

Wetland Plant Indices

2023 WHEP FIELD TRAINING

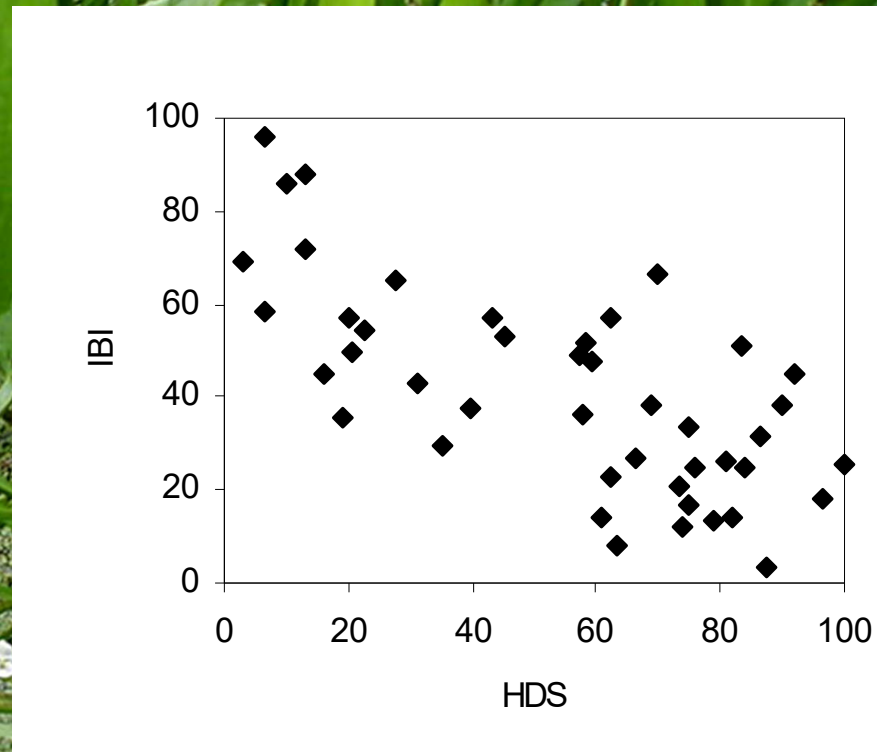
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May 25, 2023



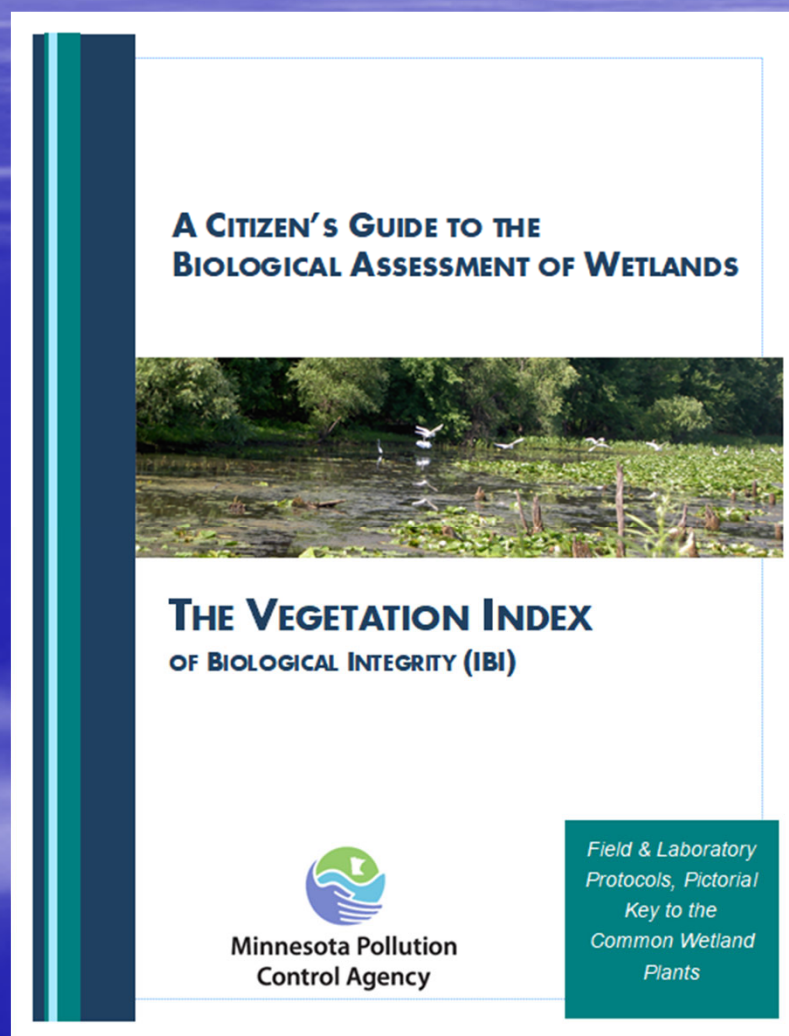
MINNESOTA POLLUTION
CONTROL AGENCY

Why Plants?

- Important to wetland ecology
- Permanent residents
- Readily identified
- Responsive to their environment

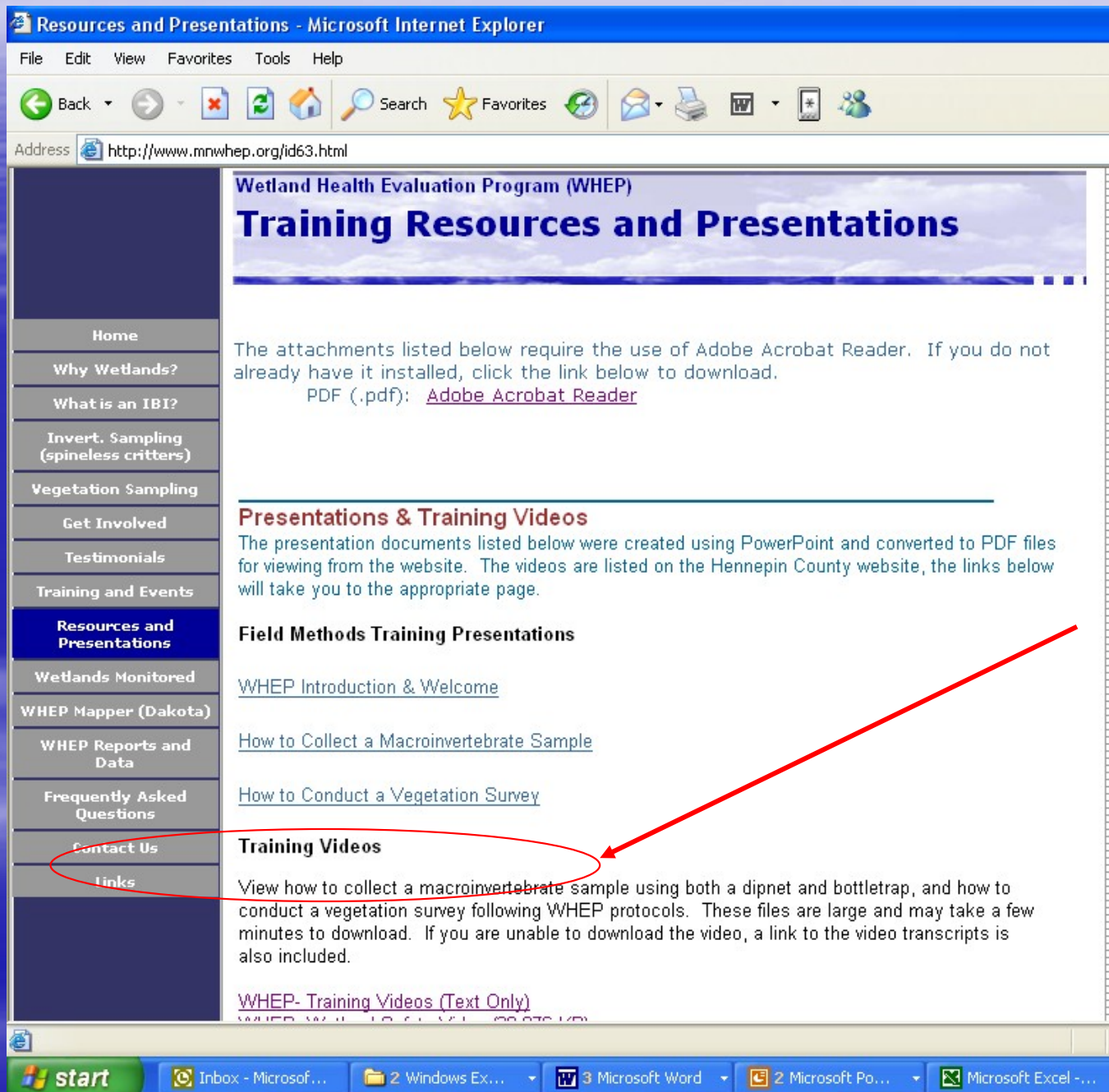


WHEP Plant Sampling Resources



<http://www.pca.state.mn.us/water/biomonitoring/bio-citizenmonitoring.html>

WHEP Plant Sampling Resources



Resources and Presentations - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Back Forward Stop Refresh Home Search Favorites Home Mail Print Word Mobile People

Address <http://www.mnwhep.org/id63.html>

Wetland Health Evaluation Program (WHEP)

Training Resources and Presentations

The attachments listed below require the use of Adobe Acrobat Reader. If you do not already have it installed, click the link below to download.
PDF (.pdf): [Adobe Acrobat Reader](#)

Presentations & Training Videos

The presentation documents listed below were created using PowerPoint and converted to PDF files for viewing from the website. The videos are listed on the Hennepin County website, the links below will take you to the appropriate page.

Field Methods Training Presentations

- [WHEP Introduction & Welcome](#)
- [How to Collect a Macroinvertebrate Sample](#)
- [How to Conduct a Vegetation Survey](#)

Training Videos

View how to collect a macroinvertebrate sample using both a dipnet and bottletrap, and how to conduct a vegetation survey following WHEP protocols. These files are large and may take a few minutes to download. If you are unable to download the video, a link to the video transcripts is also included.

[WHEP- Training Videos \(Text Only\)](#)

[WHEP- Training Videos \(Text Only\)](#)

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Training
Videos

Vegetation Field Protocol

- 1. Record site information**
- 2. Determine the major plant communities in the wetland**
- 3. Locate a spot for a representative plot**
- 4. Determine the plot shape**
- 5. Lay out the 100 m² plot**
- 6. Record releve information**
- 7. Identify plants within the plot**
- 8. Estimate each taxa cover**

Equipment & Supplies

- Clipboard with site & releve datasheets
- Pencils
- Compass: (optional)
- 4 tall garden stakes with colorful flagging
- 1 or 2 30-50m measuring tapes
- Plant ID guide(s)
- Waders

Record Site Info

- Some basic site information

MN WHEP VEGETATION SURVEY FIELD SHEET: SITE INFORMATION

Site Name: _____	Date/Time: _____
Team Leader/Observer: _____	Team Name: _____
Local Sponsor: _____	County: _____

Location Information (UTM coordinates from GPS unit, Township Range Section coordinates, or street directions):

Site Description (include vegetation, water pathway, and immediate land use descriptions. Note any unique plants or plant communities within the wetland but occurring outside of the reve. Did you observe any wildlife while at this site?):

Site Sketch (include vegetation zones, water inlets and outlets, point source pollution inputs such as stormwater pipes, immediate land use practices, any landmarks, and the location of the reve in the wetland):



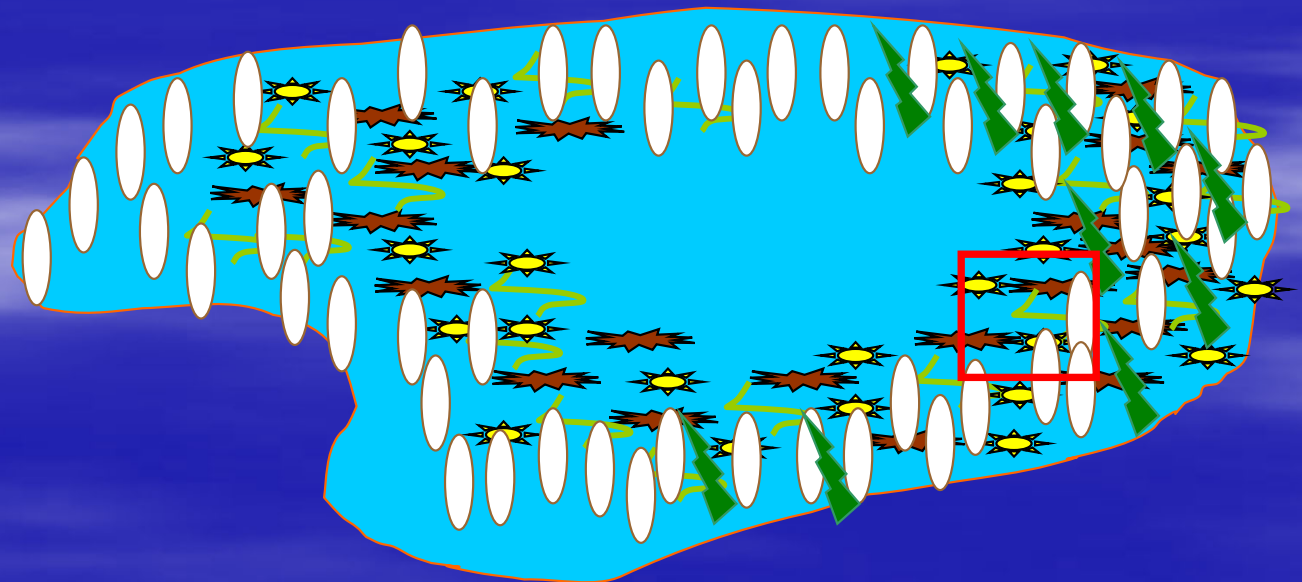
Determine Plant Communities

- Need to locate the sampling plot in a 'representative' location

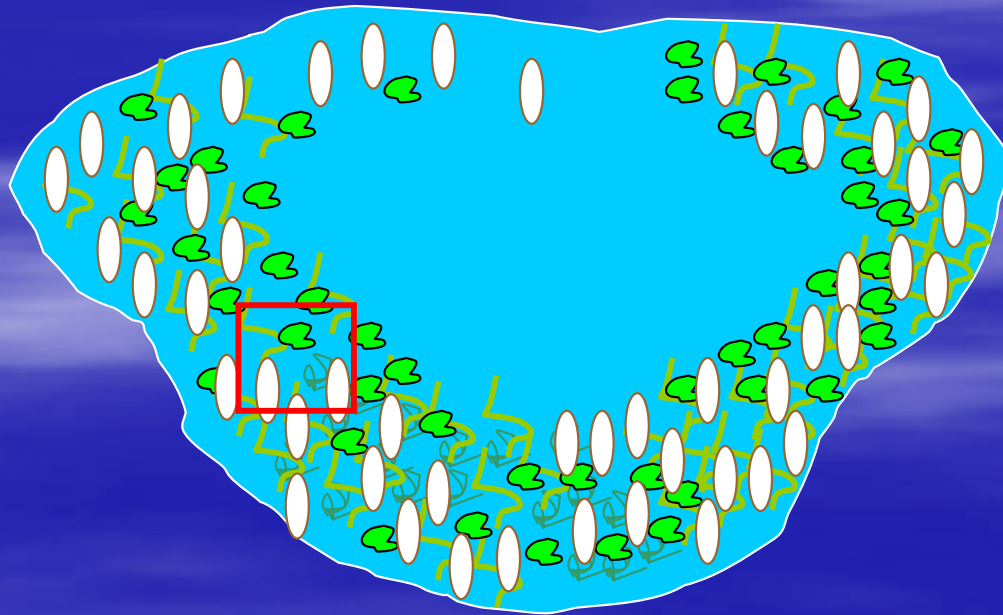
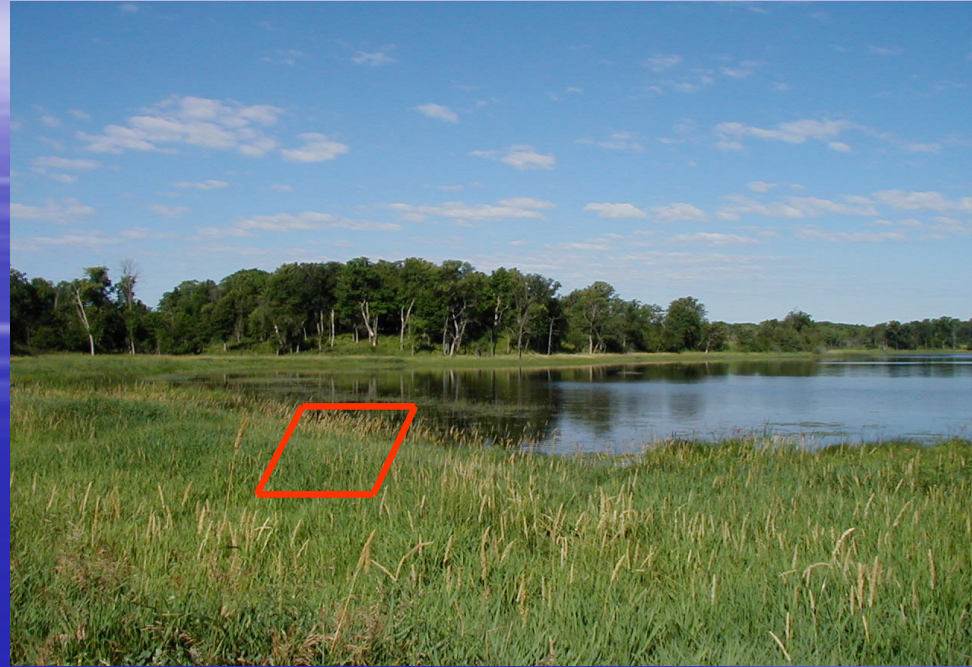


Locate Sampling Plot

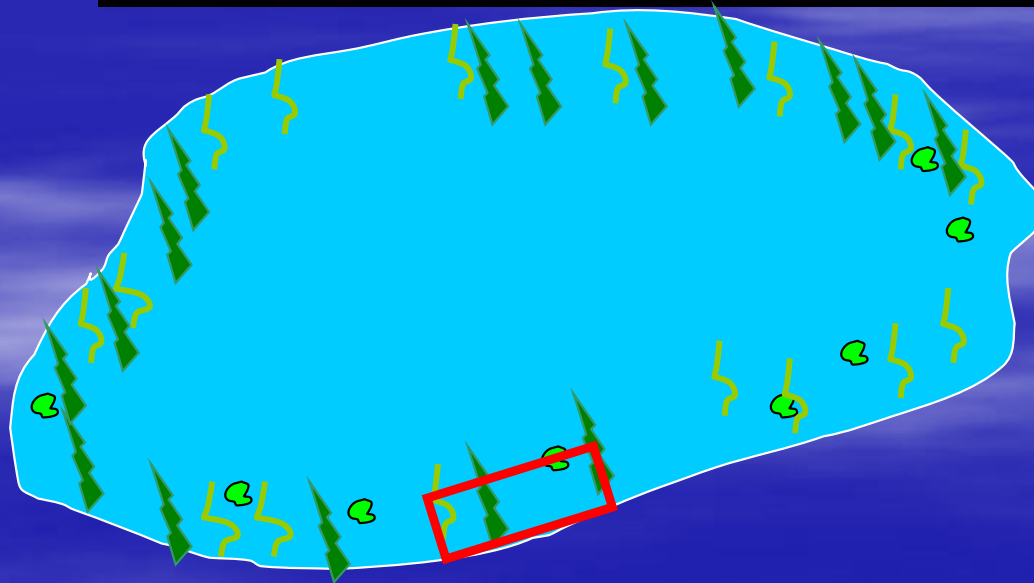
- Emergent/
aquatic
vegetation
interface



Locate Sampling Plot



Locate Sampling Plot

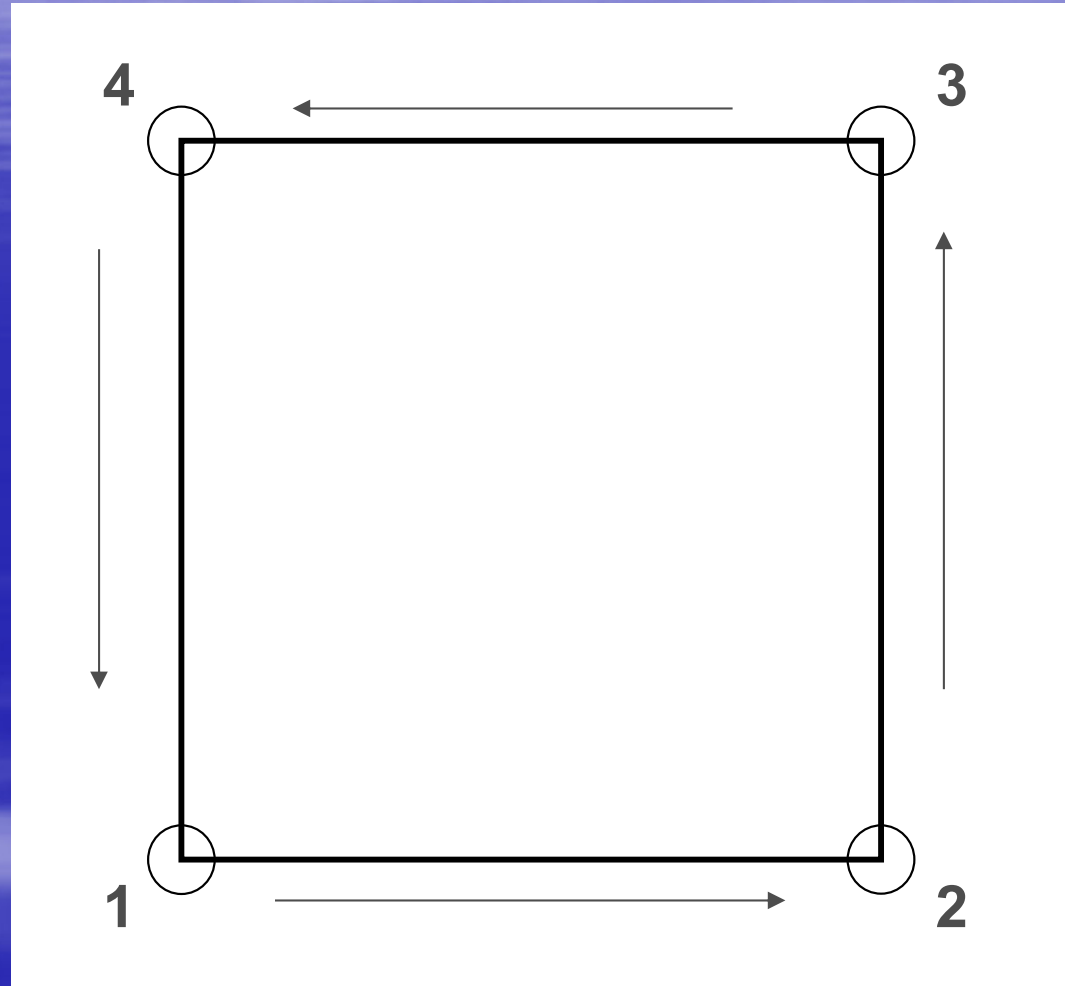


Plot Shape

- Plot size is standard (100m²)
- Plot shape can be altered depending on the wetland vegetation
 - Square — well developed emergent fringe
 - 10 x 10m plot
 - Rectangle narrow fringe of plants (less than 5m wide) or gets deep quickly
 - 5 x 20m plot

Lay-Out the Plot

- Aquatic/ emergent interface
- Establish corner #1
- Measure off 1st side w/tape
- Establish corner #2
- Turn 90° measure 2nd side
- Repeat for remaining sides...



Record Releve Info

- Some basic information about the releve

MN WHEP VEGETATION SURVEY FIELD SHEET: RELEVE DATA

Site Name: _____	Date/Time: _____
Team Leader/Observer: _____	Team Name: _____
Local Sponsor: _____	County: _____

Releve Dimensions (circle one): 10 m x 10 m or 5 m x 20 m = 100 m²
 Is the releve typical of the wetland plant community? (circle one): Yes or No (explain below)
 Water depth in the plot (meters): Shallowest: _____ m Deepest: _____ m
 Substrate/bottom description: _____

Comments: _____

Note: Numbers in () refer to the metrics where the data are used

Pres CC NONVASCULAR (2, 6)

<input type="checkbox"/>	Chara (Muskgrass)
<input type="checkbox"/>	Lichen
<input type="checkbox"/>	Moss
<input type="checkbox"/>	Riccia fluitans (Slender Riccia)
<input type="checkbox"/>	Rocioaropus natans (Purple-Fringed Riccia)

Pres CC LOW VASCULAR (1)

<input type="checkbox"/>	Equisetum (Horsetail)
<input type="checkbox"/>	Onoclea sensibilis (Sensitive Fern)
<input type="checkbox"/>	Osmunda (Osmunda)
<input type="checkbox"/>	Thelypteris palustris (Marsh-Fern)

Pres CC WOODY (1)

Vines	
<input type="checkbox"/>	Parthenocissus (Virginia Creeper)
<input type="checkbox"/>	Vitis riparia (Grape)
Shrubs or Trees with Opposite Leaves	
<input type="checkbox"/>	Acer (Maple, Box Elder)
<input type="checkbox"/>	Cornus (Dogwood)
<input type="checkbox"/>	Fraxinus (Ash)
<input type="checkbox"/>	Rhamnus cathartica (Common Buckthorn)
Shrubs or Trees with Alternate Leaves	
<input type="checkbox"/>	Ainus (Alder)
<input type="checkbox"/>	Frangula alnus (Alder-Buckthorn)
<input type="checkbox"/>	Populus (Aspen, Cottonwood)
<input type="checkbox"/>	Quercus (Oak)
<input type="checkbox"/>	Rubus (Raspberry, Dewberry, Blackberry)
<input type="checkbox"/>	Salix (Willow)
<input type="checkbox"/>	Spiraea alba (Meadowsweet)
<input type="checkbox"/>	Ulmus (Elm)

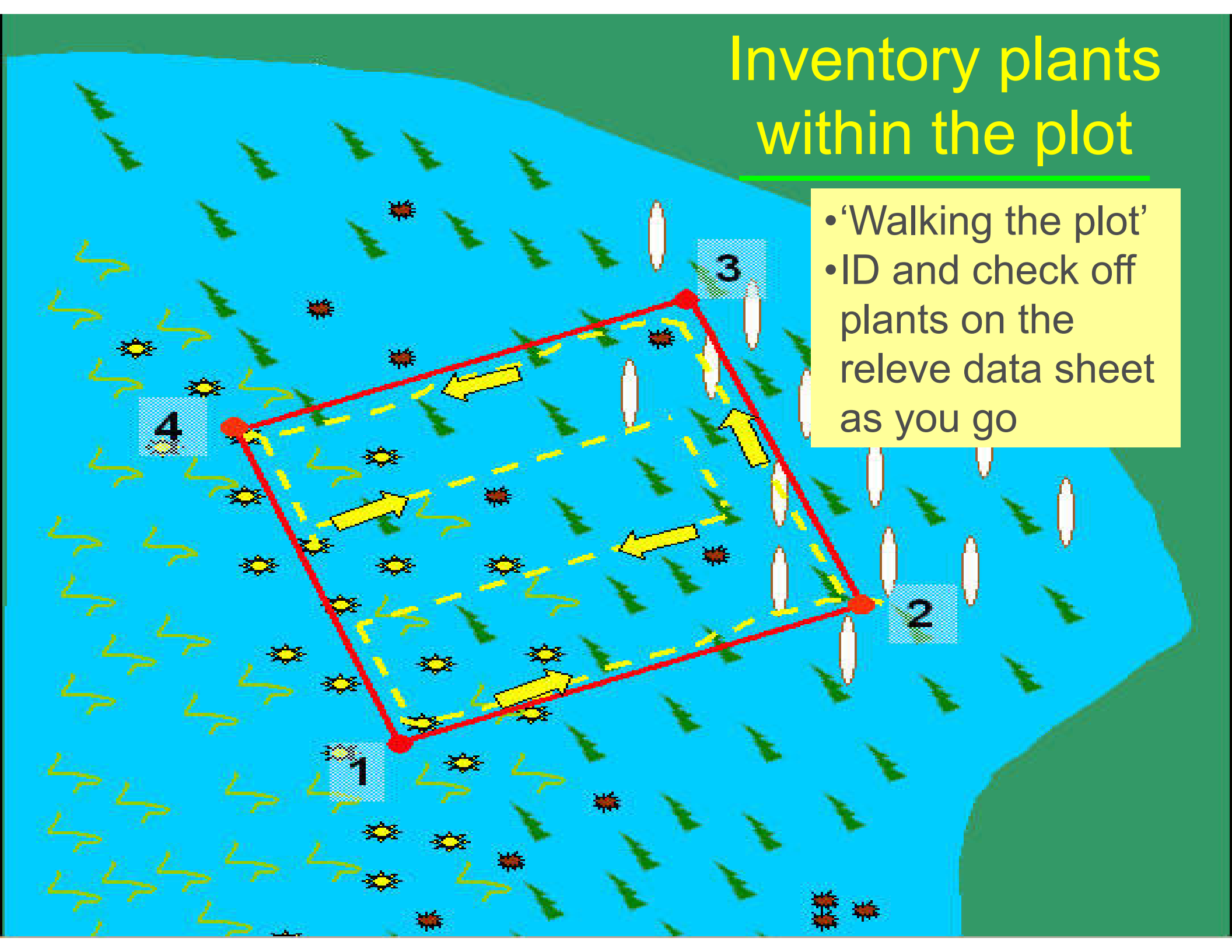
Pres CC GRASSLIKE (1, 3, 4, 7)

Sedges, Bulrushes, Rushes	
<input type="checkbox"/>	Carex (Sedge)
<input type="checkbox"/>	Cyperus (Flatsedge)
<input type="checkbox"/>	Dulichium arundinaceum (Three-Way Sedge)
<input type="checkbox"/>	Eleocharis (Spike-Rush)
<input type="checkbox"/>	Juncus (Rush)
<input type="checkbox"/>	Scirpus (Bulrush)
True Grasses	
<input type="checkbox"/>	Agrostis (Bent Grass)
<input type="checkbox"/>	Alopecurus (Foxtail)
<input type="checkbox"/>	Calamagrostis (Reed Grass)
<input type="checkbox"/>	Echinochloa (Barnyard-Grass)
<input type="checkbox"/>	Glyceria (Manna-Grass)
<input type="checkbox"/>	Leersia (Cut Grass)
<input type="checkbox"/>	Phalaris arundinacea (Reed Canary-Grass)
<input type="checkbox"/>	Phragmites australis (Giant Reed)
<input type="checkbox"/>	Poa (Blue Grass)
<input type="checkbox"/>	Spartina pectinata (Prairie Cord-Grass)
<input type="checkbox"/>	Zizania aquatica (Wild Rice)

Cover Class (CC)	Percent Cover Range
6	75-100%
5	50-75%
4	25-50%
3	5-25%
2	1-5%
1	0-1%

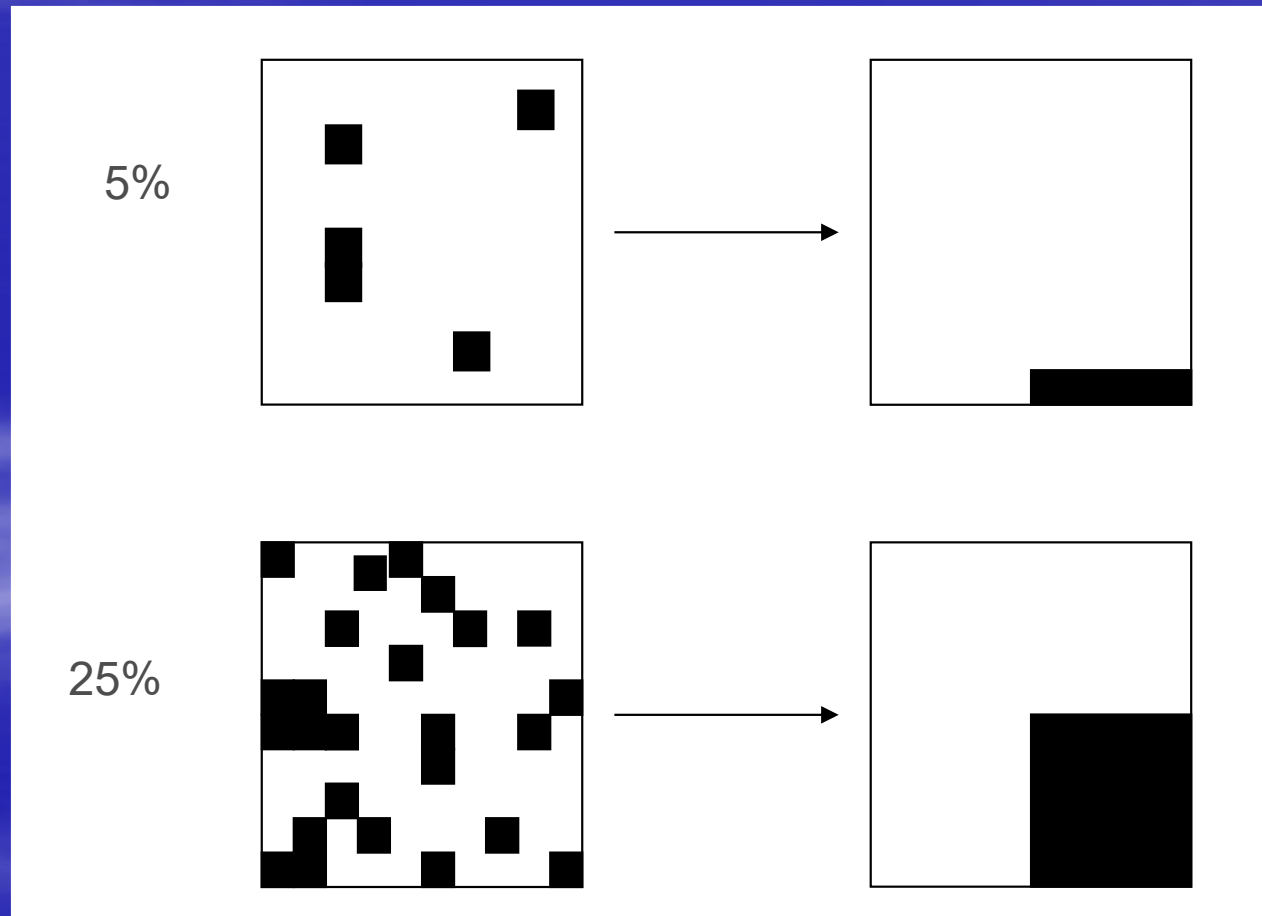
Inventory plants within the plot

- 'Walking the plot'
- ID and check off plants on the releve data sheet as you go



Estimate Cover

- Proportion or percentage of plot taken up by specific plant when looking straight down on the plot

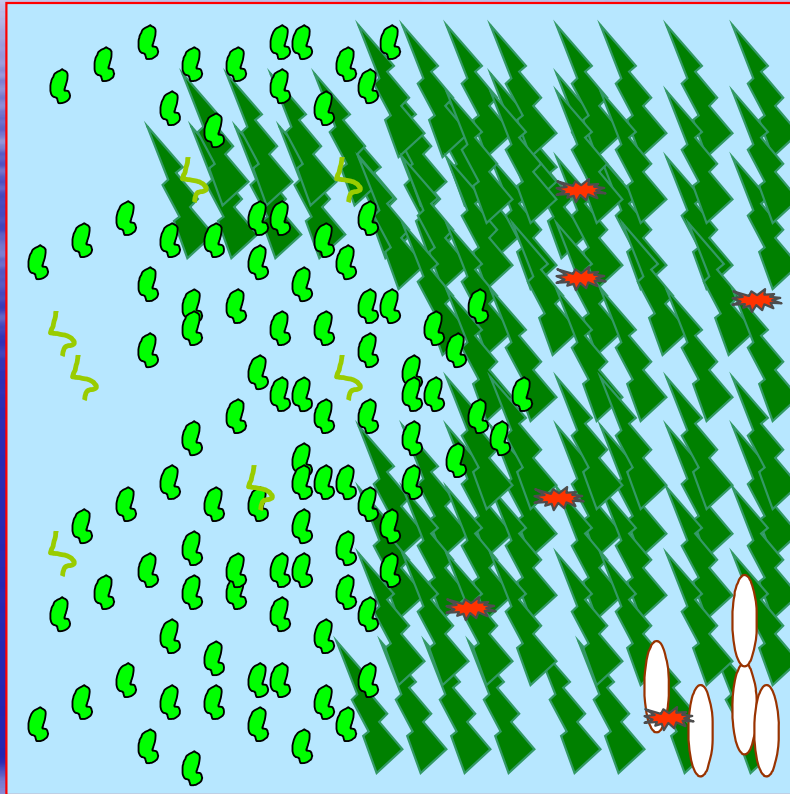







Estimate Cover

- Cover Classes (CC)

Cover Class (CC)	Percent Cover Range	Mid-point Percent
6	75-100%	87%
5	50-75%	63%
4	25-50%	38%
3	5-25%	15%
2	1-5%	3%
1	0-1%	0.5%

Estimating Wetland Plant cover class



Plant	CC
	2
	4
	1
	1
	5

Cover Class (CC)	Percent Cover Range
6	75-100%
5	50-75%
4	25-50%
3	5-25%
2	1-5%
1	0-1%

Plant Metrics

1. Vascular genera
2. Nonvascular taxa
3. Grasslike genera
4. *Carex* cover
5. Bladderwort (*Utricularia*) presence
6. Aquatic Guild
7. Persistent litter

*Remember to have fun, be
safe, and enjoy your wetland
experience.....*



Thanks for your time!!