



ENP Recommendations Based on Alternative 5 Performance

CSOP Advisory Team Meeting
September 29, 2005

MWD Project Purpose: Improved Water Deliveries to ENP

Construct modifications to improve water deliveries into ENP and to the extent practicable take steps to restore natural hydrologic conditions in ENP by meeting 3 interrelated criteria:

Timing: Changing the schedule of water deliveries so that it fluctuates in consonance with local meteorological conditions, including providing for long term and annual variation in ecosystem conditions in the Everglades;

Location: Restoring WCA 3B and Northeast Shark Slough as a functioning component of the Everglades hydrologic system;

Volume: Adjusting the magnitude of water discharged to ENP to minimize the effects of too much or too little water. (Source: USACE 1992 MWD GDM, Section 44: Objectives, page 24-25).

The Army Corps 1992 GDM states the Final Selected Plan Meets the Project Objectives by...

- “Location: The historic path of Shark River Slough will be restored by bringing WCA No. 3B and NESRS back into the flow-way between WCA No. 3A and Everglades National Park”.



The Army Corps 1992 GDM states: Construction of features to restore historic flow patterns from WCA 3A through 3B into NESRS will...

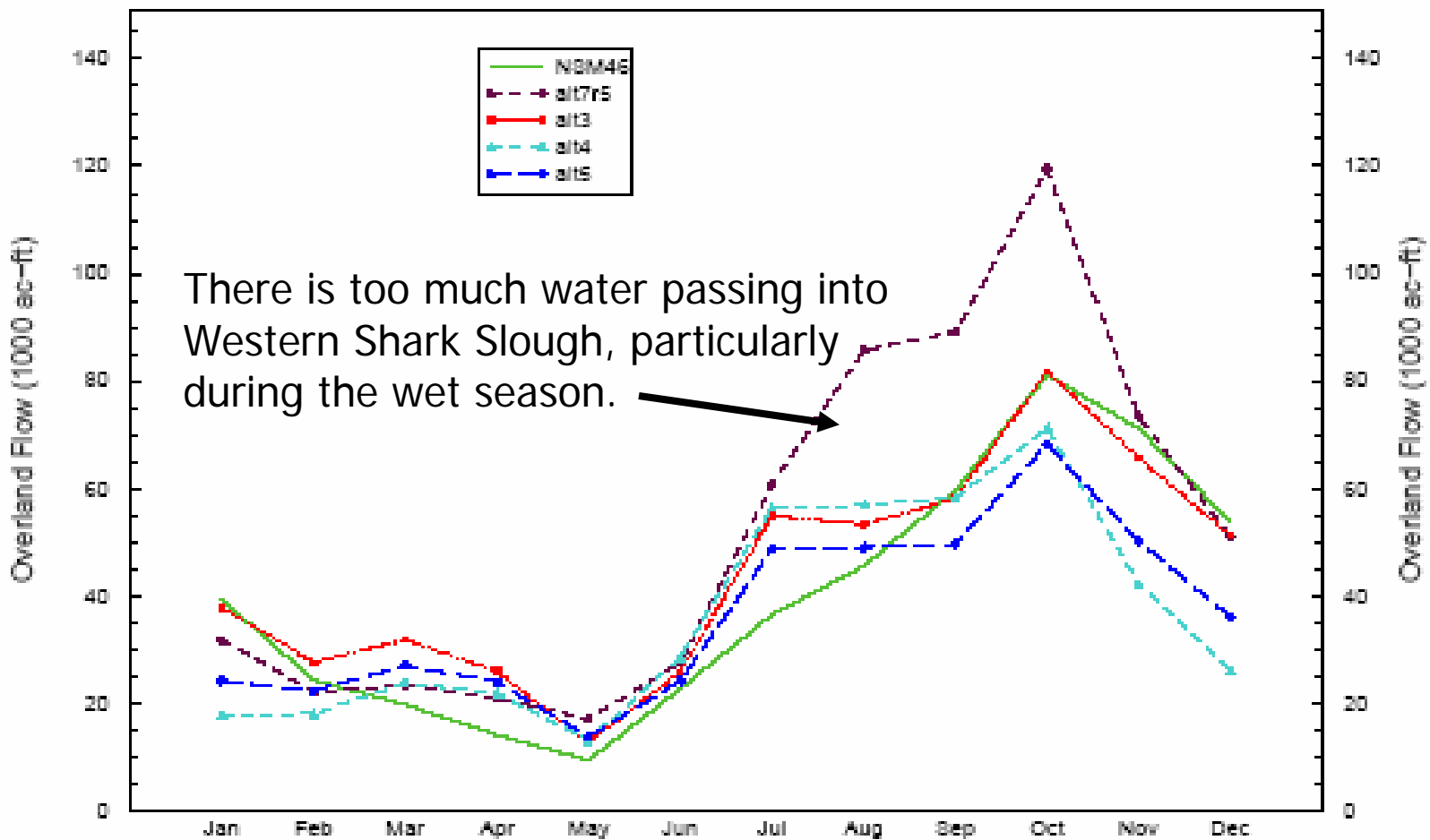
- "Restore the historic flow patterns in the Everglades Basin"
- "100,000 acres of prime Everglades habitat would be brought back as a fully functional component of the Everglades system"
- "Decreases the volume and, in some cases, the need for regulatory water releases into the Park from WCA 3A"



Flows into Western Shark Slough

Average Monthly Overland Flow across Transect 17 (1965–2000)

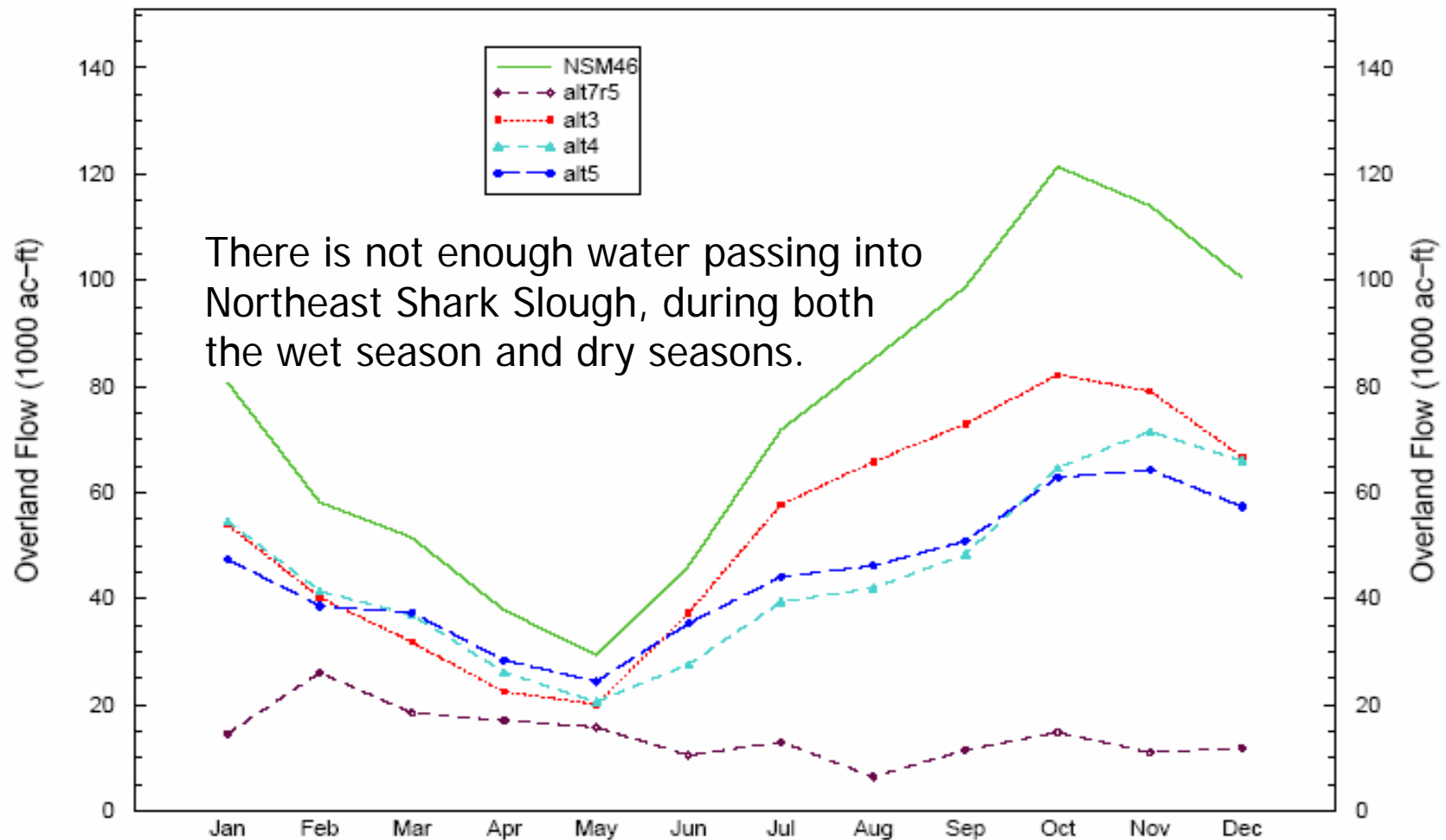
Southward flow in Northern ENP (south of Tamiami Trail & west of L-67 extension)



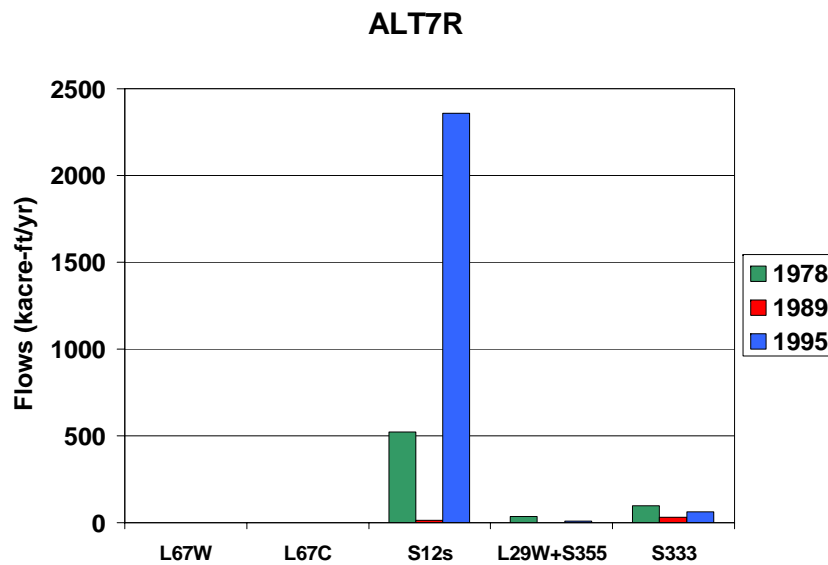
Flows into Northeast Shark Slough

Average Monthly Overland Flow across Transect 18 (1965–2000)

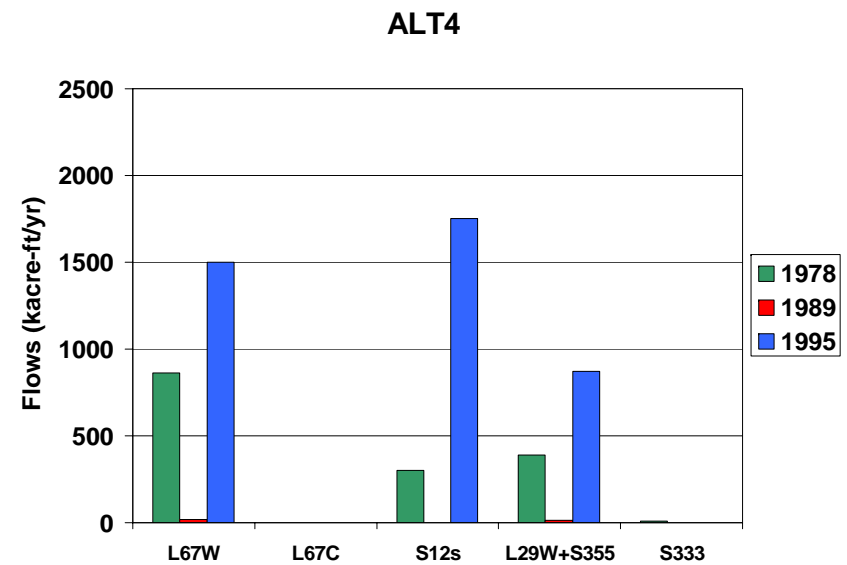
Southward flow in Northern ENP (south of Tamiami Trail & east of L-67 extension)



Flow Comparisons IOP vs Alt.4



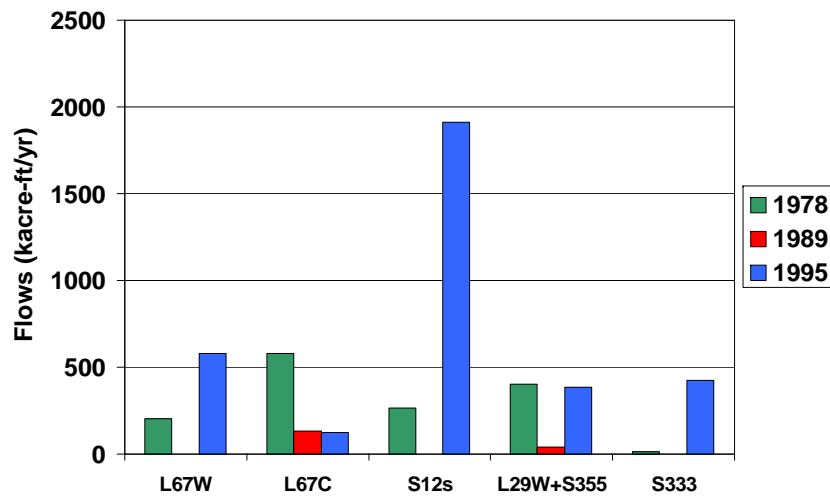
<u>Average (1978)</u>		<u>Wet (1995)</u>	
S-12's	523K	S-12's	2359K
S-333	98K	S-333	61K
L-67's	0K	L-67's	0K
L-29's	36K	L-29's	10K
WSS	80%	WSS	97%
NESS	20%	NESS	3%



<u>Average (1978)</u>		<u>Wet (1995)</u>	
S-12's	301K	S-12's	1555K
S-333	10K	S-333	0K
L-67's	861K	L-67's	1500K
L-29's	388K	L-29's	872K
WSS	43%	WSS	64%
NESS	57%	NESS	36%

Flow Comparisons Alt.5 vs ENP85B

ALT5



Average (1978)

S-12's 265K
S-333 12K
L-67's 784K
L-29's 403K

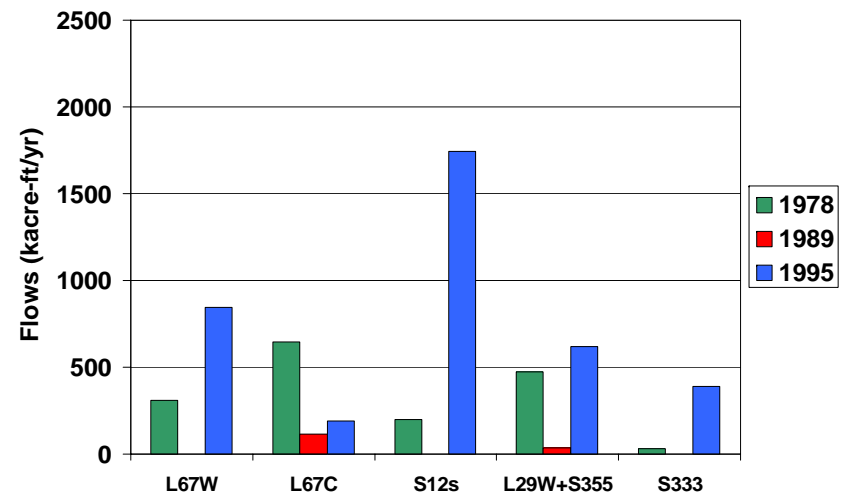
WSS 39%
NESS 61%

Wet (1995)

S-12's 1913K
S-333 424K
L-67's 707K
L-29's 385K

WSS 70%
NESS 30%

ENP85B



Average (1978)

S-12's 197K
S-333 32K
L-67's 957K
L-29's 475K

WSS 28%
NESS 72%

Wet (1995)

S-12's 1743K
S-333 390K
L-67's 1036K
L-29's 621K

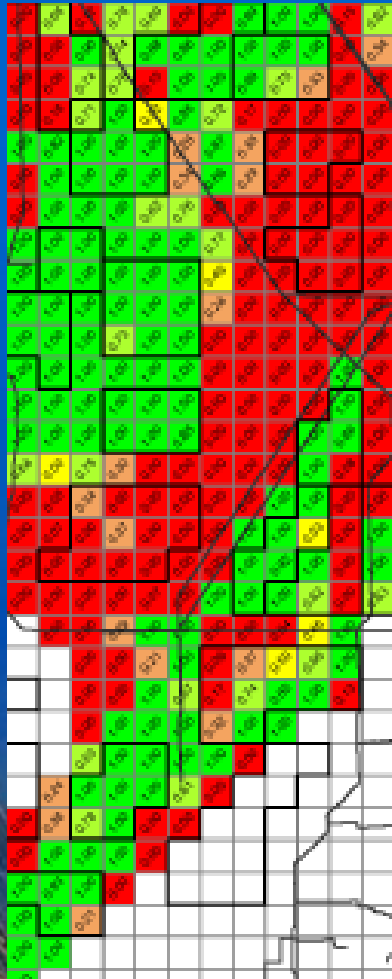
WSS 63%
NESS 37%

Flow/Water Depth Comparisons Alt.5 vs ENP85B

	ALT5	ENP85B
WCA-3B Out	341 kacre-ft/yr	442 kacre-ft/yr
% thru WCA-3B	39%	50%
NESS/WSS Split	44 / 56	54 / 46
WCA-3A > 2.5ft	20%	15%
WCA-3A > 2.0ft	47%	39%
WCA-3B > 2.5ft	5%	9%
WCA-3B > 2.0ft	31%	51%

TREE Island Habitat Suitability

Alt 4



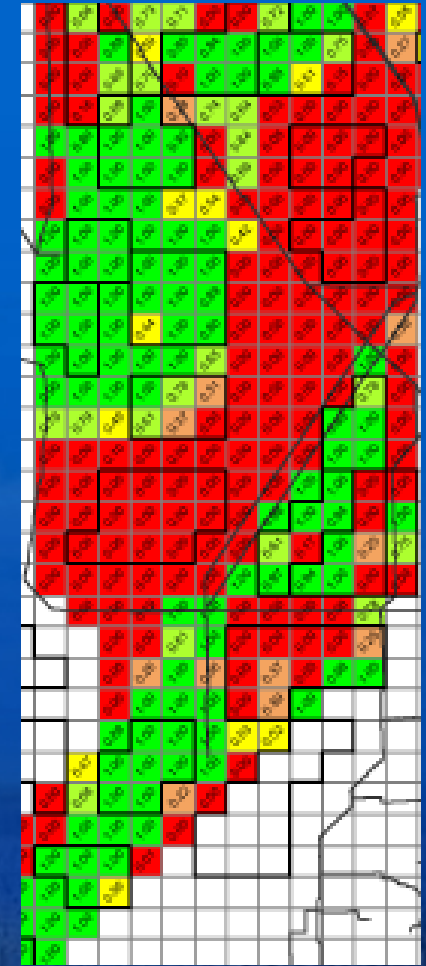
3A

3B

ENP

IR	ALT 4	ALT 5
121	1.0	0.9
123	1.0	0.5
124	0.1	0.0
125	0.8	0.9
126	0.9	0.8
128	0.4	0.5
129	0.6	0.3
130	1.0	1.0
131	0.8	0.9

Alt 5



Trade-offs:
major loss of benefits in 3A and ENP for minor improvements in 3B

Ridge and Slough Habitat Suitability

Alt 4



Alt 5



Alt 4	Alt 5
0.4	0.3
0.4	0.4
0.4	0.4

Alt 5 consequence for ridge and slough:
Small decrease in suitability in WCA 3B

ENP Targets for Restoring Hydrological Connection Between WCA 3A, 3B and NESRS

- Volume: CERP0 flows, as long as other water-related needs of project are not exceeded.
- Distribution: WSS 34%/NESS 66% -- maximize percentage of overland flow (sheetflow) from WCA-3A, through 3B into NESRS
- Location: Restore overland flow through WCA 3B to NESRS; reduction of flows into ENP from S-333 (L-67A).

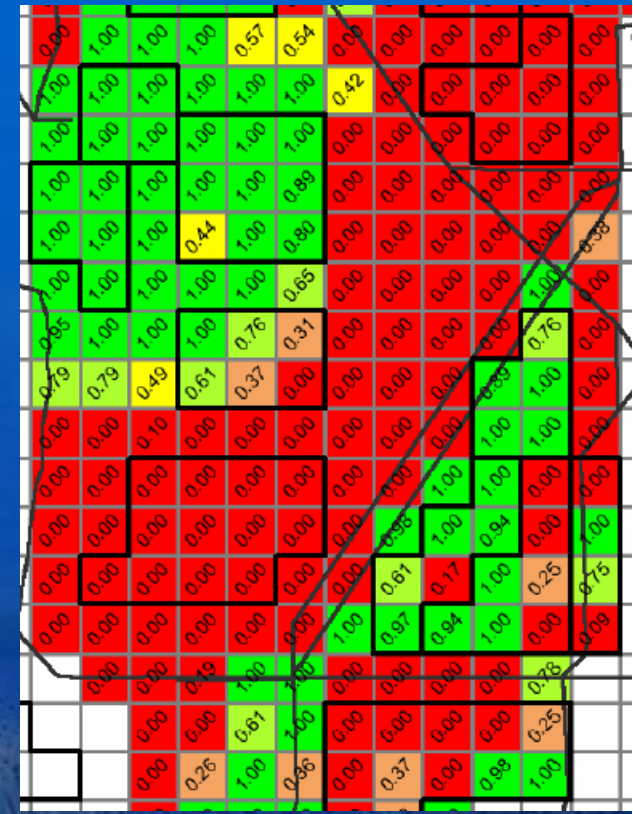
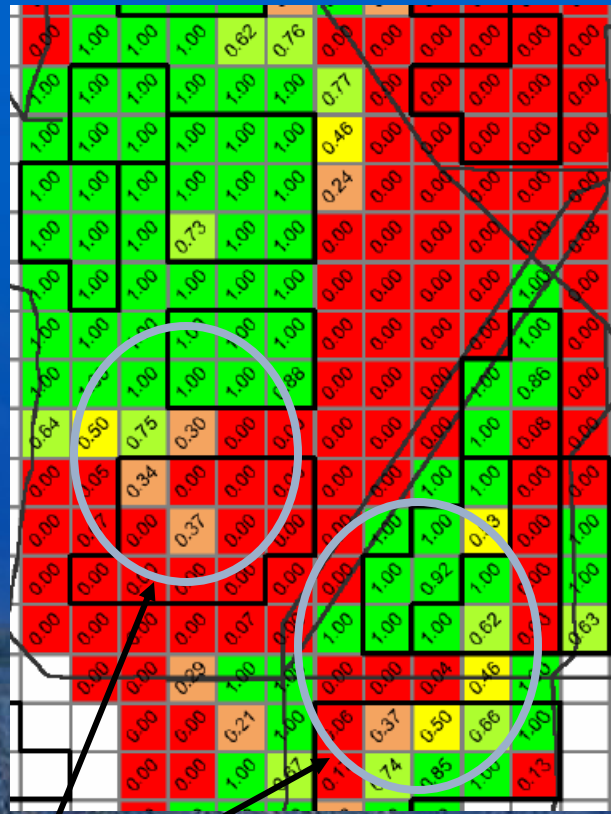
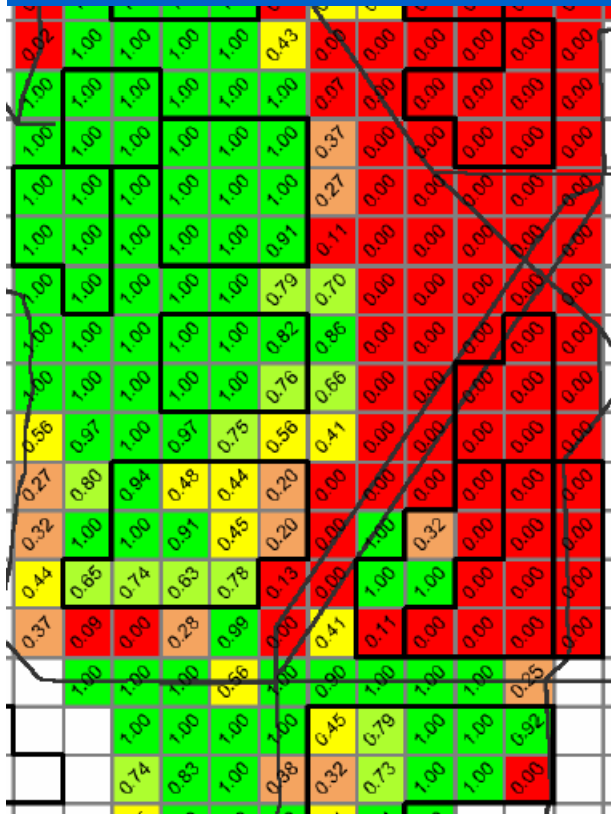


Tree Island PM

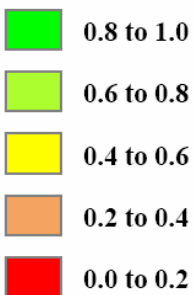
West

Alt4

Alt5



Classes



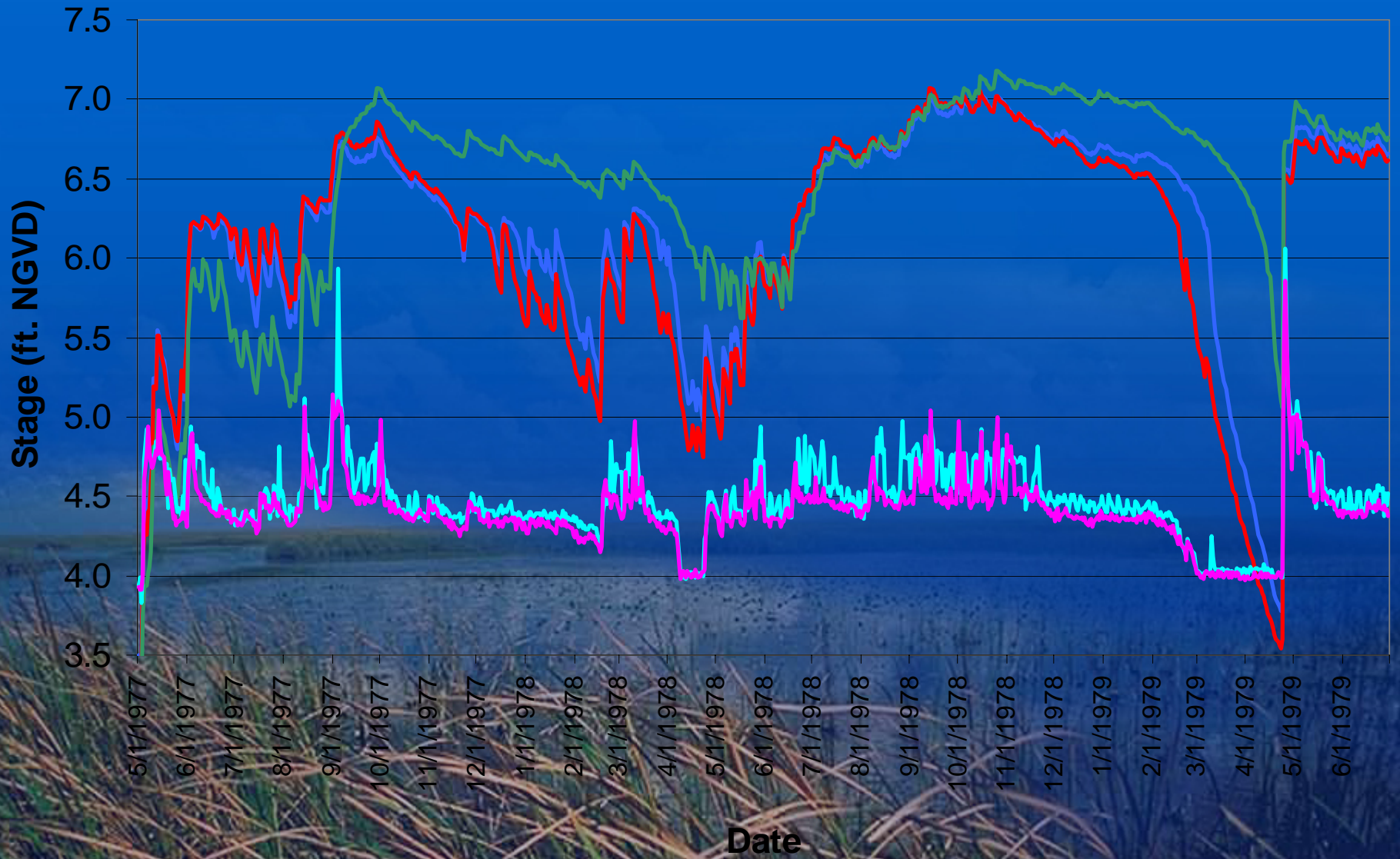
Better

Worse

- On these areas, Alt4 performs better than Alt5.
- The performance is more pronounced if we read the numeric numbers.

L31N Stages and Marsh Stages Two Miles West of S332B

— ENP85B Marsh — ALT5 Marsh — NSMv4.6.2 Marsh — ENP85B L31N — ALT5 L31N



ENP Recommendations

- Implement ENP85B with change in S-18C operations to address high water conditions in that area.
- ENP85B is a compromise proposal by ENP; it does not provide flow volumes to significantly improve ridge and slough conditions in 3A, 3B, and ENP; however, it performs much better than Alt. 5