

# Herbaceous Plants<sup>1</sup>

(Herbaceous Perennials, Annuals, Hardy Bulbs, Tender Bulbs, Landscape Grasses, and Vines)

Name <sup>2</sup>	Cold Hardiness Zones <sup>3</sup>	Soil / Climate	Pests / Diseases & Other Problems	Size <sup>4</sup>	Exposure	Flowers / Fruit / Foliage	Additional Features
<b>Herbaceous Perennials</b>							
<p><i>Rudbeckia</i> spp.<sup>5</sup></p> <p><b>Black-Eyed-Susans &amp; Coneflowers</b></p> <p><b>Asteraceae Aster/Sunflower Family</b></p>	3/4-9	Adaptable; will grow in just about any soil that is well-drained. Drought tolerant.	Aphids, powdery mildew, and leaf spots are the most common and can sometimes be a problem.	H: 2-9' S: 1-2'	Full sun to partial shade, best in full sun.	<p>Flowers – daisy-like, yellow to orange in heads with dark-colored centers; showy; insect pollinated.</p> <p>Bloom Time – summer/fall (July-September).</p> <p>Foliage – leaves alternate, green, oval to lance-shaped, rough, often hairy, variously toothed, sometimes lobed.</p> <p>Fruit – an achene (think sunflower “seeds”); greenish becoming brown, purplish-brown, gray, or nearly black; matures in fall (September/October).</p>	Native to North America including Minnesota; many named selections (cultivars) based on form and flower characteristics are available; form is upright; the species are propagated by seed and the cultivars by division.
<p>Several species are native to Minnesota including <i>Rudbeckia hirta</i> (black-eyed Susan, gloriosa daisy), <i>Rudbeckia laciniata</i> (cutleaf or green-headed coneflower), and <i>Rudbeckia triloba</i> (brown-eyed Susan); <i>Rudbeckia fulgida</i> var <i>sullivantii</i> ‘Goldsturm’ (‘Goldsturm’ orange coneflower), native to the eastern and southeastern United States, but not Minnesota, is a very popular garden selection that is commonly planted in Minnesota landscapes; several other genera share the common name coneflower including <i>Echinacea</i> and <i>Ratibida</i> [e.g., <i>Echinacea purpurea</i> (purple coneflower) and <i>Ratibida pinnata</i> (gray-headed coneflower)]; both of these species are native to Minnesota; all of these species are members of the Asteraceae (Aster/Sunflower Family).</p>							
<p><i>Chrysanthemum morifolium</i></p> <p><b>Chrysanthemum</b></p> <p>Garden Mum</p> <p>Hardy Mum</p> <p><b>Asteraceae Aster/Sunflower</b></p>	3/4-9	Adaptable; prefer moist, well-drained soil, but will grow on most soils so long as they are well-drained.	Susceptible to several pests with aphids, spider mites, and leaf spots being the most common.	H: 1-3' S: 1-3'	Full sun to partial shade; bloom best in full sun.	<p>Flowers – single (daisy-like) to double, in various shades of white, yellow, orange, pink, orange-red, bronze, lavender, and purple, in heads; two types of flowers are produced – tubular disk flowers in the center and variously-shaped ray flowers to the outside; insect pollinated.</p> <p>Bloom Time – late summer/</p>	Native to Asia; many named selections (cultivars) have been developed based on habit, flower characteristics, and cold hardiness; form is upright to mounded; it is important to select cold hardy types for Minnesota landscapes including hardy varieties developed at the University of Minnesota; the species are propagated

<b>Family</b>						fall (August-October). Foliage – leaves green, silvery-green beneath; lobed, aromatic. Fruit – an achene; matures in late summer/fall (August-October).	by seed, division, and stem cuttings and the cultivars by division and stem cuttings.
<b><i>Heemerocallis</i> spp.</b> <b>Daylilies</b>  <b>Liliaceae</b> <b>Lily</b> <b>Family</b>	3-9	Very adaptable and easy to grow; prefer moist, organic, slightly acidic, well-drained soils, but will grow on most soils, regardless of texture or pH (acidic or alkaline) so long as they are well-drained.  Quite drought tolerant once established.	Several including aphids, spider mites, thrips, and several leaf diseases.  Eaten by deer.	H: 1-5’ (including flower stalks) S: 1-3’	Full sun to partial shade.	Flowers – variously white, yellow, gold, peach, orange, orange-red, purple, and bicolored or tricolored, fragrant, in open clusters (cymes) on long scapes (leafless stalks); individual flowers last one day; insect pollinated.  Bloom Time – spring/summer (June-August; some with repeat bloom).  Foliage – leaves, bright green, basal, strap-like.  Fruit – a capsule; green, becoming tan; matures in fall (September/October).	Native to eastern Europe and Asia; very popular and thousands of named selections (cultivars; mostly of hybrid origin) based primarily on flower characteristics (mainly color, size, and bloom time) have been developed; plants have short, fleshy rhizomes and the form is an upright to arching mound; the species is propagated by seed and division and the cultivars by division.
<b><i>Heuchera</i> spp.</b> <b>Coral Bells</b> Alumroot  <b>Saxifragaceae</b> <b>Saxifrage Family</b>	3/4-8	Adaptable; prefer moist, neutral to slightly alkaline soils that are well-drained, but will grow on moist soils so long as they are well-drained and not too acidic.  Tend to be intolerant of heavy, clay soils.	Few serious, but stem/root rot (on wet soils), mealy bugs, and root weevils can sometimes be problematic.	H: 1-2.5’ (including flower stalks) S: 1-2’	Full sun to partial shade.	Flowers – flowers small, bell-shaped, greenish to yellowish white, pink, rose-pink, and red, presented well above the mounded leaves on long scapes (leafless stalks); insect pollinated.  Bloom Time – late spring/summer (June-September).  Foliage – leaves dark green, sometimes greenish-purple, maroon, yellow, yellow-green, or copper-colored, heart-shaped, mostly basal, on long petioles (leaf stalks), toothed, often with wavy margins or 5 to 9 lobes and greenish-white, white, or silver markings.  Fruit – a capsule; green,	Native to North America including Minnesota; many named selections (cultivars) based on foliage, flower, and other characteristics are available; form is a mounded clump; the leaves can be evergreen, but are generally injured during Minnesota winters and are replaced by new leaves the following year; the species are propagated by seed and division and the cultivars by division.
<p><i>Heuchera micrantha</i> (crevice alumroot), <i>Heuchera sanguinea</i> (coral bells), and <i>Heuchera villosa</i> (hairy alumroot) and <i>Heuchera americana</i> (American alumroot) are some of the more common species; a sampling of species and hybrid cultivars include ‘Berry Smoothie’ (rose-pink, becoming rose-purple foliage, pink flowers), ‘Amber Waves’ (yellow-orange foliage, cream-colored flowers), ‘Blackberry Ice’ (purple-green foliage, white flowers), ‘Caramel’ (yellow-orange leaves with rose-purple undersides, pink flowers) ‘Citronelle’ (lime green foliage, ??? flowers), ‘Hollywood’ (purple-green foliage with silver markings, orange-red flowers), ‘Midnight Rose’ (purple foliage with pink splotches, ??? flowers), ‘Peppermint Spice’ (silver green foliage with purple veins, rose-pink flowers) ‘Palace Purple’ (bronze-purple foliage, pink flowers), and ‘Southern Comfort’ (coral-peach foliage, white flowers).</p>							

						becoming tan, insignificant; matures in late summer/fall (August/October).	
<b><i>Hosta</i> spp.</b> <b>Plantain Lilies</b> Hosta  <b>Liliaceae</b> <b>Lily Family</b>	3-8	Very adaptable and easy to grow; prefer moist, organic, slightly acid to neutral, well-drained soils, but will grow on just about any soil, regardless of texture or pH (acidic or alkaline) so long as it is well-drained.	A few with slugs being most common; a virus (Hosta Virus X) is a growing concern.  A favorite of deer.	H: 0.5-5' (including flower stalks)  S: 0.5-5'	Partial shade to shade.	Flowers – tubular, white to lavender, often fragrant, held well above the foliage; insect pollinated.  Bloom Time – summer (late June-September).  Foliage – leaves various shades of green to blue-green, sometimes variegated, basal; some have fairly good yellow fall color.  Fruit – a capsule; green, becoming tan; matures in fall (September).	Native to Asia (China, Japan, Korea); thousands of named selections (cultivars) primarily based on leaf characteristics and size; very popular and one of the best plants for shady sites; form is mounded; the species are propagated by seed and division and the cultivars by division.
<b><i>Hylotelephium</i> spp.</b> <b>Stonecrops</b> Sedum  <b>Crassulaceae</b> <b>Orpine/Stonecrop</b> <b>Family</b>	3-10	Adaptable; will grow in any soil that is well-drained.  Drought tolerant.	Generally pest-free.	H: 1-2'  S: 1-2'	Full sun to partial shade; best in full sun.	Flowers – white, pink, reddish-purple in dense, flat-topped clusters (cymes); insect pollinated.  Bloom Time – late summer/fall (August-October).  Summer Foliage – leaves fleshy, light green to blue-green, alternate, opposite, or whorled.  Fruit – a capsule; green, becoming light brown; matures in fall (September/October).	Native to eastern Europe and Asia; form is mounded; very attractive to butterflies and bees, especially bumble bees; the species are propagated by seed, stem cuttings, and division and the cultivars by stem cuttings and division.
		<p><i>Hylotelephium spectabile</i> (showy stonecrop, ice plant) and <i>Hylotelephium telephium</i> (orpine, live-forever; native to China and Korea) are the most common species; a number of named selections (cultivars) from these species and hybrids between them include ‘Autumn Joy’, Brilliant’, ‘Neon’, ‘Meteor’, ‘Autumn Charm’ and ‘Pink Chablis’ (variegated foliage), ‘Stardust’ and ‘Iceberg’ (white flowers), and ‘Matrona’, ‘Black Jack’, and ‘Bon Bon’ (purple foliage) to name a few; the genus <i>Hylotelephium</i> is closely related to, and was originally included in, the genus <i>Sedum</i> (sedum, stonecrop; flowers white, yellow, or pink) which includes several species commonly planted in Minnesota landscapes an on green roofs.</p>					
<b><i>Iris</i> spp.</b> <b>Irises</b>  <b>Iridaceae</b> <b>Family</b>	3/4-8	Somewhat variable, but generally any moist, well-drained soil; a few species tolerate wet soils.	Iris borer.	H: 0.5-3'  S: 1-2'	Full sun to partial shade.	Flowers – various shades of white, yellow, blue, lilac, and purple; insect pollinated.  Bloom Time – spring (April-June).  Foliage – green to bluish-green, strap-like; variegated forms exist.  Fruit – a capsule; green, becoming dark brown; matures in fall (August/September).	Native to temperate regions of the Northern Hemisphere including North America and Minnesota; there are bulbous and rhizomatous types; there are thousands of named selections (cultivars), many of hybrid origin; form is upright; the species are propagated by seed and division and the cultivars by division.
		<p><i>Iris sibirica</i> (Siberian iris) and bearded iris (hybrids; dwarf, intermediate, and tall types) are most commonly planted in Minnesota landscapes; <i>Iris cristata</i> (crested iris), <i>Iris pallida</i> (sweet iris), <i>Iris pumila</i> (dwarf bearded iris), and a few other species are also grown; <i>Iris versicolor</i> (blue flag iris) is a Minnesota native and grows on wet soils and in shallow water; <i>Iris pseudacoris</i> (yellow flag) is a very adaptable, introduced species that has escaped cultivation and is naturalized in most of the United States (including Minnesota) and Canada.</p>					

<p><b><i>Liatis</i> spp.</b></p> <p><b>Gayfeathers</b></p> <p>Blazing Star</p> <p>Liatis</p> <p><b>Asteraceae</b> <b>Aster/Sunflower</b> <b>Family</b></p>	<p>3-9</p>	<p>Adaptable; prefer moist, well-drained soil, but will grow in just about any soil regardless of texture or pH (acidic to alkaline) so long as it is well-drained.</p>	<p>Generally disease and insect free.</p>	<p>H: 2-5’ S: 1-2’</p>	<p>Full sun to partial shade; best in full sun.</p>	<p>Flowers – white or lavender-pink in spiked heads; unusual in that they open from the top of the spike to the bottom; insect pollinated and very attractive to bees and butterflies.</p> <p>Bloom Time – summer/early fall (July-September).</p> <p>Foliage – leaves green, alternate, grass-like.</p> <p>Fruit – a tufted achene; matures in fall (August/September).</p>	<p>Native to North America including Minnesota; form is upright; grows from a corm (a bulb-like structure composed of stem tissue); a few selections (cultivars) primarily based on flower color and height are available; the species are propagated by seed and division and the cultivars by division.</p>
<p>Several species are native to Minnesota including <i>Liatis aspera</i> (rough blazing star), <i>Liatis cylindracea</i> (cylindric blazing star), <i>Liatis ligulistylis</i> (northern plains blazing star), <i>Liatis punctata</i> (dotted blazing star), and <i>Liatis pycnostachya</i> (prairie blazing star); <i>Liatis spicata</i> (spike gayfeather), native to the eastern United States, is also planted in Minnesota landscapes and is a popular cut flower.</p>							
<p><b><i>Paeonia</i> spp.</b></p> <p><b>Peonies</b></p> <p><b>Paeoniaceae</b> <b>Peony Family</b></p>	<p>3-8</p>	<p>Adaptable; prefer well-drained, fertile, slightly acidic, loamy soils, but will grow on most soils so long as they are well-drained.</p>	<p>Generally pest free; botrytis blight can sometimes be a problem.</p> <p>Deer and rabbit resistant.</p>	<p>H: 2-4’ S: 2-4’</p>	<p>Full sun to partial shade; flower best in full sun.</p>	<p>Flowers – solitary, large, single to double, white, pink, reddish-purple, very showy, fragrant; insect pollinated.</p> <p>Bloom Time – late spring (June)</p> <p>Foliage – leaves dark green; alternate, compound with lobed leaflets.</p> <p>Fruit – a follicle; green, becoming brown; matures in fall (August/September).</p>	<p>Native to temperate regions of central and eastern Asia, southern Europe, and western North America; form is rounded, shrub-like; the species are propagated by seed and division and the cultivars by division.</p>
<p>Most peonies are of hybrid origin with <i>Paeonia lactiflora</i> (Chinese/common peony) as one of the parents; <i>Paeonia tenuifolia</i> (fernleaf peony) has finely divided foliage and red flowers; <i>Paeonia suffruticosa</i> (tree peony) has woody stems.</p>							
<p><b>Annuals</b></p>							
<p><b><i>Antirrhinum majus</i></b></p> <p><b>Snapdragon</b></p> <p><b>Scrophulariaceae</b> <b>Figwort Family</b></p>	<p>9-11</p>	<p>Adaptable; prefer well-drained, fertile soils.</p>	<p>Generally pest free; rust. Aphids, and spider mites can sometimes be a problem.</p>	<p>H: 6-48” S: 4-12”</p>	<p>Full sun to partial shade.</p>	<p>Flowers – showy, pea-like, in various shades of white, yellow, orange, pink, lavender, and red, sometimes bicolored, in elongated, terminal clusters (racemes); insect pollinated.</p> <p>Bloom Time – summer/fall (June-October); removing the old flower clusters (deadheading) enhances continued bloom.</p> <p>Foliage – leaves medium to dark green, opposite, lance-shaped.</p>	<p>Native to the Mediterranean region; a tender perennial that is not cold hardy in Minnesota; grown as an annual in Minnesota; form is upright oval; quite a few named selections (cultivars) have been selected based on height and flower characteristics; propagated by seed.</p>

						Fruit – a capsule; green, becoming tan; matures in fall (July-October).	
<b><i>Begonia</i> spp.</b> <b>Begonias</b>  <b>Begoniaceae</b> <b>Begonia Family</b>	10-11	Prefers moist, but well-drained, organic, fertile soils.	Powdery mildew and a variety of leaf spots are most common.	H: 6-36” S: 6-24”	Full sun to partial shade.	Flowers – showy, single or double, white, pink, yellow, orange, or red, sometimes bicolored, in axillary clusters (cymes); insect pollinated.  Bloom Time – summer/fall until frost (June-October).  Foliage – variable; leaves alternate, rounded to wing-shaped and asymmetrical, fleshy to leathery, various shades of green, sometimes reddish-purple to bronze, dull or shiny, sometimes textured and variously mottled or variegated.  Fruit – a winged capsule; green, becoming greenish-tan; matures in summer/fall (July-October).	Native to tropical and subtropical areas in Africa, Asia, and Central and South America; tender perennials that are not cold hardy in Minnesota; grown as annuals in Minnesota; form tends to be upright to rounded, or arching; a number of cultivars have been selected based habit and foliage and flower characteristics; some species are primarily grown for their foliage; the species are propagated by seed and the cultivars by stem cuttings; seeds require light to germinate.
<p>Many species, including an ever increasing variety of hybrids, are commercially available including the commonly planted <i>Begonia</i> × <i>semperflorens-cultorum</i> (wax or bedding begonia) and others (<i>Begonia</i> ×; angel wing, dragon wing, and others); none of these species develop the underground storage structures (tuberous stems; corms) that are produced by <i>Begonia</i> × <i>tuberhybrida</i> (tuberous begonia; see the tender bulbs section).</p>							
<b><i>Impatiens</i> spp.</b> <b>Impatiens</b> Patience Plant  <b>Balsaminaceae</b> <b>Balsam Family</b>	10-11	Adaptable so long as adequate moisture is available; prefer organic, moist, but well-drained soils.	Slugs.  Eaten by rabbits and deer.	H: 6-36” S: 6-36”	Full sun to shade; need adequate moisture in full sun.	Flowers – showy, variable, single or double, white, pink, lavender, salmon, or red; insect pollinated.  Bloom Time – spring to frost (June-October).  Foliage – leaves light to dark green, pale green beneath; alternate, toothed.  Fruit – a capsule; green; matures in summer/fall (August/September) and opens explosively to expel the seeds; insignificant.	Native to the Northern Hemisphere, including North America (including Minnesota) and in tropical and subtropical areas in east Africa and Asia; the genus includes annuals and tender perennials that are not cold hardy in Minnesota; the tender perennials are grown as annuals in Minnesota; propagated by seed and stem cuttings.
<p><i>Impatiens balsamina</i> (southern Asia; garden/rose balsam, touch-me-not), <i>Impatiens hawkeri</i> (Papua New Guinea, Solomon Islands; New Guinea impatiens), and several hybrids are some of the most commonly planted species; <i>Impatiens capensis</i> (jewelweed, orange jewelweed, touch-me-not) and <i>Impatiens pallida</i> (pale/yellow jewelweed/touch-me-not) are annuals and Minnesota natives.</p>							
<p><i>Impatiens walleriana</i> (impatiens, busy Lizzie, sultana), an east African species, and one of the most popular bedding plants in Europe and the United States, is susceptible to impatiens downy mildew, a new and devastating disease; New Guinea impatiens and several hybrids, including SunPatiens® and Bounce™ &amp; Big Bounce™ impatiens are resistant.</p>							

<p><b><i>Pelargonium</i> × <i>hortorum</i></b></p> <p><b>Bedding Geranium</b> Zonal Geranium</p> <p><b>Geraniaceae</b> <b>Geranium Family</b></p>	10-11	Adaptable; prefers moist, well-drained soils with a neutral to slightly alkaline pH.	Stem and root rots on wet soils, leaf spots, botrytis blight, spider mites, but few are significant if grown well.	H: 12-24” S: 12-24”	Full sun to partial shade.	<p>Flowers – showy, single or double, white, pink, lavender, or red in dense clusters (umbels); insect pollinated.</p> <p>Bloom Time – spring until a hard frost (June-October).</p> <p>Foliage – leaves medium to dark green, opposite, rounded with scalloped edges, toothed, often with colored zones.</p> <p>Fruit – a capsule; green, becoming tan when mature; matures in summer/fall (July-October); typically removed as the dead flowers are unattractive.</p>	Of hybrid origin from species that are primarily native to South Africa; a tender perennial that is not cold hardy in Minnesota; grown as an annual in Minnesota; a very popular garden plant; the species is propagated by seed and the cultivars by cuttings.
<p><b><i>Petunia</i> × <i>hybrida</i></b></p> <p><b>Petunia</b> Garden Petunia</p> <p><b>Solanaceae</b> <b>Potato/Nightshade Family</b></p>	10-11	Adaptable; just about any well-drained, soil.	Botrytis blight, tobacco mosaic virus, Attacked by a variety of insects and diseases including downy mildew, aphids, and spider mites.	H: 8-24” S: 8-12”	Full sun to partial shade; flowers best in full sun.	<p>Flowers – very showy, solitary in the axils of the leaves, single or double, funnel-shaped, in various shades of white, yellow, pink, blue, purple, and red, sometimes bicolored, sometimes with wavy or scalloped margins, fragrant; insect pollinated.</p> <p>Bloom Time – spring, summer, fall until a hard frost (June-October); removing the spent flowers promotes continued bloom.</p> <p>Foliage – leaves alternate, medium to dark green, pubescent (fuzzy).</p> <p>Fruit – a capsule; green, becoming light brown when mature; matures in summer/fall (July-October); insignificant.</p>	Of hybrid origin involving several species that are native to South America; form is rounded to trailing; thousands of selections (cultivars) have been selected based on form and floral characteristics; propagated by seed. Some petunias can become leggy and ratty looking by late summer; cutting the plants back can promote new growth and rejuvenate them for the rest of the season.
<p><b><i>Plectranthus</i> <i>scutellarioides</i></b></p> <p><b>Coleus</b></p>	10-11	Prefers moist, but well-drained, organic, fertile soils.	Attacked by a variety of insects and diseases including downy mildew, aphids, and spider mites.	H: 8-24” S: 8-12”	Full sun to partial shade.	Flowers – small, various shades of lavender-blue, in long vertical terminal clusters (verticillasters; the inflorescence typical of the	Native to tropical areas of southeast Asia, India, Africa, and Australia; tender herbaceous perennials that are not cold

<p>Garden Coleus Painted Nettle</p> <p><b>Lamiaceae</b> <b>Mint Family</b></p>	<p>Botanists seem to be having trouble making up their minds about the scientific/botanical name for the plants that are commonly referred to as garden coleus or simply coleus; <i>Plectranthus scutellarioides</i> is currently the accepted scientific/botanical name for these plants; historically several other names have been applied to this species including <i>Coleus blumei</i>, <i>Coleus</i> × <i>hybridus</i>, and, more recently, <i>Solenostemon scutellarioides</i>; these names are now considered synonyms.</p>					<p>mint family) whorls of flowers - actually a pair of opposite cymes - variously stacked on a central stem); insect pollinated.</p> <p>Bloom Time – summer/fall until frost (June-October).</p> <p>Foliage – variable in shape and color; leaves opposite, typically multicolored in shades of green, yellow, orange, pink, purple, and red.</p> <p>Fruit – a nutlet; green, becoming light brown; matures in summer/fall (August-October); typically removed as removing the flowers is recommended.</p>	<p>hardy in Minnesota; grown as annuals in Minnesota; primarily grown for their interesting foliage; the flowers should generally be removed to keep the plants looking good; propagated by seed and stem cuttings.</p>
<p><b><i>Tagetes</i> spp.</b></p> <p><b>Marigolds</b></p> <p><b>Asteraceae</b> <b>Aster / Sunflower Family</b></p>	<p>9-11</p>	<p>Adaptable; will grow on most soils so long as they are well-drained.</p> <p>Tolerant of high pH (alkaline) soils and drought.</p>	<p>Few insect or disease problems; spider mites and aster yellows are most common.</p>	<p>H: 6-36” S: 4-18”</p>	<p>Full sun.</p>	<p>Flowers – showy, in various shades of white, yellow, orange, and reddish-brown, sometimes bicolored, in terminal heads; insect pollinated.</p> <p>Bloom Time – spring to frost (June-October).</p> <p>Foliage – leaves dark green, opposite, pinnately compound, with narrow, toothed leaflets, aromatic.</p> <p>Fruit – an achene; green, becoming tan with a black stripe with a fringed cap; matures in one year in fall (August-October).</p>	<p>Native to North (Mexico), Central, and South America; the genus includes annual and tender perennials, but only the annuals are commonly grown in Minnesota; form is upright to rounded; there are hundreds of named selections (cultivars) based primarily based on habit and floral characteristics; propagated by seed; sometimes reseeds in protected locations.</p>
<p><b><i>Viola</i> × <i>wittrockiana</i></b></p> <p><b>Pansy</b> Garden Pansy</p> <p><b>Violaceae</b></p>	<p>6-9</p>	<p>Adaptable; prefers moist, but well-drained, soils that are rich.</p>	<p>Leaf spots, stem rot, slugs, aphids, and cucumber mosaic virus can occur.</p>	<p>H: 4-10” S: 4-15”</p>	<p>Full sun to partial shade.</p>	<p>Flowers – showy in various shades of white, yellow, orange, and purple, sometimes bicolored, fragrant; insect pollinated.</p> <p>Bloom Time – spring-fall (May-October), but prefer cool weather and suffer and may stop blooming during the heat of the summer.</p>	<p>Of hybrid origin from species native to Europe and Asia; short-lived, tender perennials that typically are not cold hardy in Minnesota; grown as annuals in Minnesota and often planted in the spring and again in the fall; can sometimes overwinter in</p>
<p><i>Viola tricolor</i> (Johnny-jump-up), one of the parents of pansies, is a short-lived perennial that commonly reseeds in gardens; the genus <i>Viola</i> also includes the violets which are perennials and common in Minnesota landscapes (several species are native to Minnesota).</p>							

<b>Violet Family</b>						<p>Foliage – leaves medium green; basal and rounded to lance shaped, with rounded teeth alternate with regular, pointed lobes and sinuses that extend about half way to the center vein.</p> <p>Fruit – a capsule; green, becoming brown; matures in late spring to fall (June-October); insignificant.</p>	Minnesota with ample and reliable snow cover; edible; propagated by seed.
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## Hardy Bulbs<sup>6</sup>

<p><b><i>Crocus</i> spp.</b></p> <p><b>Crocuses</b></p> <p><b>Iridaceae</b> <b>Iris Family</b></p>	3-8	Perform best on sandy loam soils, but will grow on most soils so long as they are well-drained.	<p>A few, but generally not serious.</p> <p>Squirrels, chipmunks, and mice may eat the corms and rabbits may eat the flowers and foliage.</p>	<p>H: 4-6”</p> <p>S: 4-6”</p>	Full sun to partial shade; best in full sun.	<p>Flowers – showy, various shades of white, yellow, blue, and purple; sometimes with purple stripes and sometimes bicolored, borne singly or in loose clusters (cymes); the flowers close at night and tend to remain closed on cloudy days; insect pollinated.</p> <p>Bloom Time – early spring (late March-early May).</p> <p>Foliage – leaves basal, linear, grass-like, light green with a white stripe down the center.</p> <p>Fruit – a capsule; inconspicuous; matures in late spring (May/June).</p>	Native to central and southern Europe; spring ephemerals; the “bulb” (underground storage structure) is a tuberous stem (corm); the corms are planted in the fall (September/October); the species are propagated by seed and division and the cultivars by division.
<p>The species of crocus that are most commonly planted in Minnesota include <i>Crocus chrysanthus</i> (golden crocus) and <i>Crocus vernus</i> (Dutch crocus) and their hybrids.</p>							
<p><b><i>Hyacinthus orientalis</i></b></p> <p><b>Hyacinth</b> Garden Hyacinth</p> <p><b>Liliaceae</b> <b>Lily Family</b></p>	3-7	Perform best on moist, sandy soils, but will grow on most soils so long as they are well-drained; mulching in winter can be beneficial.	None that are serious.	<p>H: 6-12”</p> <p>S: 6-12”</p>	Full sun to partial shade; best in full sun.	<p>Flowers – showy, in various shades of white, yellow, pink, red, blue, and purple, in cylindrical clusters (racemes) on stout scapes (leafless stalks); very fragrant; insect pollinated.</p> <p>Bloom Time – early spring (late March/April).</p> <p>Foliage – leaves dark green, basal, strap-like, and cupped inward longitudinally.</p>	Native to southeastern Europe and far western Asia (Mediterranean region); spring ephemerals; the underground storage structure is a true bulb (specifically a tunicate bulb; bulbs with a papery covering); many named selections (cultivars) are available; the bulbs are planted in the fall (September/early October);

<p>Sometimes placed in the Hyacinthaceae (Hyacinth Family) and more recently in the Asparagaceae (Asparagus Family)</p>						<p>Fruit – a capsule; green, becoming light brown; matures in late spring (May/June).</p>	<p>the species are propagated by seed and division and the cultivars by division.</p> <p>Hyacinths tend to be short-lived in the landscape.</p> <p>Hyacinths are often forced indoors in the winter and spring.</p>	
<p><b><i>Lilium</i> spp.</b></p> <p><b>Asiatic Lilies</b></p> <p>Garden Lilies</p> <p><b>Liliaceae</b></p> <p><b>Lily Family</b></p>	<p>3/4-9</p>	<p>Perform best on moist, slightly acidic, sandy loam soils, but will grow on most soils so long as they are well-drained.</p>	<p>Few that are serious; aphids and viruses can sometimes be problematic.</p> <p>Eaten by deer.</p>	<p>H: 1-7”</p> <p>S: 1-3”</p>	<p>Full sun to partial shade; most perform best in full sun.</p>	<p>Flowers – funnel-shaped, showy, in various shades of white, yellow, orange, pink, red, purple, and maroon, often speckled, terminal, borne singly or in clusters (racemes or panicles); fragrant; insect pollinated.</p> <p>Bloom Time – summer (June-September).</p> <p>Foliage – leaves dark green, lance-shaped, alternate or whorled.</p> <p>Fruit – a capsule; green, becoming brown; matures in late summer/fall (September/October).</p>	<p>Native to Europe, Asia, and North America including Minnesota; the underground storage structure is a true bulb (specifically a scaly or non-tunicate bulb; bulbs with exposed, overlapping leaf bases/scales that lack the papery covering seen in tunicate bulbs); many named selections (cultivars) based on size and flower characteristics are available; the bulbs are planted in the fall (September/October); the species are propagated by seed and division and the cultivars by division; lilies can also be propagated from bulb scales and some produce small daughter bulbs (bulbils) above ground in the axils of their leaves.</p>	
<p>Species native to Minnesota include <i>Lilium michiganense</i> (Michigan Lily) and <i>Lilium philadelphicum</i> (wood lily); other species that are grown in Minnesota landscapes include <i>Lilium martagon</i> (martagon lily; grows in partial shade) and a variety of hybrid lilies including the Asiatic hybrids which include hundreds of cultivars and are generally easy to grow.</p>	<p><b><i>Narcissus</i> spp.</b></p> <p><b>Daffodils</b></p> <p><b>Amaryllidaceae</b></p> <p><b>Amaryllis Family</b></p>	<p>3/4-9</p>	<p>Prefer neutral to slightly acidic, well-drained soils.</p>	<p>Generally pest free with bulb rots being most common and usually on poorly drained soils.</p> <p>Deer and rabbit resistant.</p>	<p>H: 6-24”</p> <p>S: 4-12”</p>	<p>Full sun to partial shade.</p>	<p>Flowers – distinctive, showy, with six floral leaves surrounding a central trumpet, in various shades of white, yellow, orange, and salmon-pink, sometimes bicolored, borne singly or in clusters (umbels) at the tips of relatively long scapes (leafless stalks); often</p>	<p>Native to the Mediterranean region (southwestern Europe, far western Asia, and northern Africa; spring ephemerals; the underground storage structure is a true bulb (specifically a tunicate bulb; bulbs with a papery covering); most of the</p>

						<p>fragrant; insect pollinated.</p> <p>Bloom Time – spring (May/June).</p> <p>Foliage – leaves basal, green to bluish-green, strap-like.</p> <p>Fruit – a capsule; green, becoming brown; matures in late spring/early summer (June).</p>	<p>cultivated varieties are of hybrid origin and thousands of named selections (cultivars) are available primarily based on size and flower characteristics; the bulbs are planted in the fall (September/early October); the species are propagated by seed and division and the cultivars by division.</p> <p>Daffodils are a popular cut flower and are sometimes forced as potted plants in early spring.</p>
<p><b><i>Tulipa</i> spp.</b></p> <p><b>Tulips</b></p> <p><b>Liliaceae</b> <b>Lily Family</b></p>	3/4-8	Perform best in loamy soils that are well-drained, but will grow in most soils so long as they are well-drained; tulips do not compete well with the roots of trees and shrubs.	<p>Several leaf spots, blights, and bulb rots, but usually not serious.</p> <p>Eaten by deer and rabbits.</p>	<p>H: 6-36”</p> <p>S: 6-12”</p>	Full sun to partial shade; best in full sun.	<p>Flowers – very showy, with six floral leaves, in various shades of white, yellow, orange, pink, red, and purple (just about every color imaginable except blue), sometimes bicolored or tricolored, borne singly or in clusters (umbels) at the tips of relatively long scapes (leafless stalks); often fragrant; insect pollinated.</p> <p>Bloom Time – early spring (April/May).</p> <p>Foliage – leaves primarily basal, medium green to bluish-green, broadly strap-like, often with wavy edges, and sometimes with purple mottling.</p> <p>Fruit – a capsule; green, becoming brown; matures in late spring/early summer (May/June).</p>	<p>Native to southeastern Europe, western and central Asia, and northern Africa; spring ephemerals, the underground storage structure is a true bulb (specifically a tunicate bulb; bulbs with a papery covering); hundreds of species and thousands of cultivars; although perennial by nature, most tulips planted in the United States perform as biennials or short-lived perennials as a result of less than ideal growing conditions; the bulbs are planted in late fall (October/early November) just before the soil freezes.</p> <p>Tulips are a popular cut flower and are sometimes forced as potted plants in early spring.</p>
<b>Tender Bulbs<sup>6</sup></b>							
<p><b><i>Begonia</i> × <i>tuberhybrida</i></b></p>	9-11	Prefer organic, moist, acidic, well-drained soils.	<p>Powdery mildew</p> <p>Eaten by deer.</p>	<p>H: 1-2’</p> <p>S: 1-2’</p>	Partial shade to shade; flower best	Flowers – very showy, single or double in various shades of white, yellow, orange,	Native to Brazil; tender perennials; the garden types are complex hybrids

<p><b>Tuberous Begonia</b></p> <p><b>Begoniaceae</b> <b>Begonia Family</b></p>					<p>in partial shade.</p>	<p>pink, and red; insect pollinated.</p> <p>Bloom Time – summer/fall until frost (June-October).</p> <p>Foliage – leaves variable; medium to dark green, sometimes with lighter veins, asymmetrical at the base, with large, irregular teeth.</p> <p>Fruit – a winged capsule; green, becoming tan when mature; matures in late summer/fall (September/October).</p>	<p>involving quite a few species; the “bulb” (underground storage structure) is a tuberous stem (corm); grown as annuals or the corms are dug up and stored at above freezing temperatures for replanting the following year; the species are propagated by seed and cuttings and the cultivars by cuttings; begonias can also be propagated by leaf and leaf-piece cuttings.</p>
<p><b><i>Canna × generalis</i></b></p> <p><b>Canna</b></p> <p><b>Cannaceae</b> <b>Canna Family</b></p>	<p>8-10</p>	<p>Prefer, fertile, moist, well-drained soils, but will grow on most soils so long as they are not too wet.</p>	<p>Rust, viruses, slugs, and Japanese beetles can be problematic, but usually are not serious.</p>	<p>H: 2-6’ S: 1-2’</p>	<p>Full sun.</p>	<p>Flowers – various shades of white, yellow, orange, pink, and red, sometimes variegated or speckled, in terminal clusters (spikes, racemes, or panicles).</p> <p>Bloom Time – mid to late summer (August/September).</p> <p>Foliage – leaves large, broad, typically bright green, but sometimes bluish-green, bronze, maroon, or variegated/ streaked with yellow, orange, pink, or reddish-purple, alternate, and emerge rolled up and then unfurl.</p> <p>Fruit – a warty capsule; green, sometimes reddish-purple, becoming brown when mature; matures in late summer/fall (September/October).</p>	<p>Native to tropical and subtropical regions of North, Central, and South America from the southern United States to northern Argentina; tender perennials; the garden types are hybrids derived primarily from crosses involving several species; the “bulb” (underground storage structure) is a rhizome; ; grown as annuals or the rhizomes are dug up and stored at above freezing temperatures for replanting the following year; hundreds of named selections (cultivars) are available based on size and flower and foliage characteristics; the species is propagated by seed and division and the cultivars by division.</p>
<p>Depending on the variety, cannas may be started from seed or rhizomes started indoors in late April and planted outdoors after the danger of frost has passed in mid to late May.</p>							
<p><b><i>Dahlia spp.</i></b></p> <p><b>Dahlias</b></p>	<p>8-10</p>	<p>Prefer, organic, fertile, moist, well-drained soil.</p>	<p>Susceptible to a variety of fungal and bacterial pests, several viruses, and aphids and spider mites.</p>	<p>H: 1-8’ S: 1-3’</p>	<p>Full sun to partial shade.</p>	<p>Flowers – tremendous variability in form, size, and color; various shades of white, yellow, orange, pink, red, lavender, and purple and bicolored in heads.</p> <p>Bloom Time – summer/fall</p>	<p>Native to Mexico and is the national flower of Mexico; tender perennials grown as annuals in Minnesota; the garden types are hybrids primarily derived from three species (<i>Dahlia</i></p>

<p><b>Asteraceae</b> <b>Aster/Sunflower</b> <b>Family</b></p>						<p>until frost (June-October). Foliage – leaves green, opposite or whorled, simple to pinnately compound with an odd number of leaflets, toothed. Fruit – an achene, tufted or not; green, becoming greenish-tan when mature; matures in late summer/ fall (August-October).</p>	<p><i>coccinea</i>, <i>Dahlia pinnata</i>, and <i>Dahlia rosea</i>); the “bulb” (underground storage structure) is a tuberous root that must be dug up and stored at above freezing temperatures for replanting the following year; thousands of named selections (cultivars) are available based on size and flower characteristics; the species are propagated by seed and stem cuttings and the cultivars by stem cuttings.</p>
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## Landscape Grasses<sup>7</sup>

<p><b><i>Andropogon gerardii</i></b>  <b>Big Bluestem</b> Turkeyfoot  <b>Poaceae</b> <b>Grass Family</b></p>	<p>3-9</p>	<p>Adaptable; prefers moist, fertile, well-drained, sandy to clay soils.  Quite drought tolerant once established.</p>	<p>Few pests.</p>	<p>H: 3-10’ S: 1-2’</p>	<p>Full sun to partial shade; best in full sun.</p>	<p>Flowers – showy, purplish, in terminal, branched, turkey-foot-like clusters (racemes); wind pollinated.  Bloom Time – summer (August/September).  Foliage – leaves green to blue-green, becoming purple to reddish-purple in fall.  Fruit – a caryopsis; green, becoming tan when mature; matures in late summer (September/October).</p>	<p>Native to central and eastern North America including Minnesota where it is native throughout the state; an upright, clump-forming, warm-season grass that is easy to grow; propagated by seed.</p>
<p><b><i>Calamagrostis × acutiflora</i></b>  <b>Feather Reed Grass</b>  <b>Poaceae</b> <b>Grass Family</b></p>	<p>3-9</p>	<p>Adaptable; prefers moist, well-drained soils.</p>	<p>Few pests; rust can sometimes be a problem.</p>	<p>H: 3-4’ S: 1-2’</p>	<p>Full sun to partial shade; best in full sun.</p>	<p>Flowers – fairly showy, green, in long, narrow terminal, branched clusters (panicles); wind pollinated.  Bloom Time – spring (June).  Foliage – leaves bright green and emerge sooner than those of the warm season grasses.  Fruit – a caryopsis; green, becoming tan when mature; matures in summer (August/September).</p>	<p>Of hybrid origin from species native to Europe and Asia; an upright, clump-forming, cool-season grass that is easy to grow; stays upright during the winter; propagated by seed and division.</p>

A hybrid between *Calamagrostis arundinacea* (reed grass; native to Europe and Asia) and *Calamagrostis epigejos* (wood small-reed; native to Europe, Asia, and eastern Africa); ‘Karl Foerster’ is very popular and the most commonly planted cultivar; other cultivars include ‘Overdam’ and ‘Avalanche’ which have variegated leaves; *Calamagrostis brachytricha* (Korean feather reed grass; hardy to Zone 4) is much less common, but is more shade tolerant and has pinkish flowers and larger, showier, more feathery seed heads.

<p><b><i>Panicum virginicum</i></b></p> <p><b>Switchgrass</b></p> <p>Panicgrass</p> <p><b>Poaceae</b></p> <p><b>Grass Family</b></p>	<p>3/4-9</p>	<p>Very adaptable; will grow on just about any soil.</p> <p>Tolerates clay soils, drought (once established), and short-term, seasonal flooding</p>	<p>Few pests.</p>	<p>H: 3-6’</p> <p>S: 1-2’</p>	<p>Full sun.</p>	<p>Flowers – showy, pinkish-tan, in large, airy, terminal, branched, conical clusters (panicles); wind pollinated.</p> <p>Bloom Time – summer (August/September).</p> <p>Foliage – leaves green to blue-green, becoming yellow, purple, or reddish-purple in fall.</p> <p>Fruit – a caryopsis; green, becoming tan when mature; matures in late summer/fall (September/October); seed heads persist during the winter.</p>	<p>Native across most of North America including Minnesota where it is native throughout most of the state; an upright to arching, warm-season, clump-forming grass tope with airy seed heads; propagated by seed and division.</p>
<p>A number of named selections (cultivars) are available – examples include ‘Heavy Metal’ (blue-green foliage and yellow fall color), ‘Northwind’ (dense, upright habit with blue-green foliage), ‘Prairie Sky’ (upright habit with greenish-blue foliage), ‘Rostrahlbusch’ (upright, red fall color), and ‘Shenandoah’ (reddish-purple streaked foliage).</p>							
<p><b><i>Schizachyrium scoparium</i></b></p> <p><b>Little Bluestem</b></p> <p><b>Poaceae</b></p> <p><b>Grass Family</b></p>	<p>3-8</p>	<p>Adaptable; prefers well-drained, sandy, sandy loam, or loamy soils.</p>	<p>Few pests.</p>	<p>H: 2-3’</p> <p>S: 1-2’</p>	<p>Full sun to partial shade; best in full sun.</p>	<p>Flowers – showy, purplish-yellow, along long slender stems (racemes); wind pollinated.</p> <p>Bloom Time – summer (July-September).</p> <p>Foliage – leaves light green to bluish-green, becoming golden-brown to copper-brown with silvery-white, fluffy seed heads in the fall.</p> <p>Fruit – a caryopsis; green, becoming tan when mature; matures in late summer/fall (September/ October).</p>	<p>Native to North America including Minnesota where it is native across most of the state; propagated by seed and division.</p>
<p>A number of named selections (cultivars) are available; ‘Blue Heaven’ (upright habit, bluish-green foliage, orange-red fall color) and ‘The Blues’ (upright habit, powder-blue foliage, copper-orange fall color) are popular examples.</p>							
<p><b><i>Sporobolus heterolepis</i></b></p> <p><b>Prairie Dropseed</b></p> <p><b>Poaceae</b></p> <p><b>Grass Family</b></p>	<p>3-9</p>	<p>Adaptable; prefers moist, well-drained soils.</p> <p>Drought and heat tolerant once established.</p> <p>Intolerant of wet sites.</p>	<p>Few pests.</p>	<p>H: 2-4’</p> <p>S: 1-2’</p>	<p>Full sun.</p>	<p>Flowers – showy, delicate, pinkish, in fairly compact, branched terminal clusters (panicles) held well above the foliage; wind pollinated.</p> <p>Bloom Time – summer/fall (August/September).</p> <p>Foliage – leaves bright green, fine-textured, arching, becoming yellow-orange and eventually tan in the fall.</p> <p>Fruit – a caryopsis; green, becoming tan when mature; matures in late summer/fall</p>	<p>Native to east-central and central North America including Minnesota; a well-behaved, warm-season, clump-forming grass with a graceful, mounded habit and seed heads that are held well above the mounded foliage; propagated by seed.</p>
<p>A species that is growing in popularity as a result of its graceful habit and shorter stature; commonly planted in large groups as a ground cover in sunny locations.</p>							

						(September/October); the seed heads have an interesting, popcorn fragrance.	
<b>Herbaceous Vines<sup>8</sup></b>							
<b><i>Ipomoea</i> spp.</b>  <b>Morning Glories</b>  <b>Convolvulaceae</b> <b>Morning Glory Family</b>	9-11	Any well-drained soil. Quite drought tolerant once established.	Few that are serious.	H: 8-15'	Full sun.	Flowers – very showy, usually solitary, trumpet-shaped, in the axils of the leaves, in various shades of white, pink, purple, blue, and red, sometimes with white throats and radial stripes; flowers open in the morning and close by midday; insect pollinated.  Bloom Time – summer/fall (July-September).  Foliage – leaves variable, alternate, heart-shaped to pinnately lobed or divided.  Fruit – a capsule; green, becoming tan when mature; matures in late summer/fall (August/September).	Native to Mexico and Central America; herbaceous perennials that are frost tender and not cold hardy in Minnesota; grown as annuals in Minnesota; the species that climb, climb by twining stems; propagated by seed.
	<i>Ipomoea batatas</i> (sweet potato vine; a trailing vine), <i>Ipomoea purpurea</i> (morning glory, purple morning glory), and <i>Ipomoea tricolor</i> (morning glory, Mexican morning glory) are the species that are most often grown in Minnesota; other species that are sometimes grown in Minnesota include <i>Ipomoea alba</i> (moonflower, white morning glory; very fragrant and blooms at night), <i>Ipomoea × multifida</i> (cardinal climber; leaves divided, small scarlet flowers), and <i>Ipomoea quamoclit</i> (cypress vine, cardinal climber; leaves very finely divided, small scarlet flowers).						
<b><i>Lablab purpureus</i></b>  <b>Hyacinth Bean</b> Dolichos Bean Lablab Bean  <b>Fabaceae</b> <b>Pea/Bean Family</b>	10-11	Any well-drained soil. Fairly drought tolerant once established.	Japanese beetles; otherwise few that are serious; spider mites can occasionally be a problem.	H: 10-20'	Full sun to partial shade.	Flowers – showy, white, pink, purple, or bluish-purple, in terminal clusters (racemes); insect pollinated.  Bloom Time – summer/fall until frost (June-October).  Foliage – leaves alternate, trifoliate with purple petioles (leaf stalks).  Fruit – a legume; green, becoming purple and eventually brown when mature; matures in late summer/fall (August-October).	Native to tropical Africa; a herbaceous perennial that is frost tender and not cold hardy in Minnesota; grown as an annual in Minnesota; attractive to hummingbirds and other pollinators; climbs by twining stems; propagated by seed.
<b><i>Thunbergia alata</i></b>  <b>Black-Eyed Susan Vine</b>	10-11	Prefers moist, but well-drained, fertile soils.	None serious.	H: 6-8'	Full sun to partial shade; best in partial shade.	Flowers – very showy, solitary in the axils of the leaves, in various shades of white, yellow, and orange	Native to eastern Africa; a herbaceous perennial that is frost tender and not hardy in Minnesota, grown

<p>Clock Vine</p> <p><b>Acanthaceae</b> <b>Acanthus Family</b></p>		<p>Intolerant of excessive heat and drought.</p>			<p>with dark centers (maroon to brownish-purple; insect pollinated.</p> <p>Bloom Time – summer/fall (July-September).</p> <p>Foliage – leaves opposite, heart-shaped to triangular, with winged petioles, toothed.</p> <p>Fruit – a capsule; green, becoming tan when mature; matures in late summer/fall (August/September).</p>	<p>as an annual in Minnesota; climbs by twining stems; propagated by seed and stem cuttings.</p>
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<sup>1</sup> Herbaceous Plants – herbaceous plants include annuals (plants that complete their life cycle – germinate from seed, grow, flower, set seed, and die – in one growing season), biennials (plants that complete their life cycle in two growing seasons), and herbaceous perennials (plants that live for more than two years); annuals die after they have flowered and set seed or at the end of the growing season and new plants grow from seed each year; biennials produce a rosette of foliage the first year and flower, set seed, and die the second year; some herbaceous perennials live for many years without flowering and then flower, set seed, and die, while others flower and set seed each year for many years; although a few are evergreen, the tops of most herbaceous perennials die back during the winter and regrow from below ground each year; herbaceous plants may have a single stem or multiple stems (clump forming) and some are trailing or climbing vines; some herbaceous perennials that are not hardy in Minnesota are grown as annuals.

<sup>2</sup> Name – Scientific/Botanical and Common Name(s).

<sup>3</sup> Zones – USDA Cold Hardiness Zones; Zone 1 / < 50°F, Zone 2 / -40 to -50°F, Zone 3 / -30 to -40°F, Zone 4 / -20 to -30°F, Zone 5 / -10 to -20°F, etc..

<sup>4</sup> Size – H = Height; S = Spread.

<sup>5</sup> spp. – spp. is the abbreviation for multiple species (species plural; where the author is referring to more than one species within a genus); sp. is the abbreviation for a single species (species singular; where the author is referring to a particular plant (one species), but where the specific species is unknown or not important relative to the information being presented).

<sup>6</sup> Hardy/Tender Bulbs – the term bulb is a generic term for a variety of underground food storage and resting structures produced by plants for future growth after a dormant period (winter in Minnesota); hardy bulbs are herbaceous perennials that produce underground storage structures with dormant buds that function as food storage (food reserves), reproductive (vegetative reproduction), and survival structures during dormant periods when the weather conditions are adverse to plant growth (winter, when temperatures are not conducive to growth in cold climates like Minnesota’s and summer, fall, and winter for spring ephemerals that grow in woodland ecosystems; spring ephemerals complete their annual growth and reproductive cycle in the early spring when light is abundant before the tree canopy leafs out and then go dormant until the following spring; in warmer climates, the dormant period typically corresponds to the dry season); plants that produce these types of underground storage structures are called geophytes (geo = earth, phyte = plant; earth plants) and the underground storage structures – rhizomes (fleshy underground stems), stem-tubers (tuberous stems; primarily composed of stem tissue; corms are included in this group), root-tubers (tuberous roots; primarily composed of root tissue), bulbs (true bulbs; primarily composed of fleshy leaf tissue attached to a short stem called a basal plate; two types – tunicate bulbs like onions and tulips which have a protective, papery covering and scaly, also called non-tunicate or imbricate, bulbs like lilies which lack the protective tunic), and root geophytes (plants with fleshy roots that serve as the storage tissue) – are generically referred to as bulbs; tender bulbs are geophytes that are killed by freezing temperatures and will not survive a Minnesota winter unless they lifted and stored to protect them from freezing temperatures; tender bulbs are grown as annuals and new bulbs must be planted each year or the “bulbs” must be dug up, stored for the winter, and replanted after danger of frost each year.

<sup>7</sup> Landscape Grasses – landscape grasses include the members of the grass family (the true grasses – Poaceae; the bamboos are included in this group) and other grass-like plants from other families including sedges (Cyperaceae), rushes (Juncaceae), and cattails (Typhaceae) that are used in designed landscapes; they may be annuals or herbaceous perennials and include turf (lawn) grasses like Kentucky bluegrass and a variety of other species that are planted in gardens and other landscape beds.

<sup>8</sup> Herbaceous Vines – herbaceous vines are herbaceous plants (plants with non-woody stems) that have weak stems and strong apical dominance (growth of the terminal bud inhibits the growth of lateral buds and branches resulting in a tall plant with only one or a few stems); as a result of their weak stems, vines ramble over the ground or have the ability to climb a support; herbaceous vines may be annuals, tender perennials (not cold hardy and killed during the winter), or cold hardy perennials.

**Notes:**

This is only a partial list (33) of the native and introduced herbaceous species that can be planted in Minnesota landscapes; a complete list would include hundreds of species and thousands of named selections (cultivars).

The crown sizes listed represent a typical range for each species; individual trees may be bigger or smaller depending on location and the resulting light and soil (fertility and moisture) conditions and cultivar; trees that are part of forest canopies or are surrounded by neighboring trees in designed landscapes tend to be taller and narrower as a consequence of crowding and stretching for light.

Remember that native plants, including herbaceous species, are an important component of native ecosystems and thereby serve as an important food source for a variety of native insects, animals, and micro-organisms (e.g., the milkweeds – *Asclepias* spp. – an important nectar and pollen source for native butterflies, bees, and other pollinators and the larval food source for monarch butterflies and other insects – without milkweed plants growing in the wild and in designed landscapes, some of these species, including monarch butterflies, cannot survive); and while the creatures that feed on milkweeds and other plants may be considered pests in designed landscapes, they, just like the plants themselves, are also important components of native ecosystems as food and ecosystem engineers.

**Resources:**

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