

Wildlife Habitat Incentives Program (WHIP) Practice Payment Schedule Oklahoma FY 2009

Practice Code	Practice Name (units)	Scenario 1/	Payment Units	Payment Rate 2/	Practice Lifespan (yrs)
314 Brush Management (ac)					10
	314.1	Chemical treatments (except 2,4D and tebuthiuron)	AC	\$15.44	
	314.1	Chemical treatments (except 2,4D and tebuthiuron)-HU 3/	AC	\$23.16	
	314.2	Chemical, 2,4D	AC	\$5.69	
	314.2	Chemical, 2,4D-HU	AC	\$8.53	
	314.3	Chemical, tebuthiuron	AC	\$38.16	
	314.3	Chemical, tebuthiuron-HU	AC	\$57.23	
	314.4	Mechanical - level 1	AC	\$47.78	
	314.4	Mechanical - level 1-HU	AC	\$66.15	
	314.5	Mechanical - level 2	AC	\$83.20	
	314.5	Mechanical - level 2-HU	AC	\$115.20	
	314.6	Cut/Spray	AC	\$39.55	
	314.6	Cut/Spray-HU	AC	\$59.32	
	314.7	Chemical, IPT	AC	\$16.00	
	314.7	Chemical, IPT-HU	AC	\$24.00	
	314.8	Mechanical-Volatile Fuels Removal	AC	\$90.68	
	314.8	Mechanical-Volatile Fuels Removal-HU	AC	\$125.55	
	314.9	Mechanical-Cedar Removal, Special	AC	\$172.79	
	314.9	Mechanical-Cedar Removal, Special-HU	AC	\$239.25	
322 Channel Bank Vegetation (ac)					10
	322.1	Sprigging and Seeding Grasses	AC	\$105.32	
	322.1	Sprigging and Seeding Grasses-HU	AC	\$126.38	
	322.2	Trees/shrub Establishment	AC	\$496.24	
	322.2	Trees/shrub Establishment-HU	AC	\$595.49	
	322.3	Switchgrass and Reedgrass Establishment	AC	\$1,965.00	
	322.3	Switchgrass and Reedgrass Establishment-HU	AC	\$2,358.00	
332 Contour Buffer Strips (ac)					10
	332.3	Native Grass Monoculture	AC	\$54.56	
	332.3	Native Grass Monoculture-HU	AC	\$65.48	
	332.4	Native Grass Mixture	AC	\$49.50	
	332.4	Native Grass Mixture-HU	AC	\$59.40	
338 Prescribed Burning (ac)					5
	338.1	Level 1-Prescribed Burn	AC	\$5.24	
	338.1	Level 1-Prescribed Burn-HU	AC	\$6.28	
	338.2	Level 2-Prescribed Burn	AC	\$8.24	
	338.2	Level 2-Prescribed Burn-HU	AC	\$9.88	
342 Critical Area Planting (ac)					10
	342.1	Critical Area Planting	AC	\$116.76	
	342.1	Critical Area Planting-HU	AC	\$140.11	
	342.2	Tree/Shrub Establishment	AC	\$514.99	
	342.2	Tree/Shrub Establishment-HU	AC	\$617.99	

Practice Code	Practice Name (units)	Scenario 1/	Payment Units	Payment Rate 2/	Practice Lifespan (yrs)
362	Diversion (ft)				10
	362.1	Diversion	CY	\$1.04	
	362.1	Diversion-HU	CY	\$1.25	
378	Pond (no)				20
	Note: Maximum payment of \$7,500.00 per pond.				
	378.1	Pond	CU	\$0.86	
	378.1	Pond-HU	CU	\$1.29	
380	Windbreak/Shelterbelt Establishment (ft)				15
	380.1	Trees &/or Shrubs - Barerooted	EA	\$0.54	
	380.1	Trees &/or Shrubs - Barerooted-HU	EA	\$0.64	
	380.2	Trees &/or Shrubs - Barerooted - w/ACD	EA	\$0.77	
	380.2	Trees &/or Shrubs - Barerooted - w/ACD-HU	EA	\$0.92	
	380.3	Trees &/or Shrubs - Containerized/Potted	EA	\$0.92	
	380.3	Trees &/or Shrubs - Containerized/Potted-HU	EA	\$1.10	
	380.4	Trees &/or Shrubs-Containerized/Potted - w/ACD	EA	\$1.15	
	380.4	Trees &/or Shrubs-Containerized/Potted - w/ACD-HU	EA	\$1.38	
382	Fence (ft)				20
	382.1	Permanent Fence, Barbed or Smooth Wire	FT	\$0.76	
	382.1	Permanent Fence, Barbed or Smooth Wire-HU	FT	\$1.14	
	382.3	Permanent Power Fence	FT	\$0.56	
	382.3	Permanent Power Fence-HU	FT	\$0.84	
	382.5	Permanent Fence, Barbed or Smooth Wire, Extra Materials and Labor	FT	\$1.64	
	382.5	Permanent Fence, Barbed or Smooth Wire, Extra Materials and Labor	FT	\$1.96	
386	Field Border (ft)				10
	386.3	Native Grass Monoculture	AC	\$59.81	
	386.3	Native Grass Monoculture-HU	AC	\$71.78	
	386.4	Native Grass Mixture	AC	\$49.50	
	386.4	Native Grass Mixture-HU	AC	\$59.40	
390	Riparian Herbaceous Cover (ac)				10
	390.1	Native Grass Mixture	AC	\$62.10	
	390.1	Native Grass Mixture-HU	AC	\$74.52	
391	Riparian Forest Buffer (ac)				15
	391.1	Trees &/or Shrubs - Barerooted	EA	\$0.54	
	391.1	Trees &/or Shrubs - Barerooted-HU	EA	\$0.64	
	391.2	Trees &/or Shrubs - Barerooted - w/ACD	EA	\$0.77	
	391.2	Trees &/or Shrubs - Barerooted - w/ACD-HU	EA	\$0.92	
	391.3	Trees &/or Shrubs - Containerized/Potted	EA	\$0.92	
	391.3	Trees &/or Shrubs - Containerized/Potted-HU	EA	\$1.10	
	391.4	Trees &/or Shrubs - Containerized/Potted - w/ACD	EA	\$1.15	
	391.4	Trees &/or Shrubs - Containerized/Potted - w/ACD-HU	EA	\$1.38	
393	Filter Strip (ac)				10
	393.3	Native Species	AC	\$93.09	
	393.3	Native Species-HU	AC	\$111.71	

Practice Code	Practice Name (units)	Scenario 1/	Payment Units	Payment Rate 2/	Practice Lifespan (yrs)
394	Fire Break (ft)				10
	394.1	Firebreak, Normal	AC	\$112.44	
	394.1	Firebreak, Normal-HU	AC	\$134.93	
	394.2	Firebreak, Heavy Equipment	AC	\$531.32	
	394.2	Firebreak, Heavy Equipment-HU	AC	\$637.58	
422	Hedgerow Planting (ft)				15
	422.1	Trees &/or Shrubs - barerooted	Each	\$0.54	
	422.1	Trees &/or Shrubs - barerooted-HU	Each	\$0.64	
	422.2	Trees &/or Shrubs - barerooted - ACD	Each	\$0.77	
	422.2	Trees &/or Shrubs - barerooted - ACD-HU	Each	\$0.92	
441	Irrigation System, Microirrigation (ac)				10
	441.2	Windbreak Drip System	TREE	\$1.57	
	441.2	Windbreak Drip System-HU	TREE	\$1.88	
484	Mulching (ac)				1
	484.1	Geotextile Fabric Weed Barrier	LF	\$0.30	
	484.1	Geotextile Fabric Weed Barrier-HU	LF	\$0.36	
	484.2	Organic Mulch	AC	\$450.00	
	484.2	Organic Mulch-HU	AC	\$540.00	
490	Tree/Shrub Site Preparation (ac)				1
	490.1	Mechanical Seedbed Preparation	AC	\$28.50	
	490.1	Mechanical Seedbed Preparation-HU	AC	\$34.20	
	490.2	Chemical Site Preparation	AC	\$90.00	
	490.2	Chemical Site Preparation-HU	AC	\$108.00	
512	Pasture and Hay Planting (ac)				10
	Note: 512 is only applicable on existing cropland fields not to exceed 10% of the field acreages.				
	512.2	Introduced Species - Seedbed Preparation, Seed & Seeding	AC	\$43.63	
	512.2	Introduced Species - Seedbed Preparation, Seed & Seeding-HU	AC	\$52.35	
	512.3	Native Species - Seedbed Preparation, Seed & Seeding	AC	\$64.64	
	512.3	Native Species - Seedbed Preparation, Seed & Seeding-HU	AC	\$77.57	
	512.4	Legumes - Seedbed Preparation, Seed & Seeding	AC	\$17.36	
	512.4	Legumes - Seedbed Preparation, Seed & Seeding-HU	AC	\$20.83	
516	Pipeline (ft)				20
	516.1	Livestock Pipeline	FT	\$0.72	
	516.1	Livestock Pipeline-HU	FT	\$1.07	
533	Pumping Plant (no)				15
	533.1	Solar Powered	GAL/DA	\$1.53	
	533.1	Solar Powered-HU	GAL/DA	\$2.30	
550	Range Planting (ac)				10
	550.1	Native Species, Seedbed Preparation, Seed & Seeding	AC	\$62.10	
	550.1	Native Species, Seedbed Preparation, Seed & Seeding-HU	AC	\$74.52	
561	Heavy Use Area Protection (ac)				10
	Note: 561 payment is limited to \$35,000 per operating unit.				
	561.1	Rock/Gravel	CY	\$31.27	
	561.1	Rock/Gravel-HU	CY	\$37.52	
	561.2	Concrete	CY	\$122.91	
	561.2	Concrete-HU	CY	\$147.49	

Practice Code	Practice Name (units)	Scenario 1/	Payment Units	Payment Rate 2/	Practice Lifespan (yrs)
574	Spring Development (no)				10
	574.1 Spring Development		EA	\$344.13	
	574.1 Spring Development-HU		EA	\$516.20	
575	Animal Trails and Walkways (ft)				10
	575.1 Access Ramp		CY	\$107.09	
	575.1 Access Ramp-HU		CY	\$128.50	
578	Stream Crossing (no)				10
	578.1 Stream Crossing		CY	\$58.51	
	578.1 Stream Crossing-HU		CY	\$70.21	
580	Streambank and Shoreline Protection (ft)				20
	580.1 Streambank and Shoreline Protection		CY	\$44.55	
	580.1 Streambank and Shoreline Protection-HU		CY	\$53.46	
587	Structure for Water Control (no)				20
	587.1 Structure for Water Control		CU	\$0.86	
	587.1 Structure for Water Control-HU		CU	\$1.29	
589C	Cross Wind Trap Strips (ac)				5
	589C.3 Native Grass Monoculture		AC	\$59.81	
	589C.3 Native Grass Monoculture-HU		AC	\$71.78	
	589C.4 Native Grass Mixture		AC	\$49.50	
	589C.4 Native Grass Mixture-HU		AC	\$59.40	
590	Nutrient Management (ac)				1
	590.1 Fertilizer for Grass Establishment		AC	\$49.88	
	590.1 Fertilizer for Grass Establishment-HU		AC	\$59.86	
	590.2 Fertilizer for Critical Area Plantings		AC	\$100.01	
	590.2 Fertilizer for Critical Area Plantings-HU		AC	\$120.02	
	590.3 Lime for Grass Establishment		TON	\$31.50	
	590.3 Lime for Grass Establishment-HU		TON	\$37.80	
595	Pest Management (ac)				1
	595.1 Pest Mgt, Sericea Lespedeza Control		AC	\$8.76	
	595.1 Pest Mgt, Sericea Lespedeza Control-HU		AC	\$13.13	
603	Herbaceous Wind Barriers (ft)				5
	603.2 Native Grass Monoculture		AC	\$51.66	
	603.2 Native Grass Monoculture-HU		AC	\$61.99	
	603.3 Native Grass Mixture		AC	\$49.50	
	603.3 Native Grass Mixture-HU		AC	\$59.40	
612	Tree/Shrub Establishment (ac)				15
	612.1 Trees &/or Shrubs - Barerooted		EA	\$0.54	
	612.1 Trees &/or Shrubs - Barerooted-HU		EA	\$0.64	
	612.2 Trees &/or Shrubs - Barerooted - w/ACD		EA	\$0.77	
	612.2 Trees &/or Shrubs - Barerooted - w/ACD-HU		EA	\$0.92	
	612.3 Trees &/or Shrubs - Containerized/Potted		EA	\$0.92	
	612.3 Trees &/or Shrubs - Containerized/Potted-HU		EA	\$1.10	
	612.4 Trees &/or Shrubs - Containerized/Potted - w/ACD		EA	\$1.15	
	612.4 Trees &/or Shrubs - Containerized/Potted - w/ACD-HU		EA	\$1.38	
	612.5 Tree Spade Transplantation		PLUG	\$6.12	
	612.5 Tree Spade Transplantation-HU		PLUG	\$7.34	

Practice Code	Practice Name (units)	Scenario 1/	Payment Units	Payment Rate 2/	Practice Lifespan (yrs)
614 Watering Facility (no)					10
	614.1 Drinking Tank or Trough		DF	\$106.76	
	614.1 Drinking Tank or Trough-HU		DF	\$160.14	
	614.2 Energy Free Fountains		GAL	\$15.83	
	614.2 Energy Free Fountains-HU		GAL	\$23.74	
	614.3 Freeze Proof Tank		EA	\$570.15	
	614.3 Freeze Proof Tank-HU		EA	\$855.23	
	614.4 Guzzler		GAL	\$3.15	
	614.4 Guzzler-HU		GAL	\$4.73	
	614.5 Storage Tank		GAL	\$0.27	
	614.5 Storage Tank-HU		GAL	\$0.40	
642 Water Well (no)					20
	642.1 Well-Drilled, Cased		FT	\$9.43	
	642.1 Well-Drilled, Cased-HU		FT	\$14.14	
	642.2 Well-Drilled, Cased, Shallow <100 foot		EA	\$971.03	
	642.2 Well-Drilled, Cased, Shallow <100 foot-HU		EA	\$1,456.54	
Note: 642.3 is for Zone 1 only. Alfalfa, Beaver, Blaine, Canadian, Cimarron, Dewey, Ellis, Garfield, Grant, Harper, Kay, Kingfisher, Logan, Major, Noble, Oklahoma, Texas, Woods, and Woodward Counties.					
	642.3 Well-Drilled, Cased, Zone 1		FT	\$11.70	
	642.3 Well-Drilled, Cased, Zone 1-HU		FT	\$17.55	

1/ All items must be implemented according to the Economic Cost Data grey box for that scenario

2/ All Items are paid at 100% of the payment rate per unit applied.

3/ HU - Historically Underserved which includes any of the following:

- Limited Resource Farmer or Rancher or Forest Owner
- Beginning Farmer or Rancher
- Socially disadvantaged Farmer or Rancher

ECONOMIC COST DATA

Cost Data

Typical Implementation Scenario

314.1 Chemical treatments (excluding 2,4D and tebuthiuron)

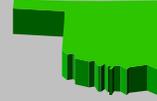
This management practice is for controlling undesirable and/or invasive brush on rangeland, pasturelands, native or naturalized pastures and hayland according to a brush management plan developed in accordance with the NRCS Brush Management (314) standard and specifications. Application is completed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

There may be several options for chemicals. This scenario includes the most commonly used brush herbicides, excluding 2,4-D products or tebuthiuron. Some options may also be combinations of more than one active ingredient. Common brush species controlled under this practice include mesquite, sand sagebrush, blackberry, broom snakeweed, multiflora rose, osage orange, prickly pear, cholla cactus, honey locust, oaks, shinnery and elm. Results may vary.

Associated Practices: 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, Sales data from companies.

Cost/Unit

Materials

Chemical: Multiple, most commonly used	\$24.43	\$24.88
Surfactant (if needed)	\$0.45	

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

Equipment/Installation

Aerial or broadcast application: cost of equipment use, labor, fuel, etc.		\$6.00
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Labor

Included in installation Costs		\$0.00
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Mobilization

Included in equipment costs		\$0.00
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Operation & Maintenance

Monitoring and possible follow-up treatments		\$0.31
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Acquisition of Technical Knowledge

None		\$0.00
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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
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Risk

Reduced risk, forage yield increase		\$0.00
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Administration & Permit Costs

None		\$0.00
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Total Cost Estimate:		\$33.19
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ECONOMIC COST DATA

Cost Data

Typical Implementation Scenario

314.2 Chemical treatment with 2,4D

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.

The most common chemical used is 2,4D as a low cost alternative for control of species such as sand sagebrush, black locust, sumac, willow, buckbrush and elm. Control options for sumac and mesquite using 2,4D and picloram are also included due to low rates and costs. Results may be variable and some alternatives may only result in suppression and/or low kill rates. Those used for suppression will require follow-up applications in order to achieve reductions.

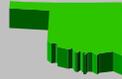
Associated Practices: Prescribed Grazing (528), Upland Wildlife Habitat Management (645)

Geographic Area: Statewide

Unit for Cost Estimate: Acre

Practice Life (Years): 10

Discount Rate (%/Year): 5%



Data Source: 2008 actual cost data, Sales data from companies.

Cost/Unit

Materials

Chemical: 2,4D (and/or picloram when used for sumac or mesquite)	\$4.92	\$5.37
Surfactant (if needed)	\$0.45	
Costs based on average cost of chemicals and prescribed rates according to current Brush Management (314) specifications.		

Equipment/Installation

Aerial or broadcast application: cost of equipment use, labor, fuel, etc.		\$6.00
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Labor

Included in installation Costs		\$0.00
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Mobilization

Included in equipment costs		\$0.00
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Operation & Maintenance

Monitoring and possible follow-up treatments		\$0.11
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Acquisition of Technical Knowledge

None		\$0.00
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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
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Risk

Reduced risk, forage yield increase		\$0.00
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Administration & Permit Costs

None		\$0.00
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Total Cost Estimate:		\$13.48
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ECONOMIC COST DATA

Cost Data

Typical Implementation Scenario

314.3 Chemical treatment with tebuthiuron

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 control option uses tebuthiuron and is primarily used on sand shinnery and some for blackjack / post oaks. 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).

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

Geographic Area: Statewide

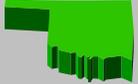
Unit for Cost Estimate: Acre

Practice Life (Years): 10

Discount Rate (%/Year): 5%

Data Source: 2008 actual cost data, Sales data from companies.

	<u>Cost/Unit</u>
<u>Materials</u>	\$70.31
Chemical: Tebuthiuron	\$70.31
Costs based on average cost of chemicals and prescribed rates according to current Brush Management (314) specifications.	
<u>Equipment/Installation</u>	\$6.00
Aerial or broadcast application: cost of equipment use, labor, fuel, etc.	
<u>Labor</u>	\$0.00
Included in installation Costs	
<u>Mobilization</u>	\$0.00
Included in equipment costs	
<u>Operation & Maintenance</u>	\$0.76
Monitoring and possible follow-up treatments	
<u>Acquisition of Technical Knowledge</u>	\$0.00
None	
<u>Forgone Income</u>	\$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	
<u>Risk</u>	\$0.00
Reduced risk, forage yield increase	
<u>Administration & Permit Costs</u>	\$0.00
None	
Total Cost Estimate:	\$79.07



ECONOMIC COST DATA

Cost Data

Typical Implementation Scenario

314.4 Mechanical Treatment Level 1

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.

These control options can be very selective by removing the individual unwanted plants but cutting, sawing, severing below the soil surface, or uprooting the plant, while leaving desirable ones. These options are best used for non-sprouting species (such as cedar) or when no other effective option is available and followup treatments are planned. Costs include stacking and raking into piles / windrows.

Associated Practices: 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.

Cost/Unit

Materials

NONE

\$0.00

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 medium infestation levels.

\$73.50

Infestation levels are typically <30% canopy cover or less than 200 single stem, non-sprouting plants (i.e. Juniper <8 ft tall) per acre.

Equipment may include tree saws, hydraulic clippers, hydraulic circular saws or other approved methods to sever woody species at or just above the ground surface; or, powergrubbing, treedozing, and low-energy grubbing equipment designed to cut underneath a brush plant and lift or push it out of the ground.

\$56.00

Stacking and/or raking into piles or windrows

\$17.50

Labor

Included in installation Costs

\$0.00

Mobilization

Included in equipment costs

\$0.00

Operation & Maintenance

Monitoring and possible followup treatments

\$0.74

Acquisition of Technical Knowledge

None

\$0.00

Forgone Income

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

\$2.00

Risk

Reduced risk, forage yield increase

\$0.00

Administration & Permit Costs

None

\$0.00

Total Cost Estimate:

\$76.24

ECONOMIC COST DATA

Cost Data

Typical Implementation Scenario

314.5 Mechanical Treatment Level 2

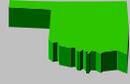
This management practice is for controlling undesirable and/or invasive brush on rangeland, pasturelands, native or naturalized pastures and hayland according to a brush management plan developed in accordance with the NRCS Brush Management (314) standard.

These control options can be very selective by removing the individual unwanted plants but cutting, sawing, severing below the soil surface, or uprooting the plant, while leaving desirable ones. These options are best used for non-sprouting species (such as cedar) or when no other effective option is available and followup treatments are planned. Costs include stacking and raking into piles / windrows.

Associated Practices: 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.

Cost/Unit

Materials		\$0.00
NONE		
Equipment/Installation		\$128.00
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		
<u>Infestation levels</u> are typically >30% canopy cover or 200 single stem, non-sprouting plants (i.e. Juniper <8 ft tall) per acre. The most cost effective application is at levels of 30-60% canopy or 200 - 500 single stem, non-sprouting plants per acre.		
Equipment may include tree saws, hydraulic clippers, hydraulic circular saws or other approved methods to sever woody species at or just above the ground surface or, powergrubbing, treedozing, and low-energy grubbing equipment designed to cut underneath a brush plant and lift or push it out of the ground.		\$93.00
Stacking and/or raking into piles or windrows		\$35.00
Labor		\$0.00
Included in installation Costs		
Mobilization		\$0.00
Included in equipment costs		
Operation & Maintenance		\$1.28
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 deferment period depending on density of brush prior to control. Typical deferment may be 60 - 90 or more days		
Risk		\$0.00
Reduced risk, forage yield increase		
Administration & Permit Costs		\$0.00
None		
Total Cost Estimate:		\$131.28

ECONOMIC COST DATA

Cost Data

Typical Implementation Scenario

314.6 Cutting and Spraying

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 control option can be very selective by treating the individual unwanted plants, while leaving desirable ones and is only used when controlling sprouting species. Equipment such as tree saws, hydraulic clippers, hydraulic circular saws or other approved methods are used to sever woody species at or just above the ground surface. The equipment is also equipped with spray nozzle and tank to apply a chemical mixture directly to the stump immediately following severing.

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

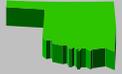
Geographic Area: Statewide

Unit for Cost Estimate: Acre

Practice Life (Years): 10

Discount Rate (%/Year): 5%

Data Source: 2008 actual cost data.



		Cost/Unit
Materials		\$22.55
Chemical Mixture: Costs based on Remedy (25%) and diesel fuel (75%)		
	Low infestations	\$11.28
	Medium infestations	\$22.55
	High infestations	\$33.83
Equipment/Installation		\$56.54
Costs includes costs for labor, fuel, chemical 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.		
Low infestation levels are typically less than 10% canopy cover or less than 100 single stem, plants per acre.		\$31.00
Medium infestation levels are typically 10% to 30% canopy cover or less than 199 single stem plants per acre.		\$56.00
High infestation levels are typically >30% canopy cover or 200 single stem plants per acre. The most cost effective application is at levels of 30-60% canopy or 200 - 500 single stem, non-sprouting plants per acre.		\$93.00
Labor		\$0.00
Included in installation Costs		
Mobilization		\$0.00
Included in equipment costs		
Operation & Maintenance		\$0.79
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 deferment period depending on density of brush prior to control. Typical deferment may be 60 - 90 or more days		
Risk		\$0.00
Reduced risk, forage yield increase		
Administration & Permit Costs		\$0.00
None		
Total Cost Estimate:		\$81.88

ECONOMIC COST DATA

Cost Data

Typical Implementation Scenario

314.7 Individual Plant Treatment (IPT), Chemical

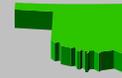
This management practice is for controlling undesirable and/or invasive brush on rangeland, pasturelands, native or naturalized pastures and hayland according to a brush management plan developed in accordance with the NRCS Brush Management (314) standard and specifications (IPT recommendations).

This option is for Individual Plant Treatment (IPT). 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: 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, 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		\$17.00
Basal Treatment - Herbicide mixed with diesel fuel, oil and/or penetrant applied around lower stem targeted plants. Average of \$.25 per tree	\$18.75	
Soil applied herbicides applied by hand as pellets or some liquid herbicides requiring an exact delivery handgun applicator. Average of \$.10 per tree	\$7.50	
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). Average of \$.22 per tree.	\$16.50	

Equipment/Installation

Hand held equipment and labor costs estimated at \$15.00 per acre. Average treatment is 75 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: \$32.15

ECONOMIC COST DATA

Cost Data

Typical Implementation Scenario

314.8 Mechanical Treatment - Volatile fuel removal

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: 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.

Cost/Unit

Materials

NONE

\$0.00

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.

\$139.50

Equipment such as tree saws, hydraulic clippers, hydraulic circular saws, dozers, or other approved methods

\$69.50

Stacking and/or raking into piles or windrows

\$70.00

Labor

Included in installation Costs

\$0.00

Mobilization

Included in equipment costs

\$0.00

Operation & Maintenance

Monitoring and possible followup treatments

\$1.40

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:

\$140.90

ECONOMIC COST DATA

Cost Data

Typical Implementation Scenario

314.9 Mechanical Treatment - Cedar Removal, Special

This management practice is for mechanically removing cedar trees from rangeland, pasturelands, native or naturalized pastures and hayland or within riparian zones according to the NRCS Brush Management (314) standard.

This practice is only applied when cedar trees exceed 30% canopy cover and one of the following exists: 1) Riparian areas where cedars are threatening desirable deciduous trees native to riparian sites (cottonwoods) used for wildlife habitat (primarily roosting sites), or 2) Terrain and /or density of cedar trees do not allow for use of clipping/cutting to be accomplished. Cedars are selectively removed using clipping / cutting equipment or dozers and stacked or placed in windrows or piles. Dozing will be done in a manner that minimizes soil disturbances and damage to other woody species (i.e. hardwoods). This practice is not used for land clearing or for control of re-sprouting species (i.e. oaks).

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

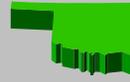
Geographic Area: Statewide

Unit for Cost Estimate: Acre

Practice Life (Years): 10

Discount Rate (%/Year): 5%

Data Source: 2008 actual cost data, receipts.



	<u>Cost/Unit</u>
Materials	\$0.00
NONE	
Equipment/Installation	\$265.83
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 treatment of dozing.	
Clipping, cutting, dozing	\$195.83
Stacking and/or raking into piles or windrows	\$70.00
Labor	\$0.00
Included in installation Costs	
Mobilization	\$0.00
Included in equipment costs	
Operation & Maintenance	\$2.66
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:	\$268.49

ECONOMIC COST DATA

Cost Data

Typical Implementation Scenario

322.1 Sprigging and Seeding Grasses

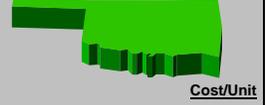
Establishing permanent herbaceous vegetation on channel banks, berms, spoils and associated areas along streambanks and/or shorelines (above the water line) following stabilization activities or used alone to stabilize streambank or shorelines to reduce erosion and sedimentation. Evaluations for the proper use of this practice are based on criteria found in the NRCS Streambank and Shoreline (580) standard.

Associated Practices: Critical Area Planting (342), Nutrient Management (590), Pest Management (595), Streambank and Shoreline Protection (580)

Data Source: 2008 actual cost data, Critical Area Planting (342) cost data.

Geographic Area: Statewide

Unit for Cost Estimate: Acre
 Practice Life (Years): 10
 Discount Rate (%/Year): 5%



Materials

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.

\$100.00

Equipment/Installation

Tractor / Drill / Sprigger / Spreader
 Seedbed preparation
 Includes labor

\$15.42

Labor

Costs included with installation

Mobilization

Due to size of jobs (typically small), some cost may be incurred.

\$25.00

Operation & Maintenance

Proper use which may include excluding use.
 2% of installation costs

\$2.81

Acquisition of Technical Knowledge

Planting and management grass.

\$0.00

Forgone Income

None

\$0.00

Risk

None

\$0.00

Administration & Permit Costs

None

\$0.00

Total Cost Estimate:

\$143.23

ECONOMIC COST DATA

Cost Data

Typical Implementation Scenario

322.2 Trees/Shrub Establishment - Seedbed Preparation & Planting

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: Critical Area Planting (342), Nutrient Management (590), Pest Management (595), Streambank and Shoreline Protection (580), Tree / Shrub Planting (612)

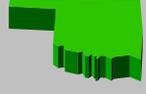
Data Source: 2008 actual cost data, Critical Area Planting (342) cost data.

Geographic Area: Statewide

Unit for Cost Estimate: Acre

Practice Life (Years): 10

Discount Rate (%/Year): 5%



	<u>Cost/Unit</u>
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

Typical Implementation Scenario

322.3 Switchgrass and Reedgrass Establishment

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: Critical Area Planting (342), Nutrient Management (590), Pest Management (595), Streambank and Shoreline Protection (580)

Data Source: 2008 actual cost data, Critical Area Planting (342) cost data.

Geographic Area: Statewide
 Unit for Cost Estimate: Acre
 Practice Life (Years): 10
 Discount Rate (%/Year): 5%



	<u>Cost/Unit</u>
Materials	\$2,600.00
Kanlow switchgrass: Cost of the seed and any needed seedbed preparation prior to planting.	\$150.00
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.	\$2,450.00
Does not include cost of fertilizer for establishment.	
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	\$52.40
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:	\$2,672.40

ECONOMIC COST DATA

Cost Data

Typical Implementation Scenario

332.3 Native Grass Monoculture

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.

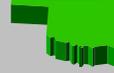
Associated practices include: Residue and Tillage Management - No Till/Strip Till/Direct Seed (329), Residue and Tillage Management - Mulch Till (345), Residue and Tillage Management - Ridge Till (346), Cover Crop (340), Pest Management (595), Nutrient Management (590), Contour Farming (330), Deep Tillage (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: 2008 Pasture and Hay Planting (550) cost data.

Materials

Native Grass Species

(Big Bluestem, Sand Bluestem, Indiangrass, Switchgrass)

\$72.75

Equipment/Installation

Tractor / drill

includes labor costs

\$7.00

Labor

Included in Installation cost.

Mobilization

None

\$0.00

Operation & Maintenance

2% O&M factor

\$1.46

Acquisition of Technical Knowledge

Calibrate and operate seed drill, manage perennial grass

\$0.00

Forgone Income

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) =

\$2.74

Risk

Reduced risk, less erosion, less machinery wear & tear.

\$0.00

Administration & Permit Costs

None

\$0.00

Total Cost Estimate:

\$83.95

ECONOMIC COST DATA

Cost Data

Typical Implementation Scenario

332.4 Native Grass Mixture

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).

This practice includes the costs of 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 (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: 2008 Range Planting (550) cost data.

Materials

Native Grass Seed

\$59.00

Equipment/Installation/Labor

Tractor/Drill/Labor

\$7.00

Labor

Included in Installation cost

\$0.00

Mobilization

None

\$0.00

Operation & Maintenance

2% O&M factor

\$1.32

Acquisition of Technical Knowledge

Calibrate and operate seed drill, manage perennial grass

\$0.00

Forgone Income

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) =

\$2.74

Risk

Reduced risk, less erosion, less machinery wear & tear.

\$0.00

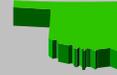
Administration & Permit Costs

None

\$0.00

Total Cost Estimate:

\$70.06



ECONOMIC COST DATA

Cost Data

Typical Implementation Scenario

338.1 Level 1-Prescribed Burn

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.

Prescribed burns in this scenario are 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)

Associated Practices: Firebreak (394), Prescribed Grazing (528), Upland Wildlife Habitat Management (645)

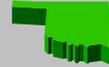
Data Source: Actual equipment costs, producer knowledge, Documented research and demonstration projects

Geographic Area: Statewide

Unit for Cost Estimate: Acre

Practice Life (Years): 5

Discount Rate (%/Year): 5%



Cost/Unit

Materials

Included in Equipment and Installation

Equipment/Installation

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.

\$2.98

Labor

Labor will vary depending on number of crew. Average crew size would be 8 people

\$4.00

Mobilization

Included in Equipment and Installation

\$0.00

Operation & Maintenance (Annual)

N/A

\$0.00

Acquisition of Technical Knowledge

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.

\$0.42

Forgone Income (Annual)

Depending on situation, there may be deferral to build fuels as required and according to the Prescribed Burn Plan and some deferral following burn to allow for plant regrowth prior to grazing.

\$6.00

Risk

None

Administration & Permit Costs

None

Total Cost Estimate:

\$13.40

ECONOMIC COST DATA

Cost Data

Typical Implementation Scenario

338.2 Level 2-Prescribed Burn

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 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)

Associated Practices: 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%

Cost/Unit

Materials

Included in Equipment and Installation

Equipment/Installation

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.

\$2.98

Labor

Labor will vary depending on number of crew. Average crew size would be 8 people

\$8.00

Mobilization

Included in Equipment and Installation

\$0.00

Operation & Maintenance (Annual)

N/A

\$0.00

Acquisition of Technical Knowledge

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.

\$0.42

Forgone Income (Annual)

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.

\$6.00

Risk

None

Administration & Permit Costs

None

Total Cost Estimate:

\$17.40

ECONOMIC COST DATA

Cost Data

Typical Implementation Scenario

342.1 Critical Area Planting

Establishing permanent vegetation on areas with excessive erosion and previously constructed structural practices (ponds, waterways, grade stabilization structures, diversions, etc.) Typical planting is either seeding grasses or sprigging.

Associated Practices: Nutrient Management (590), Various Engineering Practices

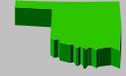
Data Source: 2008 actual cost data.

Geographic Area: Statewide

Unit for Cost Estimate: Acre

Practice Life (Years): 10

Discount Rate (%/Year): 5%



Cost/Unit

Materials

Costs for seed and/or 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

\$130.68

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	\$111.36
Sprigging bermudagrass includes cost of sprigs, tractor / sprigging equipment and planting	\$150.00

Labor

Costs included with installation

Mobilization

\$25.00

Due to size of jobs (typically small), some cost may be incurred.

Operation & Maintenance

\$4.67

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:

\$160.35

ECONOMIC COST DATA

Cost Data

Typical Implementation Scenario

342.2 Tree/Shrub Establishment

Establishing adapted trees on gullied areas with excessive erosion.

Associated Practices: Nutrient Management (590), Tree / Shrub Establishment (612)

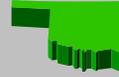
Data Source: 2008 actual cost data, Tree Shrub Establishment (612) cost data.

Geographic Area: Statewide

Unit for Cost Estimate: Acre

Practice Life (Years): 10

Discount Rate (%/Year): 5%



Materials

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

Included with labor costs

Labor

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

Due to size of jobs (typically small), some cost may be incurred.

Operation & Maintenance

3% of installation costs

Acquisition of Technical Knowledge

Planting and maintenance of trees.

Forgone Income

None

Risk

Reduced risk, less concentrated flow erosion.

Administration & Permit Costs

None

Total Cost Estimate:

Cost/Unit
\$378.00

\$0.00

\$283.65

\$25.00

\$8.51

\$0.00

\$0.00

\$0.00

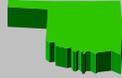
\$0.00

\$695.16

ECONOMIC COST DATA

Cost Data

<u>Typical Implementation Scenario</u>		
362.1 Diversion		
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		
Data Source: 2007 & 2008 actual cost data.		
Geographic Area:	Statewide	
Unit for Cost Estimate:	Cubic Yard (CY)	
Practice Life (Years):	10	
Discount Rate (%/Year):	5%	
		Cost/Unit
Materials		\$0.00
If needed, Included in Equipment/Installation Cost		
Equipment/Installation		
Includes cost of equipment, labor, mobilization		
Labor		\$1.39
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:		\$1.42



ECONOMIC COST DATA

Cost Data

Typical Implementation Scenario

378.1 Pond - Earthen

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 3000 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: 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

Geographic Area: Statewide

Unit for Cost Estimate: Construction Unit (CU)

Practice Life (Years): 20

Discount Rate (%/Year): 5%

Data Source: 2008 actual cost data and current vendor pricing.

Cost/Unit

Materials

Includes Equipment/Installation, Labor and Mobilization Costs

\$1.72

Table 1-A Example

Component	Units	Quantity	Multiplier	CU
Earthwork	CY	3000	1.0	3,000
HCMP / Welded Steel	DIFT	1116	1.2	1,339
Plastic Pipe	DIFT	0	0.4	0
Concrete	CY	2	146.5	293
Trashguard	PF	44	9.9	436
Gypsum	TON	0	69.8	0
Riprap	CY	0	31.4	0
Filter (C33 sand)	CY	0	23.0	0
Total Construction Units				5,068

To determine the average cost for any component listed above, multiply \$1.72 times the **Multiplier** for that component. For example, the average cost of concrete would be $\$1.72 \times 146.5 = \$251.98 / \text{CY}$.

Table 1-B

Component	Units	Quantity	Multiplier	CU
Earthwork	CY		1	
HCMP / Welded Steel	DIFT		1.2	
Plastic Pipe	DIFT		0.4	
Concrete	CY		146.5	
Trashguard	PF		9.9	
Gypsum	TON		69.8	
Riprap	CY		31.4	
Filter	CY		23	
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:

\$1.74

ECONOMIC COST DATA

Cost Data

Typical Implementation Scenario

380.1 Trees &/or Shrubs - barerooted

This practice consists of establishing 3 rows of bare root trees or shrubs in linear configurations oriented east to west, 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

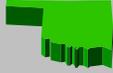
Unit for Cost Estimate: Each

Practice Life (Years): 15

Discount Rate (%/Year): 5%

Data Source: 2008 actual costs, and ODAFF-Forestry Services Data.

			<u>Cost/Unit</u>
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% o 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:			\$0.72



ECONOMIC COST DATA

Cost Data

Typical Implementation Scenario

380.2 Trees &/or Shrubs - barerooted, with animal control devices

This practice consists of planting 3 rows of bare root trees or shrubs with animal control devices, in linear configurations oriented east to west, to reduce soil erosion from wind.

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: 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)

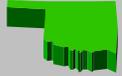
Geographic Area: Statewide

Unit for Cost Estimate: Each

Practice Life (Years): 15

Discount Rate (%/Year): 5%

Data Source: 2008 cost estimates by ODAFF-Forestry Services Data.



Materials	<u>Unit</u>	<u>\$/Unit</u>	Cost/Unit
Bare-rooted seedlings (average for all species and order sizes)	Tree	\$0.40	
Animal Control Devices	Tree	\$0.25	
Total		\$0.65	\$0.65
Equipment/Installation			\$0.35
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
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:			\$1.03

ECONOMIC COST DATA

Cost Data

Typical Implementation Scenario

380.3 Trees &/or Shrubs - containerized/potted

This practice consists of planting 3 rows of containerized trees/shrubs in harsh site conditions where bare rooted seedlings are not recommended, in linear configurations oriented east to west, 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

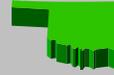
Unit for Cost Estimate: Each

Practice Life (Years): 15

Discount Rate (%/Year): 5%

Data Source: 2008 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% 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 None			\$0.00
Risk None			\$0.00
Administration & Permit Costs None			\$0.00
Total Cost Estimate:			\$1.24



ECONOMIC COST DATA

Cost Data

Typical Implementation Scenario

380.4 Trees &/or Shrubs - containerized/potted with animal control device

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, in linear configurations oriented east to west, 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

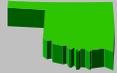
Unit for Cost Estimate: Each

Practice Life (Years): 15

Discount Rate (%/Year): 5%

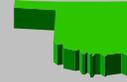
Data Source: 2008 estimates by ODAFF-Forestry Services Data.

			<u>Cost/Unit</u>
Materials			\$1.15
Containerized or potted seedlings (average for all species and order sizes)	<u>Unit</u> Tree	<u>\$/Unit</u> \$0.90	
Animal Control Devices	<u>Tree</u>	<u>\$0.25</u>	
Total		<u>\$1.15</u>	
Equipment/Installation			\$0.35
Planting of each seedling	<u>Unit</u> Tree	<u>\$/Unit</u> \$0.30	
Animal Control Devices	<u>Tree</u>	<u>\$0.05</u>	
Total		<u>\$0.35</u>	
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

Typical Implementation Scenario		
382.1 Permanent fence, Barbed or smooth Wire		
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 should be >40 acres.		
All materials and design are based off of the NRCS Fence (382) standard and specifications		
Associated Practices: Prescribed Grazing (528), Access Control (472)		
Geographic Area:	Statewide	
Unit for Cost Estimate:	Foot	
Practice Life (Years):	20	
Discount Rate (%/Year):	5%	
Data Source: 2008 actual cost data and current vendor pricing		Cost/Unit
Materials		\$0.78
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		\$0.74
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

Cost Data

Typical Implementation Scenario

382.3 Permanent Power Fence

Installation of permanent 3 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: Prescribed Grazing (528), Access Control (472)

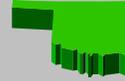
Geographic Area: Statewide

Unit for Cost Estimate: Foot

Practice Life (Years): 20

Discount Rate (%/Year): 5%

Source of data: 2008 actual cost data, fence suppliers.



	Cost/Unit
Materials	\$0.77
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	\$0.35
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:	\$1.14

ECONOMIC COST DATA

Cost Data

Typical Implementation Scenario

382.5 Permanent fence, Barbed or smooth Wire, Extra materials and labor

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. This type of fence will involve extra labor and materials due to rough terrain or changes in direction (more corners) that are [required according the NRCS Fence \(382\) standard and specifications, design and layout](#)

All materials and design are based off of the NRCS Fence (382) standard and specifications

Associated Practices: Prescribed Grazing (528), Access Control (472)

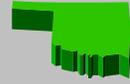
Geographic Area: Statewide

Unit for Cost Estimate: Foot

Practice Life (Years): 20

Discount Rate (%/Year): 5%

Source of data: 2008 actual cost data, fence suppliers.



	<u>Cost/Unit</u>
Materials	\$1.16
Materials may vary depending on length of fence, types of post used, etc. Typical materials consist of: <div style="padding-left: 20px;">Double strand barbed, smooth wire, or woven wire t-posts, wood or steel brace posts, stays, staples, concrete, paint, gates and welding supplies</div>	
Equipment/Installation	\$1.02
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

Typical Implementation Scenario

386.3 Native Grass Monoculture

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.

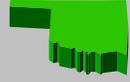
Associated practices include: Residue and Tillage Management - No Till/Strip Till/Direct Seed (329), Residue and Tillage Management - Mulch Till (345), Residue and Tillage Management - Ridge Till (346), Cover Crop (340), Pest Management (595), Nutrient Management (590), Contour Farming (330), Deep Tillage (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: 2008 actual cost data, OSU Enterprise Budget Software, Pasture and Hay (512) cost data.

Materials	\$72.75
Native Grass Species	
Equipment/Installation/Labor	\$7.00
Tractor/Drill/Labor	
Labor	\$0.00
Included in Equipment/Installation Cost	
Mobilization	\$0.00
None	
Operation & Maintenance	\$0.80
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:	\$83.29

ECONOMIC COST DATA

Cost Data

Typical Implementation Scenario

386.4 Native Grass Mixture

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: 2008 actual cost data, OSU Enterprise Budget Software, Range Planting (550) cost data.

Materials

Native Grass Seed

\$59.00

Equipment/Installation/Labor

Tractor/Drill/Labor

\$7.00

Labor

Included in Equipment/Installation Cost

\$0.00

Mobilization

None

\$0.00

Operation & Maintenance

1% O&M factor

\$0.66

Acquisition of Technical Knowledge

Calibrate and operate seed drill, manage perennial grass

\$0.00

Forgone Income

1 Acre taken out of crop production

Assume wheat crop minus value of hay/forage crop from perennial forage.

Net Income (\$/Ac/Yr)

\$2.74

Risk

Reduced risk, erosion, less machinery wear & tear.

\$0.00

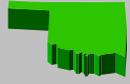
Administration & Permit Costs

None

\$0.00

Total Cost Estimate:

\$69.40



ECONOMIC COST DATA

Cost Data

Typical Implementation Scenario

390.1 Native Grass Mixture

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.

Data Source: 2008 actual cost data, OSU Enterprise Budget Software.

Geographic Area: Statewide

Unit for Cost Estimate: Acre

Practice Life (Years): 10

Discount Rate (%/Year): 5%

Cost/Unit

Materials

\$59.00

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

\$23.80

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

\$0.00

Included in Installation costs.

Mobilization

\$0.00

None

Operation & Maintenance

\$0.83

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.

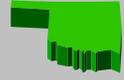
Administration & Permit Costs

\$0.00

None

Total Cost Estimate:

\$86.37



ECONOMIC COST DATA

Cost Data

Typical Implementation Scenario

391.1 Trees &/or Shrubs - barerooted

This practice consists of planting a 35 foot wide strip to barerooted bottomland hardwood trees along each side of the bank of a perinneeal stream, to reduce excess amounts of sediment and nutrients entering the stream. The trees will be established according to the Tree/Shrub Establishment (612) and Tree/Shrub Site Preparation (490) standard and specifications.

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

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

Geographic Area: Statewide

Unit for Cost Estimate: Each

Practice Life (Years): 15

Discount Rate (%/Year): 5%

Data Source: 2008 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

Typical Implementation Scenario

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

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. The trees will be established according to the Tree/Shrub Establishment (612) and Tree/Shrub Site Preparation (490) standard and specifications.

and/or water bodies.

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

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.

Geographic Area: **Statewide**

Unit for Cost Estimate: **Each**

Practice Life (Years): **15**

Discount Rate (%/Year): **5%**

Data Source: 2008 cost data from ODAFF-Forestry Services Data.



			<u>Cost/Unit</u>
Materials			\$0.65
	<u>Unit</u>	<u>\$/Unit</u>	
Bare-rooted seedlings (average for all species and order sizes)	<u>Tree</u>	<u>\$0.40</u>	
Animal Control Devices	<u>Tree</u>	<u>\$0.25</u>	
Total		<u>\$0.65</u>	
Equipment/Installation			\$0.35
	<u>Unit</u>	<u>\$/Unit</u>	
Planting of each seedling	<u>Tree</u>	<u>\$0.30</u>	
Animal Control Devices	<u>Tree</u>	<u>\$0.05</u>	
Total		<u>\$0.35</u>	
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

Typical Implementation Scenario

391.3 Trees &/or Shrubs - containerized/potted

This practice consists of planting a 35 foot wide strip to containerized bottomland hardwood trees in harsh site conditions where bare rooted seedlings are not recommended, along each side of the bank of a perinneal stream, to reduce excess amounts of sediment and nutrients entering the stream. The trees will be established according to the Tree/Shrub Establishment (612) and Tree/Shrub Site Preparation (490) standard and specifications.

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

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

Geographic Area: Statewide

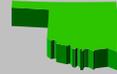
Unit for Cost Estimate: Each

Practice Life (Years): 15

Discount Rate (%/Year): 5%

Data Source: 2008 cost data from ODAFF-Forestry Services Data.

			Cost/Unit
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			\$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

Typical Implementation Scenario

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

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 perinneal stream, to reduce excess amounts of sediment and nutrients entering the stream. The trees will be established according to the Tree/Shrub Establishment (612) and Tree/Shrub Site Preparation (490) standard and specifications.

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

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.

Geographic Area: **Statewide**

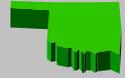
Unit for Cost Estimate: **Each**

Practice Life (Years): **15**

Discount Rate (%/Year): **5%**

Data Source: 2008 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)	<u>Tree</u>	<u>\$0.90</u>	
Animal Control Devices	<u>Tree</u>	<u>\$0.25</u>	
Total		<u>\$1.15</u>	
Equipment/Installation			\$0.35
	<u>Unit</u>	<u>\$/Unit</u>	
Planting of each seedling	<u>Tree</u>	<u>\$0.30</u>	
Animal Control Devices	<u>Tree</u>	<u>\$0.05</u>	
Total		<u>\$0.35</u>	
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

Typical Implementation Scenario

393.3 Natives

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: 2008 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 590.1 and 590.3

Equipment/Installation

\$124.12

Seeding inative grass species as monoculture or in mixture - Includes seed costs, seedbed preparation and seeding equipment.

Labor

Costs included with installation

Mobilization

None

Operation & Maintenance

2% O&M factor

\$2.48

Acquisition of Technical Knowledge

Calibrate and operate seed drill/sprigger, manage perennial grass

\$0.00

Forgone Income

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) =

\$15.63

Risk

Reduced risk, less erosion, less machinery wear & tear.

\$0.00

Administration & Permit Costs

None

\$0.00

Total Cost Estimate:

\$142.23

ECONOMIC COST DATA

Cost Data

Typical Implementation Scenario

394.1 Firebreak, normal

Installation of firebreak to facilitate implementation of Prescribed Burning (338)

Construction/installation of a 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 no be crossed).

Associated Practices: Prescribed Burning (338)

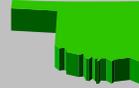
Data Source: 2008 actual cost data.

Geographic Area: Statewide

Unit for Cost Estimate: Acre

Practice Life (Years): 10

Discount Rate (%/Year): 5%



Cost/Unit

Materials

None

0.00

Equipment/Installation

Normal farm equipment (tractor, disk, plow, mowers, etc..) and labor. Some cases may require mowing of thick vegetation and 2-3 passes to fully remove/bury vegetation.

\$149.92

Labor

Included in installation.

Mobilization

Included in installation.

Operation & Maintenance

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.

5.00

Acquisition of Technical Knowledge

Knowledge of prescribed burning, use of equipment for installation

0.00

Forgone Income

Could be loss of acreage of forage, but could be negligible if planted to green crops as part of maintenance,

0.00

Risk

Reduced risk, less fire damage hazard.

0.00

Administration & Permit Costs

None

0.00

Total Cost Estimate:

154.92

ECONOMIC COST DATA

Cost Data

Typical Implementation Scenario

394.2 Firebreak, heavy equip.

Installation of firebreak to facilitate implementation of Prescribed Burning (338)

Construction/installation of a 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 require 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. Also included is the needed stacking and removing of debris in order to provide a technically sufficient firebreak.

Associated Practices: Prescribed Burning (338)

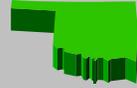
Data Source: 2008 actual cost data.

Geographic Area: Statewide

Unit for Cost Estimate: Acre

Practice Life (Years): 10

Discount Rate (%/Year): 5%



Cost/Unit

Materials

None

0.000

Equipment/Installation

Equipment includes cost of Dozer to construct firebreak. Costs are on a per acre basis.

\$708.42

Labor

Included in installation

Mobilization

Included with equipment and installation

Operation & Maintenance

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.

10.00

Acquisition of Technical Knowledge

Knowledge of prescribed burning, use of equipment for installation

0.000

Forgone Income

None

0.000

Risk

Reduced risk, less fire damage hazard.

0.000

Administration & Permit Costs

None

0.000

Total Cost Estimate:

718.42

ECONOMIC COST DATA

Cost Data

Typical Implementation Scenario

422.1 Trees &/or Shrubs - barerooted

Establishment of dense vegetation (trees/shrubs) in a linear design.

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.

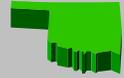
Geographic Area: Statewide

Unit for Cost Estimate: Each

Practice Life (Years): 15

Discount Rate (%/Year): 5%

Data Source: 2008 actual cost data and current vendor pricing.



<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
<u>Equipment/Installation</u>			\$0.30
Planting of each seedling	Tree	\$0.30	
<u>Labor</u> (Included in Installation cost)			\$0.00
<u>Mobilization</u> 2% of materials, equipment and labor			\$0.01
<u>Operation & Maintenance</u> 5% of installation costs			\$0.01
<u>Acquisition of Technical Knowledge</u> None			\$0.00
<u>Forgone Income</u> None			\$0.00
<u>Risk</u> None			\$0.00
<u>Administration & Permit Costs</u> None			\$0.00
Total Cost Estimate:			\$0.72

ECONOMIC COST DATA

Cost Data

Typical Implementation Scenario

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

Establishment of dense vegetation (trees/shrubs) with animal control devices, in a linear design.

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.

Geographic Area: Statewide

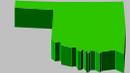
Unit for Cost Estimate: Each

Practice Life (Years): 15

Discount Rate (%/Year): 5%

Data Source: 2008 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

Typical Implementation Scenario

441.2 Drip System for Windbreaks

Consisting of drip 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.

Data Source: Cost based on indexed 2007 cost data.

Geographic Area: Statewide

Unit for Cost Estimate: Tree

Practice Life (Years): 10

Discount Rate (%/Year): 5%

Materials

Includes cost for Equipment/Installation, Labor, Filters, Gauges, Emitters, Lateral lines, and Mobilization.

Equipment/Installation

Included in Materials Cost.

Labor

Included in Materials Cost.

Mobilization

Included in Materials Cost.

Operation & Maintenance (Annual)

5% of materials, equipment/Installation and labor costs

Acquisition of Technical Knowledge

N/A

Forgone Income (Annual)

None

Risk

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

Administration & Permit Costs

Paperwork required to complete designs, meetings with engineers, travel

Total Cost Estimate:

Cost/Unit

\$2.09

\$0.00

\$0.00

\$0.00

\$0.10

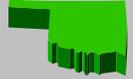
\$0.00

\$0.00

\$0.00

\$0.00

\$2.19



ECONOMIC COST DATA

Cost Data

Typical Implementation Scenario

484.1 Geotextile Fabric Weed Barrier

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.

This practice includes the costs of the geotextile fabric, anchoring materials, equipment and labor associated with placing the fabric in place.

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%

Cost/Unit

Data Source: 2008 cost data from ODAFF.

Materials

Geotextile Fabric/Anchoring Materials/Equipment/Labor

\$0.40

Equipment/Installation

Included in Materials Cost

\$0.00

Labor

Included in Materials Cost

\$0.00

Mobilization

Included in Materials Cost

\$0.00

Operation & Maintenance

0% O&M factor

\$0.00

Acquisition of Technical Knowledge

N/A

\$0.00

Forgone Income

N/A

\$0.00

Risk

N/A

\$0.00

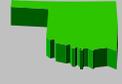
Administration & Permit Costs

None

\$0.00

Total Cost Estimate:

\$0.40



ECONOMIC COST DATA

Cost Data

Typical Implementation Scenario

484.2 Organic Mulch

This practice consists of applying organic mulch material during the grass establishment year to control weed competition and conserve moisture. This practice includes the costs of the organic 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%

Data Source: 2008 current vendor pricing.

Materials

Organic Mulch/Equipment/Labor

Equipment/Installation/Labor

Included in Materials Cost

Labor

Included in Materials Cost

Mobilization

Included in Materials Cost

Operation & Maintenance

0% O&M factor

Acquisition of Technical Knowledge

N/A

Forgone Income

N/A

Risk

N/A

Administration & Permit Costs

None

Total Cost Estimate:



Cost/Unit

\$600.00

\$0.00

\$0.00

\$0.00

\$0.00

\$0.00

\$0.00

\$0.00

\$0.00

\$600.00

ECONOMIC COST DATA

Cost Data

Typical Implementation Scenario

490.1 Mechanical Seedbed Preparation

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 in **heavy sod**. This mechanical seedbed preparation is used for tree and shrub plantings on previously non-cultivated ground only.

Data Source: 2008 cost data from ODAFF, Foresters

Geographic Area: Statewide

Unit for Cost Estimate: Acre

Practice Life (Years): 1

Discount Rate (%/Year): 5%



Cost/Unit

Materials

Materials includes complete installation costs.

\$38.00

Equipment/Installation

N/A

\$0.00

Labor

N/A

\$0.00

Mobilization

N/A

\$0.00

Operation & Maintenance

Continued suppression of competitive vegetation the first year - 15%

\$5.70

Acquisition of Technical Knowledge

None

\$0.00

Forgone Income (Annual)

None

\$0.00

Risk

None

\$0.00

Administration & Permit Costs

None

\$0.00

Total Cost Estimate:

\$43.70

ECONOMIC COST DATA

Cost Data

Typical Implementation Scenario

490.2 Chemical Site Preparation

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 trees. 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.

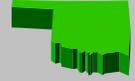
Associated practices include: Pest Management (595), Tree/Shrub Pruning (660), Brush Management (314), Forest Stand Improvement (666), Silvopasture Establishment (381), Firebreak (394), Access Control (472), Tree/Shrub Planting (612) Forest Slash Treatment (384)

Geographic Area: Statewide

Unit for Cost Estimate: Acre

Practice Life (Years): 1

Discount Rate (%/Year): 5%



Cost/Unit

Data Source: 2008 cost data from ODAFF, Foresters

Materials

Herbicide cost per acre

\$80.00

Equipment/Installation

Included in Labor cost

\$0.00

Labor

Cost to aerially apply herbicide per acre

\$40.00

Mobilization

N/A

\$0.00

Operation & Maintenance (Annual)

N/A

\$0.00

Acquisition of Technical Knowledge

None

\$0.00

Forgone Income (Annual)

None

\$0.00

Risk

None

\$0.00

Administration & Permit Costs

None

\$0.00

Total Cost Estimate:

\$120.00

ECONOMIC COST DATA

Cost Data

Typical Implementation Scenario

512.2 Introduced Species - Seedbed Preparation, Seed & Seeding

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.

Associated Practices: 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: 2007-2008 actual cost data, Oklahoma Cooperative Extension Fact Sheets <http://osufacts.okstate.edu>, seed costs from dealers

	<u>Cost/Unit</u>
<u>Materials</u>	\$34.37
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 in 590.1 and 590.3	
Does not include cost of cover crops if needed.	
<u>Equipment/Installation</u>	\$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
<u>Labor</u>	
Costs included with equipment and installation	
<u>Mobilization</u>	
N/A	
<u>Operation & Maintenance</u>	\$0.58
1% of installation costs	
<u>Acquisition of Technical Knowledge</u>	\$0.00
Calibrate and operate seed drill, manage perennial grass	
<u>Forgone Income</u>	\$15.24
Lost forage production during installation (1-year deferment)	
<u>Risk</u>	\$0.00
Reduced risk, less erosion, less machinery wear & tear.	
<u>Administration & Permit Costs</u>	\$0.00
None	
Total Cost Estimate:	\$73.99

ECONOMIC COST DATA

Cost Data

Typical Implementation Scenario

512.3 Native species - Seedbed Preparation, Seed & Seeding

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

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

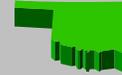
Geographic Area: Statewide

Unit for Cost Estimate: Acre

Practice Life (Years): 10

Discount Rate (%/Year): 5%

Data Source: 2007-2008 actual cost data, Oklahoma Cooperative Extension Fact Sheets <http://osufacts.okstate.edu>, seed costs from dealers



Cost/Unit

Materials		\$62.39
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 in 590.1 and 590.3		
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	\$16.80	
Labor		
Costs included with equipment and installation		
Mobilization		
N/A		
Operation & Maintenance		\$0.86
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:		\$97.05

ECONOMIC COST DATA

Cost Data

Typical Implementation Scenario

512.4 Legumes - Seedbed Preparation, Seed & Seeding

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) in overseeded into existing stands. When mixing legumes with grass seed for establishment, refer to 512.2.

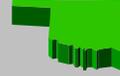
Associated Practices: Nutrient Management (590), Pest Management (595), Prescribed Grazing (528), Forage Harvest Management (511)

Geographic Area: Statewide

Unit for Cost Estimate: Acre

Practice Life (Years): 10

Discount Rate (%/Year): 5%



Cost/Unit

Data Source: 2007-2008 actual cost data, Oklahoma Cooperative Extension Fact Sheets <http://osufacts.okstate.edu>, seed costs from dealers

Materials

\$13.00

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).

Does not include cost of fertilizer or other soil amendments needed for establishment.

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

\$0.23

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:

\$23.37

ECONOMIC COST DATA

Cost Data

Typical Implementation Scenario

516.1 Livestock Pipeline

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: 614-Watering Facility, 642-Water Well, 533-Pumping Plant

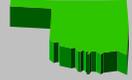
Data Source: 2008 actual cost data

Geographic Area: Statewide

Unit for Cost Estimate: DIFT

Practice Life (Years): 20

Discount Rate (%/Year): 5%



Cost/Unit

Materials

\$1.43

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

Diameter	Installed Cost / Foot
Inch	\$
0.75	\$1.07
1.00	\$1.43
1.50	\$2.15
2.00	\$2.86
2.50	\$3.58

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:

\$1.46

ECONOMIC COST DATA

Cost Data

Typical Implementation Scenario

533.1 Solar Powered

A solar powered pumping plant to provide water for agriculture use such as livestock or wildlife water. A typical pumping plant consists of installing a solar pump and solar panel that will deliver 1200 gallons of water per day at a cost of \$3,672.00.

Data Source: 2008 actual cost data.

Geographic Area: Statewide
 Unit for Cost Estimate: gallons/day
 Practice Life (Years): 15
 Discount Rate (%/Year): 5%



	<u>Cost/Unit</u>
Materials	\$3.06
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)	\$0.06
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:	\$3.12

ECONOMIC COST DATA

Cost Data

Typical Implementation Scenario

550.1 Native Species, Seedbed Preparation, Seed & Seeding

Establishing a mixture of native grasses, forbs and/or legumes, according to the Oklahoma NRCS Range Planting (550) standard and specification

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

Data Source: 2008 actual cost data and current vendor pricing.

Geographic Area: Statewide

Unit for Cost Estimate: Acre

Practice Life (Years): 10

Discount Rate (%/Year): 5%

Cost/Unit

Materials

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

\$59.00

Equipment/Installation

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

\$23.80

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

Calibrate and operate seed drill, management of native range.

\$0.00

Forgone Income

Assume deferment for up to two years

\$20.00

Risk

Reduced risk, less erosion, less machinery wear & tear.

\$0.00

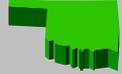
Administration & Permit Costs

None

\$0.00

Total Cost Estimate:

\$102.80



ECONOMIC COST DATA

Cost Data

Typical Implementation Scenario

561.1 Heavy Use Protection, Rock/Gravel

Heavy use area protection using a rock/gravel surface. A typical job consist of 26.7 CY of rock/gravel at a total cost \$1113.05

Associated Practices: 614-Watering Facilities, 313-Waste Storage Facility

Data Source: 2008 Actual Cost Data

Geographic Area: Statewide

Unit for Cost Estimate: CY

Practice Life (Years): 10

Discount Rate (%/Year): 5%

Cost/Unit

Materials

\$41.69

Total Cost includes Equipment/Installation and Labor Costs.

Rock/gravel	26.7	CY	\$ 31.83	\$ 849.86
Geotextile	51.5	SQ-YD	\$ 1.71	\$ 88.07
Excavation	88	CY	\$ 1.99	\$ 175.12
			Total Cost	\$1,113.05

Equipment/Installation

\$0.00

Included in Materials Cost

Labor

\$0.00

Included in Materials Cost

Mobilization

\$0.00

Included in Materials Cost

Operation & Maintenance

\$6.25

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:

\$47.94



ECONOMIC COST DATA

Cost Data

Typical Implementation Scenario

561.2 Heavy Use Protection, Concrete

Heavy use protection consist of stabilization of an area frequently used by people, animals or vehicles. They typical job is protecting a 3000 sq-ft areas with concrete frequently being used by dairy cows. The Unit cost is per cubic yards of concrete.

Associated Practices: 614-Watering Facilities, 313-Waste Storage Facility

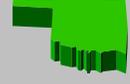
Data Source: 2008 actual cost data.

Geographic Area: Statewide

Unit for Cost Estimate: CY

Practice Life (Years): 10

Discount Rate (%/Year): 5%



Cost/Unit

Materials

Includes Equipment/Installation and Labor Costs.

Component	Quantity	Units	Cost/Unit	Cost
Concrete	70.8	CY	\$147.04	\$10,410.43
Blanket material (sand)	57.3	CY	19.83	1136.259
Excavation	28	CY	1.99	55.72
Total Cost			\$11,602.41	

\$163.88

Equipment/Installation

Included in Materials Cost

\$0.00

Labor

Included in Materials Cost

\$0.00

Mobilization

Included in Materials Cost

\$0.00

Operation & Maintenance

15% of Installation Costs

\$24.58

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:

\$188.46

ECONOMIC COST DATA

Cost Data

Typical Implementation Scenario

574.1 Spring Development

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 at a total cost of \$688.27

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

Data Source: Based on 2008 Actual Cost Data for similar type work.

Geographic Area: Statewide

Unit for Cost Estimate: Each

Practice Life (Years): 10

Discount Rate (%/Year): 5%



Cost/Unit

Materials

\$688.27

Includes Equipment/Installation, Labor and Mobilization Costs.

Component	Quantity	Units	Cost/Unit	Cost
Excavation/Fill	20	CY	1.72	\$ 34.40
Gravel (filter material)	4.6	CY	31.83	\$ 146.42
Galvanized Steel Pipe	180	DIFT	1.99	\$ 358.20
Drain Pipe	75	DIFT	1.99	\$ 149.25
			Total Cost	\$ 688.27

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:

\$688.27

ECONOMIC COST DATA

Cost Data

Typical Implementation Scenario

575.1 Animal Access Ramp

Typical job is an animal access ramp to pond water for 100 animals. A typical ramp is 16 ft wide X 40 ft long at a cost of \$1799.05 The unit for Estimating cost is CY of Rock/Gravel.

Associated Practices: 378-Pond, 382-Fence

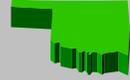
Data Source: 2008 actual cost data and current vendor pricing.

Geographic Area: Statewide

Unit for Cost Estimate: CY

Practice Life (Years): 10

Discount Rate (%/Year): 5%



Cost/Unit

Materials

\$142.78

Includes Labor, Equipment/Installation and Mobilization Costs.

Component	Cost / Unit	Units	Cost
Geocell (SY)	19.53	71	\$ 1,386.63
Geotextile (SY)	\$1.19	84	\$ 99.96
Rock (CY)	\$23.37	12.6	\$ 294.46
Excavation (CY)	\$1.20	15	\$ 18.00
Total Cost			\$ 1,799.05

Equipment/Installation

\$0.00

Included in Materials

Mobilization

\$0.00

Included in Materials

Operation & Maintenance (Annual)

\$1.43

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:

\$144.21

ECONOMIC COST DATA

Cost Data

Typical Implementation Scenario

578.1 Stream Crossing

Used to stabilize an area where livestock, people and/or equipment cross an intermittent or perennial water course. 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 \$2,340.25. Cost is based on cubic yards of rock installed.

Data Source: 2008 actual cost data

Geographic Area: Statewide

Unit for Cost Estimate: CY

Practice Life (Years): 10

Discount Rate (%/Year): 5%

Cost/Unit

Materials

\$78.01

Includes Labor, Equipment/Installation and Mobilization Costs.

Component	Cost / Unit	Units	Cost
Geocell (SY)	\$19.53	66	\$1,288.98
Geotextile (SY)	\$1.19	143	\$170.17
Rock (CY)	\$23.37	30	\$701.10
Excavation (CY)	\$1.20	150	\$180.00
Total Cost			\$2,340.25

Equipment/Installation

\$0.00

Included in Materials Cost

Labor

\$0.00

Included in Materials Cost

Mobilization

\$0.00

Included in Materials Cost

Operation & Maintenance (Annual)

\$7.80

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:

\$85.81

ECONOMIC COST DATA

Cost Data

Typical Implementation Scenario

580.1 Streambank and Shoreline Protection

For the purpose of stabilizing a stream bank. A typical job would consist of 100 ft of non stable 10 ft high bank to be stabilized with rock rip rap at a total cost of \$14,731.20

Associated Practices: 342-Critical Area Planting, 382-Fence

Data Source: Costs taken from current federal contracts for similar type work.

Geographic Area: Statewide

Unit for Cost Estimate: CY

Practice Life (Years): 20

Discount Rate (%/Year): 5%

Cost/Unit

Materials

\$59.40

Includes Equipment/Installation, Labor and Mobilization Costs

Component	Quantity	Cost / CY	Total Cost
Riprap - Cubic Yard	207	\$59.40	\$12,295.80
Filter - Cubic Yard	41	\$59.40	\$2,435.40
			\$14,731.20

Equipment/Installation

\$0.00

Included in Materials Cost

Labor

\$0.00

Included in Materials Cost

Mobilization

\$0.00

Included in Materials Cost

Operation & Maintenance

\$5.94

10% of Installation Costs, pest control.

Acquisition of Technical Knowledge

\$0.00

None

Forgone Income

\$0.00

None

Risk

\$0.00

None

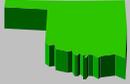
Administration & Permit Costs

\$0.00

None

Total Cost Estimate:

\$65.34



ECONOMIC COST DATA

Cost Data

Typical Implementation Scenario

587.1 Structure for Water Control

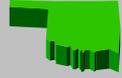
A component of a system to control the stage, discharge, distribution, delivery or direction of water flow. A typical system consists of a low embankment (effective height cannot exceed 8.0 ft) 2000 ft long.

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: 382-Fence, 447-Irrigation System Tailwater Recovery, 607-Surface Drainage

Data Source: 2008 Actual Cost Data

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



Cost/Unit

Materials

Includes Equipment/Installation, Labor and Mobilization Costs

\$1.72

Table 1-A Example

Component	Units	Quantity	Multiplier	CU
Earthwork	CY	3000	1.0	3,000.0
HCMP / Welded Steel	DIFT	1116	1.2	1,339.2
Plastic Pipe	DIFT	0	0.4	0.0
Concrete	CY	2	146.5	293.0
Trashguard	PF	44	9.9	435.6
Gypsum	TON	0	69.8	0.0
Riprap	CY	0	31.4	0.0
Filter (C33 sand)	CY	0	23.0	0.0
In-Line PVC Riser	EA	1	697.7	697.7
Slide Gate	DI	0	17.4	0.0
Total Construction Units				5,765.5

To determine the average cost for any component listed above, multiply \$1.72 times the **Multiplier** for that component. For example, the average cost of concrete would be $\$1.72 \times 146.5 = \$251.98 / \text{CY}$.

Table 1-B

Component	Units	Quantity	Multiplier	CU
Earthwork	CY		1	
HCMP / Welded Steel	DIFT		1.2	
Plastic Pipe	DIFT		0.4	
Concrete	CY		146.5	
Trashguard	PF		9.9	
Gypsum	TON		69.8	
Riprap	CY		31.4	
Filter	CY		23	
In-Line PVC Riser	EA		697.7	
Slide Gate	DI		17.4	
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% 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:	\$1.74

ECONOMIC COST DATA

Cost Data

Typical Implementation Scenario

589C.3 Native Grass Monoculture

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 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: 2008 actual cost data, OSU Enterprise Budget Software, Pasture and Hay (512) cost data

Materials

Native Grass Species

\$72.75

Equipment/Installation/Labor

Tractor/Drill/Labor

\$7.00

Labor

Included in Equipment/Installation Cost

\$0.00

Mobilization

None

\$0.00

Operation & Maintenance

5% O&M factor

\$3.99

Acquisition of Technical Knowledge

Calibrate and operate seed drill, manage perennial grass

\$0.00

Forgone Income

1 Acre taken out of crop production

Assume wheat crop minus value of hay/forage crop from perennial forage.

Net Income (\$/Ac/Yr)

\$2.74

Risk

Reduced risk, less erosion, less machinery wear & tear.

\$0.00

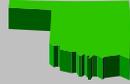
Administration & Permit Costs

None

\$0.00

Total Cost Estimate:

\$86.48



ECONOMIC COST DATA

Cost Data

Typical Implementation Scenario

589C.4 Native Grass Mixture

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 vegetative strips will be planted to a native mixture using the NRCS Range Planting (550) standard.

This practice includes the costs of perennial native grass seed, tractor, drill and labor to plant grass in buffer strips.

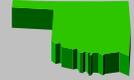
Associated practices include: Residue and Tillage Management - No Till/Strip Till/Direct Seed (329), Residue and Tillage Management - Mulch Till (345), Residue and Tillage Management - Ridge Till (346), Cover Crop (340), Pest Management (595), Nutrient Management (590), Contour Farming (330), Deep Tillage (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: 2008 actual cost data, OSU Enterprise Budget Software, Range Planting (550) cost data

Materials

[Native Grass Seed](#)

\$59.00

Equipment/Installation/Labor

[Tractor/Drill/Labor](#)

\$7.00

Labor

[Included in Equipment/Installation Cost](#)

\$0.00

Mobilization

[None](#)

\$0.00

Operation & Maintenance

[5% O&M factor](#)

\$3.30

Acquisition of Technical Knowledge

[Calibrate and operate seed drill, manage perennial grass](#)

\$0.00

Forgone Income

[1 Acre taken out of crop production](#)

[Assume wheat crop minus value of hay/forage crop from perennial forage.](#)

[Net Income \(\\$/Ac/Yr\)](#)

\$2.74

Risk

[Reduced risk, less erosion, less machinery wear & tear.](#)

\$0.00

Administration & Permit Costs

[None](#)

\$0.00

Total Cost Estimate:

\$72.04

ECONOMIC COST DATA

Cost Data

Typical Implementation Scenario

590.1 Fertilizer for Grass Establishment

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. Fertilizer will only be applied during or immediately following planting. 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.

This practice includes the costs of fertilizer, application equipment and labor to apply the nutrients. The typical/average scenario is a 60 acre field with an application rate of 35N-20P-20K. This is the extent that has been used in the following calculations when arriving at per acre costs.

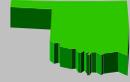
Associated practices include: Pasture and Hayland Management (512), Range Planting (550), Deep Tillage (324), Pest Management (595), Access Control (472), Prescribed Grazing (528), Fencing (382)

Geographic Area: Statewide

Unit for Cost Estimate: Acre

Practice Life (Years): 1

Discount Rate (%/Year): 5%



Data Source: 2008 actual cost data and current vendor pricing.

Cost/Unit

Materials

\$58.34

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

\$8.17

Application/Labor \$8.00

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:

\$66.51

ECONOMIC COST DATA

Cost Data

Typical Implementation Scenario

590.2 Fertilizer for Critical Area Plantings

This practice consists of applying fertilizer for establishing vegetation planted in accordance with the NRCS Critical Area Planting (342) standard. Fertilizer will only be applied during or immediately following planting. 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.

This practice includes the costs of fertilizer, application equipment and labor to apply the nutrients. The typical scenario involves a small acreage, generally less than 1 acre with a fertilizer application rate of 200 lbs. of 19N-19P-19K or 300 lbs. of 13N-13P-13K. One acre will be used to establish per acre costs for this scenario.

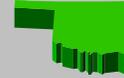
Associated practices include: Critical Area Planting (342), Mulching (484), Pest Management (595), Access Control (472), Prescribed Grazing (528), Fencing (382), Salinity and Sodic Soil Management (610)

Geographic Area: Statewide

Unit for Cost Estimate: Acre

Practice Life (Years): 1

Discount Rate (%/Year): 5%



Cost/Unit

Data Source: 2008 actual cost data and current vendor pricing.

<u>Materials</u>	\$100.85
Fertilizer	
<u>Equipment/Installation/Labor</u>	\$32.50
Application/Labor = \$32.50	
<u>Labor</u>	\$0.00
Included in Equipment/Installation Cost	
<u>Mobilization</u>	\$0.00
Included in Equipment/Installation Cost	
<u>Operation & Maintenance</u>	\$0.00
0% O&M factor	
<u>Acquisition of Technical Knowledge</u>	\$0.00
Knowledge to calibrate applicator	
<u>Forgone Income</u>	\$0.00
No land taken out of production, no lost opportunity costs	
<u>Risk</u>	\$0.00
Reduced risk, crop yield increase, reduced water quality damages	
<u>Administration & Permit Costs</u>	\$0.00
None	
Total Cost Estimate:	\$133.35

ECONOMIC COST DATA

Cost Data

Typical Implementation Scenario

590.3 Lime for Grass Establishment

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. 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.

This practice includes the costs of (ECCE) lime, application equipment and labor to apply the nutrients.

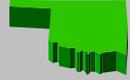
Associated practices include: Pasture and Hayland Management (512), Range Planting (550), Deep Tillage (324), Pest Management (595), Access Control (472), Prescribed Grazing (528), Fencing (382)

Geographic Area: Statewide

Unit for Cost Estimate: Ton ECCE

Practice Life (Years): 1

Discount Rate (%/Year): 5%



Data Source: 2008 actual cost data and current vendor pricing.

Materials

Lime

Cost/Unit

\$35.33

Equipment/Installation/Labor

Application/Labor \$6.50

Soil Test = \$10/ea \$10/ 60 ton \$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.

\$6.67

Labor

Included in Equipment/Installation Cost

\$0.00

Mobilization

Included in Equipment/Installation Cost

\$0.00

Operation & Maintenance

0% O&M factor

\$0.00

Acquisition of Technical Knowledge

Knowledge to calibrate applicator

\$0.00

Forgone Income

No land taken out of production, no lost opportunity costs

\$0.00

Risk

Reduced risk, crop yield increase, reduced water quality damages

\$0.00

Administration & Permit Costs

None

\$0.00

Total Cost Estimate:

\$42.00

ECONOMIC COST DATA

Cost Data

Typical Implementation Scenario

595.1 Pest Mgt, sericea lespedeza control

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 sericea lespedeza. Other costs may include scouting and record keeping.

Associated Practices: Prescribed Grazing (528), Prescribed Burning (338), Forage Harvest Management (511)

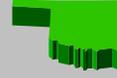
Data Source: 2008 actual cost data and current vendor pricing.

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 the most used chemicals and recommended rates.

\$11.93

\$12.38

Adjuvants, Surfactant, crop oils - costs vary but range from \$.35 to .50 per acre

\$0.45

Equipment/Installation

Tractor / Sprayer or custom application (aerial or ground)

\$5.00

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)

Labor for control strategies incorporated into equipment and installation cost

\$0.13

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:

\$17.51

ECONOMIC COST DATA

Cost Data

Typical Implementation Scenario

603.2 Native Grass Species

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 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 strips.

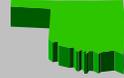
Associated practices include: Residue and Tillage Management - No Till/Strip Till/Direct Seed (329), Residue and Tillage Management - Mulch Till (345), Residue and Tillage Management - Ridge Till (346), Cover Crop (340), Pest Management (595), Nutrient Management (590), Contour Farming (330), Deep Tillage (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: 2008 actual cost data, OSU Enterprise Budge Software, Pasture and Hay Planting (512) cost data

Materials	\$61.88
Native Grass (switchgrass only)	
Equipment/Installation/Labor	\$7.00
Tractor/Drill/Labor	
Labor	\$0.00
Included in Equipment/Installation Cost	
Mobilization	\$0.00
None	
Operation & Maintenance	\$2.07
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:	\$73.69

ECONOMIC COST DATA

Cost Data

Typical Implementation Scenario

603.3 Native Grass Mixture

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 strips 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 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

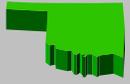
Practice Life (Years): 5

Discount Rate (%/Year): 5%

Cost/Unit

Data Source: 2008 actual cost data, OSU Enterprise Budget Software, Range Planting (550) cost data

<u>Materials</u>	\$59.00
Native Grass Seed	
<u>Equipment/Installation/Labor</u>	\$7.00
Tractor/Drill/Labor	
<u>Labor</u>	\$0.00
Included in Equipment/Installation Cost	
<u>Mobilization</u>	\$0.00
None	
<u>Operation & Maintenance</u>	\$1.98
3% O&M factor	
<u>Acquisition of Technical Knowledge</u>	\$0.00
Calibrate and operate seed drill, manage perennial grass	
<u>Forgone Income</u>	\$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)	
<u>Risk</u>	\$0.00
Reduced risk, less erosion, less machinery wear & tear.	
<u>Administration & Permit Costs</u>	\$0.00
None	
Total Cost Estimate:	\$70.72



ECONOMIC COST DATA

Cost Data

Typical Implementation Scenario

612.1 Trees &/or Shrubs - barerooted

This practice consists of planting barerooted trees and/or shrubs on a 10' x 12' spacing to enhance wildlife habitat and restore natural diversity.

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)

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

Geographic Area: Statewide

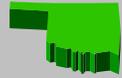
Unit for Cost Estimate: Each

Practice Life (Years): 15

Discount Rate (%/Year): 5%

Data Source: 2008 actual costs, and 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 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:			\$0.86



ECONOMIC COST DATA

Cost Data

Typical Implementation Scenario

612.2 Trees &/or Shrubs - barerooted, with animal control devices

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.

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)

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.

Geographic Area: Statewide

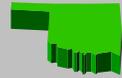
Unit for Cost Estimate: Each

Practice Life (Years): 15

Discount Rate (%/Year): 5%

Data Source: 2008 vendor quotes, and ODAFF-Forestry Services Data

			<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
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

Typical Implementation Scenario

612.3 Trees &/or Shrubs - containerized/potted

This practice consists of planting containerized 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.

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)

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

Geographic Area: Statewide

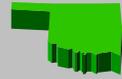
Unit for Cost Estimate: Each

Practice Life (Years): 15

Discount Rate (%/Year): 5%

Data Source: 2008 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			\$0.14
Deferred grazing for up to five years.			
Risk			\$0.00
None			
Administration & Permit Costs			\$0.00
None			
Total Cost Estimate:			\$1.38



ECONOMIC COST DATA

Cost Data

Typical Implementation Scenario

612.4 Trees &/or Shrubs - containerized/potted with animal control device 612.4

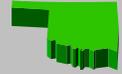
This practice consists of planting containerized trees and/or shrubs with animal control devices on a 10' x 12' spacing, in harsh site conditions where bare rooted seedlings are not recommended, to enhance wildlife habitat and restore natural diversity. This scenario should only be used when the planting plan requires containerized tree stock.

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)

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

Geographic Area: Statewide

Unit for Cost Estimate: Each
Practice Life (Years): 15
Discount Rate (%/Year): 5%



Data Source: 2008 vender quotes and 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			\$0.14
Deferred grazing for up to five years.			
Risk			\$0.00
None			
Administration & Permit Costs			\$0.00
Total Cost Estimate:			\$1.68

ECONOMIC COST DATA

Cost Data

Typical Implementation Scenario

612.5 Establishment of trees or shrubs through transplanting with a tree spade

This practice consists of transplanting sand plum shrubs by using a tree spade, to create mottes which will promote protective cover for bobwhite quail.

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)

Includes the cost of labor and equipment (the tree spade to dig up, transport and transplant the planting stock) to complete the planting operation.

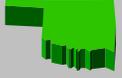
Geographic Area: Statewide

Unit for Cost Estimate: Plug

Practice Life (Years): 15

Discount Rate (%/Year): 5%

Data Source: 2008 ODWC estimates of charges and job costs for their equipment



	<u>Cost/Unit</u>
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% of 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

Typical Implementation Scenario

614.1 Drinking Tank or Trough

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: 561-Heavy Use Area Protection, 382-Fence, 533-Pumping Plant, 516-Pipeline

Geographic Area: Statewide

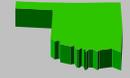
Unit for Cost Estimate: Diameter Foot (DF)

Practice Life (Years): 10

Discount Rate (%/Year): 5%

Source: 2008 actual jobs and cost data

	<u>Cost/Unit</u>
Materials	\$176.02
Cost of a turn-key installation.	
Equipment/Installation	\$37.50
Included in materials.	
Labor	\$0.00
(Included in Installation)	
Mobilization	\$0.00
Included in Installation Cost	
Operation & Maintenance	\$2.14
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:	\$215.66



ECONOMIC COST DATA

Cost Data

Typical Implementation Scenario

614.2 Energy Free Fountains

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: 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

Source: 2008 actual cost data

Materials

Cost of the actual watering fountain. (\$533 for 20 gallon)

\$24.45

Equipment/Installation

Total Installation Cost/Unit: (\$144 for 20 gallon)

\$7.20

Labor

(Included in Installation Costs)

\$0.00

Mobilization

Included in Installation Costs

\$0.00

Operation & Maintenance

1% of Installation Costs

\$0.32

Acquisition of Technical Knowledge

N/A

\$0.00

Forgone Income

None

\$0.00

Risk

None

\$0.00

Administration & Permit Costs

None

\$0.00

Total Cost Estimate:

\$31.97

ECONOMIC COST DATA

Cost Data

Typical Implementation Scenario

614.3 Freeze Proof Tank

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: 561-Heavy Use Area Protection, 382-Fence, 516-Pipeline

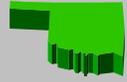
Data Source: 2008 actual cost data.

Geographic Area: Statewide

Unit for Cost Estimate: Gallon

Practice Life (Years): 10

Discount Rate (%/Year): 5%



	<u>Cost/Unit</u>
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

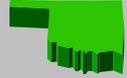
Typical Implementation Scenario

614.4 Guzzler

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.

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	\$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

Typical Implementation Scenario

614.5 Storage Tank

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: 533-Pumping Plant, 516-Pipeline

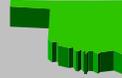
Data Source: Indexed 2007 Actual Cost Data.

Geographic Area: Statewide

Unit for Cost Estimate: Gallon

Practice Life (Years): 10

Discount Rate (%/Year): 5%



Source: 2006 Cost Lists which had been originally developed from cost estimates and calls to suppliers.

	<u>Cost/Unit</u>
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

Typical Implementation Scenario

642.1 Well - Drilled, Cased

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.

Data Source: 2008 actual cost data

Geographic Area: Statewide

Unit for Cost Estimate: Foot

Practice Life (Years): 20

Discount Rate (%/Year): 5%

Cost/Unit

Materials

Materials cost includes complete installation.

\$18.85

Equipment/Installation

(Included in Materials Costs)

\$0.00

Labor

(Included in Materials Costs)

\$0.00

Mobilization

(Included in Materials Costs)

\$0.00

Operation & Maintenance

1% of Installation Costs

\$0.19

Acquisition of Technical Knowledge

N/A

\$0.00

Forgone Income

N/A

\$0.00

Risk

N/A

\$0.00

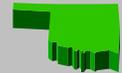
Administration & Permit Costs

N/A

\$0.00

Total Cost Estimate:

\$19.04



ECONOMIC COST DATA

Cost Data

Typical Implementation Scenario

642.2 Well-Drilled, Cased, Shallow <100 foot

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.

Data Source: 2008 actual cost data for wells less than 100 feet in depth.

Geographic Area: Statewide

Unit for Cost Estimate: EACH

Practice Life (Years): 20

Discount Rate (%/Year): 5%

Cost/Unit

Materials

\$1,765.50

Materials cost includes complete installation.

Well, Drilled and Cased \$23.54 / Foot

Well Depth (feet): 75 FT

Total Cost Typical Installation **\$1,765.50**

Equipment/Installation

\$0.00

(Included in Materials Costs)

Labor

\$0.00

(Included in Materials Costs)

Mobilization

\$176.55

10% - Mobilization on a shallow well is a larger percentage of the cost of the total job.

Operation & Maintenance

\$19.42

1% of Installation Costs

Acquisition of Technical Knowledge

\$0.00

N/A

Forgone Income

\$0.00

N/A

Risk

\$0.00

N/A

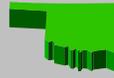
Administration & Permit Costs

\$0.00

N/A

Total Cost Estimate:

\$1,961.47



ECONOMIC COST DATA

Cost Data

Typical Implementation Scenario

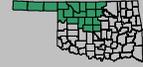
642.3 Well - Drilled, Cased, For Zone 1 Counties Only

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.

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

Associated Practices: 614-Watering Facility, 533-Pumping Plant

Data Source: 2008 actual cost data



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

Materials	\$23.40
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	\$0.23
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:	\$23.63