

Largemouth bass cohort response to drawdown management on Rodman Reservoir




Rodman Reservoir specs.

- Located in north-central Florida
- 9100 acre impoundment of the Ocklawaha River
- Largemouth bass managed by 14 inch minimum size and 5 fish bag limit per person



Rodman Reservoir Drawdown History

Dates	NVGD change (m)	Comments
Aug 1972 to Mar 1973	18 to 13	Court ordered for wetland trees fluctuation
Jan 1975 to Mar 1975	18 to 15, surcharge to 20	
Aug 1979 to Nov 1979	18 to 14	Experimental drawdown for aquatic plant management
Jan 1980 to Feb 1980	18 to 14	
Sep 1980 to Mar 1981	18 to 13	
Sep 1981 to Feb 1982	18 to 13	
Dec 1988 to Mar 1989	18 to 13	
Nov 1991 to Apr 1992	18 to 13, surcharge to 19	
Nov 1995 to Mar 1996	18 to 13, surcharge to 20	
Dec 1998 to Mar 1999	18 to 11 , surcharge to 20	"Extreme" drawdown
Dec 2001 to Mar 2002	18 to 11 , surcharge to 20	"Extreme" drawdown



Purpose: Evaluate the effects of drawdown management on the largemouth bass population over 4 years

Objectives

- Test for differences in age-1 abundance
- Test for differences in age-1 growth
- Relate potential trends in abundance and age structure to reservoir levels

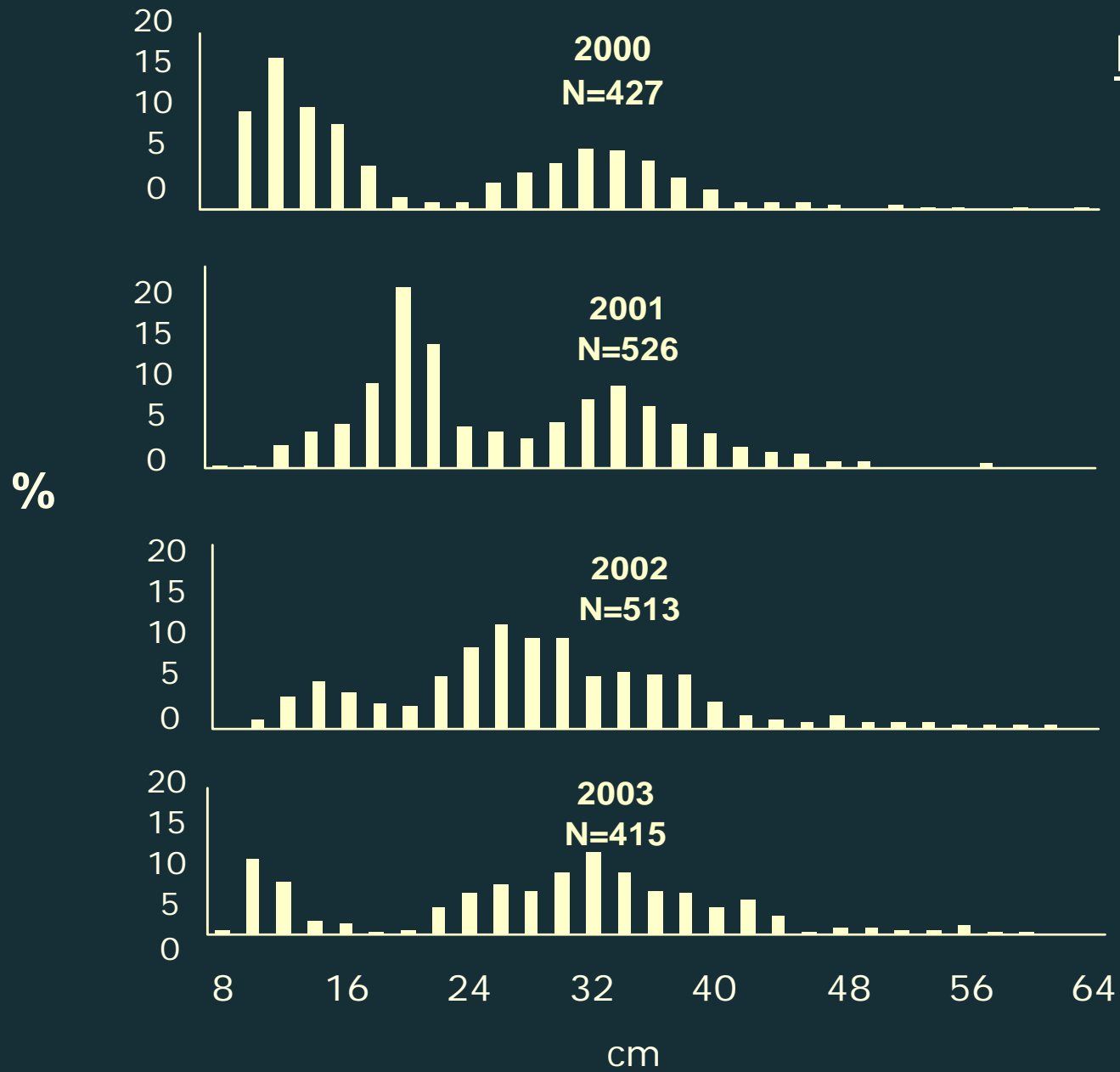
Drawdown Years

1993

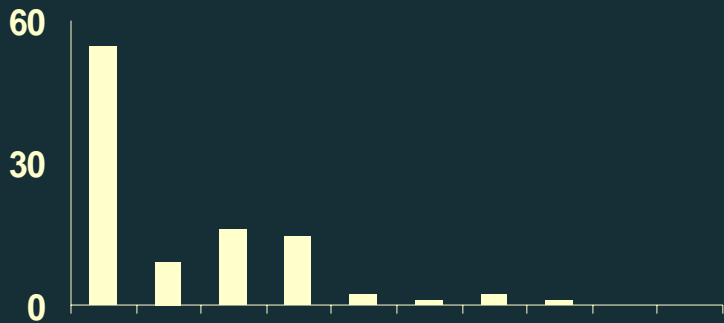
1996

1999

2002



2000



Drawdown Years

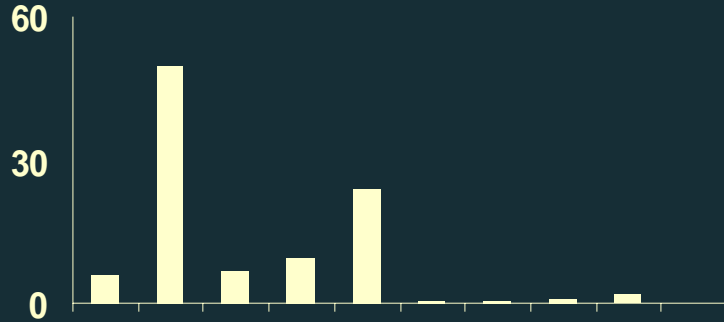
1993

1996

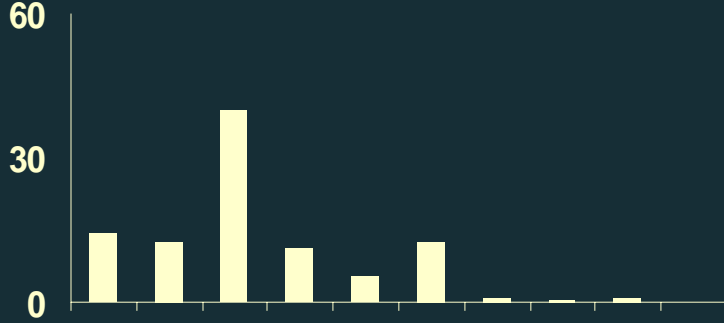
1999

2002

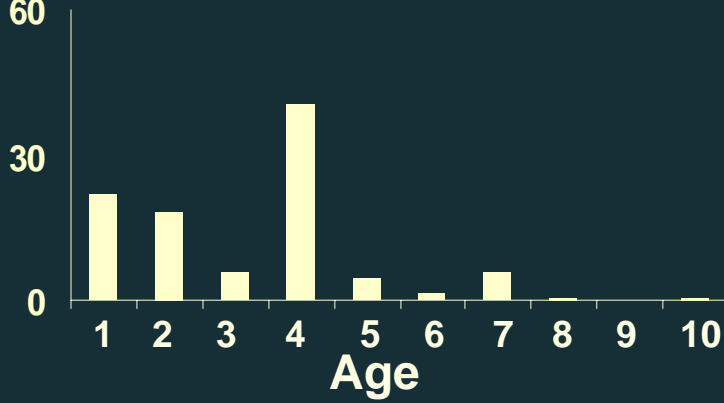
2001



2002

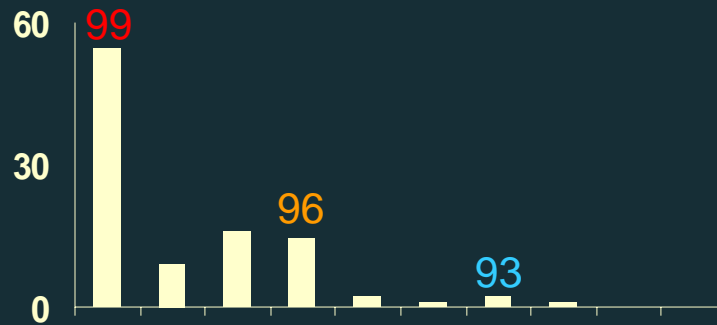


2003



72 %

2000



Drawdown Years

1993

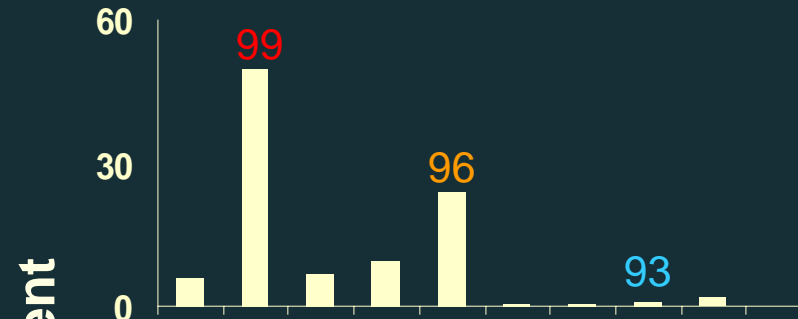
1996

1999 (Extreme)

2002 (Extreme)

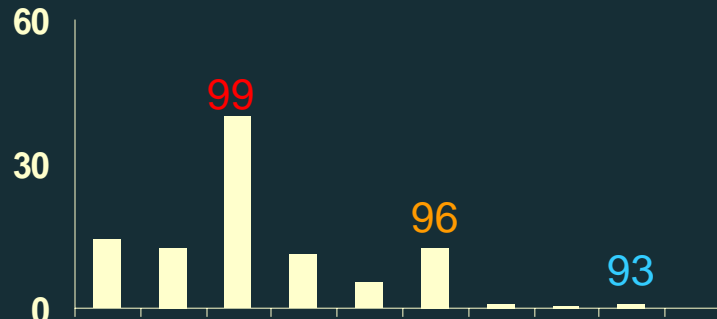
75 %

2001



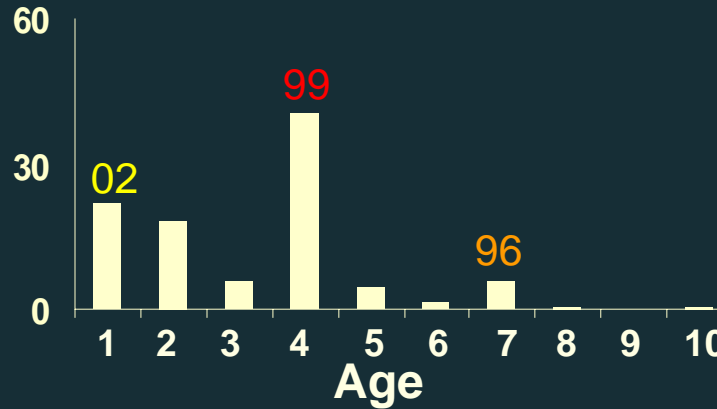
54 %

2002

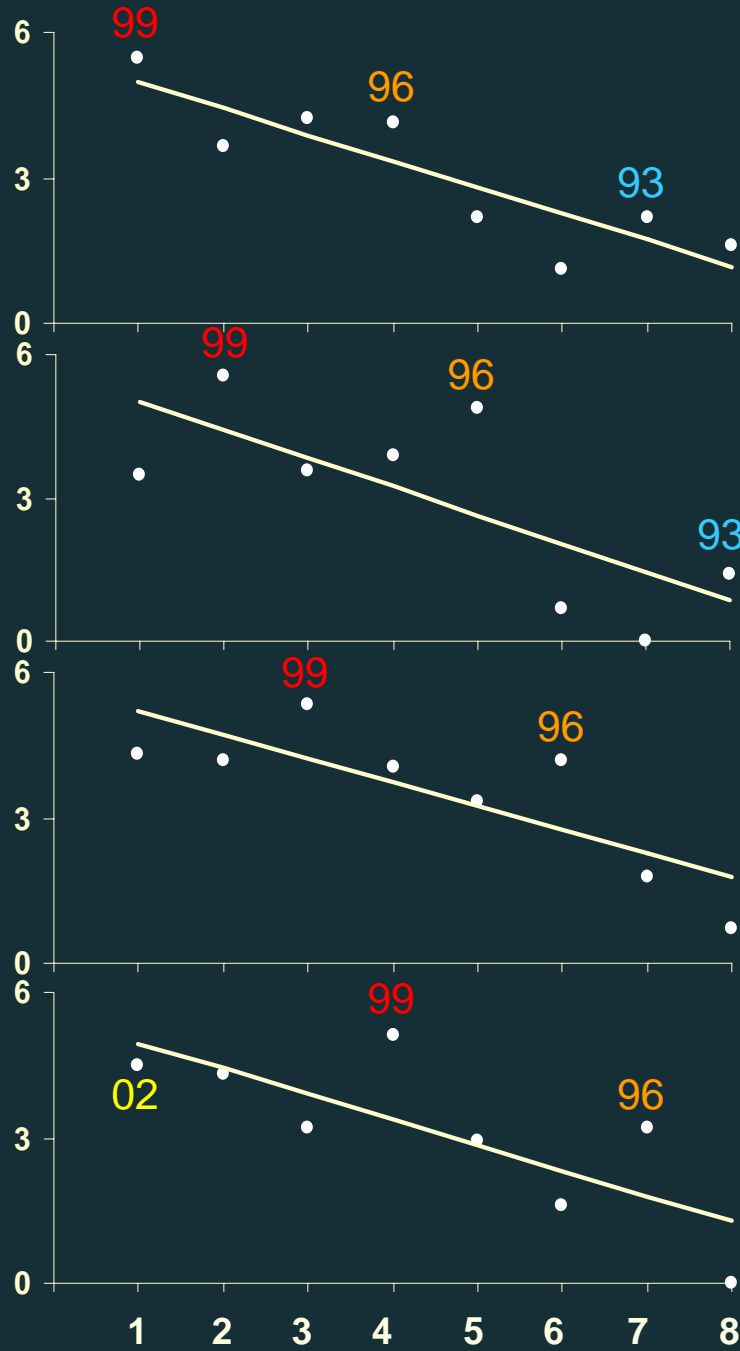


68 %

2003



2000



Drawdown Years

1993

1996

1999 (Extreme)

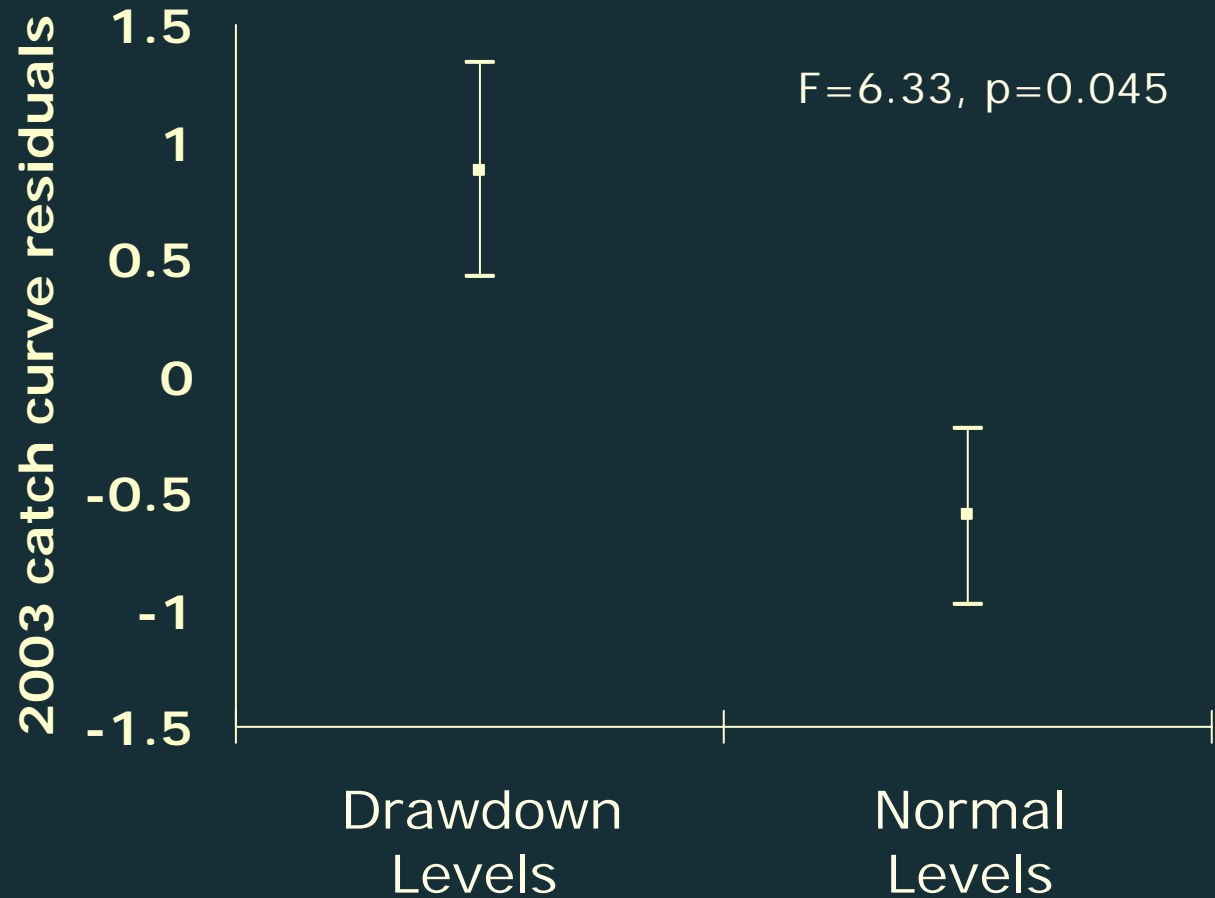
2002 (Extreme)

2001

2002

2003

Age



Comparison of catch curve residuals on Reservoir levels from the 2003 collection year



Conclusions

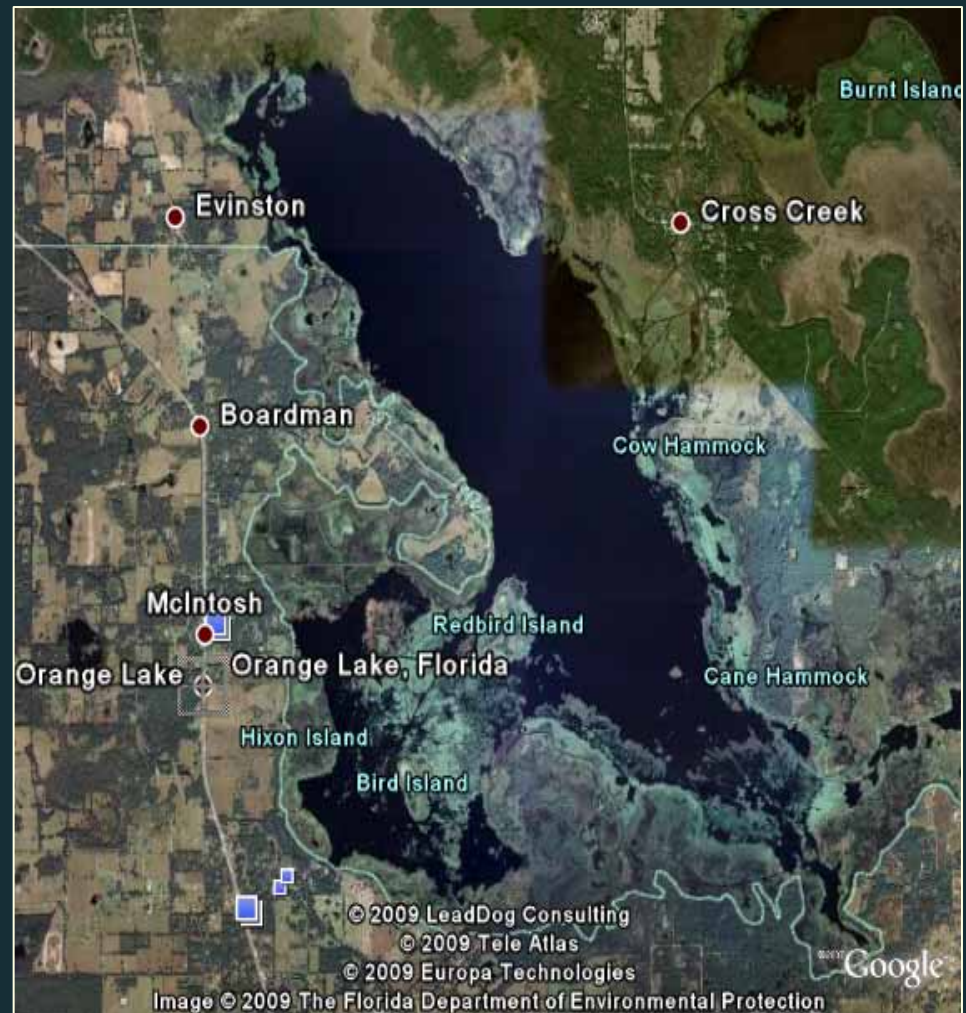
- The probability of strong year class production and survival to age-1 increases during drawdown years
- Current drawdown timing, duration, and magnitude provide fishery managers with an inexpensive tool for high recruitment to the fishery on 3-year intervals

Orange Lake habitat management guidelines



Orange Lake specs.

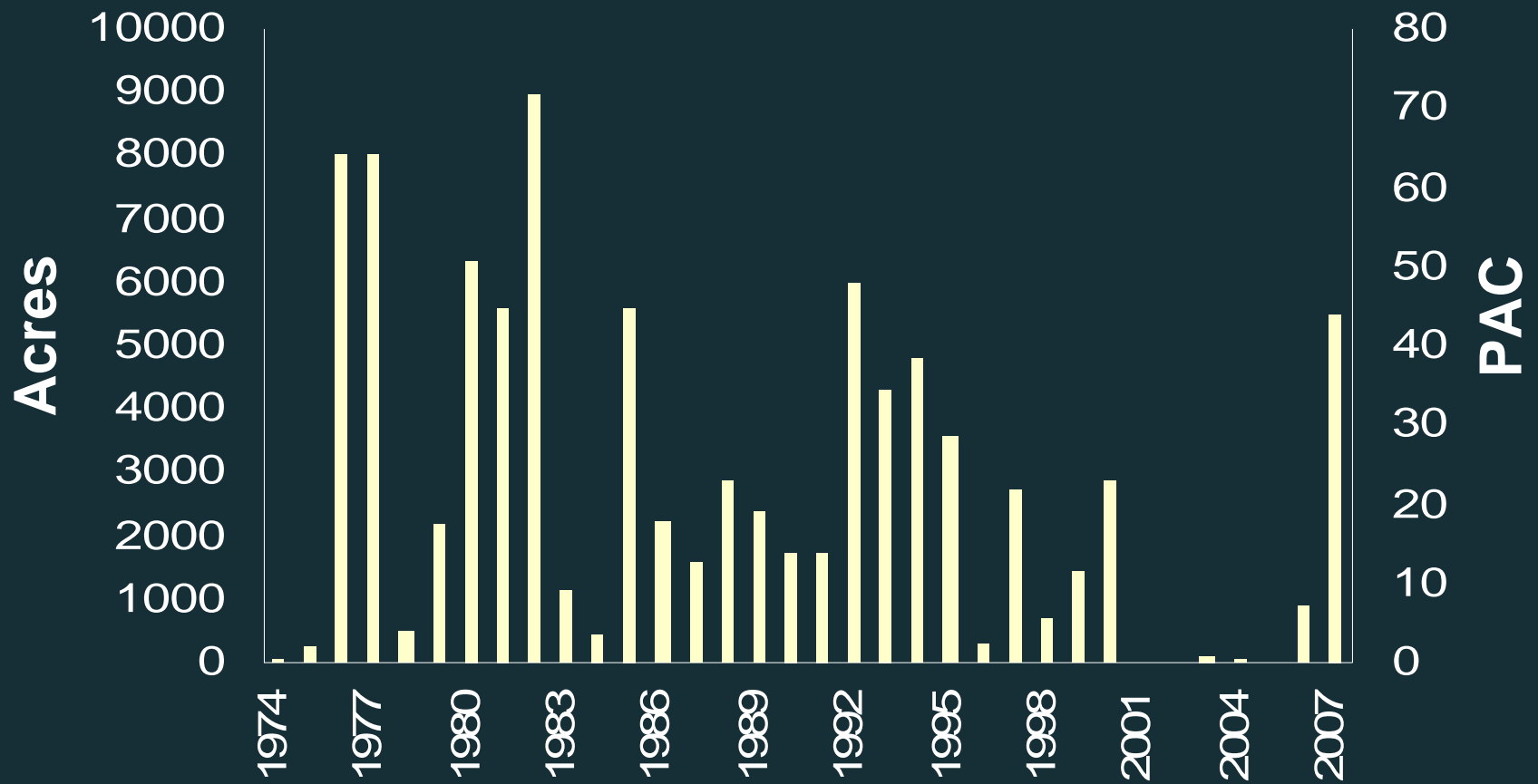
- Located in north-central Florida
- 12,000 acres
- Largemouth bass managed by 15 to 24 inch size slot and 3 fish bag limit per person



Vegetation management



Hydrilla coverage on Orange Lake



Natural Control





FWC Orange Creek Basin Working Group

Goal – To facilitate and communicate the long-term maintenance and enhancement of fish and wildlife aquatic habitats in the OCB.

Objectives

- Identify and define the habitat types represented within the basin
- Identify important fish and wildlife guilds and their respective habitat preferences
- Provide a framework (guidelines) for developing management priorities and research needs

Major habitat types in Orange Lake

- Tree island
- Shrub swamp
- Shallow marsh
- Floating marsh
- Deep marsh
- Floating island
- SAV (Hydrilla)



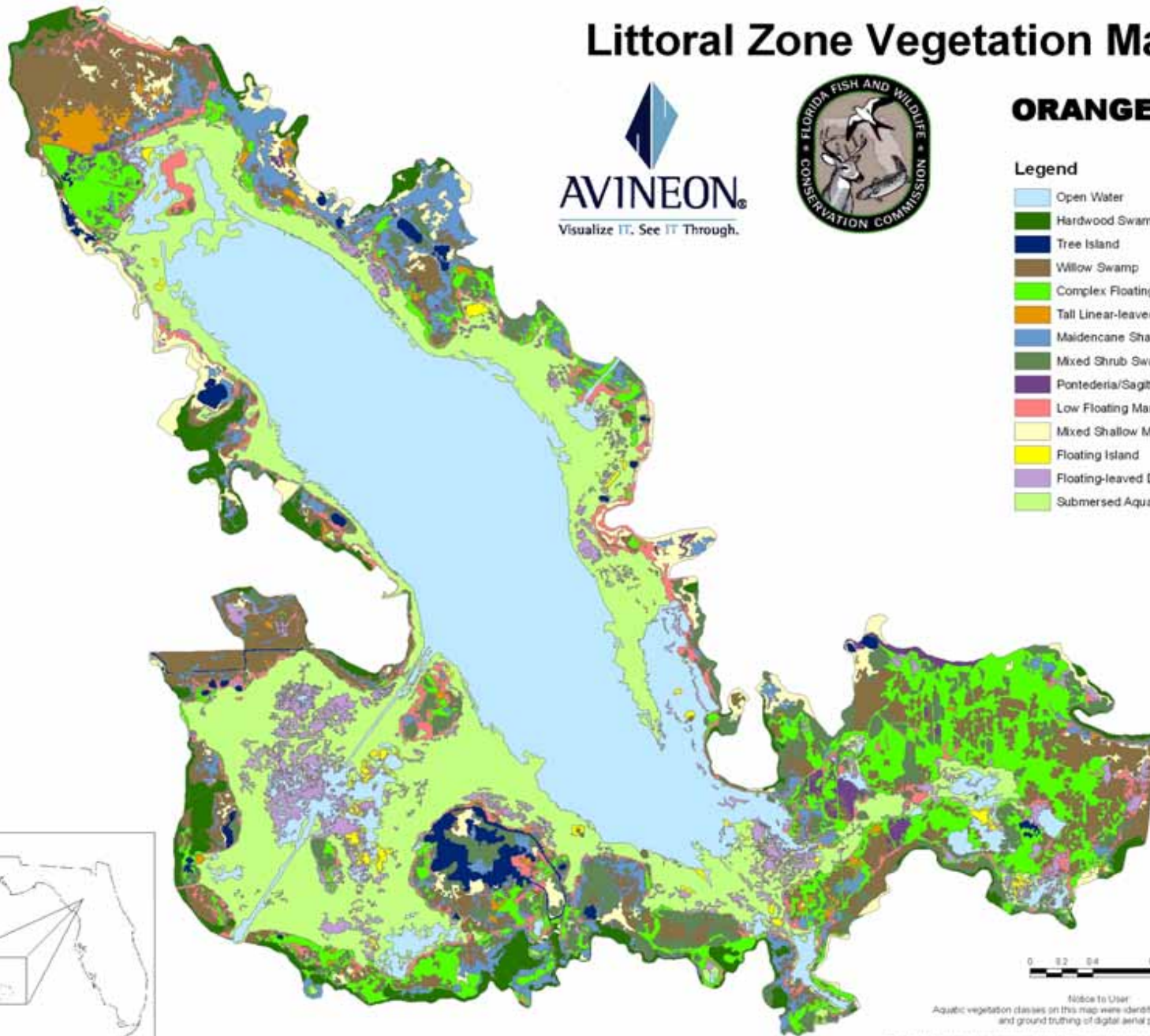
Littoral Zone Vegetation Mapping



ORANGE LAKE

Legend

- Open Water
- Hardwood Swamp
- Tree Island
- Willow Swamp
- Complex Floating Marsh
- Tall Linear-leaved Shallow Marsh
- Maldenecane Shallow Marsh
- Mixed Shrub Swamp
- Pontederia/Sagittaria/Peltandra Shallow Marsh
- Low Floating Marsh
- Mixed Shallow Marsh
- Floating Island
- Floating-leaved Deep Marsh
- Submersed Aquatic Vegetation




Notice to User:
Aquatic vegetation classes on this map were identified using photointerpretation and ground truthing of digital aerial photography.

The digital color infrared aerial photography was obtained in May of 2007 with 1 foot pixel resolution.

Major taxonomic guilds

- *Alligators*
 - *Wading birds*
 - *Waterfowl*
 - *Bald eagles*
 - *Centrarchid fish*
 - *Reptiles and amphibians*
 - *Mammals*
- High economic importance.
 - High recreational importance.
 - Sensitive to habitat manipulations.
 - Keystone species
 - Rare or listed species



Guild-specific habitat objectives

Examples:

Shallow marsh objectives:

Waterfowl – To manage shallow marsh habitat for a mosaic of 30-60% vegetative cover and moderate interspersions to provide use by wood ducks and dabbling ducks on Orange Lake.

Sunfish – To manage indefinitely shallow marsh areas for a mosaic of 50-75% rooted emergent vegetation and a maximum of 25% floating marsh, to maintain connectivity to deep marsh habitat.



Guild-specific habitat objectives

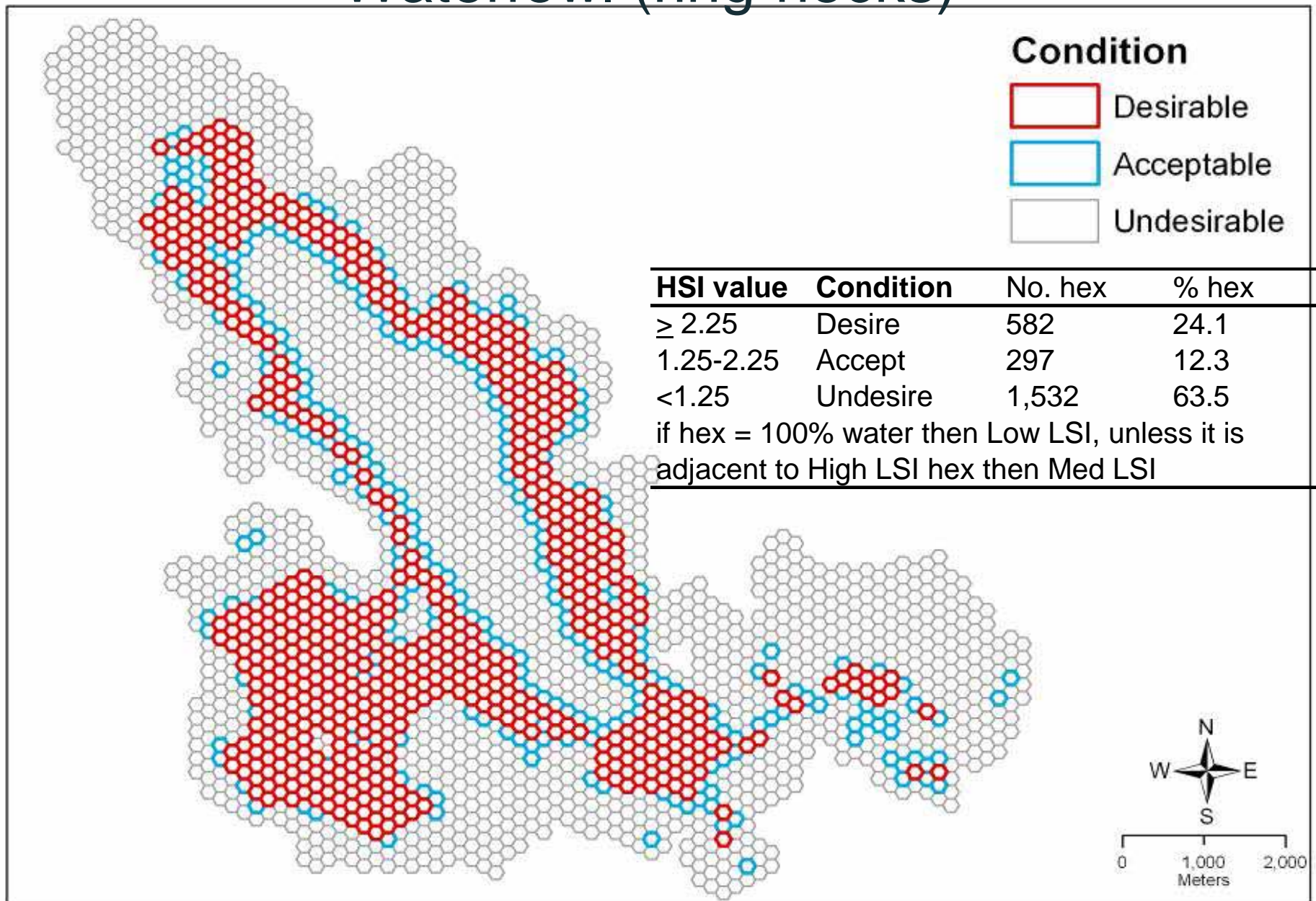
Examples:

Hydrilla objectives:

Waterfowl – To manage 1000 or more acres of hydrilla on Orange Lake to provide food for waterfowl during fall and winter.

Sunfish – To manage indefinitely the defined open water areas of Orange Lake to less than 5% surface coverage of hydrilla or less than 20% surface coverage native SAV.

Waterfowl (ring-necks)



Sunfish

