

RIDEM Division of Fish and Wildlife

Native Plants and Pollinators

Gardening for Pollinators

Gardeners are one of the first lines of defense when it comes to wild pollinator conservation! The food and habitat that gardens can provide for our pollinating friends is so important, especially since many pollinating insect populations are unfortunately in decline.



Almost 90% of plants require an animal pollinator to help them reproduce. Pollinators assist plants in their reproduction by carrying pollen from one flower to another in an act called “pollination” which allows the plant to produce seeds and fruits. There are many animals who carry out the ecosystem service of pollination (such as birds, bats, monkeys, and lizards) but most pollinator species are insects.

Animal-pollinated plants account for about 35% of global food production. These crop pollination services are worth up to \$530 billion per year and wild pollinators do it for free! Pollinators are not only vital for supporting our health and our food security, but they are also essential for supporting healthy food webs and the health of the environment. In this way, they help keep our beautiful planet in balance.

Unfortunately, insect pollinators are experiencing global declines, including our North American pollinators. For example, about 30% of North America’s bumblebee populations are in decline and almost 20% of North America’s butterflies are facing extinction. These declines are due to threats such as habitat loss, disease spread, pesticide use, and invasive species. Many of these pressures are a direct result of land use changes caused by increased urbanization and agricultural intensification.

Luckily, there are many actions we can take to protect these insect pollinators and the services that they provide for future generations!



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Creating a Pollinator-Friendly Garden

Gardening for Pollinators

Improving bee nesting habitat

- Consider **mulching with compost or leaves** instead of wood chips to make the ground more accessible for ground-nesting bees
- Plant RI **native plants that have hollow, pithy stems** that cavity-nesting bees can use for nests, such as native raspberries and Joe-Pye weeds
- Plant RI and encourage **native grasses**, such as little bluestem (*Schizachyrium scoparium*) or Indiangrass (*Sorghastrum nutans*), which provide bumblebees with both nesting and overwintering habitat
- **Plant native butterfly host plants**, such as milkweeds, willows, violets, and bluestem grasses
- **Leave piles of twigs, branches, or logs** on your property for cavity-nesting bees, wood-boring bees, and bumblebees
- **Leave the leaves** and dried, perennial stems in the fall to provide cover and protection for overwintering insects by either leaving a thin layer of leaves on your lawn, spreading raked leaves over your vegetable and garden beds, or piling them around ornamental trees and shrubs

Improving pollinator food availability

- Consider growing RI **native flowers, trees, and shrubs** that are visited by bees and other pollinators and **avoiding the cultivars of those species**, which are not as accessible or nutritious for bees
- If you are growing food for yourself or your community, **consider planting RI native food plants** frequented by pollinators, such as summer grape (*Vitis aestivalis*), low and highbush blueberries (*Vaccinium angustifolium* and *Vaccinium corymbosum*), and black cherry trees (*Prunus serotina*)
- **Avoid using weedkillers and insect sprays** in your garden and on your lawn, as these can limit the availability of flowers available for insect pollinators to feed on and/or can poison the nectar and pollen that bees collect, which may kill or impair the bees and their offspring
- **Remove invasive plants** like bittersweet, garlic mustard, and dog-strangling vine, which can outcompete and choke out native plants that are beneficial for pollinators



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Pollinator-Friendly Plants

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To attract a wide diversity of native insect pollinators, it's important to choose native flowers of different colors, shapes, sizes, and bloom times. At least three different flower species should be blooming at any one time from spring until fall to support both early and late emerging insect species. Native grasses are also an important feature of a pollinator garden or meadow, since they can act as host plants for butterflies, as well as provide nesting sites for bumblebees. Before purchasing seeds or plants, check with your nursery to make sure they haven't been treated with pesticides, as this could affect the quality of the nectar and pollen that the insects feed on. Cultivars should also be avoided, as they are not as accessible or nutritious to insect pollinators.

If you're looking for some inspiration, check out these New England native plants!

Common Name	Latin Name	Color	Bloom Time
Virginia Wild Rye	<i>Elymus virginicus</i>	NA	Grass
Little Bluestem	<i>Schizachyrium scoparium</i>	NA	Grass
Big Bluestem	<i>Andropogon gerardi</i>	NA	Grass
Indian Grass	<i>Sorghastrum nutans</i>	NA	Grass
Golden Groundsel	<i>Packera aurea</i>	Yellow	Early
Red Columbine	<i>Aquilegia canadensis</i>	Red	Early
Northeastern/Hairy Beardtongue	<i>Penstemon hirsutus</i>	Purple	Early
Golden Alexander	<i>Zizia aurea</i>	Yellow	Early
Foxglove Beardtongue	<i>Penstemon digitalis</i>	White	Early - Mid
Yellow Wild Indigo	<i>Baptisia tinctoria</i>	Yellow	Early - Mid
Common Milkweed	<i>Asclepias syriaca</i>	Pink	Mid
Butterfly Milkweed	<i>Asclepias tuberosa</i>	Orange	Mid
Common Yarrow	<i>Achillea millefolium</i>	White	Mid
Blue Vervain	<i>Verbena hastata</i>	Purple	Mid
Whorled Mountain Mint	<i>Pycnanthemum verticillatum</i>	White	Mid
Purple Joe-Pye Weed	<i>Eutrochium purpureum</i>	Purple	Mid - Late
Woodland Sunflower	<i>Helianthus divaricatus</i>	Yellow	Mid - Late
Wreath/Blue-stemmed Goldenrod	<i>Solidago caesia</i>	Yellow	Mid - Late
Hyssop-Leaf Thoroughwort	<i>Eupatorium hyssopifolium</i>	White	Mid - Late
Wild Bee-Balm/Wild Bergamot	<i>Monarda fistulosa</i>	Purple	Mid - Late
New England Aster	<i>Aster novae-angliae</i> (<i>Symphotrichum novae-angliae</i>)	Purple	Late
Seaside Goldenrod	<i>Solidago sempervirens</i>	Yellow	Late
Heath American-Aster	<i>Symphotrichum ericoides</i>	White	Late



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Responsible Beekeeping

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This may come as a surprise, but honeybees are actually a livestock species in North America! Managed honeybee colonies were brought over by European colonists in the early 17th century and, while feral populations do exist in the wild today, these bees are not native to North America and remain a primarily managed species. Today, they are used for both large-scale crop pollination and honey production, as well as smaller-scale backyard beekeeping.



The European Honeybee (*Apis mellifera*) became a media star in the early 2000s when beekeepers began reporting unexplained mass die-offs of their colonies. These die-offs are now referred to as Colony Collapse Disorder (CCD), which is thought to have been caused by a combination of parasites, diseases, and pesticide exposure. Luckily, while once thought to pose a major long-term threat to honeybees, reports of CCD have declined substantially over the last five years - which is great news for beekeepers!

As any livestock species, honeybees are kept in large numbers, which leave them prone to diseases and parasites. Unfortunately, these pathogens can also be spread to wild bees, such as bumblebees and solitary bees, who don't have the same support system as honeybees. Additionally, in areas with high populations of honeybees, they can outcompete wild bees for food. Since wild bees are already experiencing declines, this can put unnecessary pressure on their populations. Therefore, if you do keep bees for honey or pollination services, it's important to practice responsible beekeeping to reduce the impact on our wild, native bees. Luckily, there are lots of ways for beekeepers to do this!

- Register your apiary with the RIDEM Division of Agriculture to help track potential disease outbreaks
- Request regular inspections of your hives
- Join a local beekeeping community to stay up to date with the latest protocols on how to monitor and protect your hives from diseases and pests
- Try not to place hives near conservation areas to avoid competition with wild bees
- BONUS! Many of the actions that help support managed honeybees (e.g., planting native flowers and reducing pesticide use) also help conserve wild pollinators!



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Other Resources

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Division of Fish & Wildlife - <https://dem.ri.gov/natural-resources-bureau/fish-wildlife>

- Rhode Island Pollinator Atlas
- Wildlife & You Wildlife Factsheets
 - “Our buzzing neighbors: Living with Wasps”
 - “Wild Bees of Rhode Island”
 - “Butterflies of Rhode Island”
- Critter Kits
 - Pollinator Pals!

Xerces Society for Invertebrate Conservation - <https://www.xerces.org>

- Pollinator Conservation Resource Center
 - Regional plant lists
 - Habitat management
- Learn about Invertebrates
 - Pollinator profiles
 - Wings: Essays on Invertebrate Conservation

URI Native Plant Guide - <https://web.uri.edu/rinativeplants/>

- Search by plant name or species
- Filter by environmental tolerance, wildlife uses, and type
- Find out where to purchase certain species from reputable sellers

iNaturalist - <https://www.inaturalist.org/>

- Online community of naturalists
- Community science platform for recording observations living things
- Creates research-quality community science data
- Helps users identify the plants, animals, and fungi around them!

