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APPENDIX A

ENGINEERING APPENDIX

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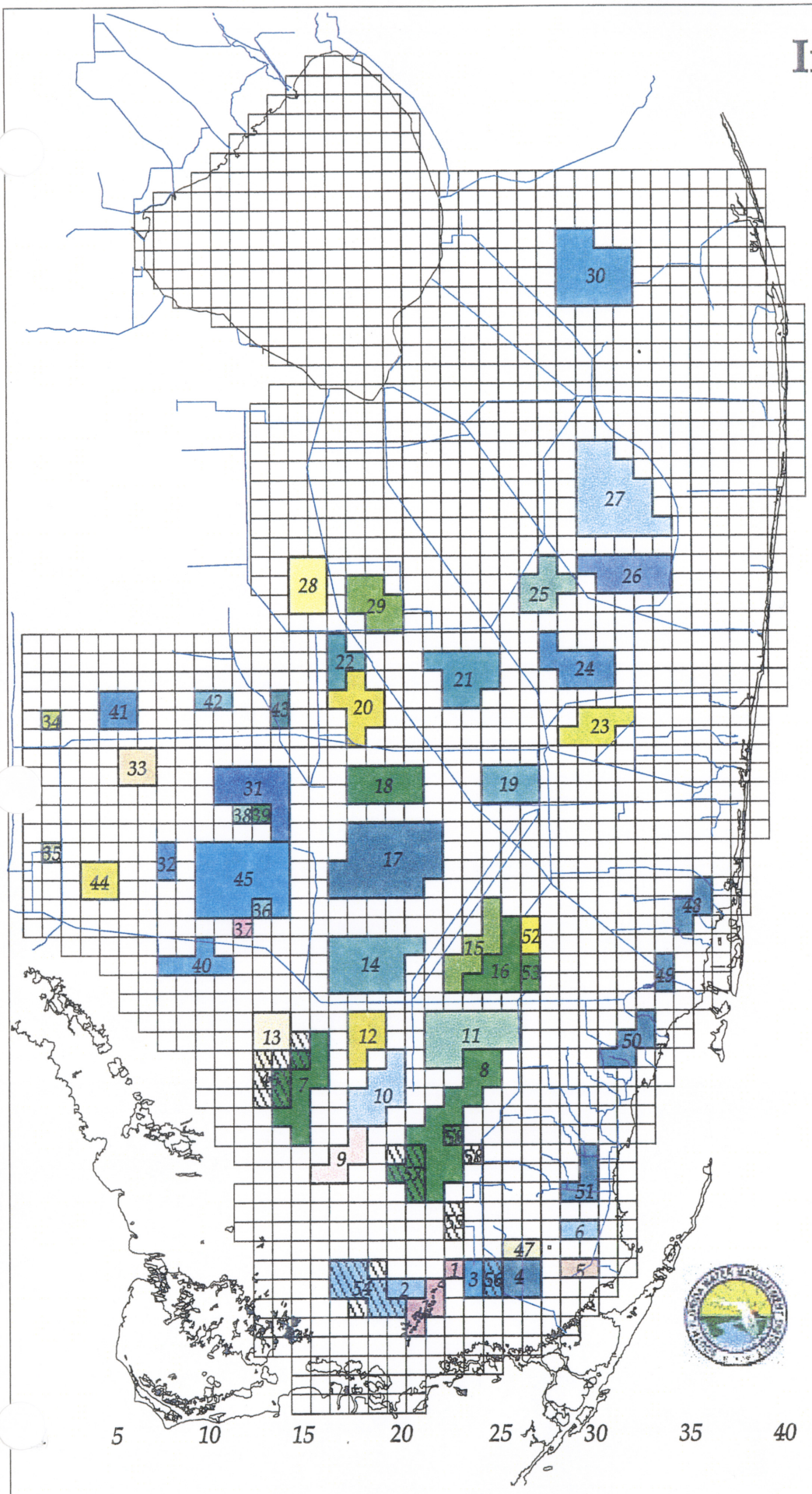
Indicator Regions

Updated April 13, 1998



1=Taylor Slough
2=West Perrine Marl Marsh
3=Mid-Perrine Marl Marsh
4=C-111 Perrine Marl Marsh
5=Model Lands South
6=Model Lands North
7=Ochopee Marl Marsh
8=Rockland Marl Marsh
9=SW Shark River Slough
10=Mid-Shark River Slough
11=NE Shark River Slough
12=New Shark River Slough
13=West Slough
14=South WCA-3A
15=West WCA-3B
16=East WCA-3B
17=South Central WCA-3A
18=North Central WCA-3A
19=East WCA-3A
20=NW WCA-3A
21=NE WCA-3A
22=NW Corner WCA-3A
23=WCA-2B
24=South WCA-2A
25=North WCA-2A
26=South WCA-1 (LNWR)
27=North WCA-1 (LNWR)
28=Rotenberger WMA
29=Holey Land WMA
30=Corbett WMA
31=Mullet Slough
32=Upland Pine
33=Upper Mullet Slough
34=Cypress Marsh
35=Wet Prairie
36=Wetter Prairie NE
37=Wetter Prairie SW
38=Drier Cypress NW
39=Drier Cypress NE
40=Cypress
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42=NE Big Cypress
43=NE Corner Big Cypress
44=SW Big Cypress
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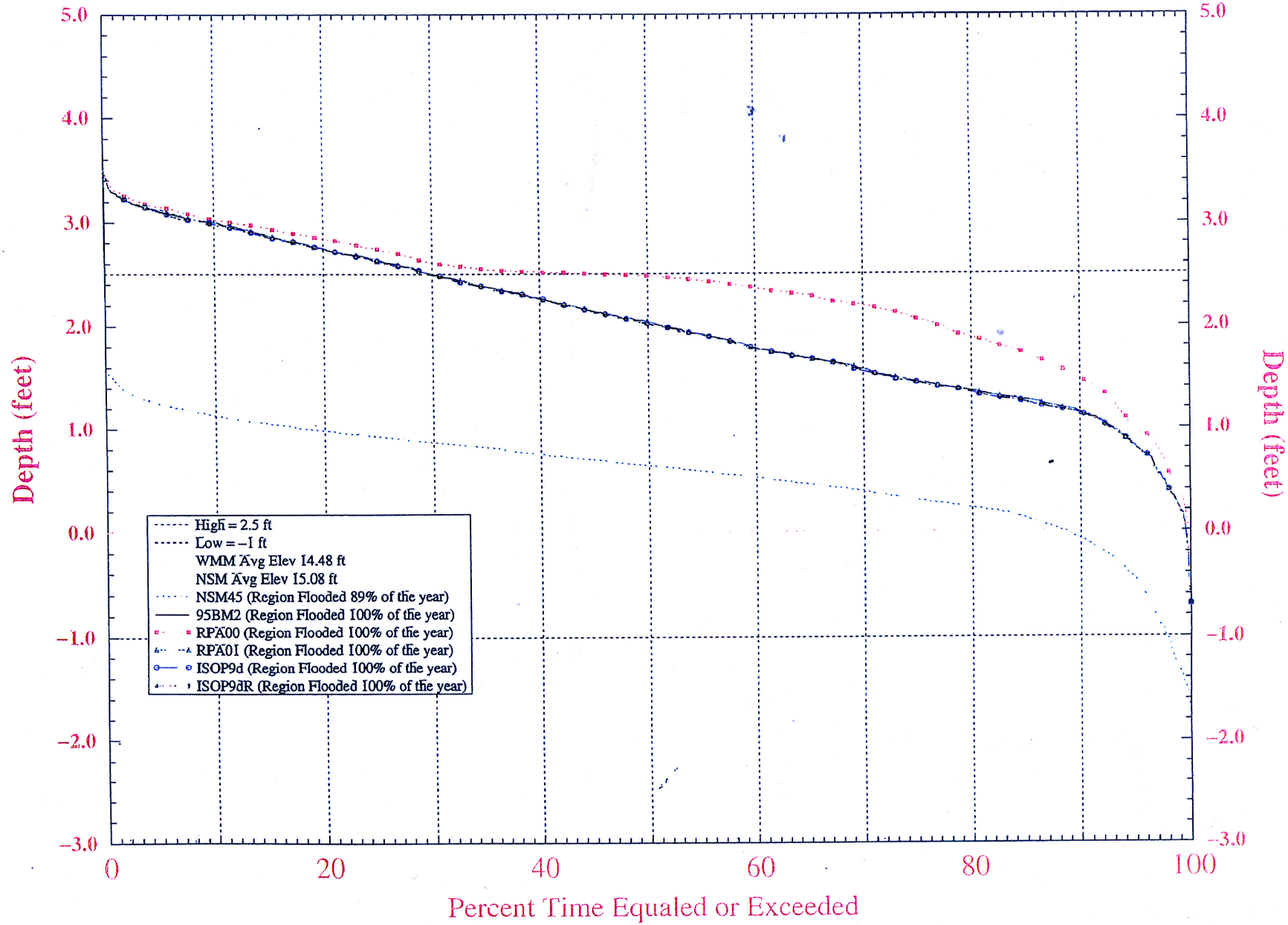
Normalized Weekly Stage Duration Curves for South LNWR (WCA–1)

Indicator Region 26 (R44C31–34 R45C30–34)



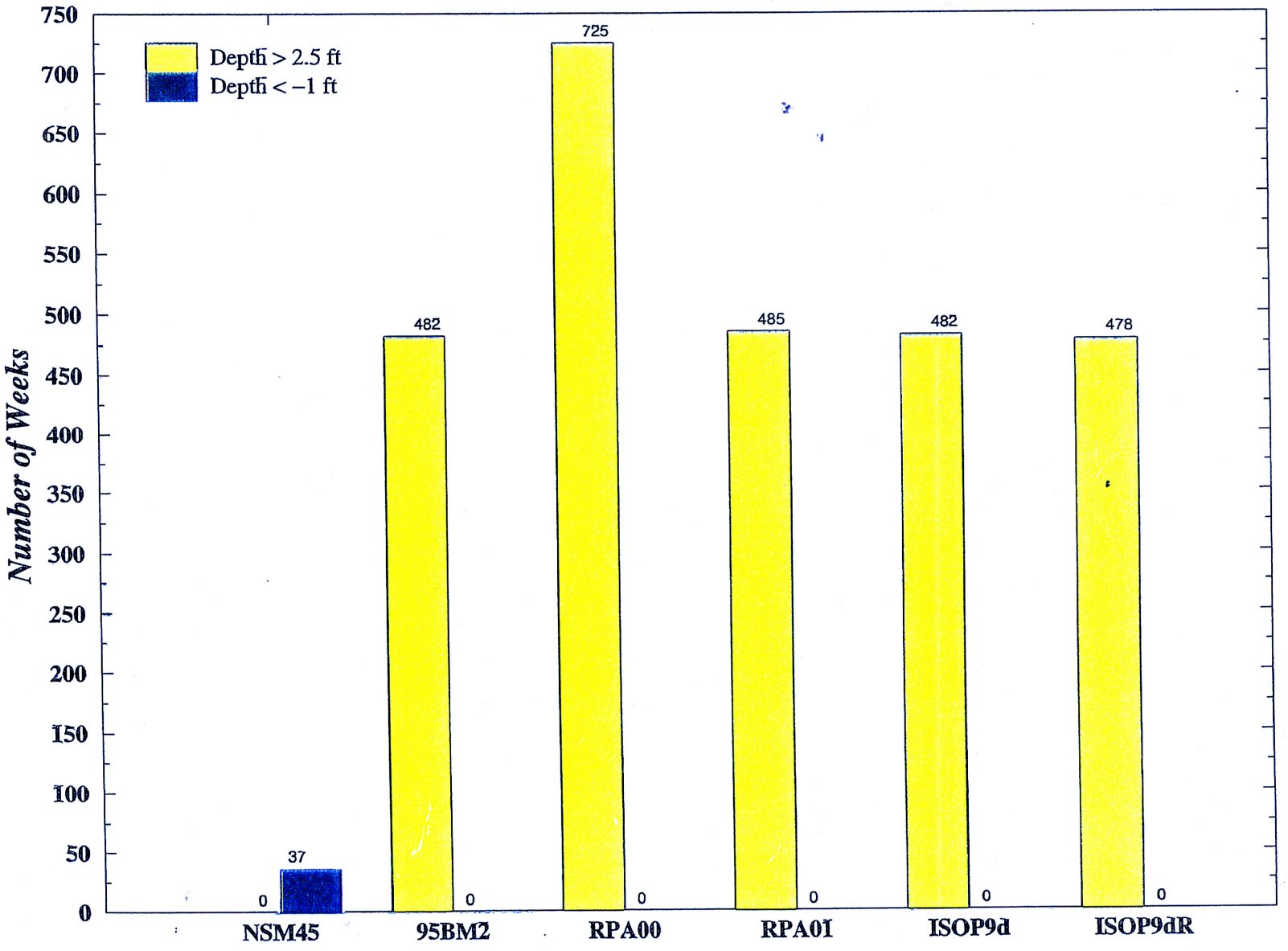
Note: Normalized stage is stage referenced to Land Elevation. Thus, values above zero indicate ponding while values below zero indicate depth to the water table.

Run date: Thu Aug 9 15:27:54 EDT 2001
For Planning Purposes Only
SFWMM V3.4

A4

Number of Weeks High/Low Water Depth Criteria Exceeded

Indicator Region 26 (R44C31–34 R45C30–34)

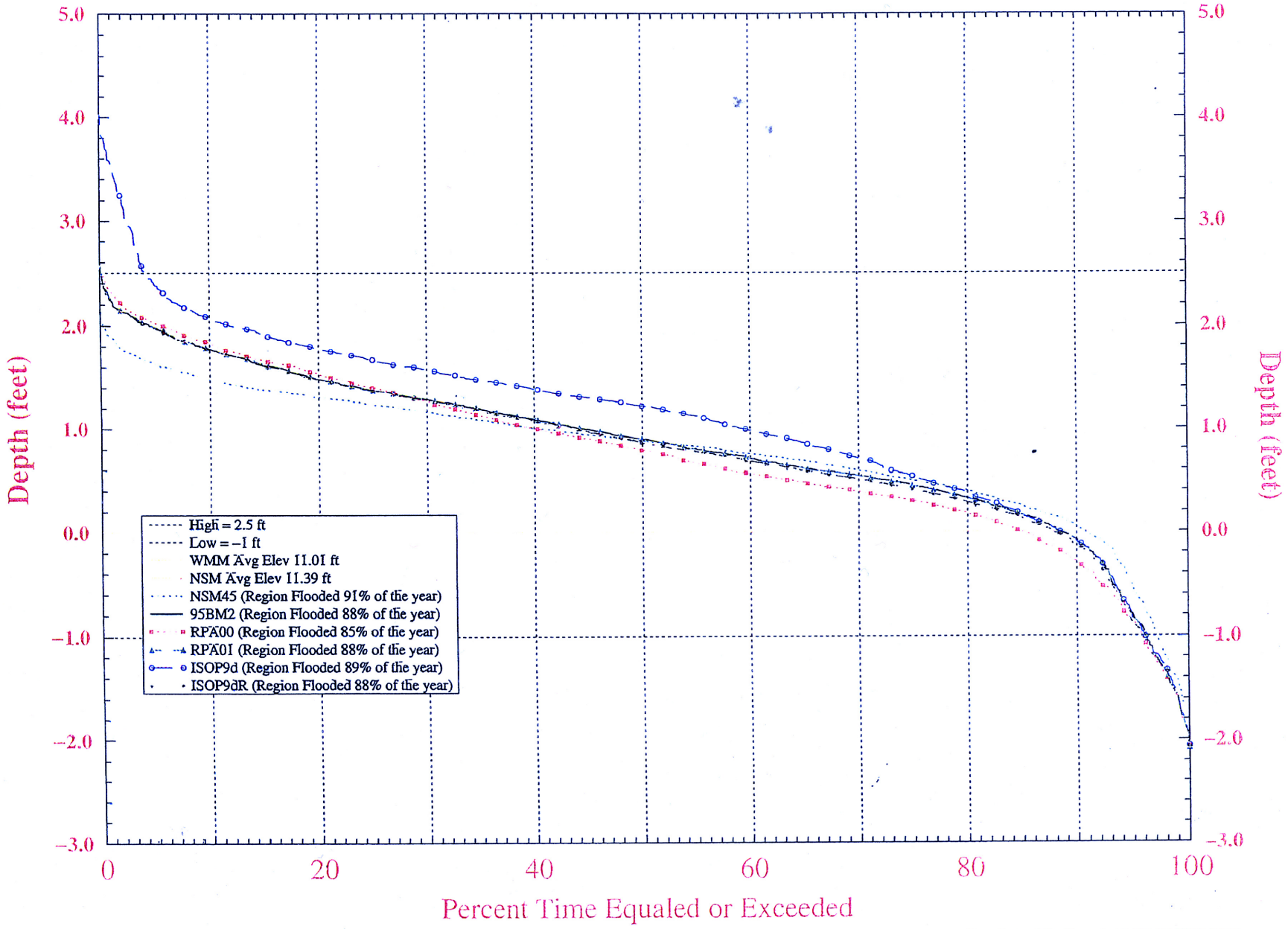


Note: The desired condition is to exceed the high water depth as few times as possible and go below the low water depth as few times as possible.

Run date: Thu Aug 9 15:27:54 EDT 2001
For Planning Purposes Only

Normalized Weekly Stage Duration Curves for South WCA–2A

Indicator Region 24 (R39C29–31 R40C28–31 R41C28–28)



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: Thu Aug 9 15:27:47 EDT 2001
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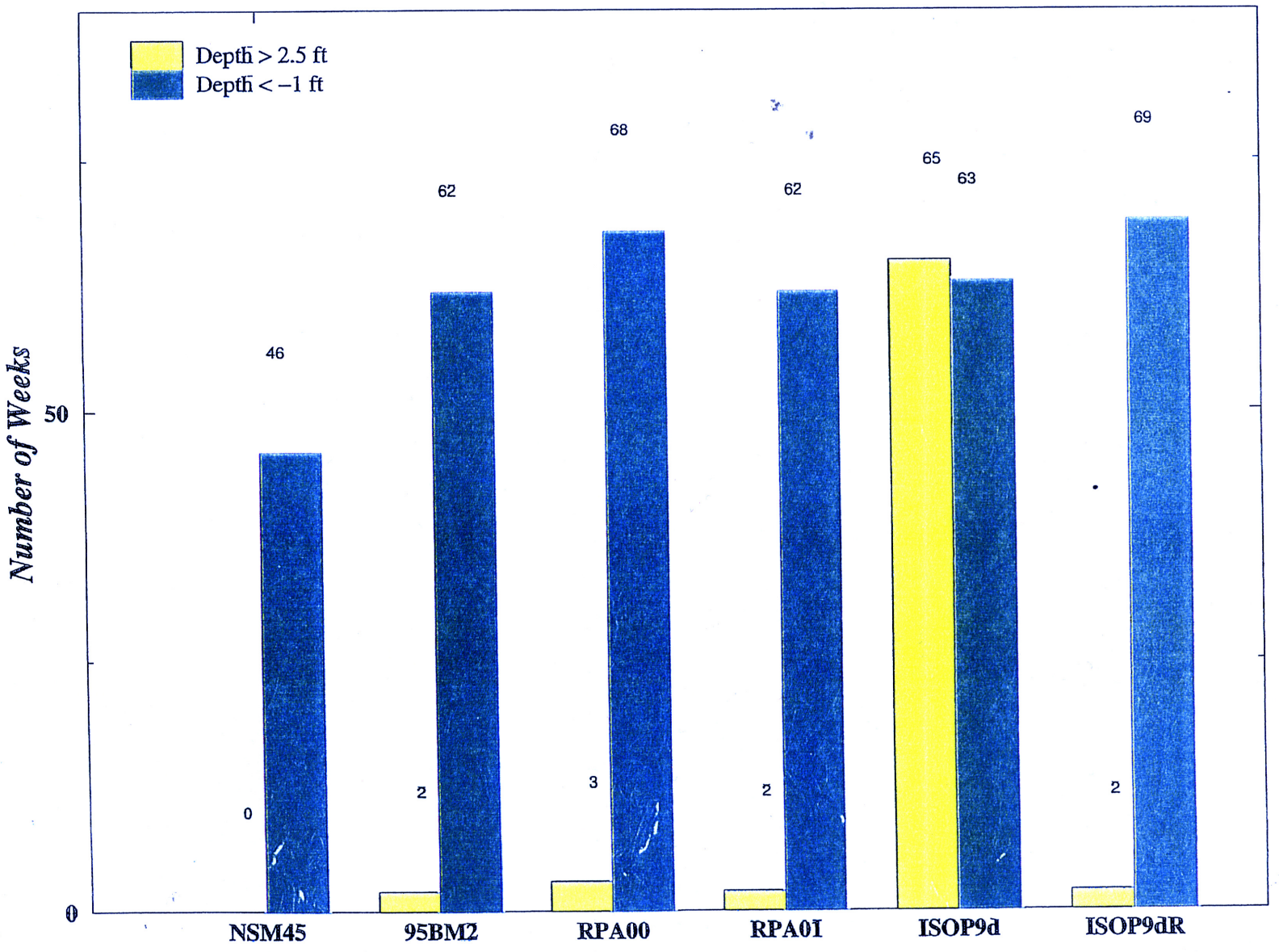
Number of Weeks High/Low Water Depth Criteria Exceeded

Indicator Region 24 (R39C29–31 R40C28–31 R41C28–28)



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: Thu Aug 9 15:27:47 EDT 2001
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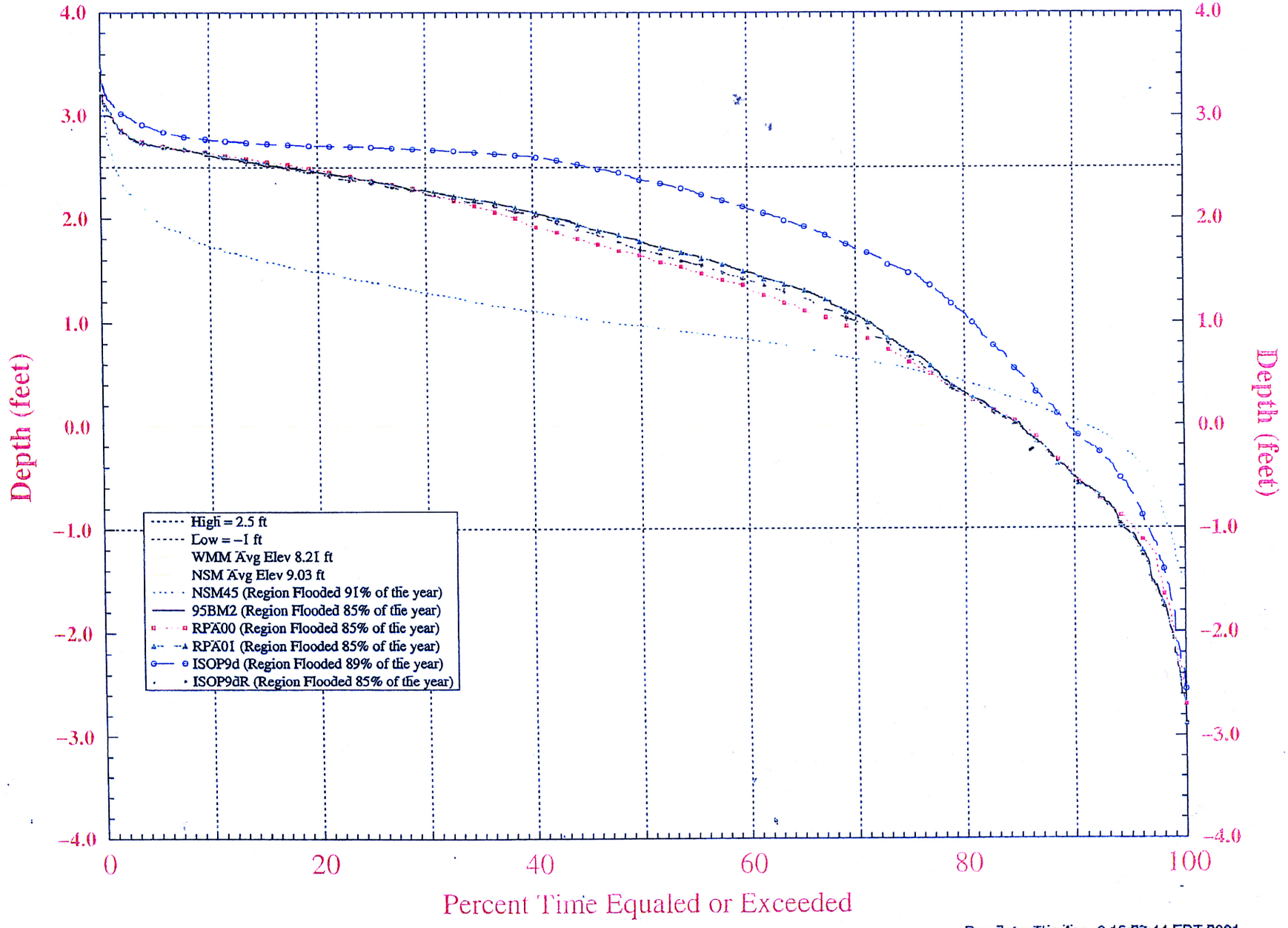
A-7

Normalized Weekly Stage Duration Curves for WCA–2B

Indicator Region 23 (R36C29–31 R37C30–32)



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.

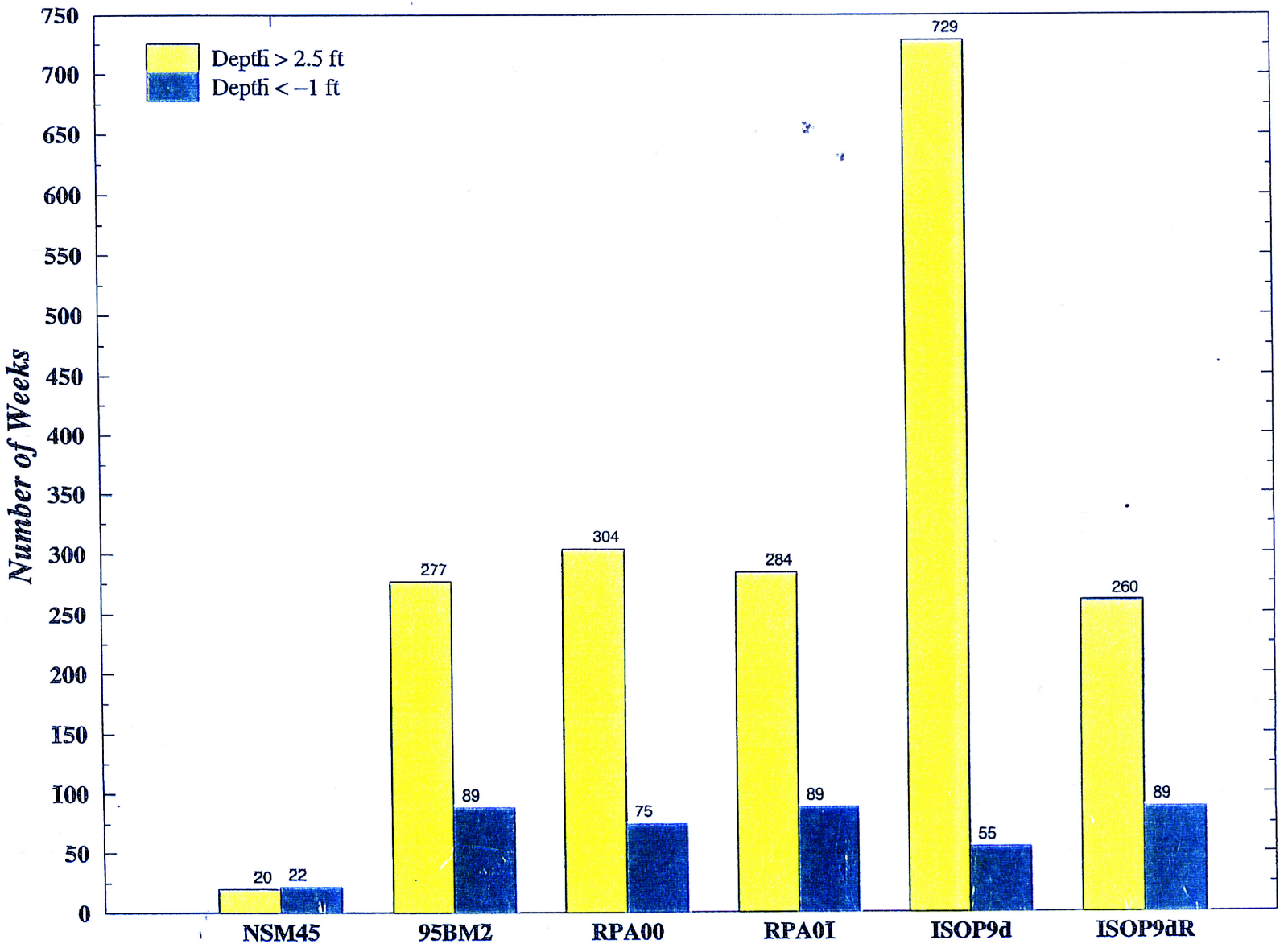
Run date: Thu Aug 9 15:27:44 EDT 2001

For Planning Purposes Only

A-8

Number of Weeks High/Low Water Depth Criteria Exceeded

Indicator Region 23 (R36C29–31 R37C30–32)

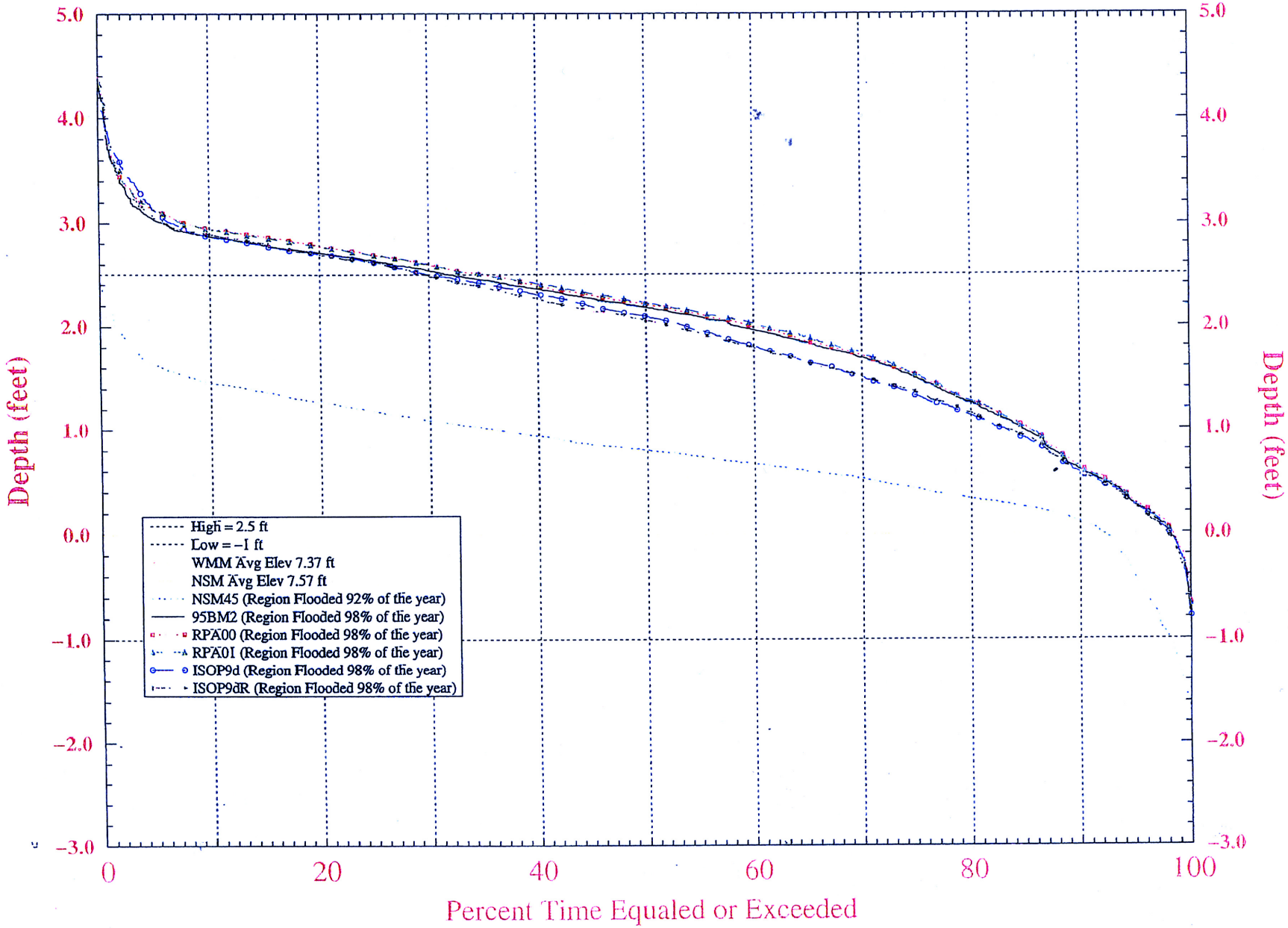


Note: The desired condition is to exceed the high water depth as few times as possible and go below the low water depth as few times as possible.

Run date: Thu Aug 9 15:27:44 EDT 2001
For Planning Purposes Only
SFWMM V3.4

Normalized Weekly Stage Duration Curves for South WCA–3A

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

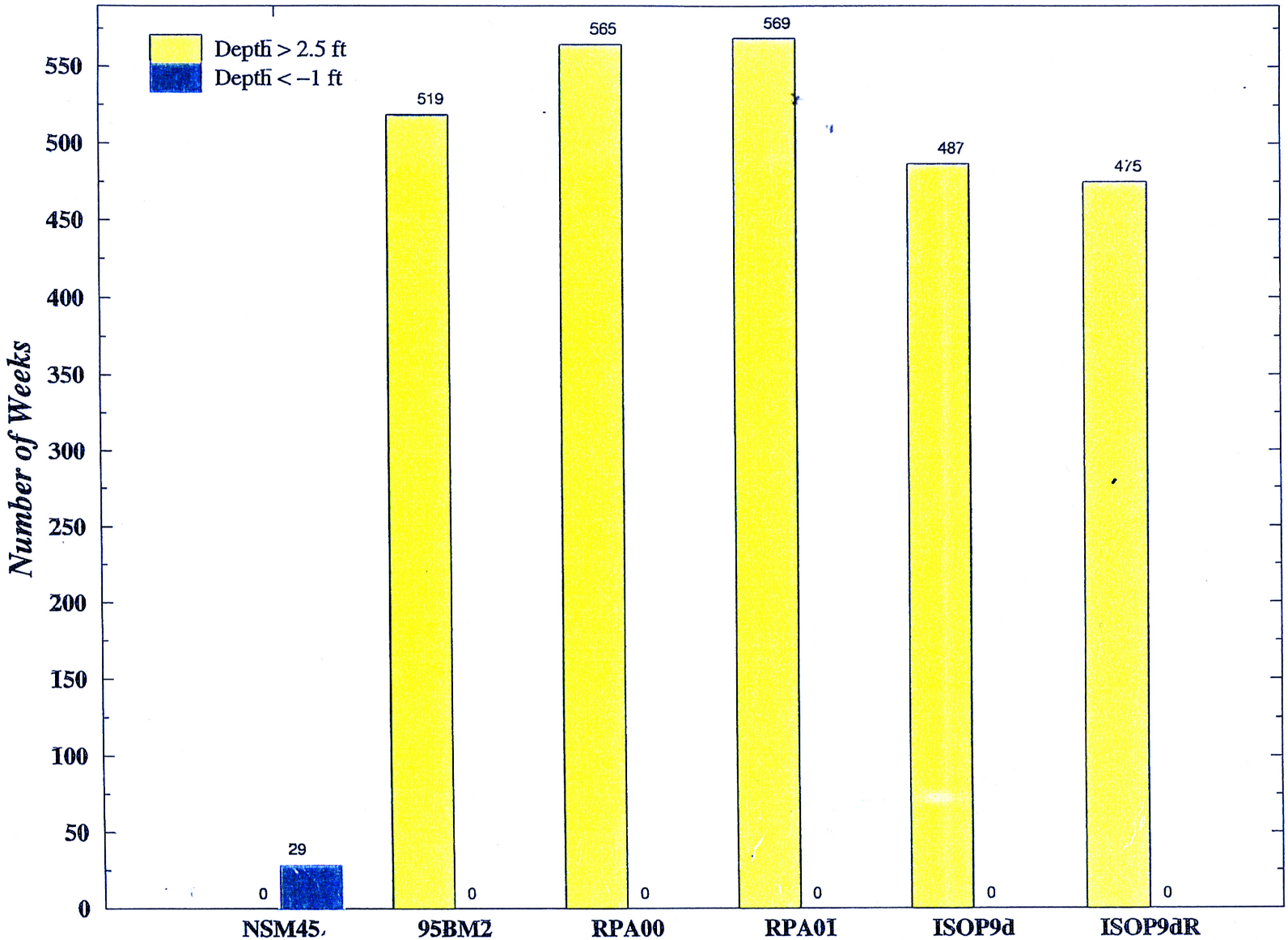


Note: Normalized stage is stage referenced to Land Elevation. Thus, values above zero indicate ponding while values below zero indicate depth to the water table.

Run date: Thu Aug 9 15:27:09 EDT 2001
For Planning Purposes Only
SFWMM V3.4

Number of Weeks High/Low Water Depth Criteria Exceeded

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

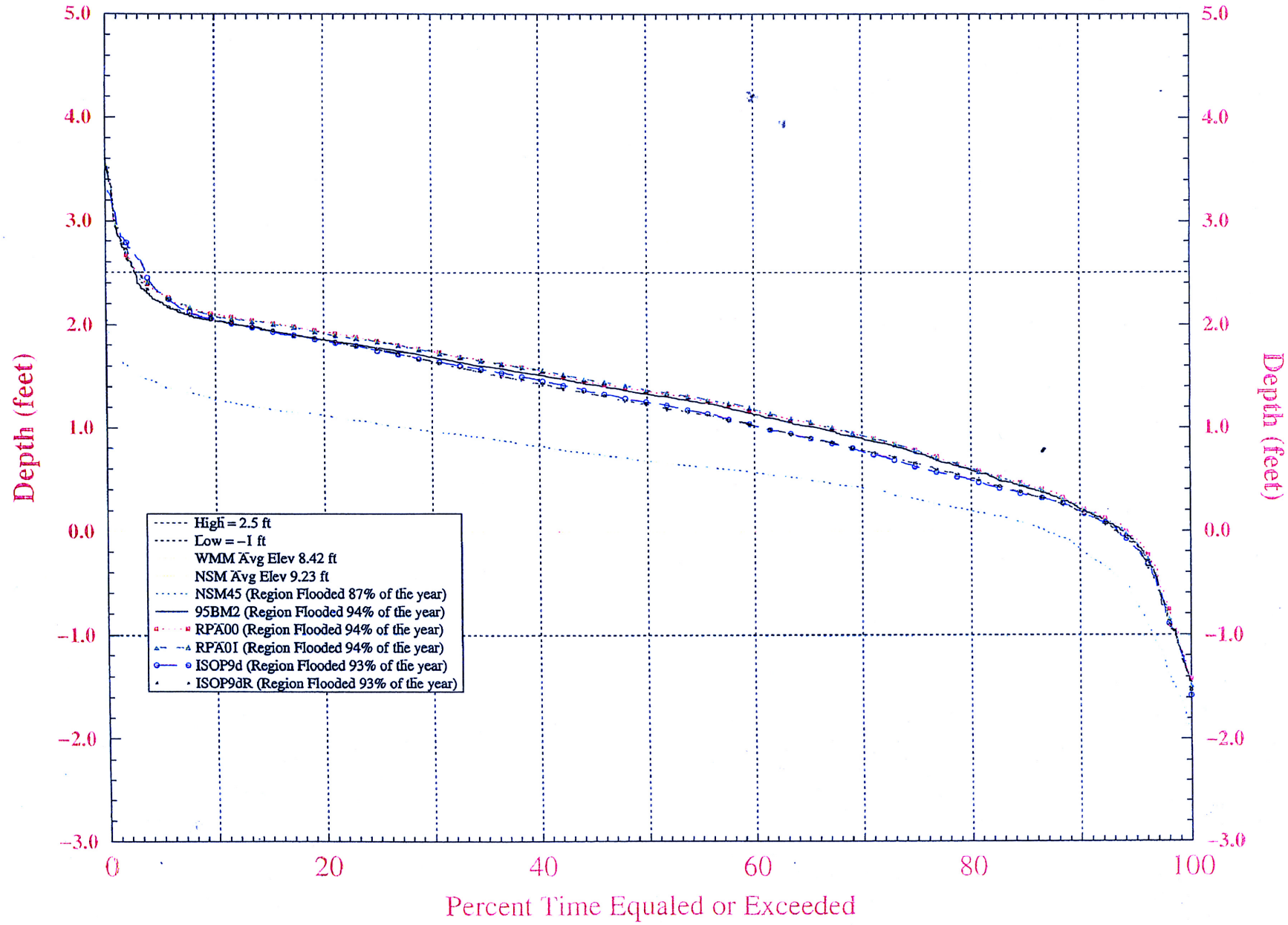


Note: The desired condition is to exceed the high water depth as few times as possible and go below the low water depth as few times as possible.

Run date: Thu Aug 9 15:27:09 EDT 2001
For Planning Purposes Only

Normalized Weekly Stage Duration Curves for South Central WCA–3A

Indicator Region 17 (R28C17–21 R29C17–22 R30C18–22 R31C18–22)



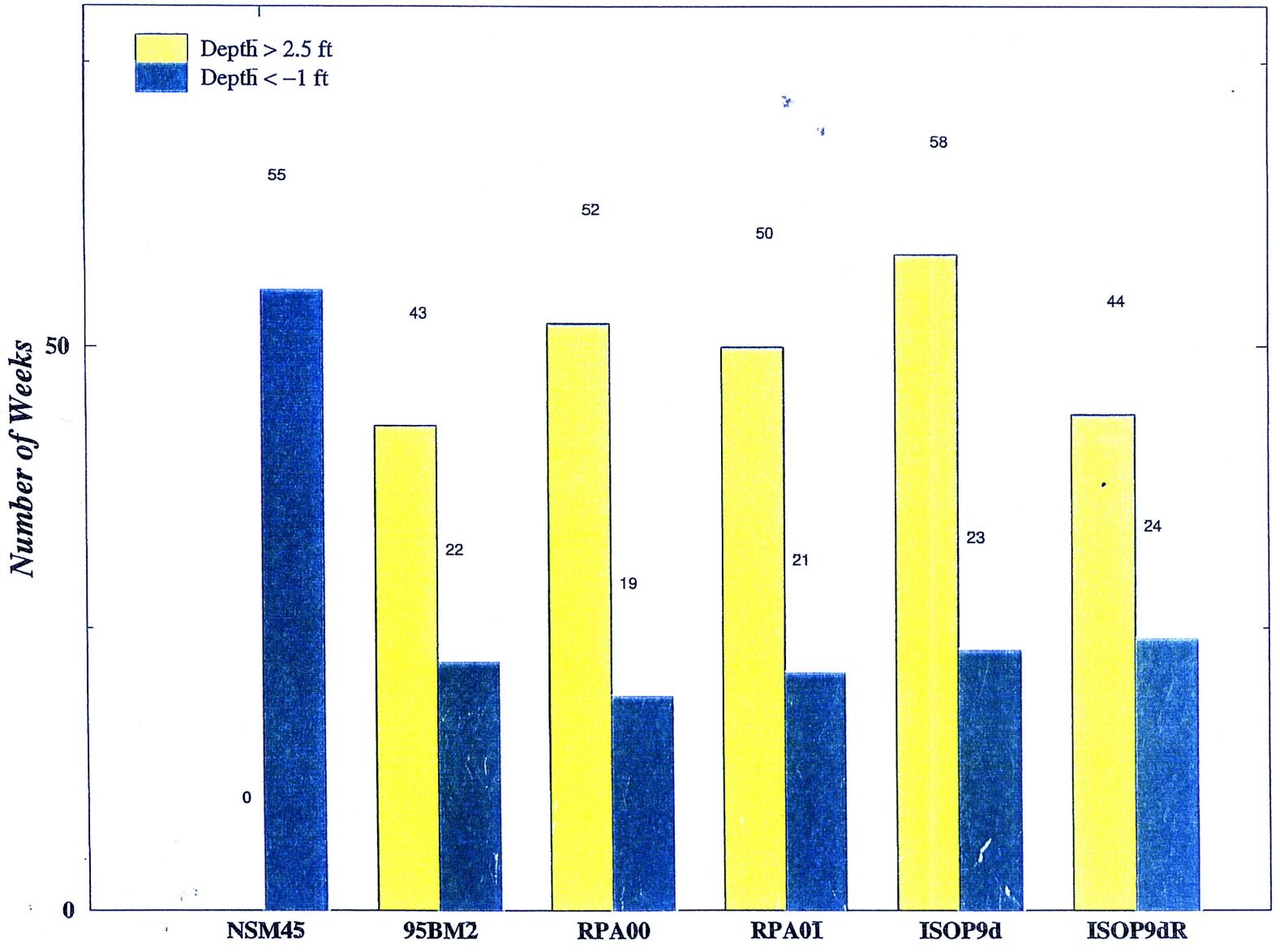
Note: Normalized stage is stage referenced to Land Elevation. Thus, values above zero indicate ponding while values below zero indicate depth to the water table.

Run date: Thu Aug 9 15:27:23 EDT 2001
For Planning Purposes Only

A-12

Number of Weeks High/Low Water Depth Criteria Exceeded

Indicator Region 17 (R28C17–21 R29C17–22 R30C18–22 R31C18–22)

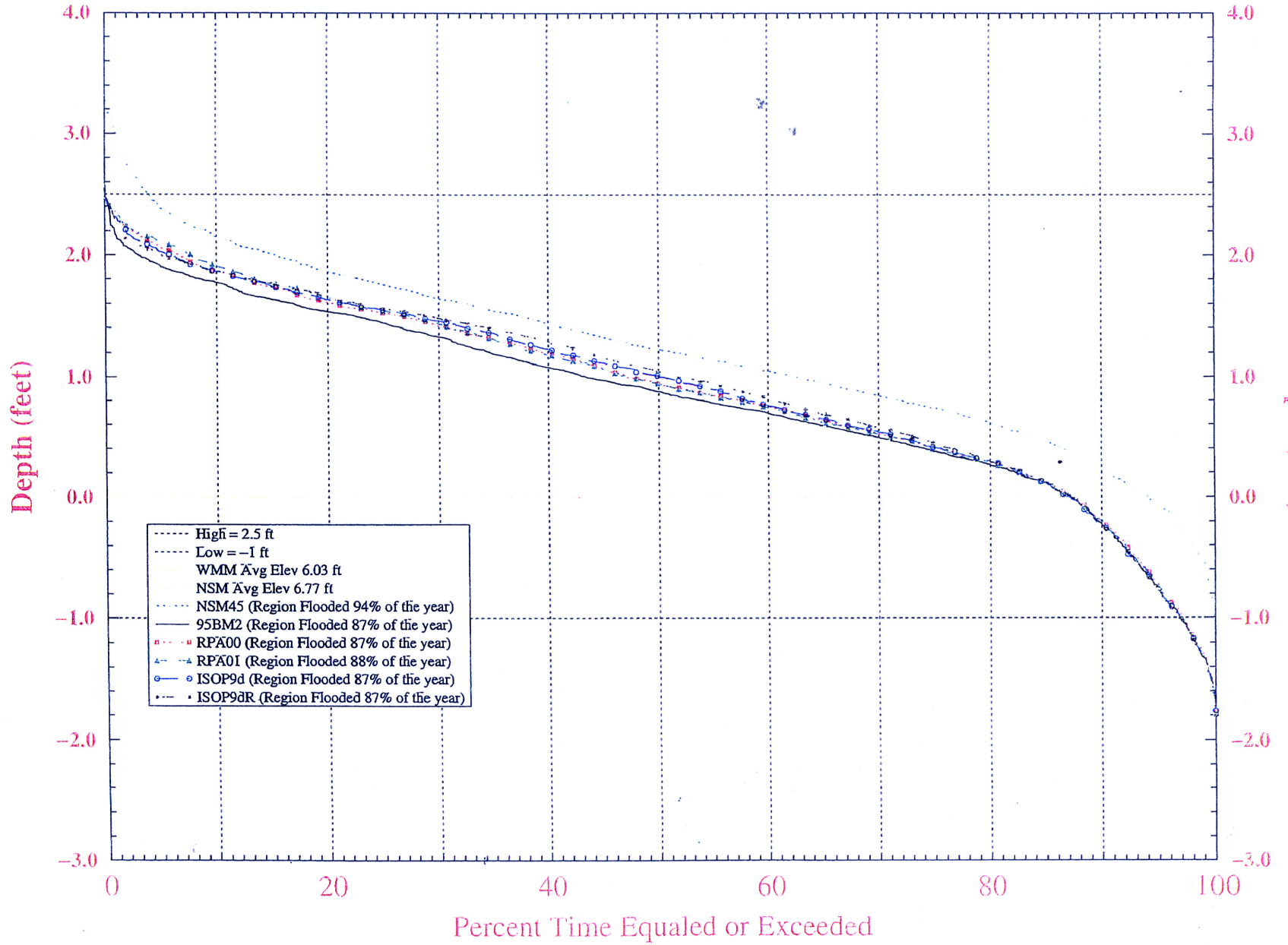


Note: The desired condition is to exceed the high water depth as few times as possible and go below the low water depth as few times as possible.

Run date: Thu Aug 9 15:27:23 EDT 2001
For Planning Purposes Only

Normalized Weekly Stage Duration Curves for East WCA–3B

Indicator Region 16 (R23C24–26 R24C25–26 R25C26–26 R26C26–26)



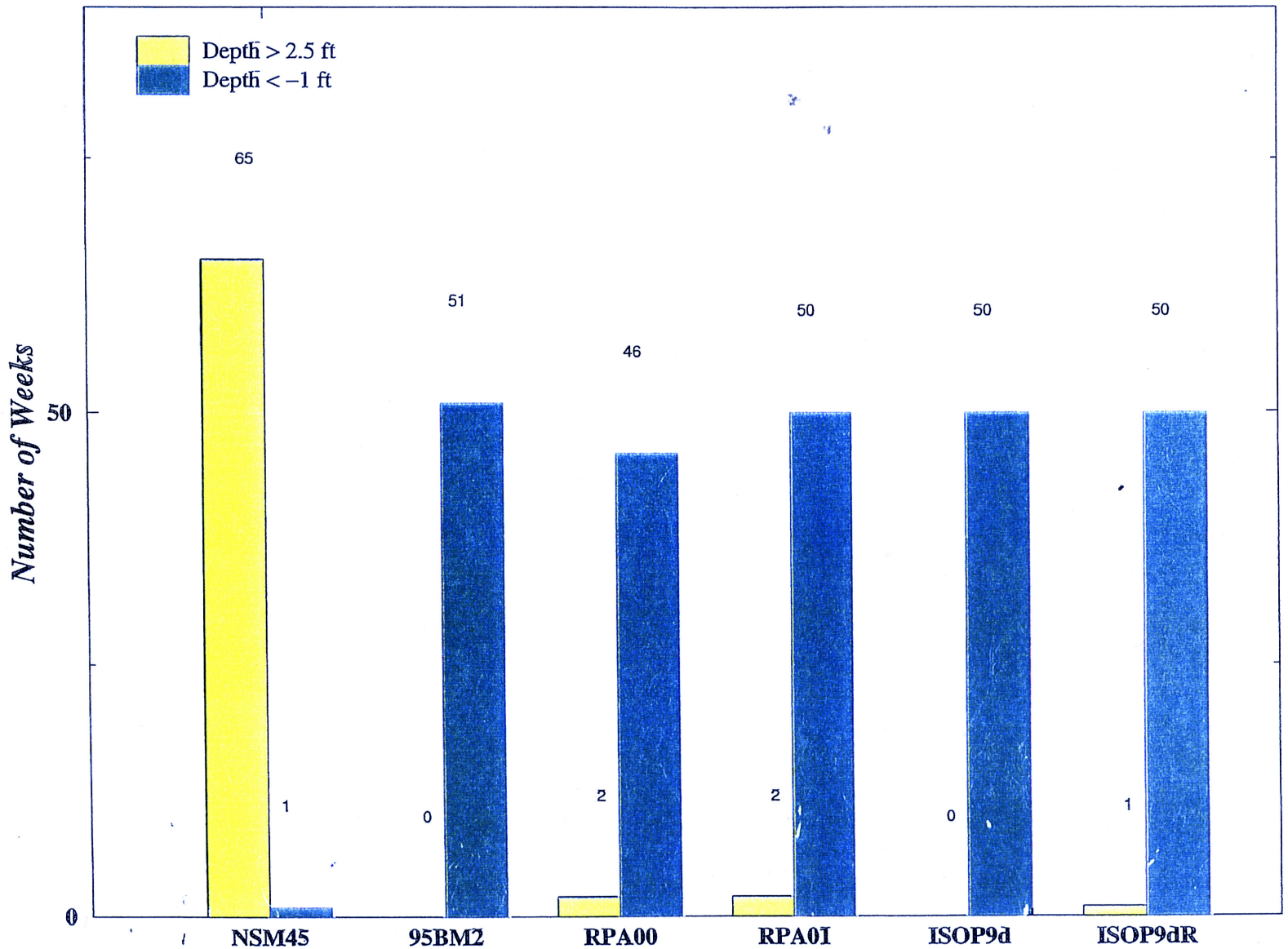
Note: Normalized stage is stage referenced to Land Elevation. Thus, values above zero indicate ponding while values below zero indicate depth to the water table.

Run date: Thu Aug 9 15:27:16 EDT 2001
For Planning Purposes Only

H-14

Number of Weeks High/Low Water Depth Criteria Exceeded

Indicator Region 16 (R23C24–26 R24C25–26 R25C26–26 R26C26–26)



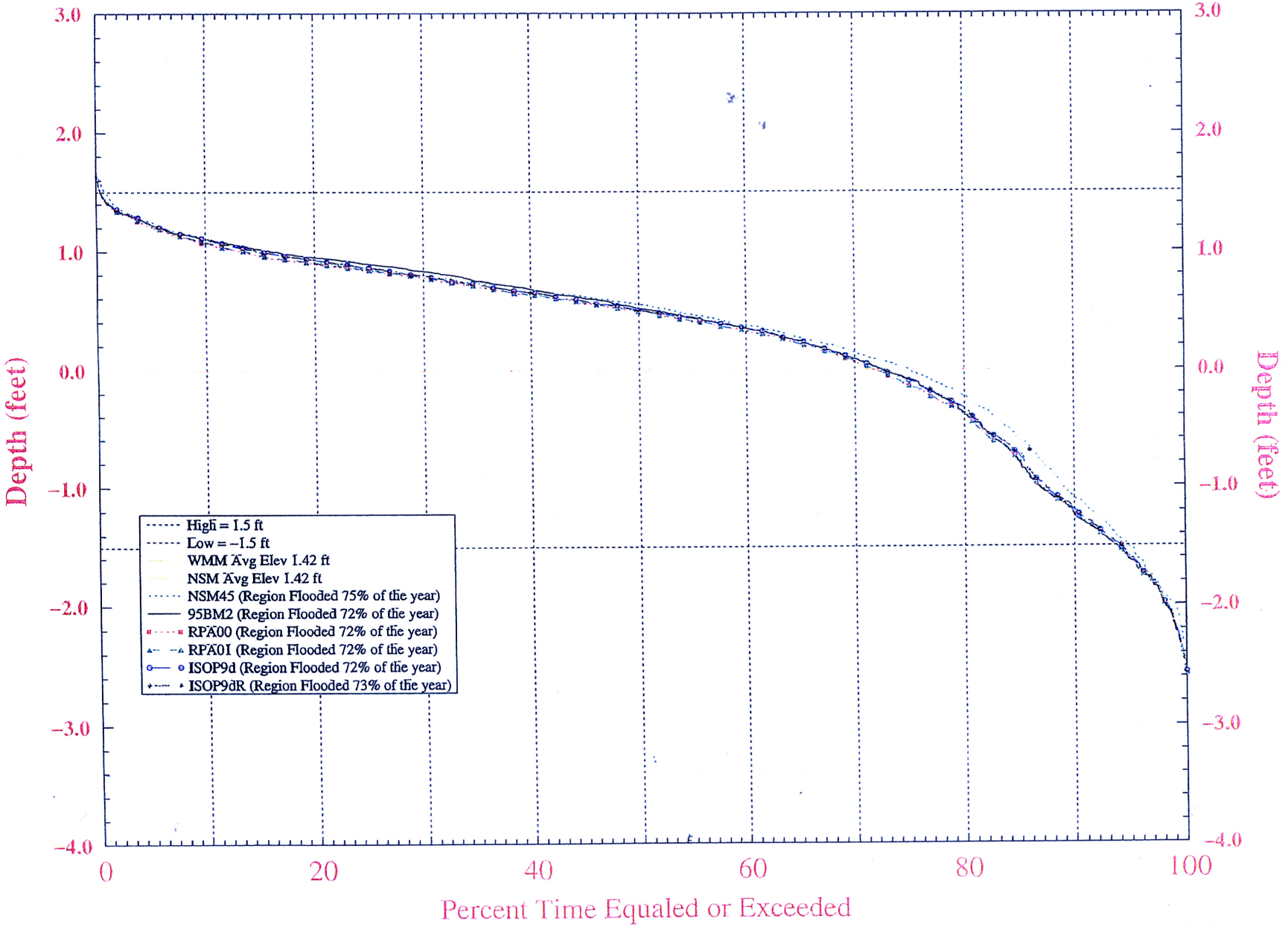
Note: The desired condition is to exceed the high water depth as few times as possible and go below the low water depth as few times as possible.

Run date: Thu Aug 9 15:27:16 EDT 2001
For Planning Purposes Only

A-15

Normalized Weekly Stage Duration Curves for Taylor Slough

Indicator Region 1 (R5C21–21 R6C21–22 R7C22–22 R8C23–23)



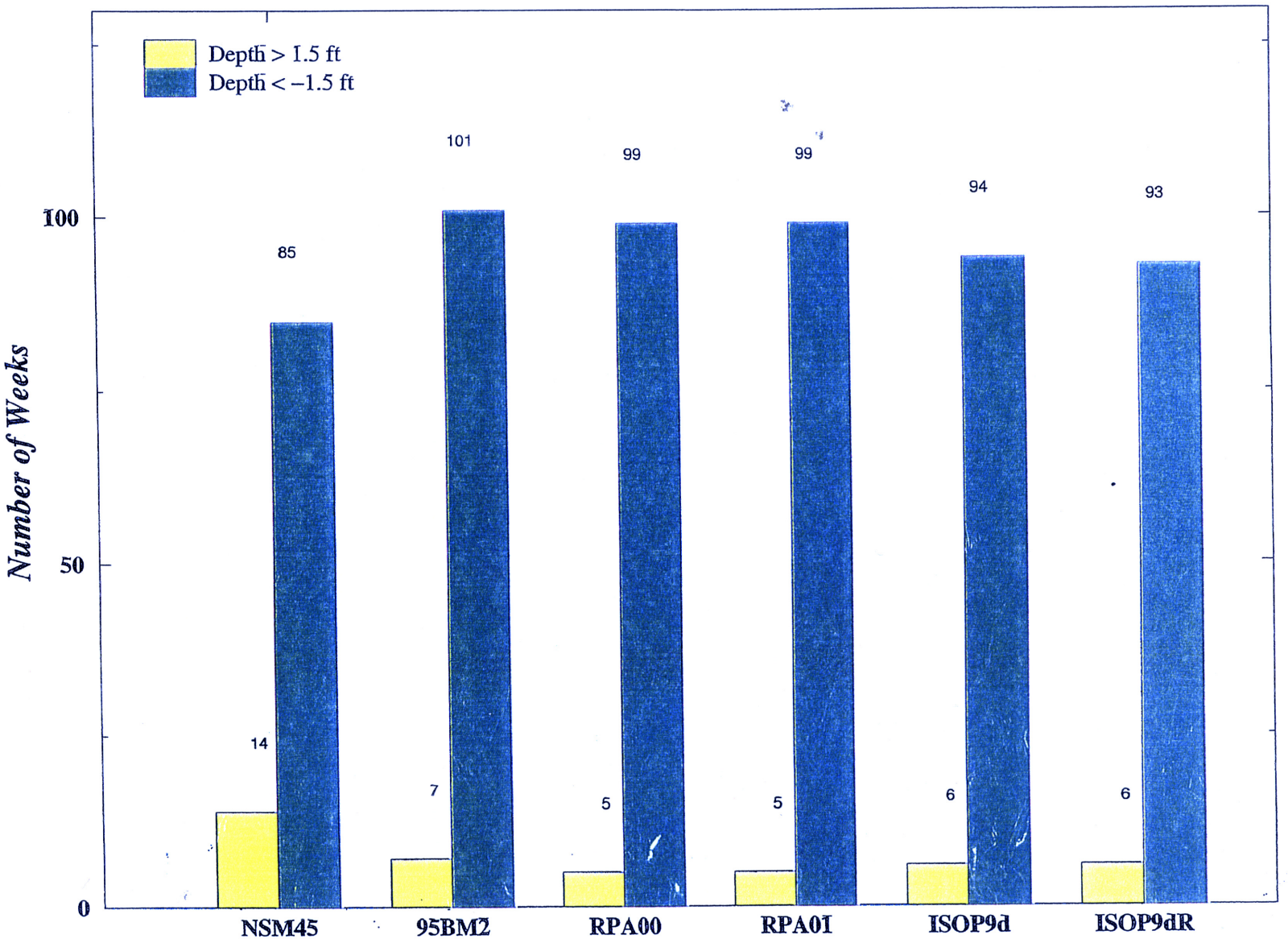
Note: Normalized stage is stage referenced to Land Elevation. Thus, values above zero indicate ponding while values below zero indicate depth to the water table.

Run date: Thu Aug 9 15:26:21 EDT 2001

For Planning Purposes Only

Number of Weeks High/Low Water Depth Criteria Exceeded

Indicator Region 1 (R5C21–21 R6C21–22 R7C22–22 R8C23–23)



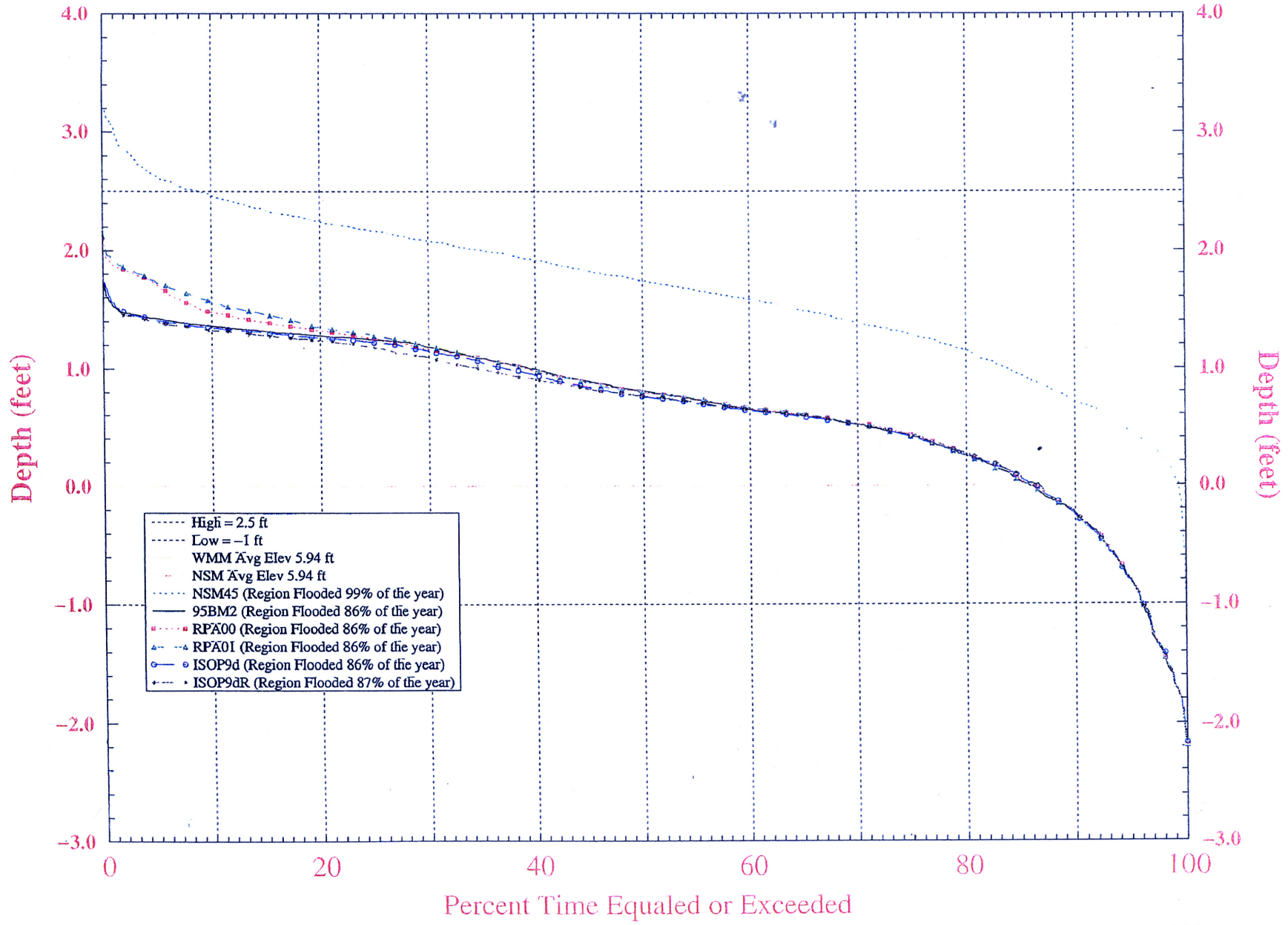
Note: The desired condition is to exceed the high water depth as few times as possible and go below the low water depth as few times as possible.

Run date: Thu Aug 9 15:26:21 EDT 2001
For Planning Purposes Only

A-17

Normalized Weekly Stage Duration Curves for NE Shark River Slough

Indicator Region 11 (R19C22–23 R20C22–26 R21C22–26)

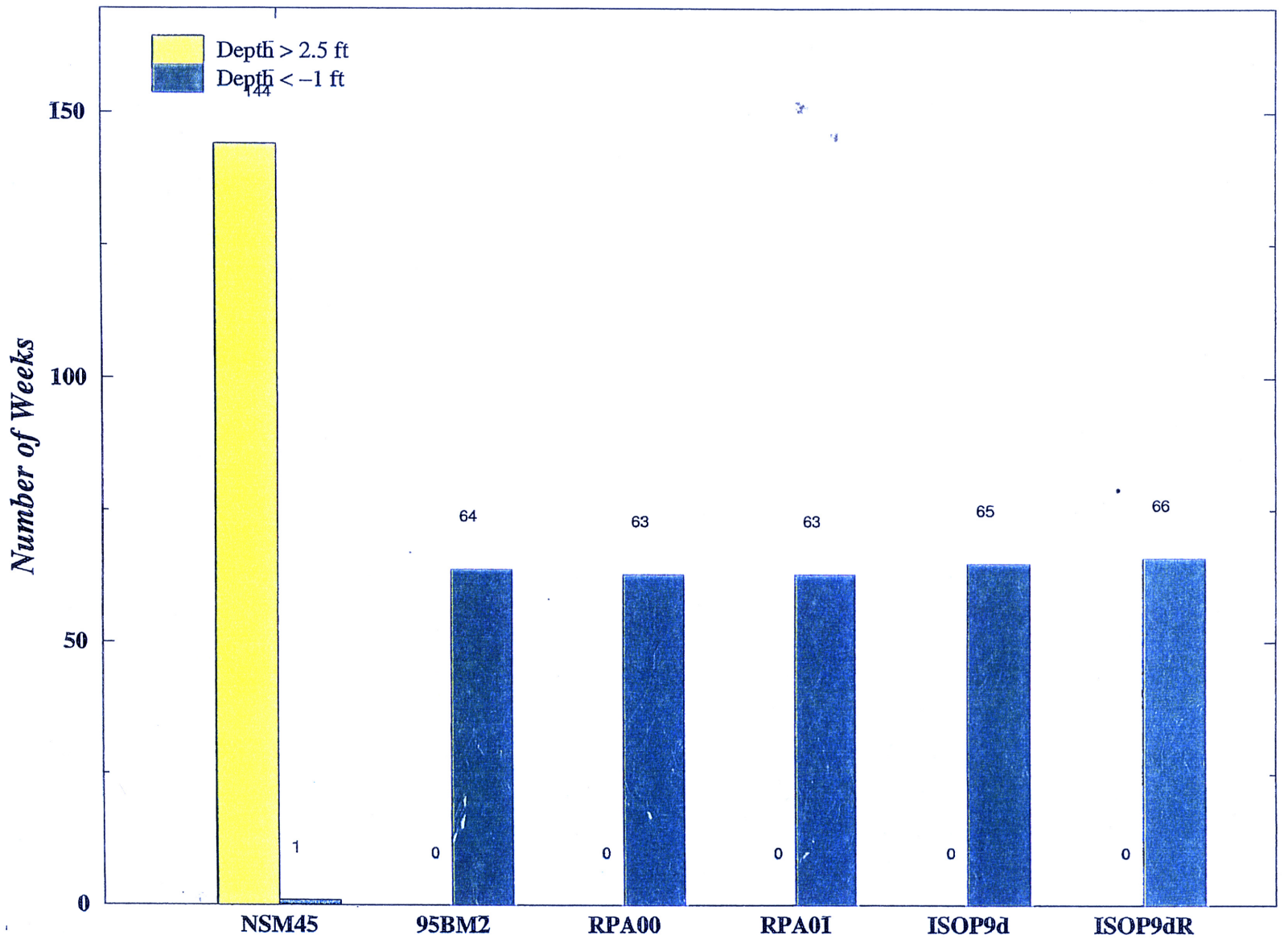


Note: Normalized stage is stage referenced to Land Elevation. Thus, values above zero indicate ponding while values below zero indicate depth to the water table.

Run date: Thu Aug 9 15:26:58 EDT 2001
For Planning Purposes Only

Number of Weeks High/Low Water Depth Criteria Exceeded

Indicator Region 11 (R19C22–23 R20C22–26 R21C22–26)



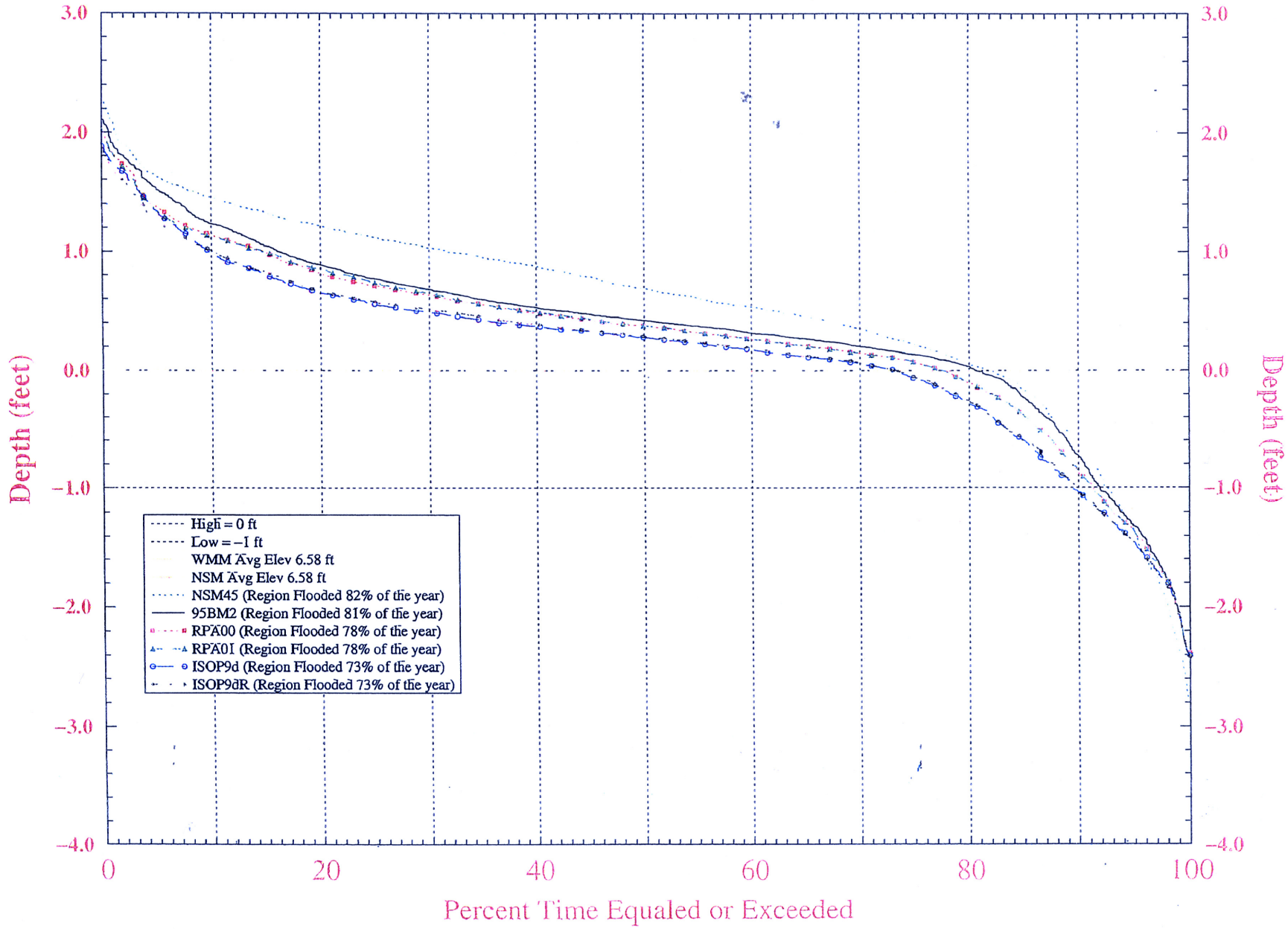
Note: The desired condition is to exceed the high water depth as few times as possible and go below the low water depth as few times as possible.

Run date: Thu Aug 9 15:26:58 EDT 2001
For Planning Purposes Only

A-19

Normalized Weekly Stage Duration Curves for New Shark River Slough

Indicator Region 12 (R19C18–18 R20C18–19 R21C18–19)

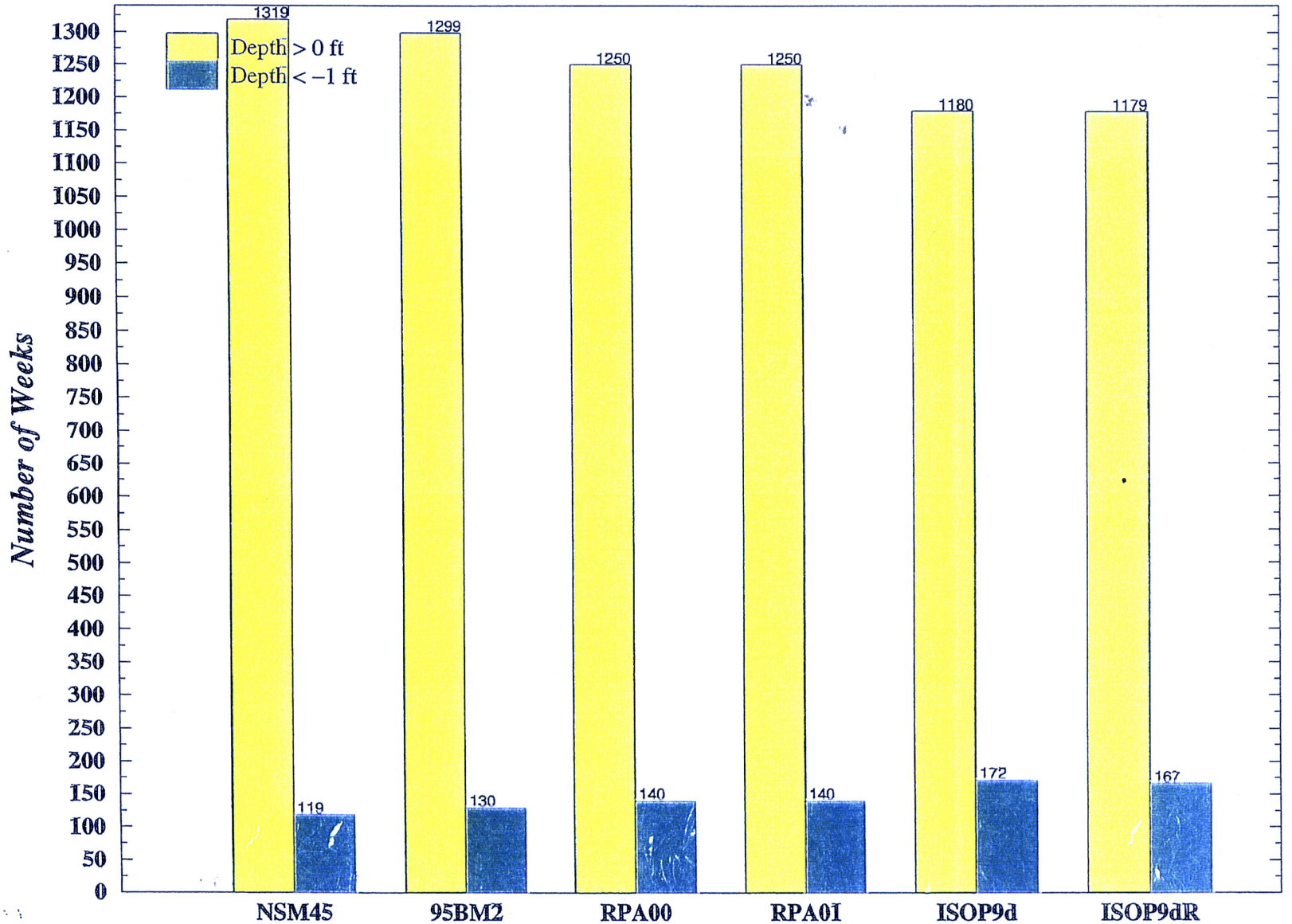


Note: Normalized stage is stage referenced to Land Elevation. Thus, values above zero indicate ponding while values below zero indicate depth to the water table.

Run date: Thu Aug 9 15:27:01 EDT 2001
For Planning Purposes Only

Number of Weeks High/Low Water Depth Criteria Exceeded

Indicator Region 12 (R19C18–18 R20C18–19 R21C18–19)

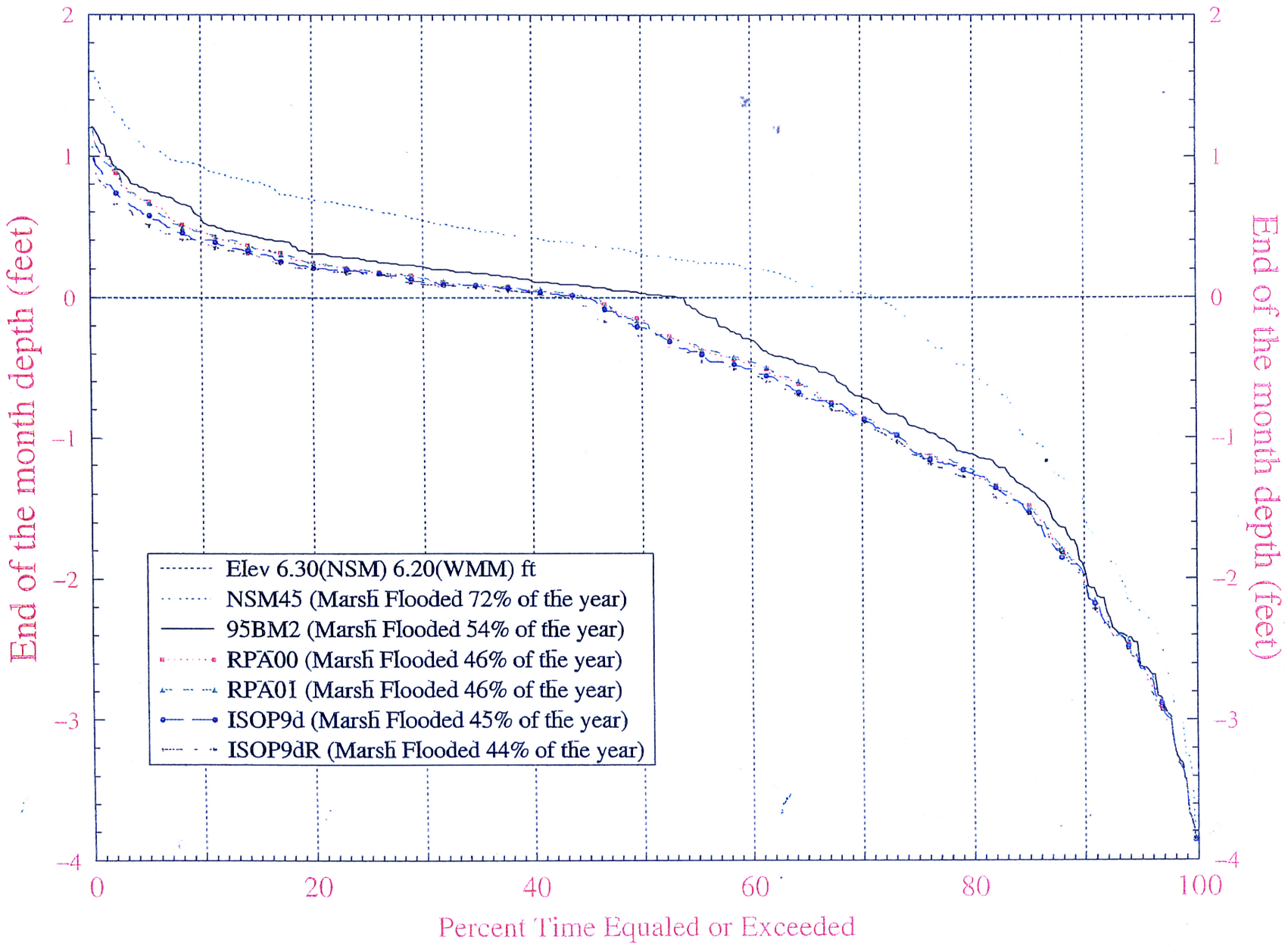


Note: The desired condition is to exceed the high water depth as few times as possible and go below the low water depth as few times as possible.

Run date: Thu Aug 9 15:27:01 EDT 2001
For Planning Purposes Only

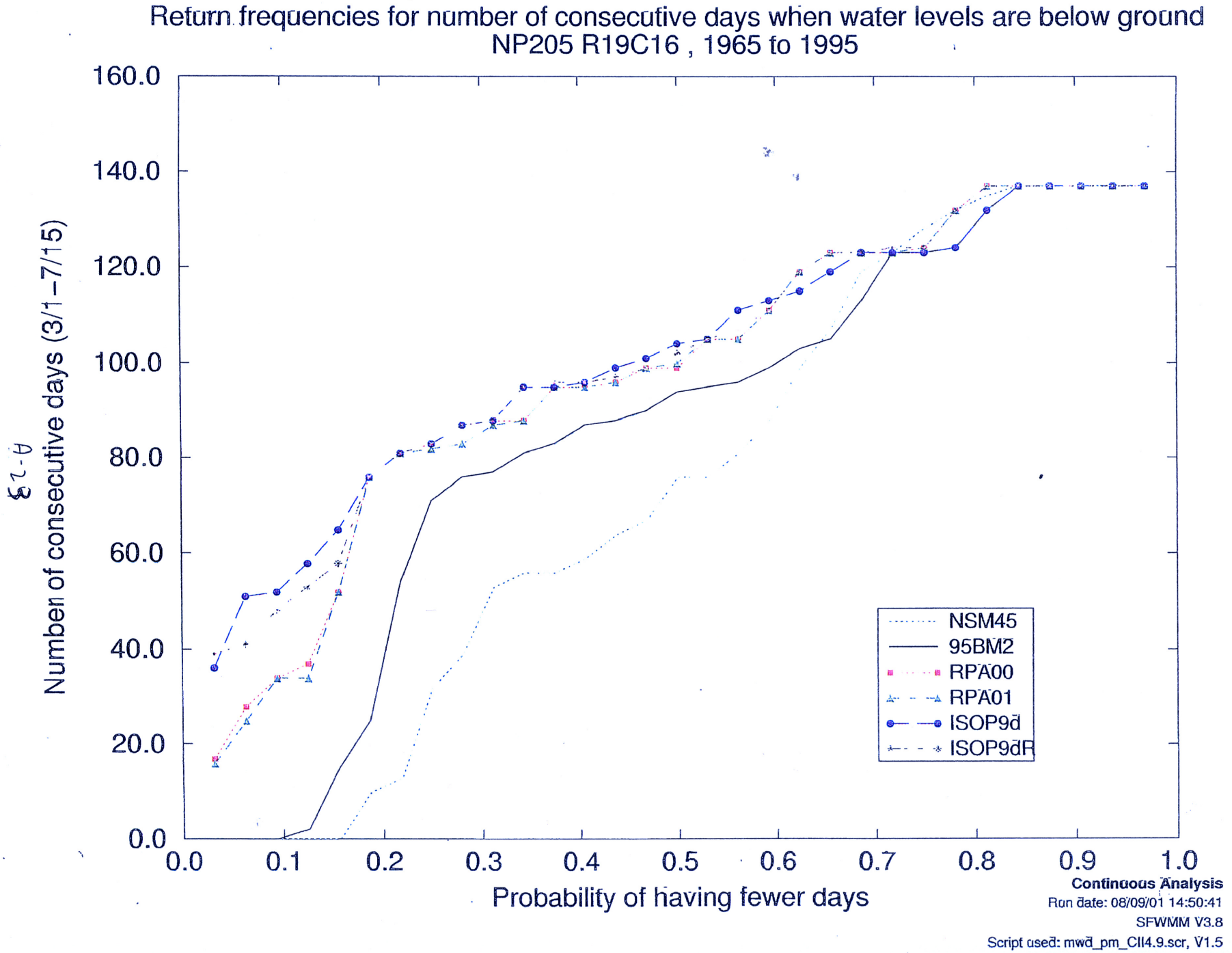
12-A

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



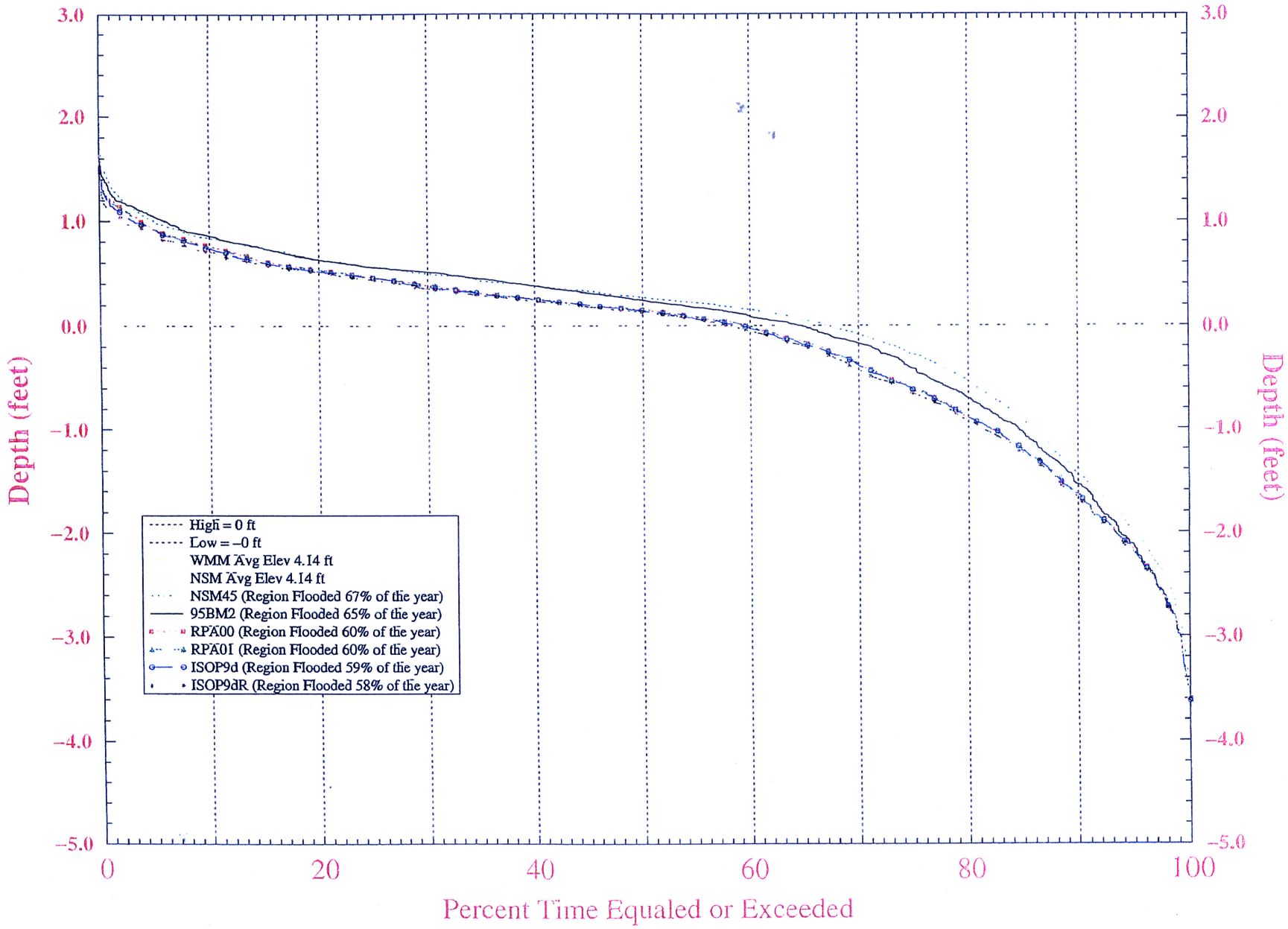
Run date: 08/09/01 14:38:53
Continuous Analysis

Note: Normalized stage is stage referenced to Land Elevation. Thus, values above zero indicates ponding


Return frequencies for number of consecutive days when water levels are below ground
NP205 R19C16 , 1965 to 1995
Number of consecutive days (3/1–7/15)
Probability of having fewer days
160.0
140.0
120.0
100.0
80.0
60.0
40.0
20.0
0.0
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
NSM45
95BM2
RPA00
RPA01
ISOP9d
ISOP9dR
Continuous Analysis
Run date: 08/09/01 14:50:41
SFWMM V3.8
Script used: mwd_pm_CII4.9.scr, V1.5

Normalized Weekly Stage Duration Curves for Cape Sable Sparrow A

Indicator Region 46 (R17C13–14 R18C13–14 R19C13–15 R20C15–15)

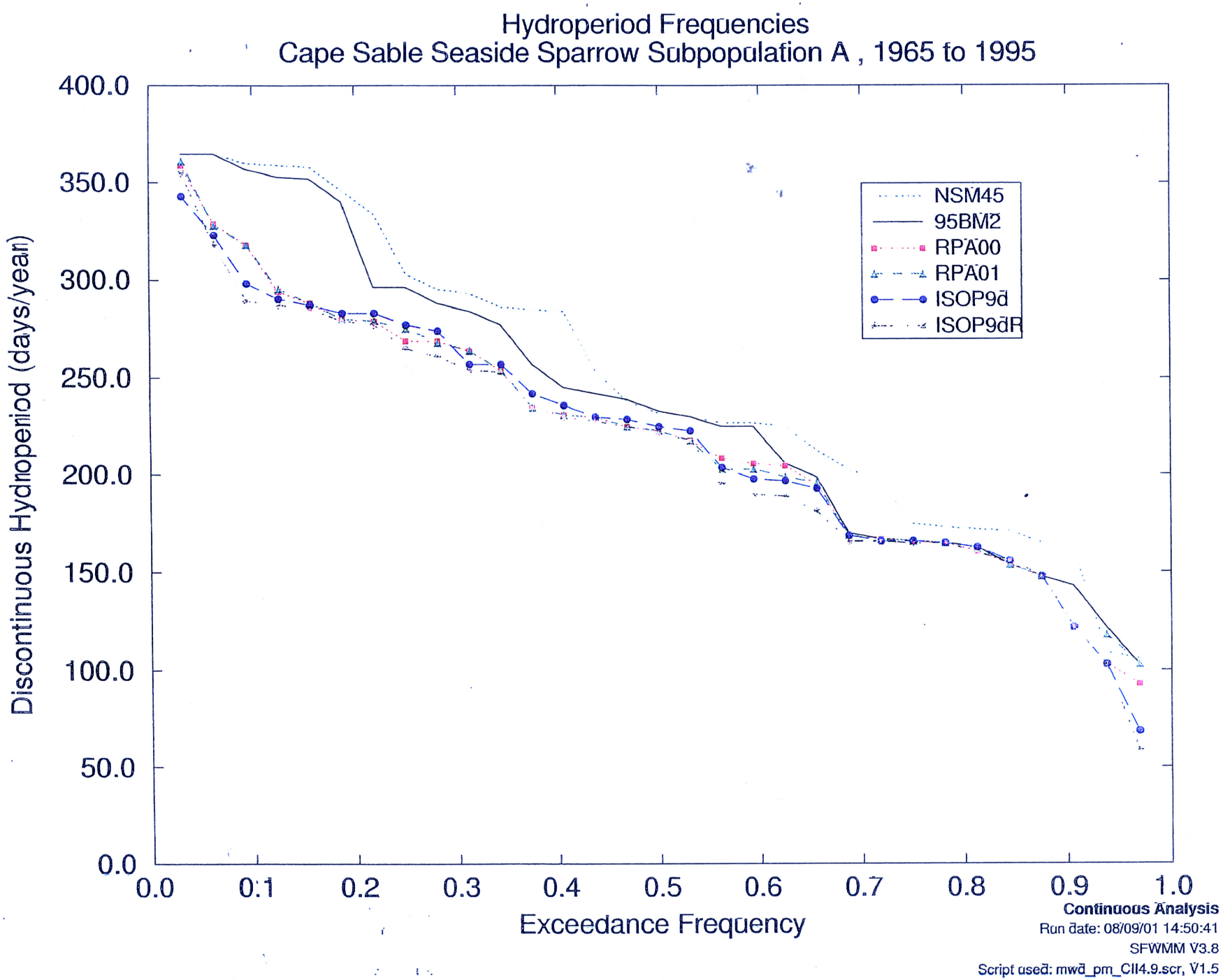


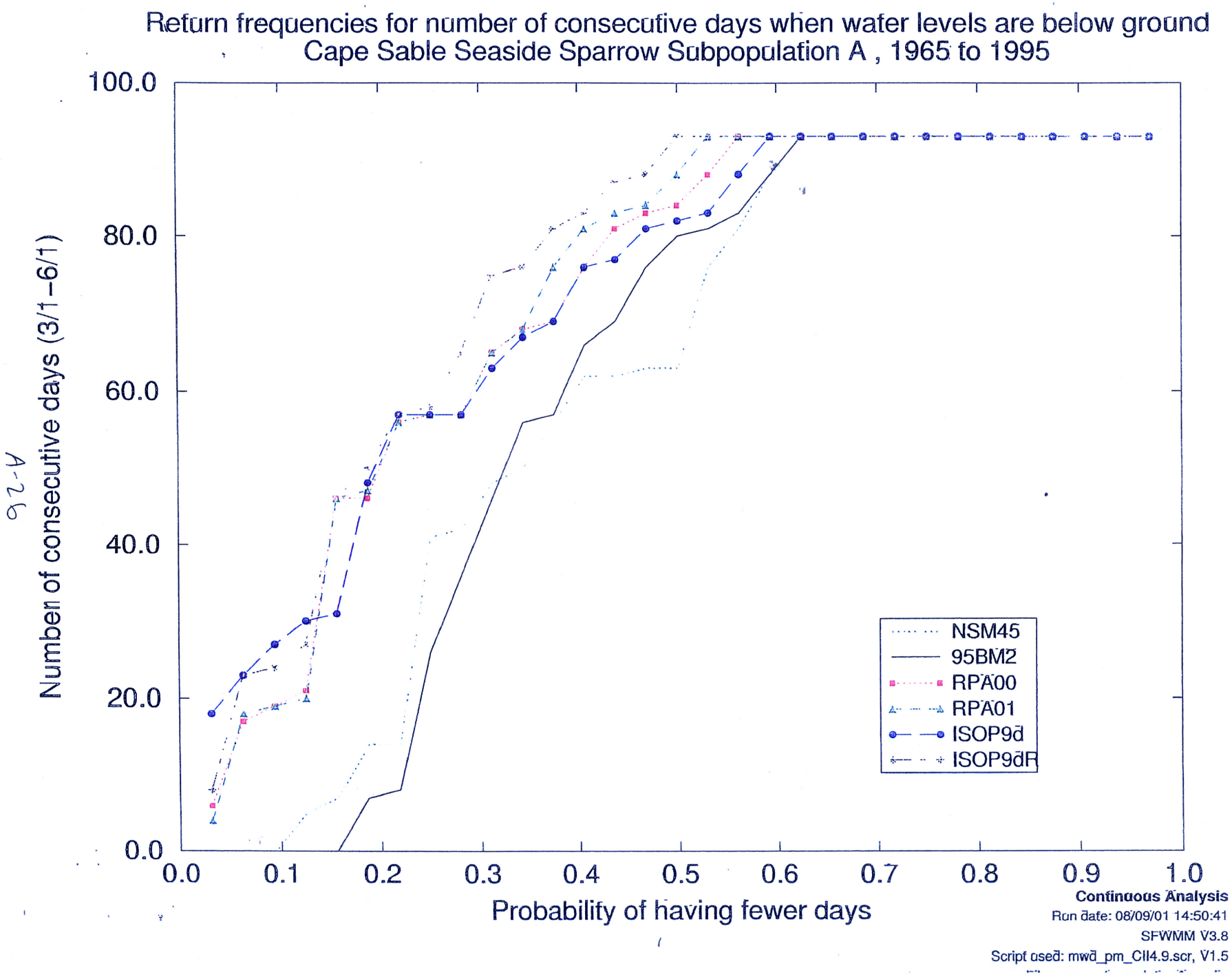
A-24

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: Thu Aug 9 15:29:21 EDT 2001

For Planning Purposes Only

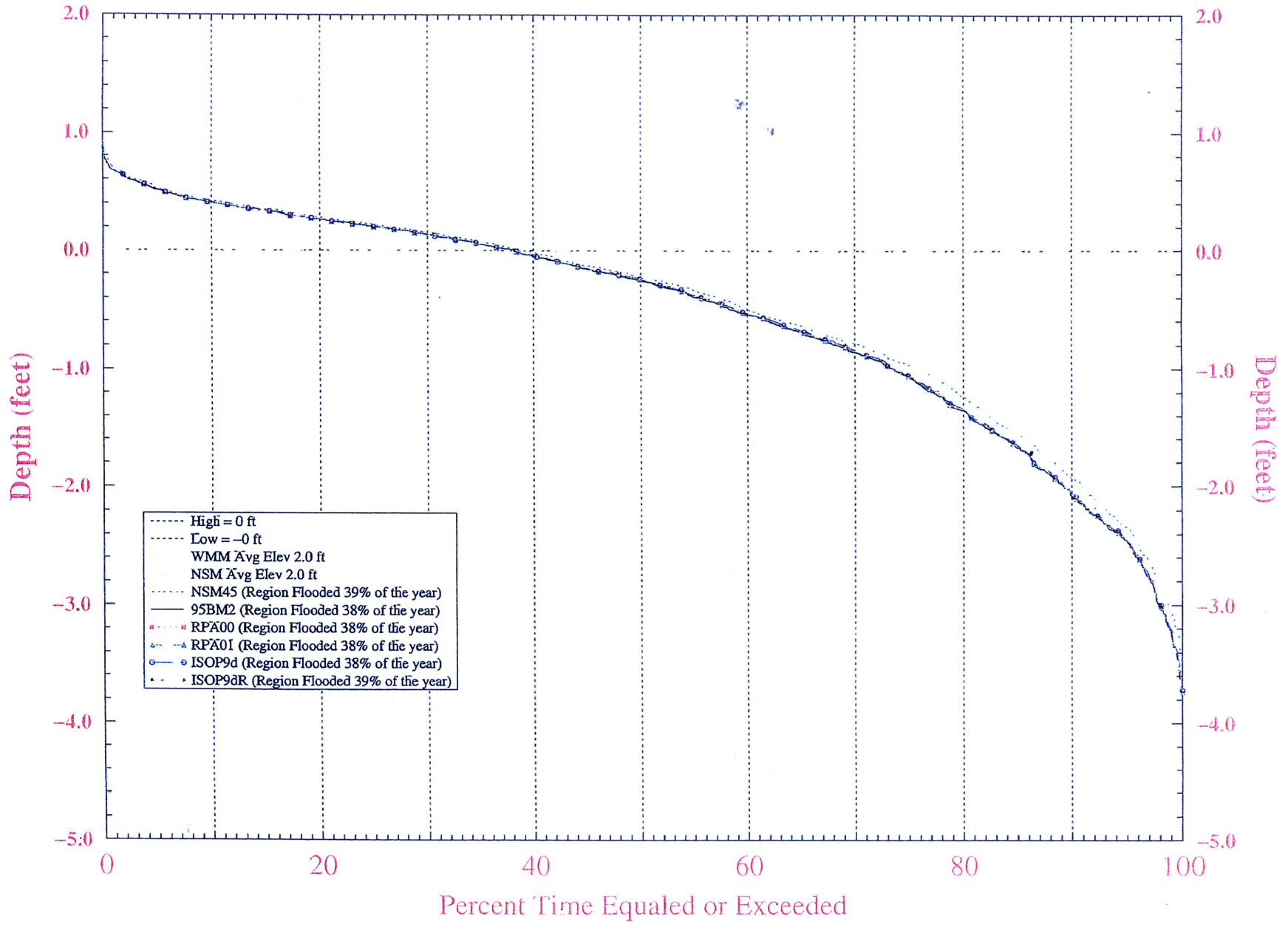

Hydroperiod Frequencies
Cape Sable Seaside Sparrow Subpopulation A , 1965 to 1995
Discontinuous Hydroperiod (days/year)
400.0
350.0
300.0
250.0
200.0
150.0
100.0
50.0
0.0
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
Exceedance Frequency
NSM45
95BM2
RPA00
RPA01
ISOP9d
ISOP9dR
Continuous Analysis
Run date: 08/09/01 14:50:41
SFWMM V3.8
Script used: mwd_pm_CII4.9.scr, V1.5


Return frequencies for number of consecutive days when water levels are below ground
Cape Sable Seaside Sparrow Subpopulation A , 1965 to 1995
Number of consecutive days (3/1-6/1)
100.0
80.0
60.0
40.0
20.0
0.0
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
Probability of having fewer days
NSM45
95BM2
RPA00
RPA01
ISOP9d
ISOP9dR
Continuous Analysis
Run date: 08/09/01 14:50:41
SFWMM V3.8
Script used: mwd_pm_CII4.9.scr, V1.5

A-26

Normalized Weekly Stage Duration Curves for Cape Sable Sparrow B

Indicator Region 54 (R6C18–20 R7C17–19 R8C17–19)

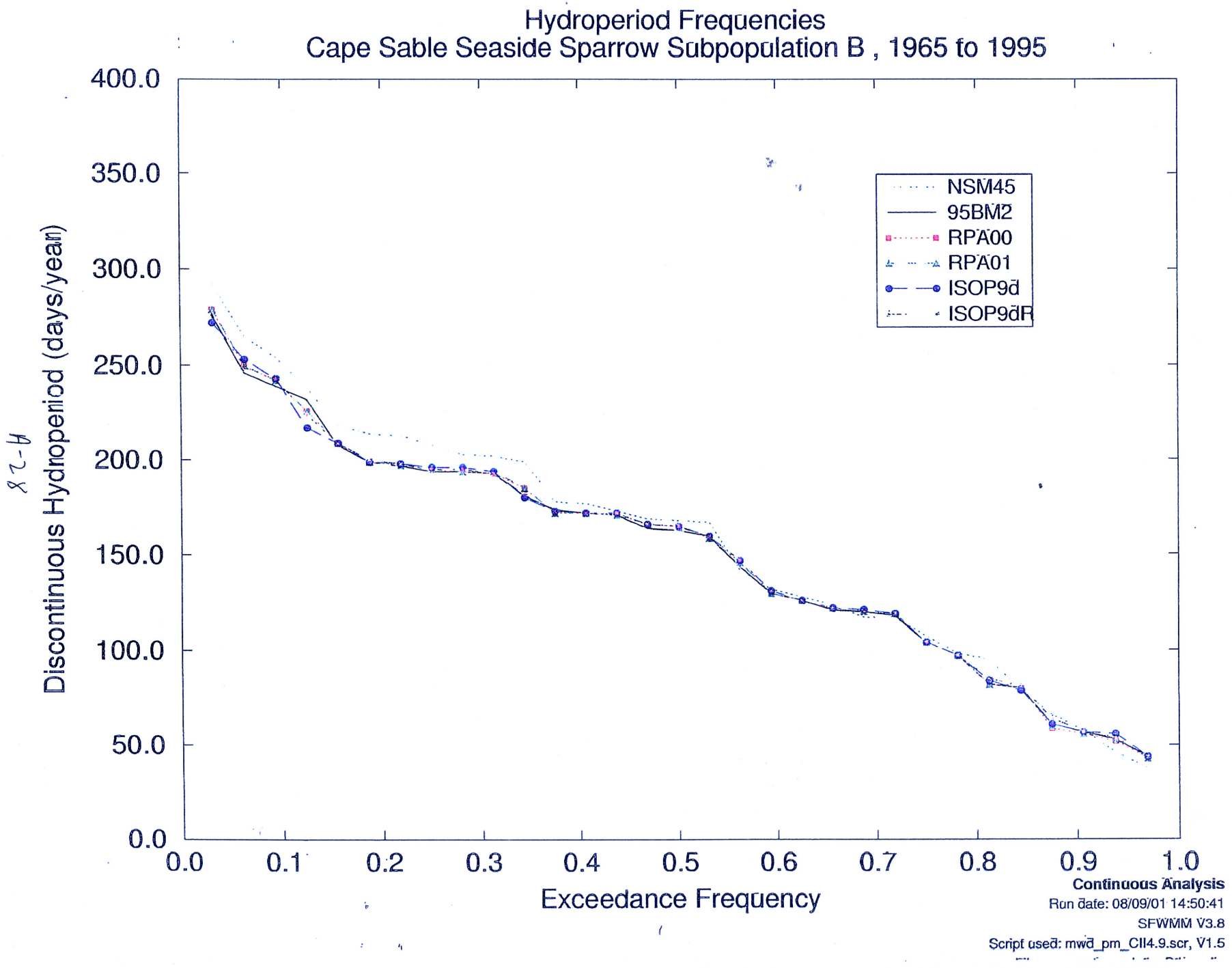


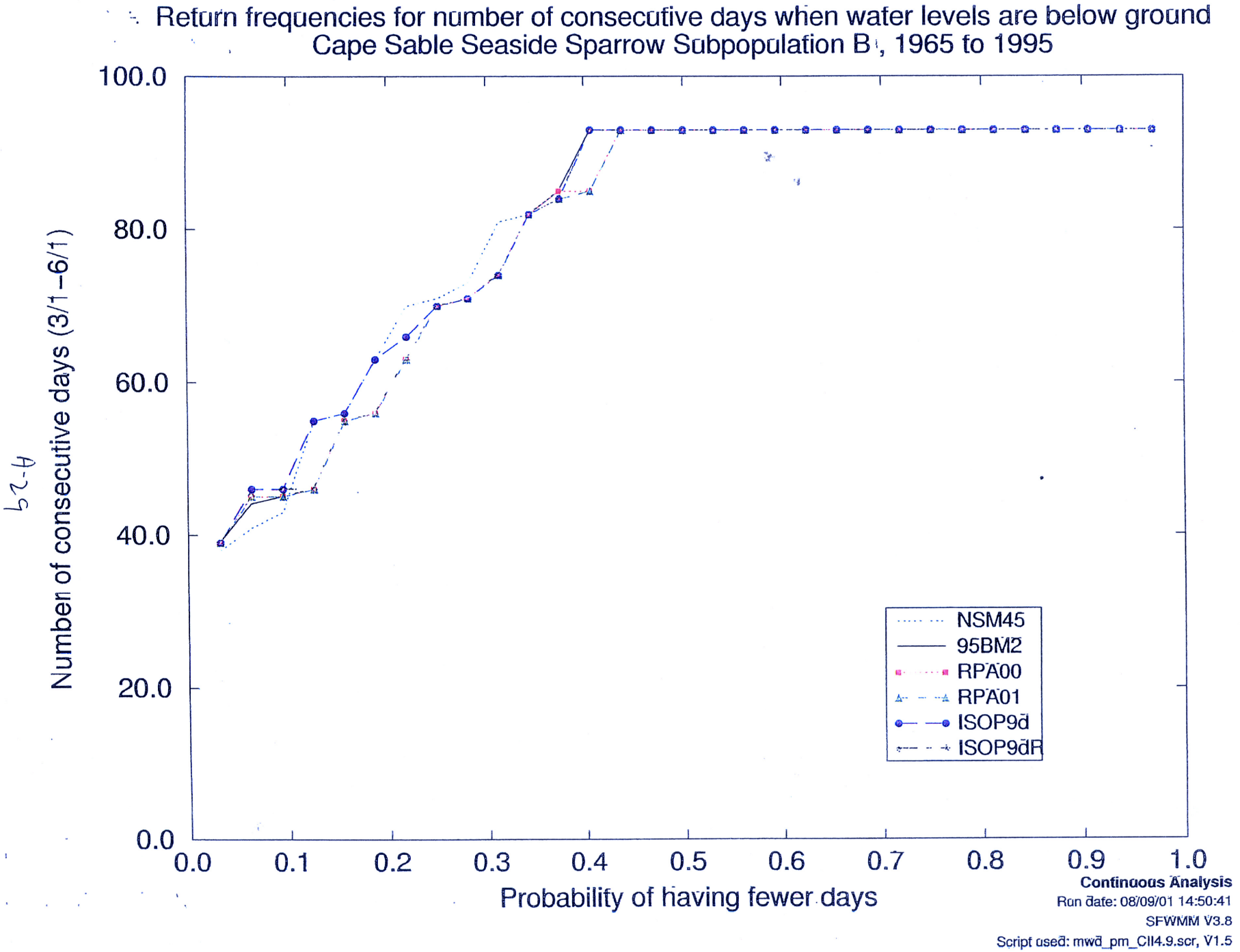
Note: Normalized stage is stage referenced to Land Elevation. Thus, values above zero indicate ponding while values below zero indicate depth to the water table.

Run date: Thu Aug 9 15:29:24 EDT 2001

For Planning Purposes Only

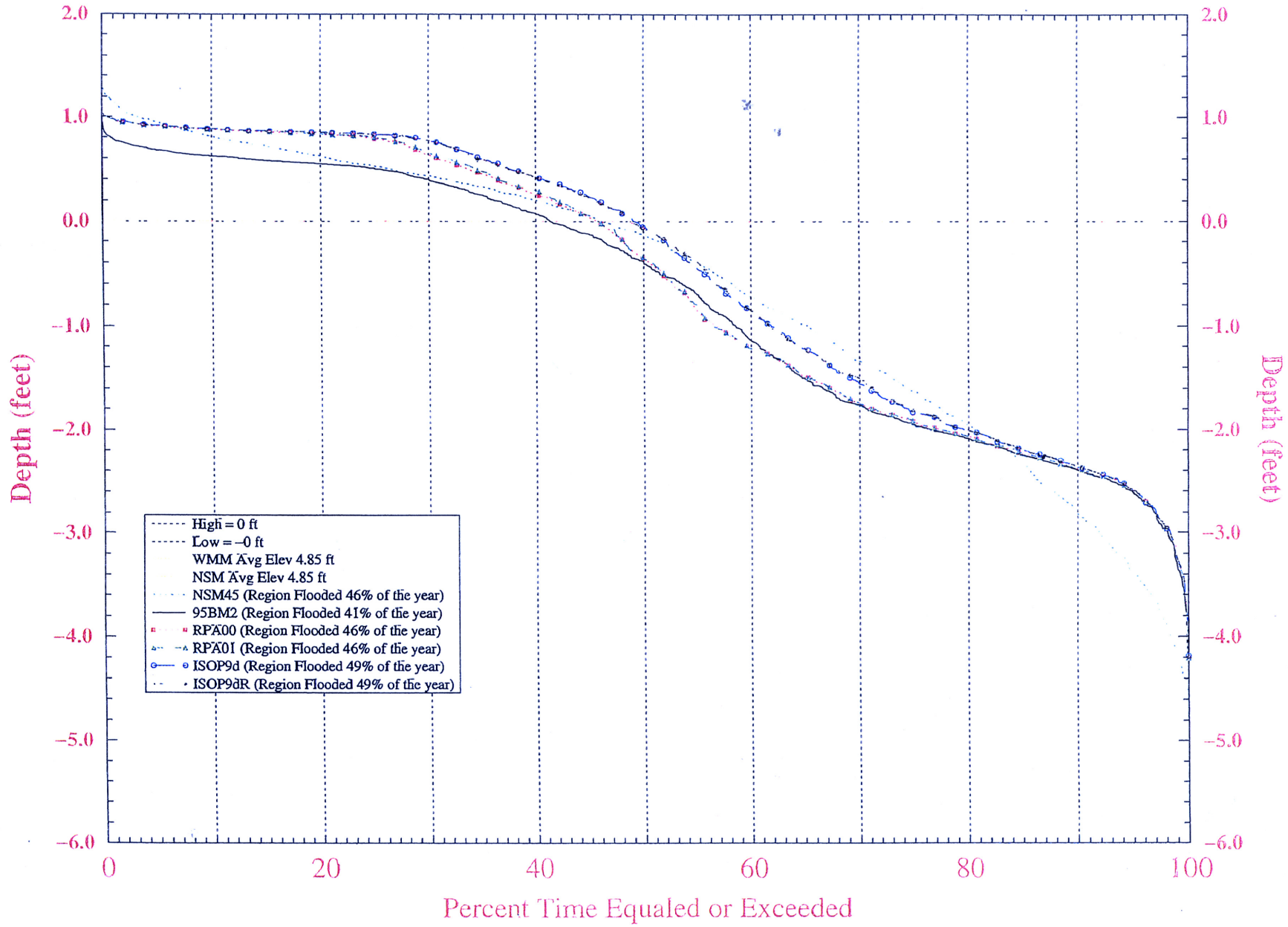
4-27


Hydroperiod Frequencies
Cape Sable Seaside Sparrow Subpopulation B , 1965 to 1995
Discontinuous Hydroperiod (days/year)
400.0
350.0
300.0
250.0
200.0
150.0
100.0
50.0
0.0
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
Exceedance Frequency
NSM45
95BM2
RPA00
RPA01
ISOP9d
ISOP9dR
Continuous Analysis
Run date: 08/09/01 14:50:41
SFWMM V3.8
Script used: mwd_pm_CII4.9.scr, V1.5


Return frequencies for number of consecutive days when water levels are below ground
Cape Sable Seaside Sparrow Subpopulation B, 1965 to 1995
Number of consecutive days (3/1-6/1)
100.0
80.0
60.0
40.0
20.0
0.0
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
Probability of having fewer days
NSM45
95BM2
RPA00
RPA01
ISOP9d
ISOP9dR
Continuous Analysis
Run date: 08/09/01 14:50:41
SFWMM V3.8
Script used: mwd_pm_CII4.9.scr, V1.5

Normalized Weekly Stage Duration Curves for Cape Sable Sparrow C

Indicator Region 55 (R10C23–23 R11C23–23)



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: Thu Aug 9 15:29:27 EDT 2001

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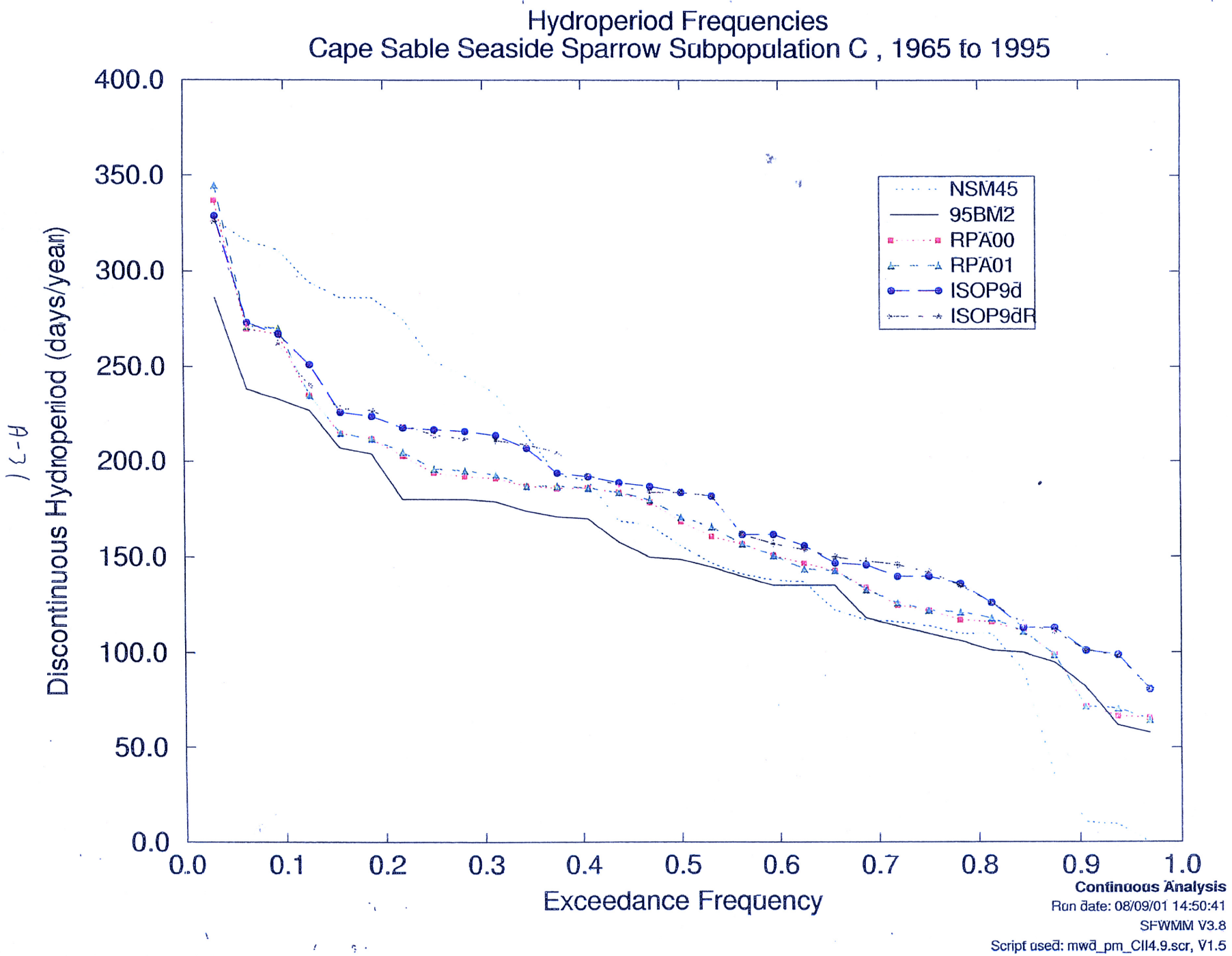
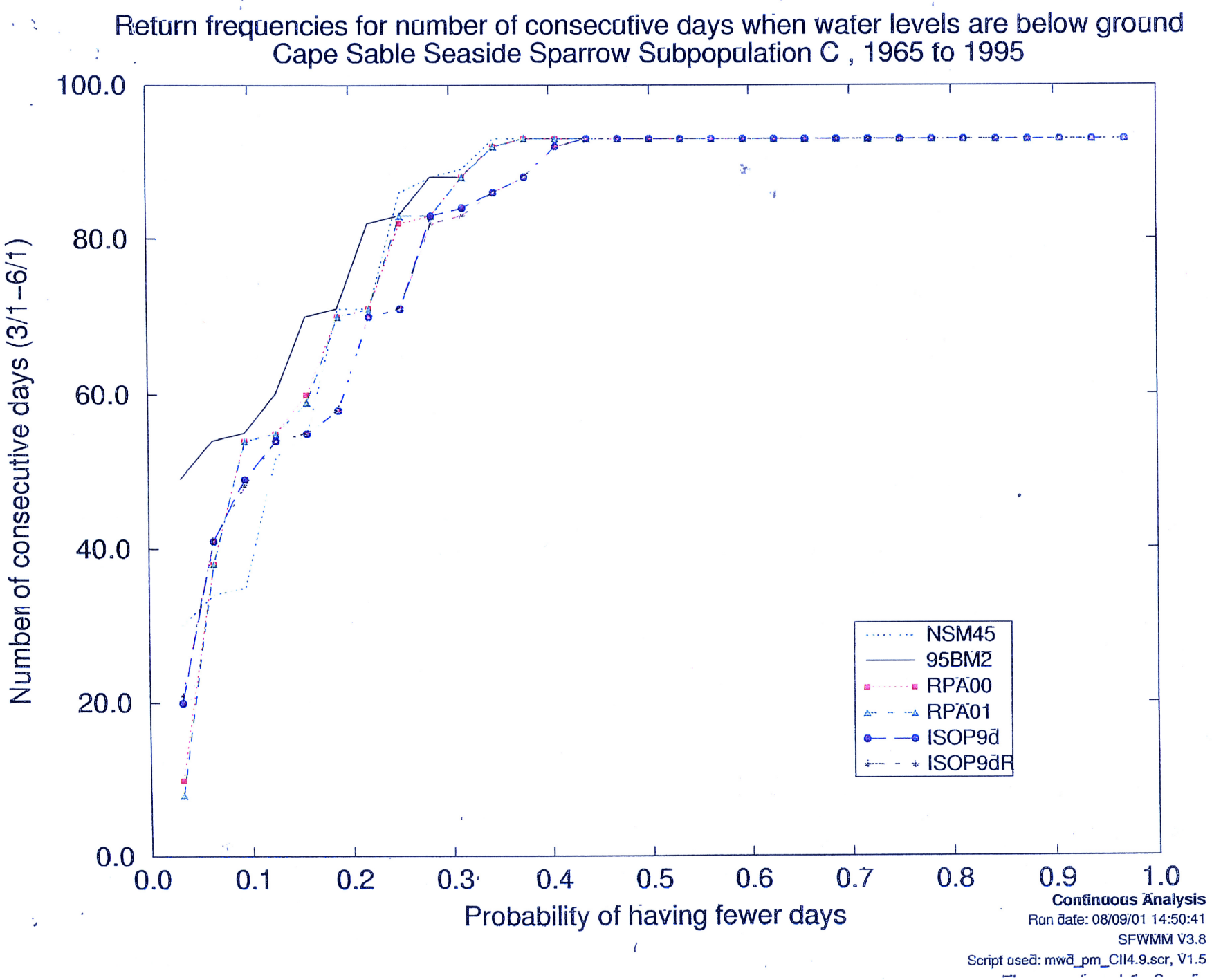
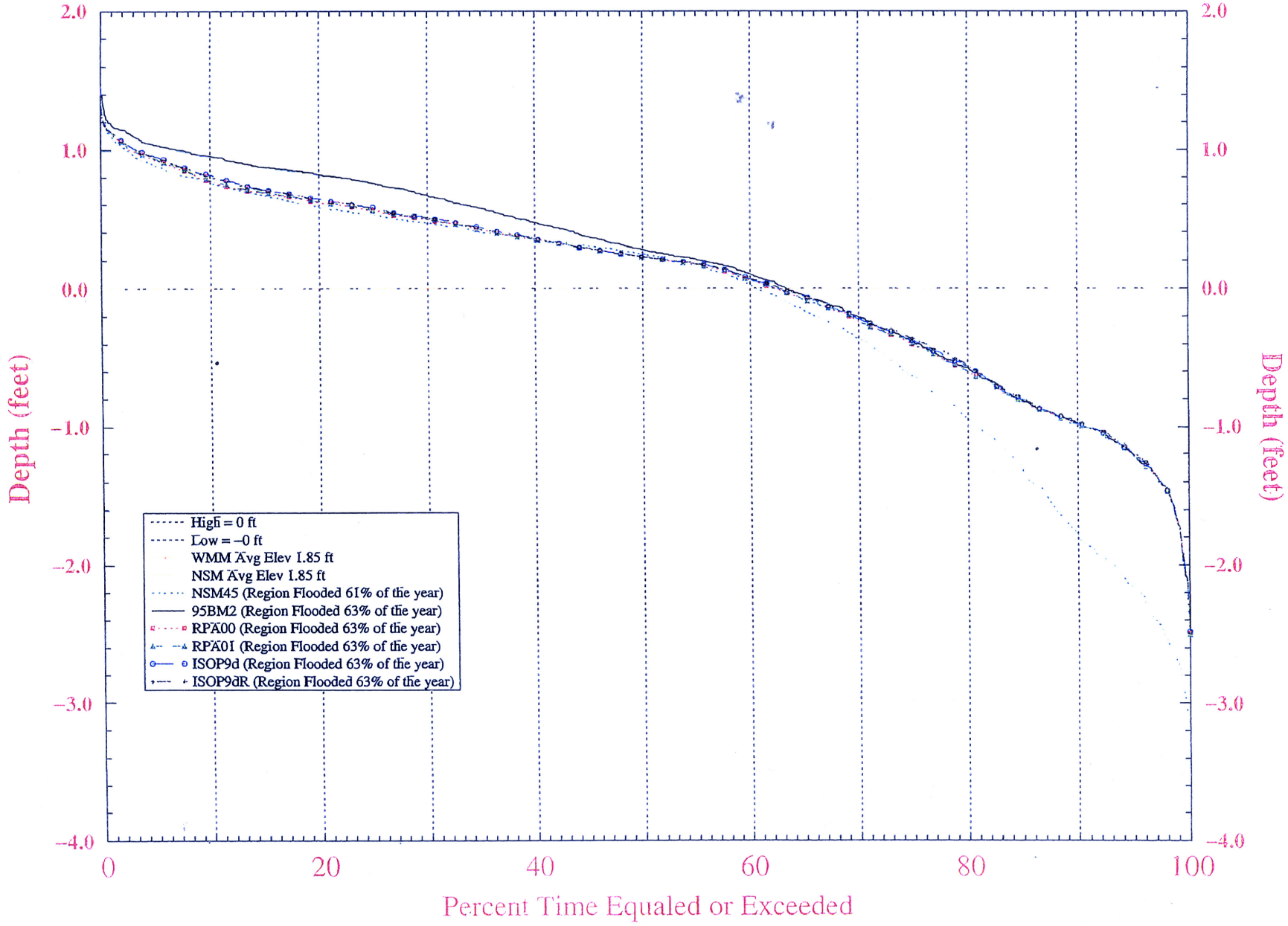

Hydroperiod Frequencies
Cape Sable Seaside Sparrow Subpopulation C , 1965 to 1995
Discontinuous Hydroperiod (days/year)
Exceedance Frequency
400.0
350.0
300.0
250.0
200.0
150.0
100.0
50.0
0.0
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
NSM45
95BM2
RPA00
RPA01
ISOP9d
ISOP9dR
Continuous Analysis
Run date: 08/09/01 14:50:41
SFWMM V3.8
Script used: mwd_pm_CII4.9.scr, V1.5


Return frequencies for number of consecutive days when water levels are below ground
Cape Sable Seaside Sparrow Subpopulation C , 1965 to 1995
Number of consecutive days (3/1-6/1)
100.0
80.0
60.0
40.0
20.0
0.0
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
Probability of having fewer days
NSM45
95BM2
RPA00
RPA01
ISOP9d
ISOP9dR
Continuous Analysis
Run date: 08/09/01 14:50:41
SFWMM V3.8
Script used: mwd_pm_CII4.9.scr, V1.5

Normalized Weekly Stage Duration Curves for Cape Sable Sparrow D

Indicator Region 56 (R7C25–25 R8C25–25)



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: Thu Aug 9 15:29:30 EDT 2001
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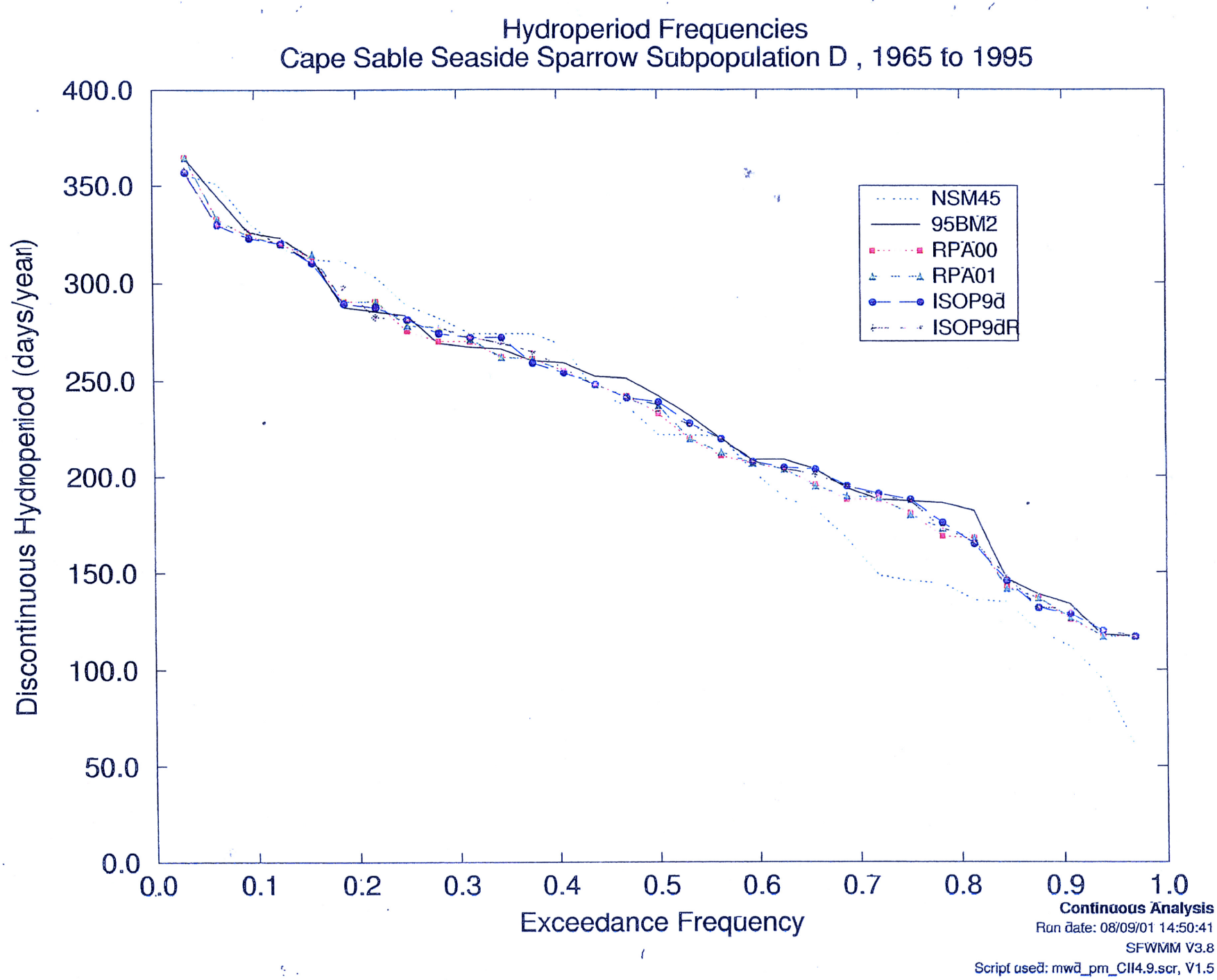
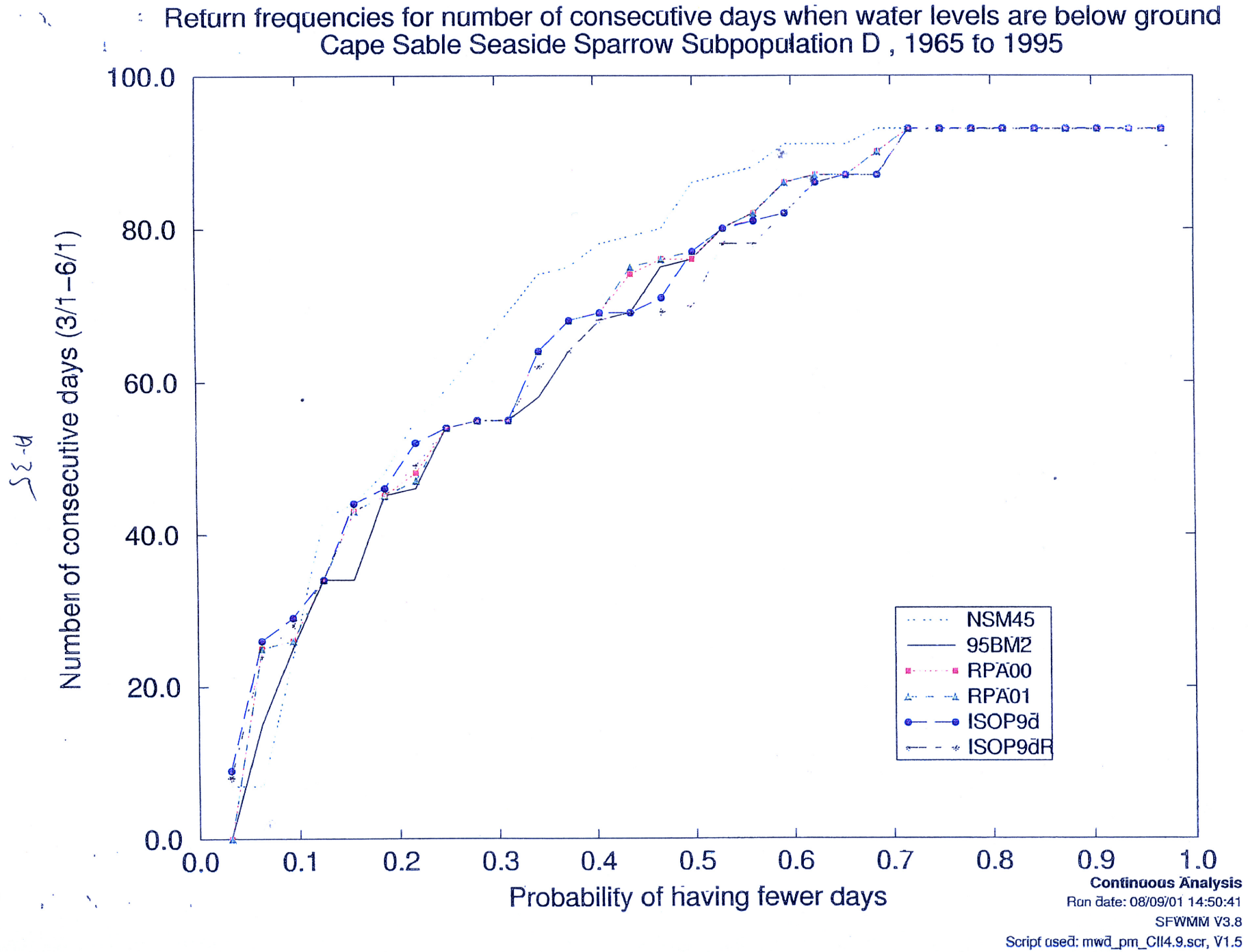
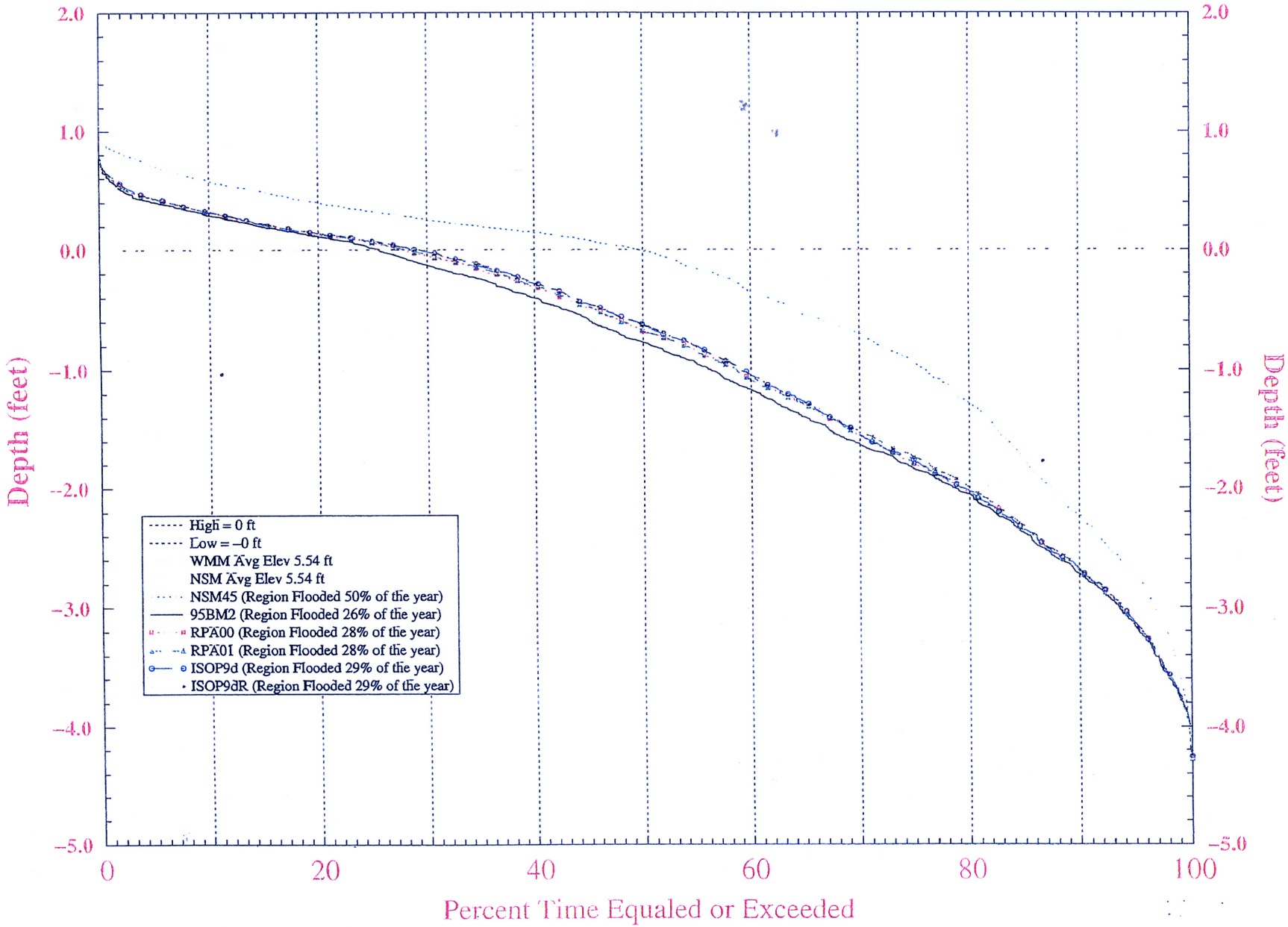
H-33


Hydroperiod Frequencies
Cape Sable Seaside Sparrow Subpopulation D , 1965 to 1995
Discontinuous Hydroperiod (days/year)
400.0
350.0
300.0
250.0
200.0
150.0
100.0
50.0
0.0
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
Exceedance Frequency
NSM45
95BM2
RPA00
RPA01
ISOP9d
ISOP9dR
Continuous Analysis
Run date: 08/09/01 14:50:41
SFWMM V3.8
Script used: mwd_pm_CII4.9.scr, V1.5


Return frequencies for number of consecutive days when water levels are below ground
Cape Sable Seaside Sparrow Subpopulation D , 1965 to 1995
Number of consecutive days (3/1-6/1)
100.0
80.0
60.0
40.0
20.0
0.0
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
Probability of having fewer days
NSM45
95BM2
RPA00
RPA01
ISOP9d
ISOP9dR
Continuous Analysis
Run date: 08/09/01 14:50:41
SFWMM V3.8
Script used: mwd_pm_CII4.9.scr, V1.5

Normalized Weekly Stage Duration Curves for Cape Sable Sparrow E

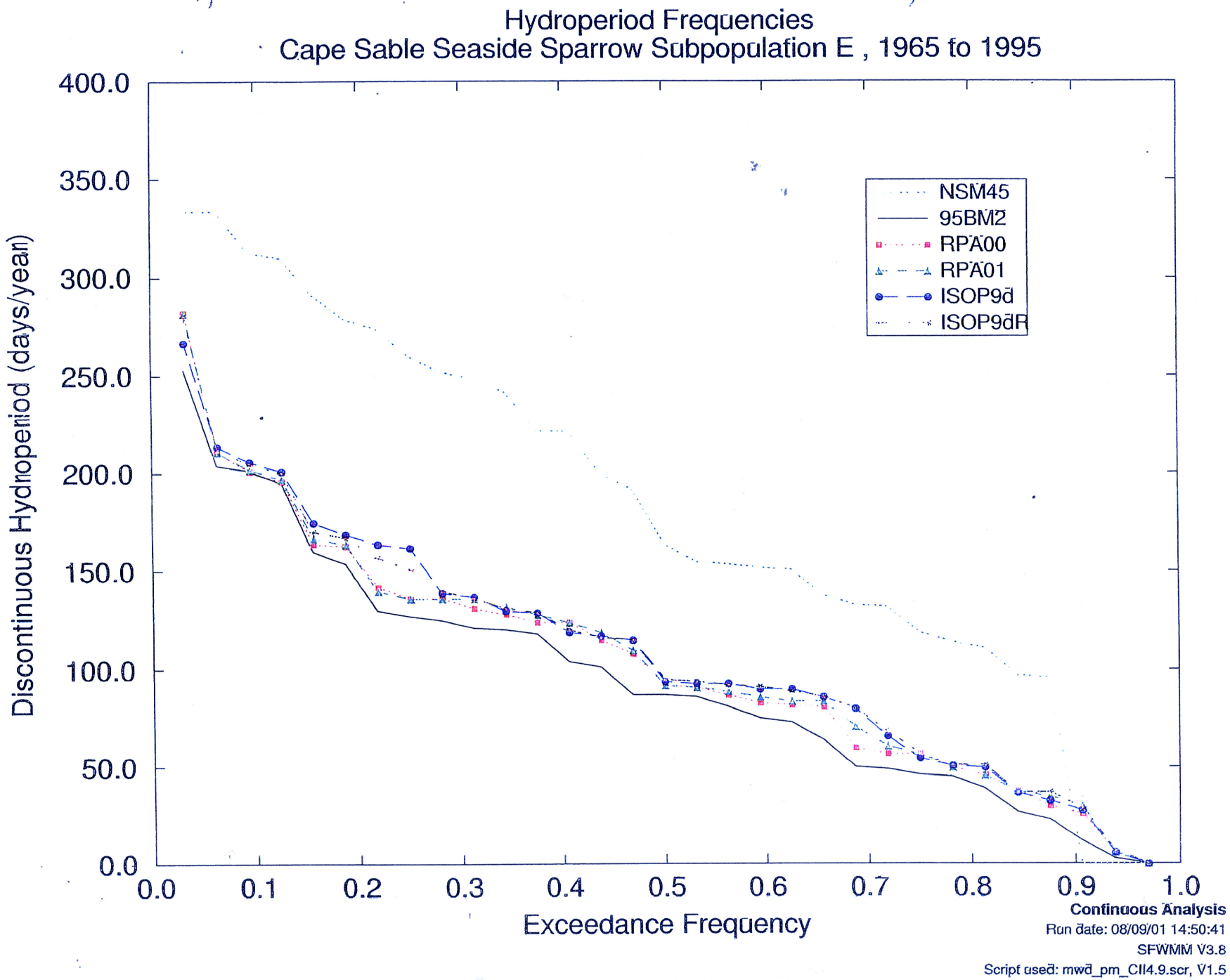
Indicator Region 57 (R12C21–21 R13C20–21 R14C20–21)

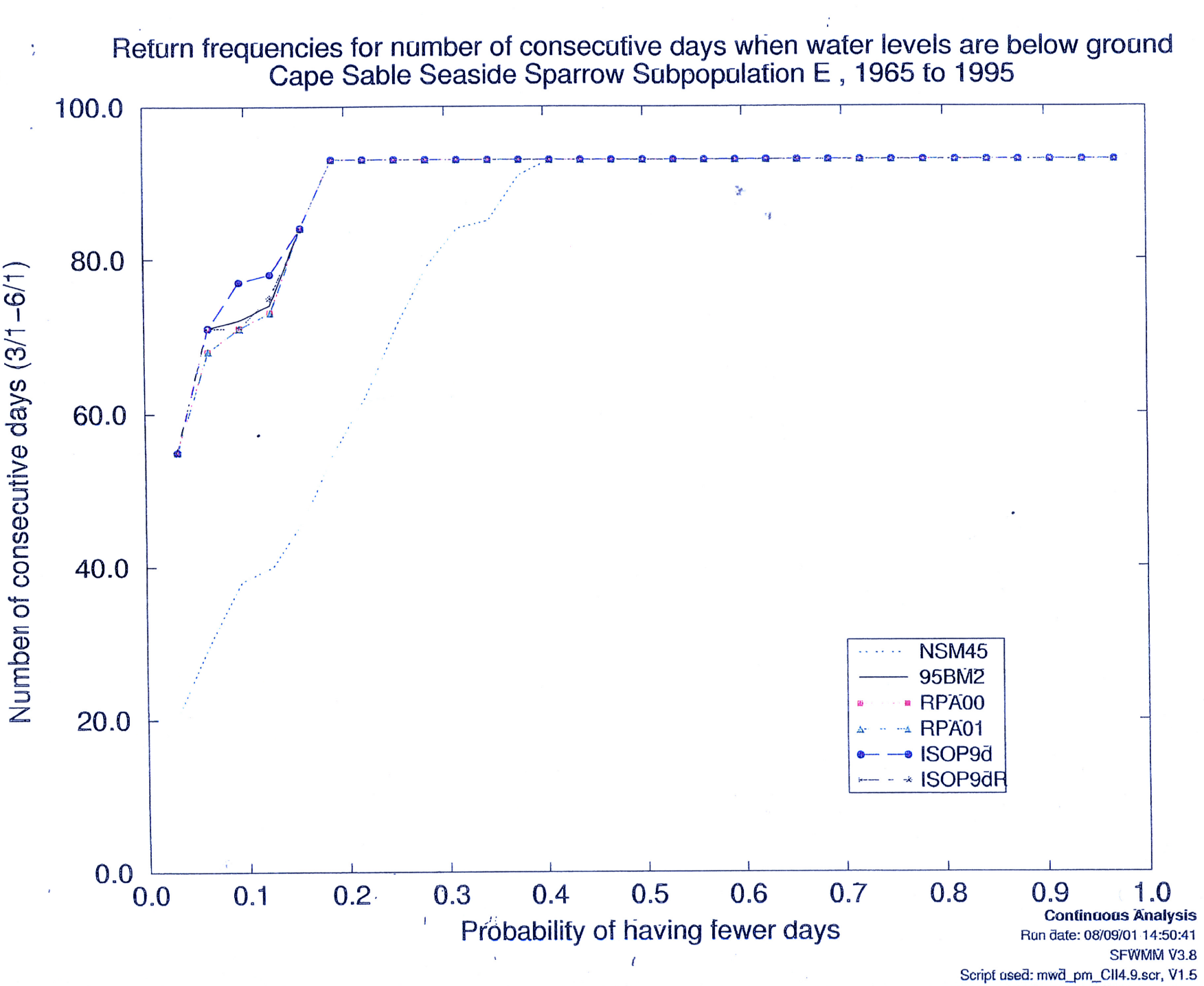


Note: Normalized stage is stage referenced to Land Elevation. Thus, values above zero indicate ponding while values below zero indicate depth to the water table.

Run date: Thu Aug 9 15:29:33 EDT 2001
For Planning Purposes Only

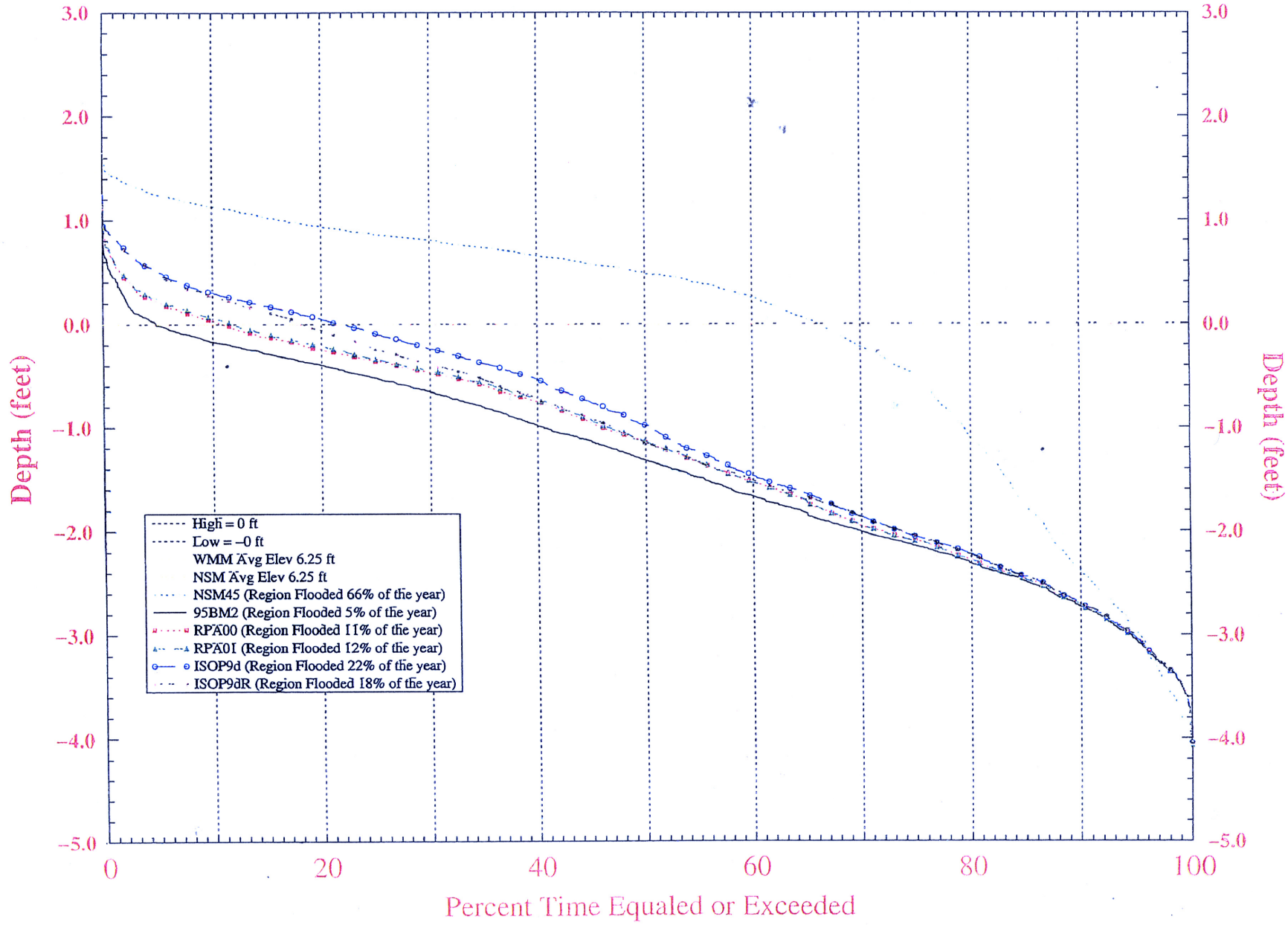
F-32


Hydroperiod Frequencies
Cape Sable Seaside Sparrow Subpopulation E , 1965 to 1995
Discontinuous Hydroperiod (days/year)
400.0
350.0
300.0
250.0
200.0
150.0
100.0
50.0
0.0
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
Exceedance Frequency
NSM45
95BM2
RPA00
RPA01
ISOP9d
ISOP9dR
Continuous Analysis
Run date: 08/09/01 14:50:41
SFWMM V3.8
Script used: mwd_pm_CII4.9.scr, V1.5


Return frequencies for number of consecutive days when water levels are below ground
Cape Sable Seaside Sparrow Subpopulation E , 1965 to 1995
Number of consecutive days (3/1 -6/1)
100.0
80.0
60.0
40.0
20.0
0.0
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
Probability of having fewer days
NSM45
95BM2
RPA00
RPA01
ISOP9d
ISOP9dR
Continuous Analysis
Run date: 08/09/01 14:50:41
SFWMM V3.8
Script used: mwd_pm_CII4.9.scr, V1.5

Normalized Weekly Stage Duration Curves for Cape Sable Sparrow F

Indicator Region 58 (R14C24–24 R15C23–23)



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: Thu Aug 9 15:29:35 EDT 2001

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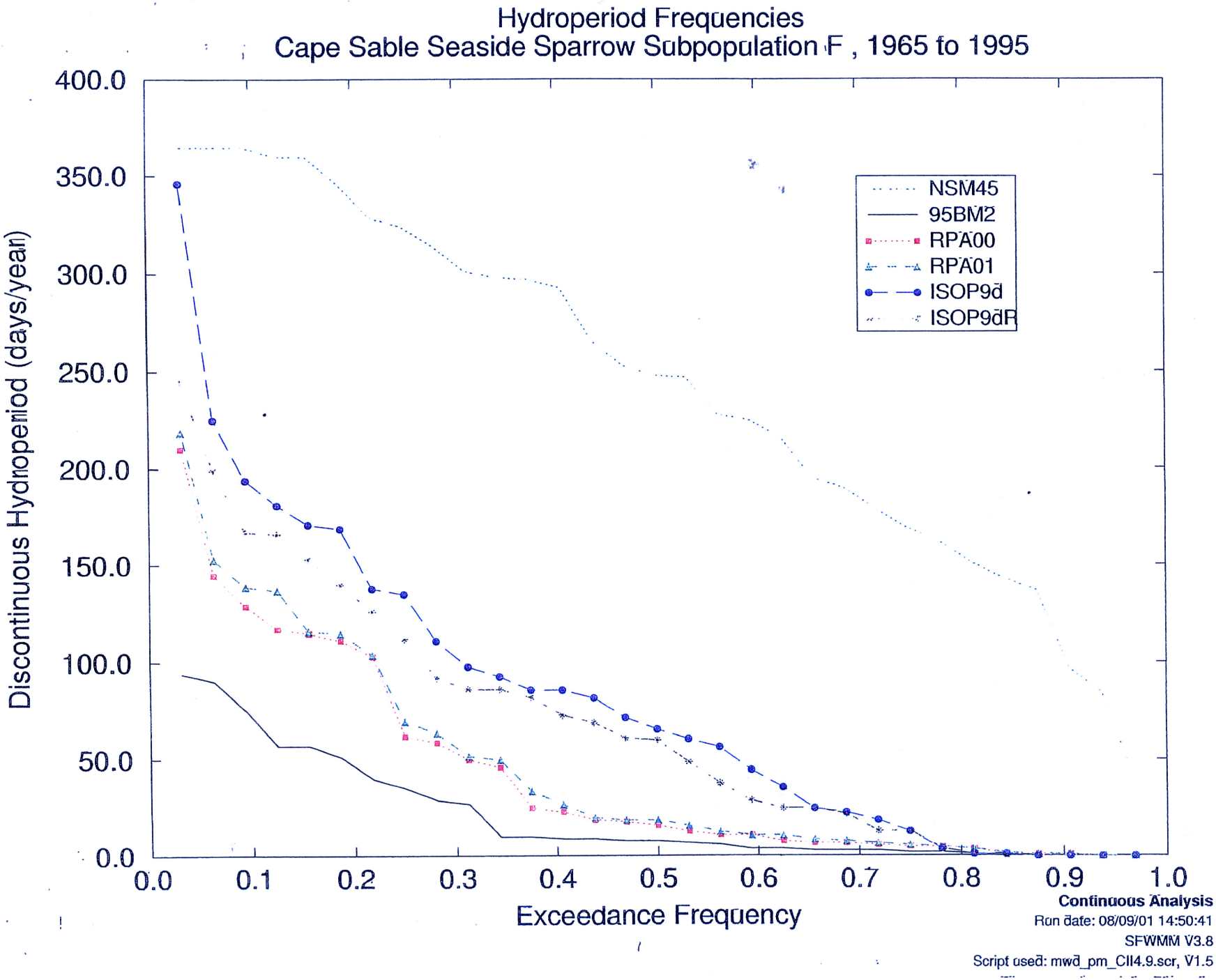
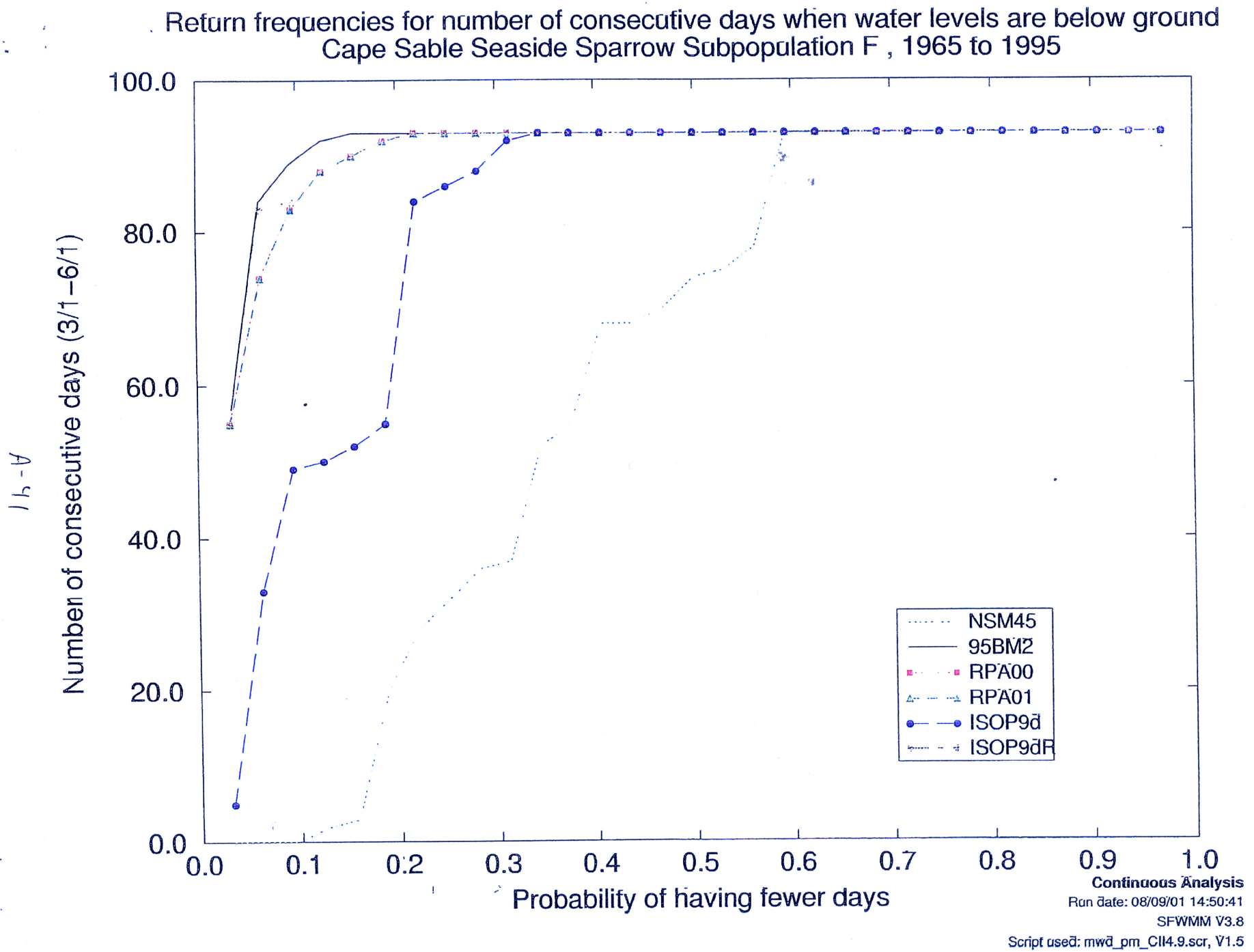
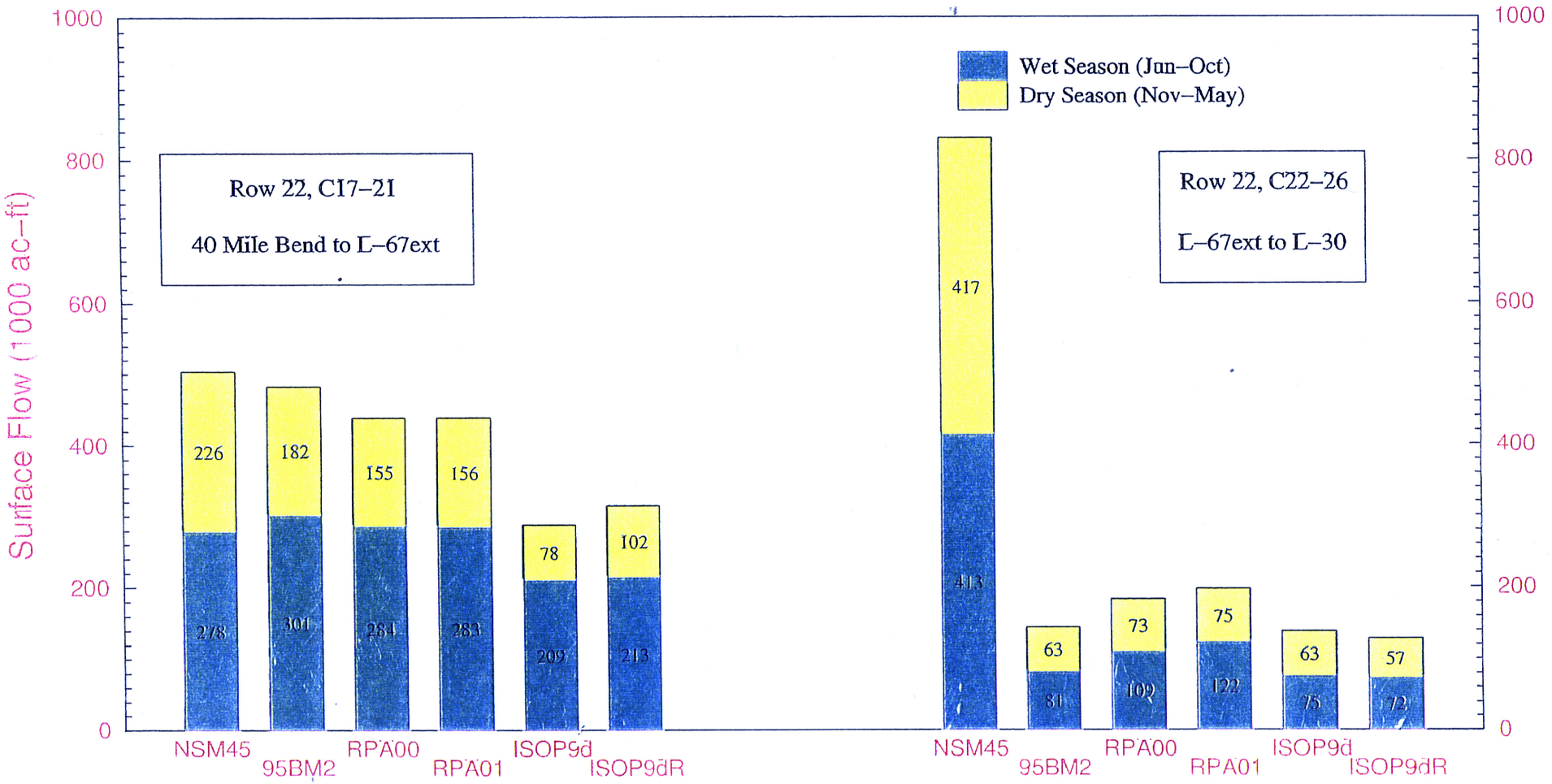

Hydroperiod Frequencies
Cape Sable Seaside Sparrow Subpopulation F , 1965 to 1995
Discontinuous Hydroperiod (days/year)
400.0
350.0
300.0
250.0
200.0
150.0
100.0
50.0
0.0
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
Exceedance Frequency
NSM45
95BM2
RPA00
RPA01
ISOP9d
ISOP9dR
Continuous Analysis
Run date: 08/09/01 14:50:41
SFWMM V3.8
Script used: mwd_pm_CII4.9.scr, V1.5

A-40


Return frequencies for number of consecutive days when water levels are below ground
Cape Sable Seaside Sparrow Subpopulation F , 1965 to 1995
Number of consecutive days (3/1 –6/1)
100.0
80.0
60.0
40.0
20.0
0.0
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
Probability of having fewer days
NSM45
95BM2
RPA00
RPA01
ISOP9d
ISOP9dR
Continuous Analysis
Run date: 08/09/01 14:50:41
SFWMM V3.8
Script used: mwd_pm_CII4.9.scr, V1.5

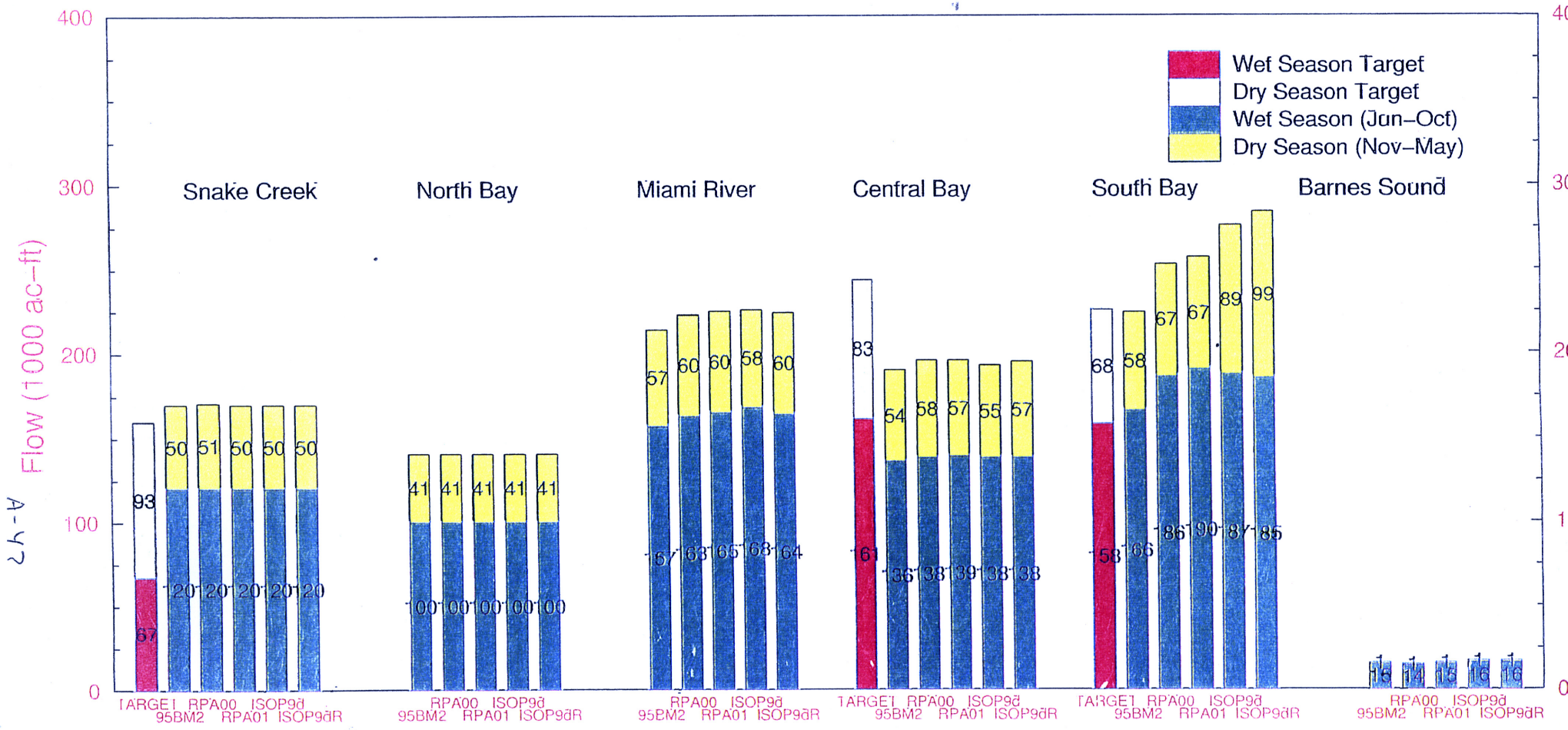
Average Annual Overland Flows to ENP South of Tamiami Trail, West & East of L–67ext for the 31 year simulation period



Note: Flow represents overland flows for cells Row 22 Columns 22 thru 26. NSM water depths at key ENP gage locations are used as operational targets for most alternatives. NSM flows are NOT targets and are shown for comparative purposes only.

Run date: 08/09/01 14:20:02
Continuous Analysis

Simulated Mean Annual Surface Flows Discharged into Biscayne Bay for the 1965 – 1995 simulation period



Note: Snake Creek=S29; North Bay=G58+S28+S27; Miami River=S26+S25B+S25; Central=G97+S22+S123; South=S21+S21A+S20F+S20G; Barnes Sound=S197

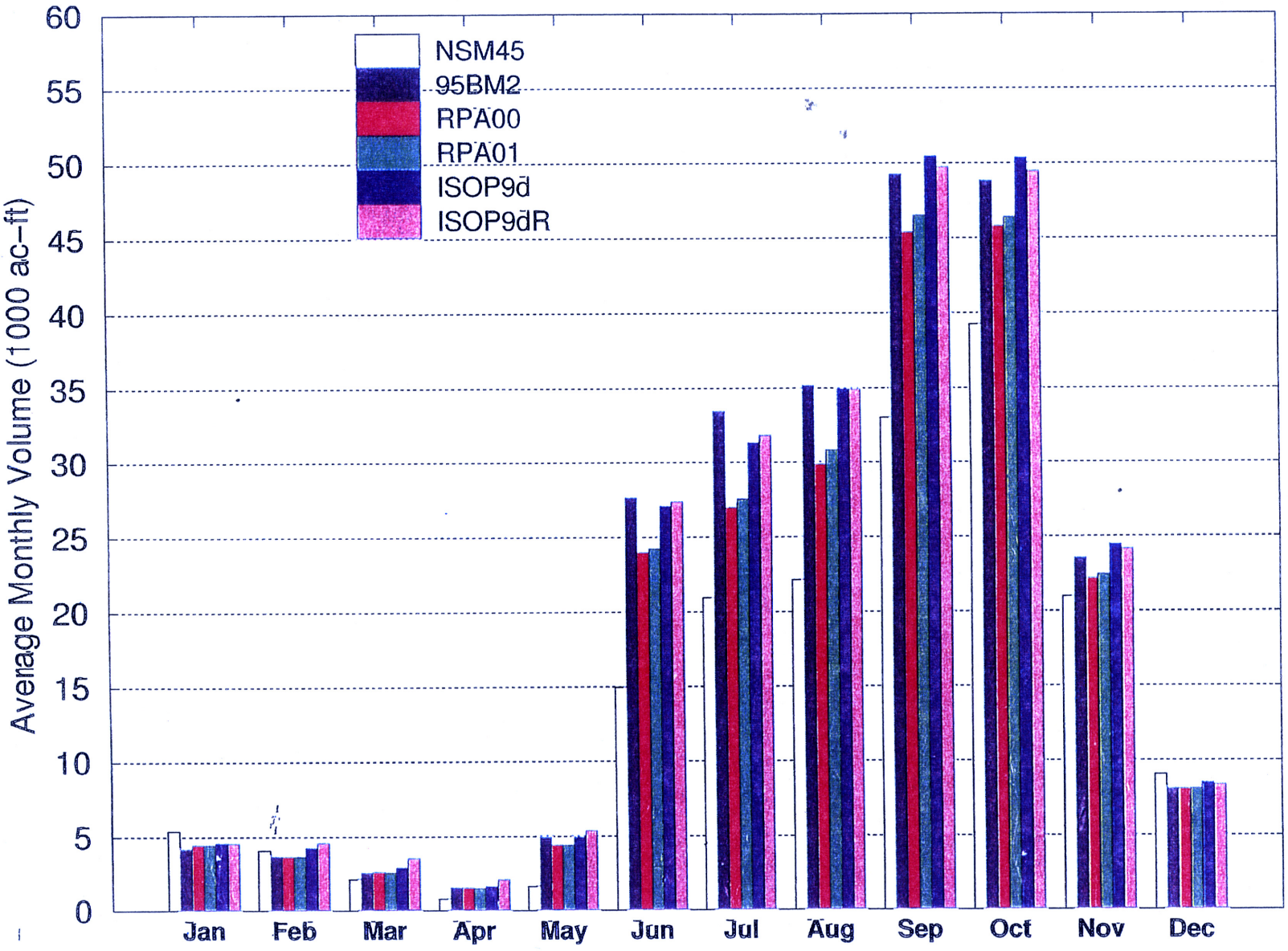
Targets for Central and South Bay reflect a 30% increase in mean annual dry season flows over the 95 Base

Targets for Snake Creek reflect a minimum monthly flow volume of 13,300 ac–ft (x 5 months for wet season

Run date: 08/09/01 14:12:55
Continuous Analysis

Average monthly flow volumes towards Florida Bay

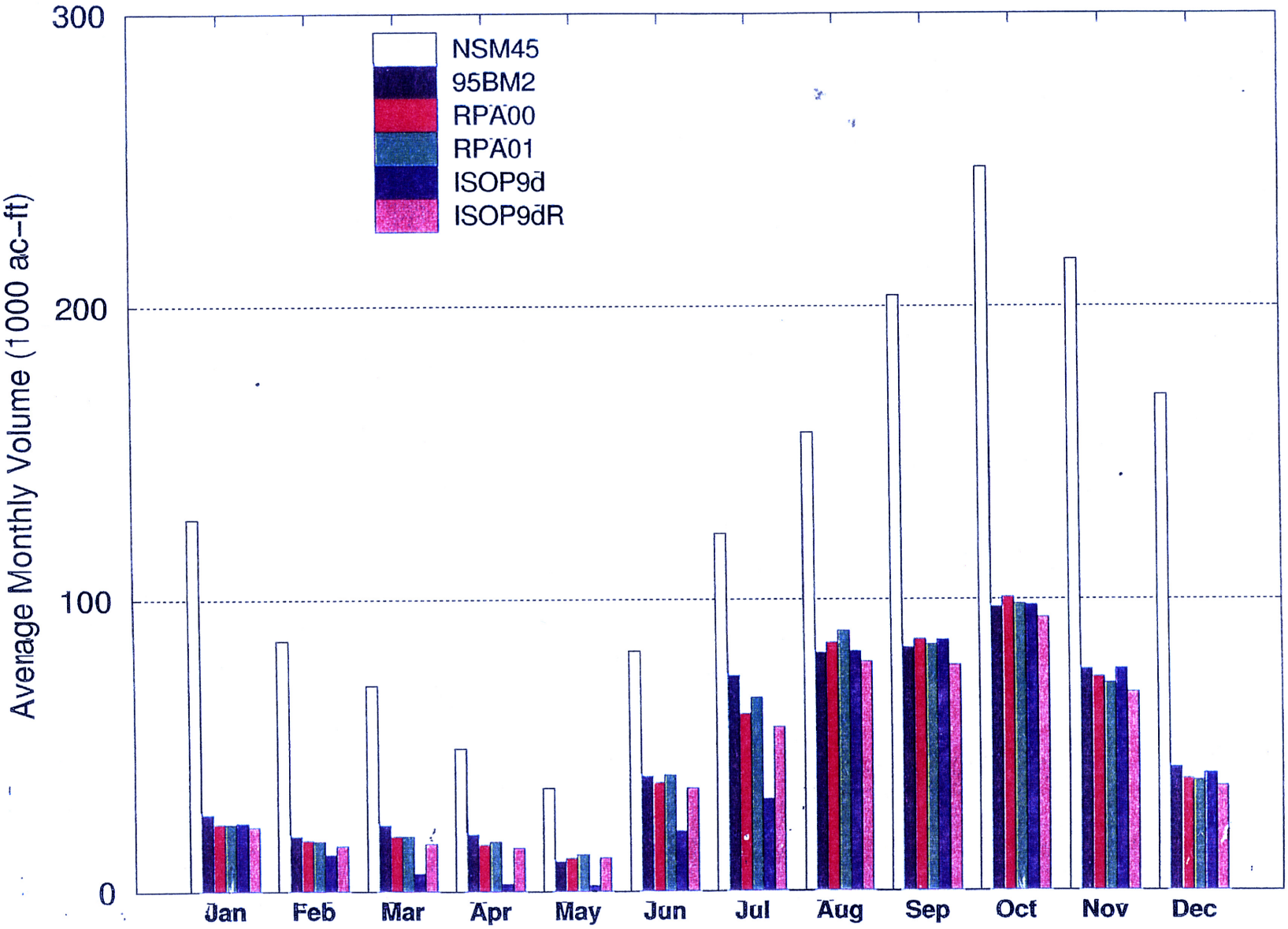
T23 (R6 C17–28), Period 1965 to 1995



Continuous Analysis
Run date: 08/09/01 14:49:31
SFWMM V3.8
Script used: mwd_pm_CII4.6.scr, V1.3

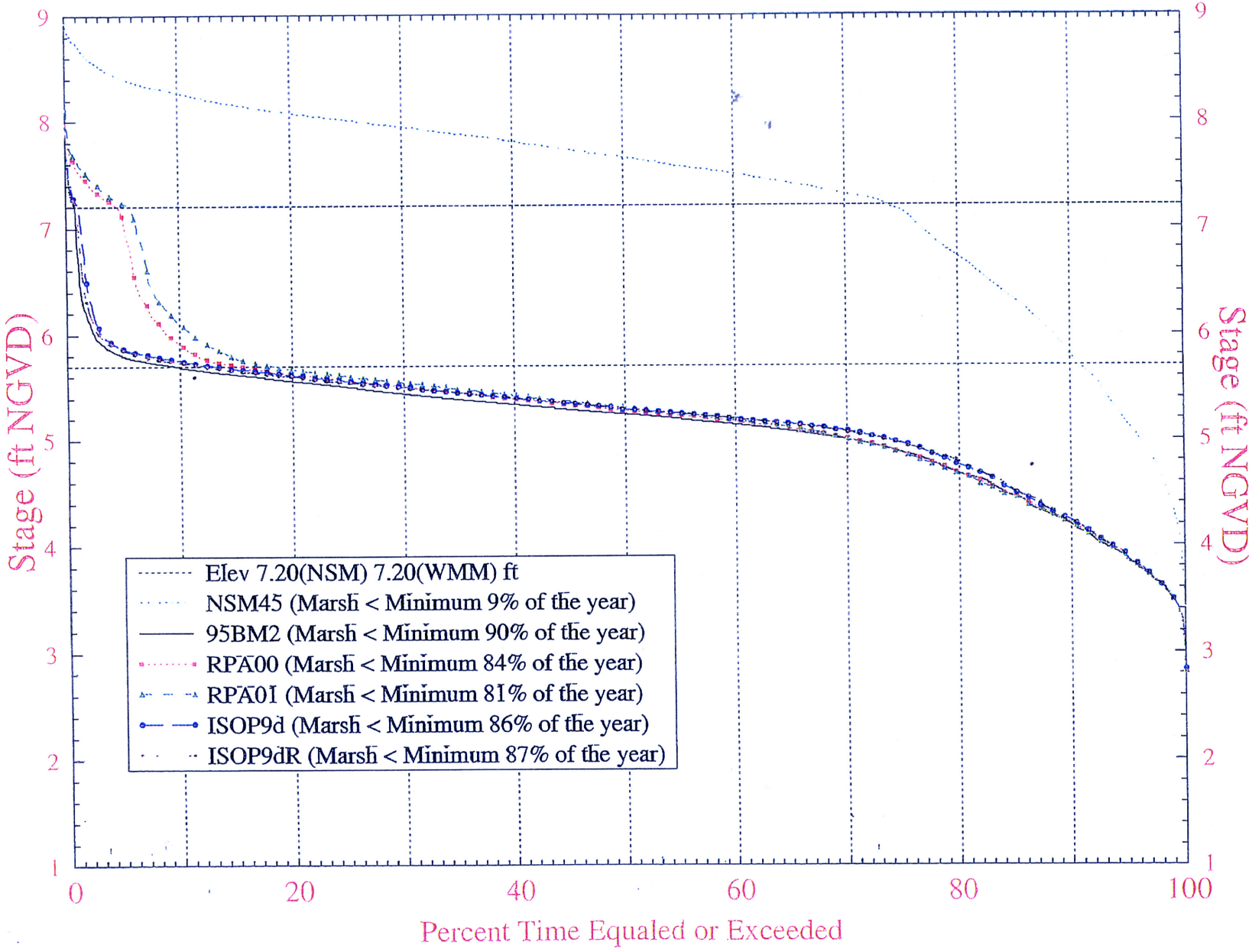
Average monthly flow volumes into Shark Slough

T27 (R19 C16, R18 C17, R17 C18, R16 C19, R15 C20, R14 C21), Period 1965 to 1995



Continuous Analysis
Run date: 08/09/01 14:49:33
SFWMM V3.8
Script used: mwd_pm_CII4.6.scr, V1.3

Marsh Stage Duration for Rocky Glades Marl
Gage G-596, Cell R18 C26, Proposed Min Lvl 1.5 ft below ground



Run date: 08/09/01 14:59:45
Script used: marsh_mfl_sta_graphic.scr V1.16

Peak Stage Indicators In C-111 Basin

Cell	Land Surface Elev	Peak Stage(ft)			Stage at Highest 10th Percentile(ft)			Percent of Time stage above Root Zone *												
		CALIB_VERIF_V3.7			95BM2			RPA00			RPA01			ISOP9d			ISOP9dR		
R10C25	5.20	5.49	3.69	41.6	5.43	3.86	47.3	5.44	3.91	52.4	5.44	4.72	52.4	5.42	3.94	55.5	5.42	3.93	57.4
R13C25	6.50	6.79	4.75	17.9	6.93	4.94	30.3	7.11	5.14	43.8	7.11	5.15	44.2	7.01	4.87	25.9	7.02	4.87	24.5
R15C26	7.53	7.80	5.37	7.9	7.75	5.56	10.5	7.77	5.71	13.8	7.77	5.72	14.2	7.79	5.49	9.2	7.79	6.27	9.0
R17C27	8.46	7.80	5.05	0.3	6.65	5.73	0.0	6.87	4.95	0.1	7.12	4.94	0.1	6.25	5.14	0.0	6.25	5.16	0.0
R19C28	8.00	8.23	5.48	4.0	8.19	5.58	4.6	8.20	6.39	4.7	8.21	5.60	4.9	8.19	5.58	4.6	8.19	5.59	4.7
R20C28	7.50	8.06	5.48	9.7	8.01	5.59	11.9	8.01	5.59	12.1	8.02	5.60	12.3	8.01	5.58	11.8	8.01	5.58	11.9
R16C29	9.66	6.07	4.66	0.0	6.07	4.69	0.0	6.11	4.71	0.0	6.11	4.71	0.0	6.13	4.71	0.0	6.14	4.70	0.0
R22C29	7.50	6.09	4.87	0.9	6.02	5.00	2.3	6.12	5.81	2.4	6.11	5.02	2.4	6.11	5.02	2.3	6.16	5.03	2.3
R24C30	5.90	6.32	4.13	15.9	6.31	4.38	26.2	6.31	4.40	27.0	6.32	4.41	27.3	6.32	4.42	27.1	6.31	4.42	27.3

* Roof Zone is assumed to be 2 feet deep.

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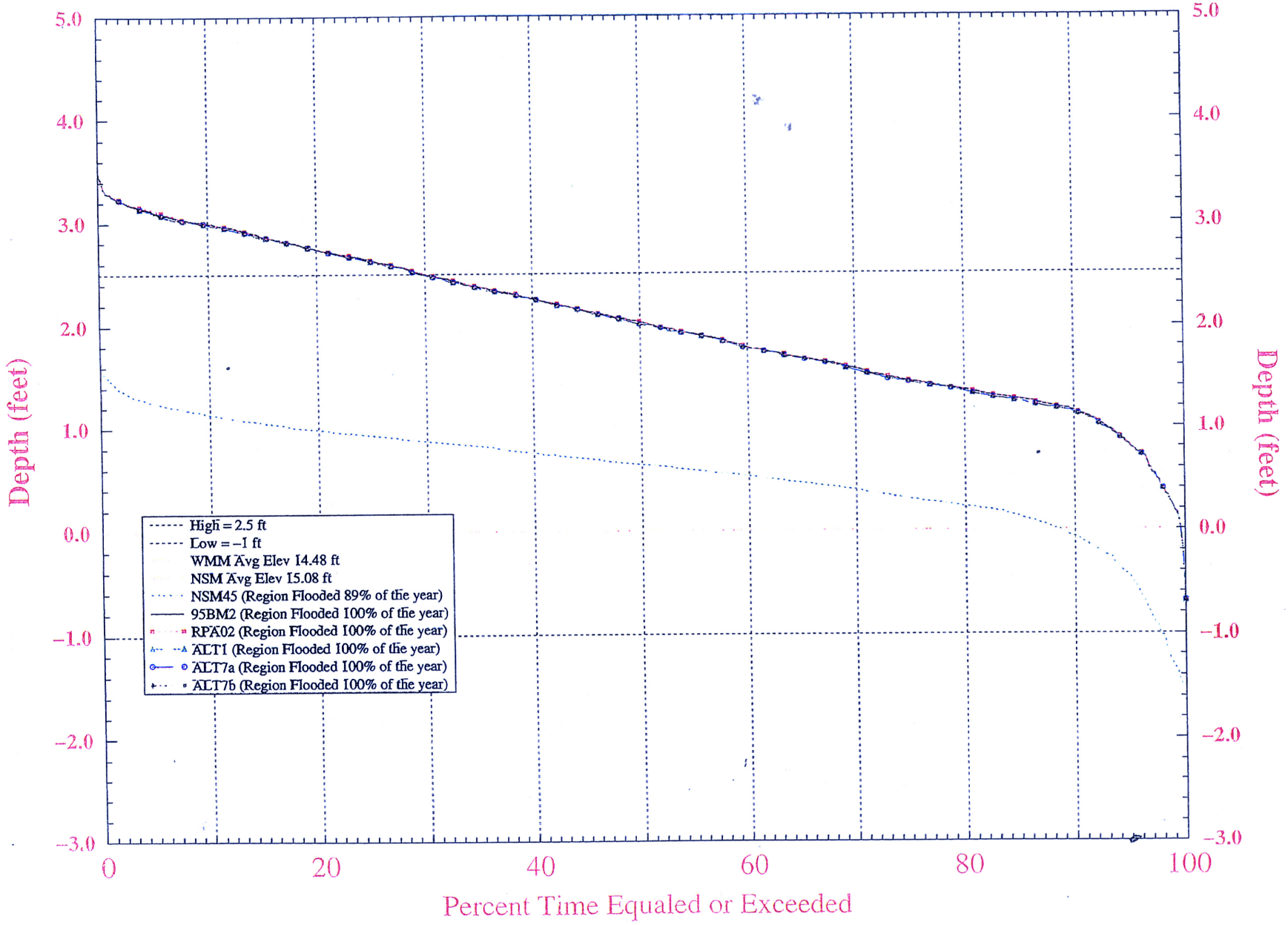
Normalized Weekly Stage Duration Curves for South LNWR (WCA–1)

Indicator Region 26 (R44C31–34 R45C30–34)

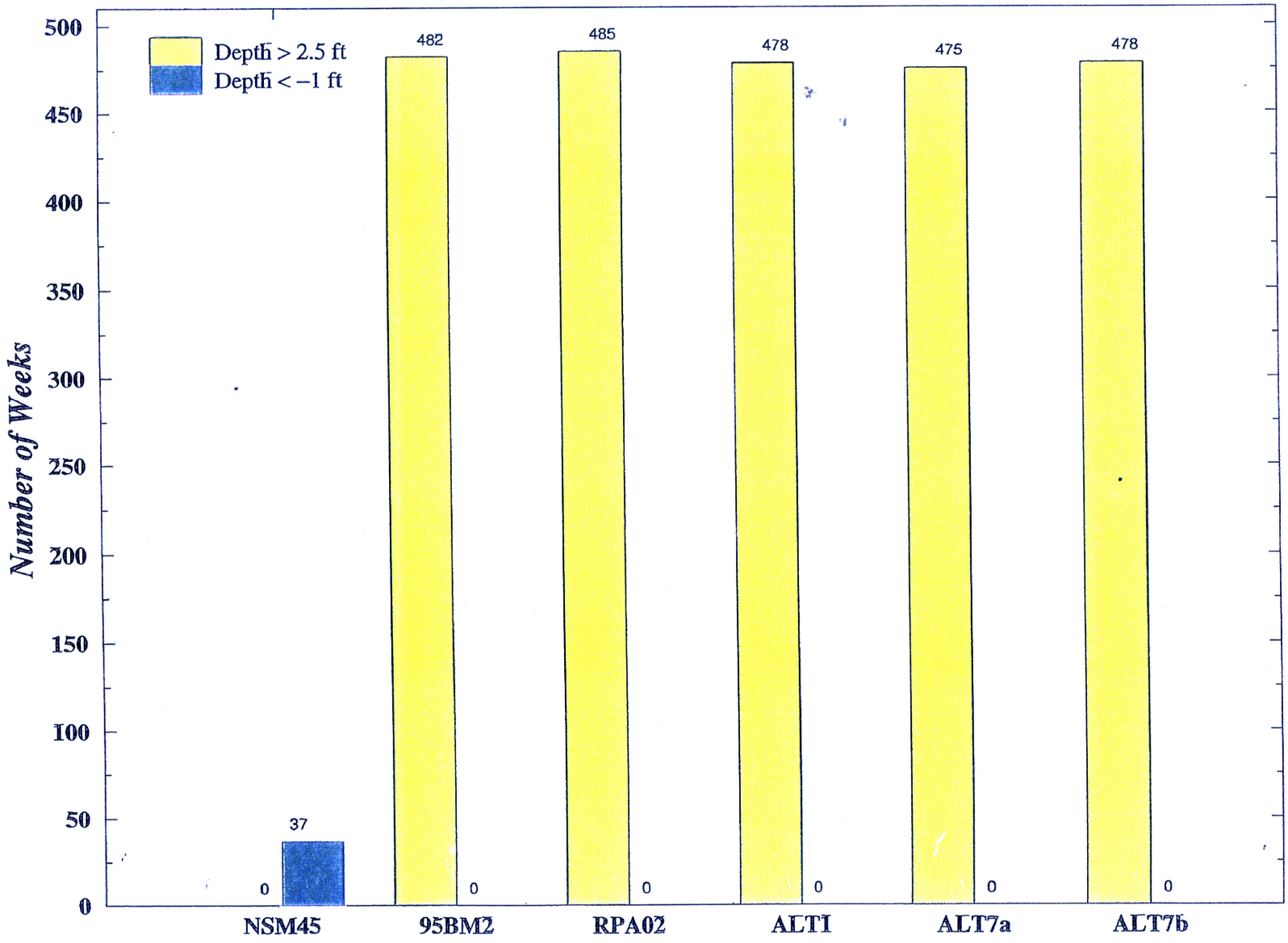


Note: Normalized stage is stage referenced to Land Elevation. Thus, values above zero indicate ponding while values below zero indicate depth to the water table.

Run date: Thu Aug 2 19:17:58 EDT 2001
For Planning Purposes Only

Number of Weeks High/Low Water Depth Criteria Exceeded

Indicator Region 26 (R44C31–34 R45C30–34)



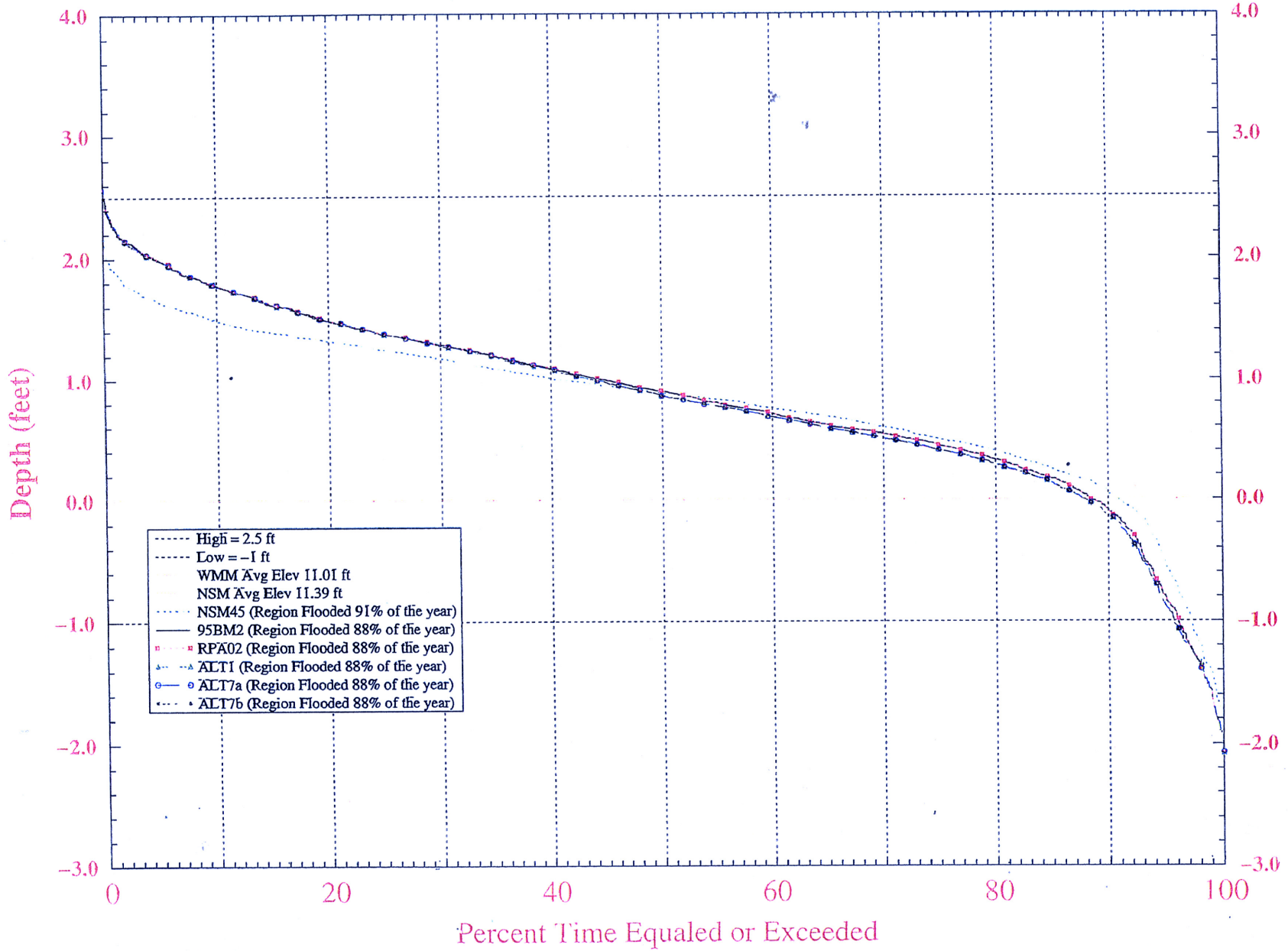
Note: The desired condition is to exceed the high water depth as few times as possible and go below the low water depth as few times as possible.

Run date: Thu Aug 2 19:17:58 EDT 2001
For Planning Purposes Only

4-46

Normalized Weekly Stage Duration Curves for South WCA–2A

Indicator Region 24 (R39C29–31 R40C28–31 R41C28–28)



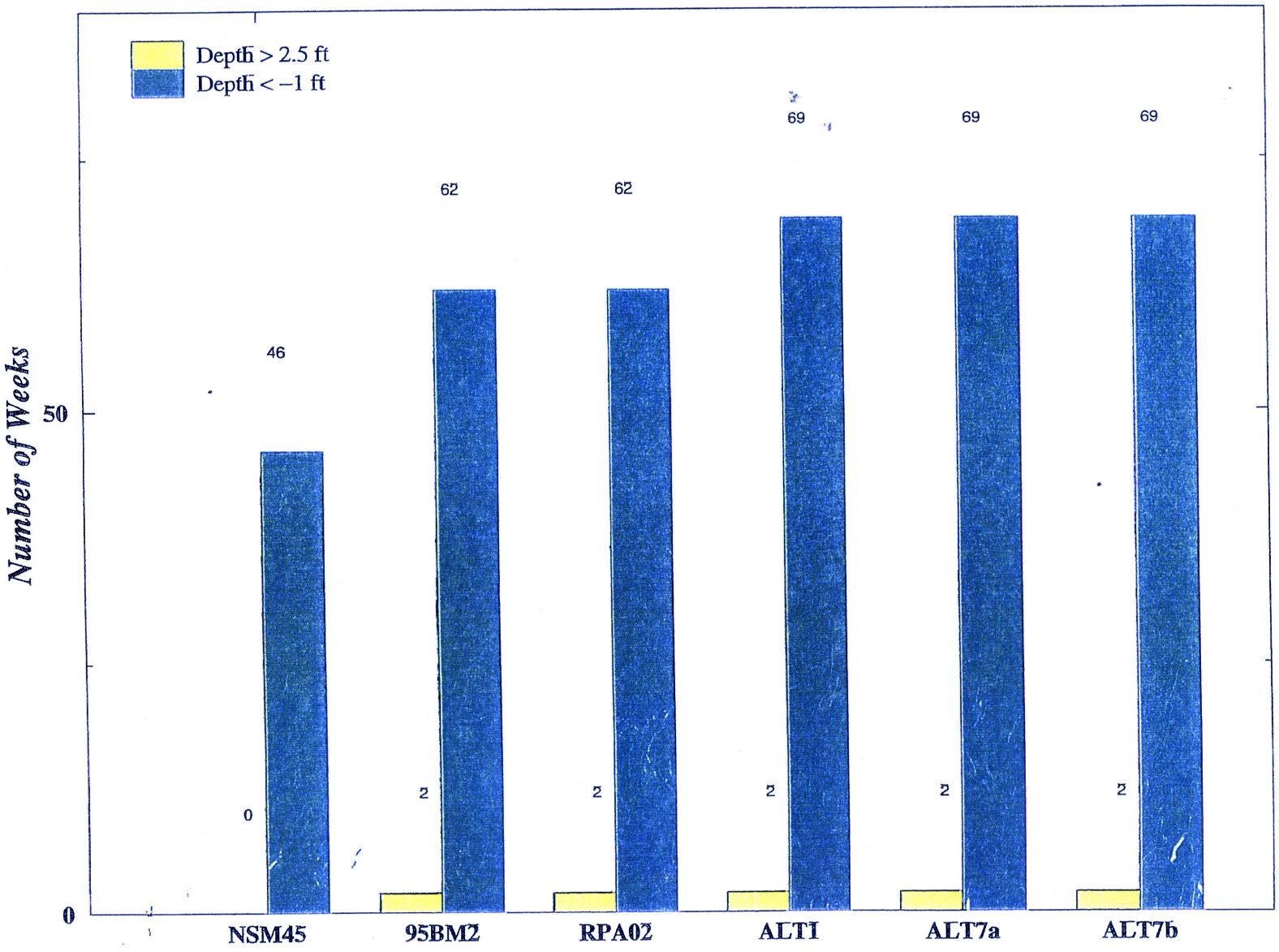
Note: Normalized stage is stage referenced to Land Elevation. Thus, values above zero indicate ponding while values below zero indicate depth to the water table.

Run date: Thu Aug 2 19:17:51 EDT 2001

For Planning Purposes Only

Number of Weeks High/Low Water Depth Criteria Exceeded

Indicator Region 24 (R39C29–31 R40C28–31 R41C28–28)



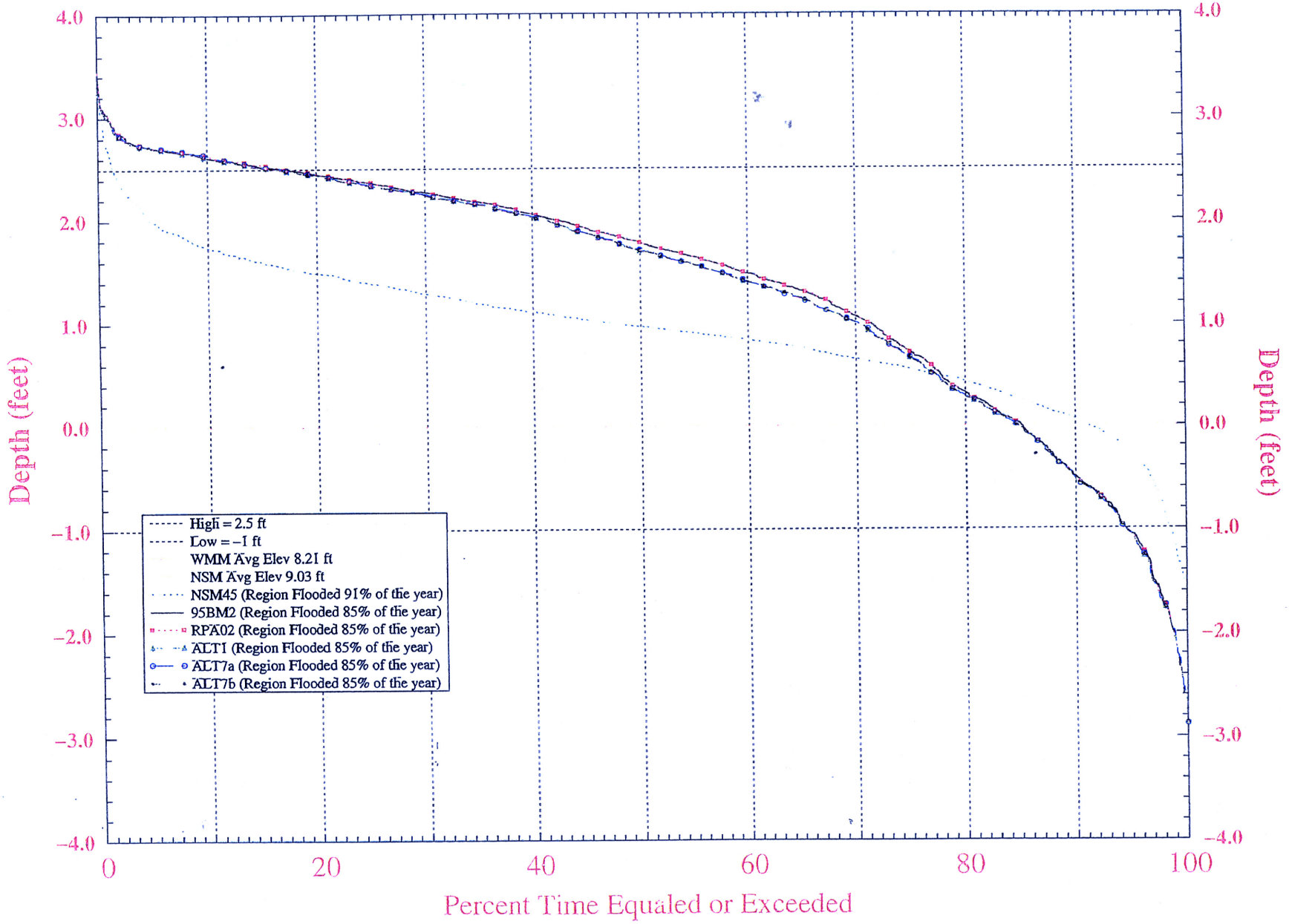
Note: The desired condition is to exceed the high water depth as few times as possible and go below the low water depth as few times as possible.

Run date: Thu Aug 2 19:17:51 EDT 2001
For Planning Purposes Only

A-51

Normalized Weekly Stage Duration Curves for WCA–2B

Indicator Region 23 (R36C29–31 R37C30–32)



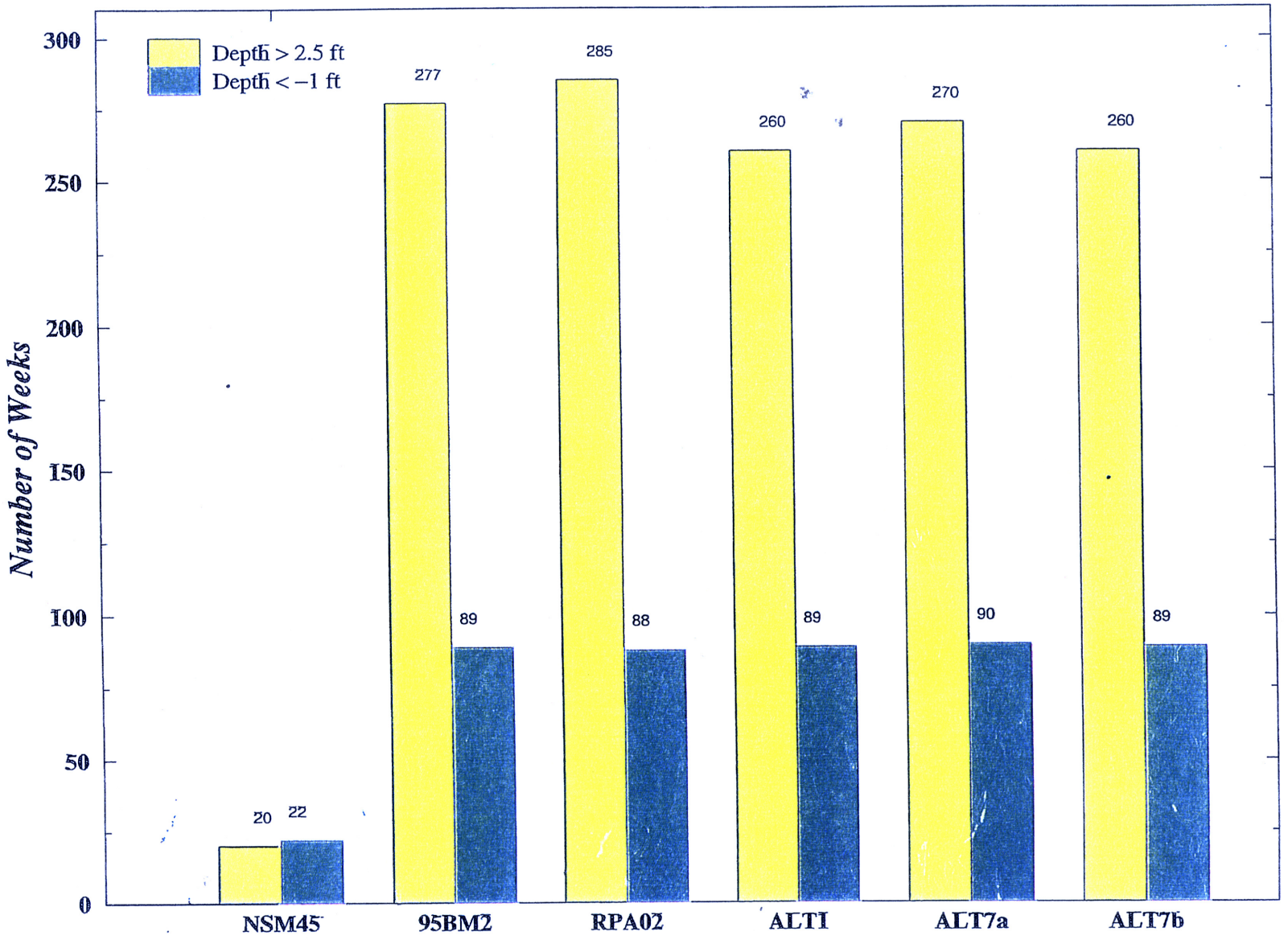
Note: Normalized stage is stage referenced to Land Elevation. Thus, values above zero indicate ponding while values below zero indicate depth to the water table.

Run date: Thu Aug 2 19:17:48 EDT 2001
For Planning Purposes Only

A-52

Number of Weeks High/Low Water Depth Criteria Exceeded

Indicator Region 23 (R36C29–31 R37C30–32)

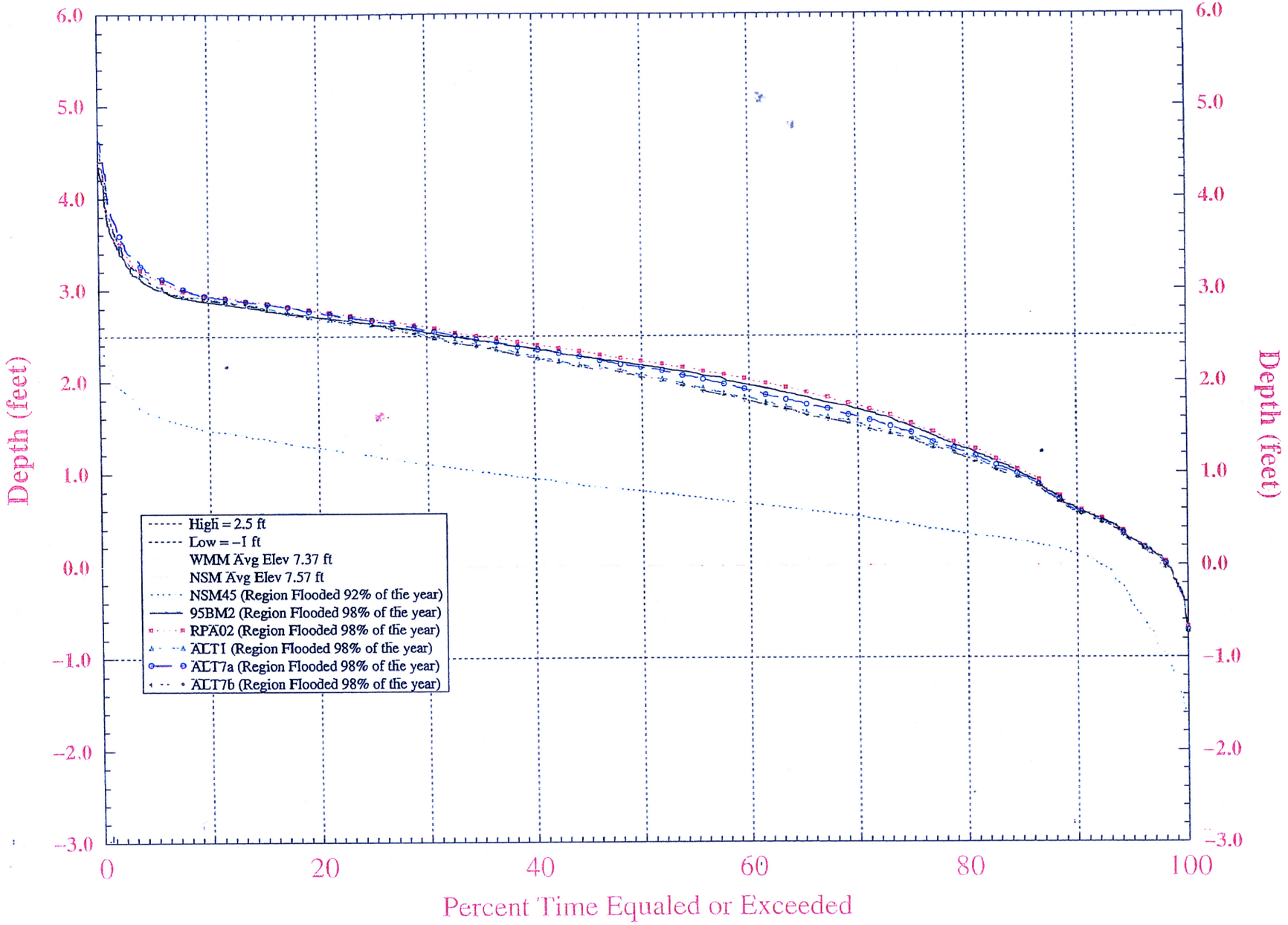


Note: The desired condition is to exceed the high water depth as few times as possible and go below the low water depth as few times as possible.

Run date: Thu Aug 2 19:17:48 EDT 2001
For Planning Purposes Only

Normalized Weekly Stage Duration Curves for South WCA–3A

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



A-54

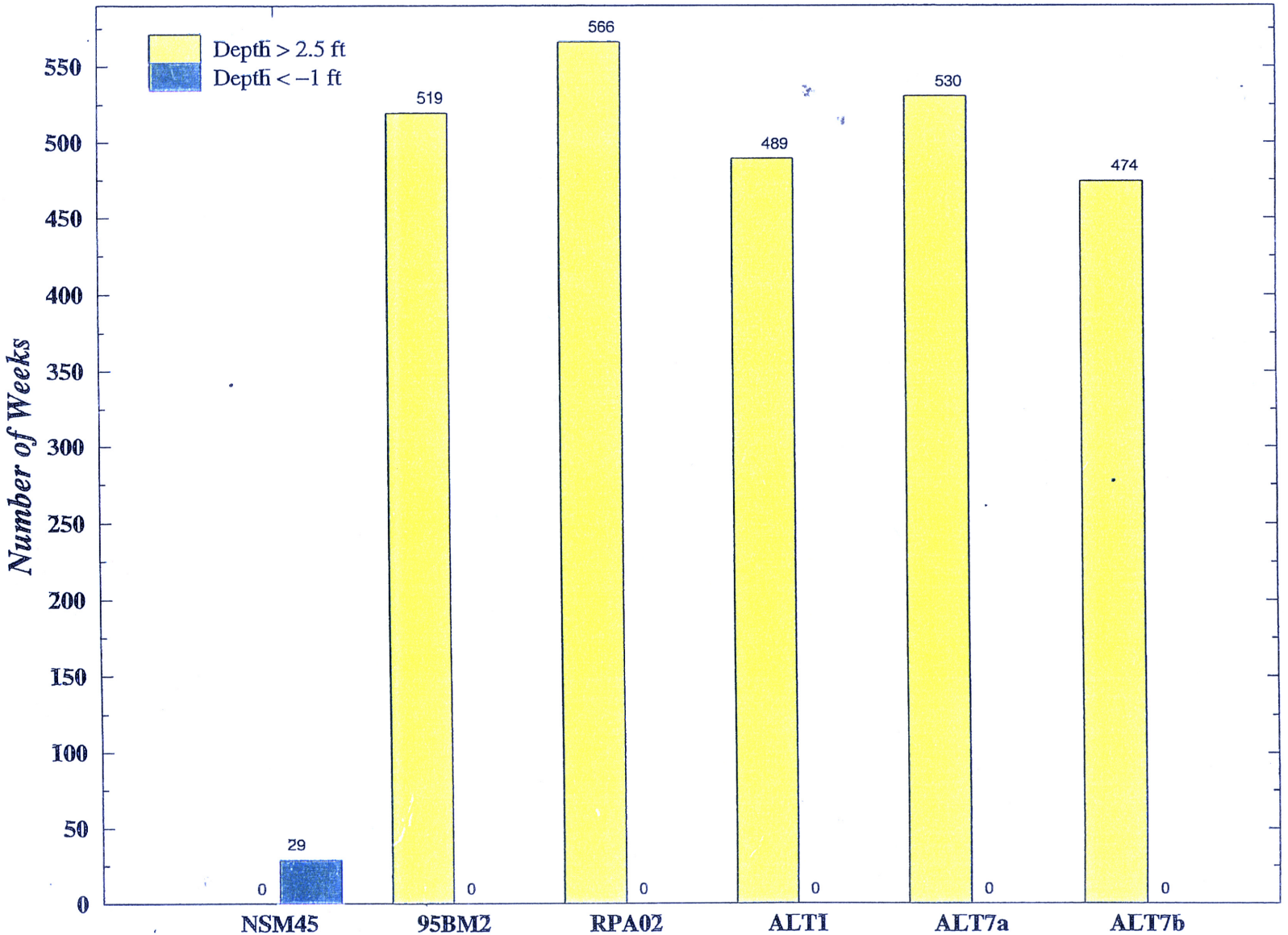
Note: Normalized stage is stage referenced to Land Elevation. Thus, values above zero indicate ponding while values below zero indicate depth to the water table.

Run date: Thu Aug 2 19:17:14 EDT 2001

For Planning Purposes Only

Number of Weeks High/Low Water Depth Criteria Exceeded

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

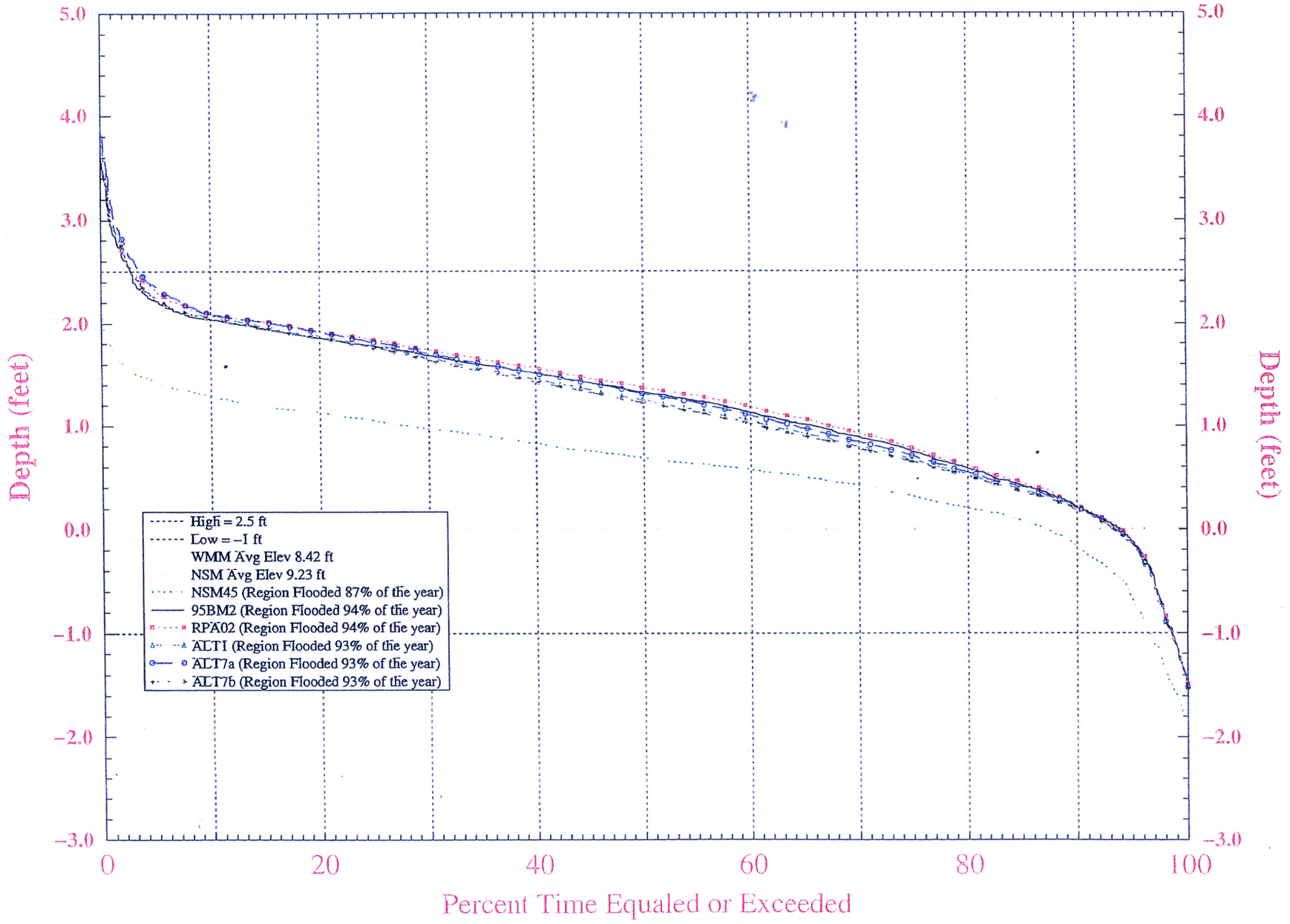


Note: The desired condition is to exceed the high water depth as few times as possible and go below the low water depth as few times as possible.

Run date: Thu Aug 2 19:17:13 EDT 2001
For Planning Purposes Only

Normalized Weekly Stage Duration Curves for South Central WCA–3A

Indicator Region 17 (R28C17–21 R29C17–22 R30C18–22 R31C18–22)



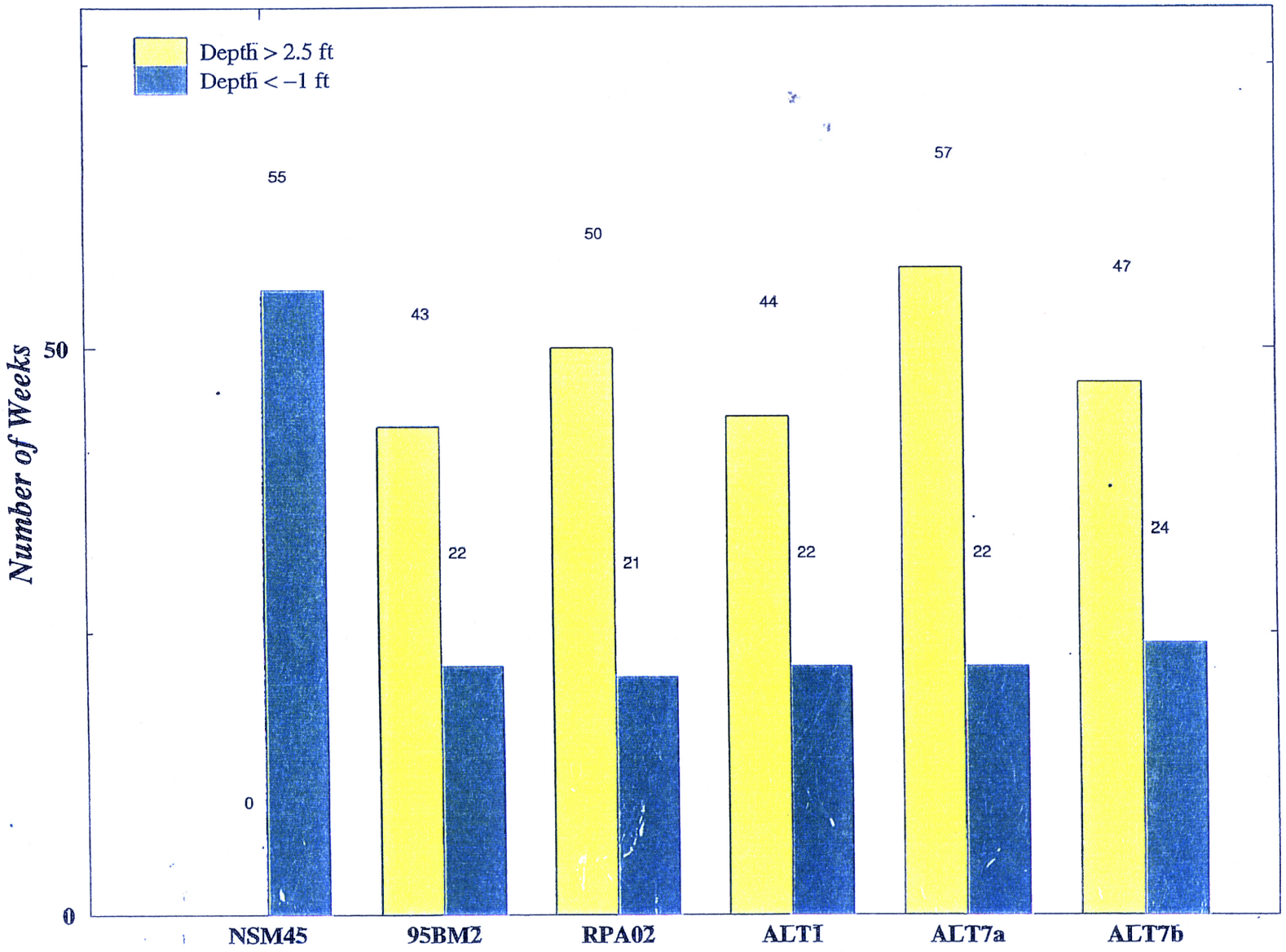
Note: Normalized stage is stage referenced to Land Elevation. Thus, values above zero indicate ponding while values below zero indicate depth to the water table.

Run date: Thu Aug 2 19:17:27 EDT 2001
For Planning Purposes Only

A-76

Number of Weeks High/Low Water Depth Criteria Exceeded

Indicator Region 17 (R28C17–21 R29C17–22 R30C18–22 R31C18–22)

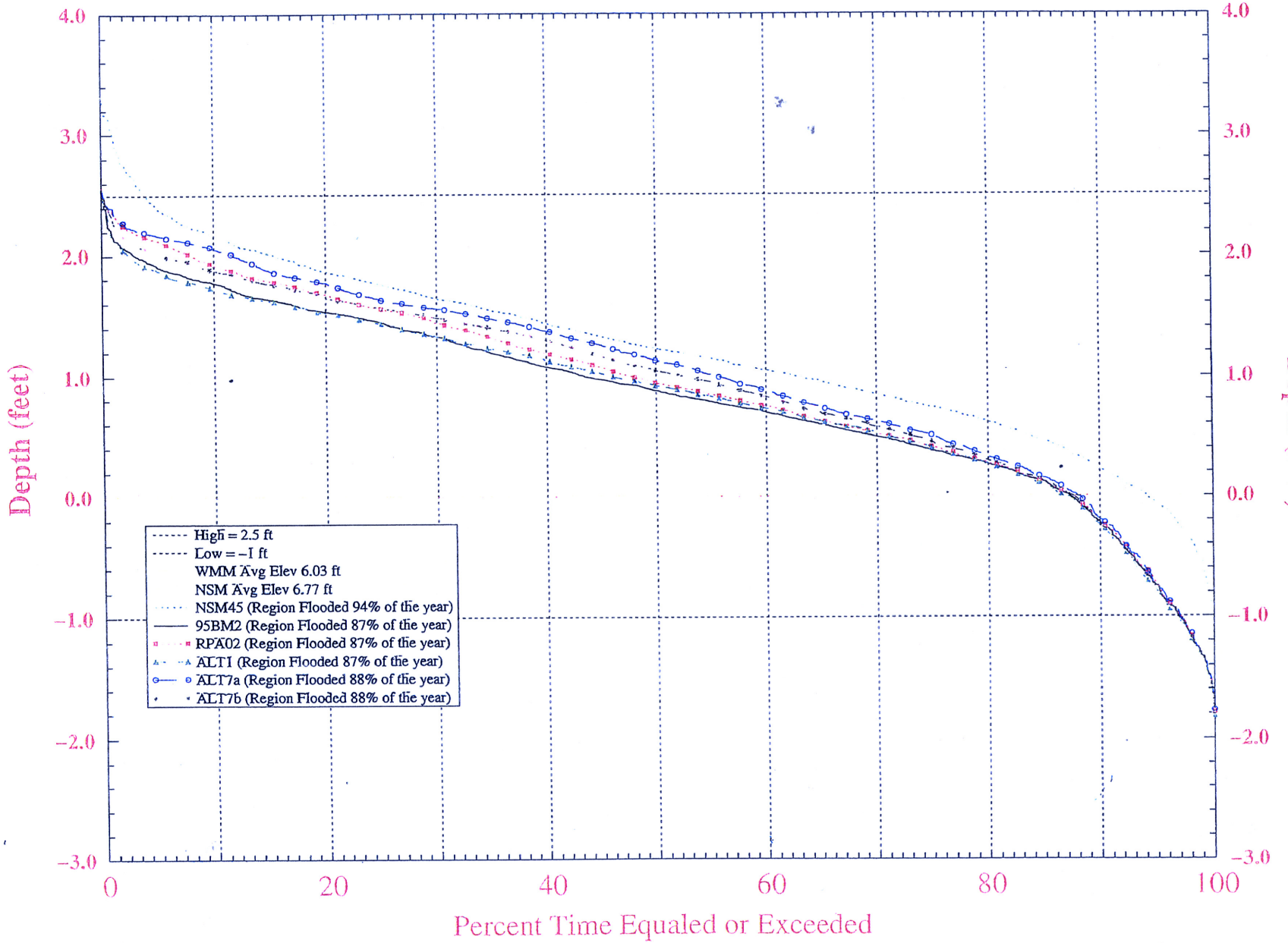


Note: The desired condition is to exceed the high water depth as few times as possible and go below the low water depth as few times as possible.

Run date: Thu Aug 2 19:17:27 EDT 2001
For Planning Purposes Only

Normalized Weekly Stage Duration Curves for East WCA–3B

Indicator Region 16 (R23C24–26 R24C25–26 R25C26–26 R26C26–26)



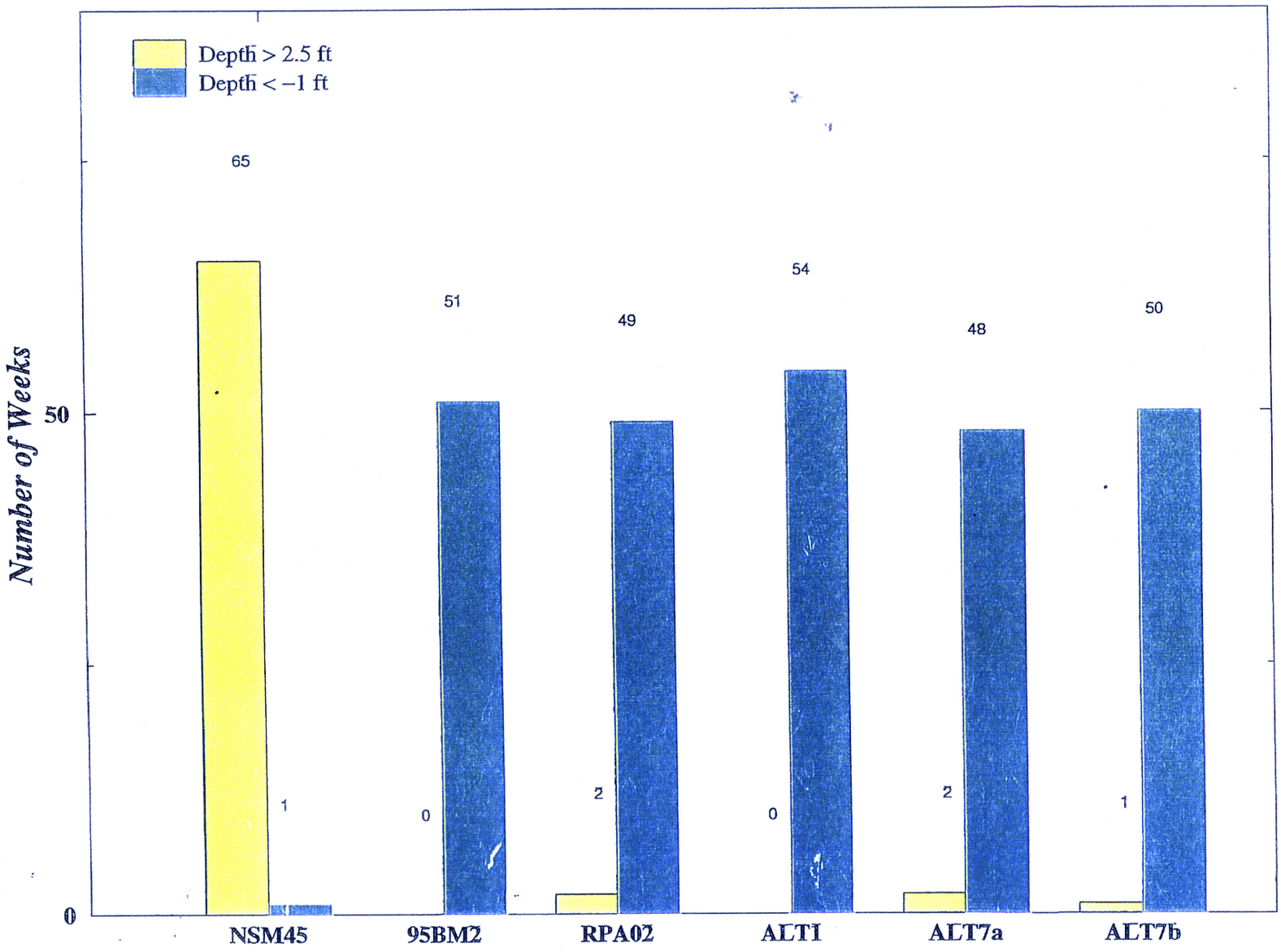
Note: Normalized stage is stage referenced to Land Elevation. Thus, values above zero indicate ponding while values below zero indicate depth to the water table.

Run date: Thu Aug 2 19:17:20 EDT 2001

For Planning Purposes Only

Number of Weeks High/Low Water Depth Criteria Exceeded

Indicator Region 16 (R23C24–26 R24C25–26 R25C26–26 R26C26–26)



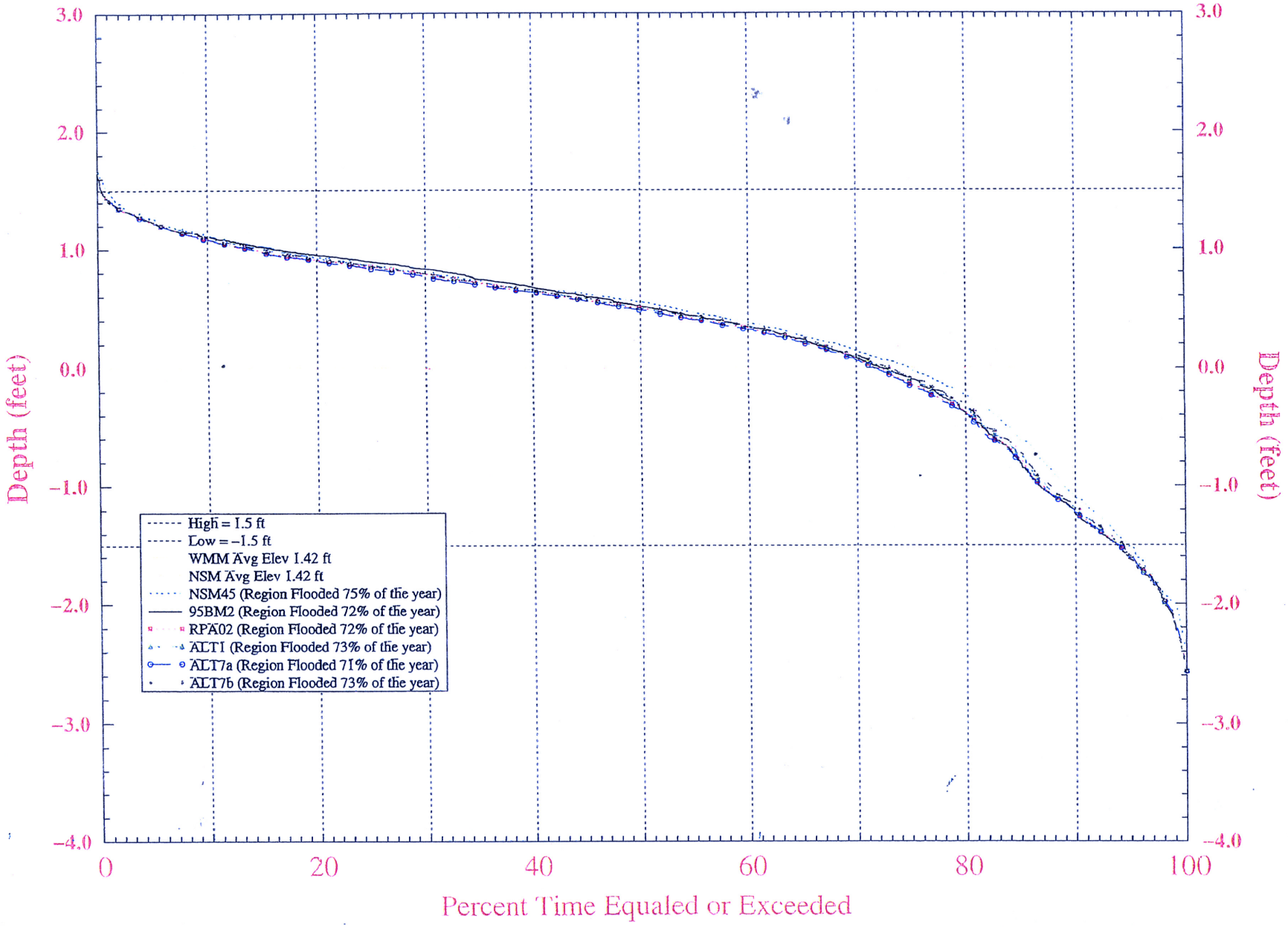
Note: The desired condition is to exceed the high water depth as few times as possible and go below the low water depth as few times as possible.

Run date: Thu Aug 2 19:17:20 EDT 2001
For Planning Purposes Only

A-57

Normalized Weekly Stage Duration Curves for Taylor Slough

Indicator Region 1 (R5C21–21 R6C21–22 R7C22–22 R8C23–23)



09-4

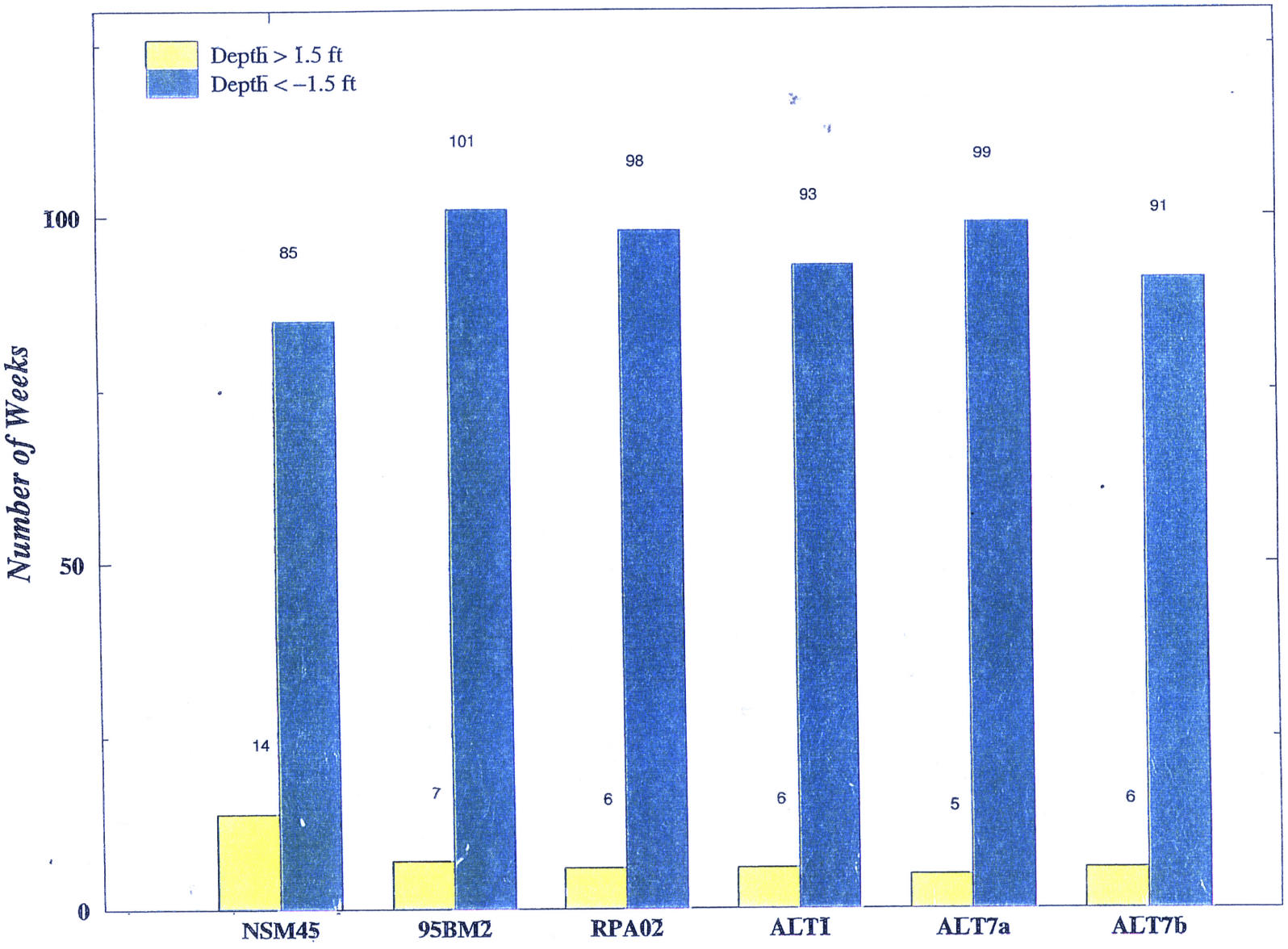
Note: Normalized stage is stage referenced to Land Elevation. Thus, values above zero indicate ponding while values below zero indicate depth to the water table.

Run date: Thu Aug 2 19:16:26 EDT 2001

For Planning Purposes Only

Number of Weeks High/Low Water Depth Criteria Exceeded

Indicafor Region 1 (R5C21–21 R6C21–22 R7C22–22 R8C23–23)

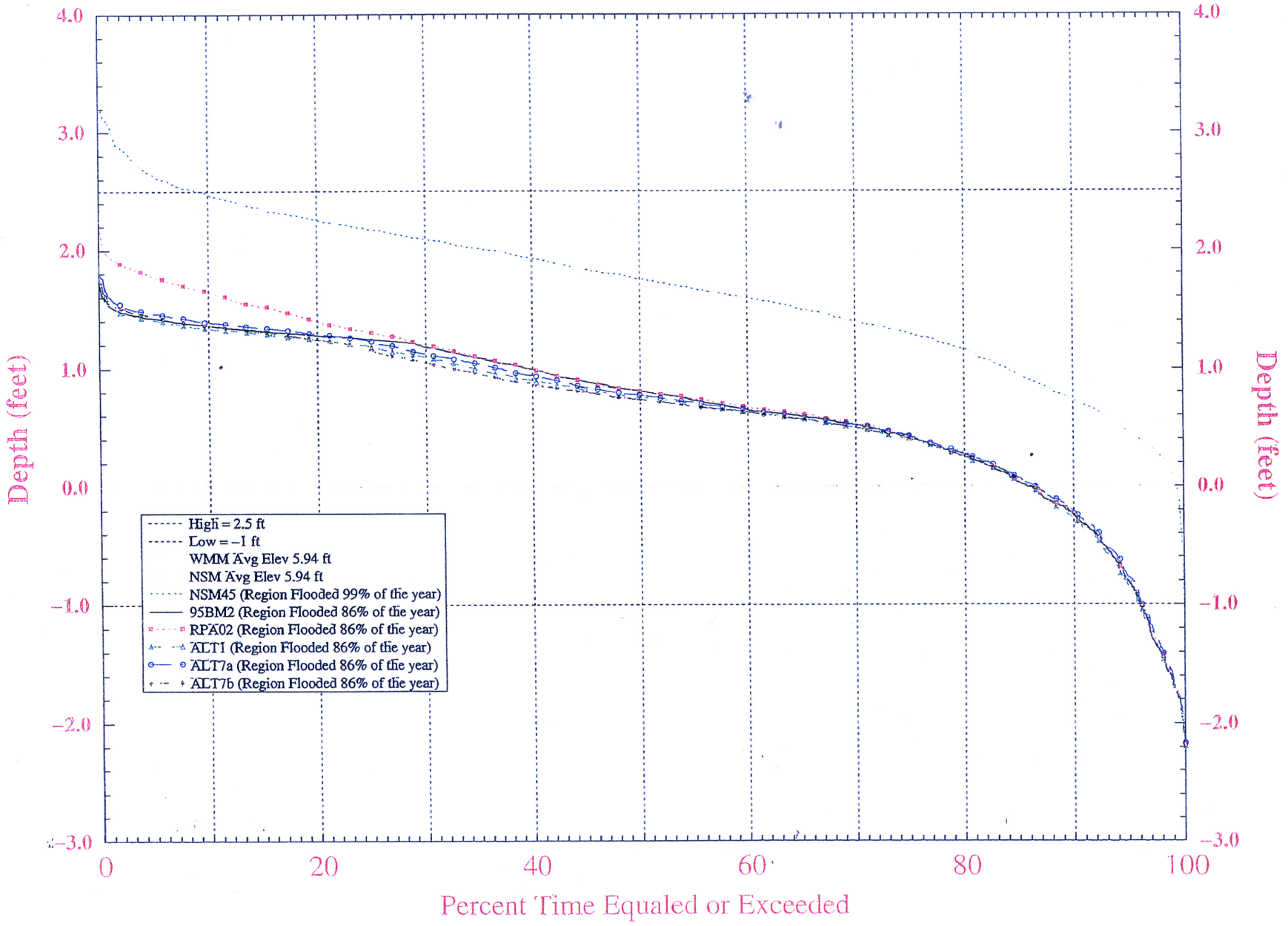


Note: The desired condition is to exceed the high water depth as few times as possible and go below the low water depth as few times as possible.

Run date: Thu Aug 2 19:16:26 EDT 2001
For Planning Purposes Only

Normalized Weekly Stage Duration Curves for NE Shark River Slough

Indicator Region 11 (R19C22–23 R20C22–26 R21C22–26)



A-62

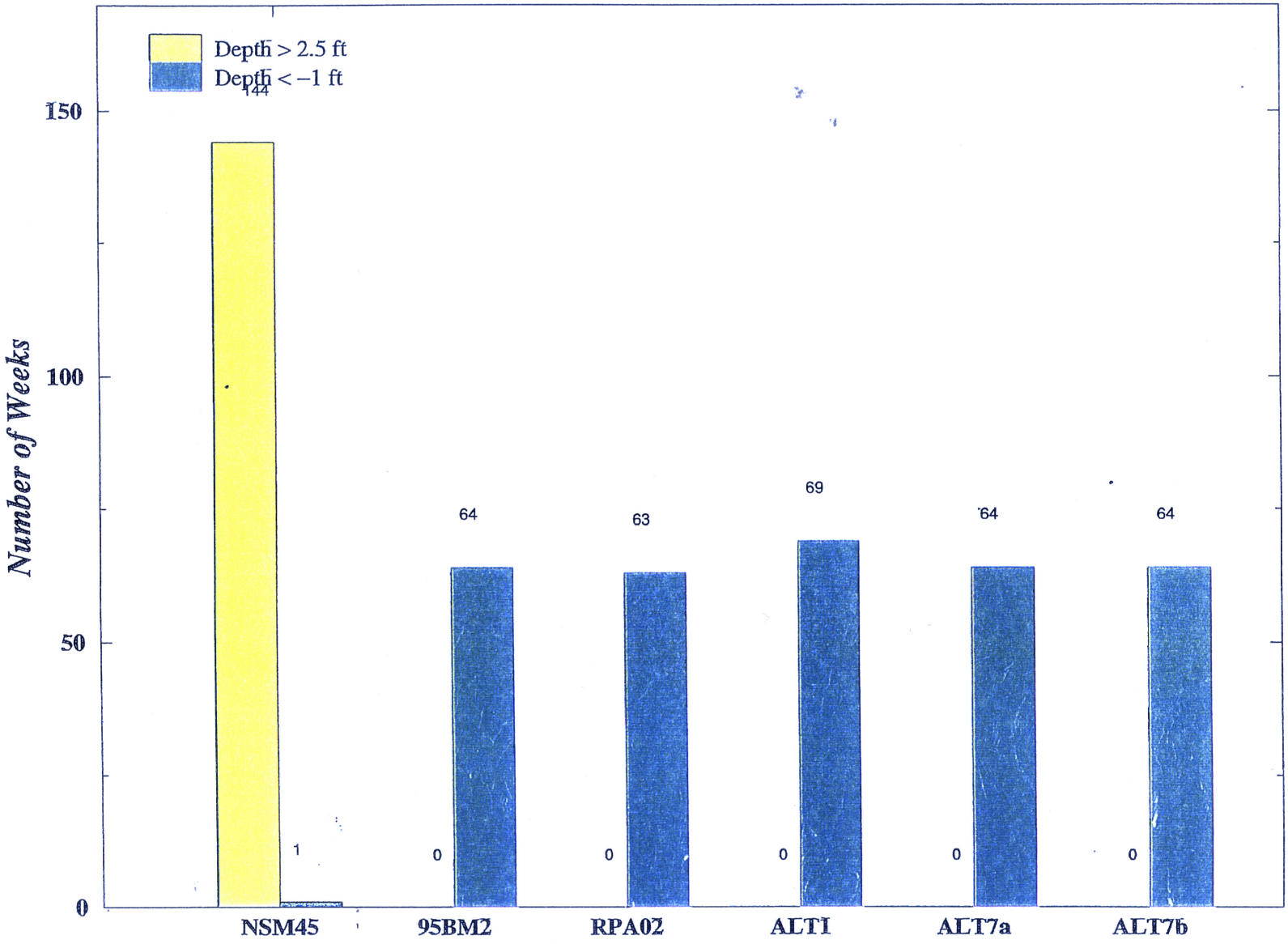
Note: Normalized stage is stage referenced to Land Elevation. Thus, values above zero indicate ponding while values below zero indicate depth to the water table.

Run date: Thu Aug 2 19:17:03 EDT 2001

For Planning Purposes Only

Number of Weeks High/Low Water Depth Criteria Exceeded

Indicator Region 11 (R19C22–23 R20C22–26 R21C22–26)

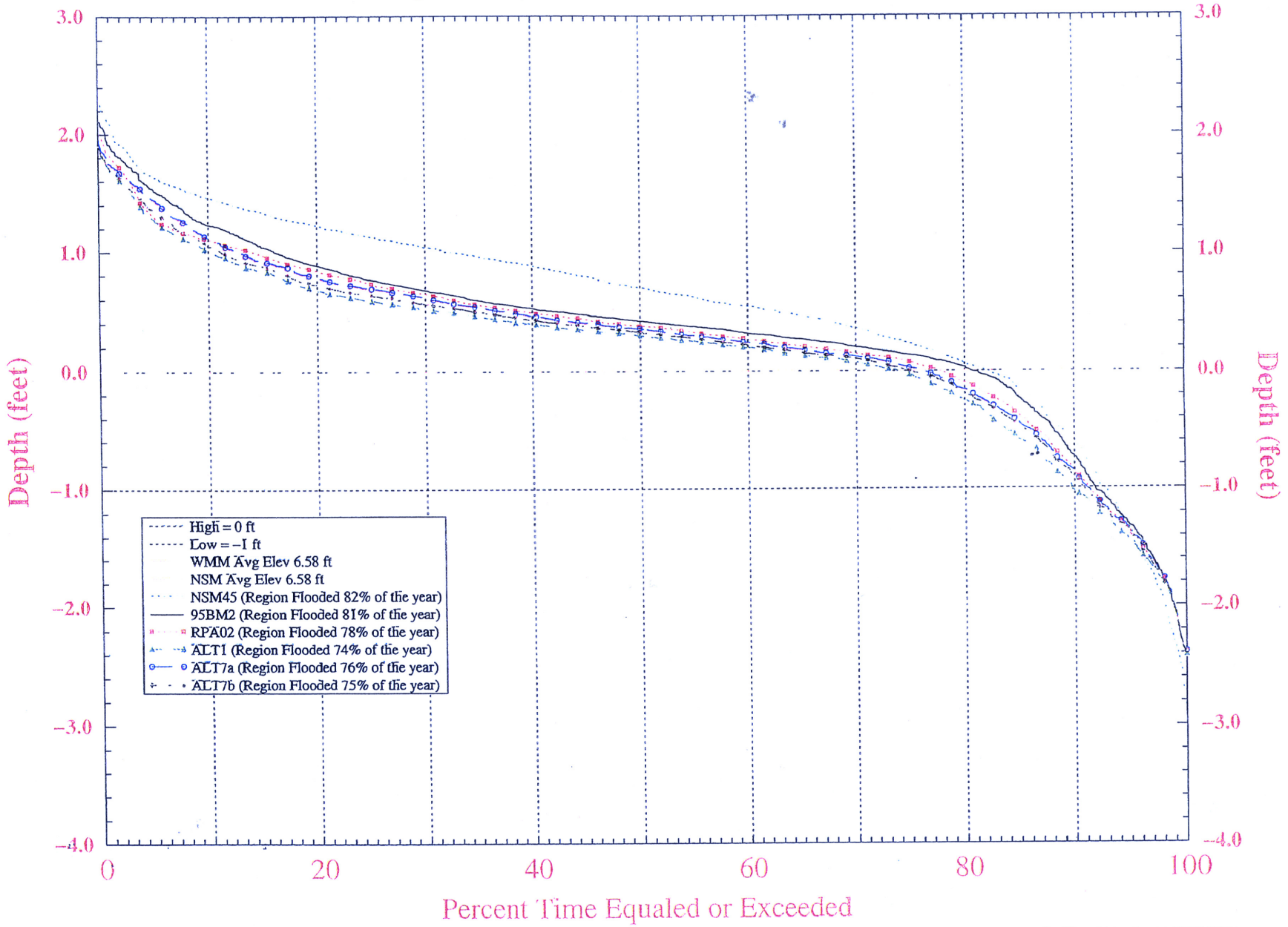


Note: The desired condition is to exceed the high water depth as few times as possible and go below the low water depth as few times as possible.

Run date: Thu Aug 2 19:17:03 EDT 2001
For Planning Purposes Only

Normalized Weekly Stage Duration Curves for New Shark River Slough

Indicator Region 12 (R19C18–18 R20C18–19 R21C18–19)



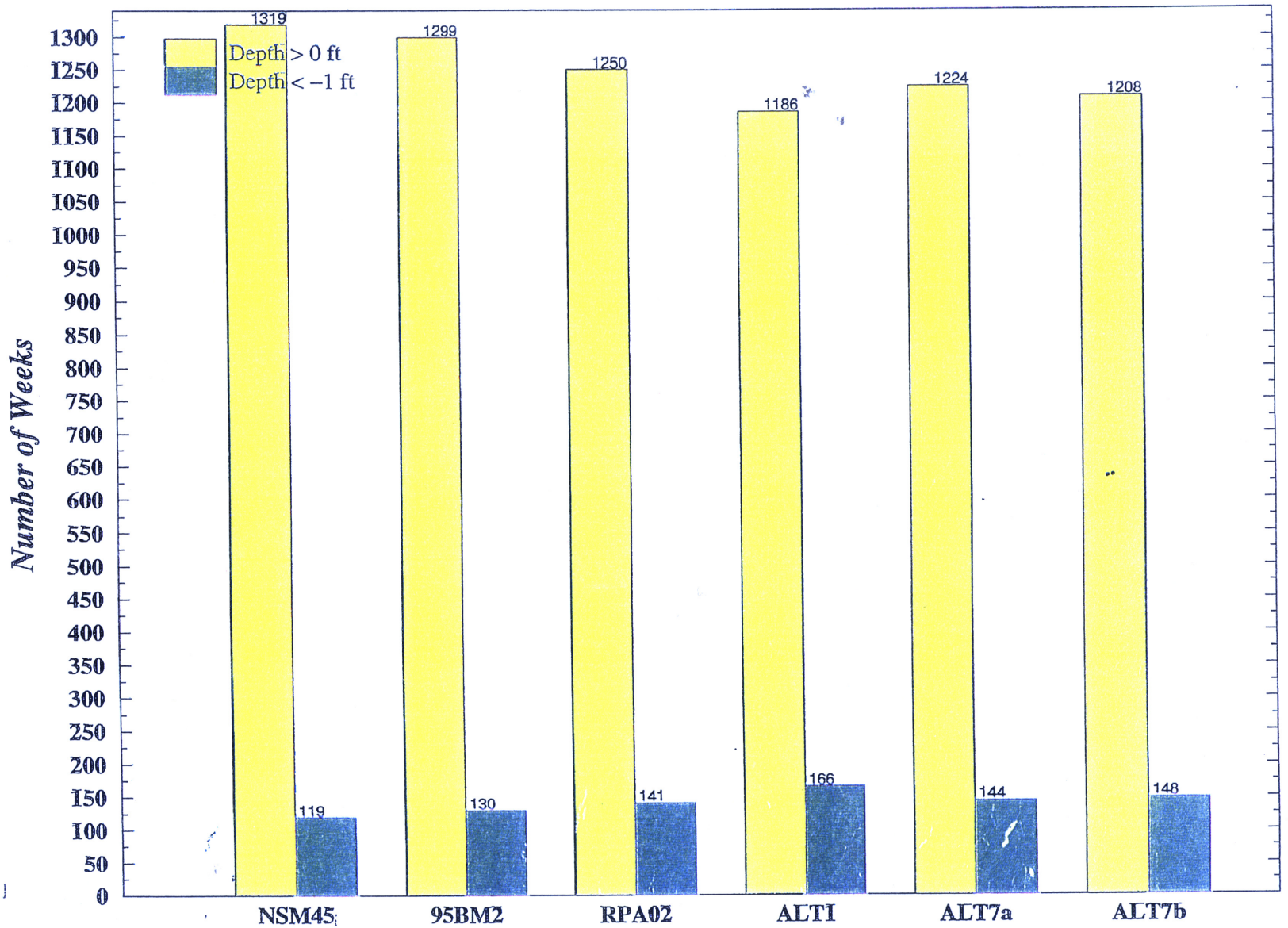
Note: Normalized stage is stage referenced to Land Elevation. Thus, values above zero indicate ponding while values below zero indicate depth to the water table.

Run date: Thu Aug 2 19:17:06 EDT 2001
For Planning Purposes Only

A-69

Number of Weeks High/Low Water Depth Criteria Exceeded

Indicator Region 12 (R19C18–18 R20C18–19 R21C18–19)

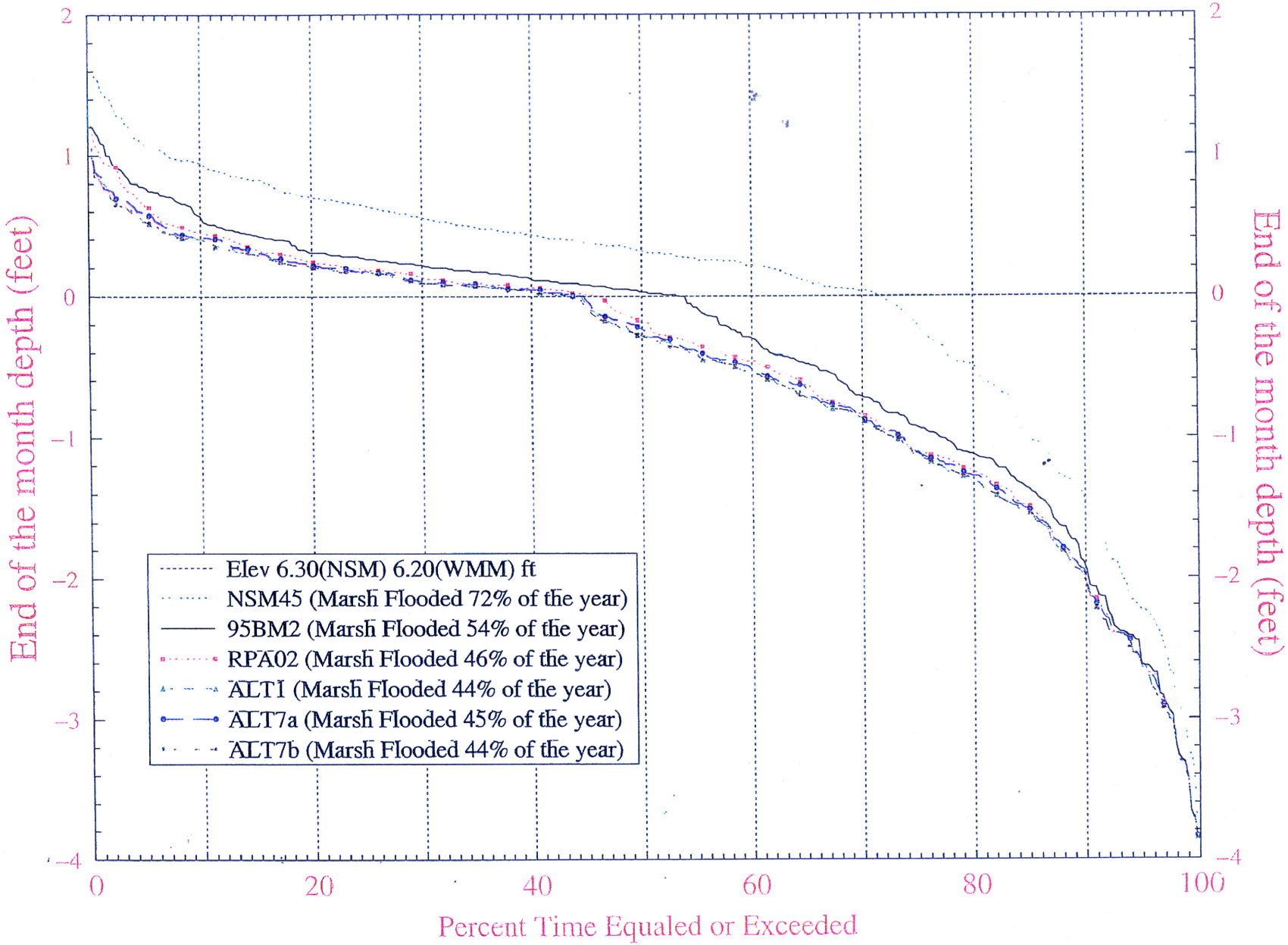


Note: The desired condition is to exceed the high water depth as few times as possible and go below the low water depth as few times as possible.

Run date: Thu Aug 2 19:17:06 EDT 2001
For Planning Purposes Only

A-65

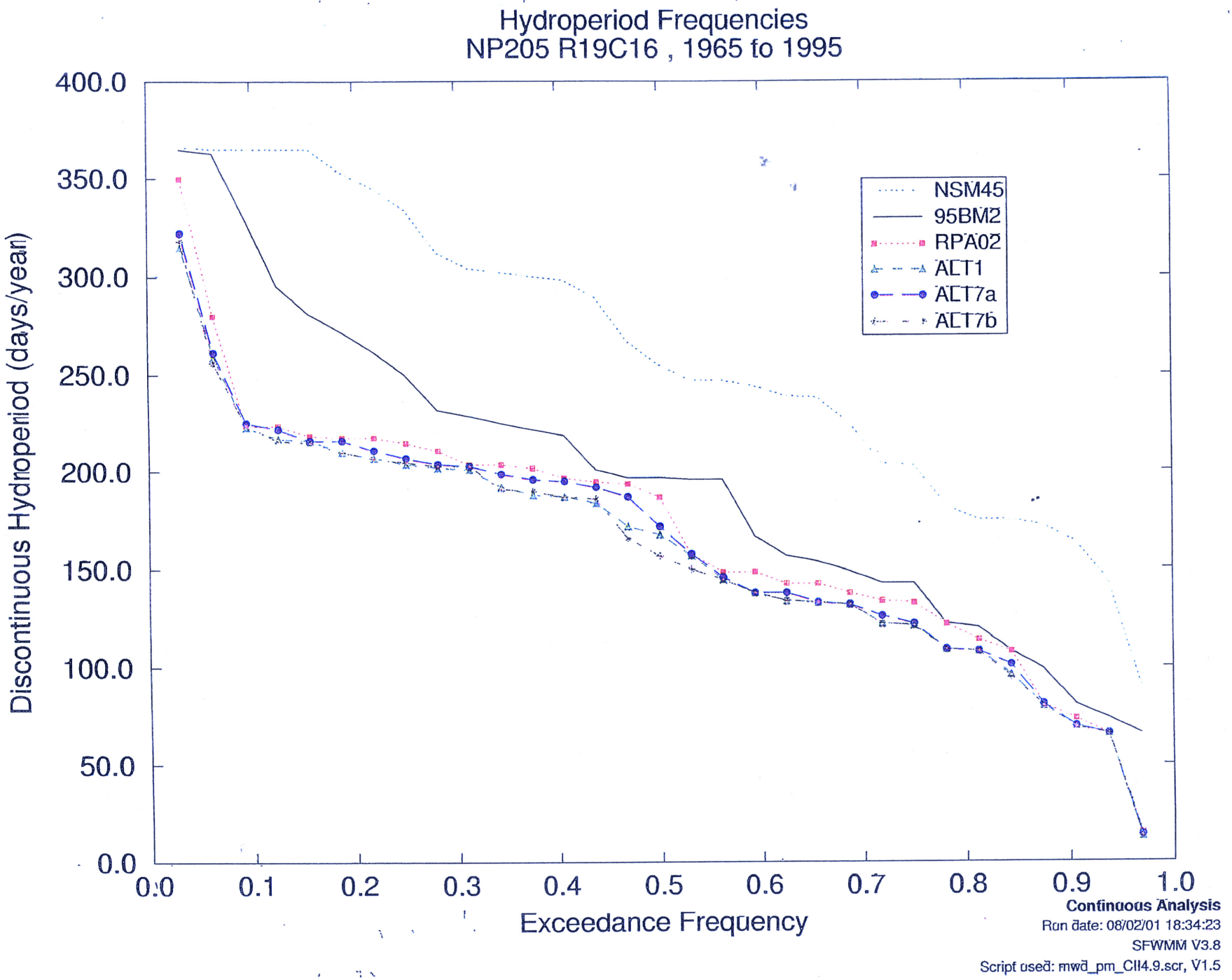
Normalized Stage Duration Curves at Cell (R19 C16)
ENP Gage NP205

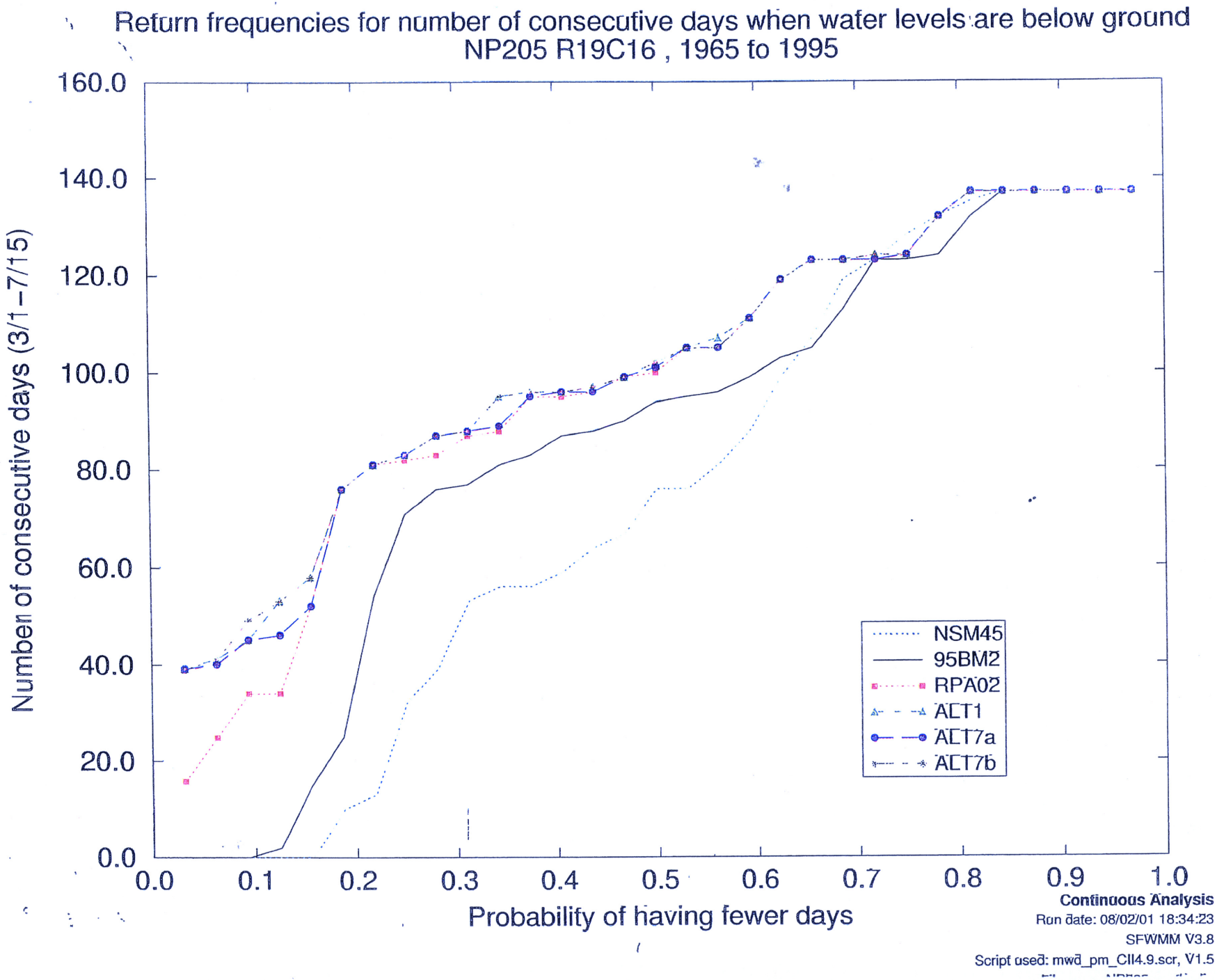


Note: Normalized stage is stage referenced to Land Elevation. Thus, values above zero indicates ponding

Run date: 08/02/01 18:21:50
Continuous Analysis

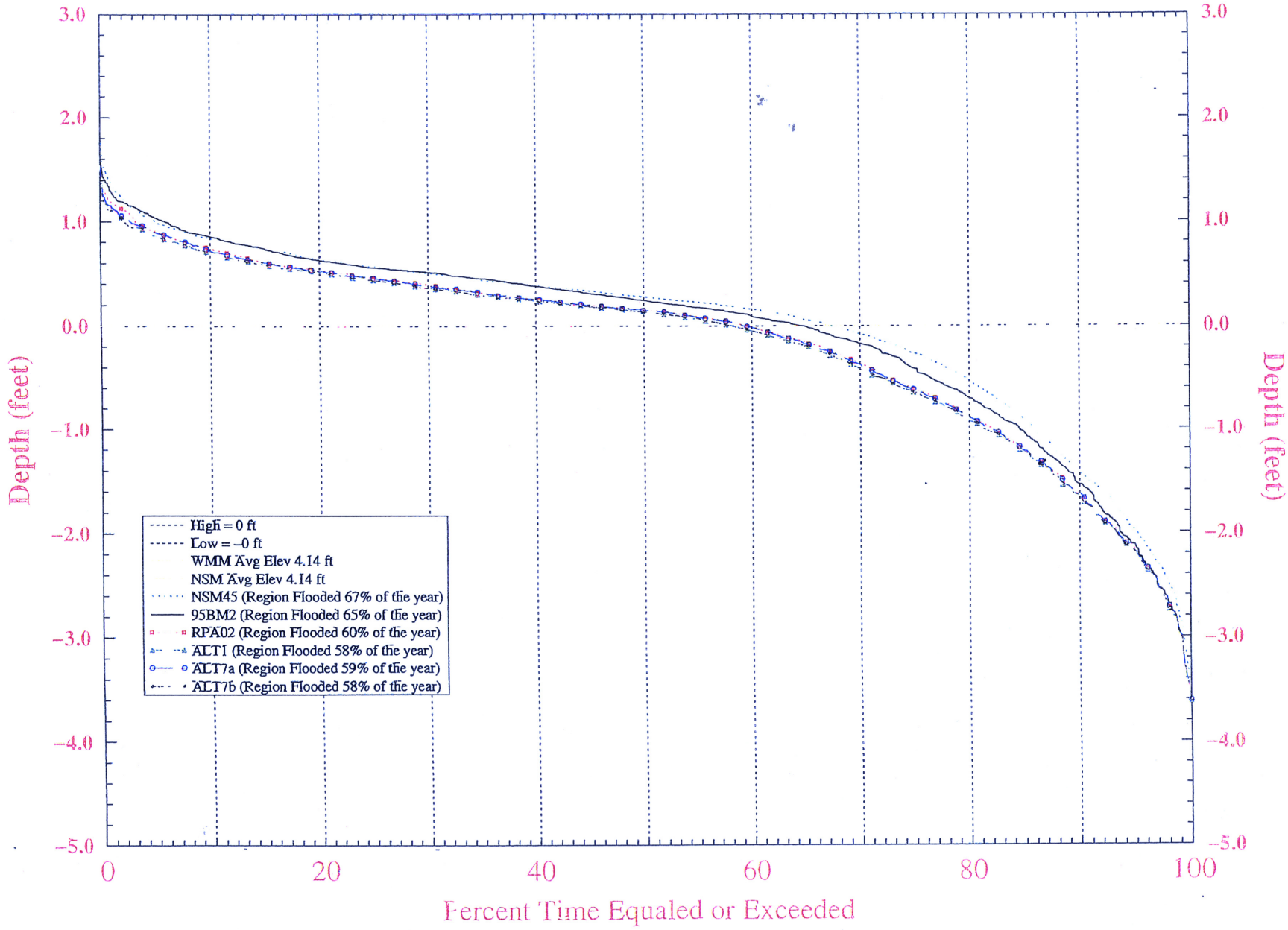
A-96


Hydroperiod Frequencies
NP205 R19C16 , 1965 to 1995
Discontinuous Hydroperiod (days/year)
400.0
350.0
300.0
250.0
200.0
150.0
100.0
50.0
0.0
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
Exceedance Frequency
NSM45
95BM2
RPA02
ALT1
ALT7a
ALT7b
Continuous Analysis
Run date: 08/02/01 18:34:23
SFWMM V3.8
Script used: mwd_pm_CII4.9.scr, V1.5


Return frequencies for number of consecutive days when water levels are below ground
NP205 R19C16 , 1965 to 1995
Number of consecutive days (3/1-7/15)
160.0
140.0
120.0
100.0
80.0
60.0
40.0
20.0
0.0
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
Probability of having fewer days
NSM45
95BM2
RPA02
ACT1
ACT7a
ACT7b
Continuous Analysis
Run date: 08/02/01 18:34:23
SFWMM V3.8
Script used: mwd_pm_CII4.9.scr, V1.5

Normalized Weekly Stage Duration Curves for Cape Sable Sparrow A

Indicator Region 46 (R17C13–14 R18C13–14 R19C13–15 R20C15–15)

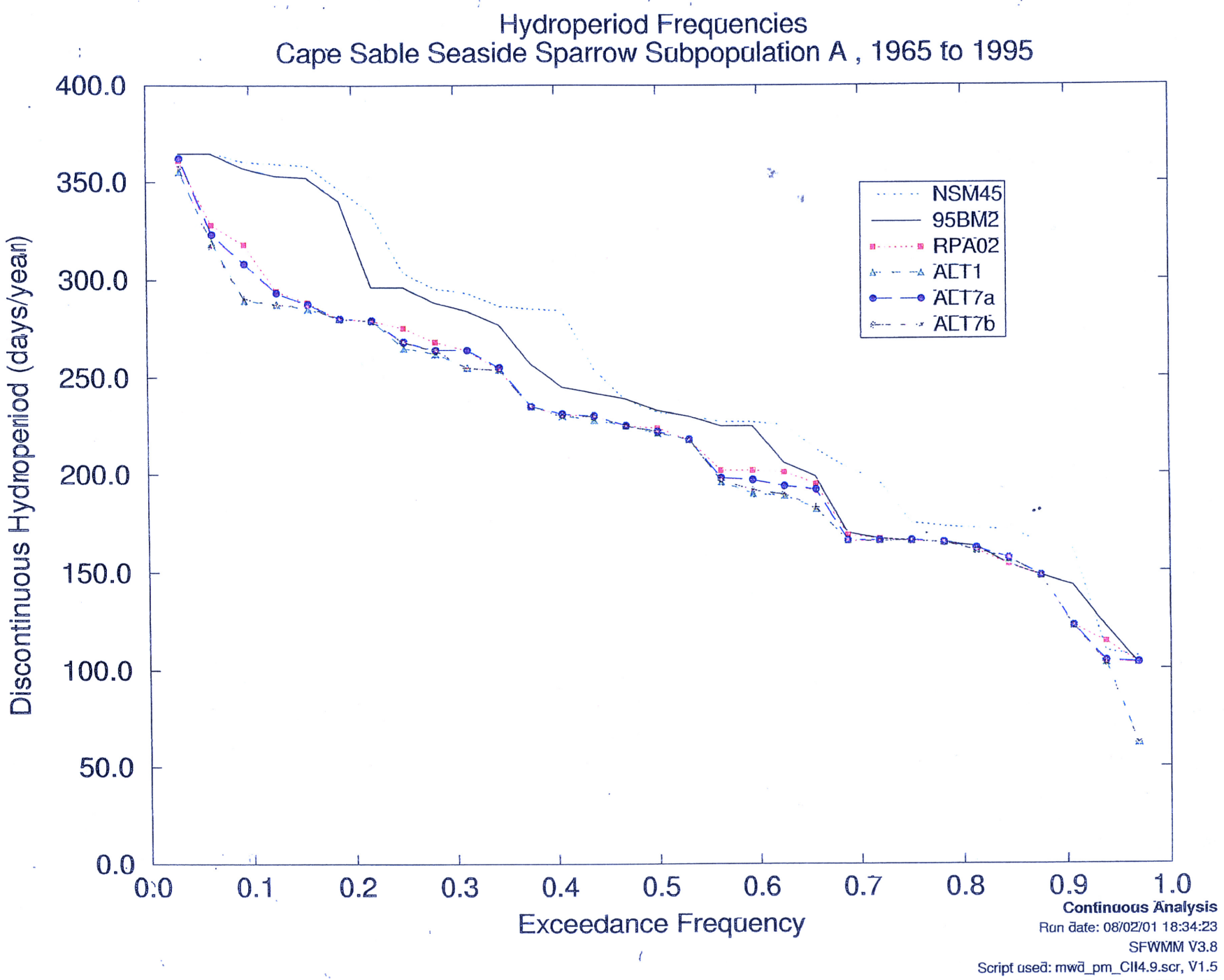


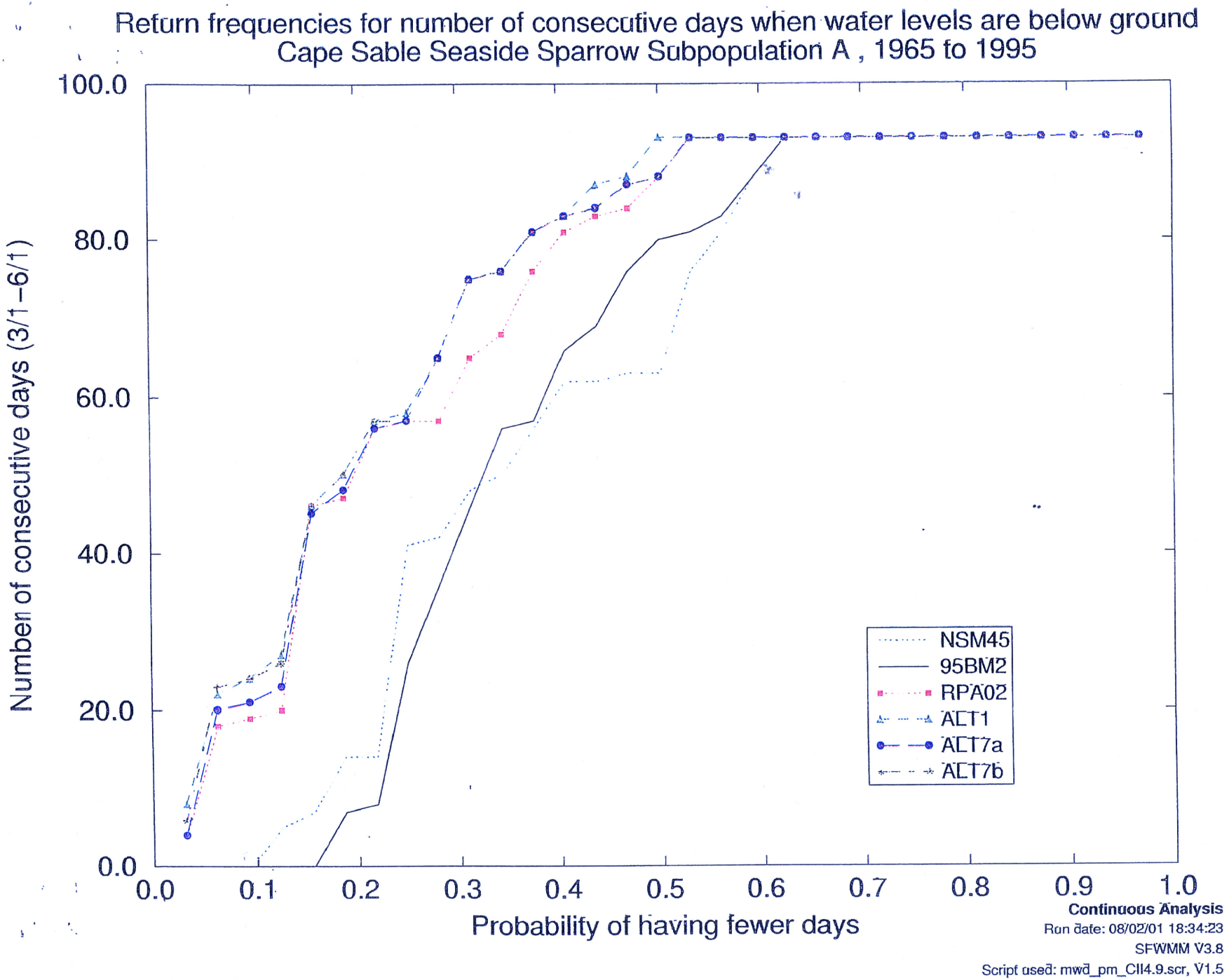
A-69

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: Thu Aug 2 19:19:25 EDT 2001

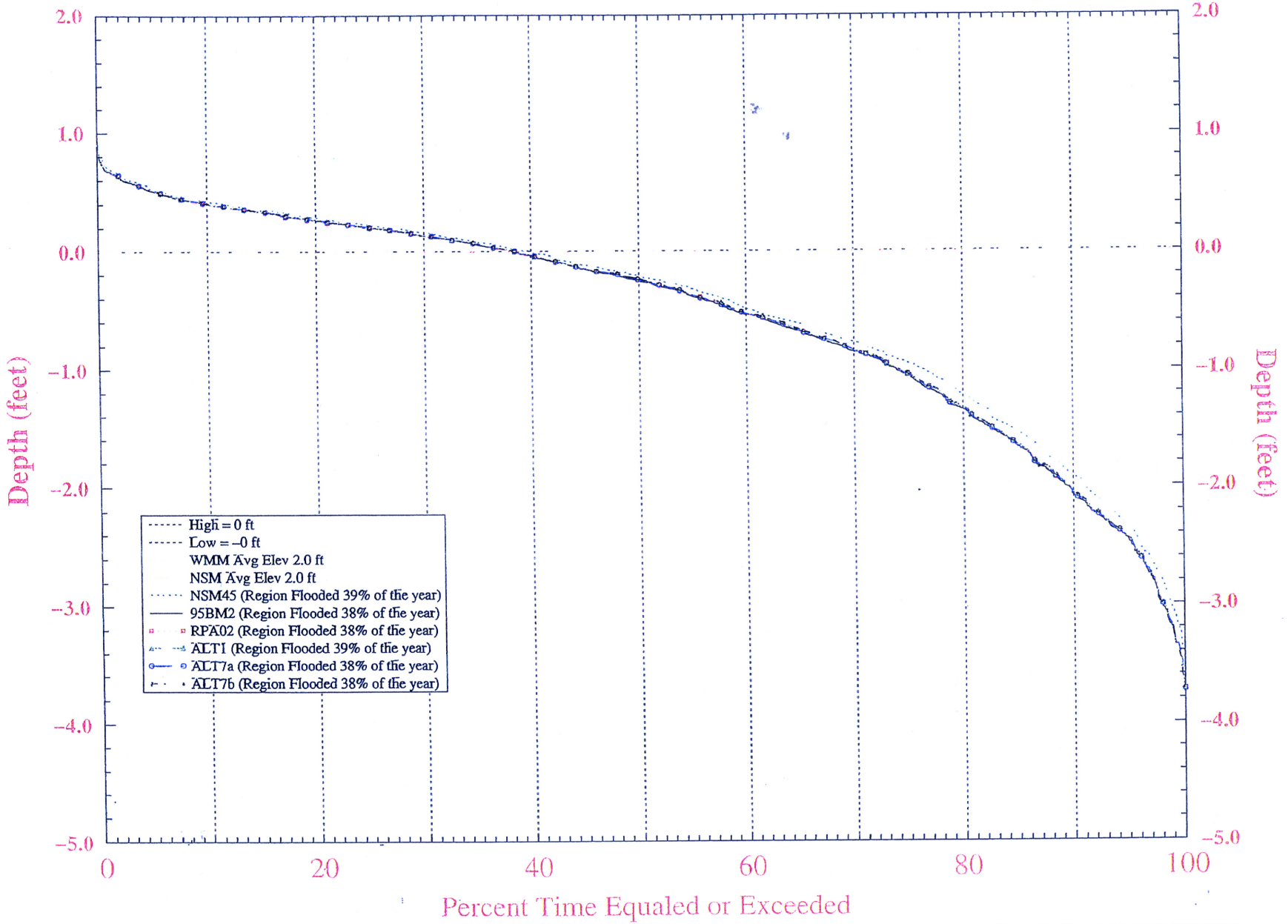
For Planning Purposes Only


Hydroperiod Frequencies
Cape Sable Seaside Sparrow Subpopulation A , 1965 to 1995
Discontinuous Hydroperiod (days/year)
400.0
350.0
300.0
250.0
200.0
150.0
100.0
50.0
0.0
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
Exceedance Frequency
NSM45
95BM2
RPA02
ALT1
ALT7a
ALT7b
Continuous Analysis
Run date: 08/02/01 18:34:23
SFWMM V3.8
Script used: mwd_pm_CII4.9.scr, V1.5


Return frequencies for number of consecutive days when water levels are below ground
Cape Sable Seaside Sparrow Subpopulation A , 1965 to 1995
Number of consecutive days (3/1-6/1)
100.0
80.0
60.0
40.0
20.0
0.0
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
Probability of having fewer days
NSM45
95BM2
RPA02
ACT1
ACT7a
ACT7b
Continuous Analysis
Run date: 08/02/01 18:34:23
SFWMM V3.8
Script used: mwd_pm_CII4.9.scr, V1.5

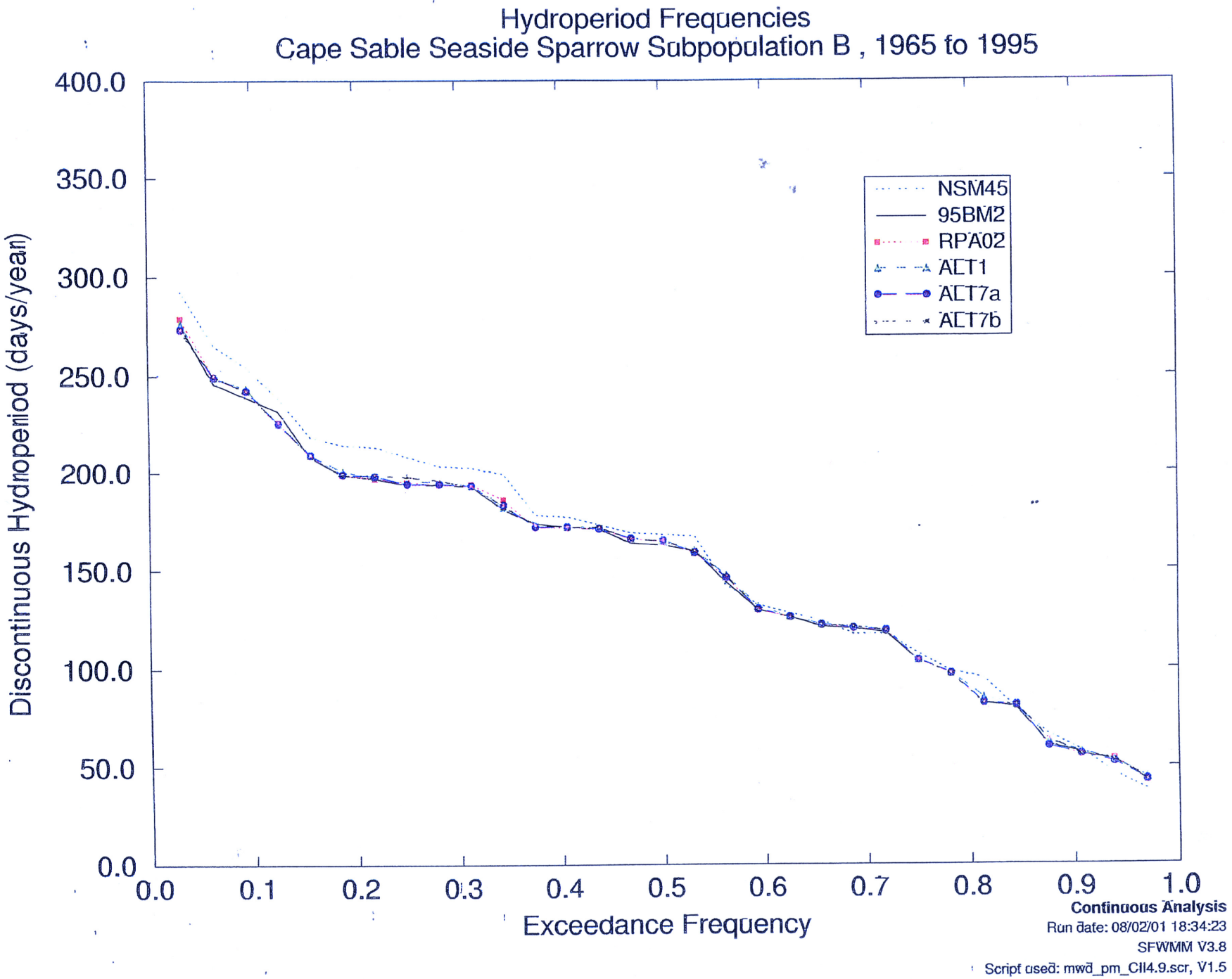
Normalized Weekly Stage Duration Curves for Cape Sable Sparrow B

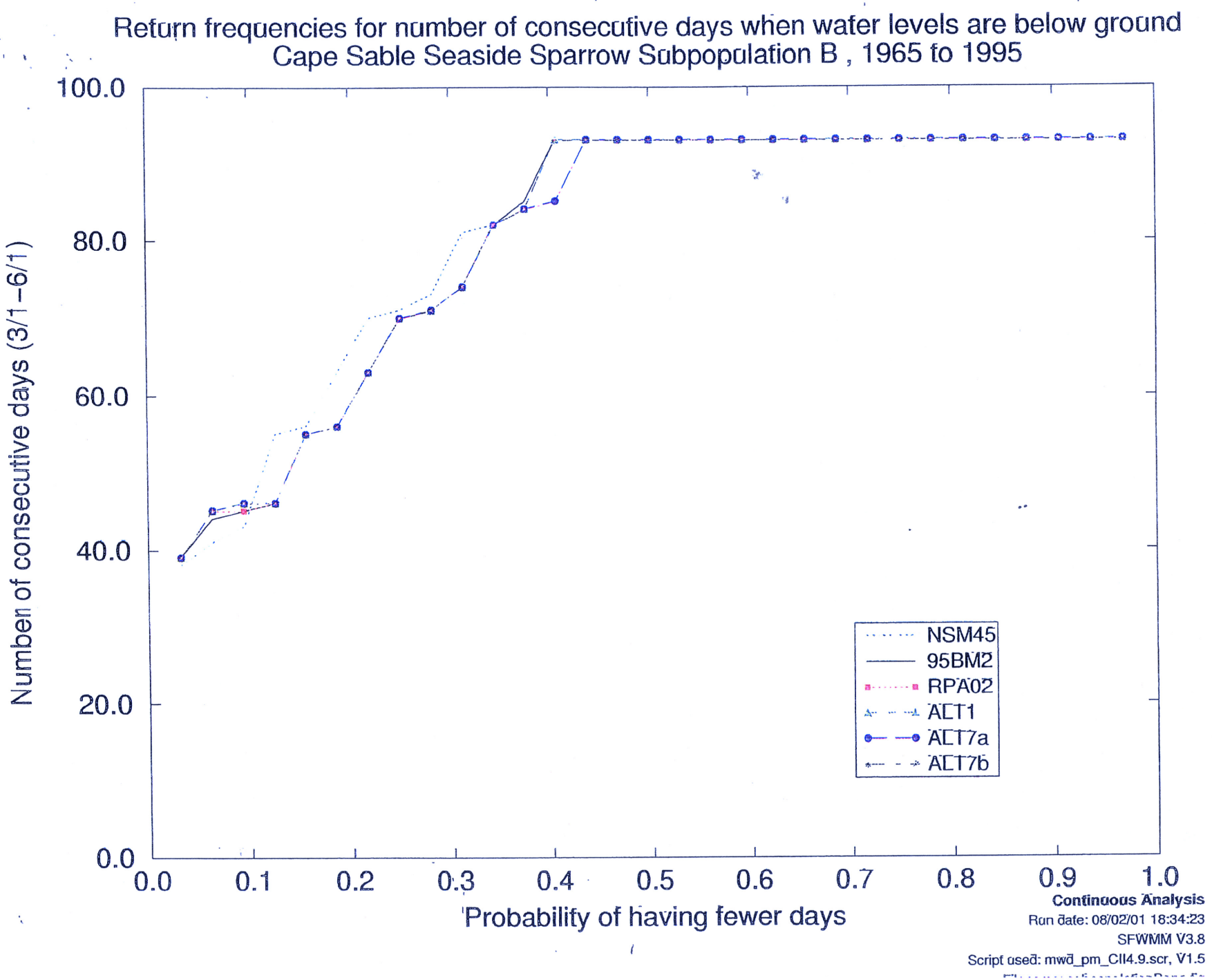
Indicator Region 54 (R6C18–20 R7C17–19 R8C17–19)



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.

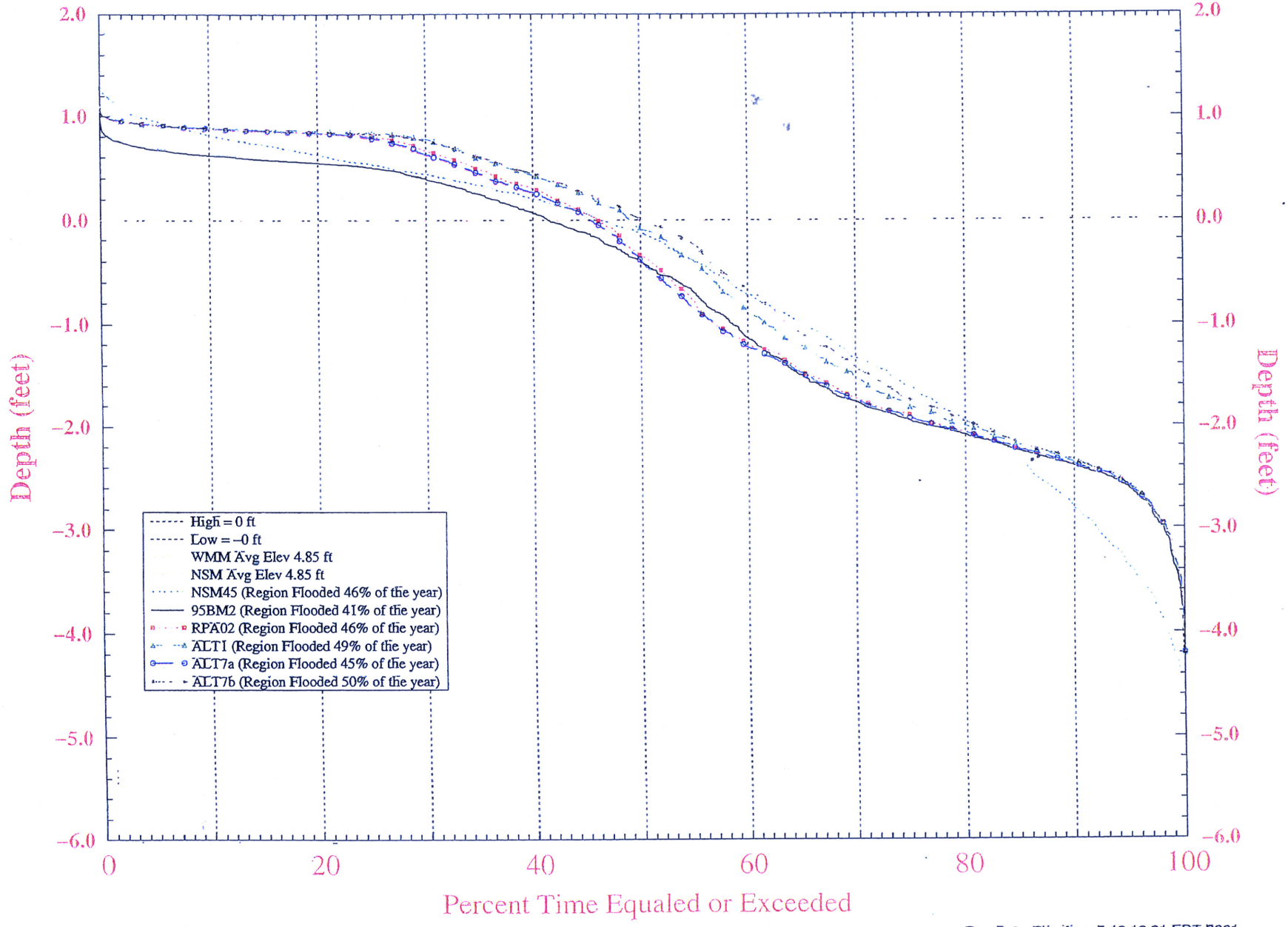
Run date: Thu Aug 2 19:19:29 EDT 2001
For Planning Purposes Only


Hydroperiod Frequencies
Cape Sable Seaside Sparrow Subpopulation B , 1965 to 1995
Discontinuous Hydroperiod (days/year)
400.0
350.0
300.0
250.0
200.0
150.0
100.0
50.0
0.0
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
Exceedance Frequency
NSM45
95BM2
RPA02
ALT1
ALT7a
ALT7b
Continuous Analysis
Run date: 08/02/01 18:34:23
SFWMM V3.8
Script used: mwd_pm_CII4.9.scr, V1.5


Return frequencies for number of consecutive days when water levels are below ground
Cape Sable Seaside Sparrow Subpopulation B , 1965 to 1995
Number of consecutive days (3/1-6/1)
100.0
80.0
60.0
40.0
20.0
0.0
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
Probability of having fewer days
NSM45
95BM2
RPA02
ACT1
ACT7a
ACT7b
Continuous Analysis
Run date: 08/02/01 18:34:23
SFWMM V3.8
Script used: mwd_pm_CII4.9.scr, V1.5

Normalized Weekly Stage Duration Curves for Cape Sable Sparrow C

Indicator Region 55 (R10C23–23 R11C23–23)

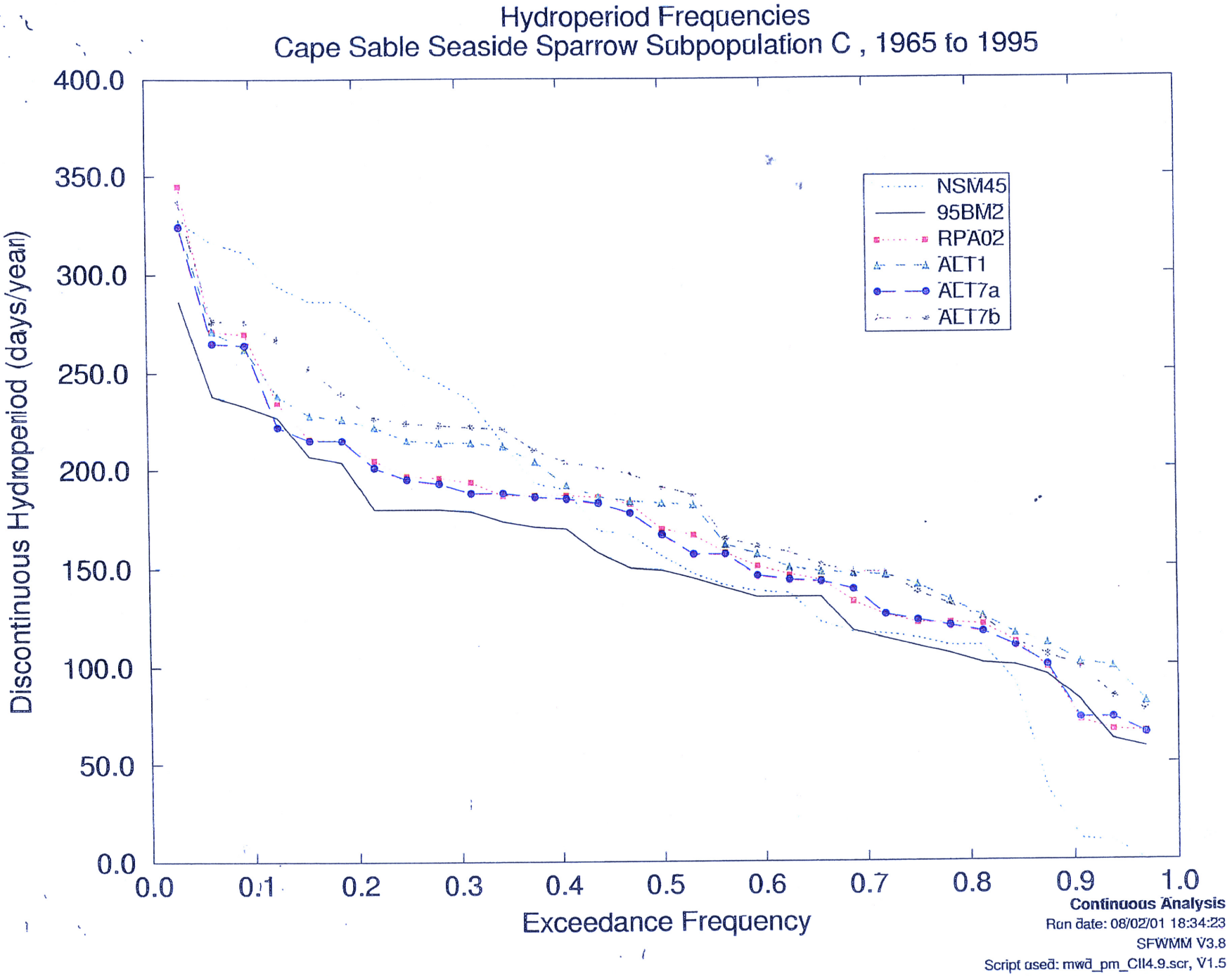


A-75

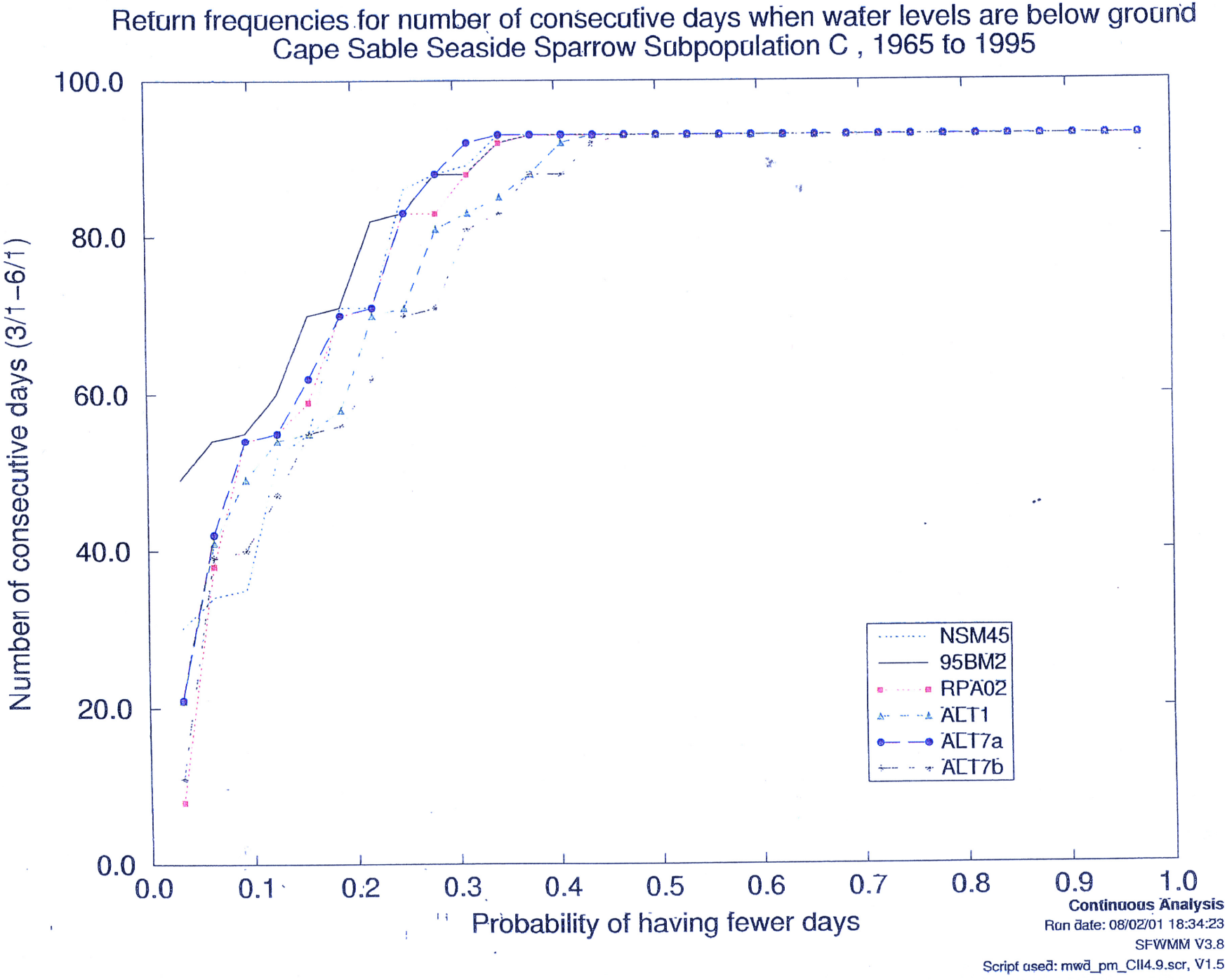
Note: Normalized stage is stage referenced to Land Elevation. Thus, values above zero indicate ponding while values below zero indicate depth to the water table.

Run date: Thu Aug 2 19:19:31 EDT 2001

For Planning Purposes Only

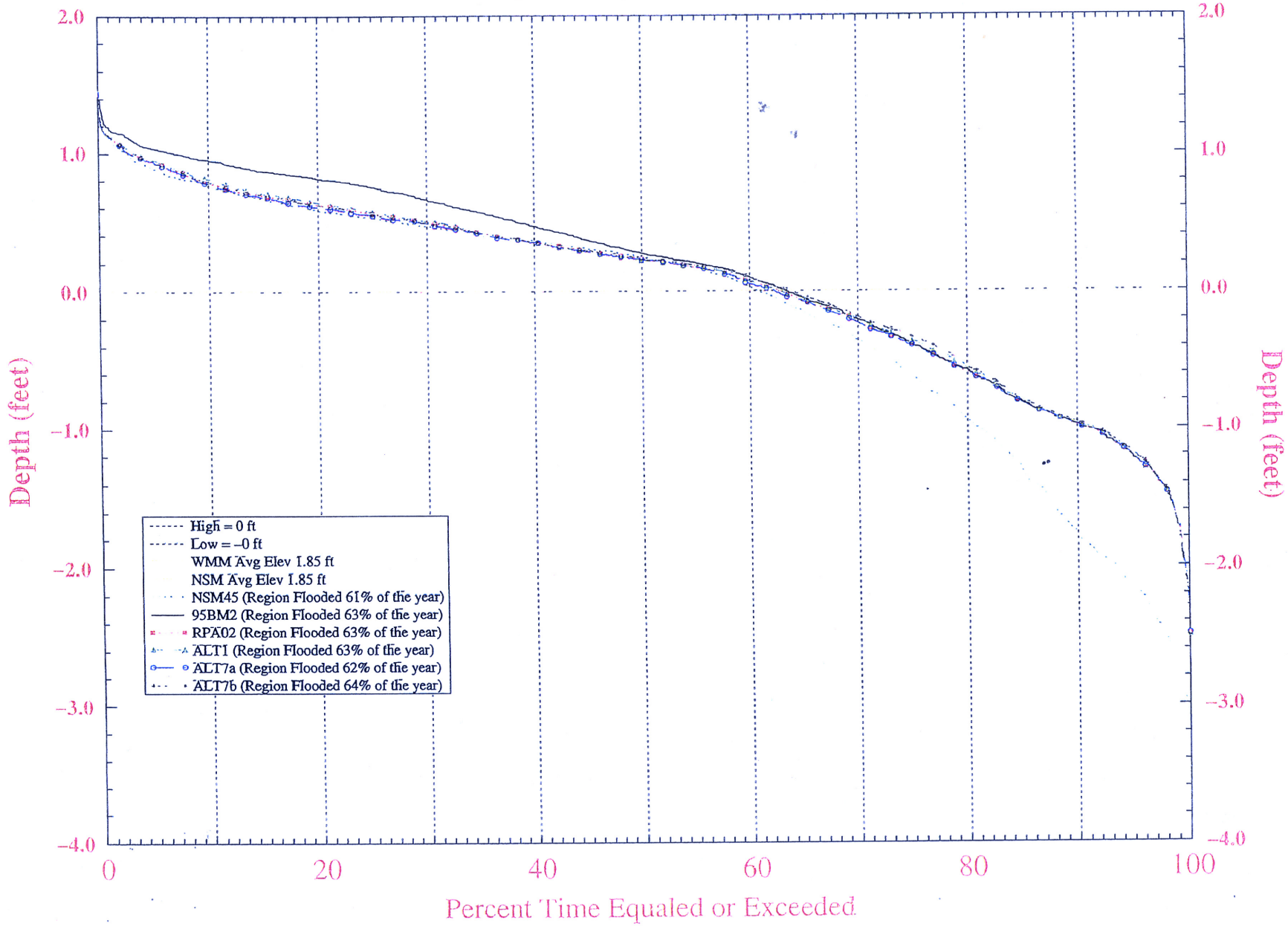

Hydroperiod Frequencies
Cape Sable Seaside Sparrow Subpopulation C , 1965 to 1995
Discontinuous Hydroperiod (days/year)
400.0
350.0
300.0
250.0
200.0
150.0
100.0
50.0
0.0
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
Exceedance Frequency
NSM45
95BM2
RPA02
ALT1
ALT7a
ALT7b
Continuous Analysis
Run date: 08/02/01 18:34:23
SFWMM V3.8
Script used: mwd_pm_CII4.9.scr, V1.5

A-76


Return frequencies for number of consecutive days when water levels are below ground
Cape Sable Seaside Sparrow Subpopulation C , 1965 to 1995
Number of consecutive days (3/1-6/1)
100.0
80.0
60.0
40.0
20.0
0.0
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
Probability of having fewer days
NSM45
95BM2
RPA02
ACT1
ACT7a
ACT7b
Continuous Analysis
Run date: 08/02/01 18:34:23
SFWMM V3.8
Script used: mwd_pm_CII4.9.scr, V1.5

Normalized Weekly Stage Duration Curves for Cape Sable Sparrow D

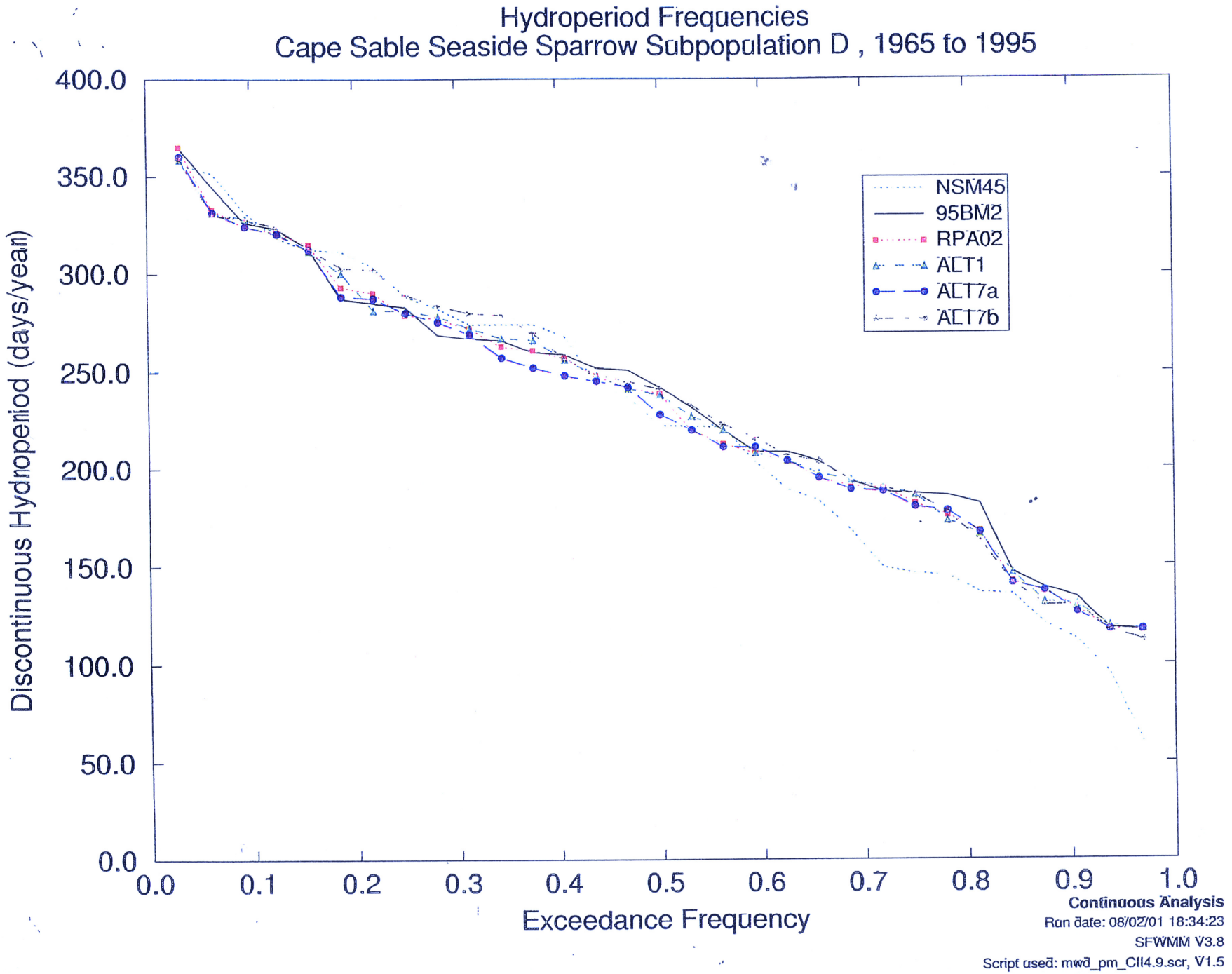
Indicator Region 56 (R7C25–25 R8C25–25)

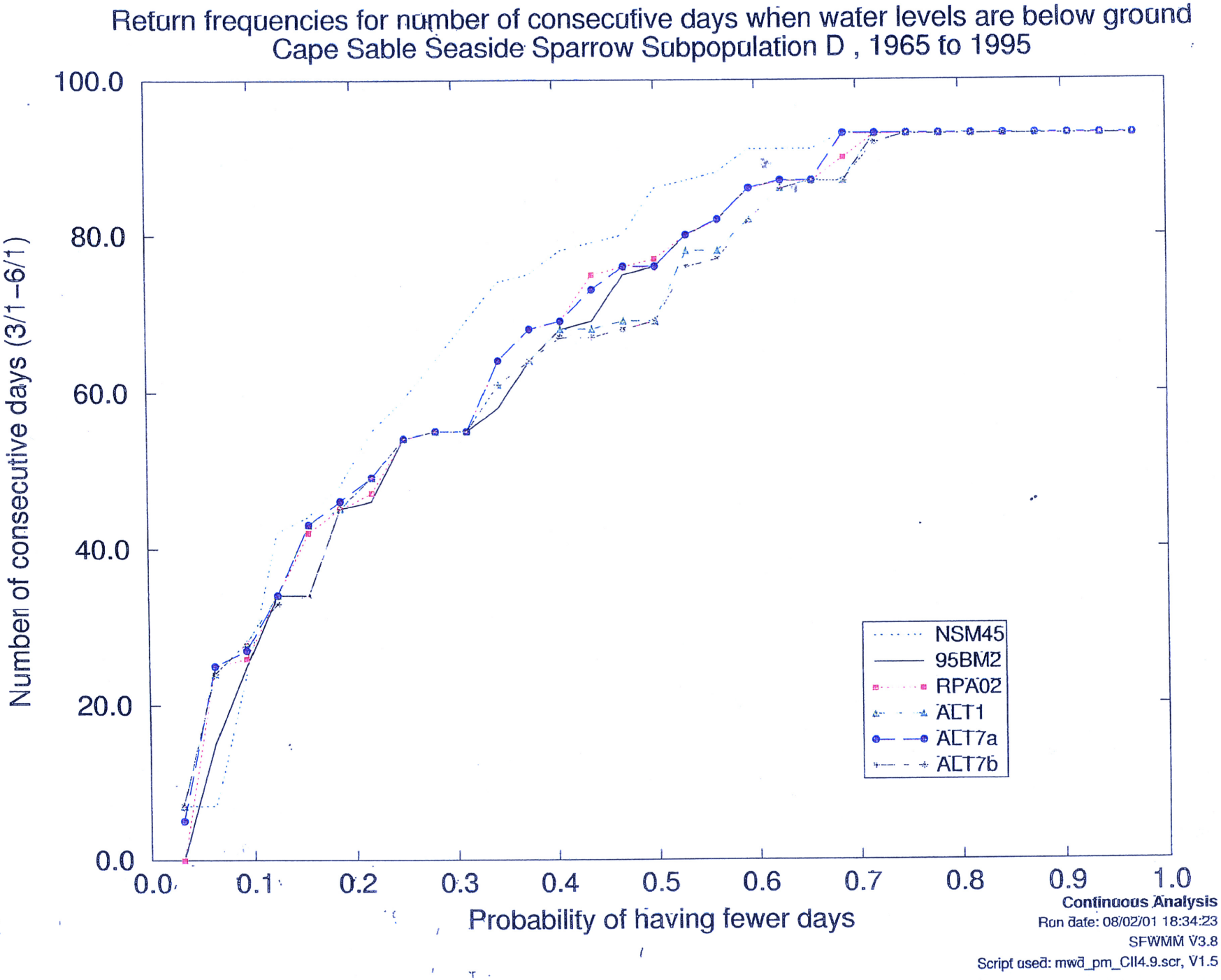


Note: Normalized stage is stage referenced to Land Elevation. Thus, values above zero indicate ponding while values below zero indicate depth to the water table.

Run date: Thu Aug 2 19:19:34 EDT 2001

For Planning Purposes Only

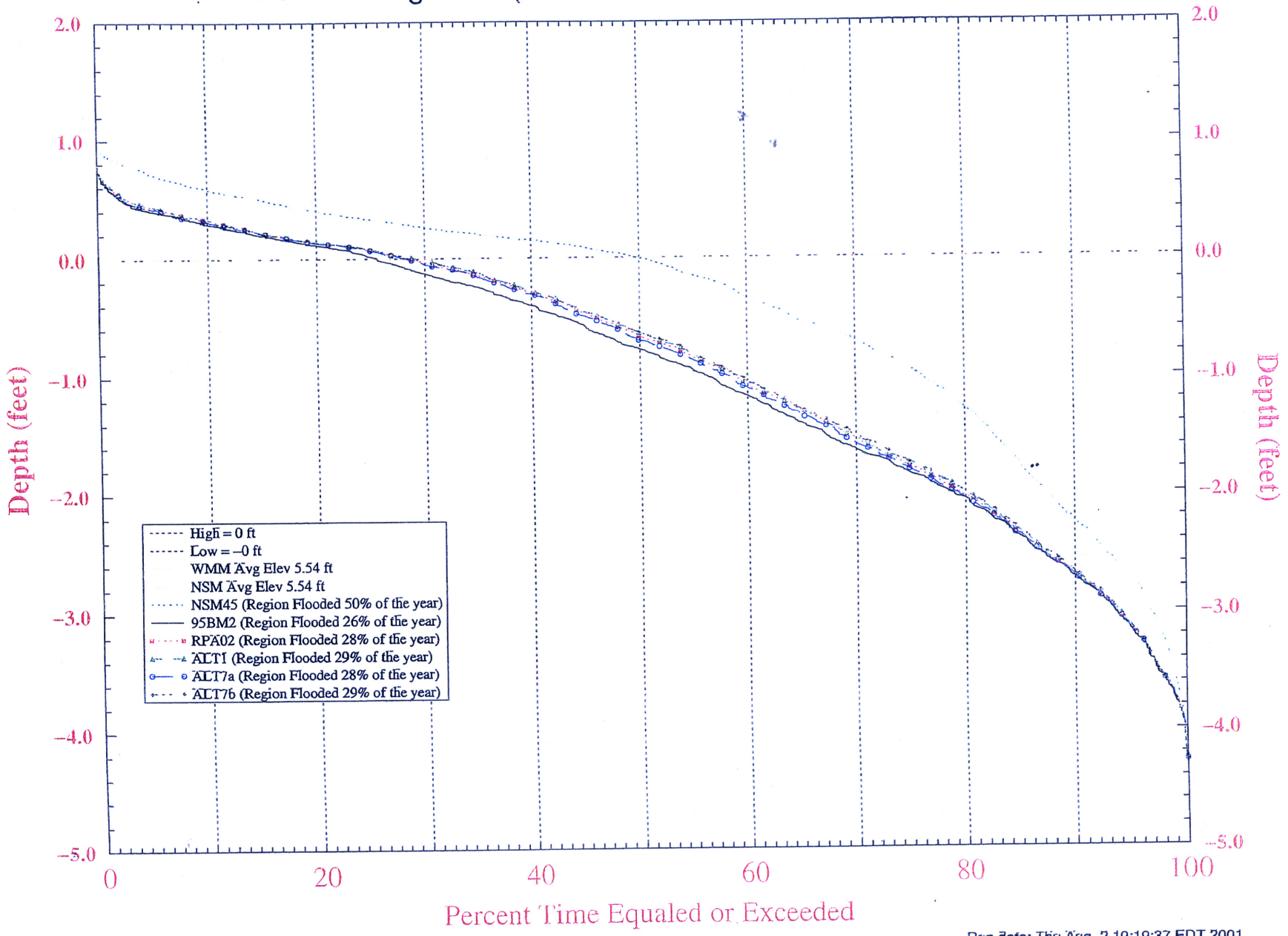

Hydroperiod Frequencies
Cape Sable Seaside Sparrow Subpopulation D , 1965 to 1995
Discontinuous Hydroperiod (days/year)
400.0
350.0
300.0
250.0
200.0
150.0
100.0
50.0
0.0
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
Exceedance Frequency
NSM45
95BM2
RPA02
ALT1
ALT7a
ALT7b
Continuous Analysis
Run date: 08/02/01 18:34:23
SFWMM V3.8
Script used: mwd_pm_CII4.9.scr, V1.5


Return frequencies for number of consecutive days when water levels are below ground
Cape Sable Seaside Sparrow Subpopulation D , 1965 to 1995
Number of consecutive days (3/1–6/1)
100.0
80.0
60.0
40.0
20.0
0.0
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
Probability of having fewer days
NSM45
95BM2
RPA02
ALT1
ALT7a
ALT7b
Continuous Analysis
Run date: 08/02/01 18:34:23
SFWMM V3.8
Script used: mwd_pm_CII4.9.scr, V1.5

A-80

Normalized Weekly Stage Duration Curves for Cape Sable Sparrow E

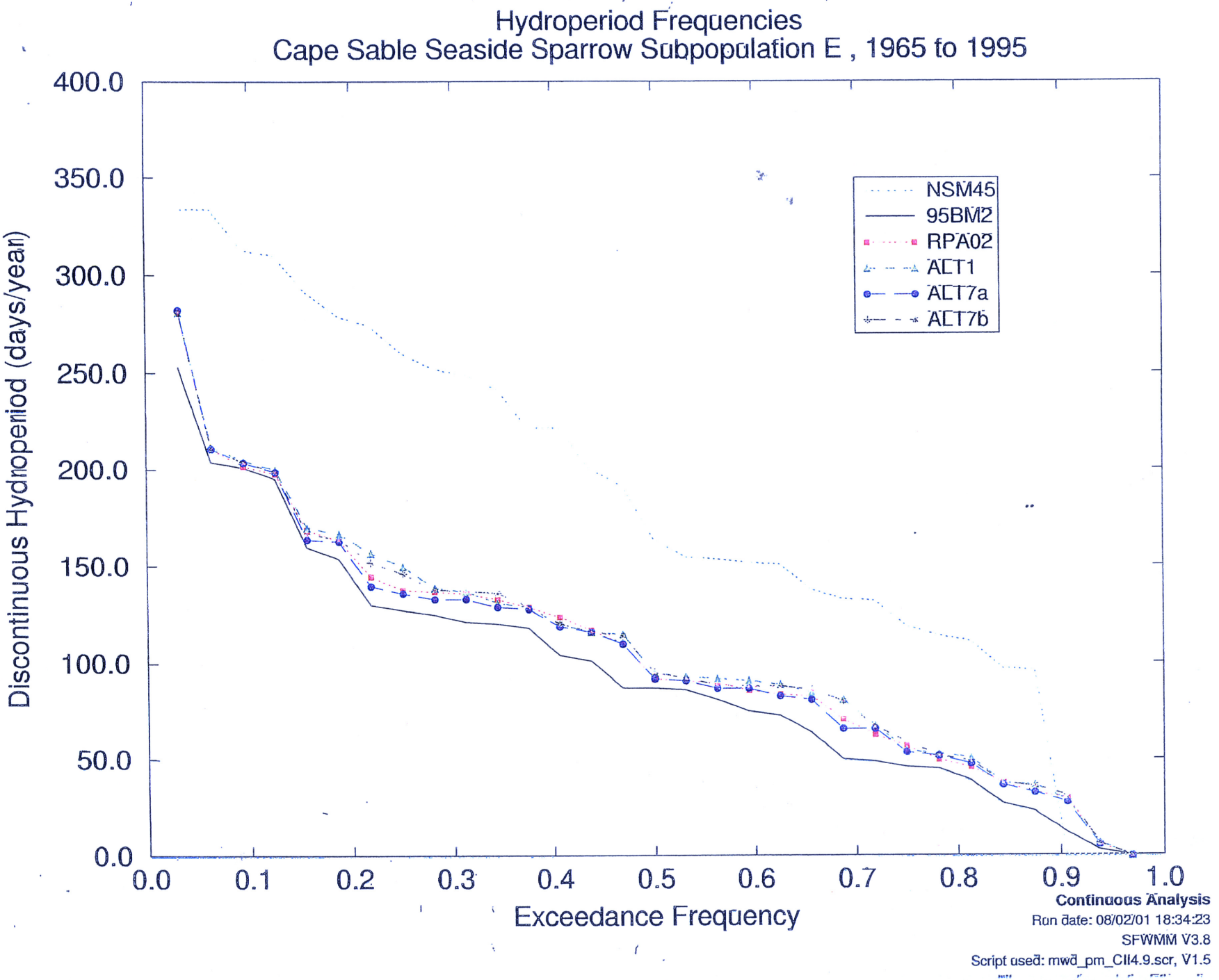
Indicator Region 57 (R12C21–21 R13C20–21 R14C20–21)



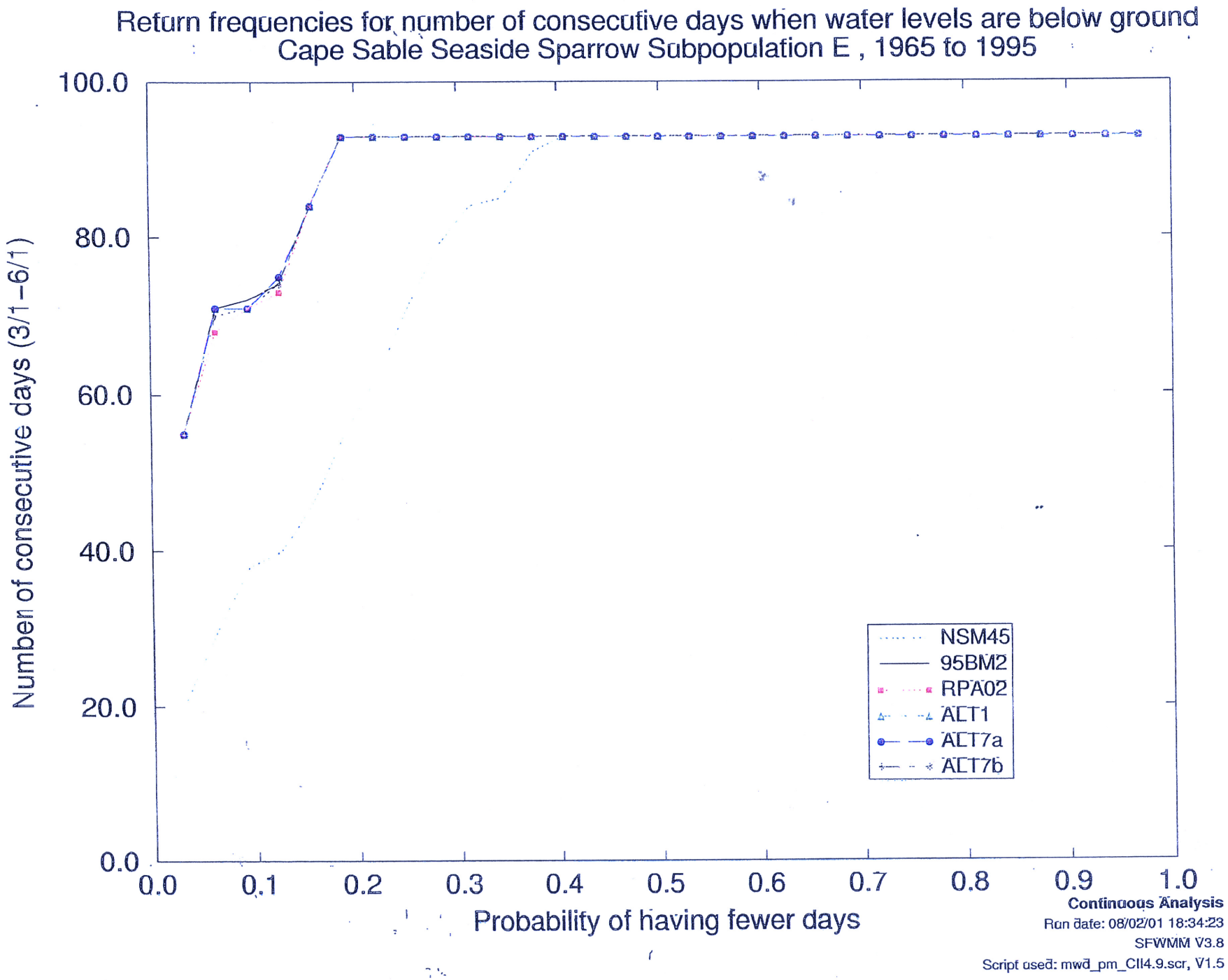
Note: Normalized stage is stage referenced to Land Elevation. Thus, values above zero indicate ponding while values below zero indicate depth to the water table.

Run date: Thu Aug 2 19:19:37 EDT 2001
For Planning Purposes Only

A-81


Hydroperiod Frequencies
Cape Sable Seaside Sparrow Subpopulation E , 1965 to 1995
Discontinuous Hydroperiod (days/year)
400.0
350.0
300.0
250.0
200.0
150.0
100.0
50.0
0.0
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
Exceedance Frequency
NSM45
95BM2
RPA02
ALT1
ALT7a
ALT7b
Continuous Analysis
Run date: 08/02/01 18:34:23
SFWMM V3.8
Script used: mwd_pm_CII4.9.scr, V1.5

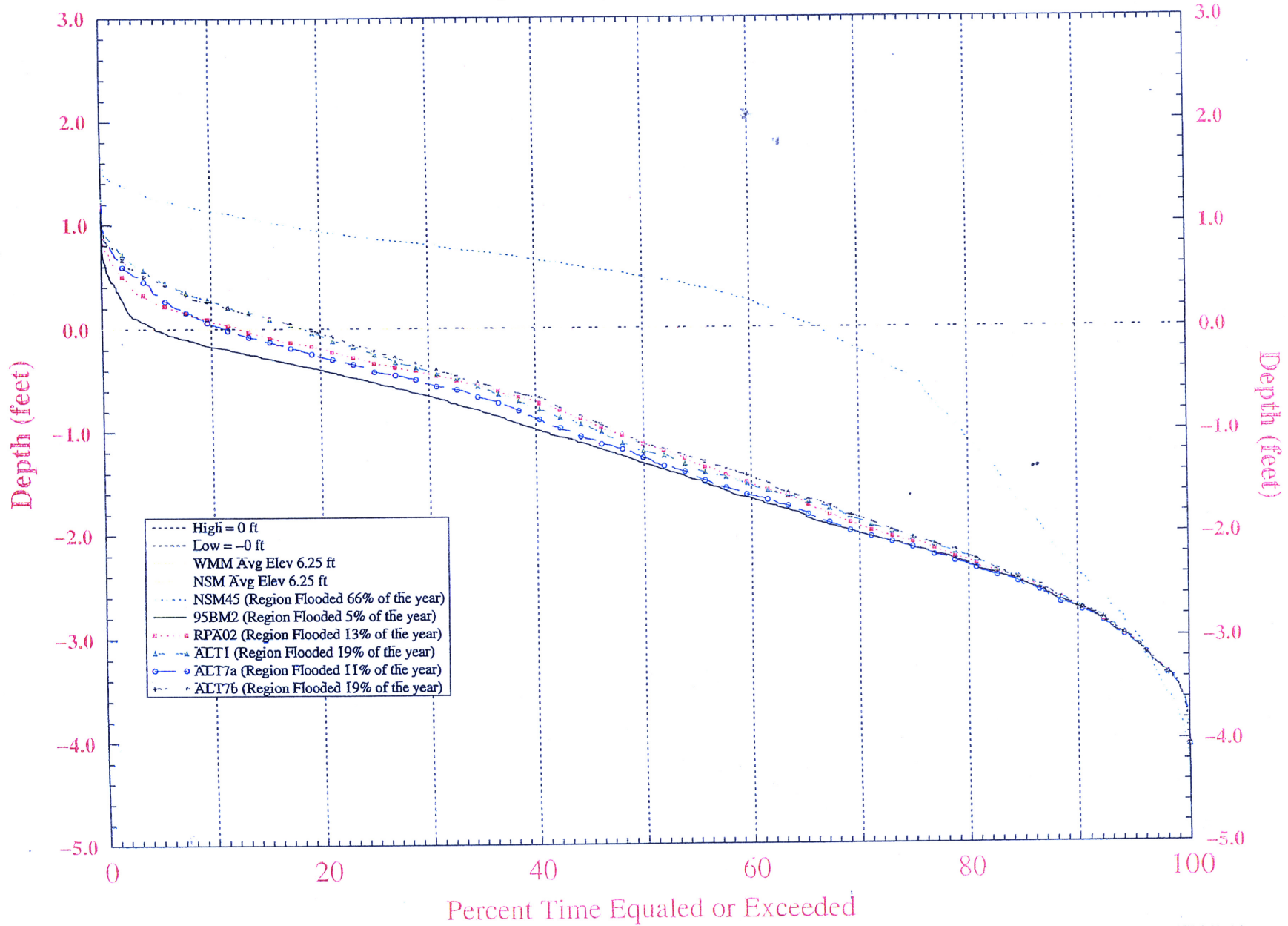
A-82


Return frequencies for number of consecutive days when water levels are below ground
Cape Sable Seaside Sparrow Subpopulation E , 1965 to 1995
Number of consecutive days (3/1-6/1)
100.0
80.0
60.0
40.0
20.0
0.0
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
Probability of having fewer days
NSM45
95BM2
RPA02
ACT1
ACT7a
ACT7b
Continuous Analysis
Run date: 08/02/01 18:34:23
SFWMM V3.8
Script used: mwd_pm_CII4.9.scr, V1.5

A-83

Normalized Weekly Stage Duration Curves for Cape Sable Sparrow F

Indicator Region 58 (R14C24–24 R15C23–23)

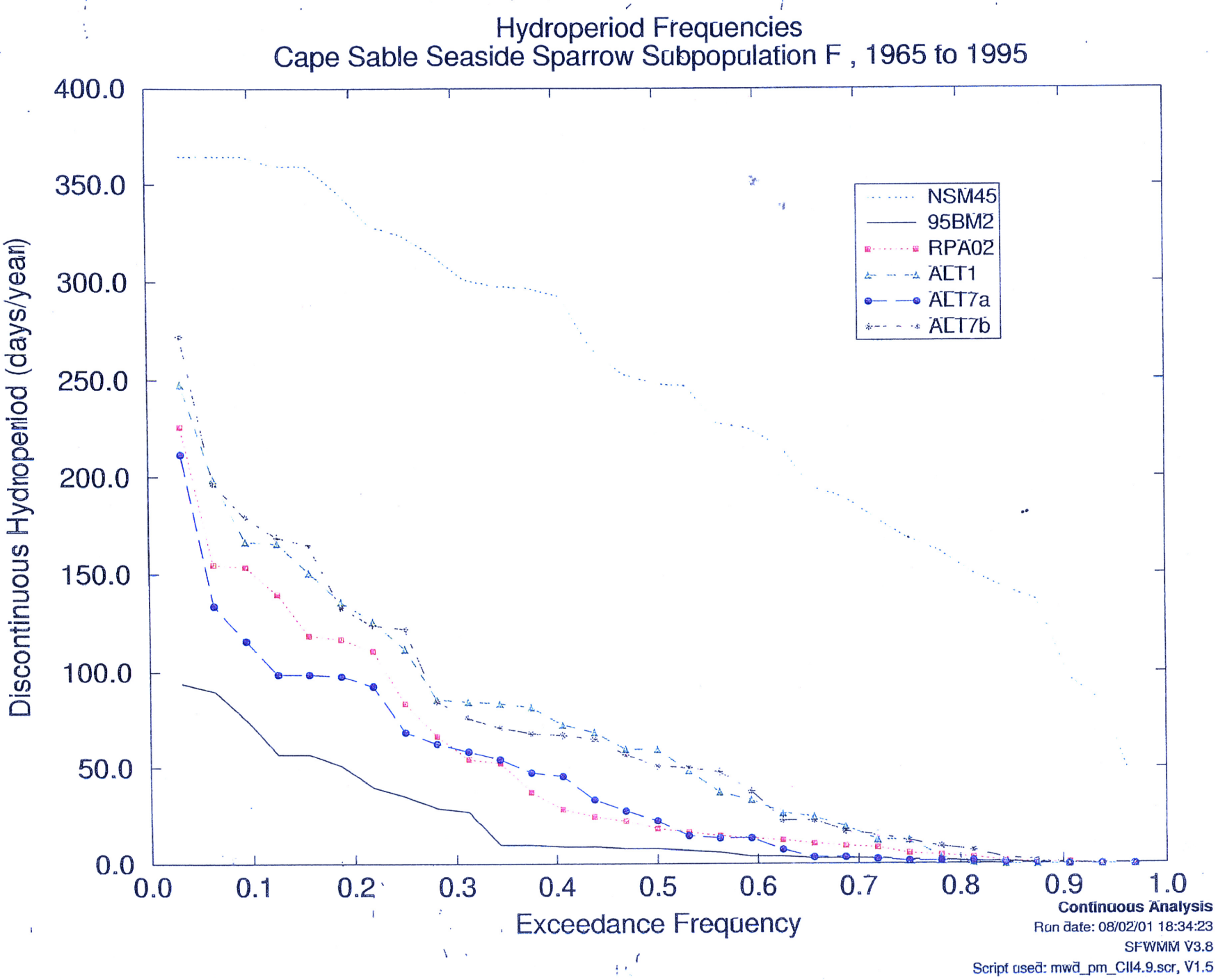


Note: Normalized stage is stage referenced to Land Elevation. Thus, values above zero indicate ponding while values below zero indicate depth to the water table.

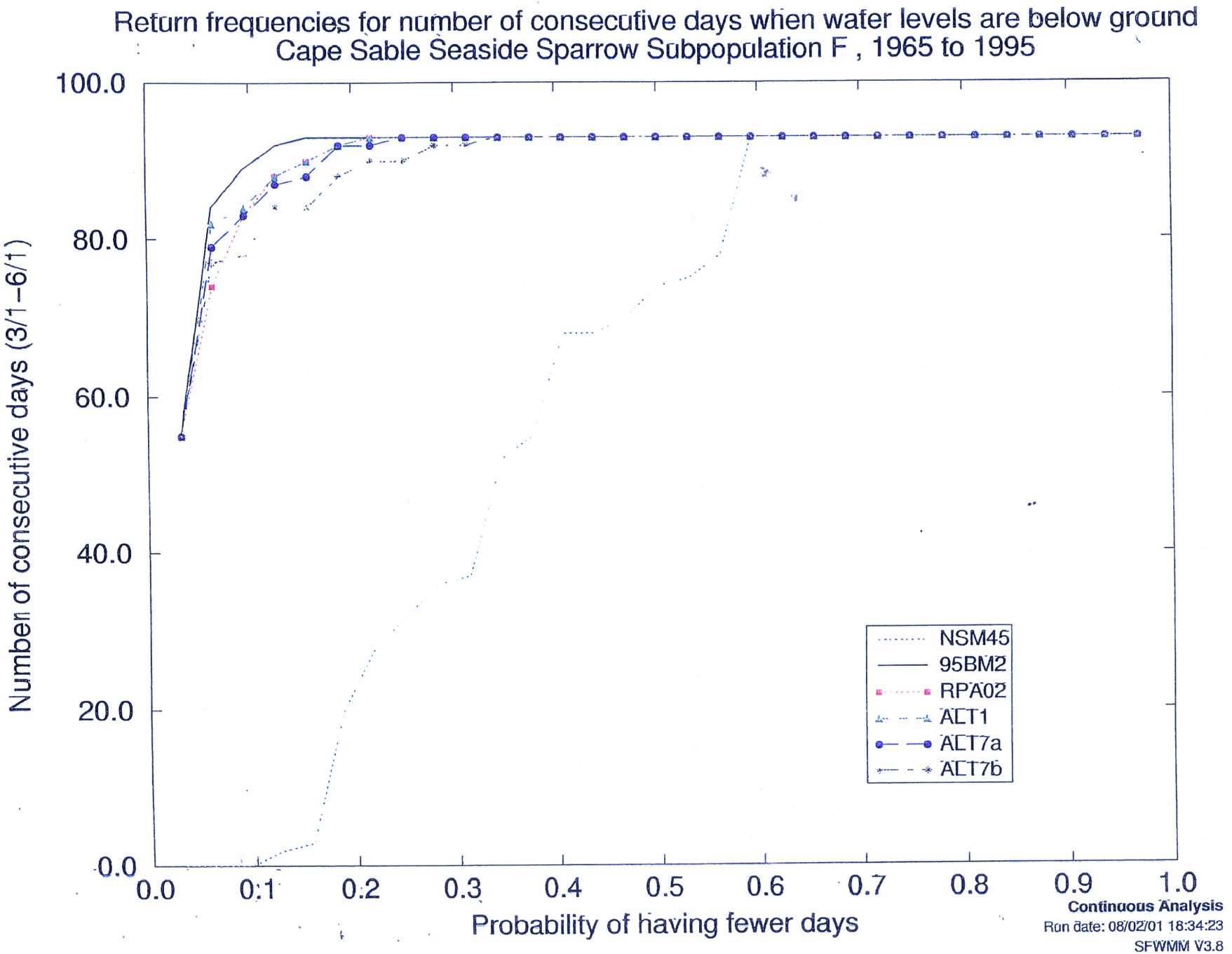
Run date: Thu Aug 2 19:19:40 EDT 2001

For Planning Purposes Only

A-74

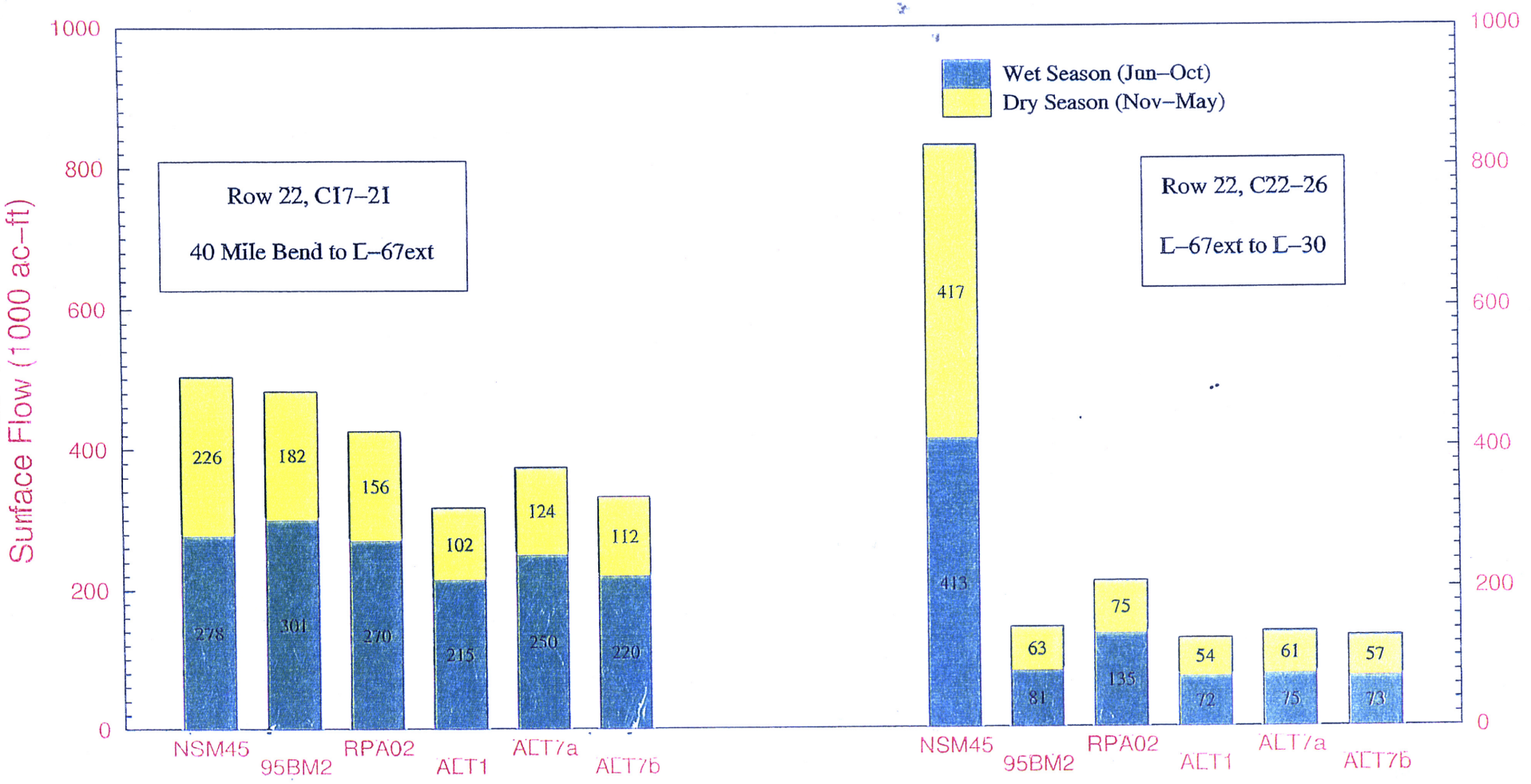

Hydroperiod Frequencies
Cape Sable Seaside Sparrow Subpopulation F , 1965 to 1995
Discontinuous Hydroperiod (days/year)
400.0
350.0
300.0
250.0
200.0
150.0
100.0
50.0
0.0
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
Exceedance Frequency
NSM45
95BM2
RPA02
ALT1
ALT7a
ALT7b
Continuous Analysis
Run date: 08/02/01 18:34:23
SFWMM V3.8
Script used: mwd_pm_CII4.9.scr, V1.5

A-85


Return frequencies for number of consecutive days when water levels are below ground
Cape Sable Seaside Sparrow Subpopulation F , 1965 to 1995
Number of consecutive days (3/1-6/1)
100.0
80.0
60.0
40.0
20.0
0.0
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
Probability of having fewer days
NSM45
95BM2
RPA02
ACT1
ACT7a
ACT7b
Continuous Analysis
Run date: 08/02/01 18:34:23
SFWMM V3.8
Script used: mwd_pm_CII4.9.scr, V1.5

A-76

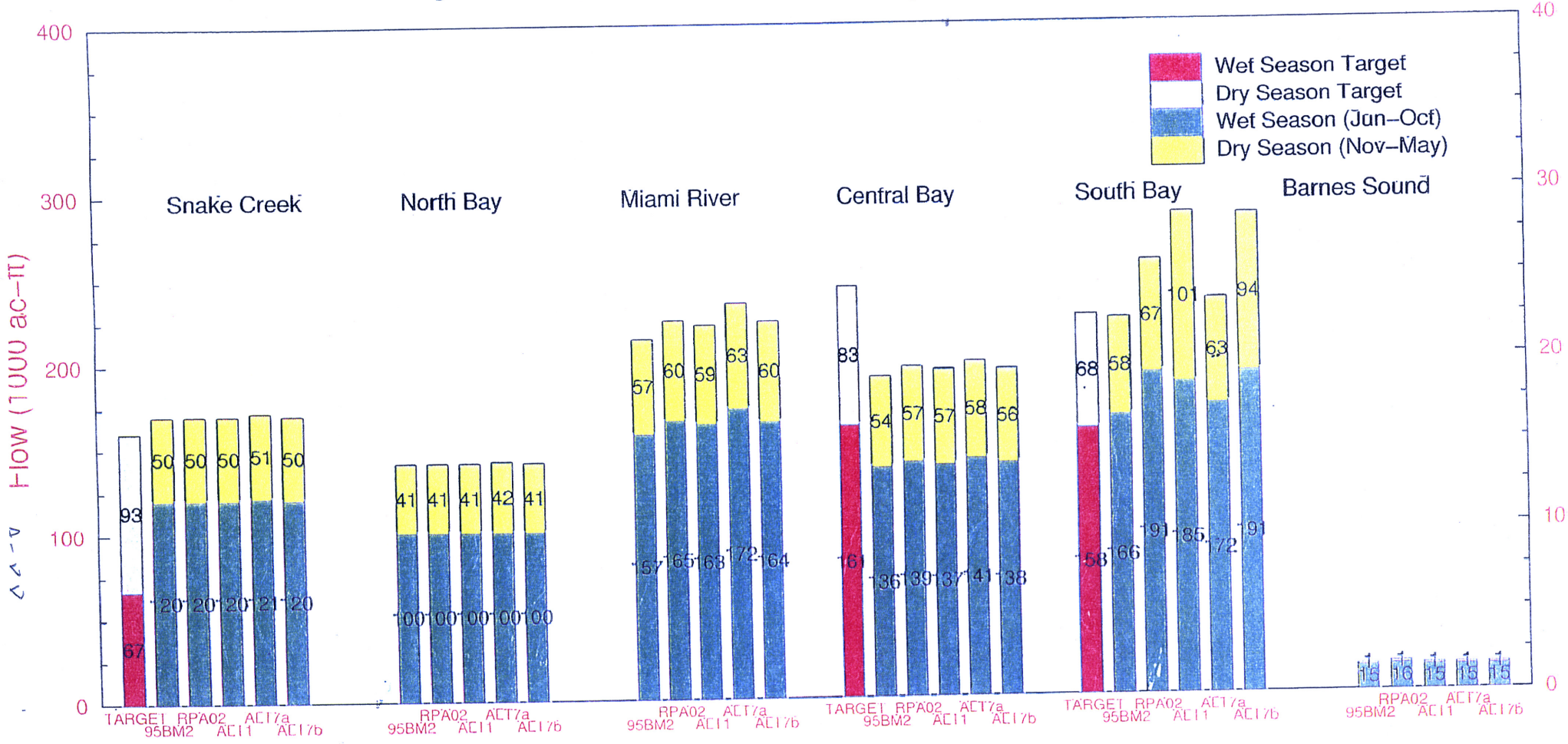
Average Annual Overland Flows to ENP South of Tamiami Trail, West & East of L–67ext for the 31 year simulation period



Note: Flow represents overland flows for cells Row 22 Columns 22 thru 26. NSM water depths at key ENP gage locations are used as operational targets for most alternatives. NSM flows are NOT targets and are shown for comparative purposes only.

Run date: 08/02/01 17:58:31
Continuous Analysis

Simulated Mean Annual Surface Flows Discharged into Biscayne Bay for the 1965 – 1995 simulation period



Note: Snake Creek=S29; North Bay=G58+S28+S27; Miami River=S26+S25B+S25; Central=G97+S22+S123; South=S21+S21A+S20F+S20G; Barnes Sound=S197

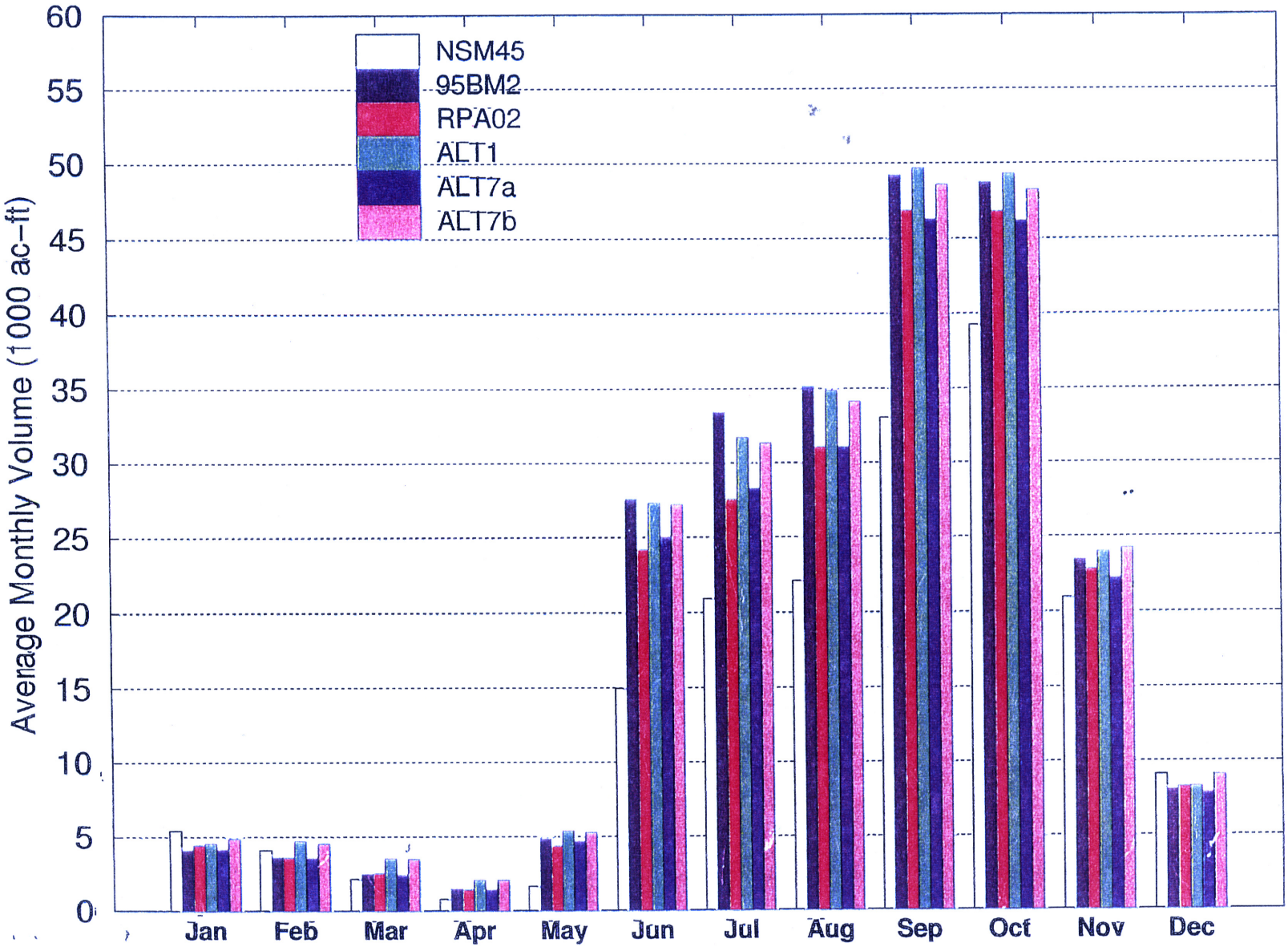
Targets for Central and South Bay reflect a 30% increase in mean annual dry season flows over the 95 Base

Targets for Snake Creek reflect a minimum monthly flow volume of 13,300 ac–ft (x 5 months for wet season

Run date: 08/02/01 17:51:35
Continuous Analysis

Average monthly flow volumes towards Florida Bay

T23 (R6 C17–28), Period 1965 to 1995

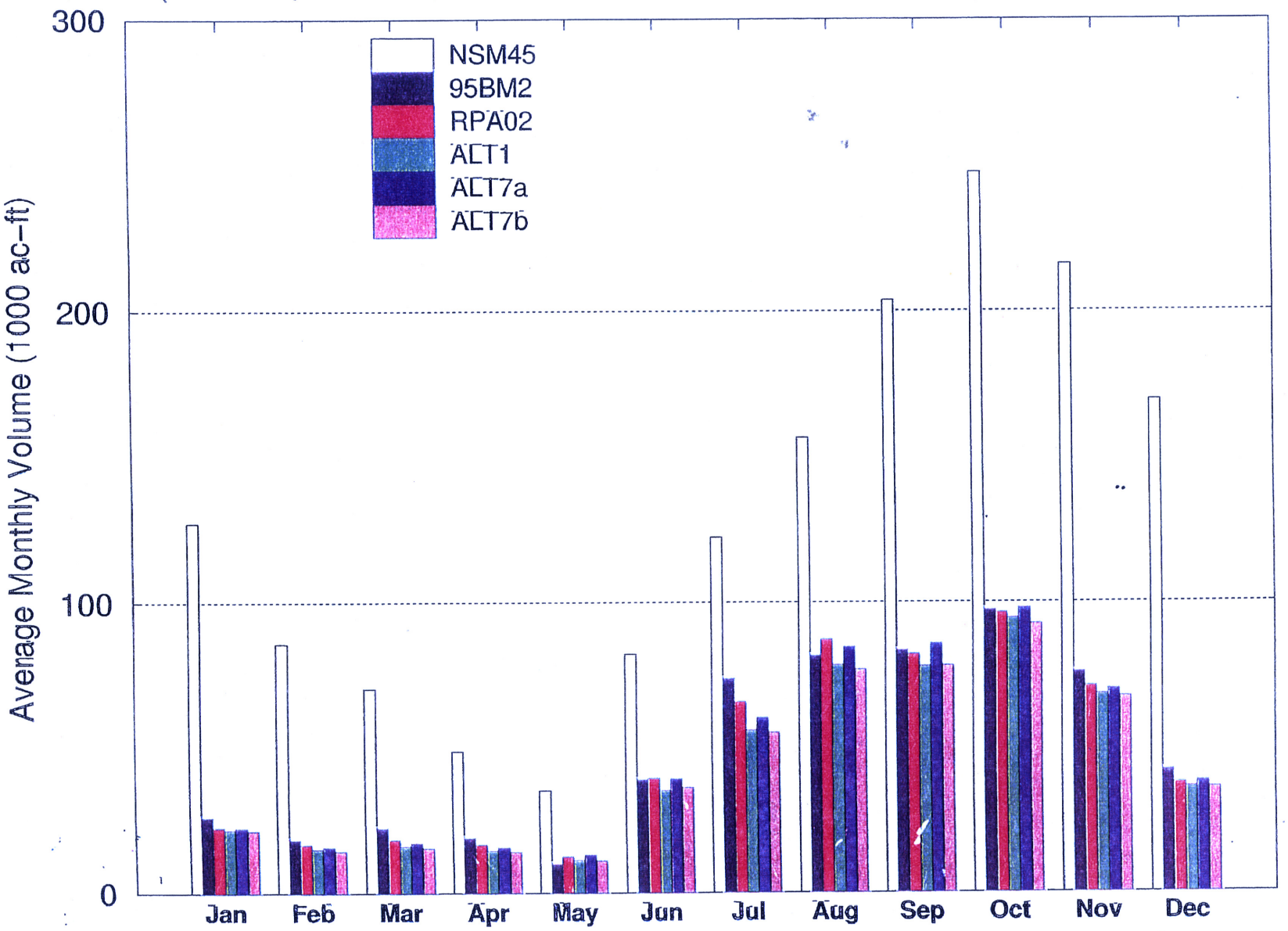


Continuous Analysis
Run date: 08/02/01 18:33:19
SFWMM V3.8
Script used: mwd_pm_CII4.6.scr, V1.3

A-84

Average monthly flow volumes into Shark Slough

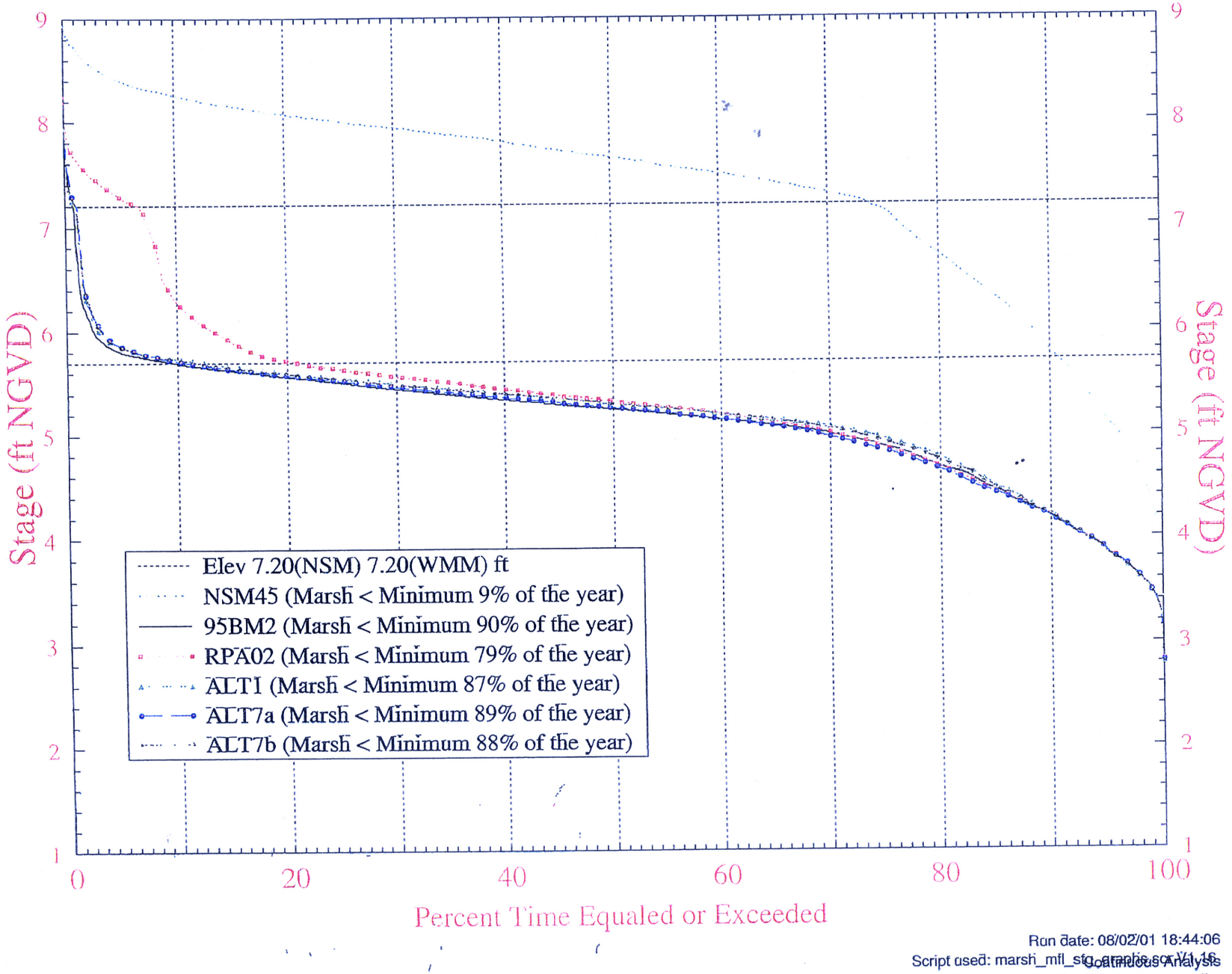
T27 (R19 C16, R18 C17, R17 C18, R16 C19, R15 C20, R14 C21), Period 1965 to 1995



Continuous Analysis
Run date: 08/02/01 18:33:22
SFWMM V3.8
Script used: mwd_pm_CII4.6.scr, V1.3

A-90

Marsh Stage Duration for Rocky Glades Marl
Gage G–596, Cell R18 C26, Proposed Min Lvl 1.5 ft below ground



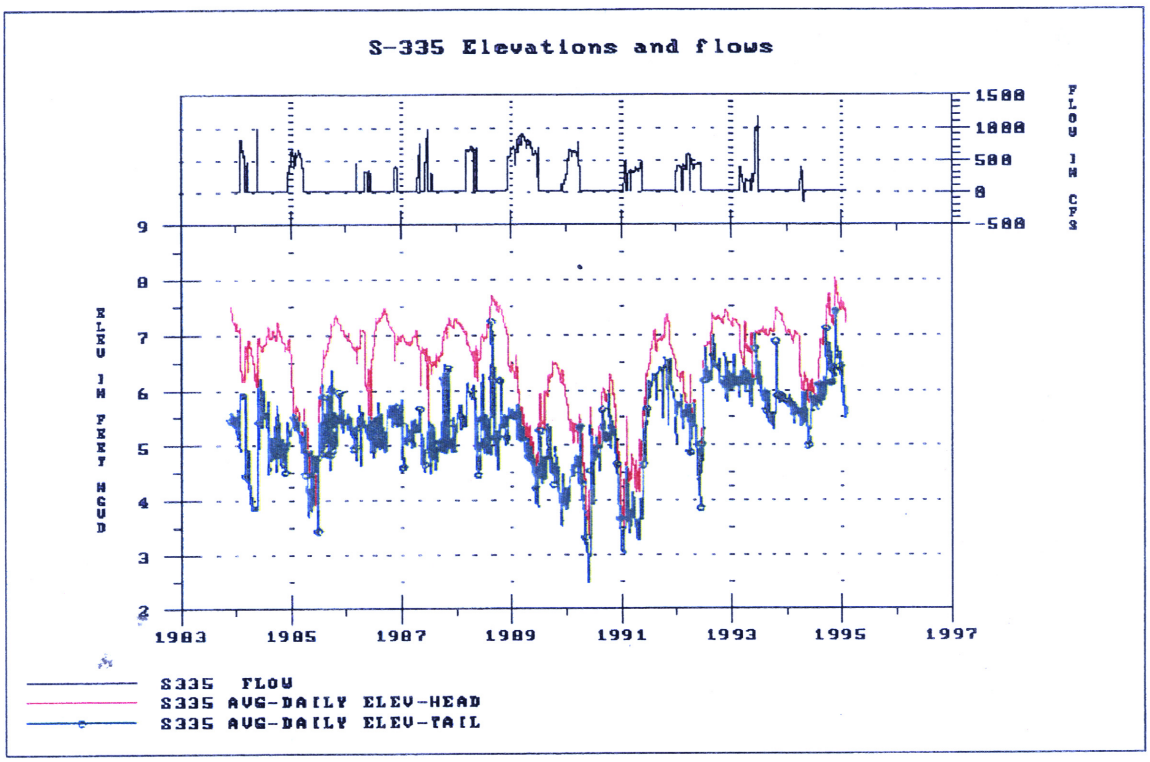
Run date: 08/02/01 18:44:06
Script used: marsh_mfl_stg_graphic.scr V1.16
Continuous Analysis

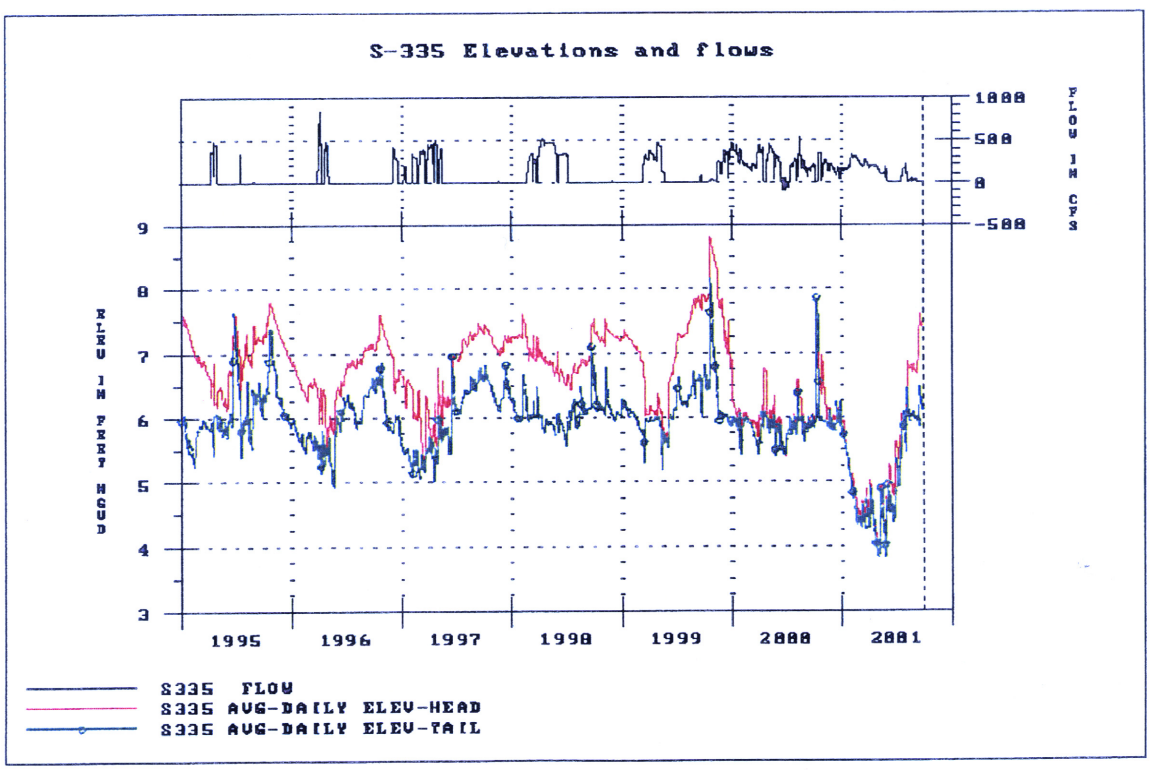
A-61

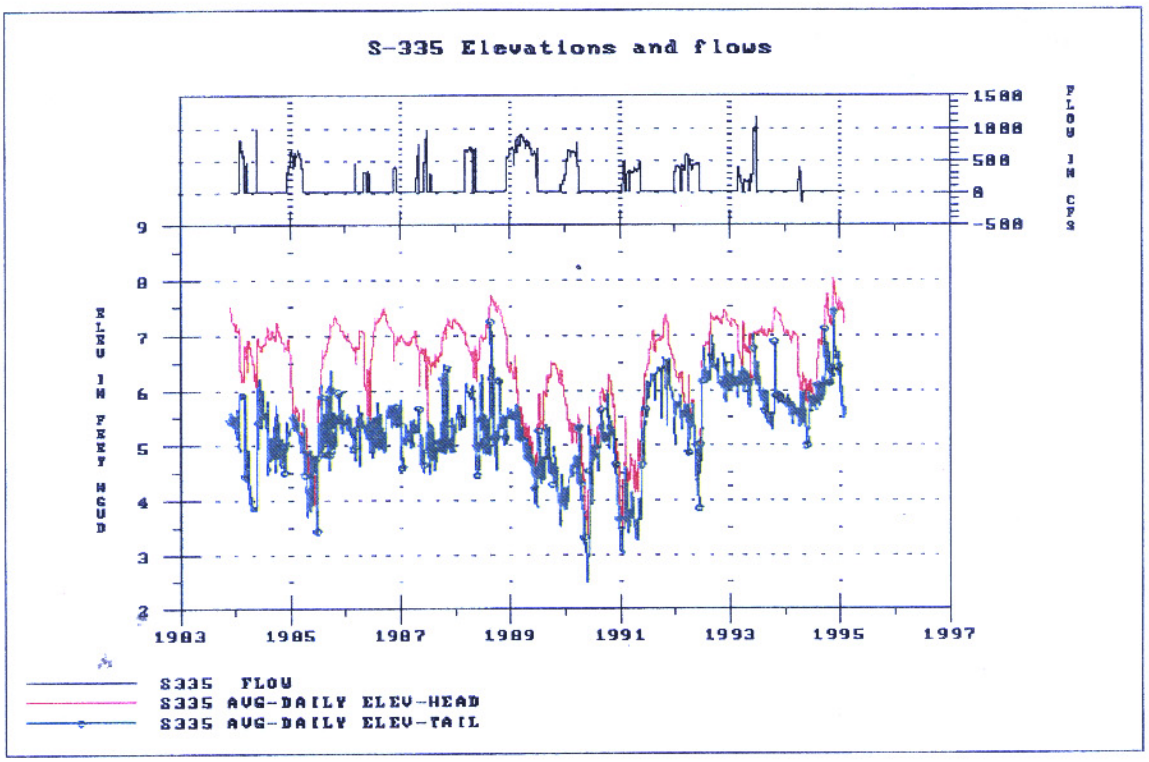
Peak Stage Indicators in C-111 Basin

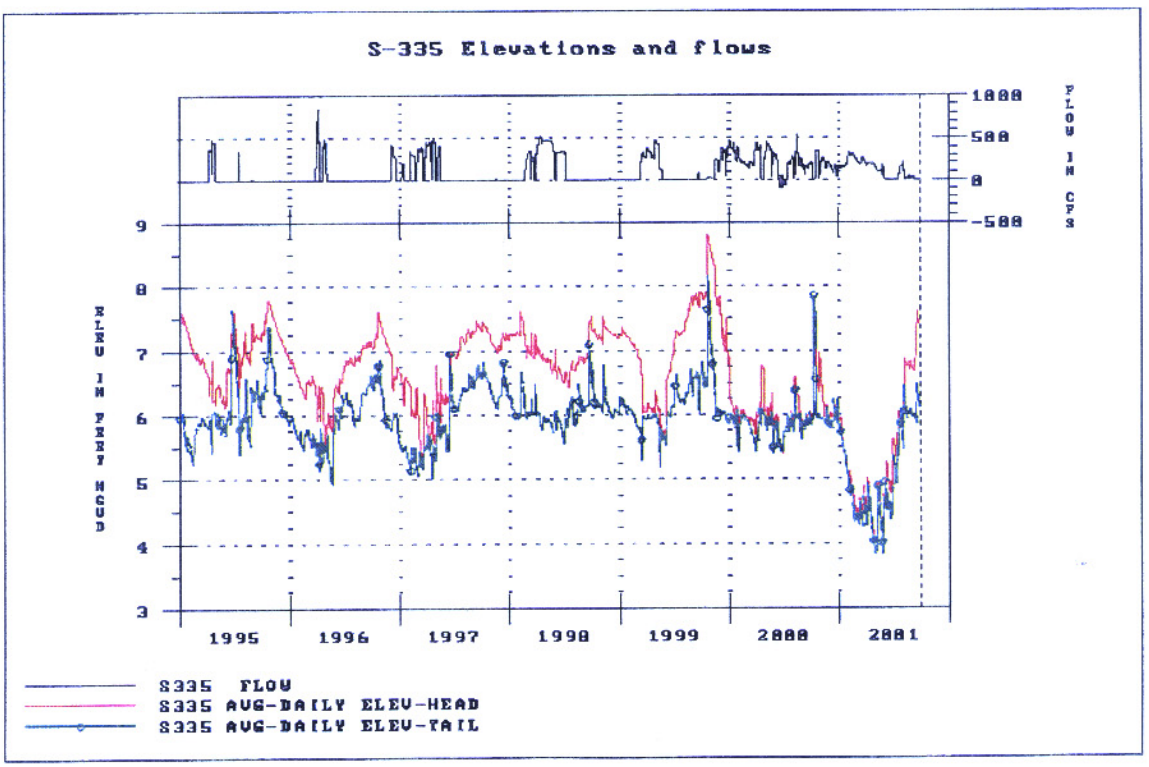
Cell	Land Surface Elev	Peak Stage (ft)			Stage at Highest 10th Percentile (ft)			Percent of Time stage above Root Zone *												
		CALIB_VERIF_V3.7			95BM2			RPA02			ALT1			ALT7a			ALT7b		
R10C25	5.20	5.49	3.69	41.6	5.43	3.86	47.3	5.44	3.93	52.8	5.42	3.93	57.1	5.43	3.95	53.2	5.43	3.93	59.5
R13C25	6.50	6.79	4.75	17.9	6.93	4.94	30.3	7.11	5.16	44.3	7.02	5.66	24.4	7.00	5.02	37.3	7.04	5.00	35.7
R15C26	7.53	7.80	5.37	7.9	7.75	5.56	10.5	7.77	6.53	14.4	7.78	6.27	9.0	7.76	5.60	11.3	7.76	5.60	11.5
R17C27	8.46	7.80	5.05	0.3	6.65	5.73	0.0	7.16	4.94	0.1	6.25	5.16	0.0	6.22	4.98	0.0	6.25	5.18	0.0
R19C28	8.00	8.23	5.48	4.0	8.19	5.58	4.6	8.21	5.60	4.9	8.19	5.59	4.7	8.20	5.60	4.8	8.19	5.58	4.7
R20C28	7.50	8.06	5.48	9.7	8.01	5.59	11.9	8.03	5.61	12.4	8.01	5.58	11.8	8.01	6.40	12.3	8.01	5.58	11.7
R16C29	9.66	6.07	4.66	0.0	6.07	4.69	0.0	6.11	4.71	0.0	6.14	4.70	0.0	6.09	4.70	0.0	6.14	4.71	0.0
R22C29	7.50	6.09	4.87	0.9	6.02	5.00	2.3	6.11	5.02	2.4	6.16	5.02	2.3	6.18	5.04	2.5	6.16	5.03	2.4
R24C30	5.90	6.32	4.13	15.9	6.31	4.38	26.2	6.32	4.41	27.3	6.31	4.40	26.7	6.32	4.43	27.9	6.32	4.42	27.2

* Root Zone is assumed to be 2 feet deep.


S-335 Elevations and flows
1500
1000
500
0
-500
FLOW IN CFS
9
8
7
6
5
4
3
2
ELEV IN FEET NGVD
1983
1985
1987
1989
1991
1993
1995
1997
S335 FLOW
S335 AVG-DAILY ELEV-HEAD
S335 AVG-DAILY ELEV-TAIL


S-335 Elevations and flows
1000
500
0
-500
FLOW IN CFS
9
8
7
6
5
4
3
ELEV IN FEET NGVD
1995
1996
1997
1998
1999
2000
2001
S335 FLOW
S335 AVG-DAILY ELEV-HEAD
S335 AVG-DAILY ELEV-TAIL


S-335 Elevations and flows
1500
1000
500
0
-500
FLOW IN CFS
ELEV IN FEET NGVD
9
8
7
6
5
4
3
2
1983
1985
1987
1989
1991
1993
1995
1997
S335 FLOW
S335 AVG-DAILY ELEV-HEAD
S335 AVG-DAILY ELEV-TAIL


S-335 Elevations and flows
1000
500
0
-500
FLOW IN CFS
ELEV IN FEET NGVD
9
8
7
6
5
4
3
1995
1996
1997
1998
1999
2000
2001
S335 FLOW
S335 AVG-DAILY ELEV-HEAD
S335 AVG-DAILY ELEV-TAIL

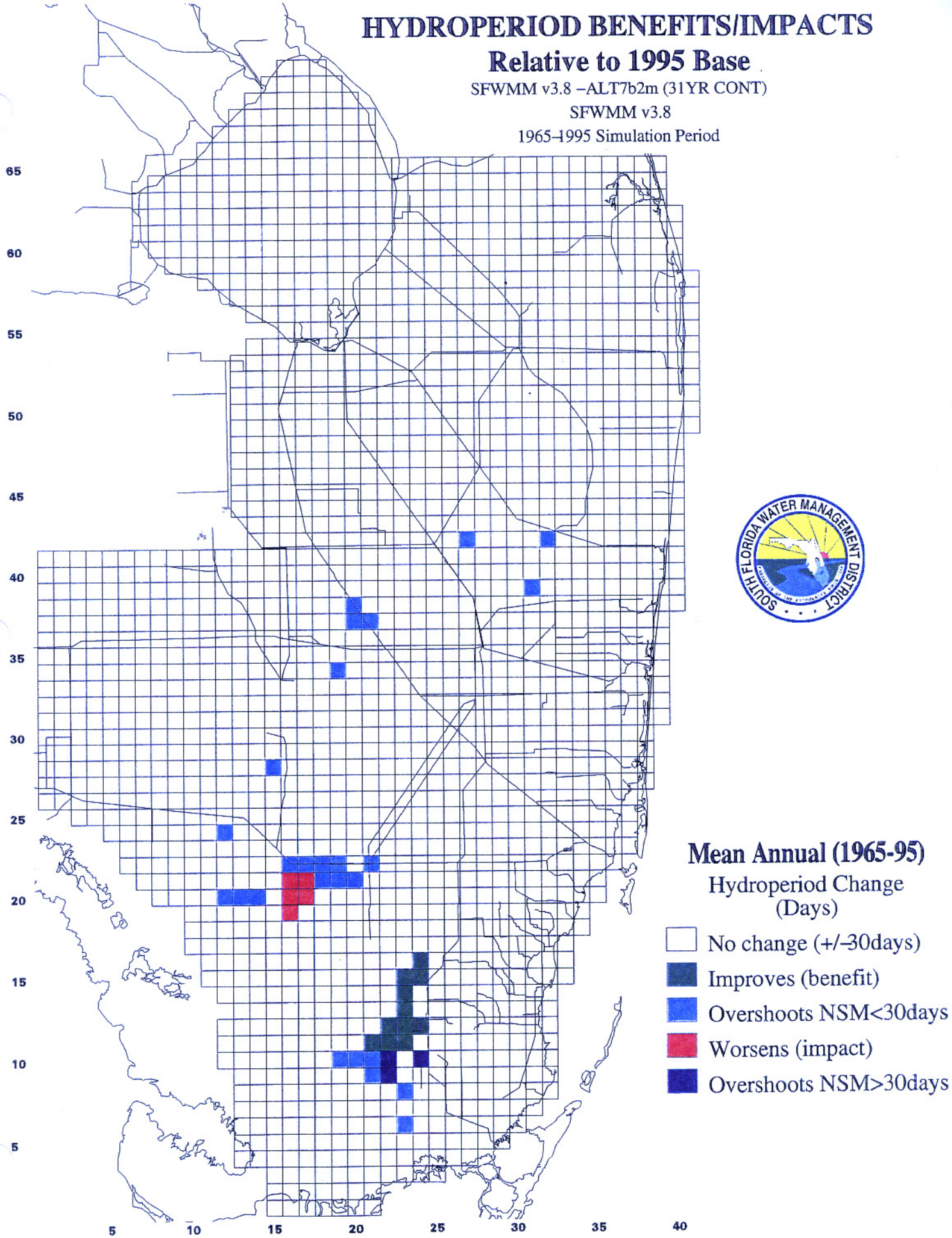
HYDROPERIOD BENEFITS/IMPACTS

Relative to 1995 Base

SFWMM v3.8 –ALT7b2m (31YR CONT)

SFWMM v3.8

1965-1995 Simulation Period



27 Jul 01 18:09:43 Friday

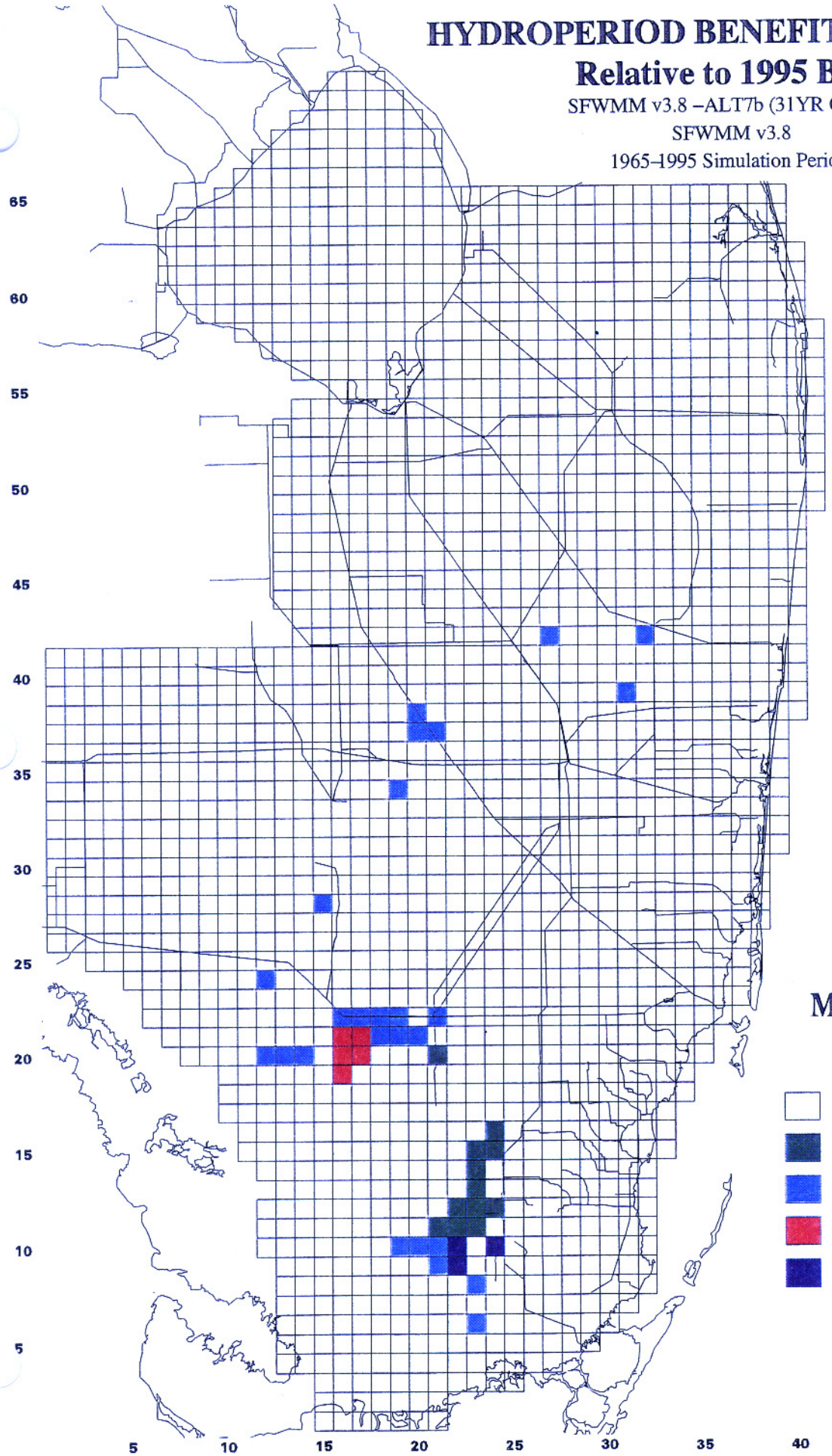
HYDROPERIOD BENEFITS/IMPACTS

Relative to 1995 Base

SFWMM v3.8 –ALT7b (31YR CONT)

SFWMM v3.8

1965–1995 Simulation Period



SOUTH FLORIDA WATER MANAGEMENT DISTRICT

Mean Annual (1965-95)

Hydroperiod Change (Days)

- No change (+/–30days)
- Improves (benefit)
- Overshoots NSM<30days
- Worsens (impact)
- Overshoots NSM>30days

15 Aug 01 11:13:57 Wednesday

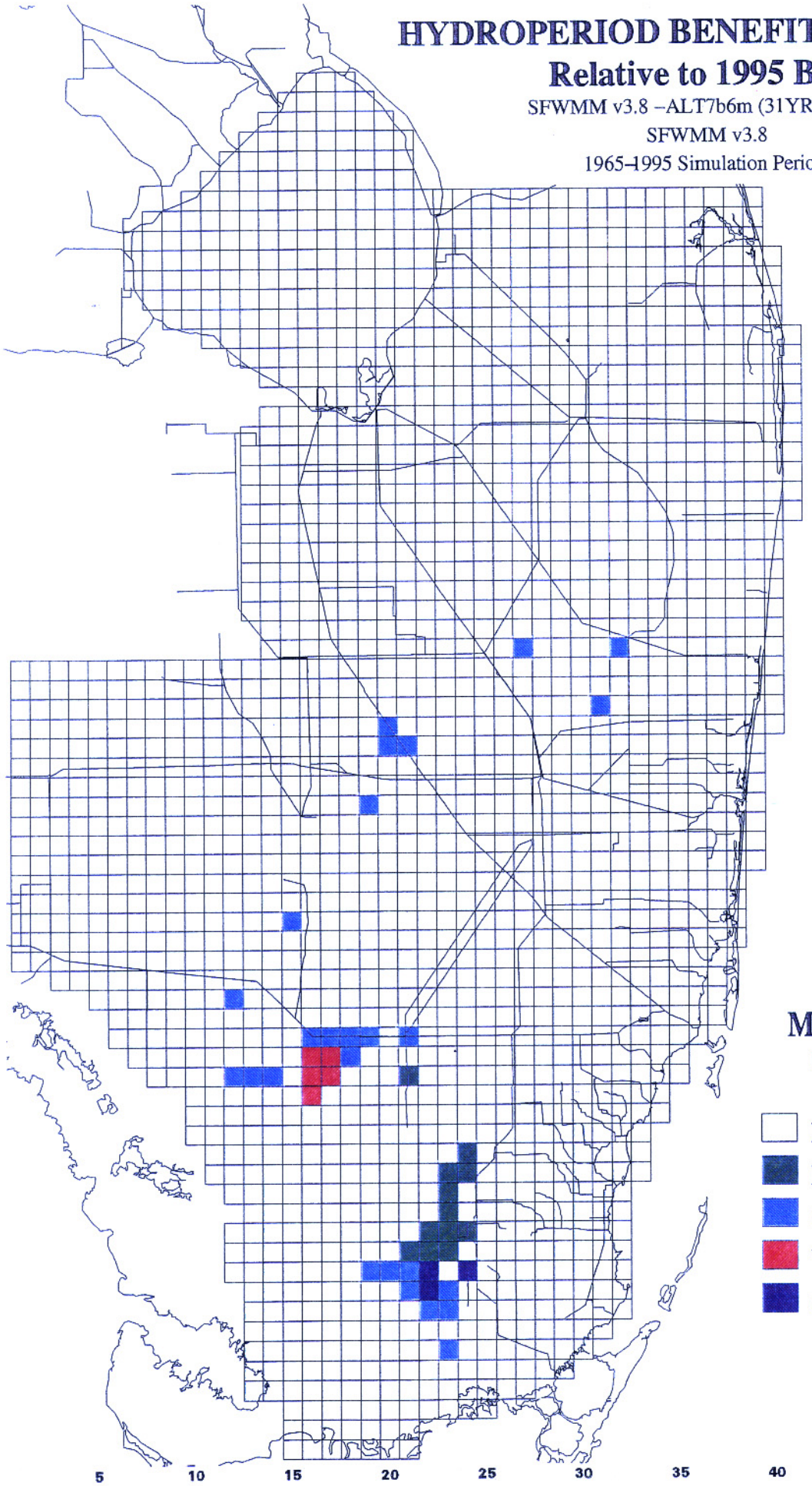
HYDROPERIOD BENEFITS/IMPACTS

Relative to 1995 Base

SFWMM v3.8 –ALT7b6m (31YR CONT)

SFWMM v3.8

1965-1995 Simulation Period



SOUTH FLORIDA WATER MANAGEMENT DISTRICT

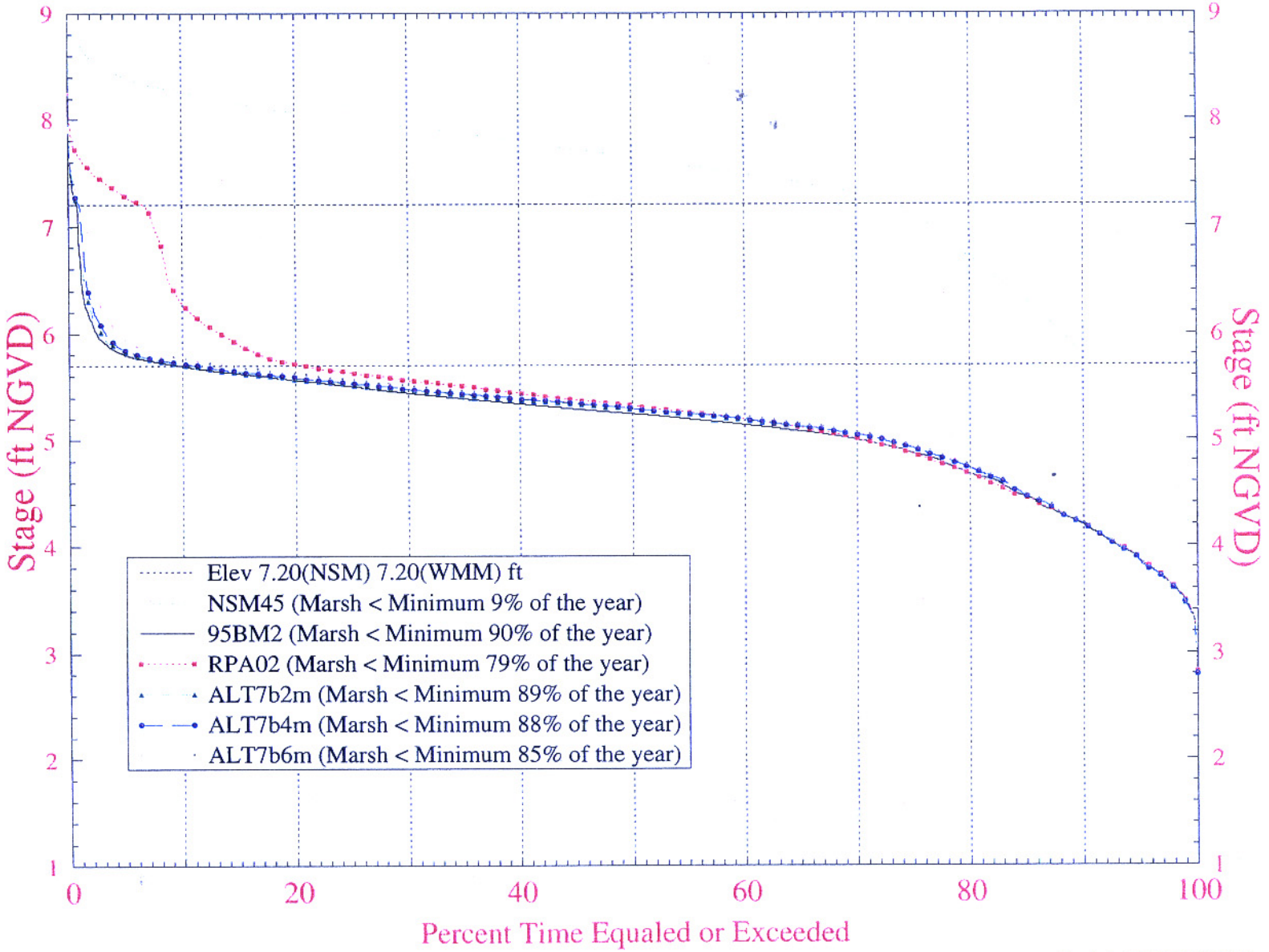
Mean Annual (1965-95)

Hydroperiod Change (Days)

- No change (+/-30days)
- Improves (benefit)
- Overshoots NSM<30days
- Worsens (impact)
- Overshoots NSM>30days

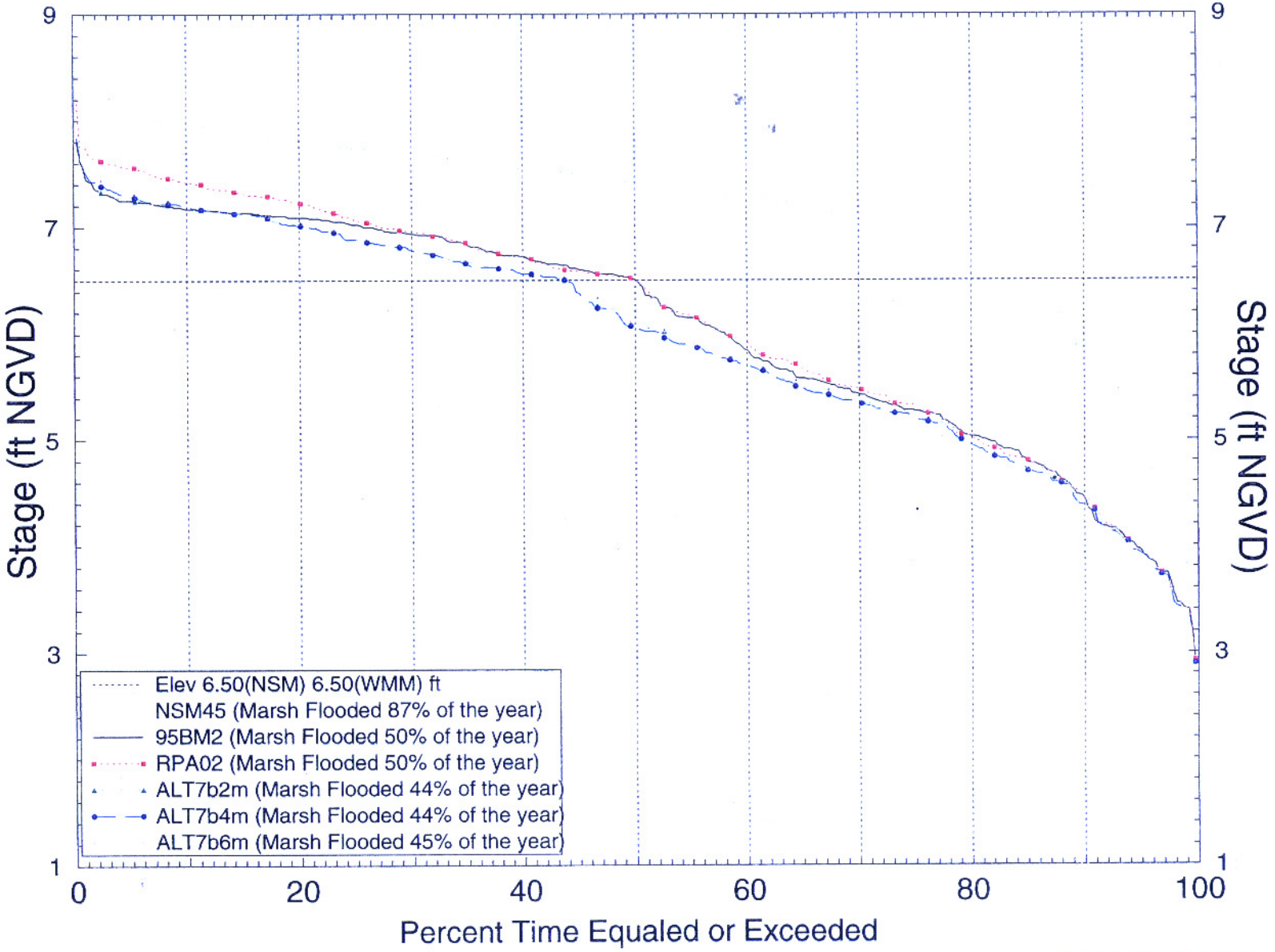
27 Jul 01 17:39:03 Friday

Marsh Stage Duration for Rocky Glades Marl
Gage G–596, Cell R18 C26, Proposed Min Lvl 1.5 ft below ground



Run date: 07/27/01 22:07:43
Script used: marsh_mfl_stg_graphs.scx V1.16
marsh_stg_dur_curves.Rocky_Gld_G-596_1826.fig

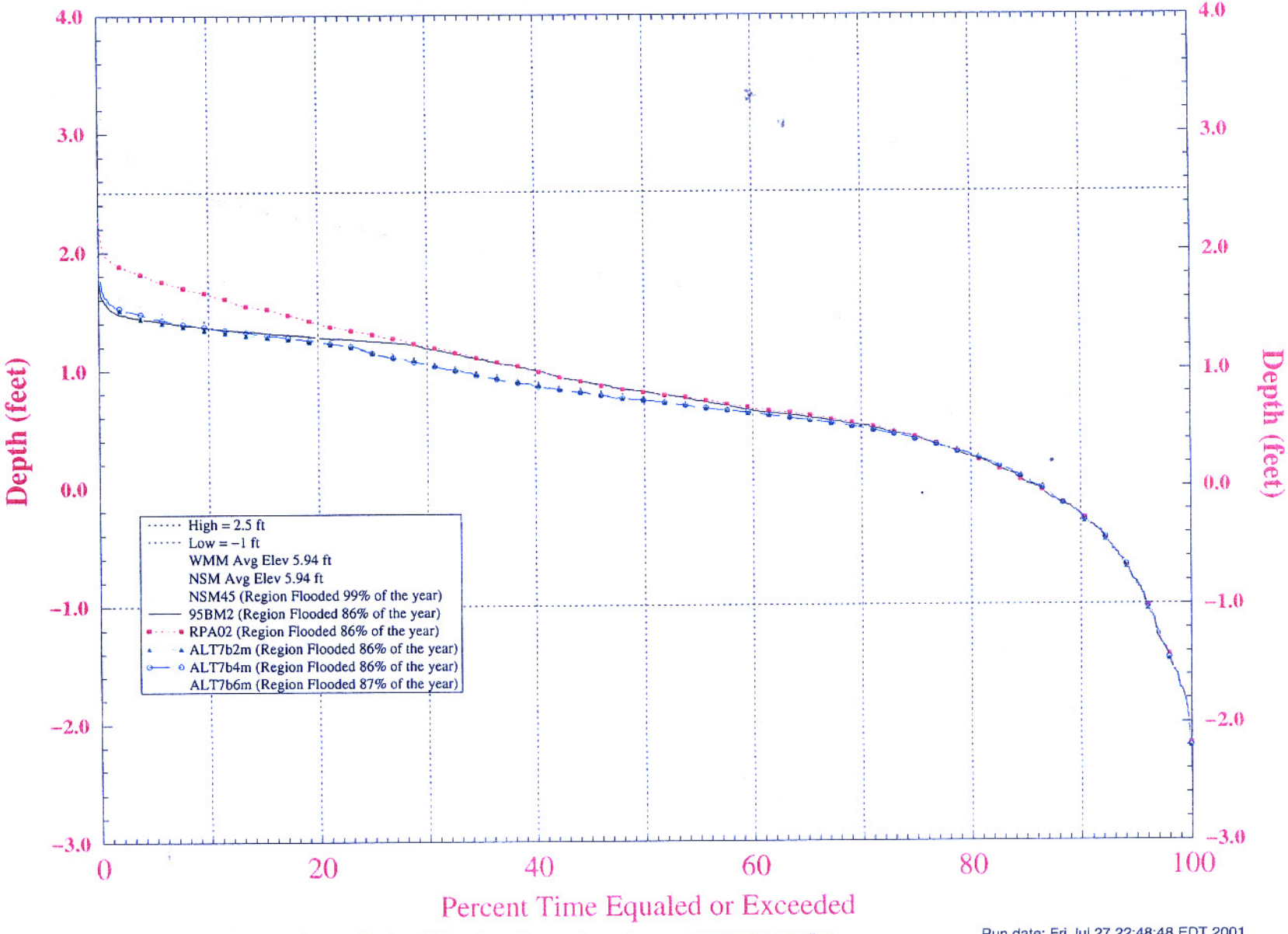
Stage Duration Curves at Rocky Glades
Gage G-3273, Cell R17 C24



Run date: 07/27/01 21:32:20
Continuous Analysis
SFWMM V3.8

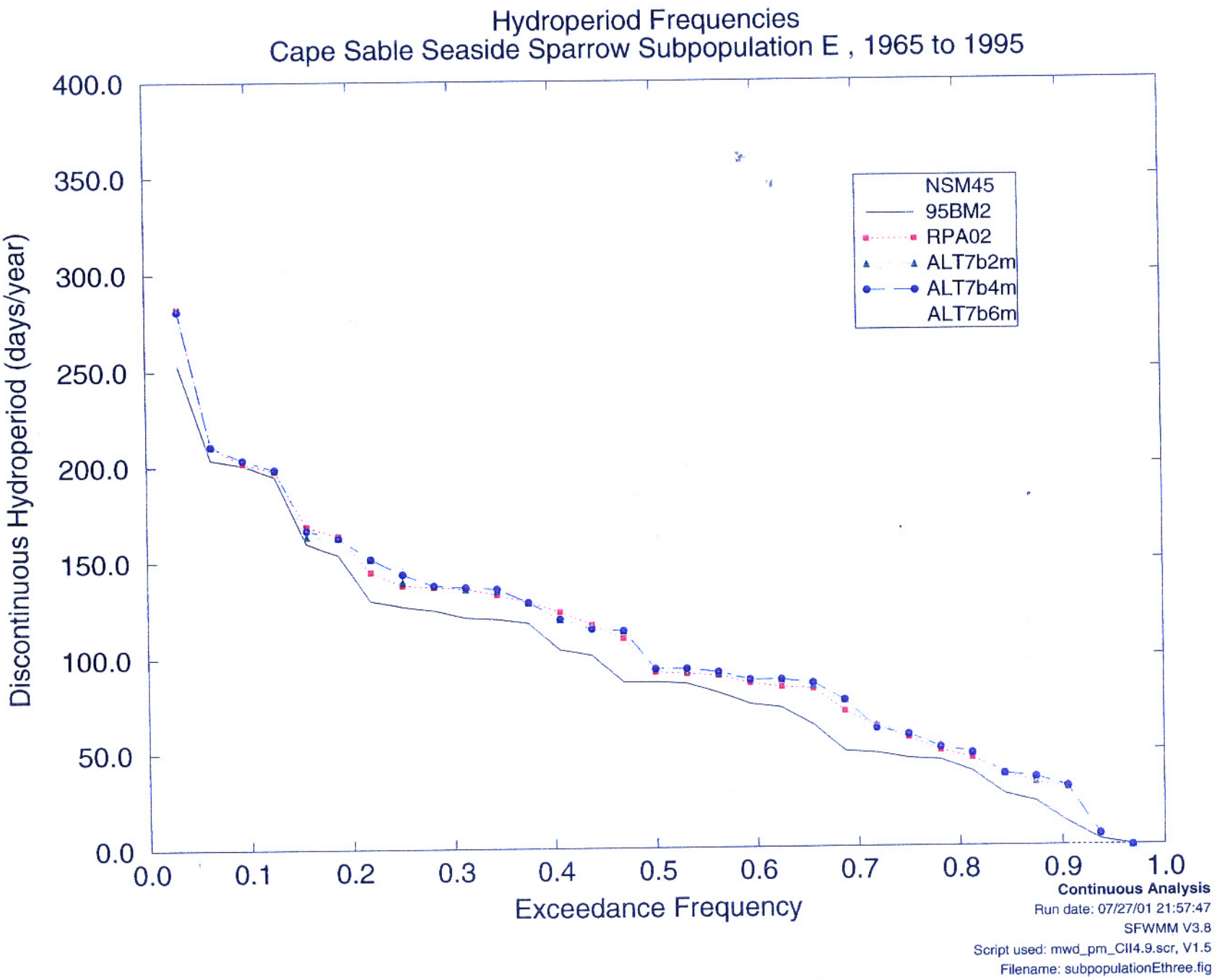
Normalized Weekly Stage Duration Curves for NE Shark River Slough

Indicator Region 11 (R19C22–23 R20C22–26 R21C22–26)

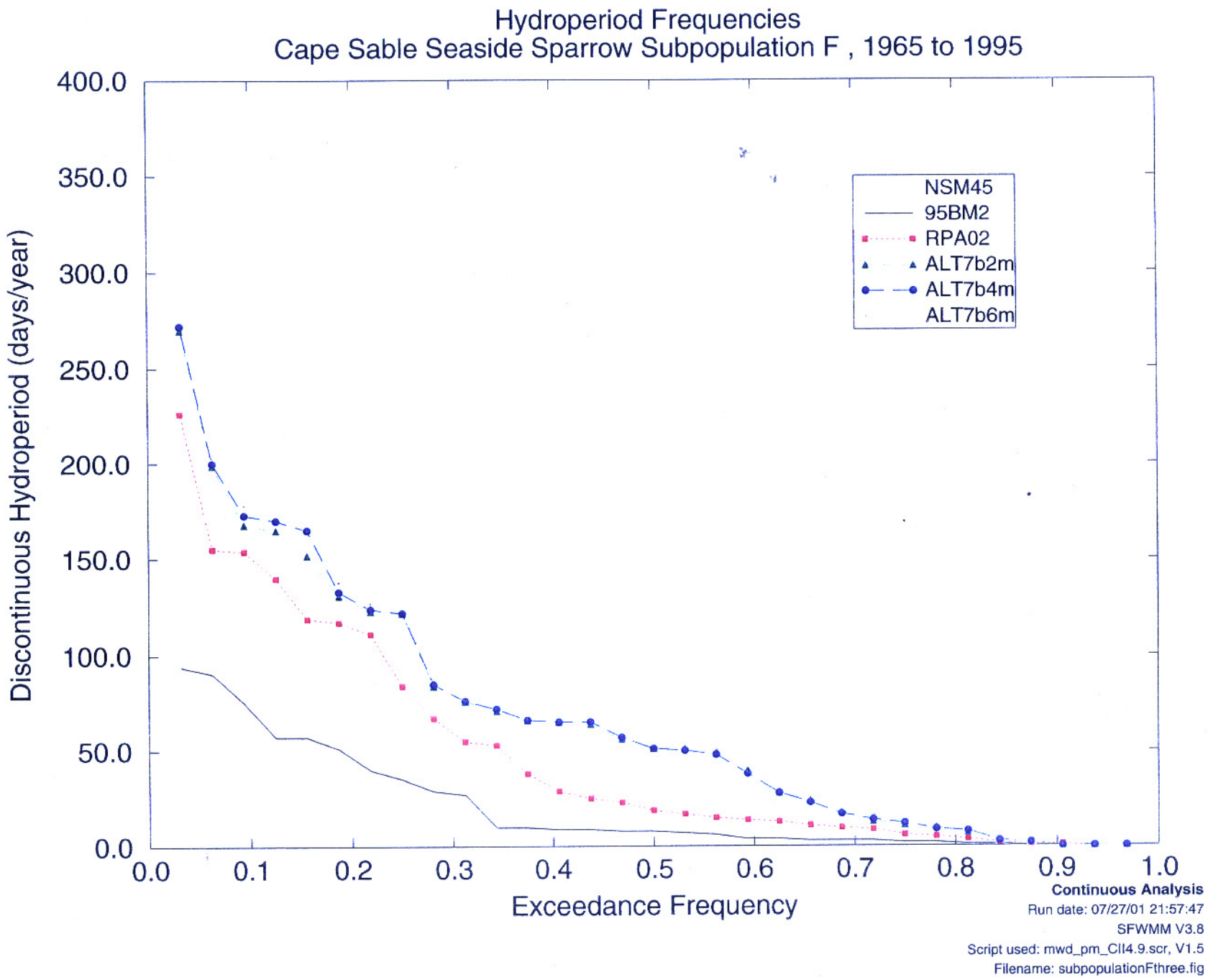


Note: Normalized stage is stage referenced to Land Elevation. Thus, values above zero indicate ponding while values below zero indicate depth to the water table.

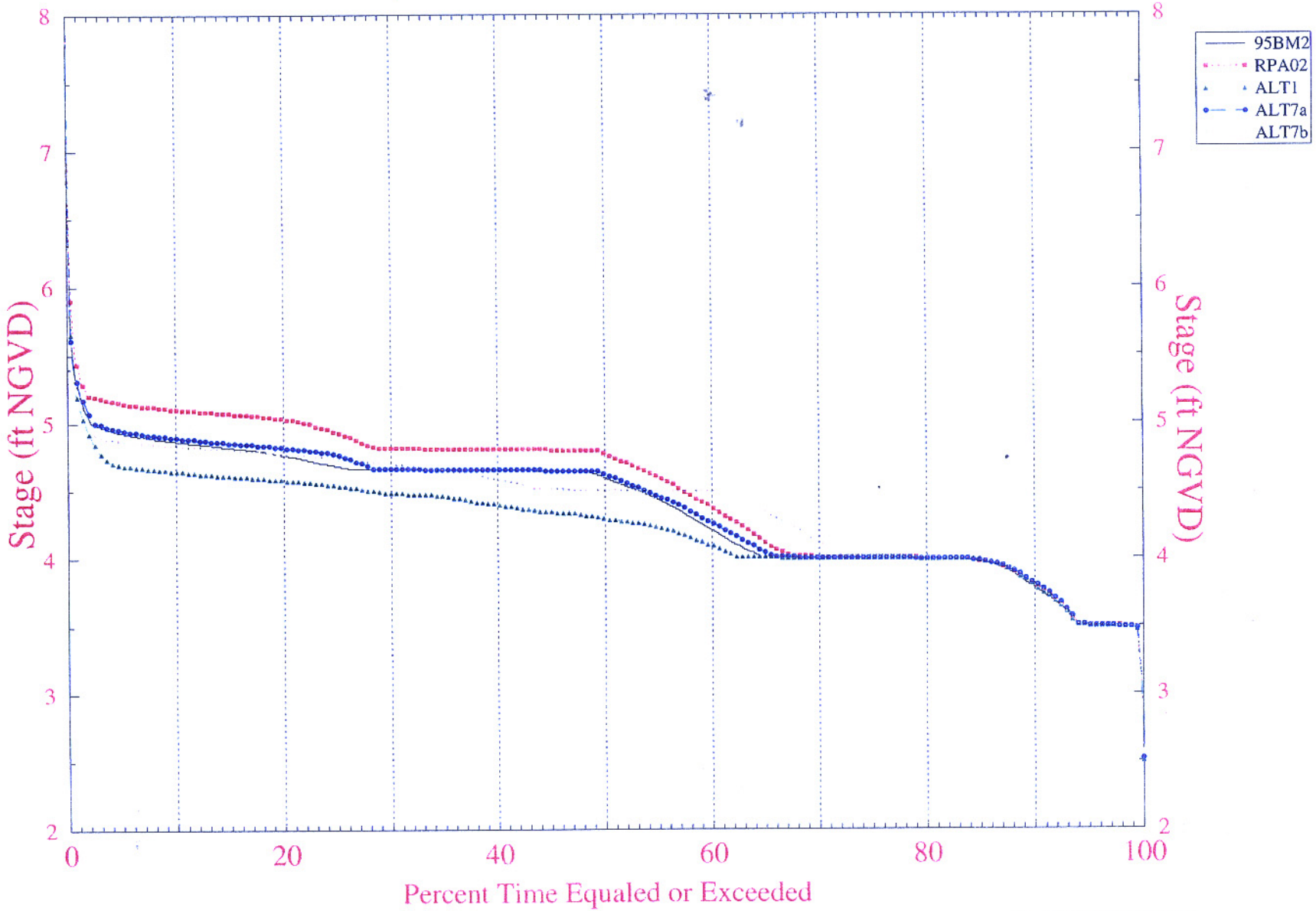
Run date: Fri Jul 27 22:48:48 EDT 2001
For Planning Purposes Only
SFWMM V3.4


Hydroperiod Frequencies
Cape Sable Seaside Sparrow Subpopulation E , 1965 to 1995
Discontinuous Hydroperiod (days/year)
400.0
350.0
300.0
250.0
200.0
150.0
100.0
50.0
0.0
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
Exceedance Frequency
NSM45
95BM2
RPA02
ALT7b2m
ALT7b4m
ALT7b6m
Continuous Analysis
Run date: 07/27/01 21:57:47
SFWMM V3.8
Script used: mwd_pm_CII4.9.scr, V1.5
Filename: subpopulationEthree.fig

001-4


Hydroperiod Frequencies
Cape Sable Seaside Sparrow Subpopulation F , 1965 to 1995
Discontinuous Hydroperiod (days/year)
400.0
350.0
300.0
250.0
200.0
150.0
100.0
50.0
0.0
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
Exceedance Frequency
NSM45
95BM2
RPA02
ALT7b2m
ALT7b4m
ALT7b6m
Continuous Analysis
Run date: 07/27/01 21:57:47
SFWMM V3.8
Script used: mwd_pm_CII4.9.scr, V1.5
Filename: subpopulationFthree.fig

Stage Duration Curves for L–31N Canal at S–174
(Salt–Water Intrusion Indicator Stage = 2.1 ft, NGVD)



Run date: 08/02/01 19:01:07
Continuous Analysis
SFWMM V3.8

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