Gardening for Biodiversity With Native Plants

Providing habitat for pollinators, birds and other essential wildlife

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Summary of Garden Practices that Support Biodiversity - p1

Planting:

- Plant a minimum of 70% biomass of native plants, grasses, trees and shrubs
- Plant in vertical layers (plants of different heights) and plant densely
- Choose plants to suit your site conditions
- Plan for a variety of native flowers in bloom from spring through fall
- Prioritize keystone plants and plants that support endangered insects

Ecological Lawn care:

- Shrink your lawn to what you use for recreation and walking paths
- Allow flowering plants in the lawn you keep
- Mow every 2-3 weeks; allow grass to get 4” tall

Summary of Garden Practices that Support Biodiversity - p2

Providing habitat:

- Skip fall cleanup to protect overwintering insects.
- Leave plant stems and fallen leaves. (Nature provides safer shelter than bee hotels!)
- Provide dead wood, brush and leaf piles, rocks
- Provide a clean water source - can be a shallow dish with pebbles

Habitat protection:

- Identify and remove invasive plants
- Avoid herbicide, pesticide and chemical fertilizers
- Minimize soil disruption (digging, tilling) to protect soil health
- Minimize night light: use low wattage warm spectrum bulbs (color leans towards warm yellow, not cool blue); keep lights off or change to motion sensors

Native Plant Spreadsheets

Spreadsheets are best viewed on a computer or with a google app

Comprehensive native plant spreadsheet - mostly of the Northeast

https://docs.google.com/spreadsheets/d/1I7kqWQ8l6dDX4cdRrZHvIS5jtF2JFJMQgBmmclL_htY/edit?usp=sharing

Includes plants that are recommended for Northeast gardens, and also plants for meadows and habitat restoration. See tabs at the bottom of the page for herbaceous perennials, shrubs, trees, grasses and sedges, ferns, vines, and for specific growing conditions. Use the links to see pictures and read more detailed descriptions.

Native Plants for Northeast Gardeners - including starter kits

https://docs.google.com/spreadsheets/d/1cVAgtnGEt3IL70Sx8hdUOelaB3JuiUsHGvmWr3_SDk4/edit?usp=sharing

A shorter list of plants suitable for gardens. The kits are suggestions of easy to grow, non aggressive plants organized by growing conditions, for all seasons of bloom, including plants with winter interest. Scroll down to see perennials, grasses and sedges, shrubs and trees, all on the first page. The tree list is short and is appropriate for small gardens. Additional tabs show plants organized by spring, summer and fall bloom. On each of those pages, scroll down to see plants organized by height. See also tabs for compact tidy growth habit, and aggressive spreaders.

New England Native Plants for Containers (not comprehensive)

https://docs.google.com/spreadsheets/d/1AYM5P0MsprvmSr8_m3XO4GHJd_8d_n8prgcOo1NYxdY/edit?usp=sharing

Spreadsheet of plants that support endangered insects in MA

https://docs.google.com/spreadsheets/d/1AIs3Wv4NCRBvO_zWp3D8djS8hXwTLl5ZtwuqBZX-STo/edit?usp=sharing

Sample page of Native Plant Spreadsheet

Latin name	Common name	Bloom time									Bloom color	Height	Spacing	Sunlight			Moisture			Resistant to	Salt tolerant	Tidy growth habit
PERENNIALS		M	A	M	J	J	A	S	O	N				Full	Part	Shade	Moist	Med	Dry			
Achillea millefolium	Common yarrow				J	J	A	S			white/pink	12-18”	6"									
Acorus americanus	Sweet flag			M	J							2 ft										
Actaea rubifolia	Appalachian bugbane						A	S	O		white	30-48"	12- 24"							Deer Rabbit		
Agastache foeniculum	Anise hyssop				J	J	A	S			lavender	3 ft	12-16"							Deer Rabbit		yes
Allium cernuum	Nodding onion					J	J				pink	18"	6"							Deer Rabbit		yes
Allium stellatum	Prairie onion					J	A				purple-pink	14"	4 -8"									
Amorpha canescens	Lead plant				J	J	A				purple	3 ft	1 - 2 ft									
Amsonia hubrichtii	Thread-leaf bluestar		A	M	J						sky bue	3 ft	2 ft							Deer Rabbit		yes
Amsonia tabernaemontana	Eastern bluestar		A	M	J						sky blue	3 ft	2 ft							Deer Rabbit		yes
Anemone canadensis	Canada anemone			M	J						white	1 ft									yes	
Anemone virginiana	Tall thimbleweed				J	J	A				white	3 ft	18-24"									

Native Plant Lists

Keystone plants of New England
https://www.nwf.org/-/media/Documents/PDFs/Garden-for-Wildlife/Keystone-Plants/NWF-GFW-keystone-plant-list-ecoregion-8-eastern-temperate-forests.pdf?sc_lang=en&hash=C475FADDFCC2622C7539F25935F5DAA1

Native Pollinator Plants by Season of Bloom
https://wildseedproject.net/wp-content/uploads/2019/04/Pollinator-Plants-by-Season.pdf

Rugged native plants for replanting after invasive species removal
https://wildseedproject.net/wp-content/uploads/2019/04/Invasives-to-Natives.pdf

Native Plant List by growing conditions
https://wildseedproject.net/comprehensive-plant-list/

Plants to include or exclude from lawns

TO PLANT

Native

- wild Strawberry, *Fragaria virginiana*
- bluets, *Houstonia caerulea*
- common cinquefoil, *Potentilla simplex*

Native and Non-Native

- violets, *Viola sp.*
- heal-all, *Prunella vulgaris*
- hawkweeds, *Hieracium spp.*

ALLOW

Non-Native & Innocuous

- clovers (white, red, hop, rabbit-foot), *Trifolium spp.*
- yellow wood sorrel, *Oxalis stricta*
- common dandelion, *Taraxacum officinale*
- creeping thyme, *Thymus serpyllum*
- Curly dock, *Rumex crispus*
- Plantain, *Plantago spp.*
- Chickweed, *Cerastium spp.*
- Crabgrass, *Digitaria spp.*

REMOVE

Non-Native & Aggressive

- bugleweed, *Ajuga spp.*
- gill-over-the-ground, *Glechoma hederacea*
- birds-foot trefoil, *Lotus corniculatus*

Noxious / Invasive

- sheep sorrel, *Rumex acetosella*
- Creeping thistle (Canada thistle), *Cirsium arvense*
- creeping bellflower, *Campanula rapunculoides*

From Wild Seed Project
https://apcc.org/wp-content/uploads/2022/06/DiversifyYourLawn_Handout_June2022.pdf

About 5% of native plant species feed 75% of insect species

Top **Keystone Plants** of the Northeast

Trees

- Oaks - Quercus
- Cherries - Prunus
- Willows - Salix
- Birches - Betula
- Poplars - Populus
- Elms - Ulmus

Herbaceous plants and shrubs

- Goldenrods - Solidago
- Asters - Symphyotrichum
- Perennial sunflowers - Helianthus
- Blueberries - Vaccinium

Comprehensive list of keystone plants

https://grownativemass.org/sites/default/files/documents/Keystone-Plant-Species-for-Landscape-Use_GNMA-web_2.pdf

What to Look for at Nurseries, in Catalogues, and From Landscapers

- Native plant species, not hybrids or cultivars (with few exceptions)
- Plants grown pesticide free
- Ideally, plants grown from seed
- Beware of marketing hype: “Plants for Pollinators” that don’t specify that plants or seeds are species native to our region
- Tell your nursery (and landscaper) what you want
- Safest to shop at native plant nurseries, but we can educate others
- **Spreadsheet of nurseries with native plants:** https://docs.google.com/spreadsheets/d/1RLPLSbm4l_Ahx72EFCHD2ViN61aM7kTdm6FoJ8M2zGM/edit?usp=sharing
  Note: Second tab shows all-native nurseries

Wing and a Prayer Nursery, Cummington

Habitat information

Nesting and overwintering habitat
https://xerces.org/sites/default/files/publications/18-014.pdf

The right way to leave stems for native bees
https://sites.tufts.edu/pollinators/2021/04/the-right-way-to-leave-stems-for-native-bees/

5 Ways to increase nesting habitat for bees
https://xerces.org/blog/5-ways-to-increase-nesting-habitat-for-bees

More than half of life on earth is found in soil
https://theconversation.com/more-than-half-of-life-on-earth-is-found-in-soil-heres-why-thats-important-211455

Designing a larger area with native plants
https://gardenforwildlife.com/blogs/learning-center/native-plant-landscape-design-how-to-create-the-wildlife-garden-of-your-dreams

Dark Skies International
https://darkskymass.org/about-us/international-dark-skies/

Problems in the Garden

Invasive Plants

Invasive plants in Massachusetts
file:///Users/amymeltzer/Downloads/MAInvasivesBooklet_2023-2.pdf

Common invasive species and how to manage them
https://newfs-society.s3.amazonaws.com/documents/Managing_Common_Invasives_40519.pdf

What to plant after removing invasives
https://wildseedproject.net/2024/02/after-removing-disruptive-invasives-try-planting-these/

Rabbits

How to stop bunnies from eating your pollinator garden
https://sites.tufts.edu/pollinators/2022/06/how-to-stop-bunnies-from-eating-your-pollinator-garden/

Jumping Worms

Staying Ahead of Invasive Jumping Worms - from Native Plant Trust
https://docs.google.com/document/d/1nVeJq8FMoAdNc-49W21XkIszTNpzy_xIfQG2QdtmrWg/edit?usp=sharing

Pollinator Gardens and Bee Stings (not much to worry about!)

https://nativeplantgardener.ca/pollinator-gardens-and-bee-stings/

Impact of honeybees on native bees and plants

We need to talk about honeybees -Xerces Society
https://www.youtube.com/watch?v=_8XMgphEP1M

Why getting a hive won't "Save the Bees"
https://xerces.org/sites/default/files/publications/22-011.pdf

The Truth About Honey Bees
Raising non natives does not "save the bees"—and may harm them.
https://www.nwf.org/Home/Magazines/National-Wildlife/2021/June-July/Gardening/Honey-Bees

Honeybees disrupt the structure and functionality of plant-pollinator networks
https://www.nature.com/articles/s41598-019-41271-5

The Problem with Honey Bees
They're important for agriculture, but they're not so good for the environment
https://www.scientificamerican.com/article/the-problem-with-honey-bees/

Plants Pollinated by Honey Bees Produce Lower-quality Offspring
https://today.ucsd.edu/story/plants-pollinated-by-honey-bees-produce-lower-quality-offspring?_ga=2.240226432.209776918.1688047624-2003186901.1688047624

Island-wide removal of honeybees reveals exploitative trophic competition with strongly declining wild bee populations High densities of managed honeybees (*Apis mellifera*) can threaten wild bees through exploitative competition, thus leading to population declines of the latter
https://www.cell.com/current-biology/fulltext/S0960-9822(25)00262-3

Where to Do Native Plant Research

Native Plant Trust Plant Finder
https://plantfinder.nativeplanttrust.org/Plant-Search
Excellent search tool. Experiment with how many variables you enter.

Prairie Moon Nursery https://www.prairiemoon.com/
Excellent for looking up plants. Get pictures, descriptions, cultural info, native geographical location, ecological benefits. Great search terms.

Ladybird Johnson Wildflower Center
https://www.wildflower.org/
Good photos and descriptions, cultural requirements. Prairie Moon is more accurate for bloom time in our location.

Organizations and Websites - Local

Local organizations for education, resources & community

Massachusetts Pollinator Network https://masspollinatornetwork.org/
Central hub of communication and education for MA pollinator groups

Grow Native Massachusetts https://www.grownativemass.org/
Comprehensive, informative website; newsletter; speaker series; annual native plant sale

Pollinator Pathways - Massachusetts https://www.pollinator-pathway.org/towns-1/massachusetts
Guidance for creating connected pollinator habitat in your town; website with good resources

Native Plant Trust https://www.nativeplanttrust.org/
Educational programs; native plant nurseries; garden plant finder online tool;
beautiful habitat to visit

Wild Seed Project https://wildseedproject.net/
Located in Maine. Education, resources for planting native plants.

Organizations and Websites - National

National organizations with useful resources for native plant gardening

Audubon Society - https://www.audubon.org/native-plants

Homegrown National Park - https://homegrownnationalpark.org/

Doug Tallamy's educational website for creating pollinator pathways with private gardens

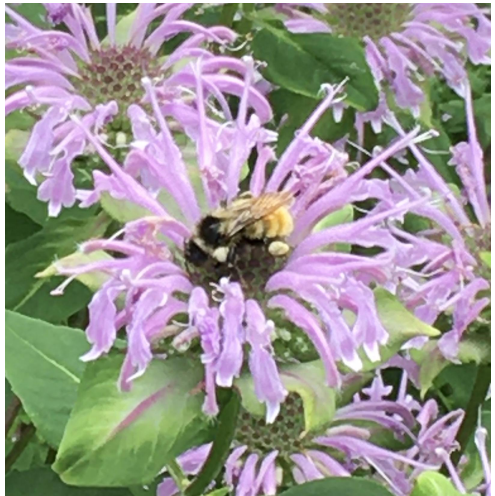
Wild Ones https://wildones.org/

Wild Ones promotes native landscapes through education, advocacy, and collaborative action

National Wildlife Federation - https://www.nwf.org/nativeplantfinder/

Native plants by zip code

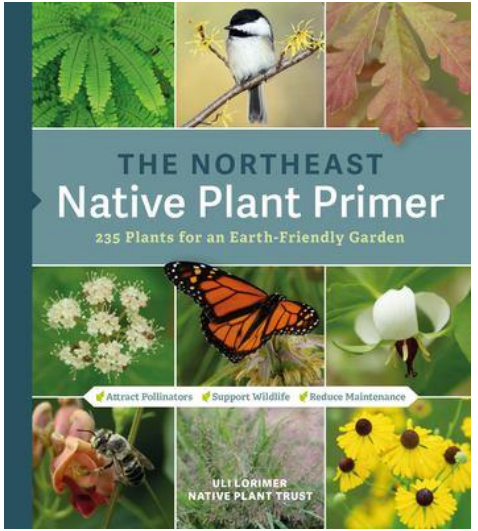
Xerces Society - https://xerces.org/



Newsletters: Native Plants and Healthy Habitats

- **Grow Native Massachusetts** https://grownativemass.org/Join-Support/e-news
- **MA Pollinator Network** https://masspollinatornetwork.dreamhosters.com/newsletter/
- **Lexington Living Landscapes** www.lexingtonlivinglandscapes.org
- **Rebecca McMackin** https://www.rebeccamcmackin.com/newsletter
- **Margaret Roach** https://awaytogarden.com/about/about-my-email-newsletter/

Books



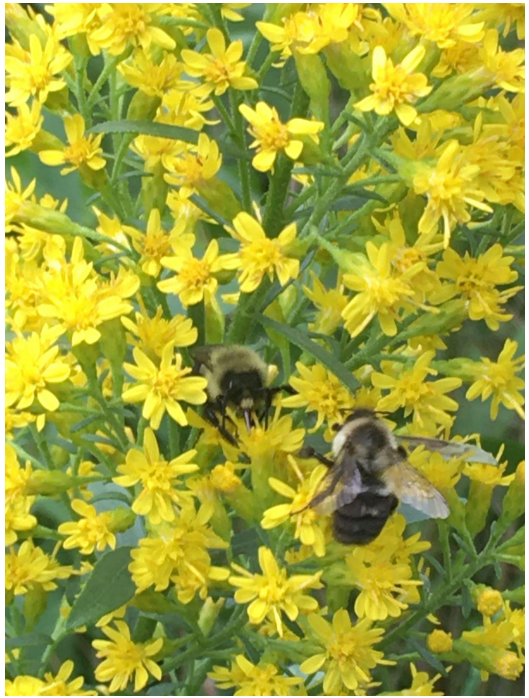
Local native plant guides:

Uli Lorimer - The Northeast Native Plant Primer - Native Plant Trust
Dan Jaffe - Native Plants for New England Gardens - Native Plant Trust
Wild Seed Project Guide - Native Trees for Northeast Landscapes
Wild Seed Project Guide - Native Ground Covers for Northeast Landscapes
Wild Seed Project Guide - Native Shrubs for Northeast Landscapes
Wild Seed Project Guide - Planting for Climate Resilience in Northeast Landscapes
Wild Seed Project Guide - Gardening for Biodiversity

Some how-to books

Kim Eierman - The Pollinator Victory Garden
Owen Wormser - Lawns into Meadows
Sue Reed - Climate-Wise Landscaping: Practical Actions for a Sustainable Future
Sarah Jayne - Nature's Action Guide: How to Support Biodiversity and Your Local Ecosystem

Inspiring books on the research and principles of using native plants and trees

Dave Goulson - Silent Earth
Doug Tallamy - Bringing Nature Home
Doug Tallamy - Nature’s Best Hope
Groundbreaking researcher on the crucial connections between native plants/trees, insects and birds
Suzanne Simard - Finding the Mother Tree
Autobiographical, as well as covering her fascinating research on mycorrhizal/tree relationships.

Enjoy the wildlife
you welcome
to your healthy habitat!