SOUTH FLORIDA WATER MANAGEMENT DISTRICT

AGENDA

SOUTH FLORIDA WATER MANAGEMENT DISTRICT (SFWMD)
WATER RESOURCES ADVISORY COMMISSION (WRAC)
Lake Okeechobee Committee Meeting

Wednesday, February 24, 2010, 9:00 AM
John B. Boy Auditorium, Beardsley Conference Room
1300 South W.C. Owens Avenue
Clewiston, Florida

1.	Welcome and Opening Remarks - Kevin Powers, Chair	5m
2.	Member Issues	30m
3.	Northern Everglades and Estuaries Protection Plan Update - Pinar Balci, Section Leader, Federal and State Policy Div., Policy and Coordination Dept., Everglades Restoration and Capital Projects, SFWMD	20p 25d
4.	Water Conditions Report - Cal Neidrauer, Chief Engineer, Operations Control, Operations and Maintenance, SFWMD	15p 15d
5.	Lake Okeechobee Ecological Conditions - David Unsell, Director, Lake Okeechobee Division, Restoration Sciences Dept., Everglades Restoration and Capital Projects, SFWMD	15p 15d
	See supporting document: lo_conditions_du_WRAC_022410.pdf	
• Public Comment		15m
6.	Working Lunch - 12:00 Noon	30m
7.	Adaptive Protocols for Lake Okeechobee Operations Status Update - Kim O'Dell, Environmental Scientist Supervisor, Restoration Sciences Dept., Everglades Restoration and Capital Projects, SFWMD	20p 25d
	See supporting document: adaptiveprotocolsupdate_ko_WRAC_022410.pdf	
8.	Aquatic Plant Management Discussion - Chair Powers and Group	45m
9.	Water Quality Update - Kevin Carter, Lead Technical Program Specialist, Stormwater Improvement Div., Intergovernmental Programs Dept., Regulatory and Public Affairs, SFWMD	15p 45d
• Public Comment		15m

10. Adjourn: 3:30 p.m

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2. Member Issues 30m

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5. Lake Okeechobee Ecological Conditions - David Unsell, Director, Lake Okeechobee Division, Restoration Sciences Dept., Everglades Restoration and Capital Projects, SFWMD — 15p 15d

See supporting document: lo_conditions_du_WRAC_022410.pdf

- Public Comment — 15m

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WATER RESOURCES ADVISORY COMMISSION
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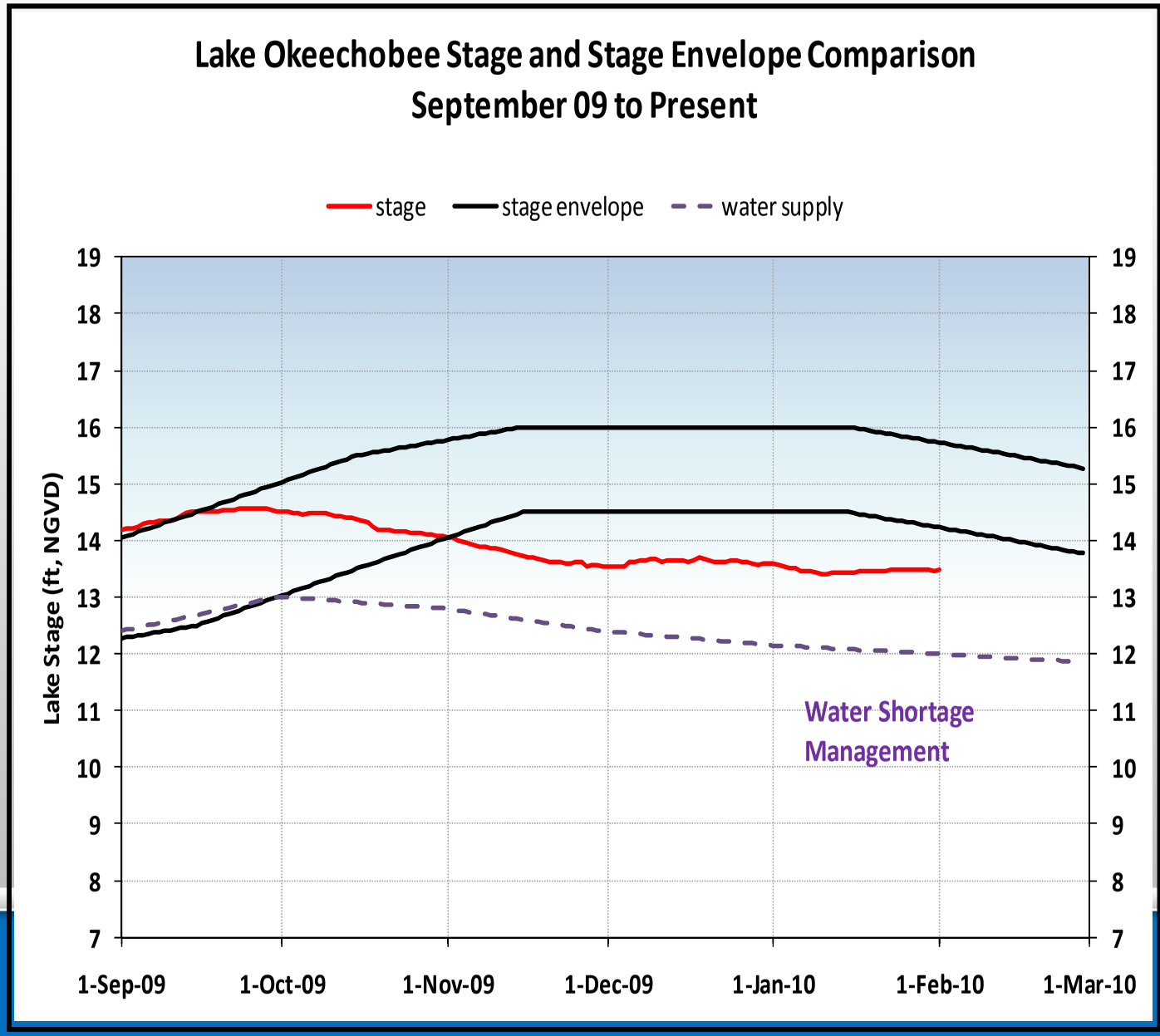
Lake Okeechobee Ecological Conditions

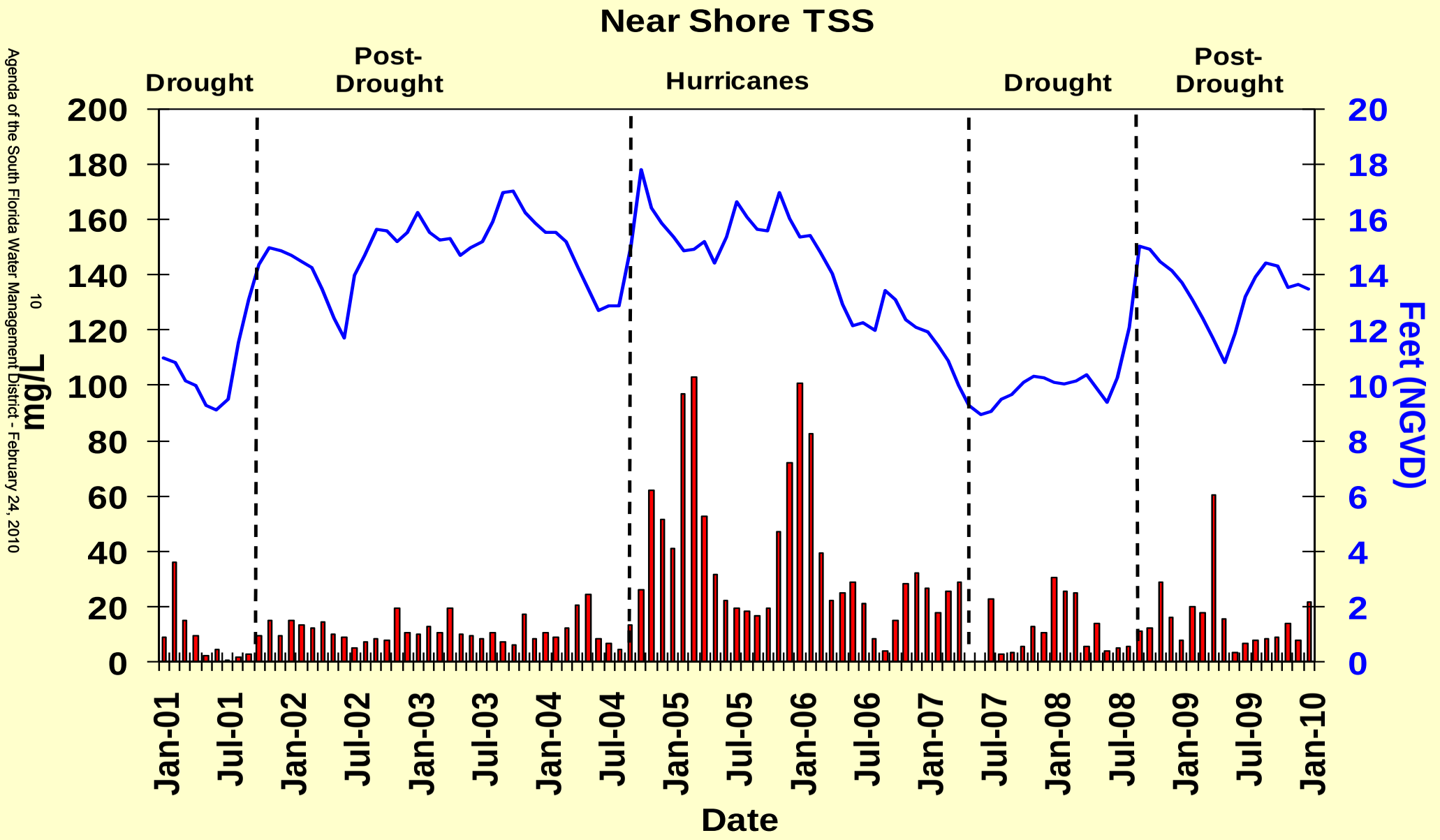
David Unsell
Director, Lake Okeechobee Division
Restoration Sciences Department

Lake Stage and Water Quality

- Lake stage is 13.52' 0.05' higher than a month ago 0.05' higher than a year ago
- Water Clarity is satisfactory and no obvious blooms
- Both Total Phosphorus and Total Suspended Solids increased



Water Quality – Total Suspended Solids



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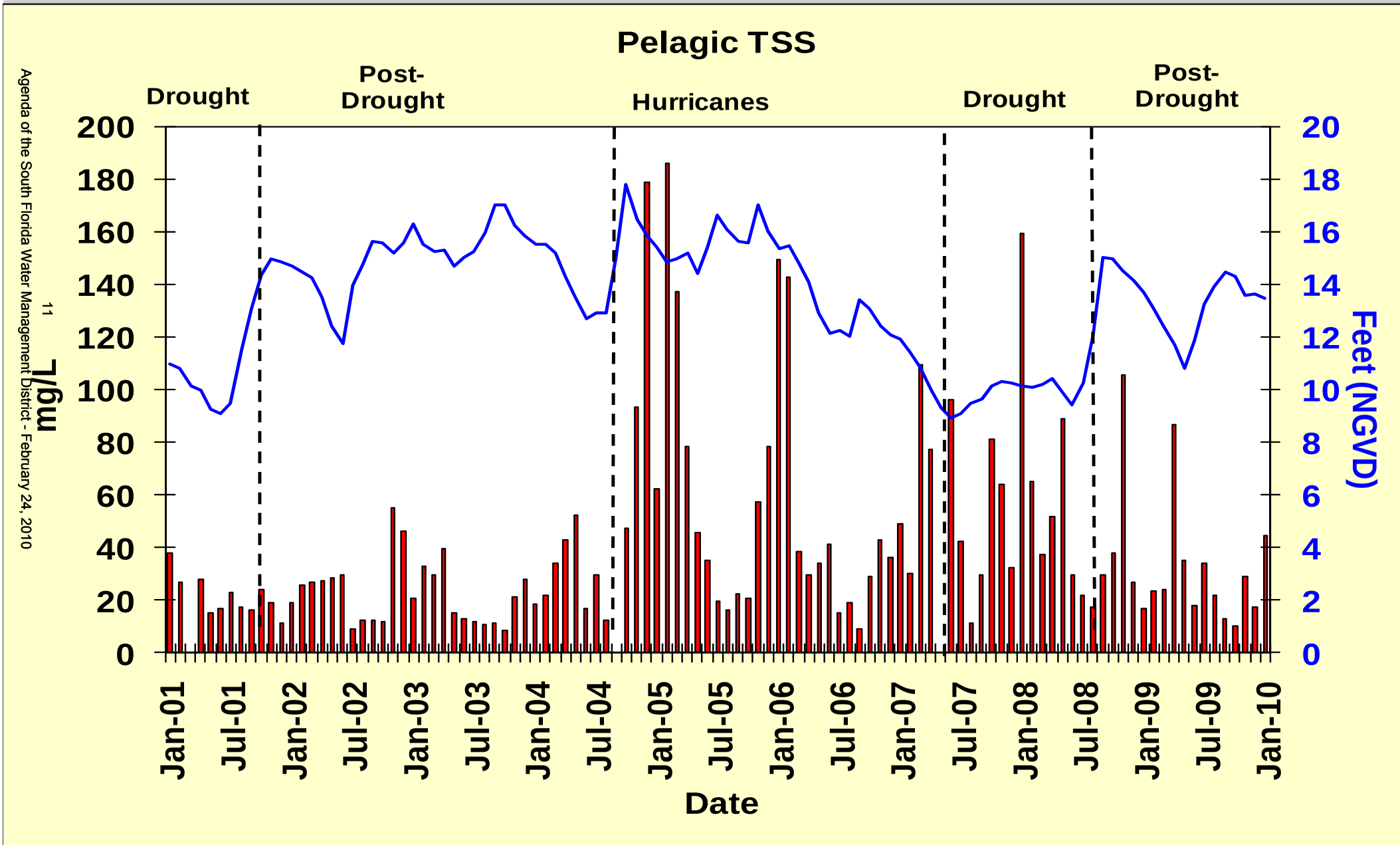
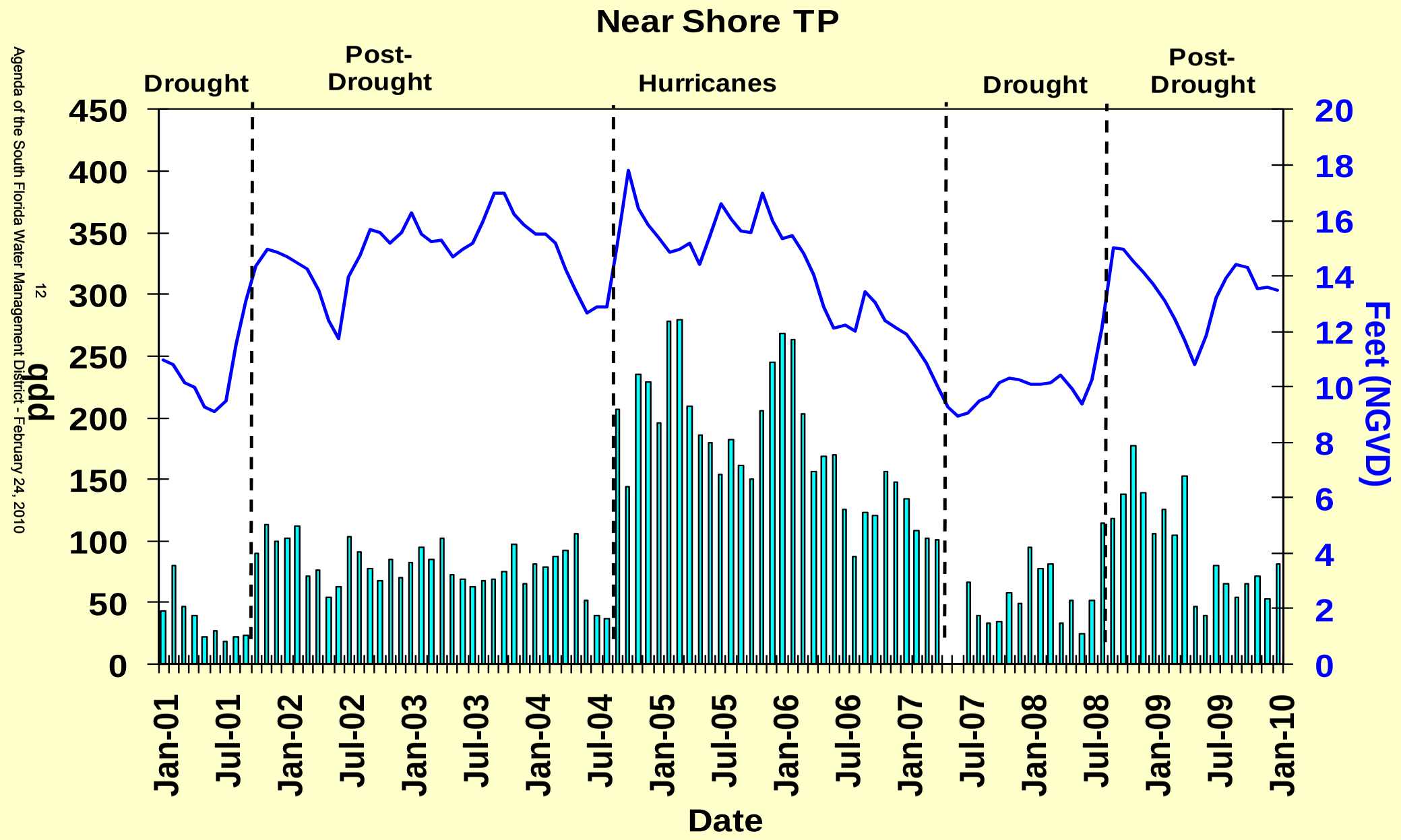
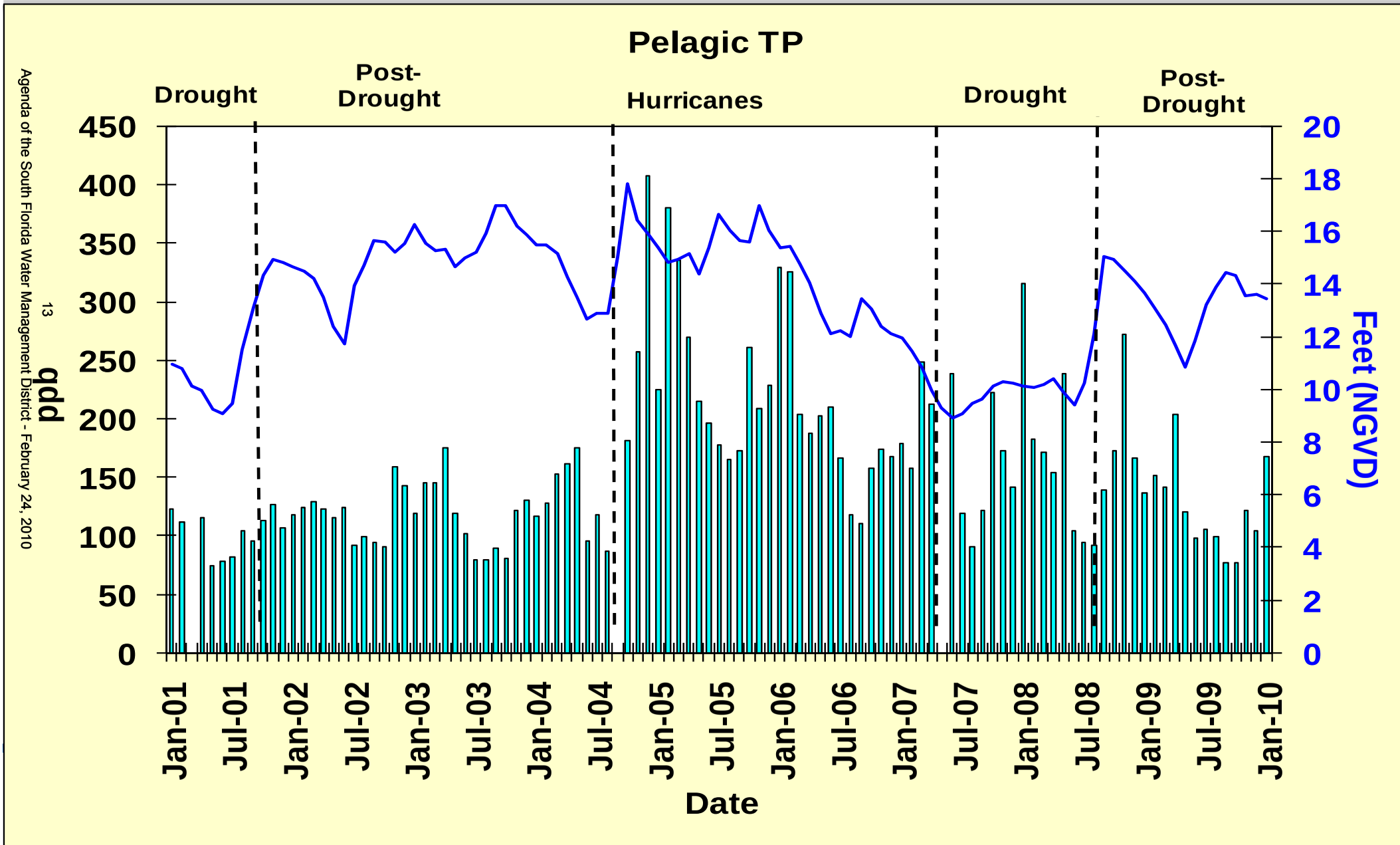


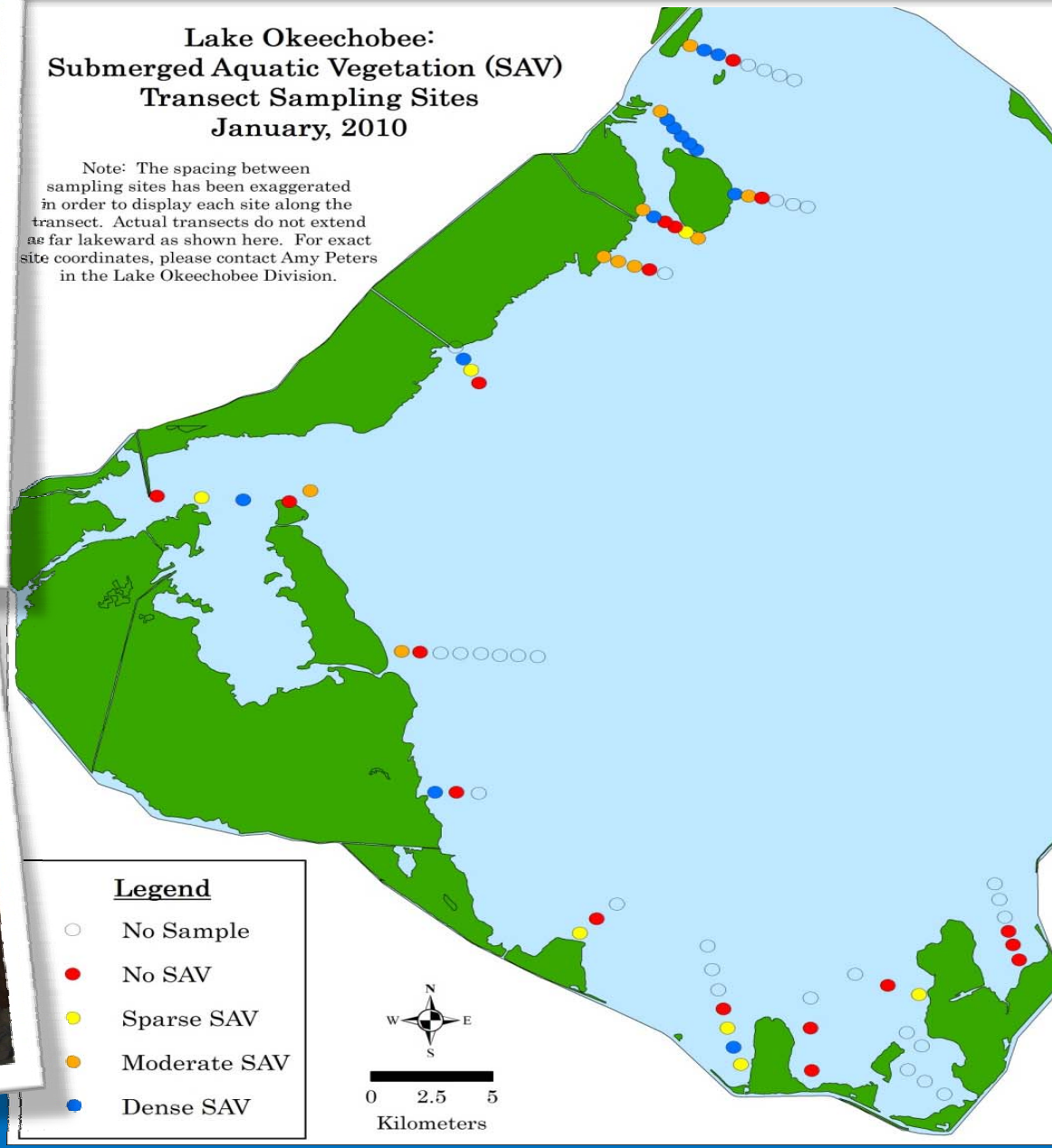
Water Quality – Total Phosphorus



Water Quality – Total Phosphorus



Submerged Aquatic Vegetation



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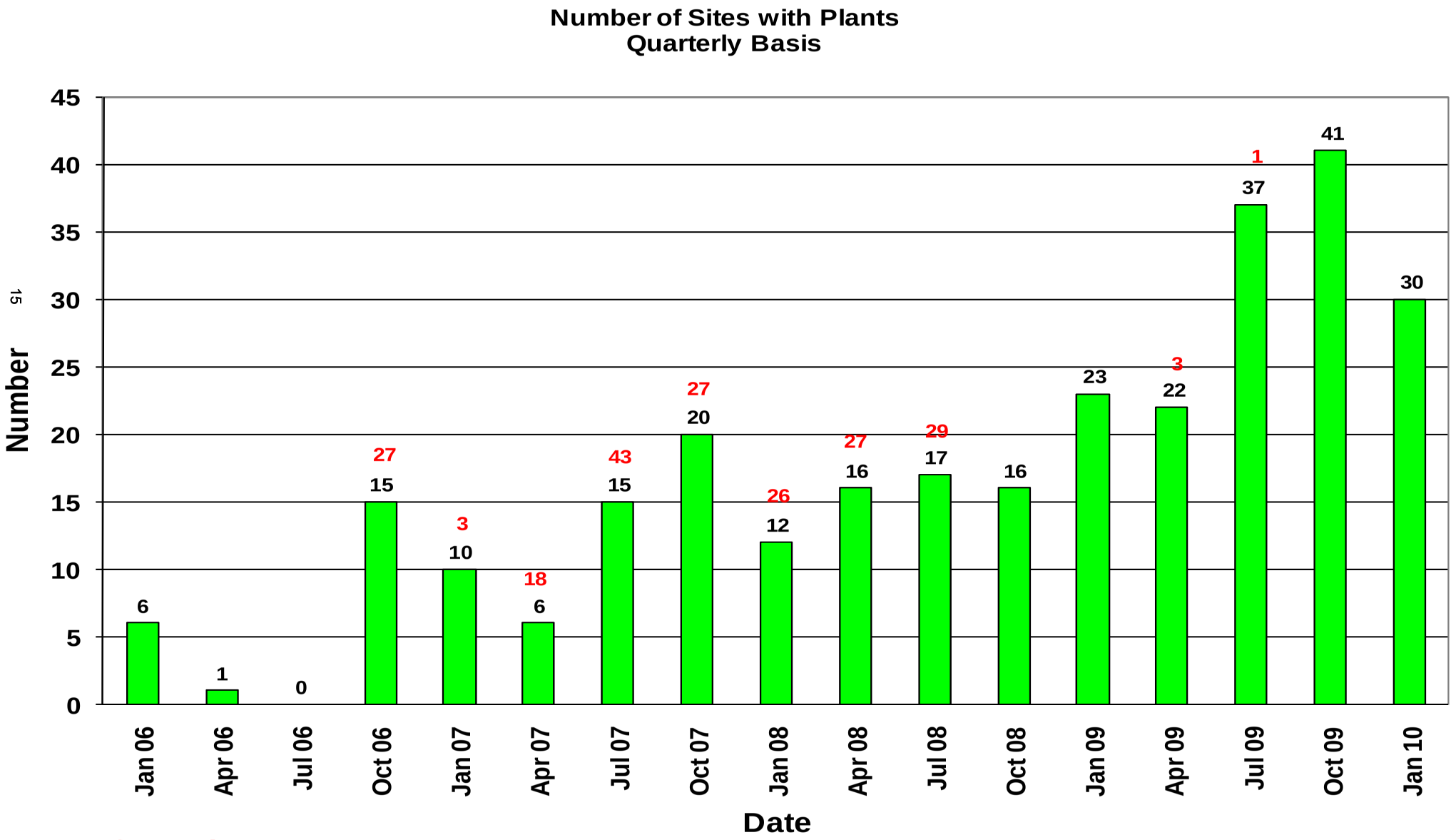

# of Dry sites

Bulrush Recovery

November 2009
two days
post-treatment

January 2010
two months
post-treatment

Wildlife

Thank you

6. Working Lunch - 12:00 Noon 30m

7. Adaptive Protocols for Lake Okeechobee Operations Status Update - Kim O'Dell, Environmental Scientist Supervisor, Restoration Sciences Dept., Everglades Restoration and Capital Projects, SFWMD 20p 25d

See supporting document:
adaptiveprotocolsupdate_ko_WRAC_022410.pdf

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Water Resources Advisory Commission
Lake Okeechobee Committee
February 24, 2010

Adaptive Protocols For Lake Okeechobee Operations

Status Update

Kim O'Dell
Supervisor - Environmental Scientist
Restoration Sciences Department

2003 Adaptive Protocols Summary

- Identify specific discharge amounts in the Water Supply and Environment (WSE) regulation schedule where the schedule indicates an “up to” amount
- Aim to maximize benefits to environment without increased risk to water supply
- Allow environmental water deliveries to downstream ecosystems, not exceeding 300 cfs unless approved by the Governing Board, and only in Zone D or above
- Take advantage of opportunities where the WSE schedule calls for releases to the WCAs to provide freshwater to meet demands of the estuaries

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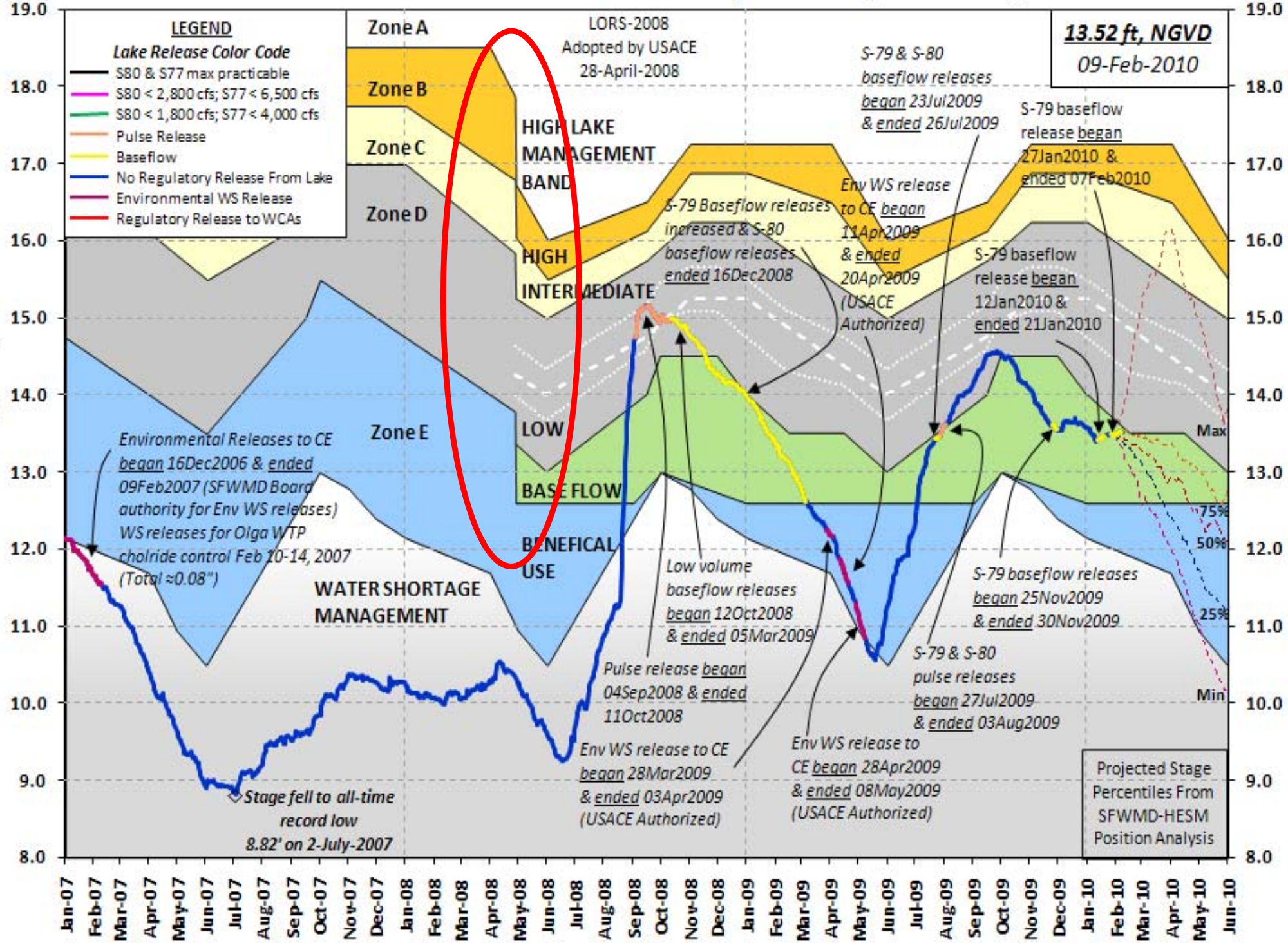
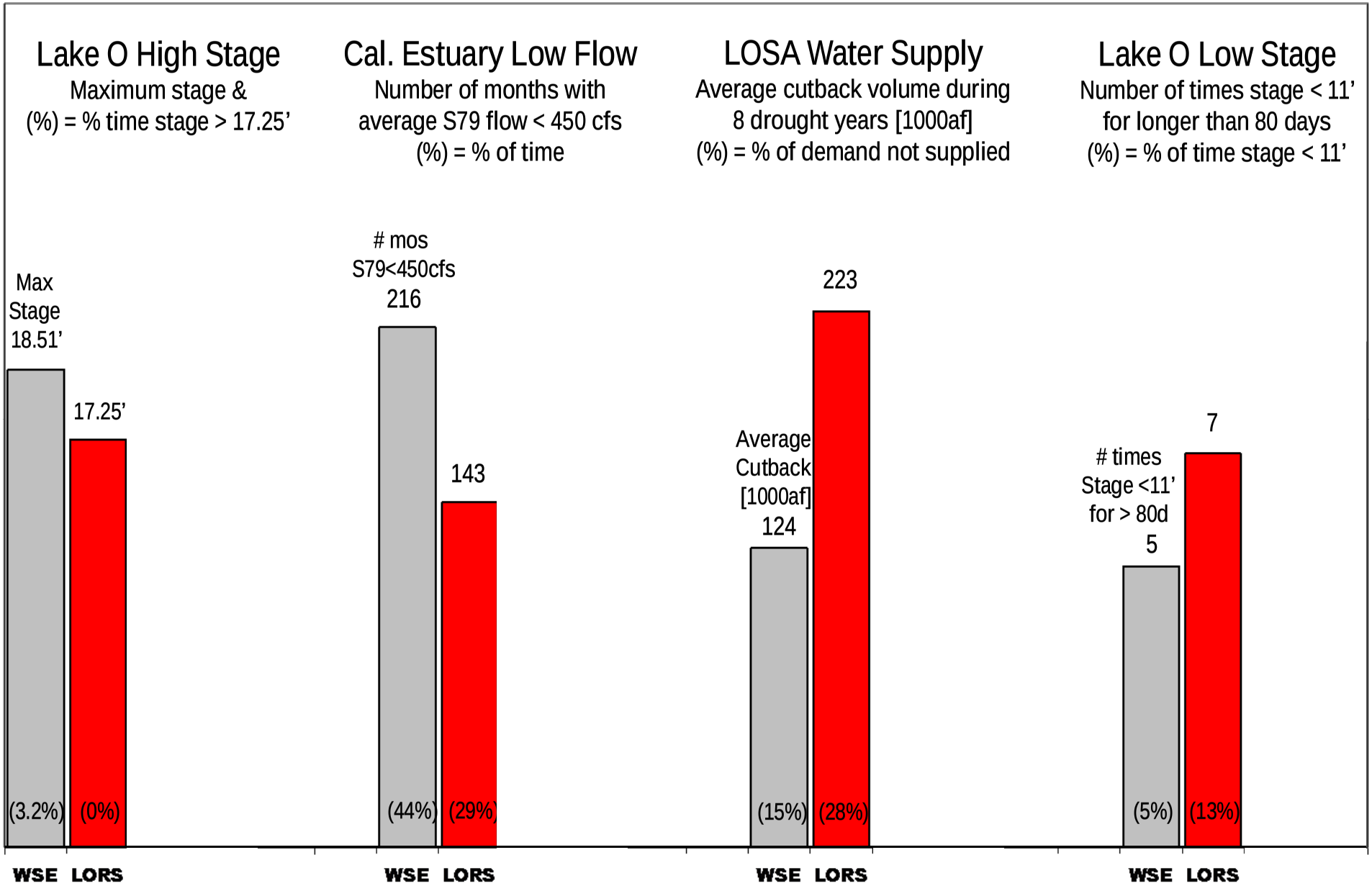
Lake Okeechobee Water Level History and Projected Stages



Performance Comparison (41-yr simulation)

WSE v. LORS



Draft Guiding Principles
Key Components

- Balance water supply, flood protection, and environmental protection
- Provide guidance where releases are expressed as a range of volumes, i.e. “up to 2000 cfs”
- Identify opportunities for “win-win” or “win-neutral” improvements
- Provide guidance on environmental deliveries to the estuaries in the Base Flow and Beneficial Use subbands

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Adaptive Protocols
Areas of Consensus

- Clarify advisory role for SFWMD to make release recommendations to the USACE
- Recommend to the USACE to be “conservative” in releases in the Low subband at the beginning of the dry season as long as it does not impact dike safety (verify with modeling)
- Develop release decision flow chart for guiding releases in the Base Flow and Beneficial Use subbands

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Stakeholder Suggestion #1

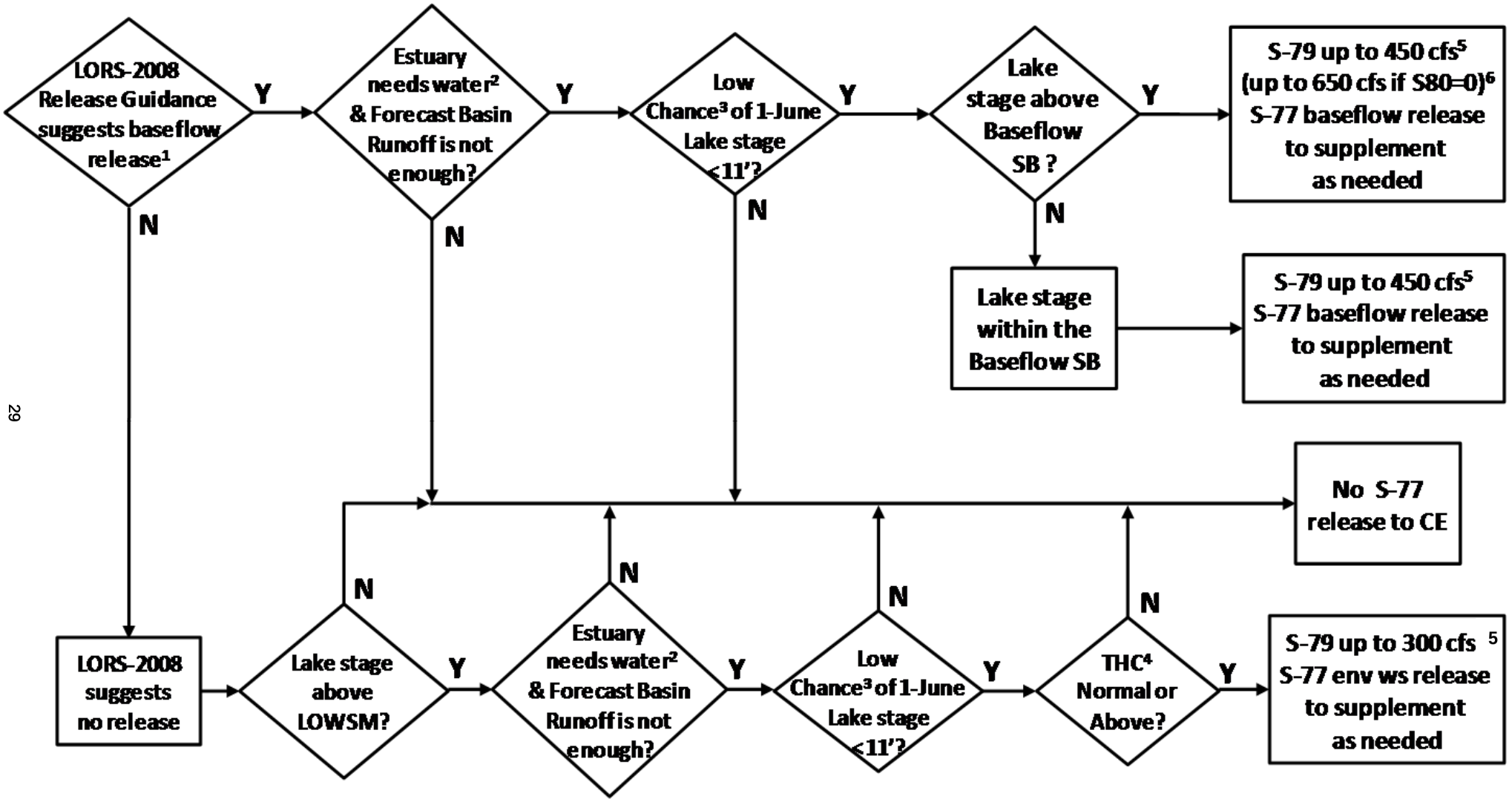
- Limit LORS-2008 releases (except low level release) to 50% of maximum limit when stage is within the Low subband during dry season
- Objective was to refrain from maximum releases during the early dry season in order to conserve water for the late dry season

SFWMD Staff Proposed Protocol

- Provide additional release guidance to maximize benefits of low level releases and minimize adverse impacts to:
  - Lake Okeechobee water levels
  - permitted water supply users
- Protocol provided in a flowchart as suggested by stakeholders during previous Adaptive Protocols Issue Team meetings
- “Bookend Simulations” performed to bracket the range of possible performance from proposed protocols

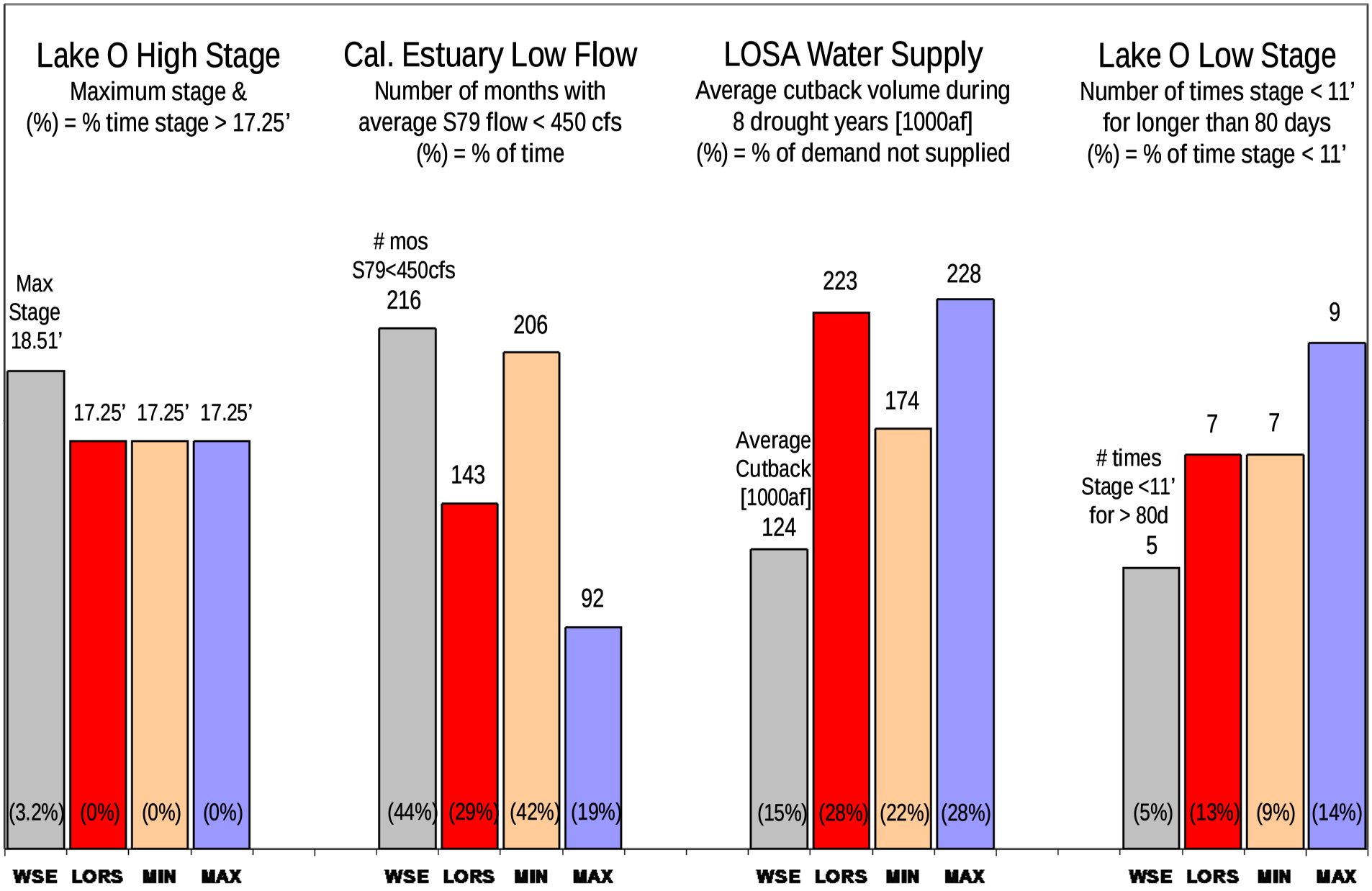
Proposed Draft
20-January-2010

Flowchart to Guide Recommendations for Lake Okeechobee Releases to the Caloosahatchee Estuary for LORS-2008 Baseflow & for Environmental Water Supply



[1]The LORS-2008 Release Guidance (Part D) can suggest baseflow releases in the Intermediate, Low, or Baseflow Subbands.
[2]For simulation testing, estuary "needs" water when 30d moving avg. salinity at I-75 bridge is projected to exceed 5psu within 2 weeks.
[3]For simulation testing, "Low chance" is defined as less than a 30% chance that the 1-June Lake stage falls below elevation 11.0', NGVD.
[4]THC = Tributary Hydrologic Condition is based on classification of Lake O Net Inflow and Palmer Index.
[5]Can release less than the "up to" limit if lower release is sufficient to reach or sustain desired estuary salinity.
[6]Based on confirmation that the St. Lucie Estuary does not need all or a portion of this baseflow

Performance Comparison (41-yr simulation)



WSE = Previous LORS (aka LORS-2000)

LORS = Current LORS (aka LORS-2008)
(simulated assuming max base flow release)

MIN = No base flow or Env WS from Lake O

MAX = up to 650cfs base flow (& up to 650 cfs Env. WS release in Beneficial Use subband)

Simulated Performance of Proposed Protocols

Simulations:

- LO_zero: zero base flow releases & zero Environmental water supply deliveries
- LO_650: up to 650 cfs base flow releases in the Base Flow subband & up to 650 cfs environmental water supply deliveries in the Beneficial Use subband
- AP1: Stakeholder Suggestion #1
- AP4: Staff Proposal (Low Chance parameter = 30%)
- AP5: Hybrid of AP1 & AP4

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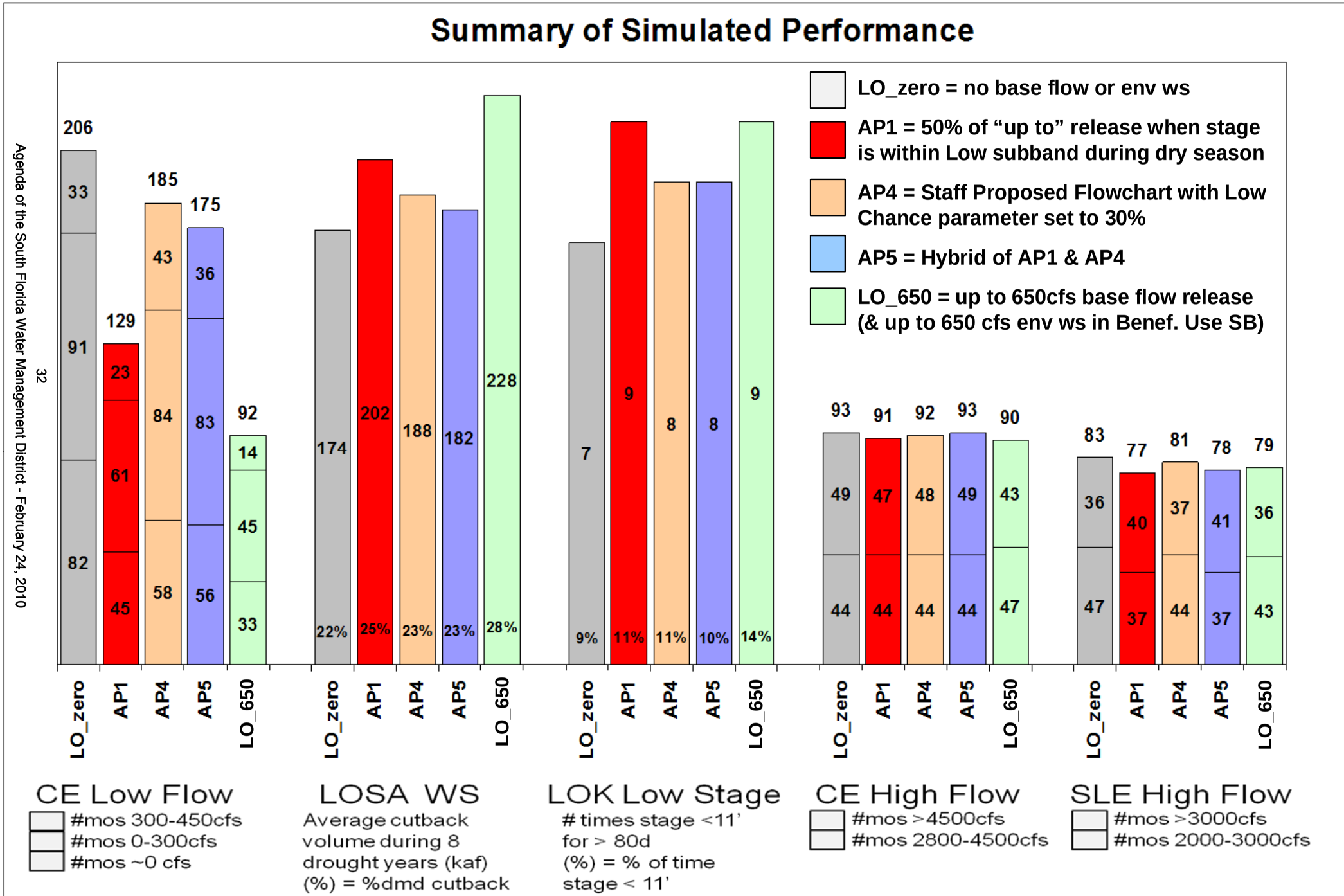
Performance Summary
(Stakeholder & Staff Proposals & Hybrid)



Summary and Conclusions

- Simulated performance of all proposed protocols falls within the bounds set by the LO_zero and LO_650 “Bookend Simulations”
- AP5 shows promising results
  - Integrates dry season conservative release strategy for the Low subband with the potential for releases in Base Flow & Beneficial Use subbands
  - Performance generally improved compared to the original stakeholder & staff proposals (synergistic effect)
- Work underway to integrate recently developed salinity regression models into the LOOPS Model
  - Goal is to produce salinity-based performance measures

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Outstanding Stakeholder Concerns

- Impact of low lake stages caused by shift to LORS 2008 on:
  - Water supply
  - Lake Okeechobee Minimum Flow & Level
- Existing legal rights of permitted water users
- Estuary environmental needs

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THANK YOU!

8. Aquatic Plant Management Discussion - Chair Powers and Group 45m

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9.	Water Quality Update - Kevin Carter, Lead Technical Program Specialist, Stormwater Improvement Div., Intergovernmental Programs Dept., Regulatory and Public Affairs, SFWMD	15p 45d
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10. Adjourn: 3:30 p.m

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