

Sowams Meadow /Karen Burnes - WRE

NRCS Wetland Reserve Easement Program

Easement Overview:

The Sowams Meadow / Karen Burnes property is Plat 21 Lots 1 & 2, 314 Market Street, Warren RI and is owned by the Warren Land Conservation Trust. The entire property is approximately 23.29 acres. The NRCS Wetland Reserve Easement program (WRE) easement is 23.29 acres. The site historically was hayed for salt marsh hay and the fields were used for vegetables or hayland.

The Warren Land Conservation Trust is the property owner, however, United States Department of Agriculture – Natural Resource Conservation Service has placed a perpetual easement through the Wetland Reserve Easement program (WRE) on the 23.29 acres. As per the easement language in the Warranty Easement Deed: Part V (Rights of the United States) Section 'A' (Management Activities). The United States shall have the right to enter unto the easement area to undertake, at its own expense or on a cost-share basis with the Landowner or other entity, any activities to restore, protect, manage, maintain, enhance, and monitor, the wetland and other natural values of the easement area. The United States, at its own cost, may apply to or impound additional waters on the easement area to maintain or improve wetland and other natural values.

Existing Conditions:

Most of the upland area of the property consists of poorly drained Walpole sandy loam soil on the gently sloping lower elevations of zero to three percent. This soil is associated with outwash plains and the parent material consists of sandy glaciofluvial deposits. The wetland area consists of Matunuck mucky peat with zero to two percent slopes which are frequently flooded. This soil type is found on tidal marshes on coastal plains. The parent material consists of partially-decomposed herbaceous organic material over glaciofluvial deposits and/or sandy marine deposits. There are many invasive plants in the upland that will require removal and the fields will be reseeded to provide habitat for native wildlife. Some of the invasives that are throughout the fields are Multiflora Rose (*Rosa Multiflora*), Asian Bittersweet (*Celastrus orbiculatus*), Honeysuckle (*Lonicera sp.*), Buckthorn (*Rhamnus sp.*), and Autumn Olive (*Elaeagnus umbellata*).

Project Scope:

The project includes proposed restoration activities on the abandoned agricultural fields, the freshwater/brackish wetland adjacent to the marsh and the upland buffer. The goal of the proposed project is to facilitate future marsh migration by planting native grasses and shrubs in

the migration zone and removing impediments along the upper edges of the salt marsh to allow for the flow of salt water into the upland areas. Additionally, a freshwater wetland community will be restored in a portion of the existing hay fields. Within the other portion of the field, pollinator, and native grass seedings will be established. As part of the project, brush management will be completed in the buffer areas surrounding the fields. Management to prevent invasive species will be implemented once the fields are established. Trees that are dead due to impacts from Bittersweet will be removed. Native trees will be planted to replace the removed trees.

Invasive Control:

NRCS Practice 314 Brush Management

NRCS has identified areas where woody invasive plants bordering the fields occur on the easement (see Conservation Plan Map). The acres on the map are 1.65 in total, with all of it occurring in the upland area along the northern field borders. However, invasive plant removal will be selective in nature where the display on the map shows only a general location. The exact areas of brush removal will be identified and flagged in the field by NRCS staff. The areas marked will be cleared and grubbed and all stumps will be removed.

The site currently has invasive plants Multiflora Rose (*Rosa Multiflora*), Asian Bittersweet (*Celastrus orbiculatus*), Honeysuckle (*Lonicera sp.*), Buckthorn (*Rhamnus sp.*), and Autumn Olive (*Elaeagnus umbellate*). There is also a 0.15 acre patch of non-native willows in the southern field which will be cut and removed. All the brush will be chipped and disposed of offsite. Refer to attached "Brush Management -Invasive Plant Control Autumn Olive, Multiflora Rose, Honeysuckle, Buckthorn, and Oriental Bittersweet Job Sheets" and Conservation Plan Map.

After the Brush Management is completed there may be regrowth of the Bittersweet. The vendor will complete follow up control of the regrowth of the Bittersweet. The cutting and treatment of the invasive vegetation will occur within the August/September timeframe when plants will actively pull the herbicide down into the roots. The work will be conducted only by vendors with licenses to apply herbicides. A standard method of "cut and paint" will be followed: Cut each vine or stem close to the ground (about 2 inches above ground) and immediately apply a 25% solution of glyphosate (e.g., Accord) or triclopyr (e.g., Garlon 3A) mixed with water to the cut surface of the stem.

All areas where brush management is taking place will be followed up with a cover crop of oats. This will help prevent runoff, control invasive plant species pressure, and keep the soil in place. If the oats cannot be planted before the first week of October 2022, then winter rye should be planted as the cover crop. If using winter rye, it is critical to monitor closely in the spring. When vegetation reaches 12-18 in mow it back to 8 in immediately. Then continue with multiple high

mowing until it is time to plant the final seed mixture of grasses or pollinators depending on the field.

After the wildlife plantings/conservation cover are established in the fields, the invasives will be managed through spot spraying annually as needed for up to three years.

Field Rehabilitation and Planting of Natives:

NRCS Practice 327 Conservation Cover (Smother Cropping)

To establish a diverse habitat mosaic of high value species of greatest conservation need in the former agricultural fields found in the freshwater wetlands and upland, the following seeding/planting approaches will be implemented as highlighted in the Restoration Plan. The Restoration Plan for the freshwater wetlands and uplands in the former agricultural fields was created by the NRCS biologist.

The seeding process will take place over a two-year period. Site preparation prior to seeding will be accomplished through "smother cropping" to reduce the number of non-native plants that dominate including the Plantago species. Smother cropping will occur across 5.29 acres. A cover crop mix of soybeans and red clover will be seeded in the spring, followed by a fall seeding of cereal (winter) rye. The smother cropping will prepare the fields for seeding of native forbs, legumes and grasses during the following fall and spring. A wet portion of the northern field will be staked off so that it is not mowed to allow for native vegetation to persist.

The first round of smother cropping with soybeans and red clover will be planted March 20, 2023 to May 20, 2023. If planting does not occur within the allotted window, the site will need to be reevaluated. Prior to establishing the smother crop, despite the method of planting, the fields will be mowed as close to the ground as possible, and the plant residue removed. There will be no disking of any kind on this property. The soybean seed would be planted at a rate of 90 lbs/ac broadcast, or 50 lbs/ac drilled, planted at 1-2 in depth. Clover should be planted at a rate of 10 lbs/ac broadcast, or 5 lbs/ac drilled, planted at 1/4-1/2 in depth. Because of the different planting depths, and the small seed size of clover, it is recommended to drill the soybean and broadcast clover, so that the clover is not planted too deeply. Drill seeding is the preferred method for planting. If the area is deemed too wet to drill seed, then it will be broadcast.

The second round of smother cropping with cereal (winter) rye will take place November 21st, 2023 to first snow. Prior to planting, the first round of smother crop will be mowed, and the residue removed. Broadcast rye at 30 lb/ac (note, much lower rate than agricultural use). The pollinator mix will be planted at the same time as the rye. There are two options, it can be seeded at the same time as the rye (as long as they are both evenly mixed and distributed) or

broadcast the rye first and then broadcast the pollinator mix. Lightly press the seed into the surface using a harrow rake or a cultipacker. For the rye, it is critical to monitor closely in the spring. When vegetation reaches 12-18 in mow it back to 8 in immediately. Then continue with multiple high mowing until August/September. A final mow will be done to remove any smother crop remaining on the field prior to planting of the pollinators and native grasses. To see full instructions of amounts, species, and timing please refer to attached instructions from the NRCS biologist and the Conservation Plan Map.

NRCS Practice 420 Wildlife Habitat Planting (Pollinator)

In the southern field, which is at a lower elevation, a pollinator seed mix including both obligate and facultative wetland species will be planted, approximating 2.4 acres. Selection of plant species will maximize benefits to pollinators and the monarch butterfly as per the NRCS New England Pollinator Partnership with U.S. Fish and Wildlife Service. A species list has been developed and approved for wetter areas by Gary Casabona and Kelly Gill of the Xerces Society. The list has 24 different species. See attached Pollinator Species List, Wildlife Habitat Planting Implementation Requirement, and Conservation Plan Map.

Common Name	Scientific Name	% of mix by number of seeds/ft	# seed/ft²	Seeding rate (lb/ac)	Bloom Period
Golden Alexanders	<i>Zizia aurea</i>	2.0%	1.20	0.30	Early
Tall White Beardtongue	<i>Penstemon digitalis</i>	5.0%	3.00	0.33	Early
White Avens	<i>Geum canadense</i>	1.0%	0.60	0.07	Early-Late
Wild Bergamot	<i>Monarda fistulosa</i>	3.0%	1.80	0.06	Mid
Swamp Milkweed	<i>Asclepias incarnata</i>	2.0%	1.20	0.34	Mid
Partridge Pea (PA)	<i>Chamaecrista fasciculata</i>	1.5%	0.90	0.60	Mid
Showy Ticktrefoil	<i>Desmodium canadense</i>	1.5%	0.90	0.54	Mid
Flat Topped White Aster	<i>Doellingeria umbellata</i>	3.0%	1.80	0.07	Mid-Late
Joe Pye Weed	<i>Eutrochium fistulosum</i>	3.0%	1.80	0.04	Mid-Late
Common Boneset	<i>Eutrochium perfoliatum</i>	3.0%	1.80	0.03	Mid-Late
Great Blue Lobelia	<i>Lobelia siphilitca</i>	6.0%	3.60	0.04	Mid-Late
Allegheny Monkeyflower	<i>Mimulus ringens</i>	9.0%	5.40	0.01	Mid-Late
Virginia Mountainmint	<i>Pycnanthemum virginianum</i>	4.0%	2.40	0.03	Mid-Late
Common Sneezeweed	<i>Helenium autumnale</i>	4.0%	2.40	0.07	Late
Wrinkleleaf Goldenrod	<i>Solidago rugosa</i>	3.0%	1.80	0.08	Late
New England Aster	<i>Symphyotrichum novae-angliae</i>	4.0%	2.40	0.10	Late
New York Aster	<i>Symphyotrichum novi-belgii</i>	3.0%	1.80	0.11	Late
Blue Vervain	<i>Verbena hastata</i>	9.0%	5.40	0.16	Late
New York Ironweed	<i>Vernonia noveboracensis</i>	1.0%	0.60	0.09	Late
Fox Sedge (PA)	<i>Carex vulpinoidea</i>	10.0%	6.00	0.20	Sedge
Virginia Wildrye	<i>Elymus virginicus</i>	5.0%	3.00	1.79	CSG
Deertongue 'Tioga'	<i>Panicum clandestinum</i>	5.0%	3.00	0.37	WSG
Switchgrass 'Shelter'	<i>Panicum virgatum</i>	7.0%	4.20	0.71	WSG
		100.0%	60.00	6.13	

NRCS Practice 420 Wildlife Planting (Grass)

In the northern field at the highest elevation, a conservation cover will be planted in the Spring of 2024, composed of a mix of both warm-season and cool-season grasses, approximating 2.89 acres (excluding the staked off wet area). The mix is designed for areas where wildlife cover is desired without frequent mowing. This will be planted after the smother crop is implemented. See attached quote from Ernst Conservation Seeds 4/2022. Seeds can be purchased from another vendor if approved by NRCS first.

Pipeline Mix w/Switchgrass - ERNMX-102-1

	Botanical Name	Common Name
33.00 %	<i>Panicum virgatum, 'Shawnee'</i>	Switchgrass, 'Shawnee'
25.00 %	<i>Festuca rubra</i>	Creeping Red Fescue
18.00 %	<i>Lolium multiflorum</i>	Annual Ryegrass
16.00 %	<i>Phleum pratense, Climax</i>	Timothy, Climax
5.00 %	<i>Trifolium hybridum</i>	Alsike Clover
3.00 %	<i>Agrostis alba</i>	Redtop

100.00 %

Seeding Rate: 40 lb per acre
Erosion Control & Revegetation

NRCS Practice 500 Obstruction Removal (Tree Removal)

Throughout the front two fields there are 21 trees that will need to be removed because they are either dead or dying from invasives species pressure. The trees will be marked in the field by NRCS. Onsite removal of selective trees will be done using a chainsaw and chipper. Removal excludes stumps, which will be cut flush to the ground. For details, refer to CS-01- Clearing Tree Removal.

NRCS Practice 612 Tree/Shrub Establishment with NRCS Practice 484 Mulching

The trees that will be removed in the front two fields will be replaced with 21 1" caliper native saplings of a **mix** of birch, oak, black walnut, or cedar. To help the trees establish and keep in moisture, mulch will be put down around the base of all newly planted trees. The trees will also need tree tubes or fencing for protection against herbivory.

NRCS Practice 649 Structures for Wildlife

Nesting boxes for both Bluebirds and Bats will be installed on the restoration site. The bluebird boxes will be placed along the edges of the fields. The bat boxes will be installed within the edge of the forested areas. NRCS will provide the locations in the field.

Installation of Signage with Posts

Four wildlife signs will be installed throughout the restoration site. **NRCS will supply the signs.** The contractor will provide the post and installation.

Mobilization/Demobilization

This is for mobilizing and demobilizing the equipment for the project. This will be a lump sum.

Table 1. Timeline of Implementation

2022	
Fall	Mowing both fields
	Invasive brush removal
	Planting of oats cover crop along perimeter of fields where brush was removed (oats if seeded by first week of October, otherwise winter rye)
	Tree removal
2023	
Spring	Mowing of both fields
	Soybean and Red Clover smother crop in both fields (plant March 20-May 20)
	Tree and shrub planting + mulching
	Structures for wildlife
Fall	Mowing both fields
	Winter Rye smother crop in both fields (seed in late October/November)
	Pollinator planting in south field (seed in late October/November)
2024	
Spring	Mowing both fields (south field: when veg reaches 12-18", mow back to 8", and continue until September)
	Grass planting in north field (plant March 20-May 20)
Fall	Spot spraying of invasives (as needed)
	Obstruction removal