

**Everglades Avian Ecology
Forum
Miami, FL
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*Everglades Hydrology
and
Avian Ecology*

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Desired Outcome

The Formulation and
Implementation of
a True Multi-Species
Recovery Plan
which is
Compatible with
Everglades Restoration

The Import of a Multi-Species Recovery Plan

- The Everglades is an ecosystem
- The engine that drives the Everglades ecosystem is water
- Thus, fundamental to restoring the Everglades is “getting the water right”
- Without a “multi-species recovery plan (MSRP)” that complements “getting the water right” in an ecosystem context, Everglades restoration, as we know it, is in serious jeopardy

Example

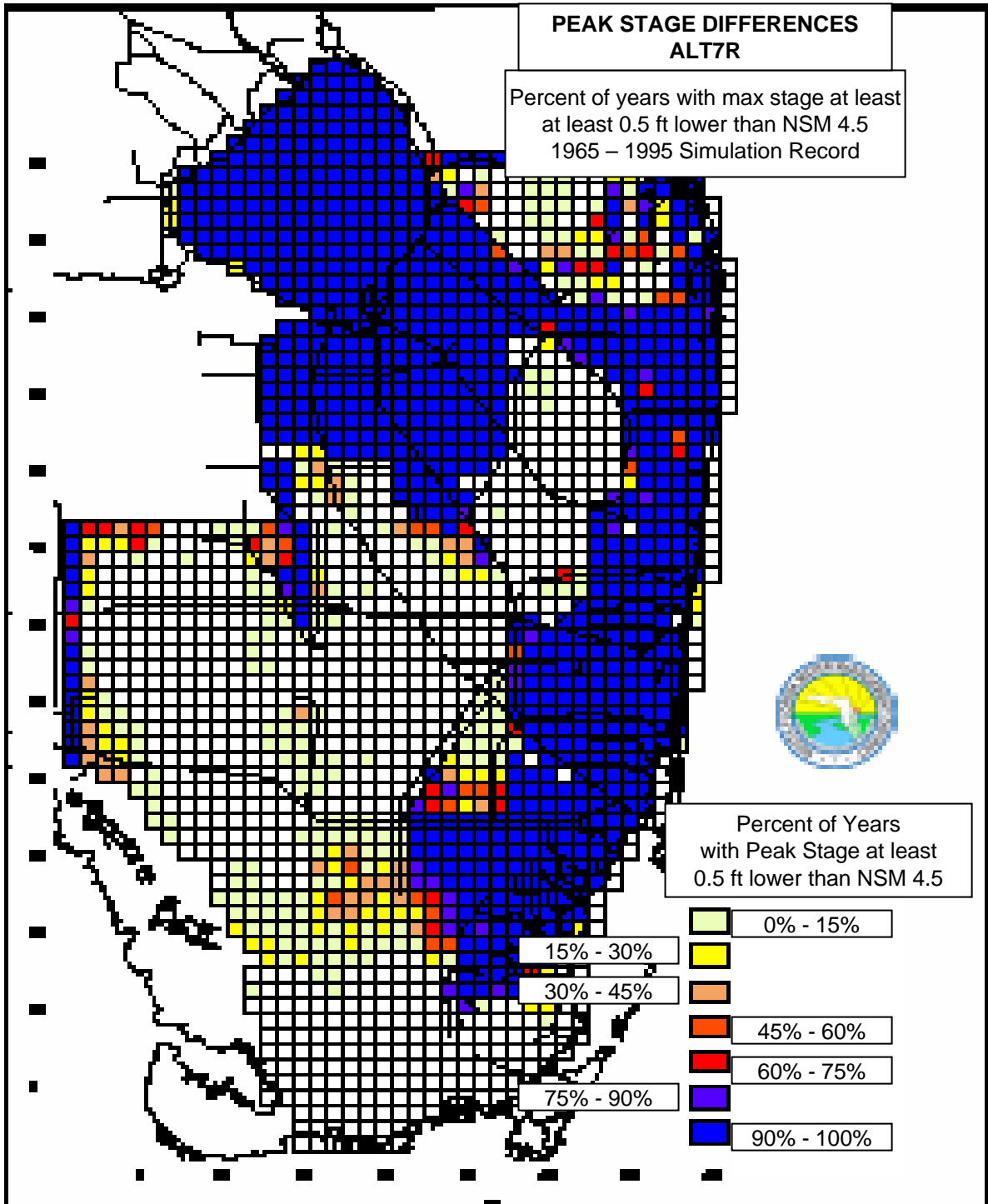
"Saving the Sparrow"

- As projects are being formulated and implemented to restore the Everglades by reducing water levels in WCA 3A and raising them in ENP, government officials declare that the opposite must be done to save the Sparrow
- Voila the ...
 - Emergency Deviations – Dec 1997 – 2000
 - Interim Structural & Operational Plan (ISOP) – 2000 - 2002
 - Interim Operational Plan (IOP) – 2002 – ????
 - Proposed Revisions to CSSS Critical Habitat - 2006

Explanation of Symbols & Abbreviations

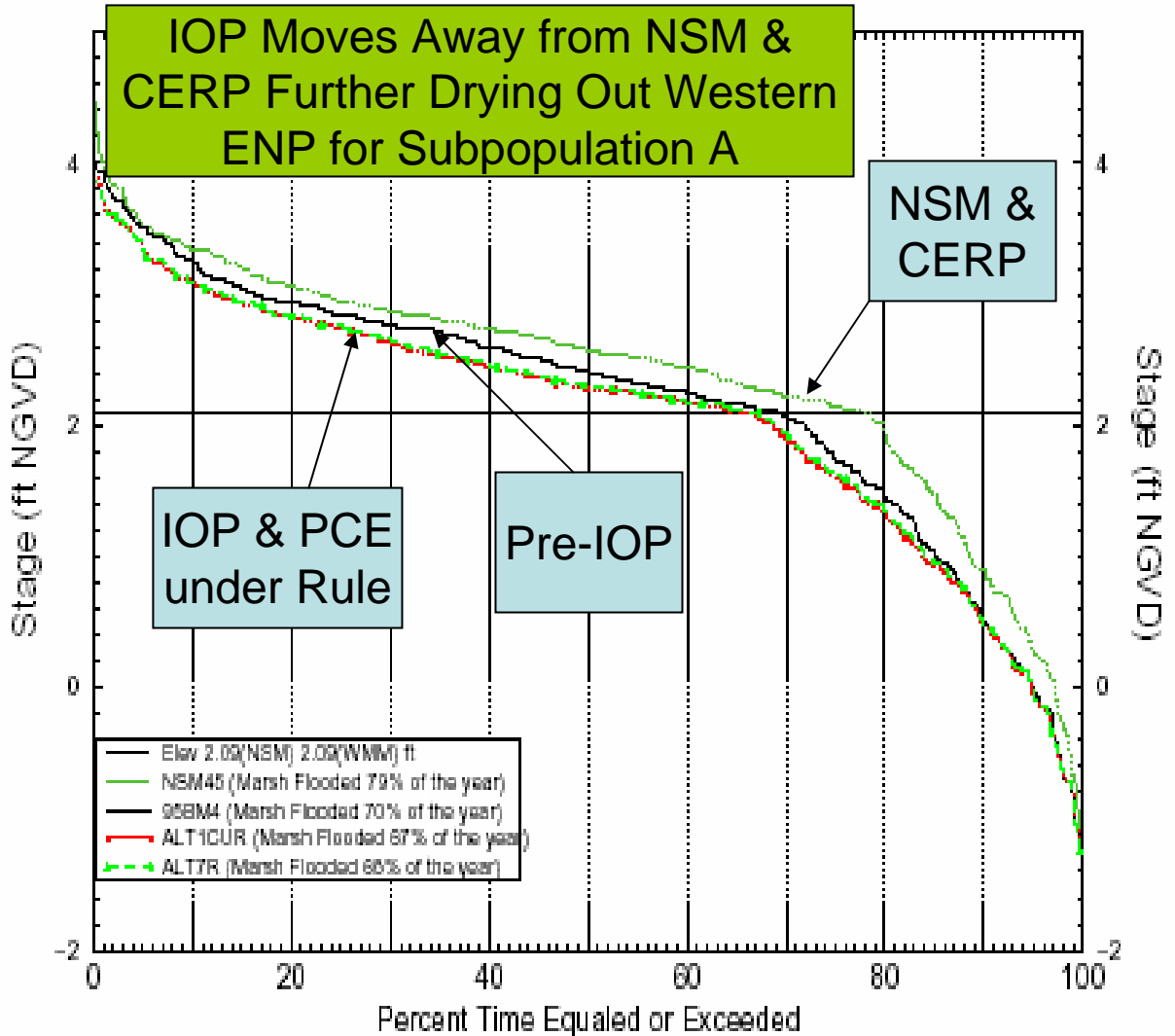
- NSM or NSM 4.5 = Natural System Model = CERP goal
- Base 95 or 95BM4 = Test 7, Phase I or the regulation schedule when jeopardy was declared to the CSSS
- ALT1CUR = ISOP
- ALT7R = IOP

UNDER IOP, ENP IS MUCH LOWER THAN NSM AND HEADED IN THE WRONG DIRECTION



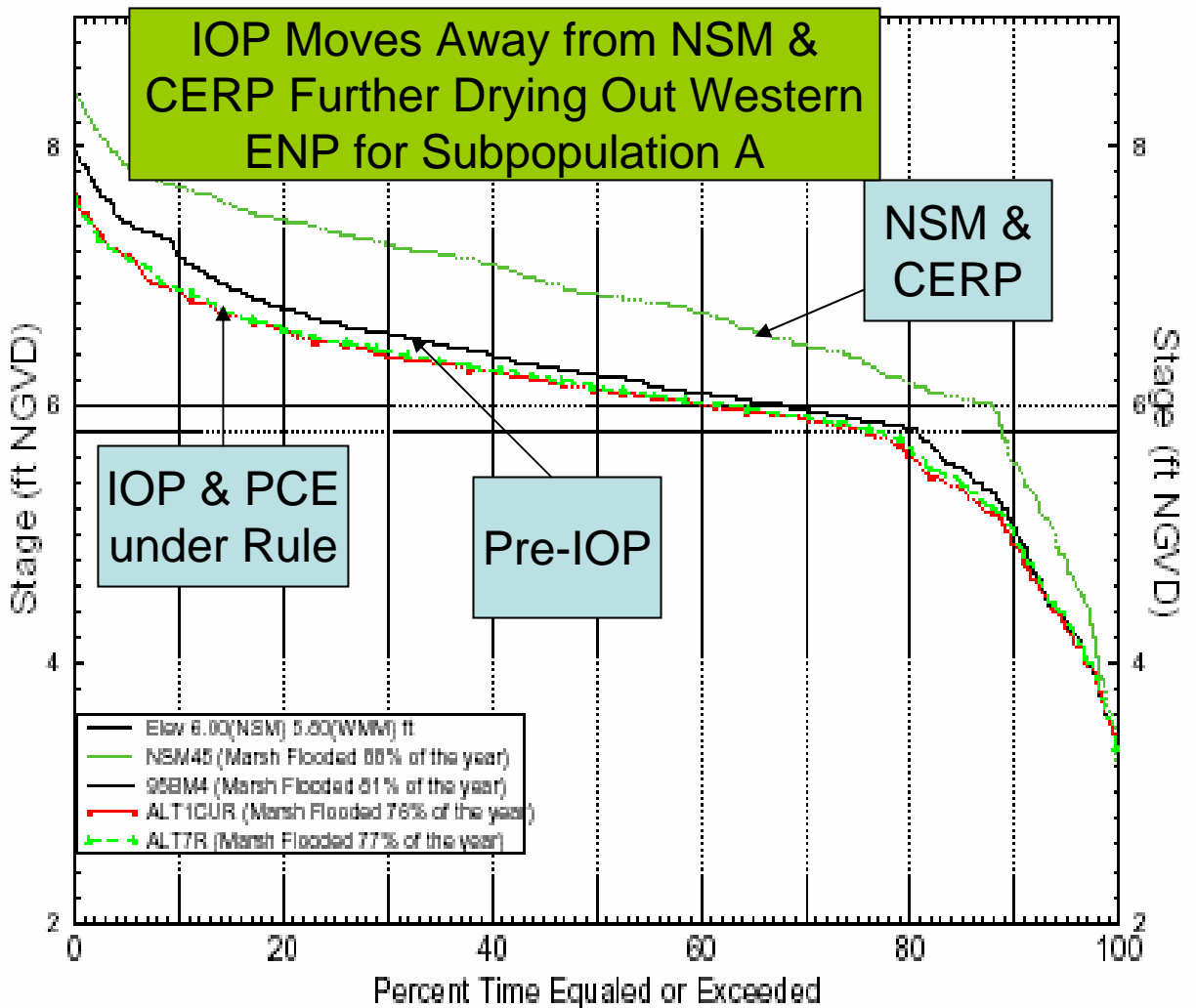
ENP Cell R17 C13

Stage Duration Curves at Marl Lands West of SRS
Gage NP-34, Cell R17 C13



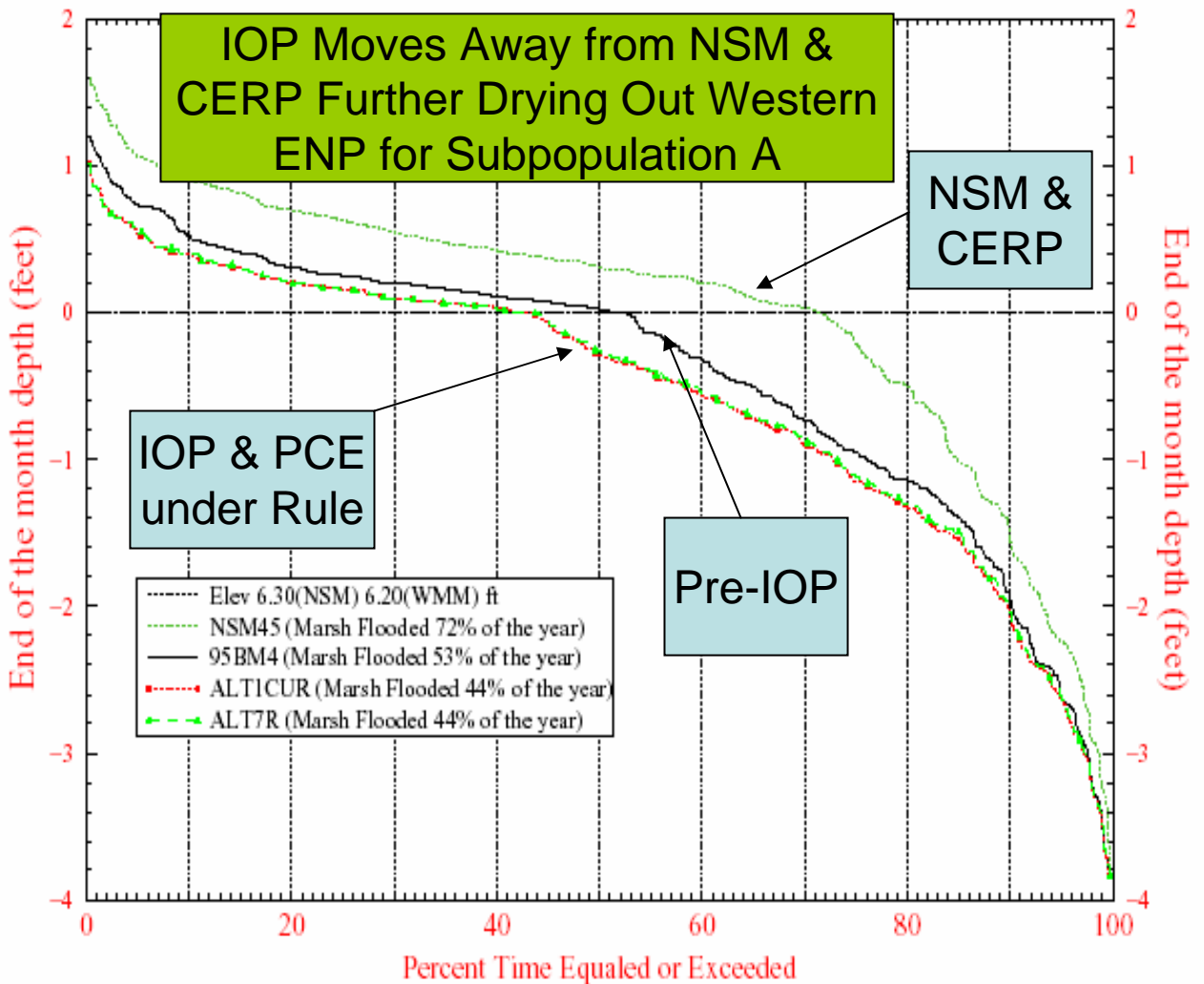
ENP Cell R19 C18

Stage Duration Curves at NW SRS
Gage G-620, Cell R19 C18



ENP Cell R19 C16

Normalized Stage Duration Curves at Cell (R19 C16)
ENP Gage NP205



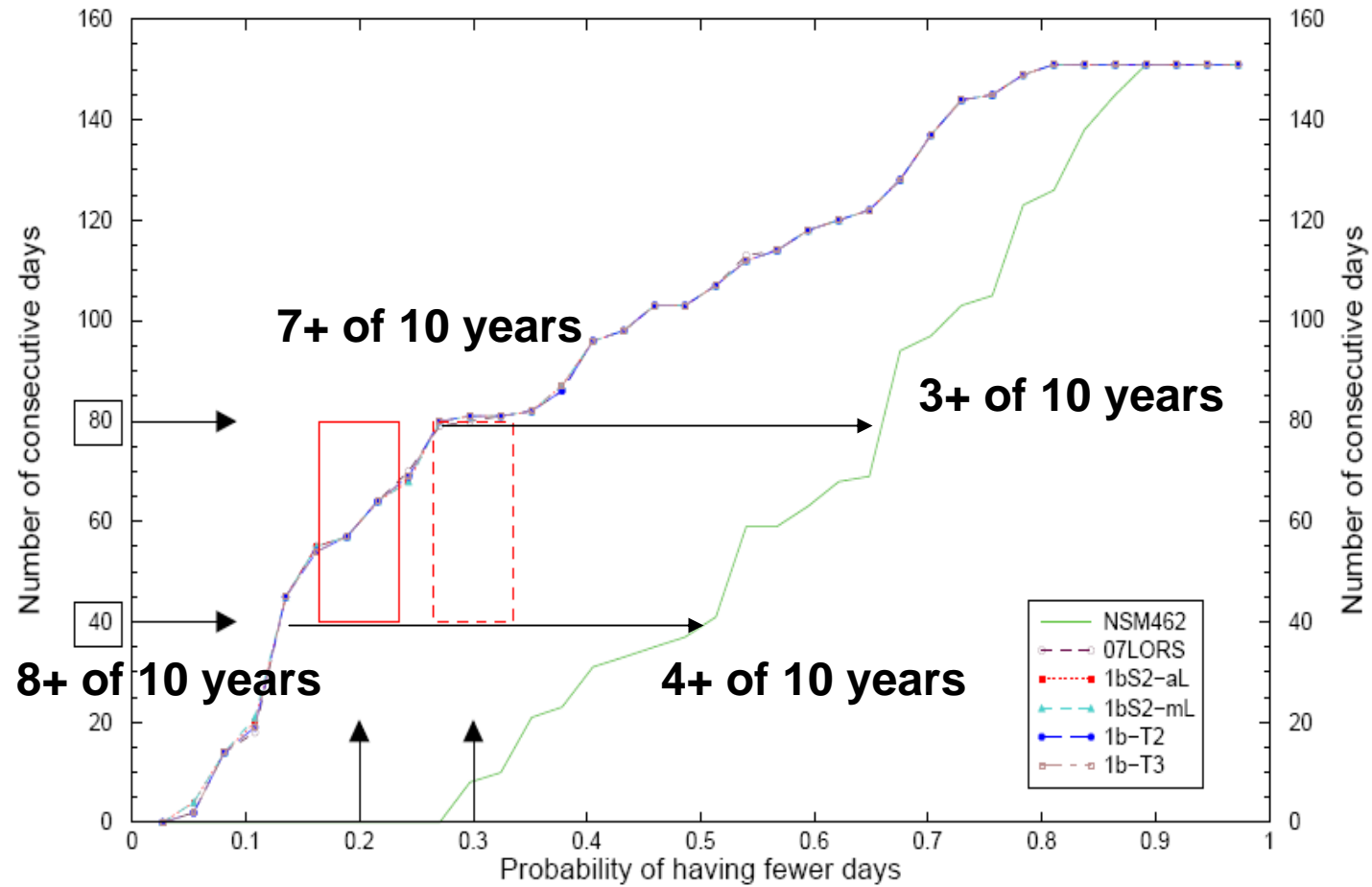
Note: Normalized stage is stage referenced to Land Elevation. Thus, values above zero indicates ponding while below zero indicates depth to the water table.

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Continuous Analysis
SFWM V4.4

Sub-Population A Nesting Availability

Sub-population "A" Nesting Condition Availability (1965–2000)

Number of consecutive days with water levels below ground (2/15–7/15)



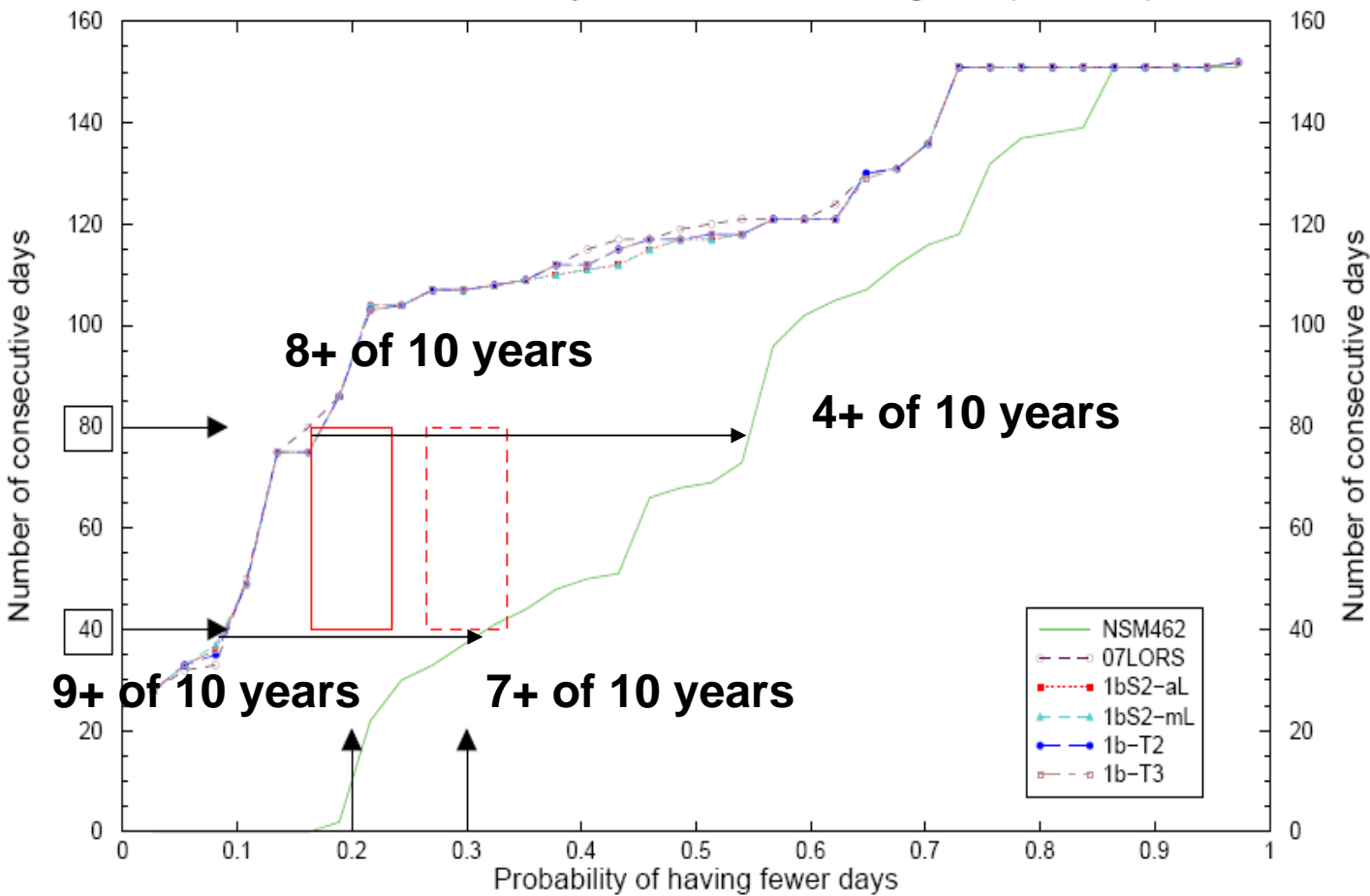
40–80 day window
8 out of 10 years (0.2)

40–80 day window
7 out of 10 years (0.3)

Sub-Population E Nesting Availability

Sub-population "E" Nesting Condition Availability (1965-2000)

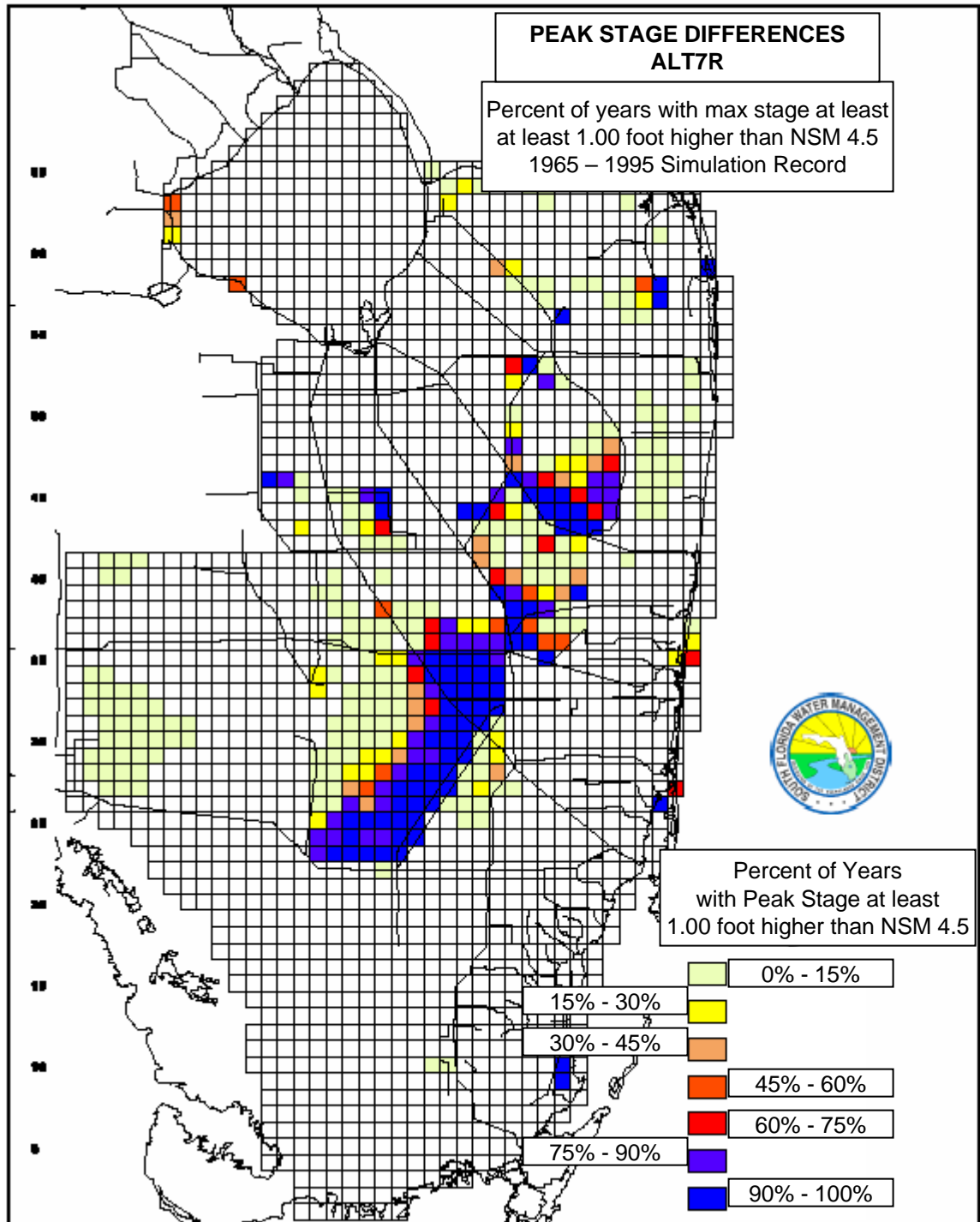
Number of consecutive days with water levels below ground (2/15-7/15)



40-80 day window
8 out of 10 years (0.2)

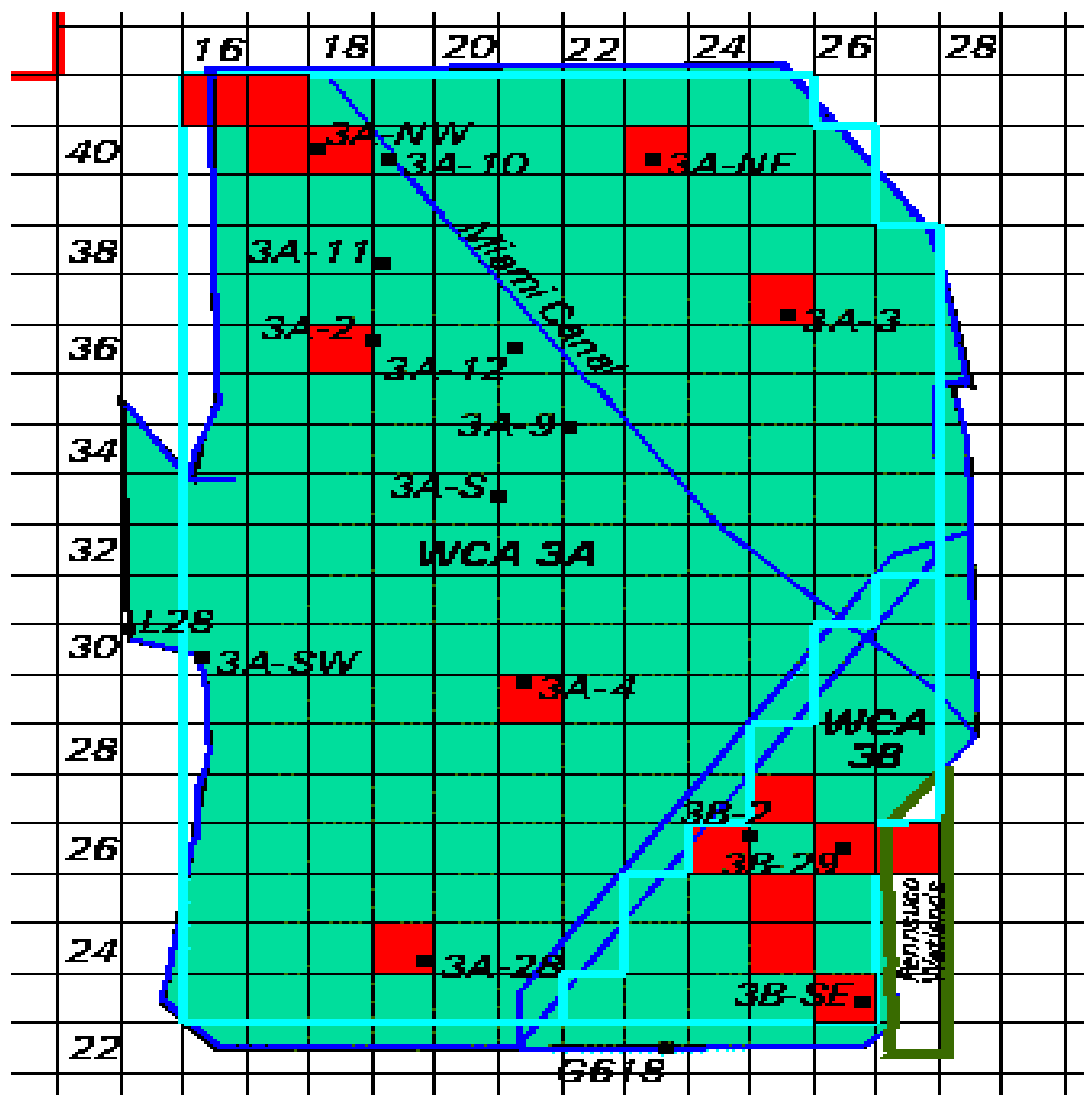
40-80 day window
7 out of 10 years (0.3)

UNDER IOP, WCA 3A & SNAIL KITE CRITICAL HABITAT IS MUCH HIGHER THAN NSM AND HEADED IN THE WRONG DIRECTION



WCA 3A Indicator Cells

Water Conservation Area 3

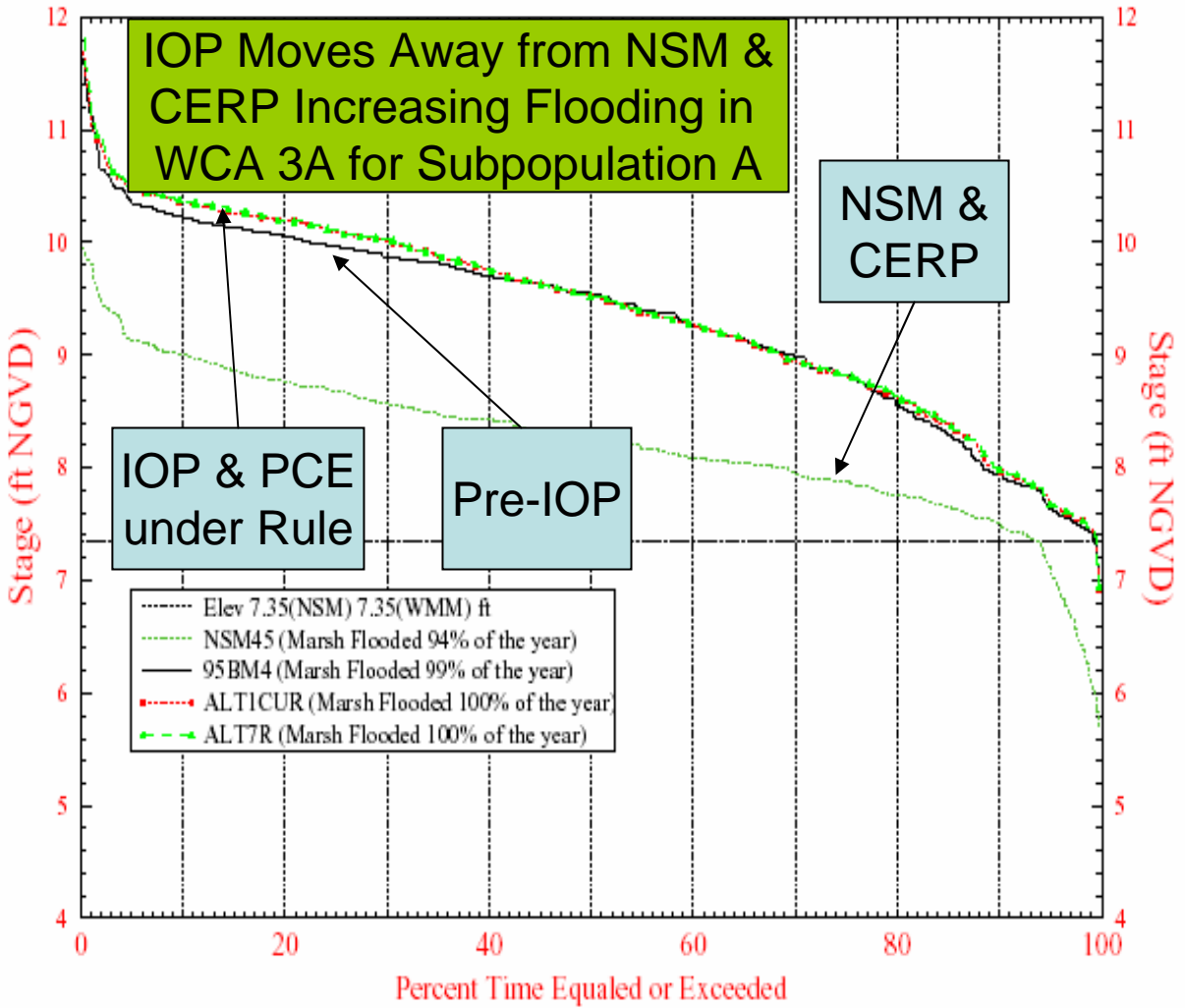


WCA 3A Cell R24 C19

SNAIL KITE CRITICAL HABITAT

MUCH WETTER THAN NSM ... AND GETTING WETTER BECAUSE OF THE SPARROW

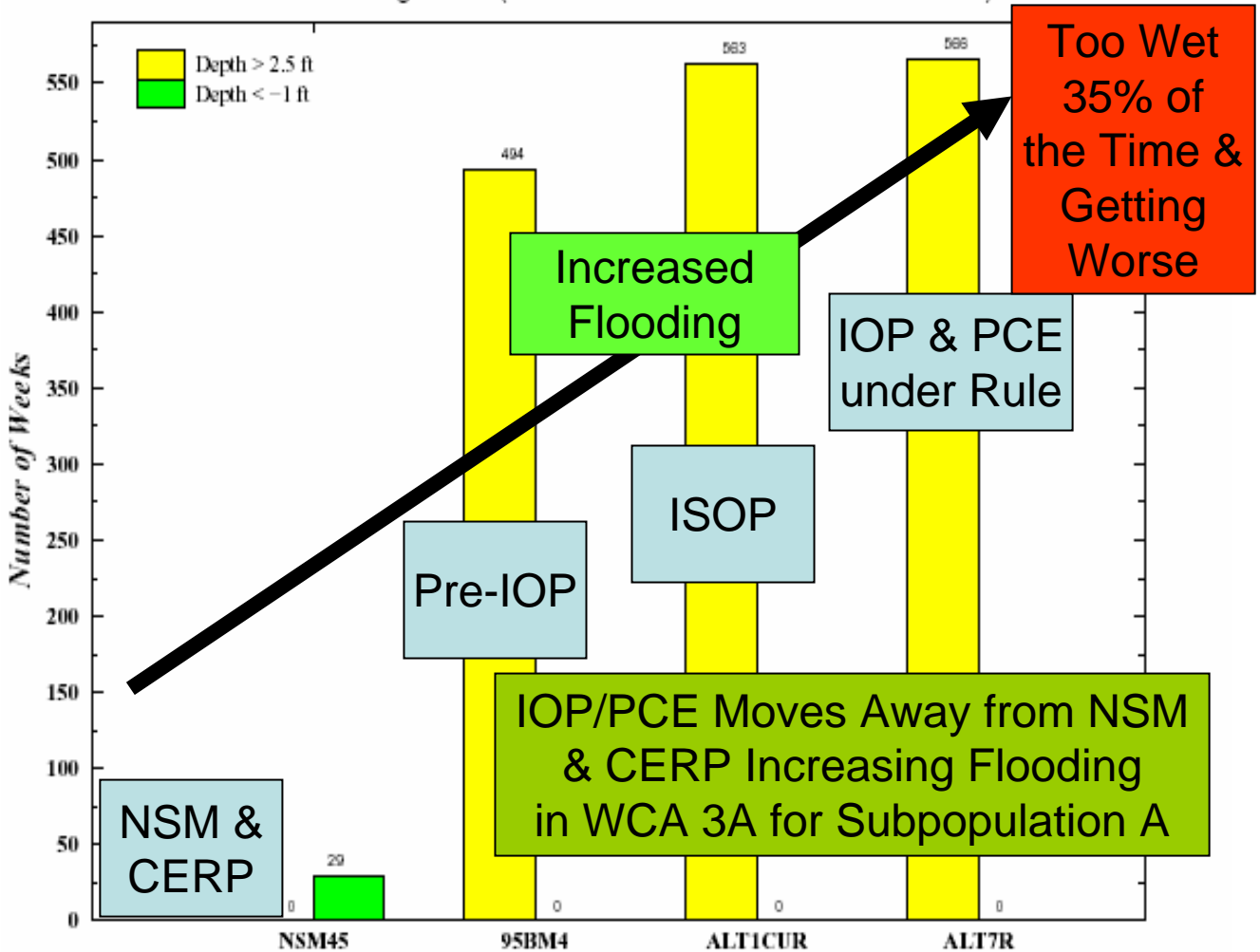
Stage Duration Curves at South End of WCA-3A
(Gage 3A-28, Cell R24 C19)



WCA 3A Regional Indicator

Number of Weeks High/Low Water Depth Criteria Exceeded

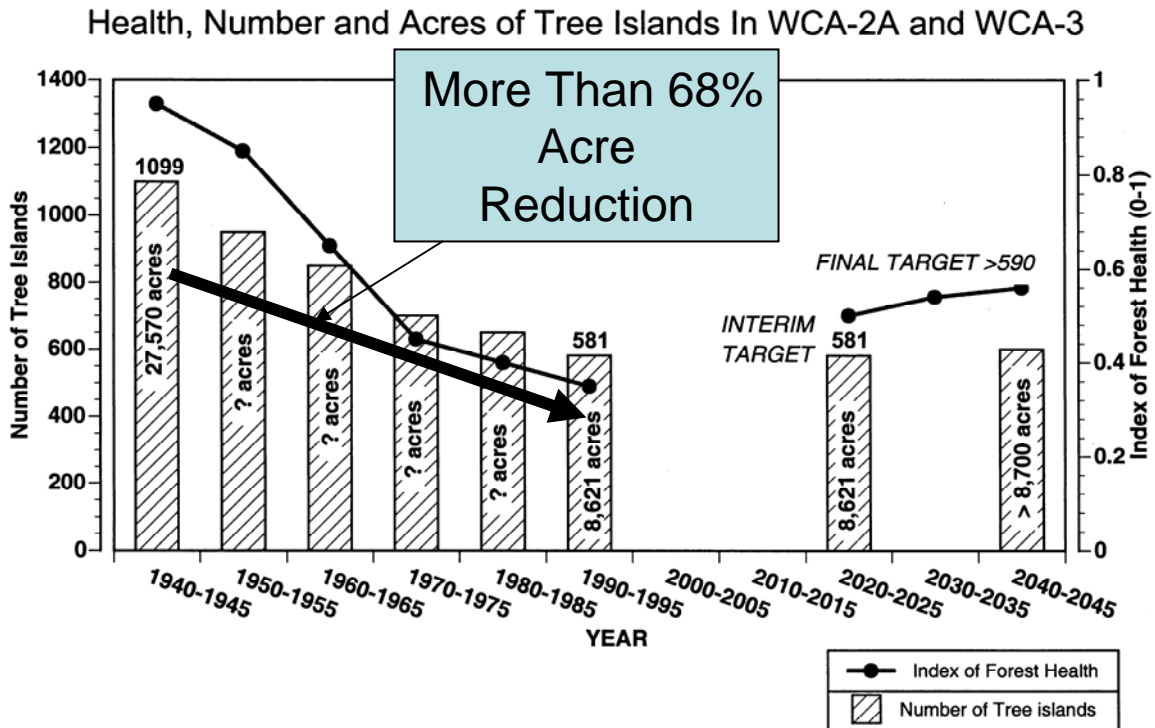
Indicator Region 14 (R23C17-20 R24C17-20 R25C17-21)



Note: The desired condition is to exceed the high water depth as few times as possible and go below the low water depth as few times as possible.

Run date: Fri Oct 25 16:09:54 EDT 2002
For Planning Purposes Only
SPWMM V3.4

Tree Island Destruction 1940 to 1995



US Army Corps of Engineers—8.5 SMA GRR/EIS July 2000—cost of delay in implementing Mod Waters project:

- “loss of tree islands has an impact on the critical habitats and cultural resources”
- “it is estimated as loss of 8.4 islands and 246 acres per year”
- “estimated values for full restoration of tree islands may range from \$50,000 to \$500,000 per acre”

WCA 3A

Snail Kite Critical Habitat

"We expect that these stages will result in the degradation of 184,320 acres of snail kite [critical] habitat within WCA-3A in each of the next four years when stages exceed 10.5 feet."

Fish & Wildlife Service Biological Opinion on the Interim Operational Plan for the CSSS, November 17, 2006, page 77.

In Summary

- Officials initially said that sparrow deviations were for the short-term, but after 9+ years, there is no end in site
- Serious and irreversible destruction is being done, e.g. tree islands & 10s of thousands of acres of Snail Kite Critical Habitat in WCA 3A have been damaged and/or lost
- With the removal of Mod Waters from the RPA and the added Critical Habitat PCE, flows will have to be blocked in perpetuity
- Jeopardy will potentially be declared on both CSOP and CERP
- And even worse, these unnatural alterations have apparently reduced the sparrow population