

Spread and Management of Hydrilla in Catawba River Reservoirs



Ken Manuel

Lake Services

Presented at

The Aquatic Invasive Species Workshop

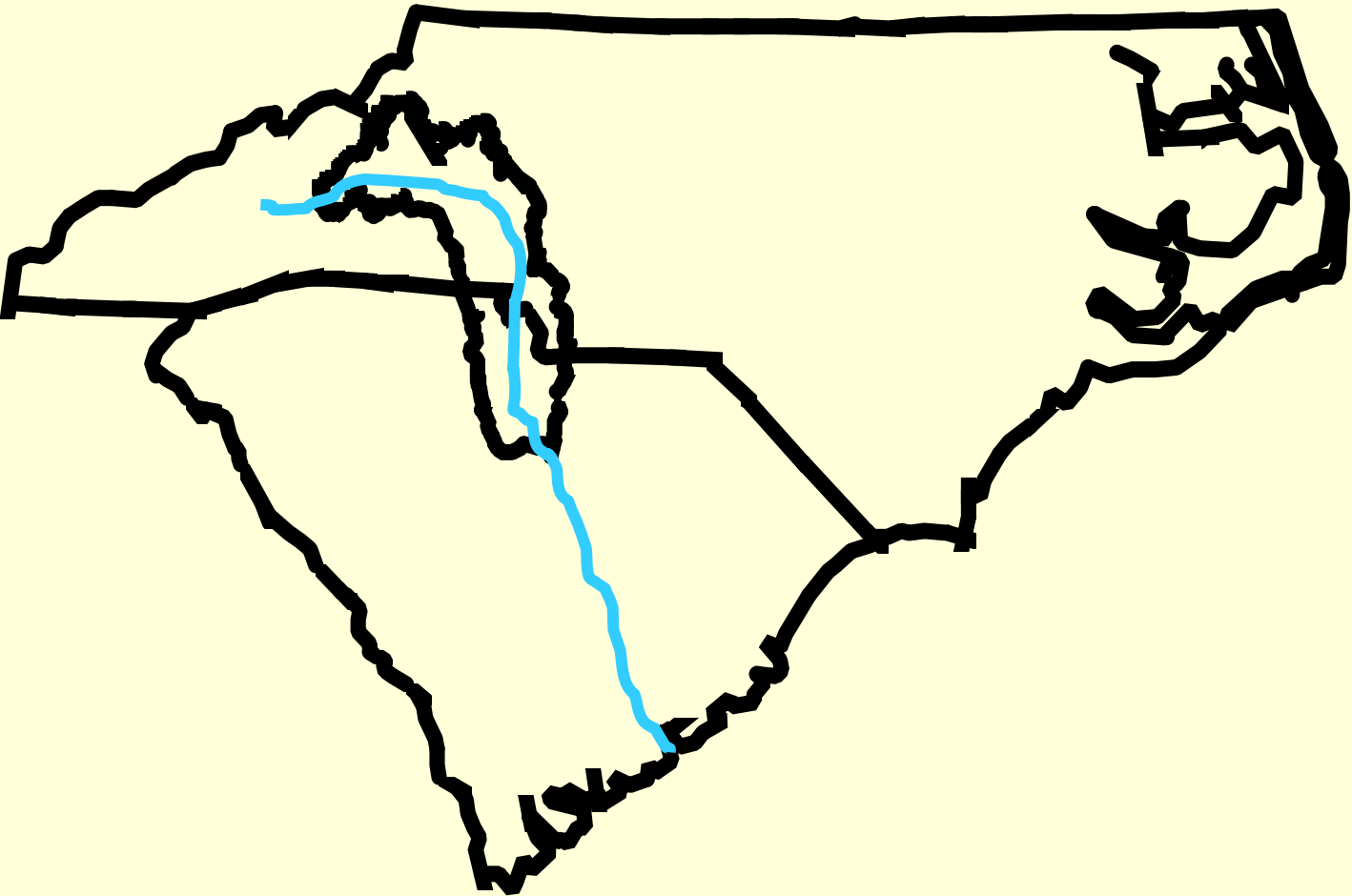
SC-AFS and SCFWA

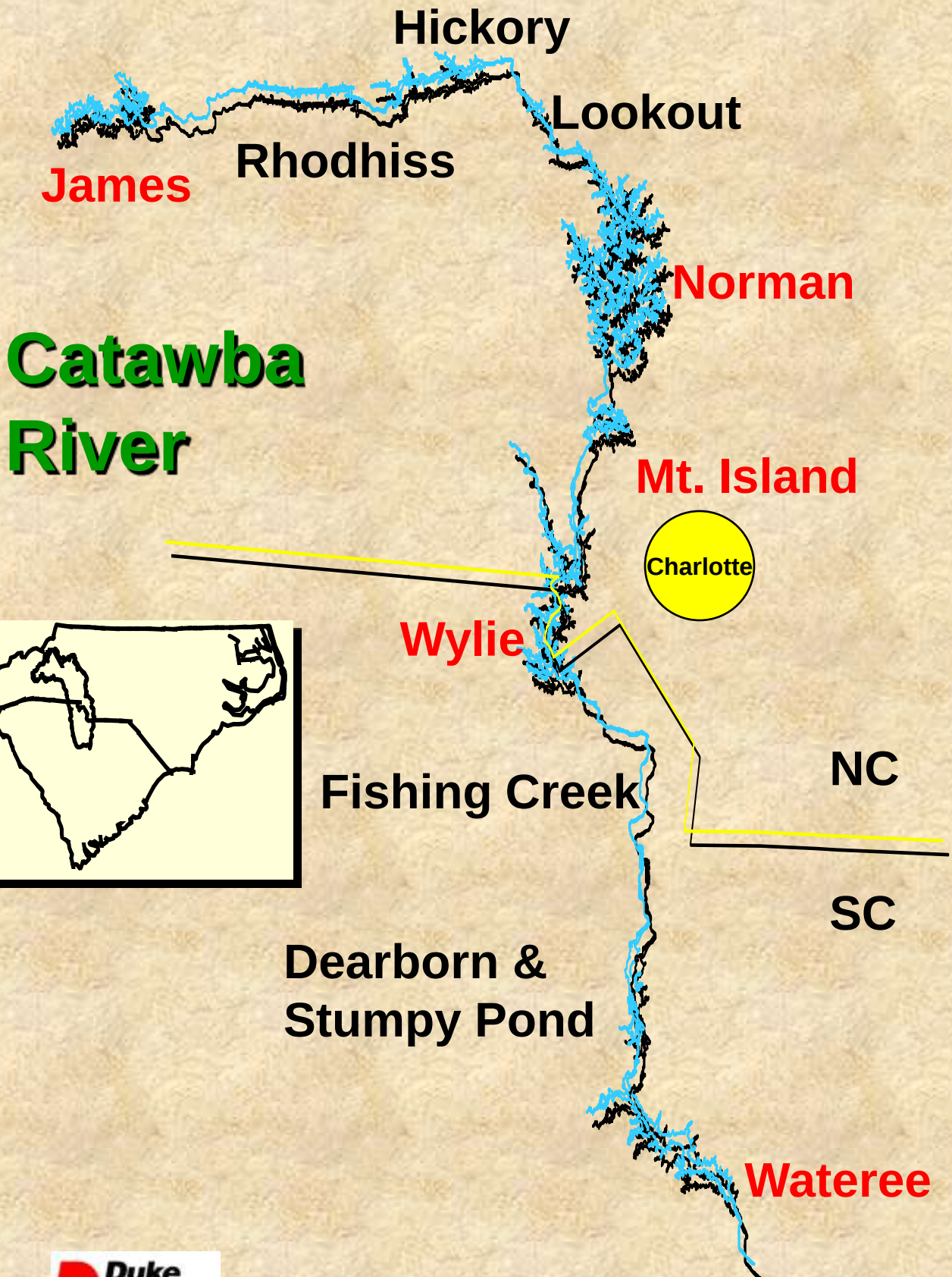
Columbia, SC

October 2, 2008

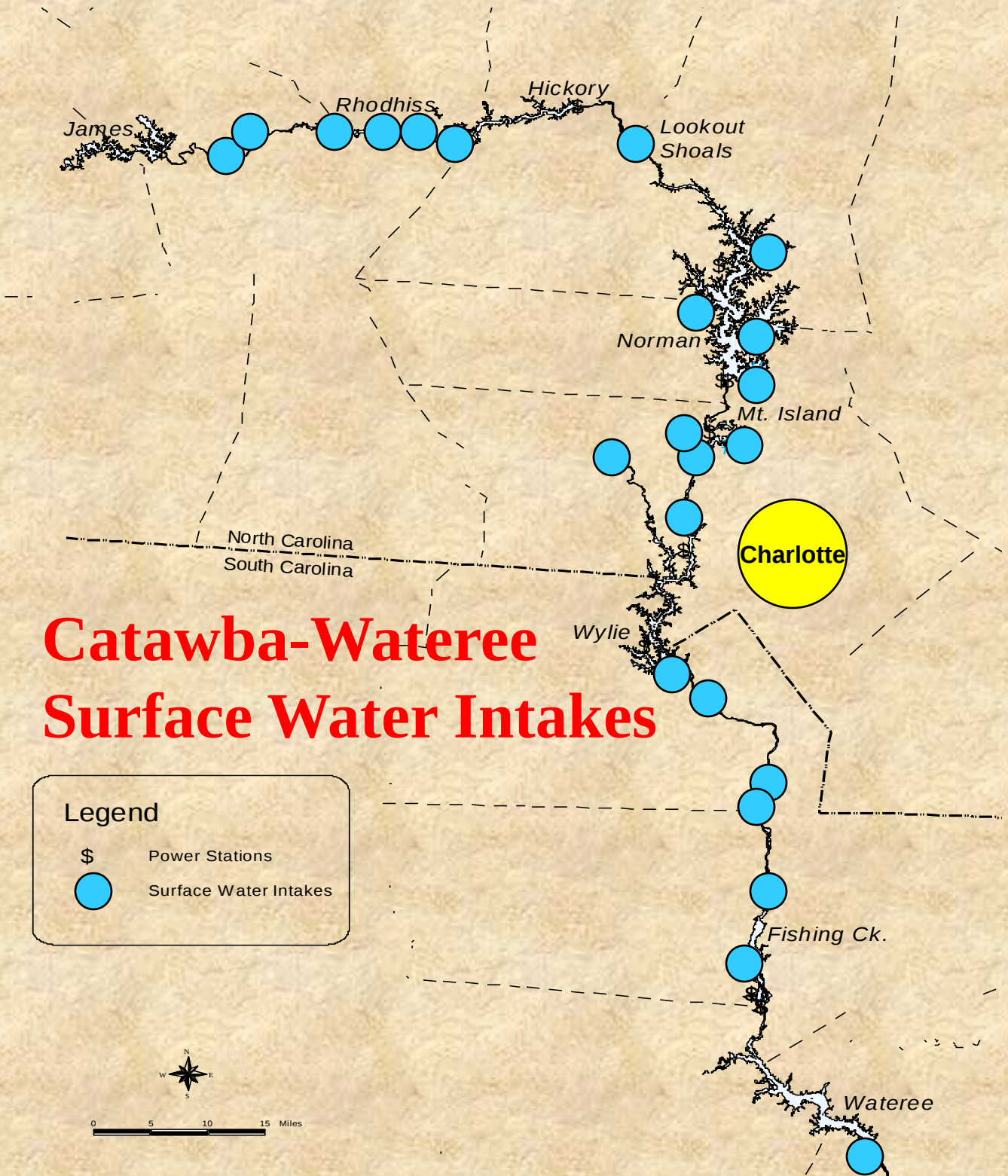
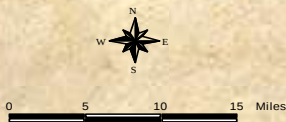
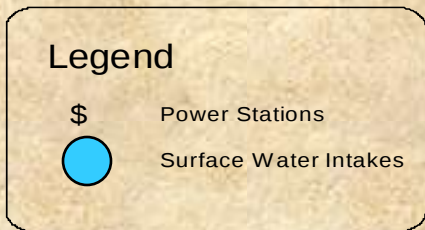


Catawba - Wateree - Santee - Cooper River





Catawba-Wataree Surface Water Intakes



Catawba-Wateree Power Stations (18)

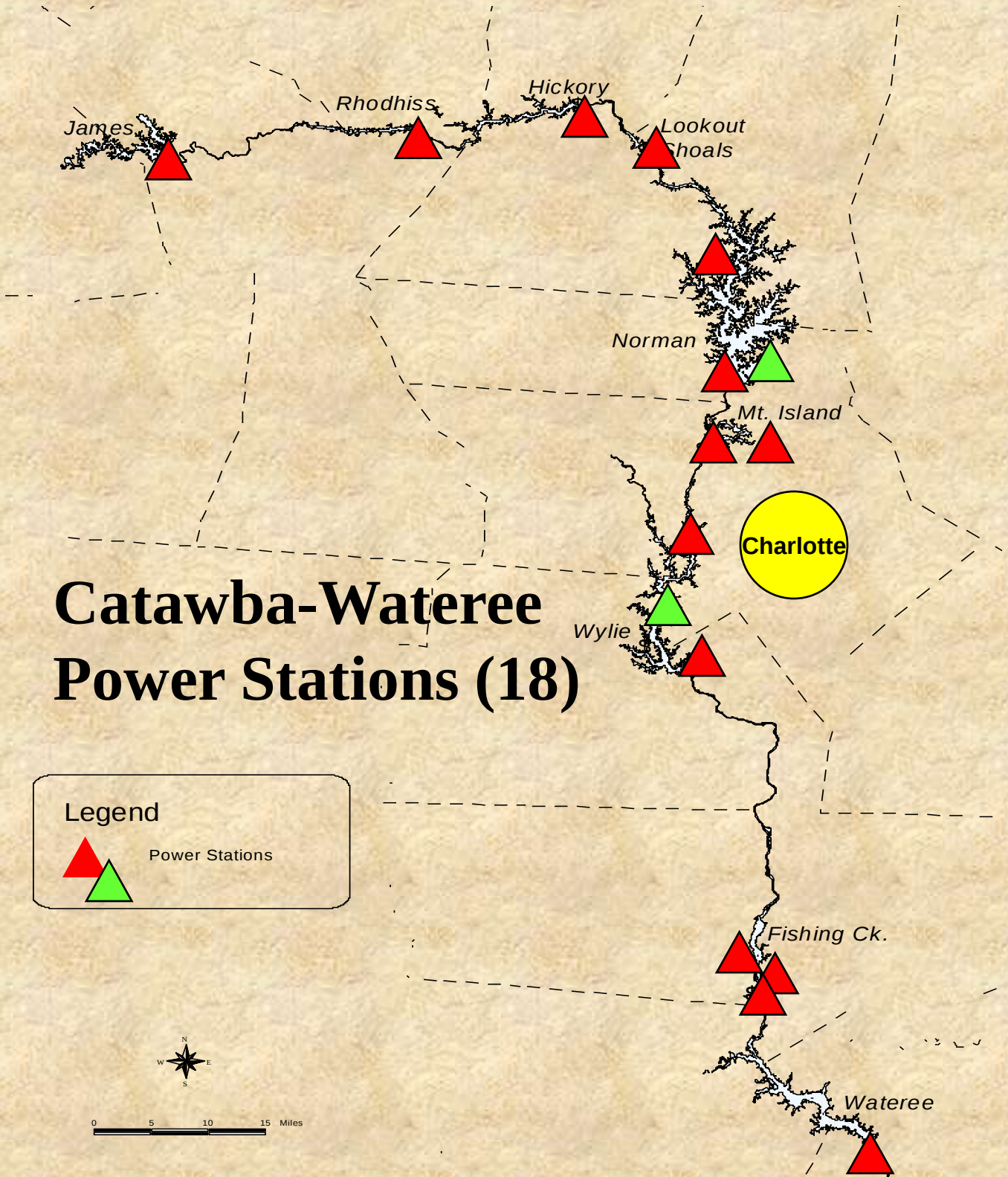
Legend



Power Stations



0 5 10 15 Miles



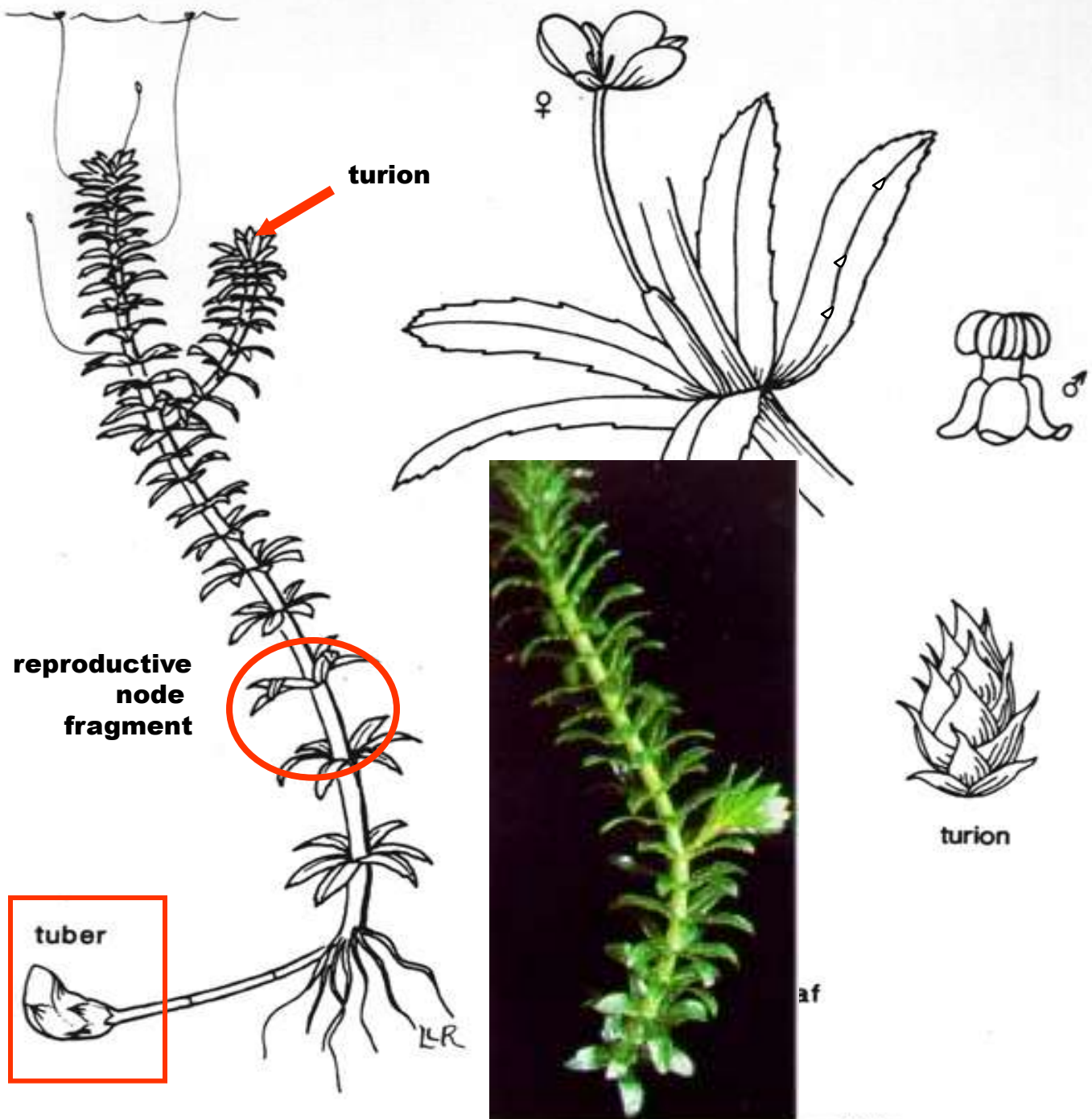




HYDRILLA



Hydrilla verticillata
Hydrilla



provided by:
IFAS, Center for Aquatic Plants
University of Florida, Gainesville, 1990

Hydrilla Tubers

Lake James



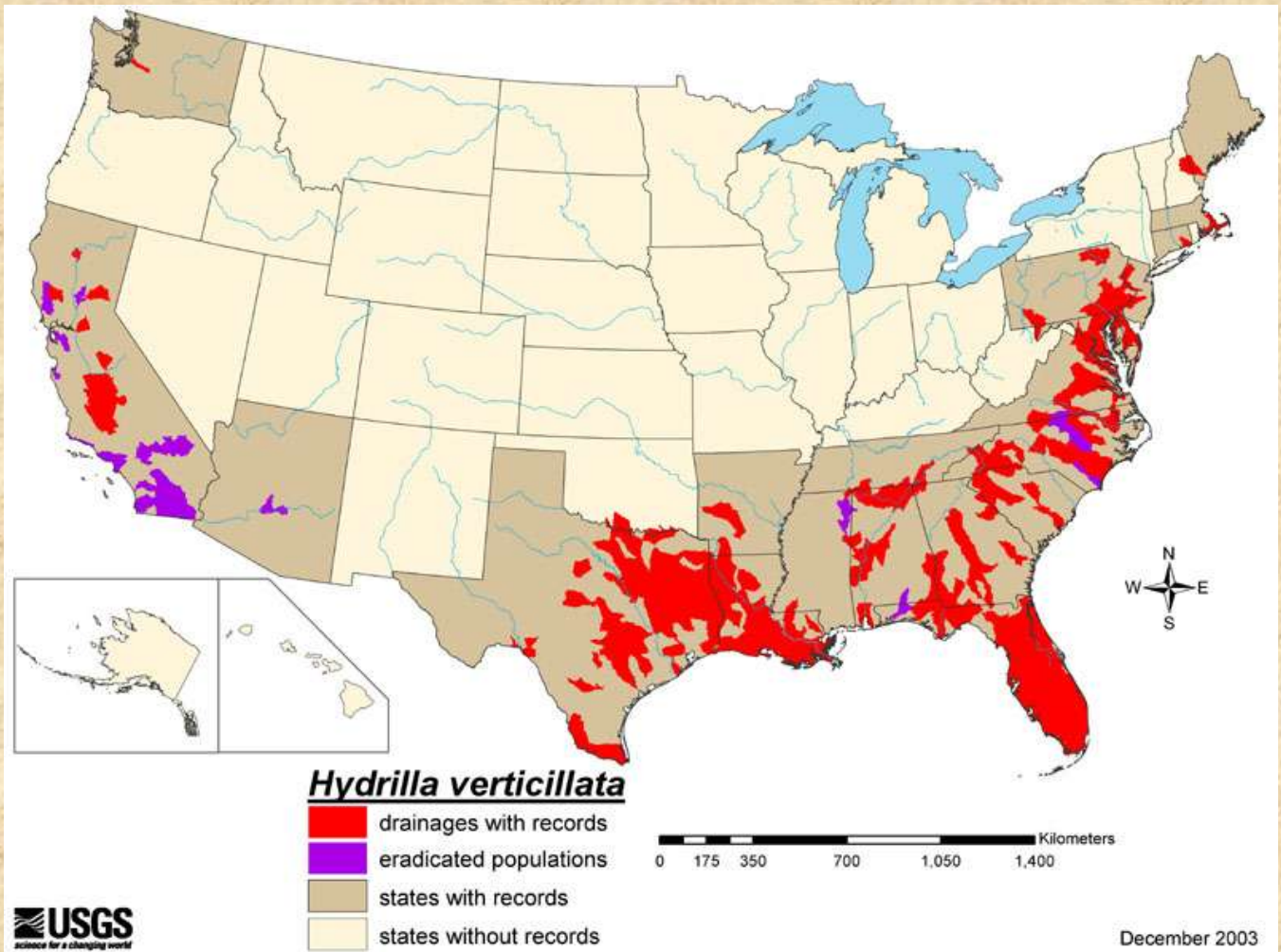
Female Flower

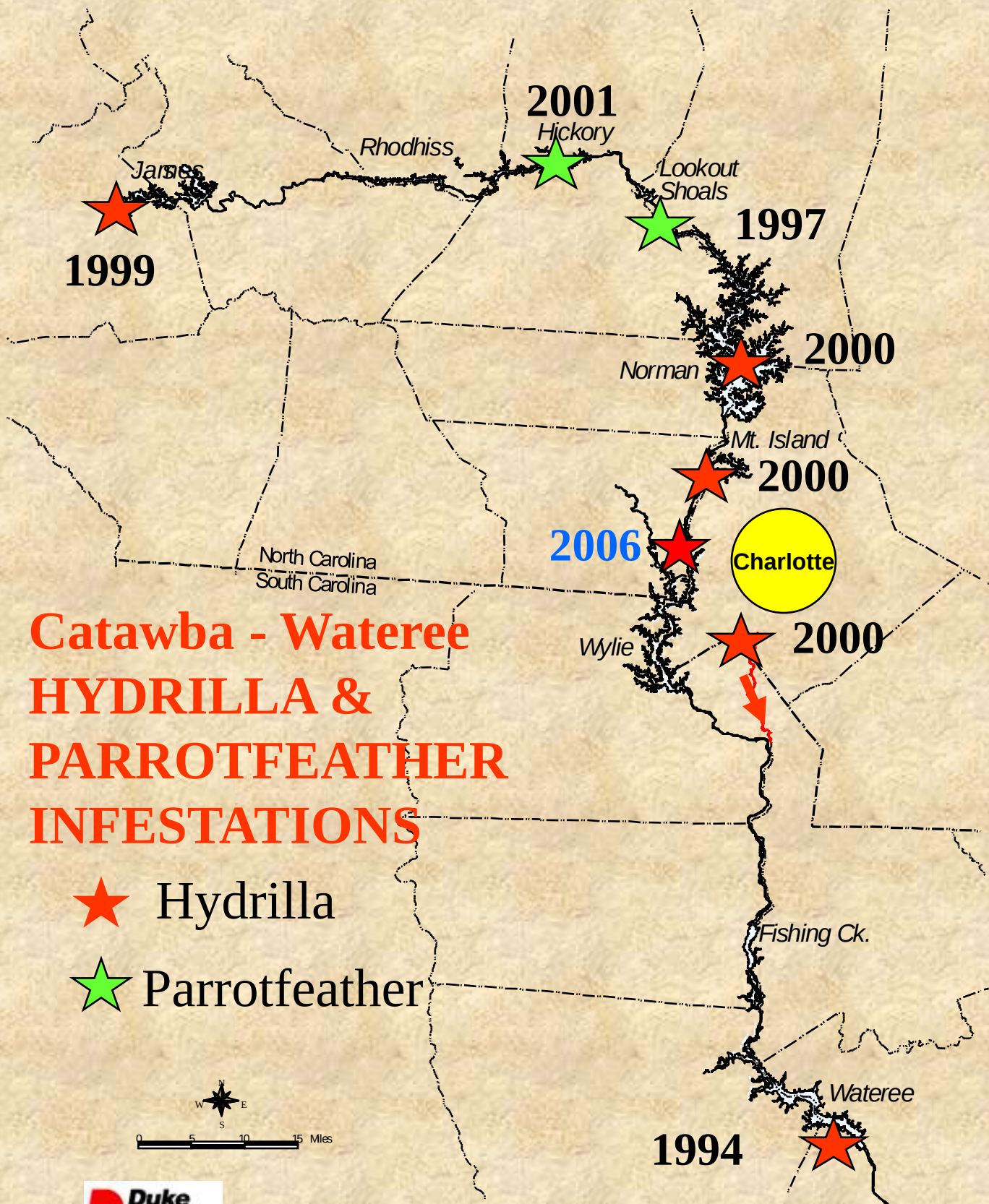


Turion



US Hydrilla Distribution





Hydrilla Distribution in L. James 2002

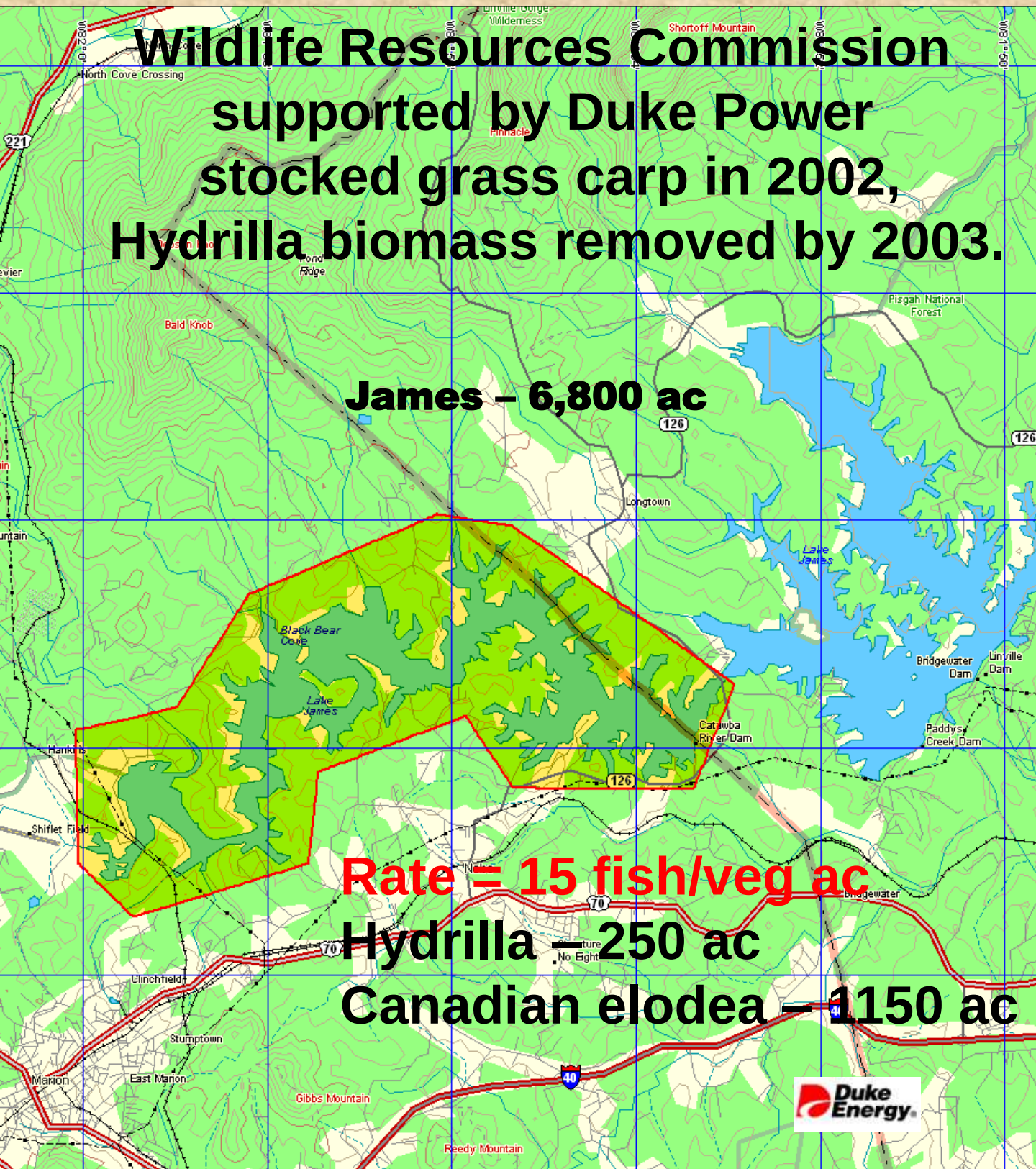
**Wildlife Resources Commission
supported by Duke Power
stocked grass carp in 2002,
Hydrilla biomass removed by 2003.**

James – 6,800 ac

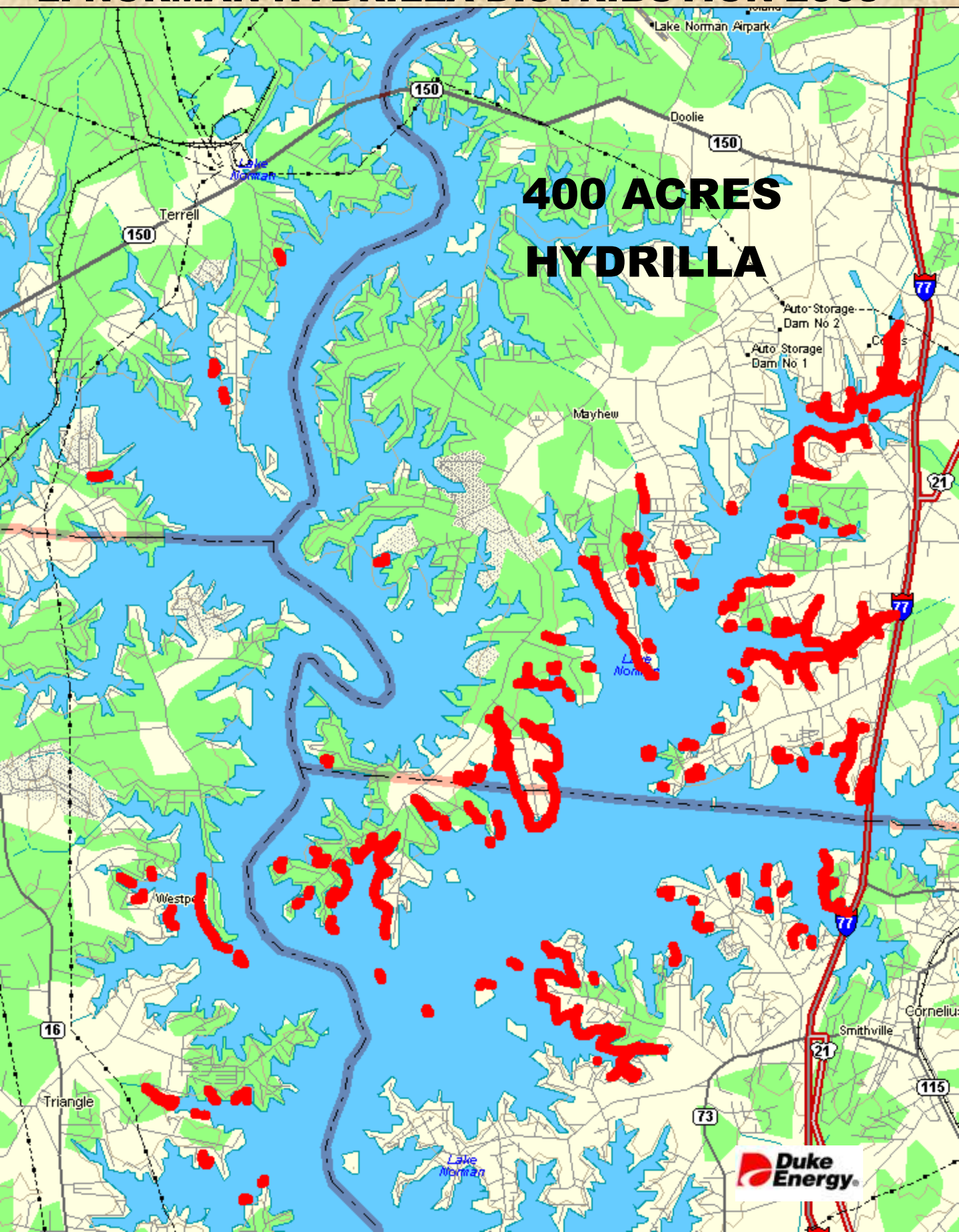
Rate = 15 fish/veg ac

Hydrilla – 250 ac

Canadian elodea – 1150 ac



L. NORMAN HYDRILLA DISTRIBUTION 2003



Mountain Island Lake

3,300 AC

Allison Ferry

Tree Rock

Duke Power Village

Rozzelle Bridge

Historic Latta Place

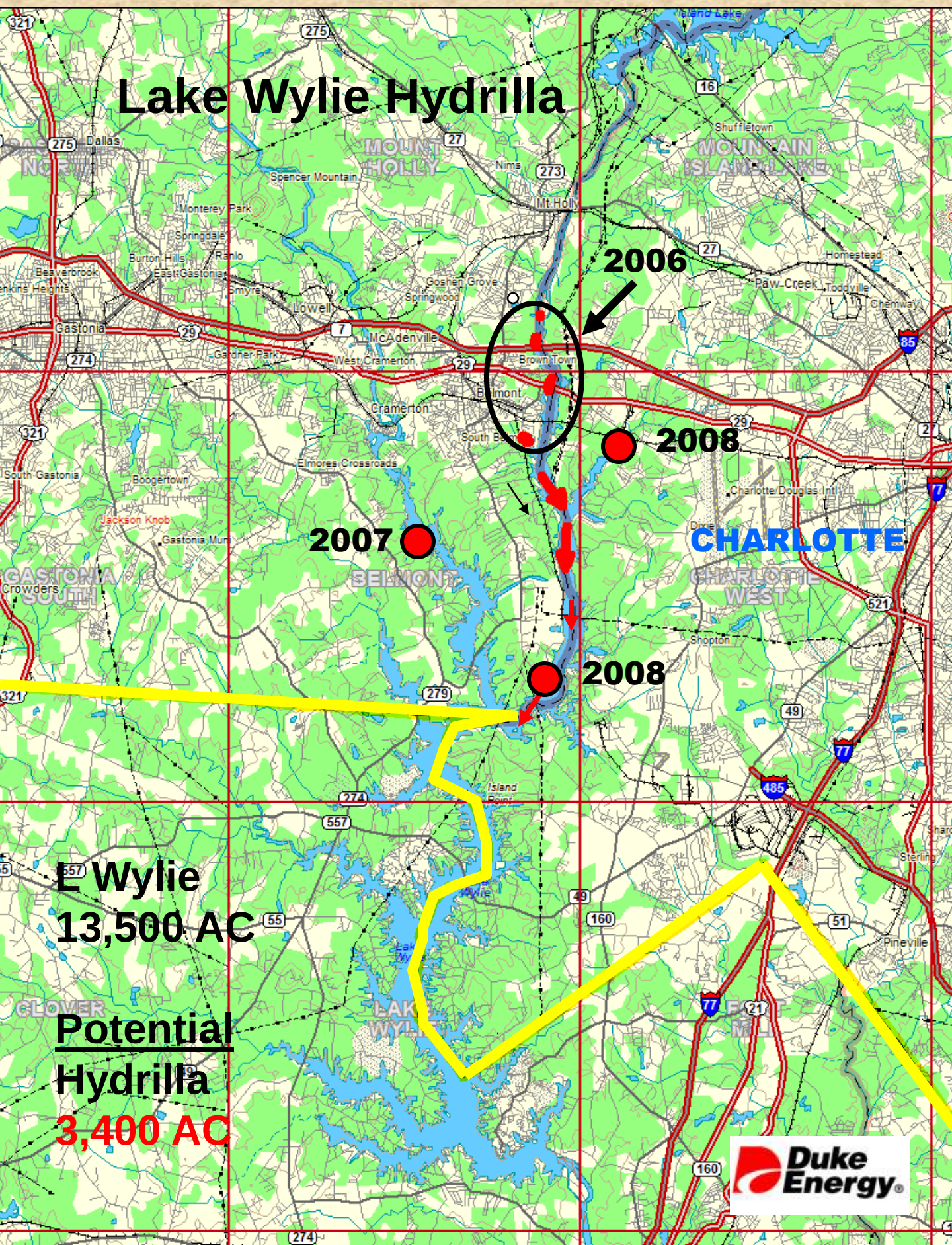
Mountain Island Reservoir Dam

Charlotte Drinking Water Intake

Grass carp rate: 15 fish/ veg acre

700 ac Hydrilla in 2001, NO Hydrilla observed in 2004.

Lake Wylie Hydrilla



L Wylie
13,500 AC

Potential
Hydrilla
3,400 AC

Lake Wateree Hydrilla Distribution 2007

Wateree= 13,800 ac

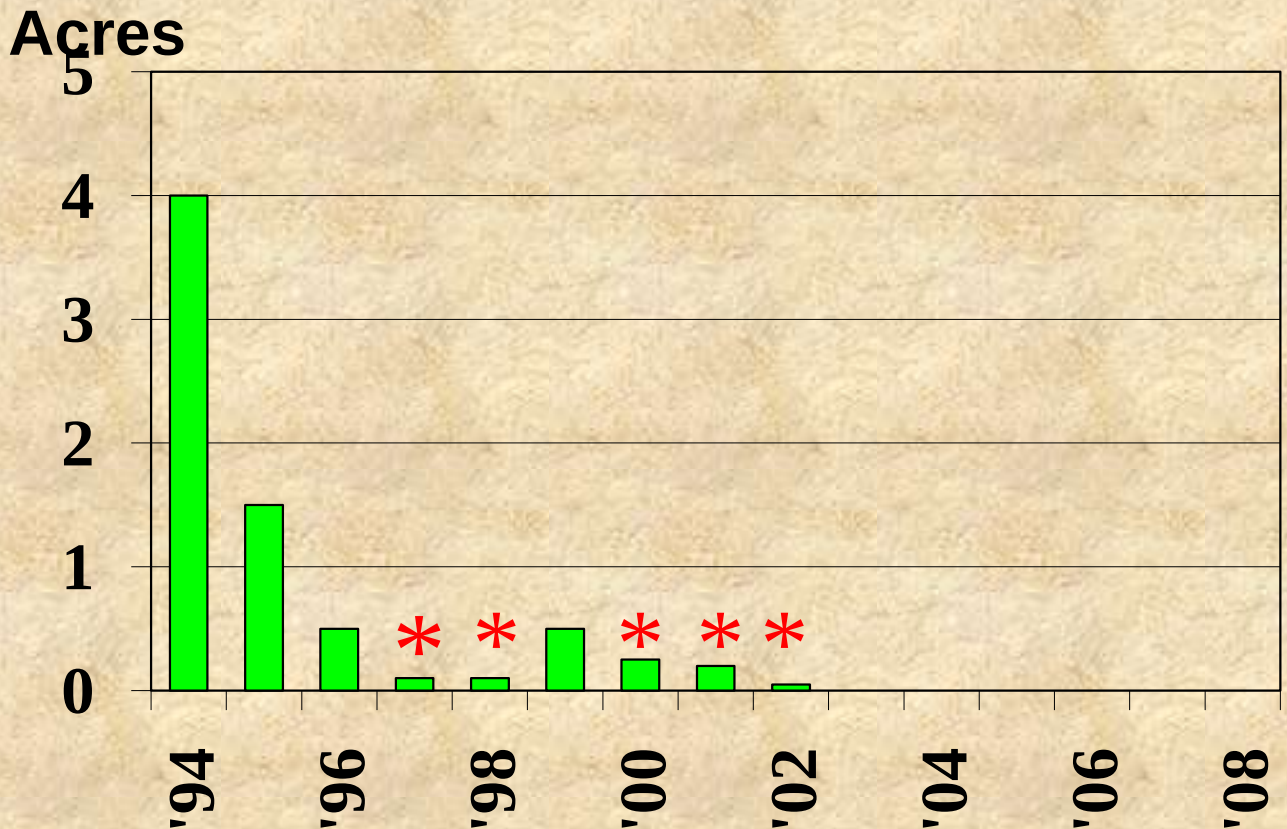
**Hydrilla biomass not observed
Since 2003.**

**Scattered and at times, extensive
Najas minor beds.**

**Hydrilla
4 AC**



Hydrilla Control in Lake Wateree 1994 - 2008



* hand removal of tuber sprouts





**51.4 lbs Sterile Asian Grass Carp
Lake Bowen, SC
Mr. Todd Davis
Carp Anglers Association**



Summary of Hydrilla Management in Catawba R Lakes

LAKE & Lead Org.	Year Found (Acres)	Potential Acres/ (Total AC)	Max Acres	Control
James <i>NCWRC</i>	1999 (~2)	1,400 (6,812)	300+ (2002)	Chem, Grass Carp '02
Norman <i>LNMC</i>	2000 (~7)	8,000 (32,500)	400+ (2004)	Chem, Grass Carp '04
Mtn. Island <i>CMUD</i>	2000 (~2)	1,200 (3,281)	700+ (2002)	Chem, Grass Carp '02
Wylie <i>LWMC</i>	2006 (~10)	3,400 (13,443)	60+ (2008)	Chem, Grass Carp '08
Wateree <i>DPC</i>	1994 (~4)	4,200 (13,864)	4 (2006)	Chem & by hand



Lookout Shoals Parrotfeather 2002

**NC WRC Proposed NCSU
Masters Research
supper stocking of
grass carp to manage
Parrotfeather
(*Myriophyllum aquaticum*)**

**230 AC parrotfeather &
Brazilian elodea**

RATE: 40 fish/veg. AC

LOOKOUT SHOALS RESERVOIR 1200 AC

PARROTFEATHER DISTRIBUTION, Approx. 200 AC, 9/2001







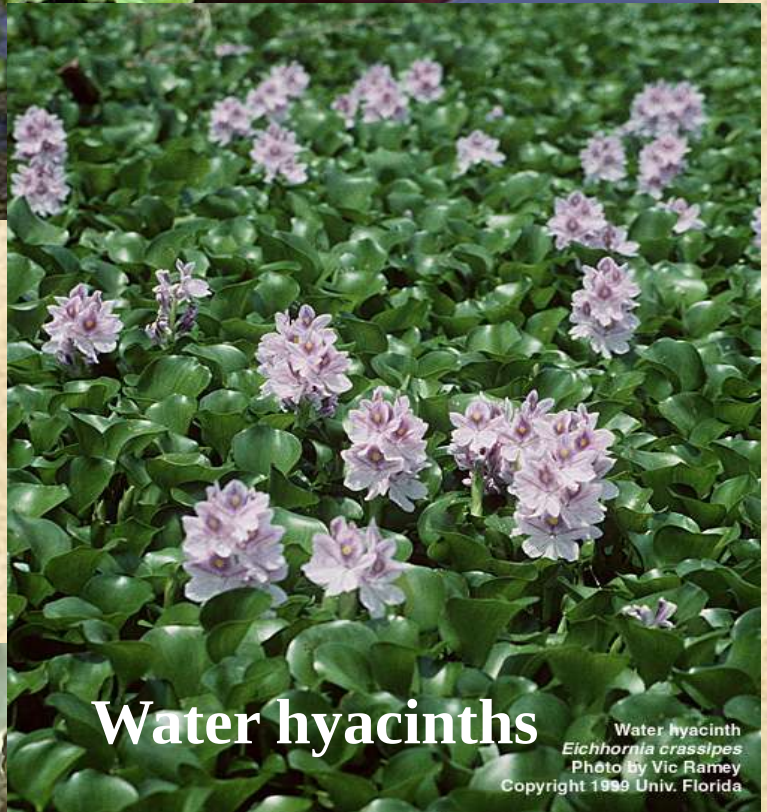




Lake James 2002



Water lettuce



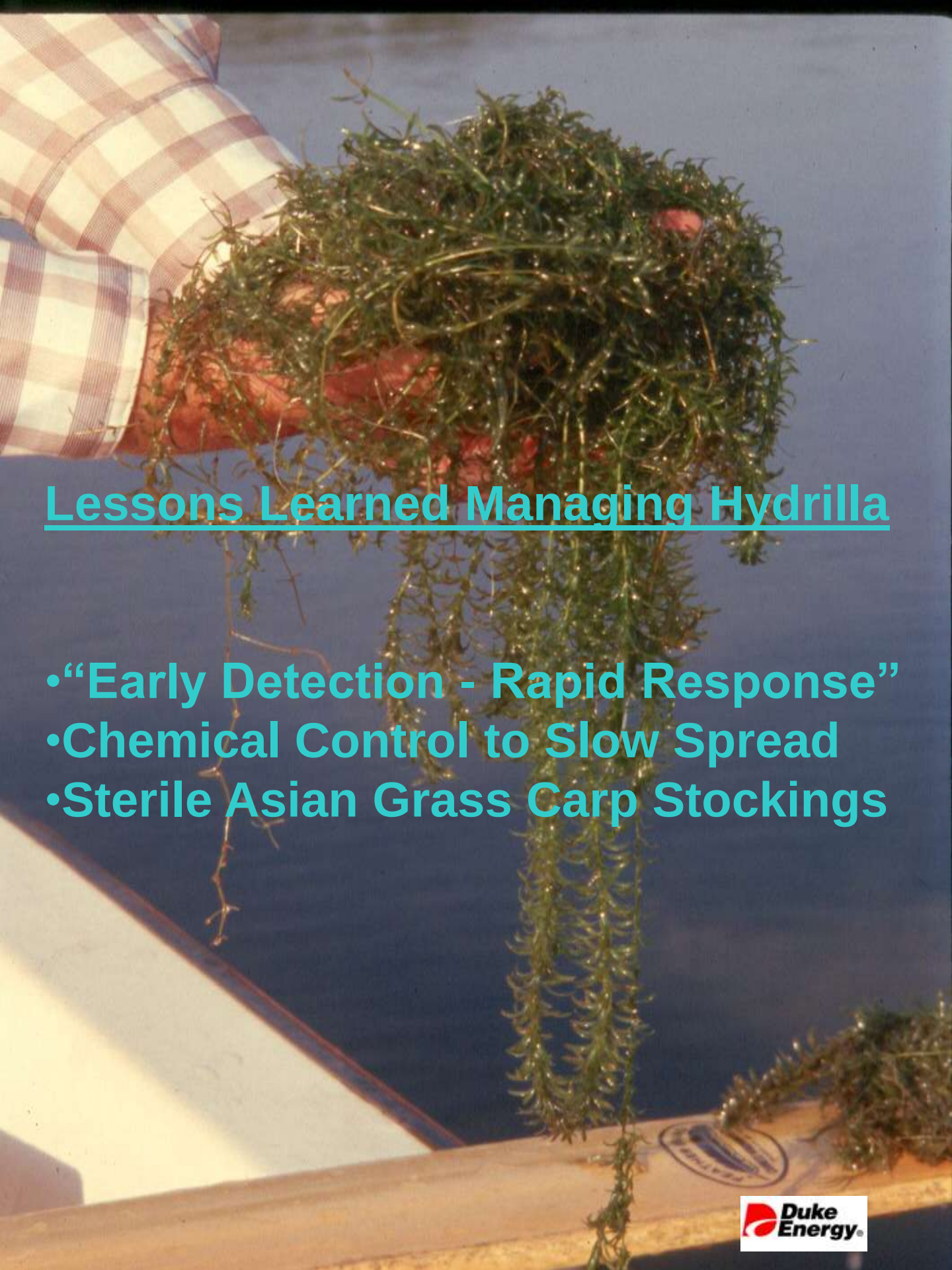
Water hyacinths

Water hyacinth
Eichhornia crassipes
Photo by Vic Ramey
Copyright 1999 Univ. Florida



Giant salvinia

Giant salvinia
Salvinia molesta
Photo by Vic Ramey
Copyright 2000 Univ. Florida



Lessons Learned Managing Hydrilla

- “Early Detection - Rapid Response”
- Chemical Control to Slow Spread
- Sterile Asian Grass Carp Stockings

QUESTIONS