New England Pollinator Partnership

June 15, 2020 | Kick-Off Webinar

Photos: Sarah Foltz Jordan, Kelly Gill, Jennifer Hopwood / The Xerces Society

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New England Pollinator Partnership

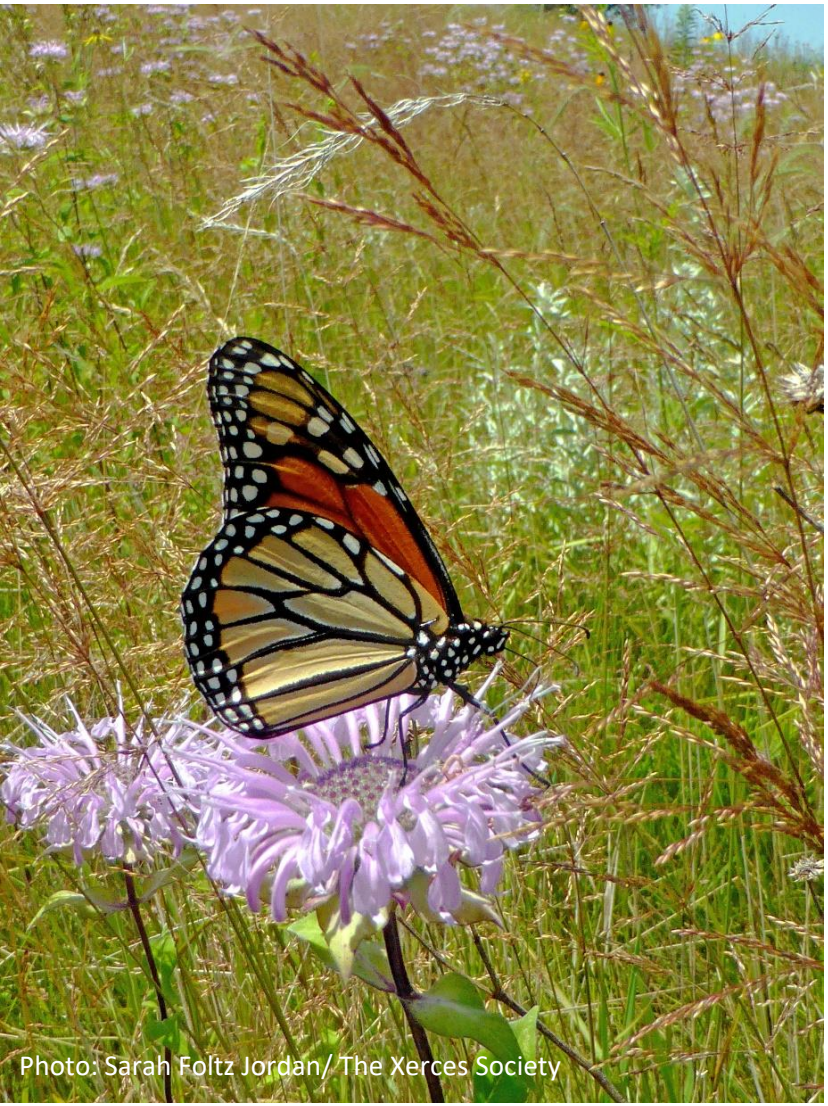


Photo: Sarah Foltz Jordan/ The Xerces Society

Acknowledgements

Special thanks to:

- Jen Ryan and Don Riley for help with webinar set-up and moderating
- Today's speakers: Jeremy Markuson (ME NRCS), Mark McCollough (USFWS), Gary Casabona (RI NRCS)

Introduction to Xerces' Partner Biologists in New England:

- Alina Harris (NH)
- Hannah Mullally (ME)

New England Pollinator Partnership

A Collaborative Partnership to Assist Agricultural Producers/Landowners, and to Conserve Pollinators

Follows the Working Lands For Wildlife (WLFW) Model

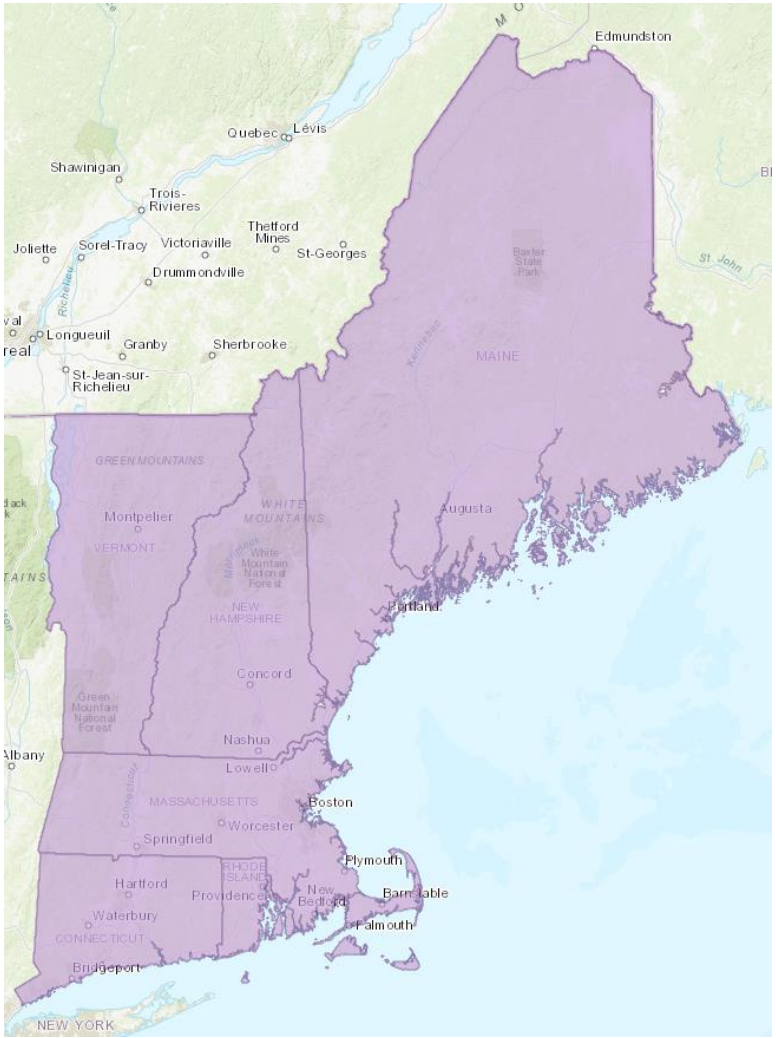
Photo credits: The Xerces Society, Sarah Foltz Jordan and Dan VanWart, Peaked Mountain Farm

New England Pollinator Partnership (NEPP) – A multi-state conservation strategy developed by USDA NRCS, USFWS, Xerces Society, and other partners to address declines in native pollinator populations across New England by protecting and improving pollinator habitat.

Geographic Area

Participating States
Maine
New Hampshire
Vermont
Massachusetts
Rhode Island
Connecticut

Photo credit: Eric Venturini



Goals and Framework

Goals

1. Incentivize program participation through NRCS financial assistance (EQIP and CSP)
2. Engage the landowners in pollinator conservation
3. Create/enhance pollinator habitat and protect target species from pesticides
4. If necessary, revise BMPs in collaboration with USFWS
5. Preclude the need to list target species

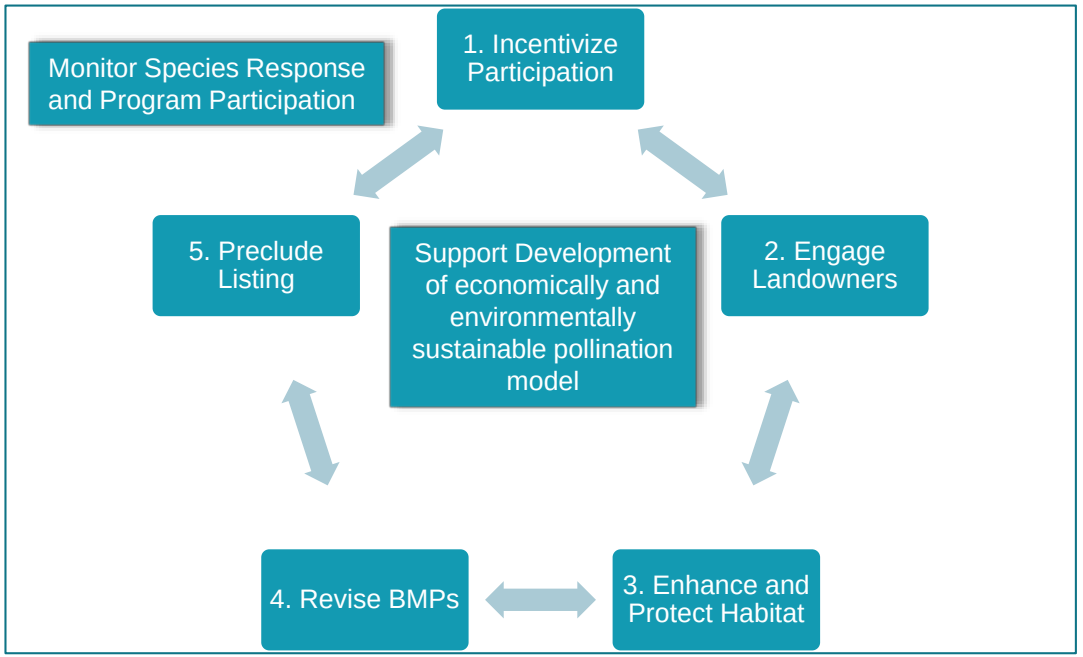


Photo credit: Eric Venturini and Jeremy Markuson

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Key Requirements

Requirements to Participate in NEPP

1. Complete one of the sixteen core practices
2. Complete the Pollinator Wildlife Habitat Evaluation Guide
3. Implement Best Management Practices
4. Maintain the conservation practices

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Q&A: New England Pollinator Partnership

Question 1: What is the New England Pollinator Partnership?

The New England Pollinator Partnership (NEPP) is an agreement between the NRCS, the U.S. Fish and Wildlife Service (Service), and participating eligible producers to help restore populations of the rusty patched bumble bee, monarch butterfly, and seven other ground nesting bumble bee species found throughout New England. This partnership reduces the regulatory burden of the Endangered Species Act. Participating landowners don't have to worry about ESA regulations that may apply to the target bumble bees and monarch butterfly. The NEPP is also a science-driven effort that uses voluntary incentives to proactively conserve pollinators and the rural way of life.

Question 2: What are the benefits of participating in the NEPP?

NEPP participants do NOT need to worry that the presence of endangered pollinators on their property could require operational changes. The regulatory predictability remains in place for 25 years provided the producer continues to follow their NEPP Conservation Plan, maintains NRCS pollinator conservation practice(s), and abides by the NEPP Best Management Practices. In other words, if a rusty patched bumble or any of the other species covered in the NEPP is injured or killed, or its habitat degraded significantly, and the injury, death, or degraded habitat is the result of activities carried out in accordance with Best Management Practices (BMPs) and NRCS practice standards, the landowner is protected from liability for that "take".

https://www.nrcs.usda.gov/wps/portal/nrcs/detailfull/me/technical/ecoscience/threat/?cid=nrcseprd1575616

Overall Commitments by 2025

State	Habitat Target	Number of Producers Participating	Integrated Pest Management Target
Maine	2,400 acres	480	300 acres
New Hampshire	1,800 acres	360	No target specified
Vermont	2,400 acres	240	6 acres
Massachusetts	900 acres	60	60 acres
Rhode Island	120 acres	30	No target specified
Connecticut	60 acres	12	No target specified
Total	7,680 acres	1,182	366 acres

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Other Partners and Funding

Other Partners
Soil and Water Conservation Districts
State Wildlife Agencies
Academic Institutions
Research Cooperatives
Private Groups/Entities
Cooperative Extension
NGOs
Commodity Groups - Wild Blueberry Commission of Maine

Funding
Existing EQIP Funding Pools
Maine - Separate State Subaccount/Funding Pool

Photo credits: Tom Kielbasa

NRCS Point of Contacts for NEPP

State	NRCS Contact	Email
Connecticut	Nancy Ferlow	nancy.ferlow@usda.gov
Massachusetts	Tom Akin	thomas.akin@usda.gov
Maine	Jeremy Markuson	jeremy.markuson@usda.gov
New Hampshire	Kelly Boland	kelly.boland@usda.gov
Rhode Island	Gary Casabona	gary.casabona@usda.gov
Vermont	Toby Alexander	toby.alexander@usda.gov

Photo credits: Dan VanWart, Mike Madden, and Jeremy Markuson

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Fernald, Ashton's, Indiscriminate, Variable cuckoo bumble bees

Confusing, Yellow, American bumble bees

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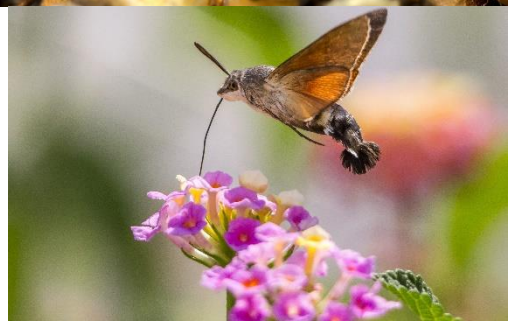
BEE STRONG!



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Endangered species listing

- Rusty patched bumble bee – listed as endangered February 2017

USFWS ESA 7 consultation areas

- Stockton Springs, Maine 2009
- Pleasant Lake, Massachusetts 2009

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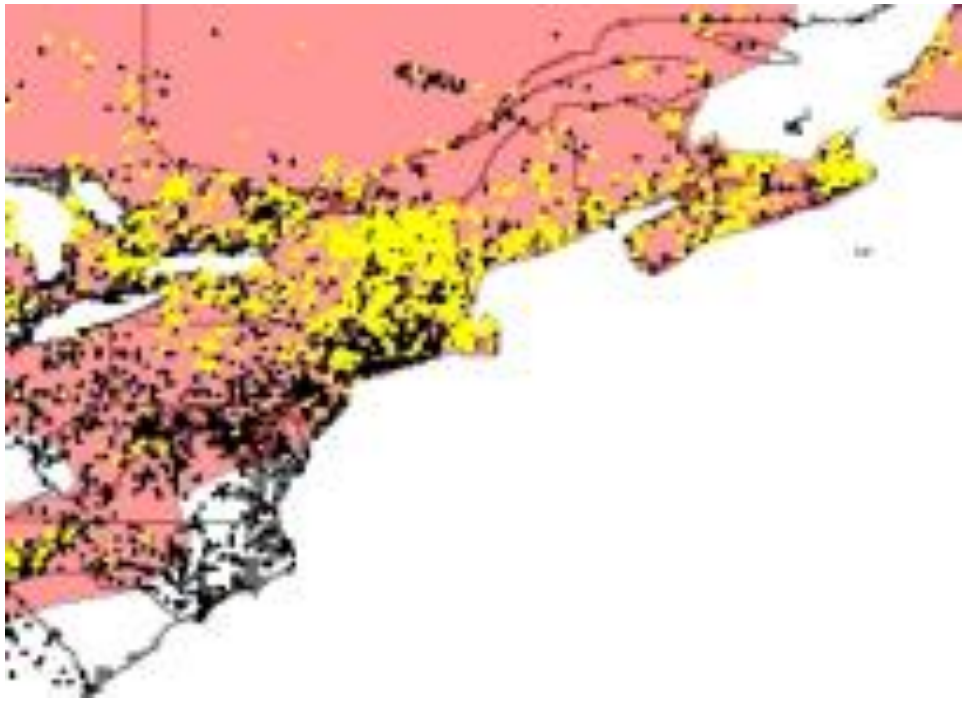
New England Pollinator Partnership

Endangered species listing

- Rusty patched bumble bee – listed as endangered February 2017
- Yellow banded bumble bee - petitioned for listing in 2015; August 2019 listing not warranted



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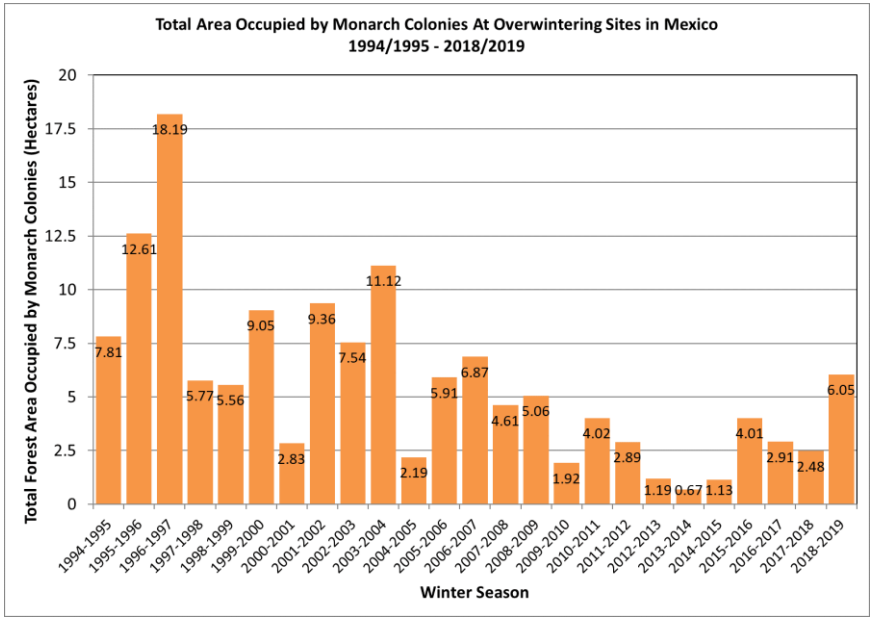
Endangered species listing

- Rusty patched bumble bee – listed as endangered February 2017
- Yellow banded bumble bee - petitioned for listing in 2015; August 2019 listing not warranted
- Monarch butterfly – petitioned for listing in 2014; December 15, 2020 final determination



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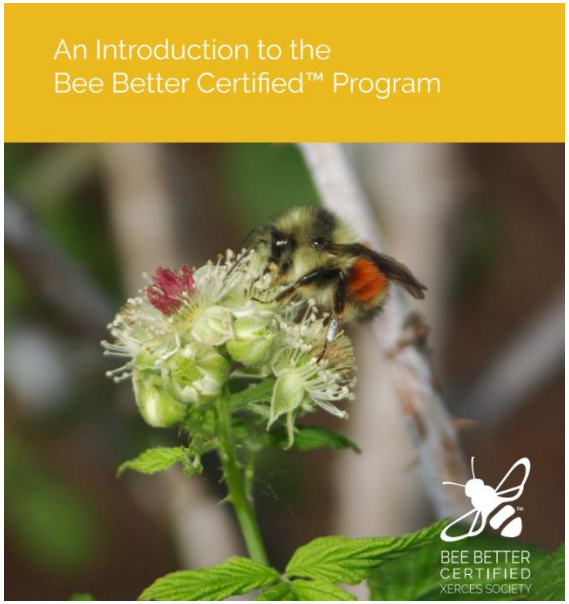
Best Management Practices
https://beebettercertified.org/

- Buffer pollinator habitat from pesticide use
- Apply IPM practice required
- Needed to obtain ESA predictability
- Also cover pollinator habitat site preparation
- Mowing and brush management guidelines
- Pollinator cover crops (e.g., clover)



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In conjunction with your voluntary implementation of conservation practices outlined in the NEPP, the Service is providing you with regulatory predictability under the Endangered Species Act. If any of the species identified in the NEPP is currently listed or is listed in the future, you will be exempt from liability for any incidental take of the species that may be inadvertently caused by the implementation and maintenance of the conservation practices identified in your conservation plan.

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…to receive the incidental take exemption for the 25-year term of this agreement, you are required to implement and maintain the practices and associated conservation measures exactly as detailed in your conservation plan.

NEPP Conservation Practices

NEPP practices are organized into three categories

- **Core:** Prioritized for greatest conservation benefit to target species
- **Supporting:** Mostly used in association with NEPP Core Practices, but can be designed to benefit target species
- **Associated:** May be needed to ensure the effectiveness of NEPP Core and Supporting Practices

Photo: Kelly Gill / The Xerces Society

NEPP Core Practices

One or more Core Practice(s) listed must be included in a client contract to participate in NEPP

- Core Practices provide the greatest conservation benefit to target species
- Range of practices from planting to less intensive options*
- For more information on NEPP Practices see the New England Pollinator Partnership Agreement on the NEPP webpage

Conservation Cover	327
Wildlife Habitat Planting	420
Hedgerow Planting	422
Tree/Shrub Establishment	612
Field Border	386
Upland Wildlife Habitat Mgmt.	645
Early Success. Habitat Dev./Mgmt.	647
Riparian Forest Buffer	391
Wetland Restoration	657
Brush Management	314
Herbaceous Weed Treatment	315
Integrated Pest Mgmt.	595
Pollinator Habitat CAP	146
Fish and Wildlife Habitat CAP	142
Integrated Pest Mgmt. CAP	114

NEPP Supporting Practices

Supporting Practices are generally used in association with NEPP Core Practices

- Supporting Practices provide a conservation benefit if specifically designed to address a wildlife habitat resource concern
- Any of the Supporting Practices listed may be included in NEPP contracts
- For more information on NEPP Practices see the New England Pollinator Partnership Agreement on the NEPP webpage

Cover Crop	340
Windbreak/Shelterbelt	380
Conservation Crop Rotation	328
Contour Buffer Strips	332
Forest Stand Improvement	666
Filter Strip	393
Wetland Enhancement	659
Restoration of Rare or Declining Natural Communities	643
Forage and Biomass Planting	512
Prescribed Grazing	528
Residue and Tillage Management	329
Forestry Management Plan	106
Organic Transition Plan	138

NEPP Associated Practices

Associated Practices may be needed to ensure the effectiveness of NEPP Core and Supporting Practices

- Associated Practices have limited or no value to covered species if used on their own.
- For more information on NEPP Practices see the New England Pollinator Partnership Agreement on the NEPP webpage

Tree/Shrub Site Preparation	490
Mulching	484
Tree/Shrub Pruning	660
Obstruction Removal	500
Access Road	560
Forest Trails and Landings (655)	655

Prioritizing Practices

Core Practices range in level of intensity

- Creating diverse habitat – e.g., meadows, hedgerows, buffers, field borders
- Managing existing habitat – e.g., adjusting mowing regime, forest edge feathering, invasive species control
- Integrated Pest Mgmt. program that includes practices that prevent or reduce pesticide risks to pollinators
- Reducing reliance on commercial bumble bees, managed honey bees

Photo: Kelly Gill / The Xerces Society

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Resources and Tools

NEPP webpage:

- Q&A for participating landowners
- NEPP Agreement
- WHEG (*follow-up webinar topic)
- Promotional flyer
- BMPs

Other:

- Planner Checklists
- Xerces resources www.xerces.org and partner biologists
- USFWS pollinator webpage https://www.fws.gov/pollinators/

Photo: Jennifer Hopwood / The Xerces Society

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Conservation Planning for Pollinators in Rhode Island: Key Points and Lessons Learned

Gary Casabona, State Biologist, NRCS-RI

Photo: Gary Casabona

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In this short presentation, I'll focus mostly on the following:

- **Key points for educating landowners during the planning process**
- **Selection of practices. And things NOT to do while implementing them. Comparison of seeding meadow vs. planting shrubs.**
- **Choosing plant species of value for pollinators and beneficial insects, but also providing resources for SGCN vertebrate species**
- **The importance of learning to identify common plants of interest**

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Emphasize key points to landowners (over and over and over ☺)

- **If the customers lacks proper equipment and/or knowledge, steer them away from meadow creation (327 or 420) and toward 612 Tree/Shrub Establishment. Use Xerces Hedgerow Guide, Migratory Bird Guide or other suitable document for species selection, and consider soil moisture, available sunlight, etc.**

- **Consider choosing plant species that will also benefit New England cottontail and/or declining species of migratory songbirds**

- **For wetland areas, Elderberry is a great choice. Also Jewelweed, Buttonbush, and Swamp milkweed (recent evidence suggests preferred Monarch host plant).**

- **Educate the customer to stop hating Blackberry/Raspberry/Sumac !**

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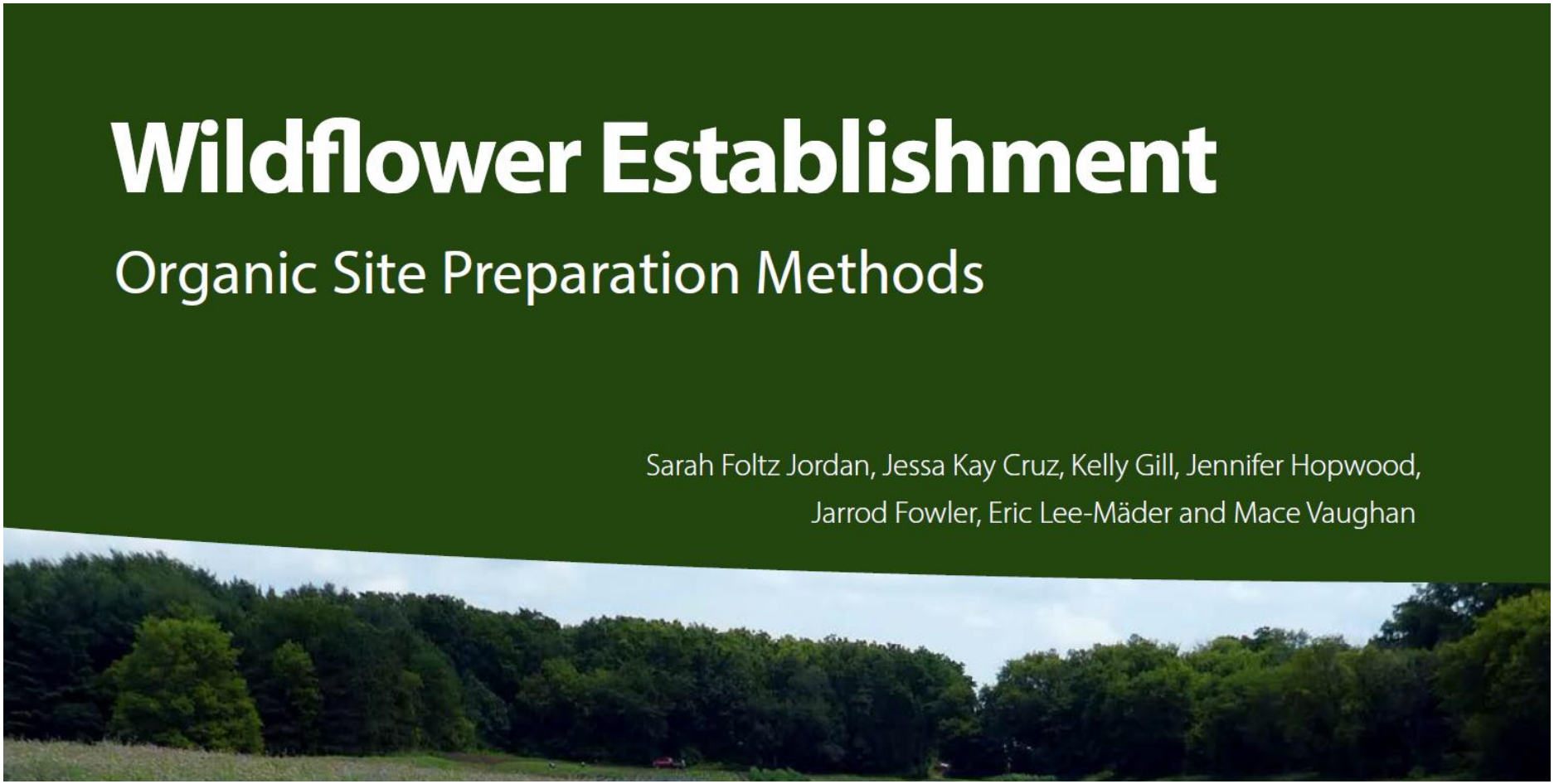
Elderberry not only provides food for pollinators, but it also provides nesting sites for tunnel-nesting bees. They burrow into the twigs to lay their eggs. In addition, the fruits provide food for migratory birds in fall migration.

Emphasize key points to landowners (over and over and over ☺)

- **Native plants are typically suited for nutrient-poor and moisture-poor conditions.**
- **Except in rare situations, you won't need to lime or fertilize – this just makes the site more attractive to invasives. If seeding, don't bury the seeds too deep, just ¼ - ½ inch.**
- **Manage expectations ! It could be a couple of years before the perennial plants are established and flowering. Can consider seeding some sunflowers (self-medication) and other annuals in small amounts for earlier blooms (no additional payment). We typically include some Partridge pea in the mix for floral resources earlier than the perennials.**
- **Don't support cutting down healthy forest to plant a pollinator meadow !!!! Why do so many landowners want to do this ?? !**

Godena Farm, Jamestown RI
Partridge Pea
Annual Legume w Extra-floral nectaries

Site prep is **absolutely critical**. Good seed to soil contact or failure.
We've had some success with buckwheat smother cropping.



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Emphasize key points to landowners (over and over and over ☺)

- **Get NRCS approval before purchasing seed. In RI, I check for native status ("Go Botany" website has BONAP data by county). Can also ensure that grass percent in the mix is not excessive**

- **DON'T BURY THE SEEDS TOO DEEP !!!**

Use chain harrow, chain link fence, or rake. No more than ¼ to ½ inch of soil covering

- **Plan for "fall dormant" seeding for best success. In southern New England, can seed as late as late October / early November. Can include oats for some organic matter. If including oats, seed a bit earlier. They will die back over winter.**

- **Mow, as needed in years 1 and 2 to reduce weeds. After establishment, mow no more than one half of meadow area each year. Never mow lower than 6 inches (I tell them 8 for caution)**

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Hedgerow Planting (422) for Pollinators

Rhode Island

Installation Guide

Arrowwood viburnum (*Viburnum dentatum*). In addition, the fruits provide one of the most nutritious and preferred foods for migratory birds in fall migration.

A. Highly recommended and preferred by migratory songbirds:

Common Name	Scientific Name	Nutrient Content[1]			Antioxidant Properties[2]			
		Fat	Carbs	Energy	Antho.[a]	Vit E[b]	Phenols	TAC[c]
Arrowwood Viburnum	*Viburnum dentatum*	*High	High	High	High	High	High	High
Virginia Creeper	*Parthenocissus quinquefolia*	Med	High	High	Med	Low	High	High
Gray Dogwood	*Cornus racemosa*	High	Med	High	Low	N/A	Med	Low
Silky Dogwood	*Cornus amomum*	Low	High	Med	Med	N/A	Med	Low
Red Osier Dogwood	*Cornus sericea*	*Med	Med	High	Low	N/A	Med	Low

B. Recommended and eaten by many migratory songbirds:

Serviceberry	*Amelanchier spp.*	*Low	High	Med
Common Elderberry	*Sambucus canadensis*	Low	High	Med
Spicebush	*Lindera benzoin*	High	Low	High
Pokeweed	*Phytolacca americana*	Low	High	Low
Flowering Dogwood	*Cornus florida*	Med	Med	High
Chokecherry	*Prunus virginiana*	*Low	High	Low
Highbush Blueberry	*Vaccinium corymbosum*	*Low	High	Low

Antioxidants and Birds

Birds during migration experience oxidative stress when they burn fats to fuel their flights. Fruits with *high antioxidant capacity* can help to alleviate these stresses.

Vitamin E and *phenols in fruits*, especially colored compounds called *anthocyanins* that give fruits their bright purple-maroon coloration, are good dietary sources of antioxidants for birds.

C. Recommended and eaten by a few migratory songbirds and overwintering birds:

Northern Bayberry	*Myrica pennsylvanica*	*High	High	High
Winterberry	*Ilex verticillata*	*Low	High	Med
Black Chokeberry	*Aronia melanocarpa*	Low	High	Med
Mapleleaf Viburnum	*Viburnum acerifolium*	*Low	Low	Med
Nannyberry	*Viburnum lentago*	*Low	Med	Low

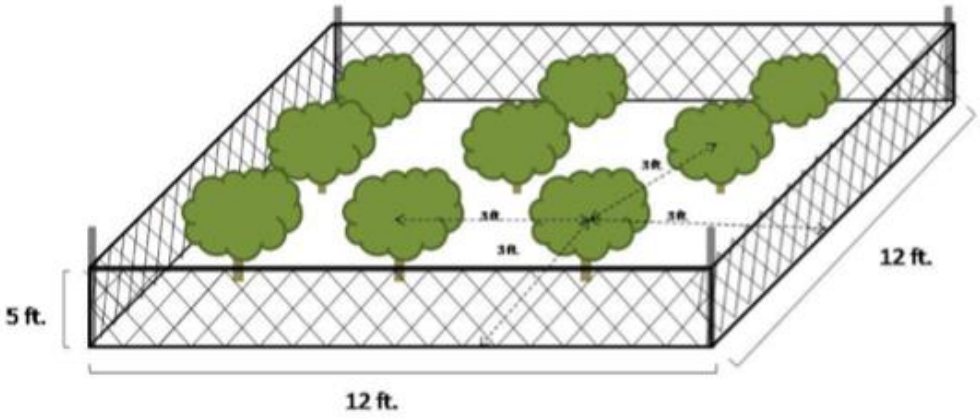
1 Smith, S. B. and S. R. McWilliams. 2015. Rochester, NY: Rochester Institute of Technology and University of Rhode Island.

For Tree/Shrub wildlife benefits, plant close together to maximize cover value

Specifications

Typically shrubs to be established may come from containerized, bare root, rooted cutting, seedling, or direct seeding plant stock.

The preferred method of planting utilizes containerized materials. Plantings should be arranged in groupings of nine trees and/or shrubs within a 6' by 6' area. Each group will be surrounded by a 12' by 12' by 5' wire protective enclosure to minimize browse for a minimum of 3 years or until the plants are of sufficient size and vigor to be able to tolerate browse. Plantings may also be arranged and fenced individually; these must have an enclosure with a minimum diameter of 3'. If creating rows, arrange trees and/or shrubs in the rows so that they are staggered with relation to the plants in adjacent rows.



In addition to the previous methods, live stakes, whips or wattles may be used to establish an area. Live stakes are dormant, live woody cuttings of a species with the branches trimmed off. Stakes 2' in length must be planted by driving a pilot hole in firm soil, planting at a right angle (buds oriented up) with at least two-thirds of the length underground. These should be spaced about 1-2 feet apart on center. Whips are slender, live woody shrub material that is well suited for very moist areas. Whips should be pushed in to the ground as far as they will go without breaking; at least two-thirds should be covered with soil. Whips can be installed either by laying them at an angle or erect in the soil. Wattles, also known as fascines, are living branches bound together in long, tubular bundles. To plant, the material is placed in 6" wide trenches and is covered with soil. Wedge-like dead stakes are used to secure them in place at 2'-3' intervals. Live stakes can also be used in conjunction with wood material to secure the bound vegetation.

Manage for maples and willows, which provide some of the earliest forage for pollinators.

New England aster, New York aster and Meadowsweet (*Spiraea alba*) are good late-season species. Goldenrods also cover the late period and are often already onsite.

Photo: Gary Casabona

647 Early Successional can provide early season maple, willow forage, later blackberry, blueberry and huckleberry. Other flowering shrubs, depending on soils & site.

ASSESSMENTS (WHEG, HEP, HSI, etc.).

Over the years, college curricula have changed and we find a lot of our employees have not had Dendrology, Plant Taxonomy, etc.

Be the person in your office who excels at developing plant identification skills. You will stand out in the crowd !

Learn the species on the Pollinator WHEG, plus other plant species of value to declining wildlife/insect species. Also, when working on farms, know your species that are toxic to livestock (e.g., Black cherry)

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Learn to recognize some of the more common and valuable herbaceous and woody species in your area. Example: typically found in large colonies

Another example typically found in large wetland colonies. Jewelweed:

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In Rhode Island, on old fields and "associated ag lands" you will often find several species of asters and goldenrods blooming into September and even October. All have value. New England aster seems to be especially attractive to pollinators:

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I do see Meadowsweet somewhat commonly in the wild. This is a high value plant for pollinators and is Included in the plant list for the WHEG. *Spiraea alba*.

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I also see Steeplebush somewhat commonly in the wild. This is in the same genus as Meadowsweet. Included in the plant list for the WHEG

Spiraea tomentosa

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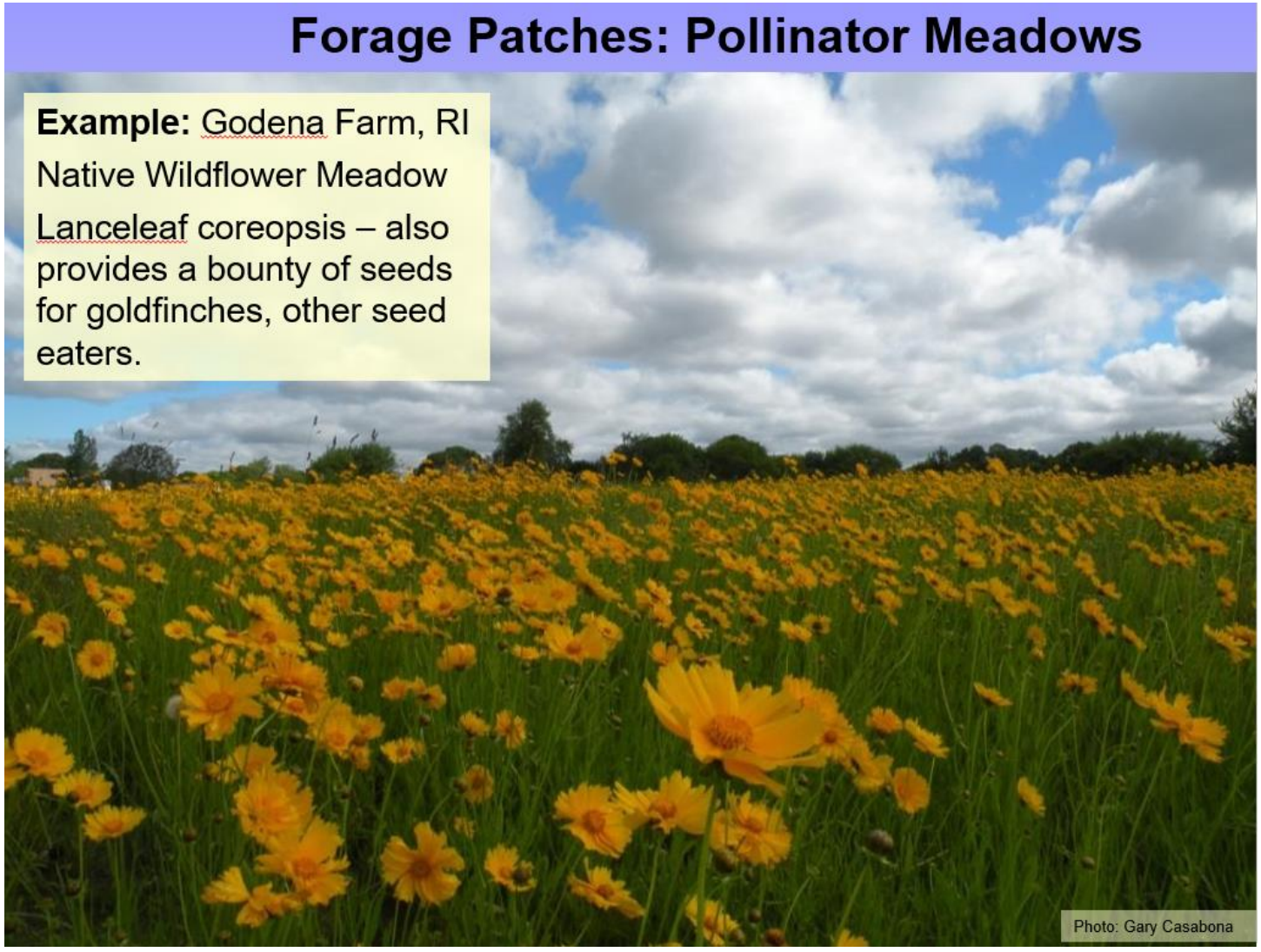
Spotted Joe Pye weed and other Joe Pyes are common in and around wetlands in southern New England. This is a very high value plant for pollinators and is included in the plant list for the WHEG. You'll often see it in wet spots in fields. Leave these areas out of your site prep and seeding. Use this principle to scout for other valuable plants onsite and consider working around them.

Eutrochium maculatum

Don’t associate Milkweeds only with Monarch conservation. They attract many beneficial insects and pollinators.

Bumblebee on Asclepias tuberosa. Photo: Gary Casabona

This species is not native, but is naturalized, has value, and helps to bring down the overall seed cost.



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Newer ideas coming out of research… Chelone glabra, Tilia spp

Recent research open_in_new by scholars at Dartmouth, University of Colorado at Boulder, and North Carolina State University investigated the use of **secondary metabolites** called **iridoid glycosides**–specifically, aucubin and catalpol–use by the native eastern bumble bee, *Bombus impatiens*, infected with *Crithidia bombi*, an intestinal parasite. These parasites shorten the bee's lifespan and limit the productivity of the queens,

http://content.yardmap.org/learn/bees-use-drugs-evidence-of-self-medication/

Thank You!

A shout-out to the following folks that helped make this happen:

Eric Venturini: Executive Directory, Wild Blueberry Commission of Maine
Anna Harris: USFWS Maine Field Office, Project Leader
David Simmons: USFWS New England Field Office, Assistant Supervisor of Endangered Species
Anthony Tur - USFWS Northeast Regional Office, Regional At-Risk Wildlife Coordinator
Richard Gooch - USFWS Region 1, Fish and Wildlife Biologist

Photo credits: Jeremy Markuson and USFWS

QUESTIONS ?

If we don't have time now,
they will be addressed in a follow-up Webinar.

This is a skipper on Marsh vetchling *Lathyrus palustris.* Last week at Barn Island WMA saltmarsh, Connecticut

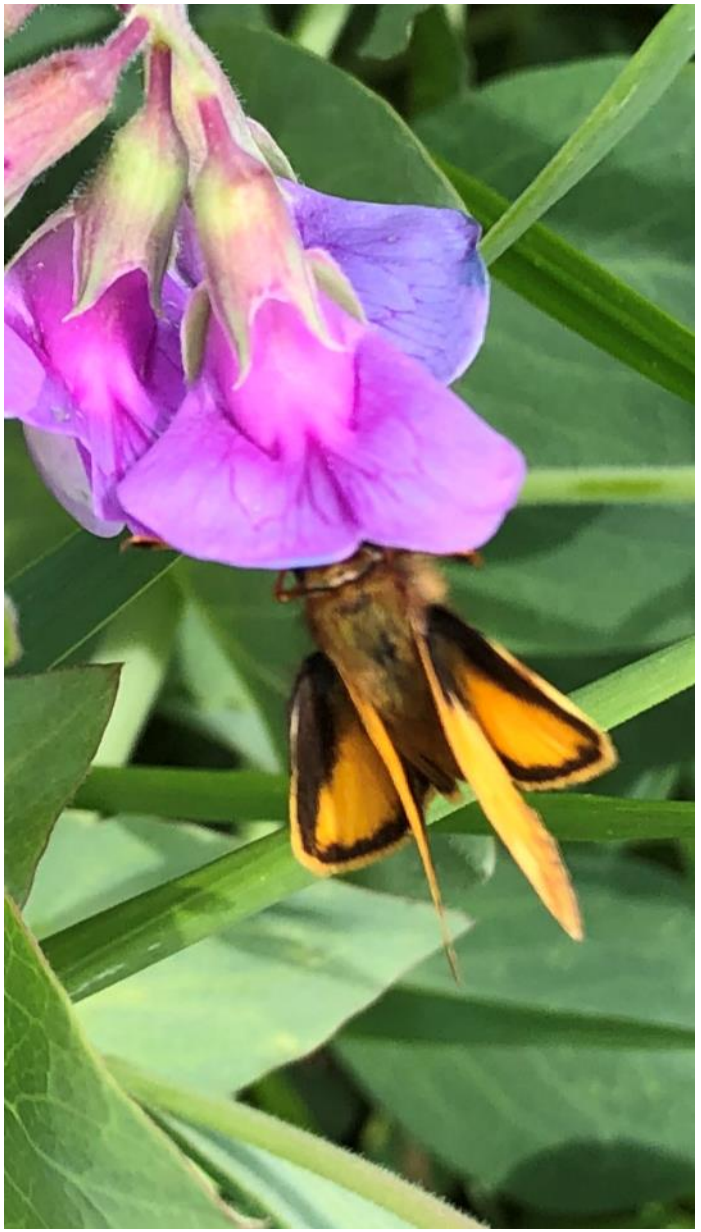

Photo: Gary Casabona