Old Field Toolkit

CHAPMAN PASTURE

EXISTING CONDITIONS

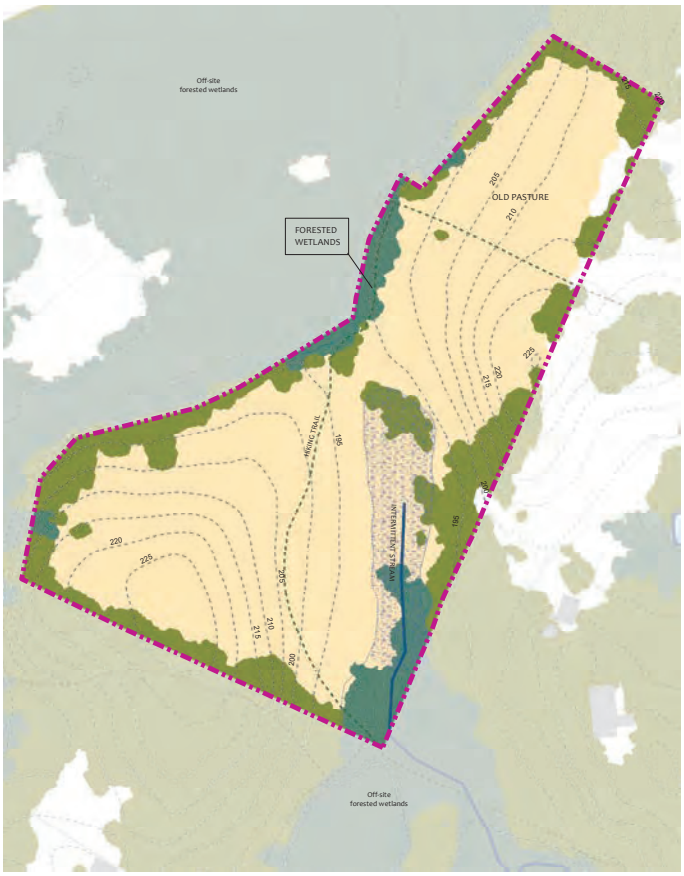
Chapman Pasture is a rolling 8-acre grassland that was grazed with sheep for over forty years. The property is unique in that its vegetation is relatively consistent: upland areas of the site are almost all non-native grasses that reach a mature height of less than 3 feet. The property forms part of a contiguous 95-acre corridor of protected land owned and managed by LLCT.

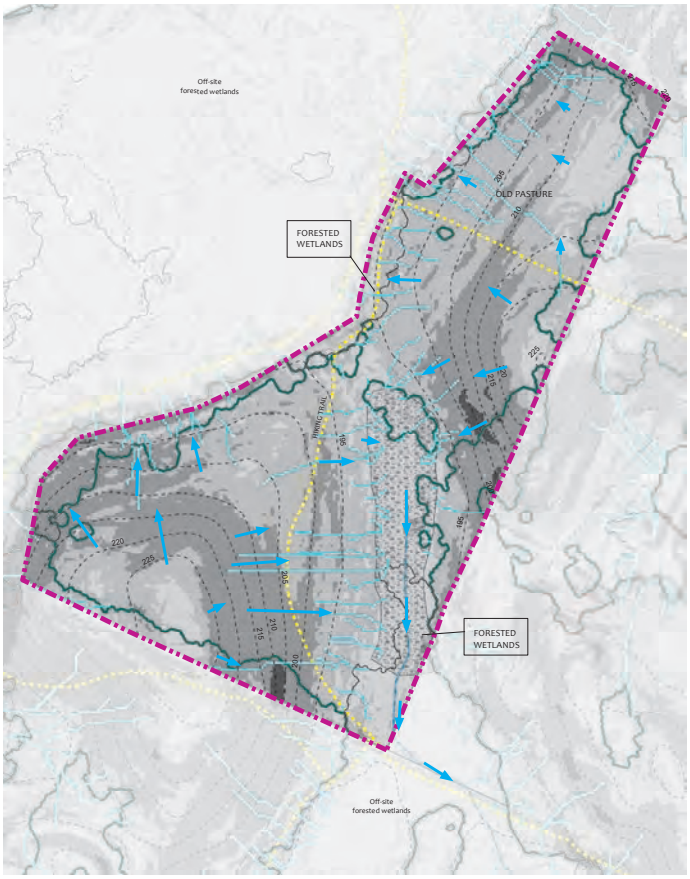
Forested wetlands border the site on both northwest and southeast sides, with an intermittent stream running northward through the center of the field from the southeast corner of the property. This stream, combined with the topography of the site, creates a low point in the center of the field, a wet swale which is comprised predominantly of native vegetation.

Whereas the upland two-thirds of the site are dominated by non-native grasses with small patches of early successional *Pinus strobus* (White pine) and *Juniperus virginiana* (Eastern red cedar), this wet swale contains a somewhat limited range of plants that support threatened pollinator species, including *Carex vulpinoidea* (Common fox sedge), *Asclepias incarnata* (Swamp milkweed), *Symphyotrichum nove-belgii* (New York American-aster) and *Solidago gigantea* (Smooth goldenrod). Field borders and forest edges contain significant portions of invasive *Celastrus orbiculatus* (Oriental bittersweet) as well as *Rosa multiflora* (Multiflora rose).

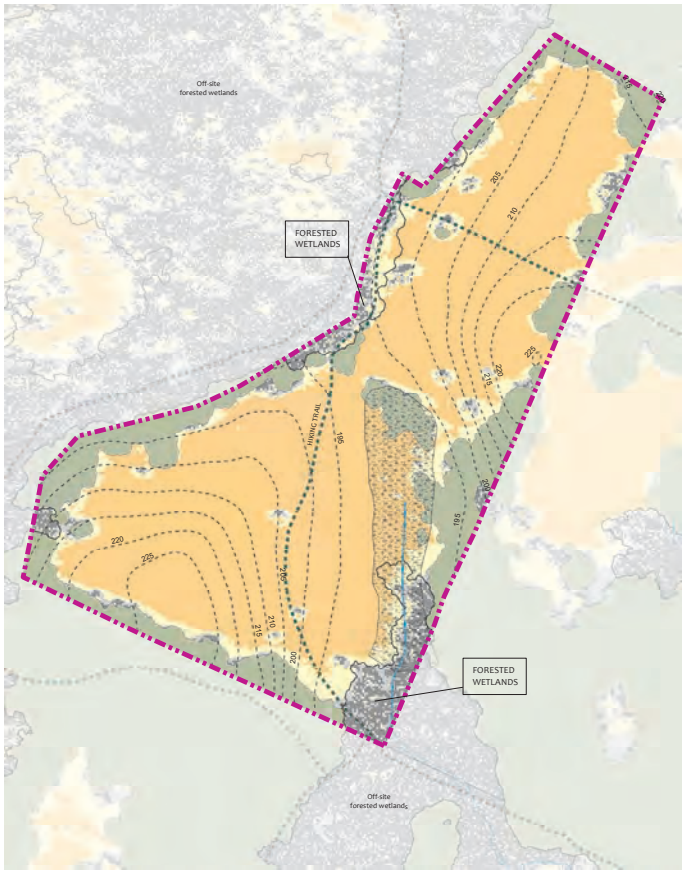
While Chapman Pasture is somewhat secluded, the site is open to the public and one point of access originates from another Toolkit site, Upper Browning Fields. LLCT is committed to converting the low habitat value of the grasses at Chapman Pasture to a diverse pollinator meadow with shrub areas. Seven bird boxes at Chapman Pasture are monitored for Eastern Bluebirds and Tree Swallows by a dedicated LLCT volunteer. Enhancements to the site will benefit these birds and wildlife at other trophic levels.

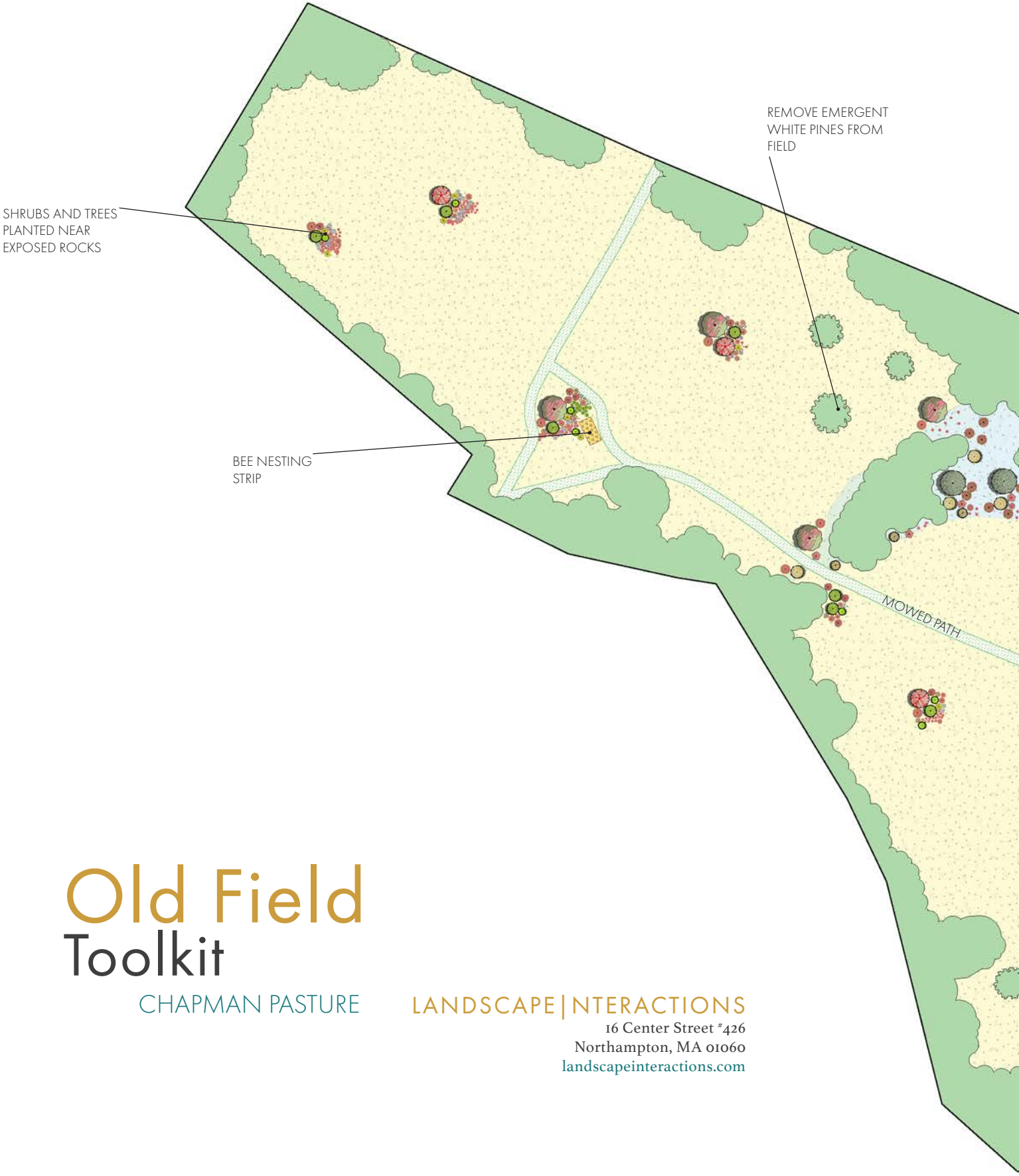
Due in large part to the dominance of the non-native grasses on the site, as well as the large scale of the property, Landscape Interactions proposed that prescribed fire be used to clear the site of existing vegetation and expose the soil for seeding. A proposal was prepared by LLCT and Landscape Interactions and sent to U.S. Fish & Wildlife Service. After visiting the site and learning more about LLCT's town-wide effort to target threatened pollinator species, USFWS agreed to fund a burn plan for the site, and to help find a team to execute the burn. USFWS will clear approximately one acre of field edges in preparation for the burn, which is scheduled for early spring 2021.





Above and right: some of the site analyses created to interpret the Chapman Pasture site and develop recommendations for habitat conversion and design. Clockwise from top left: Basemap, Slopes and Drainage, Sun and Shade. Below: existing conditions at the Chapman Pasture site in September, 2019. Opposite: Oriental bittersweet climbing a tree at the field edges.





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CHAPMAN PASTURE

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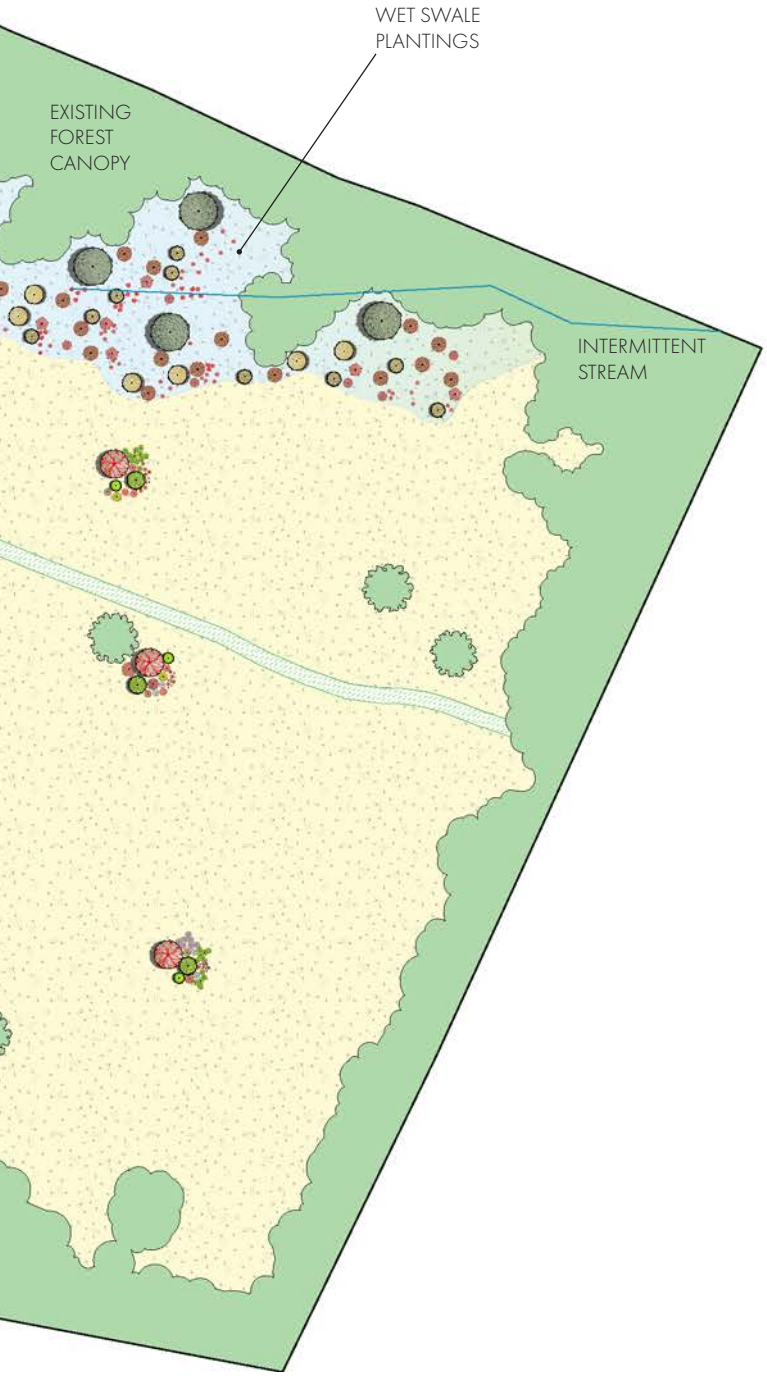
SITE CONDITIONS

DRY SOILS & MOIST TO WET SOILS
FULL SUN & PART SHADE
NATURALIZED LANDSCAPE
OLD FIELD GRASSLAND



PLANT SCHEDULE

TREES	BOTANICAL NAME	COMMON NAME	QTY	REMARKS
	Cercis canadensis	Eastern Redbud	4	20` wide spacing
	Quercus ilicifolia	Scrub Oak	6	15` wide spacing
	Salix bebbiana	Beaked Willow	6	20` wide spacing
	Salix discolor	Pussy Willow	12	8` wide spacing
	Salix humilis	Prairie Willow	10	6` wide spacing
	Salix lucida	Shining Willow	10	10` wide spacing
	Salix petiolaris	Meadow Willow	10	10` wide spacing

SHRUBS	BOTANICAL NAME	COMMON NAME	QTY	REMARKS
	Cephalanthus occidentalis	Buttonbush	10	6` wide spacing
	Diervilla lonicera	Northern Bush-honeysuckle	12	4` wide spacing
	Hypericum prolificum	Shrubby St. John`s-wort	10	5` wide spacing
	Rosa carolina	Carolina Rose	8	4` wide spacing
	Rosa palustris	Swamp Rose	8	5` wide spacing
	Rosa virginiana	Virginia Rose	8	5` wide spacing
	Rubus odoratus	Purple-flowering Raspberry	8	7` wide spacing
	Rubus pensilvanicus	Pennsylvania Blackberry	10	6` wide spacing
	Rubus vermontanus	Vermont Blackberry	10	4` wide spacing
	Spiraea alba	Meadowsweet	22	3` wide spacing
	Spiraea tomentosa	Steeplebush	22	3` wide spacing
	Vaccinium angustifolium	Lowbush Blueberry	36	3` wide spacing
	Vaccinium corymbosum	Highbush Blueberry	24	8` wide spacing
	Vaccinium macrocarpon	American Cranberry	24	2` wide spacing
	Vaccinium oxycoccos	Small Cranberry	24	2` wide spacing
	Vaccinium pallidum	Hillside Blueberry	100	2` wide spacing

PERENNIALS	BOTANICAL NAME	COMMON NAME	QTY	REMARKS
	Cirsium pumilum	Pasture Thistle	20	1` wide spacing
	Eutrochium dubium	Coastal Plain Joe-Pye Weed	30	2` wide spacing
	Hypericum ascyron	Giant St. John`s-wort	20	2` wide spacing
	Pedicularis canadensis	Canadian Wood Betony	40	1` wide spacing
	Viola pedata	Bird`s-foot Violet	40	.5` wide spacing

GROUND COVERS	BOTANICAL NAME	COMMON NAME	QTY	REMARKS
	Dry Mix	Upland Meadow Seed Mix	265,186 sf	Min. 110 PLS/sq.ft
	Wet Mix	Wet Meadow Seed Mix	23,789 sf	Min. 110 PLS/sq.ft

100 FT.

Refer to the following page for more information regarding plants in the design.

KEY TO DESIGN AREAS

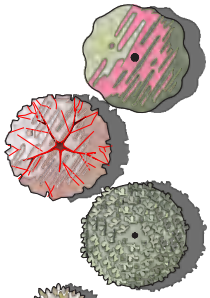
rock outcrop, full sun

rock outcrop, full sun to part-shade

wet swale, full sun

wet swale, full sun to part-shade

PLANT SCHEDULE

TREES	BOTANICAL NAME	COMMON NAME	QTY	REMARKS
	Cercis canadensis	Eastern Redbud	4	20` wide spacing
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	Spiraea tomentosa	Steeplebush	22	3` wide spacing	
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PERENNIALS	BOTANICAL NAME	COMMON NAME	QTY	REMARKS	
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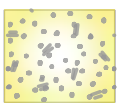
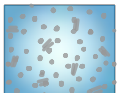
	Dry Mix	Upland Meadow Seed Mix	265,186 sf	Min. 110 PLS/sq.ft
	Wet Mix	Wet Meadow Seed Mix	23,789 sf	Min. 110 PLS/sq.ft

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CHAPMAN PASTURE

MANAGEMENT GUIDELINES

SITE ESTABLISHMENT

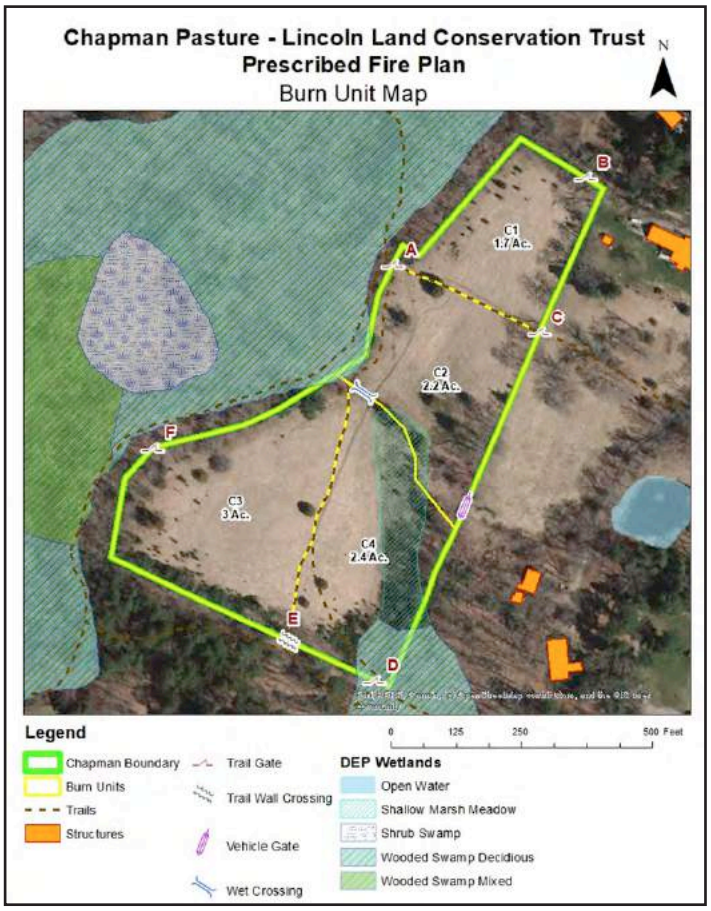
As mentioned, Chapman Pasture will be subject to prescribed fire in April 2021 as the initial method of site preparation for seeding. The burn will knock back non-native cool season grasses which dominate the site, expose the soil and encourage remnant native plant communities. As soon as 1 week following the burn, the wet swale can be planted with the recommended species depicted in the design. Additionally, exposed rocks and boulders on the site will be planted with the recommended arrangements of plants. Prescribed burns should continue on the site every 3-5 years as a primary method of vegetation management.

In late October or November 2021, the entire site should be mowed as close to the ground as possible, with the exception of those areas planted in the wet swale and in/around boulders in the field. If any emergent trees or invasives are found in the meadow during the 2021 growing season, they should be grubbed or pulled.

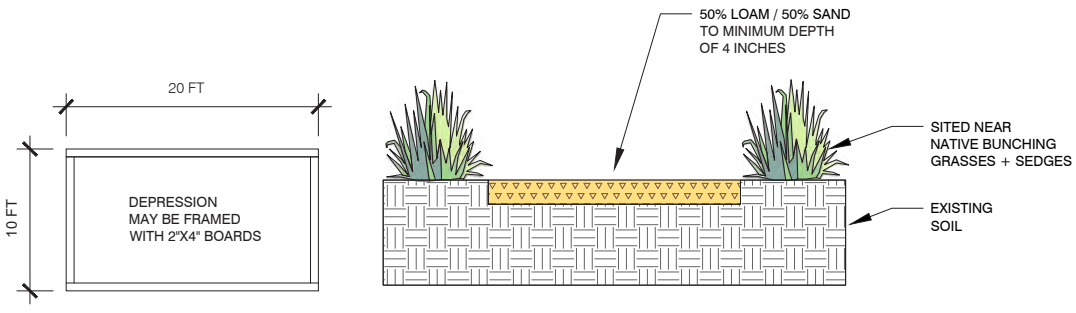
In November or December 2021, the wet and dry mixes should be seed drilled across the site, according to the areas outlined on the preceding page. If a seed drill is not available, the seed mixes may be broadcast; a harrow raking across the site may be required beforehand to ensure sufficient seed to soil contact (if drilling, no harrow raking is required). 100 lbs./acre of winter wheat cover crop should be added when fall seeding (if spring seeding, wild oats should be used instead). The plant lists for each seed mix are on the opposite page.

MOWING REGIMES

For the first growing season following seeding (2022), the entire site should be closely monitored for growth of vegetation. When the average height



BEE NESTING STRIP DETAIL



Above: Map of burn unit areas from Chapman Pasture Prescribed Fire Plan courtesy Alex Entrup of Entrup Consulting. Left: Due in part to the scale and accessibility of the Chapman Pasture site, rather than having multiple 2'x4' nesting strips, it is recommended to create a single 10'x20' nesting location. Remove all vegetation and at least 4 inches of soil. 50% of the soil can be added back in mixed with 50% sand. The area should be well draining, in full sun and kept clear of weeds, grasses or other vegetation. Do not mulch.

CHAPMAN PASTURE UPLAND MEADOW SEED MIX

Shrubs	
Spiraea alba	Meadowsweet
Spiraea tomentosa	Steeplebush
Forbs	
Agastache scrophulariifolia	Purple giant hyssop
Asclepias syriaca	Common milkweed
Asclepias tuberosa	Butterfly weed
Baptisia tinctoria	Yellow wild indigo
Cirsium discolor	Field thistle
Geranium maculatum	Spotted crane's-bill
Hypericum punctatum	Spotted St. John's-wort
Lupinus perennis	Wild lupine
Monarda fistulosa	Wild bergamot
Pedicularis canadensis	Canadian lousewort
Penstemon digitalis	Foxglove beardtongue
Penstemon hirsutus	Northeastern beardtongue
Prunella vulgaris ssp. lanceolata	Common selfheal
Solidago odora	Sweet goldenrod
Solidago speciosa	Showy goldenrod
Symphyotrichum lateriflorum	Calico American-aster
Zizia aptera	Heart-leaf golden Alexanders
Zizia aurea	Golden Alexanders
Graminoids	
Andropogon gerardii	Big bluestem
Carex blanda	Common wood sedge
Carex brevior	Plains oval sedge
Panicum virgatum	Switchgrass
Schizachyrium scoparium	Little bluestem

CHAPMAN PASTURE WET MEADOW SEED MIX

Forbs	
Asclepias incarnata	Swamp milkweed
Doellingeria umbellata	Tall white aster
Eutrochium fistulosum	Hollow Joe-Pye weed
Eutrochium maculatum	Spotted Joe-Pye weed
Eutrochium purpureum	Purple Joe-Pye weed
Impatiens capensis	Spotted touch-me-not
Mimulus alatus	Winged monkey flower
Mimulus ringens	Allegheny monkey flower
Rumex orbiculatus	Great Water Dock
Scutellaria galericulata	Hooded skullcap
Scutellaria lateriflora	Mad dog skullcap
Graminoids	
Andropogon gerardii	Big bluestem
Carex blanda	Common wood sedge
Carex brevior	Plains oval sedge
Panicum virgatum	Switchgrass

of vegetation in a given area is approximately 12 inches, the area should be brush hogged to a height of no less than 8 inches. This schedule should be continued throughout the first, and possibly second growing season.

In the second growing season (2023), the site should be periodically assessed by a botanist or other individual with vetted plant identification skills. If the majority of vegetation on the site or in a given area is native species from the mixes which were seeded, then the mowing schedule for the site or that area may be transitioned to a once-a-year mow. This should always occur during the dormant season (after November 15 or before April 1), after plants have gone to seed or before they begin next season's growth. Ideally, the site would be broken up into 2 or 3 sections, with each section being mowed once a year on a rotational basis. During this annual mow, vegetation should be cut to a height of 4-6 inches.

If during the second growing season, the majority of vegetation on the site or in a given area appears to remain non-native grasses, then continue mowing to keep the overall height of plants between 8-12 inches. This regime should be followed until the third growing season.

No-till seed drills such as the Flex by Truax pictured above are ideally suited for largescale native seeding without the need for raking. ***Sites should never be tilled before seeding native species, as doing so brings dormant weed seeds to the surface, increasing competition.***

By the end of the third growing season (2024), the site should be ready for transition to an annual mow on a rotational basis. Invasive species and early successional trees in the open portions of the site should be closely monitored throughout, and either manually grubbed using a weed wrench ("Pullerbear" brand) or mechanically grubbed using a brush grubber ("Brush Grubber" brand) mounted on a tractor, ATV or pickup truck.