



*Florida Department of
Environmental Protection*

LVI Primer and Field Sheet Updates

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DEP Standards and Assessment Section



LVI Primer

1. General

1.1 Intended uses

1.2 Lake definition

2. Description of Methods

2.1 Sampling index period

2.2 Subdividing the lake

2.3 Drive-by and transect

2.4 Deploying the frotus

2.5 Determination of dominant and codominant plants

2.6 Seasonal high water level

2.7 Plants intentionally planted by humans

2.8 Collecting specimens of unknown taxa

2.9 Lake size considerations

2.10 Aquatic plant control considerations





LVI Primer

3. Quality assurance considerations

3.1 Species-level identification

3.2 Quality assurance in DEP SOPs

4. Conditions under which sampling may not be appropriate

4.1 Flooding

4.2 Drought

4.3 Saltwater species

4.4 Highly vegetated lakes

4.5 Impoundments

4.6 Artificial waterbodies

5. Data usability





Seasonal High Water

- 62-340.200(15), F.A.C., “the elevation to which the groundwater and surface water can be expected to rise in a normal wet season...The presence of hydrologic indicators must be used with reasonable scientific judgment.”
- **Only Include Plants of Wetland Status**
 - **OBL, FACW, FAC**
- Policy will become rule when SOP revised





Common Species with no Wetland Status – observations in SBIO

<i>Pinus elliottii</i>	631
<i>Urena lobata</i>	102
<i>Serenoa repens</i>	83
<i>Musa</i>	71
<i>Magnolia grandiflora</i>	71
<i>Ampelopsis arborea</i>	50
<i>Ilex glabra</i>	35
<i>Panicum maximum</i>	34

These taxa should no longer be included, with the exception of *Pinus elliottii*





Exceptions to Wetland Status Rule – Vines to be Included in LVI (+1)

- *Apios americana*
 - *Dioscorea bulbifera*
 - *Ipomoea aquatica*
 - *Lygodium japonicum*
 - *Lygodium microphyllum*
 - *Mikania scandens*
 - *Smilax laurifolia*
 - *Toxicodendron radicans*
 - *Vigna luteola*
 - *Vitis rotundifolia*
 - **Pinus elliottii*
- **Pinus elliottii* should be included if seen in the lake; it is an expected component of some lake communities and was excluded from Florida wetland status for other reasons.





Questions so far?



Genus Level IDs

- Primer encourages species level ID
- Reasons for genus level IDs
 - Lack of necessary plant parts (fruits, flowers)
 - Lack of effort (no collection, occasional sighting)
- Consequences of genus-level ID
 - % Native: genus native - included, else no info
 - % Sensitive: not included
 - % FLEPPC: not included
 - C of C Dominant: not included except list of 5





Most Common Genus-Level IDs

<u>Genus</u>	<u>Occurences</u>
<i>Amaranthus</i>	67
<i>Andropogon</i>	111
<i>Baccharis</i>	99
<i>Bidens</i>	197
<i>Eleocharis</i>	262
<i>Eriocaulon</i>	219
<i>Hypericum</i>	201
<i>Lemna</i>	75
<i>Lycopus</i>	61
<i>Pluchea</i>	78
<i>Rhexia</i>	94
<i>Rhynchospora</i>	124
<i>Sagittaria</i>	54
<i>Salix</i>	71
<i>Thelypteris</i>	48
<i>Utricularia</i>	574
<i>Xyris</i>	535





****Our goal is to make IDs
easier and more accurate
in the field and lab without
losing information for the
LVI calculation****





New Guidance for Lowest Practical Taxonomic Levels

- Increase efficiency
- Improve plant taxonomic QC
- 3 Proposed lists of genera
 - ID ok at genus level (unless dominant/codominant)
 - Species level ID necessary, but can be done in field
 - Species level ID necessary, and may need to be done in lab (i.e., these are the plants you should take back to verify ID with scope until you can recognize them in the field)





Changes in Level of ID Guidance

- Additional C of C scores at genus level
- Practical taxonomic levels suggested
- Genus level ID ok if:
 - Entire genus is native
 - Occurrence is incidental and not likely to be dominant
 - Level of difficulty of ID > information gained
- Species level still required if Dominant/Codominant!!
- New information will be in LT 7500 when SOPs revised





Genus Level ID OK (ID in field)

- *Andropogon*
- *Baccharis*
- *Hydrocotyle**
- *Lemna**
- *Nuphar**
- *Peltandra**
- *Persea*
- *Pluchea*
- *Solidago*
- *Taxodium**
- *Typha**
- *Xyris*

* These genera have existing or proposed genus level C of C scores





Species Level ID Required (in Field)

- *Bacopa*
- *Bidens*
- *Eleocharis* (large species)
- *Ludwigia* (select species)
- *Micranthemum*
- *Ilex*
- *Lyonia*
- *Triadenum*
- Select grasses, sedges, rushes, ferns





*Species Level ID for Lab**

- *Aster*
- *Commelina*
- *Cyperus*
- *Echinochloa*
- *Eleocharis*
- *Eriocaulon*
- *Fuirena*
- *Hypericum* (with field obs)
- *Juncus*
- *Ludwigia*
- *Myriophyllum*
- *Najas*
- *Panicum*
- *Paspalum*
- *Polygonum*
- *Potamogeton*
- *Rhexia*
- *Rhynchospora*
- *Sagittaria*
- *Schoenoplectus*
- *Sesbania*
- *Utricularia*

***These genera may need to be taken back to lab for positive species ID**





New Notations on LVI Field Sheet

- LVI datasheet tweaks
 - “*Genus* sp.” indicated for genera that can be left at genus level
 - * added to species/genera for which you probably need to use a key and may need magnification for species level ID
- Goal is enhanced plant ID QC
 - Highlight plants you think you know but you don’t
 - Reduce species-level IDs to make field work easier





Revised Lake HA/Phys/Chem Sheet

- Includes
 - Components of old Lake Habitat Assessment that are not redundant with LVI or LDI
 - Phys/chem measurements and observations applicable to lake sampling
 - Additional field observations that can be helpful in the interpretation of LVI and chemistry data
- Try it out tomorrow and let us know what you think!
- NOTE: Use old Lake HA form with LCI collection





Review New Forms

Questions?

<http://www.dep.state.fl.us/water/bioassess/index.htm>

<http://www.dep.state.fl.us/water/bioassess/training.htm#LVI>

<http://www.dep.state.fl.us/water/bioassess/plantid.htm>



Bacopa – field ID

Bacopa caroliniana

- Lemon bacopa
- Leaves clasping
- Stems hairy
- Flowers purple 9-13 mm



Bacopa monnieri

- Does not smell like lemon
- Leaves not clasping
- Stems not hairy
- Flowers pink-white, 8-10 mm



Which one is this?



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Bacopa

Bacopa innominata

- Does not smell like lemon
- Leaves clasping
- Leaves oval
- Flowers white, 3-4 mm long
- Occurs statewide

Like *B. caroliniana* except with much smaller white flowers and no lemony smell

Bacopa repens

- **Not native**
- Leaves clasping
- Leaves rounded
- Flowers white, 3-4 mm long
- Currently only known from Collier County

***Bidens* - field ID**

most common species with showy flowers with rays

Bidens mitis

- Leaves opposite
- Leaves not sessile
- Leaves dissected or not

Bidens laevis

- Leaves opposite
- Leaves sessile
- Leaves not dissected



Bidens mitis

Photo by Glenn Fleming

USF Herbarium Slide Collection



Bidens alba – native but much weedier
White flower, leaves with 3 leaflets

Bidens alba

Photo by Allen Boatman



Bidens laevis

Photo by Dennis Girard



*There are other species of *Bidens*, so if you aren't sure, key it out or send to your expert

Micranthemum – field ID

Micranthemum umbrosum

- Leaves round
- Leaves usually 4-9 mm



Micranthemum glomeratum

- Leaves oblanceolate
- Leaves usually 2-4 mm



Triadenum virginicum



- Virginia marsh St. John's wort
- Leaves opposite, sessile, egg-shaped, no teeth
- Stem and leaves with purple tint
- Small bushy herb, up to 70 cm tall

Triadenum – field ID

Triadenum virginicum

- Leaves broad at base, sometimes clasping



Triadenum walteri

- Panhandle only
- Leaves not clasping

