

Floristic Inventory of the Lake Louise Field Station, Lowndes County, Georgia

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Herbarium (VSC)

Biology Department

Valdosta State University

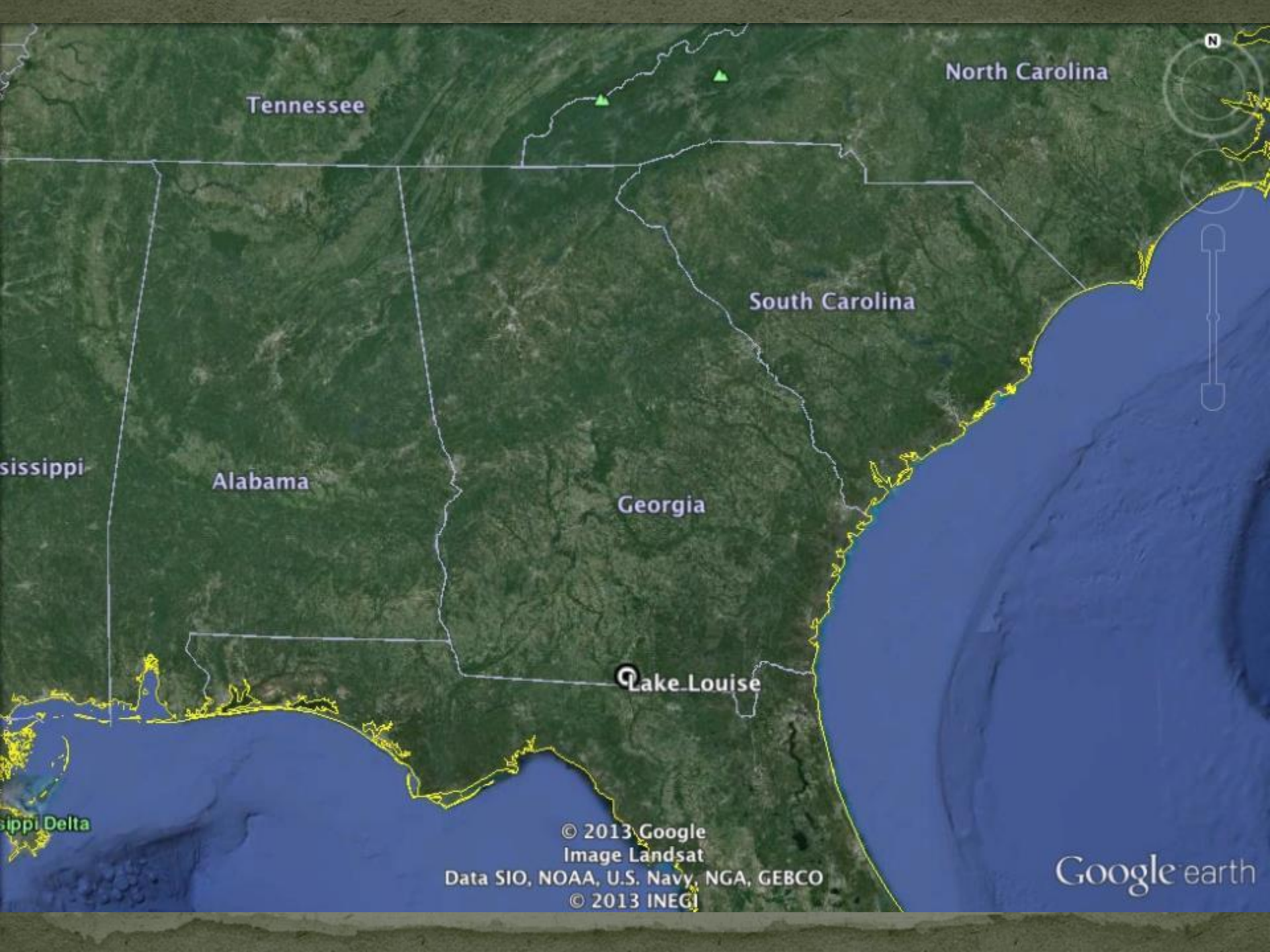
Valdosta, Georgia





Floristic Inventory of the Lake Louise Field Station, Lowndes County, Georgia

Joshua Luke Steele and Richard Carter
Department of Biology, Valdosta State University



Tennessee

North Carolina

South Carolina

Alabama

Georgia

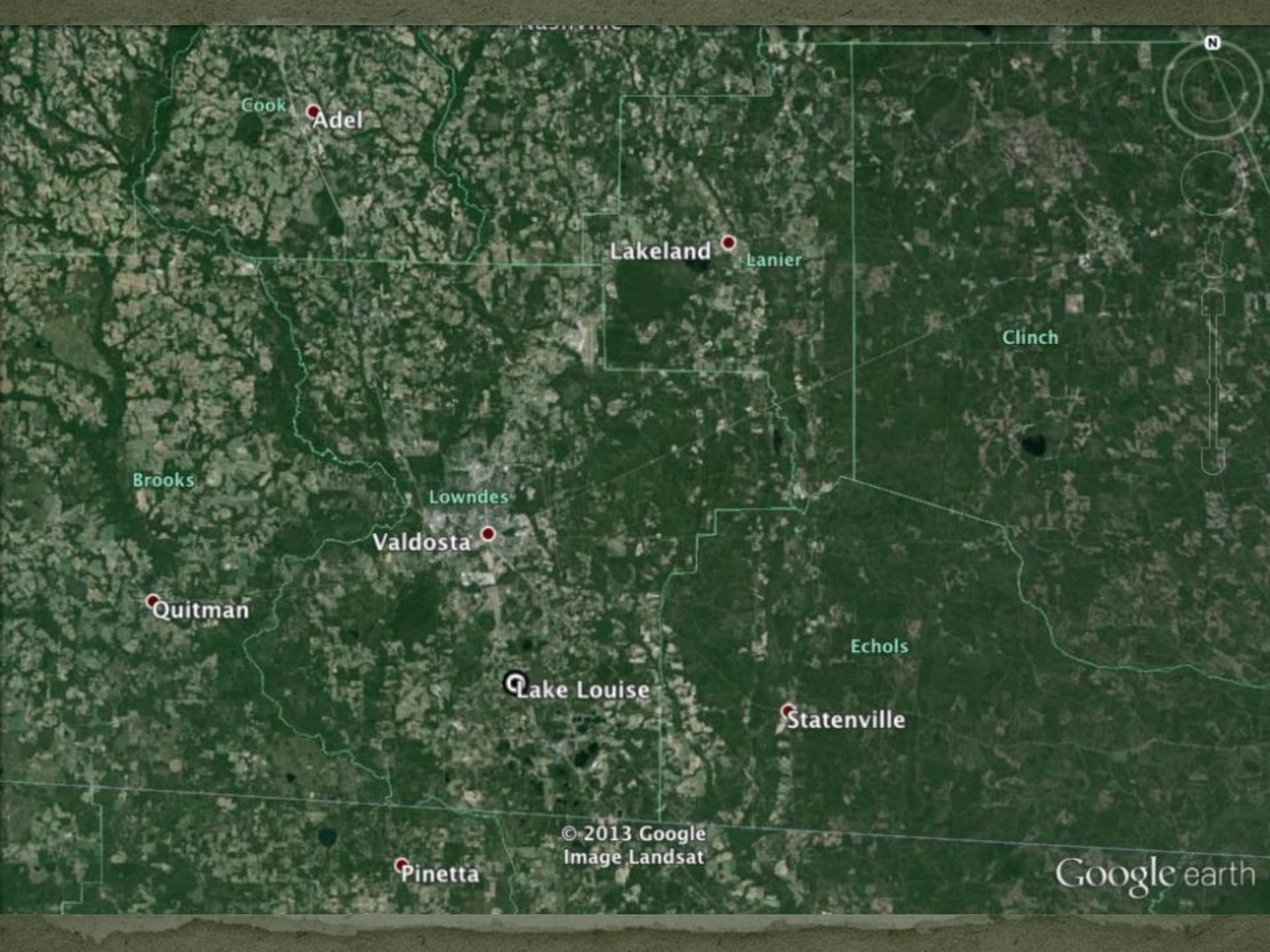
Mississippi

Lake Louise

Mississippi Delta

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Image Landsat
Data SIO, NOAA, U.S. Navy, NGA, GEBCO
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Google earth



Cook
Adel

Lakeland
Lanier

Clinch

Brooks

Lowndes
Valdosta

Quitman

Lake Louise

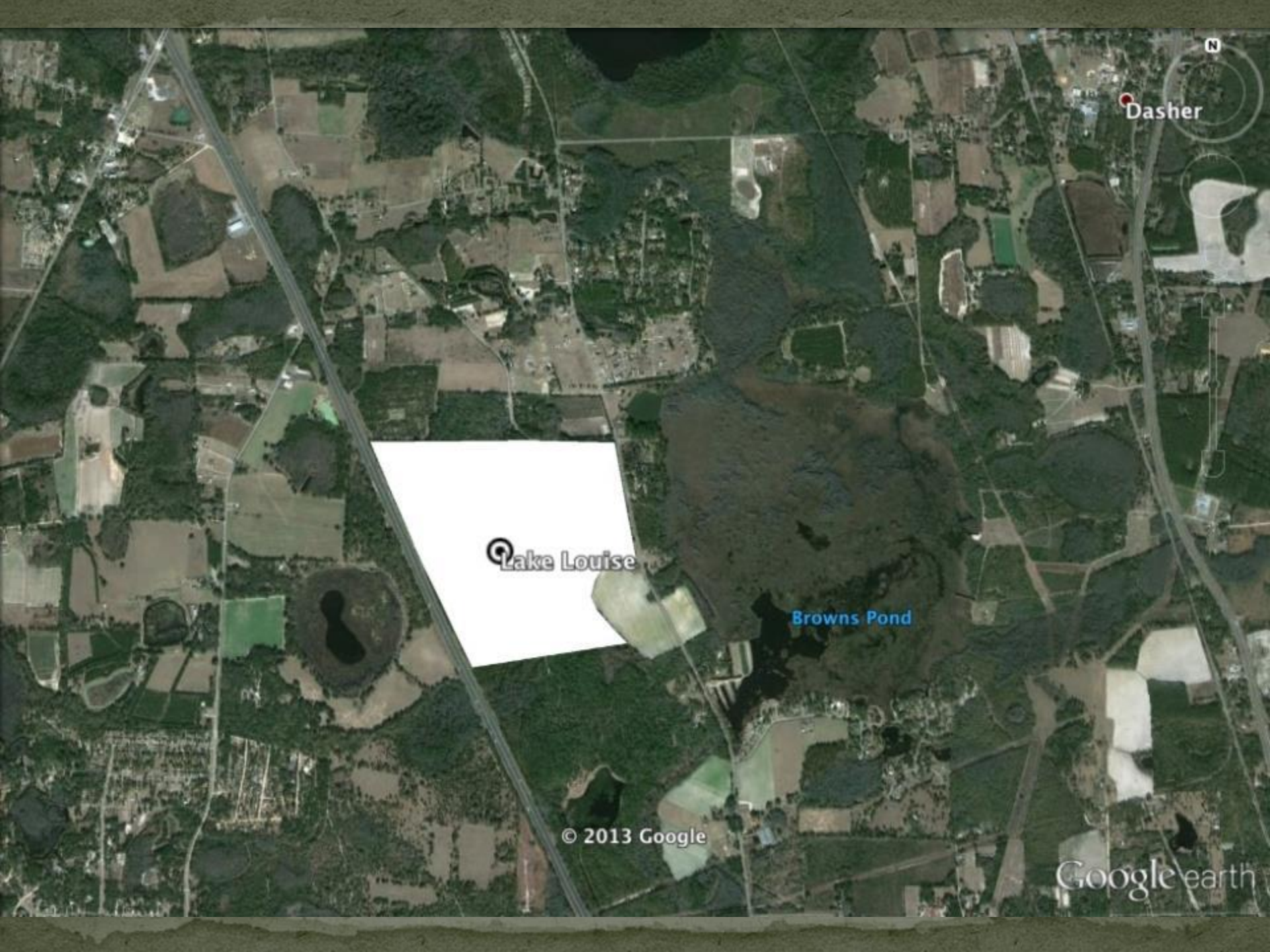
Echols

Statenville

Pinetta

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Google earth



Dasher

Lake Louise

Browns Pond

© 2013 Google

Google earth



Lake Louise

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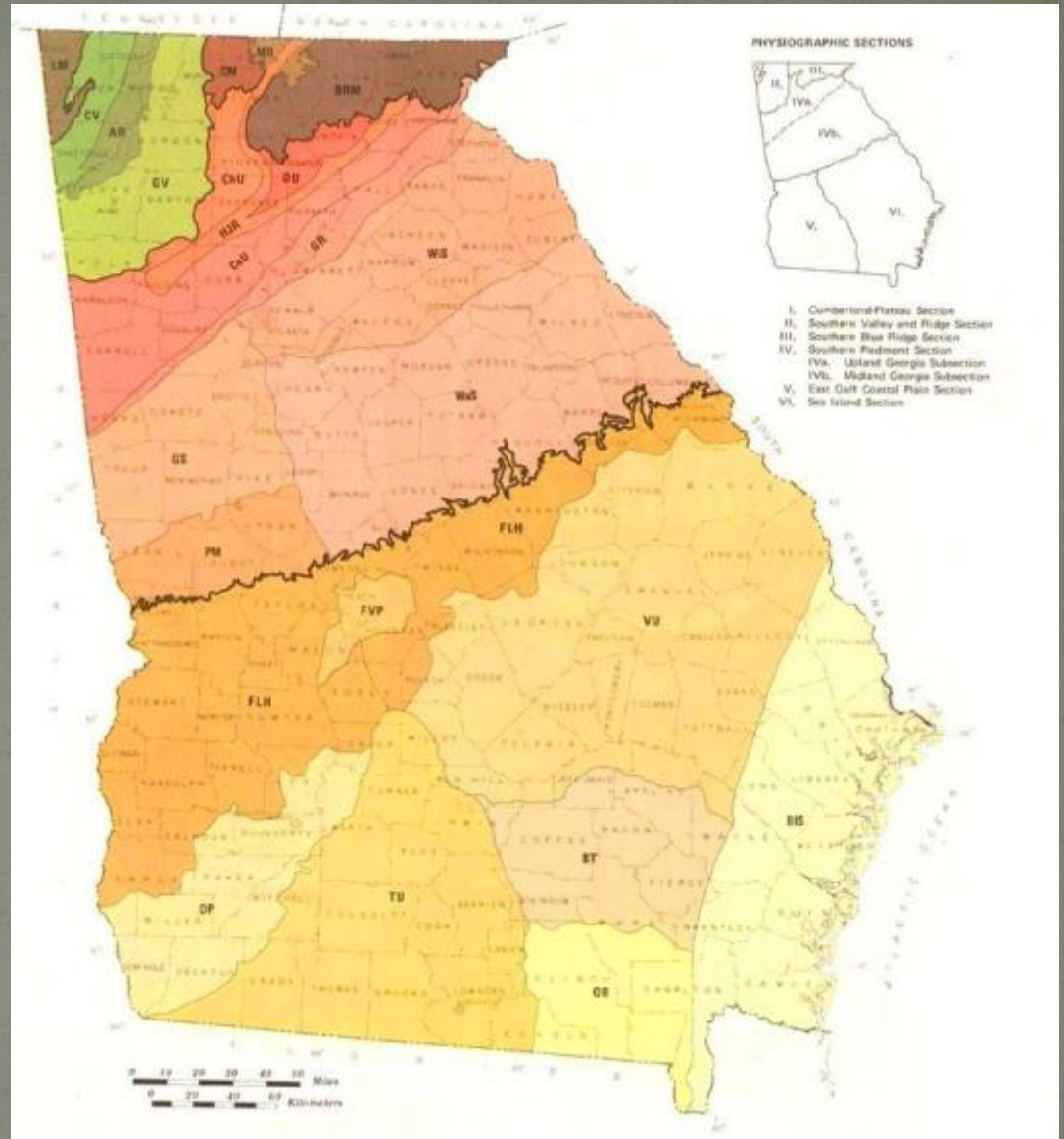
Google earth

Lake Louise Field Station

- 76.9 hectare area owned by VSU
- Centered around karst pond
- Owned by Valdosta State University since 1995
- Past Research
 - Core samples for pollen (Watts 1971)
 - Diatoms (Hains & Sebring 1981)
 - Bee foraging (Pascarella 2007)

Physiography

- Atlantic and Gulf Coastal Plain Province (Thorne 1993)
- Tifton Upland District (Clark & Zisa 1976)



Objectives

- Document and voucher occurrences of vascular plants with particular emphasis on rare and endangered species as well as invasive weeds
- Identify and describe plant communities within LLFS

Floristic Inventory

- 10 collecting trips from March 2013-March 2014
- Vouchers will be deposited in the Valdosta State University Herbarium (VSC).

Prediction

- Comparison of other inventories throughout SE US
- Species-area curve predicted 350 vascular plant species for an area of comparable size

Results, thus far...

- 294 vascular plants vouchered
- 150 genera
- 69 families

Largest Families

- 1) Poaceae – 36
- 2) Asteraceae – 29
- 3) Fabaceae - 17
- 4) Cyperaceae - 13
- 5) Euphorbiaceae - 12
- 6) Fagaceae - 9
- 7) Ericaceae – 7
- 8) Aquifoliaceae - 5
- 9) Rubiaceae - 5
- 10) Clusiaceae - 4

Rare Plants

- *Baptisia lecontei* Torr. & A. Gray
- *Carex decomposita* Muhl.
- *Desmodium sessilifolium* (Torr.) Torr. & A. Gray
- *Eustachys floridana* Chapm.
- *Palafoxia integrifolia* (Nuttall) Torrey & A. Gray
- *Peltandra sagittifolia* (Michx.) Morong.
- *Pinckneya bracteata* (Bartr.) Raf.
- *Rhynchospora microcarpa* (Baldw.) ex A. Gray
- *Tillandsia recurvata* (L.) L.

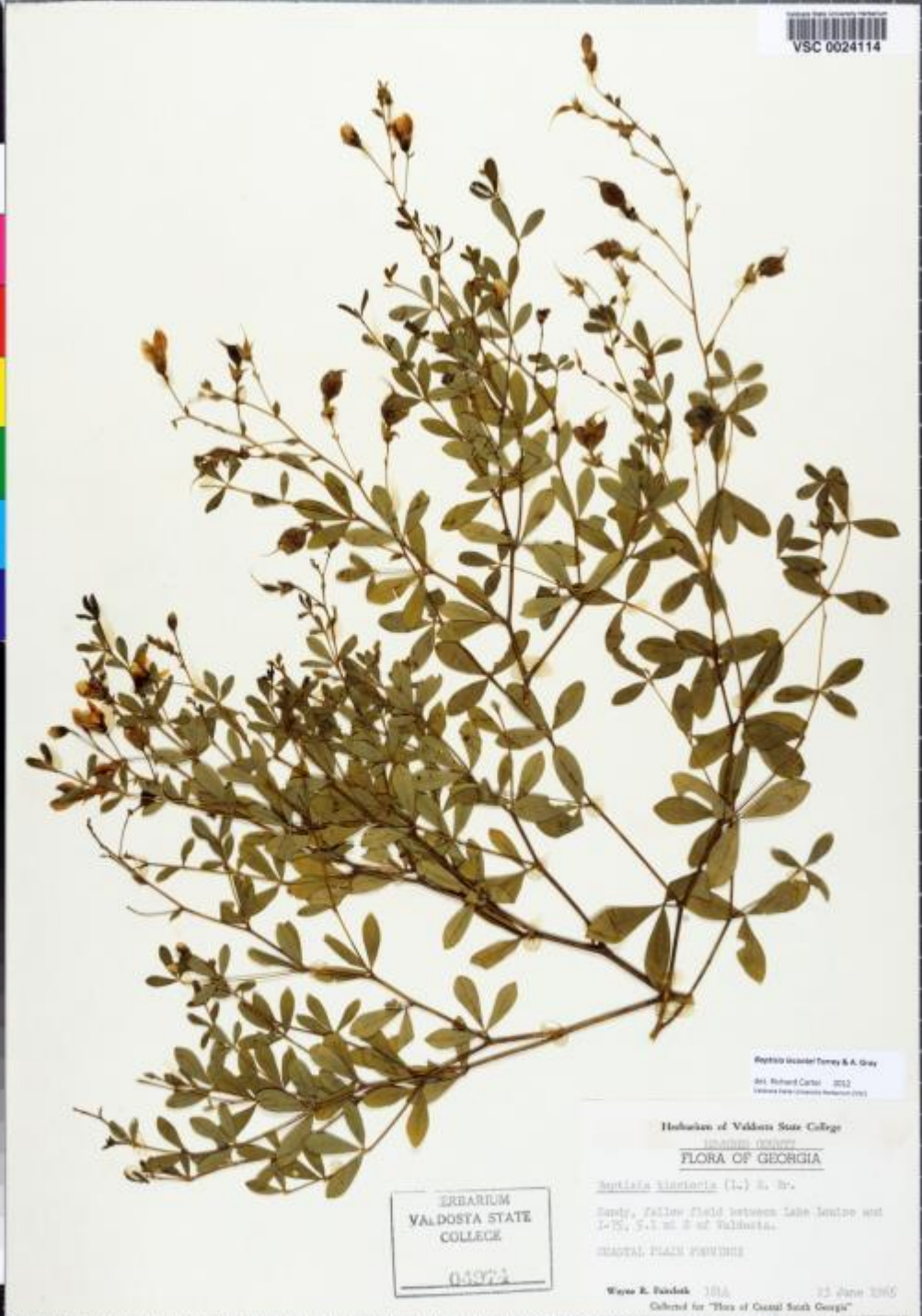
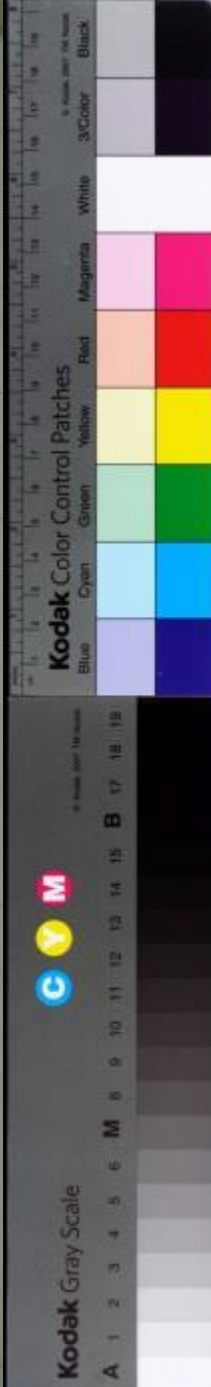
Georgia Department of Natural Resources ,Wildlife Resources
Division, Georgia Rare Species and Natural Community Data,
<http://georgiawildlife.com/conservation/species-of-concern>

Baptisia lecontei

Global rank: G4?

State rank: S1

Source: *The Valdosta State University Virtual Herbarium*, <http://herb.valdosta.edu>

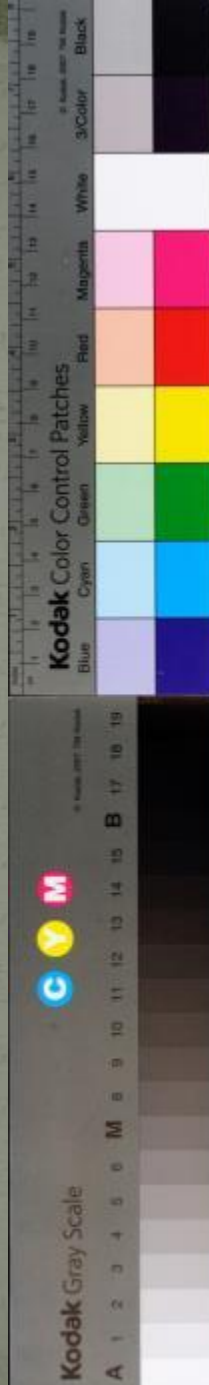


Carex decomposita

Global rank: G3

State rank: S2?

Source: The Valdosta State
University Virtual Herbarium,
<http://herb.valdosta.edu>



Valdosta State University
Herbarium (VSC)
52913

VSC 0042606



Carex decomposita, as det. — Nice material!
dgl; det. Charles T. Bryson
Carter 16495
v-2006

CYPERACEAE
Carex decomposita Michx.
U.S.A. GEORGIA, LAWRENDS COUNTY: ca. 8 miles S Valdosta city
center by Loch Earn⁶ Road and Trueman Road, Lake Lanier
Field Station, 30° 43' 36.38" N, 82° 15' 22.91" W; plant local,
erect, on decaying log at edge of Lake Lanier, a limnatic pond.
Richard Carter 16495
det. R. Carter
28 Apr 2006

VALDOSTA STATE UNIVERSITY HERBARIUM (VSC)

Desmodium sessilifolium

Global rank: G5

State rank: S1?

Source: *USDA Plants Database*,
<http://plants.usda.gov>



Eustachys floridana

Global rank: G2?

State rank: S1?

Source: *The Valdosta State University Virtual Herbarium*,
<http://herb.valdosta.edu>



POACEAE

Eustachys floridana Chapm.

U.S.A. GEORGIA, Lowndes County: N50.7070 W83.25455, Lake Louise Field Station, along main trail between Touchton Road and Lake Louise, ecotone between live oak hammock and degraded longleaf pine-wiregrass upland, sandy loam along trail; plants infrequent, but locally common.

Richard Carter 20344
det. R. Carter

07 Nov 2011

Valdosta State University Herbarium (VSC)



Palafoxia integrifolia

Global rank: G3G4

State rank: S2?

Peltandra sagittifolia

Global rank: G3G4

State rank: S2?



Source: *Southeastern Flora*,

<http://www.southeasternflora.com>

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Pinckneya bracteata

Florida: Threatened

Georgia: no special status



Rhynchospora microcarpa

Global rank: G5

State rank: S1S2

Source: *The Valdosta State University Virtual Herbarium*,
<http://herb.valdosta.edu>



VSC 0050659

VSC-HERBARIUM
VALDOSTA STATE
COLLEGE
39781

Cyperaceae
Rhynchospora microcarpa Baldw. ex Gray
GEORGIA, Bryan County: Ft. Stewart Military Reservation, Training Area A-1, Grid Coor. 636176; Jct. Hwy. GA 67 and Hwy. GA 144, just west of Richmond Hill Fire Tower; pond in sand pit; perennial herb, locally common.
R. Carter 9987 25 June 1992
S. J. Lusk
Det. R. Carter

Tillandsia recurvata

Global rank: G5

State rank: S1



Invasive weeds

- *Albizia julibrissin* Durazz.
- *Bidens bipinnata* L.
- *Lonicera japonica* Thunb.
- *Ligustrum sinense* Lour.
- *Lygodium japonicum* (Thunb. ex Murr.) Sw.
- *Paspalum notatum* Flueggé

Georgia Exotic Pest Plant Council (GA EPPC),
<http://www.gaepcc.org>

Albizia julibrissin

Category 1



Photo credit: John Ruter; T. Davis Sydnor
Source: invasive.org

Lonicera japonica

Category 1



Photo credit: Leslie J. Mehrhoff
Source: invasive.org

Ligustrum sinense

Category 1



Lygodium japonicum

Category 1



Photo credit: James H. Miller
Source: invasive.org



Paspalum notatum

Category 2



Photo credit: James H. Miller & Ted Bodner

Source: invasive.org



Bidens bipinnata

Category 4



Photo credit: James H. Miller & Ted Bodner
Source : invasive.org

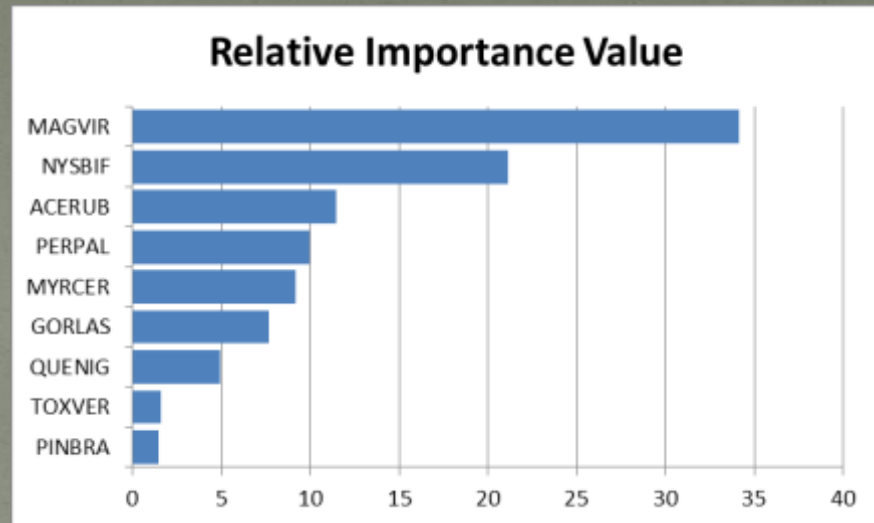
Plant communities

- Plant communities were described based on relative importance of tree species
- Point quarter sampling
 - At least 3 replicates per community type
- Six communities recognized

Bayswamp



Most important trees:
Magnolia virginiana
Nyssa biflora
Acer rubrum
Persea palustris
Myrica cerifera



Bayswamp

Other characteristic species:

Trees – *Gordonia lasianthus*, *Quercus nigra*, *Toxicodendron vernix*, *Pinus serotina*

Shrubs – *Cyrilla racemiflora*, *Clethra alnifolia*, *Ilex coriacea*, *Itea virginica*, *Leucothoe racemosa*, *Lyonia lucida*, *Viburnum nudum*

Vines – *Smilax laurifolia*, *Smilax walteri*

Misc. – *Woodwardia areolata*, *W. virginica*, *Osmunda cinnamomea*, *O. regalis*, *Sphagnum* spp.

Rare plants:

Peltandra sagittifolia, *Pinckneya bracteata*

Misc.:

Most specimens of *Persea palustris* are dead or moribund, exhibiting the effects of laurel wilt disease (LWD); first detected at LLFS in 2012, LWD is a fungal disease transmitted by an exotic ambrosia beetle (*Xyleborus glabratus*).

NatureServe Classification:

Gordonia lasianthus - *Magnolia virginiana* - *Persea palustris* / *Sphagnum* spp.

Forest

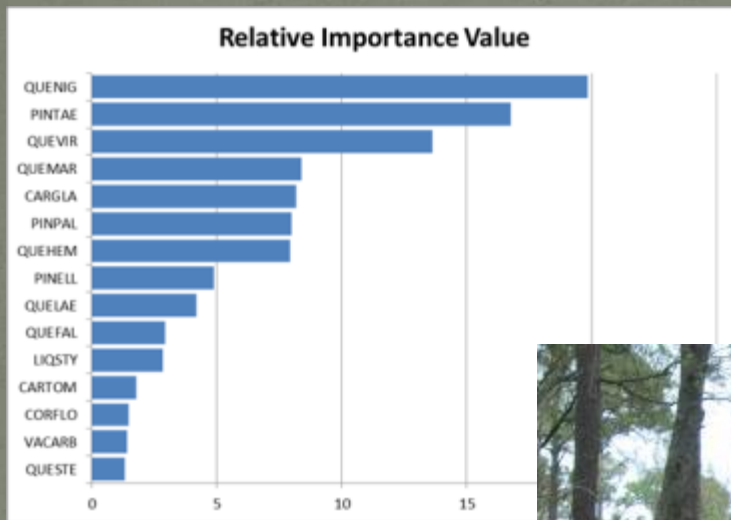
Translated Name: Loblolly-bay - Sweetbay - Swamp Bay / Peatmoss species Forest

Common Name: Loblolly-bay Forest

Unique Identifier: CEGLo07044

Classification Approach: International Vegetation Classification (IVC)

Upland Subxeric Mixed Pine Hardwood



Most important trees:

Quercus nigra

Pinus taeda

Quercus virginiana

Quercus margarettae

Carya glabra

Pinus palustris



Upland Subxeric Mixed Pine Hardwood

Other characteristic species:

Trees – *Quercus hemisphaerica*, *Pinus elliottii*, *Quercus laevis*, *Quercus falcata*, *Liquidambar styraciflua*, *Carya tomentosa*, *Cornus florida*, *Vaccinium arboreum*, *Quercus stellata*, *Quercus incana*

Shrubs – *Ilex glabra*, *Serenoa repens*, *Vaccinium stamineum*, *Lyonia ferruginea*, *Cartrema (Osmanthus) americana*, *Asimina longifolia*, *Vaccinium myrsinites*

Vines – *Smilax auriculata*, *Gelsemium sempervirens*

Misc. – *Pteridium aquilinum*

Rare plants:

Eustachys floridana

NatureServe Classification:

Pinus palustris - *Pinus (echinata, taeda)* - *Quercus (incana, margarettiae, falcata, laevis)* Woodland

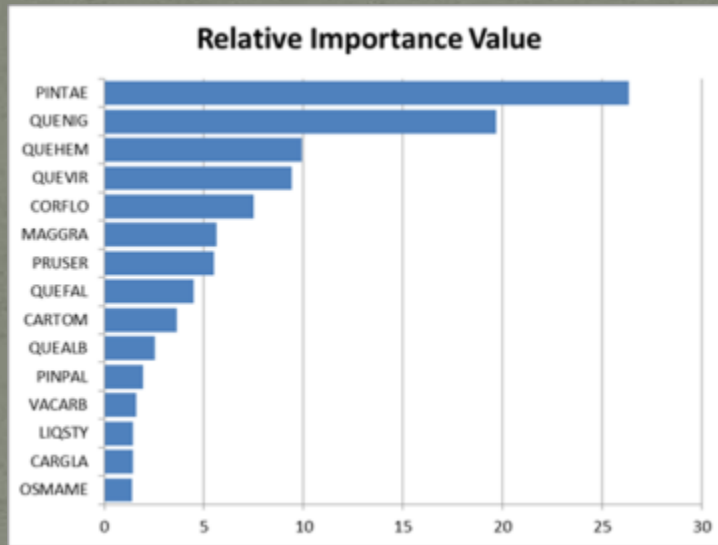
Translated Name: Longleaf Pine - (Shortleaf Pine, Loblolly Pine) - (Bluejack Oak, Sand Post Oak, Southern Red Oak, Turkey Oak) Woodland

Common Name: Fire-Suppressed Longleaf Sandhill

Unique Identifier: CEGLo07511

Classification Approach: International Vegetation Classification (IVC)

Liveoak Hammock Slope



Most important trees:

Pinus taeda

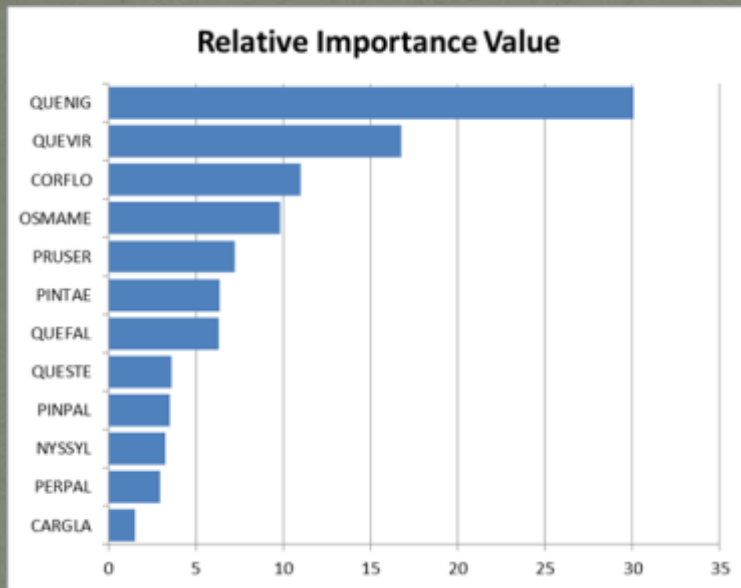
Quercus nigra

Quercus hemisphaerica

Quercus virginiana

Cornus florida

Liveoak Hammock Flat



Most important trees:

Quercus nigra

Quercus virginiana

Cornus florida

Cartrema (Osmanthus) americana

Prunus serotina

Liveoak Hammock

Other characteristic species:

Trees – *Quercus falcata*, *Quercus stellata*, *Pinus palustris*, *Nyssa sylvatica*, *Persea palustris*, *Carya glabra*, *Magnolia grandiflora*, *Carya tomentosa*, *Quercus alba*, *Vaccinium arboreum*, *Liquidambar styraciflua*

Shrubs – *Ilex glabra*, *Serenoa repens*, *Vaccinium stamineum*, *Lyonia ferruginea*

Vines – *Vitis rotundifolia*, *Gelsemium sempervirens*

Misc. – *Pteridium aquilinum*

Rare plants:

Tillandsia recurvata

NatureServe Classification:

Quercus virginiana - *Quercus (hemisphaerica, nigra)* / *Serenoa repens* Forest

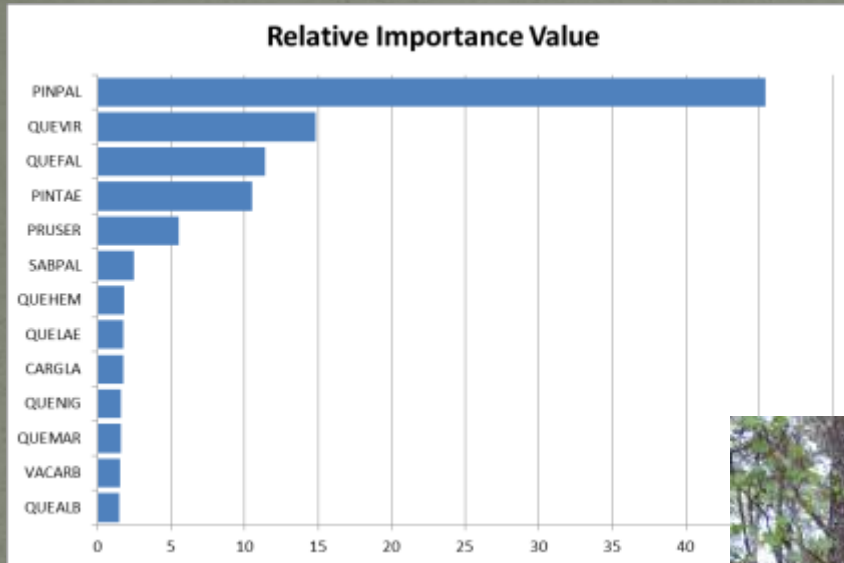
Translated Name: Live Oak - (Darlington Oak, Water Oak) / Saw Palmetto Forest

Common Name: Dry Live Oak Hammock

Unique Identifier: CEGLo04408

Classification Approach: International Vegetation Classification (IVC)

Upland Pine Flatwoods Successional to Hardwood Hammock



Most important trees:

Pinus palustris

Quercus virginiana

Quercus falcata

Pinus taeda

Prunus serotina



Upland Pine Flatwoods Successional to Hardwood Hammock

Other characteristic species:

Trees – *Quercus hemisphaerica*, *Quercus laevis*, *Carya glabra*,
Sabal palmetto, *Quercus margarettae*, *Vaccinium arboreum*,
Quercus alba, *Magnolia grandiflora*, *Ilex opaca*, *Juniperus*
virginiana

Shrubs – *Ilex glabra*, *Serenoa repens*, *Vaccinium stamineum*,
Lyonia ferruginea, *Cartrema (Osmanthus) americana*, *Cornus*
florida, *Prunus umbellata*

Vines – *Smilax bona-nox*, *Vitis rotundifolia*

Misc. – *Pteridium aquilinum*

Rare plants:

Baptisia lecontei

Misc.:

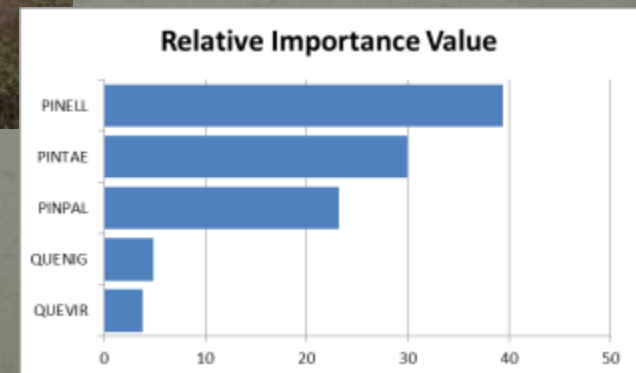
Fire has been excluded from this area.

Pine Plantation Restoration



Rare plants:
Palafoxia integrifolia
Desmodium sessilifolium

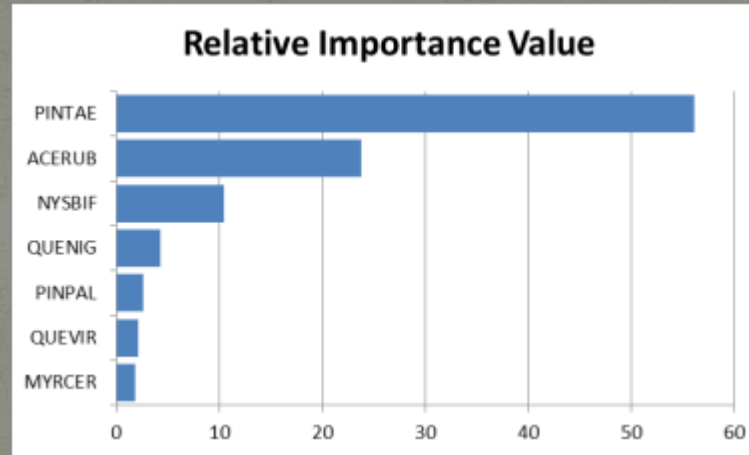
Most important trees:
Pinus elliottii
Pinus taeda
Pinus palustris
Quercus nigra
Quercus virginiana



Barrow Pit South of Lake



Rare plants:
Rhyncospora microcarpa



Most important trees:
Pinus taeda
Acer rubrum
Nyssa biflora
Quercus nigra
Pinus palustris

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Questions?

