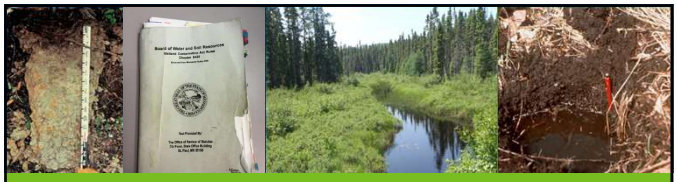


MN Wetland Professional Certification Program
Wetland Plant ID

BOARD OF WATER AND SOIL RESOURCES

Minnesota Wetland Professional Certification Program

1

Remaining MWPCP 2025 Courses

- Regional Training –Hermantown– August 12-13
- Introduction to Wetland Delineation & Regulations- Brainerd - September 8-12
- Introduction to Wetland Delineation &Regulations- Shoreview- October 6-10
- Hydrogeomorphic Method of Classifying Wetlands- Duluth- October 28-29
- Wetland Banking & Monitoring for Consultants- Shoreview- November 12-13

2

Minnesota Wetland Professional Certification Program

MWPCP Wetland Plant ID Agenda

- Plant ID concepts
- Common species: forbs
- Common species: grasses, sedges, rushes
- Lunch
- Common species: trees and shrubs
- Plant ID Stations
- Group Field Exercise
- Group discussion & recap

Class Portal: https://bwsr.state.mn.us/node/4681

3

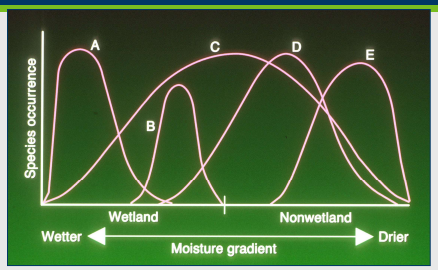
Plant Indicator Status

Wetland Indicator Status	Indicator Symbol	Definition
Obligate Wetland	OBL	Plants that almost always grow in wetlands. Estimated probability of >99% for growing in wetland.
Facultative Wetland	FACW	Plants that usually occur in wetlands. Estimated probability of 67% - 99% for growing in wetland (1%-33% in upland)
Facultative	FAC	Plants with similar likelihood of occurring in both wetland and upland. Estimated 33%-67% for growing in wetland.
Facultative Upland	FACU	Plants that sometimes grow in wetland. Estimated 1% - <33% for growing in wetland.(>67% - 99% in upland).
Obligate Upland	UPL	Plants that rarely occur in wetland. Estimated probability of <1% for growing in wetland (>99% in upland).

Hydrophytes

4

Plant Indicator Status Distributions



Indicator Status

A Obligate
FACW
C FAC
FACU
E Upland

5

The Plant ID Process

BOARD OF WATER AND SOIL RESOURCES

BWSR Academy 2018

6

Identification Steps

- Office Review
- Site Analysis
- Species Identification

7

7

Office Review

Reviewing aerial images of the site

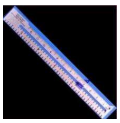
8

8

Office Review

Determining what equipment to bring along



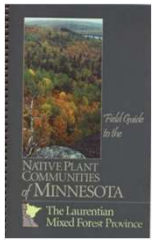


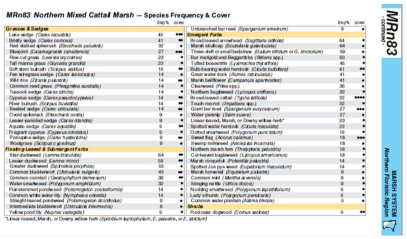

9

9

Office Review

Species Lists

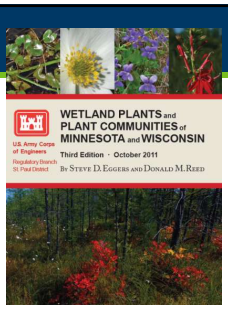




10

10

Office Review



Deep and Shallow Marshes

VEGETATION: The above shallow marsh community includes bottlebrush sedge (*Carex vesicaria*), broad-leaf arrowhead (*Sagittaria latifolia*), slough sedge (*Carex atherodes*), lake sedge (*Carex lacustris*), soft rush (*Juncus effusus*), rice cut-grass (*Leersia oryzoides*), giant manna grass (*Glyceria grandis*), reed canary grass (*Phalaris arundinacea*), common spikerush (*Eleocharis palustris*), small yellow pond lily (*Nuphar variegata*), lesser duckweed (*Lemna minor*), greater duckweed (*Spirodela polyrhiza*), common waterweed (*Elodea canadensis*), common bladderwort (*Utricularia macrorhiza*), common bugleweed (*Lycopus americanus*) and a border of reed canary grass (*Phalaris arundinacea*).

SOILS: Palms muck (Terric Haplosaprists) with 16 to 51 inches of muck over loamy deposits.

HYDROLOGY: Saturated soils at or near the surface and shallow inundation up to 6 inches. Primarily supported by groundwater seepages, but also influenced by water levels in Lake Marion. A small, groundwater-fed, perennial stream flows through this community.

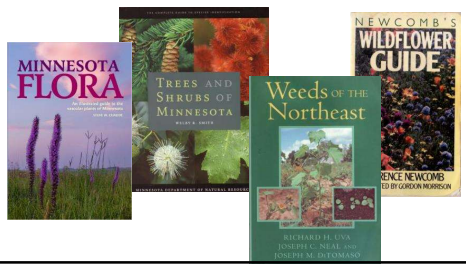
LOCATION: Adjacent to Lake Marion, Ritter Farm Park, Dakota County, Minnesota.

11

11

Office Review

Determining What Plant ID Resources to Bring Along

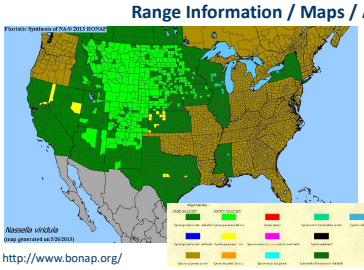


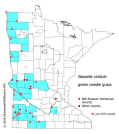
12

12

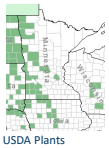
Office Review

Range Information / Maps / Atlases





MN Wildflowers



USDA Plants

http://www.bonap.org/

13

13

Site Analysis

14

14

Site Analysis

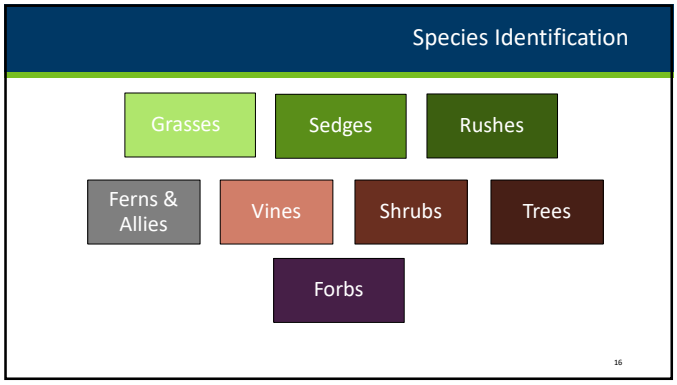
Time of Year – September

Soil – loamy, slightly rocky/gravelly

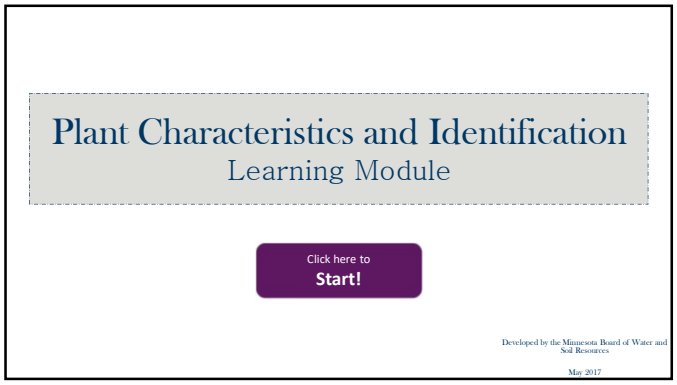
Habitat – disturbed woodland with sparse canopy

15

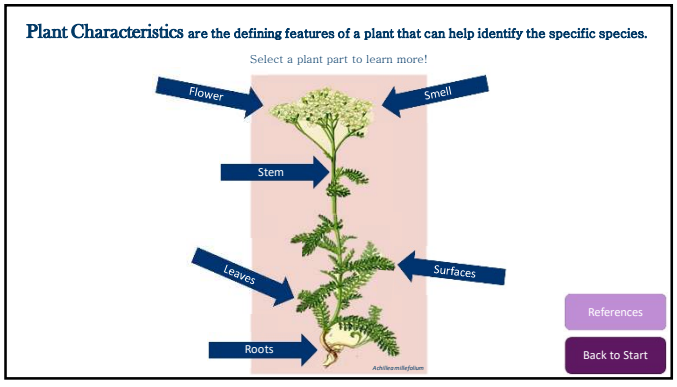
15


Species Identification
Grasses
Sedges
Rushes
Ferns & Allies
Vines
Shrubs
Trees
Forbs
16

16


Plant Characteristics and Identification
Learning Module
Click here to
Start!
Developed by the Minnesota Board of Water and Soil Resources
May 2017

17

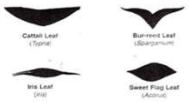

Plant Characteristics are the defining features of a plant that can help identify the specific species.
Select a plant part to learn more!
Flower
Smell
Stem
Leaves
Surfaces
Roots
References
Back to Start

18

Stem Shape

More stem shapes

Stem shape can be distinctive between plants. For example, Sweet-Flag (*Acrous americanus*) has a distinct oval shape with flattened sides. In early summer it can easily be mistaken for Cattail or Blue-Flag Iris.



The above stems are Sedge, Bulrush, and Grass stems. In general:

"Sedges have edges.
And rushes are round.
Grasses are hollow right up
from the ground."

Back to Stems

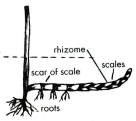
Back to all Plant Characteristics

19

Stems

Rhizome is a horizontal underground stem that puts out lateral shoots and roots (adventitious roots).
Example: Kentucky Blue Grass (*Poa pratensis*) and Reed Canary Grass (*Phalaris arundinacea*)

Kentucky Blue Grass (*Poa pratensis*) rhizome



Stolon is an above ground, creeping horizontal stem or runner that takes root and can put out lateral shoots to form new plants.
Example: Wild Strawberry (*Fragaria virginiana*)

Back to Stems

Back to all Plant Characteristics

20

Leaves

Leaves are the site where plants make their food through a process called Photosynthesis. Leaves are very unique between plant species and can be one of the most important characteristics to identifying a plant. Leaves, themselves, have many defining characteristics. Select the characteristic below to learn more.

Euthamia graminifolia

Aster macrophyllus

Onoclea sensibilis

Type | Attachment | Description of Attachment

Shape | Margins | Venation

Back to all Plant Characteristics

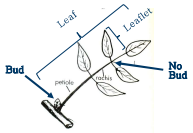
21

Leaf Type

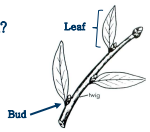
There are two types of leaves: Simple and Compound.

Compound leaf is a leaf consisting of several leaflets joined to a single stem.
Example: Ash tree

Simple leaf is a leaf that is joined to a single stem.
Example: River Birch



Ask yourself:
- Where is the bud?



Back to Leaves

Back to all Plant Characteristics

22

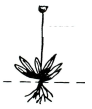
Leaf Attachment

Leaf Attachment is the pattern by which leaves are attached to a stem. There are four types of leaf attachment: Alternate, Opposite, Whorled, and Basal.

Alternate: leaves are attached to the stem in an alternating pattern

Opposite: 2 leaves opposite each other at the same point

Whorled: 3 or more leaves attached at the same point around the stem



Basal: leaves at the base of the plant

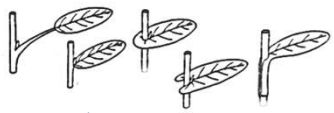
Back to Leaves

Back to all Plant Characteristics

23

Description of Attachment

Perfoliate leaves of *Eupatorium perfoliatum*



Petiolate Sessile Perfoliate Clasping Sheathing

Clasping leaves of *Symphyotrichum novae-angliae*

Petiolate: When there is a petiole that attaches the leaf to the stem

Perfoliate: When the leaf goes around the stem

Sheathing: When the leaf continues down the stem

Sessile: When the leaf attaches directly to the stem

Clasping: When the leaf clasps the stem but doesn't go all the way around the stem

Back to Leaves

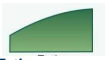
Back to all Plant Characteristics

24

Leaf Margins

More Leaf Margins

Leaf Margin is the structure of the leaf edge. The most common margins are below. Select the button to learn more types.



Entire: even, smooth throughout

Toothed: with fine serrations

Doubly Toothed: Toothed with sub-teeth

Lobed: Indented but not to the midline

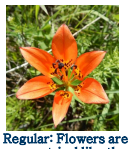
Wavy: Widely wavy

Back to Leaves

Back to all Plant Characteristics

25

Flower Shape



Regular: Flowers are symmetrical like the spokes on a bike wheel

Bell: The petals are fused together to form a bell shape

Indistinguishable: Cannot tell the number of petals or the male and female parts

Irregular: Flowers are not symmetrical. They usually have upper and lower lips

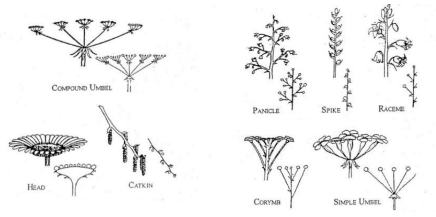
Tubular: Petals are fused together to form a tube

Back to Flowers

Back to all Plant Characteristics

26

Cluster Shape



Back to Flowers

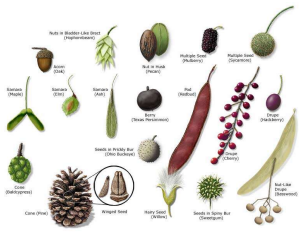
Back to all Plant Characteristics

27


Cornus canadensis

Fruit and Seeds


Fragaria virginiana



Fruit is the ripened ovary. They can be very distinct, but not present during parts of the year. The time of fruit ripening can also give clues as to the species.


Carex oligosperma

Back to Flowers

Back to all Plant Characteristics

28

Smell

Smells can be very distinctive. The crushed leaves or seed heads can have smells. Some examples include Sweet flag, the Mint family, and Swamp Milkweed


Sweet Flag smells like sweet lemon


Bee Balm smells like sweet mint


Swamp Milkweed smells like bubblegum


Virginia Mountain Mint smells minty

Back to all Plant Characteristics

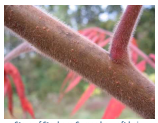
29

Surfaces

The Surfaces can be soft, rough, prickly, or hairy. There are some distinctions between species that depend on the feel of the stem or leaves. Not only can the stem and leaves have different textures but also the seeds.


Stem of *Bidens cernua*


The leaves and stems of this plant are rough and hairy


Stem of Staghorn Sumac has soft hairs


Base of an Aster with glandular hairs

Back to all Plant Characteristics

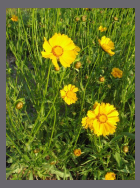
30

FORBS: FAMILIES AND IDENTIFICATION

31

Forb definition

A forb is a broad-leaved, non-woody flowering plant with around 148 families



32

Families:

- Mint (Lamiaceae)
- Aster (Asteraceae)
- Vervain (Verbenaceae)
- Milkweed (Apocynaceae)
- Smartweed (Polygonaceae)
- Loosestrife (Lythraceae)
- Burreed (Sparganiaceae)
- Cattail (Typhaceae)
- Water Plantain (Alismaceae)
- Iris (Iridaceae)
- Legume (Fabaceae)
- Carrot (Apiaceae)

33

Mint Family–Lamiaceae

- 4-angled square stem typically
- Often aromatic
- Flowers in leaf axils, or heads or spikes at end of stem
- Leaves simple, opposite, sharply toothed or lobed

34

Bugleweed
Lycopus americanus

- Small 4-lobed white flowers in axils
- Similar to field mint, but not strongly scented

NCNE	MW	GP
OBL	OBL	OBL

35

Aster Family–Asteraceae

- Flowers of two types, ray and disc flowers
- Head surrounded by an involucral bract
- Fruit is an achene

36

Giant Goldenrod
Solidago gigantea

- Alternate, 3-veined leaves
- Wet sites

NCNE	MW	GP
FACW	FACW	FAC

37

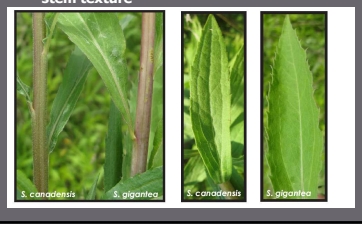
Canada Goldenrod
Solidago canadensis

- Stem hairy [top part esp.]
- Alternate leaves
- 3-veined
- Upland and transition areas

NCNE	MW	GP
FACU	FACU	FACU

38

Goldenrods



39

Cup-plant
Silphium perfoliatum

- Squarish stem
- Not a mint!
- Rough leaf surface

NCNE	MW	GP
FACW	FACW	FAC

40

Sneezeweed
Helenium autumnale

- Yellow flowers with three teeth at the end of each ray
- Winged stem

NCNE	MW	GP
FACU	FACU	FACU

41

Sawtooth Sunflower
Helianthus grosseserratus

- Stems smooth with sparse hairs
- Drooping leaves, both sides rough
- Pale leaf underside covered with short hairs

NCNE	MW	GP
FACW	FACW	FACW

Bill Summers @ USDA-NRCS PLANTS Database

42

Boneset
Eupatorium perfoliatum

- Coarsely toothed leaf
- Perfoliate
- Hairy stem

NCNE	MW	GP
FACW	OBL	FACW

Leaves joined into one

43

Vervain Family- Verbenaceae

- 4-angled square stem
- Opposite, toothed leaves
- Flowers in spikes or groups at end of stem

44

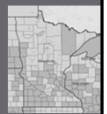
Vervain

Blue Vervain
Verbena hastata
FACW

Hoary Vervain
Verbena stricta
UPL

Fewer stouter spikes

Rounder Leaves



45

Milkweed Family- Apocynaceae

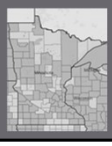
- Leaves opposite
- Milky juice in stem
- Flowers numerous in umbels at end of stem

46

Common Milkweed
Asclepias syriaca

- Wide opposite leaves
- Milky sap

NCNE	MW	GP
UPL	FACU	UPL



47

Swamp Milkweed
Asclepias incarnata

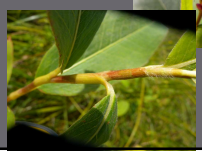
- Tapering narrow leaves
- Milky sap (less than other species)
- Wet sites

NCNE	MW	GP
OBL	OBL	FACW

48

Smartweed Family- Polygonaceae

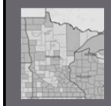
- Alternate, simple leaves, Stipules joined forming a sheath (Ocrea) around stem at nodes
- Petals absent, sepals petal-like



49

Smartweeds

Pennsylvania Smartweed
[Persicaria pensylvanicum]
FACW



Thumbprint on leaf

Water Smartweed
[*Persicaria amphibium*]
OBL

Both at wet sites

50

Loosestrife Family- Lythraceae

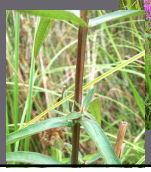
- Upper stems multi-sided, square
- Leaves opposite and stalk-less
- Flowers have 6 petals

51

Purple Loosestrife
Lythrum salicaria

- MN Noxious weed
- Woody square stem
- Leaves lanceolate, opposite or whorled
- Spikes of purple-red flowers

NCNE	MW	GP
OBL	OBL	OBL



52

Burreed Family- Sparganiaceae

- Stems erect, un-branched, round in cross section
- Leaves long and linear
- Flowers crowded in round heads with male and female flowers separate

53

Triangular leaf cross-section

Sparganium americannum

54

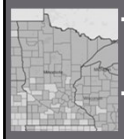
Cattail Family- *Typhaceae*

- Leaves near base, in two ranks, long and strap-like
- Flowers are tiny, in large groupings, male and female portions of spike are separate
- Female flowers on bottom, male flowers on top
- Reproduce by submerged rhizome, creating mats

http://botany.csdl.tamu.edu/FLORA/gallery.htm

55

Broadleaf Cattail
Typha latifolia

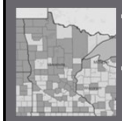


- Broad leaves usually don't extend past spike
- Upper staminate and lower pistillate portions of the spike are continuous

NCNE	MW	GP
OBL	OBL	OBL

56

Narrowlead and Hybrid Cattail
Typha angustifolia and Typha X glauca



- Narrow Leaves extend beyond spike
- Staminate and pistillate portions of spike separate, with gap

NCNE	MW	GP
OBL	OBL	OBL

57

Water Plantain Family- Alismaceae

- Stout rhizomes
- Leaves from base of plant, clasping stem
- Multi-branched inflorescence
- Flowers with 3 petals

58

Water Plantain

Alisma subcordatum

- Leaves elliptical or egg shaped on long stalks
- White or pinkish flowers about 1/8" wide
- Found along muddy shores

NCNE	MW	GP
OBL	OBL	OBL

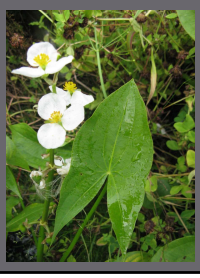
59

Broad Leaf Arrowhead

Sagittaria latifolia

- Flowers grow in whorls of 3 from an un-branched stalk
- Leaf shaped like an arrow head

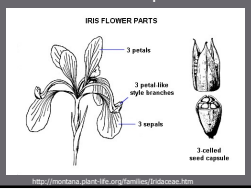
NCNE	MW	GP
OBL	OBL	OBL



60

Iris Family- Iridaceae

- Parallel veined, 2 ranked leaves
- Flowers with 6-petals



http://montana.plant-life.org/families/Iridaceae.htm

61

Harlequin Blue Flag Iris
Iris versicolor

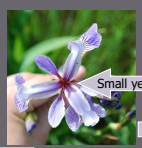
- Deep purple base
- Blue flower with large yellow center
- Found in the North

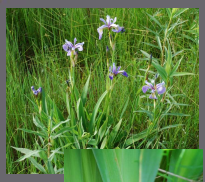
NCNE	MW	GP
OBL	OBL	OBL

62

Virginia Iris
Iris virginica

- Green base
- Purple flower with small yellow center
- Found in the south



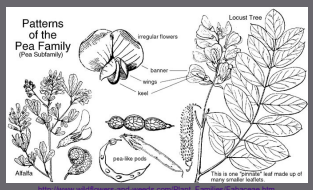


NCNE	MW	GP
OBL	OBL	OBL

63

Legume Family- Fabaceae

- Alternate leaves, pinnately divided
- Flowers irregular, 5 lobed and in racemes

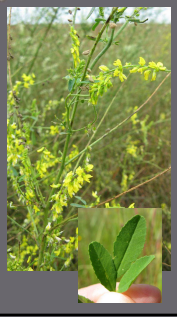


64

Sweet Clover
Melitotus officinalis

- Flowers can be yellow or white
- Leaves divided into 3 leaflets
- Non-native

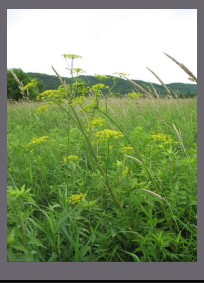
NCNE	MW	GP
FACU	FACU	FACU



65

Carrot (or parsley) Family- Apiaceae

- Hollow stem
- Alternate or basal leaves, mostly compound
- Flowers in flat-topped umbels; 5 petals



66

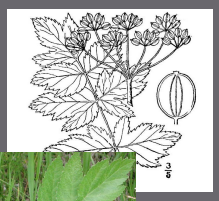
Wild Parsnip
Pastinaca sativa

- Contact with the plant can cause a sun-induced rash
- Compound umbel of yellow flowers
- Pinnately lobed leaves
- Tall growth habit.

NCNE	MW	GP
UPL	UPL	UPL

67

Wild Parsnip



Golden Alexanders

68

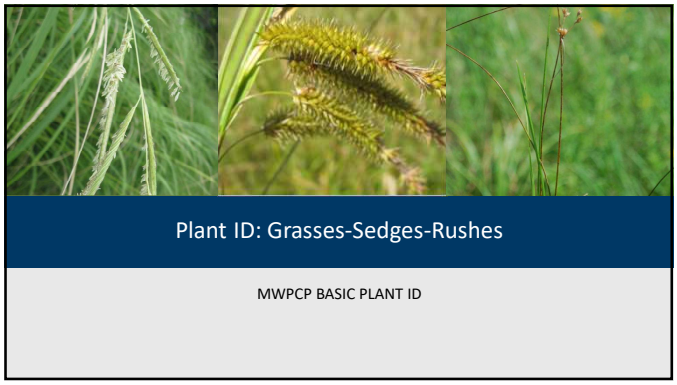
What family is this plant from?

Mint (Lamiaceae)
Aster (Asteraceae)
Vervain (Verbenaceae)
Milkweed (Apocynaceae)
Smartweed (Polygonaceae)
Loosestrife (Lythraceae)
Burreed (Sparganiaceae)
Cattail (Typhaceae)
Water Plantain (Alismaceae)
Iris (Iridaceae)
Legume (Fabaceae)
Carrot (Apiaceae)

69


DO NOT TOUCH!
Wild Parsnip
Water Hemlock
Poison Ivy
Poison Sumac
Poison Hemlock
Nettles

70


Plant ID: Grasses-Sedges-Rushes
MWPCP BASIC PLANT ID

71


Grass like plants

72

Grass like plants

Grasses

Sedge Family

Rushes

Source: Minnesota Wildflowers
https://www.minnesotawildflowers.info/page/grasses-sedges-rushes

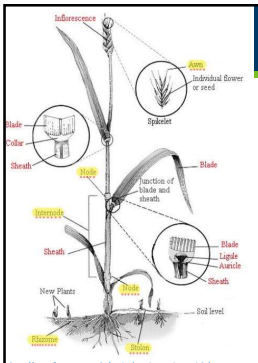
73

DEPARTMENT OF TRANSPORTATION

Grasses (Poaceae Family)

74

Structure




Spike


Panicle


Raceme

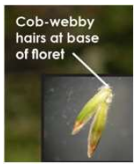
http://www.forages.psu.edu/topics/species_variety_trials/commonpagrasses/structures.html

Grass Search

75

Bluegrasses (*Poa spp.*)

- Cool season grasses
- Narrow leaves
- Boat shaped leaf tips
- Multiple flowers per spikelet



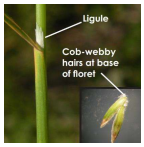
76

Kentucky Bluegrass (*Poa pratensis*)

NCNE FACU | MW FAC | GP FACU

Fowl Bluegrass (*Poa palustris*)

NCNE FACW | MW FACW | GP FACW



77

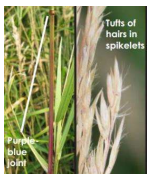
Redtop (*Agrostis gigantea*)

NCNE FACW | MW FACW | GP FACW

78

Canada bluejoint (*Calamagrostis canadensis*)

NCNE	MW	GP
OBL	OBL	FACW



79

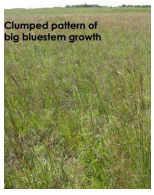
Prairie Cordgrass (*Spartina pectinata*)

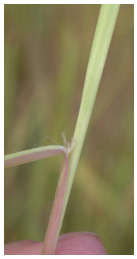
NCNE	MW	GP
FACW	FACW	FACW

80

Big bluestem (*Andropogon gerardii*)

NCNE	MW	GP
FACU	FAC	FACU





81

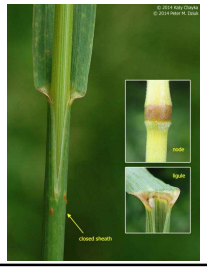
Switchgrass (*Panicum virgatum*)

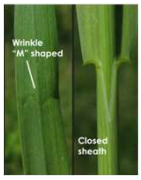
NCNE	MW	GP
FAC	FAC	FAC

82

Bromegrass (*Bromus inermis*)

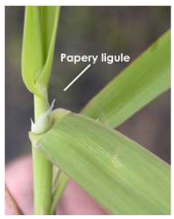
NCNE	MW	GP
UPL	FACU	UPL





83

Reed canary grass (*Phalaris arundinacea*)



NCNE	MW	GP
FACW	FACW	FACW

84

Canada Wild Rye (*Elymus canadensis*)

NCNE FACU MW FACU GP FACU




Elymus canadensis

85

Quack Grass (*Elymus repens*)

NCNE FACU MW FACU GP FACU



Elymus repens

Virginia Wild Rye (*Elymus virginicus*)

NCNE FACW MW FACW GP FAC



Straight awns spikelets

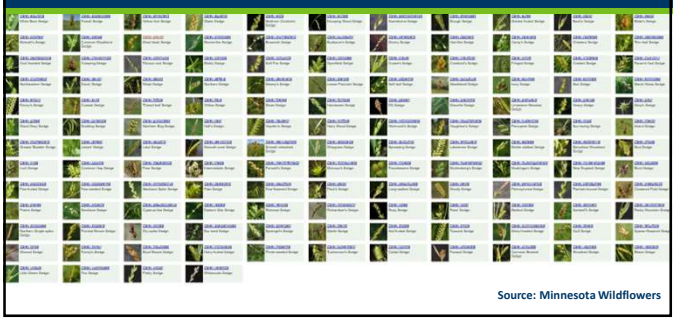
Elymus virginicus

86

Sedges (Cyperaceae Family)

87

Carex Sedges

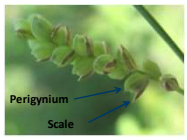


Source: Minnesota Wildflowers

88

Carex Sedges

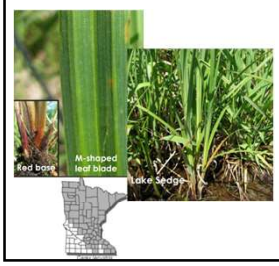
- Triangular stems
- Flower heads variable
- Each achene enclosed in a perigynium
- Scales subtend perigynium



89

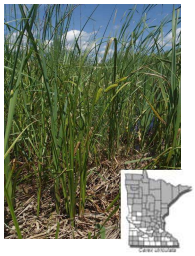
Common Obligate Wetland Carex

Lake Sedge
Carex lacustris



Slough Sedge
Carex atherodes

Common Beaked Sedge
Carex utriculata



90

Common Wetland Carex

Awl fruited Sedge
Carex stipata
(OBL)

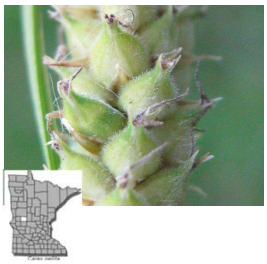
Tussuck Sedge
Carex stricta
(OBL)

Fox sedge
Carex vulpinoidea

NCNE	MW	GP
OBL	FACW	FACW

91

Carex pellita

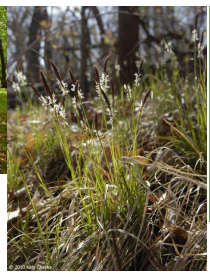


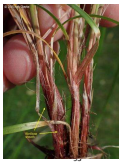
Wooly sedge
Carex pellita
(OBL)

Source: Minnesota Wildflowers

92

Carex pensylvanica (Upland)





93

Cyperus – Flatsedges, Nutsedges, Umbrella sedges

Yellow Nutsedge (*Cyperus esculentus*) FACW

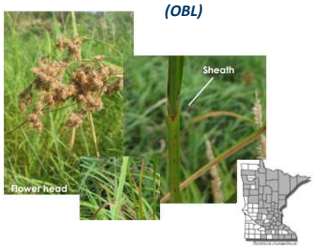
- Perennial (not native to MN)
- Leaves light green
- Spikelets are bright yellow, perpendicular to the stem
- Each spike is 5-8 cm long

94

Bulrushes (*Scirpus, Schoenoplectus, Bulboschoenus*)

Green Bulrush
Scirpus atrovirens
(OBL)

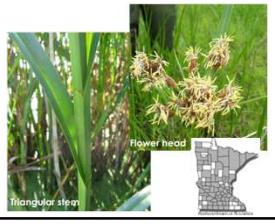
Woolgrass
Scirpus cyperinus
(OBL)



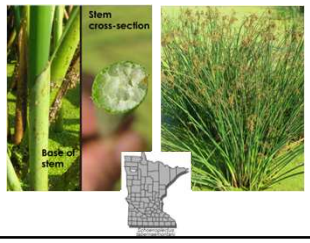
95

Bulrushes (*Scirpus, Schoenoplectus, Bulboschoenus*)

River Bulrush
Bolboschoenus fluviatilis
(OBL)



Softstem Bulrush
Schoenoplectus tabernaemontani
(OBL)



96

Eleocharis - Spikerushes

- Rounded or flattened solid/spongy stem
- Leaves reduced to sheaths
- Terminal spikelet

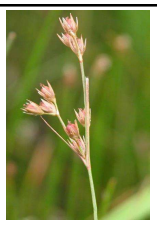
97

Eriophorum (Cottongrass)

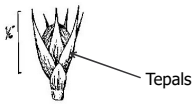
- *Eriophorum angustifolium*

mndot.gov 98

98



DEPARTMENT OF TRANSPORTATION



Rushes (Juncaceae Family)

99

Juncus – True Rushes

- Rounded or flattened stem
- Leaves few, round or flattened
- Sheaths open, often with auricles
- Flowers with 6 tepals
- Capsules with many seeds

Source: Minnesota Wildflowers

100

Review: Sedges and Rushes

101

Plant Part		Group (Genus)
_____		_____
_____		_____
_____		_____
_____		_____
_____		_____
_____		_____

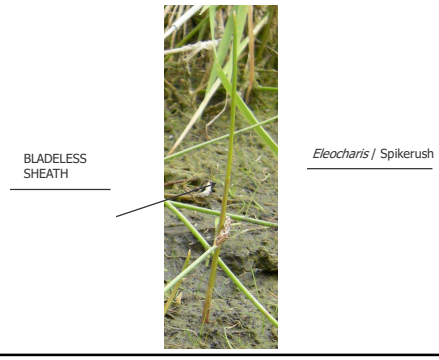
bladeless sheath, perigynium, tepals, bristles, flattened spikelet, bracts

Cyperus (flat sedge), Carex (true sedge), Juncus (true rush), Scirpus (bulrush), Eleocharis (spikerush)

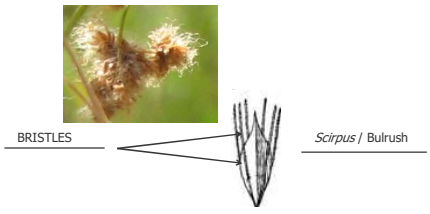
102


BRACTS
FLATTENED SPIKELET
Cyperus / Flatsedge

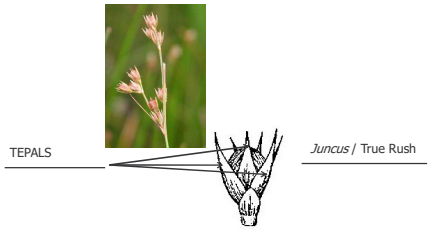
103


BLADELESS SHEATH
Eleocharis / Spikerush

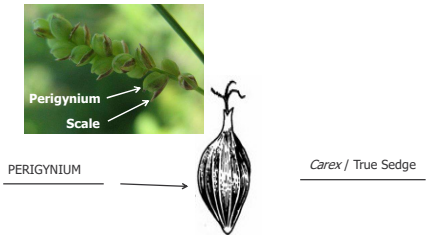
104


BRISTLES
Scirpus / Bulrush

105


TEPALS
Juncus / True Rush

106


Perigynium
Scale
PERIGYNIUM
Carex / True Sedge

107

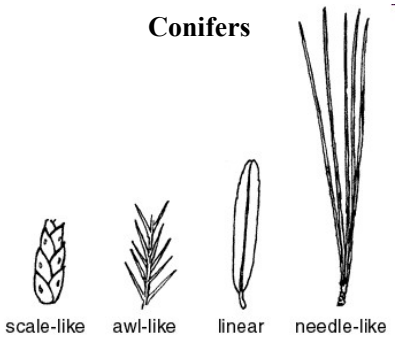

Trees, Shrubs & Vines
MWPCP
Basic Plant ID Training

108

Conifers & Broadleaf

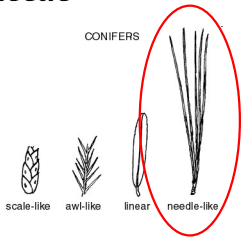
- Conifers – a tree that bears cones and evergreen needlelike leaves
- Broadleaf – a tree that bears wide flat leaves that are shed annually

109

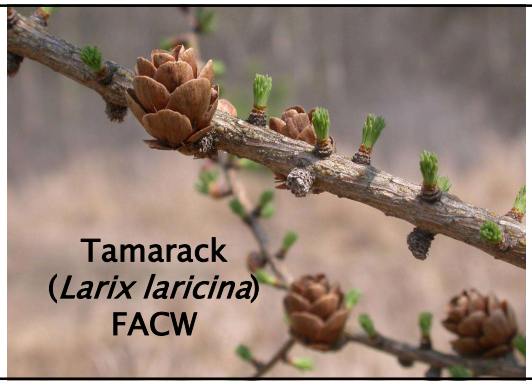


110

Clustered Needles (Pines) Pinaceae



111



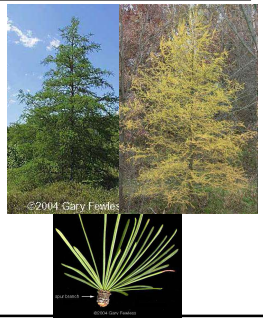
112

Tamarack

Larix laricina

NCNE	MW	GP
FACW	FACW	FACW

- Deciduous
- Needles are bunched
- Common to swamps and bogs



113

Eastern White Pine

Pinus strobus

NCNE	MW	GP
FACU	FACU	FACU

- 5 Needles per bunch
- Needles 2.5 to 5”
- Soft flexible needles

114

Red Pine

Pinus resinosa

NCNE	MW	GP
FACU	FACU	FACU

- 2 Needles per bunch
- Needles 2.5 to 5”
- Soft flexible needles

115

Jack Pine

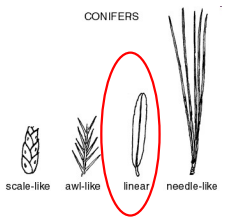
Pinus banksiana

NCNE	MW	GP
FACU	FACU	FACU

- Adapted for fire
- Serotinous cones
- Germinate best on mineral soil

116

Single Needles (Fir, Spruce, Hemlock – still Pinaceae)



117

Balsam fir

Abies balsamea

NCNE	MW	GP
FAC	FACW	FAC

- Needles continuous along stem and branches
- Needles ¾ to 1 inch and flat
- Cones are purple

118

White Spruce

Picea glauca

NCNE	MW	GP
FACU	FACU	FACU

- Short blue green needles
- Needles are born singly
- Branches slightly droop

119

Black Spruce

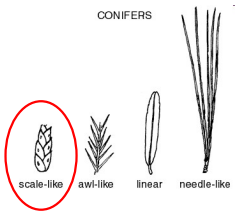
Picea mariana

NCNE	MW	GP
FACW	FACW	FACW

- Branches short and drooping
- Needles are 4 angled with a blunt tip
- Dark (blackish) foliage

120

Scale-like Needles (White Cedar)



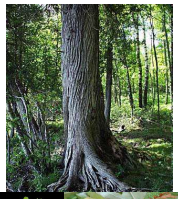
121

N. White Cedar

Thuja occidentalis

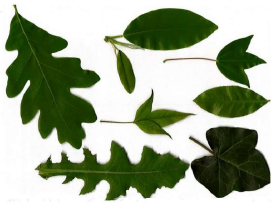
NCNE	MW	GP
FACW	FACW	FACW

- Spicy fragrance when crushed
- Needles turn yellow-brown in winter
- Needles are bicolored



122

Broadleaf Trees



123

OPPOSITE BRANCHING

124

Maple (Aceraceae)

Red maple
(*Acer rubrum*)

NCNE	MW	GP
FAC	FAC	FAC

Sugar maple
(*Acer sacharum*)

NCNE	MW	GP
FACU	FACU	UPL

Silver maple
(*Acer sacharinum*)

NCNE	MW	GP
FACW	FACW	FAC

125

Box Elder (Maple)

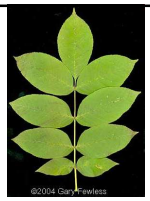
Acer negundo

NCNE	MW	GP
FAC	FAC	FAC

126

Ash (Oleaceae)

127



Black Ash
(*Fraxinus nigra*)

NCNE	MW	GP
FACW	FACW	FACW

Green Ash
(*Fraxinus pennsylvanica*)

NCNE	MW	GP
FACW	FACW	FAC

128

Dogwoods (Cornaceae)

129

Red-osier dogwood

Cornus alba

NCNE	MW	GP
FACW	FACW	FACW

130

Gray Dogwood

Cornus racemosa

NCNE	MW	GP
FAC	FAC	FAC

- Dull, gray twigs
- Opposite leaves
- White berries on bright red pedicels

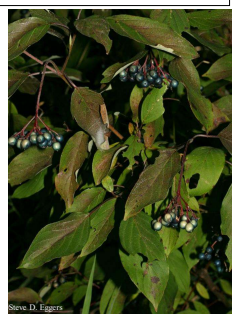
131

Silky Dogwood

Cornus obliqua

NCNE	MW	GP
FACW	FACW	FACW

- Magenta twigs
- Opposite leaves
- Dark blue berries



132

Dogwoods

Left: **Red-Osier Dogwood** – bright red twigs, white pith, white berries

Middle: **Gray Dogwood** – gray twigs, brown pith, white berries

Right: **Silky Dogwood** – magenta twigs, brown pith, dark blue berries

133

Viburnum (Caprifoliaceae)

134

Nannyberry

Viburnum lentago

NCNE	MW	GP
FAC	FAC	FACU

135

Highbush Cranberrry

Viburnum opulus

NCNE	MW	GP
FACW	FAC	FAC

136

ALTERNATE BRANCHING

137

Birches (Betulaceae)

138

Yellow Birch

(*Betula alleghaniensis*)

NCNE	MW	GP
FAC	FAC	FACU

139

Paper Birch

(*Betula papyrifera*)

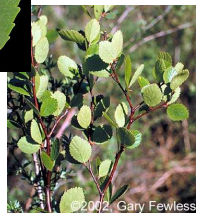
NCNE	MW	GP
FACU	FACU	FACU

140

Bog Birch

(*Betula pumila*)

NCNE	MW	GP
OBL	OBL	OBL



141

Speckled Alder

(*Alnus incana*)

NCNE	MW	GP
FACW	FACW	FACW

142

Oaks (Fagaceae)

N. Red Oak
(*Quercus rubra*)

NCNE	MW	GP
FACU	FACU	FACU

N. Pin Oak
(*Q. ellipsoidalis*)

NCNE	MW	GP
UPL	UPL	UPL

Bur Oak
(*Q. macrocarpa*)

NCNE	MW	GP
FACU	FAC	FACU

143

Elms (Ulmaceae)

American Elm

(*Ulmus americana*)

NCNE	MW	GP
FACW	FACW	FAC

144

Northern Hackberry

(*Celtis occidentalis*)

NCNE	MW	GP
FAC	FAC	FACU




145

Poplars (Salicaceae)



Balsam Poplar
(*Populus balsamifera*)

NCNE	MW	GP
FACW	FACW	FACW

Bigtooth Aspen
(*P. grandidentata*

NCNE	MW	GP
FACU	FACU	FACU

Trembling Aspen
(*P. tremuloides)*

NCNE	MW	GP
FACU	FAC	FAC

146

Cottonwood

(*Populus deltoides*)

NCNE	MW	GP
FAC	FAC	FAC

- Opposite leaves (CAP), compound
- Small, purple-black berries
- Twigs brittle due to large pith



147

Willows (Salicaceae)

(*Salix spp.*)

18 species native in Minnesota, 3 species naturalized

- Leaf width vs. length
- Upper and lower surface texture, color
- Leaf edges
- Stipules may be present

148

Gooseberries or Currents (Grossulariaceae)

(*Ribes spp.*)

9 species native in Minnesota

- Currants lack spines and bristles (1 exception), jointed stalk
- Gooseberries have spines and bristles, berry stalk not jointed

149

The Rose Family (Rosaceae)

Blackberry & Raspberry

(*Rubus spp.*)

The largest genus of woody plants in Minnesota (33 native, 2 hybrids)

- If present, prickle or bristle shape
- Leaf structure
- Cane growth pattern (both from 1st year and 2nd year canes)

150

Red Raspberry

(*Rubus idaeus ssp. strigosus*)

NCNE	MW	GP
FACU	FACU	FACU

151

Steeplebush

(*Spiraea tomentosa*)

NCNE	MW	GP
FACW	FACW	FACW

- Leaves alternate
- White to orange woolly undersides

152

Meadowsweet

(*Spiraea alba*)

NCNE	MW	GP
FACW	FACW	FACW

- Alternate leaves
- Leaves not woolly

153

Buckthorn Family (Rhamnaceae)

Glossy Buckthorn

(Frangula alnus)

NCNE	MW	GP
FAC	FACW	FAC

- Leaf margins entire (not toothed)

154

Common Buckthorn

(Rhamnus cathartica)

NCNE	MW	GP
FAC	FAC	FACU

- Leaf margins with fine teeth

155

WOODY VINES

156

Grape Family (Vitaceae)

Virginia Creeper
(*Parthenocissus quinquefolia*)

NCNE	MW	GP
FACU	FACU	FACU

Woodbine
(*Parthenocissus inserta*)

NCNE	MW	GP
FACU	FACU	FAC

157

Summer Grape
(*Vitis aestivalis*)

NCNE	MW	GP
FACU	FACU	FAC

River-bank Grape
(*Vitis riparia*)

NCNE	MW	GP
FACU	FACW	FAC

158

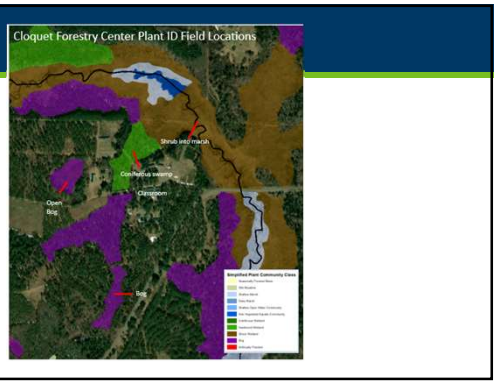
Menispermaceae Family

Moonseed
(*Menispermum canadense*)

NCNE	MW	GP
FAC	FAC	FACU

159

160


Cloquet Forestry Center Plant ID Field Locations
Shrub Intermarsh
Open Bog
Classroom
Bog

161