

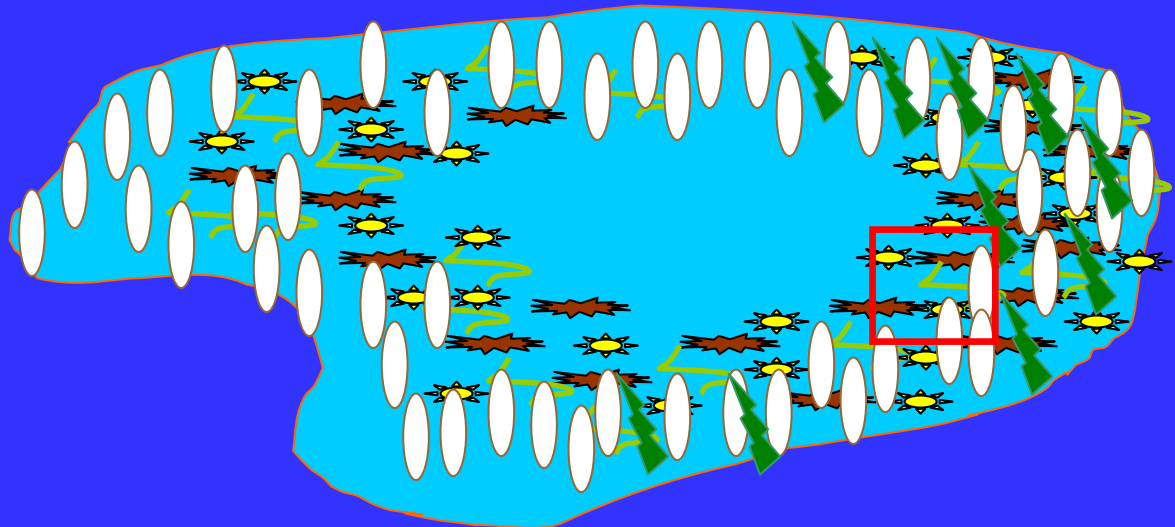
Determine Major Plant Communities

- Need to locate the sampling plot in a ‘representative’ location

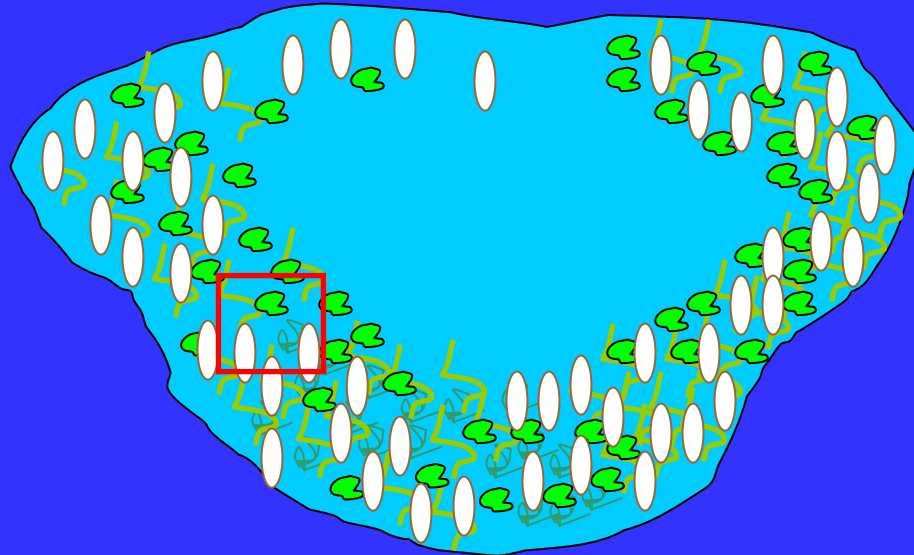
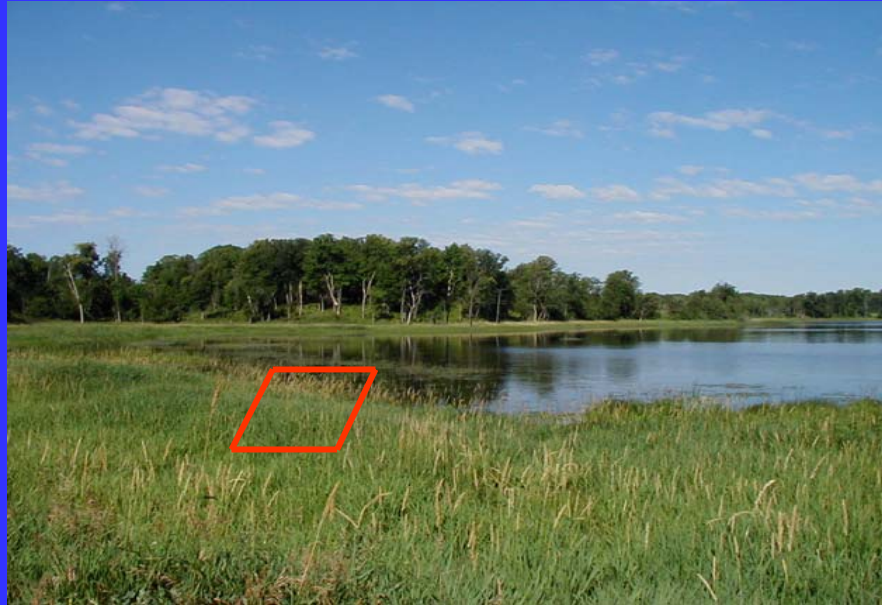


Locate Sampling Plot

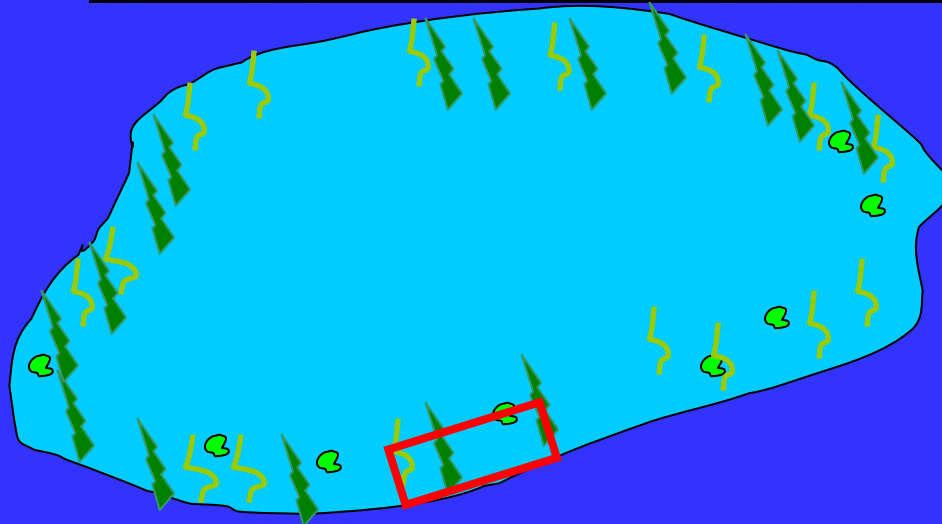
- Emergent/
aquatic
vegetation
interface



Locate Sampling Plot



Locate Sampling Plot





Ferns & Horsetails



**Chara, Mosses; Lichen;
Riccia fluitans;
Ricciocarpus natans**

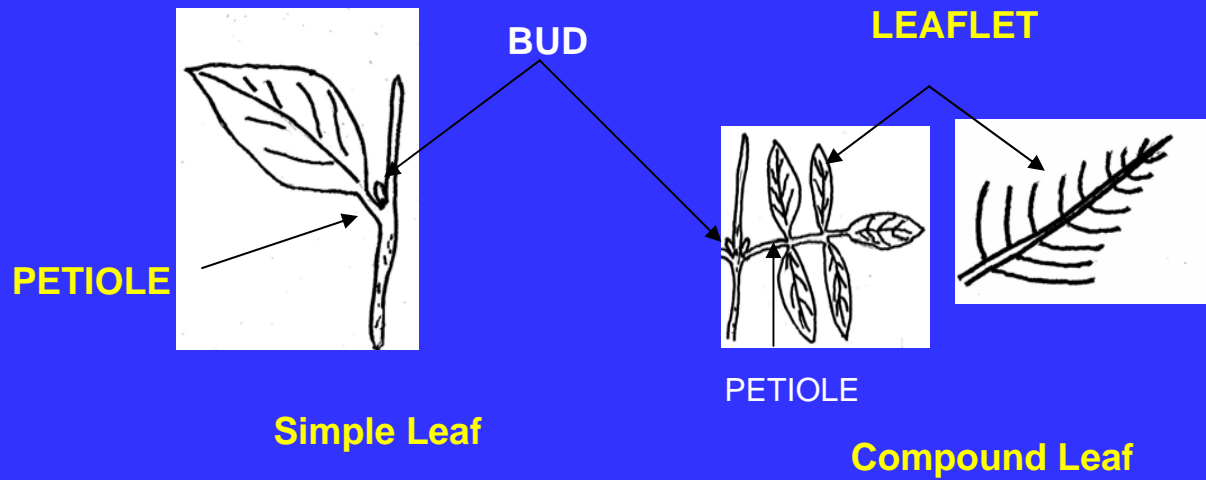
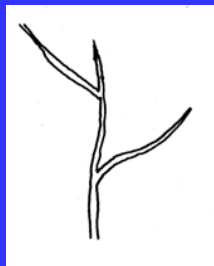
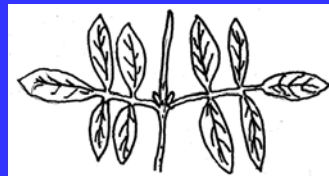


Figure 5. Leaf morphology.



Alternate



Opposit



Whorled



Basal

Figure 6. Leaf arrangement.



Typha leaf



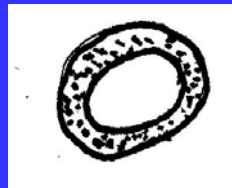
Iris leaf



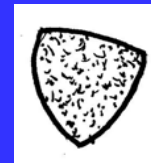
**Sparganium
leaf**



Acorus leaf



Grass stem



**Carex, Scirpus
stem**

Figure 7. Cross sections of selected leaves and stems (Adapted from Eggers and Reed 1997).

Emergent, Grasslike or Grass?

Cross-sections



Bur-reed Leaf
Sparganium



Iris Leaf
Iris



Cattail Leaf
Typha



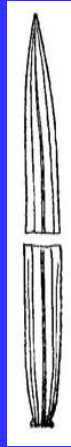
Sedge Stem
Carex, Scirpus



Grass Stem



Bulrush Stem
Scirpus



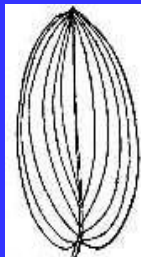
Linear



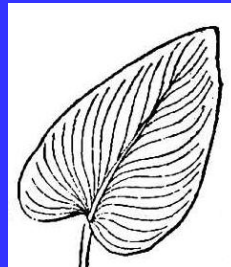
Lanceolate



Ovate



Elliptic



Chordate



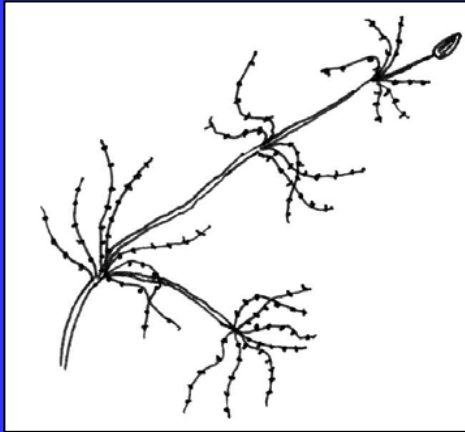
Branching

Figure 8. Leaf shape.

Major Plant Groups

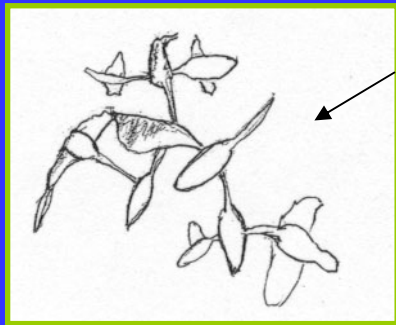
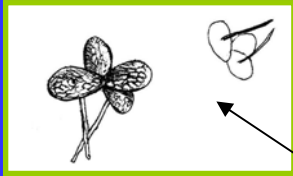
- ❖ Nonvascular & Low Vascular Plants
- ❖ Grass-like Plants: grasses, sedges and rushes
- ❖ Aquatic Submergent Forbs
- ❖ Aquatic Floating Leaved Forbs
- ❖ Emergent Forbs with Simple Basal Leaves
- ❖ Emergent Forbs with Compound Leaves
- ❖ Emergent Sprawling or Twining Forbs
- ❖ Emergent Forbs with Simple Alternate Leaves (occasionally opposite)
- ❖ Emergent Forbs with Simple Opposite or Whorled Leaves
- ❖ Woody Plants (vines, shrubs and trees)

Nonvascular & Low Vascular

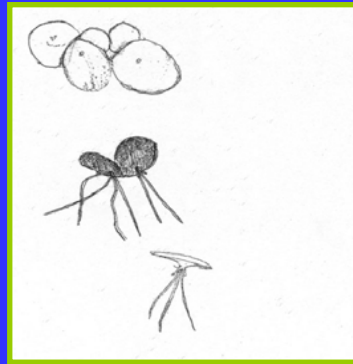


Small floating wetland plants

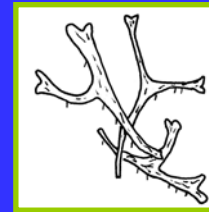
Generally less than 3 x 3 cm in size



Lemna
(forb)



Spirodela
(forb)



Riccia
(nonvascular)



Ricciocarpus
(nonvascular)



Wolffia
(forb)

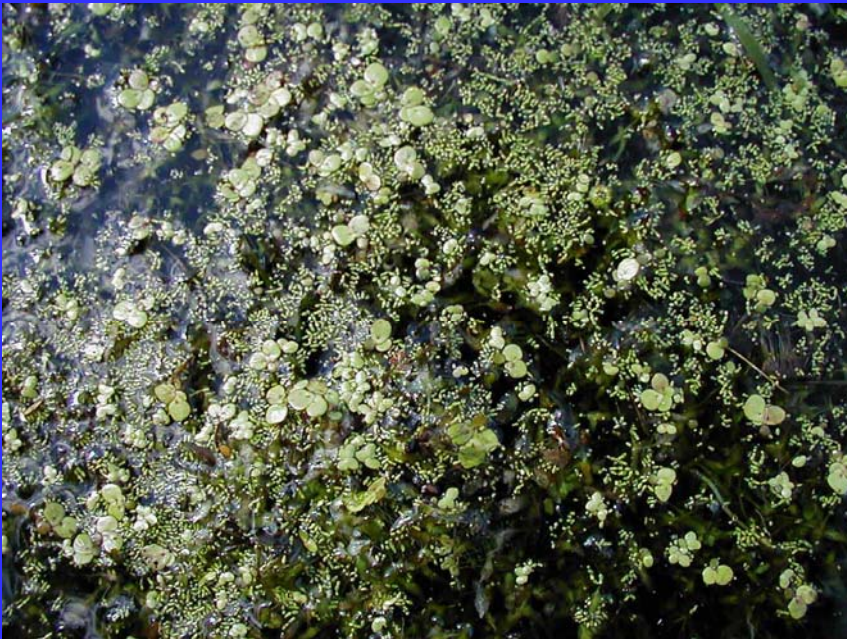
Small Floating-Vascular (Forb)



Spirodela, Lemna, Wolffia

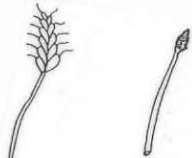









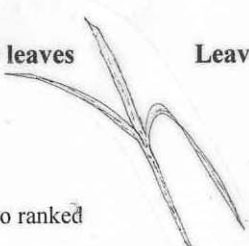

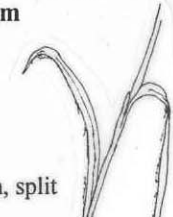
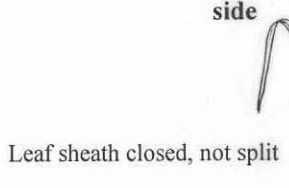


Aquatic floating leaved forbs

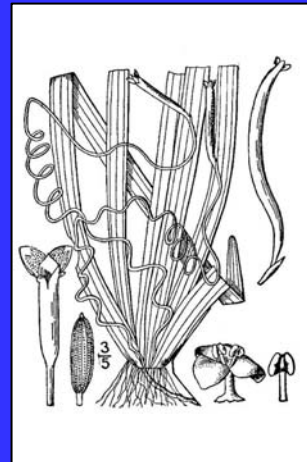


Grasslikes



Name	Grass	Spike Rush	Three-way Sedge	True Rush	Nut Sedge	Sedge	Bullrush
Taxon	(Various)	<i>Eleocharis</i>	<i>Dulichium</i>	<i>Juncus</i>	<i>Cyperus</i>	<i>Carex</i>	<i>Scirpus</i>
Bracts below flower/fruit --	No leaflike bract under the flwr/frt	No leaflike bract under the flwr/frt 	No leaflike bract under the flwr/frt  bracts absent	One or more leaflike bracts below the flwr/frt	One or more leaflike bracts below the flwr/frt  leaflike bracts	Often with a leaflike bract under the flwr/frt	One or more leaflike bracts below the flwr/frt
Seed/fruit arrangement --	Seeds enclosed within two or more scalelike leaves  seed	Seeds are attached to scalelike bracts  bract	Seeds are attached to scalelike bracts which are arranged in two vertical rows  seed bract	Many tiny seeds within a capsule  capsule with seeds	Seeds are attached to scalelike bracts which are arranged in two vertical rows  Two rows	Each seed within a saclike bract called the "Perigynium"  Perigynium	Seeds are attached to scalelike bracts which are arranged in a spiral  Spiral
Stems --	Stems flat or round and hollow except at joint	Stems round and hollow	Stems round and hollow	Stem usually round often hollow	Stem is angled often appearing triangular, usually solid	Stem triangular or round and usually solid	Stem triangular or round and usually solid
Leaf arrangement --	Leaves 2-ranked	No leaves  Two ranked	Leaves 3-ranked	Leaves two ranked  Three ranked	Leaves 3-ranked	Leaves 3-ranked	Leaves 3-ranked or absent
Leaf Sheath -- (open /closed)	Leaf sheath split down one side  Leaf sheath open, split	No leaves, green stem	Leaf sheath not split (closed) down side	Leaf sheath not split (closed) down side	Leaf sheath not split (closed) down side  Leaf sheath closed, not split	Leaf sheath not split (closed) down side	Leaf sheath not split (closed) down side

Aquatic submergent forbs



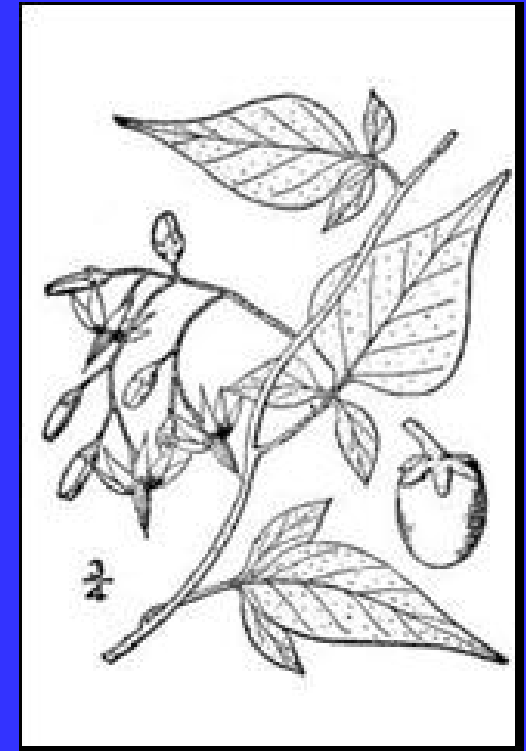
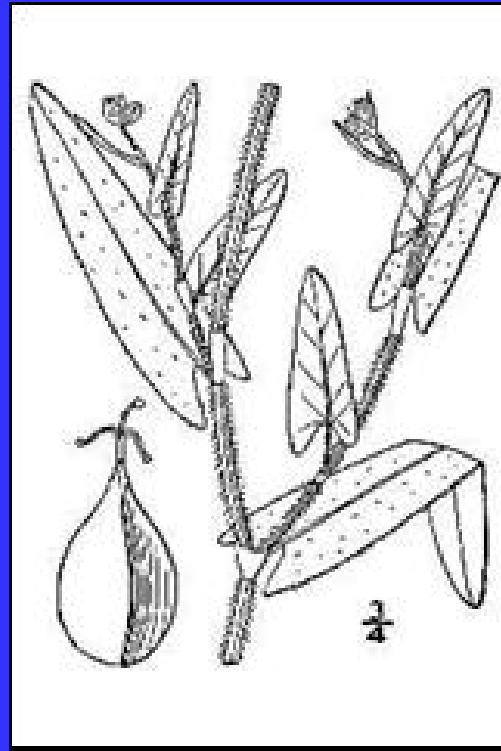
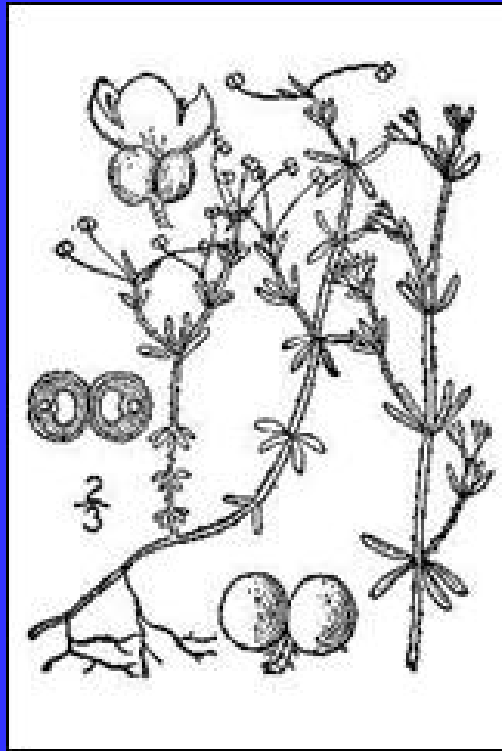
Emergent forbs with basal leaves



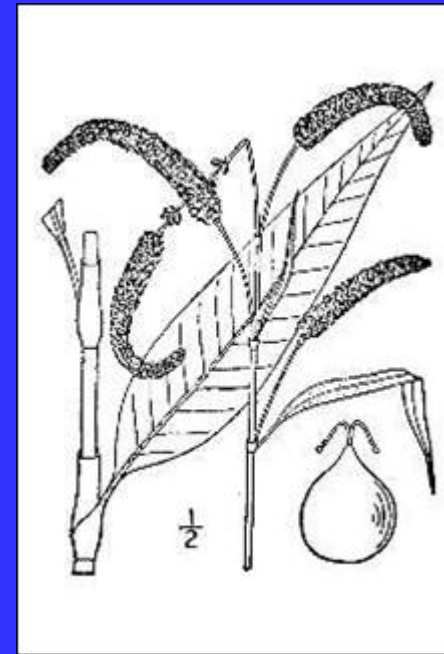
Emergent forbs with compound leaves



Emergent sprawling/twining forbs



Emergent forbs with simple alternate leaves



Emergent forbs with simple opposite leaves



Woody Plants (Vines, Shrubs, or Trees)

