

Invasive Aquatic Vegetation Potential Threats and Control Options

Howard Elder

Texas Parks and Wildlife Department

Inland Fisheries Division

Aquatic Invasive Species

- Texas reservoirs provide a fertile media for introduced exotic vegetation especially those in East Texas
- By their very nature, reservoirs are disturbed habitat whose young ecosystems have not had time to develop stable aquatic plant communities
- Fluctuating water levels make the establishment of native vegetation difficult
- Exotic plant species thrive because they are adapted to rapidly fill ecological niches created by disturbed or unstable habitats

Aquatic Invasive Species

- Exotic plant species are not native and arrive with no natural enemies or control mechanism
- Have evolved under intense competition and as a result, grow faster and out-compete native species for light, space, and nutrients
- Develop mono-culture, degrade water quality, and decrease bio-diversity
- Negatively impact reservoir-based businesses and recreation by restricting access

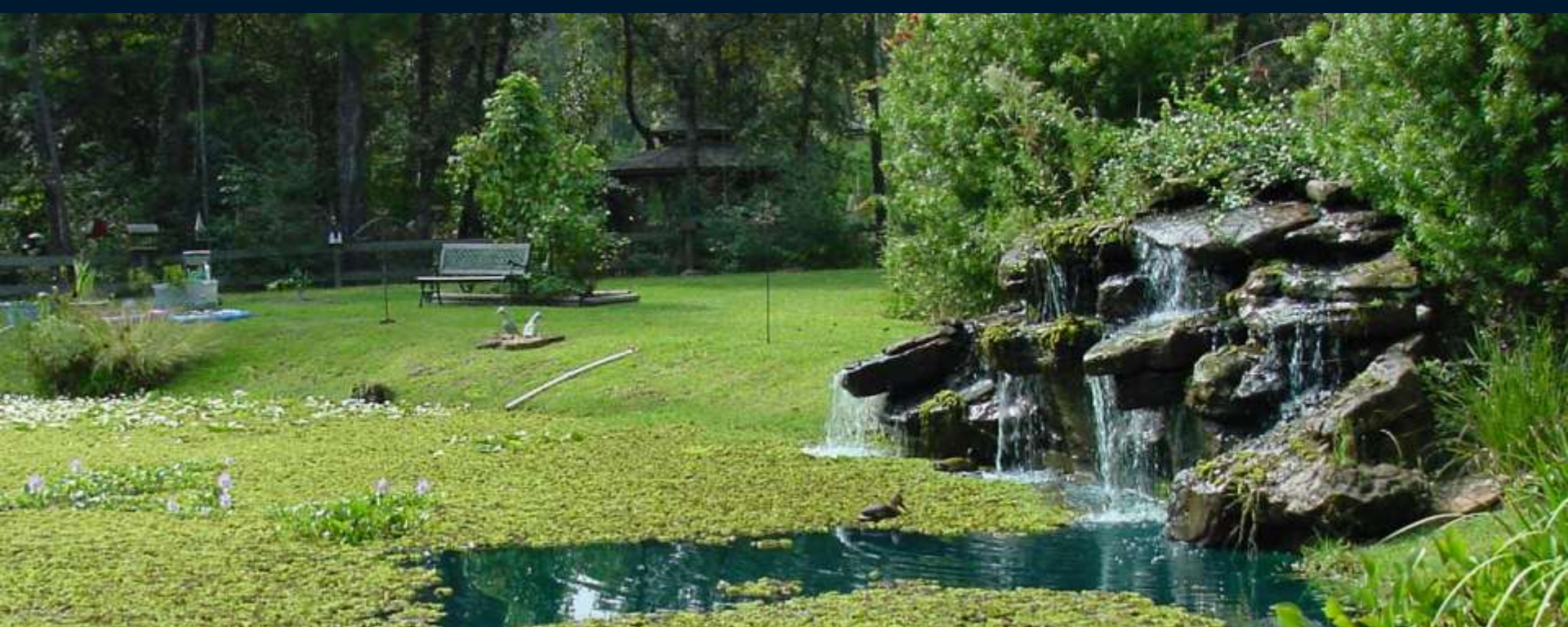
Integrated Pest Management

- IPM is the strategic use of one or more techniques to control nuisance aquatic species at the most cost-effective level without hurting anyone or anything.
- Best management practices are those which have proven the most effective and least likely to negatively impact the ecology of the aquatic environment

Giant salvinia

Salvinia molesta





Transport



Salvinia molesta



Primary form
Leaves 2-15mm



Secondary form,
Leaves grow to
20-55mm
and begin to
crease and fold.



Tertiary Form, Mat forming stage

Common salvinia

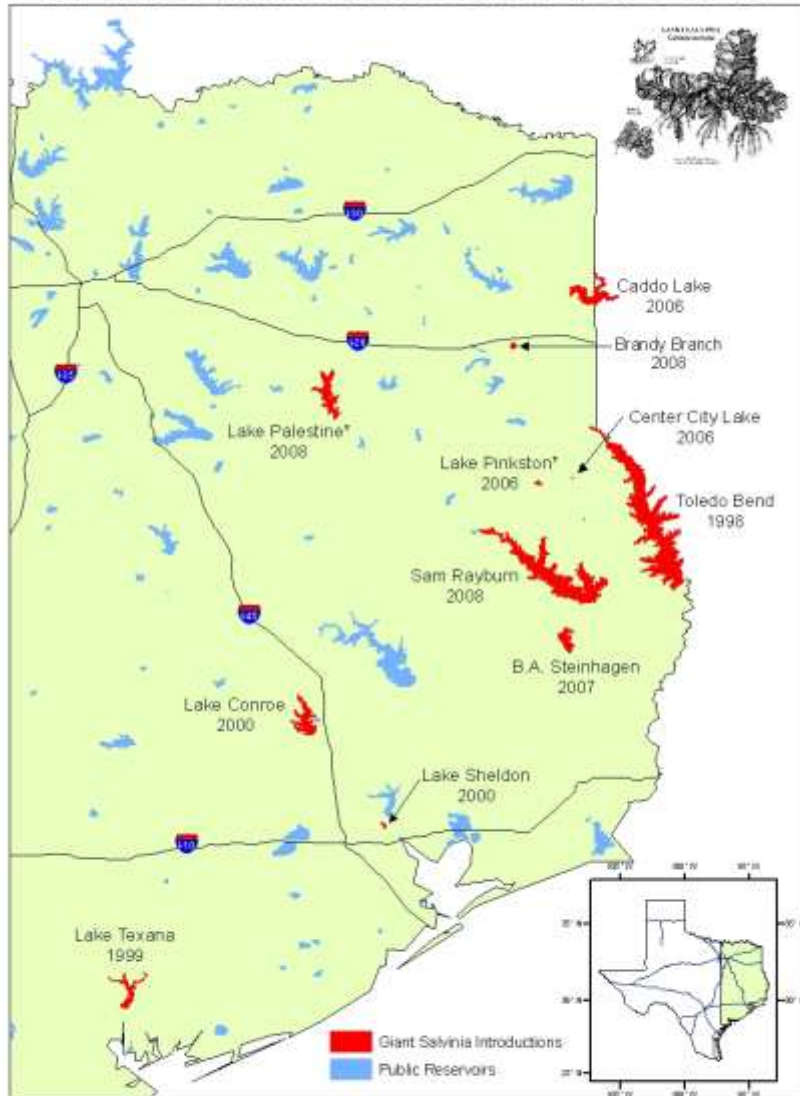
Salvinia minima



Common salvinia

Giant salvinia

Giant salvinia Introductions in East Texas Reservoirs 1998-2008



Toledo Bend
Lake Sheldon
Lake Conroe
Lake Texana
Center City Lake
Lake Pinkston
Caddo Lake
BA Steinhagen
Sam Rayburn
Brandy Branch
Lake Palestine
Lake of the Pines

Prepared by: Dan Bennett
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Texas Parks and Wildlife Department
NOTE: THIS MAP IS FOR REFERENCE ONLY
The requester must be aware of data conditions
and ultimately bear responsibility for the appropriate
use of the information with respect to possible errors,
original map scale, collection methodology,
currency of data, and other conditions specific
to certain data.

Prevention



WARNING

GIANT SALVINIA PRESENT IN CADDO LAKE



STATUS: Giant salvinia is a floating aquatic plant prohibited in the United States by Federal Law. Giant salvinia grows rapidly and forms thick mats which crowd out other vegetation, degrade water quality, and impede recreational access. Giant salvinia poses a serious threat to all water bodies in East Texas.

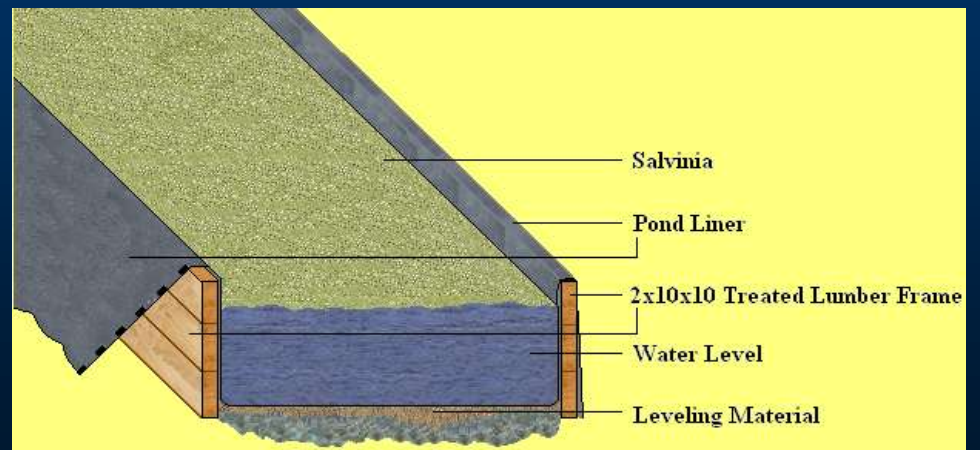
IT IS ILLEGAL TO POSSESS OR TRANSPORT GIANT SALVINIA

PREVENTION: Giant salvinia is easily transported to other water bodies by boats, propellers, and trailers. Even small plant fragments can create new infestations.

**INSPECT AND CLEAN BOATS AND TRAILERS
BEFORE LEAVING LAUNCH AREAS**

For more information please call 409-384-9965

Giant salvinia weevil *Cyrtobagous salviniae*



EPA Approved Herbicides

Salvinia spp.

Rate per Acre

(100 gallons water)

Glyphosate - 0.75 -1.0 gal/acre

Diquat – 1.0 pint/acre

NIS - 1.0 quart/acre

Silicone – 1.0 pint/acre

Read and Follow Label Directions!

Water hyacinth
Eichhornia crassipes



Impacts





EPA Approved Herbicides

Water Hyacinth

Rate per Acre
(100 gallons water)

2,4-D Amine - 1.0 gal/acre
(Requires TDA Applicator's License)

Non-Ionic Surfactant - 1.0 quart/acre

Read and Follow Label Directions!

Alligatorweed *Alternanthera philoxeroides*



Alligatorweed Flea Beetle *Agasicles hygrophila*



EPA Approved Herbicides

Alligatorweed

Rate per Acre

(100 gallons water)

Glyphosate - 0.75 -1.25 gal/A

Triclopyr – 0.5 - 2.0 gal/A

Imazapyr – 0.5 - 2.0 qt/A

Non-Ionic Surfactant - 1.0 quart/acre

Read and Follow Label Directions!

Identification and Control Options

Texas A&M University

<http://aquaplant.tamu.edu/index.htm>

University of Florida

<http://plants.ifas.ufl.edu/>

Treatment Proposal

*** Required prior to any treatment on public water**

Aquatic Vegetation Management In Texas: “A Guidance Document”

www.tpwd.state.tx.us/publications/pwdpubs/media/pwd_pl_t3200_1066_1.pdf

Early Detection



Rapid Response

TEXAS

PARKS &

WILDLIFE