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**Appendices to J Poll Ecol 31(6), Vilella-Arnizaut et al.**

**Note: Open the figures in this document in Adobe pdf for better visibility.**

Table S1. Table with descriptions of all remnant temperate grassland sites and the Prairie Centennial Garden inside McCrory Gardens. All sites listed were sampled in 2019 in eastern South Dakota. Description includes site name, county name, latitude & longitude, size (in hectares) and ownership of sites.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Site Name** | **County** | **Latitude and Longitude** | **Size (ha)** | **Ownership** |
| Prairie Centennial Garden in McCrory Gardens | Brookings | 44.313976, -96.769175 | 0.16 | South Dakota State University |
| Sioux Prairie | Moody | 44.031099, -96.783710 | 81 | Nature Conservancy |
| Brookings Prairie | Brookings | 44.252489, -96.810310 | 16 | City of Brookings |
| Aurora Prairie | Brookings | 44.262012, -96.704581 | 12 | Nature Conservancy |
| Oak lake | Deuel | 44.509589, -96.532529 | 231 | South Dakota State University |
| Deer Creek | Brookings | 44.469750, -96.502181 | 91 | South Dakota Game, Fish and Parks |
| Severson WPA | Brookings | 44.714526, -96.500388 | 81 | U.S. Fish and Wildlife Service |
| Seven-mile fen | Deuel | 44.748073, -96.535572 | 88 | Nature Conservancy |
| Jacobson Fen | Deuel | 44.793818, -96.627707 | 65 | Nature Conservancy |
| Coteau Lakes | Deuel | 44.819894, -96.728137 | 239 | South Dakota Game, Fish and Parks |
| Altamont | Deuel | 44.860664, -96.710675 | 81 | South Dakota Game, Fish and Parks |
| Altamont Prairie | Deuel | 44.887370, -96.533403 | 25 | Nature Conservancy |
| Coteau Prairie | Deuel | 44.904428, -96.719979 | 169 | U.S. Fish and Wildlife Service |
| Round Bullhead 1 | Deuel | 44.933864, -96.828411 | 8 | South Dakota Game, Fish and Parks |
| Round Bullhead 2 | Deuel | 44.920024, -96.828519 | 433 | South Dakota Game, Fish and Parks |
| Gary Gulch | Deuel | 44.790391, -96.468345 | 49 | South Dakota Game, Fish and Parks |

**Table S2.**All pollinators observed and identified in the Prairie Centennial Garden within McCrory Gardens, Brookings, South Dakota in 2019. Insect pollinators that could not be identified to genus were identified to morphospecies. All insect pollinators could be identified to family except for two non-syrphid fly visitors we named Gen\_Myst which make up < 0.5% of visitations. We also include number of total observed interactions of each pollinator from May through October 2019.

|  |  |  |  |
| --- | --- | --- | --- |
| **Pollinators** | **Family** | **Functional Groups** | **Total number of interactions from May – October** |
| *Agapostemon spp.* | Halictidae | Small bee | 12 |
| *Agapostemon sp. 1* | Halictidae | Small bee | 1 |
| *Agapostemon sp. 2* | Halictidae | Small bee | 4 |
| *Allographta obliqua* | Syrphidae | Syrphid | 9 |
| *Andrena sp. 1* | Andrenidae | Small bee | 11 |
| *Andrena sp. 2* | Andrenidae | Small bee | 3 |
| *Andrena sp. 3* | Andrenidae | Small bee | 42 |
| *Andrena sp. 4* | Andrenidae | Small bee | 5 |
| *Andrena sp. 5* | Andrenidae | Small bee | 4 |
| *Anthophora terminales* | Apidae | Small bee | 9 |
| *Apis mellifera* | Apidae | Honeybee | 25 |
| *Archytas sp. 1* | Tachinidae | Non-syrphid fly | 162 |
| *Bombus spp.* | Apidae | Large bee | 80 |
| *Bombus griseocollis* | Apidae | Large bee | 20 |
| *Bombus impatiens* | Apidae | Large bee | 14 |
| *Bombus bimaculatus* | Apidae | Large bee | 24 |
| *Bracon sp.* | Braconidae | Small wasp | 1 |
| *Ceratina sp. 1* | Apidae | Small bee | 5 |
| *Cerceris sp. 1* | Crabronidae | Small wasp | 24 |
| *Cerceris sp. 2* | Crabronidae | Small wasp | 3 |
| *Chauliognathus pensylvanicus* | Cantharidae | Beetle | 372 |
| *Cisseps fulvicollis* | Erebidae | Lepidopteran | 5 |
| *Crabronina sp. 1* | Crabronidae | Small wasp | 11 |
| *Danaus plexippus* | Nymphalidae | Lepidopteran | 36 |
| *Diabrotica barberi* | Chrysomelidae | Beetle | 2 |
| *Eristalis-BFBF* | Syrphidae | Syrphid | 23 |
| *Eristalis transvera* | Syrphidae | Syrphid | 3 |
| *Eristalis spp.* | Syrphidae | Syrphid | 28 |
| *Gen\_Antho spp.* | Anthocoridae | Hemiptera | 8 |
| *Gen\_Bomby spp.* | Bombyliidae | Non-syrphid fly | 1 |
| *Gen\_Calli spp.* | Calliphoridae | Non-syrphid fly | 153 |
| *Gen\_Chlor spp.* | Chloropidae | Non-syrphid fly | 10 |
| *Gen\_Chrysid spp.* | Chrysididae | Small wasp | 11 |
| *Gen\_Chrys sp. 1* | Chrysomelidae | Beetle | 3 |
| *Gen\_Dolic spp.* | Dolichopodidae | Non-syrphid fly | 6 |
| *Gen\_Halic sp. 1* | Halictidae | Small bee | 5 |
| *Gen\_Halic spp.* | Halictidae | Small bee | 2 |
| *Gen\_Ichne spp.* | Ichneumonidae | Small wasp | 2 |
| *Gen\_Mirid spp.* | Miridae | Hemiptera | 3 |
| *Gen\_Musci spp.* | Muscidae | Non-syrphid fly | 225 |
| *Gen\_Myst sp. 1* | Gen\_Myst | Non-syrphid fly | 3 |
| *Gen\_Myst sp. 2* | Gen\_Myst | Non-syrphid fly | 13 |
| *Gen\_Noctu spp.* | Noctuidae | Lepidopteran | 1 |
| *Gen\_Sarco spp.* | Sarcophagidae | Non-syrphid fly | 27 |
| *Gen\_Strat spp.* | Stratiomyidae | Non-syrphid fly | 2 |
| *Gen\_Syrph sp. 1* | Syrphidae | Syrphid | 8 |
| *Gen\_Syrph spp.* | Syrphidae | Syrphid | 8 |
| *Gen\_Syrph sp. 2* | Syrphidae | Syrphid | 16 |
| *Gen\_Syrph sp. 3* | Syrphidae | Syrphid | 1 |
| *Gen\_Syrph sp. 4* | Syrphidae | Syrphid | 1 |
| *Gen\_Vespi spp.* | Vespidae | Large wasp | 21 |
| *Halictus spp.* | Halictidae | Small bee | 52 |
| *Helophilus sp. 1* | Syrphidae | Syrphid | 133 |
| *Hylaeus sp. 1* | Colletidae | Small bee | 34 |
| *Lasioglossum spp.* | Halictidae | Small bee | 3 |
| *Lejops spp.* | Syrphidae | Syrphid | 7 |
| *Megachile brevis* | Megachilidae | Small bee | 107 |
| *Melissodes spp.* | Apidae | Small bee | 2 |
| *Melissodes sp. 1* | Apidae | Small bee | 23 |
| *Melissodes sp. 2* | Apidae | Small bee | 4 |
| *Melissodes sp. 3* | Apidae | Small bee | 3 |
| *Melissodes sp. 4* | Apidae | Small bee | 2 |
| *Melissodes sp. 5* | Apidae | Small bee | 137 |
| *Merodon equestris* | Syrphidae | Syrphid | 2 |
| *Papilio glaucus* | Papilionidae | Lepidopteran | 3 |
| *Parancistrocerus sp. 1* | Vespidae | Small wasp | 119 |
| *Phyllotreta spp.* | Chrysomelidae | Beetle | 1 |
| *Phyllotreta sp. 1* | Chrysomelidae | Beetle | 1 |
| *Phyllotreta vitatta* | Chrysomelidae | Beetle | 1 |
| *Polistes spp.* | Vespidae | Large wasp | 2 |
| *Polistes fuscatus* | Vespidae | Large wasp | 2 |
| *Sphaerophoria sp. 1* | Syrphidae | Syrphid | 2 |
| *Sphecius speciosus* | Crabronidae | Large wasp | 5 |
| *Sphecius spp.* | Crabronidae | Large wasp | 4 |
| *Sphex pensylvanicus* | Sphecidae | Large wasp | 4 |
| *Stratiomys sp. 1* | Stratiomyidae | Non-syrphid fly | 41 |
| *Stratiomys sp. 2* | Stratiomyidae | Non-syrphid fly | 23 |
| *Syritta sp. 1* | Syrphidae | Syrphid | 92 |
| *Tetraopes tetrophthalmus* | Cerambycidae | Beetle | 3 |
| *Toxomerus spp.* | Syrphidae | Syrphid | 854 |
| *Vanessa atalanta* | Nymphalidae | Lepidopteran | 12 |

**Table S3.** All the pollinators observed and identified in remnant temperate grassland sites in the Prairie Coteau region near Brookings, South Dakota in 2019. Insect pollinators that could not be identified to genus were identified to morphospecies. We also include number of remnant temperate grassland sites (out of 15 total) in which pollinators were present and the number of total observed interactions of each pollinator from May through October 2019.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Pollinators** | **Family** | **Functional Group** | **Number of sites** | **Total number of interactions from May – October** |
| *Agapostemon spp.* | Halictidae | Small bee | 10 | 163 |
| *Agapostemon sp. 1* | Halictidae | Small bee | 3 | 8 |
| *Agapostemon sp. 2* | Halictidae | Small bee | 1 | 96 |
| *Allographta spp.* | Syrphidae | Syrphid fly | 1 | 1 |
| *Andrena spp.* | Andrenidae | Small bee | 3 | 8 |
| *Apis mellifera* | Apidae | Honey bee | 7 | 1218 |
| *Archytas sp. 1* | Tachinidae | Non-syrphid fly | 6 | 70 |
| *Augochlora spp.* | Halictidae | Small bee | 1 | 7 |
| *Augochlorella sp. 1* | Halictidae | Small bee | 1 | 3 |
| *Boloria bellona* | Nymphalidae | Lepidopteran | 3 | 4 |
| *Bombus bimaculatus* | Apidae | Large bee | 2 | 5 |
| *Bombus borealis* | Apidae | Large bee | 2 | 32 |
| *Bombus griseocollis* | Apidae | Large bee | 9 | 332 |
| *Bombus huntii* | Apidae | Large bee | 1 | 2 |
| *Bombus impatiens* | Apidae | Large bee | 6 | 36 |
| *Bombus pensylvanicus* | Apidae | Large bee | 5 | 64 |
| *Bombus spp.* | Apidae | Large bee | 2 | 162 |
| *Bracon spp.* | Braconidae | Small wasp | 1 | 4 |
| *Ceratina spp.* | Apidae | Small bee | 3 | 9 |
| *Cercyonis pegalla* | Nymphalidae | Lepidopteran | 4 | 12 |
| *Chauliognathus pensylvanicus* | Cantharidae | Beetle | 14 | 850 |
| *Cisseps fulvicollis* | Erebidae | Lepidopteran | 9 | 173 |
| *Coleophora sp. 1* | Coleophoridae | Lepidopteran | 1 | 2 |
| *Coleophora sp. 2* | Coleophoridae | Lepidopteran | 4 | 44 |
| *Coleophora spp.* | Coleophoridae | Lepidopteran | 1 | 2 |
| *Colias philodice* | Pieridae | Lepidopteran | 5 | 6 |
| *Cupido comyntas* | Lycaenidae | Lepidopteran | 2 | 5 |
| *Danaus plexippus* | Nymphalidae | Lepidopteran | 8 | 11 |
| *Diabrotica sp. 1* | Chrysomelidae | Beetle | 2 | 11 |
| *Enodia anthedon* | Nymphalidae | Lepidopteran | 3 | 6 |
| *Eristalis transversa* | Syrphidae | Syrphid fly | 3 | 11 |
| *Eristalis-BFBF sp. 1* | Syrphidae | Syrphid fly | 3 | 24 |
| *Eristalis-BWFBF sp. 2* | Syrphidae | Syrphid fly | 3 | 33 |
| *Eristalis-FBF sp. 3* | Syrphidae | Syrphid fly | 10 | 402 |
| *Eristalis-FBFLA sp. 4* | Syrphidae | Syrphid fly | 1 | 5 |
| *Eristalis-OFBF sp. 5* | Syrphidae | Syrphid fly | 7 | 77 |
| *Eristalis-WFBF sp. 6* | Syrphidae | Syrphid fly | 2 | 24 |
| *Gen\_Andren spp.* | Andrenidae | Small bee | 2 | 14 |
| *Gen\_Antho spp.* | Anthomyiidae | Non-syrphid fly | 4 | 14 |
| *Gen\_Bombylii spp.* | Bombyliidae | Non-syrphid fly | 2 | 4 |
| *Gen\_Calliphor spp.* | Calliphoridae | Non-syrphid fly | 11 | 259 |
| *Gen\_Ceramby spp.* | Cerambycidae | Beetle | 3 | 5 |
| *Gen\_Chironom spp.* | Chironomidae | Non-syrphid fly | 2 | 3 |
| *Gen\_Chloro spp.* | Chloropidae | Non-syrphid fly | 13 | 401 |
| *Gen\_Chryso sp. 1* | Chrysomelidae | Beetle | 8 | 143 |
| *Gen\_Chryso spp.* | Chrysomelidae | Beetle | 3 | 35 |
| *Gen\_Chrysopid spp.* | Chrysopidae | Non-syrphid fly | 1 | 1 |
| *Gen\_Crambi spp.* | Crambidae | Lepidopteran | 2 | 3 |
| *Gen\_Culici spp.* | Culicidae | Non-syrphid fly | 3 | 7 |
| *Gen\_Dolicho spp.* | Dolichopodidae | Non-syrphid fly | 1 | 27 |
| *Gen\_Elachis spp.* | Elachisitidae | Lepidopteran | 1 | 1 |
| *Gen\_Fannii sp. 1* | Fanniidae | Non-syrphid fly | 3 | 49 |
| *Gen\_Fannii spp.* | Fanniidae | Non-syrphid fly | 1 | 3 |
| *Gen\_Halic spp.* | Halictidae | Small bee | 7 | 46 |
| *Gen\_Hesp spp.* | Hesperidae | Lepidopteran | 5 | 10 |
| *Gen\_Ichi spp.* | Ichneumonidae | Small wasp | 4 | 11 |
| *Gen\_Lampyr sp. 1* | Lampyiridae | Beetle | 1 | 2 |
| *Gen\_Mega spp.* | Megachilidae | Small bee | 1 | 35 |
| *Gen\_Meloi sp. 1* | Meloidae | Beetle | 1 | 2 |
| *Gen\_Meloi spp.* | Meloidae | Beetle | 8 | 24 |
| *Gen\_Mely spp.* | Melyridae | Beetle | 1 | 7 |
| *Gen\_Miri spp.* | Miridae | Hemiptera | 3 | 8 |
| *Gen\_Musc sp. 1* | Muscidae | Non-syrphid fly | 1 | 3 |
| *Gen\_Musc spp.* | Muscidae | Non-syrphid fly | 13 | 755 |
| *Gen\_Noctu spp.* | Noctuidae | Lepidopteran | 1 | 1 |
| *Gen\_Pent* | Pentatomidae | Hemiptera | 3 | 8 |
| *Gen\_Pompi sp. 1* | Pompilidae | Small wasp | 1 | 1 |
| *Gen\_Pompi spp.* | Pompilidae | Large wasp | 2 | 6 |
| *Gen\_Pyrgot sp. 1* | Pyrgotidae | Non-syrphid fly | 1 | 1 |
| *Gen\_Sarco spp.* | Sarcophagidae | Non-syrphid fly | 10 | 139 |
| *Gen\_Spheci spp.* | Sphecidae | Large wasp | 1 | 4 |
| *Gen\_Sphing spp.* | Sphingidae | Lepidopteran | 1 | 6 |
| *Gen\_Strat sp. 1* | Stratiomyidae | Non-syrphid fly | 4 | 22 |
| *Gen\_Strat spp.* | Stratiomyidae | Non-syrphid fly | 3 | 33 |
| *Gen\_Syr sp. 1* | Syrphidae | Syrphid fly | 1 | 1 |
| *Gen\_Syr sp. 2* | Syrphidae | Syrphid fly | 2 | 15 |
| *Gen\_Syr spp.* | Syrphidae | Syrphid fly | 1 | 10 |
| *Gen\_Tachin spp.* | Tachinidae | Non-syrphid fly | 1 | 1 |
| *Gen\_Tephrit spp.* | Tephritidae | Non-syrphid fly | 3 | 27 |
| *Gen\_Ulidii spp.* | Ulidiidae | Non-syrphid fly | 7 | 80 |
| *Gen\_Weev spp.* | Curculionidae | Beetle | 9 | 36 |
| *Halictus spp.* | Halictidae | Small bee | 10 | 542 |
| *Helophilus sp. 1* | Syrphidae | Syrphid fly | 5 | 24 |
| *Helophilus spp.* | Syrphidae | Syrphid fly | 2 | 39 |
| *Hemyda spp.* | Tachinidae | Non-syrphid fly | 1 | 1 |
| *Heriades spp.* | Megachilidae | Small bee | 1 | 13 |
| *Hylaeus sp. 1* | Colletidae | Small bee | 2 | 13 |
| *Hylaeus spp.* | Colletidae | Small bee | 2 | 2 |
| *Junonia coenia* | Nymphalidae | Lepidopteran | 1 | 1 |
| *Lasioglossum spp.* | Halictidae | Small bee | 9 | 457 |
| *Lithurgopsis spp.* | Megachilidae | Small bee | 1 | 1 |
| *Megachile spp.* | Megachilidae | Small bee | 1 | 8 |
| *Melissodes spp.* | Apidae | Small bee | 6 | 23 |
| *Merodon equestris* | Syrphidae | Syrphid fly | 1 | 2 |
| *Nomada spp.* | Apidae | Small bee | 1 | 6 |
| *Parasyrphus sp. 1* | Syrphidae | Syrphid fly | 3 | 88 |
| *Parhelophilus spp.* | Syrphidae | Syrphid fly | 3 | 35 |
| *Phyciodes pulchella* | Nymphalidae | Lepidopteran | 5 | 8 |
| *Phyllotreta sp. 1* | Chrysomelidae | Beetle | 3 | 110 |
| *Pseudopanurgus spp.* | Andrenidae | Small bee | 2 | 2 |
| *Speyeria idalia* | Nymphalidae | Lepidopteran | 2 | 2 |
| *Sphaerophoria spp.* | Syrphidae | Syrphid fly | 5 | 54 |
| *Stratiomys spp.* | Stratiomyidae | Non-syrphid fly | 3 | 3 |
| *Syritta sp. 1* | Syrphidae | Syrphid fly | 7 | 82 |
| *Toxomerus spp.* | Syrphidae | Syrphid fly | 15 | 2125 |

**Table S4.** All biotically-pollinated flowering plants identified in the Prairie Centennial Garden within McCrory Gardens, Brookings, South Dakota in 2019. All species except Epilobium sp. were identified to species level.

|  |  |  |
| --- | --- | --- |
| **Species** | **Common Name** | **Family** |
| *Achillea millefolium* | Common yarrow | Asteraceae |
| *Allium stellatum* | Prairie onion | Amaryllidaceae |
| *Asclepias incarnata* | Swamp milkweed | Apocynaceae |
| *Asclepias tuberosa* | Butterflyweed | Apocynaceae |
| *Coreopsis tictoria* | Plains coreopsis | Asteraceae |
| *Dalea purpurea* | Purple prairie clover | Fabaceae |
| *Echinacea angustifolia* | Narrow-leaved coneflower | Asteraceae |
| *Epilobium sp.* | Willowherb | Onagraceae |
| *Erigeron canadensis* | Horseweed | Asteraceae |
| *Erigeron philadelphicus* | Philadelphia fleabane | Asteraceae |
| *Eupatorium perfoliatum* | Common boneset | Asteraceae |
| *Gaillardia aristata* | Common blanketflower | Asteraceae |
| *Gaillardia x grandiflora* | Mesa yellow | Asteraceae |
| *Heliopsis helianthoides* | Smooth oxeye | Asteraceae |
| *Helianthus maximiliani* | Maximilian sunflower | Asteraceae |
| *Liatris spicata* | Floristan white blazing star | Asteraceae |
| *Liatris aspera* | Button blazing star | Asteraceae |
| *Liatris ligulistylis* | Meadow blazing star | Asteraceae |
| *Liatris punctata* | Dotted blazing star | Asteraceae |
| *Liatris pycnostachya* | Prairie blazing star | Asteraceae |
| *Linum flavum* | Golden flax | Linaceae |
| *Lythrum salicaria* | Purple loosestrife | Lythraceae |
| *Monarda fistulosa* | Wild bergamot | Lamiaceae |
| *Rudbeckia fulgida var. sullivantii* | Goldstrum | Asteraceae |
| *Solidago gigantea* | Late goldenrod | Asteraceae |
| *Solidago rigida* | Stiff goldenrod | Asteraceae |
| *Symphyotrichum novae-angliae* | New England aster | Asteraceae |
| *Teucrium canadense* | Canada germander | Lamiaceae |
| *Veronicastrum virginicum* | Culver's root | Plantaginaceae |

Table **S5**. All biotically-pollinated flowering plants identified while sampling remnant temperate grassland sites in the Prairie Coteau region near Brookings, South Dakota in 2019. All species except *Agrimonia sp.* were identified to species level. We also include number of remnant temperate grassland sites (out of 15 total) in which pollinators were present and the number of total observed interactions of each pollinator from May through October.

|  |  |  |  |
| --- | --- | --- | --- |
| **Species** | **Family** | **Common name** | **Number of sites present** |
| *Achillea millefolium* | Asteraceae | Common yarrow | 6 |
| *Agoseris glauca* | Asteraceae | False dandelion | 2 |
| *Agrimonia sp.* | Rosaceae | Agrimony | 2 |
| *Allium stellatum* | ‎Amaryllidaceae | Prairie onion | 7 |
| *Amorpha canescens* | Fabaceae | Lead plant | 6 |
| *Anemone canadensis* | Ranunculaceae | Meadow anemone | 9 |
| *Anticlea elegans* | Melanthiaceae | Mountain deathcamas | 3 |
| *Apocynum cannabinum* | Apocynaceae | Prairie dogbane | 1 |
| *Artemisia absinthium* | Asteraceae | Absinthe wormwood | 1 |
| *Asclepias stenophylla* | Apocynaceae | Slim leaf milkweed | 2 |
| *Asclepias syriaca* | Apocynaceae | Common milkweed | 3 |
| *Astragalus agrestis* | Fabaceae | Purple milkvetch | 5 |
| *Astragalus canadensis* | Fabaceae | Canadian milkvetch | 1 |
| *Brickellia eupatorioides* | Asteraceae | False boneset | 1 |
| *Carduus nutans* | Asteraceae | Musk thistle | 4 |
| *Cerastium arvense* | Caryophyllaceae | Prairie chickweed | 1 |
| *Cirsium arvense* | Asteraceae | Canada thistle | 11 |
| *Cirsium floodmanii* | Asteraceae | Floodman’s thistle | 4 |
| *Dalea candida* | Fabaceae | White prairie clover | 5 |
| *Dalea purpurea* | Fabaceae | Purple prairie clover | 5 |
| *Daucus carota* | Apiaceae | Queen Anne’s lace | 1 |
| *Desmodium illinoense* | Fabaceae | Illinois tick trefoil | 1 |
| *Doellingeria umbellata* | Asteraceae | Flat-top aster | 2 |
| *Echinacea angustifolia* | Asteraceae | Purple coneflower | 2 |
| *Erigeron philidelphicus* | Asteraceae | Daisy fleabane | 3 |
| *Erigeron strigosus* | Asteraceae | Prairie fleabane | 2 |
| *Euphorbia esula* | Euphorbiaceae | Leafy spurge | 4 |
| *Eupatorium maculatum* | Asteraceae | Spotted joe-pye weed | 2 |
| *Fragaria virginiana* | Rosaceae | Wild strawberry | 2 |
| *Gaillardia aristata* | Asteraceae | Common gaillardia | 1 |
| *Gallium boreale* | Rubiaceae | Northern bedstraw | 4 |
| *Gentiana andrewsii* | Gentianaceae | Bottle gentian | 1 |
| *Geum triflorum* | Rosaceae | Prairie smoke | 2 |
| *Glycyrrhiza lepidota* | Fabaceae | American licorice | 3 |
| *Grindelia squarrosa* | Asteraceae | Curly-cup gumweed | 1 |
| *Helenium autumnale* | Asteraceae | Sneezeweed | 3 |
| *Heliopsis helianthoides* | Asteraceae | Smooth oxeye | 8 |
| *Helianthus maximiliani* | Asteraceae | Maximilian sunflower | 3 |
| *Helianthus nuttallii* | Asteraceae | Nutall’s sunflower | 5 |
| *Helianthus pauciflorus* | Asteraceae | Stiff sunflower | 8 |
| *Hypoxis hirsuta* | Amaryllidaceae | Common goldstar | 3 |
| *Liatris ligulistylis* | Asteraceae | Meadow blazing star | 3 |
| *Linaria vulgaris* | Plantaginaceae | Yellow toadflax | 2 |
| *Lithospermum canescens* | Boraginaceae | Hoary puccoon | 5 |
| *Lobelia siphilitica* | Campanulaceae | Blue cardinal flower | 1 |
| *Lobelia spicata* | Campanulaceae | Pale spike lobelia | 2 |
| *Lycopus asper* | Lamiaceae | Rough bugleweed | 2 |
| *Lythrum alatum* | Lythraceae | Winged loosestrife | 1 |
| *Melilotus albus* | Fabaceae | White sweetclover | 10 |
| *Medicago lupulina* | Fabaceae | Black medick | 6 |
| *Melilotus officinalus* | Fabaceae | Yellow sweetclover | 9 |
| *Medicago sativa* | Fabaceae | Alfalfa | 5 |
| *Monarda fistulosa* | Lamiaceae | Wild bergamot | 6 |
| *Mulgedium pulchellum* | Asteraceae | Showy blue lettuce | 2 |
| *Oxalis violacea* | Oxalidaceae | Violet wood-sorrel | 4 |
| *Packera plattensis* | Asteraceae | Prairie ragwort | 1 |
| *Pediomelum argophyllum* | Fabaceae | Silverleaf scurfpea | 5 |
| *Phlox pilosa* | Polemoniaceae | Downy phlox | 2 |
| *Ratibida columnifera* | Asteraceae | Upright prairie coneflower | 6 |
| *Ratibida pinnata* | Asteraceae | Gray-headed coneflower | 3 |
| *Rosa acicularis* | Rosaceae | Wild rose | 4 |
| *Rudbeckia hirta* | Asteraceae | Black-eyed susan | 2 |
| *Silene vulgaris* | Caryophyllaceae | Bladder campion | 1 |
| *Sisyrinchium campestre* | Iridaceae | Prairie blue-eyed grass | 3 |
| *Sisyrinchium montanum* | Iridaceae | Strict blue-eyed grass | 1 |
| *Solidago canadensis* | Asteraceae | Canada goldenrod | 1 |
| *Solidago gigantea* | Asteraceae | Giant goldenrod | 6 |
| *Solidago missouriensis* | Asteraceae | Missouri goldenrod | 5 |
| *Solidago ptarmicoides* | Asteraceae | Upland white goldenrod | 1 |
| *Solidago rigida* | Asteraceae | Stiff goldenrod | 2 |
| *Sonchus arvensis* | Asteraceae | Field sow thistle | 10 |
| *Stachys palustris* | Lamiaceae | Marsh woundwort | 3 |
| *Symphyotrichum ericoides* | Asteraceae | White heath aster | 5 |
| *Symphyotrichum lanceolatum* | Asteraceae | Lance-leaf aster | 3 |
| *Symphyotrichum novae-angliae* | Asteraceae | New England aster | 1 |
| *Symphyotrichum sericeum* | Asteraceae | Silky aster | 1 |
| *Symphoricarpos occidentalis* | Caprifoliaceae | Western snowberry | 4 |
| *Taraxacum officinalis* | Asteraceae | Common dandelion | 5 |
| *Tragopogon dubius* | Asteraceae | Yellow salsify | 2 |
| *Trifolium repens* | Fabaceae | White clover | 2 |
| *Trifolium pratense* | Fabaceae | Red clover | 5 |
| *Verbena stricta* | Verbenaceae | Hoary vervain | 2 |
| *Verbascum thapsus* | Scrophulariaceae | Common mullien | 1 |
| *Verbena urticifolia* | Verbenaceae | White vervain | 1 |
| *Viola nephrophylla* | Violaceae | Northern bog violet | 1 |
| *Viola pedatifida* | Violaceae | Prairie violet | 2 |
| *Zizia aptera* | Apiaceae | Heart-leaved golden alexander | 5 |

Table S6. Spearman rank correlations for pollinator diversities from early (May-June), mid (July-August), and late (September-October) seasons in the Prairie Centennial Garden in McCrory Gardens, Brookings, South Dakota in 2019. Total represents rank correlation results from data when all three seasons are consolidated. *P*-values were Bonferroni corrected for multiple comparisons. Any values where *P* < 0.05 are in bold.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Taxa** | **Season** | **Diversity metric** | ***r*** | ***p*-value** |
| Pollinator | Total | Functional & Family | 0.48 | 0.17 |
| Pollinator | Total | Functional & Genus | 0.45 | 0.19 |
| Pollinator | Total | Family & Genus | 0.38 | 0.28 |
| Pollinator | Early | Functional & Family | 0.48 | 0.17 |
| Pollinator | Early | Functional & Genus | 0.45 | 0.19 |
| Pollinator | Early | Family & Genus | 0.38 | 0.28 |
| Pollinator | Mid | Functional & Family | 0.48 | 0.17 |
| Pollinator | Mid | Functional & Genus | 0.45 | 0.19 |
| Pollinator | Mid | Family & Genus | 0.38 | 0.28 |
| Pollinator | Late | Functional & Family | 0.48 | 0.17 |
| Pollinator | Late | Functional & Genus | 0.45 | 0.19 |
| Pollinator | Late | Family & Genus | 0.38 | 0.28 |

Table S7. Spearman rank correlations for plant diversities from early (May-June), mid (July-August), and late (September-October) seasons in the Prairie Centennial Garden in McCrory Gardens, Brookings, South Dakota in 2019. Total represents rank correlation results from data when all three seasons are consolidated. *P*-values were Bonferroni corrected for multiple comparisons. Any values where *P* < 0.05 are in bold.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Taxa** | **Season** | **Diversity metric** | ***r*** | ***p*-value** |
| Plant | Total | Family & Genus | 0.87 | **0.001** |
| Plant | Total | Family & Species | 0.87 | **0.001** |
| Plant | Total | Genus & Species | 1 | **< 0.001** |
| Plant | Early | Family & Genus | 0.87 | **0.001** |
| Plant | Early | Family & Species | 0.87 | **0.001** |
| Plant | Early | Genus & Species | 1 | **< 0.001** |
| Plant | Mid | Family & Genus | 0.87 | **0.001** |
| Plant | Mid | Family & Species | 0.87 | **0.001** |
| Plant | Mid | Genus & Species | 1 | **< 0.001** |
| Plant | Late | Family & Genus | 0.87 | **0.001** |
| Plant | Late | Family & Species | 0.87 | **0.001** |
| Plant | Late | Genus & Species | 1 | **< 0.001** |

Table S8. Means of network metrics across all remnant temperate grassland sites in the Prairie Coteau region near Brookings, SD and network metrics of McCrory Gardens for all seasons using transects as our replicates in 2019 (Early: May – June, Mid: July – August, Late: September – October). Standard errors of means are placed in parentheses next to mean value. McCrory Gardens was only sampled once during the early and late seasons; thus we do not provide standard errors for these values.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Season** | **Site** | **Nestedness** | **Connectance** | **Network Specialization** |
| Early | Prairies | 25 (4.5) | 0.50 (0.03) | 0.56 (0.07) |
| Early | McCrory | 28 | 0.38 | 0.26 |
| Mid | Prairies | 26 (1.9) | 0.40 (0.02) | 0.60 (0.04) |
| Mid | McCrory | 29 (1.6) | 0.29 (0.02) | 0.64 (0.05) |
| Late | Prairies | 34 (7.4) | 0.45 (0.05) | 0.80 (0.13) |
| Late | McCrory | 17 | 0.67 | 0.35 |

**Figure S1.** Distributions of Shannon diversity of a) pollinators at the functional group, family, and genus level and b) insect-pollinated plants at the family, genus, and species level between remnant temperate grassland sites (white bars) in the Prairie Coteau near Brookings, SD and McCrory Gardens (black bars) for each sampling season in 2019 (Early: May – June, Mid: July – August, Late: September – October). Distributions demonstrate diversity for all sites and are overlayed (i.e., not stacked) for comparison between sites. Height of bars refer to number of samples (sites) that fell within the diversity range indicated on the x-axis.



**Figure S2.** Distribution of Jaccard similarity index values comparing pollinator functional group, family, and genus composition between remnant temperate grassland sites in the Prairie Coteau near Brookings, SD and McCrory Gardens in a) early season (May – June), b) mid-season (July – August), and c) late-season (September – October) of 2019. All sites are represented on the x and y axis. Jaccard Similarity index ranges from 0 to 1, with a value of 0 indicating sites are completely dissimilar and 1 indicating sites completely overlap in composition. Warmer, lighter tones on the chart indicate values that are approaching 1.



**Figure S3.** Non-metric multidimensional scaling plots (NMDS) using Jaccard dissimilarity for all pollinators (May – October 2019) illustrate the difference in a) functional group, b) family, and c) genus composition between McCrory Gardens and remnant temperate grassland sites in the Prairie Coteau region near Brookings, SD. McCrory Gardens is distinguished with an asterisk.



**Figure S4.** Distributions of Jaccard similarity index values comparing insect-pollinated plant family, genus, and species composition between remnant temperate grassland sites in the Prairie Coteau near Brookings, SD and McCrory Gardens in a) the entire season (May – October), b) early season (May – June), c) mid-season (July – August), and d) late-season (September – October) of 2019. All sites are represented on the x and y axis. Jaccard Similarity index ranges from 0 to 1, with a value of 0 indicating sites are completely dissimilar and 1 indicating sites completely overlap in composition. Warmer, lighter tones on the chart indicate values that are approaching 1.



**Figure S5.** Non-metric multidimensional scaling plots (NMDS) using Jaccard dissimilarity for all plants (May – October 2019) illustrate the difference in a) family, b) genus, and c) species composition between McCrory Gardens and remnant temperate grassland sites in the Prairie Coteau region near Brookings, SD. McCrory Gardens is distinguished with an asterisk.

