Important Plants of the Monarch Butterfly

Southern Great Plains

Staff Guide

Natural Resources Conservation Service
nrcs.usda.gov/monarchs
Important Plants of the Monarch Butterfly

Southern Great Plains

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* Southern Great Plains Region 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 Kansas, Oklahoma, and Texas 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 Plant 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 ............................................................................................................................................................... 8

Monarch Planting List .............................................................................................................................................. 14

Monarch WHEG Inventory Plant List .................................................................................................................. 17

Flower Color Chart .................................................................................................................................................. 19

Pale Purple Coneflower (*Echinacea pallida*) ............................................................................................ 101
New England Aster (*Symphyotrichum novae*) ........................................................................................ 97
Maximillian Sunflower (*Helianthus maximiliani*) ...................................................................................... 95
Lemon Beebalm (*Monarda citriodora*) ........................................................................................................ 93
Leadplant (*Amorpha canescens*) .................................................................................................................. 89
Late flowering Thoroughwort (*Eupatorium serotinum*) ...................................................................... 87
Hoary Verbena (*Verbena stricta*) .................................................................................................................. 85
Hairy Wedelia (*Wedelia acapulcensis*) ....................................................................................................... 83
Green Antelopehorn (*Asclepias viridis*) ....................................................................................................... 81
Gray Goldenrod (*Solidago nemoralis*) ........................................................................................................ 79
Golden Crownbeard (*Verbesina encelioides*) .......................................................................................... 77
Fringed Twinevine (*Funastrum cynanchoides*) ....................................................................................... 75
Engelmann’s Daisy (*Engelmannia peristenia*) .......................................................................................... 73
Entireleaf Indian Paintbrush (*Castilleja indivisa*) ..................................................................................... 69
Downy Ragged Goldenrod (*Solidago petiolaris*) .................................................................................... 67
Dotted Blazing Star (*Liatris punctata*) ........................................................................................................ 65
Dotted Blue Mistflower (*Conoclinium coelestinum*) ................................................................................ 61
Compassplant (*Silphium laciniatum*) ........................................................................................................... 59
Common Sunflower (*Helianthus annuus*) .................................................................................................. 57
Common Dittany (*Cunila origanoides*) ......................................................................................................... 53
Common Milkweed (*Asclepias syriaca*) ....................................................................................................... 55
Cup Plant (*Silphium perfoliatum*) .................................................................................................................. 51
Common Boneset (*Eupatorium perfoliatum*) ............................................................................................ 49
Canada Goldenrod (*Solidago canadensis*) ................................................................................................. 47
Common Milkweed (*Asclepias syriaca*) ....................................................................................................... 45
Baton leaf Thoroughwort (*Conoclinium betonicifolium*) ........................................................................ 43
Blackeyed Susan (*Rudbeckia hirta*) ............................................................................................................. 37
Blacksamson Echinacea (*Echinacea angustifolia*) ....................................................................................... 39
Blue Mistflower (*Conoclinium coelestinum*) .............................................................................................. 41
Broadleaf Milkweed (*Asclepias latifolia*) .................................................................................................. 33
Button Eryngo (*Eryngium yuccifolium*) ......................................................................................................... 31
Canada Goldenrod (*Solidago canadensis*) ................................................................................................. 29
Ashy Sunflower (*Helanthus mollis*) .............................................................................................................. 27
Ashy Bushsunflower (*Simia calva*) ............................................................................................................... 25
Aromatic Aster (*Symphyotrichum oblongifolium*) .................................................................................... 23
American Star-thistle (*Centaurea Americana*) ........................................................................................... 21
Common Milkweed (*Asclepias syriaca*) ....................................................................................................... 19

Ver. 2.0 Southern Great Plains, April 2018     4
<table>
<thead>
<tr>
<th>Plant Name</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pinkscale Blazing Star (<em>Liatris elegans</em>)</td>
<td>107</td>
</tr>
<tr>
<td>Prairie Blazing Star (<em>Liatris pycnostachya</em>)</td>
<td>109</td>
</tr>
<tr>
<td>Prairie Ironweed (<em>Vernonia fasciculate</em>)</td>
<td>111</td>
</tr>
<tr>
<td>Prairie Milkweed (<em>Asclepias sullivantii</em>)</td>
<td>113</td>
</tr>
<tr>
<td>Purple Prairie Clover (<em>Dalea purpurea</em>)</td>
<td>115</td>
</tr>
<tr>
<td>Roughstem Rosinweed (<em>Silphium radula</em>)</td>
<td>117</td>
</tr>
<tr>
<td>Roundhead Prairie Clover (<em>Dalea multiflora</em>)</td>
<td>119</td>
</tr>
<tr>
<td>Roundleaf Ragwort (<em>Packera obovate</em>)</td>
<td>121</td>
</tr>
<tr>
<td>Sawtooth Sunflower (<em>Helianthus grosseserratus</em>)</td>
<td>123</td>
</tr>
<tr>
<td>Scaly Blazing Star (<em>Liatris squarrosa</em>)</td>
<td>125</td>
</tr>
<tr>
<td>Shiny Goldenrod (<em>Oligoneuron nitidum</em>)</td>
<td>127</td>
</tr>
<tr>
<td>Showy Goldenrod (<em>Solidago speciose</em>)</td>
<td>129</td>
</tr>
<tr>
<td>Showy Milkweed (<em>Asclepias speciosa</em>)</td>
<td>131</td>
</tr>
<tr>
<td>Smooth Blue Aster (<em>Symphyotrichum leave</em>)</td>
<td>133</td>
</tr>
<tr>
<td>Smooth Oxeye (<em>Heliopsis helianthoides</em>)</td>
<td>135</td>
</tr>
<tr>
<td>Sneezeweed (<em>Helenium amarum</em>)</td>
<td>137</td>
</tr>
<tr>
<td>Soft-hair Marbleseed (<em>Onosmodium bejariense</em>)</td>
<td>139</td>
</tr>
<tr>
<td>Spanish Gold (<em>Grindelia papposa</em>)</td>
<td>141</td>
</tr>
<tr>
<td>Spider Milkweed (<em>Asclepias asperula</em>)</td>
<td>143</td>
</tr>
<tr>
<td>Spotted Beebalm (<em>Monarda punctata</em>)</td>
<td>145</td>
</tr>
<tr>
<td>Stiff Goldenrod (<em>Oligoneuron rigidum</em>)</td>
<td>147</td>
</tr>
<tr>
<td>Stiff Tickseed (<em>Coreopsis palmate</em>)</td>
<td>149</td>
</tr>
<tr>
<td>Swamp Milkweed (<em>Asclepias incarnate</em>)</td>
<td>151</td>
</tr>
<tr>
<td>Sweetscented Joe Pye Weed (<em>Solidago speciosa</em>)</td>
<td>153</td>
</tr>
<tr>
<td>Tall Blazing Star (<em>Liatris aspera</em>)</td>
<td>155</td>
</tr>
<tr>
<td>Texas Vervain (<em>Verbena halei</em>)</td>
<td>157</td>
</tr>
<tr>
<td>Western Wallflower (<em>Erysimum asperum</em>)</td>
<td>159</td>
</tr>
<tr>
<td>White Crownbeard (<em>Verbesina virginica</em>)</td>
<td>161</td>
</tr>
<tr>
<td>White Heath Aster (<em>Symphyotrichum ericoides</em>)</td>
<td>163</td>
</tr>
<tr>
<td>White Prairie Clover (<em>Verbena halei</em>)</td>
<td>165</td>
</tr>
<tr>
<td>Wholeleaf Rosinweed (<em>Sliphium integrifolium</em>)</td>
<td>167</td>
</tr>
<tr>
<td>Wild Bergamot (<em>Monarda fistulosa</em>)</td>
<td>169</td>
</tr>
<tr>
<td>Wild Blue Phlox (<em>Phlox divaricata</em>)</td>
<td>171</td>
</tr>
<tr>
<td>Wrinkleleaf Goldenrod (<em>Solidago rugose</em>)</td>
<td>173</td>
</tr>
<tr>
<td>Zizotes Milkweed (<em>Asclepias oenotheroides</em>)</td>
<td>175</td>
</tr>
</tbody>
</table>

| Literature Cited                                    | 177  |
### Find Plants by Scientific Name

<table>
<thead>
<tr>
<th>Scientific Name</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asclepias asperula (Spider Milkweed)</td>
<td>143</td>
</tr>
<tr>
<td>Amorpha canescens (Leadplant)</td>
<td>89</td>
</tr>
<tr>
<td>Asclepias incarnate (Swamp Milkweed)</td>
<td>151</td>
</tr>
<tr>
<td>Asclepias latifolia (Broadleaf Milkweed)</td>
<td>43</td>
</tr>
<tr>
<td>Asclepias oenotheroides (Zizotes Milkweed)</td>
<td>175</td>
</tr>
<tr>
<td>Asclepias speciosa (Showy Milkweed)</td>
<td>131</td>
</tr>
<tr>
<td>Asclepias sullivantii (Prairie Milkweed)</td>
<td>113</td>
</tr>
<tr>
<td>Asclepias tuberosa (Butterfly Milkweed)</td>
<td>45</td>
</tr>
<tr>
<td>Asclepias syriaca (Common Milkweed)</td>
<td>55</td>
</tr>
<tr>
<td>Asclepias viridis (Green Antelopehorn)</td>
<td>81</td>
</tr>
<tr>
<td>Bidens aristosa (Bearded Beggarticks)</td>
<td>33</td>
</tr>
<tr>
<td>Castilleja indivisa (Entireleaf Indian Paintbrush)</td>
<td>69</td>
</tr>
<tr>
<td>Centaurea Americana (American Star-thistle)</td>
<td>21</td>
</tr>
<tr>
<td>Conoclinium betonicifolium (Betonyleaf Thoroughwort)</td>
<td>35</td>
</tr>
<tr>
<td>Conoclinium coelestinum (Blue Mistflower)</td>
<td>41</td>
</tr>
<tr>
<td>Conoclinium greggii (Palmleaf Thoroughwort)</td>
<td>103</td>
</tr>
<tr>
<td>Coreopsis palmate (Stiff Tickseed)</td>
<td>149</td>
</tr>
<tr>
<td>Cunila origanoides (Common Dittany)</td>
<td>53</td>
</tr>
<tr>
<td>Dalea multiflora (Roundhead Prairie Clover)</td>
<td>119</td>
</tr>
<tr>
<td>Dalea purpurea (Purple Prairie Clover)</td>
<td>115</td>
</tr>
<tr>
<td>Echinacea angustifolia (Blacksamson Echinacea)</td>
<td>39</td>
</tr>
<tr>
<td>Echinacea pallida (Pale Purple Coneflower)</td>
<td>101</td>
</tr>
<tr>
<td>Echinacea purpurea (Eastern Purple Coneflower)</td>
<td>71</td>
</tr>
<tr>
<td>Engelmannia peristenia (Engelmann’s Daisy)</td>
<td>73</td>
</tr>
<tr>
<td>Eryngium leavenworthii (Leavenworth’s Eryngo)</td>
<td>91</td>
</tr>
<tr>
<td>Eryngium yuccifolium (Button Eryngo)</td>
<td>47</td>
</tr>
<tr>
<td>Erysimum asperum (Western Wallflower)</td>
<td>159</td>
</tr>
<tr>
<td>Eupatorium perfoliatum (Common Boneset)</td>
<td>51</td>
</tr>
<tr>
<td>Eutrochium purpureum (Sweetscented Joe Pye Weed)</td>
<td>153</td>
</tr>
<tr>
<td>Eupatorium serotinum (Late flowering Thoroughwort)</td>
<td>87</td>
</tr>
<tr>
<td>Funastrum cynanchoides (Fringed Twinevine)</td>
<td>75</td>
</tr>
<tr>
<td>Glandularia bipinnatifida (Dakota Mock Vervain)</td>
<td>63</td>
</tr>
<tr>
<td>Grindelia papposa (Spanish Gold)</td>
<td>141</td>
</tr>
<tr>
<td>Helianthus mollis (Ashy Sunflower)</td>
<td>25</td>
</tr>
<tr>
<td>Helianthus annuus (Common Sunflower)</td>
<td>57</td>
</tr>
<tr>
<td>Helianthus grosseserratus (Sawtooth Sunflower)</td>
<td>123</td>
</tr>
<tr>
<td>Helianthus maximiliani (Maximillian Sunflower)</td>
<td>95</td>
</tr>
<tr>
<td>Helianthus mollis (Ashy Sunflower)</td>
<td>155</td>
</tr>
<tr>
<td>Helianthus annuus (Common Sunflower)</td>
<td>107</td>
</tr>
<tr>
<td>Helianthus mollis (Ashy Sunflower)</td>
<td>65</td>
</tr>
<tr>
<td>Helianthus annuus (Common Sunflower)</td>
<td>109</td>
</tr>
<tr>
<td>Helianthus grosseserratus (Sawtooth Sunflower)</td>
<td>125</td>
</tr>
<tr>
<td>Helianthus mollis (Ashy Sunflower)</td>
<td>99</td>
</tr>
<tr>
<td>Helianthus mollis (Ashy Sunflower)</td>
<td>135</td>
</tr>
<tr>
<td>Liatris aspera (Tall Blazing Star)</td>
<td>155</td>
</tr>
<tr>
<td>Liatris elegans (Pinkscale Blazing Star)</td>
<td>107</td>
</tr>
<tr>
<td>Liatris punctata (Dotted Blazing Star)</td>
<td>65</td>
</tr>
<tr>
<td>Liatris pycnostachya (Prairie Blazing Star)</td>
<td>109</td>
</tr>
<tr>
<td>Liatris squarrosa (Scaly Blazing Star)</td>
<td>125</td>
</tr>
<tr>
<td>Lithospermum incicum (Narrowleaf Stoneseed)</td>
<td>99</td>
</tr>
<tr>
<td>Monarda citriodora (Lemon Beebalm)</td>
<td>93</td>
</tr>
<tr>
<td>Monarda fistulosa (Wild Bergamot)</td>
<td>169</td>
</tr>
<tr>
<td>Monarda punctata (Spotted Beebalm)</td>
<td>145</td>
</tr>
<tr>
<td>Oligoneuron nitidum (Shiny Goldenrod)</td>
<td>127</td>
</tr>
<tr>
<td>Oligoneuron rigidum (Stiff Goldenrod)</td>
<td>147</td>
</tr>
<tr>
<td>Onosmodium bejariense (Soft-hair Marbleseed)</td>
<td>139</td>
</tr>
<tr>
<td>Packera obovate (Roundleaf Ragwort)</td>
<td>121</td>
</tr>
<tr>
<td>Phlox divaricata (Wild Blue Phlox)</td>
<td>171</td>
</tr>
<tr>
<td>Polygonum pensylvanicum (Pennsylvania Smartweed)</td>
<td>105</td>
</tr>
</tbody>
</table>
Important Plants of the Monarch Butterfly
Southern Great Plains

Rudbeckia hirta (Blackeyed Susan) ................................................................. 37
Salvia azurea (Azure Blue Sage) ................................................................. 29
Silphium integrifolium (Wholeleaf Rosinweed) .............................................. 167
Silphium laciniatum (Compassplant) ............................................................ 59
Silphium perfoliatum (Cup Plant) ............................................................... 61
Silphium radula (Roughstem Rosinweed) ..................................................... 117
Simsia calva (Awnless Bushsunflower) ......................................................... 27
Solidago canadensis (Canada Goldenrod) ...................................................... 49
Solidago nemoralis (Gray Goldenrod) ........................................................ 79
Solidago petiolaris (Downy Ragged Goldenrod) ......................................... 67
Solidago rugose (Wrinkleleaf Goldenrod) .................................................... 173
Solidago speciosa (Showy Goldenrod) ........................................................ 129
Symphyotrichum ericoides (White Heath Aster) ........................................... 163
Symphyotrichum laeve (Smooth Blue Aster) ............................................... 133
Symphyotrichum novae -angliae (New England Aster) ............................ 97
Symphyotrichum oblongifolium (Aromatic aster) .......................................... 23
Verbena halei (Texas Vervain) ................................................................. 157
Verbena virginica (White Prairie Clover) ...................................................... 165
Verbena stricta (Hoary Verbena) ............................................................... 85
Verbena encelioides (Golden Crownbeard) ............................................... 77
Verbena virginica (White Crownbeard) ...................................................... 161
Vernonia baldwinii (Baldwin's Ironweed) .................................................. 31
Vernonia fasciculate (Prairie Ironweed) ...................................................... 111
Wedelia acapulcensis (Hairy Wedelia) ......................................................... 83
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: Southern Great Plains Edition (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 (Agrawal 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.
Important Plants of the Monarch Butterfly
Southern Great Plains

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 of *Cynanchum, Funastrum*, and *Matelea*. The larval stage includes 5 instars (molts) 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, and 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 ½ 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)
to extract nectar from the flower (Krenn 2010). 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 2nd 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 2nd 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 1st generation adults migrate from the southern U.S. primarily, but far from exclusively, to the Midwest and Great Lakes region. The 2nd generation then spreads out across the U.S. and southern Canada, with many of the 3rd and 4th 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). 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.

---

6 Monarch butterflies are ineffective pollinators of milkweed (Agrawal 2017), and only incidental pollinators of other species.
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 (*Asclepias* spp.) (Fig. 4). The occurrence of the three most common milkweeds in this subregion is largely determined by soil type. The deep clay soils in the Blackland Prairie of Texas, and sandy soils of Texas, Oklahoma, and Kansas support primarily green milkweed (*Asclepias viridis*). Some refer to this species as green antelope horns. This species is less drought tolerant than spider milkweed, also referred to as antelope horns (*Asclepias asperula*). *Asclepias asperula* is most commonly found on shallow limestone soils, common to the Edwards Plateau and portions of the Texas Cross Timbers ecoregions (Griffith et al. 2007). Zizotes milkweed, also called side-cluster milkweed (*Asclepias oenotheroides*), thrives in areas with low vegetation (routinely mowed or heavily grazed), and is more common in the south central portion of the subregion. Based on the distribution of these three species in central TX (Calvert 1996), *Asclepias oenotheroides* appears to be less drought tolerant than *Asclepias asperula* and less tolerant of acidic soils than *Asclepias viridis*. A fourth species, butterfly milkweed (*Asclepias tuberosa*) is adapted to sandy, non-alkaline soils that are not typically shallow to bedrock. This species of milkweed occurs more commonly in Oklahoma and Kansas than in Texas. Unlike seeds for the other three species of *Asclepias* mentioned in this document, commercial seeds for *A. tuberosa* are readily available. Because butterfly milkweed is not well adapted to shallow…
Important Plants of the Monarch Butterfly  
Southern Great Plains

and/or calcareous soils, so the opportunities for the use of this plant is limited in the subregion. The milkweed of the greatest abundance and distribution in the Midwestern U.S is common milkweed (A. syriaca). This species occurs in eastern Kansas but is infrequent in Oklahoma and virtually non-existent in Texas. Lastly, planting of the non-native tropical milkweed (Asclepias curassavica) is not recommended and shall not be included in any NRCS seeding mix recommendations.

Trees and Shrubs: Narrow bands of woody vegetation and edges of forested areas can provided important fall resting sites (microclimates) 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: Southern Great Plains Edition, 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.

  Note: The commercial supply of Asclepias spp. is limited in some regions of the southern Great Plains. Refer to the NRCS state office guidance on areas where the requirements to include Asclepias in the mix is waived due to limited seed availability.

- 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 Inventory Plant List: The Monarch WHEG Inventory Plant List is for use by conservation planners in the application of the herbaceous vegetation-sampling portion of the Monarch Butterfly Wildlife Habitat Evaluation Guide: Southern 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 Southern 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**

We would like to thank the following specialists who contributed records and observations to help the in the development of these lists. Kristen Baum and Shaun McCooshum of Oklahoma State University, Carol Clark, Kip Kiphart and Mike Quinn of the Austin Butterfly Forum, Roger Sanderson of the Texas Discovery Gardens at Fair Park, and Anne Stine of the Xerces Society. Also providing input to the second version of this edition were biologists from Xerces, USDA-NRCS, U.S. Fish and Wildlife Service, state resource management agencies, universities and conservations organizations.
<table>
<thead>
<tr>
<th>Species name</th>
<th>Plant symbol</th>
<th>Common name</th>
<th>Growth habit</th>
<th>Monarch Value</th>
<th>Early</th>
<th>Mid</th>
<th>Late</th>
<th>KS</th>
<th>OK</th>
<th>TX</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amorpha canescens</td>
<td>AMCA6</td>
<td>leadplant shrub, subshrub</td>
<td>High</td>
<td></td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Asclepias asperula</td>
<td>ASAS</td>
<td>antelope horn forb/herb</td>
<td>Very High</td>
<td></td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Asclepias incarnata</td>
<td>ASIN</td>
<td>swamp milkweed forb/herb</td>
<td>Very High</td>
<td></td>
<td></td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Asclepias latifolia</td>
<td>ASLA4</td>
<td>broadleaf milkweed forb/herb</td>
<td>Very High</td>
<td></td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Asclepias oenotheroides</td>
<td>ASOE</td>
<td>zizotes milkweed forb/herb</td>
<td>Very High</td>
<td></td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Asclepias speciosa</td>
<td>ASSP</td>
<td>showy milkweed forb/herb</td>
<td>High</td>
<td></td>
<td>x</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Asclepias sullivantii</td>
<td>ASSU3</td>
<td>prairie milkweed forb/herb</td>
<td>High</td>
<td></td>
<td></td>
<td></td>
<td>x</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Asclepias syriaca</td>
<td>ASSY</td>
<td>common milkweed forb/herb</td>
<td>Very High</td>
<td></td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Asclepias tuberosa</td>
<td>ASTU</td>
<td>butterfly milkweed forb/herb</td>
<td>High</td>
<td></td>
<td>x</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Asclepias viridis</td>
<td>ASV12</td>
<td>green milkweed forb/herb</td>
<td>Very High</td>
<td></td>
<td>x</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bidens aristosa</td>
<td>BIAR</td>
<td>bearded beggarticks forb/herb</td>
<td>Very High</td>
<td></td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Castilleja indivisa</td>
<td>CAIN13</td>
<td>Indian paintbrush forb/herb</td>
<td>High</td>
<td></td>
<td></td>
<td></td>
<td>x</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Centaurea americana</td>
<td>CEAM2</td>
<td>basket flower forb/herb</td>
<td>High</td>
<td></td>
<td></td>
<td></td>
<td>x</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Conoclinium betonicifolium</td>
<td>COBE4</td>
<td>betony leaf thoroughwort</td>
<td>High</td>
<td></td>
<td>x</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Conoclinium coelestinum</td>
<td>COCO13</td>
<td>blue mistflower forb/herb</td>
<td>Very High</td>
<td></td>
<td>x</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Conoclinium greggii</td>
<td>COGR10</td>
<td>palmleaf thoroughwort forb/herb</td>
<td>High</td>
<td></td>
<td>x</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Coreopsis palmata</td>
<td>COPA10</td>
<td>stiff tickseed forb/herb</td>
<td>High</td>
<td></td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cunila origanoides</td>
<td>CUOR</td>
<td>common dittany forb/herb, subshrub</td>
<td>High</td>
<td></td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dalea candida</td>
<td>DACA7</td>
<td>white prairie clover forb/herb, subshrub</td>
<td>High</td>
<td></td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dalea multiflora</td>
<td>DAMU</td>
<td>Roundhead prairie clover forb/herb</td>
<td>High</td>
<td></td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dalea purpurea</td>
<td>DAPU5</td>
<td>purple prairie clover forb/herb</td>
<td>High</td>
<td></td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Echinacea angustifolia</td>
<td>ECAN2</td>
<td>black Samson echinacea forb/herb</td>
<td>High</td>
<td></td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Echinacea pallida</td>
<td>ECPA</td>
<td>pale purple conflower forb/herb</td>
<td>High</td>
<td></td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Echinacea purpurea</td>
<td>ECPU</td>
<td>eastern purple conflower forb/herb</td>
<td>Very High</td>
<td></td>
<td>x</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Engelmannia perstenia</td>
<td>ENPE4</td>
<td>Engelmann’s daisy forb/herb</td>
<td>high</td>
<td></td>
<td>x</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Eryngium leavenworthii</td>
<td>ERLE11</td>
<td>Leavenworth’s eryngo forb/herb</td>
<td>High</td>
<td></td>
<td></td>
<td></td>
<td>x</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Eryngium yuccifolium</td>
<td>ERYU</td>
<td>rattlesnake master forb/herb</td>
<td>High</td>
<td></td>
<td>x</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Erysimum asperum</td>
<td>ERAS2</td>
<td>western wallflower forb/herb</td>
<td>High</td>
<td></td>
<td></td>
<td></td>
<td>x</td>
<td></td>
<td></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>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>------------------------------</td>
<td>--------------</td>
<td>--------------------------------------</td>
<td>--------------</td>
<td>---------------</td>
<td>--------------</td>
<td>--------</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Eupatorium perfoliatum</td>
<td>EUPE3</td>
<td>common boneset forb/herb</td>
<td>High</td>
<td></td>
<td>x x x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Eupatorium serotinum</td>
<td>EUSE2</td>
<td>lateflowering thoroughwort forb/herb</td>
<td>Very High</td>
<td></td>
<td>x x x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Eutrochium purpureum</td>
<td>EUPU21</td>
<td>sweetscented joe pye weed forb/herb</td>
<td>High</td>
<td></td>
<td>x x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Funastrum cyanachoides</td>
<td>FUCY</td>
<td>finged twinevine forb/herb</td>
<td>High</td>
<td></td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Glandularia bipinnatifida</td>
<td>GLBI2</td>
<td>Dakota mock vervain forb/herb</td>
<td>High</td>
<td></td>
<td>x x x x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grindelia papposa</td>
<td>GRPA8</td>
<td>Spanish gold forb/herb</td>
<td>Very High</td>
<td></td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Helenium amarum</td>
<td>HEMA</td>
<td>sneezeweed forb/herb</td>
<td>High</td>
<td></td>
<td>x x x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Helianthus angustifolius</td>
<td>HEAN2</td>
<td>swamp sunflower forb/herb</td>
<td>High</td>
<td></td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Helianthus annuus</td>
<td>HEAN3</td>
<td>common sunflower forb/herb</td>
<td>High</td>
<td></td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Helianthus grosseserratus</td>
<td>HEGR4</td>
<td>sawtooth sunflower forb/herb</td>
<td>High</td>
<td></td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Helianthus maximiliani</td>
<td>HEMA2</td>
<td>Maximilian sunflower forb/herb</td>
<td>Very High</td>
<td></td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Helianthus mollis</td>
<td>MEMO2</td>
<td>ashy sunflower forb/herb</td>
<td>High</td>
<td></td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Helianthus helianthoides</td>
<td>HEHE5</td>
<td>smooth oxeye forb/herb</td>
<td>High</td>
<td></td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Liatris aspera</td>
<td>LIAS</td>
<td>tall blazing star forb/herb</td>
<td>Very High</td>
<td></td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Liatris elegans</td>
<td>LIEL</td>
<td>pink-scale blazing star</td>
<td>High</td>
<td></td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Liatris punctata</td>
<td>LIPU</td>
<td>dotted blazing star forb/herb</td>
<td>Very High</td>
<td></td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Liatris pycnostachya</td>
<td>LIPY</td>
<td>prairie blazing star forb/herb</td>
<td>High</td>
<td></td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Liatris squarroso</td>
<td>LISQ</td>
<td>scaly Blazing Star forb/herb</td>
<td>High</td>
<td></td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lithospermum incisum</td>
<td>LIIN2</td>
<td>narrowleaf stoneseed forb/herb</td>
<td>High</td>
<td></td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Monarda citriodora</td>
<td>MOCI</td>
<td>lemon beebalm forb/herb</td>
<td>High</td>
<td></td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Monarda fistulosa</td>
<td>MOFI</td>
<td>wild bergamot forb/herb, subshrub</td>
<td>High</td>
<td></td>
<td>x x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Monarda punctata</td>
<td>MOPU</td>
<td>spotted beebalm forb/herb, subshrub</td>
<td>High</td>
<td></td>
<td>x x x x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oligoneuron nitidum</td>
<td>OLNI</td>
<td>shiny goldenrod forb/herb</td>
<td>High</td>
<td></td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oligoneuron rigidum</td>
<td>OLRI</td>
<td>stiff goldenrod forb/herb</td>
<td>High</td>
<td></td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Onosmodium bejariense</td>
<td>ONBE</td>
<td>soft-hair marbleseed forb/herb</td>
<td>High</td>
<td></td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Packera obovata</td>
<td>PAOB6</td>
<td>roundleaf ragwort forb/herb</td>
<td>High</td>
<td></td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Phlox divaricata</td>
<td>PHDI5</td>
<td>wild blue phlox forb/herb</td>
<td>High</td>
<td></td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Polygonum pensylvanicum</td>
<td>POPEO2</td>
<td>Pennsylvania smartweed</td>
<td>High</td>
<td></td>
<td>x x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rudbeckia hirta</td>
<td>RUHI2</td>
<td>blackeyed Susan forb/herb</td>
<td>High</td>
<td></td>
<td>x x</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Important Plants of the Monarch Butterfly
Southern Great Plains
<table>
<thead>
<tr>
<th>Species name</th>
<th>Plant symbol</th>
<th>Common name</th>
<th>Growth habit</th>
<th>Monarch Value</th>
<th>Early</th>
<th>Mid</th>
<th>Late</th>
<th>States</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Salvia azurea</em></td>
<td>SAAZ</td>
<td>blue sage forb/herb</td>
<td></td>
<td>High</td>
<td>x</td>
<td></td>
<td></td>
<td>KS</td>
</tr>
<tr>
<td><em>Silphium</em></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>integerriformum</em></td>
<td>SII2</td>
<td>wholeleaf rosinweed forb/herb</td>
<td></td>
<td>High</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>Silphium</em></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>lacinatum</em></td>
<td>SILA3</td>
<td>compassplant forb/herb</td>
<td></td>
<td>High</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>Silphium</em></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>perfoliatum</em></td>
<td>SIPE2</td>
<td>cup plant forb/herb</td>
<td></td>
<td>High</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>Silphium</em></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>radula</em></td>
<td>SIRA2</td>
<td>roughstem rosinweed forb/herb</td>
<td></td>
<td>High</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>Simsia calva</em></td>
<td>SICA7</td>
<td>awnless bushsunflower forb/herb</td>
<td></td>
<td>High</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>Solidago</em></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>canadensis</em></td>
<td>SOCA6</td>
<td>Canada goldenrod forb/herb</td>
<td></td>
<td>High</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>Solidago</em></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>nemoralis</em></td>
<td>SONE</td>
<td>gray goldenrod forb/herb</td>
<td></td>
<td>Very High</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>Solidago</em></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>petiolaris</em></td>
<td>SOPE</td>
<td>downy ragged goldenrod forb/herb</td>
<td></td>
<td>High</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>Solidago</em></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>rugosa</em></td>
<td>SORU2</td>
<td>wrinkleleaf goldenrod forb/herb</td>
<td></td>
<td>High</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>Solidago</em></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>speciosa</em></td>
<td>SOSP2</td>
<td>showy goldenrod forb/herb</td>
<td></td>
<td>Very High</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>Symphyotrichum</em></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>ericoides</em></td>
<td>SYER</td>
<td>white heath aster forb/herb</td>
<td></td>
<td>High</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>Symphyotrichum</em></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>laeve</em></td>
<td>SYLA3</td>
<td>smooth blue aster forb/herb</td>
<td></td>
<td>High</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>Symphyotrichum</em></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>novae-angliae</em></td>
<td>SYNO2</td>
<td>New England aster forb/herb</td>
<td></td>
<td>Very High</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>Symphyotrichum</em></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>oblongifolium</em></td>
<td>SYOB</td>
<td>aromatic aster forb/herb</td>
<td></td>
<td>High</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>Symphyotrichum</em></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>praealtum</em></td>
<td>SYPR5</td>
<td>willowleaf aster forb/herb</td>
<td></td>
<td>High</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>Verbena halei</em></td>
<td>VEHA</td>
<td>Texas vervain forb/herb</td>
<td></td>
<td>High</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td><em>Verbena stricta</em></td>
<td>VEST</td>
<td>hoary verbena forb/herb</td>
<td></td>
<td>High</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td><em>Verbena</em></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>enceloides</em></td>
<td>VEEN</td>
<td>golden crownbeard forb/herb</td>
<td></td>
<td>Very High</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td><em>Verbena</em></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>virginica</em></td>
<td>VEVI3</td>
<td>white crownbeard forb/herb</td>
<td></td>
<td>Very High</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td><em>Vernonia</em></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>baldwinii</em></td>
<td>VEBA</td>
<td>Baldwin’s ironweed forb/herb</td>
<td></td>
<td>High</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>Vernonia</em></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>fasciculata</em></td>
<td>VEFA2</td>
<td>prairie ironweed forb/herb</td>
<td></td>
<td>High</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
</tr>
<tr>
<td><em>Wedelia</em></td>
<td>WEAC</td>
<td>hairy wedelia forb/herb</td>
<td></td>
<td>High</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td></td>
</tr>
</tbody>
</table>

## Monarch WHEG Inventory Plant 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 shrub, subshrub</td>
<td>High</td>
<td></td>
<td>x</td>
<td>KS</td>
</tr>
<tr>
<td>Asclepias spp.</td>
<td>ASCLE</td>
<td>antelope horn forb/herb</td>
<td>Very High</td>
<td>x</td>
<td>KS, OK, TX</td>
<td></td>
</tr>
<tr>
<td>Bidens aristosa</td>
<td>BIAR</td>
<td>bearded beggarticks forb/herb</td>
<td>Very High</td>
<td>x</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Castilleja indivisa</td>
<td>CAIN13</td>
<td>Indian paintbrush forb/herb</td>
<td>High</td>
<td>x</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Centaurea americana</td>
<td>CEAM2</td>
<td>basket flower forb/herb</td>
<td>High</td>
<td>x</td>
<td>KS</td>
<td></td>
</tr>
<tr>
<td>Conoclinium spp.</td>
<td>CONOC4</td>
<td>betonyleaf thoroughwort forb/herb</td>
<td>High</td>
<td>x x x</td>
<td>KS, OK, TX</td>
<td></td>
</tr>
<tr>
<td>Coreopsis palmata</td>
<td>COPA10</td>
<td>stiff tickseed forb/herb</td>
<td>High</td>
<td>x x</td>
<td>KS, OK, TX</td>
<td></td>
</tr>
<tr>
<td>Cunila origanoides</td>
<td>CUOR</td>
<td>common dittany forb/herb, subshrub</td>
<td>High</td>
<td>x x</td>
<td>KS, OK, TX</td>
<td></td>
</tr>
<tr>
<td>Dalea spp.</td>
<td>DALEA</td>
<td>white prairie clover forb/herb, subshrub</td>
<td>High</td>
<td>x x</td>
<td>KS, OK, TX</td>
<td></td>
</tr>
<tr>
<td>Echinacea spp.</td>
<td>ECHIN</td>
<td>black Samson echinacea forb/herb, subshrub</td>
<td>High</td>
<td>x x</td>
<td>KS, OK, TX</td>
<td></td>
</tr>
<tr>
<td>Engelmannia peristenia</td>
<td>ENPE4</td>
<td>Engelmann's daisy forb/herb</td>
<td>High</td>
<td>x x x</td>
<td>KS, OK, TX</td>
<td></td>
</tr>
<tr>
<td>Eryngium spp.</td>
<td>ERYNG</td>
<td>Leavenworth's eryngo forb/herb</td>
<td>High</td>
<td>x</td>
<td>KS</td>
<td></td>
</tr>
<tr>
<td>Erysimum asperum</td>
<td>ERAS2</td>
<td>western wallflower forb/herb</td>
<td>High</td>
<td>x</td>
<td>KS, OK, TX</td>
<td></td>
</tr>
<tr>
<td>Eupatorium spp.</td>
<td>EUPAT</td>
<td>common boneset forb/herb</td>
<td>High</td>
<td>x x</td>
<td>KS, OK, TX</td>
<td></td>
</tr>
<tr>
<td>Eutrochium purpureum</td>
<td>EUPU21</td>
<td>sweetscented joe pye weed forb/herb</td>
<td>High</td>
<td>x x</td>
<td>KS, OK, TX</td>
<td></td>
</tr>
<tr>
<td>Funastrum cyananchoides</td>
<td>FUCY</td>
<td>finged twinevine forb/herb</td>
<td>High</td>
<td>x x</td>
<td>KS, OK, TX</td>
<td></td>
</tr>
<tr>
<td>Glandularia bipinnatifida</td>
<td>GLBI2</td>
<td>Dakota mock vervain forb/herb</td>
<td>High</td>
<td>x x x</td>
<td>KS, OK, TX</td>
<td></td>
</tr>
<tr>
<td>Grindelia papposa</td>
<td>GRPA8</td>
<td>Spanish gold forb/herb</td>
<td>Very High</td>
<td>x</td>
<td>KS, OK, TX</td>
<td></td>
</tr>
<tr>
<td>Helianthus amaranthoides</td>
<td>HELIA3</td>
<td>common sunflower forb/herb</td>
<td>High</td>
<td>x x</td>
<td>KS, OK, TX</td>
<td></td>
</tr>
<tr>
<td>Heliopsis helianthoides</td>
<td>HEHE5</td>
<td>smooth oxeye forb/herb</td>
<td>High</td>
<td>x x</td>
<td>KS, OK, TX</td>
<td></td>
</tr>
<tr>
<td>Liatris spp.</td>
<td>LIATR</td>
<td>tall blazing star forb/herb</td>
<td>Very High</td>
<td>x</td>
<td>KS, OK, TX</td>
<td></td>
</tr>
<tr>
<td>Lithospermum incisum</td>
<td>LIIN2</td>
<td>narrowleaf stoneseed forb/herb</td>
<td>High</td>
<td>x x</td>
<td>KS, OK, TX</td>
<td></td>
</tr>
<tr>
<td>Monarda spp.</td>
<td>MONAR</td>
<td>lemon beebalm forb/herb</td>
<td>High</td>
<td>x x</td>
<td>KS, OK, TX</td>
<td></td>
</tr>
<tr>
<td>Oligoneuron spp.</td>
<td>OLIGO3</td>
<td>shiny goldenrod forb/herb</td>
<td>High</td>
<td>x x</td>
<td>KS, OK, TX</td>
<td></td>
</tr>
<tr>
<td>Onosmodium bejariense</td>
<td>ONBE</td>
<td>soft-hair marbleseed forb/herb</td>
<td>High</td>
<td>x</td>
<td>KS, OK, TX</td>
<td></td>
</tr>
<tr>
<td>Packera obovata</td>
<td>PAOB6</td>
<td>roundleaf ragwort forb/herb</td>
<td>High</td>
<td>x x</td>
<td>KS, OK, TX</td>
<td></td>
</tr>
<tr>
<td>Phlox divaricata</td>
<td>PHDI5</td>
<td>wild blue phlox forb/herb</td>
<td>High</td>
<td>x</td>
<td>KS, OK, TX</td>
<td></td>
</tr>
<tr>
<td>Polygonum pensylvanicum</td>
<td>POPE2</td>
<td>Pennsylvania smartweed forb/herb</td>
<td>High</td>
<td>x x</td>
<td>KS, OK, TX</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>Rudbeckia hirta</td>
<td>RUHI2</td>
<td>blackeyed Susan</td>
<td>forb/herb</td>
<td>High</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Salvia azurea</td>
<td>SAAZ</td>
<td>blue sage</td>
<td>forb/herb</td>
<td>High</td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>Simsia calva</td>
<td>SICA7</td>
<td>awnless bushsunflower</td>
<td>forb/herb</td>
<td>High</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Silphium spp.</td>
<td>SILPH</td>
<td>wholeleaf rosinweed</td>
<td>forb/herb</td>
<td>High</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Solidago spp.</td>
<td>SOLID</td>
<td>Canada goldenrod</td>
<td>forb/herb</td>
<td>High</td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>Symphyotrichum spp.</td>
<td>SYER</td>
<td>white heath aster</td>
<td>forb/herb</td>
<td>High</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Verbena spp.</td>
<td>VERBE</td>
<td>Texas vervain</td>
<td>forb/herb</td>
<td>High</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Verbesina spp.</td>
<td>VERBE2</td>
<td>golden crownbeard</td>
<td>forb/herb</td>
<td>Very High</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Vernonia spp.</td>
<td>Verno</td>
<td>Baldwin’s ironweed</td>
<td>forb/herb</td>
<td>High</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Wedelia acapulcensis</td>
<td>WEAC</td>
<td>hairy wedelia</td>
<td>forb/herb</td>
<td>High</td>
<td>x</td>
<td>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>antelope horn</td>
<td>Amorpha canescens</td>
<td></td>
<td></td>
</tr>
<tr>
<td>aromatic aster</td>
<td>Asclepias asperula</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ashy sunflower</td>
<td>Asclepias incarnata</td>
<td></td>
<td></td>
</tr>
<tr>
<td>awnless bushsunflower</td>
<td>Asclepias latifolia</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Baldwin’s ironweed</td>
<td>Asclepias oenotheroides</td>
<td></td>
<td></td>
</tr>
<tr>
<td>basket flower</td>
<td>Asclepias speciosa</td>
<td></td>
<td></td>
</tr>
<tr>
<td>bearded beggarticks</td>
<td>Asclepias sullivantii</td>
<td></td>
<td></td>
</tr>
<tr>
<td>betonyleaf thoroughwort</td>
<td>Asclepias syriaca</td>
<td></td>
<td></td>
</tr>
<tr>
<td>black Samson echinacea</td>
<td>Asclepias tuberosa</td>
<td></td>
<td></td>
</tr>
<tr>
<td>blackeyed Susan</td>
<td>Asclepias viridis</td>
<td></td>
<td></td>
</tr>
<tr>
<td>blue mistflower</td>
<td>Bidens aristosa</td>
<td></td>
<td></td>
</tr>
<tr>
<td>blue sage</td>
<td>Castilleja indivisa</td>
<td></td>
<td></td>
</tr>
<tr>
<td>broadleaf milkweed</td>
<td>Centaurea americana</td>
<td></td>
<td></td>
</tr>
<tr>
<td>butterfly milkweed</td>
<td>Conoclinium betonicifolium</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Canada goldenrod</td>
<td>Conoclinium coelestinum</td>
<td></td>
<td></td>
</tr>
<tr>
<td>common boneset</td>
<td>Conoclinium greggii</td>
<td></td>
<td></td>
</tr>
<tr>
<td>common dittany</td>
<td>Coreopsis palmata</td>
<td></td>
<td></td>
</tr>
<tr>
<td>common milkweed</td>
<td>Cunila origanoides</td>
<td></td>
<td></td>
</tr>
<tr>
<td>common sunflower</td>
<td>Dalea candida</td>
<td></td>
<td></td>
</tr>
<tr>
<td>compassplant</td>
<td>Dalea multiflora</td>
<td></td>
<td></td>
</tr>
<tr>
<td>cup plant</td>
<td>Dalea purpurea</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dakota mock vervain</td>
<td>Echinacea angustifolia</td>
<td></td>
<td></td>
</tr>
<tr>
<td>dotted blazing star</td>
<td>Echinacea pallida</td>
<td></td>
<td></td>
</tr>
<tr>
<td>downy ragged goldenrod</td>
<td>Echinacea purpurea</td>
<td></td>
<td></td>
</tr>
<tr>
<td>eastern purple coneflower</td>
<td>Engelmannia peristenia</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Engelmann’s daisy</td>
<td>Eryngium leavenworthii</td>
<td></td>
<td></td>
</tr>
<tr>
<td>fingered twinevine</td>
<td>Eryngium yuccifolium</td>
<td></td>
<td></td>
</tr>
<tr>
<td>golden crownbeard</td>
<td>Erysimum asperum</td>
<td></td>
<td></td>
</tr>
<tr>
<td>gray goldenrod</td>
<td>Eupatorium perfoliatum</td>
<td></td>
<td></td>
</tr>
<tr>
<td>green milkweed</td>
<td>Eupatorium serotinum</td>
<td></td>
<td></td>
</tr>
<tr>
<td>hairy wedelia</td>
<td>Eutrochium purpureum</td>
<td></td>
<td></td>
</tr>
<tr>
<td>hoary verbena</td>
<td>Funastrum cyananthoides</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Indian paintbrush</td>
<td>Glandularia bipinnatifida</td>
<td></td>
<td></td>
</tr>
<tr>
<td>lateflowering thoroughwort</td>
<td>Grindelia papposa</td>
<td></td>
<td></td>
</tr>
<tr>
<td>leadplant</td>
<td>Helianthemum amarum</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Leavenworth’s eryngo</td>
<td>Helianthus angustifolia</td>
<td></td>
<td></td>
</tr>
<tr>
<td>lemon beebalm</td>
<td>Helianthus annuus</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Maximilian sunflower</td>
<td>Helianthus grosseserratus</td>
<td></td>
<td></td>
</tr>
<tr>
<td>narrowleaf stoneseed</td>
<td>Helianthus maximiliani</td>
<td></td>
<td></td>
</tr>
<tr>
<td>New England aster</td>
<td>Helianthus mollis</td>
<td></td>
<td></td>
</tr>
<tr>
<td>pale purple coneflower</td>
<td>Heliopsis helianthoides</td>
<td></td>
<td></td>
</tr>
<tr>
<td>palmleaf thoroughwort</td>
<td>Liatris aspera</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pennsylvania smartweed</td>
<td>Liatris elegans</td>
<td></td>
<td></td>
</tr>
<tr>
<td>pink-scale blazing star</td>
<td>Liatris punctata</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Common Name</td>
<td>Flower Color</td>
<td>Scientific Name</td>
<td>Flower Color</td>
</tr>
<tr>
<td>-------------------------------</td>
<td>--------------</td>
<td>------------------------------</td>
<td>--------------</td>
</tr>
<tr>
<td>prairie blazing star</td>
<td>🌸</td>
<td>Liatris pycnostachya</td>
<td>🌸</td>
</tr>
<tr>
<td>prairie ironweed</td>
<td>🌸</td>
<td>Liatris squarrosa</td>
<td>🌸</td>
</tr>
<tr>
<td>prairie milkweed</td>
<td>🌸</td>
<td>Lithospermum incisum</td>
<td>🌸</td>
</tr>
<tr>
<td>purple prairie clover</td>
<td>🌸</td>
<td>Monarda citriodora</td>
<td>🌸</td>
</tr>
<tr>
<td>rattlesnake master</td>
<td>🌸</td>
<td>Monarda fistulosa</td>
<td>🌸</td>
</tr>
<tr>
<td>roughsteme rosinweed</td>
<td>🌸</td>
<td>Monarda punctata</td>
<td>🌸</td>
</tr>
<tr>
<td>roundhead prairie clover</td>
<td>🌸</td>
<td>Oligoneuron nitidum</td>
<td>🌸</td>
</tr>
<tr>
<td>roundleaf ragwort</td>
<td>🌸</td>
<td>Oligoneuron rigidum</td>
<td>🌸</td>
</tr>
<tr>
<td>sawtooth sunflower</td>
<td>🌸</td>
<td>Onosmodium bejariense</td>
<td>🌸</td>
</tr>
<tr>
<td>scaly blazing Star</td>
<td>🌸</td>
<td>Packera obovata</td>
<td>🌸</td>
</tr>
<tr>
<td>shiny goldenrod</td>
<td>🌸</td>
<td>Phlox divaricata</td>
<td>🌸</td>
</tr>
<tr>
<td>showy goldenrod</td>
<td>🌸</td>
<td>Polygonum pensylvanicum</td>
<td>🌸</td>
</tr>
<tr>
<td>showy milkweed</td>
<td>🌸</td>
<td>Rudbeckia hirta</td>
<td>🌸</td>
</tr>
<tr>
<td>smooth blue aster</td>
<td>🌸</td>
<td>Salvia azurea</td>
<td>🌸</td>
</tr>
<tr>
<td>smooth oxeye</td>
<td>🌸</td>
<td>Silphium integrifolium</td>
<td>🌸</td>
</tr>
<tr>
<td>sneezeweed</td>
<td>🌸</td>
<td>Silphium laciniatum</td>
<td>🌸</td>
</tr>
<tr>
<td>soft-hair marbleseed</td>
<td>🌸</td>
<td>Silphium perfoliatum</td>
<td>🌸</td>
</tr>
<tr>
<td>Spanish gold</td>
<td>🌸</td>
<td>Silphium radula</td>
<td>🌸</td>
</tr>
<tr>
<td>spotted bee balm</td>
<td>🌸</td>
<td>Simsia calva</td>
<td>🌸</td>
</tr>
<tr>
<td>stiff goldenrod</td>
<td>🌸</td>
<td>Solidago canadensis</td>
<td>🌸</td>
</tr>
<tr>
<td>stiff tickseed</td>
<td>🌸</td>
<td>Solidago nemoralis</td>
<td>🌸</td>
</tr>
<tr>
<td>swamp milkweed</td>
<td>🌸</td>
<td>Solidago petiolaris</td>
<td>🌸</td>
</tr>
<tr>
<td>Swamp sunflower</td>
<td>🌸</td>
<td>Solidago rugosa</td>
<td>🌸</td>
</tr>
<tr>
<td>sweetscented joe pye weed</td>
<td>🌸</td>
<td>Solidago speciosa</td>
<td>🌸</td>
</tr>
<tr>
<td>tall blazing star</td>
<td>🌸</td>
<td>Symphyotrichium ericoides</td>
<td>🌸</td>
</tr>
<tr>
<td>Texas vervain</td>
<td>🌸</td>
<td>Symphyotrichium laeve</td>
<td>🌸</td>
</tr>
<tr>
<td>western wallflower</td>
<td>🌸</td>
<td>Symphyotrichium novae-angliae</td>
<td>🌸</td>
</tr>
<tr>
<td>white crownbeard</td>
<td>🌸</td>
<td>Symphyotrichium oblongifolium</td>
<td>🌸</td>
</tr>
<tr>
<td>white heath aster</td>
<td>🌸</td>
<td>Symphyotrichium praealtum</td>
<td>🌸</td>
</tr>
<tr>
<td>white prairie clover</td>
<td>🌸</td>
<td>Wedelia acapulcensis</td>
<td>🌸</td>
</tr>
<tr>
<td>whole leaf rosin weed</td>
<td>🌸</td>
<td>Verbena halei</td>
<td>🌸</td>
</tr>
<tr>
<td>wild bergamot</td>
<td>🌸</td>
<td>Verbena stricta</td>
<td>🌸</td>
</tr>
<tr>
<td>wild blue phlox</td>
<td>🌸</td>
<td>Verbesina encelioides</td>
<td>🌸</td>
</tr>
<tr>
<td>willow leaf aster</td>
<td>🌸</td>
<td>Verbesina virginica</td>
<td>🌸</td>
</tr>
<tr>
<td>wrinkle leaf goldenrod</td>
<td>🌸</td>
<td>Vernonia baldwinii</td>
<td>🌸</td>
</tr>
<tr>
<td>zizotes milkweed</td>
<td>🌸</td>
<td>Vernonia fasciculata</td>
<td>🌸</td>
</tr>
</tbody>
</table>
American Star-thistle (*Centaurea Americana*)

**Aster Family**

**Other Common Names:** American basket flower, American knapweed, powderpuff thistle, shaving brush

**Scientific Name:** *Centaurea americana* Nutt.  
**Plant Symbol:** CEAM2

**Duration:** Annual  
**Growth Habit:** Forb/herb

**Plant Height:** 2–6 ft.  
**Blooms/Fruits:** May–June

**Distinguishing characteristics:** Flower heads are thistle-like, 3–5 in. across, pink to light purple on the outside with a cream colored center; the bracts under the flowering head resemble a woven basket with each bract having fringed margins; leaves are alternate, arrow-shape, attach directly to the stem with no leaf stalk, and have smooth margins (without serrations).

**Pollinator Value:** This flower provides high quality nectar to many types of bees and butterflies.

**Habitat:** Dry to mesic soils, disturbed sites.

**Note:** This genus (*Centaurea*) also includes the non-native bachelor-buttons and highly invasive species yellow star-thistle.

---

Photo: Ray Mathews, Lady Bird Johnson  
Photo: USDA-NRCS
Important Plants of the Monarch Butterfly
Southern Great Plains

Close-up of flower

Flower bud/full flowering/spent

Leaf arrangement

Mature
Aromatic Aster (*Symphyotrichum oblongifolium*)

**Aster Family**

**Other Common Names:** aromatic American aster, fall aster, wild blue aster, shale aster, oblong-leaved aster

**Scientific Name:** *Symphyotrichum oblongifolium* (Nutt.) G.L. Nesom  
**Plant Symbol:** SYOB

**Distinguishing characteristics:** Stems much branched above the midpoint, several stems developing from a woody horizontal rhizome; leaves basal as well as along the stem, the basal leaves usually absent when flowering, stem leaf shape is oblong to widest across the top, without a leaf stem, and they become progressively smaller moving up the stem; flowering heads numerous at the ends of branches, blue rays and yellow centers, about 1 inch across.

**Plant Height:** 1–2 ft.  
**Blooms/Fruits:** September–November

**Duration:** Perennial, herbaceous

**Pollinator Value:** Visited by a wide diversity of native bees, flies and butterflies. Serves as a host plant for the silvery checkerspot butterfly. Particularly important in that it is one of the latest plants to bloom in fall, providing nectar and pollen at a time when few other native plants do.

**Habitat:** Calcareous soils, upland prairies, openings in upland forests, and roadsides.

Photo: Mike Haddock
Important Plants of the Monarch Butterfly
Southern Great Plains

Full flowering/close-up of flowers

Close-up of leaf/foliage
Important Plants of the Monarch Butterfly
Southern Great Plains

Ashy Sunflower (*Helanthus mollis*)
Aster Family

**Other Common Names:** downy sunflower, hairy sunflower

**Scientific Name:** *Helanthus mollis* Lam.  
**Plant Symbol:** HEMO2

**Distinguishing characteristics:** Stems developing from thick spreading rhizomes and often colonial, stems densely hairy with short, raspy hairs that give the plant a grey appearance; leaves opposite on the stem, very wide at the base and with a pointed tip, leaves attached directly to the stem without a leaf stalk and appear to clasp the stem, hairy and appearing grey-green from all the leaf hairs; inflorescences daisy-like, single or more commonly several on the ends of branches, about 3–5 in. across; rays yellow, centers yellow to yellowish-brown.

**Plant Height:** 2–4 ft.  
**Blooms/Fruits:** June–September

**Duration:** Perennial, herbaceous

**Pollinator Value:** Attracts multiple genera of long-tongued bees (including bumblebees), short-tongued bees, flies, beetles, and butterflies.

**Habitat:** Upland prairies, pastures, sandy open woodlands, old fields, and fencerows.

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

Leaf arrangement and stem
Awnless Bushsunflower (*Simsia calva*)

**Aster Family**

**Other Common Names:** bush sunflower, awnless bush sunflower

**Scientific Name:** *Simsia calva* (Engelm. & A. Gray) A. Gray  
**Plant Symbol:** SICA7

**Distinguishing characteristics:** Stems usually branched, woody and shrub-like near the base and herbaceous in the upper parts, coarsely hairy throughout; leaves opposite, with leaf stems, delta-shaped, often lobed and serrated along the margin; flowering heads solitary on long stems; rays yellow to orange-yellow and sometimes spotted or striped with purple or red under the ray; centers yellow to yellow-orange.

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

**Duration:** Annual to Perennial, subshrub

**Pollinator Value:** This species is visited by a variety of bees, but is particularly attractive to butterflies, and serves as a host plant for the bordered patch butterfly.

**Habitat:** Dry uplands, well-drained limestone, and caliche.
Important Plants of the Monarch Butterfly
Southern Great Plains

Full flowering, close-up of flowers

Foliage

Seed
Azure Blue Sage (*Salvia azurea*)

Mint Family

Other Common Names: azure sage, pitcher sage

Scientific Name: *Salvia azurea* Michx. ex Lam.  
Plant Symbol: SAAZ

Duration: Perennial  
Growth Habit: Forb/herb

Plant Height: 2–5 ft.  
Blooms/Fruits: July-November

Distinguishing characteristics: Sky blue flowers with a white center and a pronounced lower lip; leaves linear to lance shaped, the lower ones falling off at flowering time; stems uniformly hairy with short recurved hairs.

Pollinator Value: Blue sage is highly attractive to monarch butterflies, bumblebees, and other long-tongued bees.

Habitat: Rocky & clayey prairies, uplands, pastures, roadsides, and fencerows.
Important Plants of the Monarch Butterfly
Southern Great Plains

Early flowering

Close-up of flowers/full flowering

Close-up of stem and leaves

Leaf arrangement
Baldwin’s Ironweed (Vernonia baldwinii)
Aster Family

Other Common Names: ironweed, western ironweed

Scientific Name: Vernonia baldwinii Torr.  
Plant Symbol: VEBA

Duration: Perennial  
Growth Habit: Forb/herb

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

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.

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

Habitat: Open pastures & woodlands, savannahs, fencerows, overgrazed pastures.
Important Plants of the Monarch Butterfly
Southern Great Plains

Close-up of flower/flowering

Leaves

Senescence

Photo: Sandy Smith, Lady Bird Johnson Wildflower Center

Photo: Joseph Marcus, Lady Bird Johnson Wildflower Center

Photo: John Hilty, Illinois Wildflowers
Bearded Beggarticks (*Bidens aristosa*)
Aster Family

**Other Common Names:** awnless beggarticks, tickseed sunflower

**Scientific Name:** *Bidens aristosa* (Michx.) Britton  
**Plant Symbol:** BIAR

**Family:** Asteraceae

**Duration:** Annual or Biennial  
**Growth Habit:** Forb/herb

**Plant Height:** variable, 1–5 ft.  
**Blooms/Fruits:** April–October

**Distinguishing characteristics:** Leaves opposite on the stem, 1–2 times dissected with multiple segments on each leaf; flower heads with bright to golden yellow rays and with a black and yellow center; seeds with awns on top like most beggartick species.

**Pollinator Value:** Highly attractive to monarch butterflies and many other insects including native bees.

**Habitat:** Low moist ground, wetlands, and ditches.
Important Plants of the Monarch Butterfly
Southern Great Plains

Full flowering/close-up of flower

Stem and leaf

Seedling

Seed
Betonyleaf Thoroughwort (*Conoclinium betonicifolium*)

Aster Family

Other Common Names: Betonyleaf mistflower

Scientific Name: *Conoclinium betonicifolium* (Mill.) R.M. King & H. Rob.  

Plant Symbol: COBE4

Duration: Perennial  
Growth Habit: Forb/herb

Plant Height: 1–3 ft.  
Blooms/Fruits: March–June; September–October

Distinguishing characteristics: Leaves fleshy with toothed (pointed or rounded) margins; flower heads pale blue to purple powder-puff clusters; stems spread across the ground with upturned stem tips, rooting along the stem. Plants can be horizontal or spreading.

Pollinator Value: Betonyleaf mistflower is a valuable nectar source, favored by many bees and butterflies. Male queen butterflies, another species of milkweed butterfly similar to the monarch, collect alkaloids from the nectar of these flowers to use in their courtship of females. Males can be seen nectaring in huge aggregations on these plants.

Habitat: Sands and sandy clays, coastal dunes, beaches, saltmarshes in TX and Mexico.

Photo: Texas Nature Conservancy, William Carr
Important Plants of the Monarch Butterfly
Southern Great Plains

Foliage

Flowering

Photo: Joseph Marcus, Lady Bird Johnson Wildflower Center

Photo: Texas Nature Conservancy and William Carr
Blackeyed Susan (*Rudbeckia hirta*)

**Aster Family**

**Other Common Names:** common black-eyed Susan, brown-eyed Susan, brown Betty, poor-land daisy, English bulls-eye

**Scientific Name:** *Rudbeckia hirta* L.  
**Plant Symbol:** RUHI2

**Distinguishing characteristics:** Flower heads daisy-like in overall appearance, but with yellow to orange-yellow rays and a dark purple to brown conical center, the rays may have a deep maroon to purple base; leaves are variable - larger and with a leaf stem towards the base, smaller and without a leaf stem towards the middle and top of the plant, all leaves with short, stiff hairs and have a raspy feel.

**Plant Height:** 2–3 ft., erect  
**Blooms/Fruits:** June–October

**Duration:** Annual, Biennial, to short lived  
**Perennial, herbaceous (developing taproots)**

**Pollinator Value:** The gorgone checkerspot and bordered patch butterflies use this plant as a larval food source. It may attract butterflies.

**Habitat:** Open dry woods, prairies, pastures, old fields, and roadsides.

**Note:** There are 4 botanical varieties within the US, all going by the common name blackeyed Susan. Only 2 of the varieties occur natively in the Midwest Region: *R. hirta* var. *hirta* and *R. hirta* var. *pulcherrima*. Blackeyed Susan is a commonly cultivated plant and cultivars available.
Blacksamson Echinacea (*Echinacea angustifolia*)

**Aster Family**

**Other Common Names:** blacksamson, narrow-leaf echinacea, narrow-leaf purple coneflower

**Scientific Name:** *Echinacea angustifolia* DC.  
**Plant Symbol:** ECAN2

**Duration:** Perennial  
**Growth Habit:** Forb/herb

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

**Distinguishing characteristics:** Large flowering heads with pale pink to purple drooping ray petals and a dark, conical, center beset with strong, stout spine-like projections; stem leaves very narrow, covered with short, stiff hairs that have swollen pustular bases, very rough to the touch.

**Pollinator Value:** Blacksamson echinacea is self-incompatible, and it is attractive to a variety of insect pollinators. It is especially popular with butterflies and long-tongued bees.

**Habitat:** Dry open prairies, barrens, rocky to sandy-clay soils.
Blue Mistflower (*Conoclinium coelestinum*)

Aster Family

*Other Common Names:* blue boneset, wild ageratum

**Scientific Name:** *Conoclinium coelestinum* (L.) DC.  
**Plant Symbol:** COCO13

**Duration:** Perennial  
**Plant Height:** up to 3 feet  
**Growth Habit:** Forb/herb  
**Blooms/Fruits:** July–November

**Distinguishing Characteristics:** Clusters of fluffy blue, blue-violet, or rosy-violet flower heads, rarely white; stems usually with short curly hairs; leaves fairly wide in shape, triangular or rounded; leaves opposite with margins toothed or scalloped. Sometimes sprawls over other vegetation.

**Pollinator Value:** Blue mistflower is a valuable nectar source, favored by many bees and butterflies. Male queen butterflies, another species of milkweed butterfly similar to the monarch, collect alkaloids from the nectar of these flowers to use in their courtship of females. Males can be seen nectaring in huge aggregations on these plants.

**Habitat:** Streambanks, wet meadows, low woods, floodplains, ditches, and disturbed sites. May become weedy.
Important Plants of the Monarch Butterfly
Southern Great Plains

Early flower development

Photo: Joseph A. Marcus, Lady Bird Wildflower Center

Flowering/close-up of flowers

Photo: Carolyn Fannin, Lady Bird Johnson Wildflower Center

Stem and leaf characteristics

Photo: Peggy Romfh, Lady Bird Johnson Wildflower Center

Photo: Mike Haddock
Broadleaf Milkweed (*Asclepias latifolia*)

**Milkweed Family**

**Other Common Names:** corn-kernel milkweed

**Scientific Name:** *Asclepias latifolia* (Torr.) Raf.  
**Plant Symbol:** ASLA4

**Distinguishing characteristics:** Stems unbranched, 1 or more developing from an underground tuber; leaves large, broad, waxy, almost circular with a blunt or notched tip, 3–4 in. long x 2 in. wide, and without a leaf stem or a very short one; flowers in axillary clusters, pale green–yellowish green; petals reflexed: hood lime-green to yellowish, turning yellow with age and appearing like a corn-kernel.

**Plant Height:** 2–3 ft.  
**Blooms/Fruits:** May–June

**Duration:** Perennial, herbaceous

**Pollinator Value:** Visited by a diversity of bees (including honeybees and bumblebees), plus numerous species of flies, beetles and butterflies. An important host plant for monarchs in the southern shortgrass and mixed grass prairie.

**Habitat:** Dry washes, grazed pastures and prairies, mowed, or hayed areas, mowed roadsides, and rocky calcareous soils.

![Photo: Mike Haddock](image)
Important Plants of the Monarch Butterfly
Southern Great Plains

Full flowering/leaf arrangement

Foliage and fruit
Butterfly Milkweed (*Asclepias tuberosa*)

Milkweed Family

**Other Common Names:** butterfly weed, orange milkweed

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

**Duration:** Perennial  
**Growth Habit:** Forb/herb

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

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

**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 rarely rocky limestone soils.
Important Plants of the Monarch Butterfly
Southern Great Plains

Seedling

Full flowering

Early flowering/close-up view of

Fruit

Mature fruit with seed
Button Eryngo (*Eryngium yuccifolium*)
Carrot Family

**Other Common Names:** bristle-leaf eryngo, button snakeroot, rattlesnake master

**Scientific Name:** *Eryngium yuccifolium* Michx.

**Plant Symbol:** ERYU

**Duration:** Perennial

**Growth Habit:** Forb/herb

**Plant Height:** up to 3.5 ft.

**Blooms/Fruits:** May– August

**Distinguishing characteristics:** Tall, erect, flowering stem with a basal rosette of linear, 2–3 ft. long leaves, leaves reduced up the flowering stem; leaves slightly toothed along the margin and are monocot in appearance with parallel veined (resembling *Yucca*); flowers grayish-white in compact, round, spiny heads.

**Pollinator Value:** Rattlesnake master is of special value to beneficial insects, including wasps and syrphid flies. It is the only larval host plant for the rare Rattlesnake master borer moth. Rattlesnake master nectar is also attractive to many bees and butterflies.

**Habitat:** Prairies and open rocky woodlands.

Photo: Carolyn Fannon  Lady Bird Johnson Wildflower Center
Seedling (note the toothed leaf margin)

Flowering/close-up of flower

Mature

Toothed leaf

Early vegetative growth
Canada Goldenrod (*Solidago canadensis*)

**Aster Family**

**Other Common Names:** Canadian goldenrod, tall goldenrod, giant goldenrod, verge d’or du Canada

**Scientific Name:** *Solidago canadensis* L.  
**Plant Symbol:** SOCA6

**Distinguishing characteristics:** Flowering heads small with yellow rays and yellow center; inflorescence terminal and shaped into a broad pyramid with branches bent backwards and the individual flowers oriented upward; leaves alternate on the stem, with 3 main veins, lance-shaped, the upper surface raspy to the touch from short, stiff hairs with bulbous bases; the basal and lower leaves withered at flowering; stems hairy except towards the base of the plant.

**Plant Height:** 3–6+ ft., erect (often with numerous stems)  
**Blooms/Fruits:** August–October

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

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

**Habitat:** Bottomland forests, mesic pastures and prairies, stream and riverbanks, and roadsides.

**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.
Important Plants of the Monarch Butterfly
Southern Great Plains

Full flowering/close-up of flowers

Stem and leaf arrangement; close up of underside of leaf
Common Boneset (*Eupatorium perfoliatum*)

**Aster Family**

**Other Common Names:** thoroughwort

**Scientific Name:** *Eupatorium perfoliatum* L.  
**Plant Symbol:** EUPE3

**Distinguishing characteristics:** Flower heads white in small fuzzy clusters on a many branched, flat-topped inflorescence; leaves are opposite one another (rarely whorled), hairy, with a pointed tip, and are very distinctive where the leaf bases wrap around the stem and appear as if the stem is growing through the middle of the leaf; stems are densely hairy.

**Plant Height:** 3–5 ft., erect  
**Blooms/Fruits:** August–October

**Duration:** Perennial, herbaceous

**Pollinator Value:** This summer through fall blooming flower is highly attractive to butterflies and native bees.

**Habitat:** Damp low ground, banks of ponds and streams, fens, sloughs, marshes, crop fields, and fallow fields.
Full flowering/close-up of blooms

Close-up of leaf arrangement
Common Dittany (*Cunila origanoides*)

Mint family

Other Common Names: American dittany, Maryland stone-mist

**Scientific Name:** *Cunila origanoides* (L.) Britton  
**Plant Symbol:** CUOR

**Duration:** Perennial  
**Growth Habit:** Forb/herb; subshrub

**Plant Height:** 1–2 ft.  
**Blooms/Fruits:** July–October

**Distinguishing characteristics:** Flowers in terminal or sometimes axillary clusters, purple to white in color, and the petals “two lipped” with 2 petals above and 3 petals below; leaves are resin-dotted and aromatic when crushed; leaves are widely spear shaped with rounded to heart-shaped bases and no leaf stalks. May have single or multiple woody stems.

**Pollinator Value:** This flower supports migrating monarchs during the fall migration. It may attract other butterflies.

**Habitat:** Rocky, moist, wooded hillsides and stream banks.
Common Milkweed (*Asclepias syriaca*)
Milkweed Family

Other Common Names: none

Scientific Name: *Asclepias syriaca* L.  
Scientific Name: none  
Plant Symbol: ASSY

Duration: Perennial  
Growth Habit: Forb/herb

Plant Height: 2–5 ft.  
Blooms/Fruits: May–August

**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; plants rhizomatous, usually unbranched.

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

**Habitat:** Roadsides, disturbed areas, field borders, bottomland & upland prairies, pastures, and old fields.
Flowering/close-up of flowers

Stem and leaf arrangement
Common Sunflower (\textit{Helianthus annuus})

Aster Family

Other Common Names: Kansas sunflower, mirasol, sunflower

Scientific Name: \textit{Helianthus annuus} L. \hspace{1cm} Plant Symbol: HEAN3

Family: Asteraceae

Duration: Annual \hspace{1cm} Growth Habit: Forb/herb

Plant Height: 1 - 10 ft., variable \hspace{1cm} Blooms/Fruits: July - October

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.

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.
Compassplant (*Silphium laciniatum*)
Aster Family

**Other Common Names:** none

**Scientific Name:** *Silphium laciniatum* L.  
**Plant Symbol:** SILA3

**Duration:** Perennial  
**Growth Habit:** Forb/herb

**Plant Height:** 3–6 ft.  
**Blooms/Fruits:** July–September

**Distinguishing characteristics:** Leaves thick, leathery, deeply lobed to dissected; flowering heads yellow with dark centers; basal leaves long stemmed, the leaves reduced in size up the stem; basal leaves generally oriented in a north-south direction.

**Pollinator Value:** Compass plant is an excellent source of pollen & nectar. It is especially valuable to long-tongued bees. Monarchs are known to nectar on this plant.

**Habitat:** Glades, open prairie, openings in dry upland forests, and roadsides.

Photo: Sally and Andy Wygowski, Lady Bird Johnson Wildflower Center
Important Plants of the Monarch Butterfly
Southern Great Plains

Photo: W.D. and Dolphia Bradford, Lady Bird Johnson Wildflower Center

Close-up of flowers and unopened flower

Photo: Julie Makin, Lady Bird Johnson Wildflower Center

Leaf

Photo: Sally and Andy Wasowski, Lady Bird Johnson Wildflower Center

Seedling

Photo: USDA-NRCS
Cup Plant (Silphium perfoliatum)

Aster Family

Other Common Names: cup rosinweed

Scientific Name: Silphium perfoliatum L.          Plant Symbol: SIPE2

Distinguishing characteristics: Floral heads in loose, open inflorescences; rays yellow and the central disc yellow; leaves opposite on the stem and, except the basal leaves, characteristically have the leaf bases fused together with its opposite leave making a “cup” around the stem and appearing as if the square stem is growing through the middle of the leaf, the leaves are thickened but not leathery.

Plant Height: 3–7+ ft., erect (commonly in clusters)        Blooms/Fruits: July–September

Duration: Perennial, herbaceous (from rhizomes)

Pollinator Value: This flower provides nectar and pollen to bees and other beneficial insect. It also attracts butterflies.

Habitat: Bottomland forests, banks of rivers and streams, moist low ground, and ditches.
Full flowering/close-up of flowers and mature

Leaf arrangement

Close-up of stem
Dakota Mock Vervain (*Glandularia bipinnatifida*)
Verbena Family

Other Common Names: moradilla, prairie verbena, ragweed vervain, wild vervain

Scientific Name: *Glandularia bipinnatifida* (Nutt.) Nutt.  Plant Symbol: GLBI2

Duration: Perennial  
Growth Habit: Forb/herb

Plant Height: up to 2 ft.  
Blooms/Fruits: March–October

Distinguishing characteristics: Flowers blue/purple in rounded clusters, each petal with a cleft at the tip; stems with dense bristly hairs, loosely erect with multiple stems from the base, appearing cushion-like; leaves opposite, 2–3x compound to finely dissected.

Pollinator Value: This plant blooms most of the growing season and is hugely popular with small butterflies and long-tongued bees.

Habitat: Dry plains and prairies, pastures, roadsides, and disturbed areas.
Dotted Blazing Star (*Liatris punctata*)

Aster Family

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

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

**Duration:** Perennial  
**Growth Habit:** Forb/herb

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

**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.

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

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

Photo: Bruce Leander, Lady Bird Johnson Wildflower Center

Flower buds

Photo: Steven Schwartzman, Lady Bird Johnson Wildflower Center

Plants flowering/close view of flowers

Photo: Sally and Andy Wasowski, Lady Bird Johnson Wildflower Center

Seed maturation

Seed

Ver. 2.0 Southern Great Plains, April 2018
Downy Ragged Goldenrod (*Solidago petiolaris*)

**Aster Family**

**Other Common Names:** downy goldenrod

**Scientific Name:** *Solidago petiolaris* Aiton

**Plant Symbol:** SOPE

**Duration:** Perennial

**Growth Habit:** Forb/herb

**Plant Height:** 3–5 ft.

**Blooms/Fruits:** August–October

**Distinguishing characteristics:** Flowering heads yellow in a many branched inflorescence that is wider towards the bottom and narrower on top; leaves lance-shaped and numerous along the stem, with smooth or widely spaced teeth along the margin; one of the more “showy” goldenrods in the region. Plants have slender rhizomes.

**Pollinator Value:** Downy ragged goldenrod is a valuable late-season pollen and nectar resource for wasps, bees, and butterflies.

**Habitat:** Woods and open places, bluff escarpments and limestone sites.

**Note:** There are many plants commonly called goldenrods that belong to different plant genera (e.g., *Chrysoma*, *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.

![Map of Southern Great Plains](image1)

![Photo of Downy Ragged Goldenrod](image2)
Important Plants of the Monarch Butterfly
Southern Great Plains

Flowering/close-up of flowers

Spear-leaved Goldenrod

Mature plant

Stem and leaf arrangement
Entireleaf Indian Paintbrush (*Castilleja indivisa*)

**Figwort Family**

**Other Common Names:** Indian paintbrush, scarlet paintbrush, Texas paintbrush

**Scientific Name:** *Castilleja indivisa* Engelm.

**Plant Symbol:** CAIN13

**Duration:** Annual

**Growth Habit:** Forb/herb

**Plant Height:** 6–16 in.

**Blooms/Fruits:** March–May

**Distinguishing characteristics:** Flowering heads (bracts) orange-red to red; leaves are linear and without a leaf stalk; leaf margins smooth (without teeth)

**Pollinator Value:** This plant is a good nectar source for butterflies and hummingbirds.

**Habitat:** Sandy open woods, prairies, meadows, pastures, savannas, woodlands edge, openings, and roadsides.
Important Plants of the Monarch Butterfly
Southern Great Plains

Seedlings

Full flowering

Close-up of flower showing colored bracts/stem

Photo: Plant Resource Center, Univ. of

Photo: Randy Matthews, Lady Bird Johnson

Photo: Randy Heitch, Lady Bird Johnson Wildflower
Eastern Purple Coneflower (Echinacea purpurea)
Aster Family

Other Common Names: echinacea, snakeroot, Kansas snakeroot, narrow-leaved purple coneflower, scurvy root, Indian head, comb flower, black susans, and hedgehog

Scientific Name: Echinacea purpurea (L) Moench
Plant Symbol: ECPU

Distinguishing characteristics: Flowering heads with reddish-purple to pink rays (2–3” long) which are generally reflexed slightly at flowering; central disk conical with reddish-orange, blunt tipped spines and a dark center; leaves largest basally and reduced in size up the stem and with coarsely saw-toothed margins. The only Echinacea in our range with leaves 3–5 in. wide and with rounded or heart-shaped leaf bases, and fibrous roots.

Plant Height: 2–4 ft., erect
Blooms/Fruits: May–October

Duration: Perennial, herbaceous (with fibrous roots)

Pollinator Value: The flower attracts butterflies and native bees.

Habitat: rocky prairies, open wooded, thickets, often near waterways

Note: Eastern purple coneflower is a common horticultural plant with several cultivars, which do escape into natural environments. These cultivars will appear somewhat different in size and flower color compared to native individuals.
Engelmann’s Daisy (*Engelmannia peristenia*)

**Aster Family**

**Other Common Names:** cutleaf daisy

**Scientific Name:** *Engelmannia peristenia* (Raf.) Goodman & C.A. Lawson  
**Plant Symbol:** ENPE4

**Distinguishing characteristics:** Stems erect, arising from woody rootstocks, and ridged/grooved along the stem axis; leaves basal in a rosette and alternate along the stem; basal leaves deeply pinnate-lobed and can be persistent in winter; stem leaves few, deeply pinnate-lobed towards the base and with either shallow or no lobes towards the top of the stem, mostly sessile on; inflorescences daisy-like, single or few in a cluster; rays yellow and 7 – 10 in number; centers yellow.

**Plant Height:** 2–3 ft.  
**Bloom/Fruit:** April–November

**Duration:** Perennial, herbaceous, and the basal rosette can be persistent

**Pollinator Value:** Flowers of this plant are sought by a variety of bees and butterflies.

**Habitat:** Prairies, open sites, and roadsides.

[Photo: Campbell and Lynn Loughmiller, Lady Bird Johnson Wildflower Center]
Important Plants of the Monarch Butterfly
Southern Great Plains

Full flowering/close-up of blooms

Foliage
Fringed Twinevine (*Funastrum cynanchoides*)

Milkweed Family

Other Common Names: climbing milkweed vine, twinevine

Scientific Name: *Funastrum cynanchoides* (Decne.) Schltr.  

Plant Symbol: FUCY

Duration: Perennial  
Growth Habit: Forb/herb; vine

Plant Height: climbing vine, up to 10 ft.  
Blooms/Fruits: April–August

Distinguishing characteristics: Flowers are white-fringed, in loosely rounded clusters, white to pink/purplish-tinged; leaves opposite and heart-shaped to spear-shaped, when crushed have a smell of burning rubber; all parts of the plant exude milky sap when damaged.

Pollinator Value: Possibly a larval host for the monarch butterfly, it provides nectar for many other lepidopterans.

Habitat: Sandy and rocky soil, riparian, along river washes in the desert.
This page intentionally left blank.
Golden Crownbeard (*Verbesina encelioides*)

**Aster Family**

**Other Common Names:** butter daisy, cowpen daisy, feverweed

**Scientific Name:** *Verbesina encelioides* (Cav.) Benth. & Hook. f. ex A. Gray  
**Plant Symbol:** VEEN

**Duration:** Annual  
**Growth Habit:** Forb/herb

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

**Distinguishing Characteristics:** Yellow flower heads with long floral rays; leaves alternate along the stem, characteristically with two large lobes at the leaf base; stems erect and without leafy “wings” like most other plants in this group. Plants are taprooted.

**Pollinator Value:** This flower is attractive to butterflies and native bees.

**Habitat:** Open disturbed areas, sandy soil, crop fields, and roadsides.
Important Plants of the Monarch Butterfly
Southern Great Plains

Lobed at leaf base

Leaf

Flowering

Seed

Lobed at leaf base
Gray Goldenrod (*Solidago nemoralis*)
Aster Family

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

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

**Duration:** Perennial  
**Growth Habit:** Forb/herb

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

**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.

**Pollinator Value:** This flower is very popular with bees and wasps. It is also 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 (e.g. *Chrysoma*, *Euthamia*, *Oligoneuron*, and *Solidago*) 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.
Important Plants of the Monarch Butterfly
Southern Great Plains

Photos: Ray Mathews, Lady Bird Johnson Wildflower Center

Close-up of Flowers

Unopened flowers

Full bloom

Mature plant

Seed

Photos: Ray Mathews/Bruce Leander, Lady Bird Johnson Wildflower Center

Photos: Easyliving Native Perennial Wildflowers

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

Photos: USDA-ARS
Green Antelopehorn (*Asclepias viridis*)

**Milkweed Family**

**Other Common Names:** green milkweed, Ozark milkweed, spider milkweed

**Scientific Name:** *Asclepias viridis* Walter  
**Plant Symbol:** ASVI2

**Duration:** Perennial  
**Growth Habit:** Forb/herb

**Plant Height:** 1–2 ft.  
**Blooms/Fruits:** April–September

**Distinguishing characteristics:** Flowers pale green with the petals spreading like a typical flower; leaves alternate or sub-opposite on the stem short leaf stalk; flowers in loose axillary rounded clusters.

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

**Habitat:** Upland prairies, on calcareous substrates, roadsides, & open ground. Eastern half of the Great Plains.

**Note:** This species is very similar to spider milkweed (*A. asperula*), but has slightly wider petals that have a blunt tip; the inflorescence is not as tightly packed with flowers; and the stem is fairly erect.
Hairy Wedelia (\textit{Wedelia acapulcensis})

Aster Family

Other Common Names: orange zexmania, zexmenia, wedelia, Texas creeping-oxeye, orange daisy

Scientific Name: \textit{Wedelia acapulcensis} Kunth var. hispida (Kunth) Strother  
Plant Symbol: WEAC

Distinguishing characteristics: Stems woody at the base and herbaceous throughout the leafy parts, covered with stiff, appressed hairs that are rough to the touch; leaves are opposite, lack a leaf stem, are narrowly egg-shaped, and have a coarsely toothed to slightly lobed margin; flowering heads daisy-like, on long stems, occur singly or in small groups of 2-3, and with yellow to orange rays and centers.

Plant Height: 2–3 ft.  
Blooms/Fruits: April–November

Duration: Perennial, shrub/subshrub

Pollinator Value: Visited by honeybees, native bees, and butterflies.

Habitat: Igneous or limestone derived soils, thorn woodlands, desert scrublands.

Note: This species is only represented by one variety in our flora: \textit{W. acapulcensis} var. \textit{hispida} (Kunth) Strother. Symbol: WEACH. An older scientific name (synonym) for hairy widelia is \textit{W. texana} and is found in some floras.
Important Plants of the Monarch Butterfly
Southern Great Plains

Seed

Seedlings

Full flowering and close-up of blooms
**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.
Important Plants of the Monarch Butterfly
Southern Great Plains

Full flowering/close-up of blooms

Close-up of stem and leaf

Mature plant
Late flowering Thoroughwort (*Eupatorium serotinum*)

Aster Family

**Other Common Names:** fall boneset, late eupatorium, white boneset

**Scientific Name:** *Eupatorium serotinum* Michx.  
**Plant Symbol:** EUSE2

**Duration:** Perennial  
**Growth Habit:** Forb/herb

**Plant Height:** 2–5 ft.  
**Blooms/Fruits:** August–October

**Distinguishing characteristics:** Flower heads as small, white, powder-puffs in many headed, flat-topped inflorescences; leaves mostly opposite except towards the top, broadly spear-shaped with tapering tips.

**Pollinator Value:** Late flowering thoroughwort is attractive to a variety of insects, including butterflies and bees.

**Habitat:** Open moist woods in bottomlands, disturbed sites.

Photo: Robert Stone, Lady Bird Johnson Wildflower Center
Important Plants of the Monarch Butterfly
Southern Great Plains

Flowering/close-up of flower heads

Both photos showing stem and leaf arrangement
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.

Photo: Sally and Andy Wasowski, Lady Bird Johnson Wildflower Center
Important Plants of the Monarch Butterfly
Southern Great Plains

Close-up of leaflets and vegetative growth

Photo: Sally and Andy Wasowski, Lady Bird Johnson Wildflower Center

Mature flower head

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

Full flowering/close-up of blooms

Photo: Julie Makin, Lady Bird Johnson Wildflower Center

Photo: Norman Flagg, Lady Bird Johnson Wildflower Center
Leavenworth’s Eryngo (Eryngium leavenworthii)
Carrot Family

Other Common Names: eryngo, false purple thistle

Scientific Name: Eryngium leavenworthii Torr. & A. Gray  Plant Symbol: ERLE11

Duration: Annual  Growth Habit: Forb/herb

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

Distinguishing characteristics: A tall, prickly plant with flower heads resembling small pineapples or teasel, almost all parts of the plant tinged with purple; flowers inconspicuous in spiny, purple, conical heads with a tuft of spiny leaves on the top; leaves purple tinged, deeply lobed or dissected, each lobe spine tipped.

Pollinator Value: This plant is attractive to bees and beneficial insects.

Habitat: Prairies, disturbed areas, open woodlands; preference for calcareous soils.
Lemon Beebalm (*Monarda citriodora*)

**Mint Family**

**Other Common Names:** purple horsemint, lemon mint, plains horsemint, lemon horsemint, horsemint, purple lemon mint

**Scientific Name:** *Monarda citriodora* Cerv. Ex Lag.  
**Plant Symbol:** MOCI

**Distinguishing characteristics:** Stems erect, moderately to densely hairy, and usually branched; leaves opposite on the stem, lance shaped, with a very short leaf stem (less than 1/2 in.), the leaves taper to a point at the top and the base, and the margins have widely spaced teeth; flowers are in 1-3 ball-like flower clusters toward the top of the stem, color is white to pinkish to pinkish-purple; each flower is two-lipped with the upper lip arched downward, the lower lip with dark purple spots or lines.

**Plant Height:** 1-2 ft.  
**Blooms/Fruits:** May–July

**Duration:** Annual, herbaceous

**Pollinator Value:** Known to be visited by bumblebees and butterflies.

**Habitat:** Upland prairies, openings in upland forests, bluffs, roadsides, and open disturbed areas.
Seedlings

Full flowering/close-up of flowers

Close-up of foliage
Maximilian Sunflower (*Helianthus maximiliani*)

**Aster Family**

**Other Common Names:** Max sunflower

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

**Duration:** Perennial  
**Growth Habit:** Forb/herb

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

**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.

**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.
Important Plants of the Monarch Butterfly
Southern Great Plains

Seedling

Mature plant

Full flowering/close-up of flower

Late vegetative
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:** The 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:** Bottomland prairies, moist depressions, fens, stream banks, pastures, fencerows, and roadsides.
Narrowleaf Stoneseed (*Lithospermum incisum*)

**Borage Family**

**Other Common Names:** golden puccoon, fringed puccoon, narrowleaf puccoon, narrow-leaved puccoon, puccoon, narrowleaf gromwell, fringed gromwell

**Scientific Name:** *Lithospermum incisum* Lehm.  
**Plant Symbol:** LIIN2

**Distinguishing characteristics:** Stems 1 to several from rhizomes or short woody rootstocks; leaves alternate on the stem, narrowly lance-shaped, 1-1" in. long x 1/4 in. wide, pointed at the tip and base; flowers of two kinds, showy and non-showy; showy flowers in terminal inflorescences, each flower a yellow tube with 5 yellow and strongly fringed petal-lobes, although these are showy and attract pollinators their seed production is very low; non-showy flowers are minute, in the axils of the leaves, never open, are produced after the showy flowers fade, and are self-pollinating and very fertile.

**Plant Height:** 0.5–1.5 ft.  
**Blooms/Fruits:** April–June

**Duration:** Perennial, herbaceous

**Pollinator Value:** Very little has been reported about floral visitors to this species. One source indicated that it is visited by butterflies more than by other insects.

**Habitat:** Prairies, loess prairies, limestone soils, open woodlands, and roadsides.

Photo: Mike Haddock
Important Plants of the Monarch Butterfly
Southern Great Plains

Full flowering/close-up of flowers

Leaf/foliage

Seed
Pale Purple Coneflower (Echinacea pallida)
Aster Family

Other Common Names: pale echinacea, pale coneflower

Scientific Name: Echinacea pallida (Nutt.) Nutt.  
Plant Symbol: ECPA

Distinguishing characteristics: Flower heads appearing daisy-like with pale pink, narrow, obviously drooping rays and with a dark purple to pink cone-shaped center; leaves much longer than broad, linear to widest in the middle, and with short, stiff hairs on the surfaces thus feeling raspy to the touch; stems with short stiff hairs that may be swollen (pustular) at the base of the hair.

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

Duration: Perennial, herbaceous

Pollinator Value: This flower attracts butterflies and native bees.

Habitat: Upland prairies, glades, savannas, and other dry open sites.

Note: This species is similar to black Samson (E. angustifolia), but pale purple coneflower has white pollen while black Samson’s pollen is yellow.
Important Plants of the Monarch Butterfly
Southern Great Plains

Full flowering/close-up of blooms

Mature coneflower

Stem and leaf
Palmleaf Thoroughwort (*Conoclinium greggii*)

**Aster Family**

**Other Common Names:** Gregg’s mistflower, purple palm-leaf eupatorium, purple palm-leaf mistflower

**Scientific Name:** *Conoclinium greggii* (A. Gray) Small

**Plant Symbol:** COGR10

**Duration:** Perennial

**Growth Habit:** Forb/herb

**Plant Height:** up to 2 ft.

**Blooms/Fruits:** March–November

**Distinguishing characteristics:** Flowering heads in small 1-2 inch clusters of blue to purplish powder-puffs; leaves rounded or delta-shape in overall form but palmately deeply lobed or dissected; stem bases may be woody.

**Pollinator Value:** Very attractive to butterflies, especially queen and monarch butterflies. Its blooms coincide with the fall monarch migration.

**Habitat:** Waterways, depressions, ditches, stream beds and overflow areas, gravelly calcareous soil.
Important Plants of the Monarch Butterfly
Southern Great Plains

Flowering/close-up of flowers

Full flowering and leaf arrangement

Seed
Pennsylvania Smartweed (*Polygonum pensylvanicum*)

**Smartweed Family**

**Other Common Names:** common smartweed, pink smartweed

**Scientific Name:** *Polygonum pensylvanicum* (L.)          **Plant Symbol:** POPE2

**Duration:** Annual          **Growth Habit:** Forb/herb

**Plant Height:** 0.5–6 ft., variable          **Blooms/Fruits:** May–November

**Distinguishing characteristics:** Flowers greenish white, white, or pink borne on terminal stalks and in the axils of the upper leaves; inflorescence erect, often slightly drooping; stems have a papery sheath (ocrea) growing above the leaf joints, top of the sheath is smooth and lacks hairs or bristles; leaves arrow-shaped, with or without a reddish chevron.

**Pollinator Value:** The nectar of this plant is attractive to bees, butterflies, and beneficial insects. It is also a larval host plant to a variety of moths and butterflies.

**Habitat:** Wetland shallows, mudflats, ditches, disturbed wet areas.

**Note:** Many different types of smartweeds occur in the Southern Great Plains; native, non-native, and some are invasive. All of them have a characteristic papery sheath growing up the stem from a leaf joint. Some of the species can be differentiated by the hairs, bristles, cilia, or lack of anything attached to the top of that sheath.
Leaf, stem, and close-up of flower

Seed
Pinkscale Blazing Star (*Liatris elegans*)

**Aster Family**

**Other Common Names:** blazing star, handsome blazing star

**Scientific Name:** *Liatris elegans* (Walt.) Michx.  
**Plant Symbol:** LIEL

**Family:** Asteraceae

**Duration:** Perennial  
**Growth Habit:** Forb/herb

**Plant Height:** 2–4 ft.  
**Blooms/Fruits:** August–October

**Distinguishing characteristics:** Flowering heads crowded together on an elongate, terminal, spike-like inflorescence, pink, lavender, or light purple, but some varieties can be white or cream colored; characteristically the bracts under the flower heads are longer than the flowering head and petal-like; leaves widely lance shaped, with one main vein; plants have corm rootstock.

**Pollinator Value:** Like most other *Liatris* spp., this plant is very attractive to butterflies.

**Habitat:** Sandy soils, open woods, sandy clays, pine-hardwood forests.

**Note:** There are three botanical varieties of this species occurring within the Southern Great Plains.
Important Plants of the Monarch Butterfly
Southern Great Plains

Flowering/close-up of flowers

Seedling

Seed

Stem and leaf arrangement
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 fasciculate)
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.
Important Plants of the Monarch Butterfly
Southern Great Plains

Full flowering/close-up of flowers and mature

Close-up of leaf/stem and leaf
Prairie Milkweed (*Asclepias sullivantii*)
Milkweed Family

**Other Common Names:** smooth milkweed

**Scientific Name:** *Asclepias sullivantii* Engelm. Ex A. Gray  
**Plant Symbol:** ASSU3

**Distinguishing characteristics:** Inflorescences 15–40 flowered, in roundish clusters from the axis of the upper leaves; flowers borne on 2–3 in. stalks, pinkish-rose to purple colored and reflexed; leaves opposite one another and attached directly to the stem without leaf stalks, broadly spear-shaped, and spreading but with the ends often ascending.

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

**Duration:** Perennial, herbaceous (with deep, fleshy rhizomes)

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

**Habitat:** Sandy, loamy, and rocky calcareous prairie soils and roadsides.
Important Plants of the Monarch Butterfly
Southern Great Plains

Full flowering/close-up of blooms

Leaf arrangement
Purple Prairie Clover (Dalea purpurea)

Pea Family

Other Common Names: red tassel flower, thimbleweed, violet prairie clover, wanahcha

Scientific Name: Dalea purpurea Vent.  
Plant Symbol: DAPU5

Duration: Perennial  
Growth Habit: Forb/herb; subshrub

Plant Height: 2–3 ft.  
Blooms/Fruits: May–September

Distinguishing characteristics: Flowering heads are on a compact, thimble-shaped, with a conical axis; flowers appear as a purple ring around the inflorescence and flower at the bottom first and the flower ring moves up the axis as the season progresses; mature flower heads are gray to brown and papery; leaves are alternate, compound, with about 5 leaflets per leaf.

Pollinator Value: Purple prairie clover is an especially preferred pollen & nectar source for many bee species of diverse sizes, from sweat bees to bumble bees.

Habitat: Prairies, rocky open glades, along railroad tracks, and rocky or open woods.
Roughstem Rosinweed (*Silphium radula*)
Aster Family

**Other Common Names:** none

**Scientific Name:** *Silphium radula* Nutt.  
**Plant Symbol:** SIRA2

**Duration:** Perennial  
**Growth Habit:** Forb/herb

**Plant Height:** up to 6 ft.  
**Blooms/Fruits:** June–August

**Distinguishing characteristics:** Flower heads borne singly or a few closely crowded on elongate stalks; the flowering stems very rough/raspy to the touch from very short, stiff hairs; flowering heads with yellow and with yellow and brown mottled centers; leaf are generally opposite without a leaf stalk and margins that are smooth or with some teeth, not deeply dissected like other rosinweeds.

**Pollinator Value:** Roughstem rosinweed supplies nectar and pollen to many species of native bee and other pollinators.

**Habitat:** Prairies, open wooded sites, calcareous soils.
Important Plants of the Monarch Butterfly
Southern Great Plains

Full flowering/close-up of flower

Stem and Leaf arrangement

Close-up of underside of flower
Roundhead Prairie Clover (*Dalea multiflora*)

**Pea Family**

**Other Common Names:** round headed dalea, white prairie clover

**Scientific Name:** *Dalea multiflora* (Nutt.) Shinners  
**Plant Symbol:** DAMU

**Duration:** Perennial  
**Growth Habit:** Forb/herb; subshrub

**Plant Height:** 1–3 ft., multiple stems  
**Blooms/Fruits:** June–July, as late as October

**Distinguishing characteristics:** Flowers in globe-like tight clusters of small flowers terminating the stems, white to yellowish-white; leaves alternate on the stem, compound with 7–13 leaflets per leaf.

**Pollinator Value:** This plant provides nectar and pollen to a variety of bee species.

**Habitat:** Prairies, limestone and calcareous clays, meadows, and open woodlands.
Important Plants of the Monarch Butterfly
Southern Great Plains

Full flowering/close-up of flower/mature flowers

Leaf and stem
Roundleaf Ragwort (*Packera obovata*)

**Aster Family**

**Other Common Names:** golden ragwort, roundleaf groundsel, squawweed

**Scientific Name:** *Packera obovata* (Muhl. ex Willd.) W.A. Weber & Á. Löve  
**Plant Symbol:** PAOB6

**Duration:** Perennial  
**Growth Habit:** Forb/herb

**Plant Height:** 1–2 ft. in rosettes  
**Blooms/Fruits:** April–June

**Distinguishing characteristics:** Flower heads with yellow rays and centers clustered towards the top of the flowering stalk; leaves in basal rosettes, rounded to widest towards the top and with a long leaf stalks often 1–2x the length of the leaf blade; basal leaves sometimes purple underneath; leaves are reduced in size up the flowering stem; leaf margins saw-toothed. Plants can be semi-evergreen to evergreen.

**Pollinator Value:** This flower provides early-season pollen and nectar resources to many insects, including native bees and butterflies. Roundleaf ragwort is a likely a valuable resource to migrating monarch butterflies.

**Habitat:** Rocky wooded hillsides, streambeds.
Important Plants of the Monarch Butterfly
Southern Great Plains

Flowering/close-up of flowers

Leaf shape/margin/arrangement

Mature plant with seed
Sawtooth Sunflower (*Helianthus grosseserratus*)

Aster Family

Other Common Names:  hélianthe à grosses dents

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

Duration:  Perennial  
Growth Habit:  Forb/herb

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

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.

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.
Important Plants of the Monarch Butterfly
Southern Great Plains

Leaf arrangement

Full flowering and close-up of flowers

Stem and close-up of leaf
Scaly Blazing Star (*Liatris squarrosa*)

**Aster Family**

**Other Common Names:** scaly gayfeather, scaly liatris

**Scientific Name:** *Liatris squarrosa* (L.) Michx.  
**Plant Symbol:** LISQ

**Distinguishing characteristics:** Stems arising from a globose corm; leaves alternate, linear, 4 in. ling x 1/3 in. wide, and attached directly to the stem without a leaf stem; flowering heads numerous along the inflorescence powder-puff like in appearance, purple, the individual flowering heads are not tightly clustered along the flowering stem like many other blazing stars.

**Plant Height:** 1–2 ft.  
**Bloom/Fruits:** June–September

**Duration:** Perennial, herbaceous

**Pollinator Value:** Relatively little is known, but already known to be visited frequently by the bee genera *Bombus*, *Lasioglossum* and *Halictus*, as well as large butterflies such as the monarch and regal fritillary. Like most *Liatris* spp., it is probably also visited frequently by numerous species of skipper butterflies.

**Habitat:** Dry forest openings, upland prairies, pastures, and roadsides

**Note:** The scientific name of Appalachian blazing star, *Liatris squarrulosa*, is spelled almost identically. Also, devil’s bite, *Liatris scariosa*, has a very similar species name spelling. Use caution and verify the species intended for use.
Shiny Goldenrod (Oligoneuron nitidum)
Aster Family

Other Common Names: none

Scientific Name: Oligoneuron nitidum (Torr. & A. Gray) Small
Plant Symbol: OLNI

Duration: Perennial
Growth Habit: Forb/herb

Plant Height: 1.5–3 ft.
Blooms/Fruits: June–November

Distinguishing characteristics: Similar to other goldenrods, but inflorescence is flat-topped; flower heads small, with yellow rays and center; leaves linear to lance shaped, shiny on the surface, edges smooth or with a few teeth; a basal rosette of leaves usually present at flowering.

Pollinator Value: Goldenrods provide late-season forage to bees and butterflies.

Habitat: Prairies & open woodlands

Note: There are many plants commonly called goldenrods that belong to different plant genera (e.g., Chrysoma, Euthamia, Oligoneuron, and Solidago) and are all fairly similar. They generally have yellow, clustered flowers, but some species are white. The flowering stems can be elongate and recurved (Solidago) or flat-topped (Euthamia & Oligoneuron). Shiny goldenrod may be found in older reference books as Solidago nitida.
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:** The flower is 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.
Important Plants of the Monarch Butterfly
Southern Great Plains

Close-up of Flowers

Mature plant

Leaf

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

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

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

**Habitat:** Wet prairies, savannahs, and roadside ditches.
Important Plants of the Monarch Butterfly
Southern Great Plains

Full flowering/close-up of blooms

Stem and Leaf arrangement

Fruit

Mature fruit with seed
Smooth Blue Aster (*Symphyotrichum laeve*)
Aster Family

**Other Common Names:** smooth aster

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

**Plant Symbol:** 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:** These 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.

---

**Map Image**

[Map of the Southern Great Plains showing the distribution of Smooth Blue Aster]

---

**Photo Image**

[Image of Smooth Blue Aster plants in the field]

© 2009 K. Clayka
Important Plants of the Monarch Butterfly
Southern Great Plains

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
Southern Great Plains

Full flowering/close-up of blooms

Mature plant

Stem arrangement

Leaf
Important Plants of the Monarch Butterfly
Southern Great Plains

Sneezeweed (Helenium amarum)
Aster Family

Other Common Names: bitter sneezeweed, yellow dog fennel

Scientific Name: Helenium amarum (Raf.) H. Rock
Plant Symbol: HEAM

Duration: Annual
Growth Habit: Forb/herb

Plant Height: 1–3 ft.
Blooms/Fruits: April–June; until October

Distinguishing characteristics: Flower heads bright yellow with a conical, darker yellow to occasionally purple center, ray petals with 3 distinct terminal lobes; stems not winged; leaves finely divided into thread-like segments resembling dog fennel.

Pollinator Value: Helenium amarum is a valuable late-season floral resource for bees and butterflies. However, honey produced from these flowers is unpalatable.

Habitat: Open fields, overgrazed pasture, and disturbed areas.
Flowering/close-up of flowers (note: 3 lobes on ray)

Early seed maturity

Flower head after rays have fallen

Very narrow leaves (note: thread-like leaf segments)
Important Plants of the Monarch Butterfly
Southern Great Plains

Soft-hair Marbleseed (*Onosmodium bejariense*)

**Borage Family**

**Other Common Names:** false gromwell, soft-hair false gromwell

**Scientific Name:** *Onosmodium bejariense* DC. ex A. DC.  **Plant Symbol:** ONBE

**Duration:** Perennial  **Growth Habit:** Forb/herb

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

**Distinguishing characteristics:** Flowers tubular shaped and small (0.5 in.) on long, coiled inflorescences, white, cream, or yellowish-green in color; inflorescences are coiled like a fern frond or scorpion's tail and unroll as the flowers develop; leaves are alternate, lance to egg shaped, with a tapering tip and very hairy on the top and undersurfaces; basal leaves usually falling off at flowering time. May have a woody base.

**Pollinator Value:** Softhair marbleseed's enclosed flowers are primarily accessible by large native bees. They contain both pollen and nectar resources.

**Habitat:** Grasslands, forest openings, limestone outcrops.

Photo: W.D. and Dolphia Branford, Lady Bird Johnson Wildflower Center
Important Plants of the Monarch Butterfly
Southern Great Plains

Close-up of flowers; stem and leaf arrangement

Seedling

Seed
Spanish Gold (*Grindelia papposa*)

**Aster Family**

**Other Common Names:** goldenweed, sawleaf daisy

**Scientific Name:** *Grindelia papposa* G.L. Nesom & Suh

**Plant Symbol:** GRPA8

**Duration:** Annual, Biennial

**Growth Habit:** Forb/herb

**Plant Height:** 2–5 ft., variable

**Blooms/Fruits:** August–September

**Distinguishing characteristics:** Flower heads with yellow rays and a yellow center, floral bracts spreading, cup-shaped, with pointed projections; leaves elliptical or widest at the top and with leaf margins toothed with a bristle or soft spine on each tooth. Sticky stems and leaves.

**Pollinator Value:** This flower is of special value to native bees and other insects. Its pollen and nectar have been documented to feed a variety of beetles.

**Habitat:** Disturbed areas, prairies, roadsides.
Important Plants of the Monarch Butterfly
Southern Great Plains

Photo: Campbell and Lynn Loughmiller, Lady Bird Johnson Wildflower Center

Flowering

Photo: Edith Bettinger, Lady Bird Johnson Wildflower Center

Close-up of flower and buds

Photo: W. D. and Dolphia Bransford, Lady Bird Johnson Wildflower Center

Stem and leaf
Spider Milkweed (*Asclepias asperula*)

**Milkweed Family**

**Other Common Names:** antelope horns, trailing milkweed

**Scientific Name:** *Asclepias asperula* (Decne.) Woodson  
**Plant Symbol:** ASAS

**Family:** Asclepiadaceae

**Duration:** Perennial  
**Growth Habit:** Forb/herb

**Plant Height:** 1–2 ft.  
**Blooms/Fruits:** April–June, September

**Distinguishing characteristics:** Flowers pale green with petals spreading; leaves alternate or sub-opposite on the stem with short leaf stalks; flowers in tight axillary rounded clusters.

**Pollinator Value:** Larval host plant for monarch butterfly. The plant’s high quality nectar makes it very attractive to butterflies and bees.

**Habitat:** Rocky and calcareous prairies, Texas blackland prairies. Western half of the Great Plains.

**Note:** This species is very similar to green milkweed (*A. viridis*), but has narrower petals that have a pointed tip; the inflorescence is a tightly packed almost rounded cluster of flowers; and the stems are generally sprawling across the ground or only slightly erect.

![Image](Photo: Pam Williams, Lady Bird Johnson Wildflower Center)
Flowering/ close-up of partial open flowers (upper right); open flowers (lower right)

Fruit

Empty fruit pod
Spotted Beebalm (Monarda punctata)
Mint Family

Other Common Names: dotted beebalm, horse mint, dotted horse mint

Scientific Name: Monarda punctata L.          Plant Symbol: MOPU

Distinguishing characteristics: The inflorescences are in a series of ball-like clusters of flowers terminating the stems; flowers two-lipped with a hood (top) and lip (bottom), cream-colored to pale yellow or pinkish with prominent purplish-brown to maroon spots; leaves are lance shaped and moderately hairy on both the top and bottom surfaces; the stems are square like most mints.

Plant Height: 1–2 ft., erect          Blooms/Fruits: June–September
Duration: Perennial (South), to Biennial, to Annual (North), herbaceous
Pollinator Value: The nectar may attract Hummingbirds. Also popular with butterflies and long-tongued bees.
Habitat: Sand prairies, crop field margins, open disturbed sites, and along roadsides.
Full flowering/close-up of blooms

Stem and leaf arrangement/ close-up of leaf
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:** 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.
The image shows two photos of the same plant. The left photo is a full flowering close-up of blooms, and the right photo is a stem and leaf arrangement. The photos are credited to Janice Lynn and Julie Makin from the Lady Bird Johnson Wildflower Center.
Stiff Tickseed (*Coreopsis palmate*)

**Aster Family**

**Other Common Names:** stiff coreopsis, finger coreopsis

**Scientific Name:** *Coreopsis palmata* Nutt.  
**Plant Symbol:** COPA10

**Distinguishing characteristics:** Flowering heads with yellow rays and a yellow center, 2–3 in. across, borne singly or in a loose clusters of flower heads; leaves are opposite on the stem and sessile, each leaf divided into 3-lobes resembling skinny fingers.

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

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

**Pollinator Value:** This summer blooming wildflower provides nectar and pollen to native bees and other invertebrates.

**Habitat:** Upland prairies, openings in forests, old fields, and fallow areas.
Important Plants of the Monarch Butterfly
Southern Great Plains

Full flowering/close-up of blooms

Stem and leaf

Mature plant
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

**Pollinator Value:** Laval 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.
Important Plants of the Monarch Butterfly
Southern Great Plains

Full flowering/close-up of blooms

Leaf arrangement

Fruit

Seed
Sweetscented Joe Pye Weed (*Eutrochium purpureum*)

*Aster Family*

Other Common Names: sweet joe pye weed, green-stemmed joe pye weed, purple joe pye weed

**Scientific Name:** *Eutrochium purpureum*  
**Plant Symbol:** EUPU21

**Distinguishing characteristics:** Flower heads pale-pink to light purple in large dome-shaped, terminal inflorescence; leaves are in whorls of 3 – 4 at each leaf node, broadly lance-shaped; stems have dark purple splotches at the leaf nodes on an otherwise green stem.

**Plant Height:** 3–6+ ft., erect  
**Blooms/Fruits:** July–September  
**Duration:** Perennial, herbaceous

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

**Habitat:** Bottomland forests, open wooded areas, and banks of rivers and streams.
Important Plants of the Monarch Butterfly
Southern Great Plains

Photo: Mike Haddock

Photo: Mike Haddock

Photo: John Hilty, Illinois

Photo: John Hilty, Illinois

Close-up of leaf and stem

Mature plant

Photo: Mike Haddock
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:** Several *Liatris* species 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 that 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.
Important Plants of the Monarch Butterfly
Southern Great Plains

Full flowering/close-up of blooms

Seedlings

Mature plant
Texas Vervain (Verbena halei)

Aster Family

Other Common Names: blue vervain, candelabra vervain, slender verbena, standing vervain, Texas verbena

Scientific Name: Verbena halei Small
Plant Symbol: VEHA

Duration: Perennial
Growth Habit: Forb/herb; subshrub

Plant Height: 1–3.5 ft.
Blooms/Fruits: April–October

Distinguishing characteristics: Flowers are bluish to lavender with 5 petals that are fused together at the base and borne on several long, slender spikes, flowering from the base to the tip of the spike; leaves occur opposite on the stem and show a variation from toothed margins to lobed to deeply dissected. The lower the leaf, the deeper the degree of lobing/dissection.

Pollinator Value: This flower provides nectar to many species of butterfly.

Habitat: Moist meadows, prairies, open woodlands.
Important Plants of the Monarch Butterfly
Southern Great Plains

Flowering/close-up of flower

Habitat of Texas vervain

Seed
Western Wallflower (*Erysimum asperum*)

Mustard Family

**Other Common Names:** none

**Scientific Name:** *Erysimum asperum* (Nutt.) DC.  
Plant Symbol: ERAS2

**Distinguishing characteristics:** Stems erect, unbranched or with a few branches towards the top; leaves basal and alternate along the stem; basal leaves narrow but widest towards the top and often withering when flowering; stem leaves narrow with widely toothed margins and no leaf stem; inflorescence terminal with numerous bright yellow flowers clustered together, petals 4; fruits are long, slender pods (about 3 inches long x 1/16 inch wide) that are 4-angled and with 4 stripes, fruits are widely spaced on the inflorescence and spreading/divergent.

**Plant Height:** 1–2 ft.  
**Bloom/Fruit:** April–May

**Duration:** Biennial to Perennial, herbaceous

**Pollinator Value:** Most *Erysimum* spp. is attractive to a variety of bees, flies, butterflies, and moths. This species is known to be visited by *Halictus* and *Hylaeus* bees at the very least. It is also a known host plant of the Sara orangetip butterfly.

**Habitat:** Limestone outcrops, prairies, and hillsides, sand dunes, roadsides, bluffs, sandhills along stream banks, knolls, and open plains.

[Photo: Mike Haddock]
Flowering and close-up of flowers

Leaf and stem
White Crownbeard (*Verbesina virginica*)

**Aster Family**

**Other Common Names:** frostweed, iceweed, squaw-weed, Virginia crown-beard

**Scientific Name:** *Verbesina virginica* L.  
**Plant Symbol:** VEVI3

**Family:** Asteraceae

**Duration:** Biennial, Perennial  
**Growth Habit:** Forb/herb

**Plant Height:** 4 - 8 ft.  
**Blooms/Fruits:** August - November

**Distinguishing characteristics:** Stems are winged and densely covered with short wooly hairs appearing felt-like; white flower heads; seeds winged and with two barbed awns at the tip.

**Pollinator Value:** This late season nectar source has been noted as important to fall butterflies and migrating monarchs.

**Habitat:** Bottomlands, floodplains, woodland boarders, tree driplines and savannahs (40% shade), pastures, & disturbed sites.
Important Plants of the Monarch Butterfly
Southern Great Plains

Seedling (note the winged-stem)

Flowering

Ice ribbon formed around the stem

Close-up of winged stem

Photo: Marcus Joseph, Lady Bird Johnson Wildflower Center
White Heath Aster (*Symphyotrichum ericoides*)

Aster Family

**Other Common Names:** heath aster, tall white aster, white aster, white prairie aster

**Scientific Name:** *Symphyotrichum ericoides* (L.) G.L. Nesom

**Common Synonym:** *Aster ericoides* L.

**Plant Symbol:** SYER

**Duration:** Perennial

**Growth Habit:** Forb/herb

**Plant Height:** 2–3 ft.

**Blooms/Fruits:** September–November

**Distinguishing characteristics:** Numerous small flower heads with white rays and yellowish center; leaves linear and without leaf stalks, most falling off by flowering time; a colonial plant with highly branched underground rhizomes and over-ground runners.

**Pollinator Value:** This plant is a popular pollen and nectar source with bees, butterflies, and beneficial insects.

**Habitat:** Open prairies and plains, disturbed areas, very widespread.
White Prairie Clover (*Verbena halei*)

Pea Family

Other Common Names:  none

Scientific Name: *Verbena halei* 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.
Full flowering/close-up of flowers

Stem and leaf arrangement
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.
Important Plants of the Monarch Butterfly
Southern Great Plains

Full flowering/close-up of flowers and base

Vegetative growth and close-up of stem and leaf
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.
Important Plants of the Monarch Butterfly
Southern Great Plains

Full flowering/close-up of blooms

Photo: Alan Cressler, Lady Bird Johnson

Flower bud

Photo: Eric Beckers, Lady Bird Johnson Wildflower Center

Foliage/leaf arrangement

Photo: W.D. and Dolphia Bransford, Lady Bird Johnson Wildflower Center
Wild Blue Phlox \textit{(Phlox divaricata)}

**Phlox Family**

**Other Common Names:** Louisiana phlox, blue woodland phlox, sweet william, wild sweet william

**Scientific Name:** \textit{Phlox divaricata} L.  

**Plant Symbol:** PHDI5

**Distinguishing characteristics:** Stems of 2 types – vegetative stems are spreading to slightly ascending and densely hairy, flowering stems are ascending to partially erect with moderate hairiness some of which are gland-tipped; leaves are all opposite on the stem, elliptic on the vegetative stems and widest towards the tip on flowering stems; flowers are lavender, light purple, to pale blue in dome-shaped clusters, each flower has 5-spaying petals with an elongate tube extending to the base.

**Plant Height:** Flowering stems 1–2 ft., vegetative stems 2–3 inches  

**Blooms/Fruits:** April–June

**Duration:** Perennial, herbaceous to partly evergreen (with slender rhizomes)

**Pollinator Value:** The plant serves as a late summer and fall nectar source for the monarch butterfly, native bees, and other beneficial insects. It is highly attractive to many types of pollinators.

**Habitat:** Bottomland and upland forests, and moist woodlands.

![Photo: Mike Haddock](image_url)
Wrinkleleaf Goldenrod (*Solidago rugosa*)

**Aster Family**

**Other Common Names:** rough-leaved goldenrod, rough-stemmed goldenrod, verge d’or rugueuse

**Scientific Name:** *Solidago rugosa* Mill.  
**Plant Symbol:** SORU2

**Duration:** Perennial  
**Growth Habit:** Forb/herb

**Plant Height:** 2–6 ft.  
**Blooms/Fruits:** August–October

**Distinguishing characteristics:** Leaves with only 1 obvious vein; upper surface of leaves and stems rough/raspy to the touch. Flower heads many on recurved floral branches in an overall pyramid-shaped inflorescence, flowers all yellow; leaves are lance-shaped or elliptical and become smaller towards the top of the stem; basal leaves withered at flowering.

**Pollinator Value:** Wrinkleleaf goldenrod provides floral resources to many insects, including pollinators and butterflies.

**Habitat:** Bottomland forests, stream banks, pastures, and roadsides.

**Note:** There are many plants commonly called goldenrods that belong to different plant genera (e.g., *Chrysoma*, *Euthamia*, *Oligoneuron*, and *Solidago*) and are all fairly similar. They generally have yellow, clustered flowers, but some species are white. The flowering stems can be elongate and recurved (*Solidago*) or flat-topped (*Euthamia & Oligoneuron*).
Important Plants of the Monarch Butterfly
Southern Great Plains

- Close-up of flowers
- Leaf arrangement
- Close-up of stem

Photos: R.W. Smith, Lady Bird Johnson Wildflower Center
Photos: Tom Kent
Zizotes Milkweed (*Asclepias oenotheroides*)

**Milkweed Family**

**Other Common Names:** herba de zizotes, side-clustered milkweed

**Scientific Name:** *Asclepias oenotheroides* Cham. & Schltdl.  
**Plant Symbol:** ASOE

**Family:** Asclepiadaceae  
**Duration:** Perennial  
**Growth Habit:** Forb/herb  
**Plant Height:** 1–1.5 ft.  
**Blooms/Fruits:** May–October

**Distinguishing characteristics:** Flowers in small clusters at the junction of leaf and stem; petals greenish to cream colored and strongly reflexed; leaves are opposite or sub-opposite, egg to delta shaped.

**Pollinator Value:** Zizotes milkweed is a larval host plant for the monarch butterfly. It is also a nectar source to many insects.

**Habitat:** Sandy or gravelly ground, calcareous soils, disturbed areas.

[Map showing distribution of Zizotes Milkweed]  
[Photo of Zizotes Milkweed]

*Photo: Robert Stone, Lady Bird Johnson Wildflower Center*
Important Plants of the Monarch Butterfly
Southern Great Plains

Flowering/close-up of flowers

Fruit

Mature fruit and seed

Photo: Robert Stone, Lady Bird Johnson Wildflower Center

Photo: Norman Flaig, Lady Bird Johnson Wildflower Center

Photo: Joseph Marcus, Lady Bird Johnson Wildflower Center

Photo: Joseph Marcus, Lady Bird Johnson Wildflower Center
Literature Cited


References used to construct the Monarch WHEG and Planting List:


Distribution Maps:

USDA NRCS – National PLANTS Database: http://plants.usda.gov

Plant Descriptions:

Flora North America Project, Online Flora http://floranorthamerica.org


Lady Bird Johnson Wildflower Center, Online resources http://www.wildflower.org/
Important Plants of the Monarch Butterfly
Southern Great Plains


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.
