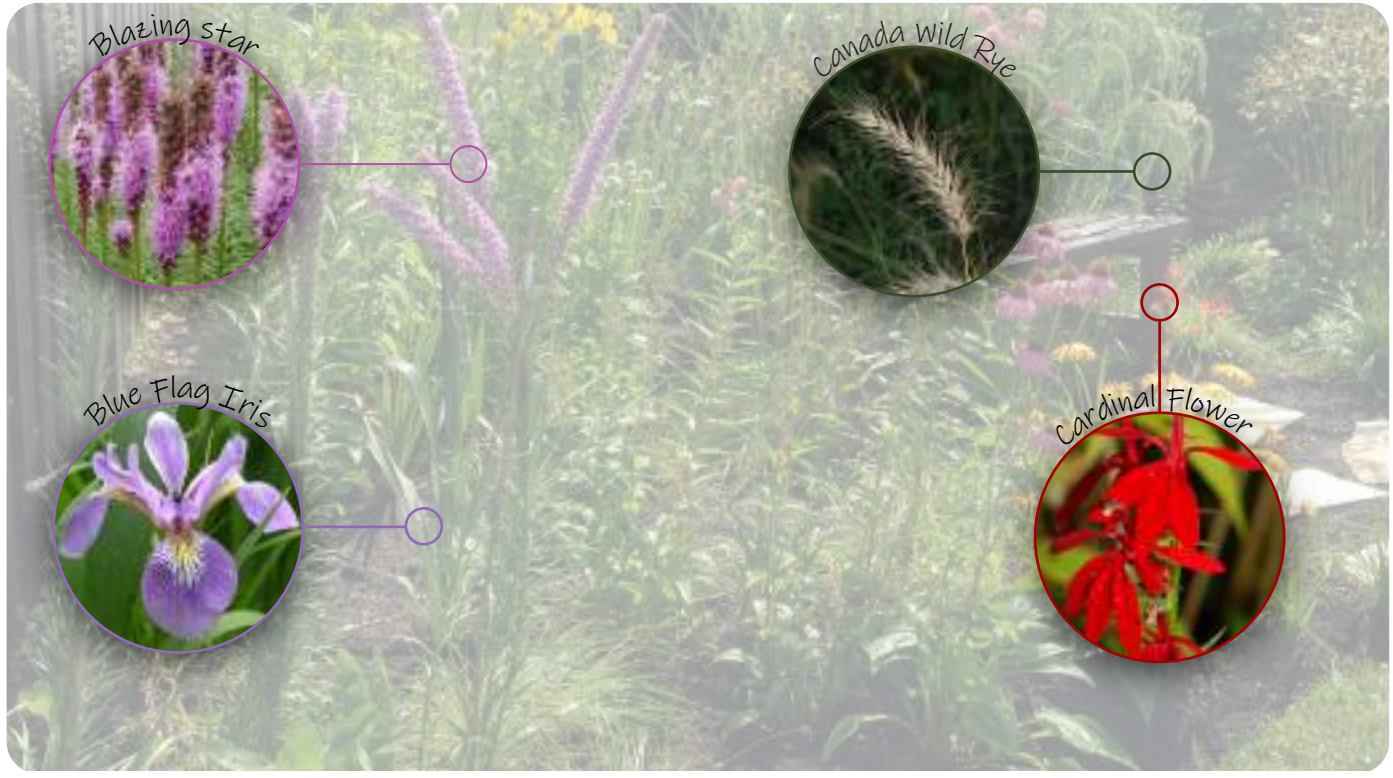
# Gardening with climate-smart native plants in the Northeast




Northeast RISCC Management — Regional Invasive Species & Climate Change

UMass Extension | NECASC | NYISRI

## Definitions

**USDA Plant Hardiness Zone:** Zones based on minimum temperature that are used to determine where plants can grow.

**Non-native:** A species unlikely to have arrived without human assistance.

**Invasive:** A species that is established and spreading with negative impacts to native species and ecosystems.

**Climate-smart gardening:** Planting for present and future conditions using native species adapted to both current and future hardiness zones.

**Learn more about invasive species & climate change at: people.umass.edu/riscc**

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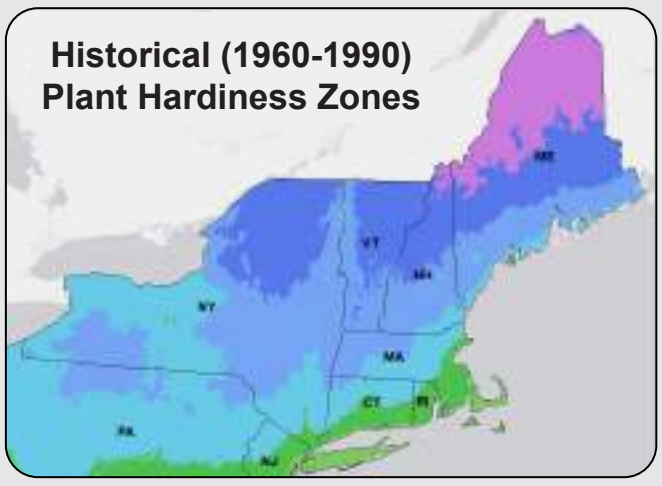
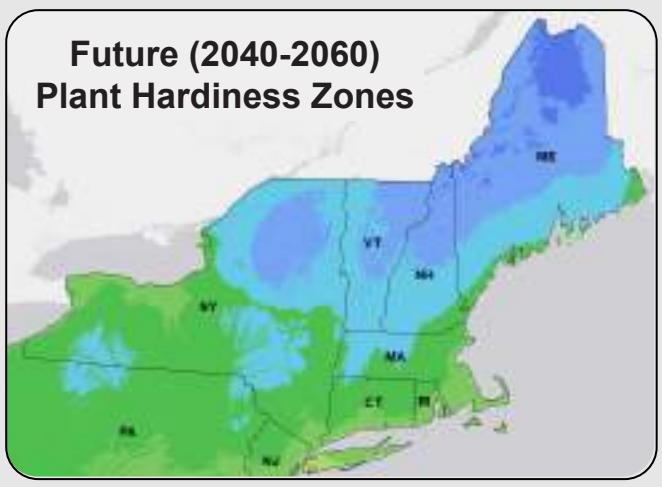
## Climate-Smart Gardening

Rapidly warming temperatures mean that native species will have to move hundreds of miles in coming decades just to keep up. Our gardens can help native species shift their ranges and adapt to climate change. Native plantings today seed ecosystems of the future.

**Historical (1960-1990) Plant Hardiness Zones**



**Future (2040-2060) Plant Hardiness Zones**



**Average Annual Minimum Temperature (°F)**

| | | | | | |
|---|---|---|---|---|---|
| -40° to -35° | 3a | -20° to -15° | 5a | 0° to 5° | 7a |
| -35° to -30° | 3b | -15° to -10° | 5b | 5° to 10° | 7b |
| -30° to -25° | 4a | -10° to -5° | 6a | 10° to 15° | 8a |
| -25° to -20° | 4b | -5° to 0° | 6b | 15° to 20° | 8b |

## Why Native?

An estimated 80% of ornamental plants for sale are non-native. This means that the average yard does a poor job of supporting native flora and fauna. By shifting our plantings towards natives, we can dramatically increase the diversity of bees, butterflies, birds and other animals. In contrast, non-native plants do not support local food webs and can become invasive. Native plants increase biodiversity and reduce risks associated with invasive species, which supports resilient ecosystems in the face of climate change. **Look inside for some ideas!**

### Benefits of Native Plants

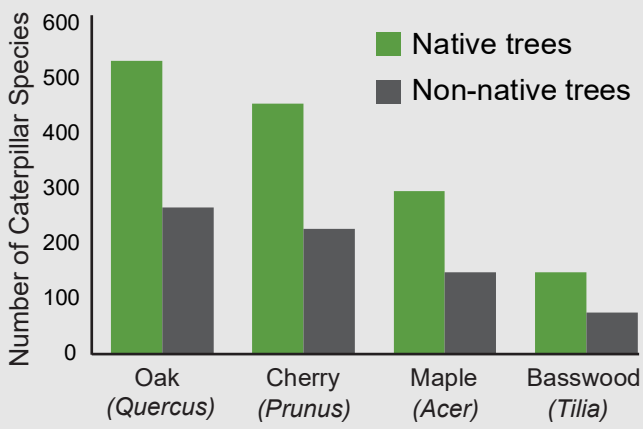
**50%** higher abundance of **native birds**

**9x** higher abundance of **rare birds**

**3x** more **butterfly species**

**2x** higher abundance of **native bees**

Native trees support **twice** the caterpillar diversity of related non-native trees




More caterpillars in your yard might sound alarming, but most are eaten by nesting birds, and many later become butterflies.

### Costs of Non-native Plants

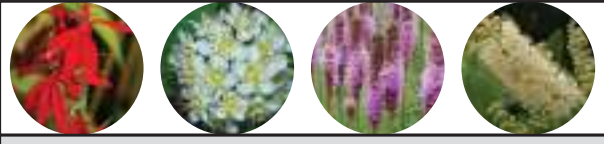
Non-native plants are **40x more likely to become invasive** than native garden plants.

Invasive plants **cost the U.S. an estimated $20 billion per year** to manage and control.

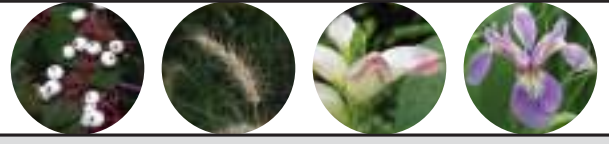

Invasive Japanese barberry supports **3x more deer ticks**, which carry Lyme disease.

**Common plantings that have become invasive and should be replaced:**


For a full list, contact your state's extension program



# Climate-smart native plants



| | Species | Growth Form | Hardiness Zones | Planting Conditions | Benefits |
|---|---|---|---|---|---|
| Native Grasses | Big blue stem (*Andropogon gerardii*) | Grass | 4-9 | | |
| | Canada wild rye (*Elymus canadensis*) | Grass | 3-8 | | |
| | Indian grass (*Sorghastrum nutans*) | Grass | 4-9 | | |
| | Little bluestem (*Schizachyrium scoparium*) | Grass | 3-9 | | |
| | Sideoats grama (*Bouteloua curtipendula*) | Grass | 4-9 | | |
| Native Flowering Herbs | Beardtongue (*Penstemon digitalis*) | Herb | 3-8 | | |
| | Blazing star (*Liatris spicata*) | Herb | 3-8 | | |
| | Blue false indigo (*Baptisia australis*) | Herb | 3-9 | | |
| | Blue flag iris (*Iris versicolor*) | Herb | 3-9 | | |
| | Blue lobelia (*Lobelia siphilitica*) | Herb | 4-9 | | |
| | Butterfly weed (*Asclepias tuberosa*) | Herb | 3-9 | | |
| | Cardinal flower (*Lobelia cardinalis*) | Herb | 3-9 | | |
| | Foam flower (*Tiarella cordifolia*) | Herb | 4-9 | | |
| | Ironweed (*Vernonia noveboracensis*) | Herb | 5-9 | | |
| | Joe pye weed (*Eutrochium fistulosum*) | Herb | 4-8 | | |
| | Lance leaf coreopsis (*Coreopsis lanceolata*) | Herb | 4-9 | | |
| | Monkey flower (*Mimulus ringens*) | Herb | 4-9 | | |
| | New England aster (*Symphyotrichum novae-angliae*) | Herb | 4-8 | | |
| | Obedient plant (*Physostegia virginiana*) | Herb | 3-9 | | |
| | White turtlehead (*Chelone glabra*) | Herb | 3-8 | | |
| Native Shrubs | American hazelnut (*Corylus americana*) | Shrub | 4-9 | | |
| | Buttonbush (*Cephalanthus occidentalis*) | Shrub | 5-9 | | |
| | Coastal sweet-pepperbush (*Clethra alnifolia*) | Shrub | 3-9 | | |
| | Deerberry (*Vaccinium stamineum*) | Shrub | 5-9 | | |
| | Eastern wahoo (*Euonymus atropurpureus*) | Shrub | 3-7 | | |
| | Highbush blueberry (*Vaccinium corymbosum*) | Shrub | 4-8 | | |
| | Mountain laurel (*Kalmia latifolia*) | Shrub | 4-9 | | |
| | Nannyberry viburnum (*Viburnum lentago*) | Shrub | 2-8 | | |
| | Ninebark (*Physocarpus opulifolius*) | Shrub | 2-8 | | |
| | Northern bush honeysuckle (*Diervilla lonicera*) | Shrub | 3-7 | | |
| | Northern spicebush (*Lindera benzoin*) | Shrub | 4-9 | | |
| Native Trees | American hornbeam (*Carpinus caroliniana*) | Tree (small) | 3-9 | | |
| | Bladdernut (*Staphylea trifoliata*) | Tree (small) | 4-8 | | |
| | Gray dogwood (*Cornus racemosa*) | Tree (small) | 4-8 | | |
| | Pussy willow (*Salix discolor*) | Tree (small) | 4-8 | | |
| | Serviceberry (*Amelanchier canadensis*) | Tree (small) | 4-8 | | |
| | Striped maple (*Acer pennsylvanicum*) | Tree (small) | 3-7 | | |
| | Witch-hazel (*Hamamelis virginiana*) | Tree (small) | 3-8 | | |
| | Hophornbeam (*Ostrya virginiana*) | Tree | 3-9 | | |
| | Kentucky coffeetree (*Gymnocladus dioica*) | Tree | 3-8 | | |
| | Persimmon (*Diospyros virginiana*) | Tree | 4-9 | | |

**KEY:**

Dry · Medium · Wet

Part shade · Full sun

Supports pollinators · Supports birds

Showy flowers · Showy/edible fruit

Low maintenance · Deer resistant