

CSOP Sensitivity Run “alt4b3”:

SFWMM Modeling – Overview of Results

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Overview of Assumptions

● Sensitivity Run: “alt4b3a”

S-357: wet season – total of 250 cfs at 4.5/4.3; total of 500 cfs at 5.0/4.5

dry season – total of 250 cfs at 5.5/5.0; total of 500 cfs at 5.8/5.5

- (alt4 used 250 cfs at 5.7/5.4 and 500 cfs at 6.0/5.7)

● Sensitivity Run: “alt4b3b”

S-357 triggers as specified in above “alt4b3a”

Additional operations changes as per “alt4b2” (proposed by Tom MacVicar):

S-338: WS only

G-211: WS only

S-331: WS and FC (5.6/5.2), 1 pump (387 cfs), tailwater constraint 4.9 at S-176 HW

S-173: WS and FC (5.3/5.1), no tailwater constraint, 175 cfs capacity

S-356: 500 cfs capacity

FC triggers (5.7/5.5—125 cfs; 5.8/5.6—375 cfs; 5.9/5.7—500 cfs)

Overview of Assumptions

● Sensitivity Run: “alt4b3c”

S-357 triggers as specified in above “alt4b3a”

S-338: WS only

G-211: WS only

S-331: WS and FC (5.6/5.2), 1 pump (387 cfs), tailwater constraint 4.9 at S-176 HW

S-173: WS and FC (5.3/5.1), no tailwater constraint, 175 cfs capacity

S-356: 950 cfs capacity

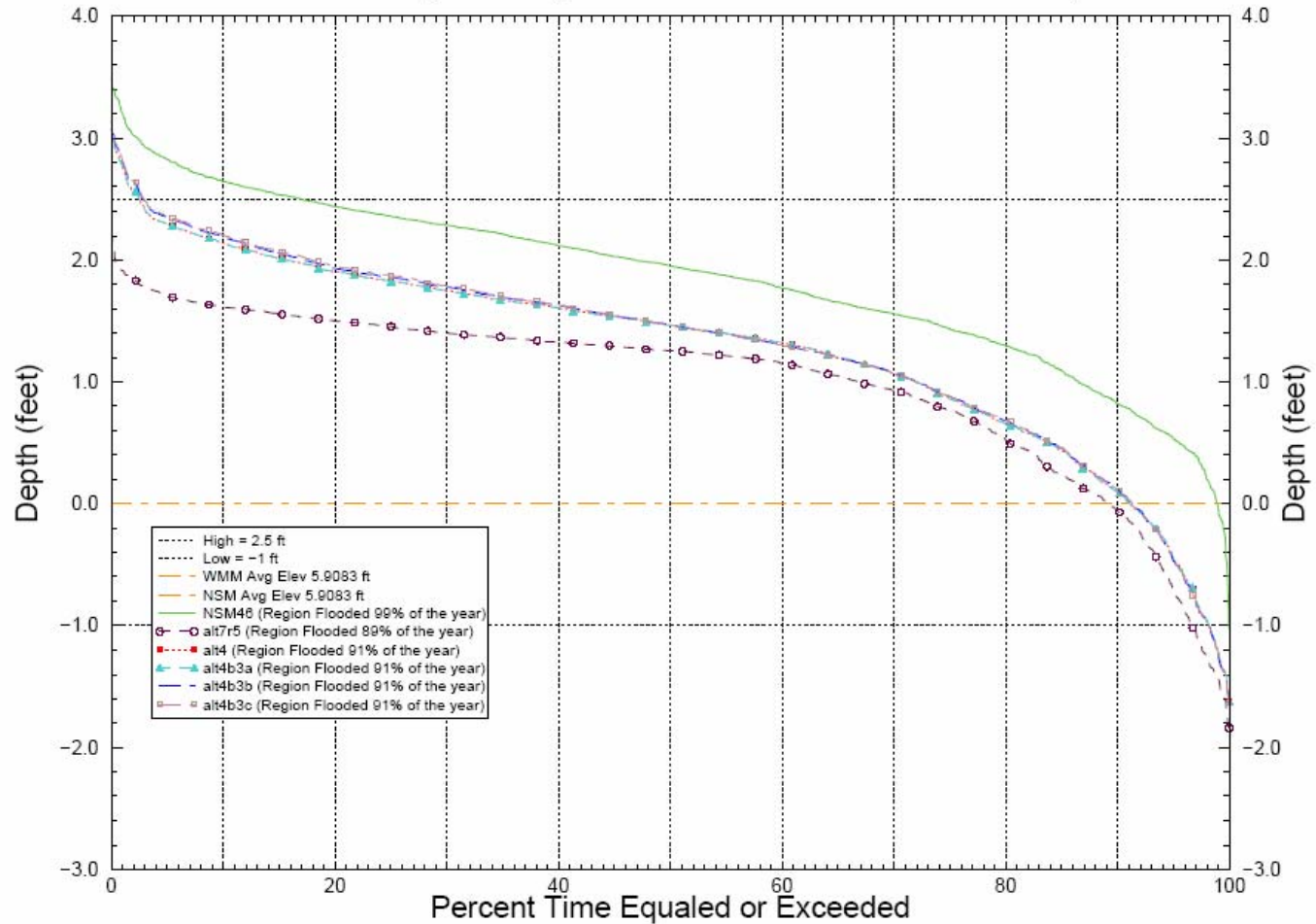
FC triggers (5.7/5.5—125 cfs; 5.8/5.6—375 cfs; 5.9/5.7—950 cfs)

C-111 detention area culverts and overflow spillaway set to overflow west to ENP when reservoir depths > 2.0 feet

NESRS: IR 129

Normalized Weekly Stage Duration Curves for NE Shark Slough

Indicator Region 129 (R19C22-23 R20C22-26 R21C22-26)



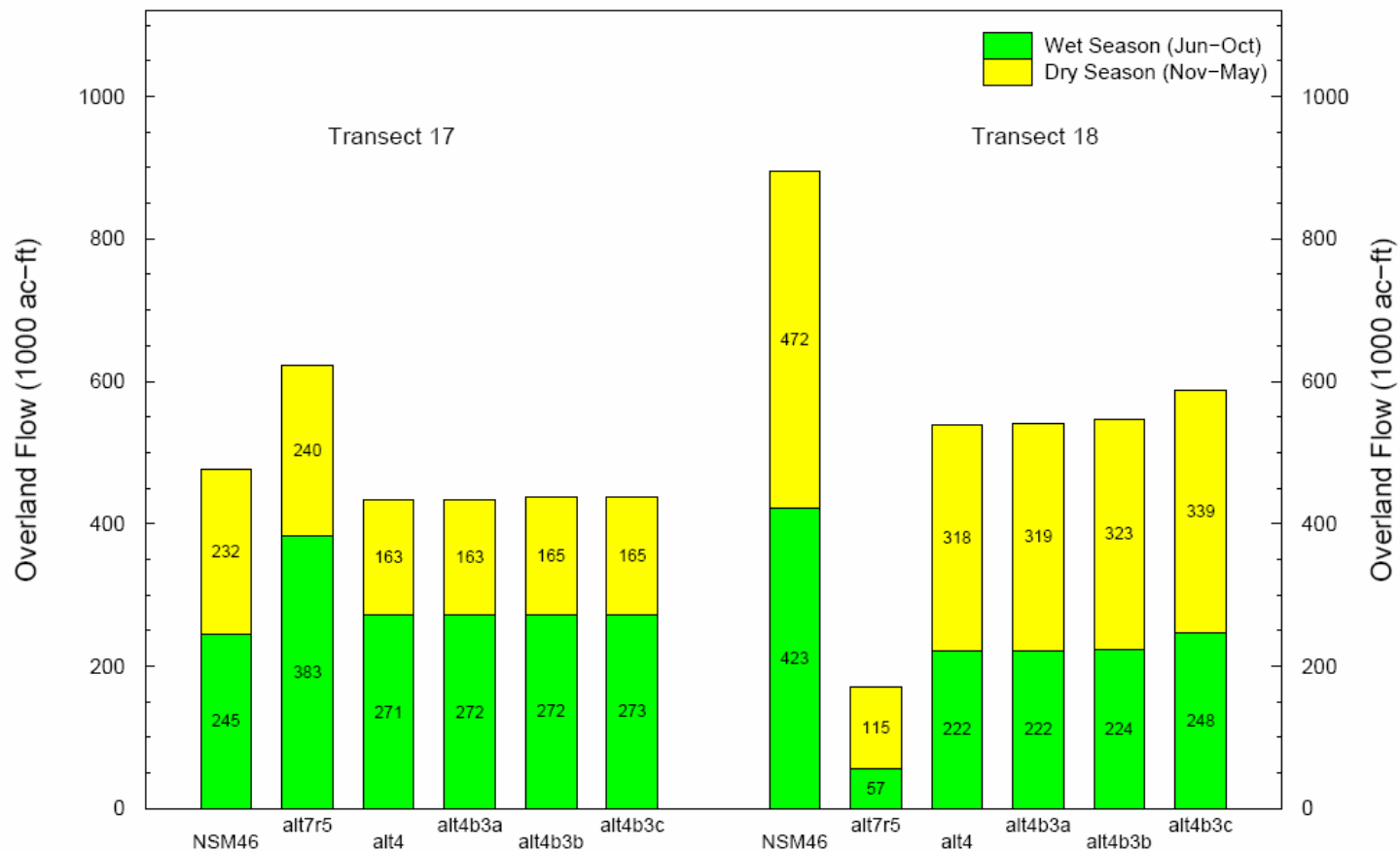
Note: Normalized stage is stage referenced to Land Elevation. Thus, values above zero indicate ponding while values below zero indicate depth to the water table.

Run date: Sun Jul 10 00:21:04 EDT 2005
For Planning Purposes Only
SFWM V5.5.6

Flows across northern SRS transects

Average Annual Overland Flow across Transects 17 & 18 (1965–2000)

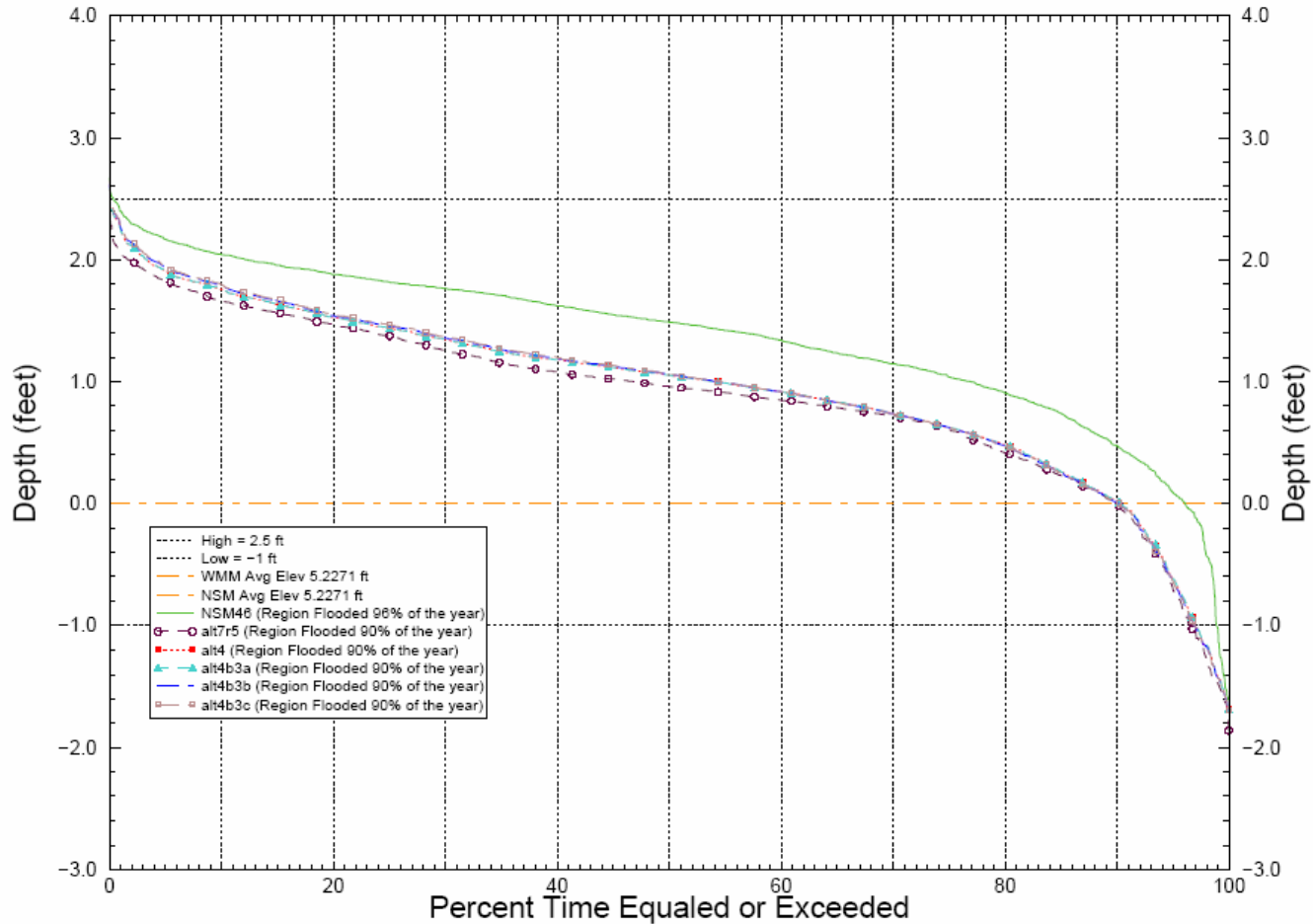
Southward flows in Northern ENP (south of Tamiami Trail – west & east of L-67 extension)



Mid-SRS: IR 130

Normalized Weekly Stage Duration Curves for Mid Shark Slough

Indicator Region 130 (R16C18-19 R17C18-20 R18C19-20)



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

Run date: Sun Jul 10 00:21:08 EDT 2005

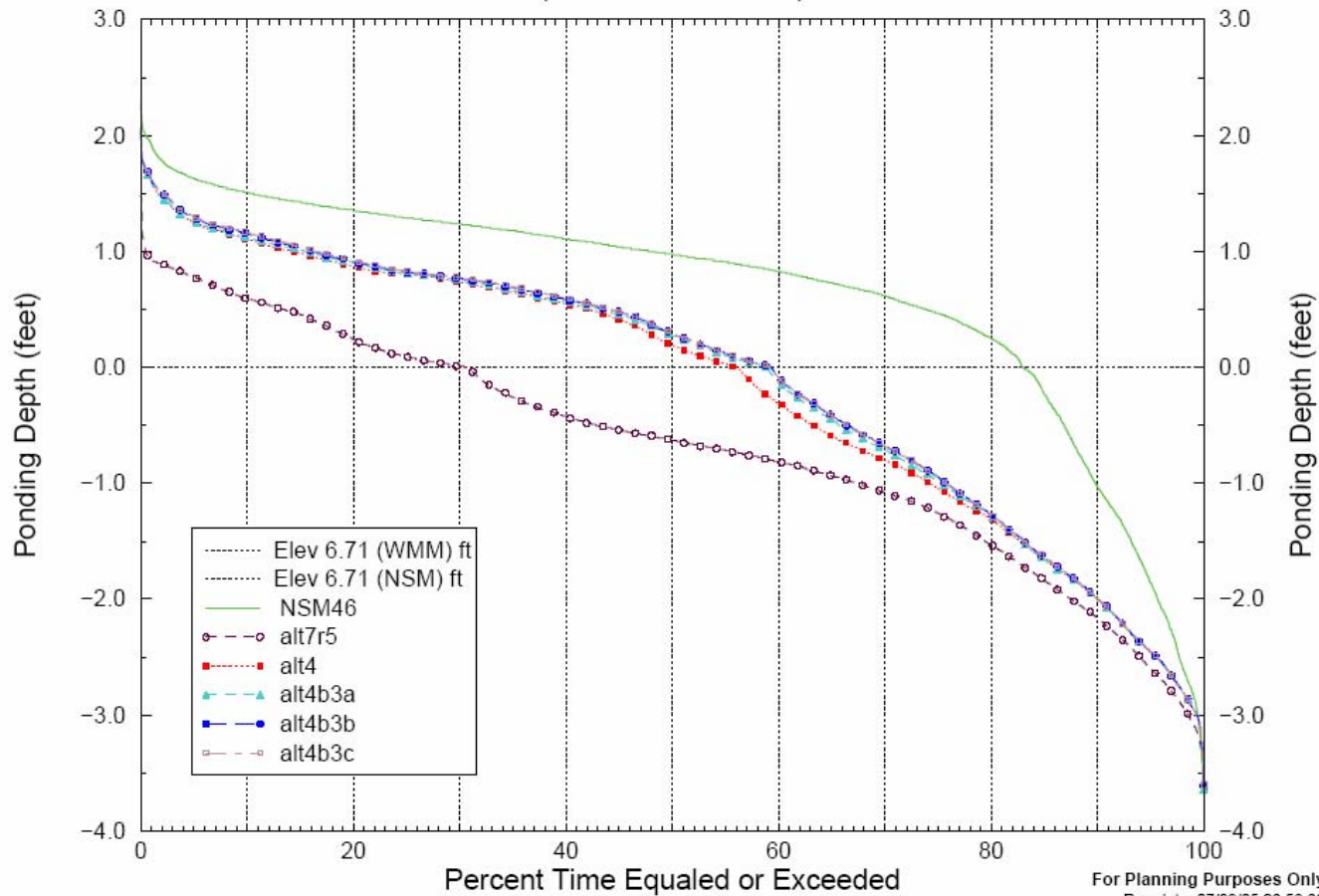
For Planning Purposes Only

SFWM V5.5.6

West of 8.5 SMA protective levee

Normalized Duration Curves for West of 8.5 Square Mile Area

(Cell Row 17 Col 25)



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Run date: 07/09/05 23:58:39

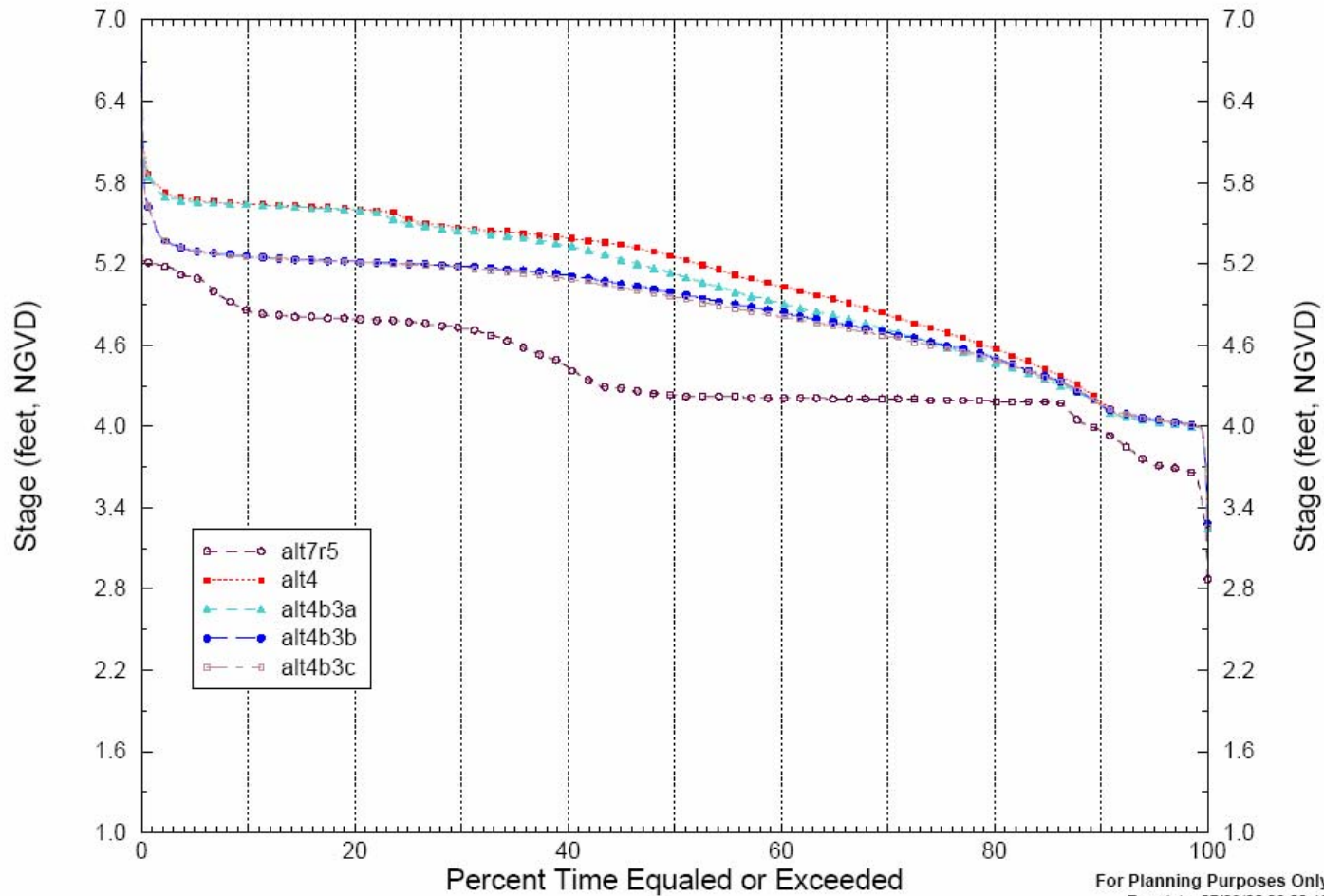
SFWMM V5.5.6

Script used: hyd_dur.scr, V1.10

Filename: 1725_dai_stgdur.fig

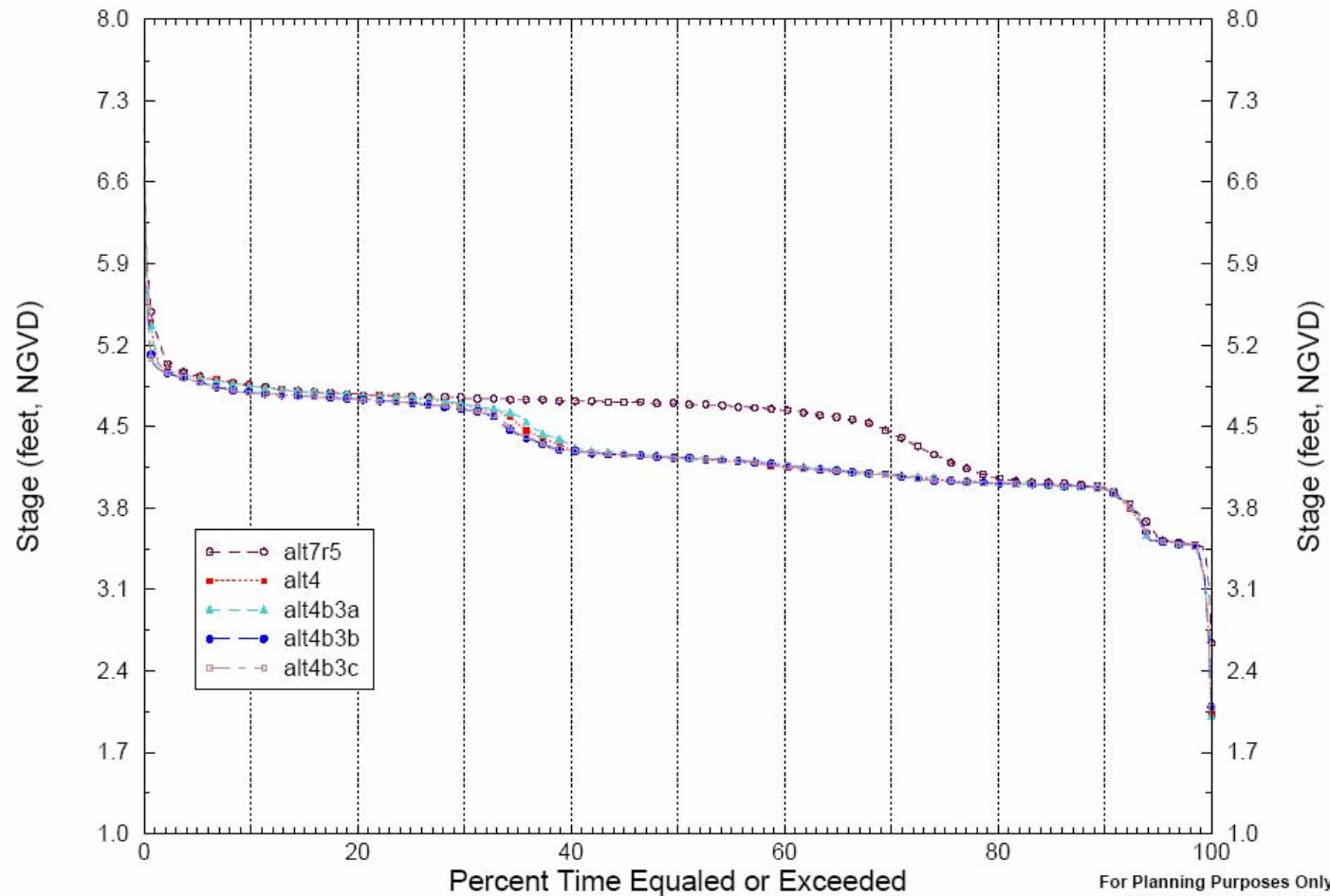
Eastern Boundary of 8.5 SMA

Stage Duration Curves for L-31N Canal at S-331



South and East of 8.5 SMA

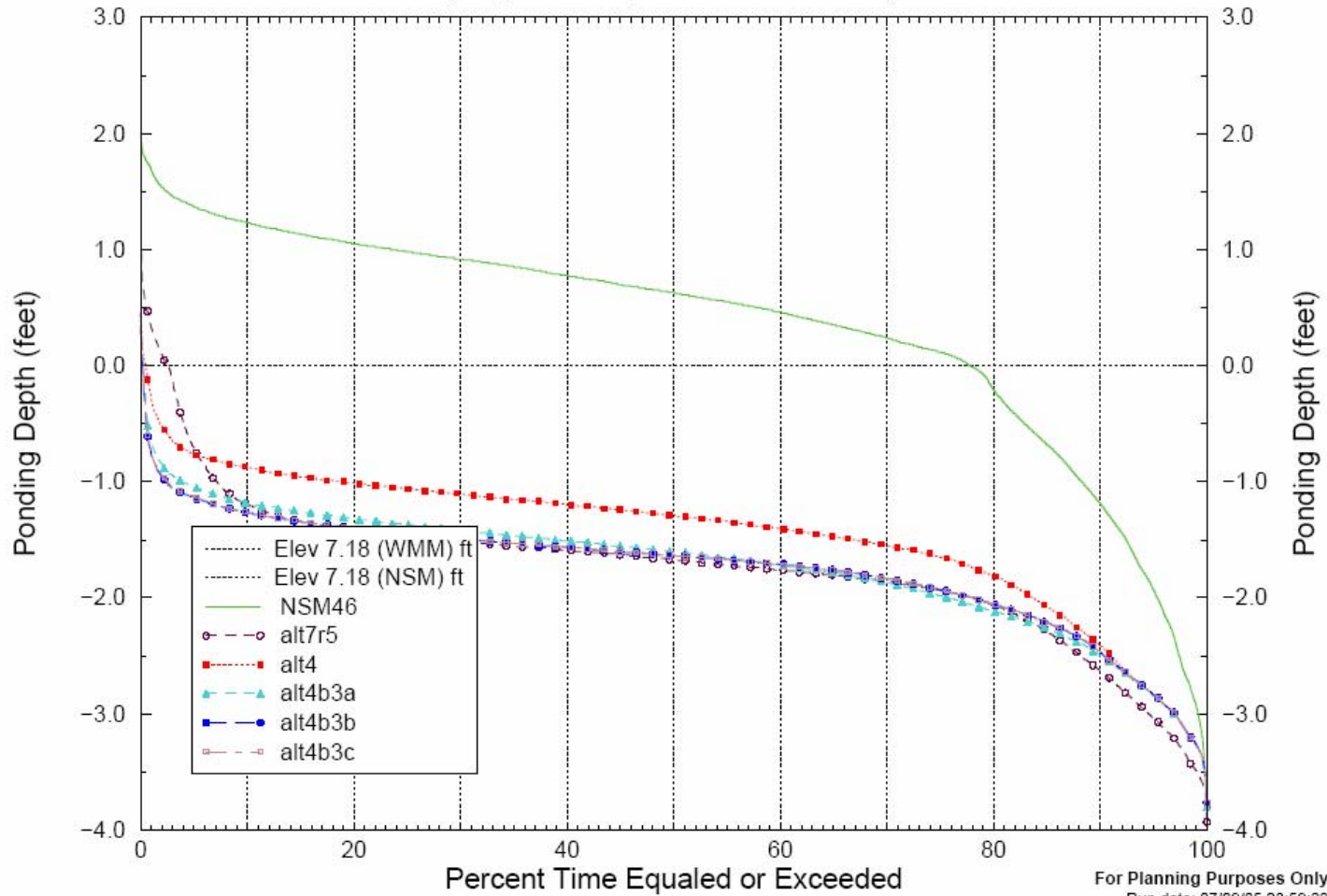
Stage Duration Curves for L-31N Canal at S-174



Northern 8.5 SMA grid cell

Normalized Duration Curves for 8.5 Square Mile Area

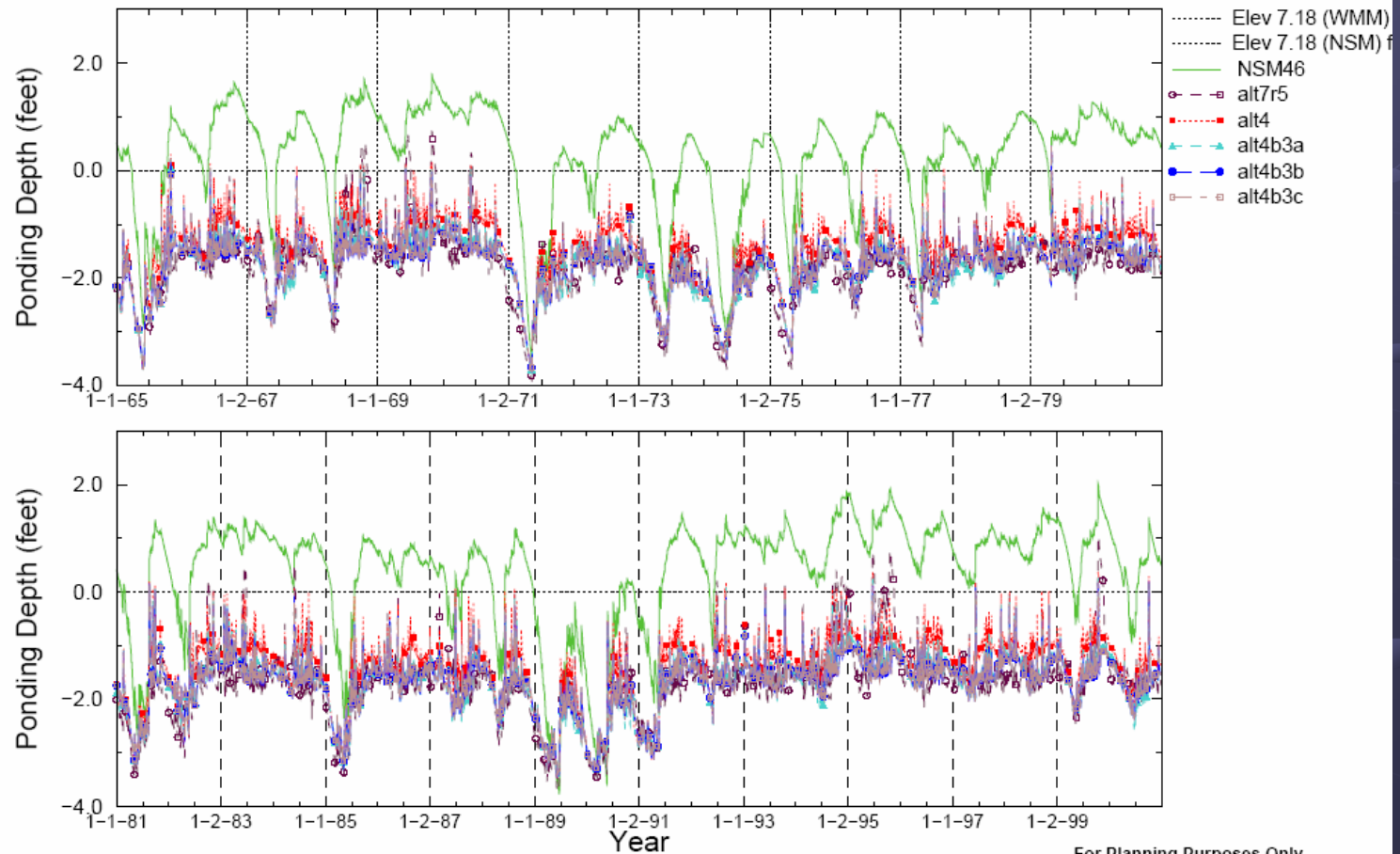
(Gage G-596, Cell Row 18 Col 26)



Northern 8.5 SMA grid cell

Normalized Hydrographs for 8.5 Square Mile Area

(Gage G-596, Cell Row 18 Col 26)



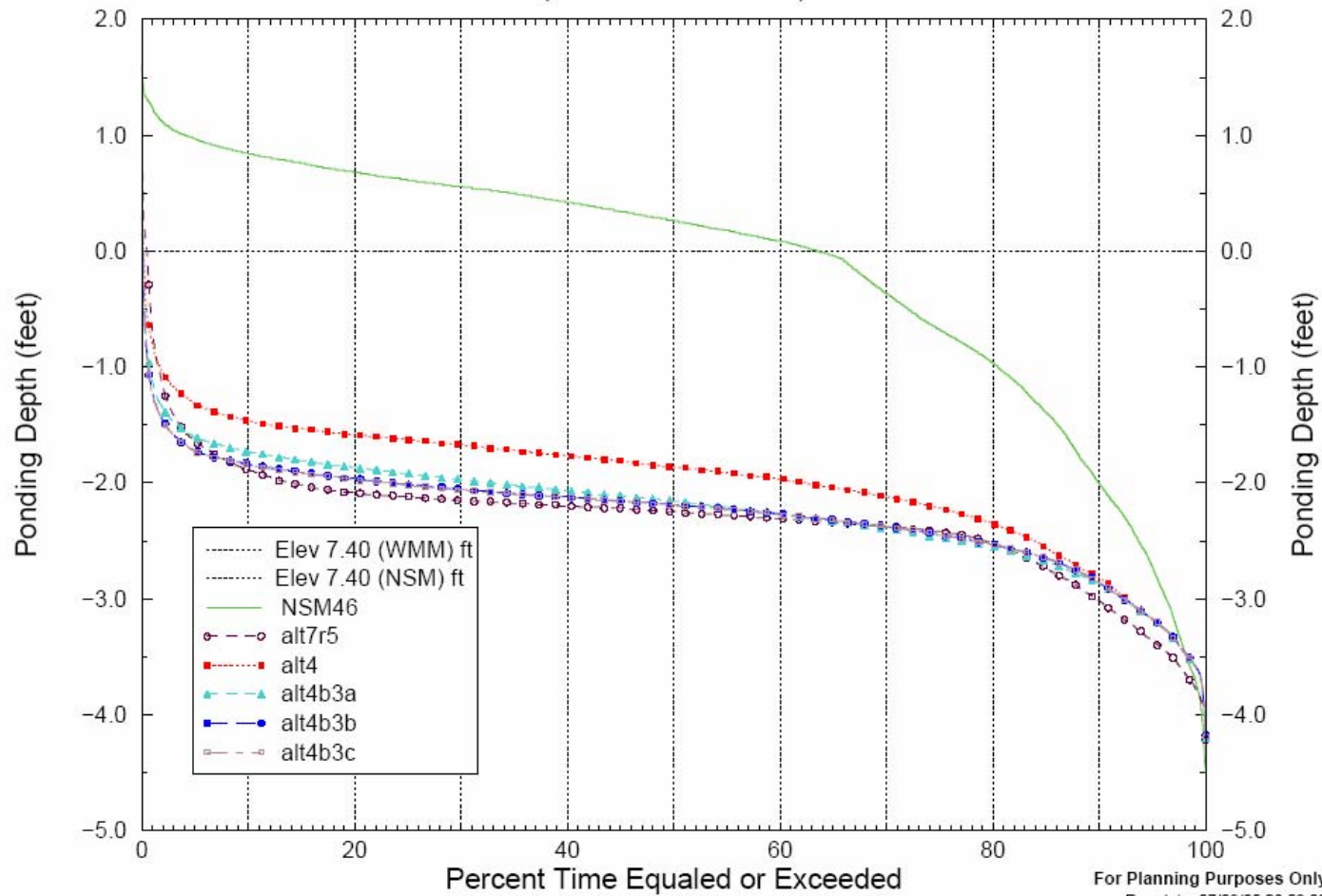
SFWM P.O.S. 1965 - 2000

For Planning Purposes Only
Run date: 07/09/05 23:59:15
SFWM V5.5.6
Script used: hyd_dur.scr, V1.10
Filename: G-596_1826_dai_stg.fig

Southern 8.5 SMA grid cell

Normalized Duration Curves for 8.5 Square Mile Area

(Cell Row 17 Col 26)

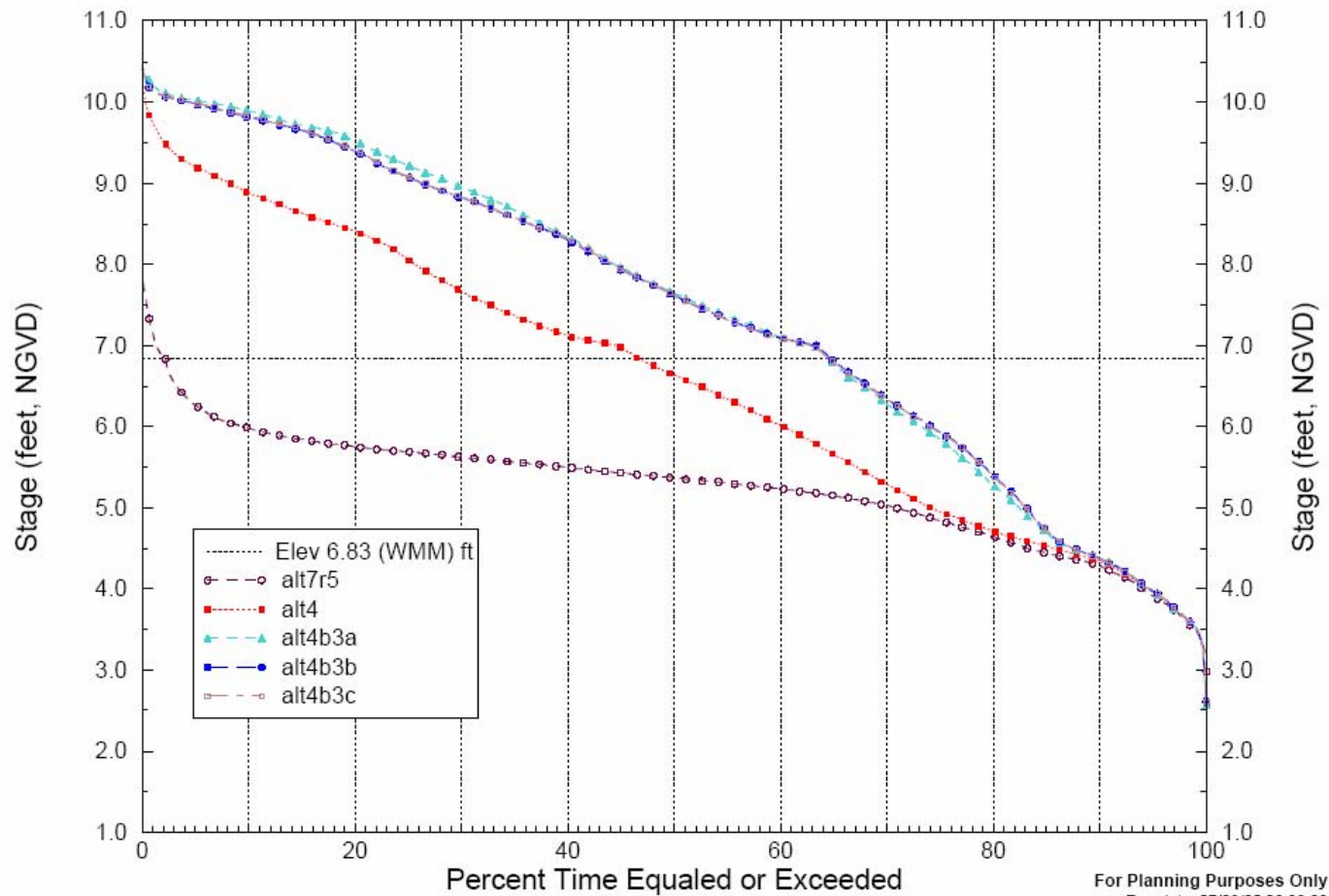


Structure Flows Summary (average kAF / yr)

	<u>alt4</u>	<u>alt4b3a</u>	<u>alt4b3b</u>	<u>alt4b3c</u>
S-335	208	208	157	183
S-356	240	242	216	277
G-211	94	92	52	52
S-173	39	36	16	15
S-331	67	62	52	52
S-357	23	48	45	45
S-332B/C	133	135	140	139
S-332D	99	100	83	83
Det. Area				
overflow	0	0	0	0
S-176	60	59	52	51

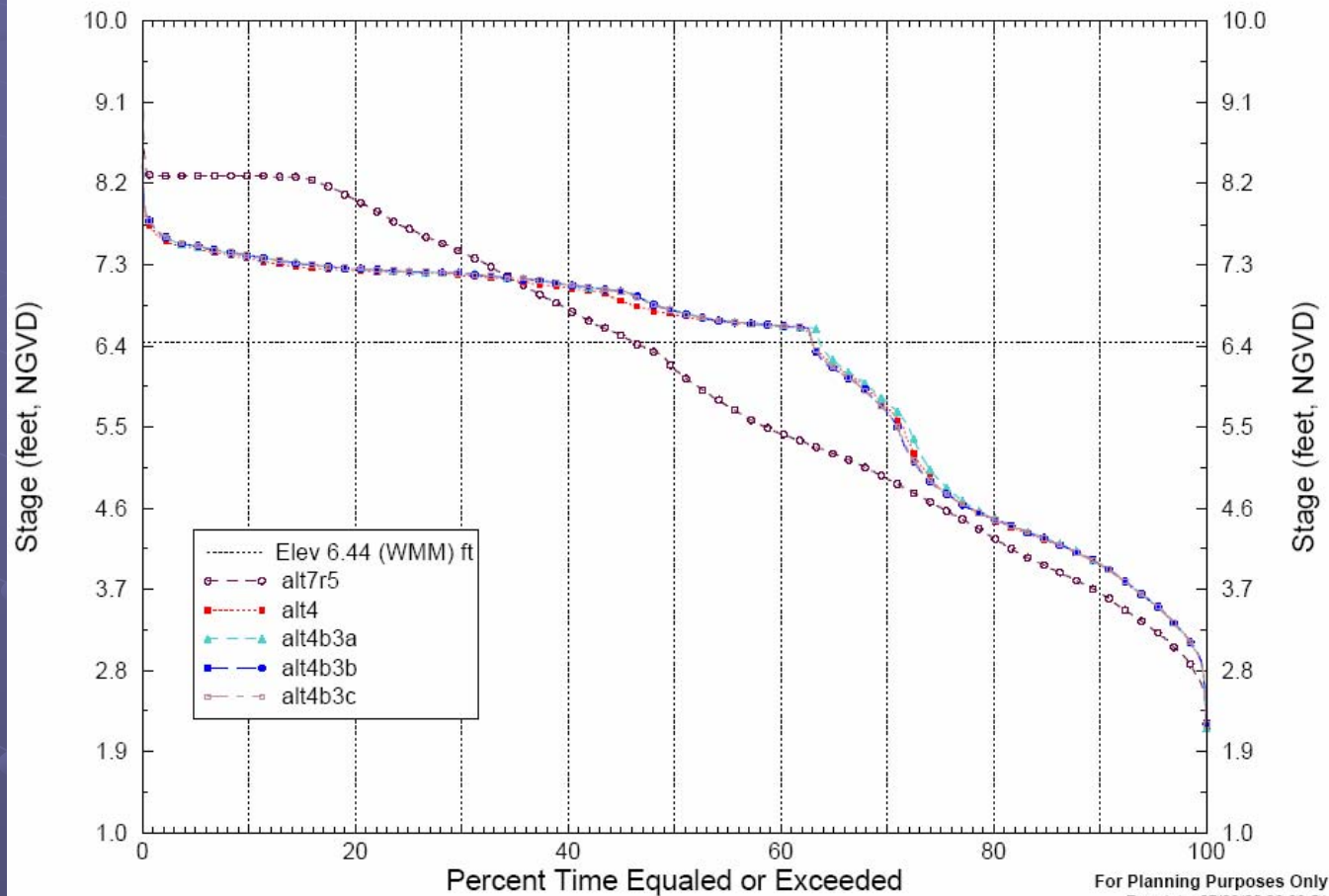
8.5 SMA STA reservoir

Stage Duration Curves for 8.5 SQMI Area STA



C-111 detention area reservoirs

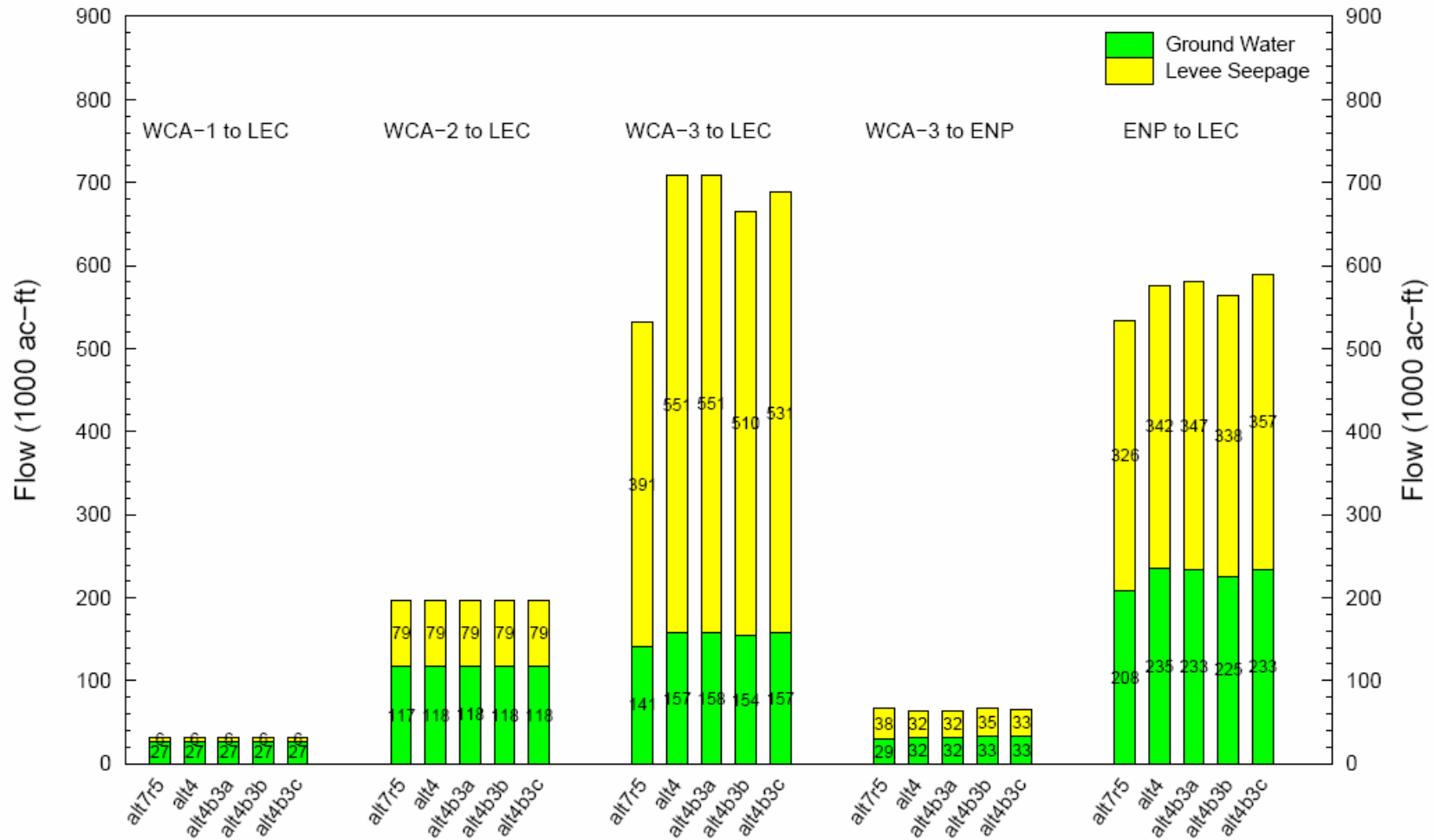
Stage Duration Curves for S332B Reservoir



Levee Seepage: along LEC levee

Average Annual Ground Water & Levee Seepage Flows

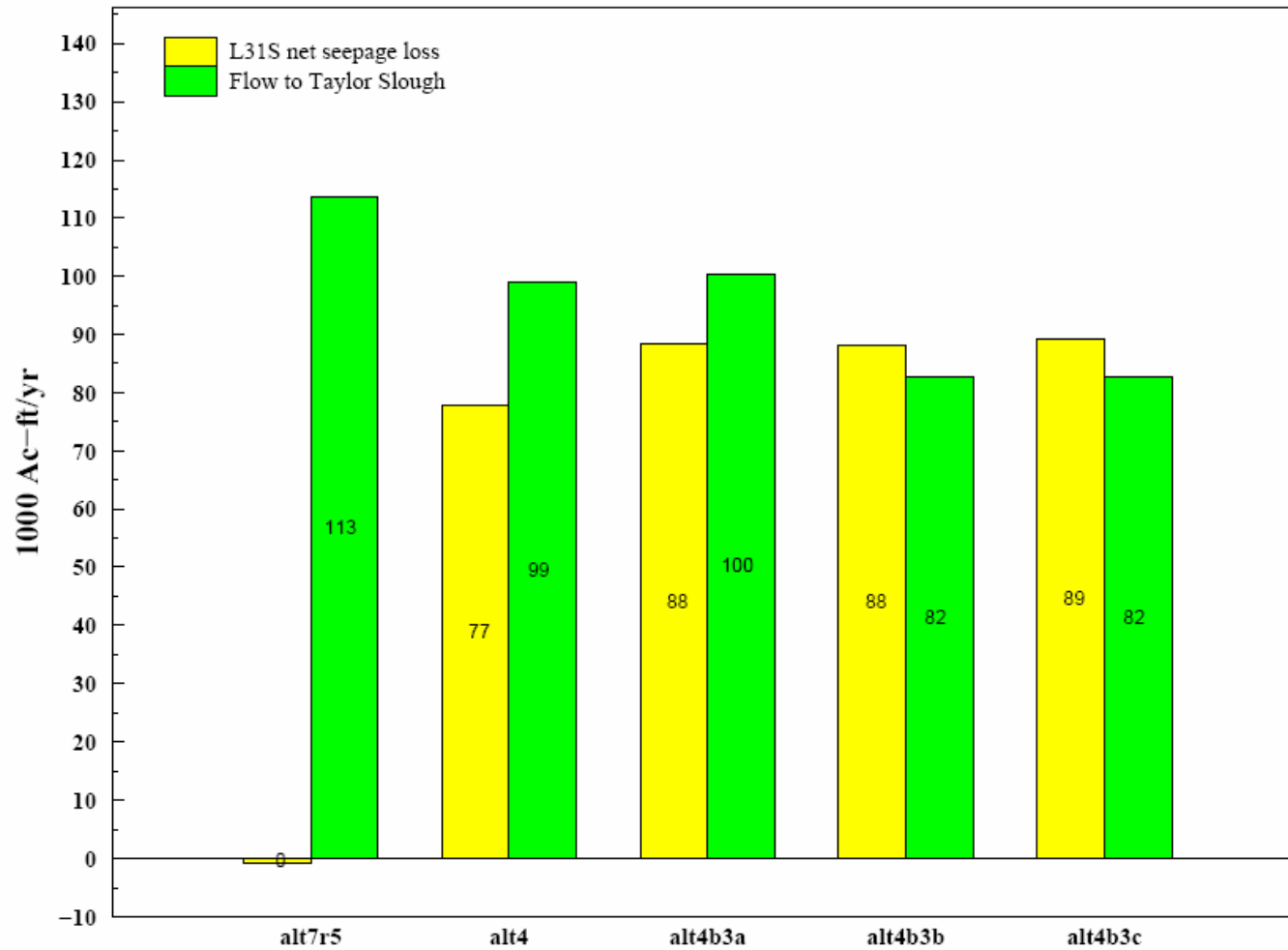
from WCA's & ENP to LEC & ENP for 1965 - 2000 Simulation Period



Levee Seepage: South of S-331

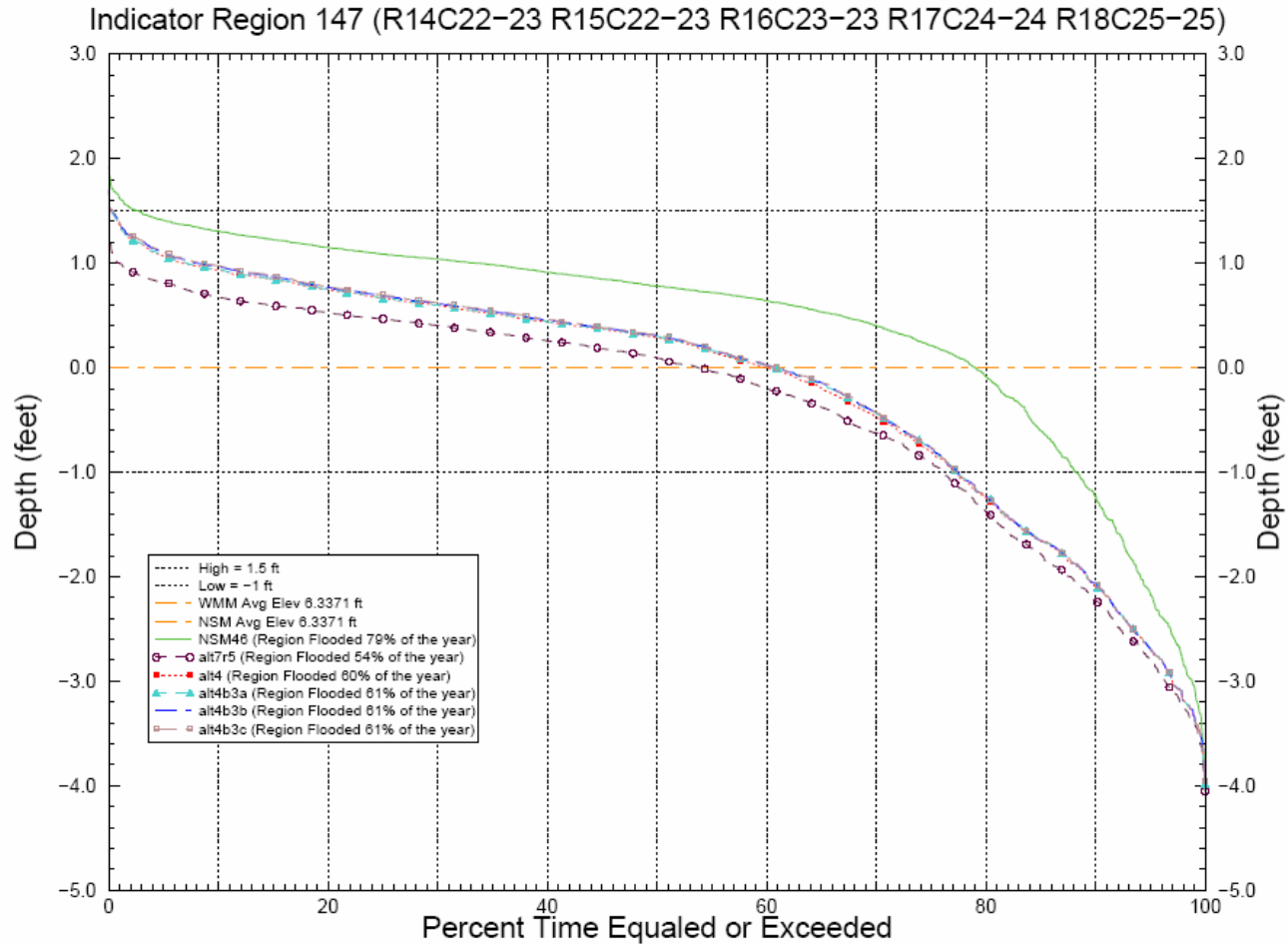
Average Annual Net Seepage Loss for L31S-S332B-S332BN-S332C and S332D

from ENP to LEC for 1965 - 2000 Simulation Period



Rocky Glades East: IR 147

Normalized Weekly Stage Duration Curves for Rocky Glades East



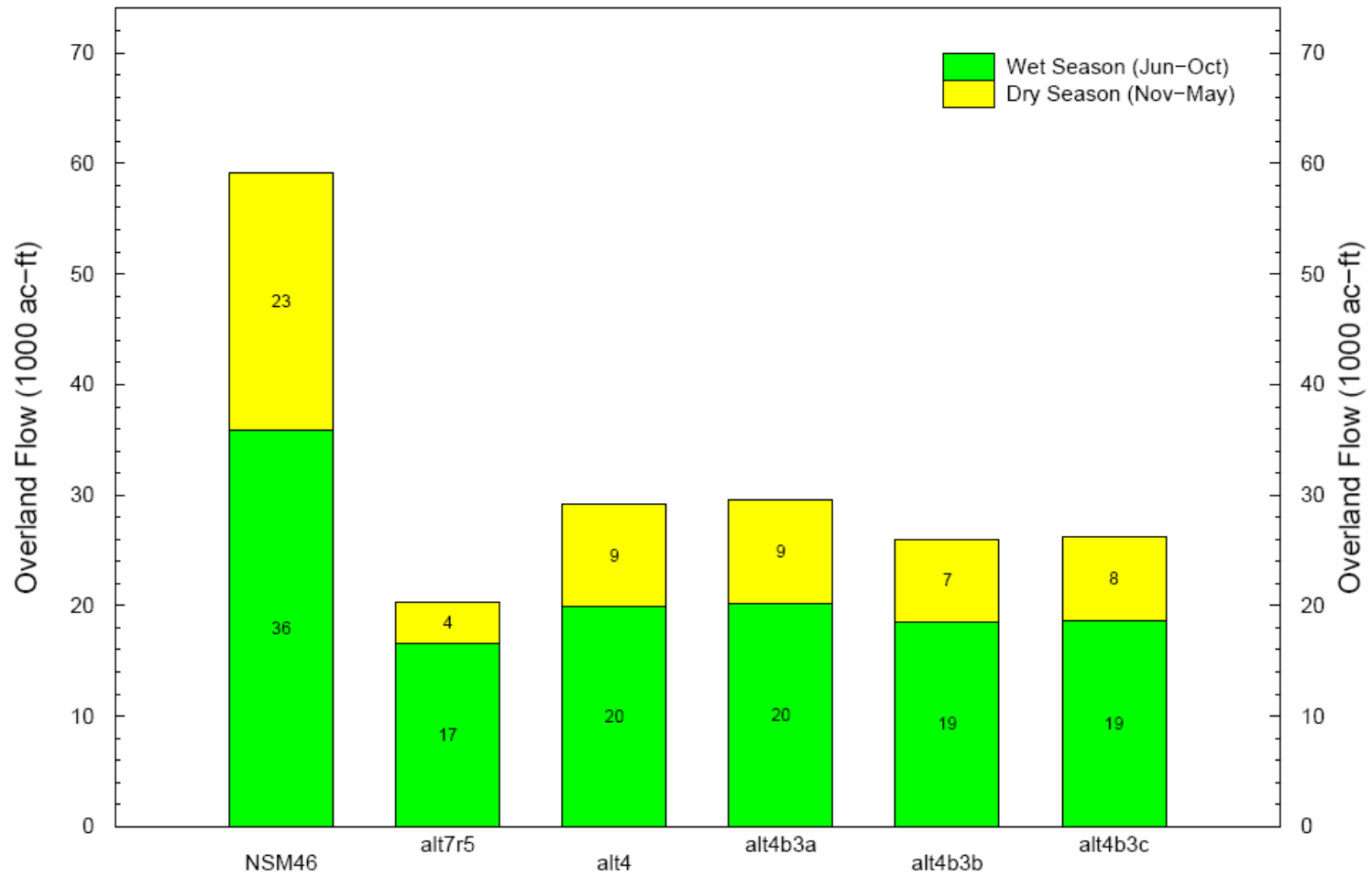
Note: Normalized stage is stage referenced to Land Elevation. Thus, values above zero indicate ponding while values below zero indicate depth to the water table.

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Rocky Glades: Transect N1

Average Annual Overland Flow across Transect New1 (1965–2000)

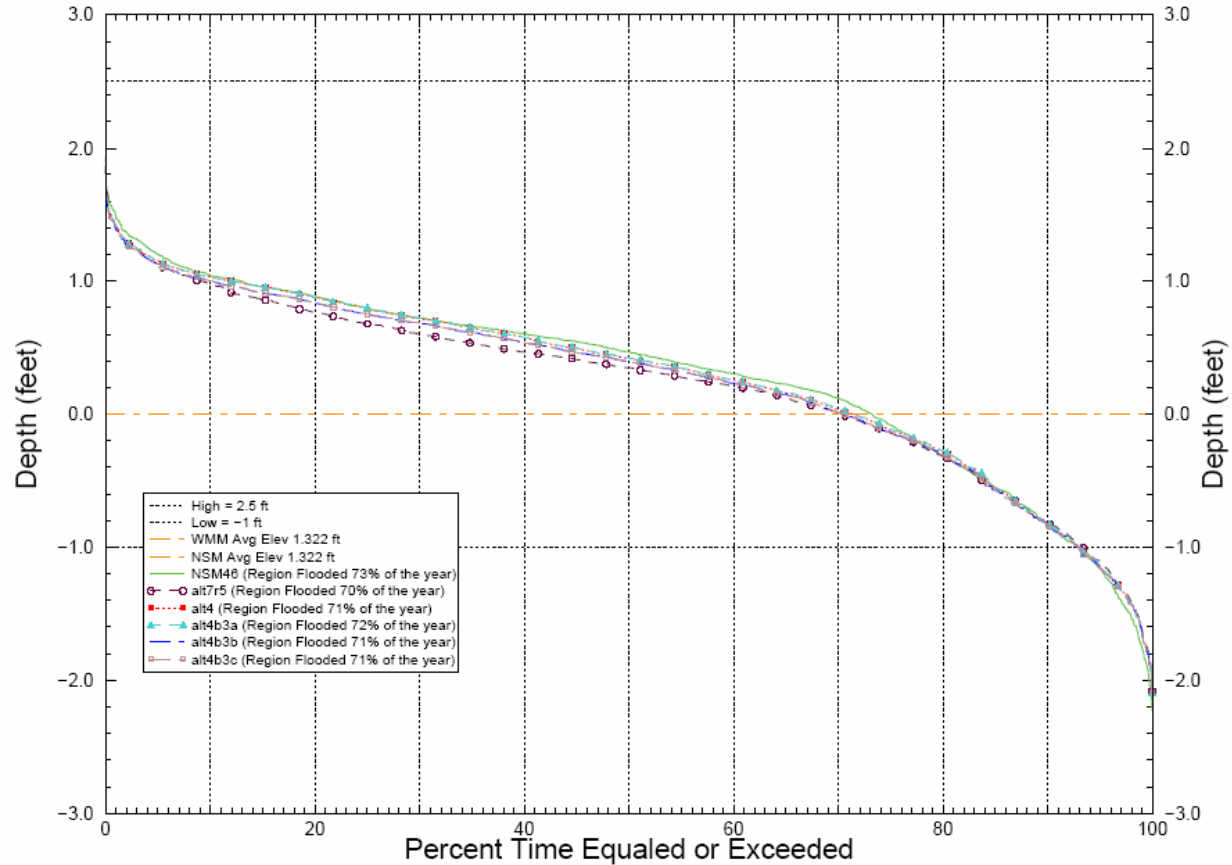
Southward flow across Rocky Glades



Taylor Slough: IR 133

Normalized Weekly Stage Duration Curves for Taylor Slough

Indicator Region 133 (R5C21-21 R6C21-22 R7C22-22 R8C23-23)



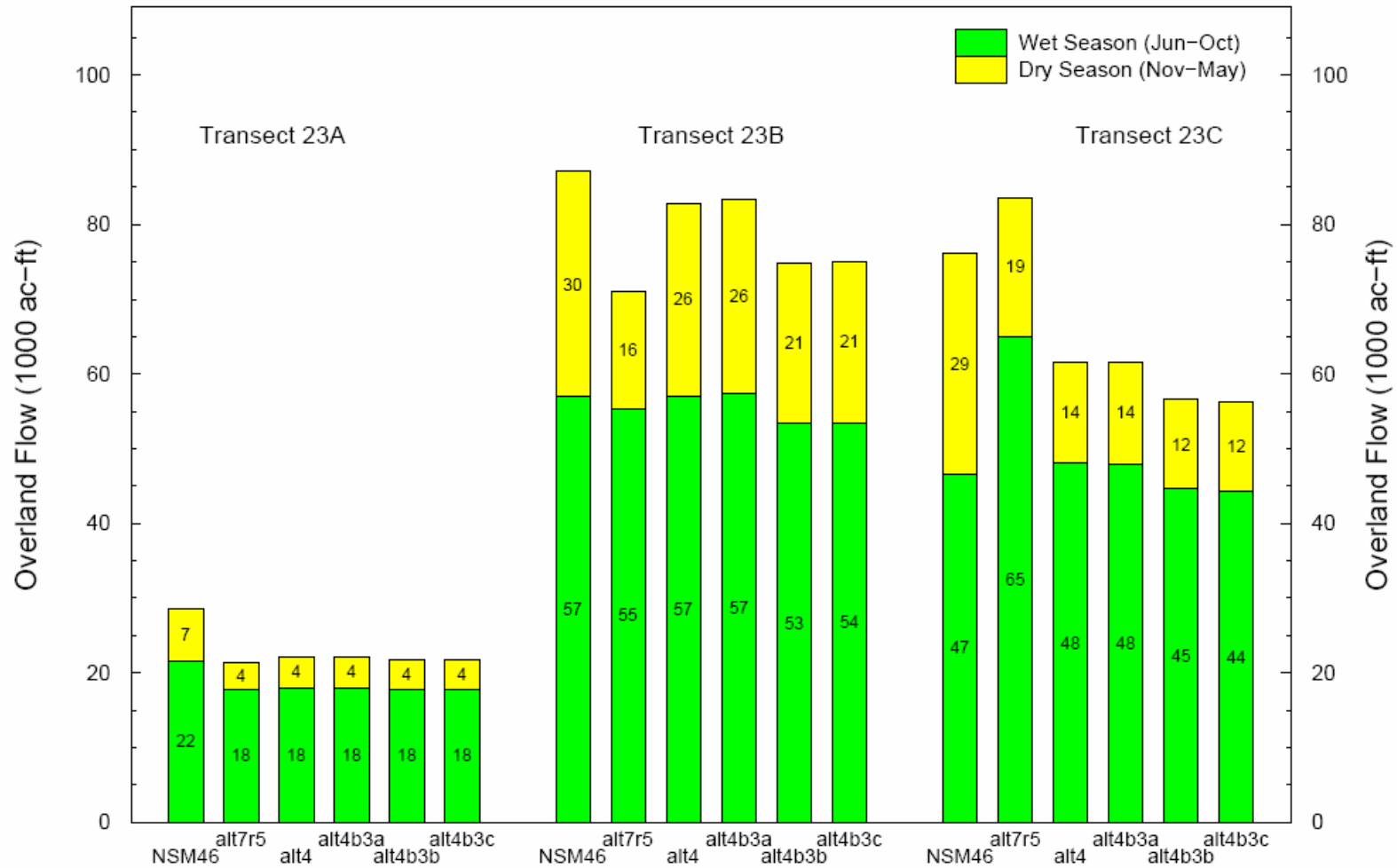
Note: Normalized stage is stage referenced to Land Elevation. Thus, values above zero indicate ponding while values below zero indicate depth to the water table.

Run date: Sun Jul 10 00:21:17 EDT 2005
For Planning Purposes Only
SFWMM V5.5.6

Taylor Slough: Transect 23

Average Annual Overland Flow across Transects 23A, 23B & 23C (1965–2000)

Southward flows in Southern ENP (Craighead Basin, Taylor Slough, & Eastern Panhandle)



Summary

- S-357 pump ops and lower canal levels decrease groundwater stages in 8.5 SMA
 - Stages above ground occur < 1% and are not significantly changed
- S-357 pump ops reduce stages in L-31N and the need to pass FC south of S-331
- S-357 pump ops do not significantly affect flows to Florida Bay
- S-357 pump ops result in a net increase in seepage losses across the L-31N levee
 - Losses are from 8.5 SMA STA and detention areas, not ENP