Diversity and Floristics of Monocots

Iridaceae - iris family

Iris virginica - Blue flag, iris

A family primarily of Mediterranean climate geophytes. Leaves are basal and equitant - folded and overlapping.

CA 3, CO 3, A 3, G (3)

Tepals 6, the 3 inner (petals) forming the “flags or standards.”

The 3 outer (sepals) forming the “falls.”

Note the nectar guides for insects.

The 3 stamens are positioned under the 3 petal-like styles.

The gynoecium is inferior and forms a 3-parted capsule.

Iris versicolor - Blue flag

Iris pseudacorus - Yellow flag

Introduced and potentially invasive.
Iridaceae - iris family

*Iris lacustris*  
Dwarf lake iris  
Endangered species restricted to fringe areas of northern Great Lakes; clonal growth

*Sisyrinchium campestre* - blue-eyed grass  
*Sisyrinchium* found in drier areas than *Iris*

Iridaceae - iris family

*Crocus vernalis* - *Crocus* cultivated  
Crocuses are all introduced but are some of the earliest flowering plants in the spring. The dried styles of *C. sativus* yields the expensive saffron.

Hypoxidaceae - star grass family

*Hypoxis hirsuta* - Yellow star grass  
Family has been placed in Liliaceae or Amaryllidaceae but is now known to be near Iridaceae
Orchid family

Orchids are mycotrophic (= fungi dependent) lilioids; some are mycotrophic parasites.

- **Cypripedium acaule** - Stemless lady-slipper
- **Corallorhiza striata** - Striped coral root

The family is diverse with about 800 genera and over 19,000 species, mainly of the tropics.

**Main features of the family:**
- Pollen masses or pollinia
- Specialized floral structure and pollination biology
- Reduced stamen number
- Many, minute, dust-like seeds in capsules

**Lady's-slippers have two functional stamens with pollen masses.**

**The lower petal is elaborated into the labellum - the landing platform.**

**Other lady's-slippers . . .**

- **Cypripedium arietinum** - Ram's-head lady's-slipper threatened
- **Cypripedium calceolus** - Yellow lady's-slipper
Orchidaceae - orchid family

*Cypripedium reginae*
showy lady’s-slipper

Orchidaceae - orchid family

*Cypripedium candidum*
white lady’s-slipper
Threatened, fen or calcareous soils

Orchidaceae - orchid family

All our other orchids have only 1 functional stamen with one or two pollinia.
The stamen is situated on a column formed by fusion with the top of the inferior gynoecium.

Orchidaceae - orchid family

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Other floral parts...
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Aplectrum hyemale
Putty root, Adam and eve

Arethusa bulbosa - Dragon's mouth [Special concern]

Calypso bulbosa - calypso orchid [threatened]
Orchidaceae - orchid family

Calopogon tuberosus - grass pink: note the labellum on top!

Orchidaceae - orchid family

Goodyera pubescens - Rattlesnake plantain

Goodyera textulata - Rattlesnake plantain

Orchidaceae - orchid family

Corallorhiza trifida - Early coral root

Corallorhiza striata - Striped coral root

Orchidaceae - orchid family

Galearis spectabilis - showy orchid

Malaxis monophylla - adder’s mouth
Orchidaceae - orchid family

Platanthera leucophaea  
Prairie fringed orchid  
State endangered,  
Federally threatened

Pogonia ophioglossoides - snake mouth

Spiranthes cernua - nodding ladies’-tresses

Dioscoreaceae - yam family

Small family, mostly of the tropics, with viney stems and net-veined leaves. Fruits are 3-winged.

Source of edible yam; sources of steroidal, cortisones, first oral contraceptives (diosgenin, progesterone)

Dioscorea villosa - wild yam

Commelinid Monocots

Tradescantia ohiensis - spiderwort

Carex pensylvanica - Pennsylvania sedge

The last group of monocots that start with spiderworts with showy flowers but no nectar and ends with grasses and sedges with reduced florets for wind pollination

The group shows trends in reduced flowers, bracted inflorescences, loss of perianth, and shift to wind pollination
Commelinaceae - spiderwort family

Family of small herbs with succulent stems, stems jointed; leaves sheathing. Family does not produce nectar, but showy flowers for insect pollen gathering.

Tradescantia ohiensis - spiderwort

Commelinaceae - spiderwort family

Inflorescence often bracted

Flowers actinomorphic or zygomorphic

Commelina communis - day flower

Tradescantia ohiensis - spiderwort

Commelinaceae - spiderwort family

Tradescantia bracteata

Bracted spiderwort

Commelina communis

Common dayflower

Introduced from Asia

Commelina erecta - Erect dayflower

Special concern native of cliffs of Driftless Region
Pontederiaceae - pickerel weed family

Aquatic family of emergents or floaters. Water hyacinth (Eichhornia) from tropical America is invasive species in subtropical areas of the world.

Eichhornia crassipes
Water hyacinth
Invading Florida

Pontederiaceae - pickerel weed family

Pickerel weed has glossy heart-shaped leaves, superficially like Sagittaria but without net venation. Flowers are in congested showy purple inflorescences.

Pontederia cordata - Pickerel weed

Pontederiaceae - pickerel weed family

Flowers are showy, insect pollinated, often with trimorphic heterostyly

Pontederia has somewhat fused perianth

Pontederia cordata - Pickerel weed

Pontederiaceae - pickerel weed family

Heteranthera dubia - Water star grass
(= Zosteraella dubia)

Heteranthera is a widespread but often overlooked emergent perennial aquatic with yellow flowers