

## Notes on Selecting Plants for your Pollinator Patch (Kavassalis 2018)

**Think about the goals** for your Pollinator Patch. Plants should suit local conditions, support healthy ecosystems, positively impact your neighbours and community, while fitting your budget.<sup>1</sup>

**Layer flowering plants, grasses, shrubs and trees** to provide pollinators with both food and habitat.<sup>2</sup>

**Bees need pollen sources, nectar sources, shelter and nesting habitat.** Plants must flower at the right time (phenology) to support their life cycle.<sup>3</sup>

**Pollen is rich in protein but not all is edible and pollinators have preferences.** Some are specialists and can feed on a few restricted species (like monarchs). Diversity is key to meeting diverse needs, though specialty gardens can be created tailored to oligolectic species.<sup>4</sup>

**Pollinators must be provided nesting habitat and resources if they are to survive.** They may nest in the foliage or stems of plants, in wood or in cracks in stone or in soil. Natural sites are best but constructed nests may help.<sup>5</sup>

### Flower choice<sup>6</sup>

- Bees - Bright colours (except red which bees cannot see)
- Butterflies - Bright colours including red with faint sweet scents and a landing pad
- Moths - Night blooming flowers (typically white) with strong, thick sweet smells
- Flies - All of the above plus flowers with the odour and colour of rotting fruit or dung
- Beetles - Strongly fruity white or green flowers

Some pollinators migrate great distances, while others are locally constrained. Even those that move short distances may belong to a species that is widely distributed and adaptable to diverse food sources. The recommendation from experts is to: **“Plant a variety of plants, biased towards native and near-native species with a selection of exotics to extend the flowering season.”**<sup>7</sup>

**Native species** are part of ecosystems, which has developed in a given area over a long period of time. **Nativars** are naturally occurring variations, selections or hybrids of local species that may have beneficial attributes. An **aggressive invasive plant** that disrupts ecosystems is an unwanted addition to any garden. What is desired in one region may not be appropriate for another. **Be cautious when using plant lists** as many have not been evaluated or may not be regionally or site suitable. **Research shows that pollinators generally prefer native species to native cultivars or non-native species.**

### David Suzuki Foundation List<sup>8</sup>

**Early Season:** blueberry, crabapple, cranberry, crocus, foxglove, heliotrope, hazelnut, heather, primrose, willow

**Mid-Season:** blackberry, catnip, chives, dahlia, hyssop, lavender, raspberry, sunflower, yarrow

**Late Season:** aster (perennial), borage, coneflower, cornflower, cosmos, goldenrod, pumpkin, sedum, squash

**This is a national list with many exotics.**

### University of Michigan Study<sup>9,10</sup> (H=Halton; U=Uncommon; R=Rare)

**Early Season:** Strawberry, *Fragaria virginiana* (H), Golden Alexander, *Zizia aurea* (H), Penstemon, *Penstemon hirsutus* (H), Lanceleaf coreopsis, *Coreopsis lanceolata* Shrubby cinquefoil, *Dasiphora fruticosa*, Dogbane, *Apocynum cannabinum* (UH).

**Mid-Season:** Prairie rose, *Rosa setigera*, Figwort, *Scrophularia marilandica* (UH), Hoary vervain, *Verbena stricta*, Swamp milkweed, *Asclepias incarnata* (H), Culver's root, *Veronicastrum virginicum* Gray headed coneflower, *Ratibida pinnata* Lead plant, *Amorpha canescens* Nodding onion, *Allium cernuum*, Meadowsweet, *Spiraea alba* (H).

**Late Season:** Yellow Giant Hyssop, *Agastache nepetoides* (RH), Spotted Bee Balk, *Monarda punctata*, Missouri Ironweed, *Vernonia missurica*, Cup Plant, *Silphium perfoliatum*, Boneset, *Eupatorium perfoliatum* (H), Great Lobelia, *Lobelia siphilitica* (H), Woodland sunflower, *Helianthus strumosus*, Hairy bush clover, *Lespedeza hirta* (RH) Rough blazing star, *Liatris aspera*. Riddell's Goldenrod, *Oligoneuron riddellii* Showy goldenrod, *Solidago speciosa*, New England Aster, *Symphyotrichum novae-angliae* (H), Smooth blue aster *Symphyotrichum laeve* (UH)

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**Most cultivars of native species are less attractive to pollinators, though there are exceptions**, e.g. Culver's Root - *Veronicastrum virginicum* 'Lavendelturm', *Phlox paniculata*: 'Jeana'; 'Dick Weaver' 'Delta Snow' 'Lavelle' 'Robert Poore.' Exotics and annuals that are long blooming can provide beauty and pollinator support when nothing else is available. Recommended species include: Bighead knapweed *Centaurea macrocephala* Dahlia (open types like 'Bishop of York,' 'Esther,' or 'Bishop of Llanda'), Mexican sunflower *Tithonia rotundifolia*.

Doug Tallamy has ranked the **best trees for moths and butterflies** as: Oak, Cherry, Willow, Birch, Poplar, Crabapple, Blueberry, Maple, Alder, Hickory, Elm, Pine, Hawthorn, Blackberry, Spruce, Ash, Basswood...<sup>11,12,13</sup>

**Grasses and sedges can form an important matrix for your pollinator garden.** They provide, shelter, protection from predators and for some pollinators food. There are 67 grasses and 83 sedges native to Halton. Only a few have been evaluated for garden use and few are commercially available. Attractive native grasses currently available: Big bluestem, *Andropogon gerardii*, Reed Grass *Calamagrostis stricta*, Bottle brush *Elymus hystrix*, Wood Millet *Milium effusum*, Switch grass *Panicum virgatum*, Little bluestem *Schizachyrium scoparium*, Indian grass *Sorghastrum nutans*. Sedge species worth considering: *Carex albicans*, *C. bromoides*, *C. crinata*, *C. eburnea*, *C. grayii*, *C. grisea*, *C. pennsylvanica*, *C. plantaginea*, *C. sprengelii*, *C. vulpinoidea*. Most sedge species prefer shady moist conditions.

**Ask your garden centre to bring in natives.** Some nurseries that specialize: NativePlantNurseries.ca; Grow Wild, St Williams Nursery, Wildflower Farms, etc. See Credit Valley Conservation website for List.

### References:

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2. M. Vaughan and S. Black (2006) USDA National Agroforestry Center. AF Note-34: *Enhancing Nest Sites for Native Bee Crop Pollinators*. [https://www.plants.usda.gov/pollinators/Enhancing Nest Sites For Native Bee Crop Pollinators.pdf](https://www.plants.usda.gov/pollinators/Enhancing_Nest_Sites_For_Native_Bee_Crop_Pollinators.pdf)
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7. Salisbury, A., et al. (2015) *Enhancing gardens as habitats for flower-visiting aerial insects (pollinators): should we plant native or exotic species?*. J Appl Ecol, 52: 1156–1164.
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9. Tuell J.K., Fiedler A.K., Landis D. & Isaacs R. (2008) Visitation by wild and managed bees (Hymenoptera: Apoidea) to eastern US native plants for use in conservation programs. Environmental Entomology, 37, 707-718).
10. More resources from MSU are online: [http://www.canr.msu.edu/nativeplants/resources/teaching\\_tools](http://www.canr.msu.edu/nativeplants/resources/teaching_tools)
11. Tallamy, D. 2007. *Bringing Nature home*. Timber press. <http://enst.umd.edu/sites/enst.umd.edu/files/docsTable%201%20from%20Doug%20Tallamy%20Sheet1.pdf>
12. Heather Holm has published a helpful list of *Native Trees and Shrubs for Pollinators* online: <https://www.pollinatorsnativeplants.com/plant-lists--posters.html>.
13. Forest Gene Conservation Assoc. <http://fgca.net/>

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### **Online Resources:**

- *Native Plants for Pollinators*, Credit Valley Conservation: <https://cvc.ca/wp-content/uploads/2017/04/17-uo-nativeplantsforpollinators-booklet-v8-web.pdf>
- *Selecting Plants for Pollinators* - Lake Erie Lowlands- Pollinator Partnership <http://www.pollinator.org/PDFs/Guides/LakeErieLowlands.ver8.hires.pdf>
- *Pollinator Friendly Plants for Northeast US* - NRCS - USDA [https://www.nrcs.usda.gov/Internet/FSE\\_PLANTMATERIALS/publications/nypmctn11164.pdf](https://www.nrcs.usda.gov/Internet/FSE_PLANTMATERIALS/publications/nypmctn11164.pdf)
- *Attracting Pollinators to Your Garden* US Forestry Service: [https://www.fs.fed.us/wildflowers/pollinators/documents/AttractingPollinatorsEasternUS\\_V1.pdf](https://www.fs.fed.us/wildflowers/pollinators/documents/AttractingPollinatorsEasternUS_V1.pdf)
- Evergreen Native Plant Database <https://nativeplants.evergreen.ca/>
- 'Garden for Life' Plant List, Oakville Horticultural Society [oakvillehort.org](http://oakvillehort.org)
- *Help Native Bees*, Conservation Halton: <http://www.conservationhalton.ca/help-native-bees>
- Pollination Guelph <https://www.pollinationguelph.ca/>
- Xerces Society <https://xerces.org/>
- *Snetsinger Butterfly Garden Designs*: <http://www.snetsingerbutterflygarden.org/plant-selection.html>