Plant Wars
Is West Indian Marsh Grass 
(*Hymenachne amplexicaulis*)
Poised to take over Freshwater Wetlands of the Southeast?

Paula Benshoff, Suncoast CISMA
Jean Huffman, Louisiana State University
Myakka River State Park
2/7/1987
Collected from River Marsh south of State Road 72.
41. **Hymenachne** Beauv.

1. **H. amplexicaulis** (Rudge) Nees.
   Wet pastures. Rare; southern cos.
   Native to West Indies. Fall.
September, 13, 1988

Hymenachne amplexicaulis, a grass native to the West Indies, is by far the dominant grass to be seen in the marshes at the park bridge at this time. While I noticed some large patches last year, this year it’s everywhere.
Big Flats—floodplain marsh along the Myakka River dominated by West Indian Marsh Grass, *Hymenachne amplexicaulis*
If only we had known how invasive this plant was....
Neither grass was observed to be invasive, as growth was confined to plots after 5 & 8 years at Immokalee and Ona, respectively.
In Australia they call it Olive Hymenachne.
Impacts

Invades:
- sugarcane
- water storages
- irrigation channels
- waterways
- wetlands
• Blocks waterways causing flooding
• Threatens drinking water supplies
• Limits access to bush tucker resources (native food) for Aboriginal people
• Impedes drainage and agricultural irrigation channels
• Threatens fish habitat and nursery areas
• Alters fire regimes
• Changes soil properties and hydrology
• Reduces biodiversity
• Impacts water quality
• Detrimental to tourist trade that relies on the appeal of untouched wilderness
Cuba, Mexico, Columbia, Venezuela, & West Indies
Stem fragments carried by water, animals, & vehicles.
A single node can produce a plant.
A single spike can produce more than 4,000 seeds.
Germination rates of 20-65% in 4-year old seeds.
Magpie geese spread seeds in Australia.
Can withstand prolonged dry seasons or water 3’-deep.
Roots in soils, but stems float out into deep water.
Thrives with high nutrient influx from upstream agriculture.
Stems grow rapidly in response to rising water.
Hymenachne amplexicaulis
– a Weed of National Significance

Rob Cobon
National Coordinator – Hymenachne and Pond Apple
**Strategic Plan**

- Released 2001
- Implemented by National Hymenachne Management Group (NHMG) and state/territory stakeholders - 2004.
- NHMG Chairperson – Nick Stipis, Canegrower, Tully
- Distribution – Northern NSW, Qld and NT.

**VISION**

- The adverse impact of Hymenachne is reduced to a minimum.

- Four primary goals:
  1. The spread is prevented.
  2. The adverse impacts minimised.
  3. National commitment to management is established and maintained.
  4. Ensure strategy does not trigger introduction and use of additional species of non-indigenous ponded pasture species.

**Successes** – awareness, containment, research/knowledge, strategic control, coordination.

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Funding, research, education, legislation, surveys
American Cupscale
(*Sacciolepis striata*)

Maidencane
(*Panicum hemitomon*)
No Management Plan
Public Education
Legislation
Surveys
Myakka study: William Overholt & Rodrigo Diaz
1,841 invertebrates in native sites; 
628 in Hymenachne-invaded wetlands
Giant Waterbug

Fishing spider

Water boatman

Dragonfly

Fishing spider

Water strider
Florida lost >260,000 acres of wetlands 1985-1996.
The plant is stoloniferous.
It roots at nodes.
• Grows to ~4’ tall
• Leaf blades 4-19”
• Leaves ~ 1.5” wide
• Blooms = cylindrical spikes
• At Myakka, blooms in August & September
Leaves smooth & shiny, except hairs on lower margins & auriculate clasping.
Native grasses are hollow.

*Hymenachne amplexicaulis*
Grows in forested wetlands at Myakka.
Goes into a dormant state during our dry winters.
Hymenachne Strategic Management Zone Map 2010

- **P1**: Prevention Zone - low risk
- **P2**: Prevention Zone - high risk
- **E**: Eradication Zones
- **C**: Containment Zones
- **A**: Asset Protection Zones

- Catchment boundary

Sydney 33.8
Tallahassee, FL
We need information, research, to assess invasion, and a plan.
Hymenachne or Olive hymenachne (Hymenachne amplexicaulis)

The problem

Hymenachne is a Weed of National Significance. It is regarded as one of the worst weeds in Australia because of its invasiveness, potential for spread, and economic and environmental impacts.

Hymenachne is a semi-aquatic grass that was introduced as fodder in artificial pastures of central Queensland. It was subsequently planted in tropical wetlands of northern Queensland and the Northern Territory, and has since escaped from cultivation and seriously threatens northern wetlands.

Hymenachne invades permanent water bodies and seasonally inundated wetlands. It blocks water ways, potentially causing flooding and threatening drinking water.

It interferes with drainage and irrigation channels used for sugar cane and contaminates sugar cane crops. Fish habitat and nursery areas are also at risk.

Hymenachne forms dense stands that reduce plant diversity and available habitat for native animals. It can also affect water quality. The potential exists to severely detract from the high conservation and recreational value of natural wetland systems (eg, Kikadu National Park).

The weed

Hymenachne is a perennial, robust grass to 2.5 m tall. It can grow above or below water, with its roots in the ground. Although its stems float, they are not hollow and contain white pith. The stems can form clones that run along the ground and produce new plants by rooting at the nodes (the junctions between sections).

It has long leaves (100-450 mm) and the leaf base may be up to 30 mm wide and covered with long hairs. The upper part of the leaf is narrower and without hairs. The leaf blade is heart-shaped at its base where it clings around the stem—this is a key characteristic of this species. Flowers occur as a cylindrical cluster (200-400 mm long) at the end of a spike that is occasionally branched. The flower cluster is made up of numerous spikes that are short stalked, 3-5 mm long and broader below the middle (lance-shaped).

Key points

- Previously promoted as pasture, Hymenachne is now a serious environmental and crop weed.
- It invades tropical wetlands and waterways and threatens large areas of northern Australia, including national parks, sugar cane plantations and water reserves.
- It is a prolific seed producer and is easily spread by plant parts.
- Catchments that are free of Hymenachne should be protected from contamination.
- Control is difficult and costly and is mainly achieved using repeated doses of herbicides.
- Other management techniques, such as burning or hard grazing before flooding, will help control it.

Hymenachne spreads by both seeds and vegetation and quickly takes over wetlands. Photo: Colm C. Wilson.
Lost a planet, Master Obi-Wan has. How embarrassing!