In accordance with Federal civil rights law and U.S. Department of Agriculture (USDA) civil rights regulations and policies, the USDA, its Agencies, offices, and employees, and institutions participating in or administering USDA programs are prohibited from discriminating based on race, color, national origin, religion, sex, gender identity (including gender expression), sexual orientation, disability, age, marital status, family/parental status, income derived from a public assistance program, political beliefs, or reprisal or retaliation for prior civil rights activity, in any program or activity conducted or funded by USDA (not all bases apply to all programs). Remedies and complaint filing deadlines vary by program or incident.

Persons with disabilities who require alternative means of communication for program information (e.g., Braille, large print, audiotape, American Sign Language, etc.) should contact the responsible Agency or USDA’s TARGET Center at (202) 720-2600 (voice and TTY) or contact USDA through the Federal Relay Service at (800) 877-8339. Additionally, program information may be made available in languages other than English.

To file a program discrimination complaint, complete the USDA Program Discrimination Complaint Form, AD-3027, found online at How to File a Program Discrimination Complaint and at any USDA office or write a letter addressed to USDA and provide in the letter all of the information requested in the form. To request a copy of the complaint form, call (866) 632-9992. Submit your completed form or letter to USDA by:

Mail: U.S. Department of Agriculture
Office of the Assistant Secretary for Civil Rights
1400 Independence Avenue, SW
Washington, D.C. 20250-9410;

Fax: (202) 690-7442; or

Email: program.intake@usda.gov.

USDA is an equal opportunity provider, employer, and lender.
Preface

The *Monarch Butterfly Wildlife Habitat Evaluation Guide (WHEG) and Decision Support Tool: Northern Great Plains Edition* is used by NRCS staffs as a planning tool to evaluate current habitat conditions at the assessment area scale, not at the farm or ranch scale. Following the assessment, a rating (poor, medium, good or excellent) is assigned to each assessment area within the farm or ranch.

These ratings (*benchmark monarch habitat conditions rating*) are used to recommend monarch habitat improvement alternatives for each assessment area, and to predict improvement of habitat following implementation of alternatives (*planned monarch habitat conditions rating*). The WHEG can also be applied to areas after conservation practice installation to determine improvement in habitat condition (*applied monarch habitat condition rating*).

An essential function of the Monarch WHEG is inventorying the current plant community. The proper identification of key monarch plant species is required when inventorying vegetation within the assessment area (belt transect). Another use of the WHEG transect protocol could be to determine planting success. To support the WHEG and assist in the development of planning, NRCS has developed this appendix to the WHEG. This appendix contains three different technical support documents to assist staff in Montana, Nebraska, North Dakota and South Dakota in making informed decisions. These documents are:

- **Monarch Planting List**: Provides key plant species for establishing a quality monarch habitat planting mix.
- **Monarch WHEG Inventory List**: Provides the plant species that will be identified and measured (percent cover) during the habitat evaluation (vegetative sampling effort within the belt transect).
- **Plant Identification Guide**: Provides a plant identification sheet for each species from the planting and WHEG lists.
# Table of Contents

Preface ..................................................................................................................3
Find Plants by Scientific Name .............................................................................5
Introduction .............................................................................................................6
Monarch Planting List ............................................................................................11
Monarch WHEG Habitat Inventory List .................................................................13
Flower Color Chart ...............................................................................................14
  Baldwin’s Ironweed (*Vernonia baldwinii*) .........................................................15
  Butterfly Milkweed (*Asclepias tuberosa*) .........................................................17
  Canada Goldenrod (*Solidago canadensis*) .........................................................19
  Common Milkweed (*Asclepias syriaca*) ............................................................21
  Common Sunflower (*Helianthus annuus*) .........................................................23
  Dotted Blazing Star (*Liatris punctata*) .............................................................25
  False Boneset (*Brickellia eupatorioides*) .........................................................27
  Flat-top Goldentop (*Euthamia graminifolia*) .....................................................29
  Gray Goldenrod (*Solidago nemoralis*) ...........................................................31
  Hoary Verbena (*Verbena stricta*) ..................................................................33
  Leadplant (*Amorpha canescens*) ..................................................................35
  Maximilian Sunflower (*Helianthus maximiliani*) ............................................37
  Missouri Goldenrod (*Solidago missouriensis*) .................................................39
  New England Aster (*Symphyotrichum novae-angliae*) ..................................41
  Prairie Blazing Star (*Liatris pycnostachya*) .....................................................43
  Prairie Ironweed (*Vernonia fasciculata*) .........................................................45
  Rocky Mountain Blazing Star (*Liatris ligulistylis*) ........................................47
  Sawtooth Sunflower (*Helianthus grosseserratus*) ............................................49
  Showy Milkweed (*Asclepias speciosa*) ...........................................................53
  Slimleaf Milkweed (*Asclepias stenophylla*) .....................................................55
  Smooth Blue Aster (*Symphyotrichum laeve*) ..................................................57
  Smooth Oxeye (*Heliopsis helianthoides*) .........................................................59
  Spotted Joe Pye Weed (*Eutrochium maculatum*) ..........................................61
  Stiff Goldenrod (*Oligoneuron rigidum*) ..........................................................63
  Stiff Sunflower (*Helianthus pauciflorus*) .........................................................65
  Swamp Milkweed (*Asclepias incarnata*) ..........................................................67
  Tall Blazing Star (*Liatris aspera*) ..................................................................69
  Tall Thistle (*Cirsium altissimum*) .................................................................71
  White Prairie Clover (*Dalea candida*) .............................................................73
  Wholeleaf Rosinweed (*Silphium integrifolium*) ..............................................75
  Whorled Milkweed (*Asclepias verticillata*) .....................................................77
  Wild Bergamot (*Monarda fistulosa*) ...............................................................79
Literature Cited .....................................................................................................81
Find Plants by Scientific Name

<table>
<thead>
<tr>
<th>Scientific Name</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Amorpha canescens</em> (Leadplant)</td>
<td>35</td>
</tr>
<tr>
<td><em>Asclepias incarnata</em> (Swamp Milkweed)</td>
<td>67</td>
</tr>
<tr>
<td><em>Asclepias speciosa</em> (Showy Milkweed)</td>
<td>53</td>
</tr>
<tr>
<td><em>Asclepias syriaca</em> (Common Milkweed)</td>
<td>21</td>
</tr>
<tr>
<td><em>Asclepias tuberosa</em> (Butterfly Milkweed)</td>
<td>17</td>
</tr>
<tr>
<td><em>Asclepias verticillata</em> (Whorled Milkweed)</td>
<td>77</td>
</tr>
<tr>
<td><em>Brickellia eupatoriioides</em> (False Boneset)</td>
<td>27</td>
</tr>
<tr>
<td><em>Cirsium altissimum</em> (Tall Thistle)</td>
<td>71</td>
</tr>
<tr>
<td><em>Dalea candida</em> (White Prairie Clover)</td>
<td>73</td>
</tr>
<tr>
<td><em>Euthamia graminifolia</em> (Flat-top Goldentop)</td>
<td>29</td>
</tr>
<tr>
<td><em>Eutrochium maculatum</em> (Spotted Joe Pye Weed)</td>
<td>61</td>
</tr>
<tr>
<td><em>Helianthus annuus</em> (Common Sunflower)</td>
<td>23</td>
</tr>
<tr>
<td><em>Helianthus grosseserratus</em> (Sawtooth Sunflower)</td>
<td>49</td>
</tr>
<tr>
<td><em>Helianthus maximiliani</em> (Maximillian Sunflower)</td>
<td>37</td>
</tr>
<tr>
<td><em>Helianthus pauciflorus</em> (Stiff Sunflower)</td>
<td>65</td>
</tr>
<tr>
<td><em>Heliopsis helianthoides</em> (Smooth Oxeye)</td>
<td>59</td>
</tr>
<tr>
<td><em>Liatris aspera</em> (Tall Blazing Star)</td>
<td>69</td>
</tr>
<tr>
<td><em>Liatris ligulistyli</em> (Rocky Mountain Blazing Star)</td>
<td>47</td>
</tr>
<tr>
<td><em>Liatris punctata</em> (Dotted Blazing Star)</td>
<td>25</td>
</tr>
<tr>
<td><em>Liatris pycnostachya</em> (Prairie Blazing Star)</td>
<td>43</td>
</tr>
<tr>
<td><em>Monarda fistulosa</em> (Wild Bergamot)</td>
<td>79</td>
</tr>
<tr>
<td><em>Oligoneuron rigidum</em> (Stiff Goldenrod)</td>
<td>63</td>
</tr>
<tr>
<td><em>Silphium integrifolium</em> (Wholeleaf Rosinweed)</td>
<td>75</td>
</tr>
<tr>
<td><em>Solidago canadensis</em> (Canada Goldenrod)</td>
<td>19</td>
</tr>
<tr>
<td><em>Solidago missouriensis</em> (Missouri Goldenrod)</td>
<td>39</td>
</tr>
<tr>
<td><em>Solidago nemoralis</em> (Gray Goldenrod)</td>
<td>31</td>
</tr>
<tr>
<td><em>Symphyotrichum laeve</em> (Smooth Blue Aster)</td>
<td>57</td>
</tr>
<tr>
<td><em>Symphyotrichum novae-angliae</em> (New England Aster)</td>
<td>41</td>
</tr>
<tr>
<td><em>Verbena stricta</em> (Hoary Verbena)</td>
<td>33</td>
</tr>
<tr>
<td><em>Vernonia baldwinii</em> (Baldwin’s Ironweed)</td>
<td>15</td>
</tr>
<tr>
<td><em>Vernonia fasciculata</em> (Prairie Ironweed)</td>
<td>45</td>
</tr>
</tbody>
</table>
Introduction
A proper understanding of the breeding and feeding behaviors of larval and adult monarch butterflies (*Danaus plexippus*) is essential to conducting an evaluation of the quality of monarch butterfly habitat. The data obtained from the application of the assessment portion (WHEG) of the *Monarch Butterfly Wildlife Habitat Evaluation Guide and Decision Support Tool: Northern Great Plains Region* (Fig. 1) is used to identify habitat deficiencies. Those identified habitat deficiencies provide targets for habitat improvements (Fig. 2). The information offered in this appendix to the monarch WHEG will assist the conservation planner in plant identification and the selection of species to consider in a monarch butterfly habitat planting mix. This information is critical to implementation of steps 3-6 of the NRCS Conservation Planning process (USDA, NRCS 2014).

- Step 3: Inventory Resources
- Step 4: Analyze Resource Data
- Step 5: Formulate Alternatives
- Step 6: Evaluate Alternatives

**Host Plant Selection and Monarch Survival:**
Gravid monarch females are selective, preferring younger and more nutrient rich plants to lay their 300 - 400+ eggs over a 2-5 week period (Fischer et al. 2015). Seldom does a single female lay more than 1-2 eggs on a single plant. Additionally, gravid females appear to prefer plants without existing eggs or larva, and plants with few aphids (Agarwal 2017 and Borkin 1982). There appears to be preferences towards some species over others. For example, gravid females do not utilize butterfly milkweed (*Asclepias tuberosa*) as often as common milkweed (*Asclepias syriaca*). Conversely, the non-native species, tropical milkweed (*Asclepias curassavica*) is highly preferred by gravid females for egg laying¹. Most monarch butterfly scientists and monarch conservation groups have raised disease concerns associated with tropical milkweed. These concerns primarily target lands adjacent to the Gulf of Mexico where tropical milkweed does not dieback in the winter. Regardless, NRCS does not support the use of non-native milkweeds for monarch habitat plantings.

Gravid female behavior of selecting plants without other monarch eggs or larva and limiting oviposition (egg laying) to 1-2 eggs per plant, assures enough plant biomass for each

---
¹ Some suggest that this preference is related to the high levels of cardenolides (toxins) found in tropical milkweed.
offspring to complete the larval stage. Some suggest that observation of multiple eggs and larva on a single plant is an ecological indicator that the site (and adjacent habitats) is deficient in adequate milkweeds. Predation of eggs and larva, primarily by predatory insects, is significant. Survival rate to the 5th instar has been documented to be as high as 10% (Borkin 1982; Pryzby and Oberhauser 2004), but is more commonly less than 5%. Survival is also compromised by parasites, and tachinid flies (Lespesia archippivora) in particular (Mueller and Baum 2014; Oberhauser et al. 2006). Although widely variable, percent of milkweed plants utilized by gravid females in monarch habitat is typically from 5-25% of available plants (Kasten et al. 2016). It is estimated that approximately 30 milkweed plants are needed to produce an adult participating in the fall migration to Mexico (Nail et al. 2015).

Most studies agree that the loss of breeding habitat (milkweed) in the corn-belt region of the U.S. has affected the eastern monarch population (Pleasants and Oberhauser 2013). Questions remain regarding the significance of other population stressors. There is growing evidence suggesting that in addition to loss of breeding habitat in the Midwest, losses of nectaring habitat throughout the eastern U.S. needed to support the fall migration, and the loss of wintering habitat in Mexico may be significant limiting factors (Agrawal 2017; Inamine et al. 2016).

**Monarch Larval Feeding Behavior:** Immature, free-living instars (larvae or caterpillars) of the monarch butterfly are obligate specialists on the leaves of milkweeds, primarily within the genus *Asclepias*, but also on milkweed vines in the genera *Cynanchum*, *Funastrum*, and *Matelea*. The larval stage includes 5 instars (mols) and requires from 8-15 days to complete. It is through the consumption of milkweed foliage as larvae that monarch butterflies gain the toxic cardenolides, which deter predation (Roeske et al. 1976) by birds and mammals. However, too much cardenolide consumption affects growth and survival of larvae. For this reason, gravid females tend to select individual plants with a moderate level of cardenolides (Zalucki et al. 1990). First instars consume their egg casing, then begin to feed on the surface of the leaf or flower. This feeding activity by the 1st instars is evidenced by shallow feeding grooves, often in small 1/2-circular patterns. As the larva grows (facilitated by molting) the grooves become deeper, until the larva creates a hole in the leaf that is often arc-shaped but may be circular or oval. Older larvae (3rd-5th instars) feed by consuming the entire leaf, often the newer (upper most) leaves, presumed of higher forage quality. Additionally, floral parts are commonly consumed. The latex (white sap) in the milkweed plants can be deadly to monarch larvae. Larvae often sever leaf veins, slowing or inhibiting the supply of latex. It is proposed that this feeding behavior reduces the supply of latex to the leaf; thereby improving foraging efficiencies and increasing survival (Zalucki et al. 2001). In addition to leaf damage, the accumulation of frass (excrement) on lower leaves and the ground provides evidence of a feeding monarch larva.

**Adult Monarch Feeding Behavior:** Adult monarchs rely on high-quality floral nectar to meet their energy requirements. Monarchs feed by rolling out their proboscis (long flexible straw)

---

2 The behavior of typically limiting egg laying to 1-2 eggs per plant may also serve to minimize predation, disease, and inadvertent cannibalism (monarch larva will consume their eggshell and other eggs if nearby).

3 On occasion, “egg dumping” from females under extreme stress does occur, resulting in plants/leaves with several (10+) eggs. Thus, egg dumping is not always an indication of inadequate milkweed availability.

4 These cardenolides do not affect most predatory invertebrates. Monarch larvae experience very large losses to predation from other arthropods (e.g. insects, spiders, centipedes).

5 Cardenolide levels can vary significantly, among individual plants within the same species.
to extract nectar from the flower (Krenn 2010)\textsuperscript{6}. Thus, a feeding monarch perches on a flower and then moves their proboscis around, finding nectar from different locations. For this reason, monarchs prefer sturdy plants that have relatively flat surfaces (sunflowers, asters) or long multi-flowering inflorescences (gayfeather), where the nectar is easily accessed. In reviewing the two plant lists provided in this document, the user will find many species in the Asteraceae family (sunflower family). Common characteristics of this family include clusters of flowers with shallow, easily accessed nectar. Milkweeds, which also have easily accessed nectar, are excellent nectar sources. Despite their somewhat long proboscises, monarchs rarely visit deep tubular flowers such as honeysuckles (Lonicera spp.).

**Migration:** Tagging data and observations documented in Journey North provide information about fall migration, but little about spring and summer movements. Isotope technology provides additional understanding of monarch natal origins and migration patterns. Stable isotopes in the bodies of adults identify (predict) the milkweed species (and even local ecotypes) that an adult monarch fed upon as a larva. As new isotopes data is collected, monarch scientists are gaining an improved understanding of movement patterns in North America. It was once suspected most all monarch adults in the northeastern U.S. moved along the Gulf, then northward to Maine. Recent isotope data suggests that most of the 2\textsuperscript{nd} generation adults in the Northeast came from the Midwest by crossing the Appalachian Mountains (Miller et al. 2017). Using isotope and tagging data, Flockhart et al. (2013) suggested most of the 2\textsuperscript{nd} generation adults that originated from the Midwest moved horizontally to populate the northern and eastern regions of the eastern U.S. This isotope work, coupled with other data (Miller et al. 2012), suggests a two-generational distribution pattern for the northern migration, rather than multi-generational (where each successive generation moves further north). The 1\textsuperscript{st} generation adults migrate from the southern U.S. primarily, but far from exclusively, to the Midwest and Great Lakes region. The 2\textsuperscript{nd} generation then spreads out across the U.S. and southern Canada, with many of the 3\textsuperscript{rd} and 4\textsuperscript{th} generation adults remaining in proximity to their natal origin. This approach results in rapid access to the cooler summer milkweed regions of the U.S., then provides for 2 generations to increase the overall population (migration is a very high morality event), maximizing numbers in preparation for the long and often fatal migration to the wintering grounds (Agrawal 2017).

Regardless of the northern migration patterns, monarchs emerging as adults in late summer migrate south to Mexico to repeat the cycle. Non-migrating adults live from 2-5 weeks, whereas migrating adults live through the fall and winter for 6-9 months. Most theorize they accomplish long distance travel by catching air currents and riding thermals using the soaring/gliding approach common to many other long distance migrants (Gibo and Pallet 1979). Brower et al. (2006) suggest that monarchs do not prepare for this long migration by storing energy (lipids) immediately, as these lipids would increase body mass and reduce flight efficiency. Rather, they consume nectar periodically during migration. As they near the overwintering locations in Mexico, they increase lipid consumption to build the energy reserves essential for the winter dormant period (November-March)\textsuperscript{7}. Agrawal (2017) and Inamine et al. (2016) suggest that the availability of fall nectar resources, particularly in Texas and northern Mexico, may be an important variable in the success of the monarch wintering population in Mexico.

\textsuperscript{6} Monarch butterflies are ineffective pollinators of milkweed (Agrawal 2017), and only incidental pollinators of other species.

\textsuperscript{7} Monarchs do not feed at the wintering grounds, but do move to access water during warmer days. Thus, the stored lipids are critical to winter survival.
The fall migration patterns, documented by Journey North, and tagging data (Monarch Watch) demonstrate many of the monarchs raised in the Midwest migrate in a southwesterly direction. Tagging data finds movement of some individuals in a primarily westerly direction from the upper Midwest to Northern Great Plains when low-pressure systems are centered in the Midwest. When this occurs, large numbers of fall migrants can occur in south eastern North Dakota, eastern South Dakota and east-central Nebraska. In some years (2015), strong easterly winds move fall migrants even further west (Fig. 3). During such years, the northern Great Plains plays a critical role in providing fall nectaring resources for migrating monarchs. In response to elevated grain prices, recent land use conversion from grasslands to cropland (Wright and Wimberly 2013), may rival losses of “in-field” milkweed from glyphosate resistant seed technology. Losses of nectar plants, in addition to milkweed due to land use changes in central portions of the northern Great Plains remain a concern for monarch butterfly conservation.

Milkweeds of the Northern Great Plains Region: There are many milkweed species native to this region of the U.S. The most common species in the eastern portions of ND, SD and NE is common milkweed (A. syriaca). The most common species in the Central and Western portions of those states is showy milkweed (A. speciosa). Both are rhizomatous, with clumped distribution patterns. Less common but locally important is the very highly preferred swamp milkweed (A. incarnata), butterfly milkweed (A. tuberosa), green comet milkweed (A. viridiflora), and whorled milkweed (A. verticillata). Seeds for many of these species are commercially available. Finding local ecotypes may be more difficult. Some species of milkweed are rhizomatous (e.g. A. syriaca, A. speciosa, and A. verticillata), while others are tap-rooted (e.g. A. tuberosa and A. viridiflora). There are obvious advantages to the establishment of rhizomatous species in conservation plantings, and for those reasons, these species should be considered in monarch butterfly planting mixes.

Trees and Shrubs: Narrow bands of woody vegetation and edges of forested areas can provided important fall resting sites (micro-climates) for migrating monarchs. However, the planting list provided in this document is limited to herbaceous species.

Plant Lists and Plant Identification Guide

To assist with the application of the NRCS Monarch Butterfly WHEG Wildlife Habitat Evaluation Guide and Planning Tool: Northern Great Plains Region, this document provides two plant species lists, and a plant identification guide for use by conservation planners.

Monarch Planting List: The Monarch Planting List provides planting recommendations for improvement of monarch habitat with the use of an array of national conservation practices
(e.g. Conservation Cover (327) and Field Borders (386)). Lists of larval host plants and nectar plants suitable for monarch butterfly habitat plantings are provided in the NRCS Field Office Technical Guide (FOTG). The following national minimum planting criteria shall be followed for all monarch butterfly habitat plantings. Nationally approved variances to these requirements may be provided by the FOTG.

- To provide food for monarch butterfly larvae, plantings shall include at least one species of milkweed (Asclepias spp.) from the FOTG monarch butterfly planting list. All milkweed species used in the mix must be from this list and shall represent at least 1.5% of the total seeds in the mix. The total seeds include pure live seed from both grass and forbs.

- A grass component in a monarch habitat planting is commonly needed for ecological stability, weed control, and fuel for prescribed burning. The FOTG provides information on the grass/forb ratio for monarch habitat plantings.

- To provide food for adults, at least 60% of the forb seeds (pure live seed) in the mix shall be from the monarch butterfly planting list (FOTG). Milkweed seeds are included in meeting the 60% minimum because milkweeds are excellent nectar plants. The FOTG provides information on the required number of forb species per bloom period (early, mid, or late season) for monarch habitat plantings. Bloom period consideration shall coincide with monarch presence in the area.

**Monarch WHEG Habitat Inventory List:** The *Monarch WHEG Habitat Inventory List* is for use by conservation planners in the application of the herbaceous vegetation sampling portion of the *Monarch Butterfly Wildlife Habitat Evaluation Guide: Northern Great Plains Edition*. This process requires identifying and inventorying vegetation in assessment areas that support an herbaceous plant community with a forb component. Some species on this list are grouped to facilitate a more rapid assessment. For example, there are many species of blazing star, also commonly referred to as gayfeather. These are all in the genus *Liatris*. Identification of *Liatris* to species adds little value to the habitat assessment process. As such, they are combined into the *Liatris* spp. group.

**Plant Identification Guide:** The *Monarch Habitat Plant Identification Guide* contains plant identification sheets of species provided in the WHEG and planting lists for the Northern Great Plains Region. The guides are organized alphabetically by common name used by the USDA-NRCS PLANTS Database (USDA, NRCS 2007). Plant species which were reported to be of superlative use to the monarch were rated as “Very High” value, as were plants mentioned in multiple sources as providing nectar to monarchs. Other plant species, which were also cited as attractive to monarchs, but with less frequency, were given the rating of “High” value.

**Acknowledgements**

The species in these plant lists were developed from a review of the literature, in combination with monarch adult nectaring observations data compiled by the Xerces Society for Invertebrate Conservation (Xerces). Biologists from Xerces, USDA-NRCS, U.S. Fish and Wildlife Service, state resource management agencies, universities and conservations organizations contributed their observations.
## Monarch Planting List

<table>
<thead>
<tr>
<th>Species name</th>
<th>Plant symbol</th>
<th>Common name</th>
<th>Growth habit</th>
<th>Monarch Value</th>
<th>Bloom Period</th>
<th>States</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amorpha canescens</td>
<td>AMCA6</td>
<td>leadplant</td>
<td>forb/herb</td>
<td>High</td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>Asclepias incarnata</td>
<td>ASIN</td>
<td>swamp milkweed</td>
<td>shrub, subshrub</td>
<td>Very High</td>
<td>x x</td>
<td></td>
</tr>
<tr>
<td>Asclepias speciosa</td>
<td>ASSP</td>
<td>showy milkweed</td>
<td>forb/herb</td>
<td>High</td>
<td>x x</td>
<td></td>
</tr>
<tr>
<td>Asclepias syriaca</td>
<td>ASSY</td>
<td>common milkweed</td>
<td>forb/herb</td>
<td>Very High</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>Asclepias tuberosa</td>
<td>ASTU</td>
<td>butterfly weed</td>
<td>forb/herb</td>
<td>Very High</td>
<td>x x x</td>
<td></td>
</tr>
<tr>
<td>Asclepias verticillata</td>
<td>ASVE</td>
<td>whorled milkweed</td>
<td>forb/herb</td>
<td>Very High</td>
<td>x x x</td>
<td></td>
</tr>
<tr>
<td>Brickellia eupatorioides</td>
<td>BREU</td>
<td>false boneset</td>
<td>forb/herb, subshrub</td>
<td>High</td>
<td>x x</td>
<td></td>
</tr>
<tr>
<td>Cirsium altissimum</td>
<td>CIA2L</td>
<td>tall thistle</td>
<td>forb/herb</td>
<td>High</td>
<td>x x</td>
<td></td>
</tr>
<tr>
<td>Dalea candida</td>
<td>DACA7</td>
<td>white prairie clover</td>
<td>forb/herb, subshrub</td>
<td>High</td>
<td>x x</td>
<td></td>
</tr>
<tr>
<td>Euthamia graminifolia</td>
<td>EUGR5</td>
<td>grass-leaved goldentop</td>
<td>forb/herb</td>
<td>Very High</td>
<td>x x x</td>
<td></td>
</tr>
<tr>
<td>Eutrochium maculatum</td>
<td>EUMA9</td>
<td>spotted joe pye weed</td>
<td>forb/herb</td>
<td>Very High</td>
<td>x x</td>
<td></td>
</tr>
<tr>
<td>Helianthus annuus</td>
<td>HEAN3</td>
<td>common sunflower</td>
<td>forb/herb</td>
<td>Very High</td>
<td>x x</td>
<td></td>
</tr>
<tr>
<td>Helianthus grosseserratus</td>
<td>HEGR4</td>
<td>sawtooth sunflower</td>
<td>forb/herb</td>
<td>High</td>
<td>x x</td>
<td></td>
</tr>
<tr>
<td>Helianthus maximiliani</td>
<td>HEMA2</td>
<td>Maximilian sunflower</td>
<td>forb/herb</td>
<td>High</td>
<td>x x</td>
<td></td>
</tr>
<tr>
<td>Helianthus pauciflorus</td>
<td>HEPA19</td>
<td>stiff sunflower</td>
<td>forb/herb</td>
<td>High</td>
<td>x x</td>
<td></td>
</tr>
<tr>
<td>Heliopsis helianthoides</td>
<td>HEHE5</td>
<td>smooth oxeye</td>
<td>forb/herb</td>
<td>Very High</td>
<td>x x</td>
<td></td>
</tr>
<tr>
<td>Liatris aspera</td>
<td>LIAS</td>
<td>rough blazing star</td>
<td>forb/herb</td>
<td>Very High</td>
<td>x x</td>
<td></td>
</tr>
<tr>
<td>Liatris ligulistylis</td>
<td>LILI</td>
<td>Rocky Mountain blazing star</td>
<td>forb/herb</td>
<td>High</td>
<td>x x</td>
<td></td>
</tr>
<tr>
<td>Liatris punctata</td>
<td>LIPU</td>
<td>dotted gayfeather</td>
<td>forb/herb</td>
<td>High</td>
<td>x x</td>
<td></td>
</tr>
<tr>
<td>Monarda fistulosa</td>
<td>MOFI</td>
<td>wild bergamot</td>
<td>forb/herb, subshrub</td>
<td>High</td>
<td>x x</td>
<td></td>
</tr>
<tr>
<td>Oligoneuron rigidum</td>
<td>OLRI</td>
<td>stiff goldenrod</td>
<td>forb/herb</td>
<td>High</td>
<td>x x x</td>
<td></td>
</tr>
<tr>
<td>Silphium integrifolium</td>
<td>SIIN2</td>
<td>wholeleaf rosinweed</td>
<td>forb/herb</td>
<td>High</td>
<td>x x</td>
<td></td>
</tr>
<tr>
<td>Solidago altissima</td>
<td>SOAL6</td>
<td>Canada goldenrod</td>
<td>forb/herb</td>
<td>High</td>
<td>x x</td>
<td></td>
</tr>
<tr>
<td>Solidago missouriensis</td>
<td>SOMI2</td>
<td>Missouri goldenrod</td>
<td>forb/herb</td>
<td>High</td>
<td>x x</td>
<td></td>
</tr>
<tr>
<td>Solidago nemoralis</td>
<td>SONE</td>
<td>gray goldenrod</td>
<td>forb/herb</td>
<td>Very High</td>
<td>x x</td>
<td></td>
</tr>
<tr>
<td>Solidago speciosa</td>
<td>SOSP2</td>
<td>showy goldenrod</td>
<td>forb/herb</td>
<td>High</td>
<td>x x</td>
<td></td>
</tr>
<tr>
<td>Symphyotrichum ericoides</td>
<td>SYER</td>
<td>white health aster</td>
<td>forb/herb</td>
<td>Very High</td>
<td>x x</td>
<td></td>
</tr>
<tr>
<td>Symphyotrichum laeve</td>
<td>SYLA3</td>
<td>smooth aster</td>
<td>forb/herb</td>
<td>High</td>
<td>x x</td>
<td></td>
</tr>
<tr>
<td>Species name</td>
<td>Plant symbol</td>
<td>Common name</td>
<td>Growth habit</td>
<td>Monarch Value</td>
<td>Bloom Period</td>
<td>States</td>
</tr>
<tr>
<td>----------------------</td>
<td>--------------</td>
<td>------------------------------</td>
<td>--------------</td>
<td>---------------</td>
<td>--------------</td>
<td>--------</td>
</tr>
<tr>
<td>Symphyotrichum novae-angliae</td>
<td>SYNO2</td>
<td>New England aster</td>
<td>forb/herb</td>
<td>High</td>
<td>x x</td>
<td></td>
</tr>
<tr>
<td>Verbena stricta</td>
<td>VEST</td>
<td>hoary verbena</td>
<td>forb/herb</td>
<td>High</td>
<td>x x</td>
<td></td>
</tr>
<tr>
<td>Vernonia baldwinii</td>
<td>VEBA</td>
<td>Baldwin’s or Western ironweed</td>
<td>forb/herb</td>
<td>High</td>
<td>x x</td>
<td></td>
</tr>
<tr>
<td>Vernonia fasciculata</td>
<td>VEFA2</td>
<td>prairie ironweed</td>
<td>forb/herb</td>
<td>High</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

## Monarch WHEG Habitat Inventory List

<table>
<thead>
<tr>
<th>Species name</th>
<th>Plant symbol</th>
<th>Common name</th>
<th>Growth habit</th>
<th>Monarch Value</th>
<th>Bloom Period</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amorpha canescens</td>
<td>AMCA6</td>
<td>leadplant</td>
<td>shrub, subshrub</td>
<td>High</td>
<td></td>
</tr>
<tr>
<td>Asclepias spp.</td>
<td>ASCLE</td>
<td>milkweed</td>
<td>forb/herb</td>
<td>Very High</td>
<td>x</td>
</tr>
<tr>
<td>Brickellia eupatorioides</td>
<td>BREU</td>
<td>false boneset</td>
<td>forb/herb, subshrub</td>
<td>High</td>
<td>x</td>
</tr>
<tr>
<td>Cirsium altissimum</td>
<td>CIAL2</td>
<td>tall thistle</td>
<td>forb/herb</td>
<td>High</td>
<td></td>
</tr>
<tr>
<td>Dalea candida</td>
<td>DACA7</td>
<td>white prairie clover</td>
<td>forb/herb, subshrub</td>
<td>High</td>
<td>x, x</td>
</tr>
<tr>
<td>Euthamia graminifolia</td>
<td>EUGR5</td>
<td>grass-leaved goldentop</td>
<td>forb/herb</td>
<td>Very High</td>
<td>x, x</td>
</tr>
<tr>
<td>Eutrochium maculatum</td>
<td>EUMA9</td>
<td>spotted joe pye weed</td>
<td>forb/herb</td>
<td>Very High</td>
<td>x, x</td>
</tr>
<tr>
<td>Helianthus spp.</td>
<td>HELIA</td>
<td>sunflower</td>
<td>forb/herb</td>
<td>Very High</td>
<td>x, x</td>
</tr>
<tr>
<td>Helopis heliandoides</td>
<td>HEHE5</td>
<td>smooth oxeye</td>
<td>forb/herb</td>
<td>High</td>
<td></td>
</tr>
<tr>
<td>Liatris spp.</td>
<td>LIATR</td>
<td>blazing star</td>
<td>forb/herb</td>
<td>Very High</td>
<td>x</td>
</tr>
<tr>
<td>Monarda fistulosa</td>
<td>MOFI</td>
<td>wild bergamot</td>
<td>forb/herb, subshrub</td>
<td>High</td>
<td>x, x</td>
</tr>
<tr>
<td>Oligoneuron rigidum</td>
<td>OLRI</td>
<td>stiff goldenrod</td>
<td>forb/herb</td>
<td>High</td>
<td>x, x</td>
</tr>
<tr>
<td>Silphium integrifolium</td>
<td>SIIN2</td>
<td>wholeleaf rosinweeds</td>
<td>forb/herb</td>
<td>High</td>
<td>x</td>
</tr>
<tr>
<td>Solidago spp.</td>
<td>SOLID</td>
<td>goldenrod</td>
<td>forb/herb</td>
<td>High</td>
<td>x, x</td>
</tr>
<tr>
<td>Symphyotrichum spp.</td>
<td>SYMPH4</td>
<td>aster</td>
<td>forb/herb</td>
<td>High</td>
<td>x, x</td>
</tr>
<tr>
<td>Verbena stricta</td>
<td>VEST</td>
<td>hoary verbena</td>
<td>forb/herb</td>
<td>High</td>
<td>x</td>
</tr>
<tr>
<td>Vernonia spp.</td>
<td>Verno</td>
<td>ironweed</td>
<td>forb/herb</td>
<td>High</td>
<td>x, x</td>
</tr>
</tbody>
</table>

## Flower Color Chart

<table>
<thead>
<tr>
<th>Common Name</th>
<th>Flower Color</th>
<th>Scientific Name</th>
<th>Flower Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baldwin’s ironweed</td>
<td>🌼</td>
<td><em>Amorpha canescens</em></td>
<td>🌼</td>
</tr>
<tr>
<td>butterfly weed</td>
<td>🌼</td>
<td><em>Asclepias incarnata</em></td>
<td>🌼</td>
</tr>
<tr>
<td>Canada goldenrod</td>
<td>🌼</td>
<td><em>Asclepias speciosa</em></td>
<td>🌼</td>
</tr>
<tr>
<td>common milkweed</td>
<td>🌼</td>
<td><em>Asclepias sternphylla</em></td>
<td>🌼</td>
</tr>
<tr>
<td>common sunflower</td>
<td>🌼</td>
<td><em>Asclepias syriaca</em></td>
<td>🌼</td>
</tr>
<tr>
<td>dotted gayfeather</td>
<td>🌼</td>
<td><em>Asclepias tuberosa</em></td>
<td>🌼</td>
</tr>
<tr>
<td>false boneset</td>
<td>🌼</td>
<td><em>Asclepias verticillata</em></td>
<td>🌼</td>
</tr>
<tr>
<td>grass-leaved goldentop</td>
<td>🌼</td>
<td><em>Brickellia eupatorioides</em></td>
<td>🌼</td>
</tr>
<tr>
<td>gray goldenrod</td>
<td>🌼</td>
<td><em>Cirsium altissimum</em></td>
<td>🌼</td>
</tr>
<tr>
<td>hoary verbena</td>
<td>🌼</td>
<td><em>Dalea candida</em></td>
<td>🌼</td>
</tr>
<tr>
<td>leadplant</td>
<td>🌼</td>
<td><em>Euthamia graminifolia</em></td>
<td>🌼</td>
</tr>
<tr>
<td>Maximilian sunflower</td>
<td>🌼</td>
<td><em>Eutrochium maculatum</em></td>
<td>🌼</td>
</tr>
<tr>
<td>Missouri goldenrod</td>
<td>🌼</td>
<td><em>Helianthus annuus</em></td>
<td>🌼</td>
</tr>
<tr>
<td>New England aster</td>
<td>🌼</td>
<td><em>Helianthus grosseserratus</em></td>
<td>🌼</td>
</tr>
<tr>
<td>prairie ironweed</td>
<td>🌼</td>
<td><em>Helianthus maximiliani</em></td>
<td>🌼</td>
</tr>
<tr>
<td>Rocky Mountain blazing star</td>
<td>🌼</td>
<td><em>Heliopsis pauciflorus</em></td>
<td>🌼</td>
</tr>
<tr>
<td>rough blazing star</td>
<td>🌼</td>
<td><em>Heliopsis helianthoides</em></td>
<td>🌼</td>
</tr>
<tr>
<td>sawtooth sunflower</td>
<td>🌼</td>
<td><em>Liatris aspera</em></td>
<td>🌼</td>
</tr>
<tr>
<td>showy goldenrod</td>
<td>🌼</td>
<td><em>Liatris ligulistylis</em></td>
<td>🌼</td>
</tr>
<tr>
<td>showy milkweed</td>
<td>🌼</td>
<td><em>Liatris punctata</em></td>
<td>🌼</td>
</tr>
<tr>
<td>slimleaf milkweed</td>
<td>🌼</td>
<td><em>Monarda fistulosa</em></td>
<td>🌼</td>
</tr>
<tr>
<td>smooth aster</td>
<td>🌼</td>
<td><em>Oligoneuron rigidum</em></td>
<td>🌼</td>
</tr>
<tr>
<td>smooth oxeye</td>
<td>🌼</td>
<td><em>Silphium integrifolium</em></td>
<td>🌼</td>
</tr>
<tr>
<td>spotted joe pye weed</td>
<td>🌼</td>
<td><em>Solidago altissima</em></td>
<td>🌼</td>
</tr>
<tr>
<td>stiff goldenrod</td>
<td>🌼</td>
<td><em>Solidago missouriensis</em></td>
<td>🌼</td>
</tr>
<tr>
<td>stiff sunflower</td>
<td>🌼</td>
<td><em>Solidago nemoralis</em></td>
<td>🌼</td>
</tr>
<tr>
<td>swamp milkweed</td>
<td>🌼</td>
<td><em>Solidago speciosa</em></td>
<td>🌼</td>
</tr>
<tr>
<td>tall thistle</td>
<td>🌼</td>
<td><em>Symphyotrichum ericoides</em></td>
<td>🌼</td>
</tr>
<tr>
<td>white health aster</td>
<td>🌼</td>
<td><em>Symphyotrichum laeve</em></td>
<td>🌼</td>
</tr>
<tr>
<td>white prairie clover</td>
<td>🌼</td>
<td><em>Symphyotrichum novae-angliae</em></td>
<td>🌼</td>
</tr>
<tr>
<td>wholeleaf rosinweed</td>
<td>🌼</td>
<td><em>Verbena stricta</em></td>
<td>🌼</td>
</tr>
<tr>
<td>whorled milkweed</td>
<td>🌼</td>
<td><em>Vernonia baldwinii</em></td>
<td>🌼</td>
</tr>
<tr>
<td>wild bergamot</td>
<td>🌼</td>
<td><em>Vernonia fasciculata</em></td>
<td>🌼</td>
</tr>
</tbody>
</table>
Baldwin’s Ironweed (Vernonia baldwinii)
Aster Family

Other Common Names: ironweed, western ironweed

Scientific Name: Vernonia baldwinii Torr.          Plant Symbol: VEBA

Distinguishing characteristics: Dark purple flower heads with dark green foliage; leaves narrowly lance shaped, uniformly hairy on the lower surfaces, upper surfaces with very fine hairs; tapering to both the tip and base of the leaf.

Plant Height: 3–5 ft.    Blooms/Fruits: July–November

Duration: Perennial, herbaceous

Pollinator Value: The plant is known to attract bees and butterflies.

Habitat: Open pastures & woodlands, savannahs, fencerows, and overgrazed pastures.
Close-up of flower/flowering

Leaves

Close-up of flower buds

Senescence
Butterfly Milkweed (*Asclepias tuberosa*)
Milkweed Family

Other Common Names: orange milkweed, butterfly weed

**Scientific Name:** *Asclepias tuberosa* L.  
**Plant Symbol:** ASTU

**Distinguishing characteristics:** brick red or orange flowers; hairy stem; long and narrow leaves with smooth leaf margins; sap not milky like other milkweed species.

**Plant Height:** up to 2.5 ft.  
**Blooms/Fruits:** May–October

**Duration:** Perennial, herbaceous (from rootstock tuberous)

**Pollinator Value:** Larval host plant for monarch butterfly. The plant is very attractive to butterflies because it is a high quality nectar source.

**Habitat:** Upland; sandy, loamy, or rocky limestone soils
Important Plants of the Monarch Butterfly
Northern Great Plains Region

Seedling

Early flowering/close-up view of

Full flowering

Fruit

Mature fruit with seed
Canada Goldenrod (*Solidago canadensis*)
Aster Family

Other Common Names: tall goldenrod, late goldenrod

Scientific Name: *Asclepias speciosa*  
Plant Symbol: SOAL6

**Distinguishing characteristics:** Stems 1–several from rhizomes, leafy throughout, and with several fine, longitudinal lines or grooves along the stem; leaves narrow, widest near the top or middle (4–5 inches long by 1 inch wide), and with 3 prominent veins; inflorescence terminal and generally overall pyramid shaped; individual flowering heads all upright on the recurving flowering branches, small, with 10–16 yellow rays and 3–7 yellow disc flowers in the centers.

**Plant Height:** 3–6 feet.  
**Blooms/Fruits:** August–November

**Duration:** Perennial, herbaceous

**Pollinator Value:** Goldenrods are very attractive to pollinators and other beneficial insects. They host a number of oligolege bees.

**Habitat:** Upland prairies, old fields, pastures, roadsides, and disturbed areas. Fairly common throughout its range.

**Note:** A similar species (*Solidago canadensis*) also goes by the common name Canada goldenrod. That species has smaller individual flower heads, and fewer ray (6–12) and disc (2–5) flowers.
Photos: Melody Lytle, Lady Bird Johnson Wildflower Center

Photos: R.W. Smith, Lady Bird Johnson Wildflower Center

Full flowering/close-up of blooms

Photos: Steven Schwartzman, Lady Bird Johnson Wildflower Center

Mature plant

Leaf arrangement
Common Milkweed (Asclepias syriaca)
Milkweed Family

Other Common Names: none

Scientific Name: Asclepias syriaca L.  Plant Symbol: ASSY

Distinguishing characteristics: Flowers in circular clusters from the leaf axils on the upper portion of the plant, each flower on a long stalk; petals reflexed, lavender or pink but may be greenish or white with pink highlights; leaves are in pairs (opposite) along the stem, lance-shaped to elliptical.

Plant Height: 2–5 ft., usually unbranched

Blooms/Fruits: May–August

Duration: Perennial, herbaceous and colonial (from deep-set rhizomes)

Pollinator Value: Sunflowers are workhorse plants, supporting bees, butterflies, and other beneficial insects. Many species of native bee are oligoleges on its pollen. Checkerspot butterflies feed on its leaves as caterpillars.

Habitat: Roadsides, disturbed areas, field borders, bottomland & upland prairies, pastures, and old fields.
Common Sunflower (Helianthus annuus)
Aster Family

Other Common Names: sunflower, Kansas sunflower, mirasol

Scientific Name: Helianthus annuus L.  Plant Symbol: HEAN3

Distinguishing characteristics: Flowering heads large with yellow rays and a dark central center disk; leaves alternate but some basal leaves may be opposite, triangular to egg-shaped and very rough or raspy surface; stems solitary with 1-many flowering heads.

Plant Height: 1–10 ft., variable  Blooms/Fruits: July–October

Duration: Annual, herbaceous (with large taproot)

Pollinator Value: Many species of native bee are sunflower specialists and they frequently nectar and collect pollen from these flowers. Butterflies also nectar on sunflowers.

Habitat: Widespread roadside weed, old fields, ditch banks, upland pastures, field borders, escape from cultivation
Dotted Blazing Star (*Liatris punctata*)

**Aster Family**

**Other Common Names:** liatris, narrow-leafed gayfeather, Nebraska blazing star, blazing star, button snakeroot, prairie snakeroot, starwort.

**Scientific Name:** *Liatris punctata* Hook.  
**Plant Symbol:** LIPU

**Distinguishing characteristics:** Clusters of puffy blue flowers loosely spaced along a spike-like inflorescence, inflorescence axis easily visible between the flower clusters; leaves narrow and crowded, slightly up-curved, with dotted glands on the surface.

**Plant Height:** 1-3 ft. flowering stems  
**Blooms/Fruits:** August–October

**Duration:** Perennial, herbaceous

**Pollinator Value:** *Liatris* spp. are very attractive to monarchs and other butterflies. While Rocky Mountain blazing star (*Liatris ligulistylis*) is by far the most attractive species for the monarch butterfly, all Liatris can serve as a nectar source. Liatris flowers are also favored by bumble bees and others.

**Habitat:** Common on upland, rocky ridges, grassy and sagebrush prairies, roadsides, in sandy or clayey soil.
Important Plants of the Monarch Butterfly
Northern Great Plains Region

Flower buds

Plants flowering/close view of flowers

Seed maturation

Seed

Ver. 1.0 Northern Great Plains Region, February 2018
False Boneset (*Brickellia eupatorioides*)
Aster Family

Other Common Names: none

**Scientific Name:** *Brickellia eupatorioides* (L.) Shinners  
**Plant Symbol:** BREU

**Distinguishing characteristics:** Flower heads in small clusters of few flowered, flat-topped inflorescences; individual flower heads appearing elongate and without rays, flowers in the disc are pale yellow, yellowish green, to pinkish lavender; leaves are alternately arranged on the stem but are closely crowded together and may appear opposite or whorled, their shape ranges from linear to broadly lance shaped, and with glandular hairs underneath.

**Plant Height:** 1–3 ft., erect to ascending  
**Blooms/Fruits:** July–October

**Duration:** Perennial, herbaceous or with a woody persistent base

**Pollinator Value:** This flower provides nectar from summer through fall for monarchs and other invertebrates.

**Habitat:** Open prairies and plains, dry open forests, pastures, old fields, and roadsides.

**Note:** Six varieties of false boneset occur in the US, three of which are native to the Midwest: varieties *corymbulosa*, *eupatorioides*, and *texana*. 

![Map of Northern Great Plains Region with false boneset distribution](image1)

![Photo of false boneset](image2)

*Photo: Mike Haddock*
Full flowering/close-up of

Early flowering
Flat-top Goldentop (*Euthamia graminifolia*)

**Aster Family**

**Other Common Names:** flat-topped goldenrod, grass-leaved goldentop/goldenrod

**Scientific Name:** *Euthamia graminifolia* (L.) Nutt.  
**Plant Symbol:** EUGR5

**Distinguishing characteristics:** Stems leafy and heavily branched in the upper half, with small spreading hairs; leaves grass like, sessile on the stem and linear, 4-5 in. long by ¼ in. wide, and with leaf margins showing stiff ascending hairs; inflorescences flat-topped in appearance and borne on the ends of branches; individual flower heads, numerous heads at the end of branches with approximately 15-25 yellow rays and a yellow center.

**Plant Height:** 3–5 ft.  
**Blooms/Fruits:** July–September

**Duration:** Perennial, herbaceous

**Pollinator Value:** Provides nectar and/or pollen to a wide variety of insect taxa including butterflies and moths, beetles, true bugs, wasps, honey bees, bumble bees and other native bee species.

**Habitat:** Fields, pastures, thickets, prairie, and roadsides.

**Note:** Older botanical keys and references refer to this species as *Solidago graminifolia*.
Important Plants of the Monarch Butterfly
Northern Great Plains Region

Flowering/close-up view of flower

Leaf shape and arrangement
Gray Goldenrod (*Solidago nemoralis*)
Aster Family

Other Common Names: grayleaf goldenrod, dwarf goldenrod, old field goldenrod, prairie goldenrod

Scientific Name: *Solidago nemoralis* Aiton  
Plant Symbol: SONE

Distinguishing characteristics: Small yellow flower clusters on recurved terminal branches; stems densely hairy with extremely short, curved hairs; leaves forming a basal rosette and are gradually reduced in size up the stem; leaves oblong, widest towards the top end, with only 1 prominent vein.

Plant Height: 0.5 – 2.5 ft. tall  
Blooms/Fruits: July - November

Duration: Perennial, herbaceous

Pollinator Value: This flower is very popular with bees, wasps, and butterflies of many types. It is known to attract butterflies.

Habitat: Dry upland prairie, ledges and tops of bluffs, openings in dry woods, old fields and pastures

Note: There are many plants commonly called goldenrods that belong to different plant genera, *Solidago, Euthamia, and Oligoneuron* and are all fairly similar. They generally have yellow, clustered flowers, but some species are white. The flowering stems can be elongate and recurved or flat-topped.
Hoary Verbena (*Verbena stricta*)
Verbena Family

Other Common Names: hoary vervain, tall vervain, woolly verbena, wooly verbena

**Scientific Name:** *Verbena stricta* Vent.                             **Plant Symbol:** VEST

**Distinguishing characteristics:** Flowers blue to purple on long (up to 1 ft.) terminal spikes, flowering occurs at the bottom of the spike first and progressively flowers upward; leaves are opposite each other on the stem, attached directly to the stem without a leaf stalk, or with a short leaf stalk <1/4 in. long, shape is widely lance-shaped to almost circular; stems and leaves densely covered with short hairs giving the plant an overall “grayish” appearance.

**Plant Height:** 1–4 ft., erect to ascending                             **Blooms/Fruits:** June–September

**Duration:** Perennial, herbaceous

**Pollinator Value:** This flower is known to attract butterflies. It is also a larval food source for the common buckeye.

**Habitat:** Upland prairies, loess and sand prairies, open upland forests, overgrazed pastures, old fields, and disturbed areas.
Full flowering/close-up of blooms

Close-up of stem and leaf

Mature plant

Photo: R.W. Smith, Lady Bird Johnson Wildflower Center

Photo: Mike Haddock

© 2013 Katy Cheyka
Leadplant (*Amorpha canescens*)

Pea Family

**Other Common Names:** leadplant amorpha, prairie shoestring

**Scientific Name:** *Amorpha canescens* Pursh  
**Plant Symbol:** AMCA6

**Distinguishing characteristics:** Flowers small and purple in narrow, elongate terminal spike-like inflorescences, and unlike most pea flowers leadplant has only a banner petal; leaves are covered with short dense hairs giving the plant its distinctive grayish appearance (lead color), leaves are compound with 15-20 pairs of leaflets and a single terminal leaflet; taproots very deep, extending to 4 ft.

**Plant Height:** 1-3 ft., ascending  
**Blooms/Fruits:** May–August

**Duration:** Perennial, woody short shrub/subshrub

**Pollinator Value:** Highly attractive to native bees. Provides nectar and pollen in the summer.

**Habitat:** Upland prairies, loess hill prairies, openings in dry upland forests, pastures, and roadsides.
Full flowering/close-up of blooms  Mature flower head

Close-up of leaflets and vegetative growth
Maximilian Sunflower (*Helianthus maximilianii*)

**Aster Family**

**Other Common Names:** Max sunflower

**Scientific Name:** *Helianthus maximilianii* Schrad.  
**Plant Symbol:** HEMA2

**Distinguishing characteristics:** flower head similar to common sunflower; tall, leafy unbranched stems; long, narrow leaves up to 10 inches, coarse and hairy, and slightly toothed and pointed.

**Plant Height:** 3–10 ft., erect  
**Blooms/Fruits:** August–November

**Duration:** Perennial, herbaceous

**Pollinator Value:** Many species of native bee are sunflower specialists and they frequently nectar and collect pollen from these flowers. Butterflies also nectar on sunflowers.

**Habitat:** Adapted to many soil types, from sands to clays; favors good internal drainage and sunny locations.
Missouri Goldenrod (Solidago missouriensis)

Aster Family

Other Common Names: prairie goldenrod, Missouri basin goldenrod

Scientific Name: Solidago missouriensis Nutt.  
Plant Symbol: SOMI2

Distinguishing characteristics: Stems one or more arising from a branched rhizome, erect, with small longitudinal lines running down the stem; leaves with a basal rosette and alternately arranged up the stem, narrow 7-10x longer than wide, tip pointed, margins serrated, and 3 main veins are visible from the lower surface; inflorescence terminal, branched, and resembling a pyramid; individual flower heads pointing upward on reflexed branches, rays yellow, disk yellow.

Plant Height: 2–3 ft.  
Blooms/Fruits: July–October

Duration: Perennial, herbaceous

Pollinator Value: Visited by honey bees, various native bees, wasps, beetles, flies, bugs, moths and butterflies.

Habitat: Upland prairies, pastures, loess hill prairies, forest openings, and roadsides.
Flowering/close-up view of flower

Leaf shape and arrangement
New England Aster (*Symphyotrichum novae-angliae*)
Aster Family

Other Common Names: none

**Scientific Name:** *Symphyotrichum novae-angliae* (L.) G.L. Nesom

**Plant Symbol:** SYNO2

**Distinguishing characteristics:** Flower heads in many branched inflorescences; rays numerous (40-100) in each flower head, reddish-purple to purple and the disc reddish-purple; the leaves are widest at the ends, with a blunt tip and tapering base that clasps the stem, with 3-main veins per leaf, the middle and lower leaves absent at flowering; stems are hairy with interspersed gland-tipped hairs, 1 to several from the base and branched towards the top.

**Plant Height:** 2-5 ft., erect

**Blooms/Fruits:** July–October

**Duration:** Perennial, herbaceous (with woody rootstock and rhizomes)

**Pollinator Value:** These flowers provide abundant nectar and pollen in the fall. They attract butterflies. There are a number of aster-oligolege bees that feed on pollen.

**Habitat:** Bottomland prairies, moist depressions, fens, stream banks, pastures, fencerows, and roadides.
Full flowering/close-up of blooms

Stem and leaf arrangement

Seedlings
Prairie Blazing Star (*Liatris pycnostachya*)
Aster Family

Other Common Names: prairie gayfeather, prairie liatris, Kansas blazing star, Kansas gayfeather, Kansas liatris, cat-tail blazing star, cat-tail gayfeather, cat-tail liatris, hairy button-snakeroot

**Scientific Name:** *Liatris pycnostachya* Michx.  
**Plant Symbol:** LIPY

**Distinguishing characteristics:** Flowering heads purplish-blue to lavender powder-puffs and tightly clustered on an elongate inflorescence (spike) that may be half the length of the entire plant; flowering occurs from the top of the inflorescence first and then downward as the season progresses; leaves crowded on the stem and linear up to 6 in. long towards the base, but shorter upward.

**Plant Height:** 2–5 ft., erect  
**Blooms/Fruits:** July–October

**Duration:** Perennial, herbaceous (from a rounded corm)

**Pollinator Value:** Bees and butterflies are attracted to the flowers of this late summer through fall nectar source.

**Habitat:** Upland prairies, openings in mesic to upland forests, stream and ditch banks, fencerows, and pastures.
Prairie Ironweed (*Vernonia fasciculata*)
Aster Family

Other Common Names:

**Scientific Name:** *Vernonia fasciculata* Michx.  
**Plant Symbol:** VEFA2

**Distinguishing characteristics:** Flower heads reddish-purple to purple in a much branched inflorescence; leaves are alternate on the stem and mostly attached directly without a leaf stem, shape is widely lance-shaped and tapering at both ends, the undersurface has small, indented glands; the dark green leaves with the vivid purple flowers makes it easy to identify.

**Plant Height:** 2–4 ft., erect  
**Blooms/Fruits:** July–September  
**Duration:** Perennial, herbaceous (from rhizomes)

**Pollinator Value:** This flower attracts bees and butterflies. It supports an oligolege bee with its pollen.

**Habitat:** Bottomlands, ditches, low prairies, marshes, fens, and low fields.
Full flowering/close-up of flowers and mature

Close-up of leaf/stem and leaf
Rocky Mountain Blazing Star (*Liatris ligulistylis*)

**Aster Family**

**Other Common Names:** Rocky Mountain gayfeather, Rocky Mountain liatris, meadow blazing star, meadow gayfeather, meadow liatris

**Scientific Name:** *Liatris ligulistylis* (A. Nels) K. Schum  
**Plant Symbol:** LILI

**Distinguishing characteristics:** Flower heads blue and appearing as small powder-puffs along a spike-like inflorescence, the terminal flower head will usually flower first and is clearly larger than those below it; leaves are numerous along the stem, narrow and widest towards the top and tapering towards the stem.

**Plant Height:** 1–3 ft., erect  
**Blooms/Fruits:** July–October

**Duration:** Perennial, herbaceous (with a rounded corm)

**Pollinator Value:** Arguably, the most highly preferred monarch nectar plant. Bees and butterflies are also attracted to the flowers.

**Habitat:** Open moist sites, pine barrens, roadsides, ditches, and along railroads.

**Note:** There are several *Liatris* species that are similar in appearance to Rocky Mountain blazing star. This species can be distinguished from others by having the terminal flower head on the inflorescence larger than the lower ones when it is in flower and the inside of the floral tube is not hairy.
Sawtooth Sunflower (*Helianthus grosseserratus*)
Aster Family

Other Common Names: hélianthe à grosses dents

**Scientific Name:** *Helianthus grosseserratus* M. Marten  
**Plant Symbol:** HEGR4

**Distinguishing characteristics:** Flower heads with yellow rays and center; leaves are obviously sawtoothed on the margins, broadly lance shaped, and with 3 in. long leaf bases, upper leaf surface rough/raspy; stems arise from stout rhizomes and are hairless, but with a white waxy coating on the lower half of the stem.

**Plant Height:** 3–12 ft., erect  
**Blooms/Fruits:** August–November

**Duration:** Perennial, herbaceous

**Pollinator Value:** These flowers are known to attract butterflies and other pollinators. They provide both pollen and nectar to foraging bees.

**Habitat:** Dry to wet prairies, open sites, wooded stream bottoms

![Map of distribution](image1.png)  
![Image of Sawtooth Sunflower](image2.png)
Full flowering and close-up of flowers

Leaf arrangement

Stem and close-up of leaf
Showy Goldenrod (*Solidago speciosa*)

Aster Family

**Other Common Names:** prairie goldenrod, showy-wand goldenrod

**Scientific Name:** *Solidago speciosa* Nutt.  
**Plant Symbol:** SOSP2

**Distinguishing characteristics:** Flower heads yellow in branched inflorescences arising both terminal and from the axils of the upper leaves, ascending to spreading; leaves are variable – those on the lower portions of the plant widest in the middle or the end of the leaf, and leaves above the middle of the plant are widest towards the base of the leaf, all leaves have 1 main vein, stems with longitudinal ridges or grooves.

**Plant Height:** 2–5 ft., erect  
**Blooms/Fruits:** August–November

**Duration:** Perennial, herbaceous

**Pollinator Value:** This flower is very attractive to bumble bees and butterflies. Goldenrods are quality nectar and pollen sources for pollinators and other beneficial insects. It hosts a number of oligolege bees.

**Habitat:** Upland prairies, dry to mesic upland forests, dry open site, and roadsides.
Close-up of Flowers

Mature plant

Leaf

Photo: R.W. Smit, Lady Bird Johnson Wildflower Center

Photo: K.R. Robertson, Illinois Natural History Survey

Photo: John Hilty, Illinois Wildflowers
Showy Milkweed (*Asclepias speciosa*)
Milkweed Family

Other Common Names: None

Scientific Name: *Asclepias speciosa* Torr.  
Plant Symbol: ASSP

Distinguishing characteristics: Flowers in umbrella-shaped clusters borne on hairy flower stalks; petals reflexed with upturned tips, greenish-purple to pink with an overall hour-glass shape; leaves are opposite on the stem, pointed at the tip, rounded at the base, and hairy on the under surface; stems are hairy and may be branched.

Plant Height: 1.5–3 ft., but may reach 6 ft., erect  
Blooms/Fruits: May–September

Duration: Perennial, herbaceous (from deep-set rhizomes)

Pollinator Value: Larval host for the monarch butterfly. Flowers attract butterflies. High value summer nectar source.

Habitat: Wet prairies, savannahs, and roadside ditches.

![Map of the Northern Great Plains Region](image1)

![Showy Milkweed flowers](image2)

*Photo: John Hix, Lady Bird Johnson Wildflower Center*
Full flowering/close-up of blooms

Stem and Leaf arrangement

Fruit

Mature fruit with seed
Slimleaf Milkweed (*Asclepias stenophylla*)

Milkweed Family

**Other Common Names:** narrowleaf milkweed, narrowleaf green milkweed

**Scientific Name:** *Asclepias stenophylla* A. Gray  
**Plant Symbol:** ASST

**Distinguishing characteristics:** Stems erect, usually solitary from a corm-like rootstock; leaves alternately arrange on the stem, sessile or with very short leaf stalks, linear in shape, 4–7 in. long by <1/4 in. wide; inflorescences several from the upper leaf axils, globular in shape with numerous flowers in each; flowers with reflexed petals, mostly green, pale-green, to light-yellow; crown light-green to white with the corona hoods appearing 3-lobed.

**Plant Height:** 1–3 ft.  
**Blooms/Fruits:** May–August

**Duration:** Perennial, herbaceous (from thick, tuberous rootstock)

**Pollinator Value:** Larval host for the monarch butterfly. Visited by bumble bees, other native bees, honey bees, and a variety of butterflies.

**Habitat:** Upland prairies, open ground, exposed ledges, bluffs, calcareous ground, roadsides, and pastures.
Smooth Blue Aster (*Symphyotrichum laeve*)

Aster Family

**Other Common Names:** smooth aster

**Scientific Name:** *Symphyotrichum laeve* (L.) Á. Löve & D. Löve

*SYLA3*

**Distinguishing characteristics:** Flowering heads few to many on the ends of ascending branches, rays are blue to lavender and the center is yellow; leaves are widest near the middle and sometimes heart-shaped, generally without hairs; leaf stems absent or very short; basal leaves and those on the lower half of the stem generally absent/withered at flowering.

**Plant Height:** 2–4 ft., erect, branched above the stem’s midpoint

**Blooms/Fruits:** August-October

**Duration:** Perennial, herbaceous (from creeping, woody rhizomes)

**Pollinator Value:** Flowers provide abundant nectar and pollen in the fall. They attract butterflies. There are a number of aster-oligolege bees that feed on the pollen.

**Habitat:** Open or drying sites, upland prairies, open forests, and roadsides.
Full flowering/close-up of flowers

Stem and leaf arrangement

Mature plant
Smooth Oxeye (*Heliopsis helianthoides*)
Aster Family

**Other Common Names:** oxeye sunflower, false sunflower

**Scientific Name:** *Heliopsis helianthoides* (L.) Sweet

**Plant Symbol:** HEHE5

**Distinguishing characteristics:** Flower heads with persistent yellow rays and a cone-shaped yellow-orange center and superficially appearing like a small version of common sunflower; leaves are opposite on the stem, have a rough texture to the touch, with coarsely saw-toothed margins, 3 main veins, and a pointed tip.

**Plant Height:** 3–5 ft., erect  
**Blooms/Fruits:** June–September

**Duration:** Perennial, herbaceous (from creeping rhizomes)

**Pollinator Value:** This summer blooming flower is of high value to many pollinators and beneficial insects. It has its own oligolege bee, and it attracts butterflies.

**Habitat:** Dry areas, prairies, edges of woods, roadsides, open woods, edges of fields and thickets.
**Important Plants of the Monarch Butterfly**

**Northern Great Plains Region**

---

**Full flowering/close-up of blooms**

**Mature plant**

**Leaf**

---

**Stem arrangement**

---

Photo: R.W. Smith, Lady Bird Johnson Wildflower Center

Photo: Julie Meakin, Lady Bird Johnson Wildflower Center

Photo: K. R. Robertson, Illinois Natural History Survey

Photo: K. R. Robertson, Illinois Natural History Survey

Photo: John Hilty, Illinois Wildflowers

---

**Ver. 1.0 Northern Great Plains Region, February 2018**
Spotted Joe Pye Weed (*Eutrochium maculatum*)

Aster Family

**Other Common Names:** spotted trumpetweed, eupatoire maculée

**Scientific Name:** *Eutrochium (= Eupatorium) maculatum* (L) E.E. Lamont  
**Plant Symbol:** EUMA9

**Distinguishing characteristics:** Flower heads are terminal in large, purple, dome-shaped inflorescences; leaves are in whorls of 4 to 5 (except towards the top where they can be alternate), tapering to a point at the tip, have margins sharply toothed, undersurfaces with both short hairs and glandular hairs, and only 1 main vein per leaf; the stems are solid (except at the very base) and are colored with dark purple mottling or uniformly dark purple tinged.

**Plant Height:** 3–6 ft., erect  
**Blooms/Fruits:** August–September

**Duration:** Perennial, herbaceous

**Pollinator Value:** This late summer flower provides nectar for long---tongued bees and butterflies.

**Habitat:** Pastures & disturbed sites, moist areas, and open sun or partial shade.
Stiff Goldenrod (Oligoneuron rigidum)

Aster Family

Other Common Names: ridged goldenrod

Scientific Name: Oligoneuron rigidum (L) Small

Plant Symbol: OLRI

Distinguishing characteristics: Flower heads in branched, flat-topped to mildly rounded inflorescences, individual flower heads small with yellow rays and yellow centers; leaves with basal rosettes that are persistent at flowering as well as smaller stem leaves; leaf surfaces with short, usually dense, curved hairs making the surface feel rough; stems with several fine grooves/ridges and with pubescence of curved hairs.

Plant Height: 2–4 ft., erect

Blooms/Fruits: July–November

Duration: Perennial, herbaceous (with short, creeping rhizomes)

Pollinator Value: This flower supports pollinators and beneficial insects. It attracts butterflies, including the monarch.

Habitat: Bottomland and upland prairies, dry upland forests, old fields, and pastures.

Note: There are many plants commonly called goldenrods that belong to different plant genera, Solidago, Euthamia, and Oligoneuron, and they are all fairly similar. They generally have yellow, clustered flowers, but some species are white. The flowering stems can be elongate and recurved or flat-topped.
Full flowering/close-up of blooms

Stem and leaf arrangement
Stiff Sunflower (*Helianthus pauciflorus*)
Aster Family

**Other Common Names:** prairie sunflower, few-leaved sunflower

**Scientific Name:** *Helianthus pauciflorus* Nutt.  
**Plant Symbol:** HEPA19

**Distinguishing characteristics:** Flower heads single or a few and terminal, rays yellow and the central disc reddish-brown to dark purple; leaves few and are mostly towards the base of the plant, thick-textured and somewhat leathery, covered with short stiff hairs making the surfaces feel rough/raspy, and with 3- main veins.

**Plant Height:** 4–6 ft., erect  
**Blooms/Fruits:** August–October

**Duration:** Perennial, herbaceous (forms dense colonies from rhizomes)

**Pollinator Value:** This plant is a great summer nectar source. Sunflowers are workhorse plants, supporting bees, butterflies, and other beneficial insects. Many species of native bee are oligoleges on its pollen. Checkerspot butterflies feed on its leaves as caterpillars.

**Habitat:** Upland prairies, loess hill prairies, openings in dry upland forests, pastures, and roadsides.
Swamp Milkweed (*Asclepias incarnata*)
Milkweed Family

**Other Common Names:** rose milkweed, pleurisy root, white Indian hemp

**Scientific Name:** *Asclepias incarnata* L.  
**Plant Symbol:** ASIN

**Distinguishing characteristics:** Inflorescences long stalked and with 2–12 per plant, both terminal and in the leaf axis toward the upper end of the stem; flowers pink to pinkish-white; petals reflexed; leaves opposite on the stem, lance-shaped, and with an abrupt or rounded base; leaf stalk short.

**Plant Height:** 2–6 ft., erect  
**Blooms/Fruits:** June–October

**Duration:** Perennial, herbaceous (from a fibrous rootstock)

**Pollinator Value:** Larval host plant for the monarch butterfly. Flowers attract butterflies.

**Habitat:** Wetland habitats: swamps, sloughs, marshes, and edges of ponds.

**Note:** Swamp milkweed is poisonous if consumed in larger quantities by people and livestock. Sheep are especially susceptible.
Full flowering/close-up of blooms

Leaf arrangement

Fruit

Seed
Tall Blazing Star (*Liatris aspera*)
Aster Family

Other Common Names: rough gayfeather

**Scientific Name:** *Liatris aspera* Michx.  
**Plant Symbol:** LIAS

**Distinguishing characteristics:** Flower heads are in small powder-puffs interspersed along an elongate spike-like inflorescence; the leaves are widest towards the middle or tip of the leaves, but they are always very narrow, appearing linear.

**Plant Height:** 2–4 ft., erect  
**Blooms/Fruits:** August–November

**Duration:** Perennial, herbaceous (with a round corm)

**Pollinator Value:** Monarchs are known to visit this plant. Bees and butterflies are attracted to the flowers of this late summer/fall nectar source.

**Habitat:** Upland prairies, glades, openings of mesic to dry upland forests, pastures, and roadsides.

**Note:** There are several *Liatris* species that are similar in appearance to Tall Blazing Star. This species can be distinguished from others by having the bracts under the flower heads with thin, transparent margins which are purplish-tinged and appearing torn. The individual flowers are hairy within the floral tube, and the terminal head is NOT larger than the rest of the heads.
Tall Thistle (*Cirsium altissimum*)

Aster Family

Other Common Names: Iowa thistle, roadside thistle

Scientific Name: *Cirsium altissimum* (L.) Hill  

Plant Symbol: CIAL2

Distinguishing characteristics: Stems solitary with heavy branching in the upper portions of the stem; Leaves with a basal rosette of 1st year leaves and stems leafy with the 2nd year growth; basal & stem leaves large, up to 10 in. long and 5 in. wide, generally not lobed or with shallow lobes; leaf margins wavy and spine tipped; flowering heads numerous and solitary at the ends of the branch tips, pinkish-purple to reddish-purple in color.

Plant Height: (variable) 3–10 ft.  

Blooms/Fruits: July–September

Duration: Biennial, herbaceous

Pollinator Value: Visited for nectar and/or pollen by very diverse insect community, including bumble bees, other native bees, honey bees, flies, beetles, moths and butterflies.

Habitat: Bottomland forests, open stream bottom thickets, pastures, savannas, old fields, and roadsides.
Flowering/close-up view of flowers/mature flowers

Seedling

Leaf shape and arrangement
White Prairie Clover (*Dalea candida*)

Pea Family

**Other Common Names:**

**Scientific Name:** *Dalea candida* Michx. ex Willd.  
**Plant Symbol:** DACA7

**Distinguishing characteristics:** Flowers small, two-lipped, white, and in cylindrical or thimble-shaped clusters at the top of the stem; flowering in a ring at the base of the cylindrical inflorescence first and the ring moves up the inflorescence; leaves compound with 3–5 pairs of leaves with one on the top; stems 1 to several from a thick taproot.

**Plant Height:** 1–2 ft., erect  
**Blooms/Fruits:** May–August

**Duration:** Perennial, herbaceous to shrubby bases

**Pollinator Value:** This flower provides nectar and pollen to bees and butterflies. It is also a larval host plant for the Dogface butterfly.

**Habitat:** Prairies, open woodland, stream valleys, and roadsides.

![Map of the Northern Great Plains Region showing the distribution of White Prairie Clover.](image1)

![Photo of White Prairie Clover in natural setting.](image2)
Wholeleaf Rosinweed (*Silphium integrifolium*)
Aster Family

Other Common Names: entire-leaf rosinweed, rosinweed

Scientific Name: *Silphium integrifolium* Michx.  
Plant Symbol: SIIN2

**Distinguishing characteristics:** Flowering heads in open loose inflorescences, rays yellow and the central disc yellow; leaves occur somewhat uniformly along the stem, are opposite each other on the stem, are widely lance-shaped to heart shaped, except for some basal leaves they are attached directly to the stem and without a leaf stalk; the leaf bases are heart shaped and clasping the stem or taper down the stem but do not fuse together with the leaf on the opposite side of the stem.

**Plant Height:** 2 – 6 ft., erect  
**Blooms/Fruits:** July - September

**Duration:** Perennial, herbaceous (from short, stout rhizomes)

**Pollinator Value:** This flower provides nectar and pollen to bees and other beneficial insects.

**Habitat:** Upland prairies open upland forests, banks of streams and rivers, edges of crop fields, and roadsides.
Full flowering/close-up of flowers and base

Vegetative growth and close-up of stem and leaf
Whorled Milkweed (Asclepias verticillata)

Milkweed Family

Other Common Names: horsetail milkweed

Scientific Name: Asclepias verticillata L.  Plant Symbol: ASVE

Distinguishing characteristics: Leaves very linear/narrow and whorled along the stem. Flower clusters in loose roundish clusters, white to greenish-white sometimes with a purple tinge; petals reflexed but with upturned tips; stems solitary or few from the root mass.

Plant Height: 1–3 ft., erect  Blooms/Fruits: May–September

Duration: Perennial, herbaceous (from rhizomes)

Pollinator Value: Larval host plant for the monarch butterfly. Provides nectar in the summer and early fall. Flowers attract butterflies.

Habitat: Upland prairies, savannas, pastures, roadsides, and open upland forests.
Wild Bergamot (*Monarda fistulosa*)
Mint Family

Other Common Names: beebalm

Scientific Name: *Monarda fistulosa* L.  
Plant Symbol: MOFI

Distinguishing characteristics: Flowers in tight ball-like clusters terminating the branches, strongly 2-lipped with the upper lip erect and the lower lip downturned, pale to dark lavender, but rarely white; leaves opposite, variable from lance-shaped to widely lance-shaped, the undersurface has small, clear spots (punctae) that are visible when holding the leaf up to the light; stems are square and with backwards-pointed hairs on the upper half of the stem.

**Plant Height:** 1.5 – 4 ft., erect  
**Blooms/Fruits:** May - September

**Duration:** Perennial, herbaceous (with slender, creeping rhizomes)

**Pollinator Value:** This flower is highly attractive to long-tongued bees and butterflies.

**Habitat:** Dry open woods, fields, wet meadows and ditches, and at the edges of woods and marshes; calcareous or acidic soils.
Full flowering/close-up of blooms

Flower bud

Foliage/leaf arrangement
Literature Cited


References used to construct the Monarch WHEG and Planting List:


Distribution Maps:

USDA NRCS – National PLANTS Database: [http://plants.usda.gov](http://plants.usda.gov)

Plant Descriptions:

Flora North America Project, Online Flora [http://floranorthamerica.org](http://floranorthamerica.org)


Lady Bird Johnson Wildflower Center, Online resources http://www.wildflower.org/


NRCS - Plant Guides & Plant Facts Sheets http://plants.usda.gov


**Pollinator Values:**


Lee-Mader, Eric, Jarrod Fowler, Jillian Vento and Jennifer Hopwood. 2016. 100 Plants to Feed the Bees: Provide a Healthy Habitat to Help Pollinators Thrive. The Xerces Society, Portland, OR. 240 pp.
