

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	New England
State	Connecticut
Discipline Group	Range/Pasture Grazing
Practice Code/Name	314 - Brush Management
Scenario ID	1
Scenario Name	Brush Hog
Scenario Description	Pastures or wildlife land that are of various sizes in New England often have woody plants encroaching on the edges and throughout the field due to under utilization of the pasture or field. This reduces the amount of forage available for implementing a grazing management plan and/or negatively affects early successional habitat and forest health. The scenario is usually applied to a portion of a field. Fields are mowed with a brush hog or rotary mower to manage undesirable woody plants. This will create the desired plant community consistent with the ecological site and/or improve forage accessibility, quality and quantity for livestock and cover for wildlife.
Before Practice Situation	The resource concerns addressed in this scenario include plant productivity, health and vigor, inadequate feed and forage, inadequate cover and shelter for wildlife. Woody species are encroaching and shading out desirable forage species resulting in a degraded pasture and inadequate forage. Forest succession is limiting desirable shrub species and reducing the amount of stems per acre. The species targeted for management are often native woody species including pine, dogwood, birch, poplar, though some invasive species such as multi-flora rose may be present. The goal is to manage the brush to increase desired vegetation rather than eradicate. The encroachment of the target species is at a stage where a rotary mower or brush hog will be able to cut the species, they are usually 1" or less in diameter.
After Practice Situation	Minimum treatment area is 0.1 ac. or more of woody plants. Below this amount should be controlled through manual clipping. After treatment, livestock grazing should keep the woody vegetation under control and undesirable plants are controlled or eradicated and desirable forage species have become the dominant condition. Increased forage production results. Early successional habitat may be improved through various treatments to retain or manage for thick woody cover areas within the field.
Scenario Feature Measure	Acres planned
Scenario Unit	Acre
Scenario Typical Size	5

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	\$0.00	\$0.00
Equipment/Installation	\$301.98	\$60.40
Labor	\$167.30	\$33.46
Mobilization	\$187.23	\$37.45
Acquisition of Technical Knowledge	\$0.00	\$0.00
Foregone Income	\$0.00	\$0.00
Total	\$656.51	\$131.30

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Equipment/Installation	940	Mower, Bush Hog	Equipment and power unit costs. Labor not included.	Hour	\$43.14	7	\$301.98
Labor	232	Equipment Operators, Light	Includes: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12", Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers	Hour	\$23.90	7	\$167.30
Mobilization	1138	Mobilization, small equipment	Equipment <70 HP but can't be transported by a pick-up truck or with typical weights between 3,500 to 14,000 pounds.	Each	\$187.23	1	\$187.23

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Practice and Scenario Description:

Information Type	Data
Region	New England
State	Connecticut
Discipline Group	Range/Pasture Grazing
Practice Code/Name	314 - Brush Management
Scenario ID	8
Scenario Name	Chemical-Difficult Control
Scenario Description	This scenario will be used on sites where chemical control of invasive exotics with backpack sprayer (foliar) or for dense areas where cut-stump treatments or basal bark treatments are required. Access is very poor due to distance or heavy slash and/or high number of invasive stems/acre (~11,000 per acre, <2x2ft spacing) or invasive cover is 75 % (aerial view estimate) or greater. This would be used for moderate to heavy infestations of Oriental bittersweet and Japanese knotweed. Restricted use chemicals and contractor work is necessary in wetland settings or landowners with heavy infestations. Species to be controlled include but are not limited to barberry, buckthorn, honeysuckle, autumn olive and multiflora rose.
Before Practice Situation	Typical setting is forestland, pasture, riparian or wildlife lands where invasive plants are established and are negatively affecting wildlife food and cover, plant community diversity and regeneration of native plant species. Invasive plants are common in many parts of New England and are a multi-resource problem that is being addressed. This scenario represents the most problematic site conditions. Skilled labor for applicators and consultant time for forester or applicator supervisor. General labor for landowner or other cutting stems and or moving brush.
After Practice Situation	Typical size of this scenario is small; generally an acre or less to address a dense stand of invasive plants. This scenario would often be paired with another scenario for moderate infestations for a greater acreage. Typical application of herbicides is from a commercial applicator using a backpack foliar sprayer, cut stump treatments or basal bark treatment. Future maintenance will be required. After treatment, invasive plants have been controlled to a level that meets client objectives to improve wildlife habitat, improve plant community diversity and forest health and/or to improve plant productivity, health and vigor.
Scenario Feature Measure	Acres treated
Scenario Unit	Acre
Scenario Typical Size	1

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	\$152.45	\$152.45
Equipment/Installation	\$32.88	\$32.88
Labor	\$557.94	\$557.94
Mobilization	\$75.96	\$75.96
Acquisition of Technical Knowledge	\$0.00	\$0.00
Foregone Income	\$0.00	\$0.00
Total	\$819.23	\$819.23

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Materials	338	Herbicide, Triclopyr	Triclopyr butoxyethyl ester (BEE) is a selective foliar and root absorbed, translocated herbicide used for control of woody and broadleaf plants. Product is typically used in these practices 595, 314, 645 and 666. Refer to WIN-PST for product names and active ingredients. Materials only.	Acre	\$61.01	1	\$61.01
Materials	1095	Herbicide, Surfactant	Surfactants reduce the surface tension of water to produce more uniform coverage and penetration of herbicides, and weed killers. Paraffin Based Petroleum Surfactant. Refer to WIN-PST for product names and active ingredients. Materials only.	Acre	\$1.09	1	\$1.09
Materials	334	Herbicide, Glyphosate	A broad-spectrum, non-selective systemic herbicide. Product is typically used in these practices 340, 645, 314, 666, and 512. Refer to WIN-PST for product names and active ingredients. Materials only.	Acre	\$11.04	1	\$11.04
Materials	336	Herbicide, Imazapyr	Pre and post-emergent, non-selective herbicide for control of undesirable vegetation in non-crop areas. Product is typically used in these practices 314, 595, 666 and 645. Refer to WIN-PST for product names and active ingredients. Materials only.	Acre	\$79.31	1	\$79.31
Equipment/Installation	937	Chainsaw	Equipment and power unit costs. Labor not included.	Hour	\$5.48	6	\$32.88
Labor	230	Skilled Labor	Labor requiring a high level skill set: Includes carpenters, welders, electricians, conservation professionals involved with data collection, monitoring, and or record keeping, etc.	Hour	\$39.54	6	\$237.24
Labor	231	General Labor	Labor performed using basic tools such as power tool, shovels, and other tools that do not require extensive training. Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	\$25.71	6	\$154.26

Labor	235	Specialist Labor	Labor requiring a specialized skill set: Includes Agronomists, Foresters, Biologists, etc. to provide additional technical information during the planning and implementation of the practice. Does not include NRCS or TSP services.	Hour	\$83.22	2	\$166.44
Mobilization	1137	Mobilization, very small equipment	Equipment that is small enough to be transported by a pick-up truck with typical weights less than 3,500 pounds. Can be multiple pieces of equipment if all hauled simultaneously.	Each	\$75.96	1	\$75.96

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Practice and Scenario Description:

Information Type	Data
Region	New England
State	Connecticut
Discipline Group	Range/Pasture Grazing
Practice Code/Name	314 - Brush Management
Scenario ID	9
Scenario Name	Chemical, Difficult + Followup
Scenario Description	This scenario includes a follow up treatment to control re-sprout of the weeds on sites where chemical control of invasive exotics with backpack sprayer (foliar) or for dense areas where cut-stump treatments or basal bark treatments are required. Access is very poor due to distance or heavy slash and/or high number of invasive stems/acre (~11,000 per acre, <2x2ft spacing) or invasive cover is 75 % (aerial view estimate) or greater. This would be used for moderate to heavy infestations of Oriental bittersweet and Japanese knotweed. Restricted use chemicals and contractor work is necessary in wetland settings or landowners with heavy infestations. Species to be controlled include but are not limited to barberry, buckthorn, honeysuckle, autumn olive and multiflora rose.
Before Practice Situation	Typical setting is forestland, pasture, riparian or wildlife lands where invasive plants are established and are negatively affecting wildlife food and cover, plant community diversity and regeneration of native plant species. Invasive plants are common in many parts of New England and are a multi-resource problem that is being addressed. This scenario represents the most problematic site conditions. Skilled labor for applicators and consultant time for forester or applicator supervisor. General labor for landowner or other cutting stems and or moving brush.
After Practice Situation	Typical size of this scenario is small; generally an acre or less to address a dense stand of invasive plants. This scenario would often be paired with another scenario for moderate infestations for a greater acreage. Typical application of herbicides is from a commercial applicator using a backpack foliar sprayer, cut stump treatments or basal bark treatment. After treatment, invasive plants have been controlled to a level that meets client objectives to improve wildlife habitat, improve plant community diversity and forest health and/or to improve plant productivity, health and vigor.
Scenario Feature Measure	Acres planned
Scenario Unit	Acre
Scenario Typical Size	1

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	\$152.45	\$152.45
Equipment/Installation	\$38.36	\$38.36
Labor	\$825.03	\$825.03
Mobilization	\$75.96	\$75.96
Acquisition of Technical Knowledge	\$0.00	\$0.00
Foregone Income	\$0.00	\$0.00
Total	\$1,091.80	\$1,091.80

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Materials	338	Herbicide, Triclopyr	Triclopyr butoxyethyl ester (BEE) is a selective foliar and root absorbed, translocated herbicide used for control of woody and broadleaf plants. Product is typically used in these practices 595, 314, 645 and 666. Refer to WIN-PST for product names and active ingredients. Materials only.	Acre	\$61.01	1	\$61.01
Materials	1095	Herbicide, Surfactant	Surfactants reduce the surface tension of water to produce more uniform coverage and penetration of herbicides, and weed killers. Paraffin Based Petroleum Surfactant. Refer to WIN-PST for product names and active ingredients. Materials only.	Acre	\$1.09	1	\$1.09
Materials	334	Herbicide, Glyphosate	A broad-spectrum, non-selective systemic herbicide. Product is typically used in these practices 340, 645, 314, 666, and 512. Refer to WIN-PST for product names and active ingredients. Materials only.	Acre	\$11.04	1	\$11.04
Materials	336	Herbicide, Imazapyr	Pre and post-emergent, non-selective herbicide for control of undesirable vegetation in non-crop areas. Product is typically used in these practices 314, 595, 666 and 645. Refer to WIN-PST for product names and active ingredients. Materials only.	Acre	\$79.31	1	\$79.31
Equipment/Installation	937	Chainsaw	Equipment and power unit costs. Labor not included.	Hour	\$5.48	7	\$38.36
Labor	230	Skilled Labor	Labor requiring a high level skill set: Includes carpenters, welders, electricians, conservation professionals involved with data collection, monitoring, and or record keeping, etc.	Hour	\$39.54	10	\$395.40
Labor	231	General Labor	Labor performed using basic tools such as power tool, shovels, and other tools that do not require extensive training. Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	\$25.71	7	\$179.97

Labor	235	Specialist Labor	Labor requiring a specialized skill set: Includes Agronomists, Foresters, Biologists, etc. to provide additional technical information during the planning and implementation of the practice. Does not include NRCS or TSP services.	Hour	\$83.22	3	\$249.66
Mobilization	1137	Mobilization, very small equipment	Equipment that is small enough to be transported by a pick-up truck with typical weights less than 3,500 pounds. Can be multiple pieces of equipment if all hauled simultaneously.	Each	\$75.96	1	\$75.96

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Practice and Scenario Description:

Information Type	Data
Region	New England
State	Connecticut
Discipline Group	Range/Pasture Grazing
Practice Code/Name	314 - Brush Management
Scenario ID	6
Scenario Name	Chemical - Moderate
Scenario Description	This scenario will be used on sites where chemical control of invasive exotics with backpack sprayer (foliar), cut-stump treatments or basal bark treatments are required. Access is good and the general coverage of the invasive plants is less than 75% cover (aerial view estimate). This would be used for light to moderate infestations. Species to be controlled include but are not limited to barberry, buckthorn, honeysuckle, autumn olive and multiflora rose. Restricted use chemicals and contractor work is necessary in wetland settings.
Before Practice Situation	Typical setting is forestland, pasture, riparian or wildlife lands where invasive plants are established and are negatively affecting wildlife food and cover, plant community diversity and regeneration of native plant species. Invasive plants are common in many parts of New England and are a multi-resource problem that is being addressed. This scenario represents the most common scenario where invasive plants are established but access and potential for control is very good. Skilled labor for applicators and consultant time for forester or applicator supervisor. General labor for landowner or other cutting stems and or moving brush.
After Practice Situation	Typical size of this scenario is variable ranging from an acre to many acres. This scenario may also be paired with another scenario for heavy infestations but usually for a very small acreage. Typical application of herbicides is from a commercial applicator using a backpack foliar sprayer, cut stump treatments or basal bark treatment. Future maintenance will be required. After treatment, invasive plants have been controlled to a level that meets client objectives to improve wildlife habitat, improve plant community diversity and forest health and to improve plant productivity, health and vigor.
Scenario Feature Measure	Acres planned
Scenario Unit	Acre
Scenario Typical Size	1

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	\$62.10	\$62.10
Equipment/Installation	\$21.92	\$21.92
Labor	\$261.00	\$261.00
Mobilization	\$75.96	\$75.96
Acquisition of Technical Knowledge	\$0.00	\$0.00
Foregone Income	\$0.00	\$0.00
Total	\$420.98	\$420.98

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Materials	338	Herbicide, Triclopyr	Triclopyr butoxyethyl ester (BEE) is a selective foliar and root absorbed, translocated herbicide used for control of woody and broadleaf plants. Product is typically used in these practices 595, 314, 645 and 666. Refer to WIN-PST for product names and active ingredients. Materials only.	Acre	\$61.01	1	\$61.01
Materials	1095	Herbicide, Surfactant	Surfactants reduce the surface tension of water to produce more uniform coverage and penetration of herbicides, and weed killers. Paraffin Based Petroleum Surfactant. Refer to WIN-PST for product names and active ingredients. Materials only.	Acre	\$1.09	1	\$1.09
Equipment/Installation	937	Chainsaw	Equipment and power unit costs. Labor not included.	Hour	\$5.48	4	\$21.92
Labor	230	Skilled Labor	Labor requiring a high level skill set: Includes carpenters, welders, electricians, conservation professionals involved with data collection, monitoring, and or record keeping, etc.	Hour	\$39.54	4	\$158.16
Labor	231	General Labor	Labor performed using basic tools such as power tool, shovels, and other tools that do not require extensive training. Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	\$25.71	4	\$102.84
Mobilization	1137	Mobilization, very small equipment	Equipment that is small enough to be transported by a pick-up truck with typical weights less than 3,500 pounds. Can be multiple pieces of equipment if all hauled simultaneously.	Each	\$75.96	1	\$75.96

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	New England
State	Connecticut
Discipline Group	Range/Pasture Grazing
Practice Code/Name	314 - Brush Management
Scenario ID	7
Scenario Name	Chemical, Moderate + Followup
Scenario Description	This scenario includes a follow up treatment to control re-sprout of the weeds on sites where chemical control of invasive exotics with backpack sprayer (foliar), cut-stump treatments or basal bark treatments are required. Access is good and the general coverage of the invasive plants is less than 75% cover (aerial view estimate). This would be used for light to moderate infestations. Species to be controlled include but are not limited to barberry, buckthorn, honeysuckle, autumn olive and multiflora rose. Restricted use chemicals and contractor work is necessary in wetland settings.
Before Practice Situation	Typical setting is forestland, pasture, riparian or wildlife lands where invasive plants are established and are negatively affecting wildlife food and cover, plant community diversity and regeneration of native plant species. Invasive plants are common in many parts of New England and are a multi-resource problem that is being addressed. This scenario represents the most common scenario where invasive plants are established but access and potential for control is very good. Skilled labor for applicators and consultant time for forester or applicator supervisor. General labor for landowner or other cutting stems and or moving brush.
After Practice Situation	Typical size of this scenario is variable ranging from an acre to many acres. This scenario may also be paired with another scenario for heavy infestations but usually for a very small acreage. Typical application of herbicides is from a commercial applicator using a backpack foliar sprayer, cut stump treatments or basal bark treatment. After treatment, invasive plants have been controlled to a level that meets client objectives to improve wildlife habitat, improve plant community diversity and forest health and to improve plant productivity, health and vigor.
Scenario Feature Measure	Acres planned
Scenario Unit	Acre
Scenario Typical Size	1

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	\$62.10	\$62.10
Equipment/Installation	\$27.40	\$27.40
Labor	\$405.33	\$405.33
Mobilization	\$75.96	\$75.96
Acquisition of Technical Knowledge	\$0.00	\$0.00
Foregone Income	\$0.00	\$0.00
Total	\$570.79	\$570.79

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Materials	338	Herbicide, Triclopyr	Triclopyr butoxyethyl ester (BEE) is a selective foliar and root absorbed, translocated herbicide used for control of woody and broadleaf plants. Product is typically used in these practices 595, 314, 645 and 666. Refer to WIN-PST for product names and active ingredients. Materials only.	Acre	\$61.01	1	\$61.01
Materials	1095	Herbicide, Surfactant	Surfactants reduce the surface tension of water to produce more uniform coverage and penetration of herbicides, and weed killers. Paraffin Based Petroleum Surfactant. Refer to WIN-PST for product names and active ingredients. Materials only.	Acre	\$1.09	1	\$1.09
Equipment/Installation	937	Chainsaw	Equipment and power unit costs. Labor not included.	Hour	\$5.48	5	\$27.40
Labor	230	Skilled Labor	Labor requiring a high level skill set: Includes carpenters, welders, electricians, conservation professionals involved with data collection, monitoring, and or record keeping, etc.	Hour	\$39.54	7	\$276.78
Labor	231	General Labor	Labor performed using basic tools such as power tool, shovels, and other tools that do not require extensive training. Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	\$25.71	5	\$128.55
Mobilization	1137	Mobilization, very small equipment	Equipment that is small enough to be transported by a pick-up truck with typical weights less than 3,500 pounds. Can be multiple pieces of equipment if all hauled simultaneously.	Each	\$75.96	1	\$75.96

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	New England
State	Connecticut
Discipline Group	Range/Pasture Grazing
Practice Code/Name	314 - Brush Management
Scenario ID	4
Scenario Name	Heavy Mechanical
Scenario Description	Pastures, wildlife land, forests and early successional habitats that are of various sizes in New England often have woody plants encroaching throughout. This reduces the amount of forage needed for implementing a grazing management plan or negatively affects early successional habitat and forest health. The scenario is usually applied to a portion of a field or forest. Encroaching brush and/or invasive plant species in this setting is heavy enough (4-6" DBH) that it requires cutting with chain or brush saws and mechanical cutter/choppers/ In riparian or sensitive areas low ground pressure equipment may be used. This will create the desired plant community consistent with the ecological site and or improve forage accessibility, quality and quantity for livestock and cover for wildlife. This scenario is also used in riparian areas in a stream corridor. Management is recommended to be done on the bank and floodplain for a conservation purpose. All required permits are to be obtained prior to start of work.
Before Practice Situation	The resource concerns addressed in this scenario include plant productivity, health and vigor, inadequate feed and forage, and inadequate cover and shelter for wildlife in pastures, wildlife land and in riparian areas. Undesirable plants and invasive woody species are encroaching and forcing out desirable forage species resulting in a degraded pasture, inadequate forage and wildlife habitat. The species targeted for management include, but are not limited to, native woody species including pine, dogwood, birch, poplar, though some invasive species such as multi-flora rose and others may be present. The infestation of the target species is at a stage where a rotary mower or brush hog will not be able to cut the species, requiring a larger implement to accomplish the goals. Stems are usually 4-6" in diameter.
After Practice Situation	Minimum treatment area is 0.1 acre or more of woody plants for field situations and 30' X 400' for riparian settings. Below this amount should be controlled through manual clipping. Since the goal is to control brush, treatment is effective on very low density, as well as high. Undesirable plants are controlled or eradicated and desirable forage species and native woody species have become the dominant cover, improving forage production and wildlife habitat.
Scenario Feature Measure	Acres planned
Scenario Unit	Acre
Scenario Typical Size	2

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	\$0.00	\$0.00
Equipment/Installation	\$1,456.64	\$728.32
Labor	\$389.64	\$194.82
Mobilization	\$187.23	\$93.62
Acquisition of Technical Knowledge	\$0.00	\$0.00
Foregone Income	\$0.00	\$0.00
Total	\$2,033.51	\$1,016.76

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Equipment/Installation	943	Mechanical cutter, chopper	Masticator, flail shredder, hydro axe, brush cutter, etc. Equipment and power unit costs. Labor not included.	Hour	\$119.56	12	\$1,434.72
Equipment/Installation	937	Chainsaw	Equipment and power unit costs. Labor not included.	Hour	\$5.48	4	\$21.92
Labor	232	Equipment Operators, Light	Includes: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12", Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers	Hour	\$23.90	12	\$286.80
Labor	231	General Labor	Labor performed using basic tools such as power tool, shovels, and other tools that do not require extensive training. Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	\$25.71	4	\$102.84
Mobilization	1138	Mobilization, small equipment	Equipment <70 HP but can't be transported by a pick-up truck or with typical weights between 3,500 to 14,000 pounds.	Each	\$187.23	1	\$187.23

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	New England
State	Connecticut
Discipline Group	Range/Pasture Grazing
Practice Code/Name	314 - Brush Management
Scenario ID	2
Scenario Name	Light Mechanical
Scenario Description	Pastures, wildlife land, forests and early successional habitats that are of various sizes in New England often have woody plants encroaching throughout. This reduces the amount of forage needed for implementing a grazing management plan or negatively affects early successional habitat and forest health. The scenario is usually applied to a portion of a field or forest. Encroaching brush and/or invasive plant species in this setting is heavy enough (<2" DBH) that it requires cutting with chain or brush saws and mechanical cutter/choppers/ In riparian or sensitive areas low ground pressure equipment may be used. This will create the desired plant community consistent with the ecological site and or improve forage accessibility, quality and quantity for livestock and cover for wildlife. This scenario is also used in riparian areas in a stream corridor. Management is recommended to be done on the bank and floodplain for a conservation purpose. All required permits are to be obtained prior to start of work.
Before Practice Situation	The resource concerns addressed in this scenario include plant productivity, health and vigor, inadequate feed and forage, and inadequate cover and shelter for wildlife in pastures, wildlife land and in riparian areas. Undesirable plants and invasive woody species are encroaching and forcing out desirable forage species resulting in a degraded pasture, inadequate forage and wildlife habitat. The species targeted for management include, but are not limited to, native woody species including pine, dogwood, birch, poplar, though some invasive species such as multi-flora rose and others may be present. The infestation of the target species is at a stage where a rotary mower or brush hog will not be able to cut the species, requiring a larger implement to accomplish the goals. Stems are usually less than 2" in diameter.
After Practice Situation	Minimum treatment area is 0.1 acre or more of woody plants for field situations and 30' X 400' for riparian settings. Below this amount should be controlled through manual clipping. Since the goal is to control brush, treatment is effective on very low density, as well as high. Undesirable plants are controlled or eradicated and desirable forage species and native woody species have become the dominant cover, improving forage production and wildlife habitat.
Scenario Feature Measure	Acres planned
Scenario Unit	Acre
Scenario Typical Size	3

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	\$0.00	\$0.00
Equipment/Installation	\$1,076.04	\$358.68
Labor	\$215.10	\$71.70
Mobilization	\$187.23	\$62.41
Acquisition of Technical Knowledge	\$0.00	\$0.00
Foregone Income	\$0.00	\$0.00
Total	\$1,478.37	\$492.79

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Equipment/Installation	943	Mechanical cutter, chopper	Masticator, flail shredder, hydro axe, brush cutter, etc. Equipment and power unit costs. Labor not included.	Hour	\$119.56	9	\$1,076.04
Labor	232	Equipment Operators, Light	Includes: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12", Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers	Hour	\$23.90	9	\$215.10
Mobilization	1138	Mobilization, small equipment	Equipment <70 HP but can't be transported by a pick-up truck or with typical weights between 3,500 to 14,000 pounds.	Each	\$187.23	1	\$187.23

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	New England
State	Connecticut
Discipline Group	Range/Pasture Grazing
Practice Code/Name	314 - Brush Management
Scenario ID	10
Scenario Name	Livestock
Scenario Description	Management of woody non-herbaceous plant species through the use of livestock that are closely herded to concentrate grazing on targeted shrubs. Typical area is moderate rolling to gentle sloping, moderately deep to deep soils that have dense stands of woody non-herbaceous species that exceed the desirable ecological site condition. This scenario is an alternative for organic producers.
Before Practice Situation	Area consist of dense stands of woody non-herbaceous species that exceed the desirable ecological site condition degrading forage quality, promoting noxious and invasive species, increasing risk of soil erosion and degrading wildlife habitat.
After Practice Situation	Woody species are grazed to limit the regrowth of shrubs and achieve a desirable plant community based on species composition, structure, density, and canopy cover or height. Ecological site condition is progressing in an upward trend, hydrology and plant health and vigor is returning to near normal levels.
Scenario Feature Measure	Acres treated
Scenario Unit	Acres
Scenario Typical Size	5

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	\$50.00	\$10.00
Equipment/Installation	\$174.00	\$34.80
Labor	\$395.40	\$79.08
Mobilization	\$272.11	\$54.42
Acquisition of Technical Knowledge	\$0.00	\$0.00
Foregone Income	\$0.00	\$0.00
Total	\$891.51	\$178.30

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Materials	1130	Animals used for biological weed control	Goats, Llamas, Sheep - Includes all support: fence, water, dog, mob, etc.	Head per day	\$1.00	50	\$50.00
Equipment/Installation	961	Trucking, moving livestock to new paddock	Livestock transportation costs to implement a grazing rotation using a gooseneck trailer 6'8" x 24'. Includes equipment, power unit and labor costs.	Mile	\$2.53	2	\$5.06
Equipment/Installation	939	Truck, Pickup	Equipment and power unit costs. Labor not included.	Hour	\$26.51	2	\$53.02
Equipment/Installation	965	All terrain vehicles, ATV	Includes equipment, power unit and labor costs.	Hour	\$28.98	4	\$115.92
Labor	230	Skilled Labor	Labor requiring a high level skill set: Includes carpenters, welders, electricians, conservation professionals involved with data collection, monitoring, and or record keeping, etc.	Hour	\$39.54	10	\$395.40
Mobilization	1141	Mobilization, Skilled labor	Mobilization of skilled labor: Includes carpenters, welders, electricians, conservation professionals involved with data collection, monitoring, and or record keeping, etc.	Hour	\$39.23	5	\$196.15
Mobilization	1137	Mobilization, very small equipment	Equipment that is small enough to be transported by a pick-up truck with typical weights less than 3,500 pounds. Can be multiple pieces of equipment if all hauled simultaneously.	Each	\$75.96	1	\$75.96

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	New England
State	Connecticut
Discipline Group	Range/Pasture Grazing
Practice Code/Name	314 - Brush Management
Scenario ID	11
Scenario Name	Manual, Hand tools
Scenario Description	This scenario will be used on sites where manual control of invasive exotics is possible due to few young stems per acre. Access is good and the general coverage of the invasive plants is very low. This would be used for initial and light infestations. Species to be controlled include but are not limited to barberry, buckthorn, honeysuckle, autumn olive and multiflora rose. Hand pulling and hand tools such as shovels and weed wrenches will be used to remove plants and roots from the ground. Plants will be hung in nearby trees to be sure roots dessicate.
Before Practice Situation	Typical setting is forestland, pasture, riparian or wildlife lands where invasive plants are just starting to become established and are beginning to negatively affecting wildlife food and cover, plant community diversity and regeneration of native plant species. Invasive plants are common in many parts of New England and are a multi-resource problem that is being addressed. This scenario represents conditions where invasive plants are just starting to get established and can be readily controlled by hand pulling. General labor for consultant or landowner time pulling plants.
After Practice Situation	Typical size of this scenario is variable ranging from 1-2 acres. A minimum of two treatments and future maintenance will be required. After treatment, invasive plants have been controlled to a level that meets client objectives to improve wildlife habitat, improve plant community diversity and forest health and to improve plant productivity, health and vigor.
Scenario Feature Measure	Acres treated
Scenario Unit	Acre
Scenario Typical Size	1

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	\$0.00	\$0.00
Equipment/Installation	\$30.51	\$30.51
Labor	\$51.42	\$51.42
Mobilization	\$0.00	\$0.00
Acquisition of Technical Knowledge	\$0.00	\$0.00
Foregone Income	\$0.00	\$0.00
Total	\$81.93	\$81.93

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Equipment/Installation	939	Truck, Pickup	Equipment and power unit costs. Labor not included.	Hour	\$26.51	1	\$26.51
Equipment/Installation	1318	Pruning tools, hand tools	Pruning tools, hand tools, shears, loppers, pole saw, handsaw Equipment costs only. Labor not included.	Hour	\$2.00	2	\$4.00
Labor	231	General Labor	Labor performed using basic tools such as power tool, shovels, and other tools that do not require extensive training. Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	\$25.71	2	\$51.42

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	New England
State	Connecticut
Discipline Group	Range/Pasture Grazing
Practice Code/Name	314 - Brush Management
Scenario ID	12
Scenario Name	Manual, Hand tools + Followup
Scenario Description	This scenario includes a follow up treatment to control re-sprout of the weeds on sites where manual control of invasive exotics is possible due to few young stems per acre. Access is good and the general coverage of the invasive plants is very low. This would be used for initial and light infestations. Species to be controlled include but are not limited to barberry, buckthorn, honeysuckle, autumn olive and multiflora rose. Hand pulling and hand tools such as shovels and weed wrenches will be used to remove plants and roots from the ground. Plants will be hung in nearby trees to be sure roots desiccate.
Before Practice Situation	Typical setting is forestland, pasture, riparian or wildlife lands where invasive plants are just starting to become established and are beginning to negatively affecting wildlife food and cover, plant community diversity and regeneration of native plant species. A previous hand pulling had been completed. Invasive plants are common in many parts of New England and are a multi-resource problem that is being addressed. This scenario represents conditions where invasive plants are just starting to get established and can be readily controlled by hand pulling. General labor for consultant or landowner time pulling plants.
After Practice Situation	Typical size of this scenario is variable ranging from 1-2 acres. Future maintenance by the landowner will be required. After treatment, invasive plants have been controlled to a level that meets client objectives to improve wildlife habitat, improve plant community diversity and forest health and to improve plant productivity, health and vigor.
Scenario Feature Measure	Acres planned
Scenario Unit	Acre
Scenario Typical Size	1

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	\$0.00	\$0.00
Equipment/Installation	\$32.51	\$32.51
Labor	\$77.13	\$77.13
Mobilization	\$0.00	\$0.00
Acquisition of Technical Knowledge	\$0.00	\$0.00
Foregone Income	\$0.00	\$0.00
Total	\$109.64	\$109.64

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Equipment/Installation	939	Truck, Pickup	Equipment and power unit costs. Labor not included.	Hour	\$26.51	1	\$26.51
Equipment/Installation	1318	Pruning tools, hand tools	Pruning tools, hand tools, shears, loppers, pole saw, handsaw Equipment costs only. Labor not included.	Hour	\$2.00	3	\$6.00
Labor	231	General Labor	Labor performed using basic tools such as power tool, shovels, and other tools that do not require extensive training. Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	\$25.71	3	\$77.13

Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	New England
State	Connecticut
Discipline Group	Range/Pasture Grazing
Practice Code/Name	314 - Brush Management
Scenario ID	5
Scenario Name	Mechanical & Chemical
Scenario Description	Pastures, wildlife land, forests and early successional habitats that are of various sizes in New England often have woody plants encroaching throughout. This reduces the amount of forage available for implementing a grazing management plan and/or negatively affects early successional habitat and forest health. The scenario is usually applied to a portion of a field or forest. This treatment will consist of both herbicide and mechanical treatment. The treatment will create the desired plant community consistent with the ecological site.
Before Practice Situation	The resource concerns addressed in this scenario include plant productivity, health and vigor, invasive species infestation, inadequate feed and forage, and inadequate cover and shelter for wildlife. Undesirable plants and invasive woody species are encroaching and forcing out desirable forage species resulting in a degraded pasture, inadequate forage and degraded wildlife habitat. The species targeted for eradication include, but are not limited to, are multi-flora rose, autumn olive, Asiatic bittersweet, glossy and common buckthorn, exotic honeysuckle, and Japanese barberry. The infestation of the target species is at a stage where a rotary mower or brush hog will be able to cut the species, they are usually 1-3" in diameter. A follow-up treatment with a chemical application is necessary to ensure that re-sprouting is controlled.
After Practice Situation	At least 1 mechanical and 1 herbicide treatment is needed to control the target species, and annual monitoring is necessary. Minimum treatment area is 0.1 acre or more of woody plants. Undesirable plants are controlled or eradicated and desirable forage species and native woody species have become the dominant cover type, improving forage production and wildlife habitat and forest health. Payment includes cost of one cutting treatment and one herbicide treatment for the area. Follow up with landowner after first year to evaluate success and repeat if necessary.
Scenario Feature Measure	Acres planned
Scenario Unit	Acre
Scenario Typical Size	3

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	\$186.30	\$62.10
Equipment/Installation	\$972.92	\$324.31
Labor	\$509.71	\$169.90
Mobilization	\$187.23	\$62.41
Acquisition of Technical Knowledge	\$0.00	\$0.00
Foregone Income	\$0.00	\$0.00
Total	\$1,856.16	\$618.72

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Materials	338	Herbicide, Triclopyr	Triclopyr butoxyethyl ester (BEE) is a selective foliar and root absorbed, translocated herbicide used for control of woody and broadleaf plants. Product is typically used in these practices 595, 314, 645 and 666. Refer to WIN-PST for product names and active ingredients. Materials only.	Acre	\$61.01	3	\$183.03
Materials	1095	Herbicide, Surfactant	Surfactants reduce the surface tension of water to produce more uniform coverage and penetration of herbicides, and weed killers. Paraffin Based Petroleum Surfactant. Refer to WIN-PST for product names and active ingredients. Materials only.	Acre	\$1.09	3	\$3.27
Equipment/Installation	943	Mechanical cutter, chopper	Masticator, flail shredder, hydro axe, brush cutter, etc. Equipment and power unit costs. Labor not included.	Hour	\$119.56	8	\$956.48
Equipment/Installation	937	Chainsaw	Equipment and power unit costs. Labor not included.	Hour	\$5.48	3	\$16.44
Labor	232	Equipment Operators, Light	Includes: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12", Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers	Hour	\$23.90	8	\$191.20
Labor	230	Skilled Labor	Labor requiring a high level skill set: Includes carpenters, welders, electricians, conservation professionals involved with data collection, monitoring, and or record keeping, etc.	Hour	\$39.54	4	\$158.16
Labor	231	General Labor	Labor performed using basic tools such as power tool, shovels, and other tools that do not require extensive training. Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	\$25.71	3	\$77.13
Labor	235	Specialist Labor	Labor requiring a specialized skill set: Includes Agronomists, Foresters, Biologists, etc. to provide additional technical information during the planning and implementation of the practice. Does not include NRCS or TSP services.	Hour	\$83.22	1	\$83.22

Mobilization	1138	Mobilization, small equipment	Equipment <70 HP but can't be transported by a pick-up truck or with typical weights between 3,500 to 14,000 pounds.	Each	\$187.23	1	\$187.23
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Scenario Worksheet

Practice and Scenario Description:

Information Type	Data
Region	New England
State	Connecticut
Discipline Group	Range/Pasture Grazing
Practice Code/Name	314 - Brush Management
Scenario ID	3
Scenario Name	Medium Mechanical
Scenario Description	Pastures, wildlife land, forests and early successional habitats that are of various sizes in New England often have woody plants encroaching throughout. This reduces the amount of forage needed for implementing a grazing management plan or negatively affects early successional habitat and forest health. The scenario is usually applied to a portion of a field or forest. Encroaching brush and/or invasive plant species in this setting is heavy enough (2-4" DBH) that it requires cutting with chain or brush saws and mechanical cutter/choppers/ In riparian or sensitive areas low ground pressure equipment may be used. This will create the desired plant community consistent with the ecological site and or improve forage accessibility, quality and quantity for livestock and cover for wildlife. This scenario is also used in riparian areas in a stream corridor. Management is recommended to be done on the bank and floodplain for a conservation purpose. All required permits are to be obtained prior to start of work.
Before Practice Situation	The resource concerns addressed in this scenario include plant productivity, health and vigor, inadequate feed and forage, and inadequate cover and shelter for wildlife in pastures, wildlife land and in riparian areas. Undesirable plants and invasive woody species are encroaching and forcing out desirable forage species resulting in a degraded pasture, inadequate forage and wildlife habitat. The species targeted for management include, but are not limited to, native woody species including pine, dogwood, birch, poplar, though some invasive species such as multi-flora rose and others may be present. The infestation of the target species is at a stage where a rotary mower or brush hog will not be able to cut the species, requiring a larger implement to accomplish the goals. Stems are usually 2-4" in diameter.
After Practice Situation	Minimum treatment area is 0.1 acre or more of woody plants for field situations and 30' X 400' for riparian settings. Below this amount should be controlled through manual clipping. Since the goal is to control brush, treatment is effective on very low density, as well as high. Undesirable plants are controlled or eradicated and desirable forage species and native woody species have become the dominant cover, improving forage production and wildlife habitat.
Scenario Feature Measure	Acres planned
Scenario Unit	Acre
Scenario Typical Size	3

Cost Summary:

Cost Category	Scenario Cost	Scenario Cost/Unit
Materials	\$0.00	\$0.00
Equipment/Installation	\$1,809.84	\$603.28
Labor	\$435.63	\$145.21
Mobilization	\$187.23	\$62.41
Acquisition of Technical Knowledge	\$0.00	\$0.00
Foregone Income	\$0.00	\$0.00
Total	\$2,432.70	\$810.90

Cost Details:

Cost Category	Component ID	Component Name	Component Description	Unit	Price (\$/unit)	Quantity	Cost
Equipment/Installation	943	Mechanical cutter, chopper	Masticator, flail shredder, hydro axe, brush cutter, etc. Equipment and power unit costs. Labor not included.	Hour	\$119.56	15	\$1,793.40
Equipment/Installation	937	Chainsaw	Equipment and power unit costs. Labor not included.	Hour	\$5.48	3	\$16.44
Labor	232	Equipment Operators, Light	Includes: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12", Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers	Hour	\$23.90	15	\$358.50
Labor	231	General Labor	Labor performed using basic tools such as power tool, shovels, and other tools that do not require extensive training. Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	\$25.71	3	\$77.13
Mobilization	1138	Mobilization, small equipment	Equipment <70 HP but can't be transported by a pick-up truck or with typical weights between 3,500 to 14,000 pounds.	Each	\$187.23	1	\$187.23