehensive Nutrient Management Plan (CNMP) for a permitted dairy, swine or beef waste storage and handling facility.</p> <p>This practice includes the costs of hiring a Tech Reg certified Technical Service Provider (TSP) to develop a CNMP for a permitted dairy, swine or beef waste storage and handling facility. The CNMP must fully comply with the Oklahoma NRCS Statement of Work for CNMP deliverables dated March 5, 2007 which requires the use of Manure Management Planner (MMP) and Spatial Nutrient Management Planner (SNMP) software.</p>		
<p>Associated practices include: Animal Mortality Facility (316), Atmospheric Resource Quality Management (370), Composting Facility (317) Feed Management (592), Filter Strip (393), Manure Transfer (634), Nutrient Management (590), Roof Runoff Structure (558), Runoff Management System (570), Salinity and Sodic Soil Management (610), Waste Facility Cover (367), Waste Storage Facility (313), Waste Treatment (629), Waste Treatment Lagoon (359), Waste Utilization (633),</p>		
Geographic Area:	Statewide	
Unit for Cost Estimate:	Each	
Practice Life (Years):	1	
Discount Rate (%/Year):	5%	
Data Source: 2009 cost data from Technical Service Providers was used for this practice.		Cost/Unit
Materials	None	\$0.00
Equipment/Installation/Labor	None	\$0.00
Labor	Technical Service Provider rates	\$9,000.00
Mobilization	None	\$0.00
Operation & Maintenance	None	\$0.00
Acquisition of Technical Knowledge	None	\$0.00
Forgone Income	None	\$0.00
Risk	None	\$0.00
Administration & Permit Costs	None	\$0.00
Total Cost Estimate:		\$9,000.00



ECONOMIC COST DATA

Cost Data

Practice Name: Alley Cropping

Practice Code: 311

Activity Type: 311.1 - Tree/Shrub Bareroot

Typical Implementation Scenario

This practice consists of a typical scenario of planting rows of bareroot northern red oak trees spaced 12 feet apart with a 70' wide alley way between rows, on a 10 acre bottomland field in an effort to increase crop diversity. The area between the tree rows consists of a bermudgrass/fescue mixture which is harvested for hay as the trees mature for timber production. The trees will be established according to the Tree/Shrub Establishment (612) and Tree/Shrub Site Preparation (490) standard and specifications. Fruit or nut production tree species are not eligible for payments.

This practice includes the costs of tree/shrubs, tractor, planter and labor to plant tree/shrubs in an alley system.

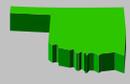
Associated practices include: Cover Crop (340), Forage Harvest Management (511), Pest Management (595), Nutrient Management (590), Tree/Shrub Pruning (660), Pasture and Hayland Planting (512)

Geographic Area: Statewide

Unit for Cost Estimate: Each

Practice Life (Years): 15

Discount Rate (%/Year): 5%



Data Source: 2009 actual cost data and current vendor pricing. Cost data from the 612 practice was used for this practice.

Cost/Unit

Materials

Bareroot Trees/Shrubs

\$0.40

Equipment/Installation/Labor

Tractor/Planter/Labor

\$0.30

Labor

Included in Equipment/Installation

\$0.00

Mobilization

2% of materials, equipment and labor

\$0.01

Operation & Maintenance

1% O&M factor

\$0.01

Acquisition of Technical Knowledge

Calibrate and operate tree planter and manage trees

\$0.00

Forgone Income

Assume no crops taken out of production.

\$0.00

Risk

Reduced risk, less erosion, improved water quality

\$0.00

Administration & Permit Costs

None

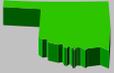
\$0.00

Total Cost Estimate:

\$0.72

ECONOMIC COST DATA

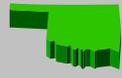
Cost Data

Practice Name: Alley Cropping		
Practice Code: 311		
Activity Type: 311.2 - Tree/Shrub Containerized		
Typical Implementation Scenario		
<p>This practice consists of a typical scenario of planting a 10 acre bottomland field to <u>containerized</u> northern red oak trees spaced 12 feet apart with a 70' wide alley way between rows, in an effort to increase crop diversity. The area between the tree rows consists of a bermudgrass/fescue mixture which is harvested for hay as the trees mature for timber production. The trees will be established according to the Tree/Shrub Establishment (612) and Tree/Shrub Site Preparation (490) standard and specifications. Fruit or nut production tree species are ineligible for payment.</p> <p>This practice includes the costs of tree/shrubs, tractor, planter and labor to plant tree/shrubs in an alley system.</p> <p>Associated practices include: Cover Crop (340), Forage Harvest Management (511), Pest Management (595), Nutrient Management (590), Tree/Shrub Pruning (660), Pasture and Hayland Planting (512)</p>		
Geographic Area:	Statewide	
Unit for Cost Estimate:	Each	
Practice Life (Years):	15	
Discount Rate (%/Year):	5%	
Data Source: 2009 actual cost data and current vendor pricing. Cost data from the 612 practice was used for this practice.		Cost/Unit
Materials		\$0.90
Containerized Trees/Shrubs		
Equipment/Installation/Labor		\$0.30
Tractor/Planter/Labor		
Labor		\$0.00
Included in Equipment/Installation		
Mobilization		\$0.02
2% of materials, equipment and labor		
Operation & Maintenance		\$0.01
1% O&M factor		
Acquisition of Technical Knowledge		\$0.00
Calibrate and operate tree planter and manage trees		
Forgone Income		\$0.00
Assume no crops taken out of production.		
Risk		\$0.00
Reduced risk, less erosion, improved water quality		
Administration & Permit Costs		\$0.00
None		
Total Cost Estimate:		\$1.24

ECONOMIC COST DATA

Cost Data

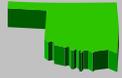
Practice Name:	Waste Storage Facility				
Practice Code:	313				
Activity Type:	313.1 Waste Storage Facility				
Typical Implementation Scenario					
This practice applies to a waste storage facility that is constructed by excavation or fill of earth that temporarily stores wastes such as manure, waste water, and contaminated runoff, as part of an agricultural waste management system. The typical structure consists of excavation/fill plus a designed liner. Typical structure consists of 6572 CY of excavation/fill plus 1230 CY of liner. The liner will normally be a Clay Liner or Bentonite Liner. The cost for the typical installation is equal to \$2.24/cy of required excavation/fill, and designed liner.					
Associated practices include: 590-Nutrient Management, 633-Waste Utilization, 342-Critical Area Planting					
Geographic Area:	Statewide				
Unit for Cost Estimate:	CY - Cubic Yard				
Practice Life (Years):	15				
Discount Rate (%/Year):	5%				
Data Source: Indexed 2007 actual cost data					Cost/Unit
Materials					\$2.24
Includes Equipment/Installation, Labor and Mobilization Costs					
	Component	Unit	Unit Cost	Quantity	Total Costs
	Excavation	CY	\$1.73	6572	\$11,369.56
	Clay Liner	CY	\$4.95	1230	\$6,088.50
			Totals	7,802	\$17,458.06
Equipment/Installation					\$0.00
Included in Materials Cost					
Labor					\$0.00
Included in Equipment/Installation Costs					
Mobilization					\$0.00
Included in Materials Cost					
Operation & Maintenance					\$0.00
N/A					
Acquisition of Technical Knowledge					\$0.00
N/A					
Forgone Income					\$0.00
None					
Small amount of land taken out of production, no lost opportunity costs					
Risk					\$0.00
Reduced risk, can better manage livestock waste					
Increased risk, slight increase in motorized equipment					
Administration & Permit Costs					
None					
Total Cost Estimate:					\$2.24



ECONOMIC COST DATA

Cost Data

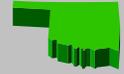
Practice Name:	Waste Storage Facility
Practice Code:	313
Activity Type:	313.2 Concrete Open Top Waste Storage Facility
Typical Implementation Scenario	
<p>This practice applies to the installation of a concrete open top waste storage facility structure, as part of an agricultural waste management system. The typical installation job is for a dairy facility, however, the costs and type of structure would carry across to all open top concrete waste storage facilities (including swine). The size of the structures and the standard drawings will vary from job to job. A typical structure is designed to store the waste for 120 cow dairy for a 45 day period requiring 82.8 CY of concrete. Cost is based on a turnkey job, all costs included, constructed in accordance to SNTC-1B drawing.</p>	
Associated practices include: 590-Nutrient Management, 633-Waste Utilization	
Geographic Area:	Statewide
Unit for Cost Estimate:	CY
Practice Life (Years):	15
Discount Rate (%/Year):	5%
	Cost/Unit
Data Source: 2007 & 2008 actual cost data	
Materials	\$340.69
Includes Equipment/Installation, Labor and Mobilization Costs	
Equipment/Installation	\$0.00
Included in Materials Cost	
Labor	\$0.00
Included in Equipment/Installation Costs	
Mobilization	\$0.00
Included in Materials Cost	
Operation & Maintenance	\$0.00
N/A	
Acquisition of Technical Knowledge	\$0.00
N/A	
Forgone Income	\$0.00
None	
Risk	\$0.00
Reduced risk, can better manage livestock waste	
Administration & Permit Costs	\$0.00
None	
Total Cost Estimate:	\$340.69



ECONOMIC COST DATA

Cost Data

Practice Name:	Waste Storage Facility	
Practice Code:	313	
Activity Type:	313.3 Winter Feeding Structure	
Typical Implementation Scenario		
<p>This practice applies to the installation of a winter feeding structure, as part of an agricultural waste management system. This includes a building designed and installed from approved standard drawings to be used by dairy cows for shelter, a feeding area, and to temporarily store waste. The structure will store approximately 90 days of manure. Unit costs include all labor and materials needed to build the structure. The typical structure is an open sided building with metal trusses and metal roof. It is 40' 4" wide, 144' long (5904.0 SF) for 100 dairy cows.</p>		
Associated practices include: 590-Nutrient Management, 633-Waste Utilization		
Geographic Area:	Statewide	
Unit for Cost Estimate:	SF	
Practice Life (Years):	15	
Discount Rate (%/Year):	5%	
		Cost/Unit
Data Source: Indexed 2007 actual cost data.		
Materials		\$9.97
Includes Equipment/Installation, Labor and Mobilization Costs		
Equipment/Installation		\$0.00
Included in Materials Cost		
Labor		\$0.00
Included in Equipment/Installation Costs		
Mobilization		\$0.00
Included in Materials Cost		
Operation & Maintenance		\$0.00
N/A		
Acquisition of Technical Knowledge		\$0.00
N/A		
Forgone Income		\$0.00
None		
Risk		\$0.00
Reduced risk, can better manage livestock waste		
Administration & Permit Costs		\$0.00
None		
Total Cost Estimate:		\$9.97



ECONOMIC COST DATA

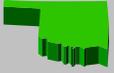
Cost Data

Practice Name: Waste Storage Facility	
Practice Code: 313	
Activity Type: 313.4 Dry Waste Storage Structure, Temporary Storage of Bird Litter	
Typical Implementation Scenario	
<p>This practice applies to the construction of a building designed and installed from approved standard drawings or a PE design used for temporary storage of dry poultry waste, as part of an agricultural waste management system. Dry waste is the mix of poultry litter and manure removed from a poultry house after a single flock has been removed, otherwise known as cake. For breeder operations, dry waste will be that mix of litter and manure resulting from a complete cleanout. The structure will store one cake-out from houses (broiler, pullet, and/or turkey) or one cleanout of all houses in a breeder operation. This practice is not intended for combination compost and dry waste storage structures. The typical structure is an enclosed building, 40.3 ft (40'4") wide, 65 ft long, 5.0 ft deep for 100,000 broilers.</p>	
Associated practices include: 590-Nutrient Management, 633-Waste Utilization	
Geographic Area:	Statewide
Unit for Cost Estimate:	SF
Practice Life (Years):	15
Discount Rate (%/Year):	5%
Data Source: 2009 actual cost data	
Materials	Cost/Unit
Includes Equipment/Installation, Labor and Mobilization Costs	\$8.76
Equipment/Installation	\$0.00
Included in Materials Cost	
Labor	\$0.00
Included in Equipment/Installation Costs	
Mobilization	\$0.00
Included in Materials Cost	
Operation & Maintenance	\$0.00
N/A	
Acquisition of Technical Knowledge	\$0.00
N/A	
Forgone Income	\$0.00
None	
Risk	\$0.00
Reduced risk, can better manage livestock waste	
Administration & Permit Costs	\$0.00
None	
Total Cost Estimate:	\$8.76



ECONOMIC COST DATA

Cost Data

Practice Name:	Waste Storage Facility	
Practice Code:	313	
Activity Type:	313.5 Liquid Waste Storage Facility	
Typical Implementation Scenario		
<p>This practice applies to the installation of a storage tank constructed of steel and other suitable materials used to store waste from a livestock operation, as part of an agricultural waste management system. The typical job is the installation of a steel pre-fabricated storage tank for liquid slurry on a swine or dairy operation. Cost is based on cubic feet of storage capacity. The size of the structures and the standard drawings vary from job to job. Cost is based on a turnkey job, all costs included.</p>		
Associated practices include: 590-Nutrient Management, 633-Waste Utilization		
Geographic Area:	Statewide	
Unit for Cost Estimate:	Cubic Foot (CUFT)	
Practice Life (Years):	15	
Discount Rate (%/Year):	5%	
Data Source: Supplier quotes, 2007 cost data from other states.		
Materials		\$1.76
Includes Equipment/Installation, Labor and Mobilization Costs		
Equipment/Installation		\$0.00
Included in Materials Cost		
Labor		\$0.00
Included in Equipment/Installation Costs		
Mobilization		\$0.00
Included in Materials Cost		
Operation & Maintenance		\$0.00
N/A		
Acquisition of Technical Knowledge		\$0.00
N/A		
Forgone Income		\$0.00
None		
Risk		\$0.00
Reduced risk, can better manage livestock waste		
Administration & Permit Costs		\$0.00
None		
Total Cost Estimate:		\$1.76

ECONOMIC COST DATA

Cost Data

Practice Name: Brush Management		
Practice Code: 314		
Activity Type: 314.1 Chemical treatments -1 (most commonly used treatments)		
Typical Implementation Scenario		
<p>This management practice is for controlling undesirable and/or invasive brush on rangeland, pasturelands, native or naturalized pastures and hayland according to a brush management plan developed in accordance with the NRCS Brush Management (314) standard and specifications. Application is completed either by broadcast, ground application or aerial with plane or helicopter.</p> <p>This scenario includes the most commonly used brush herbicides including Remedy, Grazon P+D, Reclaim and Surmount. Common brush species controlled under this scenario include blackberry, broom snakeweed, mesquite, multiflora rose, osage orange, persimmon, prickly pear, cholla cactus, honey locust, oaks, shinnery and elm.</p>		
Associated practices include: Prescribed Grazing (528), Upland Wildlife Habitat Management (645)		
Geographic Area:	Statewide	
Unit for Cost Estimate:	Acre	
Practice Life (Years):	10	
Discount Rate (%/Year):	5%	
Data Source: 2009 actual cost data, Sales data from companies.		Cost/Unit
Materials		\$28.37
Chemical: Multiple, most commonly used	\$27.86	
Surfactant (if needed)	\$0.51	
Costs based on average cost of chemicals and prescribed rates according to current Brush Management (314) specifications.		
Equipment/Installation		\$6.00
Aerial or broadcast application: cost of equipment use, labor, fuel, etc.		
Labor		\$0.00
Included in installation Costs		
Mobilization		\$0.00
Included in equipment costs		
Operation & Maintenance		\$0.34
Monitoring and possible follow-up treatments		
Acquisition of Technical Knowledge		\$0.00
None		
Forgone Income		\$2.00
Short term production loss in treated fields. Typically there will also be a deferment period depending on density of brush prior to control. Typical deferment may be 60 - 90 days		
Risk		\$0.00
Reduced risk, forage yield increase		
Administration & Permit Costs		\$0.00
None		
Total Cost Estimate:		\$36.71

ECONOMIC COST DATA

Cost Data

Practice Name: Brush Management

Practice Code: 314

Activity Type: 314.2 Chemical treatment - 2 (2,4D)

Typical Implementation Scenario

This management practice is for controlling undesirable and/or invasive brush on rangeland, pasturelands, native or naturalized pastures and hayland according to a brush management plan developed in accordance with the NRCS Brush Management (314) standard and specifications. Application is completed either by broadcast, ground application or aerial with plane or helicopter.

This scenario covers herbicide treatments using 2,4-D, Cimarron Max and Grazon P+D to control species such as sand sagebrush, black locust, sumac, willow, buckbrush, baccharis plum, blackberry, and elm. It also includes suppression methods for mesquite and salt cedar which require follow-up applications in order to achieve reductions.

Associated practices include: Prescribed Grazing (528), Upland Wildlife Habitat Management (645)

Geographic Area: Statewide

Unit for Cost Estimate: Acre

Practice Life (Years): 10

Discount Rate (%/Year): 5%



Data Source: 2009 actual cost data, Sales data from companies.

Cost/Unit

Materials

Chemical \$8.79

Surfactant (if needed) \$0.51

Costs based on average cost of chemicals and prescribed rates according to current Brush Management (314) specifications.

\$9.30

Equipment/Installation

Aerial or broadcast application: cost of equipment use, labor, fuel, etc.

\$6.00

Labor

Included in installation Costs

\$0.00

Mobilization

Included in equipment costs

\$0.00

Operation & Maintenance

Monitoring and possible follow-up treatments

\$0.15

Acquisition of Technical Knowledge

None

\$0.00

Forgone Income

Short term production loss in treated fields. Typically there will also be a deferment period depending on density of brush prior to control. Typical deferment may be 60 - 90 days

\$2.00

Risk

Reduced risk, forage yield increase

\$0.00

Administration & Permit Costs

None

\$0.00

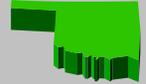
Total Cost Estimate:

\$17.45

ECONOMIC COST DATA

Cost Data

Practice Name:	Brush Management	
Practice Code:	314	
Activity Type:	314.3 Chemical treatment - 3 (Spike)	
Typical Implementation Scenario		
<p>This management practice is for controlling undesirable and/or invasive brush on rangeland, pasturelands, native or naturalized pastures and hayland according to a brush management plan developed in accordance with the NRCS Brush Management (314) standard and specifications. Application is completed either by broadcast, ground application or aerial with plane or helicopter.</p> <p>This scenario covers the use of Spike (tebuthiuron) on sand shinnery or as a spot treatment in oak wooded areas, resulting in open, grassy areas for wildlife. This option is higher cost than other options that are available and successful. The use of this chemical is not intended as a means of landclearing and is applied in a manner that results in some brush remaining (i.e. applied in strips or mosaic patterns).</p>		
Associated practices include: Prescribed Grazing (528), Upland Wildlife Habitat Management (645)		
Geographic Area:	Statewide	
Unit for Cost Estimate:	Acre	
Practice Life (Years):	10	
Discount Rate (%/Year):	5%	
Data Source: 2009 actual cost data, Sales data from companies.		
		Cost/Unit
Materials		\$70.31
Chemical: Tebuthiuron	\$70.31	
Costs based on average cost of chemicals and prescribed rates according to current Brush Management (314) specifications.		
Equipment/Installation		\$6.00
Aerial or broadcast application: cost of equipment use, labor, fuel, etc.		
Labor		\$0.00
Included in installation Costs		
Mobilization		\$0.00
Included in equipment costs		
Operation & Maintenance		\$0.76
Monitoring and possible follow-up treatments		
Acquisition of Technical Knowledge		\$0.00
None		
Forgone Income		\$2.00
Short term production loss in treated fields. Typically there will also be a deferment period depending on density of brush prior to control. Typical deferment may be 60 - 90 days		
Risk		\$0.00
Reduced risk, forage yield increase		
Administration & Permit Costs		\$0.00
None		
Total Cost Estimate:		\$79.07



ECONOMIC COST DATA

Cost Data

Practice Name: Brush Management

Practice Code: 314

Activity Type: 314.4 Mechanical Treatment Level <30%

Typical Implementation Scenario

This management practice is for controlling undesirable and/or invasive brush on rangeland, pasturelands, native or naturalized pastures and hayland according to a brush management plan developed in accordance with the NRCS Brush Management (314) standard.

This scenario covers situations where infestation levels are <30% canopy cover or less than 200 single stem, non-sprouting plants per acre. Control options selectively remove individual unwanted plants while leaving desirable plants with minimal or no ground disturbance. The typical scenario includes clipping/cutting, tree sawing and occasional dozing (higher infestation levels). Raking or pushing downed brush into piles or windrows is also common, especially at higher levels of infestation. Areas are deferred for 60-90 days to allow desired vegetation to improve.

Associated practices include: Prescribed Grazing (528), Upland Wildlife Habitat Management (645)

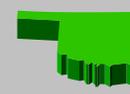
Geographic Area: Statewide

Unit for Cost Estimate: Acre

Practice Life (Years): 10

Discount Rate (%/Year): 5%

Data Source: 2009 actual cost data, receipts.



Cost/Unit

Materials	\$0.00
NONE	
Equipment/Installation	\$104.32
Costs associated with this activity will vary depending on the level of infestation and type of equipment used. Average cost is estimated on a per acre basis based on the most common treatments of clipping/cutting and stacking on areas with low to medium infestation levels.	
Labor	\$0.00
Included in installation Costs	
Mobilization	\$0.00
Included in equipment costs	
Operation & Maintenance	\$1.04
Monitoring and possible followup treatments	
Acquisition of Technical Knowledge	\$0.00
None	
Forgone Income	\$2.00
Short term production loss in treated fields. Typically there may also be a deferral period depending on density of brush prior to control. Typical deferral may be 60 - 90 or more days	
Risk	\$0.00
Reduced risk, forage yield increase	
Administration & Permit Costs	\$0.00
None	
Total Cost Estimate:	\$107.36

ECONOMIC COST DATA

Cost Data

Practice Name: Brush Management

Practice Code: 314

Activity Type: 314.5 Mechanical Treatment >30%

Typical Implementation Scenario

This management practice is for controlling undesirable and/or invasive brush on rangeland, pasturelands, native or naturalized pastures and hayland according to a brush management plan developed in accordance with the NRCS Brush Management (314) standard.

This scenario covers situations where infestation levels are 30% - 60% canopy cover or 200-500 single stem, non-sprouting plants per acre. Control options selectively remove individual unwanted plants while leaving desirable plants, including riparian areas where it is desired to maintain deciduous bottomland hardwoods. The typical scenario includes clipping/cutting, tree sawing and dozing. Raking or pushing downed brush into piles or windrows is also common, especially at higher levels of infestation. Areas are deferred for 120 or more days to allow desired vegetation to improve.

Associated practices include: Prescribed Grazing (528), Upland Wildlife Habitat Management (645)

Geographic Area: Statewide

Unit for Cost Estimate: Acre

Practice Life (Years): 10

Discount Rate (%/Year): 5%

Data Source: 2009 actual cost data, receipts.

Materials

NONE

Equipment/Installation

Costs associated with this activity will vary depending on the level of infestation and type of equipment used. Average cost is estimated on a per acre basis based on the most common treatments of clipping/cutting and stacking on areas with high infestation levels of brush

Labor

Included in installation Costs

Mobilization

Included in equipment costs

Operation & Maintenance

Monitoring and possible followup treatments

Acquisition of Technical Knowledge

None

Forgone Income

Short term production loss in treated fields. Typically there may also be a deferral period depending on density of brush prior to control. Typical deferral may be 90 - 120 days or more

Risk

Reduced risk, forage yield increase

Administration & Permit Costs

None

Total Cost Estimate:

Cost/Unit

\$0.00

\$240.54

\$0.00

\$0.00

\$2.41

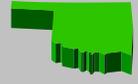
\$0.00

\$3.68

\$0.00

\$0.00

\$246.63



ECONOMIC COST DATA

Cost Data

Practice Name: Brush Management

Practice Code: 314

Activity Type: 314.6 Cutting and Spraying <30%

Typical Implementation Scenario

This management practice is for controlling undesirable and/or invasive brush on rangeland, pasturelands, native or naturalized pastures and hayland according to a brush management plan developed in accordance with the NRCS Brush Management (314) standard and specifications.

This scenario covers situations where infestation levels are <30% canopy cover or less than 200 single stem sprouting species (i.e. mesquite, oaks, osage, orange, redberry, juniper, elms). Control options selectively remove individual unwanted plants while leaving desirable plants. The typical scenario includes clipping/cutting or tree sawing of targeted species followed immediately by the application of a specified chemical mixture (typically 25 Remedy + 75% diesel) directly to the cut stump. Raking or pushing downed brush into piles or windrows is also common, especially at higher levels of infestation. Areas are deferred for 60-90 days to allow

Associated practices include: Prescribed Grazing (528), Upland Wildlife Habitat Management (645)

Geographic Area: Statewide

Unit for Cost Estimate: Acre

Practice Life (Years): 10

Discount Rate (%/Year): 5%

Data Source: 2009 actual cost data, receipts.



	<u>Cost/Unit</u>
Materials	\$0.00
Chemical Mixture: Costs based on Remedy (25%) and diesel fuel (75%) included in Equipment/Installation	
Equipment/Installation	\$88.91
Costs includes costs for labor, fuel, chemical and application and mobilization. Costs associated with this activity will vary depending on the level of infestation. Average cost is estimated on a per acre basis based on the most common treatments.	
Labor	\$0.00
Included in installation Costs	
Mobilization	\$0.00
Included in equipment costs	
Operation & Maintenance	\$0.89
Monitoring and possible followup treatments	
Acquisition of Technical Knowledge	\$0.00
None	
Forgone Income	\$2.00
Short term production loss in treated fields. Typically there may also be a deferral period depending on density of brush prior to control. Typical deferral may be 60 - 90 or more days	
Risk	\$0.00
Reduced risk, forage yield increase	
Administration & Permit Costs	\$0.00
None	
Total Cost Estimate:	\$91.80

ECONOMIC COST DATA

Cost Data

Practice Name: Brush Management

Practice Code: 314

Activity Type: 314.7 Cutting and Spraying >30%

Typical Implementation Scenario

This management practice is for controlling undesirable and/or invasive brush on rangeland, pasturelands, native or naturalized pastures and hayland according to a brush management plan developed in accordance with the NRCS Brush Management (314) standard

This scenario covers situations where infestation levels are >30% canopy cover or more than 200 single stem, sprouting species (i.e. mesquite, oaks, osage orange, redberry juniper, elms). Control options selectively remove individual unwanted plants while leaving desirable plants. The typical scenario includes clipping/cutting or tree sawing of targeted species followed immediately by the application of a specified chemical mixture (typically 25 Remedy + 75% diesel) directly to the cut stump. Raking or pushing downed brush into piles or windrows is also common, especially at higher levels of infestation. Areas are deferred for 120 days to allow desired vegetation to improve.

Associated practices include: Prescribed Grazing (528), Upland Wildlife Habitat Management (645)

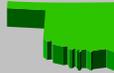
Geographic Area: Statewide

Unit for Cost Estimate: Acre

Practice Life (Years): 10

Discount Rate (%/Year): 5%

Data Source: 2009 actual cost data, receipts.



Cost/Unit

Materials	\$0.00
Chemical Mixture: Costs based on Remedy (25%) and diesel fuel (75%) included in Equipment/Installation	
Equipment/Installation	\$171.30
Costs includes costs for labor, fuel, chemical and application and mobilization. Costs associated with this activity will vary depending on the level of infestation. Average cost is estimated on a per acre basis based on the most common treatments.	
Labor	\$0.00
Included in installation Costs	
Mobilization	\$0.00
Included in equipment costs	
Operation & Maintenance	\$1.71
Monitoring and possible followup treatments	
Acquisition of Technical Knowledge	\$0.00
None	
Forgone Income	\$3.68
Short term production loss in treated fields. Typically there may also be a deferral period depending on density of brush prior to control. Typical deferral may be 90 - 120 days or more	
Risk	\$0.00
Reduced risk, forage yield increase	
Administration & Permit Costs	\$0.00
None	
Total Cost Estimate:	\$176.69

ECONOMIC COST DATA

Cost Data

Practice Name: Brush Management

Practice Code: 314

Activity Type: 314.8 Individual Plant Treatment (IPT), Chemical

Typical Implementation Scenario

This management practice is for controlling undesirable and/or invasive brush on rangeland, pasturelands, native or naturalized pastures and hayland according to a brush management plan developed in accordance with the NRCS Brush Management (314) standard and specifications (IPT recommendations).

This scenario is for Individual Plant Treatment (IPT) using herbicides. Treatments are made by using backpack sprayers, hand pump-up units, spray rigs with hand wands, or other similar equipment made to apply herbicides by hand. Treatments are made to individual plants by basal/stem spraying, high volume leaf spraying, soil application (liquid or pellets) or stump spraying when done by hand. These options are most cost effective for controlling brush at lower infestation levels, typically less than 150 plant stems per acre, for selective control when treating individual species when damage to surrounding, desirable plants needs to be avoided and for species that no other control method is available.

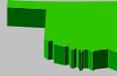
Associated practices include: Prescribed Grazing (528), Upland Wildlife Habitat Management (645)

Geographic Area: Statewide

Unit for Cost Estimate: Acre

Practice Life (Years): 10

Discount Rate (%/Year): 5%



Data Source: Past cost data, data from herbicide companies and rates according to current Brush Management (314) specifications.

	Cost/Unit
Materials	
Included chemicals, diesel, oils and/or penetrants, depending on option. Averages \$.25 per tree	\$28.50
Basal Treatment - Herbicide mixed with diesel fuel, oil and/or penetrant applied around lower stem targeted plants. Average of \$.25 per tree	\$37.50
Soil applied herbicides applied by hand as pellets or some liquid herbicides requiring an exact delivery handgun applicator. Average of \$.10 per tree	\$15.00
High volume foliar - Herbicides sprayed onto the foliage, stems and trunks of the targeted trees. This method is very useful for spraying small trees, vines, bushes with canes (blackberry) or low growing shrubs (buckbrush).	\$33.00
Equipment/Installation	\$15.00
Hand held equipment and labor costs estimated at \$15.00 per acre. Average treatment is 150 trees per acre.	
Labor	\$0.00
Included in equipment and installation Costs	
Mobilization	\$0.00
Included in equipment costs	
Operation & Maintenance	\$0.15
Monitoring and possible followup treatments	
Acquisition of Technical Knowledge	\$0.00
None	
Forgone Income	\$0.00
None	
Risk	\$0.00
Reduced risk, forage yield increase	
Administration & Permit Costs	\$0.00
None	
Total Cost Estimate:	\$43.65

ECONOMIC COST DATA

Cost Data

Practice Name: Brush Management

Practice Code: 314

Activity Type: 314.9 Mechanical Treatment - Volatile fuel removal

Typical Implementation Scenario

This management practice is for removing volatile fuels, when required and in locations required, according to the NRCS Prescribed Burning (338) and Firebreak (394) standards. Includes the removal of volatile fuels from within the burned firebreak area. This does not include situations where brush (volatile fuels) are removed from the constructed firebreak area only (refer to 394.2) and does not include costs of the actual burning of the firebreak (covered under prescribed burning costs). Removal of volatile fuels is only required where they are present and in locations as specified in approved prescribed burn plan.

Associated practices include: Prescribed Grazing (528), Upland Wildlife Habitat Management (645)

Geographic Area: Statewide

Unit for Cost Estimate: Acre

Practice Life (Years): 10

Discount Rate (%/Year): 5%

Data Source: 2008 actual cost data, receipts.

Materials

NONE

Equipment/Installation

Costs associated with this activity will vary depending on the level of infestation and type of equipment used. Average cost is estimated on a per acre basis based on the most common treatments of clipping/cutting. Extra costs are associated with removing brush to areas away from where they were cut/removed.

Equipment such as tree saws, hydraulic clippers, hydraulic circular saws, dozers, or other approved methods	\$149.39
Stacking and/or raking into piles or windrows	\$35.00

Labor

Included in installation Costs

Mobilization

Included in equipment costs

Operation & Maintenance

Monitoring and possible followup treatments

Acquisition of Technical Knowledge

None

Forgone Income

None

Risk

Reduced risk, forage yield increase

Administration & Permit Costs

None

Total Cost Estimate:

Cost/Unit

\$0.00

\$184.39

\$0.00

\$0.00

\$1.84

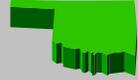
\$0.00

\$0.00

\$0.00

\$0.00

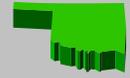
\$186.23



ECONOMIC COST DATA

Cost Data

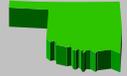
Practice Name: Composting Facility	
Practice Code: 317	
Activity Type: 317.1 Composting Facility	
Typical Implementation Scenario	
<p>This practice applies to the construction of a building designed and installed from approved standard drawings or a PE design used for composting livestock, as part of an agricultural waste management system. This is a treatment component of an agricultural waste management system for the biological stabilization of organic material. This practice is not intended for combination compost and dry waste storage structures. A typical facility is 1208 SF.</p>	
Associated practices include: 590-Nutrient Management, 633-Waste Utilization	
Geographic Area:	Statewide
Unit for Cost Estimate:	Square Foot (SF)
Practice Life (Years):	15
Discount Rate (%/Year):	5%
Data Source: 2009 & 2008 actual cost data.	
	Cost/Unit
Materials	\$8.13
Total cost estimate for complete composting facility and all associated components, includes Equipment/Installation, Labor, and Mobilization.	
Equipment/Installation	\$0.00
(Included in Materials Costs)	
Labor	\$0.00
(Included in Materials Costs)	
Mobilization	\$0.00
Included in Materials Cost	
Operation & Maintenance	\$0.16
2% of Installation Costs	
Acquisition of Technical Knowledge	\$0.00
N/A	
Forgone Income	\$0.00
N/A	
Risk	\$0.00
N/A	
Administration & Permit Costs	\$0.38
State Department of Agriculture permit to operate \$600 (\$200 every 5 years, practice life 15yrs).	
Total Cost Estimate:	\$8.67



ECONOMIC COST DATA

Cost Data

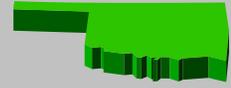
Practice Name:	Composting Facility	
Practice Code:	317	
Activity Type:	317.2 Compost/Dry Waste Storage Structure	
Typical Implementation Scenario		
<p>This practice applies to the construction of a building designed and installed from approved standard drawings or a PE design used for composting poultry remains and the temporary storage of dry poultry waste, as part of an agricultural waste management system. This is a treatment component of an agricultural waste management system for the biological stabilization of organic material. Dry waste is the mix of poultry litter and manure removed from a poultry house after a single flock has been removed, otherwise known as cake. For breeder operations, dry waste will be that mix of litter and manure resulting from a complete cleanout. The structure will store one cake-out from houses (broiler, pullet, and/or turkey) or one cleanout of all houses in a breeder operation plus the appropriate compost volume. This practice is not intended for dry waste storage structures only. The typical structure is an enclosed building 40' 4" wide, 65' long (2,622 SF) and 5.0' deep with composting bins for 85,000 broilers.</p>		
Associated practices include: 590-Nutrient Management, 633-Waste Utilization		
Geographic Area:	Statewide	
Unit for Cost Estimate:	SquareFoot (SF)	
Practice Life (Years):	15	
Discount Rate (%/Year):	5%	
Data Source: 2009 actual cost data.		
		Cost/Unit
Materials		\$8.76
Total cost estimate for complete composting facility and all associated components, includes Equipment/Installation, Labor, and Mobilization.		
Equipment/Installation		\$0.00
(Included in Materials Costs)		
Labor		\$0.00
(Included in Material Costs)		
Mobilization		\$0.00
Included in Materials Cost		
Operation & Maintenance		\$0.18
2% of Installation Costs		
Acquisition of Technical Knowledge		\$0.00
N/A		
Forgone Income		\$0.00
N/A		
Risk		\$0.00
N/A		
Administration & Permit Costs		\$0.19
State Department of Agriculture permit to operate \$600 (\$200 every 5 years, practice life 15yrs).		
Total Cost Estimate:		\$9.12



ECONOMIC COST DATA

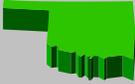
Cost Data

Practice Name:	Channel Bank Vegetation	
Practice Code:	322	
Activity Type:	322.1 Sprigging and Seeding Grasses	
Typical Implementation Scenario		
Establishing permanent herbaceous vegetation on channel banks, berms, spoils and associated areas along streambanks and/or shorelines (above the water line) following stabilization activities or used alone to stabilize streambank or shorelines to reduce erosion and sedimentation. Evaluations for the proper use of this practice are based on criteria found in the NRCS Streambank and Shoreline (580) standard.		
Associated practices include: Critical Area Planting (342), Nutrient Management (590), Pest Management (595), Streambank and Shoreline Protection (580)		
Data Source:	342 rates, various seed dealers and custom rates (2008)	
Geographic Area:	Statewide	
Unit for Cost Estimate:	Acre	
Practice Life (Years):	10	
Discount Rate (%/Year):	5%	
		Cost/Unit
Materials		\$115.87
Includes the cost of the seed/sprigs and any needed seedbed preparation prior to planting. Plantings can be comprised of bermudagrass (seed, sprigs, sod mulch), native mixtures, tall fescue or "Blackwell" switchgrass and will be planted according to the NRCS critical area planting (342) standard and specifications		
Does not include cost of fertilizer for establishment.		
Equipment/Installation		\$15.42
Tractor / Drill / Sprigger / Spreader Seedbed preparation Includes labor		
Labor		
Costs included with installation		
Mobilization		\$25.00
Due to size of jobs (typically small), some cost may be incurred.		
Operation & Maintenance		\$3.13
Proper use which may include excluding use. 2% of installation costs		
Acquisition of Technical Knowledge		\$0.00
Planting and management grass.		
Forgone Income		\$0.00
None		
Risk		\$0.00
None		
Administration & Permit Costs		\$0.00
None		
Total Cost Estimate:		\$159.42



ECONOMIC COST DATA

Cost Data

Practice Name:	Channel Bank Vegetation	
Practice Code:	322	
Activity Type:	322.2 Trees/Shrub Establishment - Seedbed Preparation & Planting	
Typical Implementation Scenario		
Establishing trees / shrubs on channel banks, berms, spoils and associated areas along streambanks and/or shorelines following stabilization activities or used alone to stabilize streambank or shorelines to reduce erosion and sedimentation. Evaluations for the proper use of this practice are based on criteria found in the NRCS Streambank and Shoreline (580) standard.		
Associated practices include: Critical Area Planting (342), Nutrient Management (590), Pest Management (595), Streambank and Shoreline Protection (580), Tree / Shrub Planting (612)		
Data Source:	612 rates, various seed dealers and custom rates (2008)	
Geographic Area:	Statewide	
Unit for Cost Estimate:	Acre	
Practice Life (Years):	10	
Discount Rate (%/Year):	5%	
		Cost/Unit
Materials		\$378.00
Includes the cost of the trees and/or shrubs (barerooted) and is based on average spacing requirements (681 - 1210 trees per acre) and costs of 40 cents per tree.		
Does not include cost of fertilizer for establishment.		
Equipment/Installation		
Included with labor costs		
Labor		\$283.65
Includes the cost labor and any equipment needed to install trees / shrubs and is based on an average rate of 30 cents per tree. Also includes any costs associated with site preparation prior to planting.		
Mobilization		
None		
Operation & Maintenance		\$13.23
Proper use which may include excluding use. 2% of installation costs		
Acquisition of Technical Knowledge		\$0.00
Planting and maintenance of trees.		
Forgone Income		\$0.00
None		
Risk		\$0.00
None		
Administration & Permit Costs		\$0.00
None		
Total Cost Estimate:		\$674.88

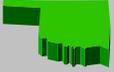
ECONOMIC COST DATA

Cost Data

Practice Name:	Channel Bank Vegetation	
Practice Code:	322	
Activity Type:	322.3 Switchgrass and Reedgrass Establishment	
Typical Implementation Scenario		
Establishing "Kanlow" switchgrass and common reedgrass on channel banks, berms, spoils and associated areas along streambanks and/or shoreline. May be installed following stabilization activities or used alone to stabilize streambank or shorelines to reduce erosion and sedimentation. Kanlow switchgrass is planted in areas at or above the waterline with common reedgrass planted at or below the water line in a system that provides protection from erosion and sedimentation during periodic fluctuations in water levels and flows. Evaluations for the proper use of this practice are based on criteria found in the NRCS Streambank and Shoreline (580) standard.		
Associated practices include: Critical Area Planting (342), Nutrient Management (590), Pest Management (595), Streambank and Shoreline Protection (580)		
Data Source:	342 rates, various seed dealers and custom rates (2008)	
Geographic Area:	Statewide	
Unit for Cost Estimate:	Acre	
Practice Life (Years):	10	
Discount Rate (%/Year):	5%	
Materials		Cost/Unit
Kanlow switchgrass: Cost of the seed and any needed seedbed preparation prior to planting.		\$2,558.00
Common reedgrass below water line: Costs includes rhizomes and labor for installation, based on 49 cents per rhizome with approximately 5,000 rhizomes planted per acre.		\$108.00
Does not include cost of fertilizer for establishment.		\$2,450.00
Equipment/Installation		\$20.00
Tractor / Drill / Sprigger / Spreader (typically range from \$15 - \$25 per acre) and includes labor for planting above the water line. Hand tools such as shovels, tree spades, posthole diggers, etc. are used for planting rhizomes by hand.		
Labor		
Costs included with materials / installation		
Mobilization		
None		
Operation & Maintenance		\$51.56
Proper use which may include excluding use. 2% of installation costs		
Acquisition of Technical Knowledge		\$0.00
Planting and management grass.		
Forgone Income		\$0.00
None		
Risk		\$0.00
None		
Administration & Permit Costs		\$0.00
None		
Total Cost Estimate:		\$2,629.56

ECONOMIC COST DATA

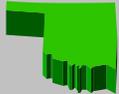
Cost Data

Practice Name:	Deep Tillage	
Practice Code:	324	
Activity Type:	324.1 - Ripping and Subsoiling	
Typical Implementation Scenario		
<p>Using a tractor to pull a subsoiler at a depth of 12 inches in an 80 acre conventionally farmed, continuous wheat field to fracture an existing plow pan prior to converting to a no-till cropping system, which will promote improved water infiltration and root penetration. This practice is limited to only situations where deep tillage has been determined to be necessary prior to conversion to a no-till system or establishing permanent vegetation.</p> <p>This practice includes the costs of the tractor, tillage implement, and labor associated with performing the operations.</p>		
Associated practices include: Residue and Tillage Management - No Till/Strip Till/Direct Seed (329), Residue and Tillage Management -(330) Mulch Till (345), Residue and Tillage Management - Ridge Till (346), Cover Crop (340), Pest Management (595), Conservation Crop Rotation (328), Contour Farming		
Geographic Area:	Statewide	
Unit for Cost Estimate:	Acre	
Practice Life (Years):	3	
Discount Rate (%/Year):	5%	
		Cost/Unit
Data Source: 2007-2008 OSU Cooperative Extension Service Custom Rates and 2009 actual cost data.		
Materials		\$0.00
None		
Equipment/Installation/Labor		\$15.00
Tractor/Implement/Labor		
Labor		\$0.00
Included in Equipment/Installation cost		
Mobilization		\$0.00
No cost on tillage practices		
Operation & Maintenance		\$0.00
0% O&M factor		
Acquisition of Technical Knowledge		\$0.00
Knowledge to determine location of compacted soil layer		
Forgone Income		\$0.00
None, no land taken out of production or lost crop		
Risk		\$0.00
None		
Administration & Permit Costs		\$0.00
None		
Total Cost Estimate:		\$15.00

ECONOMIC COST DATA

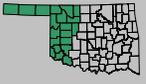
Cost Data

Practice Name:	Conservation Crop Rotation	
Practice Code:	328	
Activity Type:	328.1 - Crop Rotation	
Typical Implementation Scenario		
This practice consists of establishing a crop rotation of wheat/soybeans/corn on an 80 acre field with gently sloped, loamy soils to control sheet and rill erosion and improve soil organic matter content.		
This practice is to be used to convert a continuous monoculture cropping system to crop rotations where a minimum of 2 different crops are planted in a rotation. Longer rotations of 3 or more different crops in sequence may be used and are encouraged. An evaluation of the cropping system using the current NRCS approved Soil Conditioning Index procedure shall result in a positive trend (SCI >0).		
This practice includes the costs of acquiring knowledge and different management skills associated with converting from a monoculture to a crop rotation.		
Associated practices include: Residue and Tillage Management - No Till/Strip Till/Direct Seed (329), Residue and Tillage Management - Mulch Till (345), Residue and Tillage Management - Ridge Till (346), Cover Crop (340), Pest Management (595), Nutrient Management (590), Contour Farming (330), Deep Tillage (324)		
Geographic Area:	Statewide	
Unit for Cost Estimate:	Acre	
Practice Life (Years):	1	
Discount Rate (%/Year):	5%	
Data Source: 2009 estimates from technical specialists.		Cost/Unit
Materials		
None		\$0.00
Equipment/Installation/Labor		
None		\$0.00
Labor		
None		\$0.00
Mobilization		
None		\$0.00
Operation & Maintenance		
0% O&M factor		\$0.00
Acquisition of Technical Knowledge		
Management skills and knowledge required to convert from a monoculture cropping system to a multiple crop rotation. (28 hours X \$20/hour / 80 acres = \$7/ac)		\$7.00
Forgone Income		
N/A		\$0.00
Risk		
Crop failure		\$0.00
Administration & Permit Costs		
None		\$0.00
Total Cost Estimate:		\$7.00



ECONOMIC COST DATA

Cost Data

Practice Name:	Conservation Crop Rotation	
Practice Code:	328	
Activity Type:	328.2 - Crop Rotation - Harsh Climate	
Typical Implementation Scenario		
This practice consists of establishing a crop rotation of wheat/soybeans on an 80 acre field with gently sloped, loamy soils to control sheet and rill erosion and improve soil organic matter content.		
This practice is to be used on non-irrigated and non-double cropped fields where the average annual rainfall is less than 30 inches per year, to convert a continuous monoculture cropping system to crop rotations where a minimum of 2 different crops are planted in a rotation. Longer rotations of 3 or more different crops in sequence may be used and are encouraged. An evaluation of the cropping system using the current NRCS approved Soil Conditioning Index procedure shall result in a positive trend (SCI >0).		
This practice includes the costs of acquiring technical knowledge and different management skills associated with converting from a monoculture to a crop rotation along with the risk of establishing a crop in areas with severe climatic hazards and the associated potential forgone income.		
Associated practices include: Residue and Tillage Management - No Till/Strip Till/Direct Seed (329), Residue and Tillage Management - Mulch Till (345), Residue and Tillage Management - Ridge Till (346), Cover Crop (340), Pest Management (595), Nutrient Management (590), Contour Farming (330), Deep Tillage (324)		
Geographic Area:	Counties with 30 inch or less average annual precipitation as listed below:	
	Alfalfa, Beaver, Beckham, Blaine, Cimarron, Custer, Dewey, Ellis, Greer, Harmon, Harper, Jackson, Kiowa, Major, Roger Mills, Texas, Tillman, Washita, Woods, and Woodward counties.	
Unit for Cost Estimate:	Acre	
Practice Life (Years):	1	
Discount Rate (%/Year):	5%	Cost/Unit
Data Source: 2009 estimates from technical specialists.		
Materials		
None		\$0.00
Equipment/Installation/Labor		
None		\$0.00
Labor		
None		\$0.00
Mobilization		
None		\$0.00
Operation & Maintenance		
0% O&M factor		\$0.00
Acquisition of Technical Knowledge		
Management skills and knowledge required to convert from a monoculture cropping system to a multiple crop rotation. (28 hours X \$20/hour / 80 acres = \$7/ac)		\$7.00
Forgone Income		
Planting grain sorghum in place of an expected wheat crop (wheat return = \$62.09) (grain sorghum return = \$38.92) Difference equals \$23.17/acre		\$23.17
Risk		
Crop failure		\$0.00
Administration & Permit Costs		
None		\$0.00
Total Cost Estimate:		\$30.17

ECONOMIC COST DATA

Cost Data

Practice Name:	Conservation Crop Rotation	
Practice Code:	328	
Activity Type:	328.3 Converting from irrigation	
Typical Implementation Scenario		
This practice is to be used to convert an irrigated cropping system to a dryland cropping system. The typical cropping scenario includes a 120 acre field, irrigated by a center pivot system, consisting of a cropping rotation of wheat-corn and/or grain sorghum. The irrigation system will be dismantled and the field will be converted to a dryland cropping rotation of wheat-sorghum-fallow, which will result in an underground water quantity improvement		
This practice includes the costs of acquiring technical knowledge and different management skills associated with converting from an irrigated cropping system to a dryland system along with the risk of converting to a dryland cropping rotation and the associated potential forgone income.		
Associated practices include: Residue and Tillage Management - No Till/Strip Till/Direct Seed (329), Residue and Tillage Management - Mulch Till (345), Residue and Tillage Management - Ridge Till (346), Cover Crop (340), Pest Management (595), Nutrient Management (590), Contour Farming (330), Deep Tillage (324), Well Decommissioning (351)		
Geographic Area:	Statewide	
Unit for Cost Estimate:	Acre	
Practice Life (Years):	1	
Discount Rate (%/Year):	5%	
Data Source: 2009 estimates from technical specialists.		
Materials		
None		\$0.00
Equipment/Installation/Labor		
None		\$0.00
Labor		
None		\$0.00
Mobilization		
None		\$0.00
Operation & Maintenance		
0% O&M factor		\$0.00
Acquisition of Technical Knowledge		
None		\$0.00
Forgone Income		
Planting dryland wheat/sorghum/fallow in place of an expected irrigated wheat/corn/wheat crop		\$140.91
Irrigated Corn = \$238.45 Irrigated Wheat = \$154.53		
\$154.53 + \$238.45 + 154.53 = \$547.51		
Dryland Wheat = \$35.95 Dryland Sorghum = \$88.84		
\$35.95 + \$88.84 = \$0 = \$124.79		
Difference equals \$422.72/acre		
This is based on a 3-year rotation so average annual difference equals \$140.91/acre		
Risk		
Crop failure		\$0.00
Administration & Permit Costs		
None		\$0.00
Total Cost Estimate:		\$140.91

ECONOMIC COST DATA

Cost Data

Practice Name: Residue and Tillage Management - No Till/Strip Till/Direct Seed

Practice Code: 329

Activity Type: 329.1 - Implement No-Till System

Typical Implementation Scenario

This practice consists of managing crop residues on the soil surface year round while limiting soil disturbance activities to only those needed for the placement of nutrients, residue conditioning, and/or planting crops. This practice will be used to convert field(s) which are using full width tillage to no till/strip till systems to reduce soil erosion and improve organic matter content. The typical cropping scenario includes an 80 acre conventionally tilled, continuous wheat field converted to a no till wheat/soybean/corn rotation.

The payment for this practice is made annually after the no-till crop is planted. The annual payment(s) are subject to recovery if fields are not continuously no-tilled/strip-tilled for a minimum of 3 consecutive years. A crop rotation with a minimum of two crops is strongly encouraged. Graze-out wheat is only allowed once within a three year period and must be immediately followed with a warm season crop or cover crop. An evaluation of the cropping system using the current NRCS approved Soil Conditioning Index procedure shall result in a positive trend (SCI >0). This practice includes the costs of increased pesticides usage, short term fertilizer increase and the extra expense of a no-till drill/planter associated with installing the practice.

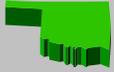
Associated practices include: Conservation Crop Rotation (328), Cover Crop (340), Pest Management (595), Nutrient Management (590), Contour Farming (330), Deep Tillage (324), Terrace (600), Grassed Waterway (412)

Geographic Area: Statewide

Unit for Cost Estimate: Acre

Practice Life (Years): 1

Discount Rate (%/Year): 5%



Cost/Unit

Data Source: 2009 cost estimates less deflationary decreases.

Materials

Fertilizer - 15% increase in N requirement (Short-Term)	\$6.75	\$28.50
Pesticides - Dramatic increase in lieu of traditional tillage operations	\$21.75	

Equipment/Installation/Labor

No-till Drill/Planter (Difference between conventional vs. no-till rental)		\$3.20
Machinery Fuel, Oil, Repair, etc. - Significant decrease in machinery useage		\$0.00

Labor

Significant decrease in machinery labor		\$0.00
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Mobilization

None		\$0.00
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Operation & Maintenance

0% O&M factor		\$0.00
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Acquisition of Technical Knowledge

Knowledge required to management no-till/strip-till system (20 hours X \$20/hour / 80 acres = \$5.00/acre)		\$5.00
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Forgone Income

None - No land taken out of production, or lost crop.		\$0.00
-------------------------------------------------------	--	--------

Risk

Reduced erosion and improved water quality		\$0.00
--------------------------------------------	--	--------

Administration & Permit Costs

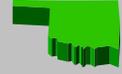
None		\$0.00
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Total Cost Estimate:		\$36.70
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ECONOMIC COST DATA

Cost Data

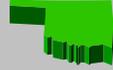
Practice Name:	Contour Buffer Strips		
Practice Code:	332		
Activity Type:	332.1 - Introduced Grass Seed		
Typical Implementation Scenario			
This practice consists of establishing a series of 15 feet wide strips to an introduced grass species such as old world bluestem, along the contour, of an 80 acre gently sloping cropland field, with slopes averaging approximately 4 percent for the purpose of reducing sheet and rill erosion. The grass strips will be alternated down the slope with 120 feet wide strips that are cropped to continuous wheat and farmed on the contour. The vegetated buffer strips will be planted according to the NRCS Pasture and Hay Planting (512) standard.			
This practice includes the costs of introduced warm or cool season perennial grass seed, tractor, drill and labor to plant grass in buffer strips.			
Associated practices include: Residue and Tillage Management - No Till/Strip Till/Direct Seed (329), Residue and Tillage Management - Mulch Till (345), Residue and Tillage Management - Ridge Till (346), Cover Crop (340), Pest Management (595), Nutrient Management (590), Contour Farming (330), Deep Tillage (324), Pasture and Hayland Planting (512), Conservation Crop Rotation (328)			
Geographic Area:	Statewide		
Unit for Cost Estimate:	Acre		
Practice Life (Years):	10		
Discount Rate (%/Year):	5%		
			Cost/Unit
Data Source: 2009 Pasture Planting (512) cost data.			
Materials			\$35.51
Perennial Grass (Introduced Species): (Bermudagrass seed, Tall Fescue, Tall Wheatgrasses, Old World Bluestem)			
Equipment/Installation/Labor			\$23.74
Tractor / drill includes labor costs			\$7.00
Seedbed Preparation. Most seedbed preparation work is done as part of tillage operations for previously grown crops. In some cases an extra tillage or firming operation may be needed prior to planting.			\$16.74
Labor			\$0.00
Included in Equipment/Installation			
Mobilization			\$0.00
None			
Operation & Maintenance			\$1.19
2% O&M factor			
Acquisition of Technical Knowledge			\$0.00
Calibrate and operate seed drill, manage perennial grass			
Forgone Income			\$15.63
1 Acre taken out of crop production Assume wheat crop minus value of occasional hay/forage crop from herbaceous cover crop. Net Income (\$/Ac/Yr) =			
Risk			\$0.00
Reduced risk, less erosion, less machinery wear & tear.			
Administration & Permit Costs			\$0.00
None			
Total Cost Estimate:			\$76.07



ECONOMIC COST DATA

Cost Data

Practice Name:	Contour Buffer Strips		
Practice Code:	332		
Activity Type:	332.2 - Bermudagrass Sprigging		
Typical Implementation Scenario			
This practice consists of sprigging a series of 15 feet wide strips to bermudagrass, along the contour of an 80 acre gently sloping cropland field, with slopes averaging approximately 4 percent for the purpose of reducing sheet and rill erosion. The grass strips will be alternated down the slope with 120 feet wide strips that are cropped to continuous wheat and farmed on the contour. The vegetated buffer strips will be planted according to the NRCS Pasture and Hay Planting (512) standard.			
This practice includes the costs of bermudagrass sprigs, tractor, sprigger, and labor to plant grass in buffer strips.			
Associated practices include: Residue and Tillage Management - No Till/Strip Till/Direct Seed (329), Residue and Tillage Management - Nutrient Management (590), Contour Farming (330), Deep Tillage (324), Pasture and Hayland Planting (512), Conservation Crop Rotation (328)			
Geographic Area:	Statewide		
Unit for Cost Estimate:	Acre		
Practice Life (Years):	10		
Discount Rate (%/Year):	5%		
Data Source: 2009 Pasture and Hay Planting (512) cost data.			Cost/Unit
Materials			
Sprigs - included in equipment and installation			
Fertilizer and/or other amendments needed for establishment are covered under the Nutrient Management (590) cost data			
Equipment/Installation			\$96.51
Tractor / sprigger and sprigs and labor cost associated with sprigging			\$79.77
Seedbed Preparation. Most seedbed preparation work is done as part of tillage operations for previously grown crops. In some cases an extra tillage or firming operation may be needed prior to planting. Costs includes one disking and packing operation.			\$16.74
Labor			\$0.00
Seedbed Preparation. Most seedbed preparation work is done as part of tillage operations for previously grown crops. In some cases an extra tillage or firming operation may be needed prior to planting.			
Mobilization			\$0.00
None			
Operation & Maintenance			\$1.93
2% O&M factor			
Acquisition of Technical Knowledge			\$0.00
Calibrate and operate sprigger, manage grass			
Forgone Income			\$15.63
1 Acre taken out of crop production			
Assume wheat crop minus value of occasional hay/forage crop from herbaceous cover crop.			
Net Income (\$/Ac/Yr) =			
Risk			\$0.00
Reduced risk, less erosion, less machinery wear & tear.			
Administration & Permit Costs			\$0.00
None			
Total Cost Estimate:			\$114.07



ECONOMIC COST DATA

Cost Data

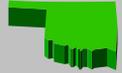
Practice Name:	Contour Buffer Strips	
Practice Code:	332	
Activity Type:	332.3 - Native Grass Monoculture	
Typical Implementation Scenario		
This practice consists of establishing a series of 15 feet wide strips to switchgrass, along the contour, of an 80 acre gently sloping cropland field, with slopes averaging approximately 4 percent for the purpose of reducing sheet and rill erosion. The grass strips will be alternated down the slope with 120 feet wide strips that are cropped to continuous wheat and farmed on the contour. The vegetated buffer strips will be planted according to the NRCS Pasture and Hay Planting (512) standard.		
This practice includes the costs of grass seed, tractor, drill and labor to plant grass in buffer strips.		
Associated practices include: Residue and Tillage Management - No Till/Strip Till/Direct Seed (329), Residue and Tillage Management - Mulch Till (345), Residue and Tillage Management - Ridge Till (346), Cover Crop (340), Pest Management (595), Nutrient Management (590), Contour Farming (330), Deep Tillage (324), Pasture and Hayland Planting (512), Conservation Crop Rotation (328)		
Geographic Area:	Statewide	
Unit for Cost Estimate:	Acre	
Practice Life (Years):	10	
Discount Rate (%/Year):	5%	
		Cost/Unit
Data Source: 2009 Pasture and Hay Planting (512) cost data.		
Materials		\$67.47
Native Grass Species (Big Bluestem, Sand Bluestem, Indiangrass, Switchgrass)		
Equipment/Installation		\$23.74
Tractor / drill \$7.00 includes labor costs		
Seedbed Preparation. Most seedbed preparation work is done as part of tillage operations for previously grown crops. In some cases an extra tillage or firming operation may be needed prior to planting. \$16.74 Seedbed Preparation.		
Labor		
Included in Installation cost.		
Mobilization		\$0.00
None		
Operation & Maintenance		\$1.35
2% O&M factor		
Acquisition of Technical Knowledge		\$0.00
Calibrate and operate seed drill, manage perennial grass		
Forgone Income		\$2.74
1 Acre taken out of crop production Assume wheat crop minus value of occasional hay/forage crop from herbaceous cover crop. Net Income (\$/Ac/Yr) =		
Risk		\$0.00
Reduced risk, less erosion, less machinery wear & tear.		
Administration & Permit Costs		\$0.00
None		
Total Cost Estimate:		\$95.30



ECONOMIC COST DATA

Cost Data

Practice Name:	Contour Buffer Strips	
Practice Code:	332	
Activity Type:	332.4 - Native Grass Mixture	
Typical Implementation Scenario		
<p>This practice consists of establishing a series of 15 feet wide strips to a native grass mixture, along the contour, of an 80 acre gently sloping cropland field, with slopes averaging 4 percent for the purpose of reducing sheet and rill erosion. The grass strips will be alternated down the slope with 120 feet wide strips that are cropped to continuous wheat and farmed on the contour. The vegetated buffer strips will be planted according to the NRCS Range Planting (550).</p> <p>This practice includes the costs of native grass seed, tractor, drill and labor to plant grass in buffer strips.</p>		
Associated practices include: Residue and Tillage Management - No Till/Strip Till/Direct Seed (329), Residue and Tillage Management - Mulch Till (345), Residue and Tillage Management - Ridge Till (346), Cover Crop (340), Pest Management (595), Nutrient Management (590), Contour Farming (330), Deep Tillage (324), Range Planting (550), Conservation Crop Rotation (328)		
Geographic Area:	Statewide	
Unit for Cost Estimate:	Acre	
Practice Life (Years):	10	
Discount Rate (%/Year):	5%	
		Cost/Unit
Data Source: 2009 Range Planting (550) cost data.		
Materials		\$53.41
Seed (based on average lbs. PLS and cost per lb. PLS needed to plant a typical range seeding mixture according to the NRCS Range Planting (550) Standard and Specification)		
Fertilizer and/or amendments, if needed for establishment, are covered under 590		
Equipment/Installation/Labor		\$23.74
Tractor / drill \$7.00		
includes labor costs		
Seedbed Preparation. Most seedbed preparation work is done as part of tillage operations for previously grown crops. In some cases an extra tillage or firming operation may be needed prior to planting. \$16.74		
Seedbed Preparation. Most seedbed preparation work is done as part of tillage operations for previously grown crops. In some cases an extra tillage or firming operation may be needed prior to planting.		
Labor		\$0.00
Included in Installation cost		
Mobilization		\$0.00
None		
Operation & Maintenance		\$1.54
2% O&M factor		
Acquisition of Technical Knowledge		\$0.00
Calibrate and operate seed drill, manage perennial grass		
Forgone Income		\$2.74
1 Acre taken out of crop production		
Assume wheat crop minus value of occasional hay/forage crop from herbaceous cover crop.		
Net Income (\$/Ac/Yr) =		
Risk		\$0.00
Reduced risk, less erosion, less machinery wear & tear.		
Administration & Permit Costs		\$0.00
None		
Total Cost Estimate:		\$81.43



ECONOMIC COST DATA

Cost Data

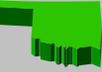
Practice Name:	Prescribed Burning	
Practice Code:	338	
Activity Type:	338.1 Level 1-Prescribed Burn	
Typical Implementation Scenario		
<p>Applying a prescribed burn according to designed burn plan and NRCS Prescribed Burning (338) standard and specifications in order to control undesirable species, improve wildlife habitat, improve plant productivity and/or quality, facilitate grazing distribution and maintain ecological processes.</p> <p>Prescribed burns in this scenario are based on a burn area of 240 acres on open grasslands or wooded areas, and may contain volatile woody species such as red cedar. Terrain is less than 12% slopes and fires can be completed in 1 day or less. Burned firebreaks used to achieve total firebreak width are part of these burns. (Constructed firebreak cost is not included in cost of burn. Refer to Firebreak (394) standard and cost scenarios)</p>		
Associated practices include: Firebreak (394), Prescribed Grazing (528), Upland Wildlife Habitat Management (645)		
Data Source: Actual equipment costs, producer knowledge,, Documented research and demonstration projects		
Geographic Area:	Statewide	
Unit for Cost Estimate:	Acre	
Practice Life (Years):	5	
Discount Rate (%/Year):	5%	
Materials		Cost/Unit
Included in Equipment and Installation		
Equipment/Installation		\$2.98
<p>Costs will vary depending on burn plan, available resources, whether the burn is custom applied or done by the landowner. Equipment may include 4-wheelers, sprayers, drip torches or propane torches, fuel mixture for torches, hand tools, tractors, pumpers, radios, weather kits, etc. Some of the equipment may be bought for first burn, so upfront costs will be more and cost will decrease for future burns.</p>		
Labor		\$4.00
<p>Labor will vary depending on number of crew. Average crew size would be 8 people</p>		
Mobilization		\$0.00
Included in Equipment and Installation		
Operation & Maintenance (Annual)		\$0.00
N/A		
Acquisition of Technical Knowledge		\$0.63
<p>There will be some costs associated with potential training at workshops and schools, costs could be on an annual basis and may be more in the beginning. As experience is gained, costs will decrease. Costs associated with burn plan development not included since this scenario is based on NRCS burn plan. Estimate \$100.00 per year and when applied to an average burn of 240 acres this would be \$.63 per acre.</p>		
Forgone Income (Annual)		\$6.00
<p>Depending on situation, there may be deferment to build fuels as required and according to the Prescribed Burn Plan and some deferment following burn to allow for plant regrowth prior to grazing.</p>		
Risk		
None		
Administration & Permit Costs		
None		
Total Cost Estimate:		\$13.61



ECONOMIC COST DATA

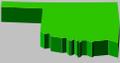
Cost Data

Practice Name:	Prescribed Burning	
Practice Code:	338	
Activity Type:	338.2 Level 2-Prescribed Burn	
Typical Implementation Scenario		
<p>Applying a prescribed burn according to designed burn plan and NRCS Prescribed Burning (338) standard and specifications in order to control undesirable species, improve wildlife habitat, improve plant productivity and/or quality, facilitate grazing distribution and maintain ecological processes. This scenario is based on a burn area of 240 acres and applies under the following conditions: where the terrain of the majority of the area to be burned exceeds 12% slopes with deep canyons requiring extra time and labor; or when the burn cannot be completed in one day to size of area or complexity; or when used for forest site preparation according to a forest stewardship plan. Burned firebreaks used to achieve total firebreak width are part of these burns. (Constructed firebreak cost is not included in cost of burn. Refer to Firebreak (394) standard and cost scenarios)</p>		
Associated practices include: Firebreak (394), Prescribed Grazing (528), Upland Wildlife Habitat Management (645)		
Data Source: Actual equipment costs, producer knowledge,, Documented research and demonstration projects		
Geographic Area:	Statewide	
Unit for Cost Estimate:	Acre	
Practice Life (Years):	5	
Discount Rate (%/Year):	5%	
Materials		Cost/Unit
Included in Equipment and Installation		
Equipment/Installation		\$2.98
<p>Costs will vary depending on burn plan, available resources, whether the burn is custom applied or done by the landowner. Equipment may include 4-wheelers, sprayers, drip torches or propane torches, fuel mixture for torches, hand tools, tractors, pumps, radios, weather kits, etc. Some of the equipment may be bought for first burn, so upfront costs will be more and cost will decrease for future burns.</p>		
Labor		\$8.00
<p>Labor will vary depending on number of crew. Average crew size would be 8 people</p>		
Mobilization		\$0.00
Included in Equipment and Installation		
Operation & Maintenance (Annual)		\$0.00
N/A		
Acquisition of Technical Knowledge		\$0.63
<p>There will be some costs associated with potential training at workshops and schools, costs could be on an annual basis and may be more in the beginning. As experience is gained, costs will decrease. Costs associated with burn plan development not included since this scenario is based on NRCS burn plan. Estimate \$100.00 per year and when applied to an average burn of 240 acres this would be \$.63 per acre.</p>		
Forgone Income (Annual)		\$6.00
<p>Depending on situation, there may be deferment to build fuels as required and according to the Prescribed Burn Plan and some deferment following burn to allow for plant regrowth prior to grazing.</p>		
Risk		
None		
Administration & Permit Costs		
None		
Total Cost Estimate:		\$17.61



ECONOMIC COST DATA

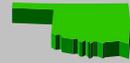
Cost Data

Practice Name:	Cover Crop	
Practice Code:	340	
Activity Type:	340.1 - Seasonal	
Typical Implementation Scenario		
<p>This practice consists of planting annual crops, legumes and/or forbs for temporary seasonal cover to protect against soil erosion, increase organic matter content, recycle nutrients or promote nitrogen fixation. The cover crop will be terminated by frost, mowing, rolling/crimping, or herbicides in preparation for the planting of the next crop. This practice is to be used in conjunction with crop rotations and will not be grazed or harvested. It must remain on the soil surface and it will not be used for grass establishment purposes. Cover crops will be used to follow low residue crops such as soybeans or used during fallow periods in the crop rotation. The typical application scenario involves the planting of wheat as a cover crop following cotton on an 80 acre gently sloping cropland field.</p> <p>This practice includes the costs of seed, fertilizer, pesticides, tractor, and labor associated with installing the practice.</p>		
Associated practices include: Conservation Crop Rotation (328), Pest Management (595), Nutrient Management (590), Contour Farming (330), Deep Tillage (324), Residue and Tillage Management, No Till/Strip Till/Direct Seed (329)		
Geographic Area:	Statewide	
Unit for Cost Estimate:	Acre	
Practice Life (Years):	1	
Discount Rate (%/Year):	5%	
		Cost/Unit
Data Source: 2009 discipline estimates & OSU Crop Budgets.		
Materials		\$61.00
Seed	\$10.50	
Fertilizer	\$46.50	
Pesticide	\$4.00	
Equipment/Installation		\$46.20
Machinery Fuel, Oil, Repair	\$46.20	
Labor		\$9.61
Machinery Labor		
Mobilization		\$0.00
None		
Operation & Maintenance		\$1.17
1% O&M factor		
Acquisition of Technical Knowledge		\$0.00
None		
Forgone Income		\$0.00
Loss of crop		
Risk		\$0.00
Reduced risk, less erosion and improved water quality		
Administration & Permit Costs		\$0.00
None		
Total Cost Estimate:		\$117.98

ECONOMIC COST DATA

Cost Data

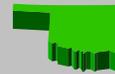
Practice Name:	Cover Crop	
Practice Code:	340	
Activity Type:	340.2 - Green Manure	
Typical Implementation Scenario		
<p>This practice consists of planting legumes to promote biological nitrogen fixation and to capture, recycle and/or redistribute nutrients in the soil profile. The cover crop will be terminated as late as possible by frost, mowing, rolling/crimping, tillage or herbicides. The cover crop will remain in the field and not be harvested or grazed. It will not be used for grass establishment purposes. The typical cropping scenario involves the planting of Austrian winter peas into an 80 acre field of harvested wheat stubble. The peas are tilled under immediately prior to planting grain sorghum in the spring.</p> <p>This practice includes the costs of seed, tractor, and labor associated with installing the practice.</p>		
Associated practices include: Conservation Crop Rotation (328), Pest Management (595), Nutrient Management (590), Contour Farming (330), Deep Tillage (324), Residue and Tillage Management, No Till/Strip Till/Direct Seed (329)		
Geographic Area:	Statewide	
Unit for Cost Estimate:	Acre	
Practice Life (Years):	1	
Discount Rate (%/Year):	5%	
		Cost/Unit
Data Source: 2009 discipline estimates & OSU Crop Budgets.		
Materials		\$23.00
Seed	\$23.00	
Equipment/Installation		\$46.20
Machinery Fuel, Oil, Repair	\$46.20	
Labor		\$9.61
Machinery Labor		
Mobilization		\$0.00
None		
Operation & Maintenance		\$0.79
1% O&M factor		
Acquisition of Technical Knowledge		\$0.00
None		
Forgone Income		\$0.00
Loss of crop		
Risk		\$0.00
Reduced risk, less erosion and improved water quality		
Administration & Permit Costs		\$0.00
None		
Total Cost Estimate:		\$79.60



ECONOMIC COST DATA

Cost Data

Practice Name:	Critical Area Planting	
Practice Code:	342	
Activity Type:	342.1 Critical Area Planting - Sprigging	
Typical Implementation Scenario		
Establishing permanent vegetation on areas with excessive erosion and/or previously constructed structural practices (ponds, waterways, grade stabilization structures, diversions, etc.). Typical sprigging includes tractor, sprigger and 50 bushels per acre of sprigs. Some seedbed preparation may be needed depending on condition of soil prior to planting and would typically be done with a disk or tiller.		
Associated practices include: Nutrient Management (590), Various Engineering Practices		
Data Source: 2009 LTP-11 data, various seed dealers and custom rates (2008)		
Geographic Area:	Statewide	
Unit for Cost Estimate:	Acre	
Practice Life (Years):	10	
Discount Rate (%/Year):	5%	
		Cost/Unit
Materials		
Costs for sprigs are included in Equipment and Installation. All rates and species are according to the Critical Area Planting (342) standard and specifications		
Does not include cost of fertilizer and/or amendments that may be needed for establishment. Refer to 590		
Equipment/Installation		\$154.24
Sprigging bermudagrass includes cost of minor seedbed preparation, sprigs, tractor / sprigging equipment and planting		
Labor		
Costs included with installation		
Mobilization		\$25.00
Due to size of jobs (typically small), some cost may be incurred.		
Operation & Maintenance		\$5.38
3% of installation cost		
Acquisition of Technical Knowledge		\$0.00
N/A		
Forgone Income		\$0.00
None		
Risk		\$0.00
Reduced risk, less concentrated flow erosion.		
Administration & Permit Costs		\$0.00
None		
Total Cost Estimate:		\$184.62

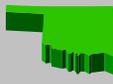


Cost/Unit

ECONOMIC COST DATA

Cost Data

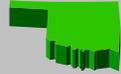
Practice Name:	Critical Area Planting	
Practice Code:	342	
Activity Type:	342.2 Critical Area Planting - Seeding	
Typical Implementation Scenario		
Establishing permanent vegetation on areas with excessive erosion and previously constructed structural practices (ponds, waterways, grade stabilization structures, diversions, etc.) Typical planting is done by seeding of either introduced or native grasses.		
Associated practices include: Nutrient Management (590), Various Engineering Practices		
Data Source: 2009 LTP-11 data, various seed dealers and custom rates (2008)		
Geographic Area:	Statewide	
Unit for Cost Estimate:	Acre	
Practice Life (Years):	10	
Discount Rate (%/Year):	5%	
		Cost/Unit
Materials		
Costs for seed is included in Equipment and Installation. All rates and species are according to the Critical Area Planting (342) standard and specifications		
Does not include cost of fertilizer and/or amendments that may be needed for establishment. Refer to 590		
Equipment/Installation		\$108.34
Seeding introduced or native seeds as monoculture or in mixture - Includes seed costs, seedbed preparation and seeding equipment. Typical species would be bermudagrass, fescue, old world bluestems and major native grass species		
Labor		
Costs included with installation		
Mobilization		\$25.00
Due to size of jobs (typically small), some cost may be incurred.		
Operation & Maintenance		\$4.00
3% of installation cost		
Acquisition of Technical Knowledge		\$0.00
N/A		
Forgone Income		\$0.00
None		
Risk		\$0.00
Reduced risk, less concentrated flow erosion.		
Administration & Permit Costs		\$0.00
None		
Total Cost Estimate:		\$137.34



ECONOMIC COST DATA

Cost Data

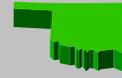
Practice Name:	Critical Area Planting	
Practice Code:	342	
Activity Type:	342.3 Tree/Shrub Establishment	
Typical Implementation Scenario		
Establishing adapted trees on gullied areas with excessive erosion.		
Associated practices include: Nutrient Management (590), Tree / Shrub Establishment (612)		
Data Source: 2009 actual cost data, Tree Shrub Establishment (612) cost data.		
Geographic Area:	Statewide	
Unit for Cost Estimate:	Acre	
Practice Life (Years):	10	
Discount Rate (%/Year):	5%	
		Cost/Unit
Materials		\$378.00
Includes the cost of the trees and/or shrubs (barerooted). This component is for planting completed under the critical area planting (342) specifications only and is based on average spacing requirements (681 - 1210 trees per acre) and costs of 40 cents per tree.		
Does not include cost of fertilizer for establishment.		
Equipment/Installation		\$0.00
Included with labor costs		
Labor		\$283.65
Includes the cost labor and any equipment needed to install trees / shrubs and is based on an average rate of 30 cents per tree. Also includes any costs associated with site preparation prior to planting.		
Mobilization		\$25.00
Due to size of jobs (typically small), some cost may be incurred.		
Operation & Maintenance		\$8.51
3% of installation costs		
Acquisition of Technical Knowledge		\$0.00
Planting and maintenance of trees.		
Forgone Income		\$0.00
None		
Risk		\$0.00
Reduced risk, less concentrated flow erosion.		
Administration & Permit Costs		\$0.00
None		
Total Cost Estimate:		\$695.16



ECONOMIC COST DATA

Cost Data

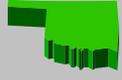
Practice Name:	Critical Area Planting	
Practice Code:	342	
Activity Type:	342.4 Shaping and Filling Gullies	
Typical Implementation Scenario		
Mechanically shaping and/or filling gullies (according to a gully shaping design) where natural recovery is not possible and vegetating afterwards. Sprigging or seeding is done following shaping activities.		
Associated practices include: Nutrient Management (590), Access Control (472), Fence (382)		
Data Source: 2009 LTP-11 data, various seed dealers and custom rates (2008)		
Geographic Area:	Statewide	
Unit for Cost Estimate:	Acre	
Practice Life (Years):	10	
Discount Rate (%/Year):	5%	
		Cost/Unit
Materials		\$131.29
Includes the cost of the seed/sprigs, planting operation and any needed seedbed preparation prior to planting following the shaping / filling of gullies. Does not include cost of fertilizer for establishment.		
Equipment/Installation		\$1,050.00
Dozer or other heavy equipment used to shape and/or fill gullies. Costs include removal and replacement of topsoil, removal of any trees or other rubbish that interferes with shaping and filling and the shaping of gully side slopes and bottom according to design.		
Includes labor		
Labor		
Costs included with installation		
Mobilization		
None		
Operation & Maintenance		\$31.50
3% of installation costs		
Acquisition of Technical Knowledge		\$0.00
N/A		
Forgone Income		\$0.00
None		
Risk		\$0.00
Reduced risk, less concentrated flow erosion.		
Administration & Permit Costs		\$0.00
None		
Total Cost Estimate:		\$1,212.79



ECONOMIC COST DATA

Cost Data

Practice Name:	Critical Area Planting	
Practice Code:	342	
Activity Type:	342.5 Sod mulching, seedbed preparation, placement	
Typical Implementation Scenario		
Establishing bermudagrass on areas with excessive erosion and/or previously constructed structural practices (ponds, waterways, grade stabilization structures, diversions, gully shaping, etc.) by placing sod mulch (mixture of bermudagrass and topsoil). This is primarily used in situations where the extra topsoil may be needed to ensure establishment or concentrated flows are a concern. Sod mulch is dug, loaded and hauled to the site where it is needed and placed. <u>This does not include</u> situations where existing bermudagrass is stockpiled and then replaced as part of the final construction activity of an engineering structural practice.		
Associated practices include: Nutrient Management (590), Various Engineering Practices		
Data Source: 2009 LTP-11 data, various seed dealers and custom rates (2008)		
Geographic Area:	Statewide	
Unit for Cost Estimate:	Acre	
Practice Life (Years):	10	
Discount Rate (%/Year):	5%	
		Cost/Unit
Materials		\$0.00
Materials include value of sprigs that are mixed with the soil and the topsoil. Costs included with Equipment and Installation Does not include cost of fertilizer and/or amendments that may be needed for establishment. Refer to 590		
Equipment/Installation		\$222.50
Materials, Equipment and labor for digging mulch, hauling, preparation and placement of sod mulch according to the critical area planting (342) standard.		
Labor		
Costs included with installation		
Mobilization		
Included in Equipment and installation costs		
Operation & Maintenance		\$6.68
3% of installation costs		
Acquisition of Technical Knowledge		\$0.00
N/A		
Forgone Income		\$0.00
None		
Risk		\$0.00
Reduced risk, less concentrated flow erosion.		
Administration & Permit Costs		\$0.00
None		
Total Cost Estimate:		\$229.18



ECONOMIC COST DATA

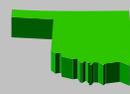
Cost Data

Practice Name:	Residue and Tillage Management - Mulch Till		
Practice Code:	345		
Activity Type:	345.1 - Implement Mulch Till System		
Typical Implementation Scenario			
<p>This practice consists of using chisels or light disking to till the entire field surface prior to planting so that crop residue is maintained on the soil surface year round, in an effort to reduce soil erosion. The typical scenario involves an 80 acre continuous wheat field on gently sloping soils. This practice will be used to convert tillage systems where little to no residue is maintained on the soil surface during the year to a mulch till system.</p> <p>Fields must be continuously mulch-tilled for a minimum of 3 consecutive years to receive this payment. An evaluation of the cropping system using the current NRCS approved Soil Conditioning Index procedure shall result in a positive trend (SCI >0). This practice includes the costs of slight increases in pesticide and fertilizer useage.</p>			
Associated practices include: Conservation Crop Rotation (328), Cover Crop (340), Pest Management (595), Nutrient Management (590), Contour Farming (330), Deep Tillage (324), Terrace (600), Grassed Waterway (412)			
Geographic Area:	Statewide		
Unit for Cost Estimate:	Acre		
Practice Life (Years):	1		
Discount Rate (%/Year):	5%		
			Cost/Unit
Data Source: 2009 cost estimates by discipline specialists to account for inflationary decreases.			
Materials			\$16.15
Fertilizer - 10% increase in N requirement (Short-Term)	\$ 7.45		
Pesticide - Slight increase in lieu of traditional tillage.	\$8.70		
Equipment/Installation			\$0.00
Machinery Fuel, Oil, Repair, etc - Slight decrease in machinery useage.			
Labor			\$0.00
Slight decrease in machinery labor.			
Mobilization			\$0.00
None			
Operation & Maintenance			\$0.00
0% O&M factor			
Acquisition of Technical Knowledge			\$5.00
Knowledge to manage mulch till system (20 hours X \$20/hour / 80 acres = \$5.00/ac)			
Forgone Income			\$0.00
None - No land taken out of production, or lost crop.			
Risk			\$0.00
Reduced risk, less erosion and improved water quality			
Administration & Permit Costs			\$0.00
None			
Total Cost Estimate:			\$21.15

ECONOMIC COST DATA

Cost Data

Practice Name:	Residue and Tillage Management - Ridge Till		
Practice Code:	346		
Activity Type:	346.1 - Implement Ridge Till System		
Typical Implementation Scenario			
<p>This practice consists of managing crop residues on the soil surface year round while planting and growing crops on ridges alternated with furrows protected by crop residues, to reduce soil erosion. This practice will be used to convert cropland field(s) where little to no residue is left on the soil surface during the year to a ridge till system.</p> <p>This practice includes a typical scenario of establishing wheat in the furrows of ridge rowed cotton on an 80 acre gently sloping field, to act as a protective cover. The wheat will be terminated with a knockdown herbicide and will remain on the soil surface throughout the cotton growing season. Costs include planting wheat to act as a cover along with a knockdown herbicide application.</p>			
Associated practices include: Conservation Crop Rotation (328), Cover Crop (340), Pest Management (595), Nutrient Management (590), Contour Farming (330), Deep Tillage (324)			
Geographic Area:	Statewide		
Unit for Cost Estimate:	Acre		
Practice Life (Years):	1		
Discount Rate (%/Year):	5%		
			Cost/Unit
Data Source: 2009 discipline specialist estimates due to inflationary increases.			
Materials			\$44.72
Seed	\$7.00		
Fertilizer	\$15.40		
Pesticides	\$22.32		
Equipment/Installation			\$31.90
Machinery Costs	\$15.00		
Machinery Fuel, Oil, Repair	\$16.90		
Labor			\$0.00
Machinery Labor included with machinery costs			
Mobilization			\$0.00
None			
Operation & Maintenance			\$0.00
0% O&M factor			
Acquisition of Technical Knowledge			\$5.00
Knowledge required to management no-till/stripcill system (20 hours X \$20/hour / 80 acres = \$5.00/ac)			
Forgone Income			\$0.00
N/A			
Risk			\$0.00
Crop Failure			
Administration & Permit Costs			\$0.00
None			
Total Cost Estimate:			\$81.62



ECONOMIC COST DATA

Cost Data

Practice Name: Sediment Basin

Practice Code: 350

Activity Type: 350.1 Sediment Basin

Typical Implementation Scenario

This practice applies to the installation of an impoundment constructed by excavation/or fill to collect and store debris or sediment. The structure is normally installed upstream of cropland fields or conservation practices. The typical structure consists of 2830 cubic yards of excavation/fill with 80 feet of 18 inch conduit.

Construction Units (CU) are found by multiplying the designed or estimated "Quantity" by the given "Multiplier" as shown in the example in Table 1-A. The construction units for each component are then summed to give the "Total Construction Units" for the project. If a component is not used, there will be no construction units for that component. The Total Construction Units are then multiplied by the **Cost/Unit** given below to give the average cost of the project. Table 1-B is given as a template for computations.

Associated practices include: 552-Irrigation Regulating Reservoir, 447-Irrigation System, Tailwater Recovery, 590-Nutrient Management, 342-Critical Area Planting

Geographic Area: Statewide

Unit for Cost Estimate: Construction Unit (CU)

Practice Life (Years): 20

Discount Rate (%/Year): 5%

Cost/Unit

Data Source: 2009 actual cost data.

Materials

Includes Equipment/Installation, Labor and Mobilization costs

\$1.73

Table 1-A Example

Component	Units	Quantity	Multiplier	CU
Earthwork	CY	2830	1.00	2,830.0
HCMP / Welded Steel	DIFT	1440	1.16	1,664.7
Plastic Pipe	DIFT	0	0.80	0.0
Concrete	CY	2	161.46	322.9
Trashguard	PF	44	10.53	463.4
Gypsum	TON	0	69.36	0.0
Riprap	CY	0	31.21	0.0
Filter (C33 sand)	CY	0	22.89	0.0
Total Construction Units				5,281.1

To determine the average cost for any component listed above, multiply \$1.73 times the "Multiplier" for that component. For example, the average cost of concrete would be \$1.73 x 161.46 = \$279.32 / CY.

Table 1-B

Component	Units	Quantity	Multiplier	CU
Earthwork	CY		1.00	
HCMP / Welded Steel	DIFT		1.16	
Plastic Pipe	DIFT		0.80	
Concrete	CY		161.46	
Trashguard	PF		10.53	
Gypsum	TON		69.36	
Riprap	CY		31.21	
Filter	CY		22.89	
Total Construction Units				

Equipment/Installation

Included in Materials Cost.

\$0.00

Labor

Included in Materials Cost.

\$0.00

Mobilization

Included in Materials Cost.

\$0.00

Operation & Maintenance (Annual)

3% of Installation Costs

\$0.05

Acquisition of Technical Knowledge

None

\$0.00

Forgone Income (Annual)

Minimal land taken out of production.

\$0.00

Risk

Reduced risk, reduced sediment/flood damage.

\$0.00

Administration & Permit Costs

None

\$0.00

Total Cost Estimate:

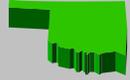
\$1.78



ECONOMIC COST DATA

Cost Data

Practice Name: Well Decommissioning	
Practice Code: 351	
Activity Type: 351.1 Plugging - Domestic/Livestock Well	
Typical Implementation Scenario	
This practice is for sealing or permanent closure of a water well no longer in use.	
This includes all costs necessary to adequately plug a livestock well or domestic well (i.e. abandoned farmstead water well) according to the Oklahoma practice standard for Well Decommissioning (351). This does not apply to larger, deep water wells used for irrigation.	
Associated practices include: 590-Nutrient Management, 342-Critical Area Planting	
Geographic Area:	Statewide
Unit for Cost Estimate:	No.
Practice Life (Years):	20
Discount Rate (%/Year):	5%
Data Source: 2009 actual cost data.	
	Cost/Unit
Materials	\$600.00
Includes the total materials and installation cost for the whole job.	
Equipment/Installation	\$0.00
(Included in Materials Costs)	
Labor	\$0.00
(Included in Materials Costs)	
Mobilization	\$0.00
(Included in Materials Costs)	
Operation & Maintenance	\$0.00
0% of Installation Costs	
Acquisition of Technical Knowledge	\$0.00
N/A	
Forgone Income	\$0.00
None	
Risk	\$0.00
N/A	
Administration & Permit Costs	\$0.00
N/A	
Total Cost Estimate:	\$600.00



ECONOMIC COST DATA

Cost Data

Practice Name: Well Decommissioning	
Practice Code: 351	
Activity Type: 351.2 Plugging - Irrigation Well	
Typical Implementation Scenario	
<p>This practice is for sealing or permanent closure of a water well no longer in use.</p> <p>This includes all costs necessary to adequately plug an irrigation well complying with all Federal, State, and Local laws and regulations and according to Oklahoma practice standard for Well Decommissioning (351). This does not apply to smaller and shallower domestic and livestock water wells. Unit cost is for the turnkey plugging of each well.</p>	
Associated practices include: 590-Nutrient Management, 342-Critical Area Planting	
Geographic Area:	Statewide
Unit for Cost Estimate:	No.
Practice Life (Years):	20
Discount Rate (%/Year):	5%
Data Source: 2009 Actual Cost Data.	
	Cost/Unit
Materials	\$2,115.00
Includes the total materials and installation cost for the whole job.	
Equipment/Installation	\$0.00
(Included in Materials Costs)	
Labor	\$0.00
(Included in Materials Costs)	
Mobilization	\$0.00
(Included in Materials Costs)	
Operation & Maintenance	\$0.00
0% of Installation Costs	
Acquisition of Technical Knowledge	\$0.00
N/A	
Forgone Income	\$0.00
None	
Risk	\$0.00
N/A	
Administration & Permit Costs	\$0.00
N/A	
Total Cost Estimate:	\$2,115.00



ECONOMIC COST DATA

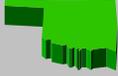
Cost Data

Practice Name: Waste Treatment Lagoon																						
Practice Code: 359																						
Activity Type: 359.1 Waste Treatment Lagoon																						
Typical Implementation Scenario																						
<p>This practice applies to a waste storage facility that is constructed by excavation or fill of earth that temporarily stores wastes such as manure, waste water, and contaminated runoff. The purpose of this facility is to biologically treat waste, such as manure and wastewater, and thereby reduce pollution potential by serving as a treatment component of an agricultural waste management system. The typical structure consists of excavation/fill plus a designed liner. Typical structure consist of 6572 CY of excavation/fill plus 1230 CY of liner. The liner will normally be a Clay Liner or Bentonite Liner. The cost for the typical installation is equal to \$2.24/cy of required excavation/fill, and designed liner.</p>																						
Associated practices include: 590-Nutrient Management, 342-Critical Area Planting																						
Geographic Area:	Statewide																					
Unit for Cost Estimate:	CY - Cubic Yard																					
Practice Life (Years):	15																					
Discount Rate (%/Year):	5%																					
Data Source: 2008 & 2009 actual cost data.		Cost/Unit																				
Materials		\$2.24																				
Includes Equipment/Installation, Labor and Mobilization Costs																						
	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 25%;">Component</th> <th style="width: 25%;">Quantity</th> <th style="width: 25%;">Unit Cost</th> <th style="width: 25%;">Units</th> <th style="width: 20%;">Total Costs</th> </tr> </thead> <tbody> <tr> <td>Excavation</td> <td style="text-align: center;">6572</td> <td style="text-align: center;">\$1.73</td> <td style="text-align: center;">CY</td> <td style="text-align: right;">\$ 11,369.56</td> </tr> <tr> <td>Clay Liner</td> <td style="text-align: center;">1230</td> <td style="text-align: center;">\$4.95</td> <td style="text-align: center;">CY</td> <td style="text-align: right;">\$ 6,088.50</td> </tr> <tr> <td colspan="4" style="text-align: right;">Total Cost</td> <td style="text-align: right;">\$ 17,458.06</td> </tr> </tbody> </table>	Component	Quantity	Unit Cost	Units	Total Costs	Excavation	6572	\$1.73	CY	\$ 11,369.56	Clay Liner	1230	\$4.95	CY	\$ 6,088.50	Total Cost				\$ 17,458.06	
Component	Quantity	Unit Cost	Units	Total Costs																		
Excavation	6572	\$1.73	CY	\$ 11,369.56																		
Clay Liner	1230	\$4.95	CY	\$ 6,088.50																		
Total Cost				\$ 17,458.06																		
Equipment/Installation		\$0.00																				
Included in Materials Cost																						
Labor		\$0.00																				
Included in Equipment/Installation Costs																						
Mobilization		\$0.00																				
Included in Materials Cost																						
Operation & Maintenance		\$0.00																				
N/A																						
Acquisition of Technical Knowledge		\$0.00																				
N/A																						
Forgone Income		\$0.00																				
None																						
Small amount of land taken out of production, no lost opportunity costs																						
Risk		\$0.00																				
Reduced risk, can better manage livestock waste																						
Increased risk, slight increase in motorized equipment																						
Administration & Permit Costs																						
None																						
Total Cost Estimate:		\$2.24																				

ECONOMIC COST DATA

Cost Data

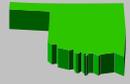
Practice Name: Closure of Waste Impoundment		
Practice Code: 360		
Activity Type: 360.1 - Closure of Waste Impoundment		
Typical Implementation Scenario		
<p>This practice applies to the closure of a waste impoundment that is no longer used for the intended purpose. Two options are available to properly complete the closure process. The first option consists of leveling and/or backfilling a waste impoundment structure and removing all waste (liquid, slurry, and solid) from the waste impoundment structure. The second option consists of converting a waste impoundment structure to fresh water storage by removing all waste (liquid, slurry, and solid) from the waste impoundment structure. Both options also involve completing all earthwork and decommissioning all structures as necessary for the proper closure of a waste impoundment structure. A typical impoundment contains 80,500 cubic feet of solid waste, 460,000 cubic feet of liquid waste, and requires 94,500 cubic feet of earthwork for a total of 635,000 cubic feet of waste and earthwork. Therefore, the average total cost is 635,000 cu.ft. x \$0.10/cu.ft.= \$63,500.00.</p>		
Associated practices include: Critical Area Planting (342), Waste Utilization (633), Nutrient Management (590)		
Geographic Area:	Statewide	
Unit for Cost Estimate:	Cubic Feet (cu. ft.)	
Practice Life (Years):	15	
Discount Rate (%/Year):	5%	
		Cost/Unit
Data Source: 2003-2005 actual cost data.		
Materials		\$0.00
<i>(Included in Equipment/Installation cost)</i>		
Equipment/Installation		\$0.10
<i>Includes Materials, Labor, and Mobilization Costs</i>		
Labor		\$0.00
<i>(Included in Equipment/Installation cost)</i>		
Mobilization		\$0.00
<i>(Included in Equipment/Installation cost)</i>		
Operation & Maintenance (Annual)		\$0.00
<i>None</i>		
Acquisition of Technical Knowledge		\$0.00
<i>None</i>		
Forgone Income (Annual)		\$0.00
<i>None, possible land brought into production.</i>		
Risk		\$0.00
<i>Reduced risk, change in land use</i>		
Administration & Permit Costs		\$0.00
<i>None</i>		
Total Cost Estimate:		\$0.10



ECONOMIC COST DATA

Cost Data

Practice Name:	Diversion	
Practice Code:	362	
Activity Type:	362.1 - Diversion	
Typical Implementation Scenario		
A channel constructed across long slopes, undulating land surfaces or gently rolling slopes to divert water away from farmsteads, agricultural waste systems, gullies, critical erosion areas or construction areas or collect and direct runoff or protect terrace systems. An earth channel constructed with a supporting ridge on the lower side across the slope. A typical diversion is 1000 ft long requiring 1200 C.Y. of excavation/fill.		
Associated Practices: 410-Grade Stabilization Structure, 342-Critical Area Planting, 410-Grassed Waterway, 590-Nutrient Management		
Geographic Area:	Statewide	
Unit for Cost Estimate:	Cubic Yard (CY)	
Practice Life (Years):	10	
Discount Rate (%/Year):	5%	
		Cost/Unit
Data Source: 2009 actual cost data.		
Materials		\$0.00
If needed, Included in Equipment/Installation Cost		
Equipment/Installation		\$1.51
Includes cost of equipment, labor, mobilization		
Labor		\$0.00
Included in Equipment/Installation Cost		
Mobilization		\$0.00
Included in Equipment/Installation Cost		
Operation & Maintenance (Annual)		\$0.03
2% of Installation Costs		
Acquisition of Technical Knowledge		\$0.00
None		
Forgone Income (Annual)		\$0.00
Minimal to no land taken out of production.		
Risk		\$0.00
Reduced risk, less concentrated flow erosion, less machinery wear & tear.		
Administration & Permit Costs		\$0.00
None		
Total Cost Estimate:		\$1.54



ECONOMIC COST DATA

Cost Data

Practice Name: Atmospheric Resource Quality Management

Practice Code: 370

Activity Type: 370.1 - Three Manure Harvests/Year

Typical Implementation Scenario

This scenario requires a feedyard to perform three or more manure harvests on all the pens annually plus follow the Atmospheric Resource Quality Management (370) standard and the approved Manure Harvesting Management Plan in an effort to reduce emissions of particulate matter and green house gases. The typical scenario involves a 6000 head beef feedyard. The beef feedyard would be required to apply all applicable criteria listed under "General Criteria applicable to All Purposes" and the "Specific Criteria Applicable to Particulate Matter Emissions" in this standard. Specific criteria are listed for both roads and confined animals. The payment amount will be determined by measuring the total pen area of the CAFO where manure was harvested to the nearest 0.1 acre.

This practice includes the costs of labor, machinery, and fuel associated with installing the practice.

Associated practices include: Waste Utilization (633), Manure Transfer (634), Nutrient Management (590), Waste Treatment (629)

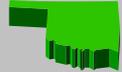
Cost Data Source: 2009 Engineering Estimates and Contractor Quotes.

Geographic Area: Statewide

Unit for Cost Estimate: Acre

Practice Life (Years): 1

Discount Rate (%/Year): 5%



Cost/Unit

Materials	\$310.00
Includes costs of labor, machinery, and fuel	
Equipment/Installation/Labor	\$0.00
Included in Materials Cost	
Labor	\$0.00
Included in Materials Cost	
Mobilization	\$0.00
NA	
Operation & Maintenance	\$0.00
NA	
Acquisition of Technical Knowledge	\$0.00
Knowledge to operate and manage application equipment	
Forgone Income	\$0.00
None	
Risk	\$0.00
Reduced risk, can better manage livestock waste	
Administration & Permit Costs	\$0.00
None	
Total Cost Estimate:	\$310.00

ECONOMIC COST DATA

Cost Data

Practice Name: Pond

Practice Code: 378

Activity Type: 378.1 Pond - Earthen

Typical Implementation Scenario

This practice applies to a water impoundment constructed by excavation and/or fill to store water. This structure may require a principal spillway pipe. The typical structure consists of 3100 CY of embankment with 93 feet of 12 in pipe. Other structures may require one or more of the following components: concrete, trashguard, riprap, gypsum treatment for dispersive clay soils, filter diaphragm, and plastic pipe.

Construction Units (CU) are found by multiplying the designed or estimated "Quantity" by the given "Multiplier" as shown in the example in Table 1-A. The construction units for each component are then summed to give the "Total Construction Units" for the project. If a component is not used, there will be no construction units for that component. The Total Construction Units are then multiplied by the **Cost/Unit** given below to give the average cost of the project. Table 1-B is given as a template for computations.

Associated practices include: 382-Fence, 575-Animal Trails and Walkways, 614-Watering Facility, 342-Critical Area Planting, 393-Filter Strip, 516-Pipeline, 521C-Pond Sealing or Lining, Bentonite Sealant, 590-Nutrient Management

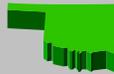
Geographic Area: Statewide

Unit for Cost Estimate: Construction Unit (CU)

Practice Life (Years): 20

Discount Rate (%/Year): 5%

Data Source: 2009 Actual Cost Data.



Cost/Unit

Materials

Includes Equipment/Installation, Labor and Mobilization Costs

\$1.73

Table 1-A Example

Component	Units	Quantity	Multiplier	CU
Earthwork	CY	3100	1.00	3,100.0
HCMP / Welded Steel	DIFT	1116	1.16	1,290.2
Plastic Pipe	DIFT	0	0.80	0.0
Concrete	CY	2	161.46	322.9
Trashguard	PF	44	10.53	463.4
Gypsum	TON	0	69.36	0.0
Riprap	CY	0	31.21	0.0
Filter (C33 sand)	CY	0	22.89	0.0
Total Construction Units				5,176.5

To determine the average cost for any component listed above, multiply \$1.73 times the "Multiplier" for that component. For example, the average cost of concrete would be \$1.73 x 161.46 = \$279.32 / CY.

Table 1-B

Component	Units	Quantity	Multiplier	CU
Earthwork	CY		1.00	
HCMP / Welded Steel	DIFT		1.16	
Plastic Pipe	DIFT		0.80	
Concrete	CY		161.46	
Trashguard	PF		10.53	
Gypsum	TON		69.36	
Riprap	CY		31.21	
Filter	CY		22.89	
Total Construction Units				

Equipment/Installation

Included in Materials Cost

\$0.00

Labor

Included in Materials Cost

\$0.00

Mobilization

Included in Materials Cost

\$0.00

Operation & Maintenance (Annual)

1% of Installation Costs

\$0.02

Acquisition of Technical Knowledge

None

\$0.00

Forgone Income (Annual)

Minimal land taken out of production.

\$0.00

Risk

Reduced risk, reliable source of water

\$0.00

Administration & Permit Costs

None

\$0.00

Total Cost Estimate:

\$1.75

ECONOMIC COST DATA

Cost Data

Practice Name: Windbreak/Shelterbelt Establishment

Practice Code: 380

Activity Type: 380.1 - Trees &/or Shrubs - barerooted

Typical Implementation Scenario

This practice consists of establishing 3 rows of bare root trees in linear configurations, oriented east to west along the edge of an 80 acre cropland field, to reduce soil erosion from wind.

Includes the cost of the bare root seedlings and the costs of planting (labor and equipment).

Associated practices include: Windbreak/Shelterbelt Renovation (650), Upland Wildlife Habitat Management (645), Access Control (472), Pest Management (595), Tree/Shrub Pruning (660), Brush Management (314), Forest Stand Improvement (666), Riparian Forest Buffer (391), Alley Cropping (311), Critical Area Planting (342), Silvopasture Establishment (381), Hedgerow Planting (422), Irrigation System, Microirrigation (441), Tree/Shrub Site Preparation (490), Firebreak (394), Tree/Shrub Establishment (612)

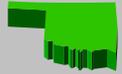
Geographic Area: Statewide

Unit for Cost Estimate: Each

Practice Life (Years): 15

Discount Rate (%/Year): 5%

Data Source: 2009 actual costs, and ODAFF-Forestry Services Data.



			<u>Cost/Unit</u>
Materials			\$0.40
Bare-rooted seedlings (average for all species and order sizes)	<u>Unit</u> Tree	<u>\$/Unit</u> \$0.40	
Equipment/Installation			\$0.30
Planting of each seedling	<u>Unit</u> Tree	<u>\$/Unit</u> \$0.30	
Labor (Included in Installation cost)			\$0.00
Mobilization 2% o materials, equipment and labor			\$0.01
Operation & Maintenance Replacement of unsuccessful seedlings during establishment period, 1% of materials, equipment and labor			\$0.01
Acquisition of Technical Knowledge None			\$0.00
Forgone Income None			\$0.00
Risk None			\$0.00
Administration & Permit Costs None			\$0.00
Total Cost Estimate:			\$0.72

ECONOMIC COST DATA

Cost Data

Practice Name: Windbreak/Shelterbelt Establishment

Practice Code: 380

Activity Type: 380.3 - Trees &/or Shrubs - Containerized/Potted

Typical Implementation Scenario

This practice consists of planting 3 rows of containerized trees in harsh site conditions where bare rooted seedlings are not recommended. The shelterbelt will be planted in linear configurations oriented east to west along the edge of an 80 acre cropland field, to reduce soil erosion from wind. This scenario should only be used when the planting plan requires containerized tree stock.

Includes the cost of the containerized or potted seedlings and the costs of planting (labor and equipment).

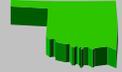
Associated practices include: Windbreak/Shelterbelt Renovation (650), Upland Wildlife Habitat Management (645), Access Control (472), Pest Management (595), Tree/Shrub Pruning (660), Brush Management (314), Forest Stand Improvement (666), Riparian Forest Buffer (391), Alley Cropping (311), Critical Area Planting (342), Silvopasture Establishment (381), Hedgerow Planting (422), Irrigation System, Microirrigation (441), Tree/Shrub Site Preparation (490), Firebreak (394), Tree/Shrub Establishment (612)

Geographic Area: Statewide

Unit for Cost Estimate: Each

Practice Life (Years): 15

Discount Rate (%/Year): 5%



Data Source: 2009 by ODAFF-Forestry Services Data.

			<u>Cost/Unit</u>
Materials			\$0.90
Containerized or potted seedlings (average for all species and order sizes)	<u>Unit</u> Tree	<u>\$/Unit</u> \$0.90	
Equipment/Installation			\$0.30
Planting of each seedling	<u>Unit</u> Tree	<u>\$/Unit</u> \$0.30	
Labor (Included in Installation cost)			\$0.00
Mobilization 2% of materials, equipment and labor			\$0.02
Operation & Maintenance Replacement of unsuccessful seedlings during establishment period, 1% of materials, equipment and labor			\$0.01
Acquisition of Technical Knowledge None			\$0.00
Forgone Income None			\$0.00
Risk None			\$0.00
Administration & Permit Costs None			\$0.00
Total Cost Estimate:			\$1.24

ECONOMIC COST DATA

Cost Data

Practice Name: Windbreak/Shelterbelt Establishment

Practice Code: 380

Activity Type: 380.4 - Trees &/or Shrubs - Containerized/Potted with animal control device

Typical Implementation Scenario

This practice consists of planting 3 rows of containerized trees/shrubs with animal control devices, in harsh site conditions where bare rooted seedlings are not recommended. The shelterbelt will be planted in linear configurations oriented east to west along the edge of an 80 acre cropland field, to reduce soil erosion from wind. This scenario should only be used when the planting plan requires containerized tree stock.

Includes the cost of the containerized or potted seedlings and the costs of planting (labor and equipment). Includes the use of the polyethylene wrap or protection net or tube, stakes, and the cost of labor for placing the devices.

Associated practices include: Windbreak/Shelterbelt Renovation (650), Upland Wildlife Habitat Management (645), Access Control (472), Pest Management (595), Tree/Shrub Pruning (660), Brush Management (314), Forest Stand Improvement (666), Riparian Forest Buffer (391), Alley Cropping (311), Critical Area Planting (342), Silvopasture Establishment (381), Hedgerow Planting (422), Irrigation System, Microirrigation (441), Tree/Shrub Site Preparation (490), Firebreak (394), Tree/Shrub Establishment (612)

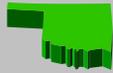
Geographic Area: Statewide

Unit for Cost Estimate: Each

Practice Life (Years): 15

Discount Rate (%/Year): 5%

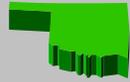
Data Source: 2009 estimates by ODAFF-Forestry Services Data.



			Cost/Unit
			\$1.15
Materials	<u>Unit</u>	<u>\$/Unit</u>	
Containerized or potted seedlings (average for all species and order sizes)	Tree	\$0.90	
Animal Control Devices	Tree	\$0.25	
Total		\$1.15	
Equipment/Installation			\$0.35
	<u>Unit</u>	<u>\$/Unit</u>	
Planting of each seedling	Tree	\$0.30	
Animal Control Devices	Tree	\$0.05	
Total		\$0.35	
Labor			\$0.00
(Included in Installation cost)			
Mobilization			\$0.03
2% of materials, equipment and labor			
Operation & Maintenance			\$0.02
Replacement of unsuccessful seedlings during establishment period, 1% of materials, equipment and labor			
Acquisition of Technical Knowledge			\$0.00
None			
Forgone Income			\$0.00
None			
Risk			\$0.00
None			
Administration & Permit Costs			\$0.00
None			
Total Cost Estimate:			\$1.55

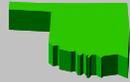
ECONOMIC COST DATA

Practice Name:	Fence	
Practice Code:	382	
Activity Type:	382.1 Permanent fence, Barbed or smooth Wire	
Typical Implementation Scenario		
Installation of permanent 4-wire, double strand barbed or smooth wire fence to facilitate a planned grazing system as designed in a prescribed grazing plan or to provide access control from specified areas in order to address one or more resource concerns. This type of fence is typically a division fence (separating forage types, areas of different production or carrying capacity, sensitive areas or areas requiring different levels of management). When used for cross fencing, size of paddocks size of paddocks are typically >40 acres.		
All materials and design are based off of the NRCS Fence (382) standard and specifications		
Associated practices include: Prescribed Grazing (528), Access Control (472)		
Geographic Area:	Statewide	
Unit for Cost Estimate:	Foot	
Practice Life (Years):	20	
Discount Rate (%/Year):	5%	
Data Source: 2009 actual cost data and current vendor pricing.		
		Cost/Unit
Materials		\$1.00
Materials may vary depending on length of fence, types of post used, etc. Typical materials consist of: Double strand barbed or smooth wire, t-posts, wood or steel brace posts, stays, staples, concrete, paint, gates and welding supplies		
Equipment/Installation		\$0.52
Pick-Up Truck, Post Hole Auger, Post "Driver", Shovel, Fencing Pliers, 4 wheeler, tractor blade for clearing site, welder, fuel Labor costs include setting posts, running wire, installing braces (welded steel or wood), attaching wires, etc.		
Labor		\$0.00
Included in equipment and installation		
Mobilization		\$0.00
Included in equipment and installation		
Operation & Maintenance (Annual)		\$0.03
2% of Installation Cost		
Acquisition of Technical Knowledge		\$0.00
Fence building skills, design, layout		
Forgone Income (Annual)		\$0.00
None, no land taken out of production		
Risk		\$0.00
Reduced risk, better livestock control		
Administration & Permit Costs		\$0.00
None		
Total Cost Estimate:		\$1.55



ECONOMIC COST DATA

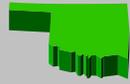
Practice Name:	Fence	
Practice Code:	382	
Activity Type:	382.2 Permanent Fence, Woven wire	
Typical Implementation Scenario		
Installation of permanent woven wire fence to facilitate a planned grazing system as designed in a prescribed grazing plan or to provide use exclusion from specified areas in order to address one or more resource concerns. Typically used for sheep and/or goats. This type of fence can be a boundary or division fence (separating forage types, areas of different production or carrying capacity, sensitive areas or areas requiring different levels of management).		
All materials and design are based off of the NRCS Fence (382) standard and specifications		
Associated practices include: Prescribed Grazing (528), Access Control (472)		
Geographic Area:	Statewide	
Unit for Cost Estimate:	Foot	
Practice Life (Years):	20	
Discount Rate (%/Year):	5%	
Data Source: 2009 actual cost data and current vendor pricing.		
		Cost/Unit
Materials		\$1.48
Materials may vary depending on length of fence, types of post used, etc. Typical materials consist of: Woven wire with 1 strand barbed wire, t-posts and wood line posts, wood or steel brace posts, staples, concrete, paint, gates and welding supplies		
Equipment/Installation		\$0.70
Pick-Up Truck, Post Hole Auger, Post "Driver", Shovel, Fencing Pliers, 4 wheeler, tractor blade for clearing site, welder, fuel Labor costs include setting posts, running wire, installing braces (welded steel or wood), attaching wires, etc.		
Labor		\$0.00
Included in equipment and installation		
Mobilization		\$0.00
Included in equipment and installation		
Operation & Maintenance (Annual)		\$0.04
2% of Installation Cost		
Acquisition of Technical Knowledge		\$0.00
Fence building skills, design, layout		
Forgone Income (Annual)		\$0.00
None, no land taken out of production		
Risk		\$0.00
Reduced risk, better livestock control		
Administration & Permit Costs		\$0.00
None		
Total Cost Estimate:		\$2.22



ECONOMIC COST DATA

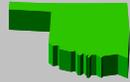
Cost Data

Practice Name:	Fence
Practice Code:	382
Activity Type:	382.3 Permanent Power Fence
Typical Implementation Scenario	
Installation of permanent 4 wire, high tensile steel, electric fence to facilitate a planned grazing system as designed in a prescribed grazing plan or to provide use exclusion from specified areas in order to address one or more resource concerns. This type of fence is typically a cross fence (facilitate rotations and further subdivisions with temporary electric fencing) and/or division fence (separating forage types, areas of different production or carrying capacity, sensitive areas or areas requiring different levels of management).	
All materials and design are based off of the NRCS Fence (382) standard and specifications	
Associated practices include: Prescribed Grazing (528), Access Control (472)	
Geographic Area:	Statewide
Unit for Cost Estimate:	Foot
Practice Life (Years):	20
Discount Rate (%/Year):	5%
Data Source: 2009 actual cost data and current vendor pricing.	
	Cost/Unit
Materials	\$0.54
Materials may vary depending on length of fence, types of post used, etc. Typical materials consist of: High tensile steel wire, t-posts, wood or steel brace posts, strainers, insulators, fence charger, concrete, paint, gates and welding supplies	
Equipment/Installation	\$0.40
Pick-Up Truck, Post Hole Auger, Post "Driver", Shovel, Fencing Pliers, 4 wheeler, tractor blade for clearing site, welder, fuel Labor costs include setting posts, running wire, installing braces (welded steel or wood), attaching wires, etc.	
Labor	\$0.00
Included in equipment and installation	
Mobilization	\$0.00
Included in equipment and installation	
Operation & Maintenance (Annual)	\$0.02
2% of Installation Cost	
Acquisition of Technical Knowledge	\$0.00
Fence building skills, design, layout	
Forgone Income (Annual)	\$0.00
None, no land taken out of production	
Risk	\$0.00
Reduced risk, better livestock control	
Administration & Permit Costs	\$0.00
None	
Total Cost Estimate:	\$0.96



ECONOMIC COST DATA

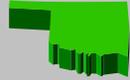
Practice Name:	Fence	
Practice Code:	382	
Activity Type:	382.4 Electric Wire, Temp	
Typical Implementation Scenario		
Installation of a 2 wire electric cross fence (aluminum, galvanized steel or polywire), to facilitate a planned grazing system as designed in a prescribed grazing plan. This type of fence is a cross fence used to divide pastures into smaller paddocks. They are temporary to allow for flexibility in paddock size and shape and to better facilitate options in management of grazing. Materials have a shorter life span and maintenance may be increased. Components of this fence are portable and not considered permanent.		
All materials and design are based off of the NRCS Fence (382) standard and specifications		
Associated practices include: Prescribed Grazing (528), Access Control (472)		
Geographic Area:	Statewide	
Unit for Cost Estimate:	Foot	
Practice Life (Years):	5	
Discount Rate (%/Year):	5%	
Data Source: 2009 actual cost data and current vendor pricing.		
		Cost/Unit
Materials		\$0.19
Materials may vary depending on length of fence, types of post used, etc. Typical materials consist of: Galvanized steel wire or poly-wire, step-in posts, wood or steel brace posts, tighteners, fence charger, gate handles		
Equipment/Installation		\$0.10
Truck, 4-wheeler, wire reels, hand tools		
Labor		\$0.05
Installations and periodic movement to implement grazing system		
Mobilization		\$0.02
Operation & Maintenance (Annual)		\$0.02
Checking of materials, replacement as needed of insulators, posts, etc.		
Acquisition of Technical Knowledge		\$0.00
Fence building skills, design, layout		
Forgone Income (Annual)		\$0.00
None, no land taken out of production		
Risk		\$0.00
Reduced risk, better livestock control		
Administration & Permit Costs		\$0.00
None		
Total Cost Estimate:		\$0.37



ECONOMIC COST DATA

Cost Data

Practice Name:	Fence
Practice Code:	382
Activity Type:	382.5 Permanent fence, Barbed or smooth Wire, Extra materials and labor
Typical Implementation Scenario	
<p>Installation of permanent 4-wire fence (double strand barbed or smooth wire fence, or woven wire) to facilitate a planned grazing system as designed in a prescribed grazing plan or to provide use exclusion from specified areas in order to address one or more resource concerns (i.e. riparian areas, ponds). This type of fence will involve extra labor and materials due to rough terrain or multiple changes in direction (more corners) that are required according the NRCS Fence (382) standard and specifications, design and layout.</p> <p>All materials and design are based off of the NRCS Fence (382) standard and specifications</p> <p>Associated practices include: Prescribed Grazing (528), Access Control (472)</p>	
Geographic Area:	Statewide
Unit for Cost Estimate:	Foot
Practice Life (Years):	20
Discount Rate (%/Year):	5%
Data Source: 2009 actual cost data and current vendor pricing.	
	Cost/Unit
Materials	\$1.74
<p>Materials may vary depending on length of fence, types of post used, etc. Typical materials consist of: Double strand barbed, smooth wire, or woven wire t-posts, wood or steel brace posts, stays, staples, concrete, paint, gates and welding supplies</p>	
Equipment/Installation	\$1.19
<p>Pick-Up Truck, Post Hole Auger, Post "Driver", Shovel, Fencing Pliers, 4 wheeler, tractor blade for clearing site, welder, fuel Labor costs include setting posts, running wire, installing braces (welded steel or wood), attaching wires, etc.</p>	
Labor	\$0.00
Included in equipment and installation	
Mobilization	\$0.00
Included in equipment and installation	
Operation & Maintenance (Annual)	\$0.06
2% of Installation Cost	
Acquisition of Technical Knowledge	\$0.00
Fence building skills, design, layout	
Forgone Income (Annual)	\$0.00
None, no land taken out of production	
Risk	\$0.00
Reduced risk, better livestock control	
Administration & Permit Costs	\$0.00
None	
Total Cost Estimate:	\$2.99



ECONOMIC COST DATA

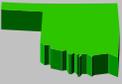
Cost Data

Practice Name:	Fuel Break	
Practice Code:	383	
Activity Type:	383.1 - Mechanical Removal	
Typical Implementation Scenario		
This practice is for thinning trees and removing understory canopy along a strip of land to control or diminish the risk of the spread of a wild fire crossing the strip and entering into a pine forested area. The strip or block of land shall be a minimum of 66 feet in width and located along the perimeter of an 80 acre tract of a native shortleaf pine stand. Trees and understory will be selectively removed using clipping/cutting equipment or dozers and removed from the site. Dozing will be done in a manner that minimizes soil disturbances and damage to other woody species.		
Associated Practices: Prescribed Forestry (409), Upland Wildlife Habitat Management (645)		
Geographic Area:	Available only in Atoka, Choctaw, Haskell, Latimer, LeFlore, McCurtain, Pittsburg, and Pushmataha Counties in Oklahoma	
Unit for Cost Estimate:	Acre	
Practice Life (Years):	1	
Discount Rate (%/Year):	5%	
Data Source: Cost Data from 2009 Brush Management (314.4).		Cost/Unit
Materials	None	\$0.00
Equipment/Installation	Costs associated with this activity will vary depending on the amount of thinning, understory and type of equipment used. Average cost is estimated on a per acre basis based on the most common treatments of clipping/cutting and removing.	\$104.32
	Equipment uses includes clipping/cutting, tree sawing and occasional dozing (higher infestation levels). Raking or pushing downed brush into piles or windrows is also common, especially at higher levels of infestation.	\$86.82
	Removing debris from site.	\$17.50
Labor	Included in installation Costs	\$0.00
Mobilization	Included in equipment costs	\$0.00
Operation & Maintenance	Monitoring and possible followup treatments	\$1.04
Acquisition of Technical Knowledge	None	\$0.00
Forgone Income	None	\$0.00
Risk	Reduced risk, forage yield increase	\$0.00
Administration & Permit Costs	None	\$0.00
Total Cost Estimate:		\$105.36

ECONOMIC COST DATA

Cost Data

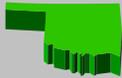
Practice Name:	Field Border	
Practice Code:	386	
Activity Type:	386.1 - Introduced Grass Seed	
Typical Implementation Scenario		
<p>This practice consists of establishing a 30 feet wide strip to an introduced species such as old world bluestem around the perimeter of an 80 acre cropland field planted to a wheat/soybean rotation, to protect soil and water quality. The field border will be planted according to the NRCS Pasture and Hay Planting (512) standard.</p> <p>This practice includes the costs of introduced warm or cool season perennial grass seed, tractor, drill and labor to plant grass in borders.</p>		
Associated practices include: Residue and Tillage Management - No Till/Strip Till/Direct Seed (329), Residue and Tillage Management - Mulch Till (345), Residue and Tillage Management - Ridge Till (346), Cover Crop (340), Pest Management (595), Nutrient Management (590), Contour Farming (330), Deep Tillage (324), Pasture and Hayland Planting (512), Conservation Crop Rotation (328)		
Geographic Area:	Statewide	
Unit for Cost Estimate:	Acre	
Practice Life (Years):	10	
Discount Rate (%/Year):	5%	
		Cost/Unit
Data Source: 2009 actual cost data, OSU Enterprise Budget Software, Pasture and Hay Planting (512) cost data		
Materials		\$34.91
Seed (based on average lbs. PLS and cost per lb. PLS needed to meet 512 Standard and Specification for introduced species plantings)		
Fertilizer and/or other amendments needed for establishment are covered under the Nutrient Management (590) cost data		
Does not include cost of cover crops if needed.		
Equipment/Installation/Labor		\$23.74
Tractor / drill \$7.00		
includes labor costs		
Seedbed Preparation. Most seedbed preparation work is done as part of tillage operations for previously grown crops. In some cases an extra tillage or firming operation may be needed prior to planting. \$16.74		
Labor		\$0.00
Included in Equipment/Installation cost		
Mobilization		\$0.00
None		
Operation & Maintenance		\$0.59
1% O&M factor		
Acquisition of Technical Knowledge		\$0.00
Calibrate and operate seed drill, manage perennial grass		
Forgone Income		\$15.63
1 Acre taken out of crop production		
Assume wheat crop minus value of hay/forage crop from perennial forage.		
Net Income (\$/Ac/Yr)		
Risk		\$0.00
Reduced risk, less erosion, less machinery wear & tear.		
Administration & Permit Costs		\$0.00
None		
Total Cost Estimate:		\$74.87



ECONOMIC COST DATA

Cost Data

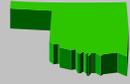
Practice Name:	Field Border	
Practice Code:	386	
Activity Type:	386.2 - Bermudagrass Sprigging	
Typical Implementation Scenario		
<p>This practice consists of sprigging a 30 feet wide strip to bermudagrass around the perimeter of an 80 acre cropland field planted to a wheat/soybean rotation, to protect soil and water quality. The field border will be planted according to the NRCS Pasture and Hay Planting (512) standard.</p> <p>This practice includes the costs of bermudagrass sprigs, tractor, sprigger, and labor to plant grass in borders.</p>		
Associated practices include: Residue and Tillage Management - No Till/Strip Till/Direct Seed (329), Residue and Tillage Management - Mulch Till (345), Residue and Tillage Management - Ridge Till (346), Cover Crop (340), Pest Management (595), Nutrient Management (590), Contour Farming (330), Deep Tillage (324), Pasture and Hayland Planting (512), Conservation Crop Rotation (328)		
Geographic Area:	Statewide	
Unit for Cost Estimate:	Acre	
Practice Life (Years):	10	
Discount Rate (%/Year):	5%	
		Cost/Unit
Data Source: 2009 actual cost data, OSU Enterprise Budget Software, Pasture and Hay Planting (512) cost data.		
Materials		
Sprigs - included in equipment and installation		
Fertilizer and/or other amendments needed for establishment are covered under the Nutrient Management (590) cost data		
Equipment/Installation		\$96.51
Tractor / sprigger and sprigs and labor cost associated with sprigging		\$79.77
Seedbed Preparation. Most seedbed preparation work is done as part of tillage operations for previously grown crops. In some cases an extra tillage or firming operation may be needed prior to planting. Costs includes one disking and packing operation.		\$16.74
Labor		
Included in Equipment/Installation Cost		
Mobilization		\$0.00
None		
Operation & Maintenance		\$0.97
1% O&M factor		
Acquisition of Technical Knowledge		\$0.00
Calibrate and operate sprigger, manage grass		
Forgone Income		\$15.63
1 Acre taken out of crop production		
Assume wheat crop minus value of hay/forage crop from perennial forage.		
Net Income (\$/Ac/Yr)		
Risk		
Reduced risk, water erosion, less machinery wear & tear.		
Administration & Permit Costs		\$0.00
None		
Total Cost Estimate:		\$113.11



ECONOMIC COST DATA

Cost Data

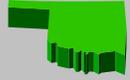
Practice Name:	Field Border		
Practice Code:	386		
Activity Type:	386.3 - Native Grass Monoculture		
Typical Implementation Scenario			
This practice consists of establishing a 30 feet wide strip to switchgrass around the perimeter of an 80 acre cropland field planted to a wheat/soybean rotation, to provide wildlife food and cover. The field border will be planted according to the NRCS Pasture and Hay Planting (512) standard.			
This practice includes the costs of grass seed, tractor, drill and labor to plant grass in borders.			
Associated practices include: Residue and Tillage Management - No Till/Strip Till/Direct Seed (329), Residue and Tillage Management - Mulch Till (345), Residue and Tillage Management - Ridge Till (346), Cover Crop (340), Pest Management (595), Nutrient Management (590), Contour Farming (330), Deep Tillage (324), Pasture and Hayland Planting (512), Conservation Crop Rotation (328)			
Geographic Area:	Statewide		
Unit for Cost Estimate:	Acre		
Practice Life (Years):	10		
Discount Rate (%/Year):	5%		
			Cost/Unit
Data Source: 2009 actual cost data, OSU Enterprise Budget Software, Pasture and Hay (512) cost data.			
Materials			\$51.65
Seed (based on average lbs. PLS and cost per lb. PLS needed to meet 512 Standard and Specification for native grasses plantings) Does not include cost of cover crops if needed Fertilizer and/or other amendments needed for establishment are covered under the Nutrient Management (590) cost data			
Equipment/Installation/Labor			\$23.74
Tractor / drill \$7.00 includes labor costs Seedbed Preparation. Most seedbed preparation work is done as part of tillage operations for previously grown crops. In \$16.74			
Labor			\$0.00
Included in Equipment/Installation Cost			
Mobilization			\$0.00
None			
Operation & Maintenance			\$0.75
1% O&M factor			
Acquisition of Technical Knowledge			\$0.00
Calibrate and operate seed drill, manage perennial grass			
Forgone Income			\$2.74
1 Acre taken out of crop production Assume wheat crop minus value of hay/forage crop from perennial forage. Net Income (\$/Ac/Yr)			
Risk			\$0.00
Reduced risk, less erosion, less machinery wear & tear.			
Administration & Permit Costs			\$0.00
None			
Total Cost Estimate:			\$78.88



ECONOMIC COST DATA

Cost Data

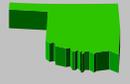
Practice Name:	Field Border		
Practice Code:	386		
Activity Type:	386.4 - Native Grass Mixture		
Typical Implementation Scenario			
This practice consists of establishing a 30 feet wide strip to a native grass mixture around the perimeter of an 80 acre cropland field planted to a wheat/soybean rotation, to provide wildlife food and cover. The field border will be planted according to the NRCS Range Planting (550) standard.			
This practice includes the costs of perennial native grass seed, tractor, drill and labor to plant grass in borders.			
Associated practices include: Residue and Tillage Management - No Till/Strip Till/Direct Seed (329), Residue and Tillage Management - Mulch Till (345), Residue and Tillage Management - Ridge Till (346), Cover Crop (340), Pest Management (595), Nutrient Management (590), Contour Farming (330), Deep Tillage (324), Range Planting (550), Conservation Crop Rotation (328)			
Geographic Area:	Statewide		
Unit for Cost Estimate:	Acre		
Practice Life (Years):	10		
Discount Rate (%/Year):	5%		
			Cost/Unit
Data Source: 2009 actual cost data, OSU Enterprise Budget Software, Range Planting (550) cost data.			
Materials			\$53.41
Seed (based on average lbs. PLS and cost per lb. PLS needed to plant a typical range seeding mixture according to the NRCS Range Fertilizer and/or amendments, if needed for establishment, are covered under 590 Does not include cost of cover crops if needed			
Equipment/Installation/Labor			\$23.74
Tractor / drill \$7.00 includes labor costs Seedbed Preparation. Most seedbed preparation work is done as part of tillage operations for previously grown crops. In \$16.74			
Labor			\$0.00
Included in Equipment/Installation Cost			
Mobilization			\$0.00
None			
Operation & Maintenance			\$0.77
1% O&M factor			
Acquisition of Technical Knowledge			\$0.00
Calibrate and operate seed drill, manage perennial grass			
Forgone Income			\$2.74
1 Acre taken out of crop production Assume wheat crop minus value of hay/forage crop from perennial forage. Net Income (\$/Ac/Yr)			
Risk			\$0.00
Reduced risk, erosion, less machinery wear & tear.			
Administration & Permit Costs			\$0.00
None			
Total Cost Estimate:			\$80.66



ECONOMIC COST DATA

Cost Data

Practice Name:	Riparian Herbaceous Cover		
Practice Code:	390		
Activity Type:	390.1 Native Grass Mixture		
Typical Implementation Scenario			
This practice consists of establishing riparian areas to permanent, herbaceous vegetation at the edge or around the perimeter of water bodies. The riparian area will be planted to a native mixture using the Oklahoma NRCS 550 standard.			
This practice includes the costs of perennial native grass seed, tractor, drill and labor to plant grass in borders.			
Associated Practices Include:			
Data Source: 2009 actual cost data, OSU Enterprise Budget Software, Range Planting (550)			
Geographic Area:	Statewide		
Unit for Cost Estimate:	Acre		
Practice Life (Years):	10		
Discount Rate (%/Year):	5%		
			Cost/Unit
Materials			\$53.41
Seed (based on average lbs. PLS and cost per lb. PLS needed to plant a typical range seeding mixture according to the NRCS Range Planting (550) Standard and Specification)			
Fertilizer and/or amendments, if needed for establishment, are covered in 590.1 and 590.3			
Does not include cost of cover crops if needed			
Equipment/Installation/Labor			\$23.74
Tractor / drill			
		\$7.00	
includes labor costs			
Seedbed Preparation. Most seedbed preparation work is done as part of tillage operations for previously grown crops. In some cases an extra tillage or firming operation may be needed prior to planting.			
		\$16.74	
Labor			\$0.00
Included in Installation costs.			
Mobilization			\$0.00
None			
Operation & Maintenance			\$0.77
1% O&M factor			
Acquisition of Technical Knowledge			\$0.00
Calibrate and operate seed drill, manage perennial grass			
Forgone Income			\$2.74
1 Acre taken out of crop production			
Assume small grain crop rotation minus value of occasional hay/forage crop from herbaceous cover crop.			
Net Income (\$/Ac/Yr) =			
Risk			\$0.00
Reduced risk, erosion, less machinery wear & tear.			
Administration & Permit Costs			\$0.00
None			
Total Cost Estimate:			\$80.66



ECONOMIC COST DATA

Cost Data

Practice Name: Riparian Forest Buffer

Practice Code: 391

Activity Type: 391.1 - Trees &/or Shrubs - barerooted

Typical Implementation Scenario

This practice consists of planting a 35 foot wide strip to barerooted bottomland hardwood trees along each side of the bank of a perennial stream, to reduce excess amounts of sediment and nutrients entering the stream.

Includes the cost of the bare root seedlings and the costs of planting (labor and equipment).

Associated practices include: Tree/Shrub Establishment (612), Filter Strip (393), Upland Wildlife Habitat Management (645), Pest Management (595), Tree/Shrub Site Preparation (490), Tree/Shrub Pruning (660), Brush Management (314), Forest Stand Improvement (666), Streambank and Shoreline Protection (580)

Geographic Area: Statewide

Unit for Cost Estimate: Each

Practice Life (Years): 15

Discount Rate (%/Year): 5%



Data Source: 2009 cost data from ODAFF-Forestry Services Data.

<u>Materials</u>	<u>Unit</u>	<u>\$/Unit</u>	<u>Cost/Unit</u>
Bare-rooted seedlings (average for all species and order sizes)	Tree	\$0.40	\$0.40
Equipment/Installation			\$0.30
Planting of each seedling	Tree	\$0.30	
Labor (Included in Installation cost)			\$0.00
Mobilization 2% of materials, equipment and labor			\$0.01
Operation & Maintenance O & M during establishment period, 1% of materials, equipment and labor			\$0.01
Acquisition of Technical Knowledge None			\$0.00
Forgone Income None			\$0.00
Risk None			\$0.00
Administration & Permit Costs None			\$0.00
Total Cost Estimate:			\$0.72

ECONOMIC COST DATA

Cost Data

Practice Name: Riparian Forest Buffer

Practice Code: 391

Activity Type: 391.2 - Trees &/or Shrubs - barerooted, with animal control devices

Typical Implementation Scenario

This practice consists of planting a 35 foot wide strip to barerooted bottomland hardwood trees with animal control devices, along each side of the bank of a perennial stream, to reduce excess amounts of sediment and nutrients entering the stream.

Includes the cost of the bare root seedlings and the costs of planting (labor and equipment). Includes the use of the polyethylene wrap or protection net or tube, stakes, and the cost of labor for placing the devices.

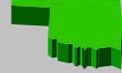
Associated practices include: Tree/Shrub Establishment (612), Filter Strip (393), Upland Wildlife Habitat Management (645), Pest Management (595), Tree/Shrub Site Preparation (490), Tree/Shrub Pruning (660), Brush Management (314), Forest Stand Improvement (666), Streambank and Shoreline Protection (580)

Geographic Area: Statewide

Unit for Cost Estimate: Each

Practice Life (Years): 15

Discount Rate (%/Year): 5%



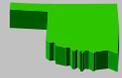
Data Source: 2009 cost data from ODAFF-Forestry Services Data.

			<u>Cost/Unit</u>
			\$0.65
Materials			
	<u>Unit</u>	<u>\$/Unit</u>	
Bare-rooted seedlings (average for all species and order sizes)	Tree	\$0.40	
Animal Control Devices	Tree	\$0.25	
Total		\$0.65	
Equipment/Installation			\$0.35
	<u>Unit</u>	<u>\$/Unit</u>	
Planting of each seedling	Tree	\$0.30	
Animal Control Devices	Tree	\$0.05	
Total		\$0.35	
Labor			\$0.00
(Included in Installation cost)			
Mobilization			\$0.02
2% of materials, equipment and labor			
Operation & Maintenance			\$0.01
O & M during establishment period, 1% of materials, equipment and labor			
Acquisition of Technical Knowledge			\$0.00
None			
Forgone Income			\$0.00
None			
Risk			\$0.00
None			
Administration & Permit Costs			\$0.00
None			
Total Cost Estimate:			\$1.03

ECONOMIC COST DATA

Cost Data

Practice Name:	Riparian Forest Buffer		
Practice Code:	391		
Activity Type:	391.3 - Trees &/or Shrubs - containerized/potted		
Typical Implementation Scenario			
This practice consists of planting a 35 foot wide strip to <u>containerized</u> bottomland hardwood trees in harsh site conditions where bare rooted seedlings are not recommended, along each side of the bank of a perennial stream, to reduce excess amounts of sediment and nutrients entering the stream.			
Includes the cost of the containerized or potted seedlings and the costs of planting (labor and equipment).			
Associated practices include: Tree/Shrub Establishment (612), Filter Strip (393), Upland Wildlife Habitat Management (645), Pest Management (595), Tree/Shrub Site Preparation (490), Tree/Shrub Pruning (660), Brush Management (314), Forest Stand Improvement (666), Streambank and Shoreline Protection (580)			
Geographic Area:	Statewide		
Unit for Cost Estimate:	Each		
Practice Life (Years):	15		
Discount Rate (%/Year):	5%		
Data Source: 2009 cost data from ODAFF-Forestry Services Data.			
			Cost/Unit
Materials			\$0.90
	<u>Unit</u>	<u>\$/Unit</u>	
Containerized or potted seedlings (average for all species and order sizes)	Tree	\$0.90	
Equipment/Installation			\$0.30
	<u>Unit</u>	<u>\$/Unit</u>	
Planting of each seedling	Tree	\$0.30	
Labor			\$0.00
(Included in Installation cost)			
Mobilization			\$0.02
2% of materials, equipment and labor			
Operation & Maintenance			\$0.01
Replacement of unsuccessful seedlings during establishment period, 1% of materials, equipment and labor			
Acquisition of Technical Knowledge			\$0.00
None			
Forgone Income			\$0.00
None			
Risk			\$0.00
None			
Administration & Permit Costs			\$0.00
None			
Total Cost Estimate:			\$1.24



ECONOMIC COST DATA

Cost Data

Practice Name: Riparian Forest Buffer

Practice Code: 391

Activity Type: 391.4 - Trees &/or Shrubs - containerized/potted with animal control device

Typical Implementation Scenario

This practice consists of planting a 35 foot wide strip to containerized bottomland hardwood trees with animal control devices, in harsh site conditions where bare rooted seedlings are not recommended, along each side of the bank of a perennial stream, to reduce excess amounts of sediment and nutrients entering the stream.

Includes the cost of the containerized or potted seedlings and the costs of planting (labor and equipment). Includes the use of the polyethylene wrap or protection net or tube, stakes, and the cost of labor for placing the devices.

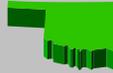
Associated practices include: Tree/Shrub Establishment (612), Filter Strip (393), Upland Wildlife Habitat Management (645), Pest Management (595), Tree/Shrub Site Preparation (490), Tree/Shrub Pruning (660), Brush Management (314), Forest Stand Improvement (666), Streambank and Shoreline Protection (580)

Geographic Area: Statewide

Unit for Cost Estimate: Each

Practice Life (Years): 15

Discount Rate (%/Year): 5%



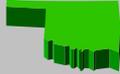
Data Source: 2009 cost data from ODAFF-Forestry Services Data.

			<u>Cost/Unit</u>
Materials			\$1.15
	<u>Unit</u>	<u>\$/Unit</u>	
Containerized or potted seedlings (average for all species and order sizes)	Tree	\$0.90	
Animal Control Devices	Tree	\$0.25	
Total		\$1.15	
Equipment/Installation			\$0.35
	<u>Unit</u>	<u>\$/Unit</u>	
Planting of each seedling	Tree	\$0.30	
Animal Control Devices	Tree	\$0.05	
Total		\$0.35	
Labor			\$0.00
(Included in Installation cost)			
Mobilization			\$0.03
2% of materials, equipment and labor			
Operation & Maintenance			\$0.02
Replacement of unsuccessful seedlings during establishment period, 1% of materials, equipment and labor			
Acquisition of Technical Knowledge			\$0.00
None			
Forgone Income			\$0.00
None			
Risk			\$0.00
None			
Administration & Permit Costs			\$0.00
None			
Total Cost Estimate:			\$1.55

ECONOMIC COST DATA

Cost Data

Practice Name:	Filter Strip	
Practice Code:	393	
Activity Type:	393.1 - Introduced Species	
Typical Implementation Scenario		
<p>This practice consists of <u>seeding</u> a 30 foot wide strip of an introduced grass species such as bermudagrass, 2700 feet long, along both edges of a drainage way within a cropland field, to trap and filter sediment from runoff. The filter strip will be planted according to the NRCS Critical Area Planting (342) standard.</p> <p>This practice includes the costs of perennial grass seed, tractor, drill, and labor to plant grass in filter strips.</p>		
Associated practices include: Residue and Tillage Management - No Till/Strip Till/Direct Seed (329), Residue and Tillage Management - Mulch Till (345), Residue and Tillage Management - Ridge Till (346), Cover Crop (340), Pest Management (595), Nutrient Management (590), Contour Farming (330), Deep Tillage (324), Critical Area Planting (342), Conservation Crop Rotation (328)		
Geographic Area:	Statewide	
Unit for Cost Estimate:	Acre	
Practice Life (Years):	10	
Discount Rate (%/Year):	5%	
		Cost/Unit
<p style="color: red;">Data Source: 2009 actual cost data, OSU Enterprise Budget Software, Critical Area Planting (342) cost data</p>		
Materials		
<p>Costs for seed is included in Equipment and Installation. All rates and species are according to the Critical Area Planting (342) standard and specifications</p> <p>Does not include cost of fertilizer and/or amendments that may be needed for establishment. Refer to 590</p>		
Equipment/Installation		\$91.84
Seeding introduced species - Includes seed costs, seedbed preparation and seeding equipment.		
Labor		
Costs included with installation		
Mobilization		
None		
Operation & Maintenance		\$1.84
2% O&M factor		
Acquisition of Technical Knowledge		\$0.00
Calibrate and operate seed drill/sprigger, manage perennial grass		
Forgone Income		\$15.63
<p>1 Acre taken out of crop production</p> <p>Assume small grain crop rotation minus value of occasional hay/forage crop from herbaceous cover crop.</p> <p>Net Income (\$/Ac/Yr) =</p>		
Risk		\$0.00
Reduced risk, less erosion, less machinery wear & tear.		
Administration & Permit Costs		\$0.00
None		
Total Cost Estimate:		\$109.31

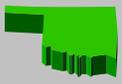


Cost/Unit

ECONOMIC COST DATA

Cost Data

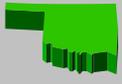
Practice Name:	Filter Strip	
Practice Code:	393	
Activity Type:	393.2 - Sprigging Bermudagrass	
Typical Implementation Scenario		
This practice consists of <u>sprigging</u> a 30 foot wide strip of bermudagrass, 2700 feet long, along both edges of a drainage way within a cropland field, to trap and filter sediment from runoff. The filter strip will be planted according to the NRCS Critical Area Planting (342) standard.		
This practice includes the costs of perennial grass seed, tractor, drill, sprigger, and labor to plant grass in filter strips.		
Associated practices include: Residue and Tillage Management - No Till/Strip Till/Direct Seed (329), Residue and Tillage Management - Mulch Till (345), Residue and Tillage Management - Ridge Till (346), Cover Crop (340), Pest Management (595), Nutrient Management (590), Contour Farming (330), Deep Tillage (324), Critical Area Planting (342), Conservation Crop Rotation (328)		
Geographic Area:	Statewide	
Unit for Cost Estimate:	Acre	
Practice Life (Years):	10	
Discount Rate (%/Year):	5%	
		Cost/Unit
Data Source: 2009 actual cost data, OSU Enterprise Budget Software, Critical Area Planting (342) cost data		
Materials		
Costs for sprigs are included in Equipment and Installation. All rates and species are according to the Critical Area Planting (342) standard and specifications		
Does not include cost of fertilizer and/or amendments that may be needed for establishment. Refer to 590.1 and 590.3		
Equipment/Installation		\$154.24
Sprigging bermudagrass includes cost of minor seedbed preparation, sprigs, tractor / sprigging equipment and planting		
Labor		
Costs included with installation		
Mobilization		
None		
Operation & Maintenance		\$3.08
2% O&M factor		
Acquisition of Technical Knowledge		\$0.00
Calibrate and operate seed drill/sprigger, manage perennial grass		
Forgone Income		\$15.63
1 Acre taken out of crop production		
Assume small grain crop rotation minus value of occasional hay/forage crop from herbaceous cover crop.		
Net Income (\$/Ac/Yr) =		
Risk		\$0.00
Reduced risk, less erosion, less machinery wear & tear.		
Administration & Permit Costs		\$0.00
None		
Total Cost Estimate:		\$172.95



ECONOMIC COST DATA

Cost Data

Practice Name:	Filter Strip	
Practice Code:	393	
Activity Type:	393.3 - Native Species	
Typical Implementation Scenario		
This practice consists of planting a 30 foot wide strip of a native grass mixture, 2700 feet long, along both edges of a drainage way within a cropland field, to trap and filter sediment from runoff. The filter strip will be planted according to the NRCS Critical Area Planting (342) standard.		
This practice includes the costs of perennial grass seed, tractor, drill, and labor to plant grass in filter strips.		
Associated practices include: Residue and Tillage Management - No Till/Strip Till/Direct Seed (329), Residue and Tillage Management - Mulch Till (345), Residue and Tillage Management - Ridge Till (346), Cover Crop (340), Pest Management (595), Nutrient Management (590), Contour Farming (330), Deep Tillage (324), Critical Area Planting (342), Conservation Crop Rotation (328)		
Geographic Area:	Statewide	
Unit for Cost Estimate:	Acre	
Practice Life (Years):	10	
Discount Rate (%/Year):	5%	
		Cost/Unit
Data Source: 2009 actual cost data, OSU Enterprise Budget Software, Critical Area Planting (342) cost data		
Materials		
Costs for seed is included in Equipment and Installation. All rates and species are according to the Critical Area Planting (342) standard and specifications		
Does not include cost of fertilizer and/or amendments that may be needed for establishment. Refer to 590		
Equipment/Installation		\$121.15
Seeding native grass species as a mixture - Includes seed costs, seedbed preparation and seeding equipment.		
Labor		
Costs included with installation		
Mobilization		
None		
Operation & Maintenance		\$2.42
2% O&M factor		
Acquisition of Technical Knowledge		\$0.00
Calibrate and operate seed drill/sprigger, manage perennial grass		
Forgone Income		\$15.63
1 Acre taken out of crop production		
Assume small grain crop rotation minus value of occasional hay/forage crop from herbaceous cover crop.		
Net Income (\$/Ac/Yr) =		
Risk		\$0.00
Reduced risk, less erosion, less machinery wear & tear.		
Administration & Permit Costs		\$0.00
None		
Total Cost Estimate:		\$139.20

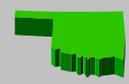


Cost/Unit

ECONOMIC COST DATA

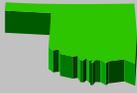
Cost Data

Practice Name:	Filter Strip	
Practice Code:	393	
Activity Type:	393.4 - Native Grass Monoculture	
Typical Implementation Scenario		
This practice consists of planting a 30 foot wide strip to switchgrass, 2700 feet long, along both edges of a drainage way within a cropland field, to trap and filter sediment from runoff. The filter strip will be planted according to the NRCS Critical Area Planting (342) standard.		
This practice includes the costs of grass seed, tractor, drill and labor to plant grass in borders.		
Associated practices include: Residue and Tillage Management - No Till/Strip Till/Direct Seed (329), Residue and Tillage Management - Mulch Till (345), Residue and Tillage Management - Ridge Till (346), Cover Crop (340), Pest Management (595), Nutrient Management (590), Contour Farming (330), Deep Tillage (324), Pasture and Hayland Planting (512), Conservation Crop Rotation (328)		
Geographic Area:	Statewide	
Unit for Cost Estimate:	Acre	
Practice Life (Years):	10	
Discount Rate (%/Year):	5%	
		Cost/Unit
Data Source: 2009 actual cost data, OSU Enterprise Budget Software, Critical Area Planting (342) cost data.		
Materials		\$115.83
Native Grass Species - Switchgrass		
Equipment/Installation/Labor		\$15.42
Tractor/Drill/Labor/ seedbed preparation		
Labor		\$0.00
Included in Equipment/Installation Cost		
Mobilization		\$0.00
None		
Operation & Maintenance		\$1.31
1% O&M factor		
Acquisition of Technical Knowledge		\$0.00
Calibrate and operate seed drill, manage perennial grass		
Forgone Income		\$2.74
1 Acre taken out of crop production		
Assume wheat crop minus value of hay/forage crop from perennial forage.		
Net Income (\$/Ac/Yr)		
Risk		\$0.00
Reduced risk, less erosion, less machinery wear & tear.		
Administration & Permit Costs		\$0.00
None		
Total Cost Estimate:		\$135.30



ECONOMIC COST DATA

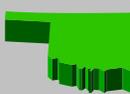
Cost Data

Practice Name:	Firebreak	
Practice Code:	394	
Activity Type:	394.1 Firebreak, normal	
Typical Implementation Scenario		
Installation of firebreak to facilitate implementation of Prescribed Burning (338)		
Construction/installation of a 10' wide firebreak as designed according to the NRCS Firebreak (394) standard and included in a Prescribed Burning Management Plan. This is limited to constructed firebreaks that can be prepared with normal farm machinery (disks, plows, mowers) or similar type equipment. Generally these are installed on open grasslands with landscapes and soils that allows for use of normal farm equipment (i.e. no boulders, no large trees, no canyons that can not be crossed). Firebreaks are maintained for future use.		
Associated practices include: Prescribed Burning (338)		
Data Source: 2009 actual cost data; Dept of Forestry data.		
Geographic Area:	Statewide	
Unit for Cost Estimate:	Acre	
Practice Life (Years):	10	
Discount Rate (%/Year):	5%	
		Cost/Unit
Materials		0.000
None		
Equipment/Installation		\$129.64
Normal farm equipment (tractor, disk, plow, mowers, etc..) and labor. Some circumstance may warrant mowing of thick vegetation and extra tillage to fully remove/bury vegetation resulting in some extra costs not included in this cost.		
Labor		
Included in installation.		
Mobilization		
Included in installation.		
Operation & Maintenance		5.00
Constructed firebreaks can be maintained in order to reduce amount of preparation time and effort for future burning. The initial construction is usually the more expensive and time consuming. Afterwards, with annual tillage and/or planting of green crops (i.e. wheat), the firebreaks can be maintained for future burns.		
Acquisition of Technical Knowledge		0.00
Knowledge of prescribed burning, use of equipment for installation		
Forgone Income		0.00
Could be loss of acreage of forage, but could be negligible if planted to green crops as part of maintenance,		
Risk		0.00
Reduced risk, less fire damage hazard.		
Administration & Permit Costs		0.00
None		
Total Cost Estimate:		134.64

ECONOMIC COST DATA

Cost Data

Practice Name: Firebreak	
Practice Code: 394	
Activity Type: 394.2 Firebreak, heavy equip.	
Typical Implementation Scenario	
Installation of firebreak to facilitate implementation of Prescribed Burning (338)	
Construction/installation of a minimum 10' wide firebreak as designed according to the NRCS Firebreak (394) standard and included in a Prescribed Burning Management Plan. This is limited to constructed firebreaks that <u>require</u> heavy equipment (dozers, graders) due to site conditions that do not allow for use of normal farm equipment. Site conditions would include thick brush, large trees, rocky terrain, creek crossings or steep slopes that would necessitate the need for heavy equipment. Firebreaks are maintained for future use.	
Associated practices include: Prescribed Burning (338)	
Data Source: 2009 actual cost data; Dept of Forestry data.	
Geographic Area: Statewide	
Unit for Cost Estimate:	Acre
Practice Life (Years):	10
Discount Rate (%/Year):	5%
	Cost/Unit
Materials	0.00
None	
Equipment/Installation	\$406.80
Equipment includes cost of Dozer to construct firebreak. Costs are on a per acre basis.	
Labor	
Included in installation	
Mobilization	
Included with equipment and installation	
Operation & Maintenance	10.00
Constructed firebreaks can be maintained with periodic tillage, removal of debris, etc. in order to reduce amount of preparation time and effort for future burning. The initial construction is usually the more expensive and time consuming. Afterwards, with annual tillage and/or planting of green crops (i.e. wheat), the firebreaks can be maintained for future burns.	
Acquisition of Technical Knowledge	0.00
Knowledge of prescribed burning, use of equipment for installation	
Forgone Income	0.00
None	
Risk	0.00
Reduced risk, less fire damage hazard.	
Administration & Permit Costs	0.00
None	
Total Cost Estimate:	416.80



ECONOMIC COST DATA

Cost Data

Practice Name: Grade Stabilization Structure

Practice Code: 410

Activity Type: 410.1 Grade Stabilization Structure - Earthen

Typical Implementation Scenario

An earthen embankment constructed near a head cut or in an unstable drain to control erosion. The typical structure consists of 3100 CY of embankment with 93 feet of 24 inch pipe. Other structures may require one or more of the following components: concrete, trashguard, riprap, gypsum treatment for dispersive clay soils, filter diaphragm, and plastic pipe.

Construction Units (CU) are found by multiplying the designed or estimated "Quantity" by the given "Multiplier" as shown in the example in Table 1-A. The construction units for each component are then summed to give the "Total Construction Units" for the project. If a component is not used, there will be no construction units for that component. The Total Construction Units are then multiplied by the **Cost/Unit** provided below, to give the average cost of the project. Table 1-B is given as a template for computations.

Associated practices include: 382-Fence, 342-Critical Area Planting, 362-Diversion, 590-Nutrient Management

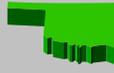
Geographic Area: Statewide

Unit for Cost Estimate: Construction Unit (CU)

Practice Life (Years): 20

Discount Rate (%/Year): 5%

Data Source: 2009 Actual Cost Data.



Cost/Unit

\$1.73

Materials

Includes Equipment/Installation, Labor and Mobilization Costs

Table 1-A Example

Component	Units	Quantity	Multiplier	CU
Earthwork	CY	3100	1.00	3,100.0
HCMP / Welded Steel	DIFT	2232	1.16	2,580.3
Plastic Pipe	DIFT	0	0.80	0.0
Concrete	CY	2	161.46	322.9
Trashguard	PF	44	10.53	463.4
Gypsum	TON	0	69.36	0.0
Riprap	CY	0	31.21	0.0
Filter (C33 sand)	CY	0	22.89	0.0
Total Construction Units				6,466.7

To determine the average cost for any component listed above, multiply \$1.73 times the "Multiplier" for that component. For example, the average cost of concrete would be \$1.73 x 161.46 = \$279.32 / CY.

Table 1-B

Component	Units	Quantity	Multiplier	CU
Earthwork	CY		1.00	
HCMP / Welded Steel	DIFT		1.16	
Plastic Pipe	DIFT		0.80	
Concrete	CY		161.46	
Trashguard	PF		10.53	
Gypsum	TON		69.36	
Riprap	CY		31.21	
Filter	CY		22.89	
Total Construction Units				

Equipment/Installation

Included in Materials Cost

\$0.00

Labor

Included in Materials Cost

\$0.00

Mobilization

Included in Materials Cost

\$0.00

Operation & Maintenance (Annual)

1% of Installation Costs

\$0.02

Acquisition of Technical Knowledge

None

\$0.00

Forgone Income (Annual)

Minimal land taken out of production.

\$0.00

Risk

Reduced risk, reliable source of water

\$0.00

Administration & Permit Costs

None

\$0.00

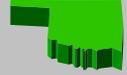
Total Cost Estimate:

\$1.75

ECONOMIC COST DATA

Cost Data

Practice Name: Grade Stabilization Structure	
Practice Code: 410	
Activity Type: 410.2 Grade Stabilization Structure with Concrete Open Weir Spillway (Formless Concrete Chute)	
Typical Implementation Scenario	
This practice applies to a concrete open weir spillway (formless concrete chute) that is constructed near a head cut to control erosion. Minor excavation and embankment is required to install the concrete structure. Typical quantities is 40 cubic yards of concrete. This structure may or may not require foundation stabilization with rock.	
Associated practices include: 342-Critical Area Planting, 362-Diversion, 590-Nutrient Management	
Geographic Area:	Statewide
Unit for Cost Estimate:	CY
Practice Life (Years):	15
Discount Rate (%/Year):	5%
Data Source: Cost is based on 10% price increase from 2008.	
	Cost/Unit
Materials	\$530.20
Includes Equipment/Installation, Labor and Mobilization Costs	
Equipment/Installation	\$0.00
Included in Materials cost	
Labor	\$0.00
Included in Materials cost	
Mobilization	\$0.00
Included in Materials Cost	
Operation & Maintenance (Annual)	\$5.30
One percent of materials, equipment and labor	
Acquisition of Technical Knowledge	\$0.00
N/A	
Forgone Income (Annual)	\$0.00
None	
Risk	\$0.00
Reduced risk, can better manage runoff water and materials	
Administration & Permit Costs	\$0.00
Paperwork required to designs, meetings with engineers, travel	
Total Cost Estimate:	\$535.50



ECONOMIC COST DATA

Cost Data

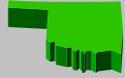
Practice Name: Grade Stabilization Structure		
Practice Code: 410		
Activity Type: 410.3 Galvanized Steel Toe Structure		
Typical Implementation Scenario		
This practice applies to a galvanized steel toe wall structure that is installed and constructed near a head cut to control erosion. The typical structure with 160 ac drainage area and 3.9 ft drop consists of 301 sq ft of galvanized steel at a total cost of \$25.21/sq-ft.		
Associated practices include: 342-Critical Area Planting, 362-Diversion, 590-Nutrient Management		
Geographic Area:	Statewide	
Unit for Cost Estimate:	Square Foot (SF)	
Practice Life (Years):	15	
Discount Rate (%/Year):	5%	
Data Source: 10% cost increase from 2008.		
		Cost/Unit
Materials		\$25.21
Galvanized Steel	301 sq ft	
Concrete (reinforced)	10.6 CY	
Filter C-33 Sand	1.3 CY	
Drain Pipe	35 LF	
Rip Rap	3.9 CY	
Excavation/Fill	variable CY	
Equipment/Installation		\$0.00
Includes Labor		
Labor		\$0.00
Labor included in Equipment cost.		
Mobilization		\$0.00
Included in Materials, Equipment and Installation Costs.		
Operation & Maintenance		\$0.25
One percent of Materials, Equipment, Labor Costs		
Acquisition of Technical Knowledge		\$0.00
N/A		
Forgone Income		\$0.00
Little or none land taken out of production.		
Risk		\$0.00
None		
Administration & Permit Costs		\$0.00
Paperwork required to designs, meetings with engineers, travel		
Total Cost Estimate:		\$25.46



ECONOMIC COST DATA

Cost Data

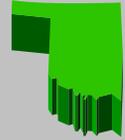
Practice Name:	Grassed Waterway	
Practice Code:	412	
Activity Type:	412.1 Grassed Waterway	
Typical Implementation Scenario		
A natural or constructed channel that is shaped to the required dimensions by excavating and/or filling. The typical waterway is 3.0 acres. If the waterway is required to be vegetated, the vegetation is installed under NRCS practice code 342, Critical Area Planting.		
Associated practices include: 600-Terrace, 362-Diversion, 342-Critical Area Planting, 590-Nutrient Management		
Geographic Area:	Statewide	
Unit for Cost Estimate:	Acre	
Practice Life (Years):	10	
Discount Rate (%/Year):	5%	
		Cost/Unit
Data Source: 2007, 2008, & 2009 actual cost data		
Materials		\$863.43
Includes Equipment, Installation and Labor Costs		
Equipment/Installation		\$0.00
Included in Materials Cost		
Labor		\$0.00
Included in Materials Cost		
Mobilization		\$0.00
Included in Materials Cost		
Operation & Maintenance (Annual)		\$17.27
2% of Installation Costs		
Acquisition of Technical Knowledge		\$0.00
Planting and management of vegetation		
Forgone Income (Annual)		\$0.00
None		
Risk		\$0.00
Reduced risk, less concentrated flow erosion, less machinery wear & tear.		
Administration & Permit Costs		\$0.00
None		
Total Cost Estimate:		\$880.70



ECONOMIC COST DATA

Cost Data

Practice Name: Hedgerow Planting					
Practice Code: 422					
Activity Type: 422.1 - Trees &/or Shrubs - barerooted					
Typical Implementation Scenario					
This practice consists of planting a 25 ft wide travel corridor for wildlife to link two habitat areas. The corridor will consist of a three row planting of barerooted tree and/or shrub species such as red mulberry, American plum and fragrant sumac.					
Includes the cost of the bare root seedlings and the costs of planting (labor and equipment) to establish at least two rows of shrubs or trees to typically serve as a wildlife corridor or screen.					
Associated practices include: Tree/Shrub Establishment (612), Upland Wildlife Habitat Management (645), Pest Management (595), Tree/Shrub Site Preparation (490), Tree/Shrub Pruning (660), Fencing (382)					
Geographic Area:	Statewide				
Unit for Cost Estimate:	Each				
Practice Life (Years):	15				
Discount Rate (%/Year):	5%				
Data Source: 2009 actual cost data and current vendor pricing.					
Materials	Cost/Unit				
	\$0.40				
Bare-rooted seedlings (average for all species and order sizes)	<table border="0"> <tr> <td style="text-align: center;"><u>Unit</u></td> <td style="text-align: center;"><u>\$/Unit</u></td> </tr> <tr> <td style="text-align: center;">Tree</td> <td style="text-align: center;">\$0.40</td> </tr> </table>	<u>Unit</u>	<u>\$/Unit</u>	Tree	\$0.40
<u>Unit</u>	<u>\$/Unit</u>				
Tree	\$0.40				
Equipment/Installation	\$0.30				
Planting of each seedling	<table border="0"> <tr> <td style="text-align: center;"><u>Unit</u></td> <td style="text-align: center;"><u>\$/Unit</u></td> </tr> <tr> <td style="text-align: center;">Tree</td> <td style="text-align: center;">\$0.30</td> </tr> </table>	<u>Unit</u>	<u>\$/Unit</u>	Tree	\$0.30
<u>Unit</u>	<u>\$/Unit</u>				
Tree	\$0.30				
Labor (Included in Installation cost)	\$0.00				
Mobilization 2% of materials, equipment and labor	\$0.01				
Operation & Maintenance 5% of installation costs	\$0.01				
Acquisition of Technical Knowledge None	\$0.00				
Forgone Income None	\$0.00				
Risk None	\$0.00				
Administration & Permit Costs None	\$0.00				
Total Cost Estimate:	\$0.72				



ECONOMIC COST DATA

Cost Data

Practice Name: Hedgerow Planting

Practice Code: 422

Activity Type: 422.2 - Trees &/or Shrubs - barerooted, with animal control devices

Typical Implementation Scenario

This practice consists of planting a 25 ft wide travel corridor for wildlife to link two habitat areas. The corridor will consist of a three row planting of barerooted tree and/or shrub species such as red mulberry, American plum and fragrant sumac, with animal control devices installed on each tree.

Includes the cost of the bare root seedlings and the costs of planting (labor and equipment) to establish at least two rows of shrubs or trees to typically serve as a wildlife corridor or screen. Includes the use of the polyethylene wrap or protection net or tube, stakes, and the cost of labor for placing the devices.

Associated practices include: Tree/Shrub Establishment (612), Upland Wildlife Habitat Management (645), Pest Management (595), Tree/Shrub Site Preparation (490), Tree/Shrub Pruning (660), Fencing (382)

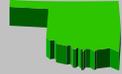
Geographic Area: Statewide

Unit for Cost Estimate: Each

Practice Life (Years): 15

Discount Rate (%/Year): 5%

Data Source: 2009 actual cost data and current vendor pricing and ODAFF information.

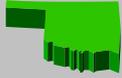


			<u>Cost/Unit</u>
Materials			\$0.65
	<u>Unit</u>	<u>\$/Unit</u>	
Bare-rooted seedlings (average for all species and order sizes)	Tree	\$0.40	
Animal Control Devices	Tree	\$0.25	
Total		\$0.65	
Equipment/Installation			\$0.35
	<u>Unit</u>	<u>\$/Unit</u>	
Planting of each seedling	Tree	\$0.30	
Animal Control Devices	Tree	\$0.05	
Total		\$0.35	
Labor			\$0.00
(Included in Installation cost)			
Mobilization			\$0.02
2% of materials, equipment and labor			
Operation & Maintenance			\$0.01
5% of installation costs			
Acquisition of Technical Knowledge			\$0.00
None			
Forgone Income			\$0.00
None			
Risk			\$0.00
None			
Administration & Permit Costs			\$0.00
None			
Total Cost Estimate:			\$1.03

ECONOMIC COST DATA

Cost Data

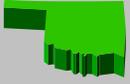
Practice Name:	Irrigation Water Conveyance, Ditch and Canal Lining, Plain Concrete	
Practice Code:	428A	
Activity Type:	428A.1 Concrete Ditch and Canal Lining	
Typical Implementation Scenario		
This practice applies to the installation of a concrete liner in an existing or newly constructed irrigation field ditch or irrigation canal or lateral. Ditches and canals to be lined shall serve as integral parts of an irrigation water distribution or conveyance system designed to facilitate the conservation use of soil and water resources on a farm or group of farms. The typical structure is 2500 ft long requiring 75 CY of concrete at a total cost of \$25,740.00		
Associated practices include: 436-Irrigation Storage Reservoir, 441-Irrigation System, Microirrigation, 442-Irrigation System, Sprinkler, 533-Pumping Plant		
Geographic Area:	Statewide	
Unit for Cost Estimate:	CY	
Practice Life (Years):	20	
Discount Rate (%/Year):	5%	
		Cost/Unit
Data Source: 2008 actual cost data and current vendor pricing.		
Materials		\$343.20
Includes cost of equipment/installation, labor and mobilization.		
Equipment/Installation		\$0.00
Included in Materials Cost		
Labor		\$0.00
Included in Materials Cost		
Mobilization		\$0.00
Included in Materials Cost		
Operation & Maintenance (Annual)		\$10.30
3% of Installation Costs		
Acquisition of Technical Knowledge		\$0.00
None		
Forgone Income (Annual)		\$0.00
Minimal to no land taken out of production.		
Risk		\$0.00
None		
Administration & Permit Costs		\$0.00
None		
Total Cost Estimate:		\$353.50



ECONOMIC COST DATA

Cost Data

Practice Name: Irrigation Water Conveyance, Pipeline, High-Pressure, Underground, Plastic	
Practice Code: 430DD	
Activity Type: 430DD.1 High Pressure	
Typical Implementation Scenario	
This practice applies to the installation of a high-pressure, underground, plastic pipeline and pipeline appurtenances to convey irrigation water. The typical job is 1500 feet of 8 inch 80 psi pipe at a total cost of \$7080.00	
Associated practices include: 533-Pumping Plant	
Geographic Area:	Statewide
Unit for Cost Estimate:	DIFT
Practice Life (Years):	25
Discount Rate (%/Year):	5%
	Cost/Unit
Data Source: 2009 actual cost data.	
Materials	\$0.68
Includes equipment/installation, labor and mobilization costs. Includes cost of trenching.	
Equipment/Installation	\$0.00
Included in Materials Cost	
Labor	\$0.00
Included in Materials Cost	
Mobilization	\$0.00
Included in Materials Cost	
Operation & Maintenance (Annual)	\$0.00
None	
Acquisition of Technical Knowledge	\$0.00
Pipe installation skills, design, layout	
Forgone Income (Annual)	\$0.00
None, no land taken out of production	
Risk	\$0.00
Reduced risk, better irrigation water control	
Administration & Permit Costs	\$0.00
None	
Total Cost Estimate:	\$0.68



ECONOMIC COST DATA

Cost Data

Practice Name:	Irrigation Water Conveyance, Pipeline, Low-Pressure, Underground, Plastic	
Practice Code:	430EE	
Activity Type:	430EE.1 Low Pressure	
Typical Implementation Scenario		
This practice applies to the installation of a low-pressure, underground, plastic pipeline and pipeline appurtenances to convey irrigation water. The typical job is 2650 ft of 8 inch 50 psi pipe at a total cost of \$12,508.00		
Associated practices include:	533-Pumping Plant	
Geographic Area:	Statewide	
Unit for Cost Estimate:	DIFT	
Practice Life (Years):	25	
Discount Rate (%/Year):	5%	
Data Source:	2009 actual cost data.	
Materials		Cost/Unit
Includes equipment/installation, labor and mobilization costs		\$0.53
Equipment/Installation		\$0.00
Included in Materials Cost		
Labor		\$0.00
Included in Materials Cost		
Mobilization		\$0.00
Included in Materials Cost		
Operation & Maintenance (Annual)		\$0.00
None		
Acquisition of Technical Knowledge		\$0.00
Pipe installation skills, design, layout		
Forgone Income (Annual)		\$0.00
None, no land taken out of production		
Risk		\$0.00
Reduced risk, better irrigation water control		
Administration & Permit Costs		\$0.00
None		
Total Cost Estimate:		\$0.53



ECONOMIC COST DATA

Cost Data

Practice Name: Irrigation Storage Reservoir

Practice Code: 436

Activity Type: 436.1 Irrigation Storage Reservoir

Typical Implementation Scenario

This practice applies to a water impoundment constructed by excavation and/or fill to conserve water by holding it in storage until it is used to meet crop irrigation requirements. This structure may require a principal spillway pipe. The typical structure consists of 3100 CY of embankment with 93 feet of 12 in pipe. Other structures may require one or more of the following components: concrete, trashguard, riprap, gypsum treatment for dispersive clay soils, filter diaphragm, and plastic pipe.

Construction Units (CU) are found by multiplying the designed or estimated "Quantity" by the given "Multiplier" as shown in the example in Table 1-A. The construction units for each component are then summed to give the "Total Construction Units" for the project. If a component is not used, there will be no construction units for that component. The Total Construction Units are then multiplied by the **Cost/Unit** given below to give the average cost of the project. Table 1-B is given as a template for computations.

Associated practices include: 382-Fence, 342-Critical Area Planting, 393-Filter Strip, 516-Pipeline, 521C-Pond Sealing or Lining, Bentonite Sealant

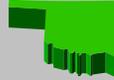
Geographic Area: Statewide

Unit for Cost Estimate: Construction Unit (CU)

Practice Life (Years): 20

Discount Rate (%/Year): 5%

Data Source: 2009 actual cost data.



Cost/Unit

\$1.73

Materials

Includes Equipment/Installation, Labor and Mobilization Costs

Table 1-A Example

Component	Units	Quantity	Multiplier	CU
Earthwork	CY	3100	1.00	3,100.0
HCMP / Welded Steel	DIFT	1116	1.16	1,290.2
Plastic Pipe	DIFT	0	0.80	0.0
Concrete	CY	2	161.46	322.9
Trashguard	PF	44	10.53	463.4
Gypsum	TON	0	69.36	0.0
Riprap	CY	0	31.21	0.0
Filter (C33 sand)	CY	0	22.89	0.0
Total Construction Units				5,176.5

To determine the average cost for any component listed above, multiply \$1.73 times the "Multiplier" for that component. For example, the average cost of concrete would be \$1.73 x 161.46 = \$279.32 / CY.

Table 1-B

Component	Units	Quantity	Multiplier	CU
Earthwork	CY		1.00	
HCMP / Welded Steel	DIFT		1.16	
Plastic Pipe	DIFT		0.80	
Concrete	CY		161.46	
Trashguard	PF		10.53	
Gypsum	TON		69.36	
Riprap	CY		31.21	
Filter	CY		22.89	
Total Construction Units				

Equipment/Installation

Included in Materials Cost

\$0.00

Labor

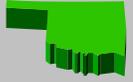
Included in Materials Cost

\$0.00

ECONOMIC COST DATA

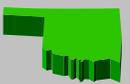
Cost Data

Practice Name: Irrigation System, Microirrigation		
Practice Code: 441		
Activity Type: 441.1 Subsurface Drip System		
Typical Implementation Scenario		
This practice consists of the installation of a subsurface drip irrigation system. The typical system consists of subsurface drip tapes on 80 inch spacing covering a 130 acre field.		
Associated practices include: 533-Pumping Plant, 447-Irrigation System, Tailwater Recovery, 552-Irrigation Regulating Reservoir, 350-Sediment Basin		
Geographic Area:	Statewide	
Unit for Cost Estimate:	Acre	
Practice Life (Years):	10	
Discount Rate (%/Year):	5%	Cost/Unit
Data Source: 2009 actual cost data		
Materials		\$991.86
Total cost estimate for complete drip irrigation system, including materials, installation, labor and mobilization. Includes filtering system, valves, controllers, main lines, lateral lines, flow meter and other required appurtenances.		
Equipment/Installation		\$0.00
Included in Materials Cost.		
Labor		\$0.00
Included in Materials Cost.		
Mobilization		\$0.00
Included in Materials Cost.		
Operation & Maintenance (Annual)		\$49.59
5% of materials, equipment/Installation and labor costs		
Acquisition of Technical Knowledge		\$0.00
N/A		
Forgone Income (Annual)		\$0.00
None, no land taken out of production.		
Risk		\$0.00
Reduced risk, can better manage irrigation water, agricultural chemicals and crops		
Administration & Permit Costs		\$0.00
Paperwork required to complete designs, meetings with engineers, travel		
Total Cost Estimate:		\$1,041.45



ECONOMIC COST DATA

Cost Data

Practice Name:	Irrigation System, Microirrigation	
Practice Code:	441	
Activity Type:	441.2 Drip System for Windbreaks	
Typical Implementation Scenario		
This practice consists of the installation of a drip irrigation systems for wind breaks. The typical system is a windbreak 2600 ft long with 3 rows of trees on 12 ft spacing which results in 650 trees.		
Associated practices include: 533-Pumping Plant, 447-Irrigation System, Tailwater Recovery, 552-Irrigation Regulating Reservoir, 350-Sediment Basin		
Geographic Area:	Statewide	
Unit for Cost Estimate:	Tree	
Practice Life (Years):	10	
Discount Rate (%/Year):	5%	
Data Source: Cost based on indexed 2007 cost data.		
Materials		Cost/Unit
Includes cost for Equipment/Installation, Labor, Filters, Gauges, Emitters, Lateral lines, and Mobilization.		\$2.09
Equipment/Installation		\$0.00
Included in Materials Cost.		
Labor		\$0.00
Included in Materials Cost.		
Mobilization		\$0.00
Included in Materials Cost.		
Operation & Maintenance (Annual)		\$0.10
5% of materials, equipment/Installation and labor costs		
Acquisition of Technical Knowledge		\$0.00
N/A		
Forgone Income (Annual)		\$0.00
None		
Risk		\$0.00
Reduced risk, can better manage irrigation water, agricultural chemicals and crops		
Administration & Permit Costs		\$0.00
Paperwork required to complete designs, meetings with engineers, travel		
Total Cost Estimate:		\$2.19

ECONOMIC COST DATA

Cost Data

Practice Name: Irrigation System, Sprinkler

Practice Code: 442

Activity Type: 442.1 New Low Pressure Sprinkler System

Typical Implementation Scenario

This practice consists of installing a new low pressure irrigation system. The typical system is a pivot 1300 ft long with drops on 5 ft spacing. A typical system also includes pressure regulators, chemigation safety check valve, and a flow meter.

Associated practices include: 430EE -Irrigation Water Conveyance--Pipeline--Low Pressure, Underground Plastic, 449-Irrigation Water Management, 533-Pumping Plant

Geographic Area: Statewide

Unit for Cost Estimate: LF - Linear Foot

Practice Life (Years): 15

Discount Rate (%/Year): 5%

Data Source: 2009 actual cost data and vendor quote.



Cost/Unit

Materials

\$46.59

Total cost includes Materials, Equipment/Installation, Labor and Mobilization

Component	Cost/Unit	Unit	Quantity	Total Costs
Main Line	\$43.42	FT	1300	\$ 56,446.00
Flowmeter	\$1,098.50	EACH	1	\$ 1,098.50
Chemigation Valve	\$653.50	EACH	1	\$ 653.50
Pressure Regulators	\$9.10	EACH	260	\$ 2,366.00
				\$ 60,564.00

Equipment/Installation

\$0.00

Included in Materials

Labor

\$0.00

Included in Materials

Mobilization

\$0.00

Included in Materials

Operation & Maintenance (Annual)

\$0.93

2% of materials, equipment/Installation and labor costs

Acquisition of Technical Knowledge

\$0.00

N/A

Forgone Income (Annual)

\$0.00

None, no land taken out of production.

Risk

\$0.00

Reduced risk, can better manage irrigation water, agricultural chemicals and crops

Administration & Permit Costs

\$0.00

N/A

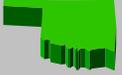
Total Cost Estimate:

\$47.52

ECONOMIC COST DATA

Cost Data

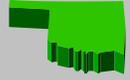
Practice Name:	Irrigation System, Sprinkler			
Practice Code:	442			
Activity Type:	442.2 Conversion to Low Pressure			
Typical Implementation Scenario				
This practice consists of converting an existing high pressure irrigation system to a low pressure irrigation system. The typical system is 1300 ft long with drops at 5 ft spacing. A typical system also includes pressure regulators, chemigation safety check valve, and a flow meter.				
Associated practices include: 449-Irrigation Water Management, 533-Pumping Plant				
Geographic Area:	Statewide			
Unit for Cost Estimate:	LF - Linear Foot			
Practice Life (Years):	15			
Discount Rate (%/Year):	5%			
Data Source: 2009 actual cost data and vendor quote.				
				Cost/Unit
Materials				\$11.46
Total cost includes Materials, Equipment/Installation, Labor and Mobilization				
Component	Cost/Unit	Units	Quantity	Total Costs
Main Line	\$8.29	FT	1300	\$ 10,777.00
Flowmeter	\$1,098.50	EACH	1	\$ 1,098.50
Chemigation Valve	\$653.50	EACH	1	\$ 653.50
Pressure Regulators	\$9.10	EACH	260	\$ 2,366.00
				\$ 14,895.00
Labor				\$0.00
Included in Materials				
Mobilization				\$0.00
Included in Materials				
Operation & Maintenance (Annual)				\$0.23
2% of materials, equipment/Installation and labor costs				
Acquisition of Technical Knowledge				\$0.00
N/A				
Forgone Income (Annual)				\$0.00
None, no land taken out of production.				
Risk				\$0.00
Reduced risk, can better manage irrigation water, agricultural chemicals and crops				
Administration & Permit Costs				\$0.00
N/A				
Total Cost Estimate:				\$11.69



ECONOMIC COST DATA

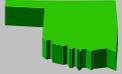
Cost Data

Practice Name: Irrigation System, Sprinkler		
Practice Code: 442		
Activity Type: 442.3 Big Gun/Pasture Gun		
Typical Implementation Scenario		
This practice is for a portable big gun/pasture gun irrigation system for use in disposal of waste water as part of a waste management plan. The cost is for a complete system that meets the requirements of the Oklahoma Conservation Practice Standard 442. The typical sprinkler is one traveling gun with 100 gpm capacity.		
Associated practices include: 430EE -Irrigation Water Conveyance--Pipeline--Low Pressure, Underground Plastic, 533-Pumping Plant, 590-Nutrient Management, 633-Waste Utilization		
Geographic Area:	Statewide	
Unit for Cost Estimate:	Each	
Practice Life (Years):	15	
Discount Rate (%/Year):	5%	
Data Source: 2008 & 2009 actual cost data.		Cost/Unit
Materials		\$1,210.00
Total cost includes Materials, Equipment/Installation, Labor and Mobilization		
Equipment/Installation		\$0.00
Included in Materials		
Labor		\$0.00
Included in Materials		
Mobilization		\$0.00
Included in Materials		
Operation & Maintenance (Annual)		\$24.20
2% of materials, equipment/Installation and labor costs		
Acquisition of Technical Knowledge		\$0.00
N/A		
Forgone Income (Annual)		\$0.00
None, no land taken out of production.		
Risk		\$0.00
Reduced risk, can better manage irrigation water, agricultural chemicals and crops		
Administration & Permit Costs		\$0.00
N/A		
Total Cost Estimate:		\$1,234.20



ECONOMIC COST DATA

Cost Data

Practice Name:	Irrigation System, Sprinkler	
Practice Code:	442	
Activity Type:	442.4 Solid Set System for Dust Control, Feedlots 35 acres and less	
Typical Implementation Scenario		
This practice consists of installing a irrigation system for dust control on feedlots 35 acres or less. A typical system is for a 30 acre feedlot.		
Associated practices include: 430EE -Irrigation Water Conveyance--Pipeline--Low Pressure, Underground Plastic, 449-Irrigation Water Management, 533-Pumping Plant		
Geographic Area:	Statewide	
Unit for Cost Estimate:	Acre	
Practice Life (Years):	15	
Discount Rate (%/Year):	5%	
		Cost/Unit
Data Source: 2008 actual cost data.		
Materials		\$8,682.00
Total cost includes Materials, Equipment/Installation, Labor and Mobilization		
Equipment/Installation		\$0.00
Included in Materials		
Labor		\$0.00
Included in Materials		
Mobilization		\$0.00
Included in Materials		
Operation & Maintenance (Annual)		\$173.64
2% of materials, equipment/Installation and labor costs		
Acquisition of Technical Knowledge		\$0.00
N/A		
Forgone Income (Annual)		\$0.00
N/A		
Risk		\$0.00
N/A		
Administration & Permit Costs		\$0.00
N/A		
Total Cost Estimate:		\$8,855.64

ECONOMIC COST DATA

Cost Data

Practice Name: Irrigation System, Sprinkler		
Practice Code: 442		
Activity Type: 442.5 Solid Set System for Dust Control, Feedlots greater than 35 acres		
Typical Implementation Scenario		
This practice consists of installing a irrigation system for dust control on feedlots greater than 35 acres in size. A typical system for a 144 acre feed lot.		
Associated practices include: 430EE -Irrigation Water Conveyance--Pipeline--Low Pressure, Underground Plastic, 449-Irrigation Water Management, 533-Pumping Plant		
Geographic Area:	Statewide	
Unit for Cost Estimate:	Acre	
Practice Life (Years):	15	
Discount Rate (%/Year):	5%	
		Cost/Unit
Data Source: 2008 actual cost data.		
Materials		\$5,381.00
Total cost includes Materials, Equipment/Installation, Labor and Mobilization		
Equipment/Installation		\$0.00
Included in Materials		
Labor		\$0.00
Included in Materials		
Mobilization		\$0.00
Included in Materials		
Operation & Maintenance (Annual)		\$107.62
2% of materials, equipment/Installation and labor costs		
Acquisition of Technical Knowledge		\$0.00
N/A		
Forgone Income (Annual)		\$0.00
N/A		
Risk		\$0.00
N/A		
Administration & Permit Costs		\$0.00
N/A		
Total Cost Estimate:		\$5,488.62



ECONOMIC COST DATA

Cost Data

Practice Name: Irrigation System, Sprinkler

Practice Code: 442

Activity Type: 442.6 New Variable Rate Low Pressure Sprinkler System

Typical Implementation Scenario

This practice consists of installing a new variable rate low pressure, precision sprinkler system. The typical system is a pivot 1315 ft long with drops on 5 ft spacing. A typical system also includes pressure regulators, chemigation safety check valve, and a flow meter.

Associated practices include: 430EE -Irrigation Water Conveyance--Pipeline--Low Pressure, Underground Plastic, 449-Irrigation Water Management, 533-Pumping Plant

Geographic Area: Statewide

Unit for Cost Estimate: LF - Linear Foot

Practice Life (Years): 15

Discount Rate (%/Year): 5%

Data Source: 2008 vendor pricing.

Cost/Unit

Materials

\$65.83

Total cost includes Materials, Equipment/Installation, Labor and Mobilization

Component	Cost/Unit	Units	Quantity	Total Costs
Main Line	\$43.42	FT	1315	\$ 57,097.30
Flowmeter	\$990.14	EACH	1	\$ 990.14
Chemigation Valve	\$692.47	EACH	1	\$ 692.47
Pressure Regulators	\$6.60	EACH	264	\$ 1,742.40
Var. Rate Base Cost	\$7,300.00	EACH	1	\$ 7,300.00
Nodes	\$1,500.00	EACH	4	\$ 6,000.00
Variable Rate Valves	\$32.00	EACH	264	\$ 8,448.00
Labor	\$2,200.00	EACH	1	\$ 2,200.00
Distance Surcharge	\$2.00	MILE	1050	\$ 2,100.00
Total Cost of System				\$ 86,570.31

Equipment/Installation

\$0.00

Included in Materials

Labor

\$0.00

Included in Materials

Mobilization

\$0.00

Included in Materials

Operation & Maintenance (Annual)

\$1.32

2% of materials, equipment/Installation and labor costs

Acquisition of Technical Knowledge

\$0.00

N/A

Forgone Income (Annual)

\$0.00

None, no land taken out of production.

Risk

\$0.00

Reduced risk, can better manage irrigation water, agricultural chemicals and crops

Administration & Permit Costs

\$0.00

N/A

Total Cost Estimate:

\$67.15



ECONOMIC COST DATA

Practice Name: Irrigation System, Tailwater Recovery
Practice Code: 447
Activity Type: 447.1 Tailwater Recovery System

Typical Implementation Scenario

This practice consists of an impoundment or pit installed to temporarily store tailwater from surface irrigation systems. A typical system consists of a sediment basin, tailwater pit with a conduit to pass the water from the sediment basin into the tailwater pit. The typical job requires 7303 CY of excavation/fill and 100 ft of 18 inch conduit.

Construction Units (CU) are found by multiplying the designed or estimated "Quantity" by the given "Multiplier" as shown in the example in Table 1-A. The construction units for each component are then summed to give the "Total Construction Units" for the project. If a component is not used, there will be no construction units for that component. The Total Construction Units are then multiplied by the **Cost/Unit** given below to give the average cost of the project. Table 1-B is given as a template for computations.

Associated practices include: 350-Sediment Basin, 441-Irrigation System, Microirrigation, 442-Irrigation System, Sprinkler, 436-Irrigation Storage Reservoir

Data Source: 2009 actual cost data.

Geographic Area: Statewide

Unit for Cost Estimate: Construction Unit (CU)
Practice Life (Years): 20
Discount Rate (%/Year): 5%

Materials **Cost/Unit**
\$1.73
 Includes Equipment/Installation, Labor and Mobilization costs

Table 1-A Example

Component	Units	Quantity	Multiplier	CU
Earthwork	CY	7303	1.00	7,303.0
HCMP / Welded Steel	DIFT	1800	1.16	2,080.9
Plastic Pipe	DIFT	0	0.80	0.0
Concrete	CY	2	161.46	322.9
Trashguard	PF	44	10.53	463.4
Gypsum	TON	0	69.36	0.0
Riprap	CY	0	31.21	0.0
Filter (C33 sand)	CY	0	22.89	0.0
Total Construction Units				10,170.2

To determine the average cost for any component listed above, multiply \$1.73 times the "Multiplier" for that component. For example, the average cost of concrete would be \$1.73 x 161.46 = \$279.32 / CY.

Table 1-B

Component	Units	Quantity	Multiplier	CU
Earthwork	CY		1.00	
HCMP / Welded Steel	DIFT		1.16	
Plastic Pipe	DIFT		0.80	
Concrete	CY		161.46	
Trashguard	PF		10.53	
Gypsum	TON		69.36	
Riprap	CY		31.21	
Filter	CY		22.89	
Total Construction Units				

Equipment/Installation \$0.00
 (Included in Materials cost)

Labor \$0.00
 (Included in Materials cost)

Mobilization \$0.00
 Included in Materials

Operation & Maintenance (Annual) \$0.05
 3% of Installation Costs

Acquisition of Technical Knowledge \$0.00
 None

Forgone Income (Annual) \$0.00
 None, possible land brought into production.

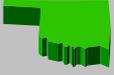
Risk \$0.00
 Reduced risk, change in land use

Administration & Permit Costs \$0.00
 None

Total Cost Estimate: **\$1.78**

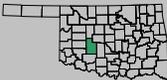
ECONOMIC COST DATA

Cost Data

Practice Name:	Irrigation Water Management	
Practice Code:	449	
Activity Type:	449.1 IWM - Higher Technology	
Typical Implementation Scenario		
This practice is for proper irrigation scheduling by utilizing "feel and appearance" soil moisture monitoring, daily evapotranspiration data, rain gauge data and flow meter checks. A typical management system is 125 Acres at a total cost of \$1787.50/yr.		
Associated practices include: 442-Irrigation System, Sprinkler, 441-Irrigation System, Microirrigation		
Geographic Area:	Statewide	
Unit for Cost Estimate:	Acre	
Practice Life (Years):	1	
Discount Rate (%/Year):	5%	
Data Source: OSU Budgets and Irrigation Data and Producer Interviews (2007)		
Materials		Cost/Unit
NA		\$0.00
Equipment/Installation		\$0.40
ET Gage - \$210.00 ÷ 10 yr = \$21.00/yr		
Soil Auger - \$262.50 ÷ 10 yr = 26.25/yr		
Rain Gage - \$21.00 ÷ 10 yr = 2.10/yr		
1 Year Cost/Unit = \$49.35 ÷ 125 Acres = \$0.40/Acre		
Labor		\$12.60
Reading ET Gage and recording keeping 124 hrs		
Reading Rain gauges and recording keeping 10 hrs		
"Feel and appearance" soil moisture check and flow meter reading -- 16 hrs		
1 Year Total Labor = 150 hrs @ \$10.50/hr = \$1575		
1 Year Cost/Unit = \$1575 ÷ 125 Acres = \$12.60/Acre		
Mobilization		\$0.00
NA		
Operation & Maintenance		\$0.00
NA		
Acquisition of Technical Knowledge		\$1.30
Working with technical specialists and attending seminars and training sessions are ways of gaining technical knowledge.		
Average 8 hours per year = \$160/yr		
1 Year Cost/Unit = \$160.00 ÷ 125 Acres = \$1.30/Acre		
Forgone Income		\$0.00
N/A		
Risk		\$0.00
N/A		
Administration & Permit Costs		\$0.00
N/A		
Total Cost Estimate:		\$14.30

ECONOMIC COST DATA

Cost Data

Practice Name: Precision Land Forming		
Practice Code: 462		
Activity Type: 462.1 Filling Gullies without Trees		
Typical Implementation Scenario		
<p>This practice consists of mechanically filling and grading gullies, which have few trees or no trees in the bottom and/or side slopes of the gullies being filled, for the purpose of controlling soil erosion by stopping the advancement of an active headcut and conveying surface runoff along a stable channel to a stable outlet, such as a grade stabilization structure. This practice does not apply to gullies that are mechanically shaped and can be stabilized by vegetation alone without the use of another structure. This practice does not apply to channels or gullies that are designed to be shaped and/or filled to a specific width and depth, such as a waterway. The typical job consists of 5700 CY of earthfill.</p>		
Associated practices include: 410-Grade Stabilization Structure, 590-Nutrient Management, 342-Critical Area Planting, 362-Diversion		
Geographic Area:	Sugar Creek Channelization Project	
Unit for Cost Estimate:	Cubic Yards (CY)	
Practice Life (Years):	1	
Discount Rate (%/Year):	5%	Cost/Unit
Data Source: 2009 Vendor Quote		
Materials		\$1.50
Includes costs of labor, machinery, and fuel		
Equipment/Installation		\$0.00
Included in Materials Cost		
Labor		\$0.00
Included in Materials Cost		
Mobilization		\$0.00
NA		
Operation & Maintenance		\$0.02
1% O&M factor		
Acquisition of Technical Knowledge		\$0.00
Knowledge to operate and manage application equipment		
Forgone Income		\$0.00
None		
Risk		\$0.00
Reduced risk, can better manage livestock waste, improve water quality		
Administration & Permit Costs		\$0.00
None		
Total Cost Estimate:		\$1.52

ECONOMIC COST DATA

Cost Data

Practice Name: Precision Land Forming

Practice Code: 462

Activity Type: 462.2 Filling Gullies with Trees

Typical Implementation Scenario

This practice consists of mechanically filling and grading gullies, which have trees in the bottom and/or side slopes of the gullies being filled, for the purpose of controlling soil erosion by stopping the advancement of an active headcut and conveying surface runoff along a stable channel to a stable outlet, such as a grade stabilization structure. This practice does not apply to gullies that are mechanically shaped and can be stabilized by vegetation alone without the use of another structure. This practice does not apply to channels or gullies that are designed to be shaped and/or filled to a specific width and depth, such as a waterway. The typical size of the trees being removed for this practice range between 8 inches and 3 feet DBH. The typical job consists of 5700 CY of earthfill and it also consists of removing and burning/burying 4.0 acres of trees outside of the construction area.

Construction Units (CU) are found by multiplying the designed or estimated "Quantity" by the given "Multiplier" as shown in the example in Table 1-A. The construction units for each component are then summed to give the "Total Construction Units" for the project. If a component is not used, there will be no construction units for that component. The Total Construction Units are then multiplied by the **Cost/Unit** given below to give the average cost of the project. Table 1-B is given as a template for computations.

Associated practices include: 410-Grade Stabilization Structure, 590-Nutrient Management, 342-Critical Area Planting, 362-Diversion

Geographic Area: Sugar Creek Channelization Project



Unit for Cost Estimate: Construction Units (CU)

Practice Life (Years): 1
Discount Rate (%/Year): 5%

Cost/Unit

Data Source: 2009 Vendor Quote

Materials

\$1.50

Includes Equipment/Installation, Labor and Mobilization Costs

Table 1-A Example

Component	Units	Quantity	Multiplier	CU
Earthwork	CY	5700	1.00	5,700.0
Tree Removal	AC	4	1013.77	4,055.1
Total Construction Units				9,755.1

To determine the average cost for any component listed above, multiply \$1.50 times the "Multiplier" for that component. For example, the average cost of Tree Removal would be \$1.50 x 1013.77 = \$1520.66 / AC.

Table 1-B

Component	Units	Quantity	Multiplier	CU
Earthwork	CY		1.00	
Tree Removal	AC		1013.66	
Total Construction Units				

Equipment/Installation

\$0.00

Included in Materials Cost.

Labor

\$0.00

Included in Materials Cost

Mobilization

\$0.00

Included in Materials Cost

Operation & Maintenance

\$0.02

1% O&M factor

Acquisition of Technical Knowledge

\$0.00

Knowledge to operate and manage application equipment

Forgone Income

\$0.00

None

Risk

\$0.00

None

Administration & Permit Costs

\$0.00

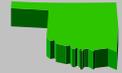
None

Total Cost Estimate:

\$1.52

ECONOMIC COST DATA

Practice Name:	Lined Waterway or Outlet	
Practice Code:	468	
Activity Type:	468.1 Concrete Lined Outlet	
Typical Implementation Scenario		
<p>This practice applies to the installation of an open weir concrete structures installed near head cuts to control erosion. This structure can only be used when the 10-yr-24 hr storm peak flow is equal or less than 200 cfs. The typical structure is 30 ft long and requires 12.8 cy of concrete. The concrete is reinforced with wire fabric or polypropylene fibers. Minor amounts of earthen excavation/fill is required for foundation and support dikes. Payment is based on cubic yards of concrete.</p>		
Associated practices include: 362-Diversion, 313 Waste Storage Facility, 359-Waste Treatment Lagoon, 412-Grassed Waterway		
Geographic Area:	Statewide	
Unit for Cost Estimate:	Cubic Yard (CY) of Concrete	
Practice Life (Years):	15	
Discount Rate (%/Year):	5%	
		Cost/Unit
Data Source: 2009 actual cost data.		
Materials		\$459.80
Total cost estimate for complete lined waterway or outlet, includes installation, labor, and mobilization.		
Equipment/Installation		\$0.00
Included in Materials Costs		
Labor		\$0.00
Included in Materials Costs		
Mobilization		\$0.00
Included in Materials Costs		
Operation & Maintenance (Annual)		\$45.98
10% of Installation Costs		
Acquisition of Technical Knowledge		\$0.00
None		
Forgone Income (Annual)		\$0.00
Minimal to no land taken out of production.		
Risk		\$0.00
None		
Administration & Permit Costs		\$0.00
None		
Total Cost Estimate:		\$505.78



ECONOMIC COST DATA

Cost Data

Practice Name: Use Exclusion

Practice Code: 472

Activity Type: 472.1 Access Control (use exclusion)

Typical Implementation Scenario

This practice is implemented to exclude use by livestock or vehicles from areas where an existing resource concern is present and protection is needed for recovery of the area. Examples may include riparian areas where livestock use has degraded the vegetation and streambanks and exclusion would improve these resources; A gullied area caused by livestock or vehicle traffic and that can improve when use of the area is excluded or limited. Exclusion periods may be from 1-3 years, depending on need. Monitoring will take place to ensure access is controlled (i.e. monitor fence to ensure effectiveness in excluding livestock)

Structural practices needed to accomplish this purpose (such as fences, access ramps, pipelines, tanks, ponds, etc.) are covered under their respective practices.

Typical scenario based on exclusion of 2% of 640 acres (12.8 acres).

Associated practices include: Fence (382), Animal Trails and Walkways (575), Prescribed Grazing (528), Heavy Use Area Protection (561), Watering Facility (614)

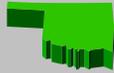
Geographic Area: Statewide

Unit for Cost Estimate: Acre

Practice Life (Years): 1

Discount Rate (%/Year): 5%

Cost Data Source: 2008 Average Cost Data



	Cost/Unit
Materials	\$0.00
N/A	
Equipment/Installation	\$0.00
None	
Labor	\$3.75
Monitoring to ensure exclusion and effectiveness. Based on .5 hours per month @ \$8.00 per hour	
Mobilization	\$0.00
None	
Operation & Maintenance (Annual)	\$0.00
None	
Acquisition of Technical Knowledge	\$0.00
None	
Forgone Income (Annual)	\$14.14
Loss of grazing / hay use for 1 year.	
Risk	\$0.00
Administration & Permit Costs	\$0.00
None	
Total Cost Estimate:	\$17.89

ECONOMIC COST DATA

Cost Data

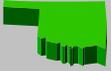
Practice Name: Mulching		
Practice Code: 484		
Activity Type: 484.1 - Geotextile Fabric Weed Barrier		
Typical Implementation Scenario		
<p>This practice consists of applying 6 feet wide strips of geotextile fabric (weed barrier) material in tree/shrub planting rows during the establishment year to control weed competition and conserve moisture. The typical scenario involves installing weed barrier in each row of a 3 row, bare root tree seedling planting, to establish a windbreak, oriented east to west along the edge of an 80 acre cropland field</p> <p>This practice includes the costs of the geotextile fabric, anchoring materials, equipment and labor associated with placing the fabric in place.</p>		
Associated practices include: Tree/Shrub Establishment (612), Tree/Shrub Site Preparation (490), Windbreak/Shelterbreak Establishment (380), Riparian Forest Buffer (391)		
Geographic Area:	Statewide	
Unit for Cost Estimate:	LF	
Practice Life (Years):	1	
Discount Rate (%/Year):	5%	
Data Source: 2009 cost data from ODAFF.		Cost/Unit
Materials		\$0.40
Geotextile Fabric/Anchoring Materials/Equipment/Labor		
Equipment/Installation		\$0.00
Included in Materials Cost		
Labor		\$0.00
Included in Materials Cost		
Mobilization		\$0.00
Included in Materials Cost		
Operation & Maintenance		\$0.00
0% O&M factor		
Acquisition of Technical Knowledge		\$0.00
N/A		
Forgone Income		\$0.00
N/A		
Risk		\$0.00
N/A		
Administration & Permit Costs		\$0.00
None		
Total Cost Estimate:		\$0.40



ECONOMIC COST DATA

Cost Data

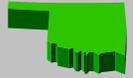
Practice Name:	Mulching	
Practice Code:	484	
Activity Type:	484.2 - Hay Mulch	
Typical Implementation Scenario		
This practice consists of applying hay mulch material during the grass establishment year to control weed competition, conserve moisture and reduce erosion. Native prairie grass hay will be uniformly distributed and anchored on a 1.5 acre gullied area which has been smoothed leveled and seeded to native grass.		
This practice includes the costs of the hay mulch, equipment and labor associated with placing the material.		
Associated practices include: Pasture and Hayland Planting (512), Range Planting (550), Salinity and Sodic Soil Management (610), Nutrient Management (590), Critical Area Planting (342)		
Geographic Area:	Statewide	
Unit for Cost Estimate:	Acre	
Practice Life (Years):	1	
Discount Rate (%/Year):	5%	
		Cost/Unit
Data Source: 2009 current vendor pricing.		
Materials		\$600.00
Organic Mulch/Equipment/Labor		
Equipment/Installation/Labor		\$0.00
Included in Materials Cost		
Labor		\$0.00
Included in Materials Cost		
Mobilization		\$0.00
Included in Materials Cost		
Operation & Maintenance		\$0.00
0% O&M factor		
Acquisition of Technical Knowledge		\$0.00
N/A		
Forgone Income		\$0.00
N/A		
Risk		\$0.00
N/A		
Administration & Permit Costs		\$0.00
None		
Total Cost Estimate:		\$600.00



ECONOMIC COST DATA

Cost Data

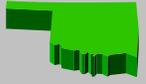
Practice Name:	Tree/Shrub Site Preparation	
Practice Code:	490	
Activity Type:	490.1 - Mechanical Seedbed Preparation	
Typical Implementation Scenario		
Treating areas with tillage implements (disk, plow, etc.) to improve site conditions for establishing trees and/or shrubs.		
This scenario includes the cost of tractor, equipment, and labor for a total of four tillage trips to prepare a seedbed in preparation of planting trees or shrubs to establish a windbreak/shelterbelt in heavy sod . This mechanical seedbed preparation is used for tree and shrub plantings on non-cultivated ground only.		
Associated practices include: Pest Management (595), Tree/Shrub Pruning (660), Brush Management (314), Forest Stand Improvement (666), Silvopasture Establishment (381), Firebreak (394), Access Control (472), Tree/Shrub Planting (612), Forest Slash Treatment (384)		
Data Source: 2009 cost data from ODAFF, Foresters		
Geographic Area:	Statewide	
Unit for Cost Estimate:	Acre	
Practice Life (Years):	1	
Discount Rate (%/Year):	5%	
		Cost/Unit
Materials		\$38.00
Materials includes complete installation costs.		
Equipment/Installation		\$0.00
N/A		
Labor		\$0.00
N/A		
Mobilization		\$0.00
N/A		
Operation & Maintenance		\$5.70
Continued suppression of competitive vegetation the first year - 15%		
Acquisition of Technical Knowledge		\$0.00
None		
Forgone Income (Annual)		\$0.00
None		
Risk		\$0.00
None		
Administration & Permit Costs		\$0.00
None		
Total Cost Estimate:		\$43.70



ECONOMIC COST DATA

Cost Data

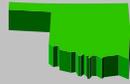
Practice Name: Tree/Shrub Site Preparation		
Practice Code: 490		
Activity Type: 490.2 - Chemical Seedbed Preparation		
Typical Implementation Scenario		
Treating forested areas with an aerial chemical application to control various hardwood species such as oak, hickory, blackberry, elm, etc. to improve site conditions for establishing/planting pine trees.		
This scenario includes a herbicide application with a mixture of Imazapyr, Metsulfuron methyl and Glyphosate to control vegetative competition prior to planting loblolly pine trees on an 80 acre brush infested field. Other costs may include scouting and record keeping. Chemical treatments to suppress competitive vegetation on other planting sites will be accomplished by using the pest management practice.		
Associated practices include: Pest Management (595), Tree/Shrub Pruning (660), Brush Management (314), Forest Stand Improvement (666), Silvopasture Establishment (381), Firebreak (394), Access Control (472), Tree/Shrub Planting (612) Forest Slash Treatment (384)		
Geographic Area:	Statewide	
Unit for Cost Estimate:	Acre	
Practice Life (Years):	1	
Discount Rate (%/Year):	5%	
		Cost/Unit
Data Source: 2009 cost data from ODAFF, Foresters		
Materials		\$80.00
Herbicide cost per acre		
Equipment/Installation		\$0.00
Included in Labor cost		
Labor		\$40.00
Cost to aerially apply herbicide per acre		
Mobilization		\$0.00
N/A		
Operation & Maintenance (Annual)		\$0.00
N/A		
Acquisition of Technical Knowledge		\$0.00
None		
Forgone Income (Annual)		\$0.00
None		
Risk		\$0.00
None		
Administration & Permit Costs		\$0.00
None		
Total Cost Estimate:		\$120.00



ECONOMIC COST DATA

Cost Data

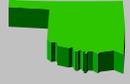
Practice Name: Tree/Shrub Site Preparation		
Practice Code: 490		
Activity Type: 490.3 - Complete Forest Site Preparation		
Typical Implementation Scenario		
Treating forested areas to improve site conditions for establishing/re-establishing forestland.		
This scenario is only for establishment of forestland, and includes the costs of equipment, labor and supplies for mechanical site preparation done to the soil to prepare an adequate seedbed prior to planting loblolly pine trees on an 80 acre field consisting of logging debris and/or competing woody vegetation. This includes applications such as roller chopping, bulldozing, shearing, root plowing, and other approved methods necessary to meet the NRCS Forest Site Preparation (490) practice standards and specifications.		
Associated practices include: Pest Management (595), Tree/Shrub Pruning (660), Brush Management (314), Forest Stand Improvement (666), Silvopasture Establishment (381), Firebreak (394), Access Control (472), Tree/Shrub Planting (612), Prescribed Burning (338), Forest Slash Treatment (384)		
Geographic Area:	Statewide	
Unit for Cost Estimate:	Acre	
Practice Life (Years):	1	
Discount Rate (%/Year):	5%	
Data Source: 2009 cost data from ODAFF, Foresters		Cost/Unit
Materials		\$0.00
None		
Equipment/Installation		\$141.00
Includes costs of bulldozer/tractors, implements and labor.		
Labor		\$0.00
Included in Installation cost.		
Mobilization		\$0.00
N/A		
Operation & Maintenance (Annual)		\$0.00
N/A		
Acquisition of Technical Knowledge		\$0.00
None		
Forgone Income (Annual)		\$0.00
None		
Risk		\$0.00
None		
Administration & Permit Costs		\$0.00
None		
Total Cost Estimate:		\$141.00



ECONOMIC COST DATA

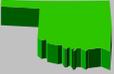
Cost Data

Practice Name:	Tree/Shrub Site Preparation	
Practice Code:	490	
Activity Type:	490.4 - Soil Ripping	
Typical Implementation Scenario		
<p>Treating forested areas by ripping 18-24 inches deep on a 9 foot spacing with a D-6 dozer to allow moisture to penetrate, roots to grow and make hand planting of trees easier. Treatment must be done before planting.</p> <p>This scenario is only for establishment of forestland, and includes the costs of a bulldozer, equipment, and labor for ripping operations required to prepare an adequate seedbed prior to planting trees on a 80 acre upland field.</p>		
Associated practices include: Tree/Shrub Pruning (660), Brush Management (314), Forest Stand Improvement (666), Silvopasture Establishment (381), Firebreak (394), Access Control (472), Tree/Shrub Planting (612), Forest Slash Treatment (384), Prescribed Burning (338),		
Geographic Area:	Statewide	
Unit for Cost Estimate:	Acre	
Practice Life (Years):	1	
Discount Rate (%/Year):	5%	
		Cost/Unit
Data Source: 2009 cost data from ODAFF, Foresters		
Materials		\$0.00
None		
Equipment/Installation		\$95.00
Bulldozer, implement and labor.		
Labor		\$0.00
Included in installation cost		
Mobilization		\$0.00
N/A		
Operation & Maintenance		\$0.00
Acquisition of Technical Knowledge		\$0.00
None		
Forgone Income (Annual)		\$0.00
None		
Risk		\$0.00
None		
Administration & Permit Costs		\$0.00
None		
Total Cost Estimate:		\$95.00



ECONOMIC COST DATA

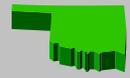
Cost Data

Practice Name:	Tree/Shrub Site Preparation	
Practice Code:	490	
Activity Type:	490.5 - Brushhogging	
Typical Implementation Scenario		
Treating areas by brushhogging to improve site conditions for establishing trees and/or shrubs.		
This scenario includes the cost of tractor, equipment, and labor to prepare a seedbed through a brush hogging operation, in preparation of planting an 80 acre field to loblolly pine trees in brushy and/or heavily vegetated areas.		
Associated practices include: Tree/Shrub Pruning (660), Brush Management (314), Forest Stand Improvement (666), Silvopasture Establishment (381), Firebreak (394), Access Control (472), Tree/Shrub Planting (612), Forest Slash Treatment (384), Prescribed Burning (338), Pest Management (595)		
Data Source: 2009 cost data from ODAFF, Foresters		
Geographic Area:	Statewide	
Unit for Cost Estimate:	Acre	
Practice Life (Years):	1	
Discount Rate (%/Year):	5%	Cost/Unit
Materials		\$25.00
Materials includes complete installation costs.		
Equipment/Installation		\$0.00
N/A		
Labor		\$0.00
N/A		
Mobilization		\$0.00
N/A		
Operation & Maintenance		\$0.00
N/A		
Acquisition of Technical Knowledge		\$0.00
None		
Forgone Income (Annual)		\$0.00
None		
Risk		\$0.00
None		
Administration & Permit Costs		\$0.00
None		
Total Cost Estimate:		\$25.00

ECONOMIC COST DATA

Cost Data

Practice Name:	Obstruction Removal	
Practice Code:	500	
Activity Type:	500.1 Terrace Removal	
Typical Implementation Scenario		
This practice applies to the removal of terrace ridges on fields that are to be established to grass. The typical job is 12640 LF at a cost of \$5,561.60		
Associated practices include: 342-Critical Area Planting, 590-Nutrient Management		
Geographic Area:	Statewide	
Unit for Cost Estimate:	LF	
Practice Life (Years):	10	
Discount Rate (%/Year):	5%	
Data Source: 2009 & 2008 actual cost data		
Materials		\$0.00
None		
Equipment/Installation		\$0.52
Includes Labor and mobilization costs.		
Labor		\$0.00
Included in Equipment/Installation Cost		
Mobilization		\$0.00
Included in Equipment/Installation Cost		
Operation & Maintenance (Annual)		\$0.03
5% of Installation Costs		
Acquisition of Technical Knowledge		\$0.00
None		
Forgone Income (Annual)		\$0.00
None		
Risk		\$0.00
None		
Administration & Permit Costs		\$0.00
None		
Total Cost Estimate:		\$0.55

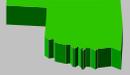


Cost/Unit

ECONOMIC COST DATA

Cost Data

Practice Name:	Obstruction Removal	
Practice Code:	500	
Activity Type:	500.2 Obstruction Removal	
Typical Implementation Scenario		
This practice applies to the removal and disposal of obstructions (other than terrace ridge) that will interfere with planned land use. A typical job consists of removing earthrow (fence row). 1320 ft long involving 2500 CY of material at a cost of \$1450.00		
Associated practices include: 342-Critical Area Planting, 590-Nutrient Management		
Geographic Area:	Statewide	
Unit for Cost Estimate:	CY	
Practice Life (Years):	10	
Discount Rate (%/Year):	5%	
Data Source:	2008 vendor quote	
Materials		Cost/Unit
None		\$0.00
Equipment/Installation		\$1.39
Includes Labor and mobilization costs.		
Labor		\$0.00
Included in Equipment/Installation Cost		
Mobilization		\$0.00
Included in Equipment/Installation Cost		
Operation & Maintenance (Annual)		\$0.03
5% of Installation Costs		
Acquisition of Technical Knowledge		\$0.00
None		
Forgone Income (Annual)		\$0.00
None		
Risk		\$0.00
None		
Administration & Permit Costs		\$0.00
None		
Total Cost Estimate:		\$1.42



ECONOMIC COST DATA

Cost Data

Practice Name: Forage Harvest Management		
Practice Code: 511		
Activity Type: 511.1 Forage Harvest		
Typical Implementation Scenario		
This practice applies to the harvest of forage crops for hay, green-chop or silage in an organic system.		
This scenario is based on forages being harvested only once per season to maintain a desired healthy plant community and stand life. Managing for healthy desirable plants will lessen incidence of disease, insect damage and weed infestations.		
Associated practices include: Prescribed Grazing (528), Prescribed Burning (338), Nutrient Management (590), Pest Management (595)		
Geographic Area: Statewide		
Unit for Cost Estimate: Acre		
Practice Life (Years): 1		
Discount Rate (%/Year): 5%		
		Cost/Unit
Data Source: 2008 Custom rates		
Materials		\$0.00
Equipment/Installation		\$0.00
Included in Labor cost		
Labor		\$40.72
Mowing forages	\$10.61	
Raking hay	\$3.63	
Swathing	\$11.34	
Baling (round bales)	\$12.14	
Hauling and storage	\$3.00	
Mobilization		\$0.00
Included in Labor Cost		
Operation & Maintenance		\$0.00
None		
Acquisition of Technical Knowledge		\$0.00
Forgone Income		\$0.00
Risk		\$0.00
None		
Administration & Permit Costs		\$0.00
None		
Total Cost Estimate:		\$40.72

ECONOMIC COST DATA

Cost Data

Practice Name: Pasture and Hay Planting		
Practice Code: 512		
Activity Type: 512.1 Bermudagrass Sprigging - Seedbed preparation, sprigs, and sprigging		
Typical Implementation Scenario		
Establishing bermudagrass by sprigging, according to the Oklahoma NRCS Pasture and Hay Planting (512) standard and specification. Includes seedbed preparation consisting of disking and cultivator.		
Associated practices include: Nutrient Management (590), Pest Management (595), Prescribed Grazing (528), Forage Harvest Management (511)		
Geographic Area:	Statewide	
Unit for Cost Estimate:	Acre	
Practice Life (Years):	10	
Discount Rate (%/Year):	5%	
Data Source: 2009 LTP-11 data, various seed dealers and custom rates (2008)		Cost/Unit
Materials		
Sprigs - included in equipment and installation		
Fertilizer and/or other amendments needed for establishment are covered under the Nutrient Management (590) cost data		
Equipment/Installation		
Tractor / sprigger and sprigs and labor cost associated with sprigging	\$79.77	\$96.51
Seedbed Preparation. Most seedbed preparation work is done as part of tillage operations for previously grown crops. In some cases an extra tillage or firming operation may be needed prior to planting. Costs includes one disking and packing operation.	\$16.74	
Labor		
Costs included with equipment and installation		\$0.00
Mobilization		
N/A		
Operation & Maintenance		
1% of installation costs		\$0.97
Acquisition of Technical Knowledge		
Calibrate and operate seed drill, manage perennial grass		\$0.00
Forgone Income		
Lost forage production during installation (1-year deferment)		\$15.24
Risk		
Reduced risk, less erosion, less machinery wear & tear.		\$0.00
Administration & Permit Costs		
None		
Total Cost Estimate:		\$112.72

ECONOMIC COST DATA

Cost Data

Practice Name: Pasture and Hay Planting

Practice Code: 512

Activity Type: 512.2 Introduced Species - Seedbed Preparation, Seed & Seeding

Typical Implementation Scenario

Establishing perennial introduced forage species (i.e. bermudagrass, old world bluestems, tall fescue, weeping lovegrass, etc.) alone or as a mixture (including legumes), according to the Oklahoma NRCS Pasture and Hay Planting (512) standard and specification. Includes seedbed preparation consisting of disking and cultivator.

Associated practices include: Nutrient Management (590), Pest Management (595), Prescribed Grazing (528), Forage Harvest Management (511)

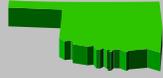
Geographic Area: Statewide

Unit for Cost Estimate: Acre

Practice Life (Years): 10

Discount Rate (%/Year): 5%

Data Source: 2009 LTP-11 data, various seed dealers and custom rates (2008)



	<u>Cost/Unit</u>
Materials	\$34.91
Seed (based on average lbs. PLS and cost per lb. PLS needed to meet 512 Standard and Specification for introduced species plantings)	
Fertilizer and/or other amendments needed for establishment are covered under the Nutrient Management (590) cost data	
Does not include cost of cover crops if needed.	
Equipment/Installation	\$23.74
Tractor / drill	\$7.00
includes labor costs	
Seedbed Preparation. Most seedbed preparation work is done as part of tillage operations for previously grown crops. In some cases an extra tillage or firming operation may be needed prior to planting.	\$16.74
Labor	
Costs included with equipment and installation	
Mobilization	
N/A	
Operation & Maintenance	\$0.59
1% of installation costs	
Acquisition of Technical Knowledge	\$0.00
Calibrate and operate seed drill, manage perennial grass	
Forgone Income	\$15.24
Lost forage production during installation (1-year deferment)	
Risk	\$0.00
Reduced risk, less erosion, less machinery wear & tear.	
Administration & Permit Costs	\$0.00
None	
Total Cost Estimate:	\$74.48

ECONOMIC COST DATA

Cost Data

Practice Name: Pasture and Hay Planting	
Practice Code: 512	
Activity Type: 512.3 Native species - Seedbed Preparation, Seed & Seeding	
Typical Implementation Scenario	
Establishing native forage species (big bluestem, switchgrass, indiangrass, eastern gamagrass, etc.) as monoculture or mixture (2-4 species), according to the Oklahoma NRCS Pasture and Hay Planting (512) standard and specification. Includes seedbed preparation consisting of disking and cultivator.	
Associated practices include: Nutrient Management (590), Pest Management (595), Prescribed Grazing (528), Forage Harvest Management (511)	
Geographic Area:	Statewide
Unit for Cost Estimate:	Acre
Practice Life (Years):	10
Discount Rate (%/Year):	5%
Data Source: 2009 LTP-11 data, various seed dealers and custom rates (2008)	
	Cost/Unit
Materials	\$51.65
Seed (based on average lbs. PLS and cost per lb. PLS needed to meet 512 Standard and Specification for native grasses plantings) Does not include cost of cover crops if needed Fertilizer and/or other amendments needed for establishment are covered under the Nutrient Management (590) cost data	
Equipment/Installation	\$23.74
Tractor / drill	\$7.00
includes labor costs	
Seedbed Preparation. Most seedbed preparation work is done as part of tillage operations for previously grown crops. In some	\$16.74
Labor	
Costs included with equipment and installation	
Mobilization	
N/A	
Operation & Maintenance	\$0.75
1% of installation costs	
Acquisition of Technical Knowledge	\$0.00
Calibrate and operate seed drill, manage perennial grass	
Forgone Income	\$10.00
Lost forage production during installation (1-year deferment)	
Risk	\$0.00
Reduced risk, less erosion, less machinery wear & tear.	
Administration & Permit Costs	\$0.00
None	
Total Cost Estimate:	\$86.14

ECONOMIC COST DATA

Cost Data

Practice Name:	Pasture and Hay Planting		
Practice Code:	512		
Activity Type:	512.4 Legumes - Seedbed Preparation, Seed & Seeding		
Typical Implementation Scenario			
Establishing perennial introduced legumes (white clover, red clover, birdsfoot trefoil, cicer milkvetch, etc.) into an existing stand of introduced grasses to increase diversity, according to the Oklahoma NRCS Pasture and Hay Planting (512) standard and specification. Plantings are incorporated after base grasses are in place (following pasture planting for grasses) or overseeded into existing stands. When mixing legumes with grass seed for establishment, refer to 512.2.			
Associated practices include: Nutrient Management (590), Pest Management (595), Prescribed Grazing (528), Forage Harvest Management (511)			
Geographic Area:	Statewide		
Unit for Cost Estimate:	Acre		
Practice Life (Years):	10		
Discount Rate (%/Year):	5%		
Data Source: 2009 LTP-11 data, various seed dealers and custom rates (2008)			Cost/Unit
Materials			\$18.00
Costs include: Seed (based on average lbs. PLS and cost per lb. PLS needed to meet 512 Standard and Specification for legume planting); inoculants as required for species planted; any pre-planting preparation as needed to enhance existing stands of grass (mowing, herbicides, disking or burning to create seedbed). Fertilizer and/or other amendments needed for establishment are covered under the Nutrient Management (590) cost data			
Equipment/Installation			\$10.14
	Tractor / drill or broadcaster	\$10.14	
includes labor costs			
Labor			
Costs included with equipment and installation			
Mobilization			
N/A			
Operation & Maintenance			\$0.28
1% of installation costs			
Acquisition of Technical Knowledge			\$0.00
Calibrate and operate seed drill, manage perennial grass			
Forgone Income			\$0.00
None			
Risk			\$0.00
Reduced risk, less erosion, less machinery wear & tear.			
Administration & Permit Costs			\$0.00
None			
Total Cost Estimate:			\$28.42

ECONOMIC COST DATA

Cost Data

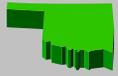
Practice Name:	Pipeline	
Practice Code:	516	
Activity Type:	516.1 Livestock Pipeline	
Typical Implementation Scenario		
This practice applies to a pipeline installed to deliver water from the water source to a watering facility. The typical pipeline consists of 1200 FT of 1 inch pipe.		
Associated practices include: 614-Watering Facility, 642-Water Well, 533-Pumping Plant		
Geographic Area:	Statewide	
Unit for Cost Estimate:	DIFT	
Practice Life (Years):	20	
Discount Rate (%/Year):	5%	
		Cost/Unit
Data Source: 2009 actual cost data		
Materials		\$1.66
Total Cost includes Materials, Equipment/Installation, Labor and Mobilization		
If a water meter tap is required in a rural water line, 302 DIFT can be added to the total DIFT of the pipeline.		
Equipment/Installation		\$0.00
Included in Materials Cost		
Labor		\$0.00
Included in Materials Cost		
Mobilization		\$0.00
Included in Materials Cost		
Operation & Maintenance (Annual)		\$0.03
2% of materials, equipment/Installation and labor costs		
Acquisition of Technical Knowledge		\$0.00
Pipe installation skills, design, layout		
Forgone Income (Annual)		\$0.00
None, no land taken out of production		
Risk		\$0.00
Reduced risk, better irrigation water control		
Administration & Permit Costs		\$0.00
None		
Total Cost Estimate:		\$1.69



ECONOMIC COST DATA

Cost Data

Practice Name:	Pond Sealing or Lining, Bentonite Sealant	
Practice Code:	521C	
Activity Type:	521C.1 Bentonite/Clay	
Typical Implementation Scenario		
This practice applies to a bentonite sealant installed in a pond to reduce seepage losses to an acceptable level. A typical job consist of installing Bentonite liner in a 1.0 surface acre pond using 2 - 4 inch thick treated blankets with 1.5 lbs per sq-ft on each treated blanket.		
Associated practices include: 378-Pond, 552-Irrigation Regulating Reservoir, 436-Irrigation Storage Reservoir, 359-Waste Treatment Lagoon, 313-Waste Storage Facility		
Geographic Area:	Statewide	
Unit for Cost Estimate:	CY	
Practice Life (Years):	15	
Discount Rate (%/Year):	5%	
		Cost/Unit
Data Source: 2008 actual cost data and current vendor pricing.		
Materials		\$8.25
Includes cost of Equipment/Installation, Labor, and Mobilization		
29,000 lbs of Bentonite		
Fill - 1076 CY		
\$8.25/CY of Treated Liner		
Equipment/Installation		\$0.00
Included in Materials Cost		
Labor		\$0.00
Included in Materials Cost		
Mobilization		\$0.00
Included in Materials Cost		
Operation & Maintenance (Annual)		\$0.25
3% of Installation Costs		
Acquisition of Technical Knowledge		\$0.00
None		
Forgone Income (Annual)		\$0.00
Minimal to no land taken out of production.		
Risk		\$0.00
None		
Administration & Permit Costs		\$0.00
None		
Total Cost Estimate:		\$8.50



ECONOMIC COST DATA

Cost Data

Practice Name: Prescribed Grazing

Practice Code: 528

Activity Type: 528.1 Prescribed Grazing

Typical Implementation Scenario

Implementing a [new or modified](#) prescribed grazing plan to address identified resource concerns. The grazing plan must ensure a balance between forage supply and animal demand and will meet the needs of both the plant (health and vigor) and animal (nutritional needs) resources. Where producer objectives include wildlife, the system will also address critical habitat needs.

The prescribed grazing plan will include a complete resource inventory including forage production, livestock numbers and types to support proper grazing use and a balance between supply and demand and a schedule of grazing (timing and duration) that provides sufficient recovery time during the growing season to meet resource needs and planned objectives. Record keeping (including dates of grazing, grazing durations, residue heights before and after) will be conducted to support implementation of the grazing plan. A monitoring plan will be in place that includes at least two of the following: use exclosures, photo points, range health, pasture condition, fecal samples, transects.

[Water development and/or fencing that may be needed to facilitate the new grazing system](#) are explained under their respective practices. [Prescribed burning to implement a patch burn grazing system is applied according to a prescribed burning plan.](#)

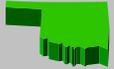
Associated practices include: Fence (382), Watering Facility (614), Prescribed Burning (338)

Geographic Area: Statewide

Unit for Cost Estimate: Ac

Practice Life (Years): 1

Discount Rate (%/Year): 5%



Data Source: Cost estimates from technical specialists

All costs based on implementation on 640 acres

Materials

Included in Equipment and Installation

Cost/Unit

\$0.00

Equipment/Installation

Includes labor and equipment (i.e. clipping supplies, enclosures, etc) needed for inventory and monitoring residuals, implementing monitoring plans as described in the scenario narrative and additional management of livestock (i.e. rotations, herding, etc.) needed to accomplish the overall objectives of the prescribed grazing plan. The time needed nor expenses include time and work already associated with the operation such as vaccinations, checking fences, monitoring calving, etc.

\$9.80

Labor

Included in Equipment and Installation

\$0.00

Mobilization

N/A

\$0.00

Operation & Maintenance

N/A

\$0.00

Acquisition of Technical Knowledge

Included in Equipment and Installation

\$0.00

Forgone Income

none

\$0.00

Risk

\$0.00

Administration & Permit Costs

None

\$0.00

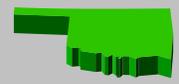
Total Cost Estimate:

\$9.80

ECONOMIC COST DATA

Cost Data

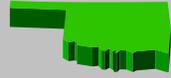
Practice Name:	Pumping Plant	
Practice Code:	533	
Activity Type:	533.1 Solar Powered	
Typical Implementation Scenario		
This practice applies to a solar powered pumping plant that provides water for agriculture use such as livestock or wildlife water. A typical solar powered pumping plant consists of installing a solar pump and solar panels that will deliver 1250 gallons of water per day at a cost of \$5,525.00.		
Associated practices include: 614-Watering Facility, 642-Water Well, 516-Pipeline		
Geographic Area:	Statewide	
Unit for Cost Estimate:	gallons/day	
Practice Life (Years):	15	
Discount Rate (%/Year):	5%	
		Cost/Unit
Data Source: 2009 actual cost data.		
Materials		\$4.42
Total cost includes Materials, Equipment/Installation, Labor and Mobilization		
Equipment/Installation		\$0.00
Included in Materials		
Labor		\$0.00
Included in Materials		
Mobilization		\$0.00
Included in Materials		
Operation & Maintenance (Annual)		\$0.09
2% of Installation Cost		
Acquisition of Technical Knowledge		\$0.00
N/A		
Forgone Income (Annual)		\$0.00
None		
Risk		\$0.00
None		
Administration & Permit Costs		\$0.00
None		
Total Cost Estimate:		\$4.51



ECONOMIC COST DATA

Cost Data

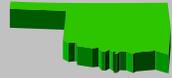
Practice Name:	Pumping Plant	
Practice Code:	533	
Activity Type:	533.2 Electric Powered	
Typical Implementation Scenario		
<p>This practice applies to the installation of an electric powered pumping plant that will improve the efficiency for an existing irrigation system. The types of irrigation systems that apply to this practice are tailwater recovery systems, microirrigation systems that irrigate more than 90 acres, or low pressure sprinkler systems. The typical pumping plant provides the needed water for 130 AC irrigation system at a total cost of \$15,500.00.</p> <p>This same scenario can also be used for establishing costs for waste pumps used in disposal of waste water as part of a waste management plan. This practice is not to be used for portable PTO pumps.</p> <p>Associated practices include: 441-Irrigation System, Microirrigation, 442-Irrigation System, Sprinkler, 447-Irrigation System, Tailwater Recovery, 430EE-Irrigation Water Conveyance--Pipeline--Lowpressure, Underground, Plastic</p>		
Geographic Area:	Statewide	
Unit for Cost Estimate:	Each	
Practice Life (Years):	15	
Discount Rate (%/Year):	5%	
		Cost/Unit
<p>Cost is based on 2006 Lugert-Altus LEA cost list which is for a turnkey installation of pump with electric motor plus cost adjustment for inflation. No actual cost data has been collected in FY 2007 - 2009.</p>		
Materials		\$15,500.00
Total cost includes Materials, Equipment/Installation, Labor and Mobilization		
Equipment/Installation		\$0.00
Included in Materials		
Labor		\$0.00
Included in Materials		
Mobilization		\$0.00
Included in Materials		
Operation & Maintenance (Annual)		\$310.00
2% of Installation Cost		
Acquisition of Technical Knowledge		\$0.00
N/A		
Forgone Income (Annual)		\$0.00
None		
Risk		\$0.00
None		
Administration & Permit Costs		\$0.00
None		
Total Cost Estimate:		\$15,810.00



ECONOMIC COST DATA

Cost Data

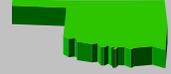
Practice Name:	Pumping Plant	
Practice Code:	533	
Activity Type:	533.3 Electric Pump for Microirrigation System Less Than 90 Acres	
Typical Implementation Scenario		
<p>This practice applies to the installation of an electric powered pumping plant that will improve the efficiency for an existing irrigation system. The types of irrigation systems that apply to this practice are microirrigation systems that irrigate less than 90 acres. The typical pumping plant provides the needed water for 90 AC irrigation system at a total cost of \$8,532.00.</p>		
Associated practices include: 441-Irrigation System, Microirrigation		
Geographic Area:	Statewide	
Unit for Cost Estimate:	Each	
Practice Life (Years):	15	
Discount Rate (%/Year):	5%	
		Cost/Unit
Data Source: 2009 actual cost data.		
Materials		\$8,532.00
Total cost includes Materials, Equipment/Installation, Labor and Mobilization		
Equipment/Installation		\$0.00
Included in Materials		
Labor		\$0.00
Included in Materials		
Mobilization		\$0.00
Included in Materials		
Operation & Maintenance (Annual)		\$170.64
2% of Installation Cost		
Acquisition of Technical Knowledge		\$0.00
N/A		
Forgone Income (Annual)		\$0.00
None		
Risk		\$0.00
None		
Administration & Permit Costs		\$0.00
None		
Total Cost Estimate:		\$8,702.64



ECONOMIC COST DATA

Cost Data

Practice Name:	Pumping Plant	
Practice Code:	533	
Activity Type:	533.4 Internal Combustion Engine	
Typical Implementation Scenario		
<p>This practice applies to the installation of an internal combustion engine pumping plant that will improve the efficiency for an existing irrigation system. The types of irrigation systems that apply to this practice are tailwater recovery systems, microirrigation systems, or low pressure sprinkler systems. The typical pumping plant provides the needed water for 130 AC irrigation system at a total cost of \$24,200.00</p> <p>This same scenario can also be used for establishing costs for waste pumps (both portable and permanent) used in disposal of waste water as part of a waste management plan. Portable pumps may be needed where permanent pumps cannot as effectively serve the purpose (i.e. a system with two lagoons). This practice is not to be used for portable PTO pumps.</p>		
Associated practices include: 441-Irrigation System, Microirrigation, 442-Irrigation System, Sprinkler, 447-Irrigation System, Tailwater Recovery, 430EE-Irrigation Water Conveyance--Pipeline--Lowpressure, Underground, Plastic		
Geographic Area:	Statewide	
Unit for Cost Estimate:	Each	
Practice Life (Years):	15	
Discount Rate (%/Year):	5%	
		Cost/Unit
Data Source: 2008 actual cost data and current vendor pricing.		
Materials		\$24,200.00
Total cost includes Materials, Equipment/Installation, Labor and Mobilization		
Equipment/Installation		\$0.00
Included in Materials		
Labor		\$0.00
Included in Materials		
Mobilization		\$0.00
Included in Materials		
Operation & Maintenance (Annual)		\$484.00
2% of Installation Cost		
Acquisition of Technical Knowledge		\$0.00
N/A		
Forgone Income (Annual)		\$0.00
None		
Risk		\$0.00
None		
Administration & Permit Costs		\$0.00
None		
Total Cost Estimate:		\$24,684.00



ECONOMIC COST DATA

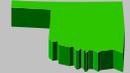
Cost Data

Practice Name:	Pumping Plant	
Practice Code:	533	
Activity Type:	533.5 Pumping Plant Waste Water (Pump Only)	
Typical Implementation Scenario		
<p>This practice is for the installation of a permanent or portable pump and appurtenances designed to handle waste water from waste storage ponds, waste treatment lagoons, or other facilities where waste water needs proper disposal. This practice covers only the pump and appurtenances; it does not cover any type of power supply to the pumping plant. If the planner intends for monetary program assistance to be applied to the purchase and installation of a power supply for the pumping plant, then 533.2-Pumping Plant--Electric Powered or 533.4-Pumping Plant--Internal Combustion Engine are to be used instead of this practice. This practice is not to be used livestock water well pumps or deep well irrigation pumps. A typical pumping plant is a portable PTO pump that will deliver 200 gpm at 100 psi discharge pressure at a cost of \$1,210.00</p>		
Associated practices include: 430EE-Irrigation Water Conveyance--Pipeline--Lowpressure, Underground, Plastic, 590-Nutrient Management, 633-Waste Utilization		
Geographic Area:	Statewide	
Unit for Cost Estimate:	Each	
Practice Life (Years):	15	
Discount Rate (%/Year):	5%	
		Cost/Unit
Data Source: Collaboration of field engineers estimates from 2006 & 2007 plus price adjustment to account for inflation.		
Materials		\$1,210.00
Total cost includes Materials, Equipment/Installation, Labor and Mobilization		
Equipment/Installation		\$0.00
Included in Materials		
Labor		\$0.00
Included in Materials		
Mobilization		\$0.00
Included in Materials		
Operation & Maintenance (Annual)		\$24.20
2% of Materials and Installation Cost		
Acquisition of Technical Knowledge		\$0.00
N/A		
Forgone Income (Annual)		\$0.00
None		
Risk		\$0.00
None		
Administration & Permit Costs		\$0.00
None		
Total Cost Estimate:		\$1,234.20

ECONOMIC COST DATA

Cost Data

Practice Name:	Range Planting		
Practice Code:	550		
Activity Type:	550.1 Native Species, Seedbed Preparation, Seed & Seeding		
Typical Implementation Scenario			
Establishing a mixture of native grasses, forbs and/or legumes, according to the Oklahoma NRCS Range Planting (550) standard and specification. Includes seedbed preparation consisting of disking and cultivator.			
Associated practices include: Nutrient Management (590), Pest Management (595), Prescribed Grazing (528), Forage Harvest Management (511)			
Data Source: 2009 LTP-11 data, various seed dealers and custom rates (2008)			
Geographic Area:	Statewide		
Unit for Cost Estimate:	Acre		
Practice Life (Years):	10		
Discount Rate (%/Year):	5%		
			Cost/Unit
Materials			
			\$53.41
Seed (based on average lbs. PLS and cost per lb. PLS needed to plant a typical range seeding mixture according to the NRCS Range Planting (550) Standard and Specification)			
Fertilizer and/or amendments, if needed for establishment, are covered under 590			
Does not include cost of cover crops if needed			
Equipment/Installation			
		\$7.00	\$23.74
Tractor / drill			
includes labor costs			
		\$16.74	
Seedbed Preparation. Most seedbed preparation work is done as part of tillage operations for previously grown crops. In some cases an extra tillage or firming operation may be needed prior to planting.			
Labor			
Costs included with equipment and installation			
Mobilization			
None			
Operation & Maintenance			
Management practices such as prescribed grazing, prescribed burning and brush management			
Acquisition of Technical Knowledge			
			\$0.00
Calibrate and operate seed drill, management of native range.			
Forgone Income			
			\$20.00
Assume deferment for up to two years			
Risk			
			\$0.00
Reduced risk, less erosion, less machinery wear & tear.			
Administration & Permit Costs			
			\$0.00
None			
Total Cost Estimate:			\$97.15



ECONOMIC COST DATA

Cost Data

Practice Name:	Irrigation Regulating Reservoir	
Practice Code:	552	
Activity Type:	552.1 Storage Tanks Used with Sprinkler System	
Typical Implementation Scenario		
<p>This practice applies to the installation of a storage tank constructed of steel and other suitable materials used to collect water from two or more irrigation wells for use in an irrigation system. An irrigation system used to control dust on feed yards is an example of the situation where this practice may be needed. The tank will meet the latest versions of AWWA standard D-1000 and D 102. A typical steel tank that holds 500,000 gallons of water installed cost is \$200,000.00 The installed cost includes all necessary items to tie tank into a pumping plant.</p>		
Associated practices include: 533-Pumping Plant, 447-Irrigation System, Tailwater Recovery		
Geographic Area:	Statewide	
Unit for Cost Estimate:	Gallon	
Practice Life (Years):	15	
Discount Rate (%/Year):	5%	
		Cost/Unit
Data Source: Based on 2007 actual cost data.		
Materials		\$0.40
Includes Equipment/Installation and Labor		
Equipment/Installation		\$0.00
(Included in Materials cost)		
Labor		\$0.00
(Included in Materials cost)		
Mobilization		\$0.00
None		
Operation & Maintenance (Annual)		\$0.00
1% of Installation Costs		
Acquisition of Technical Knowledge		\$0.00
None		
Forgone Income (Annual)		\$0.00
None		
Risk		\$0.00
None		
Administration & Permit Costs		\$0.00
None		
Total Cost Estimate:		\$0.40



ECONOMIC COST DATA

Cost Data

Practice Name: Irrigation Regulating Reservoir

Practice Code: 552

Activity Type: 552.2 Irrigation Regulating Reservoir

Typical Implementation Scenario

This practice applies to the installation of an impoundment or pit to temporarily store water to be used for irrigation when the stream or well capacity is not large enough to supply the irrigation system design flow rate. A typical job is an irrigation system design flow rate is 600 gpm and the pumping plant capacity is only 300 gpm. For a 7 day application an additional 9.3 ac ft or 15000 CY of storage is required which requires 9000 CY of excavation at a total cost of \$15,570.00.

Construction Units (CU) are found by multiplying the designed or estimated "Quantity" by the given "Multiplier" as shown in the example in Table 1-A. The construction units for each component are then summed to give the "Total Construction Units" for the project. If a component is not used, there will be no construction units for that component. The Total Construction Units are then multiplied by the **Cost/Unit** given below to give the average cost of the project. Table 1-B is given as a template for computations.

Associated practices include: 533-Pumping Plant, 590-Nutrient Management, 342-Critical Area Planting, 447-Irrigation System, Tailwater Recovery

Geographic Area: Statewide

Unit for Cost Estimate: Construction Unit (CU)

Practice Life (Years): 15

Discount Rate (%/Year): 5%

Data Source: 2009 actual cost data.

Materials

Includes Equipment/Installation, Labor and Mobilization costs

Table 1-A Example

Component	Units	Quantity	Multiplier	CU
Earthwork	CY	9000	1.00	9,000.0
HCMP / Welded Steel	DIFT	0	1.16	0.0
Plastic Pipe	DIFT	0	0.80	0.0
Concrete	CY	0	161.46	0.0
Trashguard	PF	0	10.53	0.0
Gypsum	TON	0	69.36	0.0
Riprap	CY	0	31.21	0.0
Filter (C33 sand)	CY	0	22.89	0.0
Total Construction Units				9,000.0

To determine the average cost for any component listed above, multiply \$1.73 times the "Multiplier" for that component. For example, the average cost of concrete would be \$1.73 x 161.46 = \$279.32 / CY.

Table 1-B

Component	Units	Quantity	Multiplier	CU
Earthwork	CY		1.00	
HCMP / Welded Steel	DIFT		1.16	
Plastic Pipe	DIFT		0.80	
Concrete	CY		161.46	
Trashguard	PF		10.53	
Gypsum	TON		69.36	
Riprap	CY		31.21	
Filter	CY		22.89	
Total Construction Units				

Equipment/Installation

(Included in Materials cost)

\$0.00

Labor

(Included in Materials cost)

\$0.00

Mobilization

(Included in Materials Cost)

\$0.00

Operation & Maintenance (Annual)

1% of Installation Costs

\$0.02

Acquisition of Technical Knowledge

None

\$0.00

Forgone Income (Annual)

None, possible land brought into production.

\$0.00

Risk

Reduced risk, change in land use

\$0.00

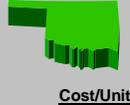
Administration & Permit Costs

None

\$0.00

Total Cost Estimate:

\$1.75



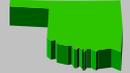
Cost/Unit

\$1.73

ECONOMIC COST DATA

Cost Data

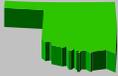
Practice Name:	Heavy Use Area Protection				
Practice Code:	561				
Activity Type:	561.1 Heavy Use Protection, Rock/Gravel				
Typical Implementation Scenario					
This practice applies to the installation of a rock/gravel surface to protect and stabilize an area frequently used by people, animals, or vehicles. A typical job consists of 26.7 CY of rock/gravel at a total cost \$1,066.02. The unit for estimating cost is cubic yards of Rock/Gravel.					
Associated practices include: 614-Watering Facilities, 313-Waste Storage Facility					
Geographic Area:	Statewide				
Unit for Cost Estimate:	Cubic Yards (CY)				
Practice Life (Years):	10				
Discount Rate (%/Year):	5%				
Data Source: 2009 Actual Cost Data					
Materials					Cost/Unit
Total Cost includes Equipment/Installation and Labor Costs.					\$39.93
	Rock/Gravel	26.7	CY	\$ 31.08	\$ 829.84
	Geotextile	51.5	SQ-YD	\$ 1.63	\$ 83.95
	Excavation	88	CY	\$ 1.73	\$ 152.24
	Total Cost			\$ 1,066.02	
Equipment/Installation					\$0.00
Included in Materials Cost					
Labor					\$0.00
Included in Materials Cost					
Mobilization					\$0.00
Included in Materials Cost					
Operation & Maintenance					\$5.99
15% of Installation Costs					
Acquisition of Technical Knowledge					\$0.00
N/A					
Forgone Income					\$0.00
Small amount of land taken out of production, no lost opportunity costs					
Risk					\$0.00
Reduced risk, can better manage livestock					
Administration & Permit Costs					\$0.00
None					
Total Cost Estimate:					\$45.91



ECONOMIC COST DATA

Cost Data

Practice Name:	Heavy Use Area Protection				
Practice Code:	561				
Activity Type:	561.2 Heavy Use Protection, Concrete				
Typical Implementation Scenario					
This practice applies to the installation of a concrete surface to protect and stabilize an area frequently used by people, animals, or vehicles. A typical job consists of protecting a 3000 sq-ft area with concrete frequently being used by dairy cows. The unit for estimating cost is cubic yards of concrete.					
Associated practices include: 614-Watering Facilities, 313-Waste Storage Facility					
Geographic Area:	Statewide				
Unit for Cost Estimate:	Cubic Yards (CY)				
Practice Life (Years):	10				
Discount Rate (%/Year):	5%				
Data Source: 2008 & 2009 actual cost data.					
Materials					\$180.88
Includes Equipment/Installation and Labor Costs.					
	Component	Quantity	Units	Cost/Unit	Cost
	Concrete	70.8	CY	\$164.15	\$11,621.82
	Blanket material (sand)	57.3	CY	\$19.83	\$1,136.26
	Excavation	28	CY	\$1.73	\$48.44
				Total Cost	\$12,806.52
Equipment/Installation					\$0.00
Included in Materials Cost					
Labor					\$0.00
Included in Materials Cost					
Mobilization					\$0.00
Included in Materials Cost					
Operation & Maintenance	15% of Installation Costs				\$27.13
Acquisition of Technical Knowledge	N/A				\$0.00
Forgone Income	Small amount of land taken out of production, no lost opportunity costs				\$0.00
Risk	Reduced risk, can better manage livestock				\$0.00
Administration & Permit Costs	None				\$0.00
Total Cost Estimate:					\$208.02



Cost/Unit

ECONOMIC COST DATA

Cost Data

Practice Name: Spring Development

Practice Code: 574

Activity Type: 547.1 Spring Development

Typical Implementation Scenario

This practice consists of developing springs and seeps to provide a dependable supply of water for planned time of use. A typical spring development consists of excavating out the seep area, installing a 36 inch diameter perforated pipe to a depth of 5.0 ft, placing 2.0 ft wide band of gravel around the 36 inch pipe and installing 50 ft of 1 1/2 inch pipe to a water facility.

Construction Units (CU) are found by multiplying the designed or estimated "Quantity" by the given "Multiplier" as shown in the example in Table 1-A. The construction units for each component are then summed to give the "Total Construction Units" for the project. If a component is not used, there will be no construction units for that component. The Total Construction Units are then multiplied by the **Cost/Unit** given below to give the average cost of the project. Table 1-B is given as a template for computations.

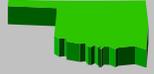
Associated practices include: 614-Watering Facility, 516-Pipeline, 516-Heavy Use Area Protection

Geographic Area: Statewide

Unit for Cost Estimate: Construction Unit (CU)

Practice Life (Years): 10

Discount Rate (%/Year): 5%



Cost/Unit

Data Source: 2009 Actual Cost Data for similar type work.

Materials

Includes Equipment/Installation, Labor and Mobilization Costs

Table 1-A Example

Component	Units	Quantity	Multiplier	CU
Earthwork	CY	20	1.00	20.0
HCMP / Welded Steel	DIFT	255	1.16	294.8
Plastic Pipe	DIFT	0	0.80	0.0
Rock/Gravel	CY	4.6	17.97	82.6
Total Construction Units				397.4

To determine the average cost for any component listed above, multiply \$1.73 times the "Multiplier" for that component. For example, the average cost of rock/gravel would be \$1.73 x 17.97 = \$31.08 / CY.

Table 1-B

Component	Units	Quantity	Multiplier	CU
Earthwork	CY		1.00	
HCMP / Welded Steel	DIFT		1.16	
Plastic Pipe	DIFT		0.80	
Rock/Gravel	CY		17.97	
Total Construction Units				

Equipment/Installation

(Included in Materials cost)

\$0.00

Labor

(Included in Materials cost)

\$0.00

Mobilization

(Included in Materials Cost)

\$0.00

Operation & Maintenance (Annual)

None

\$0.00

Acquisition of Technical Knowledge

None

\$0.00

Forgone Income (Annual)

None, possible land brought into production.

\$0.00

Risk

None

\$0.00

Administration & Permit Costs

None

\$0.00

Total Cost Estimate:

\$1.73

ECONOMIC COST DATA

Cost Data

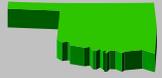
Practice Name:	Animal Trails and Walkways	
Practice Code:	575	
Activity Type:	575.1 Animal Access Ramp without GeoCell	
Typical Implementation Scenario		
This practice applies to the installation and construction of an animal access ramp without the use of an approved plastic (PE) three-dimensional cellular containment grid material. A typical job is a ramp to pond water for 100 animals. A typical ramp is 16 ft wide X 40 ft long at a cost of \$686.40. The unit for estimating cost is CY of Rock/Gravel.		
Associated practices include: 378-Pond, 382-Fence		
Geographic Area:	Statewide	
Unit for Cost Estimate:	CY	
Practice Life (Years):	10	
Discount Rate (%/Year):	5%	
		Cost/Unit
Data Source: 2009 actual cost data.		
Materials		\$57.20
Includes cost of equipment/installation, labor and mobilization. Items in cost: Rock/Gravel, Geotextile, Excavation, and Labor		
Equipment/Installation		\$0.00
Included in Materials Cost		
Labor		\$0.00
Included in Materials Cost		
Mobilization		\$0.00
Included in Materials Cost		
Operation & Maintenance (Annual)		\$0.57
1% of Installation Costs		
Acquisition of Technical Knowledge		\$0.00
None		
Forgone Income (Annual)		\$0.00
None		
Risk		\$0.00
Reduced risk, less erosion		
Administration & Permit Costs		\$0.00
None		
Total Cost Estimate:		\$57.77



ECONOMIC COST DATA

Cost Data

Practice Name:	Animal Trails and Walkways	
Practice Code:	575	
Activity Type:	575.2 Animal Access Ramp with GeoCell	
Typical Implementation Scenario		
This practice applies to the installation and construction of an animal access ramp with the use of an approved plastic (PE) three-dimensional cellular containment grid material. A typical job is a ramp to pond water for 100 animals. A typical ramp is 16 ft wide X 40 ft long at a cost of \$1421.40. The unit for estimating cost is CY of Rock/Gravel.		
Associated practices include: 378-Pond, 382-Fence		
Geographic Area:	Statewide	
Unit for Cost Estimate:	CY	
Practice Life (Years):	10	
Discount Rate (%/Year):	5%	
		Cost/Unit
Data Source: 2009 actual cost data.		
Materials		\$76.07
Includes cost of equipment/installation, labor and mobilization.		
Items in cost: Rock/Gravel, GeoCell, Geotextile, Excavation, and Labor		
Equipment/Installation		\$0.00
Included in Materials Cost		
Labor		\$0.00
Included in Materials Cost		
Mobilization		\$0.00
Included in Materials Cost		
Operation & Maintenance (Annual)		\$0.76
1% of Installation Costs		
Acquisition of Technical Knowledge		\$0.00
None		
Forgone Income (Annual)		\$0.00
None		
Risk		\$0.00
Reduced risk, less erosion		
Administration & Permit Costs		\$0.00
None		
Total Cost Estimate:		\$76.83



ECONOMIC COST DATA

Cost Data

Practice Name: Stream Crossing	
Practice Code: 578	
Activity Type: 578.1 Stream Crossing without GeoCell	
Typical Implementation Scenario	
This practice is used to stabilize an area where livestock, people and/or equipment cross an intermittent or perennial water course without the use of an approved plastic (PE) three-dimensional cellular containment grid material. A typical site is a stream channel 15 ft wide and 6.0 ft deep stabilized with geotextile and rock at a total cost \$1,716.00. Cost is based on cubic yards of rock installed.	
Associated practices include: 382-Fence	
Geographic Area:	Statewide
Unit for Cost Estimate:	CY
Practice Life (Years):	10
Discount Rate (%/Year):	5%
Data Source: 2009 actual cost data	
Materials	Cost/Unit \$57.20
Includes cost of equipment/installation, labor and mobilization. Items in cost: Rock/Gravel, Geotextile, Excavation, and Labor	
Equipment/Installation	\$0.00
Included in Materials Cost	
Labor	\$0.00
Included in Materials Cost	
Mobilization	\$0.00
Included in Materials Cost	
Operation & Maintenance (Annual)	\$5.72
10% of Installation Costs	
Acquisition of Technical Knowledge	\$0.00
None	
Forgone Income (Annual)	\$0.00
None	
Risk	\$0.00
None	
Administration & Permit Costs	\$0.00
None	
Total Cost Estimate:	\$62.92

ECONOMIC COST DATA

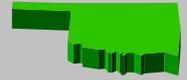
Cost Data

Practice Name: Stream Crossing		
Practice Code: 578		
Activity Type: 578.2 Stream Crossing with GeoCell		
Typical Implementation Scenario		
<p>This practice is used to stabilize an area where livestock, people and/or equipment cross an intermittent or perennial water course with the use of an approved plastic (PE) three-dimensional cellular containment grid material. A typical site is a stream channel 15 ft wide and 6.0 ft deep stabilized with geocell, geotextile, and rock at a total cost \$2,282.10. Cost is based on cubic yards of rock installed.</p>		
Associated practices include: 382-Fence		
Geographic Area:	Statewide	
Unit for Cost Estimate:	CY	
Practice Life (Years):	10	
Discount Rate (%/Year):	5%	
Data Source: 2009 actual cost data		
Materials		Cost/Unit
Includes cost of equipment/installation, labor and mobilization.		\$76.07
Items in cost: Rock/Gravel, GeoCell, Geotextile, Excavation, and Labor		
Equipment/Installation		\$0.00
Included in Materials Cost		
Labor		\$0.00
Included in Materials Cost		
Mobilization		\$0.00
Included in Materials Cost		
Operation & Maintenance (Annual)		\$7.61
10% of Installation Costs		
Acquisition of Technical Knowledge		\$0.00
None		
Forgone Income (Annual)		\$0.00
None		
Risk		\$0.00
None		
Administration & Permit Costs		\$0.00
None		
Total Cost Estimate:		\$83.68

ECONOMIC COST DATA

Cost Data

Practice Name:	Streambank and Shoreline Protection			
Practice Code:	580			
Activity Type:	580.1 Streambank and Shoreline Protection			
Typical Implementation Scenario				
This practice is for installation of a treatment used to stabilize and protect banks of streams or constructed channels, and shorelines of lakes, reservoirs, or estuaries A typical job would consist of 100 ft of unstable 10 ft high bank to be stabilized with rock riprap at a total cost of \$14,731.20. Cost is based on cubic yards of rock riprap and the cubic yards of filter material installed.				
Associated practices include: 342-Critical Area Planting, 382-Fence, 590-Nutrient Management				
Geographic Area:	Statewide			
Unit for Cost Estimate:	CY			
Practice Life (Years):	20			
Discount Rate (%/Year):	5%			
Data Source: Costs taken from 2009 federal contracts for similar type work.				
Materials				Cost/Unit
				\$56.82
Includes Equipment/Installation, Labor and Mobilization Costs				
	Component	Quantity	Cost / Unit	Total Cost
	Riprap - Cubic Yard	207	\$57.00	\$11,799.00
	Filter - Cubic Yard	41	\$45.00	\$1,845.00
	Geotextile - Square Yard	275	\$1.63	\$448.25
				\$14,092.25
Equipment/Installation				\$0.00
Included in Materials Cost				
Labor				\$0.00
Included in Materials Cost				
Mobilization				\$0.00
Included in Materials Cost				
Operation & Maintenance				\$5.68
10% of Installation Costs, pest control.				
Acquisition of Technical Knowledge				\$0.00
None				
Forgone Income				\$0.00
None				
Risk				\$0.00
None				
Administration & Permit Costs				\$0.00
None				
Total Cost Estimate:				\$62.51



ECONOMIC COST DATA

Cost Data

Practice Name: Structure for Water Control

Practice Code: 587

Activity Type: 587.1 Structure for Water Control

Typical Implementation Scenario

This practice applies to a structure in a water management system that conveys water, controls the direction or rate of flow, maintains a desired water surface elevation or measures water. A typical system consists of a low embankment (effective height cannot exceed 8.0 ft) 2000 ft long.

Construction Units (CU) are found by multiplying the designed or estimated "Quantity" by the given "Multiplier" as shown in the example in Table 1-A. The construction units for each component are then summed to give the "Total Construction Units" for the project. If a component is not used, there will be no construction units for that component. The Total Construction Units are then multiplied by the **Cost/Unit** given below to give the average cost of the project. Table 1-B is given as a template for computations.

Associated practices including: 382-Fence, 447-Irrigation System Tailwater Recovery, 607-Surface Drainage, 342-Critical Area Planting, 590-Nutrient Management

Geographic Area: Statewide

Unit for Cost Estimate: CU

Practice Life (Years): 20

Discount Rate (%/Year): 5%

Cost/Unit

Data Source: 2009 Actual Cost Data

Materials

Includes Equipment/Installation, Labor and Mobilization Costs

\$1.73

Table 1-A Example

Component	Units	Quantity	Multiplier	CU
Earthwork	CY	3000	1.00	3,000.0
HCMP / Welded Steel	DIFT	1116	1.16	1,290.2
Plastic Pipe	DIFT	0	0.80	0.0
Concrete	CY	2	161.46	322.9
Trashguard	PF	44	10.53	463.4
Gypsum	TON	0	69.36	0.0
Riprap	CY	0	31.21	0.0
Filter (C33 sand)	CY	0	22.89	0.0
In-Line PVC Riser	EA	1	723.02	723.0
Slide Gate	DI	0	17.40	0.0
Total Construction Units				5,799.5

To determine the average cost for any component listed above, multiply \$1.73 times the "Multiplier" for that component. For example, the average cost of concrete would be \$1.73 x 161.46 = \$279.32 / CY.

Table 1-B

Component	Units	Quantity	Multiplier	CU
Earthwork	CY		1.00	
HCMP / Welded Steel	DIFT		1.16	
Plastic Pipe	DIFT		0.80	
Concrete	CY		161.46	
Trashguard	PF		10.53	
Gypsum	TON		69.36	
Riprap	CY		31.21	
Filter	CY		22.89	
In-Line PVC Riser	EA		723.02	
Slide Gate	DI		17.40	
Total Construction Units				

Equipment/Installation

Included in Materials Cost

\$0.00

Labor

Included in Materials Cost

\$0.00

Mobilization

Included in Materials Cost

\$0.00

Operation & Maintenance

1% of Installation Costs

\$0.02

Acquisition of Technical Knowledge

None

\$0.00

Forgone Income

None

\$0.00

Risk

None

\$0.00

Administration & Permit Costs

None

\$0.00

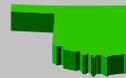
Total Cost Estimate:

\$1.75

ECONOMIC COST DATA

Cost Data

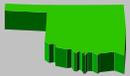
Practice Name: Cross Wind Trap Strips		
Practice Code: 589C		
Activity Type: 589C.1 - Introduced Grass Seed		
Typical Implementation Scenario		
<p>This practice consists of planting a series of 15 feet wide strips to an introduced species, such as old world bluestem, running in an east/west direction across an 80 acre field of continuous wheat, on gently sloping sandy textured soils to reduce soil erosion from wind. The distance between the strips will average approximately 300 feet. The vegetated strips will be planted according to the NRCS Pasture and Hay Planting (512) standard.</p> <p>This practice includes the costs of introduced warm or cool season perennial grass seed, tractor, drill and labor to plant grass in strips.</p>		
<p>Associated practices include: Residue and Tillage Management - No Till/Strip Till/Direct Seed (329), Residue and Tillage Management - Mulch Till (345), Residue and Tillage Management - Ridge Till (346), Cover Crop (340), Pest Management (595), Nutrient Management (590), Contour Farming (330), Deep Tillage (324), Pasture and Hayland Planting (512), Forage Harvest Management (511), Prescribed Grazing (528), Conservation Crop Rotation (328)</p>		
Geographic Area:	Statewide	
Unit for Cost Estimate:	Acre	
Practice Life (Years):	5	
Discount Rate (%/Year):	5%	
		Cost/Unit
<p>Data Source: 2009 actual cost data, OSU Enterprise Budget Software, Pasture and Hay Planting (512) cost data</p>		
Materials		\$34.91
<p>Seed (based on average lbs. PLS and cost per lb. PLS needed to meet 512 Standard and Specification for introduced species plantings) Fertilizer and/or other amendments needed for establishment are covered under the Nutrient Management (590) cost data Does not include cost of cover crops if needed.</p>		
Equipment/Installation/Labor		\$23.74
<p>Tractor / drill \$7.00 includes labor costs Seedbed Preparation. Most seedbed preparation work is done as part of tillage operations for previously grown crops. In \$16.74</p>		
Labor		\$0.00
<p>Included in Equipment/Installation Cost</p>		
Mobilization		\$0.00
<p>None</p>		
Operation & Maintenance		\$2.93
<p>5% O&M factor</p>		
Acquisition of Technical Knowledge		\$0.00
<p>Calibrate and operate seed drill, manage perennial grass</p>		
Forgone Income		\$15.63
<p>1 Acre taken out of crop production Assume wheat crop minus value of hay/forage crop from perennial forage. Net Income (\$/Ac/Yr)</p>		
Risk		\$0.00
<p>Reduced risk, less erosion, less machinery wear & tear.</p>		
Administration & Permit Costs		\$0.00
<p>None</p>		
Total Cost Estimate:		\$77.21



ECONOMIC COST DATA

Cost Data

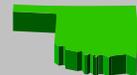
Practice Name:	Cross Wind Trap Strips		
Practice Code:	589C		
Activity Type:	589C.2 - Bermudagrass Sprigging		
Typical Implementation Scenario			
This practice consists of <u>sprigging</u> a series of 15 feet wide strips to bermudagrass, running in an east/west direction across an 80 acre field of continuous wheat, on gently sloping sandy textured soils to reduce soil erosion from wind. The distance between the strips will average approximately 300 feet. The vegetated strips will be planted according to the NRCS Pasture and Hay Planting (512) standard.			
This practice includes the costs of bermudagrass sprigs, tractor, sprigger, and labor to plant grass in buffer strips.			
Associated practices include: Residue and Tillage Management - No Till/Strip Till/Direct Seed (329), Residue and Tillage Management - Mulch Till (345), Residue and Tillage Management - Ridge Till (346), Cover Crop (340), Pest Management (595), Nutrient Management (590), Contour Farming (330), Deep Tillage (324), Pasture and Hayland Planting (512), Forage Harvest Management (511), Prescribed Grazing (528), Conservation Crop Rotation (328)			
Geographic Area:	Statewide		
Unit for Cost Estimate:	Acre		
Practice Life (Years):	5		
Discount Rate (%/Year):	5%		
			Cost/Unit
Data Source: 2009 actual cost data, OSU Enterprise Budget Software, Pasture and Hay Planting (512) cost data			
Materials			
Sprigs - included in equipment and installation			
Fertilizer and/or other amendments needed for establishment are covered in 590.1 and 590.3			
Equipment/Installation			
Tractor / sprigger and sprigs and labor cost associated with sprigging		\$79.77	\$96.51
Seedbed Preparation. Most seedbed preparation work is done as part of tillage operations for previously grown crops. In some cases an extra tillage or firming operation may be needed prior to planting. Costs includes one disking and packing operation.		\$16.74	
Labor			
Included in Equipment/Installation Cost			\$0.00
Mobilization			
None			\$0.00
Operation & Maintenance			
5% O&M factor			\$4.83
Acquisition of Technical Knowledge			
Calibrate and operate sprigger, manage grass			\$0.00
Forgone Income			
1 Acre taken out of crop production			\$15.63
Assume wheat crop minus value of hay/forage crop from perennial forage.			
Net Income (\$/Ac/Yr)			
Risk			
Reduced risk, less erosion, less machinery wear & tear.			\$0.00
Administration & Permit Costs			
None			\$0.00
Total Cost Estimate:			\$116.97



ECONOMIC COST DATA

Cost Data

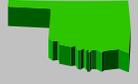
Practice Name:	Cross Wind Trap Strips		
Practice Code:	589C		
Activity Type:	589C.3 - Native Grass Monoculture		
Typical Implementation Scenario			
This practice consists of establishing a series of 15 feet wide strips to switchgrass, running in an east/west direction across an 80 acre field of continuous wheat, on gently sloping sandy textured soils to reduce soil erosion from wind. The distance between the strips will average approximately 300 feet. The vegetated strips will be planted according to the NRCS Pasture and Hay Planting (512) standard.			
This practice includes the costs of grass seed, tractor, drill and labor to plant grass in buffer strips.			
Associated practices include: Residue and Tillage Management - No Till/Strip Till/Direct Seed (329), Residue and Tillage Management - Mulch Till (345), Residue and Tillage Management - Ridge Till (346), Cover Crop (340), Pest Management (595), Nutrient Management (590), Contour Farming (330), Deep Tillage (324), Pasture and Hayland Planting (512) Forage Harvest Management (511), Prescribed Grazing (528), Conservation Crop Rotation (328)			
Geographic Area:	Statewide		
Unit for Cost Estimate:	Acre		
Practice Life (Years):	5		
Discount Rate (%/Year):	5%		
			Cost/Unit
Data Source: 2009 actual cost data, OSU Enterprise Budget Software, Pasture and Hay (512) cost data			
Materials			\$51.65
Seed (based on average lbs. PLS and cost per lb. PLS needed to meet 512 Standard and Specification for native grasses plantings)			
Does not include cost of cover crops if needed			
Fertilizer and/or other amendments needed for establishment are covered under the Nutrient Management (590) cost data			
Equipment/Installation/Labor			\$23.74
Tractor / drill			
		\$7.00	
includes labor costs			
Seedbed Preparation. Most seedbed preparation work is done as part of tillage operations for previously grown crops. In			
		\$16.74	
Labor			\$0.00
Included in Equipment/Installation Cost			
Mobilization			\$0.00
None			
Operation & Maintenance			\$3.77
5% O&M factor			
Acquisition of Technical Knowledge			\$0.00
Calibrate and operate seed drill, manage perennial grass			
Forgone Income			\$2.74
1 Acre taken out of crop production			
Assume wheat crop minus value of hay/forage crop from perennial forage.			
Net Income (\$/Ac/Yr)			
Risk			\$0.00
Reduced risk, less erosion, less machinery wear & tear.			
Administration & Permit Costs			\$0.00
None			
Total Cost Estimate:			\$81.90



ECONOMIC COST DATA

Cost Data

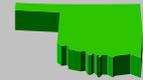
Practice Name:	Cross Wind Trap Strips	
Practice Code:	589C	
Activity Type:	589C.4 - Native Grass Mixture	
Typical Implementation Scenario		
This practice consists of establishing a series of 15 feet wide strips to a native grass mixture, running in an east/west direction across an 80 acre field of continuous wheat, on gently sloping sandy textured soils to reduce soil erosion from wind. The distance between the strips will average approximately 300 feet. The vegetated strips will be planted according to the NRCS Range Planting (550).		
This practice includes the costs of perennial native grass seed, tractor, drill and labor to plant grass in buffer strips.		
Associated practices include: Residue and Tillage Management - No Till/Strip Till/Direct Seed (329), Residue and Tillage Management - Mulch Till (345), Residue and Tillage Management - Ridge Till (346), Cover Crop (340), Pest Management (595), Nutrient Management (590), Contour Farming (330), Deep Tillage (324), Range Planting (512), Forage Harvest Management (511), Prescribed Grazing (528), Conservation Crop Rotation (328)		
Geographic Area:	Statewide	
Unit for Cost Estimate:	Acre	
Practice Life (Years):	5	
Discount Rate (%/Year):	5%	
		Cost/Unit
Data Source: 2009 actual cost data, OSU Enterprise Budget Software, Range Planting (550) cost data		
Materials		\$53.41
Seed (based on average lbs. PLS and cost per lb. PLS needed to plant a typical range seeding mixture according to the NRCS Range Fertilizer and/or amendments, if needed for establishment, are covered under 590 Does not include cost of cover crops if needed		
Equipment/Installation/Labor		\$23.74
Tractor / drill	\$7.00	
includes labor costs		
Seedbed Preparation. Most seedbed preparation work is done as part of tillage operations for previously grown crops. In	\$16.74	
Labor		\$0.00
Included in Equipment/Installation Cost		
Mobilization		\$0.00
None		
Operation & Maintenance		\$3.86
5% O&M factor		
Acquisition of Technical Knowledge		\$0.00
Calibrate and operate seed drill, manage perennial grass		
Forgone Income		\$2.74
1 Acre taken out of crop production Assume wheat crop minus value of hay/forage crop from perennial forage. Net Income (\$/Ac/Yr)		
Risk		\$0.00
Reduced risk, less erosion, less machinery wear & tear.		
Administration & Permit Costs		\$0.00
None		
Total Cost Estimate:		\$83.75



ECONOMIC COST DATA

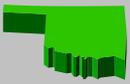
Cost Data

Practice Name:	Nutrient Management	
Practice Code:	590	
Activity Type:	590.1 - Fertilizer for Grass Establishment	
Typical Implementation Scenario		
<p>This practice consists of applying fertilizer for establishing vegetation planted in accordance with the NRCS Pasture and Hay Planting (512) and/or Range Planting (550) standards in order to budget and supply nutrients for plant establishment. The typical scenario is a 60 acre field, previously in cropland, with an application rate of 35N-20P-20K applied immediately prior to sprigging bermudagrass. Fertilizer application rates will be based on results from current soil test analysis and will be applied according to the NRCS Nutrient Management (590) standard.</p> <p>This practice includes the costs of fertilizer, application equipment and labor to apply the nutrients.</p>		
Associated practices include: Pasture and Hayland Management (512), Range Planting (550), Deep Tillage (324), Pest Management (595), Access Control (472), Prescribed Grazing (528), Fencing (382)		
Geographic Area:	Statewide	
Unit for Cost Estimate:	Acre	
Practice Life (Years):	1	
Discount Rate (%/Year):	5%	
Cost/Unit		
Data Source: 2009 actual cost data and current vendor pricing.		
Materials		\$34.63
Fertilizer		
The maximum fertilizer application for any grass planting is 40N-40P-40K, which is very rarely recommended. This scenario is based on a typical (average) fertilizer application rate of 35N-20P-20K.		
Equipment/Installation/Labor		\$4.17
Application/Labor \$4.00		
Soil Test = \$10/eac \$10 on 60 acres \$0.17		
In general for fairly uniform field conditions only one field test would be required in a 60 acre field.		
Labor		\$0.00
Included in Materials Cost		
Mobilization		\$0.00
Included in installation cost		
Operation & Maintenance		\$0.00
0% O&M factor		
Acquisition of Technical Knowledge		\$0.00
Knowledge to calibrate applicator		
Forgone Income		\$0.00
No land taken out of production, no lost opportunity costs		
Risk		\$0.00
Reduced risk, crop yield increase, reduced water quality damages		
Administration & Permit Costs		\$0.00
None		
Total Cost Estimate:		\$38.80



ECONOMIC COST DATA

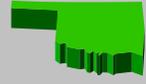
Cost Data

Practice Name:	Nutrient Management	
Practice Code:	590	
Activity Type:	590.2 - Fertilizer for Critical Area Plantings	
Typical Implementation Scenario		
<p>This practice consists of applying fertilizer for establishing vegetation planted in accordance with the NRCS Critical Area Planting (342) standard in order to budget and supply nutrients for plant establishment. The typical scenario involves hand applying 300 lbs of 13N-13P-13K immediately prior to sprigging a newly constructed .9 acre waterway. Fertilizer application rates may be based on results from a soil test analysis or in lieu of a soil test, a blend of 40 lbs/ac N, 40 lbs/ac P2O5, and 40 lbs/ac K2O may be applied according to the NRCS Nutrient Management (590) standard.</p> <p>This practice includes the costs of fertilizer, application equipment and labor to apply the nutrients. One acre will be used to establish per acre costs for this scenario.</p>		
Associated practices include: Critical Area Planting (342), Mulching (484), Pest Management (595), Access Control (472), Prescribed Grazing (528), Fencing (382), Salinity and Sodic Soil Management (610)		
Geographic Area:	Statewide	
Unit for Cost Estimate:	Acre	
Practice Life (Years):	1	
Discount Rate (%/Year):	5%	
		Cost/Unit
Data Source: 2009 actual cost data and current vendor pricing.		
Materials		\$93.12
Fertilizer		
Equipment/Installation/Labor		\$32.50
Application/Labor = \$32.50		
Labor		\$0.00
Included in Equipment/Installation Cost		
Mobilization		\$0.00
Included in Equipment/Installation Cost		
Operation & Maintenance		\$0.00
0% O&M factor		
Acquisition of Technical Knowledge		\$0.00
Knowledge to calibrate applicator		
Forgone Income		\$0.00
No land taken out of production, no lost opportunity costs		
Risk		\$0.00
Reduced risk, crop yield increase, reduced water quality damages		
Administration & Permit Costs		\$0.00
None		
Total Cost Estimate:		\$125.62

ECONOMIC COST DATA

Cost Data

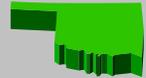
Practice Name: Nutrient Management		
Practice Code: 590		
Activity Type: 590.3 - Lime for Grass Establishment		
Typical Implementation Scenario		
<p>This practice consists of applying lime for establishing vegetation in accordance with the NRCS Pasture and Hay Planting (512) and/or Range Planting (550) standards in an effort to supply nutrients for plant establishment. The typical scenario involves incorporating 1 ton of lime into the soil immediately prior sprigging a 60 acre field to bermudagrass. Lime will only be applied during the first year of establishment. Lime application rates will be based on results from a soil test analysis with a typical application rate of 1 ton/ac.</p> <p>This practice includes the costs of (ECCE) lime, application equipment and labor to apply the nutrients.</p>		
Associated practices include: Pasture and Hayland Management (512), Range Planting (550), Deep Tillage (324), Pest Management (595), Access Control (472), Prescribed Grazing (528), Fencing (382)		
Geographic Area:	Statewide	
Unit for Cost Estimate:	Ton ECCE	
Practice Life (Years):	1	
Discount Rate (%/Year):	5%	
Data Source: 2009 actual cost data and current vendor pricing.		Cost/Unit
Materials		\$27.13
Lime		
Equipment/Installation/Labor		\$6.67
Application/Labor \$4.00		
Soil Test = \$10/ea \$10/ 60 acre \$0.17		
In general for fairly uniform field conditions only one soil test would be required in a 60 acre field with average lime application of 1 ton/ac.		
Labor		\$0.00
Included in Equipment/Installation Cost		
Mobilization		\$0.00
Included in Equipment/Installation Cost		
Operation & Maintenance		\$0.00
0% O&M factor		
Acquisition of Technical Knowledge		\$0.00
Knowledge to calibrate applicator		
Forgone Income		\$0.00
No land taken out of production, no lost opportunity costs		
Risk		\$0.00
Reduced risk, crop yield increase, reduced water quality damages		
Administration & Permit Costs		\$0.00
None		
Total Cost Estimate:		\$33.80



ECONOMIC COST DATA

Cost Data

Practice Name: Nutrient Management	
Practice Code: 590	
Activity Type: 590.4 - Calibration Strips	
Typical Implementation Scenario	
<p>This practice consists of applying nitrogen fertilizer in a manner that minimizes the risk of leaving the field. This practice will be used to utilize nitrogen rich strips to determine split application rates for nitrogen. It includes the use of hand held or tractor mounted sensor tools (ex. Greenseeker) to determine nitrogen needs as well as equipment to establish nitrogen rich strips. The typical scenario is a 320 acre wheat field on gently sloping sandy loam soils. Soil testing will be performed to determine overall fertility needs of the plants.</p> <p>This practice includes the costs for sensors, soils testing, nitrogen strip application, and labor associated with installing this practice.</p>	
<p>Associated practices include: Conservation Crop Rotation (328), Residue and Tillage Management - No Till/Strip Till/Direct Seed (329), Residue and Tillage Management - Mulch Till (345), Residue and Tillage Management - Ridge Till (346), Cover Crop (340), Pest Management (595), Contour Farming (330), Deep Tillage (324), Filter Strip (393)</p>	
Geographic Area:	Statewide
Unit for Cost Estimate:	Acre
Practice Life (Years):	1
Discount Rate (%/Year):	5%
Data Source: OSU Cooperative Extension data and Commerical Suppliers	
	Cost/Unit
Materials	\$0.00
Equipment/Installation/Labor	\$6.46
Private or Custom Application of Strips	\$8/320ac = 0.03
Hand Held Sensor	\$2000/320ac = 6.26
Soil Test	\$0.17
Labor	\$0.00
Included in Equipment	
Mobilization	\$0.00
None	
Operation & Maintenance	\$0.00
0% O&M factor	
Acquisition of Technical Knowledge	\$0.00
Knowledge to operate application tool and calibrate sensor	
Forgone Income	\$0.00
No land taken out of production, no lost opportunity costs	
Risk	\$0.00
Reduced risk, crop yield increase, reduced water quality damages	
Administration & Permit Costs	\$0.00
None	
Total Cost Estimate:	\$6.46



ECONOMIC COST DATA

Cost Data

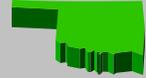
Practice Name: Nutrient Management		
Practice Code: 590		
Activity Type: 590.5 - Precision Application		
Typical Implementation Scenario		
<p>This practice consists of applying nitrogen fertilizer in a manner that minimizes the risk of leaving the field. This practice will be used to utilize advanced technology in the application of nutrients by applying nitrogen rich strips and using nutrient applicators equipped with precision sensors to deliver fertilizer through a spray system at variable rates across the field. The typical scenario is a 320 acre wheat field on gently sloping sandy loam soils. Soil testing will be performed to determine overall fertility needs of the plants.</p> <p>This practice includes the costs for application equipment with sensors, soils testing, nitrogen strip application, and labor associated with installing this practice.</p>		
<p>Associated practices include: Conservation Crop Rotation (328), Residue and Tillage Management - No Till/Strip Till/Direct Seed (329), Residue and Tillage Management - Mulch Till (345), Residue and Tillage Management - Ridge Till (346), Cover Crop (340), Pest Management (595), Contour Farming (330), Deep Tillage (324), Filter Strip (393)</p>		
Geographic Area:	Statewide	
Unit for Cost Estimate:	Acre	
Practice Life (Years):	1	
Discount Rate (%/Year):	5%	
Data Source: OSU Cooperative Extension data and Commerical Suppliers		Cost/Unit
Materials		\$0.00
Equipment/Installation/Labor		\$11.17
Nutrient applicator with sensors	\$10.00	
Computer data entry for analysis and records	\$1.00	
Soil Test	\$0.17	
Labor		\$0.00
Included in Equipment/Installation Cost		
Mobilization		\$0.00
None		
Operation & Maintenance		\$0.00
0% O&M factor		
Acquisition of Technical Knowledge		\$0.00
Knowledge to calibrate and operate applicator		
Forgone Income		\$0.00
No land taken out of production, no lost opportunity costs		
Risk		\$0.00
Reduced risk, crop yield increase, reduced water quality damages		
Administration & Permit Costs		\$0.00
None		
Total Cost Estimate:		\$11.17



ECONOMIC COST DATA

Cost Data

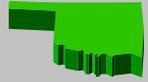
Practice Name: Nutrient Management		
Practice Code: 590		
Activity Type: 590.6 - Chemigation		
Typical Implementation Scenario		
<p>This practice consists of applying fertilizer in a manner than minimizes the risk of leaving the field by applying nutrients through irrigation systems using chemigation values and components. Nutrient management plans and soil testing will be used to determine application rates and timing. The typical scenario involves the application of nitrogen through a center pivot on a 125 acre field of corn.</p> <p>This practice includes the costs to adapt the irrigation system for chemigation.</p>		
<p>Associated practices include: Irrigation Water Management (449) Conservation Crop Rotation (328), Residue and Tillage Management - No Till/Strip Till/Direct Seed (329), Residue and Tillage Management - Mulch Till (345), Residue and Tillage Management - Ridge Till (346), Cover Crop (340), Pest Management (595), Contour Farming (330), Deep Tillage (324), Filter Strip (393)</p>		
Geographic Area:	Statewide	
Unit for Cost Estimate:	Acre	
Practice Life (Years):	1	
Discount Rate (%/Year):	5%	
Data Source: 2009 actual cost data and current vendor pricing.		Cost/Unit
Equipment/Installation/Labor		\$8.17
Equipment to Adapt Irrigation System to Chemigation	\$8.00	
Soil Test	\$0.17	
Labor		\$0.00
Included in Equipment/Installation Costs		
Mobilization		\$0.00
None		
Operation & Maintenance		\$0.00
0% O&M factor		
Acquisition of Technical Knowledge		\$0.00
Knowledge to operate irrigation system		
Forgone Income		\$0.00
No land taken out of production, no lost opportunity costs		
Risk		\$0.00
Reduced risk, crop yield increase, reduced water quality damages		
Administration & Permit Costs		\$0.00
None		
Total Cost Estimate:		\$8.17



ECONOMIC COST DATA

Cost Data

Practice Name: Nutrient Management		
Practice Code: 590		
Activity Type: 590.7 - High Soil P Index		
Typical Implementation Scenario		
<p>This practice consists of applying fertilizer in a manner that minimizes the risk of leaving the field. This practice will be used to discontinue application of animal manure or waste on soils which exceed a current soil test phosphorus index of 120. Additional nutrients required by the plant will be supplied with fertilizers that do not contain phosphorus. Soil testing will be performed to determine overall fertility needs of the plants. A typical scenario is a 40 acre bermudagrass hay field with a history of poultry litter application. The litter will now be transported to other fields with phosphorus indexes of less than 120, and a commercial fertilizer will be used to supply N and K, if needed.</p> <p>This practice includes the costs to transport manure to offsite locations. Cost of this practice will be calculated using the following formula: \$0.13 x mile x ton = cost/mile/ton</p>		
Associated practices include: Waste Utilization (633), Manure Transfer (634), Conservation Crop Rotation (328), Cover Crop (340), Pest Management (595), Contour Farming (330), Deep Tillage (324), Filter Strip (393)		
Geographic Area:	Statewide	
Unit for Cost Estimate:	\$0.13/mile/ton	
Practice Life (Years):	1	
Discount Rate (%/Year):	5%	
Data Source: OSU Cooperative Custom Rates		Cost/Unit
Equipment/Installation/Labor		\$0.13
Transport Manure	\$0.13/mile/ton	
Labor		\$0.00
Included in Equipment/Installation Cost		
Mobilization		\$0.00
None		
Operation & Maintenance		\$0.00
0% O&M factor		
Acquisition of Technical Knowledge		\$0.00
N/A		
Forgone Income		\$0.00
No land taken out of production, no lost opportunity costs		
Risk		\$0.00
Reduced risk, improved water quality		
Administration & Permit Costs		\$0.00
None		
Total Cost Estimate:		\$0.13



ECONOMIC COST DATA

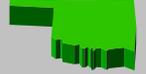
Cost Data

Practice Name:	Pest Management	
Practice Code:	595	
Activity Type:	595.1 - Sericea lespedeza, grazing lands	
Typical Implementation Scenario		
<p>This practice utilizes Integrated Pest Management (IPM) principles to manage weeds, including invasive and noxious species, in order to minimize impacts of pest control on natural resources. Prevention, Avoidance, Monitoring and Suppression (PAMS) strategies will be applied according to an approved Pest Management Plan and the Oklahoma NRCS Pest Management (595) practice standard.</p> <p>This scenario includes the use of chemicals to manage sericea lespedeza on grazing lands. Other costs include scouting and record keeping.</p>		
Associated Practices: Prescribed Grazing (528), Prescribed Burning (338), Forage Harvest Management (511)		
Data Source: 2009 actual cost data and current vendor pricing.		
Geographic Area:	Statewide	
Unit for Cost Estimate:	Acre	
Practice Life (Years):	1	
Discount Rate (%/Year):	5%	
		Cost/Unit
Materials		
Chemical - costs vary depending on chemical used. Costs are based on commonly used chemicals and recommended rates. (\$/acre)	\$10.02	\$10.53
Adjuvants, Surfactant, crop oils (\$/acre)	\$0.51	
Equipment/Installation		
Tractor / Sprayer or custom application (aerial or ground)		\$6.00
Labor		
Labor costs would include scouting and record keeping. Estimated at \$.13 per acre per year. (This is based on 1 hour for each 160 acres at \$20.00 per hour)		\$0.13
Labor for control strategies incorporated into equipment and installation cost		
Mobilization		
Included in Materials Cost		\$0.00
Operation & Maintenance		
Depending on success of first application, follow-up treatments are typically needed. Monitoring and record keeping would be done to support decisions of follow-up treatments.		\$0.00
Acquisition of Technical Knowledge		
Education incorporated into materials cost (a certified pesticide applicators license may be required)		\$0.00
Forgone Income		
No land taken out of production, no lost opportunity costs		\$0.00
Risk		
None		\$0.00
Administration & Permit Costs		
None		\$0.00
Total Cost Estimate:		\$16.66

ECONOMIC COST DATA

Cost Data

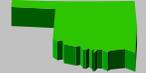
Practice Name:	Pest Management	
Practice Code:	595	
Activity Type:	595.2 - Thistle, grazing lands	
Typical Implementation Scenario		
This practice utilizes Integrated Pest Management (IPM) principles to manage weeds, including invasive and noxious species, in order to minimize impacts of pest control on natural resources. Prevention, Avoidance, Monitoring and Suppression (PAMS) strategies will be applied according to an approved Pest Management Plan and the Oklahoma NRCS Pest Management (595) practice standard.		
This scenario includes the use of chemicals to manage thistles identified as Noxious in Oklahoma (Musk, Scotch, Canada) on grazing lands. Other costs include scouting and record keeping.		
Associated Practices: Prescribed Grazing (528), Prescribed Burning (338), Forage Harvest Management (511)		
Data Source:	2009 actual cost data and current vendor pricing.	
Geographic Area:	Statewide	
Unit for Cost Estimate:	Acre	
Practice Life (Years):	1	
Discount Rate (%/Year):	5%	
		Cost/Unit
Materials		\$6.98
Chemical - costs vary depending on chemical used. Based on the most commonly used chemicals and recommended rates. (\$/acre)	\$6.47	
Adjuvants, Surfactant, crop oils (\$/acre)	\$0.51	
Equipment/Installation		\$6.00
Tractor / Sprayer or custom application (aerial or ground)		
Labor		\$0.13
Labor costs would include scouting and record keeping. Estimated at \$.13 per acre per year. (This is based on 1 hour for each 160 acres at \$20.00 per hour)		
Labor for control strategies incorporated into equipment and installation cost		
Mobilization		\$0.00
Included in Materials Cost		
Operation & Maintenance		\$0.00
Depending on success of first application, follow-up treatments are typically needed. Monitoring and record keeping would be done to support decisions of follow-up treatments.		
Acquisition of Technical Knowledge		\$0.00
Education incorporated into materials cost (a certified pesticide applicators license may be required)		
Forgone Income		\$0.00
No land taken out of production, no lost opportunity costs		
Risk		\$0.00
None		
Administration & Permit Costs		\$0.00
None		
Total Cost Estimate:		\$13.11



ECONOMIC COST DATA

Cost Data

Practice Name:	Pest Management	
Practice Code:	595	
Activity Type:	595.3 - IPM, Cropland	
Typical Implementation Scenario		
<p>This practice consists of using an Integrated Pest Management (IPM) system on <u>cropland</u> to reduce pest populations below economic injury levels and to minimize pest resistance and adverse effects of pesticides on human health and the environment. Prevention, Avoidance and Monitoring techniques will be applied. Suppression techniques are not included. This practice establishes an IPM system that utilizes scouting and monitoring to determine when pest control is needed and a pesticide record keeping system that documents all aspects of the system (pest, location, dates, rates, control measure used, etc.).</p>		
<p>Data Source: Producer and private crop consultants interviews</p>		
Geographic Area:	Statewide	
Unit for Cost Estimate:	Year	
Practice Life (Years):	1	
Discount Rate (%/Year):	5%	
		Cost/Unit
Materials		
Computer Software and equipment	\$100.00	\$100.00
Record Keeping Manual	\$0.00	
Equipment/Installation		
Pest Identification Manuals and Handbooks	\$100.00	\$125.00
Insect Nets, Containers, traps, etc	\$25.00	
Labor		
Record Keeping and Computer Data Entry (16 hours @ \$10/hour)	\$160.00	\$280.00
Scouting and Monitoring Pest Populations 6 times per year (1 hour/160 acre @ \$20.00/hour)	\$120.00	
Mobilization		
NA		\$0.00
Operation & Maintenance		
NA		\$0.00
Acquisition of Technical Knowledge		
An Oklahoma certified pesticide applicators license may be required (\$50/5 years)	\$10.00	\$60.00
Education - Continuing Educational Units may be required for applicator's license (\$250/5 years)	\$50.00	
Forgone Income		
No land taken out of production, no lost opportunity costs		\$0.00
Risk		
Reduced risk, improved water quality		\$0.00
Administration & Permit Costs		
None		\$0.00
Total Cost Estimate:		\$565.00



ECONOMIC COST DATA

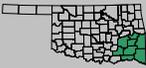
Cost Data

Practice Name:	Pest Management	
Practice Code:	595	
Activity Type:	595.4 - Crop application system	
Typical Implementation Scenario		
<p>This practice consists of using new and improved technology in pesticide applications to control pests and reduce the overall use of pesticides. This practice includes the use of Real Time Kinematic satellite navigation (RTK) level of GPS for auto steer and auto boom control to reduce sprayer overlap and/or sensor technology that identifies weeds and activates sprayer application on demand.</p>		
<p>Data Source: OSU Custom Farm Rates and previous cost share data</p>		
Geographic Area:	Statewide	
Unit for Cost Estimate:	Acre	
Practice Life (Years):	1	
Discount Rate (%/Year):	5%	
		Cost/Unit
Materials		\$0.00
Equipment/Installation		\$7.00
Private or commercial application (aerial or ground)	\$7.00	
Labor		\$0.00
Included in Equipment/Installation		
Mobilization		\$0.00
NA		
Operation & Maintenance		\$0.00
NA		
Acquisition of Technical Knowledge		\$0.00
Knowledge to management and operate auto system		
Forgone Income		\$0.00
No land taken out of production, no lost opportunity costs		
Risk		\$0.00
None		
Administration & Permit Costs		\$0.00
None		
Total Cost Estimate:		\$7.00



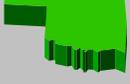
ECONOMIC COST DATA

Cost Data

Practice Name:	Pest Management	
Practice Code:	595	
Activity Type:	595.5 - Herbaceous Release	
Typical Implementation Scenario		
This practice utilizes Integrated Pest Management (IPM) principles to manage weeds/brush, including invasive and noxious species, in order to minimize impacts of pest control on natural resources. Prevention, Avoidance, Monitoring and Suppression (PAMS) strategies will be applied according to an approved Pest Management Plan and the Oklahoma NRCS Pest Management (595) practice standard.		
This scenario includes a spring herbicide application with a mixture of Imazapyr and Sulfometuron methyl in a 4 foot swath (33% coverage if 12 ft planting rows) over the rows of recently planted pine trees to control vegetative competition on an 80 acre loblolly pine plantation. Other costs may include scouting and record keeping. One third of the acre will be treated, cost is figured on the whole acre and not just the treated acre.		
Associated Practices: Tree/Shrub Establishment (612), Tree/Shrub Site Preparation (490), Forest Stand Improvement (666)		
Geographic Area:	Atoka, Choctaw, Haskell, Latimer, LeFlore, McCurtain, Pittsburg, and Pushmataha Counties in Oklahoma	
Unit for Cost Estimate:	Acre	
Practice Life (Years):	1	
Discount Rate (%/Year):	5%	
		Cost/Unit
Data Source: 2009 ODAFF actual costs.		
Materials		
Herbicide cost per acre	\$29.55	\$30.00
Adjuvants, Surfactant, crop oils - costs vary but range from \$.35 to .50 per acre	\$0.45	
Equipment/Installation		
Included in Labor cost		\$0.00
Labor		
Cost to apply herbicide per acre		\$30.00
Mobilization		
Included in Materials Cost		\$0.00
Operation & Maintenance		
Monitoring and record keeping would be done to support decisions of follow-up treatments.		\$0.00
Acquisition of Technical Knowledge		
Education incorporated into materials cost (a certified pesticide applicators license may be required)		\$0.00
Forgone Income		
No land taken out of production, no lost opportunity costs		\$0.00
Risk		
None		\$0.00
Administration & Permit Costs		
None		\$0.00
Total Cost Estimate:		\$60.00

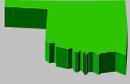
ECONOMIC COST DATA

Cost Data

Practice Name:	Terrace	
Practice Code:	600	
Activity Type:	600.1 - Terrace Construction	
Typical Implementation Scenario		
This practice applies to the construction of a new terrace system. Terrace, for the purposes of this practice, is defined as a channel with a ridge on the downslope side installed across the land slope to control erosion. The typical terrace system consists of 5130 LF of terraces.		
Associated Practices: 412-Grassed Waterway, 330-Contour Farming, 332-Contour Buffer Strips		
Geographic Area:	Statewide	
Unit for Cost Estimate:	LF - Linear Foot	
Practice Life (Years):	10	
Discount Rate (%/Year):	5%	Cost/Unit
Data Source: 2009 actual cost data.		
Materials	None	\$0.00
Equipment/Installation		\$0.64
Labor	Included in Equipment/Installation cost	\$0.00
Mobilization	Included in Equipment/Installation Cost	\$0.00
Operation & Maintenance (Annual)	0% of Installation Costs	\$0.00
Acquisition of Technical Knowledge	None	\$0.00
Forgone Income (Annual)	Minimal to no land taken out of production.	\$0.00
Risk	Reduced risk, less concentrated flow erosion, less machinery wear & tear.	\$0.00
Administration & Permit Costs	None	\$0.00
Total Cost Estimate:		\$0.64

ECONOMIC COST DATA

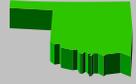
Cost Data

Practice Name:	Terrace	
Practice Code:	600	
Activity Type:	600.2 - Terrace (Fill Section)	
Typical Implementation Scenario		
This practice applies to the construction of new terraces that have underground outlets or subsurface drains. The typical system is a 40 acre field with 6 terraces. Each terrace height (channel to ridge) varies from 1.4 ft to 4.0 ft resulting in an average ridge volume of 200 CY per terrace at a total cost of \$1,788.00		
Associated Practices: 620-Underground Outlet, 606-Subsurface Drain, 330-Contour Farming, 332-Contour Buffer Strips		
Geographic Area:	Statewide	
Unit for Cost Estimate:	CY - Cubic Yard	
Practice Life (Years):	10	
Discount Rate (%/Year):	5%	Cost/Unit
Data Source: 2008 actual cost data.		
Materials		\$0.00
None		
Equipment/Installation		\$1.49
Labor		
Included in Equipment/Installation cost		
Mobilization		\$0.00
Included in Equipment/Installation Cost		
Operation & Maintenance (Annual)		\$0.00
0% of Installation Costs		
Acquisition of Technical Knowledge		\$0.00
None		
Forgone Income (Annual)		\$0.00
Minimal to no land taken out of production.		
Risk		\$0.00
Reduced risk, less concentrated flow erosion.		
Administration & Permit Costs		\$0.00
None		
Total Cost Estimate:		\$1.49

ECONOMIC COST DATA

Cost Data

Practice Name:	Terrace	
Practice Code:	600	
Activity Type:	600.3 - Terrace Construction with Ridge Removal	
Typical Implementation Scenario		
This scenario consists of removing a system of existing inadequate terraces and constructing a new terrace system. A typical job consists of removing 5445 LF of old terraces and constructing 3300 LF of new terraces, which totals 8745 LF. The total cost for this typical job is \$5,072.10.		
Associated Practices: 412-Grassed Waterway, 330-Contour Farming, 332-Contour Buffer Strips		
Geographic Area:	Statewide	
Unit for Cost Estimate:	LF - Linear Foot	
Practice Life (Years):	10	
Discount Rate (%/Year):	5%	
Data Source:	2009 actual cost data	
Materials		Cost/Unit
None		\$0.00
Equipment/Installation		\$0.58
Labor		\$0.00
Included in Equipment/Installation cost		
Mobilization		\$0.00
Included in Equipment/Installation Cost		
Operation & Maintenance (Annual)		\$0.00
0% of Installation Costs		
Acquisition of Technical Knowledge		\$0.00
None		
Forgone Income (Annual)		\$0.00
Minimal to no land taken out of production.		
Risk		\$0.00
Reduced risk, less concentrated flow erosion, less machinery wear & tear.		
Administration & Permit Costs		\$0.00
None		
Total Cost Estimate:		\$0.58

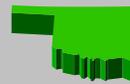


Cost/Unit

ECONOMIC COST DATA

Cost Data

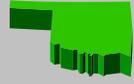
Practice Name:	Terrace	
Practice Code:	600	
Activity Type:	600.4 - Terrace Reconstruction	
Typical Implementation Scenario		
This practice applies when new terraces are to be reconstructed on the same alignment as the existing terraces. The average job consists of the reconstruction of 4842 linear feet of existing terrace at a cost of \$0.56/linear foot. This gives a total cost of \$2,711.52		
Associated Practices: 412-Grassed Waterway, 330-Contour Farming, 332-Contour Buffer Strips		
Geographic Area:	Statewide	
Unit for Cost Estimate:	LF - Linear Foot	
Practice Life (Years):	10	
Discount Rate (%/Year):	5%	
		Cost/Unit
Data Source: 2009 actual cost data		
Materials		\$0.00
None		
Equipment/Installation		\$0.56
Included in Equipment/Installation cost		
Labor		\$0.00
Included in Equipment/Installation cost		
Mobilization		\$0.00
Included in Equipment/Installation Cost		
Operation & Maintenance (Annual)		\$0.00
0% of Installation Costs		
Acquisition of Technical Knowledge		\$0.00
None		
Forgone Income (Annual)		\$0.00
Minimal to no land taken out of production.		
Risk		\$0.00
Reduced risk, less concentrated flow erosion, less machinery wear & tear.		
Administration & Permit Costs		\$0.00
None		
Total Cost Estimate:		\$0.56



ECONOMIC COST DATA

Cost Data

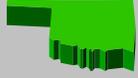
Practice Name:	Terrace								
Practice Code:	600								
Activity Type:	600.5 - Terrace Construction with Ridge Removal and Terrace Reconstruction								
Typical Implementation Scenario									
This practice applies when existing inadequate terraces in the terrace system are to be removed, new terraces are to be constructed in the terrace system, and the remaining terraces in the system are to be reconstructed along the same alignment as the existing terraces. A typical job consists of removing 1250 LF of old terraces, constructing 1300 LF of new terraces, and reconstructing 3000 LF of existing terraces, which totals 5550 LF. The total cost for this typical job is \$3,219.00.									
Associated Practices: 412-Grassed Waterway, 330-Contour Farming, 332-Contour Buffer Strips									
Geographic Area:	Statewide								
Unit for Cost Estimate:	LF - Linear Foot								
Practice Life (Years):	10								
Discount Rate (%/Year):	5%								
									Cost/Unit
Data Source: 2009 actual cost data									
Materials	None								\$0.00
Equipment/Installation									\$0.58
Labor	Included in Equipment/Installation cost								\$0.00
Mobilization	Included in Equipment/Installation Cost								\$0.00
Operation & Maintenance (Annual)	0% of Installation Costs								\$0.00
Acquisition of Technical Knowledge	None								\$0.00
Forgone Income (Annual)	Minimal to no land taken out of production.								\$0.00
Risk	Reduced risk, less concentrated flow erosion, less machinery wear & tear.								\$0.00
Administration & Permit Costs	None								\$0.00
Total Cost Estimate:									\$0.58



ECONOMIC COST DATA

Cost Data

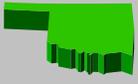
Practice Name:	Herbaceous Wind Barriers		
Practice Code:	603		
Activity Type:	603.1 - Introduced Grass Seed		
Typical Implementation Scenario			
This practice consists of planting a series of narrow strips consisting of two rows of an introduced grass species, such as weeping lovegrass, spaced 24 inches apart, running in an east/west direction across an 80 acre field of continuous wheat, on gently sloping sandy textured soils to reduce soil erosion from wind. The distance between the strips will average approximately 100 feet. The vegetated wind barrier will be planted according to the NRCS Pasture and Hay Planting (512) standard.			
This practice includes the costs of introduced perennial grass seed, tractor, drill and labor to plant grass in strips.			
Associated practices include: Residue and Tillage Management - No Till/Strip Till/Direct Seed (329), Residue and Tillage Management - Mulch Till (345), Residue and Tillage Management - Ridge Till (346), Cover Crop (340), Pest Management (595), Nutrient Management (590), Contour Farming (330), Deep Tillage (324), Pasture and Hayland Planting (512), Forage Harvest Management (511), Prescribed Grazing (528), Conservation Crop Rotation (328)			
Geographic Area:	Statewide		
Unit for Cost Estimate:	Acre		
Practice Life (Years):	5		
Discount Rate (%/Year):	5%		
			Cost/Unit
Data Source: 2009 actual cost data, OSU Enterprise Budge Software, Pasture and Hay Planting (512) cost data			
Materials			\$22.88
Introduced Perennial (old world bluestem or weeping lovegrass) Grass Seed			
Equipment/Installation/Labor			\$23.74
Tractor / drill		\$7.00	
includes labor costs			
Seedbed Preparation. Most seedbed preparation work is done as part of tillage operations for previously grown crops. In		\$16.74	
Labor			\$0.00
Included in Equipment/Installation Cost			
Mobilization			\$0.00
None			
Operation & Maintenance			\$1.40
3% O&M factor			
Acquisition of Technical Knowledge			\$0.00
Calibrate and operate seed drill, manage perennial grass			
Forgone Income			\$15.63
1 Acre taken out of crop production			
Assume wheat crop minus value of hay/forage crop from perennial forage.			
Net Income (\$/Ac/Yr)			
Risk			\$0.00
Reduced risk, less erosion, less machinery wear & tear.			
Administration & Permit Costs			\$0.00
None			
Total Cost Estimate:			\$63.65



ECONOMIC COST DATA

Cost Data

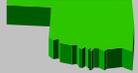
Practice Name:	Herbaceous Wind Barriers		
Practice Code:	603		
Activity Type:	603.2 - Native Grass Monoculture		
Typical Implementation Scenario			
This practice consists of establishing a series of narrow strips consisting of two rows of switchgrass, spaced 30 inches apart, running in an east/west direction across an 80 acre field of continuous wheat, on gently sloping sandy textured soils to reduce soil erosion from wind. The distance between the strips will average approximately 100 feet. The vegetated wind barrier will be planted according to the NRCS Pasture and Hay Planting (512) standard.			
This practice includes the costs of grass seed, tractor, drill and labor to plant grass in strips.			
Associated practices include: Residue and Tillage Management - No Till/Strip Till/Direct Seed (329), Residue and Tillage Management - Mulch Till (345), Residue and Tillage Management - Ridge Till (346), Cover Crop (340), Pest Management (595), Nutrient Management (590), Contour Farming (330), Deep Tillage (324), Pasture and Hayland Planting (512) Forage Harvest Management (511), Prescribed Grazing (528), Conservation Crop Rotation (328)			
Geographic Area:	Statewide		
Unit for Cost Estimate:	Acre		
Practice Life (Years):	5		
Discount Rate (%/Year):	5%		
Data Source: 2009 actual cost data, OSU Enterprise Budge Software, Pasture and Hay Planting (512) cost data			Cost/Unit
Materials			\$57.92
Native Grass (switchgrass only)			
Equipment/Installation/Labor			\$23.74
Tractor / drill		\$7.00	
includes labor costs			
Seedbed Preparation. Most seedbed preparation work is done as part of tillage operations for previously grown crops. In		\$16.74	
Labor			\$0.00
Included in Equipment/Installation Cost			
Mobilization			\$0.00
None			
Operation & Maintenance			\$2.45
3% O&M factor			
Acquisition of Technical Knowledge			\$0.00
Calibrate and operate seed drill, manage perennial grass			
Forgone Income			\$2.74
1 Acre taken out of crop production			
Assume wheat crop minus value of hay/forage crop from perennial forage.			
Net Income (\$/Ac/Yr)			
Risk			\$0.00
Reduced risk, less erosion, less machinery wear & tear.			
Administration & Permit Costs			\$0.00
None			
Total Cost Estimate:			\$86.85



ECONOMIC COST DATA

Cost Data

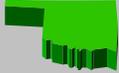
Practice Name:	Herbaceous Wind Barriers		
Practice Code:	603		
Activity Type:	603.3 - Native Grass Mixture		
Typical Implementation Scenario			
This practice consists of establishing a series of narrow strips consisting of two rows of a native grass mixture, spaced 30 inches apart, running in an east/west direction across an 80 acre field of continuous wheat, on gently sloping sandy textured soils to reduce soil erosion from wind. The distance between the strips will average approximately 100 feet. The vegetated wind barrier will be planted according to the NRCS Range Planting (550).			
This practice includes the costs of perennial native grass seed, tractor, drill and labor to plant grass in strips.			
Associated practices include: Residue and Tillage Management - No Till/Strip Till/Direct Seed (329), Residue and Tillage Management - Mulch Till (345), Residue and Tillage Management - Ridge Till (346), Cover Crop (340), Pest Management (595), Nutrient Management (590), Contour Farming (330), Deep Tillage (324), Range Planting (550), Forage Harvest Management (511), Prescribed Grazing (528), Conservation Crop Rotation (328)			
Geographic Area:	Statewide		
Unit for Cost Estimate:	Acre		
Practice Life (Years):	5		
Discount Rate (%/Year):	5%		
			Cost/Unit
Data Source: 2009 actual cost data, OSU Enterprise Budge Software, Range Planting (550) cost data			
Materials			\$53.41
Seed (based on average lbs. PLS and cost per lb. PLS needed to plant a typical range seeding mixture according to the NRCS Range Fertilizer and/or amendments, if needed for establishment, are covered under 590 Does not include cost of cover crops if needed			
Equipment/Installation/Labor			\$23.74
Tractor / drill \$7.00 includes labor costs Seedbed Preparation. Most seedbed preparation work is done as part of tillage operations for previously grown crops. In \$16.74			
Labor			\$0.00
Included in Equipment/Installation Cost			
Mobilization			\$0.00
None			
Operation & Maintenance			\$2.31
3% O&M factor			
Acquisition of Technical Knowledge			\$0.00
Calibrate and operate seed drill, manage perennial grass			
Forgone Income			\$2.74
1 Acre taken out of crop production Assume wheat crop minus value of hay/forage crop from perennial forage. Net Income (\$/Ac/Yr)			
Risk			\$0.00
Reduced risk, less erosion, less machinery wear & tear.			
Administration & Permit Costs			\$0.00
None			
Total Cost Estimate:			\$82.20



ECONOMIC COST DATA

Cost Data

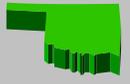
Practice Name: Salinity and Sodic Soil Management		
Practice Code: 610		
Activity Type: 610.1 - Establishing Grass on Salt Areas		
Typical Implementation Scenario		
<p>This practice will be used to establish grass on saline soils, saline seeps, or alkaline (sodic) areas of a field to reduce and control harmful salt concentrations. The saline or alkaline soils are to be identified using designated procedures in the Oklahoma NRCS 610 standard. Additional treatment required to reclaim the area will be planned and applied accordingly. Grass species selected for planting must have the appropriate salt tolerance for the designated area as listed in Technical Note OK-17, Table 1. A typical scenario involves a 2 acre saline seep located within a continuous wheat field. Grass planting will be done according to the Oklahoma NRCS Critical Area Planting (342) standard.</p> <p>This practice includes the costs for perennial grass, tractor, drill/sprigger and labor to plant grass in salted areas.</p>		
Associate practices include: Nutrient Management (590), Irrigation Water Management (449), Deep Tillage (324), Cover Crop (340), Critical Area Planting (342)		
Geographic Area:	Statewide	
Unit for Cost Estimate:	Acre	
Practice Life (Years):	1	
Discount Rate (%/Year):	5%	
		Cost/Unit
Data Source: 2009 actual cost data and current vendor pricing.		
Materials		
<p>Costs for seed and or sprigs are included in Equipment and Installation. All rates and species are according to the Critical Area Planting (342) Does not include cost of fertilizer and/or amendments that may be needed for establishment. Refer to 590.1 and 590.3</p>		
Equipment/Installation		\$132.72
	Seeding introduced or native seeds - Includes seed costs, seedbed preparation and seeding equipment. Typical species would be bermudagrass, tall wheatgrass, tall fescue, lovegrass and major native grass species	\$119.52
	Sprigging bermudagrass includes cost of sprigs, tractor / sprigging equipment and planting	\$145.92
Labor		
Costs included with installation		
Mobilization		
None		
Operation & Maintenance		
0% O&M factor		
Acquisition of Technical Knowledge		
Calibrate and operate seed drill/sprigger, manage perennial grass		
Forgone Income		
None		
Risk		
Reduced risk, less erosion		
Administration & Permit Costs		
None		
Total Cost Estimate:		\$132.72



ECONOMIC COST DATA

Cost Data

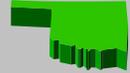
Practice Name:	Salinity and Sodic Soil Management	
Practice Code:	610	
Activity Type:	610.2 - Applying Gypsum for Soil Reclamation	
Typical Implementation Scenario		
<p>This practice is to be used to assist in reclaiming alkaline (sodic) areas of a field by applying gypsum to promote desired plant growth. Gypsum is applied to replace the sodium in the soil and allow it to leach through the soil profile. Additional treatment required to reclaim the area will be planned and applied accordingly. A typical scenario involves a 10 acre area within a 80 acre wheat field which is severely limiting crop yields to a high concentration of sodium.</p> <p>This practice includes the costs for gypsum and its application.</p>		
Associate practices include: Nutrient Management (590), Irrigation Water Management (449), Deep Tillage (324), Cover Crop (340)		
Geographic Area:	Statewide	
Unit for Cost Estimate:	Ton	
Practice Life (Years):	1	
Discount Rate (%/Year):	5%	
		Cost/Unit
Data Source: 2009 actual cost data and current vendor pricing.		
Materials		
Gypsum		\$20.00
Equipment/Installation/Labor		
Application of gypsum		\$8.00
Soil Salinity Test		\$2.00
Labor		
Included in Equipment/Installation Cost		\$0.00
Mobilization		
None		\$0.00
Operation & Maintenance		
0% O&M factor		\$0.00
Acquisition of Technical Knowledge		
Application of Gypsum		\$0.00
Forgone Income		
None		\$0.00
Risk		
Reduced risk, less erosion		\$0.00
Administration & Permit Costs		
None		\$0.00
Total Cost Estimate:		\$30.00



ECONOMIC COST DATA

Cost Data

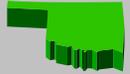
Practice Name:	Tree/Shrub Establishment		
Practice Code:	612		
Activity Type:	612.1 - Trees &/or Shrubs - barerooted		
Typical Implementation Scenario			
This practice consists of planting <u>barerooted</u> trees and/or shrubs on a 10' x 12' spacing to enhance wildlife habitat and restore natural diversity. The typical scenario involves converting a 40 acre cropland field to bottomland hardwoods.			
Includes the cost of the bare root seedlings and the costs of planting (labor and equipment). The planting of fruit or nut production trees is not eligible for payment.			
Associated practices include: Windbreak/Shelterbelt Establishment (380), Windbreak/Shelterbelt Renovation (650), Upland Wildlife Habitat Management (645), Pest Management (595), Tree/Shrub Pruning (660), Brush Management (314), Forest Stand Improvement (666), Riparian Forest Buffer (391), Alley Cropping (311), Critical Area Planting (342), Silvopasture Establishment (381), Hedgerow Planting (422), Irrigation System, Microirrigation (441), Tree/Shrub Site Preparation (490), Firebreak (394) Access Control (472)			
Geographic Area:	Statewide		
Unit for Cost Estimate:	Each		
Practice Life (Years):	15		
Discount Rate (%/Year):	5%		
Data Source: 2009 actual costs, and ODAFF-Forestry Services Data			
			Cost/Unit
Materials			\$0.40
	<u>Unit</u>	<u>\$/Unit</u>	
Bare-rooted seedlings (average for all species and order sizes)	Tree	\$0.40	
Equipment/Installation			\$0.30
	<u>Unit</u>	<u>\$/Unit</u>	
Planting of each seedling	Tree	\$0.30	
Labor			\$0.00
(Included in Installation cost)			
Mobilization			\$0.01
2% of materials, equipment and labor			
Operation & Maintenance			\$0.01
Replacement of unsuccessful seedlings during establishment period, 1% of materials, equipment and labor			
Acquisition of Technical Knowledge			\$0.00
None			
Forgone Income			\$0.14
Deferred grazing for up to five years.			
Risk			\$0.00
None			
Administration & Permit Costs			\$0.00
None			
Total Cost Estimate:			\$0.86



ECONOMIC COST DATA

Cost Data

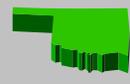
Practice Name: Tree/Shrub Establishment	
Practice Code: 612	
Activity Type: 612.2 - Trees &/or Shrubs - barerooted, with animal control devices	
Typical Implementation Scenario This practice consists of planting barerooted trees and/or shrubs with animal control devices on a 10' x 12' spacing, to enhance wildlife habitat and restore natural diversity. The typical scenario involves converting a 40 acre cropland field to bottomland hardwoods.	
Includes the cost of the bare root seedlings and the costs of planting (labor and equipment). Includes the use of the polyethylene wrap or protection net or tube, stakes, and the cost of labor for placing the devices. The planting of fruit or nut production trees is not eligible for payment.	
Associated practices include: Windbreak/Shelterbelt Establishment (380), Windbreak/Shelterbelt Renovation (650), Upland Wildlife Habitat Management (645), Pest Management (595), Tree/Shrub Pruning (660), Brush Management (314), Forest Stand Improvement (666), Riparian Forest Buffer (391), Alley Cropping (311), Critical Area Planting (342), Silvopasture Establishment (381), Hedgerow Planting (422), Irrigation System, Microirrigation (441), Tree/Shrub Site Preparation (490), Firebreak (394) Access Control (472)	
Geographic Area:	Statewide
Unit for Cost Estimate:	Each
Practice Life (Years):	15
Discount Rate (%/Year):	5%
Data Source: 2009 vendor quotes, and ODAFF-Forestry Services Data	
Materials	Cost/Unit
	\$0.65
	<u>Unit</u>
Bare-rooted seedlings (average for all species and order sizes)	<u>Tree</u>
	\$0.40
Animal Control Devices	<u>Tree</u>
Total	\$0.25
	\$0.65
Equipment/Installation	\$0.35
	<u>Unit</u>
Planting of each seedling	<u>Tree</u>
	\$0.30
Animal Control Devices	<u>Tree</u>
Total	\$0.05
	\$0.35
Labor	\$0.00
(Included in Installation cost)	
Mobilization	\$0.02
2% or materials, equipment and labor	
Operation & Maintenance	\$0.01
Replacement of unsuccessful seedlings during establishment period, 1% of materials, equipment and labor	
Acquisition of Technical Knowledge	\$0.00
None	
Forgone Income	\$0.14
Deferred grazing for up to five years.	
Risk	\$0.00
None	
Administration & Permit Costs	\$0.00
Total Cost Estimate:	\$1.17



ECONOMIC COST DATA

Cost Data

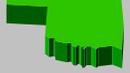
Practice Name: Tree/Shrub Establishment	
Practice Code: 612	
Activity Type: 612.3 - Trees &/or Shrubs - containerized/potted	
Typical Implementation Scenario	
This practice consists of planting <u>containerized</u> trees/shrubs on a 10' x 12' spacing, in harsh site conditions where bare rooted seedlings are not recommended, to enhance wildlife habitat and restore natural diversity. This scenario should only be used when the planting plan requires containerized tree stock. The typical scenario involves converting a 40 acre abandoned cropland field to bottomland hardwoods.	
Includes the cost of the containerized or potted seedlings and the costs of planting (labor and equipment). The planting of fruit or nut production trees is not eligible for payment.	
Associated practices include: Windbreak/Shelterbelt Establishment (380), Windbreak/Shelterbelt Renovation (650), Upland Wildlife Habitat Management (645), Pest Management (595), Tree/Shrub Pruning (660), Brush Management (314), Forest Stand Improvement (666), Riparian Forest Buffer (391), Alley Cropping (311), Critical Area Planting (342), Silvopasture Establishment (381), Hedgerow Planting (422), Irrigation System, Microirrigation (441), Tree/Shrub Site Preparation (490), Firebreak (394) Access Control (472)	
Geographic Area:	Statewide
Unit for Cost Estimate:	Each
Practice Life (Years):	15
Discount Rate (%/Year):	5%
Data Source: 2009 ODAFF-Forestry Services Data	
Materials	Cost/Unit
	\$0.90
Containerized or potted seedlings (average for all species and order sizes)	Unit Tree \$0.90
Equipment/Installation	\$0.30
Planting of each seedling	Unit Tree \$0.30
Labor (Included in Installation cost)	\$0.00
Mobilization 2% or materials, equipment and labor	\$0.02
Operation & Maintenance Replacement of unsuccessful seedlings during establishment period, 1% of materials, equipment and labor	\$0.01
Acquisition of Technical Knowledge None	\$0.00
Forgone Income Deferred grazing for up to five years.	\$0.14
Risk None	\$0.00
Administration & Permit Costs None	\$0.00
Total Cost Estimate:	\$1.38



ECONOMIC COST DATA

Cost Data

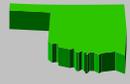
Practice Name:	Tree/Shrub Establishment	
Practice Code:	612	
Activity Type:	612.5 - Establishment of trees or shrubs through transplanting with a tree spade	
Typical Implementation Scenario		
This practice consists of transplanting sand plum shrubs by using a tree spade, to create mottes which will promote protective cover for bobwhite quail. The typical scenario involves transplanting sand plums into mottes scattered approximately 150 feet apart throughout an 80 acre native grass field.		
Includes the cost of labor and equipment (the tree spade to dig up, transport and transplant the planting stock) to complete the planting operation.		
Associated practices include: Windbreak/Shelterbelt Establishment (380), Windbreak/Shelterbelt Renovation (650), Upland Wildlife Habitat Management (645), Pest Management (595), Tree/Shrub Pruning (660), Brush Management (314), Forest Stand Improvement (666), Riparian Forest Buffer (391), Alley Cropping (311), Critical Area Planting (342), Silvopasture Establishment (381), Hedgerow Planting (422), Irrigation System, Microirrigation (441), Tree/Shrub Site Preparation (490), Firebreak (394) Access Control (472)		
Geographic Area:	Statewide	
Unit for Cost Estimate:	Plug	
Practice Life (Years):	15	
Discount Rate (%/Year):	5%	
Data Source: 2009 ODWC estimates of charges and job costs for their equipment		
		Cost/Unit
Materials		\$0.00
N/A		
Equipment/Installation		\$8.00
Cost of equipment and labor to compete the transplant operations. - unit is a PLUG of trees		
Labor		\$0.00
(Included in Installation cost)		
Mobilization		\$0.16
2% or materials, equipment and labor		
Operation & Maintenance		\$0.08
Replacement of unsuccessful seedlings during establishment period, 1% of materials, equipment and labor		
Acquisition of Technical Knowledge		\$0.00
None		
Forgone Income		\$0.14
Deferred grazing for up to five years.		
Risk		\$0.00
None		
Administration & Permit Costs		\$0.00
None		
Total Cost Estimate:		\$8.38



ECONOMIC COST DATA

Cost Data

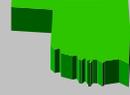
Practice Name: Tree/Shrub Establishment			
Practice Code: 612			
Activity Type: 612.6 - Planting Pine in Plantation Type Settings			
Typical Implementation Scenario			
This practice consists of planting a 30 acre clear cut field to loblolly pine seedlings on a 8' x 9' spacing following a ripping operation, for the establishment of forest products. Includes the cost of the bare root pine seedlings and the costs of planting seedlings (labor and equipment) in a plantation type of setting, such as tree farm, timber stand, or reforestation.			
Associated practices include: Upland Wildlife Habitat Management (645), Pest Management (595), Tree/Shrub Pruning (660), Brush Management (314), Forest Stand Improvement (666), Silvopasture Establishment (381), Tree/Shrub Site Preparation (490), Firebreak (394), Access Control (472)			
Geographic Area:	Statewide		
Unit for Cost Estimate:	Each		
Practice Life (Years):	15		
Discount Rate (%/Year):	5%		
Data Source: 2009 ODAFF-Forestry Services Data			Cost/Unit
Materials			\$0.07
	<u>Unit</u>	<u>\$/Unit</u>	
Bare-rooted pine seedlings	Each	\$0.07	
Equipment/Installation			\$0.11
	<u>Unit</u>	<u>\$/Unit</u>	
Planting of each seedling	Each	\$0.11	
Labor			\$0.00
(Included in Installation cost)			
Mobilization			\$0.00
2% of materials, equipment and labor			
Operation & Maintenance			\$0.00
Replacement of unsuccessful seedlings during establishment period, 1% of materials, equipment and labor			
Acquisition of Technical Knowledge			\$0.00
None			
Forgone Income			\$0.14
Deferred grazing for up to five years.			
Risk			\$0.00
None			
Administration & Permit Costs			\$0.00
None			
Total Cost Estimate:			\$0.33



ECONOMIC COST DATA

Cost Data

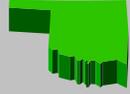
Practice Name:	Watering Facility	
Practice Code:	614	
Activity Type:	614.1 Drinking Tank or Trough	
Typical Implementation Scenario		
A device (tank, trough, or other watertight container) for providing animal access to water.		
A livestock watering facility for livestock or wildlife. This covers all types of drinking facilities except for freeze proof tanks and energy free fountains. Cost covers concrete, concrete floor with steel sidewalls, fiberglass tanks, and rubber tire tanks, and includes all materials and labor to install the tank including foundation preparation, apron, and plumbing, based on a turnkey operation.		
Associated practices include: 561-Heavy Use Area Protection, 382-Fence, 533-Pumping Plant, 516-Pipeline		
Geographic Area:	Statewide	
Unit for Cost Estimate:	Diameter Foot (DF)	
Practice Life (Years):	10	
Discount Rate (%/Year):	5%	
		Cost/Unit
Data Source: 2009 actual jobs and cost data		
Materials		\$160.56
Includes cost of materials, equipment/installation, labor, mobilization		
Equipment/Installation		\$0.00
Included in Materials cost		
Labor		\$0.00
Included in Materials cost		
Mobilization		\$0.00
Included in Materials cost		
Operation & Maintenance		\$1.61
1% of Installation Costs		
Acquisition of Technical Knowledge		\$0.00
N/A		
Forgone Income		\$0.00
None		
Risk		\$0.00
Reduced risk, can better manage livestock		
Administration & Permit Costs		\$0.00
None		
Total Cost Estimate:		\$162.17



ECONOMIC COST DATA

Cost Data

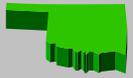
Practice Name:	Watering Facility	
Practice Code:	614	
Activity Type:	614.2 Energy Free Fountains	
Typical Implementation Scenario		
A device (tank, trough, or other watertight container) for providing animal access to water.		
Includes the complete installation of an approved Energy-Free Fountain waterer. Typically this would be a fountain unit with two to four watering stations. The cost includes all materials and labor to install the fountain, including foundation preparation, apron, and plumbing in a turnkey installation.		
Associated practices include: 561-Heavy Use Area Protection, 382-Fence, 533-Pumping Plant, 516-Pipeline		
Geographic Area:	Statewide	
Unit for Cost Estimate:	Gallon	
Practice Life (Years):	10	
Discount Rate (%/Year):	5%	
		Cost/Unit
Data Source: 2008 & 2009 actual cost data		
Materials		\$29.56
Includes cost of materials, equipment/installation, labor, mobilization		
Equipment/Installation		\$0.00
Included in Materials cost		
Labor		\$0.00
Included in Materials cost		
Mobilization		\$0.00
Included in Materials cost		
Operation & Maintenance		\$0.30
1% of Installation Costs		
Acquisition of Technical Knowledge		\$0.00
N/A		
Forgone Income		\$0.00
None		
Risk		\$0.00
None		
Administration & Permit Costs		\$0.00
None		
Total Cost Estimate:		\$29.86



ECONOMIC COST DATA

Cost Data

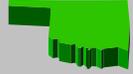
Practice Name:	Watering Facility	
Practice Code:	614	
Activity Type:	614.3 Freeze Proof Tank	
Typical Implementation Scenario		
The complete installation of an approved pre-fabricated concrete freeze proof tank. Cost includes all materials and labor on a turnkey installation, to install the tank including the headwall, the apron, and plumbing for a unit installed in the backside of an embankment. For installations that are not in the backside of the embankment, a separate pipeline design will be needed for the pipeline feeding the tank.		
Associated practices include: 561-Heavy Use Area Protection, 382-Fence, 516-Pipeline		
Geographic Area:	Statewide	
Unit for Cost Estimate:	EACH	
Practice Life (Years):	10	
Discount Rate (%/Year):	5%	
Data Source: 2008 actual cost data.		Cost/Unit
Materials		\$1,140.30
Cost of tank (includes the miscellaneous appurtenances and installation)		
Equipment/Installation		\$0.00
(Included in Materials Costs)		
Labor		\$0.00
(Included in Materials Costs)		
Mobilization		\$0.00
Included in Installation Costs		
Operation & Maintenance		\$11.40
1% of Installation Costs		
Acquisition of Technical Knowledge		\$0.00
N/A		
Forgone Income		\$0.00
None		
Risk		\$0.00
Reduced risk, can better manage livestock		
Administration & Permit Costs		\$0.00
None		
Total Cost Estimate:		\$1,151.70



ECONOMIC COST DATA

Cost Data

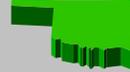
Practice Name:	Watering Facility	
Practice Code:	614	
Activity Type:	614.4 Guzzler	
Typical Implementation Scenario		
A device for providing drinking water in a wildlife watering system.		
The complete installation of an approved guzzler as specified in Wildlife Guzzler Standard Drawings 1 and 2 of the Oklahoma Standard 648, Wildlife Watering Facility, or as described in the list of "Pre-Approved Structures, Components, and Appurtenances" in Section IV of the Field Office Technical Guide. Total gallons for the cost will be based on the effective storage in the tank or barrel. Prefabricated guzzlers and guzzlers constructed using Standard Drawing No. 2, can be filled to capacity; therefore the effective storage is 100 percent of the capacity of the tank as measured in gallons. Because of the design features, guzzlers constructed using Standard Drawing No. 1 can be filled to a maximum of two-thirds of capacity; therefore the effective storage is 66.6 percent of the capacity of the tank as measured in gallons.		
Associated practices include: 645-Upland Wildlife Habitat Management & Addendum		
Geographic Area:	Statewide	
Unit for Cost Estimate:	Gallon	
Practice Life (Years):	10	
Discount Rate (%/Year):	5%	
		Cost/Unit
Data Source: Indexed 2007 Actual Cost Data.		
Materials		\$6.30
Cost includes the installation		
Equipment/Installation		\$0.00
(Included in Materials Costs)		
Labor		\$0.00
(Included in Materials Costs)		
Mobilization		\$0.00
Included in Installation Costs		
Operation & Maintenance		\$0.06
1% of Installation Costs		
Acquisition of Technical Knowledge		\$0.00
N/A		
Forgone Income		\$0.00
None		
Risk		\$0.00
N/A		
Administration & Permit Costs		\$0.00
None		
Total Cost Estimate:		\$6.36



ECONOMIC COST DATA

Cost Data

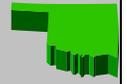
Practice Name:	Watering Facility
Practice Code:	614
Activity Type:	614.5 Storage Tank
Typical Implementation Scenario	
A device (tank, trough, or other watertight container) for providing storage of water in a livestock or wildlife watering system.	
This cost is for the complete installation of an approved prefabricated or refurbished storage tank for use in a livestock or wildlife watering system. These tanks are not drinking facilities. Materials may be fiberglass or steel. Tanks may be of used materials provided they are refurbished and certified for the intended purpose. The cost includes all materials and labor to install the storage tank including foundation preparation and plumbing	
Associated practices include: 533-Pumping Plant, 516-Pipeline	
Geographic Area:	Statewide
Unit for Cost Estimate:	Gallon
Practice Life (Years):	10
Discount Rate (%/Year):	5%
Data Source: Indexed 2007 Actual Cost Data.	
	Cost/Unit
Materials	\$0.53
Cost of tank (includes the miscellaneous appurtenances and installation)	
Equipment/Installation	\$0.00
(Included in Materials Costs)	
Labor	\$0.00
(Included in Materials Costs)	
Mobilization	\$0.00
Included in Installation Costs	
Operation & Maintenance	\$0.01
1% of Installation Costs	
Acquisition of Technical Knowledge	\$0.00
N/A	
Forgone Income	\$0.00
None	
Risk	\$0.00
Reduced risk, can better manage livestock	
Administration & Permit Costs	\$0.00
None	
Total Cost Estimate:	\$0.54



ECONOMIC COST DATA

Cost Data

Practice Name: Underground Outlet		
Practice Code: 620		
Activity Type: 620.1 Underground Outlet		
Typical Implementation Scenario		
<p>This practice applies to the installation of a conduit, such as plastic pipe, installed beneath the ground surface to collect and convey it to a suitable outlet. A typical underground outlet serves as a stable outlet for a 40 acre terrace system having six 6 inch inlets and 1300 linear feet of 4 inch to 8 inch mainline at a total cost of \$4,890</p>		
Associated practices include: 600-Terrace, 362-Diversion		
Geographic Area: Statewide		
Unit for Cost Estimate: DIFT		
Practice Life (Years): 20		
Discount Rate (%/Year): 5%		
Data Source: 2009 Actual Cost Data.		
Materials		Cost/Unit
Cost of turnkey installation of high pressure plastic irrigation pipe including equipment, labor, and installation.		\$0.68
Equipment/Installation		\$0.00
Included in Materials		
Labor		\$0.00
Included in Materials		
Mobilization		\$0.03
Five percent of materials, equipment/Installation and labor costs		
Operation & Maintenance (Annual)		\$0.01
1% of materials, equipment/Installation and labor costs		
Acquisition of Technical Knowledge		\$0.00
None		
Forgone Income (Annual)		\$0.00
None, no land taken out of production		
Risk		\$0.00
Reduced risk, better soil/water control		
Administration & Permit Costs		\$0.00
None		
Total Cost Estimate:		\$0.72



ECONOMIC COST DATA

Cost Data

Practice Name:	Waste Utilization	
Practice Code:	633	
Activity Type:	633.1 - Agitated or Solid Waste	
Typical Implementation Scenario		
<p>This practice consists of applying animal waste which is removed from an animal storage facility/lagoon in preparation for "closure" of the structure. This scenario includes liquid manure needing agitation to obtain a slurry mixture before application or solid (dry) manure. Nutrient values of the manure shall be determined immediately prior to land application based on a laboratory analysis. All animal waste shall be land applied on cropland or pastureland fields in a manner that minimizes the opportunity for contamination of surface and groundwater supplies.</p> <p>This practice includes the costs of labor, machinery, and fuel associated with installing the practice.</p>		
Associated Practices include: Closure of Waste Impoundments (360), Manure Transfer (634), Waste Treatment (629), Nutrient Management (590)		
Geographic Area:	Statewide	
Unit for Cost Estimate:	lbs P	
Practice Life (Years):	1	
Discount Rate (%/Year):	5%	Cost/Unit
Data Source: 2009 actual cost data and current vendor pricing.		
Materials		\$0.20
Includes costs of labor, machinery, and fuel		
Equipment/Installation/Labor		\$0.00
Included in Materials Cost.		
Labor		\$0.00
Included in Materials Cost		
Mobilization		\$0.00
NA		
Operation & Maintenance		\$0.00
1% O&M factor		
Acquisition of Technical Knowledge		\$0.00
Knowledge to operate and manage application equipment		
Forgone Income		\$0.00
None		
Risk		\$0.00
None		
Administration & Permit Costs		\$0.00
None		
Total Cost Estimate:		\$0.20

ECONOMIC COST DATA

Cost Data

Practice Name:	Waste Utilization		
Practice Code:	633		
Activity Type:	633.2 - Liquid Waste		
Typical Implementation Scenario			
<p>This practice consists of applying liquid animal waste which is removed from an animal storage facility/lagoon in preparation for "closure" of the structure. This scenario includes liquid animal waste not needing agitation with less than 5% solids. Nutrient values of the liquid manure shall be determined immediately prior to land application based on laboratory analysis. All liquid animal waste shall be land applied on cropland or pastureland fields in a manner that minimizes the opportunity for contamination of surface and groundwater supplies.</p> <p>This practice includes the costs of labor, machinery, and fuel associated with installing the practice.</p>			
Associated Practices include: Closure of Waste Impoundments (360), Manure Transfer (634), Waste Treatment (629), Nutrient Management (590)			
Geographic Area:	Statewide		
Unit for Cost Estimate:	lbs P		
Practice Life (Years):	1		
Discount Rate (%/Year):	5%		
		Cost/Unit	
<i>Data Source: 2009 actual cost data and current vendor pricing.</i>			
Materials			\$0.10
Includes costs of labor, machinery, and fuel			
Equipment/Installation/Labor			\$0.00
Included in Materials Cost			
Labor			\$0.00
Included in Materials Cost			
Mobilization			\$0.00
NA			
Operation & Maintenance			\$0.00
1% O&M factor			
Acquisition of Technical Knowledge			\$0.00
Knowledge to operate and manage application equipment			
Forgone Income			\$0.00
None			
Risk			\$0.00
None			
Administration & Permit Costs			\$0.00
None			
Total Cost Estimate:			\$0.10

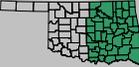
ECONOMIC COST DATA

Cost Data

Practice Name:	Waste Utilization	
Practice Code:	633	
Activity Type:	633.3 - Effluent Pumping for Rehabilitation	
Typical Implementation Scenario		
<p>This practice includes the land application of waste from an "active" swine waste treatment lagoon. Effluent will require agitation prior to pumping. The volume to be pumped is calculated from the minimum operating elevation to the bottom of the lagoon as originally designed (The effluent between the maximum and minimum operating levels on the pumpdown post is considered O&M, therefore it will not be included with the allowable pumped volume). This practice applies only to lagoons that are greater than 5 years old, installed without EQIP or other federal cost-share assistance, on non-CAFO operations. Nutrient values of the manure shall be determined prior to land application based on laboratory analysis. All animal waste shall be land applied on cropland or pastureland fields in a manner that minimizes the opportunity for contamination of surface and groundwater supplies.</p> <p>This practice includes the costs of labor, machinery, and fuel associated with installing the practice.</p>		
Associated Practices include: Closure of Waste Impoundments (360), Manure Transfer (634), Waste Treatment (629), Nutrient Management (590)		
Geographic Area:	Haskell, Latimer, and LeFlore Counties	
Unit for Cost Estimate:	100 GAL	
Practice Life (Years):	1	
Discount Rate (%/Year):	5%	
		Cost/Unit
Data Source: 2009 actual cost data and current vendor pricing.		
Materials		\$2.00
Includes costs of labor, machinery, and fuel		
Equipment/Installation/Labor		\$0.00
Included in Materials Cost.		
Labor		\$0.00
Included in Materials Cost		
Mobilization		\$0.00
NA		
Operation & Maintenance		\$0.02
1% O&M factor		
Acquisition of Technical Knowledge		\$0.00
Knowledge to operate and manage application equipment		
Forgone Income		\$0.00
None		
Risk		\$0.00
None		
Administration & Permit Costs		\$0.00
None		
Total Cost Estimate:		\$2.02

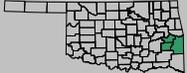
ECONOMIC COST DATA

Cost Data

Practice Name:	Manure Transfer	
Practice Code:	634	
Activity Type:	634.1 Transferring Manure Between Watersheds	
Typical Implementation Scenario		
<p>This practice includes the cost of transporting manure from an animal waste facility within a specified watershed to an area in Oklahoma that is located outside the watershed. The manure must be applied as part of a Nutrient Management Plan in accordance with the Oklahoma NRCS practice standard for Nutrient Management (590). This includes only the costs associated with transporting the manure. Hauling tickets will be used to substantiate the distance and the tonnage of the manure transferred. This is only applicable to the producer who is purchasing and applying the waste, not the producer associated with the animal waste facility.</p> <p>This practice includes the costs of labor, trucking, machinery, and fuel associated with installing the practice. Units for cost estimates are based on the number of tons of manure loaded and hauled multiplied by the number of miles hauled (one way-loaded).</p>		
Associated practices include: 629-Waste Treatment, 590-Nutrient Management, 633-Waste Utilization		
Geographic Area:	Eastern Oklahoma - All counties containing I-35, and eastward to the Arkansas State Line	
Unit for Cost Estimate:	Tons times loaded miles (TMI)	
Practice Life (Years):	1	
Discount Rate (%/Year):	5%	
		Cost/Unit
Data Source: 2009 actual cost data.		
Materials		\$0.00
Does not include cost of manure, if any		
Equipment/Installation/Labor		\$0.41
Transportation of Manure		
Labor		\$0.00
Included in Materials Cost		
Mobilization		\$0.00
NA		
Operation & Maintenance		\$0.02
5% O&M factor		
Acquisition of Technical Knowledge		\$0.00
Knowledge to operate and manage application equipment		
Forgone Income		\$0.00
None		
Risk		\$0.00
Reduced risk, can better manage livestock waste, improve water quality		
Administration & Permit Costs		\$0.00
None		
Total Cost Estimate:		\$0.43

ECONOMIC COST DATA

Cost Data

Practice Name:	Manure Transfer	
Practice Code:	634	
Activity Type:	634.2 - Effluent Pumping for Rehabilitation	
Typical Implementation Scenario		
<p>This practice consists of agitating, pumping, and removing waste from an "active" swine waste treatment lagoon, in order to achieve a total clean-out of the lagoon for the purpose of extending the life of the lagoon. The volume to be pumped is calculated from the minimum operating elevation to the bottom of the lagoon as originally designed (The effluent between the maximum and minimum operating levels on the pumpdown post is considered O&M, therefore it will not be included with the allowable pumped volume). This practice applies only to lagoons that are greater than 5 years old, installed without EQIP or other federal cost-share assistance, on non-CAFO operations. This practice does not apply to the land application of the waste.</p> <p>This practice includes the costs of labor, machinery, and fuel associated with installing the practice.</p>		
Associated practices include: 629-Waste Treatment, 590-Nutrient Management, 633-Waste Utilization		
Geographic Area:	Haskell, Latimer, and LeFlore Counties	
Unit for Cost Estimate:	GAL	
Practice Life (Years):	1	
Discount Rate (%/Year):	5%	
		Cost/Unit
Data Source: 2009 actual cost data.		
Materials		\$0.02
Includes costs of labor, machinery, and fuel		
Equipment/Installation/Labor		\$0.00
Included in Materials Cost.		
Labor		\$0.00
Included in Materials Cost		
Mobilization		\$0.00
NA		
Operation & Maintenance		\$0.00
1% O&M factor		
Acquisition of Technical Knowledge		\$0.00
Knowledge to operate and manage application equipment		
Forgone Income		\$0.00
None		
Risk		\$0.00
None		
Administration & Permit Costs		\$0.00
None		
Total Cost Estimate:		\$0.02

ECONOMIC COST DATA

Cost Data

Practice Name: Water and Sediment Control Basin

Practice Code: 638

Activity Type: 638.1 Water and Sediment Control Basin

Typical Implementation Scenario

This practice consists of an embankment with a principle spillway constructed across the slope and minor water courses to form a sediment trap and water detention basin. A typical structure has a 10 acre watershed requiring 2037CY of excavation/fill with a 93 feet long principal spillway pipe that is 12 inches in diameter.

Construction Units (CU) are found by multiplying the designed or estimated "**Quantity**" by the given "**Multiplier**" as shown in the example in Table 1-A. The construction units for each component are then summed to give the "**Total Construction Units**" for the project. If a component is not used, there will be no construction units for that component. The Total Construction Units are then multiplied by the **Cost/Unit** given below to give the average cost of the project. Table 1-B is given as a template for computations.

Associated practices include: 590-Nutrient Management, 342-Critical Area Planting

Geographic Area: Statewide

Unit for Cost Estimate: Construction Units (CU)

Practice Life (Years): 10

Discount Rate (%/Year): 5%

Data Source: 2009 Actual Cost Data.

Materials

Includes Equipment/Installation, Labor and Mobilization costs

Table 1-A Example

Component	Units	Quantity	Multiplier	CU
Earthwork	CY	2037	1.00	2,037.0
HCMP / Welded Steel	DIFT	1116	1.16	1,290.2
Plastic Pipe	DIFT	0	0.80	0.0
Concrete	CY	0	161.46	0.0
Trashguard	PF	22	10.53	231.7
Gypsum	TON	0	69.36	0.0
Riprap	CY	0	31.21	0.0
Filter (C33 sand)	CY	0	22.89	0.0
Total Construction Units				3,558.9

To determine the average cost for any component listed above, multiply \$1.73 times the "**Multiplier**" for that component. For example, the average cost of concrete would be \$1.73 x 161.46 = \$279.32 / CY.

Table 1-B

Component	Units	Quantity	Multiplier	CU
Earthwork	CY		1.00	
HCMP / Welded Steel	DIFT		1.16	
Plastic Pipe	DIFT		0.80	
Concrete	CY		161.46	
Trashguard	PF		10.53	
Gypsum	TON		69.36	
Riprap	CY		31.21	
Filter	CY		22.89	
Total Construction Units				

Equipment/Installation \$0.00
(Included in Materials cost)

Labor \$0.00
(Included in Materials cost)

Mobilization \$0.03
Included in Materials Cost

Operation & Maintenance (Annual) \$0.05
3% of Installation Costs

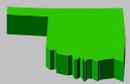
Acquisition of Technical Knowledge \$0.00
None

Forgone Income (Annual) \$0.00
None, possible land brought into production.

Risk \$0.00
Reduced risk, change in land use

Administration & Permit Costs \$0.00
None

Total Cost Estimate: \$1.82



Cost/Unit

\$1.73

ECONOMIC COST DATA

Cost Data

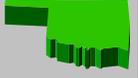
Practice Name: Water Well		
Practice Code: 642		
Activity Type: 642.1 Well - Drilled, Cased		
Typical Implementation Scenario		
A hole drilled, dug, driven, bored, jetted or otherwise constructed to an aquifer.		
Part of a livestock watering system. This component consists of the creation of a hole by drilling, digging, boring, jetting, or other means to an aquifer and the installation of casing material to seal out undesirable surface or shallow ground water flow and to support the side of the hole through unstable earth materials. Wells must meet the criteria of the Oklahoma Water Resources Board and be drilled by a contractor having an OWRB issued license. Oklahoma practice standard 642, Water Well, shall be followed in the planning and installation of water wells. Casing materials shall be as specified in the standard.		
Associated practices include: 614-Watering Facility, 533-Pumping Plant, 516-Pipeline		
Geographic Area:	Statewide	
Unit for Cost Estimate:	Foot	
Practice Life (Years):	20	
Discount Rate (%/Year):	5%	
		Cost/Unit
Data Source: 2009 & 2008 actual cost data		
Materials		\$18.30
Materials cost includes complete installation.		
Equipment/Installation		\$0.00
(Included in Materials Costs)		
Labor		\$0.00
(Included in Materials Costs)		
Mobilization		\$0.00
(Included in Materials Costs)		
Operation & Maintenance		\$0.18
1% of Installation Costs		
Acquisition of Technical Knowledge		\$0.00
N/A		
Forgone Income		\$0.00
N/A		
Risk		\$0.00
N/A		
Administration & Permit Costs		\$0.00
N/A		
Total Cost Estimate:		\$18.48



ECONOMIC COST DATA

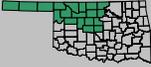
Cost Data

Practice Name:	Water Well		
Practice Code:	642		
Activity Type:	642.2 Well-Drilled, Cased, Shallow <100 foot		
Typical Implementation Scenario			
This scenario is for a water well that is less than 100 foot in depth. Mobilization is a larger portion of the cost on the smaller well drilling jobs.			
Part of a livestock watering system. This component consists of the creation of a hole by drilling, digging, boring, jetting, or other means to an aquifer and the installation of casing material to seal out undesirable surface or shallow ground water flow and to support the side of the hole through unstable earth materials. Wells must meet the criteria of the Oklahoma Water Resources Board and be drilled by a contractor having an OWRB issued license. Oklahoma practice standard 642, Water Well, shall be followed in the planning and installation of water wells. Casing materials shall be as specified in the standard.			
Associated practices include: 614-Watering Facility, 533-Pumping Plant, 516-Pipeline			
Geographic Area:	Statewide		
Unit for Cost Estimate:	EACH		
Practice Life (Years):	20		
Discount Rate (%/Year):	5%		
			Cost/Unit
Data Source: 2009 & 2008 actual cost data for wells less than 100 feet in depth.			
Materials			\$1,893.00
Materials cost includes complete installation.			
	Well, Drilled and Cased	\$25.24 / Foot	
	Well Depth (feet):	75 FT	
	Total Cost Typical Installation	\$1,893.00	
Equipment/Installation			\$0.00
(Included in Materials Costs)			
Labor			\$0.00
(Included in Materials Costs)			
Mobilization			\$189.30
10% - Mobilization on a shallow well is a larger percentage of the cost of the total job.			
Operation & Maintenance			\$20.82
1% of Installation Costs			
Acquisition of Technical Knowledge			\$0.00
N/A			
Forgone Income			\$0.00
N/A			
Risk			\$0.00
N/A			
Administration & Permit Costs			\$0.00
N/A			
Total Cost Estimate:			\$2,103.12



ECONOMIC COST DATA

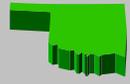
Cost Data

Practice Name:	Water Well	
Practice Code:	642	
Activity Type:	642.3 Well - Drilled, Cased, For Zone 1 Counties Only	
Typical Implementation Scenario		
<p>A hole drilled, dug, driven, bored, jetted or otherwise constructed to an aquifer. This scenario is limited to the following counties: Cimarron, Texas, Beaver, Harper, Ellis, Woodward, Woods, Major, Dewey, Blaine, Alfalfa, Grant, Garfield, Kingfisher, Canadian, Kay, Noble, Logan, and Oklahoma.</p> <p>Part of a livestock watering system. This component consists of the creation of a hole by drilling, digging, boring, jetting, or other means to an aquifer and the installation of casing material to seal out undesirable surface or shallow ground water flow</p>		
Associated practices include: 614-Watering Facility, 533-Pumping Plant, 516-Pipeline		
Geographic Area:	Zone 1 only. Alfalfa, Beaver, Blaine, Canadian, Cimarron, Dewey, Ellis, Garfield, Grant, Harper, Kay, Kingfisher, Logan, Major, Noble, Oklahoma, Texas, Woods, and Woodward Counties.	
Unit for Cost Estimate:	Foot	
Practice Life (Years):	20	
Discount Rate (%/Year):	5%	
		Cost/Unit
Data Source: 2009 & 2008 actual cost data		
Materials		\$24.21
Materials cost includes complete installation.		
Equipment/Installation		\$0.00
(Included in Materials Costs)		
Labor		\$0.00
(Included in Materials Costs)		
Mobilization		\$0.00
(Included in Materials Costs)		
Operation & Maintenance		\$0.24
1% of Installation Costs		
Acquisition of Technical Knowledge		\$0.00
N/A		
Forgone Income		\$0.00
N/A		
Risk		\$0.00
N/A		
Administration & Permit Costs		\$0.00
N/A		
Total Cost Estimate:		\$24.45

ECONOMIC COST DATA

Cost Data

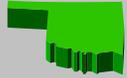
Practice Name:	Restoration and Management of Rare or Declining Habitats	
Practice Code:	643	
Activity Type:	643.1 Native Species, Seedbed Preparation, Seed & Seeding - Herbaceous only	
Typical Implementation Scenario		
Establishing a mixture of native grasses, forbs, legumes, to restore previously converted native prairie ecological sites (i.e. those converted to cropland) that no longer support native plants characteristic of the ecological site.		
Associated practices include: Range Planting (550), Tree/Shrub Establishment (612), Nutrient Management (590), Pest Management (595), Prescribed Grazing (528), Forage Harvest Management (511)		
Data Source: Current vendor pricing, Technical expertise		
Geographic Area:	Statewide	
Unit for Cost Estimate:	Acre	
Practice Life (Years):	10	
Discount Rate (%/Year):	5%	
		Cost/Unit
Materials		\$53.41
Seed (based on average lbs. PLS and cost per lb. PLS needed to plant a typical range seeding mixture according to the NRCS Range Planting (550) Standard and Specification)		
Fertilizer and/or amendments, if needed for establishment, are covered in 590.1 and 590.3		
Does not include cost of cover crops if needed		
Equipment/Installation		\$23.80
Tractor / drill	\$7.00	
includes labor costs		
Seedbed Preparation. Most seedbed preparation work is done as part of tillage operations for previously grown crops. In some cases an extra tillage or firming operation may be needed prior to planting.	\$16.80	
Labor		
Costs included with equipment and installation		
Mobilization		
None		
Operation & Maintenance		
Management practices such as prescribed grazing, prescribed burning and brush management		
Acquisition of Technical Knowledge		\$0.00
Calibrate and operate seed drill, management of native range.		
Forgone Income		\$20.00
Assume deferment for up to two years		
Risk		\$0.00
Reduced risk, less erosion, less machinery wear & tear.		
Administration & Permit Costs		\$0.00
None		
Total Cost Estimate:		\$97.21



ECONOMIC COST DATA

Cost Data

Practice Name:	Restoration and Management of Rare or Declining Habitats		
Practice Code:	643		
Activity Type:	643.2 Native Species, Seedbed Preparation, Seed & Seeding - Herbaceous and woodyes		
Typical Implementation Scenario	<p>Establishing a mixture of native grasses, forbs, legumes, and woody species (i.e. plum) to restore previously converted native prairie ecological sites (i.e. those converted to cropland) that no longer support native plants characteristic of the ecological site.</p> <p>Associated practices include: Range Planting (550), Tree/Shrub Establishment (612), Nutrient Management (590), Pest Management (595), Prescribed Grazing (528), Forage Harvest Management (511)</p> <p>Data Source: Current vendor pricing, Technical expertise</p>		
Geographic Area:	Statewide		
Unit for Cost Estimate:	Acre		
Practice Life (Years):	10		
Discount Rate (%/Year):	5%		
			Cost/Unit
Materials			\$61.88
Seed (based on average lbs. PLS and cost per lb. PLS needed to plant a typical range seeding mixture according to the NRCS Range Planting (550) Standard and Specification)		53.41	
Costs based on 1210 trees per acre, planted in plots on 6x6 spacing. Assumed 1% of acres, typical scenario of 100 acres		8.47	
Fertilizer and/or amendments, if needed for establishment, are covered in 590.1 and 590.3			
Does not include cost of cover crops if needed			
Equipment/Installation			\$23.80
Tractor / drill		\$7.00	
includes labor costs			
Seedbed Preparation. Most seedbed preparation work is done as part of tillage operations for previously grown crops. In some cases an extra tillage or firming operation may be needed prior to planting.		\$16.80	
Labor			
Costs included with equipment and installation			
Mobilization			
None			
Operation & Maintenance			
Management practices such as prescribed grazing, prescribed burning and brush management			
Acquisition of Technical Knowledge			\$0.00
Calibrate and operate seed drill, management of native range.			
Forgone Income			\$20.00
Assume deferment for up to two years			
Risk			\$0.00
Reduced risk, less erosion, less machinery wear & tear.			
Administration & Permit Costs			\$0.00
None			
Total Cost Estimate:			\$105.68



ECONOMIC COST DATA

Cost Data

Practice Name: Upland Wildlife Habitat Management

Practice Code: 645

Activity Type: 645.1 - Upland Wildlife Habitat Management

Typical Implementation Scenario

This practice will be implemented where the objective is to establish, maintain or improve habitat for selected wildlife species. This scenario covers implementing a plan that includes food plot establishment, shallow disking to provide early successional habitat and monitoring of habitat. Implementation of facilitating practices such as prescribed grazing, range planting, prescribed burning, tree/shrub planting, brush management, etc., may be required to address limiting factors and improve habitat. When needed, refer to the economic cost data developed for each of the facilitating practices to be implemented.

Based on typical operation of 160 acres which is also within the home range of many commonly managed species

Associated practices include: Prescribed Burning (338); Range Planting (550); Prescribed Grazing (528); Tree/Shrub Planting (612);

Data Source: Actual Cost Data and OSU Extension Service Custom Rates and Rental Rates

Geographic Area: Statewide

Unit for Cost Estimate: Acre

Practice Life (Years): 1

Discount Rate (%/Year): 5%

Materials

	\$/Acre
Wildlife habitat plan implementation	\$1.00
Monitoring (25% of implementation costs)	\$0.25
Seed for food plots	\$0.44

Equipment/Installation

Shallow Disking/Seeding food plots (based on custom rates)	\$0.77
------------------------------------------------------------	--------

Labor

Labor incorporated into materials cost

Mobilization

N/A

Operation & Maintenance

N/A

Acquisition of Technical Knowledge

Education to understand wildlife habitat management and adopt changes based on \$250 per year. (\$1.56/ac.)

Forgone Income

Some income may be lost due to maintaining or creating habitat elements such as food plots, leaving buffers or unharvested areas, deferred grazing for maintaining nesting cover, reduction in brush management activities to maintain woody cover/food, etc.

Risk

N/A

Administration & Permit Costs

None

Total Cost Estimate:

Cost/Unit

\$2.19

\$0.77

\$0.00

\$0.00

\$0.00

\$1.56

\$4.75

\$0.00

\$0.00

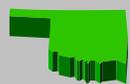
\$9.27



ECONOMIC COST DATA

Cost Data

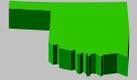
Practice Name: Forest Stand Improvement		
Practice Code: 666		
Activity Type: 666.1 - Chemical Release		
Typical Implementation Scenario		
Using single-stem injection, basal bark spray, foliar, or soil applied chemicals to kill undesirable hardwood trees to release desirable loblolly pine, which will increase the quantity and quality of forest products. The typical scenario consists of a 40 acre patch of desirable loblolly pine trees with encroachment from elm and hackberry.		
Associated practices include: Brush Management (314), Tree/Shrub Pruning (660), Windbreak/Shelterbreak Renovation (650), Fuel Break (383), Multi-Story Cropping (379), Prescribed Forestry (409)		
Geographic Area:	Statewide	
Unit for Cost Estimate:	AC	
Practice Life (Years):	10	
Discount Rate (%/Year):	5%	
		Cost/Unit
Data Source: 2009 estimates from ODAFF		
Materials		\$85.00
Includes Labor and Materials Cost.		
Equipment/Installation		\$0.00
Included in Materials Cost		
Labor		\$0.00
Included in Materials Cost		
Mobilization		\$0.00
N/A		
Operation & Maintenance (Annual)		\$0.00
N/A		
Acquisition of Technical Knowledge		\$0.00
None		
Forgone Income (Annual)		\$0.00
None		
Risk		\$0.00
None		
Administration & Permit Costs		\$0.00
None		
Total Cost Estimate:		\$85.00



ECONOMIC COST DATA

Cost Data

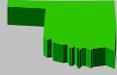
Practice Name: Forest Stand Improvement		
Practice Code: 666		
Activity Type: 666.2 - Mechanical Release		
Typical Implementation Scenario		
Mechanically removing selected pine trees by use of a rotary mower, bulldozer, tree saw, hydraulic circular saws, disk, drum chopper or other approved methods to release desirable loblolly pine, which will increase the quantity and quality of forest products. The typical scenario involves the use of a hydraulic circular saw on a 40 acre patch loblolly pine sprouts.		
Associated practices include: Brush Management (314), Tree/Shrub Pruning (660), Fuel Break (383), Multi-Story Cropping (379), Prescribed Forestry (409)		
Geographic Area:	Statewide	
Unit for Cost Estimate:	AC	
Practice Life (Years):	10	
Discount Rate (%/Year):	5%	
		Cost/Unit
Data Source: 2009 estimates from ODAFF and current vendor pricing.		
Materials		\$110.00
Materials includes complete installation costs: including labor and equipment.		
Equipment/Installation		\$0.00
Included in Materials Cost		
Labor		\$0.00
Included in Materials Cost		
Mobilization		\$0.00
N/A		
Operation & Maintenance (Annual)		\$0.00
N/A		
Acquisition of Technical Knowledge		\$0.00
None		
Forgone Income (Annual)		\$0.00
None		
Risk		\$0.00
None		
Administration & Permit Costs		\$0.00
None		
Total Cost Estimate:		\$110.00



ECONOMIC COST DATA

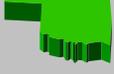
Cost Data

Practice Name:	Forest Stand Improvement	
Practice Code:	666	
Activity Type:	666.3 - Hand Release	
Typical Implementation Scenario		
Precommercial hand cutting of pine trees to thin and improve the timber stand by using a machete, axe, brush hook, chainsaw or other approved hand cutting tools to increase the quantity and quality of forest products. The typical scenario involves the use of a chainsaw to thin competitive pine trees within a 40 acre patch of desirable loblolly pine trees.		
Associated practices include: Brush Management (314), Tree/Shrub Pruning (660), Fuel Break (383), Multi-Story Cropping (379), Prescribed Forestry (409)		
Geographic Area:	Statewide	
Unit for Cost Estimate:	AC	
Practice Life (Years):	10	
Discount Rate (%/Year):	5%	
		Cost/Unit
Data Source: 2009 estimates from ODAFF		
Materials		\$155.00
Materials includes complete installation costs: including labor and equipment.		
Equipment/Installation		\$0.00
Included in Materials Cost		
Labor		\$0.00
Included in Materials Cost		
Mobilization		\$0.00
N/A		
Operation & Maintenance (Annual)		\$0.00
N/A		
Acquisition of Technical Knowledge		\$0.00
None		
Forgone Income (Annual)		\$0.00
None		
Risk		\$0.00
None		
Administration & Permit Costs		\$0.00
None		
Total Cost Estimate:		\$155.00



ECONOMIC COST DATA

Cost Data

Practice Name:	Forest Stand Improvement	
Practice Code:	666	
Activity Type:	666.4 - Chemical Post Planting	
Typical Implementation Scenario		
Using aerially applied chemical application to control various hardwood species such as oak, hickory, blackberry, elm, etc. along with vegetative competition to improve site conditions following the planting of pine trees. This component will only be used if not applied prior to planting trees through Forest Site Preparation (490).		
This scenario includes a herbicide application with a mixture of Imazapyr and Sulfometuron methyl to control woody and vegetative competition after planting an 80 acre field of loblolly or shortleaf pine tree seedlings. Other costs may include scouting and record keeping. Chemical treatments to suppress competitive vegetation on other planting sites will be accomplished by using the pest management practice.		
Associated practices include: Brush Management (314), Tree/Shrub Establishment (612), Tree/Shrub Site Preparation (490), Pest Management (595), Forest Slash Treatment (384)		
Geographic Area:	Statewide	
Unit for Cost Estimate:	AC	
Practice Life (Years):	10	
Discount Rate (%/Year):	5%	
Data Source: 2009 estimates from ODAFF		
Materials		Cost/Unit
Includes Labor and Materials Cost.		\$85.00
Equipment/Installation		\$0.00
Included in Materials Cost		
Labor		\$0.00
Included in Materials Cost		
Mobilization		\$0.00
N/A		
Operation & Maintenance (Annual)		\$0.00
N/A		
Acquisition of Technical Knowledge		\$0.00
None		
Forgone Income (Annual)		\$0.00
None		
Risk		\$0.00
None		
Administration & Permit Costs		\$0.00
None		
Total Cost Estimate:		\$85.00

ECONOMIC COST DATA

Practice Name: High Tunnel Structure			
Practice Code: 798			
Activity Type: 798.1 High Tunnel			
Typical Implementation Scenario			
This practice consists of the installation of a pre-manufactured high tunnel house kit as part of an organic certified or transitioning to organic subsistence or commercial gardening enterprise, for the purpose of extending the crop growing season. The cost is based on the construction of a 72'L x 30'W x 12'H structure. The high tunnel will be constructed on existing cropland and will be removed at the end of the growing season. All crops must be grown in the natural soil profile. Potted plantings, tables or benches are not allowed within the high tunnel structure. At no point during the lifespan shall electrical, heating, and/or mechanical ventilation systems be installed on the structure. Resource concerns addressed include improved plant quality, improved soil quality and improved water quality from reduced nutrient and pesticide transport.			
Interim practice: A fabricated framed structure covered with plastic film under which crops are grown in the natural soil profile.			
Associated practices include: Irrigation Water Management (449), Nutrient Management (590), Pest Management (595), Irrigation System, Micro-irrigation (441), Roof Runoff Structure (558), Irrigation Water Conveyance (430), Subsurface Drain (606), Structure for Water Control (587), Irrigation System, Tailwater Recovery (447), Conservation Crop Rotation (328), Residue Management-Seasonal (344)			
Geographic Area:	Statewide		
Unit for Cost Estimate:	SqFt		
Practice Life (Years):	4		
Discount Rate (%/Year):	5%		
			Cost/Unit
Materials			\$2.47
Cost for complete high tunnel facility and all associated components:			
<u>Description</u>	<u>\$/Unit</u>	<u>Units</u>	<u>Cost</u>
Commercial Kit - 30'x72'	\$4,934.41	2,160	2.28
Shipping	\$410.25	2160	\$0.19
*Plastic greenhouse film has a 4 year warranty.			
Equipment/Installation			\$0.00
Included in Materials Cost			
Labor			\$0.36
	<u>Hours/Structure</u>	<u>Cost/Hour</u>	
Labor cost (\$/Hr):	77.00	\$10.00	
Total cost per SqFt:	\$0.36		
Mobilization			\$0.00
N/A			
Operation & Maintenance			\$0.36
Operation - Disassembling and Reassembling high tunnel seasonally.			
77 hrs X \$10.00/hr. ÷ 2160 sqft = \$0.36			
Acquisition of Technical Knowledge			\$0.00
N/A			
Forgone Income			\$0.00
N/A			
Risk			\$0.00
N/A			
Administration & Permit Costs			\$0.00
N/A			
Total Cost Estimate:			\$3.19