



Advantages of Native Plants • Many perennials, some annuals or biennials

- Deep root structures
 - Nutrient cycling: topsoil regeneration from subsoil
 - Soil aeration from decayed roots, insect burrows: compacted urban soils with thin topsoil & near-surface clay
 - Higher water table: natural water availability
 - Excellent soil holding against raindrop impact & sheet
 - erosion
 - Tolerant of wide climate and weather swings







Native-Plant Gardens

- Three general approaches:
 - <u>Restoration area</u>: 50 to 150 species in 1/8th acre or larger
 - Management: invasives removal, planting, burning or mowing
 - Flower bed: one to a dozen or so species
 Management: weeding, planting, cutting or mowing
 - <u>Single species</u> in a landscaped bed
 - Management: as for a standard flower bed, with weeding, cutting, "deadheading," or root division to prevent unwanted spread

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- Upland prairies: dry, mesic, & wet
- <u>Savannas</u>: sparse trees, mostly bur oak
- Shrubby margins: native shrubs, small trees
- <u>Wetlands</u>: prairie potholes, fens, lakeshores, old oxbows, river bottoms



- Degree of slope & direction of slope face
- Aesthetic decisions about vegetative height, contrasting colors & textures, placement of lawn furniture
- Topsoil condition & restoration



What is your garden like?

- Natural soils, relatively undisturbed
 - What native plant communities grew there? Prairie, woodland, wetland, etc.
 - Use county soil surveys, NRCS, county conservation experts, university agronomy & soils people
 - Consultants who have the knowledge base & access to mapping & other resources
- Highly disturbed
 - Thin topsoil: consider native plants to restore thicker, richer topsoil longterm outcome
 - Clayey surface: introduce sand and topsoil, mix in
 - with tiller or other implement to create a seed bedPolluted soil: contact county or state agencies for
 - help

Dirt time

- Bed preparation

- Foiling invasive plants: pulling, spraying herbicide
- Soil amendments: fine wood chips, seed-free mulch
- Tilling?
- Water containment & routing for rain gardens
- Planting methods
 - Cold stratification
 - Autumn sowing
 - Seedling plugs
 - Interseeding

- The first year: managing invasive species
 - If possible, <u>burn</u> the area in the autumn, before planting
 - Remove or inhibit aggressive exotics
 - Garlic mustard: glyphosate; pull plants with flowers or green seedpods & remove from
 - property Poison ivy: glyphosate or Garlon 3A

 - Brome grass: glyphosate on green leaves, mow to prevent seeding











The second year

- Continue use of mowing, but adjust the mow height as the season progresses
 - · Allow natives to establish foliage & make nutrients
 - Prevent invasives from storing nutrients or producing seed
- Use spot spraying to control aggressive exotic seedlings or in patches of exotics where natives don't appear
- Entirely new dominant natives may appear or take over. Don't worry about this.









- Dutchman's Breeches
- Dogtooth Violet or Troutlily
- Mayapple
- Violets (white & yellow)

Mayapple

Two somewhat palm-shaped leaves at the top of a shared stem.

Blossoms: April to May in central lowa

A white flower blooms on a short stem below the leaves, followed by a greenish yellow fruit. Good luck finding a ripe fruit to eat!

The rest of the plant will cause cramping diarrhea and/or vomiting.

Often grows in large colonies in undisturbed woodlands





Virginia Bluebells 12-24 inches tall Visited by small bees, flower flies, Crows readily from seed, but can crowd other plants out Prefers moist soils Becomes dormant by midsummer





Leaves in pairs on stem, 5 petals white to pale pink with pink lines

Woods floors with dappled light, good surface moisture, & rich humus

6 to 8 inches tall

Blooms in early to mid-spring, goes dormant by summer.

Collect the tubers a few inches underground & grow from these.

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Dogtooth Violet or Troutlily

Two mottled basal leaves & a solitary flower

Woods floors with dappled or partial light, good surface moisture, & rich humus

Blossoms: early to mid-spring, then dormancy

6 to 10 inches tall

Also has a yellow relative not found in most of Iowa





Wild Columbine

Five-parted flowers attract hummingbirds, sphinx moths, & other insects

Plant in partial sun. Tolerates various soil conditions. An annual, grown from seed, but self-seeds once established.

A blue-&-white western relative isn't native in Iowa & doesn't draw hummingbirds

Several cultivars or "nativars" exist

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Iris virginica

Blue Flag

Wet soils on wetland edges, especially with constant water levels

To about 3 ft. tall

Blossoms: late spring to midsummer

Flower parts are narrower than most cultivated iris, with showy veins & lighter colors













"Drunk all the time, feelin' fine on elderberry wine" – Elton John

- Other wetland & wet prairie species:

 Bulrushes (*Cyperus*, but <u>not</u> *C. esculenta* or Chufa or Yellow Nutsedge) (medium height)
 Softstem Bulrush, *Schoenoplectrum* (tall)
 Marsh Marigold (yellow, short to medium)
 - Giant Goldenrod
 Small & large trees:
 - Serviceberry or Shadbush: understory
 Kentucky Coffee-Tree: canopy height
- The lowly cattail: don't plant it
 - Tends to spread rapidly & choke out other species, except in deeper water or if the topsoil dries out for one full season in most years

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Butterflyweed

Prefers moist areas: ditches, waterways, mesic prairies

To 3 ft. tall

Lives up to its name, plus beneficial insects

Plant from seeds or rootstocks, although the stocks may be too deep to dig



Damp swales, mesic to wet prairies, stream banks, seeps

Easily crowded out by other plants



Black-Eyed Susan

Low, with dark brown centers & coarse leaves, 1 to 2 ft. tall

Easily established from seed, grows in dry to wet areas, including poor soil

Perennial, but short-lived

Attracts many kinds of insects

Tends to dominate first- & secondyear plantings

Two taller relatives, Cut-Leaved Coneflower & Brown-Eyed Susan, favor open woods & more most soils

In addition, other mesic species to consider:

- Prairie False Indigo: top right
- Cream-Colored False Indigo
- Great St.-John'swort (yellow, med. ht.)
- Blazing Stars, several species: bottom rt.
- Illinois Bundleflower (white, med. ht.)
- Compass Plant (yellow, tall)
- Jerusalem Artichoke (yellow, med. to tall)
- Mountain-Mints, two kinds (white, med.)



Plant Species: Dry Prairies

- On convex slopes with good surface & subsurface drainage, "droughty" soils with overall thick topsoil & high organic matter
- "The" tallgrass prairie, but wetlands & wet & mesic prairies are part of the "Prairie Peninsula," too
- · Life forms in the topsoil are crucial, but poorly understood & easily overlooked







Pale Purple Coneflower

First year: basal rosette of leaves Second year: pale ray flowers around central dark cone of disk flowers, with rays drooping

Blossoms: late spring to midsummer

2 to 4 ft.

Dry to moist prairies

A relative, Purple Coneflower, is planted commonly, but is native to SE lowa & not the central & western prairies.



Rattlesnake-Master

Full sun, moist to dry prairies

First year: blue-green, yucca-like basal leaves only, with prickly edges

Second year: stalks with round, thorny balls of seeds

Self-seeds, or harvest seed with gloves

2 to 6 ft.

Adds interest to native prairie gardens







Prairie/woodland edges, old pastures Monarda fistulosa





- Prairie Larkspur (white, medium ht.)
- Gray-Headed Coneflower (yellow, med. to tall)
- Ohio Spiderwort: top right
- Foxglove Penstemon (whitish, med. ht.)
- Wild Quinine (white, med. ht.)
- Prairie Ragweed (yellow, short)
- Hoary Puccoon: bottom right
- Purple & White Prairie Clovers: short
- Canada Wild Rye (green, med. ht.)
- Goldenrods: Tall, Canada, Missouri, Stiff











For More Information Bulk seed by species & in mixes Field guides to identification • Native shrubs & trees Runkel, Sylvan, & Dean Roosa, Wildflowers of the Tallgrass Prairie, 2nd edition (Bur Oak/Univ. of Iowa) Dave Williams, The Tailgrass Prairie Center Guide to Seed and Seedling Identification in the Upper Midwest (Univ. of Iowa/UNI) Be careful about commercial sources: Earl Steve Holland & others, *Iowa Wetland Seedling Guide* (IA Dept. May, Home Depot, Lowe's, Burpee, etc. of Transportation) - The great Celastrus debacle: Books on gardening with native plants • Employees & suppliers may not differentiate between Rick Darke, The American Woodland Garden: Capturing the Spirit of the Deciduous Forest (Timber Press) native & exotic species - Ann Lovejoy, Naturalistic Gardening (Sasquatch Books) • A plant sold as a native may be a "nativar," a cultivated Iowa's native ecosystems variety chosen for a specific feature Cornelia Mutel, The Emerald Horizon (Bur Oak/Univ. of Iowa) 14 20

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Restoration guides

- . Jeannette Thompson, Prairies, Forests, and Wetlands (Bur
- Oak/Univ. of Iowa) Packard, Stephen, & Cornelia Mutel, The Tollgrass Restoration
- Handbook (Island Press)
- Daryl Smith & others, The Tallgrass Prairie Center Guide to Prairie Restoration in the Upper Midwest (Univ. of Iowa/UNI)

- Web sites

- Iowa Native Plant Society: http://www.nerbacium.jastate.edu/inps/index.php
 Iowa Prairie Network: http://www.iowaprairienetwork.org/
- USDA Plants Database: http://olants.usda.pov/java
- Tallgrass Prairie and Oak Savanna Fire Science Consortium:
- Webster County prairie plants:

