

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

**Scenario: #1 - Mast/Apple Tree Release**

**Scenario Description:**

Releasing individual Hardwood/Apple trees for mast, by reducing stocking and cutting undesirable competing species.

**Before Situation:**

Apple trees are being overtopped by other trees and plant productivity, health and vigor are negatively effected which limits flowering and fruit production. Food resources on the property are not meeting client's objectives for wildlife habitat. Healthy but suppressed trees will be retained while competing trees (with competing canopies) will be removed giving free growing space and full sunlight to the apple trees. There is limited herbaceous and woody seedlings/saplings regenerating under the apple trees further limiting food and cover.

**After Situation:**

Typical approach is to release individual trees from competition on 1 acre of land. Tools include chainsaw, brush saws, and bow saws. Trees competing with apple trees have been cut down so that there is sunlight on the apple tree for most of the day. The increase in sunlight will increase productivity, health and vigor of the apple tree stimulating future flowering and fruiting potential. Where larger trees are removed, there is also a flush of understory and forb/grass growth in the opening providing food and cover.

**Scenario Feature Measure:** Number of Trees Released

**Scenario Unit:** Each

**Scenario Typical Size:** 20

**Scenario Cost:** \$396.38

**Scenario Cost/Unit:** \$19.82

**Cost Details (by category):**

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
<b>Equipment/Installation</b>						
Chainsaw	937	Equipment and power unit costs. Labor not included.	Hour	\$6.23	12	\$74.76
<b>Labor</b>						
General Labor	231	Labor performed using basic tools such as power tool, shovels, and other tools that do not require extensive training. Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	\$24.74	13	\$321.62

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**Scenario: #2 - Small Bird Boxes or Snags**

**Scenario Description:**

Add bluebird or kestrel size bird boxes to improve nesting habitat or girdle trees to create perch trees. Typically used to install approximately 2 boxes every 300 feet or create approximately 8 snags per acre by double girdling selected trees. Poor quality or deformed trees, such as those with broken tops or large branches, will be chosen for snags when available.

**Before Situation:**

Forest stands do not have a mix of dead wood among the growing trees. Cavity nesting birds and other wildlife species that use standing dead trees for shelter are declining in the vicinity due to insufficient cover.

**After Situation:**

2 bluebird or kestrel size boxes are installed every 300 feet or 8 snags per acre are created by double-girdling the selected trees in the stand. Snags provide habitat to innumerable organisms including fungi, insects and other invertebrates, and land animals such as amphibians, reptiles, birds, and mammals.

**Scenario Feature Measure:** Number of Bird Boxes

**Scenario Unit:** Each

**Scenario Typical Size:** 1

**Scenario Cost:** \$62.28

**Scenario Cost/Unit:** \$62.28

**Cost Details (by category):**

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
<b>Labor</b>						
General Labor	231	Labor performed using basic tools such as power tool, shovels, and other tools that do not require extensive training. Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	\$24.74	1	\$24.74
<b>Materials</b>						
Habitat Box, Bird	251	Bluebird nesting box to increase nesting success. Each is 1-1/2" x 6" x 12-1/2" w/ 1-1/2" diameter opening. Includes materials and shipping.	Each	\$29.75	1	\$29.75
Predator Guard	1461	Predator guards (i.e. stove pipes, cone, hole guard, etc.) for habitat boxes. Materials only. Includes material and shipping only.	Each	\$28.58		\$0.00
Post, Wood, CCA treated, 4" x 8'	10	Wood Post, Line 4" X 8', CCA Treated. Includes materials and shipping only.	Each	\$7.79	1	\$7.79

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**Scenario: #3 - Nesting/Roosting Structures**

**Scenario Description:**

Provide nesting or roosting boxes, typically constructed from wood, for targeted wildlife species. Examples of target species include bats, bees, wood ducks and other large cavity nesters, bluebirds and other small cavity nesters, etc. Predator protection will be required on bird houses and nest boxes. The scenario will occur on forestland, wildlife land, and field/pasture edge, and riparian areas.

**Before Situation:**

The setting for this scenario will be quite variable depending upon the species habitat needs. Due to removal of snags around farm fields and with the common young to mid age forests of New England, cavity trees and snags (for cavities and exfoliating bark) are not sufficient in some areas to meet species habitat needs; there is no or limited nesting or roosting habitat.

**After Situation:**

The number of structures installed per acre and the physical setting (e.g. open land, forest, etc.) will depend upon the species or group of species targeted. After installation, there will be a significant improvement in nesting and roosting habitat which will provide breeding success where there was none before.

**Scenario Feature Measure:** Number of nesting or roosting structures

**Scenario Unit:** Each

**Scenario Typical Size:** 1

**Scenario Cost:** \$173.96

**Scenario Cost/Unit:** \$173.96

**Cost Details (by category):**

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
<b>Labor</b>						
General Labor	231	Labor performed using basic tools such as power tool, shovels, and other tools that do not require extensive training. Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	\$24.74	2	\$49.48
<b>Materials</b>						
Predator Guard	1461	Predator guards (i.e. stove pipes, cone, hole guard, etc.) for habitat boxes. Materials only. Includes material and shipping only.	Each	\$28.58	1	\$28.58
Habitat Box, waterfowl	1449	Wood Duck Box, typically 24" x 11" x 12" with 4" wide oval entrance, single. Includes material and shipping only.	Each	\$69.82	1	\$69.82
Post, Wood, CCA treated, 6" x 12-14'	13	Wood Post, Line/End 6" X 12-14', CCA Treated. Includes materials and shipping only.	Each	\$26.08	1	\$26.08

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**Scenario: #4 - Brush Piles**

**Scenario Description:**

The typical scenario is hardwood and mixedwood forest stands and open areas (for brush piles) where wildlife cover is limited. Brush piles will be created from trees on site and will be constructed by piling brush and loose branches on top of a base frame comprised of large logs.

**Before Situation:**

Forest edges, pastures, and wildlife lands have limited successional habitat in parts of the area resulting in unsuitable escape cover. Escape cover, such as brush piles, does not exist between other cover areas including hedgerows, thickets or other brushy covers. Wildlife such as cottontail will need other cover nearby for the success of the practice.

**After Situation:**

Brush piles have been constructed to improve wildlife cover with a typical of 3 an acre. Typical size is minimum 12-18 feet wide by 6 feet high. Escape cover has been created and will allow successful movement between other cover areas.

**Scenario Feature Measure:** Number of brush piles

**Scenario Unit:** Each

**Scenario Typical Size:** 1

**Scenario Cost:** \$117.65

**Scenario Cost/Unit:** \$117.65

**Cost Details (by category):**

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
<b>Equipment/Installation</b>						
Chainsaw	937	Equipment and power unit costs. Labor not included.	Hour	\$6.23	3	\$18.69
<b>Labor</b>						
General Labor	231	Labor performed using basic tools such as power tool, shovels, and other tools that do not require extensive training. Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	\$24.74	4	\$98.96

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**Scenario: #5 - Mowing/Light Brush Hog**

**Scenario Description:**

Grass dominated fields will be mowed in a manner that will improve habitat for wildlife through a change in timing (e.g. delayed mowing after breeding season) or the pattern (rotational or other) of management that it is currently used. Delaying mowing operations until after the nesting season, and/or altering the pattern of mowing will improve herbaceous cover and provide undisturbed breeding habitat. Typical equipment is mower but could also be a brush hog.

**Before Situation:**

This practice will be implemented in a hay or old hay field to address limiting habitat factors for target wildlife. The typical situation is a field that is mowed during the breeding season which does not allow successful breeding by declining species such as grassland birds. In some cases, the composition of the grasses and forbs in the field may not be suitable for target species and may need to be managed for improvement.

**After Situation:**

Typical size for this management is 10 acres. In some cases the field may be mowed on a rotational basis to maintain cover and food (flowers for pollinators) late into the season. Mowing will take place after the primary breeding season to allow for successful nesting and brood rearing for target wildlife. The vegetation is managed in a fashion that will improve food and cover for wildlife.

**Scenario Feature Measure:** Acres mowed

**Scenario Unit:** Acre

**Scenario Typical Size:** 10

**Scenario Cost:** \$923.19

**Scenario Cost/Unit:** \$92.32

**Cost Details (by category):**

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
<b>Equipment/Installation</b>						
Mower, Bush Hog	940	Equipment and power unit costs. Labor not included.	Hour	\$50.29	10	\$502.90
<b>Labor</b>						
Equipment Operators, Light	232	Includes: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12", Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers	Hour	\$24.86	10	\$248.60
<b>Mobilization</b>						
Mobilization, small equipment	1138	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	\$171.69	1	\$171.69

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**Scenario: #6 - Grassland Bird Management**

**Scenario Description:**

This practice involves a change in the mowing regime on productive hayland by ensuring an early hay cut in mid to late May followed by a delay in the second cut of 65 days. A third cut is allowed. Research has shown that implementing this management on intensely managed hayfields will provide nearly the same productivity for grassland songbirds as a hayfield not mowed until August 1st. Facilitating practice include 315 Herbaceous Weed Control. Resource concerns include Wildlife: food and cover.

**Before Situation:**

Typical setting for this practice is agricultural dominated landscapes with large fields. These agricultural landscapes, and other large grass areas such as airports or preserves, are often the most desirable areas for grassland birds in the Northeast. Breeding success for grassland songbirds on intensively managed hayfields (3-4 cuts per summer) is nearly non-existent as the time period between mowings is too short for successful nesting. Through mowing the nests are destroyed or cover is removed making them vulnerable to predation by crows, ring-billed gulls and other predators. The reduction in nesting sites reduces the population of grassland nesting birds.

**After Situation:**

Fields must be a minimum of 20 acres of uninterrupted grassland with a low perimeter-to-area ratio (approx. square). Fields must be at least 50% to 75% grass cover with less than 10% reed canary grass. First cut and all associated management including raking, baling and manure spreading must be completed by May 31st. The sequence of cutting and field management practices is allowed after 65 days. If manure is spread on the field, it must be within 3 days of the harvest. Providing this 65 day period without cutting the field provides grassland birds with good nesting habitat to breed and successfully fledge young.

**Scenario Feature Measure:**

**Scenario Unit:** Acre

**Scenario Typical Size:** 20

**Scenario Cost:** \$2,019.30

**Scenario Cost/Unit:** \$100.97

**Cost Details (by category):**

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
<b>Equipment/Installation</b>						
Tractor, agricultural, 120 HP	962	Agricultural tractor with horsepower range of 90 to 140. Equipment and power unit costs. Labor not included.	Hour	\$54.07	10	\$540.70
<b>Foregone Income</b>						
Fl, Hay, General Grass	2122	General Grass Hay is Primary Land Use	Ton	\$41.00	30	\$1,230.00
<b>Labor</b>						
Equipment Operators, Light	232	Includes: Skid Steer Loaders, Hydraulic Excavators <50 HP, Trenchers <12", Ag Equipment <150 HP, Pickup Trucks, Forklifts, Mulchers	Hour	\$24.86	10	\$248.60

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**Scenario: #7 - Disking**

**Scenario Description:**

This practice addresses inadequate wildlife habitat for species by manipulating species composition by disking vegetation and creating bare ground. The typical setting for this scenario is at the edge of crop fields, in pastures, and in other odd areas.

**Before Situation:**

The site is static or trending to higher successional plant species. The disturbance regime to maintain a lower successional stage is lacking. Pastures are often monotypic, lacking in diversity. Bare ground for seedling establishment is absent. Stands are often dense and inhibit the movements of younger wildlife species such as game bird chicks.

**After Situation:**

The application of this scenario improves wildlife habitat for species by reducing competition and creating bare ground for the establishment of plants. Additionally, brood rearing habitat is improved both by the resultant food resources and the increased openness of the plant community that allows chicks to negotiate the terrain and exploit those food resources.

**Scenario Feature Measure:** width and length of treated area

**Scenario Unit:** Acres

**Scenario Typical Size:** 2

**Scenario Cost:** \$192.57

**Scenario Cost/Unit:** \$96.29

**Cost Details (by category):**

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
<b>Equipment/Installation</b>						
Tillage, Light	945	Includes light disking (tandem) or field cultivator. Includes equipment, power unit and labor costs.	Acre	\$10.44	2	\$20.88
<b>Mobilization</b>						
Mobilization, small equipment	1138	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	\$171.69	1	\$171.69

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**Scenario: #8 - Invasive Weed Removal**

**Scenario Description:**

Improve wildlife habitat by removing infestations of invasive weeds using state approved chemical/mechanical methods. This scenario often involves chemical application (with backpack or other types of sprayers) which may be used in combination with manual cutting.

**Before Situation:**

Area consist of excessive stands of woody and herbaceous weeds degrading health and vigor of native herbaceous species promoting noxious and invasive species and degrading wildlife habitat.

**After Situation:**

Weeds are removed to achieve the 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, and improved wildlife habitat.

**Scenario Feature Measure:** Acres treated

**Scenario Unit:** Acre

**Scenario Typical Size:** 1

**Scenario Cost:** \$493.57

**Scenario Cost/Unit:** \$493.57

**Cost Details (by category):**

Component Name	ID	Component Description	Unit	Price (\$/unit)	Quantity	Cost
<b>Equipment/Installation</b>						
Chainsaw	937	Equipment and power unit costs. Labor not included.	Hour	\$6.23	3	\$18.69
Truck, Pickup	939	Equipment and power unit costs. Labor not included.	Hour	\$36.81	2	\$73.62
All terrain vehicles, ATV	965	Includes equipment, power unit and labor costs.	Hour	\$30.40	3	\$91.20
<b>Labor</b>						
General Labor	231	Labor performed using basic tools such as power tool, shovels, and other tools that do not require extensive training. Ex. pipe layer, herder, concrete placement, materials spreader, flagger, etc.	Hour	\$24.74	3	\$74.22
Skilled Labor	230	Labor requiring a high level skill set: Includes carpenters, welders, electricians, conservation professionals involved with data collection, monitoring, and or record keeping, etc.	Hour	\$40.66	3	\$121.98
<b>Materials</b>						
Herbicide, Imazapyr	336	Pre and post-emergent, non-selective herbicide for control of undesirable vegetation in non-crop areas. Refer to WIN-PST for product names and active ingredients. Includes materials and shipping only.	Acre	\$42.03	1	\$42.03
Herbicide, Surfactant	1095	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. Includes materials and shi	Acre	\$1.34	1	\$1.34
<b>Mobilization</b>						
Mobilization, very small equipment	1137	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	\$70.49	1	\$70.49