Keystone Plants

Keystone plants are native species that provide essential ecosystem services. In the U.S., under 14% of plant genera support over 90% of lepidoptera, which form the base of our food web. 96% of terrestrial birds rely on insects that feed on these plants. Keystone plants are defined by the local ecosystem, which varies by ecoregions, including the Eastern Great Lakes Lowlands, Low Lime Drift Plains, and Erie Gorges.

Some keystone plants are entire genera, like ***Coreopsis***, where all species in the genus have keystone value in our region. Others are specific species within a genus, such as ***Quercus*** (oaks), which are keystone in 84% of U.S. counties.

For a healthy ecosystem, it's crucial to plant a variety of species

- Many insects are plant specialists and need specific plants to survive. For example, monarch butterflies require regionally appropriate milkweed species.
- Monocultures pose risks, as they lack the biodiversity necessary to support a full range of species.
- Variety is always recommended. A diverse selection ensures a healthier, more resilient garden ecosystem.

Recommended Keystone Trees

Quercus (Oaks): Oaks feed over 500 species of lepidoptera and host a wide variety of insects and animals. Recommended species include:

- ***Quercus alba*** (White Oak)
- ***Quercus velutina*** (Black Oak) Dry, sandy, or rocky soils
- ***Quercus bicolor*** (Swamp White Oak) Thrives in moist to wet soils
- ***Quercus macrocarpa*** (Bur Oak) Very adaptable
- ***Quercus palustris*** (Pin Oak) Naturally found in wet bottomlands

Prunus (Cherries).....: Hosts 400+ species of insects, including caterpillars.

- ***Prunus serotina*** (Black Cherry)
- ***Prunus pensylvanica*** (Pin Cherry)
- ***Prunus virginiana*** (Chokecherry) Very adaptable
- ***Prunus americana*** (American plum) suckering

Other Keystone Trees:

Acer (Maple) Hosts over 250 species of insects, including moths and aphids

- ***Acer rubra*** (Red Maple) Prefers moist to wet soils
- ***Acer saccharinum*** (Silver Maple) Prefers moist to wet soils
- ***Acer saccharum*** (Sugar Maple) Not drought tolerant

Betula (Birch) Genus hosts over 200 species of insects

- ***Betula alleghaniensis*** (Yellow Birch)
- ***Betula nigra*** (River Birch) Excellent in wet soils
- ***Populus deltoides*** (Eastern Cottonwood) Thrives in moist to wet soils

Carya (Hickory) Hosts ~ 200 various insects, including caterpillars and beetles.

- ***Carya cordiformis*** (Bitternut Hickory) Dry, upland soils
- ***Carya glabra*** (Pignut Hickory)
- ***Carya tomentosa*** (Mockernut Hickory)

Pinus (Pine) Hosts numerous insect species, including pine sawflies and moths.

- ***Pinus strobus*** (Eastern White Pine)
- ***Pinus rigida*** (Pitch Pine) Very drought-tolerant

Nyssa sylvatica — Black gum, tupelo

Recommended Keystone Shrubs

- ***Vaccinium corymbosum*** (Highbush Blueberry): Hosts various insect species, including bees and caterpillars. Provides food for birds. Needs low pH (4-5.5)
- ***Salix discolor*** (pussy willow) early bloom for pollinators

Other Native Shrubs

Many native shrubs excel in our region, supporting a variety of insects.

Small Shrubs (2–5 feet)

Low-growing, mound-forming plants perfect for borders, low hedges, and understory layers.

- ***Aronia melanocarpa*** – Black Chokeberry; 1–3 ft (dwarf) to 6 ft (full size)
- ***Callicarpa americana*** – American Beautyberry; 3–6 ft; showy fruit, attracts birds
- ***Diervilla lonicera*** – Bush Honeysuckle; 2–3 ft; pollinator-friendly, drought-tolerant
- ***Hamamelis virginiana*** – Witch Hazel; ~5–8 ft in shrub form; fall bloomer
- ***Hypericum spp***. – St. John's Wort; 2–4 ft; sunny, dry sites
- ***Ilex glabra*** – Inkberry Holly; 3–4 ft (compact forms); evergreen
- ***Leucothoe fontanesiana*** – Drooping Leucothoe; 2–3 ft; evergreen, moist shade
- ***Potentilla fruticosa*** — Shrubby Cinquefoil

Medium Shrubs (4–8 feet)

Great for hedges, mid-layer screens, or mixed native borders with strong ecological value.

- ***Aesculus parviflora*** – Bottlebrush Buckeye; 6–12 ft; large, summer-flowering
- ***Aronia arbutifolia*** – Red Chokeberry; 6–8 ft; great berries and fall color

- ***Calycanthus floridus*** – Carolina Allspice / Sweetshrub; 6–8 ft; fragrant flowers
- ***Cornus amomum / obliqua*** – Silky Dogwood; 6–10 ft; tolerant of wet sites
- ***Cornus racemosa*** – Gray Dogwood; 6–10 ft; thicket-forming, bird-friendly
- ***Cornus sericea*** – Red Twig Dogwood; 6–9 ft; red winter stems, wet soil tolerant
- ***Itea virginica*** – Virginia Sweetspire; 4–6 ft; fragrant, excellent fall color
- ***Lindera benzoin*** – Spicebush; 4–6 ft; early bloomer, spicebush swallowtail host
- ***Physocarpus opulifolius*** – Ninebark; 6–8 ft; tough, exfoliating bark
- ***Rhododendron spp***. (native azaleas); 4–8 ft depending on species; spring bloomers
- ***Viburnum dentatum*** – 6–12 ft; excellent wildlife habitat

Recommended Keystone Forbs

Attracts and hosts various pollinators

- ***Coreopsis lanceolata*** (Lanceleaf Coreopsis)
- ***Coreopsis grandiflora*** (Large-flower Coreopsis)
- ***Helianthus*** (Sunflowers):
- ***Helianthus divaricatus*** (Woodland Sunflower)
- ***Helianthus microcephalus*** (Small Woodland Sunflower)
- ***Rudbeckia fulva*** (Orange Coneflower)
- ***Rudbeckia hirta*** (Black-eyed Susan)
- ***Rudbeckia laciniata*** (Green-headed Coneflower)

Solidago (Goldenrods):

- All species of goldenrod support numerous insect species, including bees, butterflies, and caterpillars, particularly around 100 species of lepidoptera. They provide nectar and habitat for pollinators from August to November.

***Solidago* for sun**

- ***Solidago juncea*** — Early Goldenrod
- ***Solidago speciosa*** — Showy Goldenrod
- ***Solidago rugosa*** — Rough or Wrinkle Leaf Goldenrod
- ***Solidago nemoralis*** — Grey Goldenrod

***Solidago* for shade**

- ***Solidago bicolor*** — Silverrod
- ***Solidago flexicaulus*** — Zigzag Goldenrod
- ***Solidago casea*** — Blue-stemmed Goldenrod

Asters

- ***Symphiotrichum cordifolium*** (Blue Wood Aster or Heartleaf Aster
- ***Symphiotrichum laeve*** (Smooth Aster)
- ***Symphiotrichum laterifolium*** (Calico Aster)
- ***Symphiotrichum novi-belgi*** (New York Aster
- ***Symphiotrichumnovae angilae*** (New England Aster)