

**South Florida
Ecosystem Restoration
Taskforce**

May 16, 2007

**Lake and Estuary
Restoration:
Watersheds, weather,
and strategies toward
achieving goals**

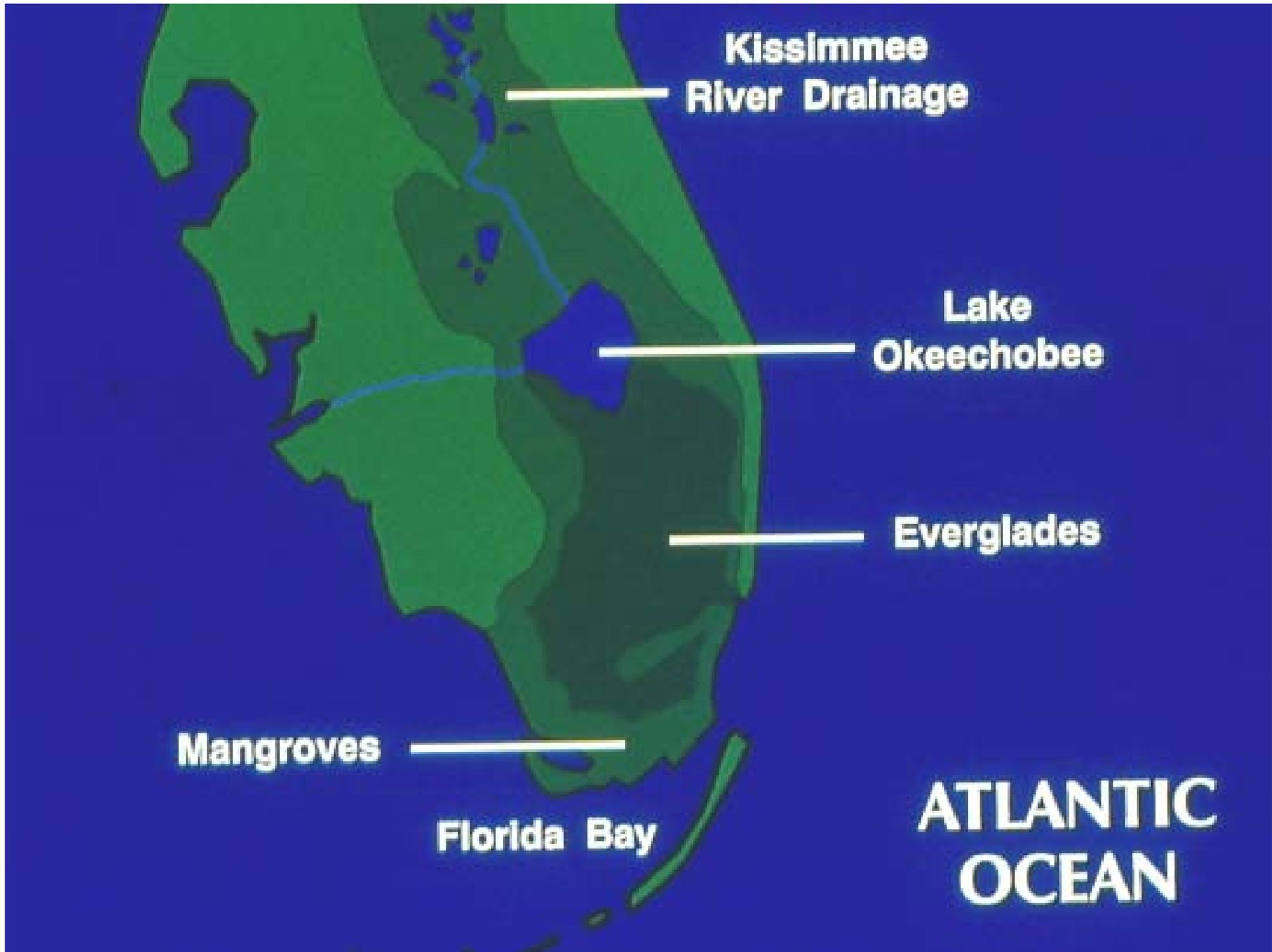
Paul N. Gray, Ph.D.

 **Audubon** OF FLORIDA









**Kissimmee
River Drainage**

**Lake
Okeechobee**

Everglades

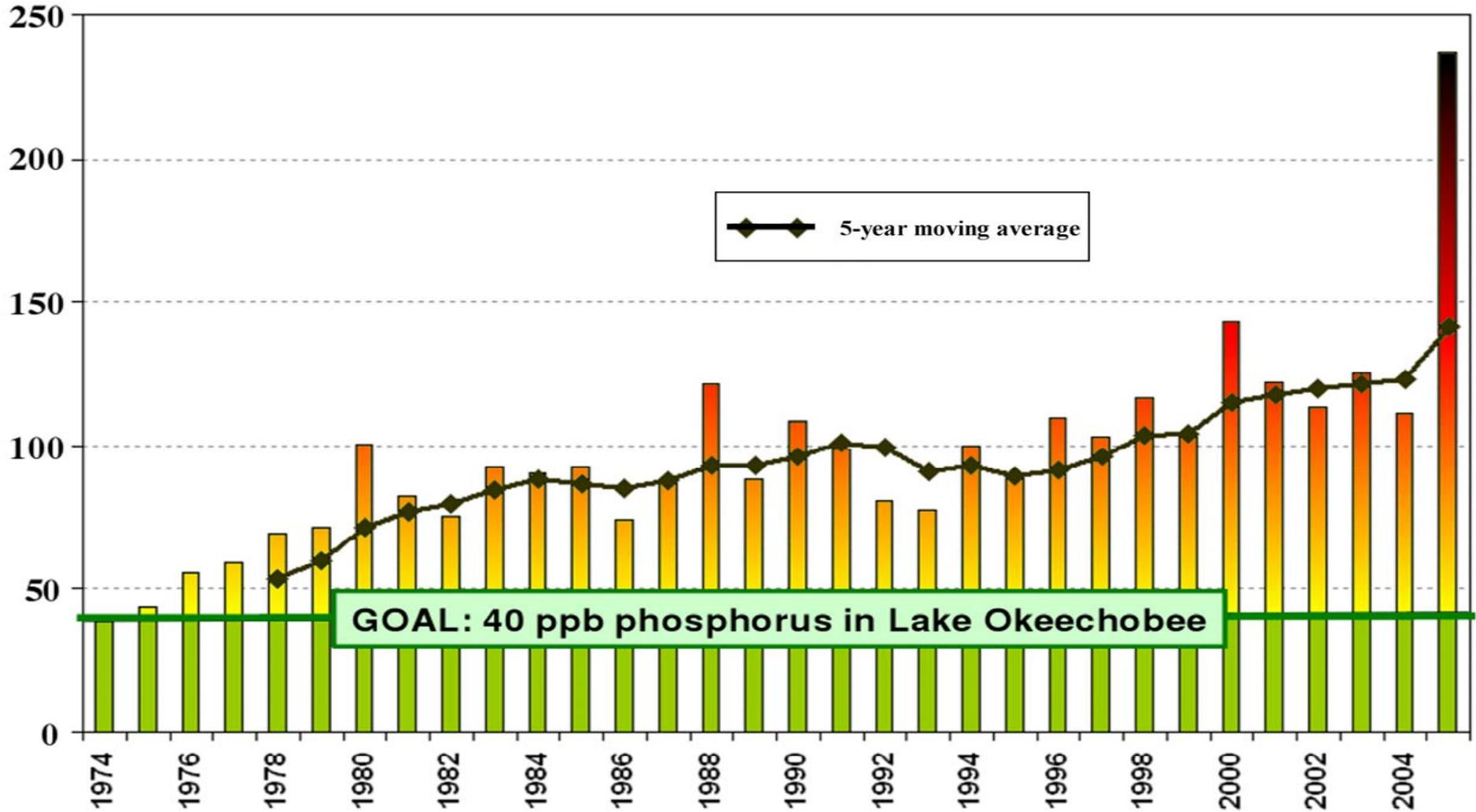
Mangroves

Florida Bay

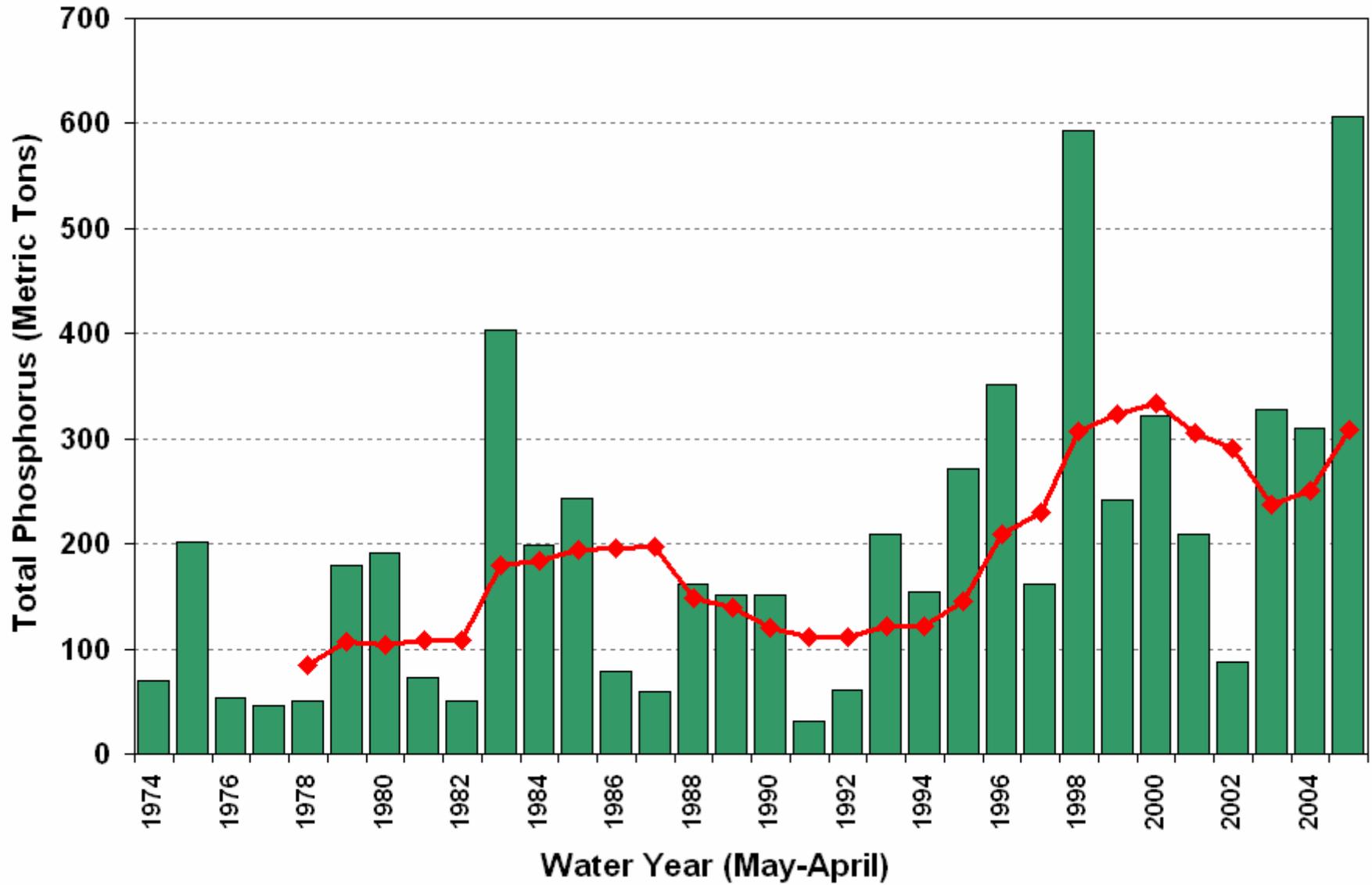
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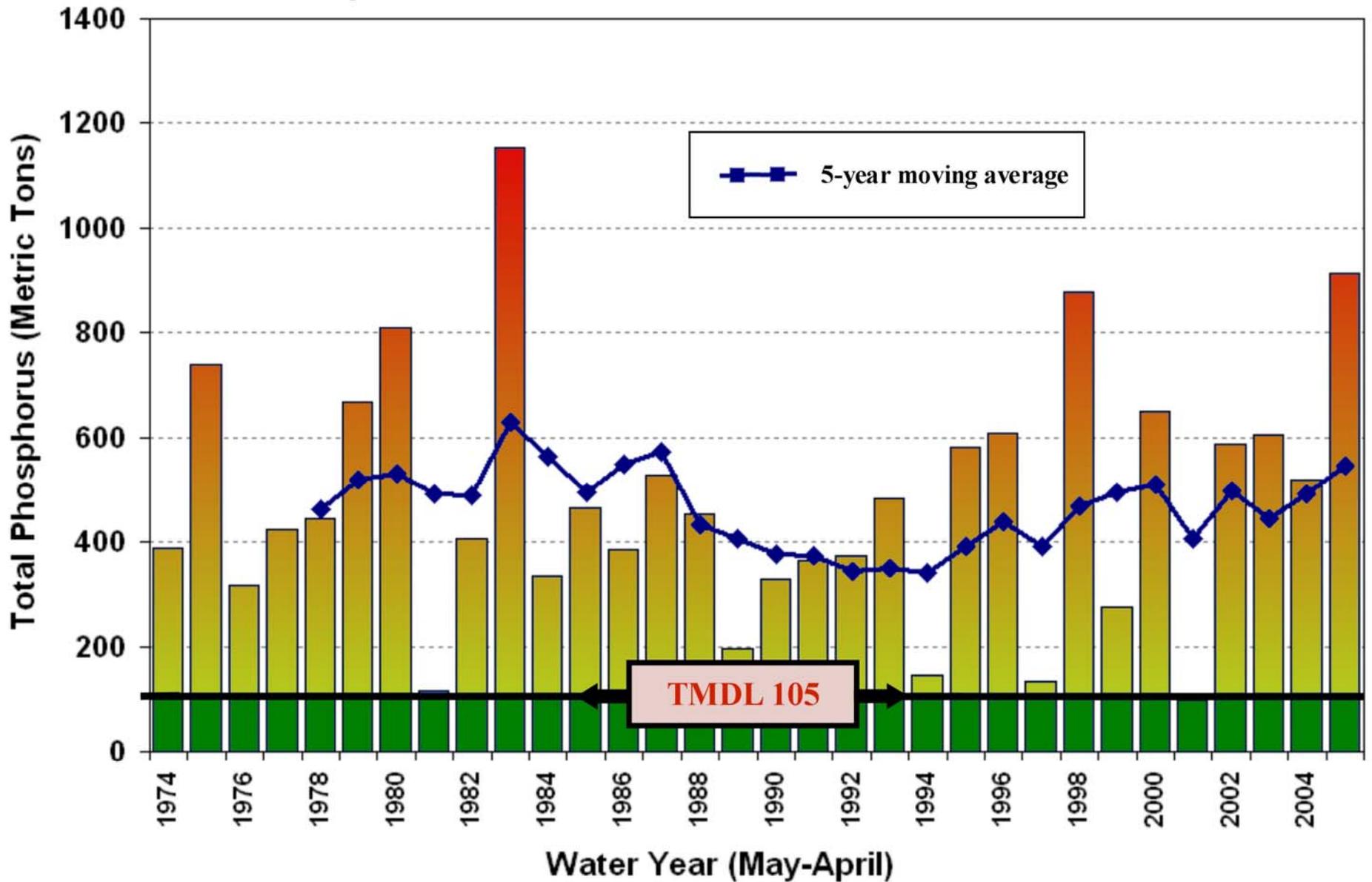
Phosphorus is increasing in Okeechobee



Phosphorus Surface Loads from Lake Okeechobee

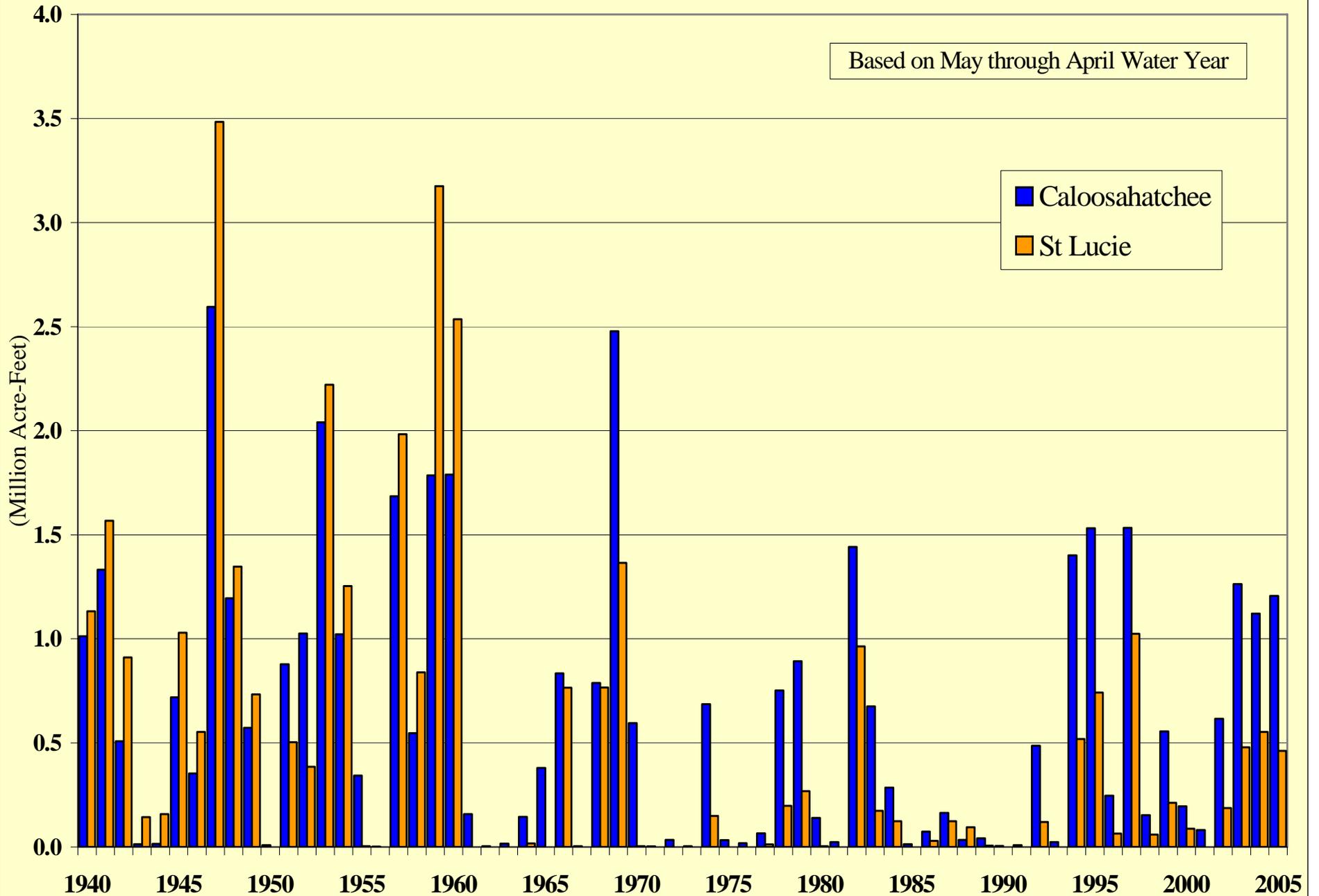


Phosphorus Surface Loads to Lake Okeechobee

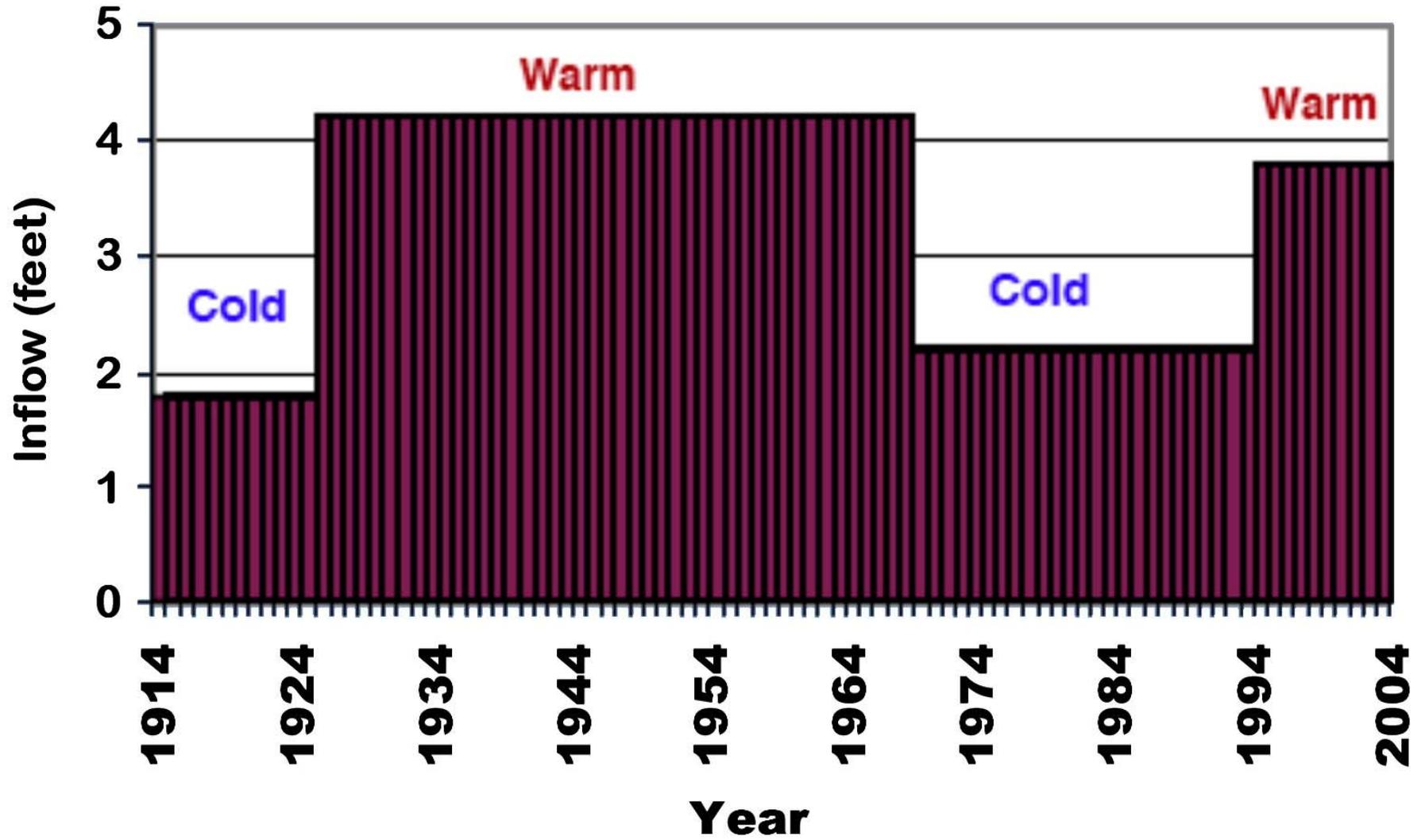


Annual Flow to Tide From Lake Okeechobee

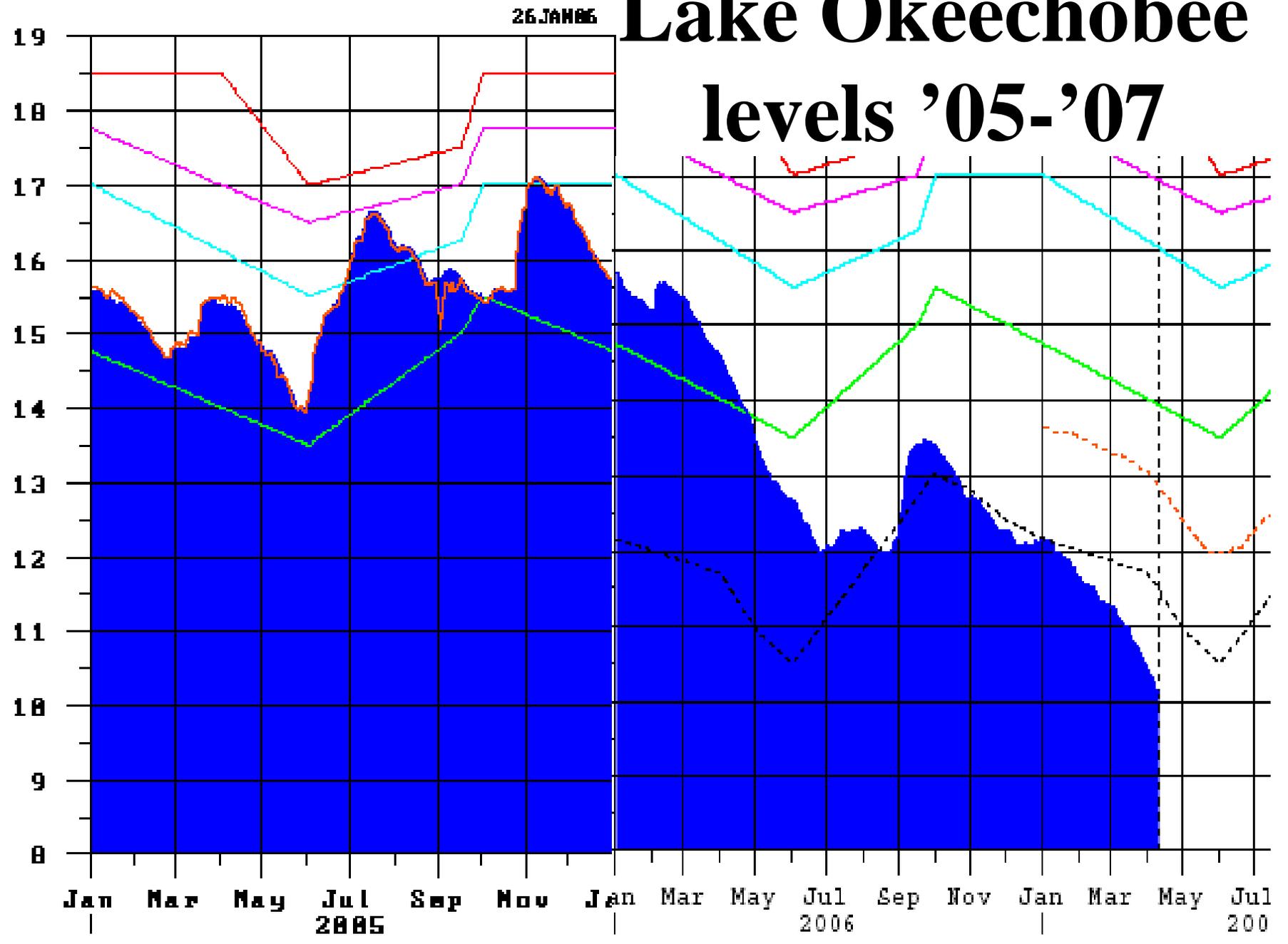
Based on May through April Water Year



Shifts in Lake Okeechobee Average Annual Inflow



Lake Okeechobee levels '05-'07



Okeechobee Challenges

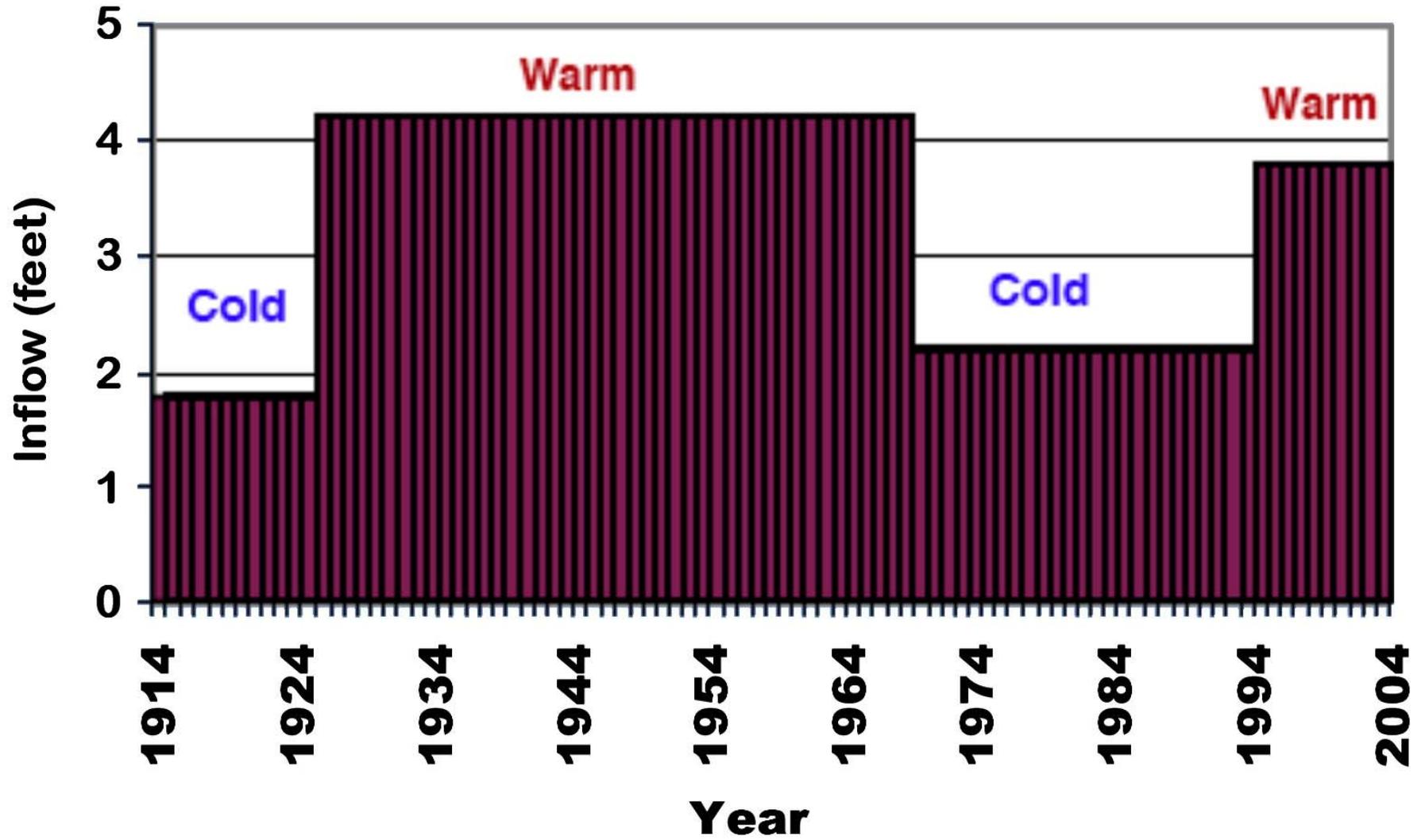
- **Volatile weather and an over-drained watershed**
- **Large amounts of phosphorus vs. lowered TMDL**



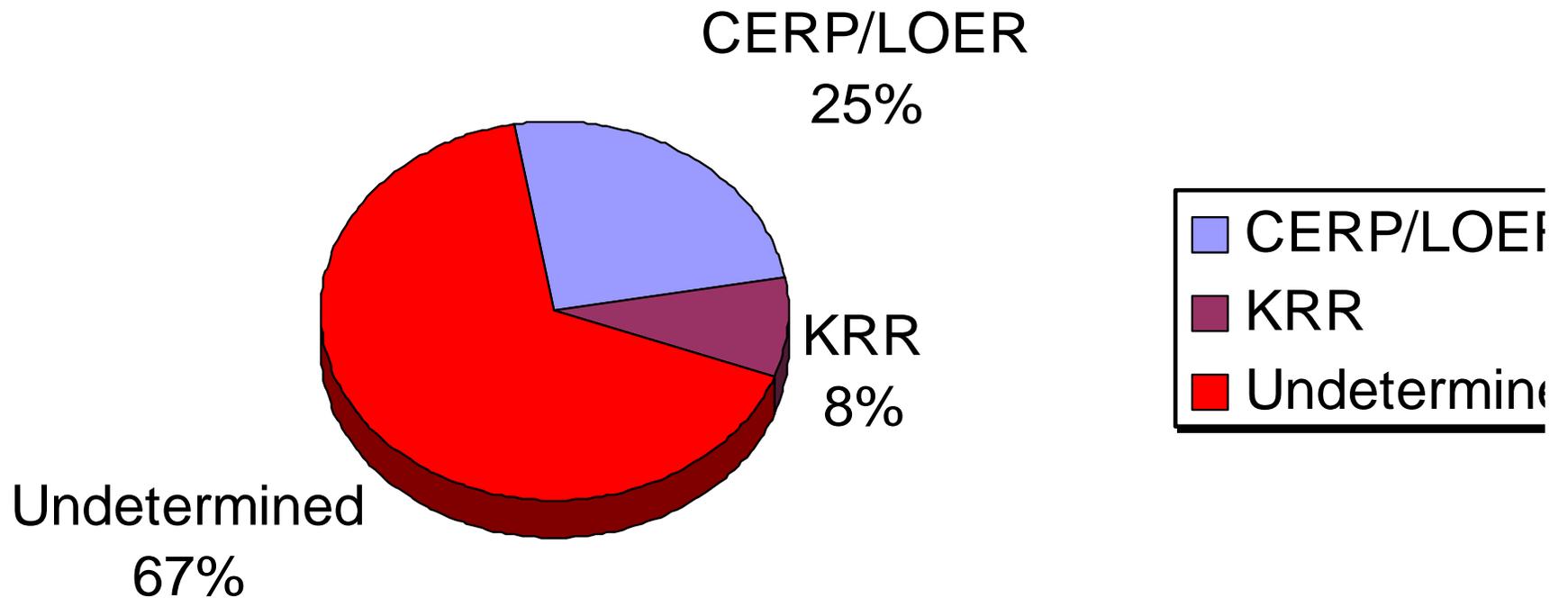
Illustration by [unreadable]

Lake Okeechobee
everything in harmony | restoration seeds

Shifts in Lake Okeechobee Average Annual Inflow

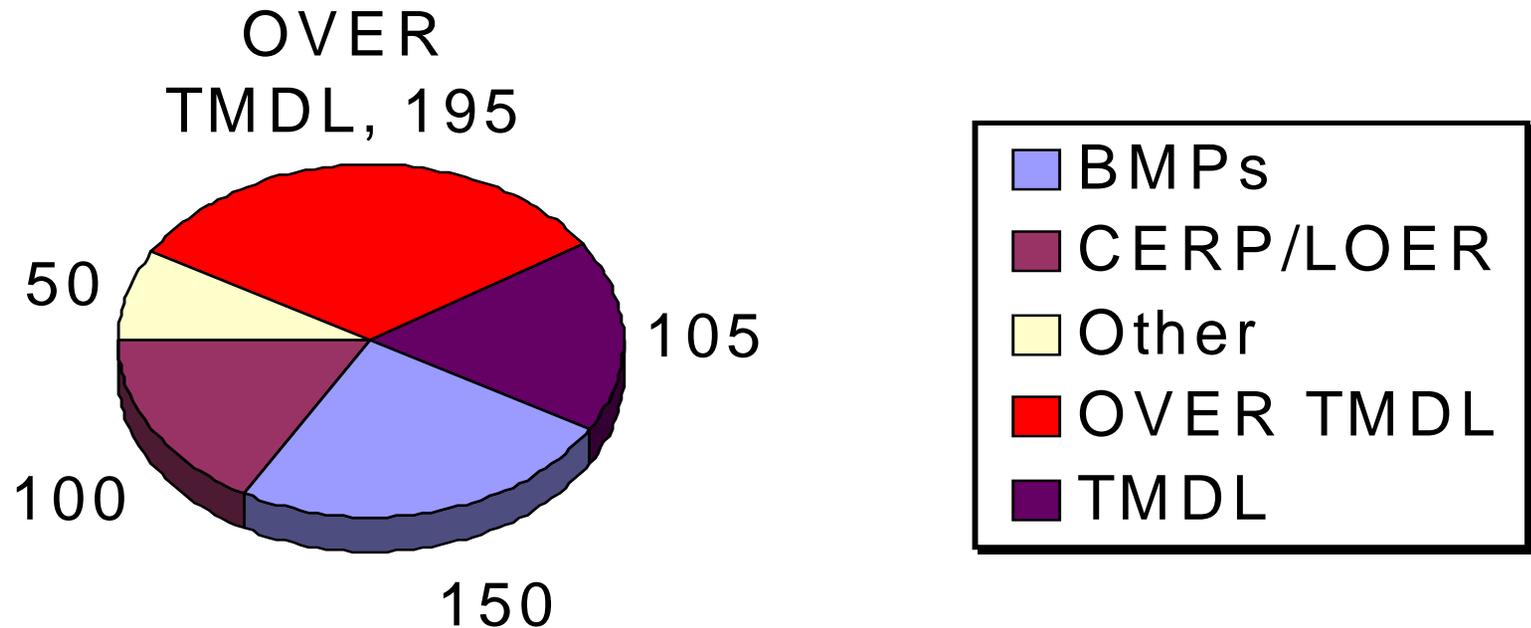


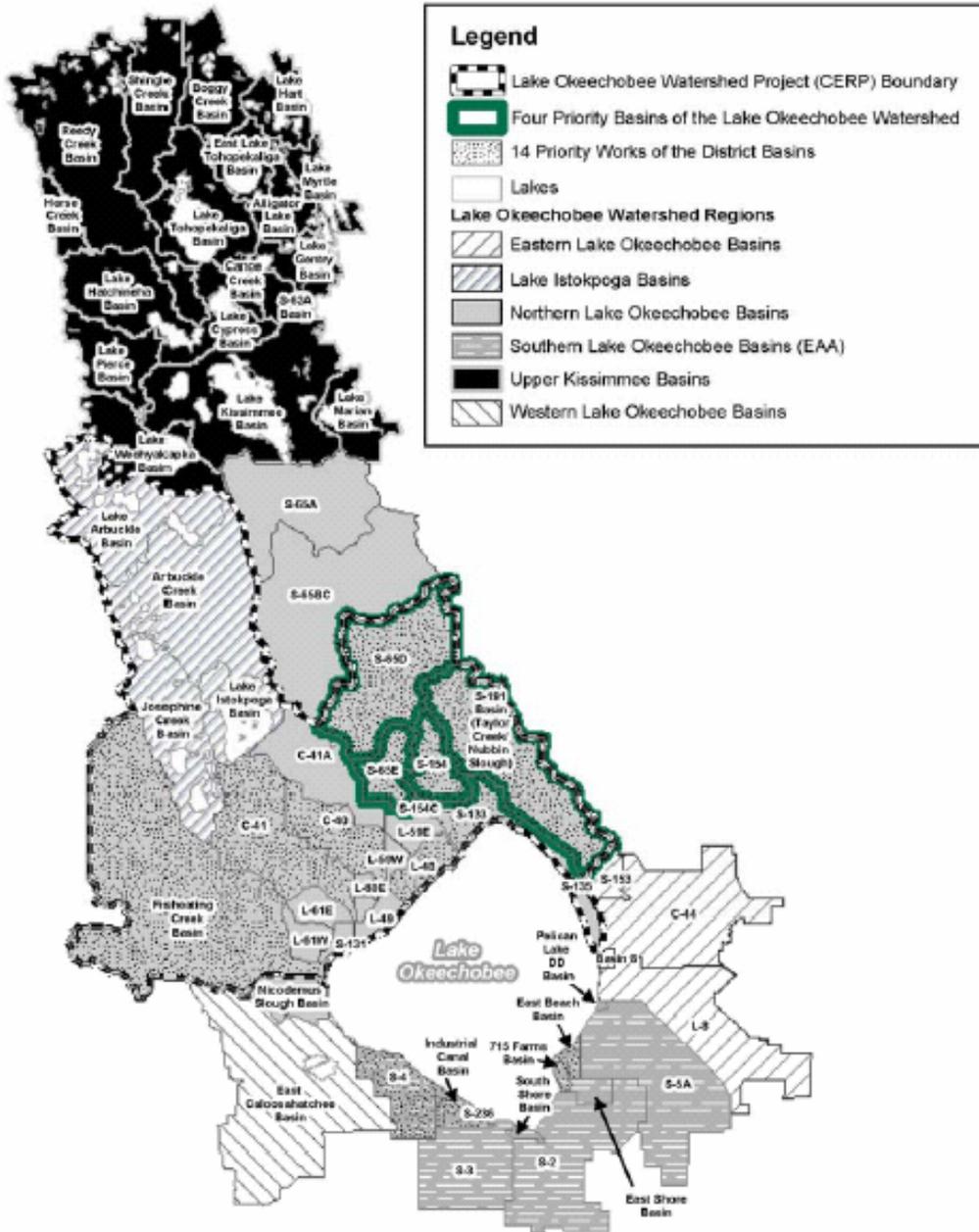
Contribution of current projects to total storage needs upstream of Lake Okeechobee



In “600 ton years,” present plans might exceed the TMDL by 195 tons.

Projected performance of current phosphorus control efforts for a 600-ton annual load to Lake Okeechobee





Lake Okeechobee Watershed

**CERP covers
the lower half
of the
watershed**

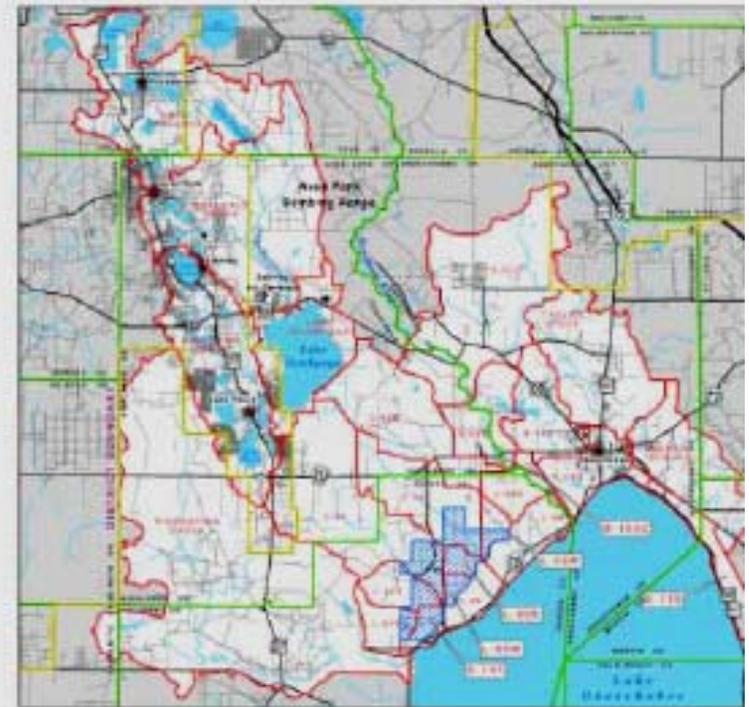


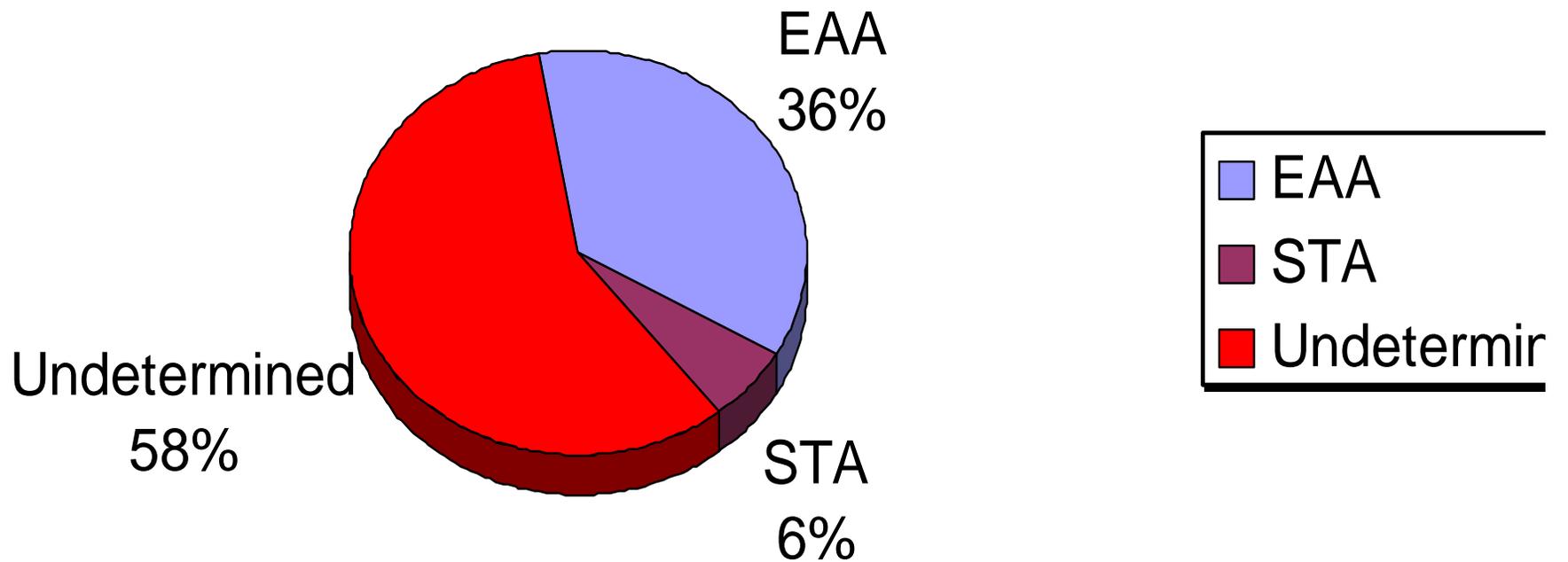
FIGURE B-2: LAKE OKEECHOBEE WATERSHED

Conclusions - Recommendations

- **Use “Northern Everglades” initiative to revisit estimates of storage and water treatment needs, and to integrate watershed management**
- **Continue on-going projects (CERP LOW, KRR, LOPP, etc.)**



Contribution of current projects to the total storage needs downstream of Lake Okeechobee





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SUSTAINABILITY PLAN FOR THE EVERGLADES AGRICULTURAL AREAⁱ

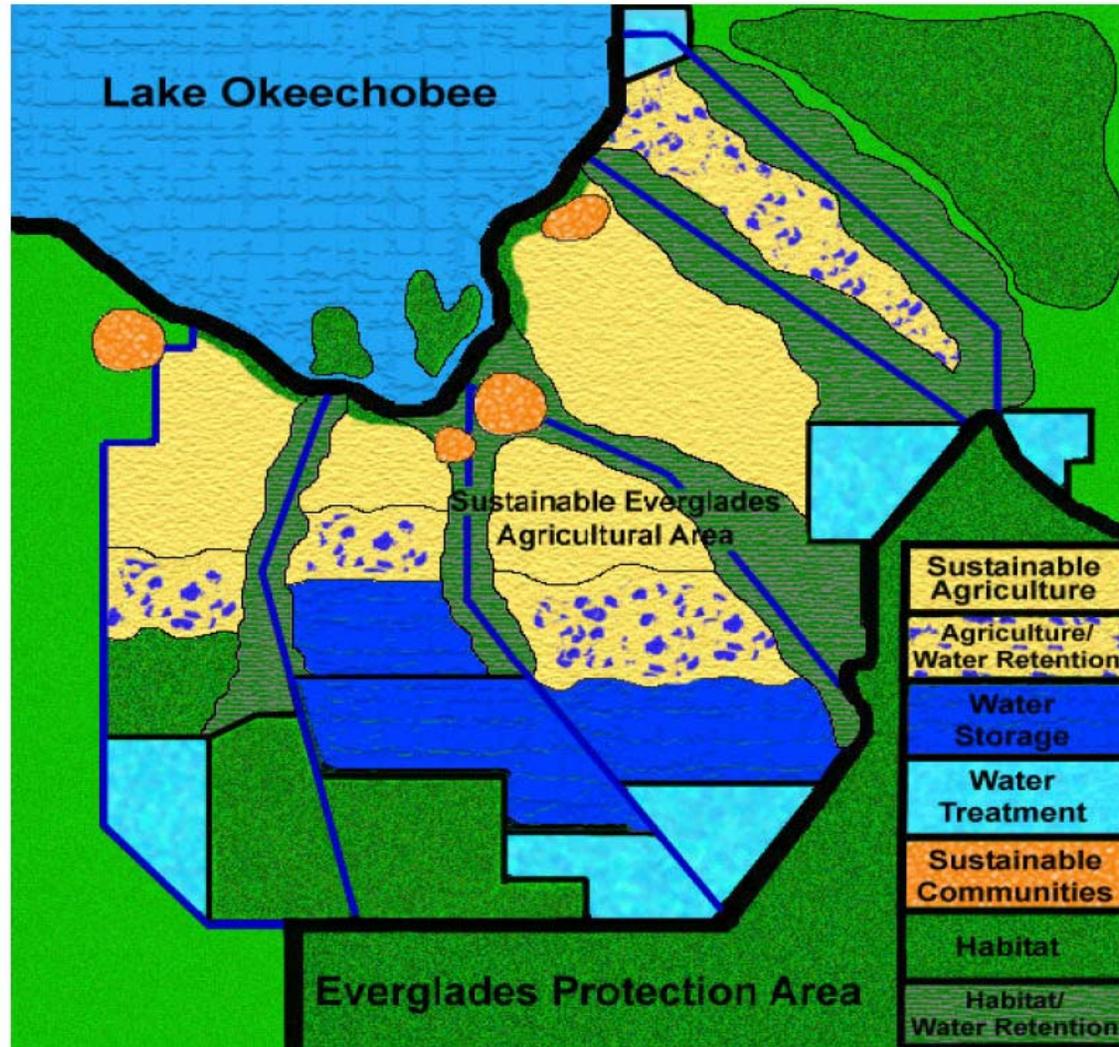
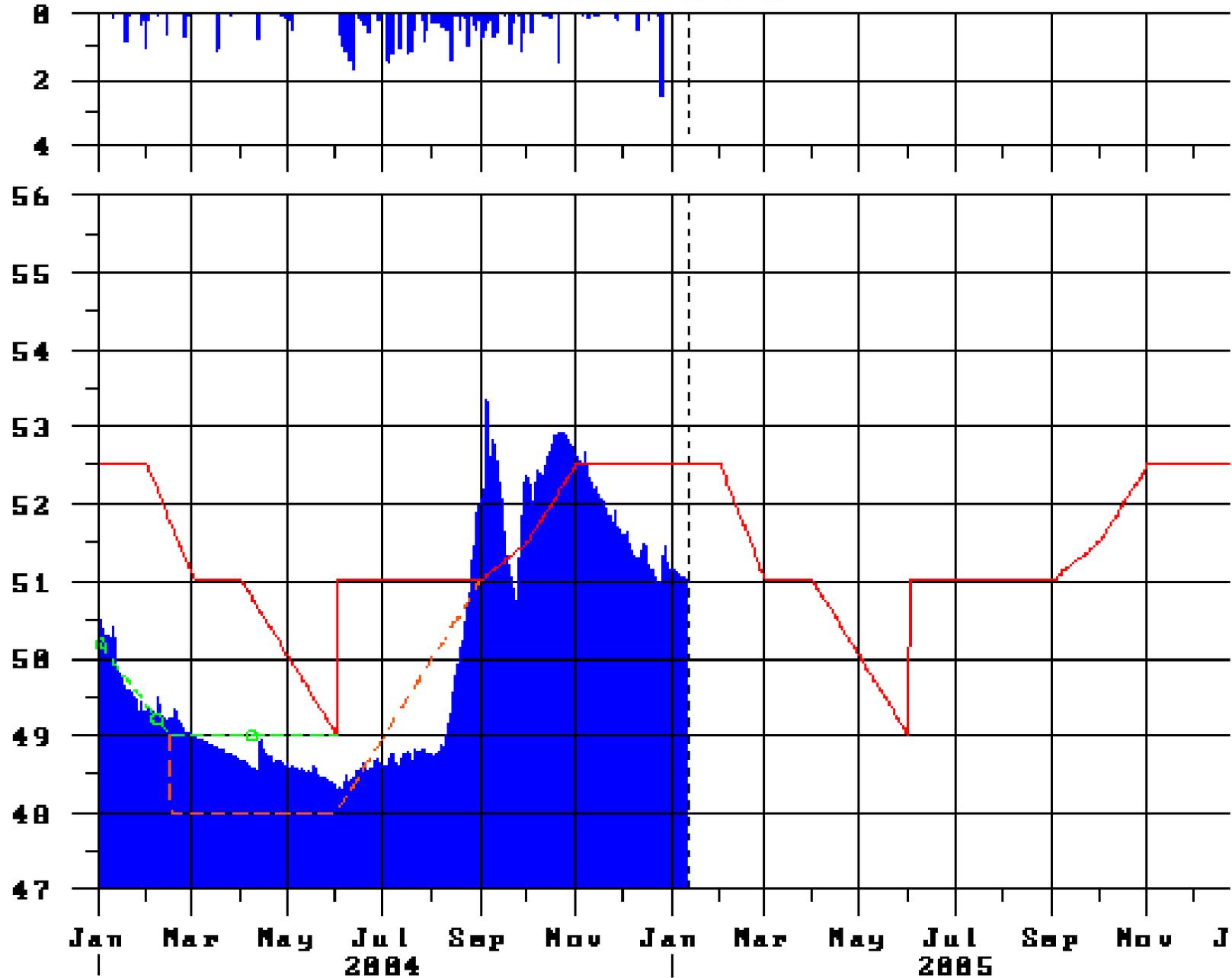


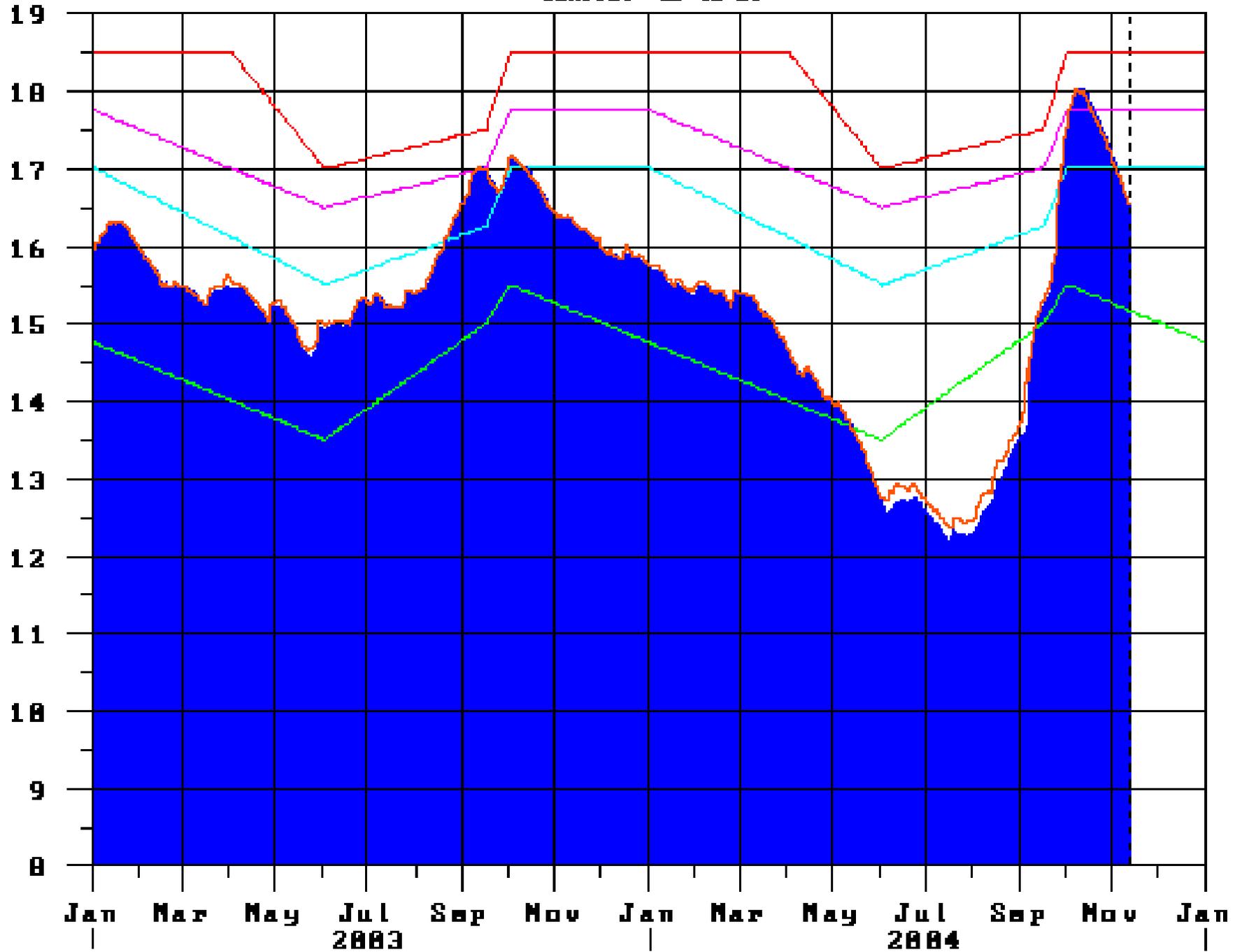
Figure 1. Vision for a Sustainable EAA

Kissinnee River Basin - Lake Kissinnee

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Land for restoration

- Public works projects such as Everglades restoration and Okeechobee Fast Track Projects are useful, but cannot meet all needs.
- The watershed has huge acreages of private lands that can aid restoration through Rural Stewardship-type initiatives, Best Management Practices, or through compensating landowners for storage and treatment (such as WWF's "Florida Ranch Lands Environmental Services Project").
- The Kissimmee Chain of Lakes and Lake Istokpoga watersheds form half the Okeechobee watershed area and are under-utilized, so far.



Recent reports estimate that more than 5,000 tons of additional phosphorus are added to the Lake Okeechobee watershed each year.

See: Mock-Roos & Associates, Inc. 2002. Phosphorus budget update for the northern Lake Okeechobee watershed. Final report. South Florida Water Management District Contract No. C-11683. and Mock-Roos & Associates. 2003. Lake Istokpoga and Upper Chain of Lakes phosphorus source control: Task 4 final report. South Florida Water Management District Contract No. C-13413. West Palm Beach.

