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TECHNICAL REPORT HL-91-7

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**US Army Corps
of Engineers**

DEVELOPMENT AND VERIFICATION OF A THREE-DIMENSIONAL NUMERICAL HYDRODYNAMIC, SALINITY, AND TEMPERATURE MODEL OF CHESAPEAKE BAY

Volume II APPENDIXES A THROUGH C

by

B. H. Johnson, R. E. Heath, B. B. Hsieh

Hydraulics Laboratory

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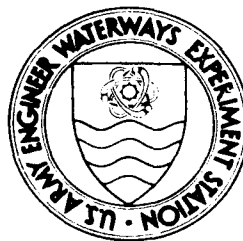
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Coastal Engineering Research Center

DEPARTMENT OF THE ARMY

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Prepared for US Army Engineer District, Baltimore
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13. ABSTRACT (Maximum 200 words) A time-varying three-dimensional (3-D) numerical hydrodynamic model of Chesapeake Bay has been developed to provide flow fields to a 3-D water quality model of the bay. The water surface, 3-D velocity field, salinity, and temperature are computed. Major physical processes affecting bay circulation and vertical mixing are modeled. A particular feature of the model is the solution of transformed equations on a boundary-fitted grid in the horizontal plane. The 3-D model has been verified through application to six data sets. The first three were about 1 month long each and represented a dry summer condition, a spring runoff, and a fall wind-mixing event. The last three were yearlong simulations for the years of 1984, 1985, and 1986. These years represent a wet, dry, and average freshwater inflow year, respectively. A major storm in November 1985 over the lower portion of the bay resulted in a 200-year flood on the James River and served to demonstrate the ability of the model to simulate extreme events. Results from these applications demonstrate that the model is a good representation of the hydrodynamics of the Chesapeake Bay and its major tributaries.					
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PREFACE

The study described herein and the preparation of this report were conducted during 1988-91 for the US Army Engineer District, Baltimore, by the US Army Engineer Waterways Experiment Station (WES) under the general supervision of Mr. F. A. Herrmann, Jr., Chief of the Hydraulics Laboratory; Dr. J. R. Houston, Chief of the Coastal Engineering Research Center; and Messrs. M. B. Boyd, Chief of the Waterways Division (WD), Hydraulics Laboratory; W. H. McAnally, Chief of the Estuaries Division (ED), Hydraulics Laboratory; and H. Lee Butler, Chief of the Research Division (RD), Coastal Engineering Research Center. Dr. Robert W. Whalin, Technical Director, WES, was the director of the study; and Mr. D. L. Robey, Chief of the Ecosystem Research and Simulation Division (ERSD), Environmental Laboratory, was the Study Manager. Mr. Butler was the coordinator for the Hydrodynamics Modeling Team.

Drs. B. H. Johnson, WD, and K. W. Kim, RD, prepared this report with assistance from Mr. R. E. Heath, Math Modeling Branch, WD; Dr. B. B. Hsieh, ED; and Mr. Butler. Dr. Y. P. Sheng of University of Florida was a consultant in the early phases of the study.

The June-July 1980 data presented in the report were obtained from Dr. W. Boicourt of the Horn Point Environmental Laboratories in Cambridge, MD. Dr. A. Blumberg of HydroQual, Inc., Mahwah, NJ, provided the April 1983 and September 1983 data sets. These data were primarily collected by the National Ocean Service.

This report was edited by Mrs. M. C. Gay, Information Technology Laboratory, WES.

Commander and Director of WES during preparation of this report was COL Larry B. Fulton, EN. Technical Director was Dr. Robert W. Whalin.

The report should be cited as follows:

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APPENDIX A: 1984 RESULTS

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Boundary Conditions

1. The ocean boundary tide at the Chesapeake Bay tunnel is shown in Figure A1 with the time-varying salinity and temperature at the ocean boundary given in Figures A2 and A3. Wind forcing data corrected to reflect the wind over open water are given in Figures A4 and A5. These wind data were collected at the Norfolk and Baltimore-Washington International Airports. Freshwater inflows on the James, York, Rappahannock, Potomac, Patuxent, Patapsco, Susquehanna and Choptank Rivers are presented in Figures A6-A13. Surface heat exchange data for the complete year are listed in Table A1.

Results

2. The 1984 year was broken into five seasons as follows for the purpose of generating seasonally averaged longitudinal transects of salinity:

Season 1 => 1 Jan - 25 Mar

Season 2 => 26 Mar - 10 Jun

Season 3 => 11 Jun - 27 Aug

Season 4 => 28 Aug - 25 Nov

Season 5 => 26 Nov - 31 Dec

3. Comparisons of computed water-surface elevation, salinity, and temperature are presented at the locations shown in Figure A14. Figures A15-A20 show the water-surface elevation comparisons at Hampton Roads, VA; Lewisetta, VA; Colonial Beach, VA; Solomons, MD; Annapolis, MD; and Havre de Grace, MD. Figures A21-A41 present the salinity comparisons at nine main bay stations and twelve tributary stations. Figures A42-A62 are similar plots showing the comparison of computed and recorded temperatures.

4. The location of the transects for generating seasonally averaged plots for the previously listed seasons are shown in Figure A63. The longitudinal plots of seasonally averaged salinities for the two main-bay transects and those on the James, Rappahannock, Potomac and Patuxent Rivers are given in Figures A64-A69.

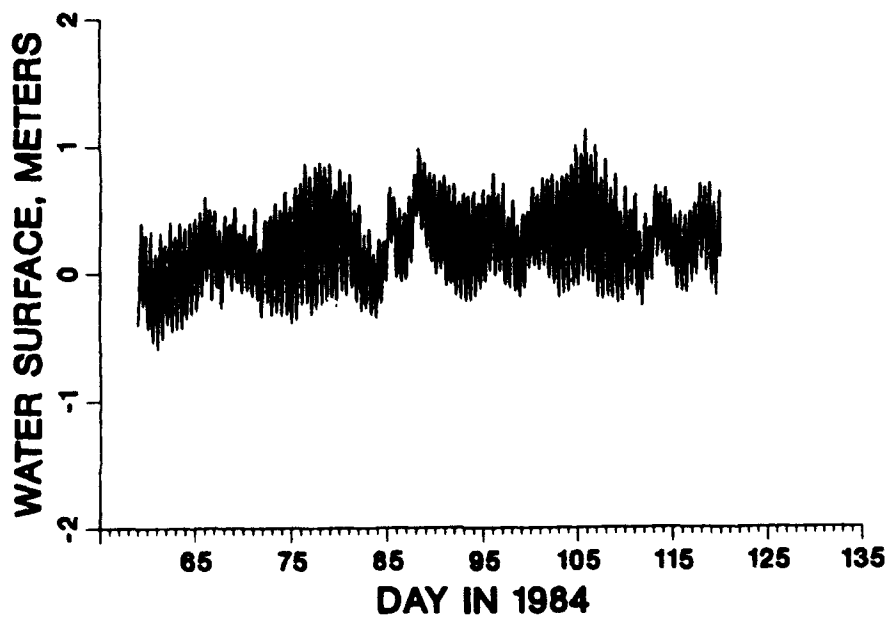
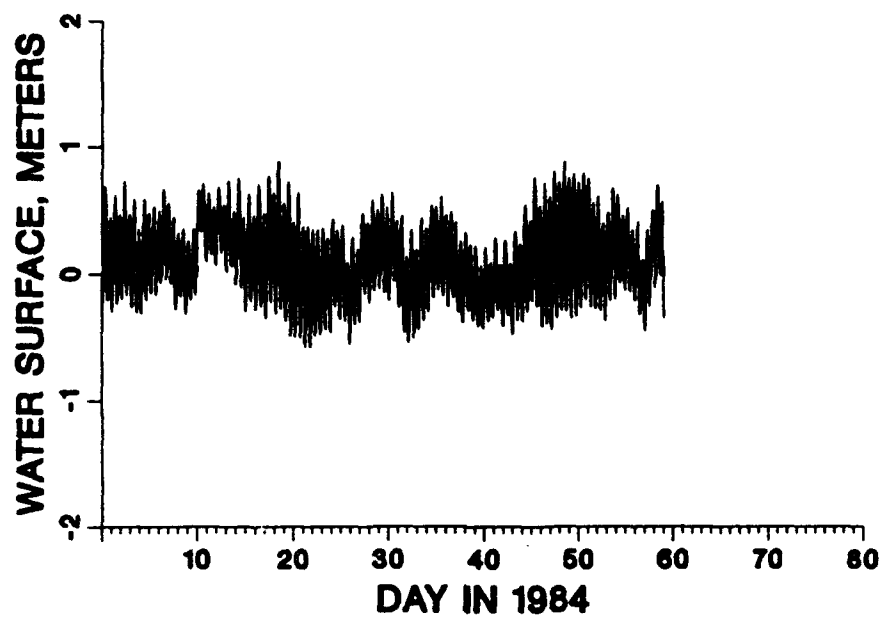


Figure A1. Ocean boundary tide during 1984 (Sheet 1 of 3)

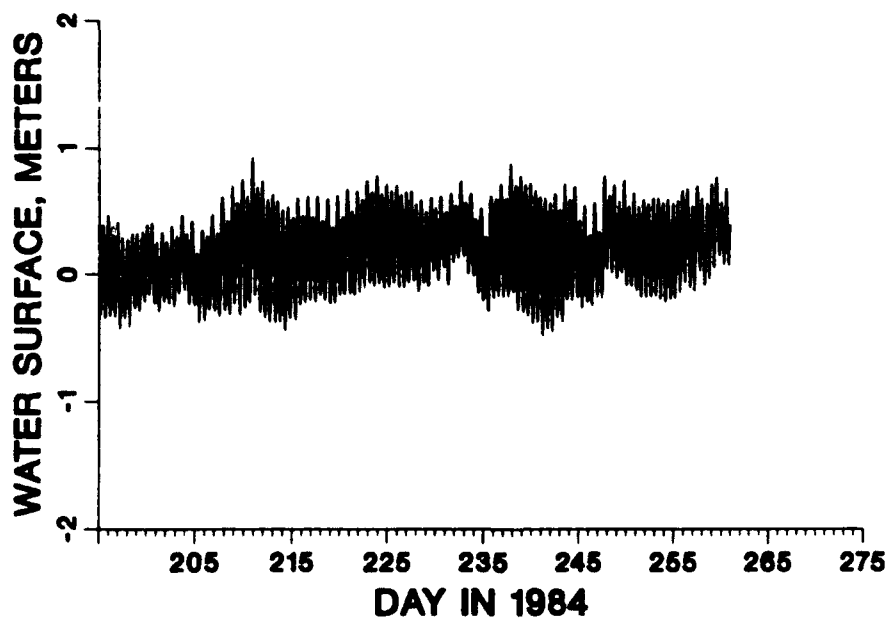
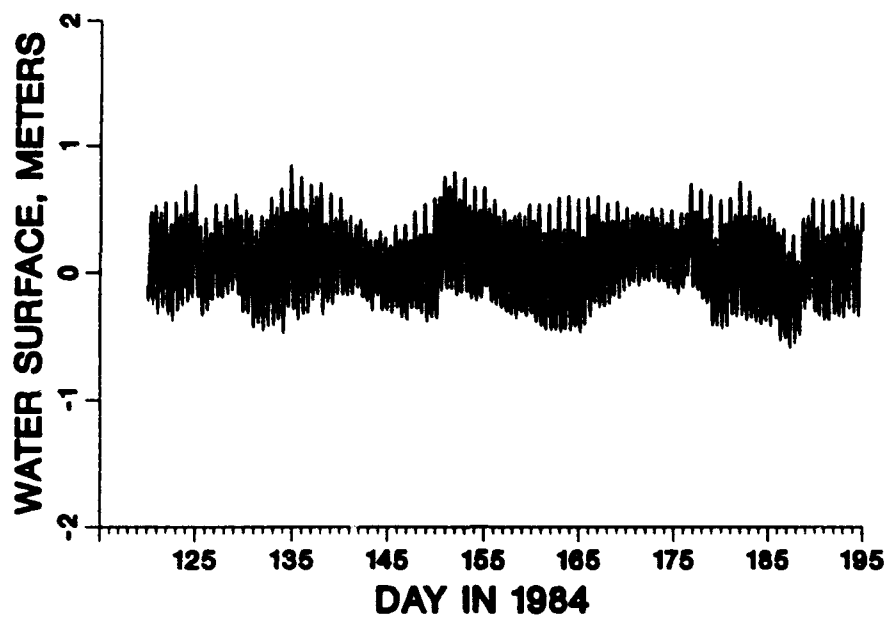


Figure A1. (Sheet 2 of 3)

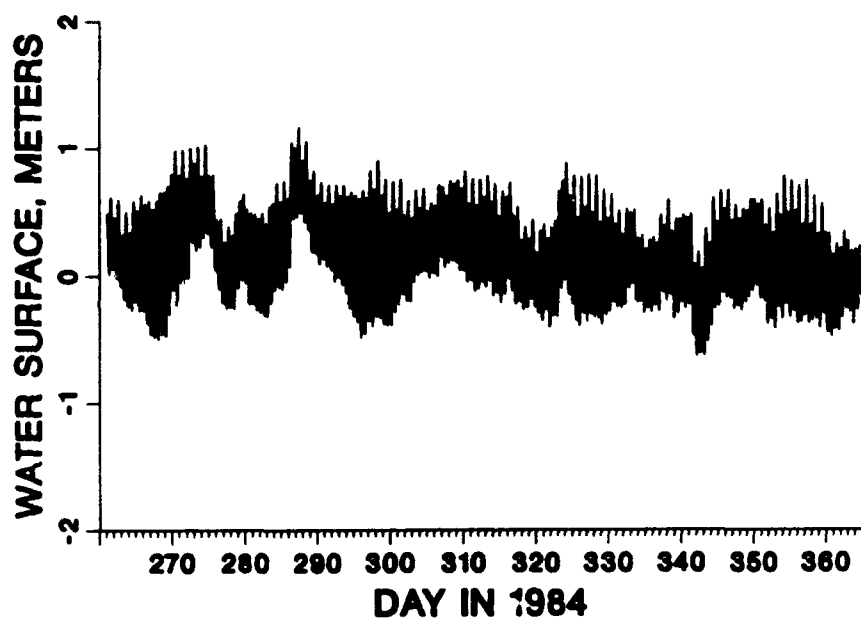


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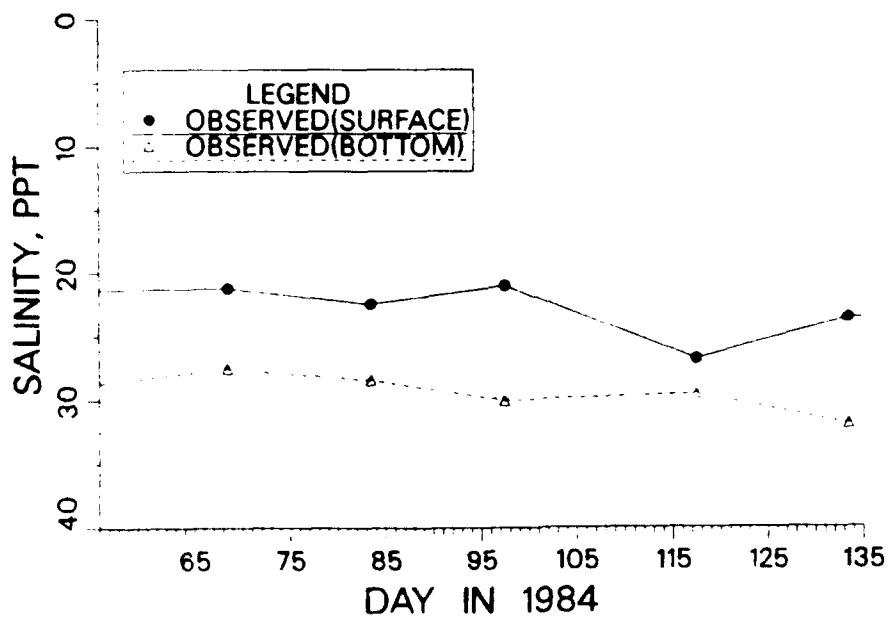
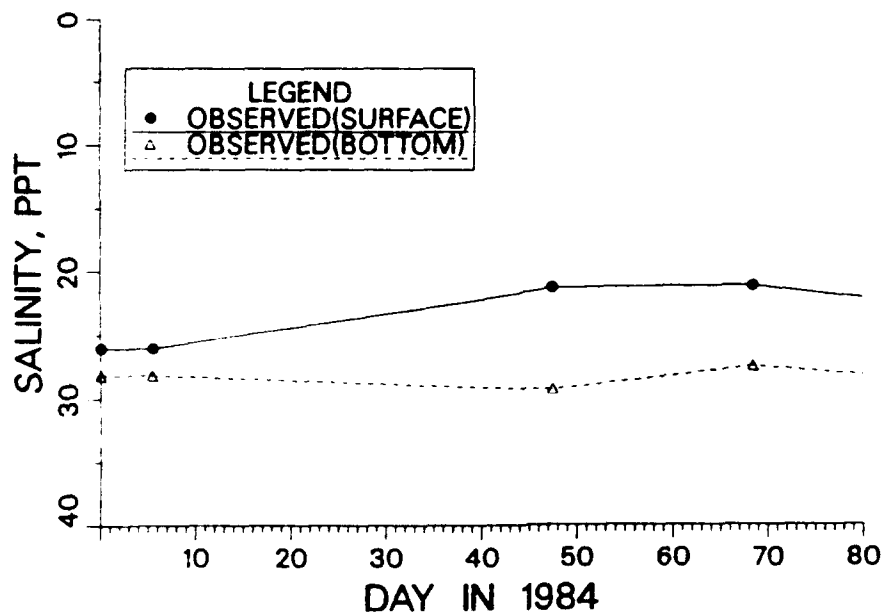


Figure A2. Ocean boundary salinity during 1984 (Sheet 1 of 3)

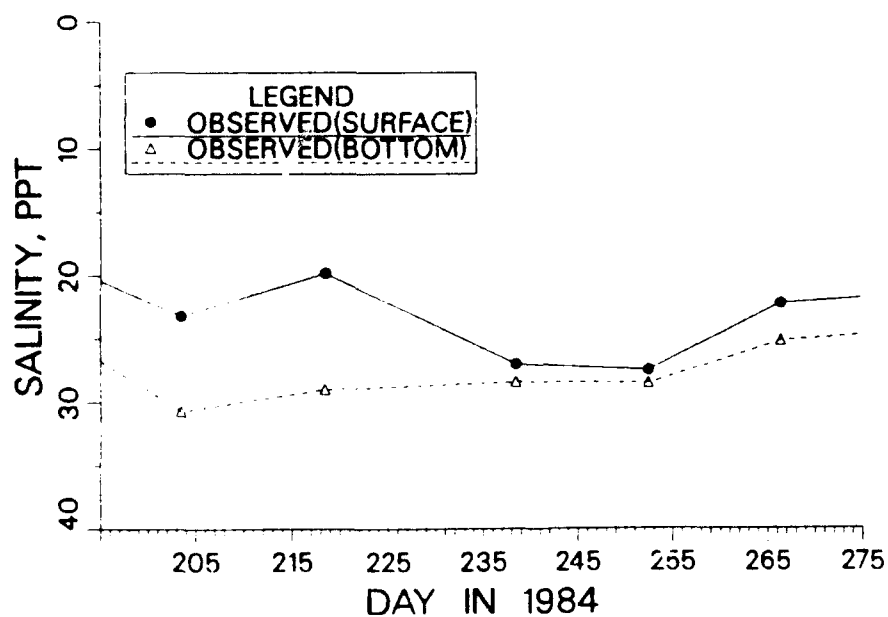
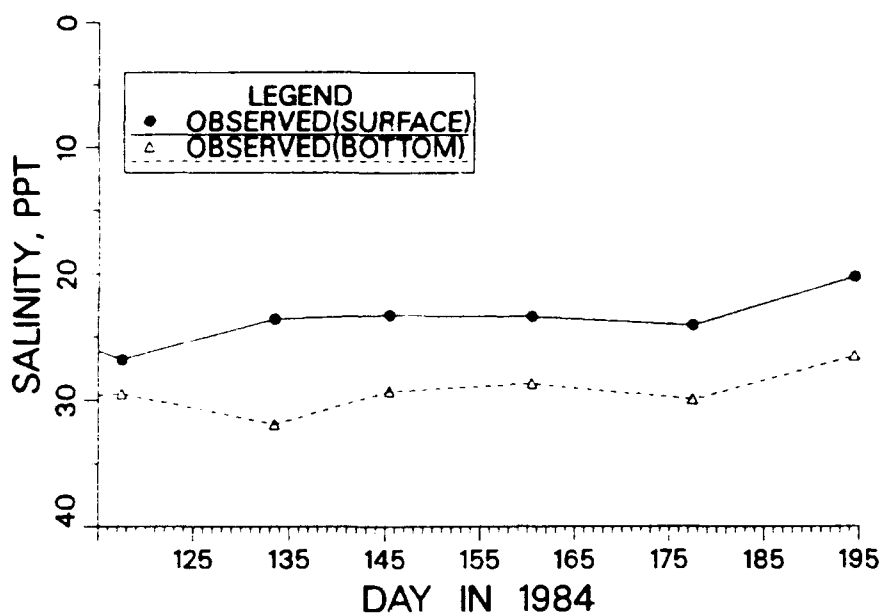


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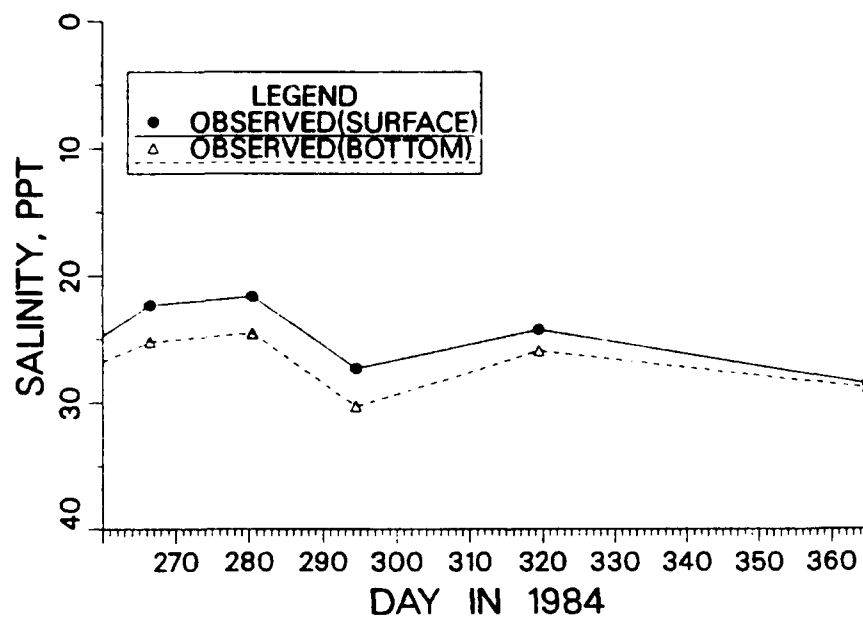


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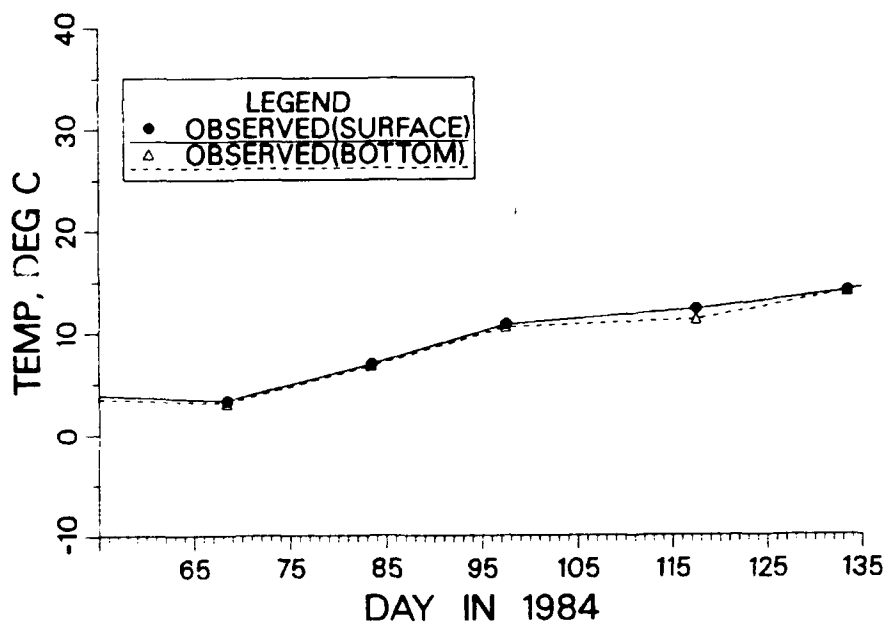
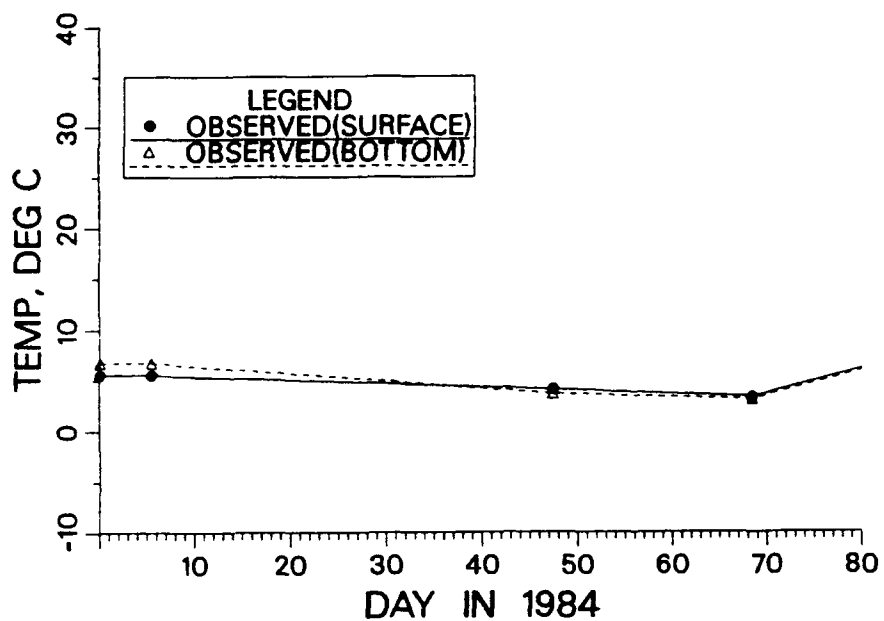


Figure A3. Ocean boundary temperature during 1984 (Sheet 1 of 3)

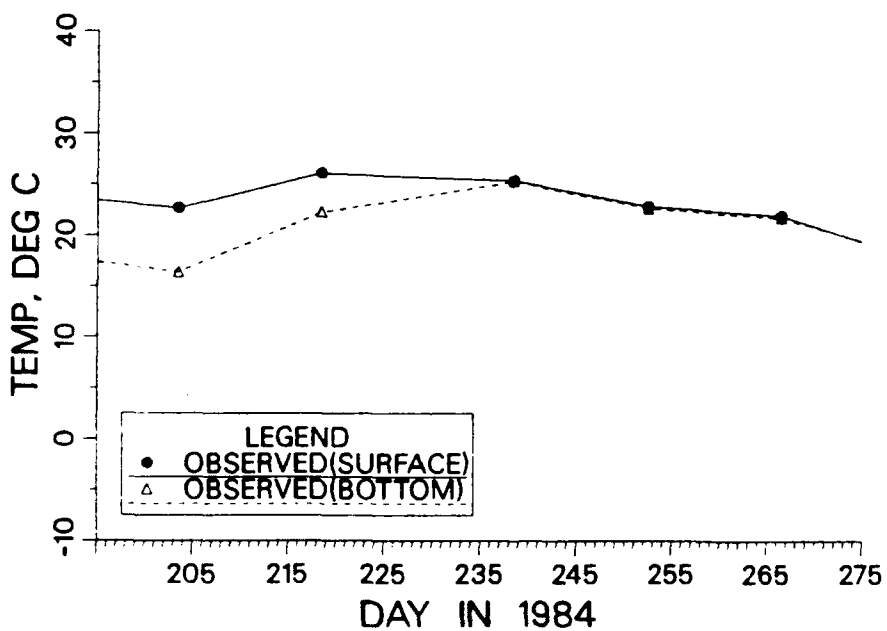
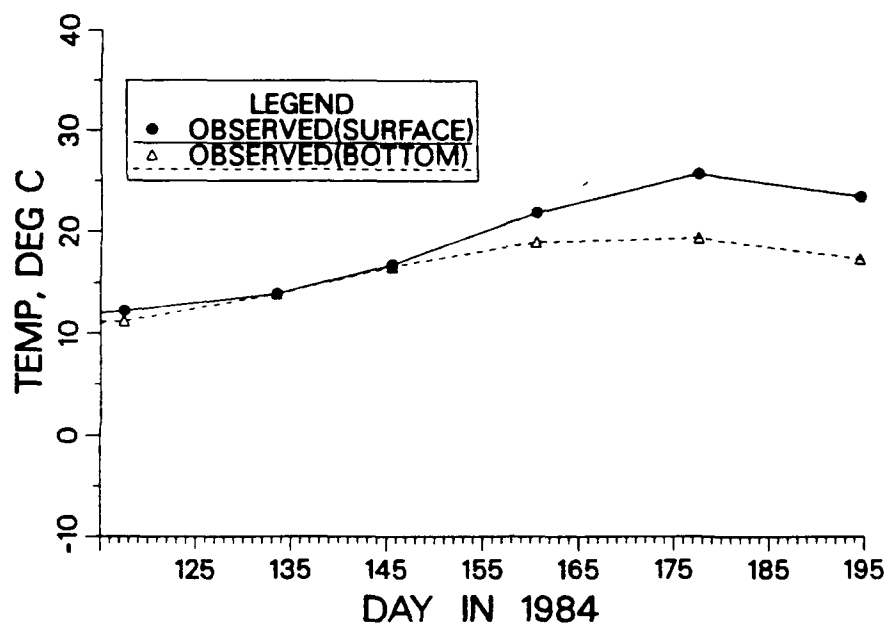


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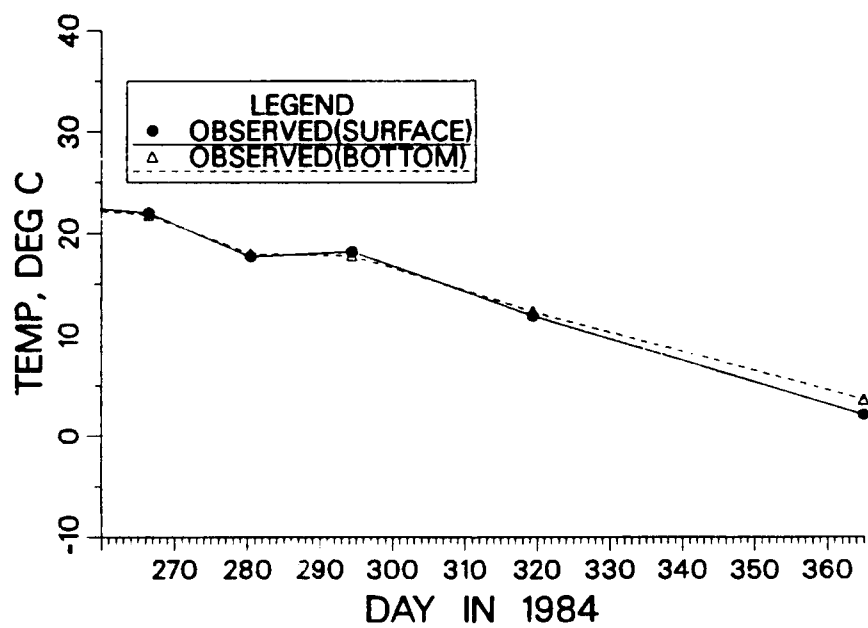
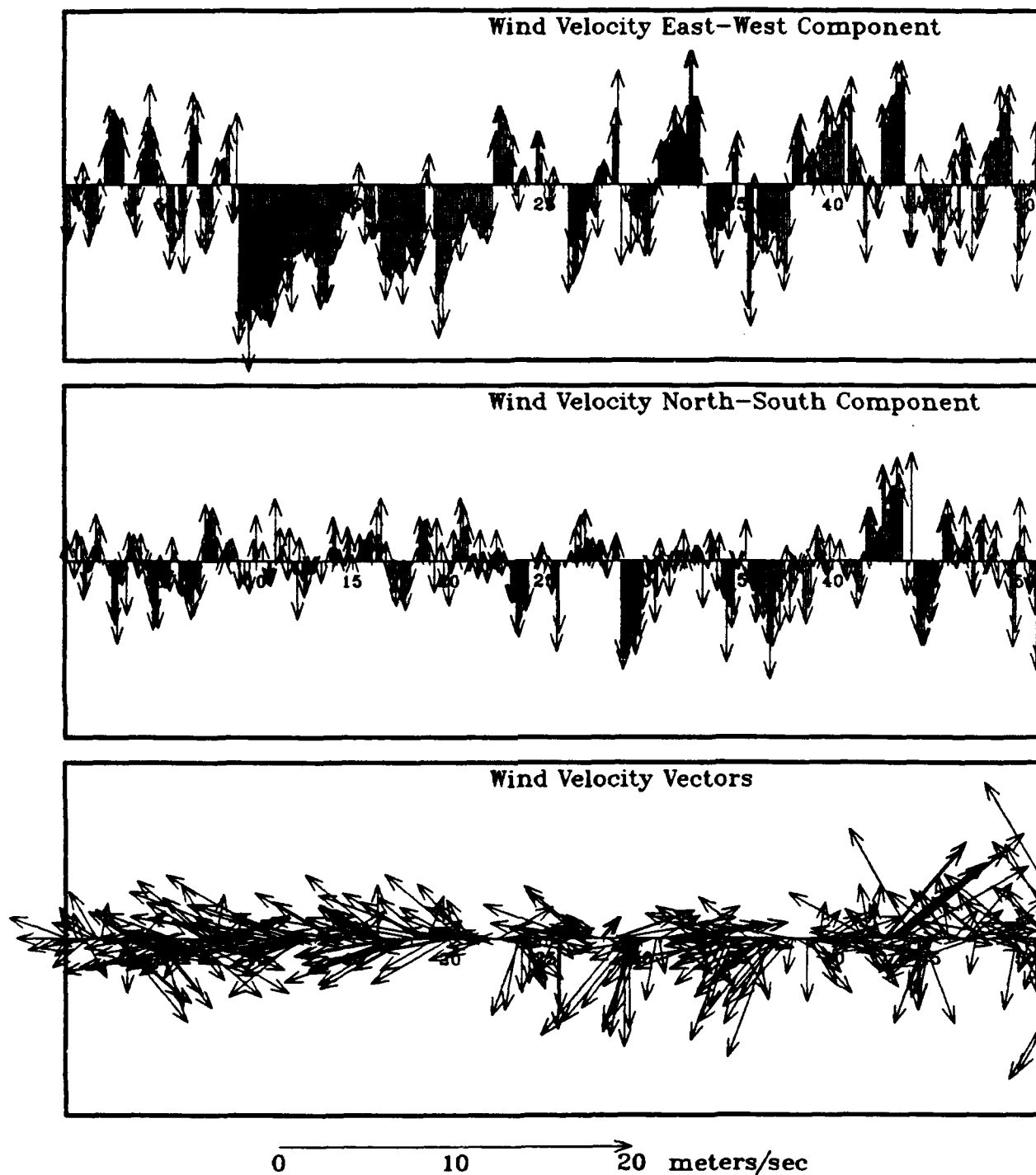
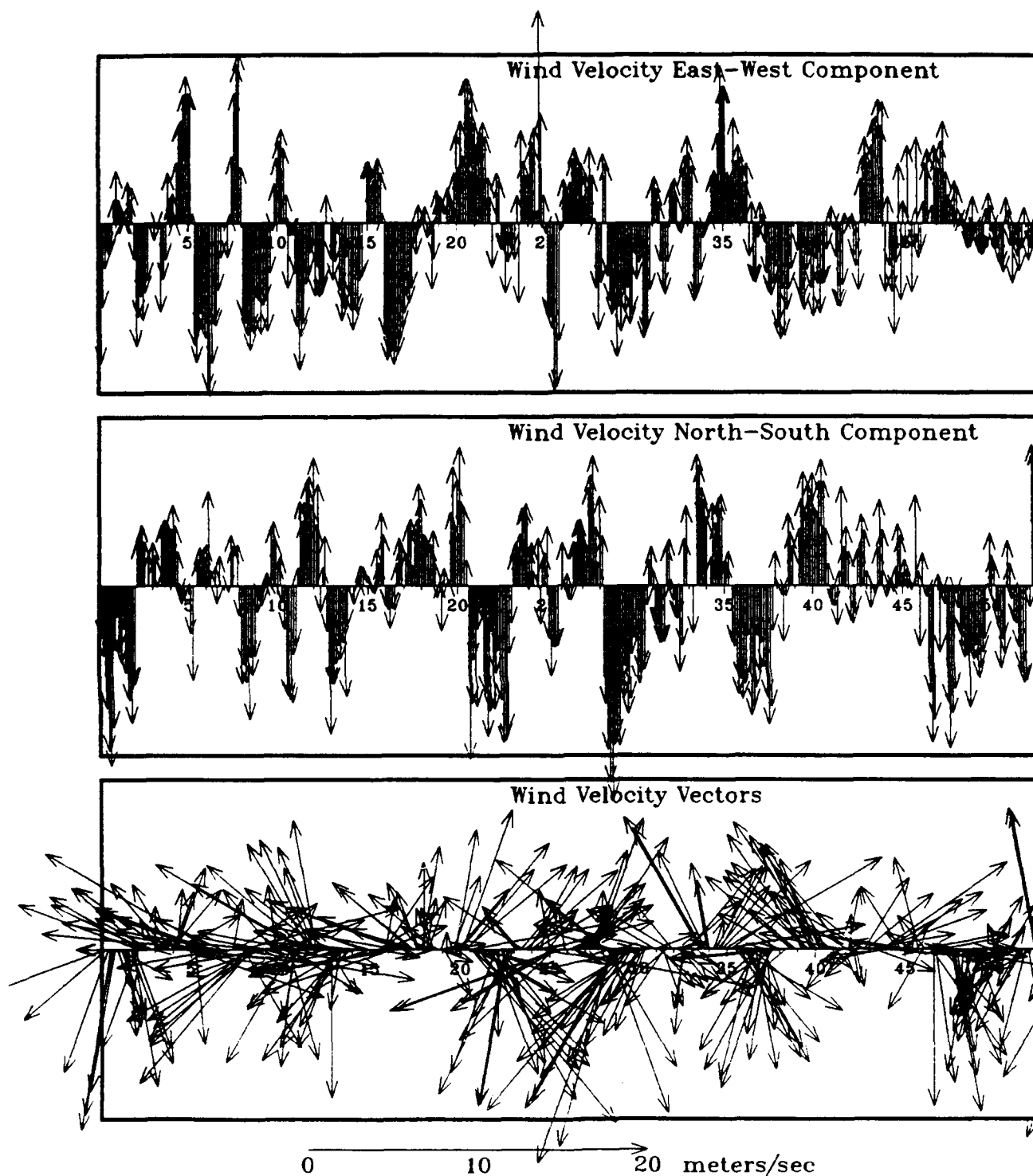


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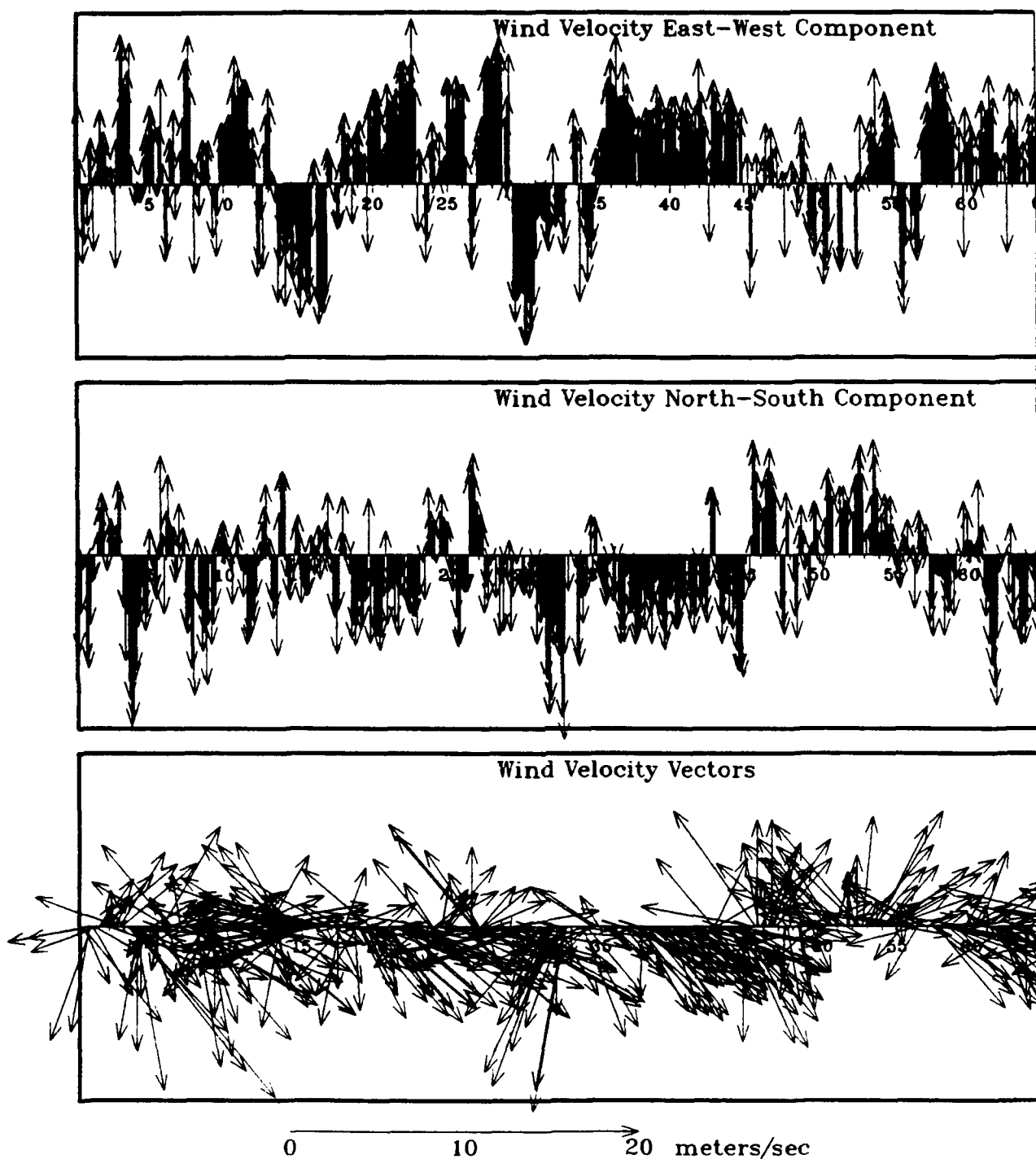
a. Day 0 is 1 January

Figure A4. Wind at Norfolk International Airport during 1984 (Sheet 1 of 5)



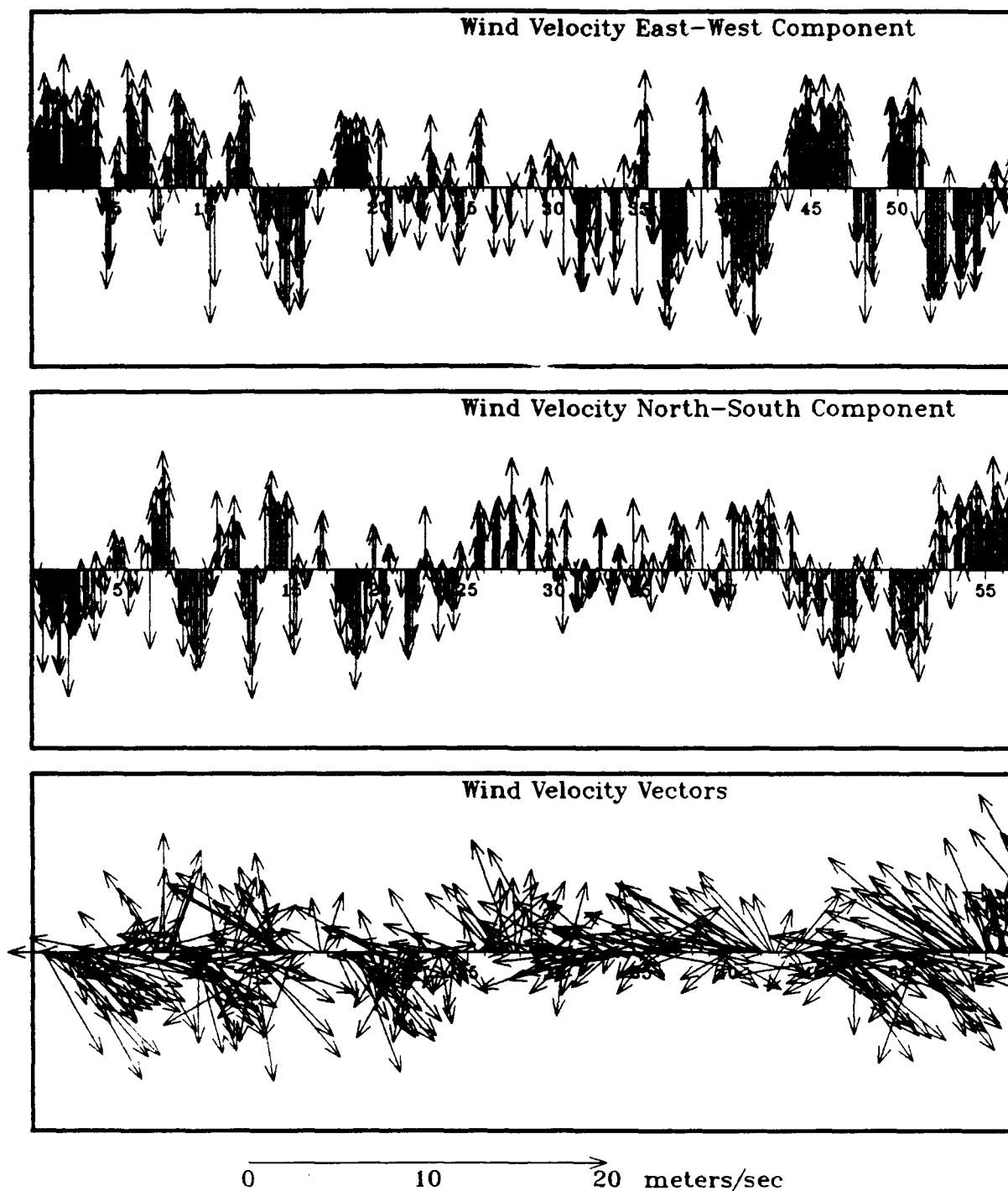
b. Day 0 is 1 March

Figure A4. (Sheet 2 of 5)



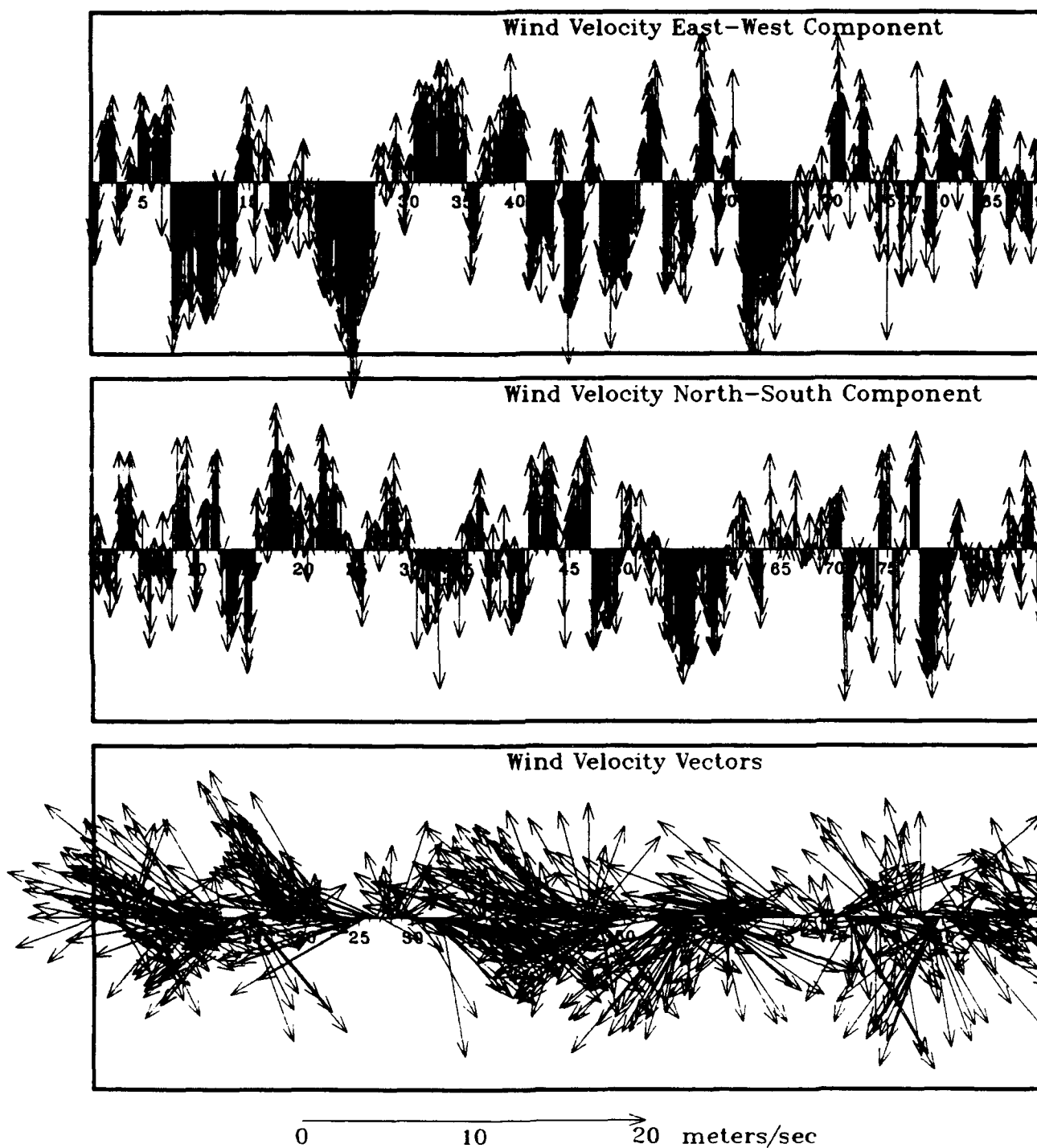
c. Day 0 is 1 May

Figure A4. (Sheet 3 of 5)



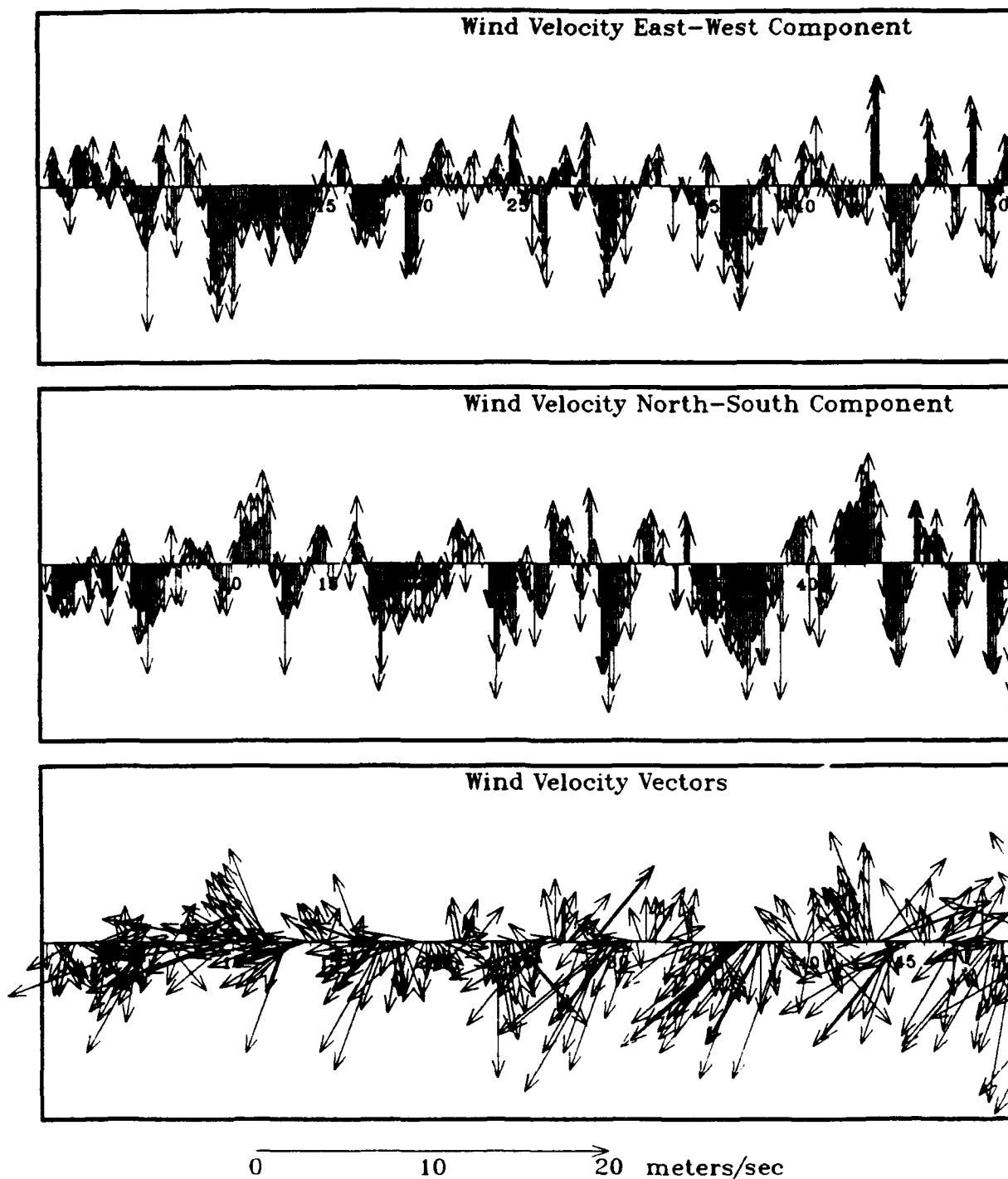
d. Day 0 is 16 July

Figure A4. (Sheet 4 of 5)



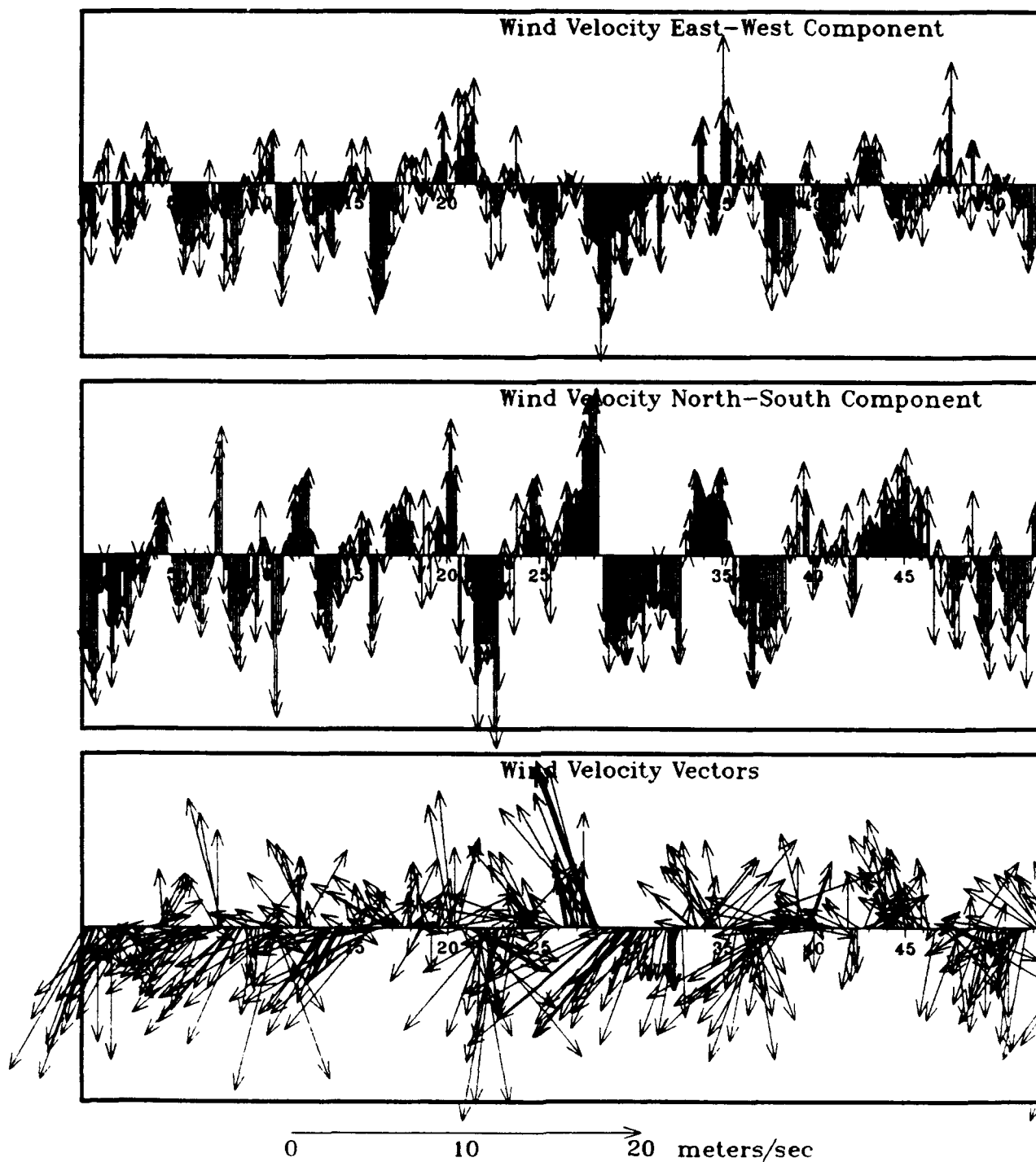
e. Day 0 is 19 September

Figure A4. (Sheet 5 of 5)



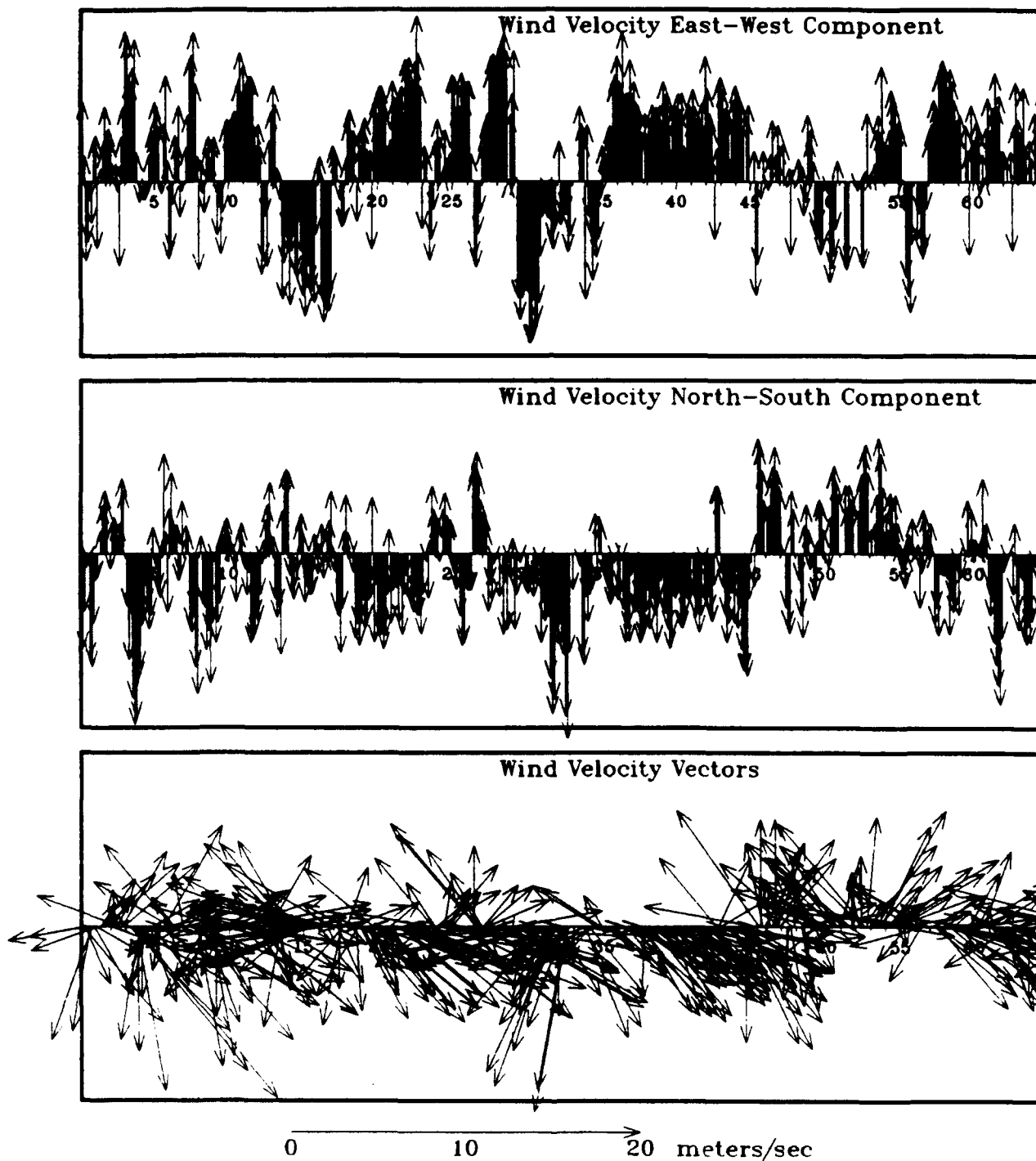
a. Day 0 is 1 January

Figure A5. Wind at Baltimore-Washington International Airport during 1984 (Sheet 1 of 5)



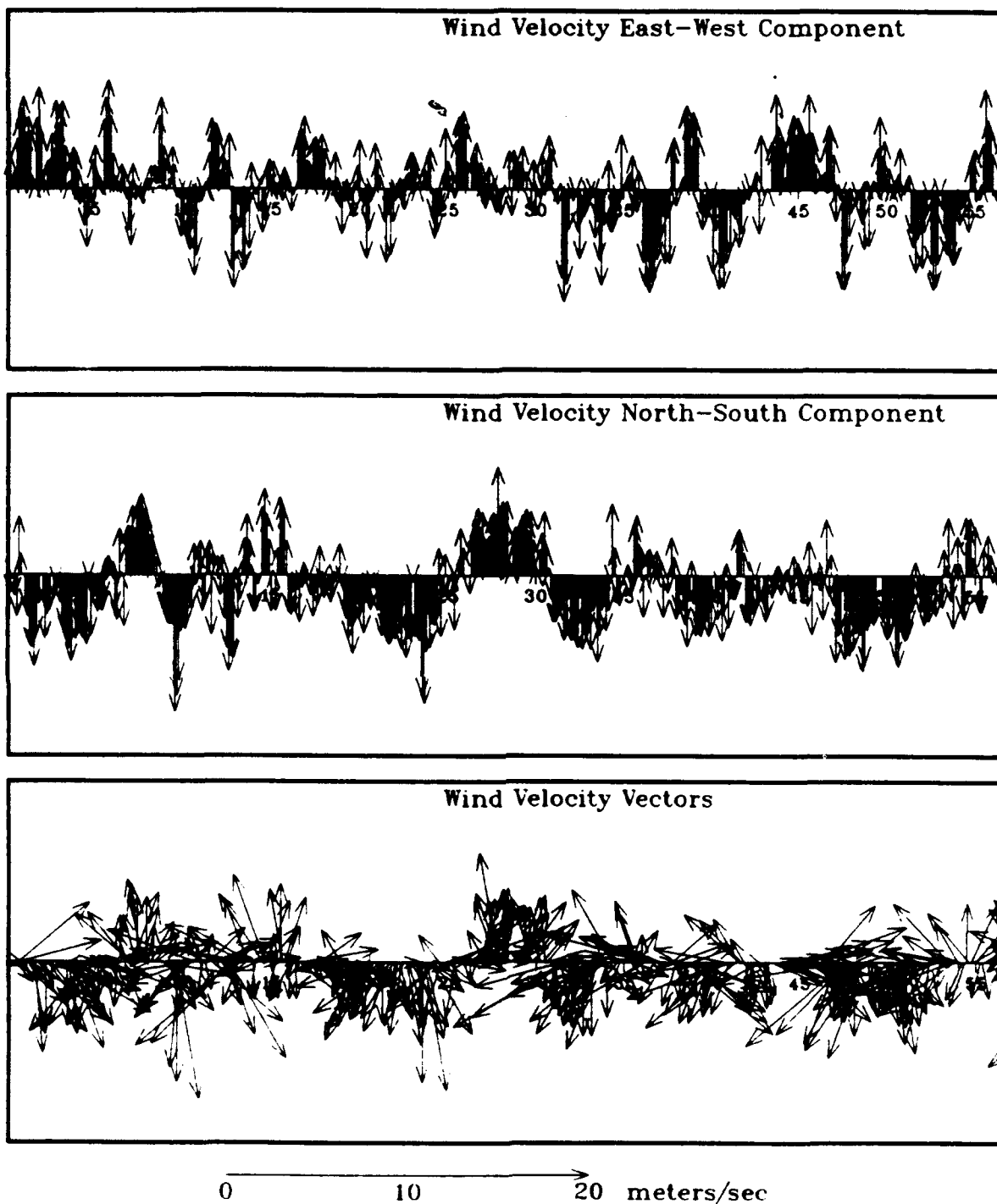
b. Day 0 is 1 March

Figure A5. (Sheet 2 of 5)



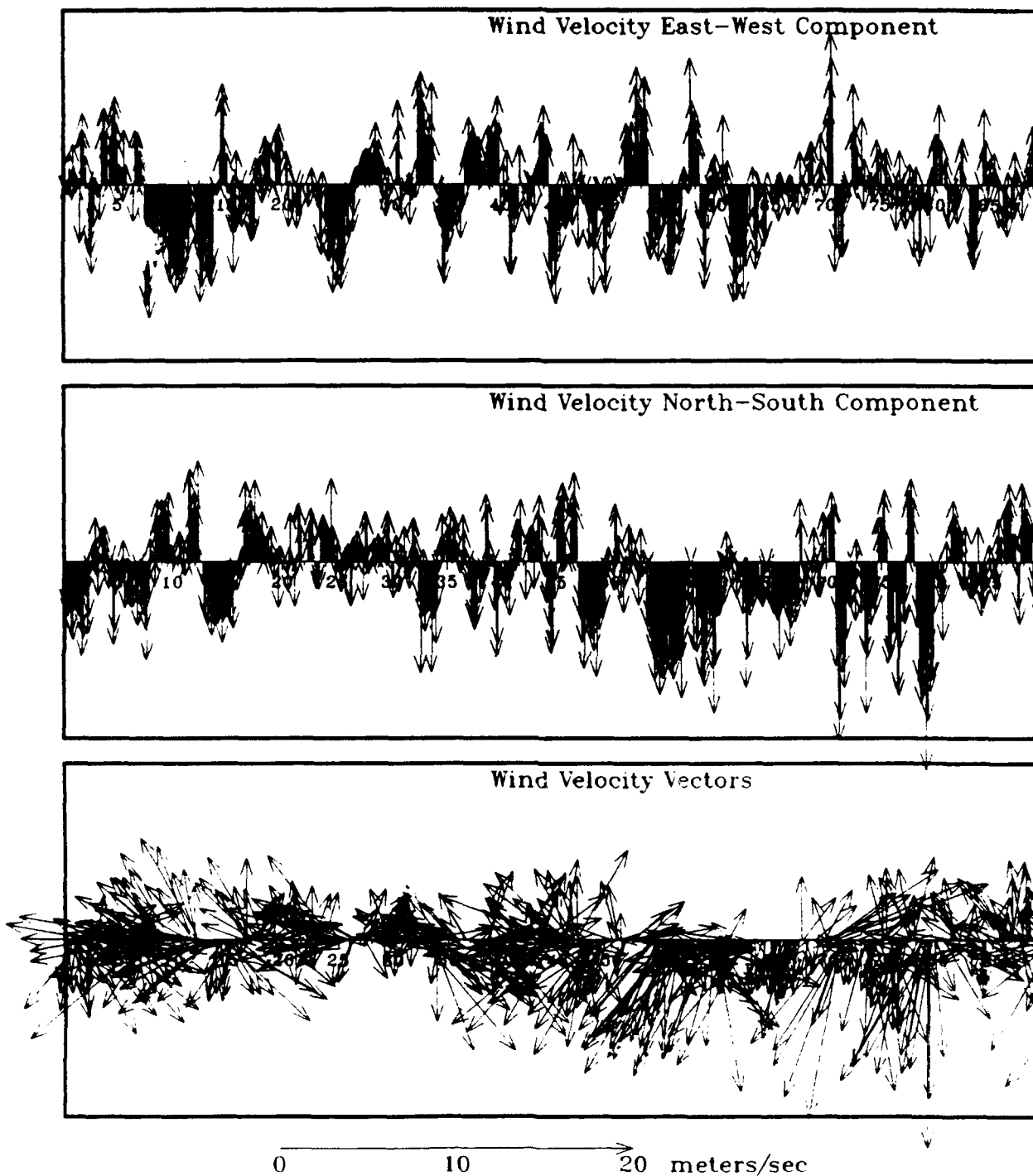
c. Day 0 is 1 May

Figure A5. (Sheet 3 of 5)



d. Day 0 is 16 July

Figure A5. (Sheet 4 of 5)



e. Day 0 is 19 September

Figure A5. (Sheet 5 of 5)

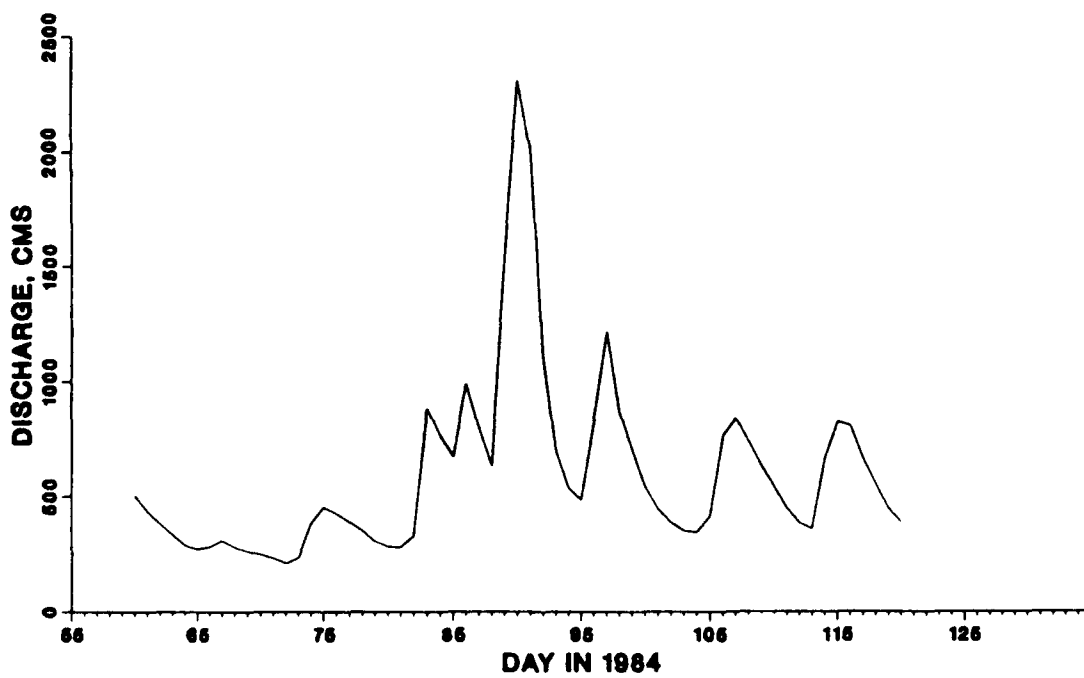
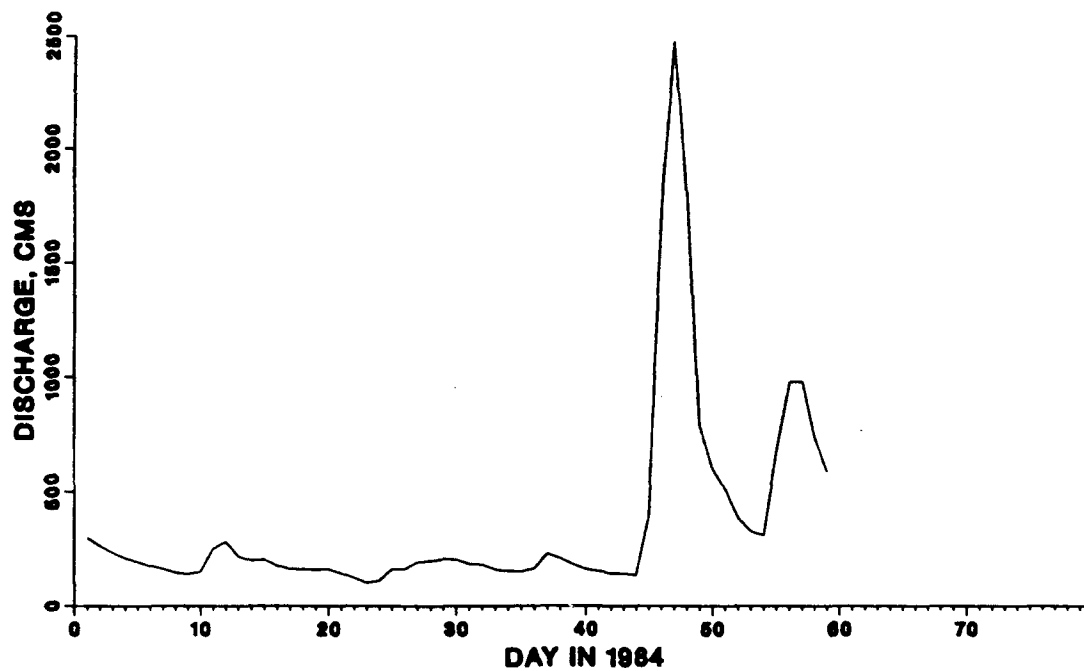


Figure A6. Freshwater inflow on James River
during 1984 (Sheet 1 of 3)

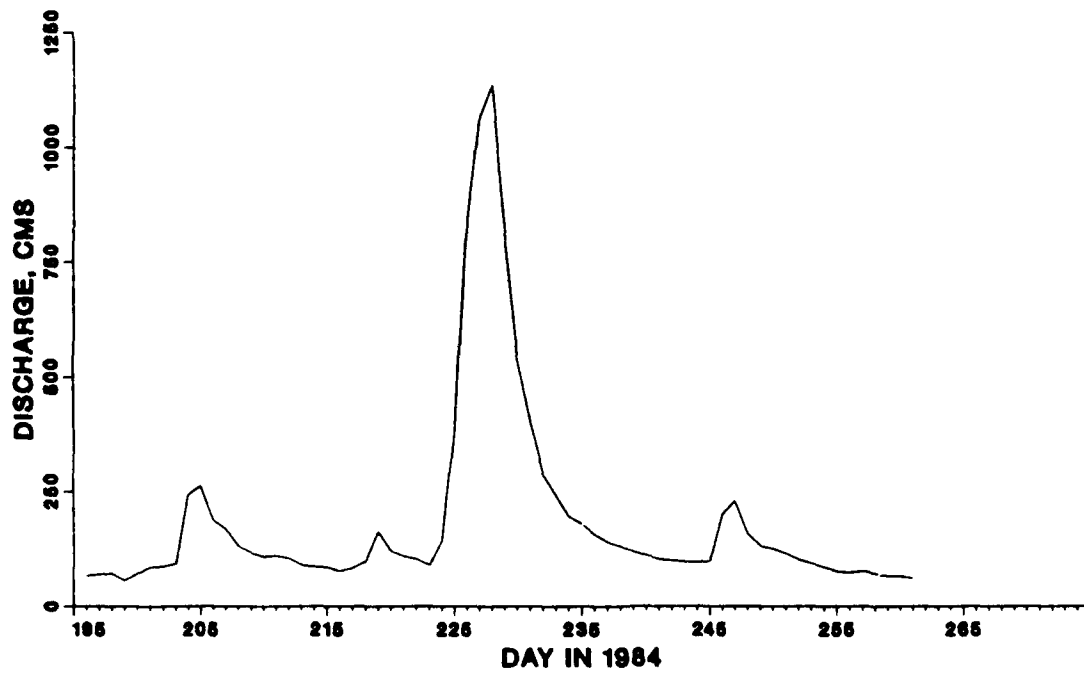
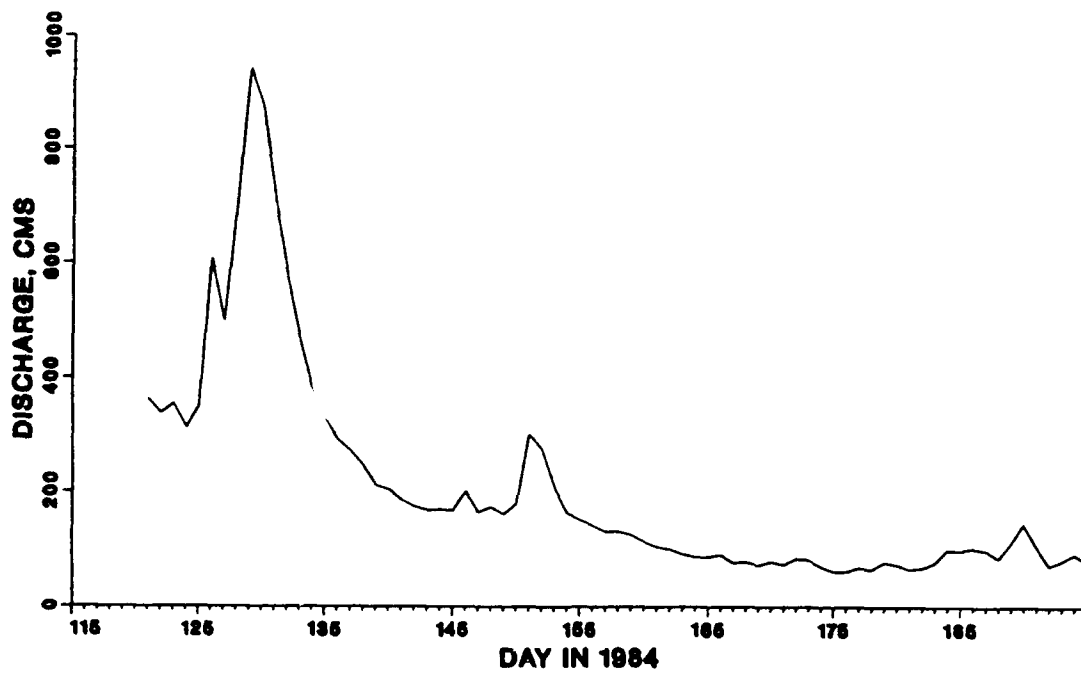


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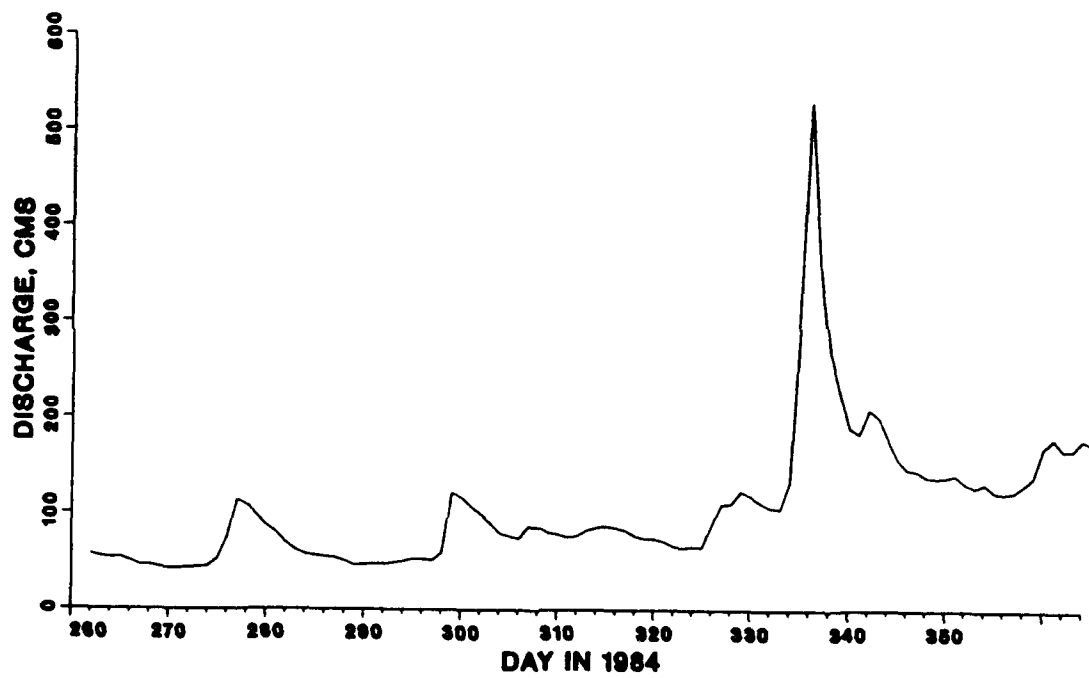


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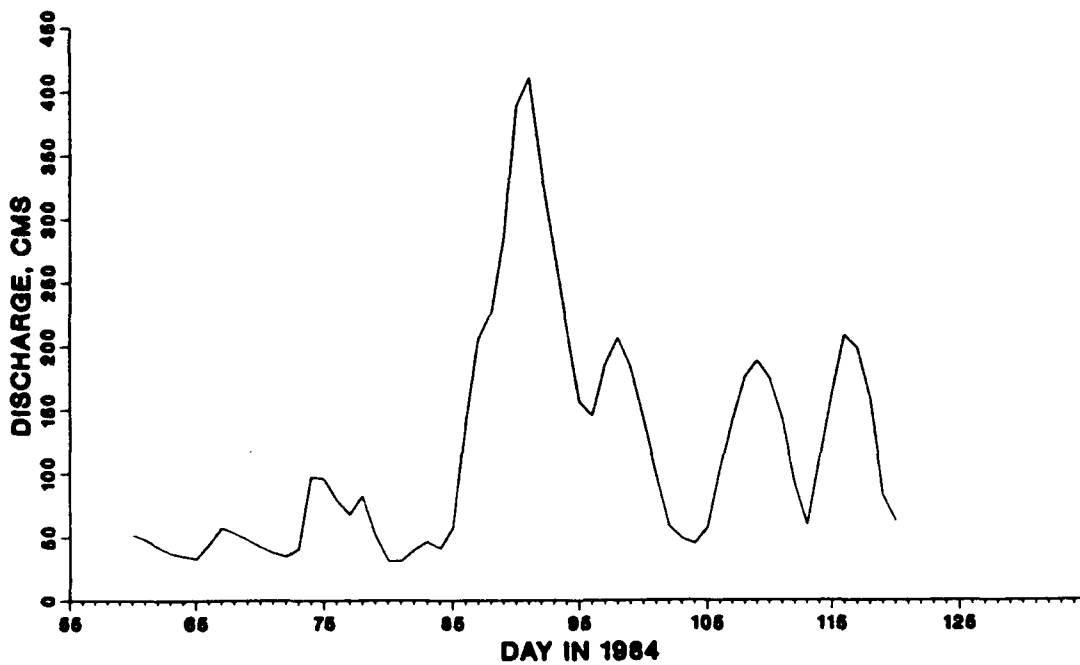
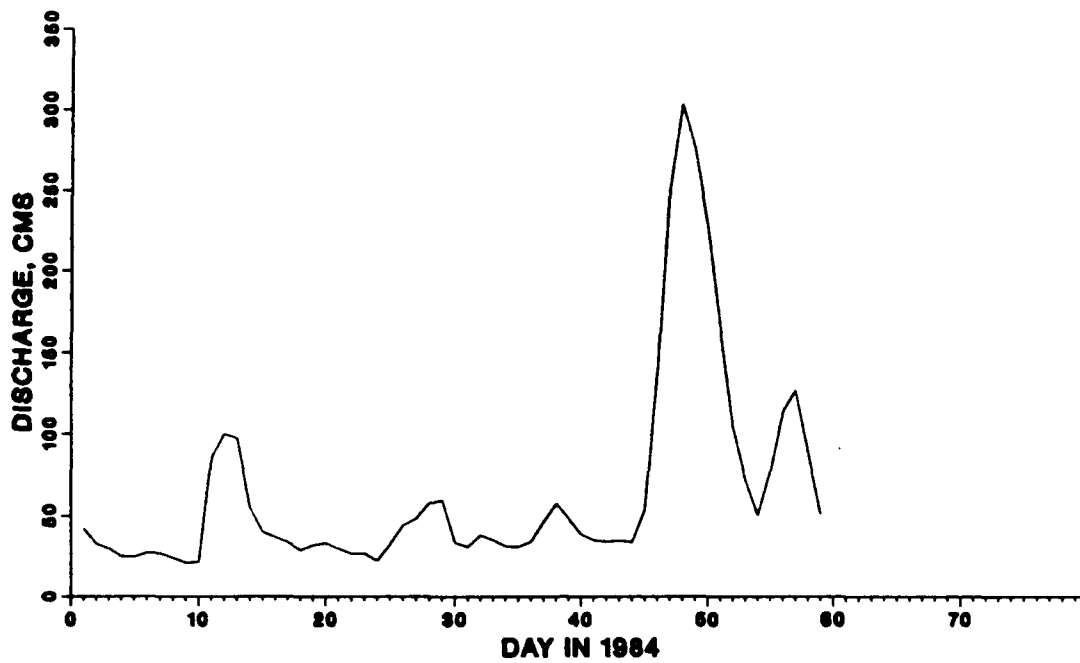


Figure A7. Freshwater inflow on York River during 1984 (Sheet 1 of 3)

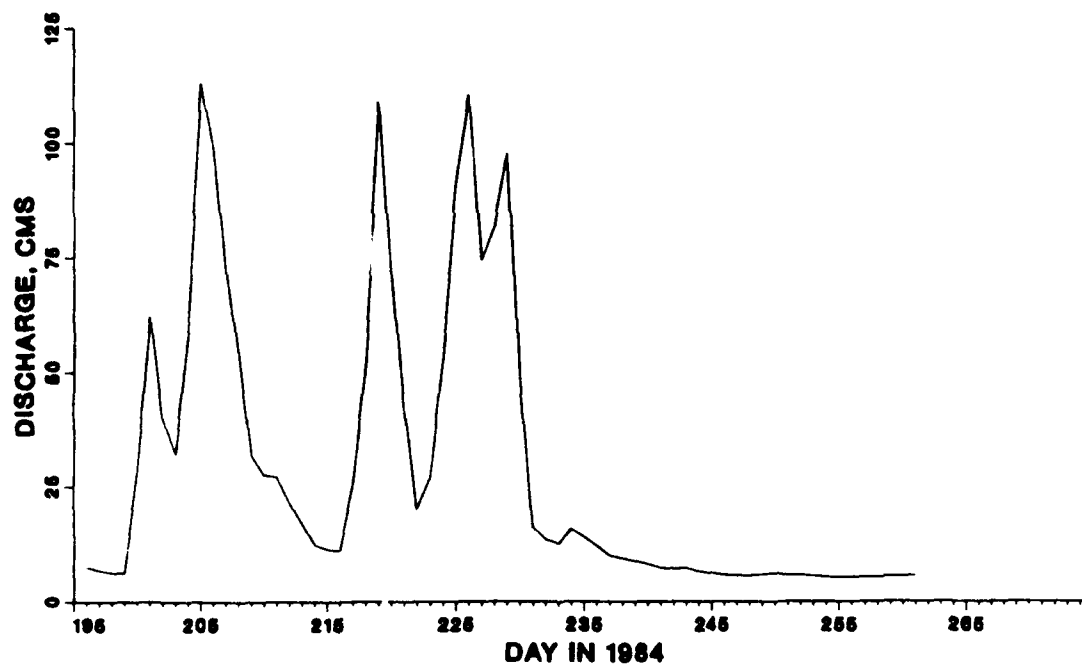
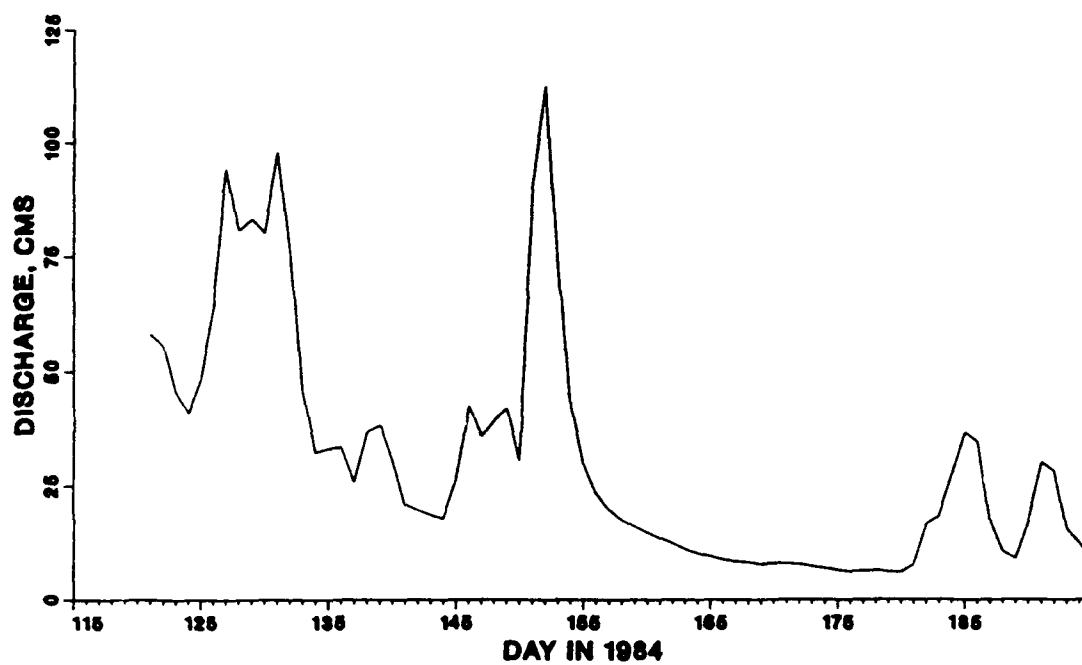


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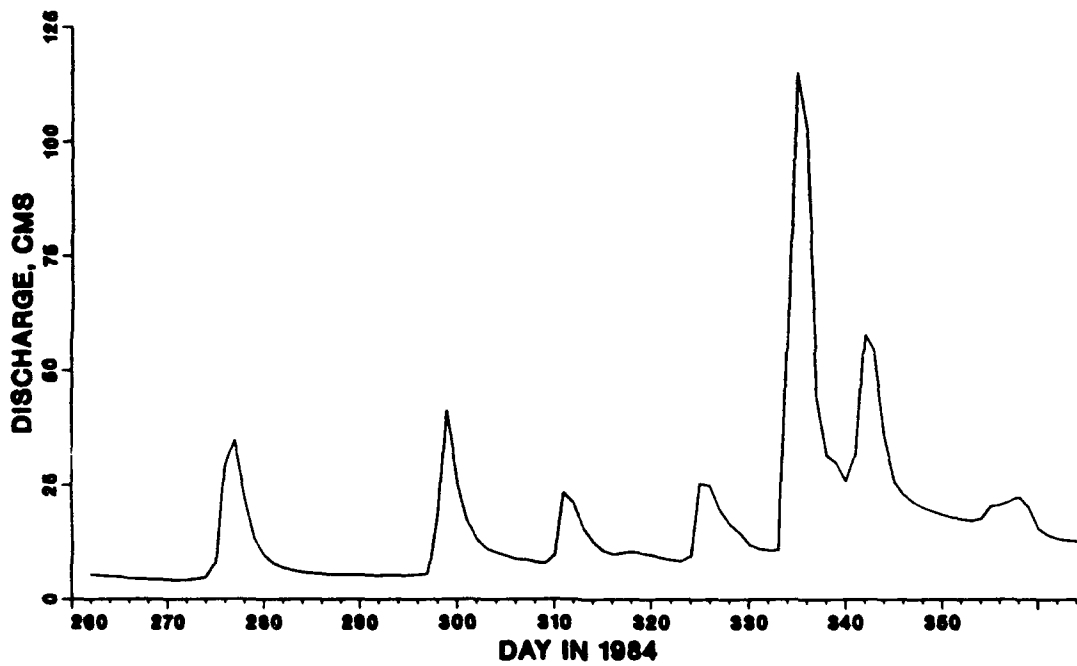


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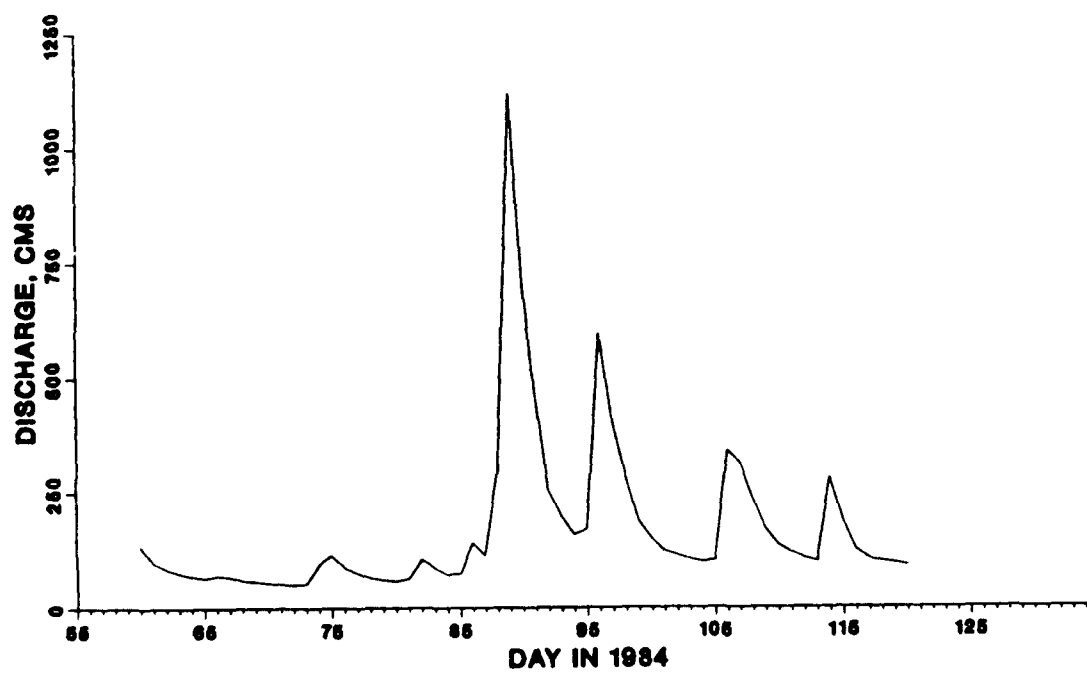
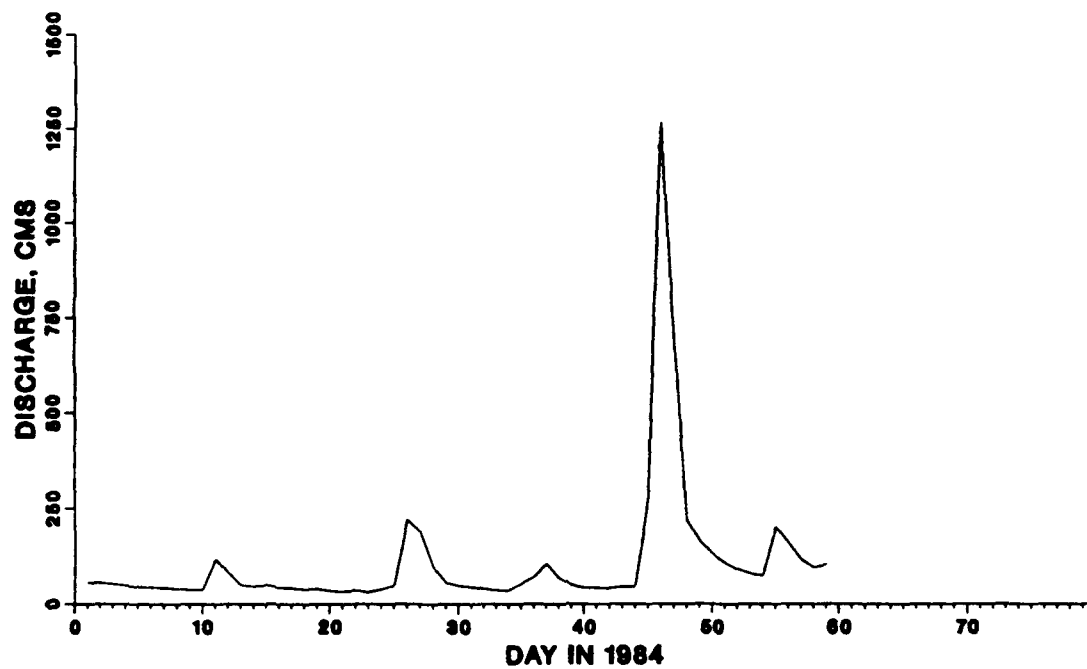


Figure A8. Freshwater inflow on Rappahannock River during 1984 (Sheet 1 of 3)

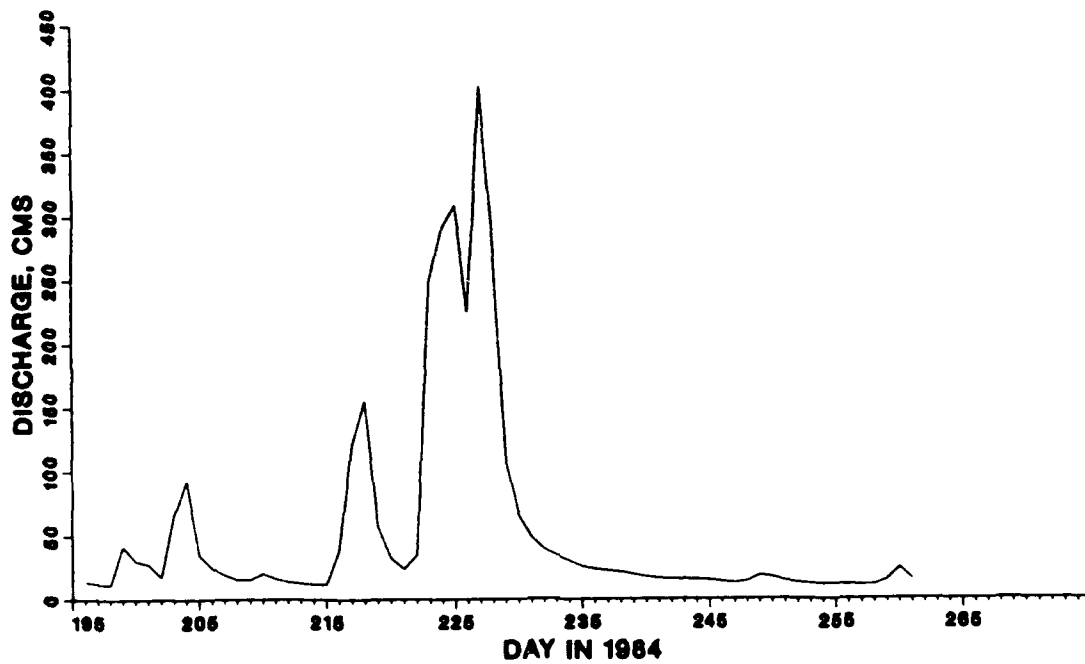
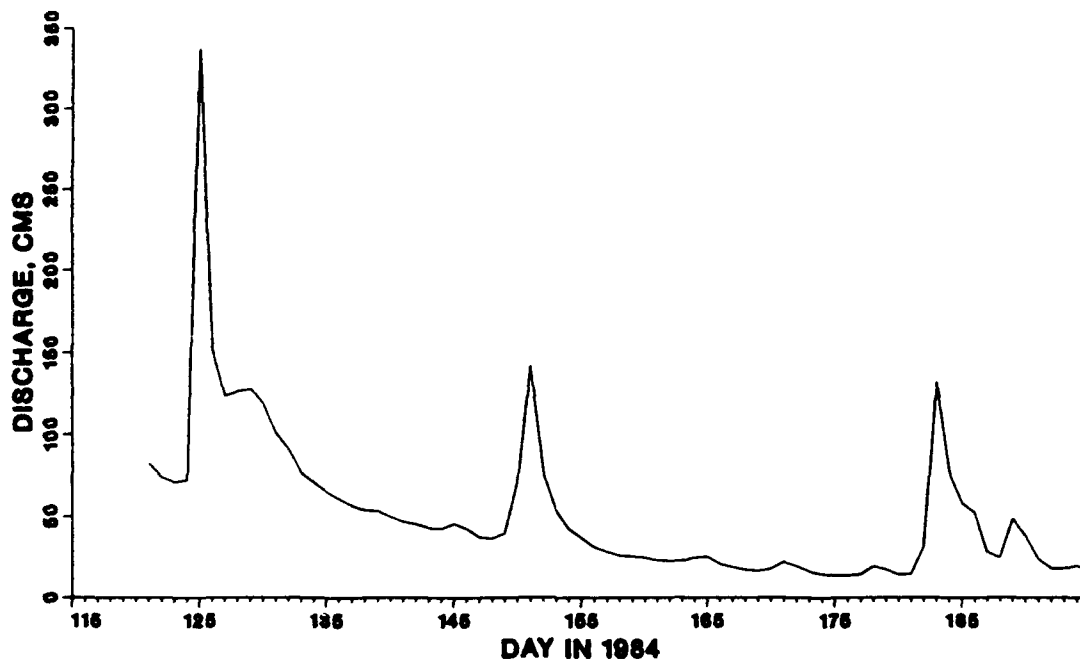


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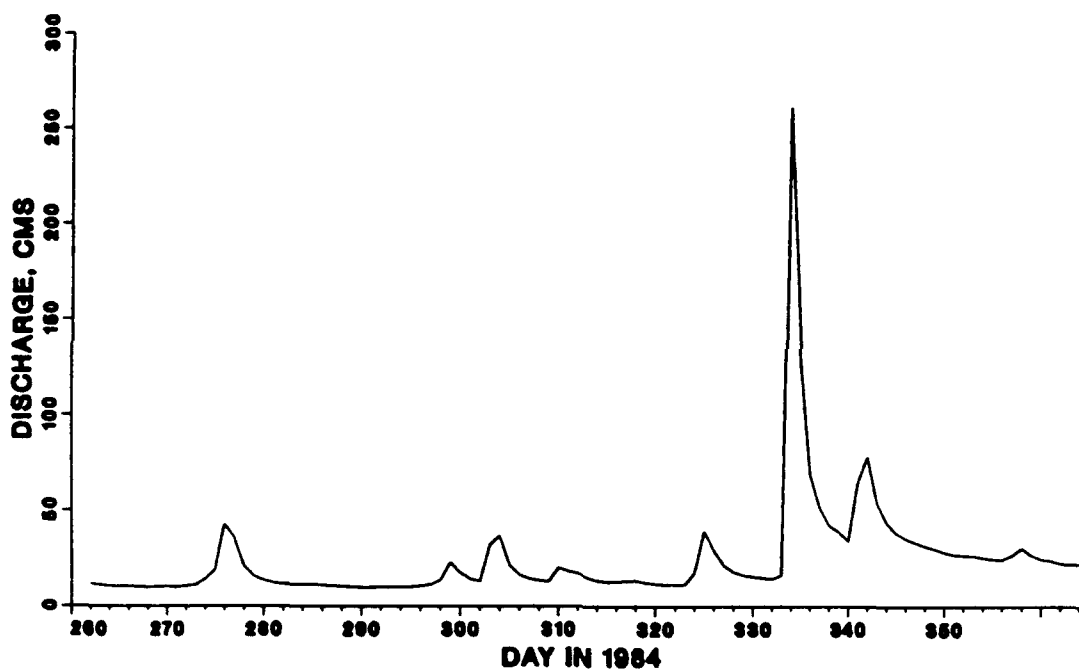


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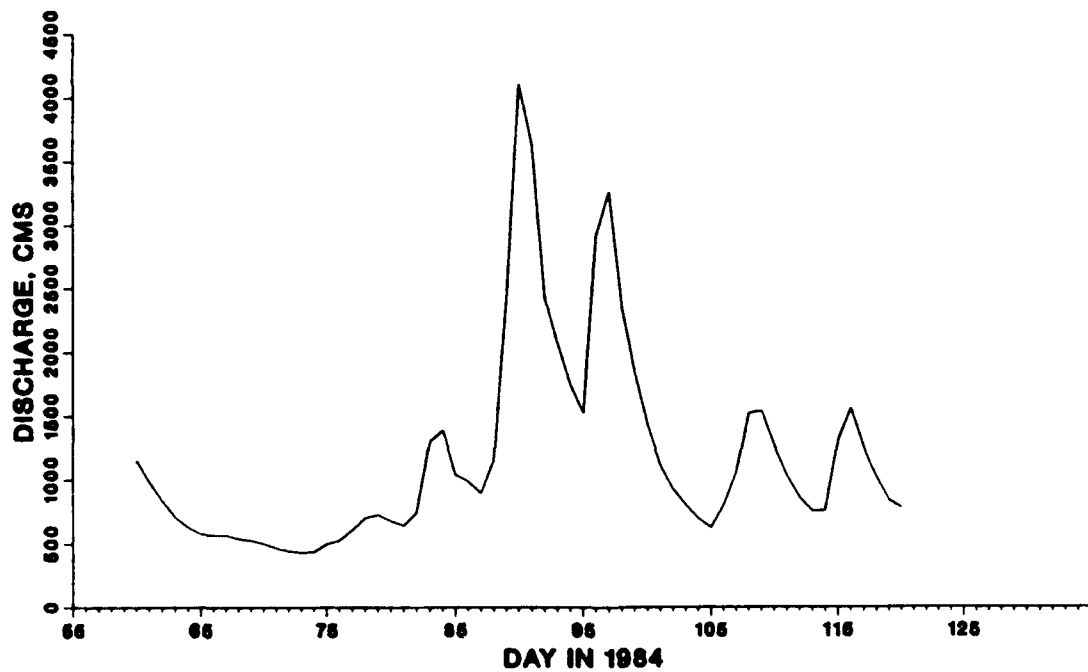
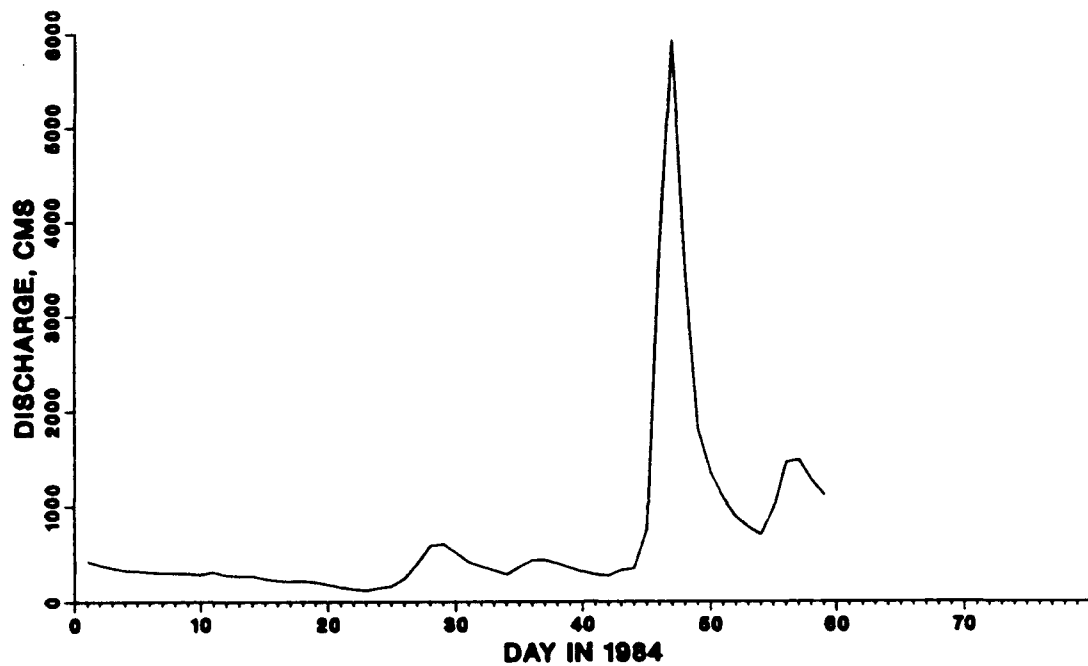


Figure A9. Freshwater inflow on Potomac River during 1984 (Sheet 1 of 3)

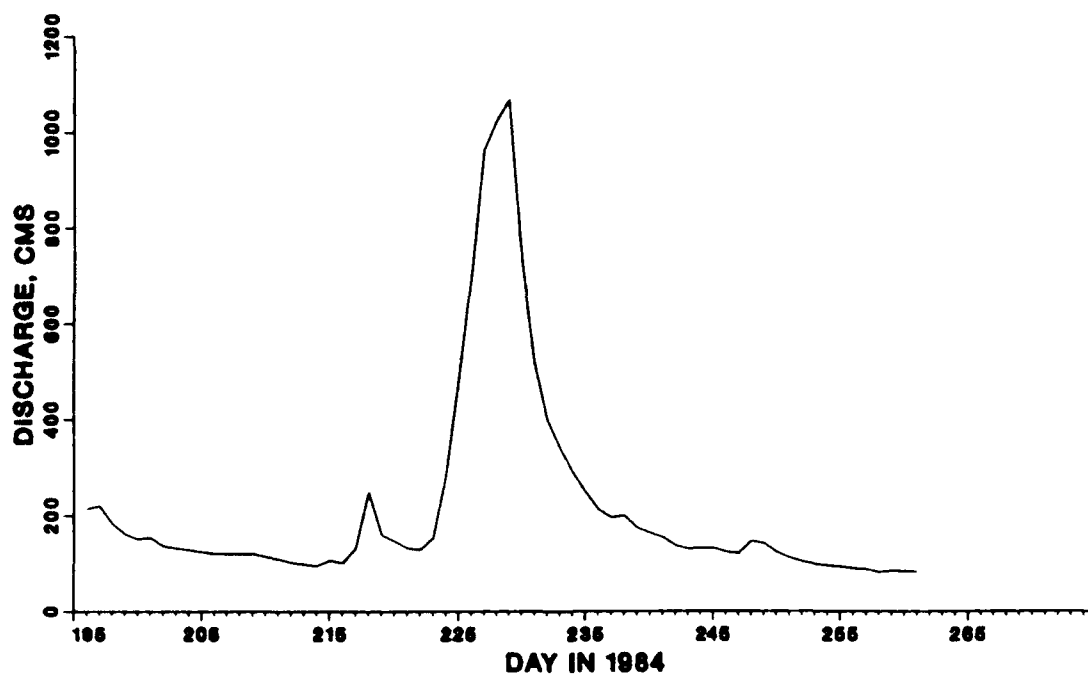
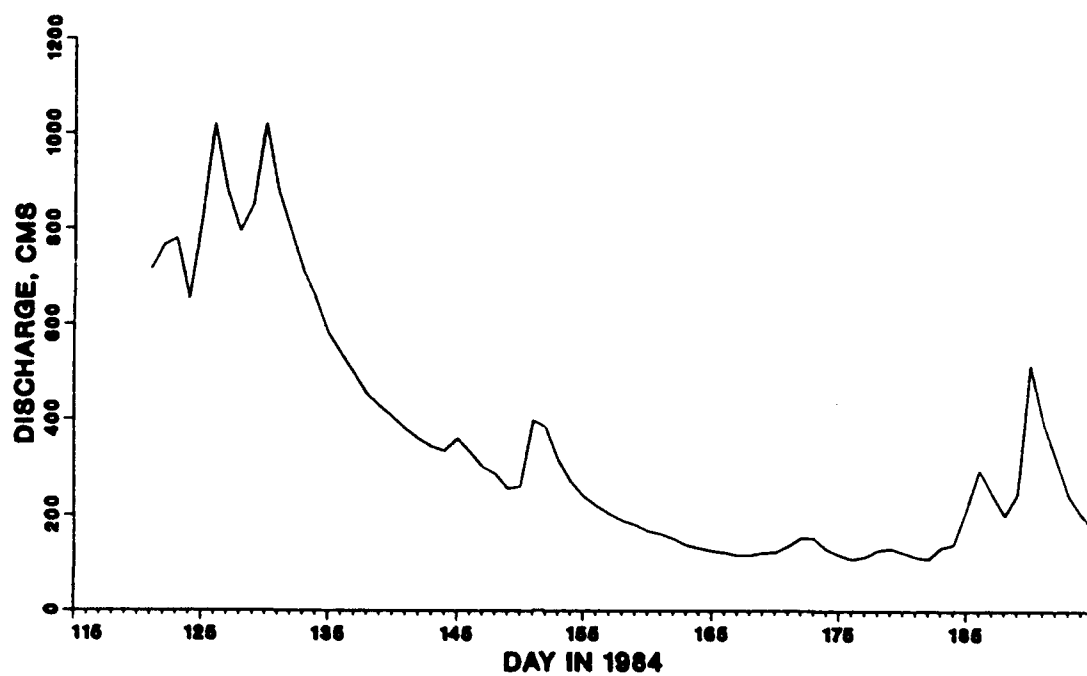


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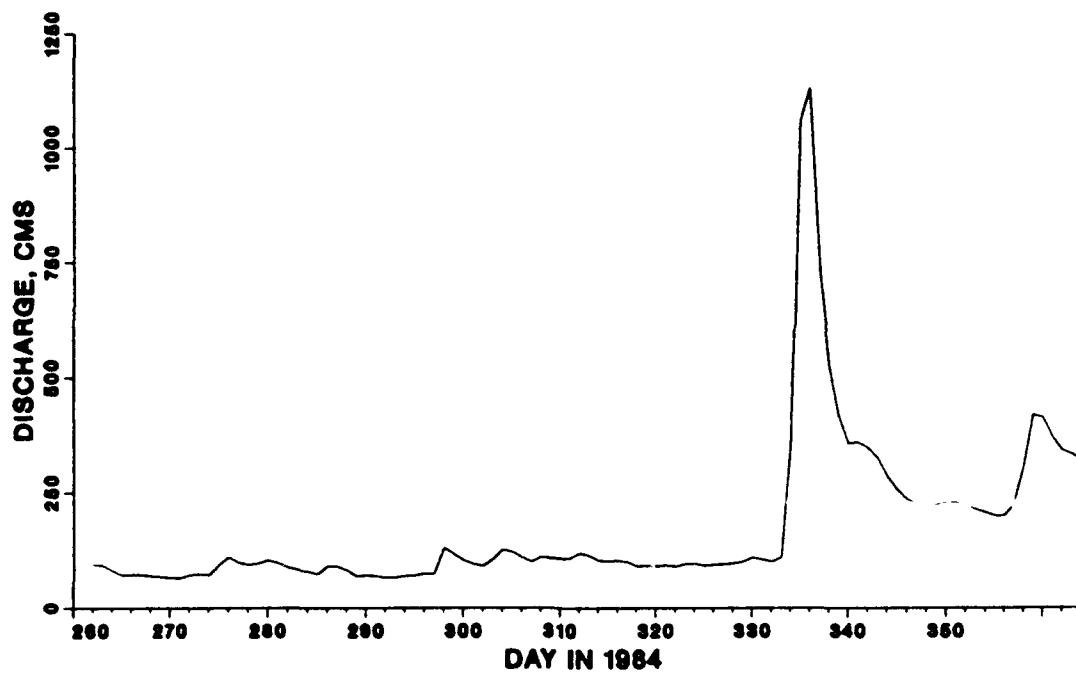


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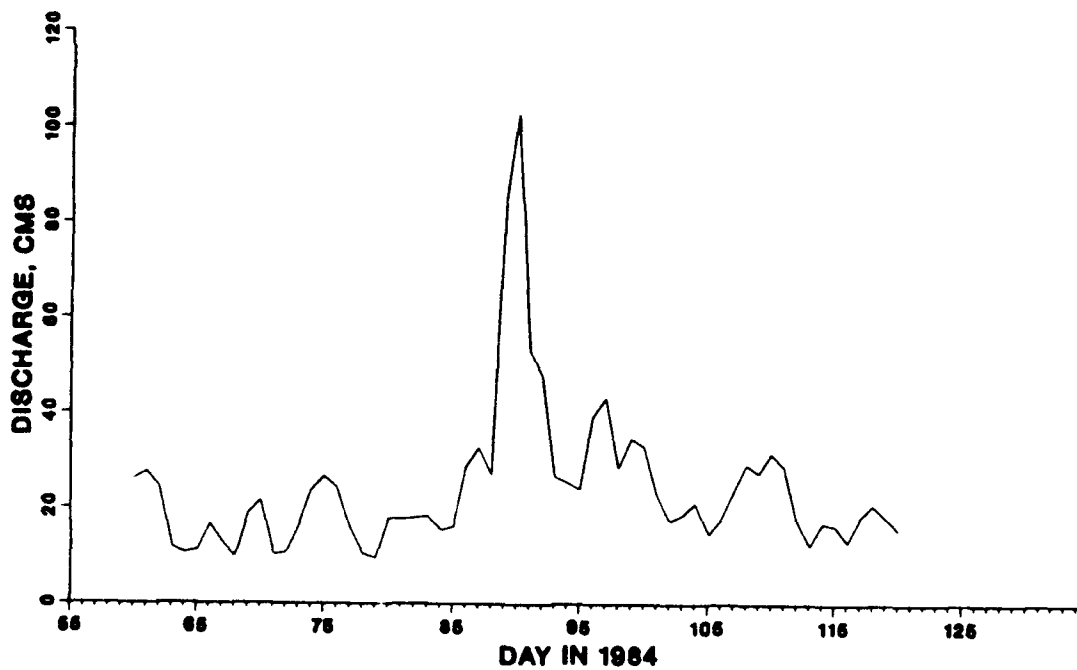
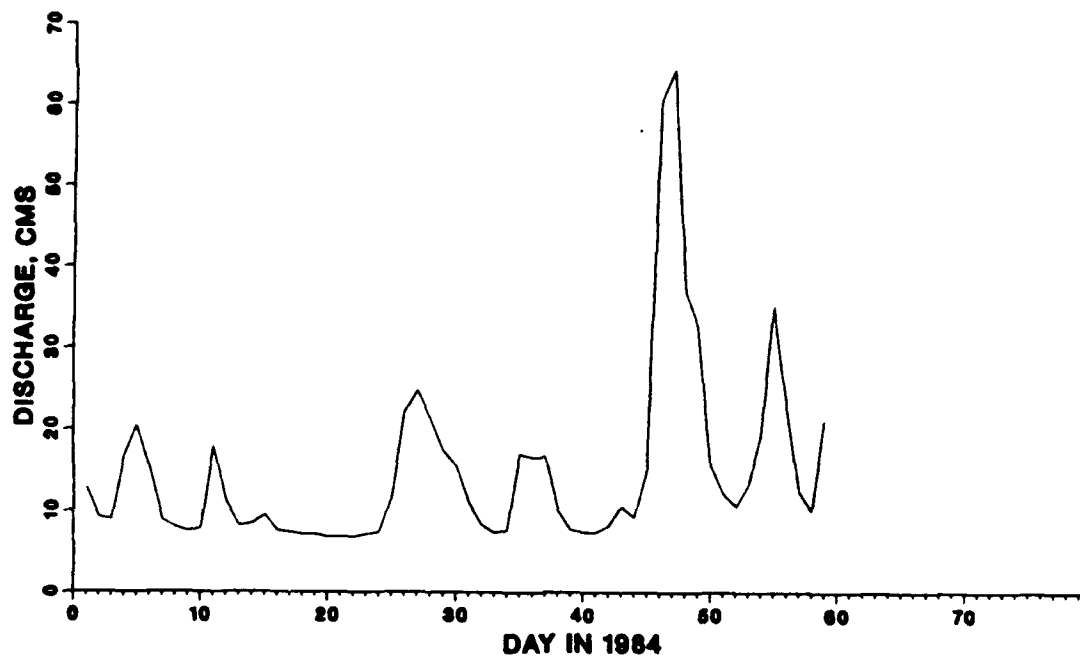


Figure A10. Freshwater inflow on Patuxent River during 1984 (Sheet 1 of 3)

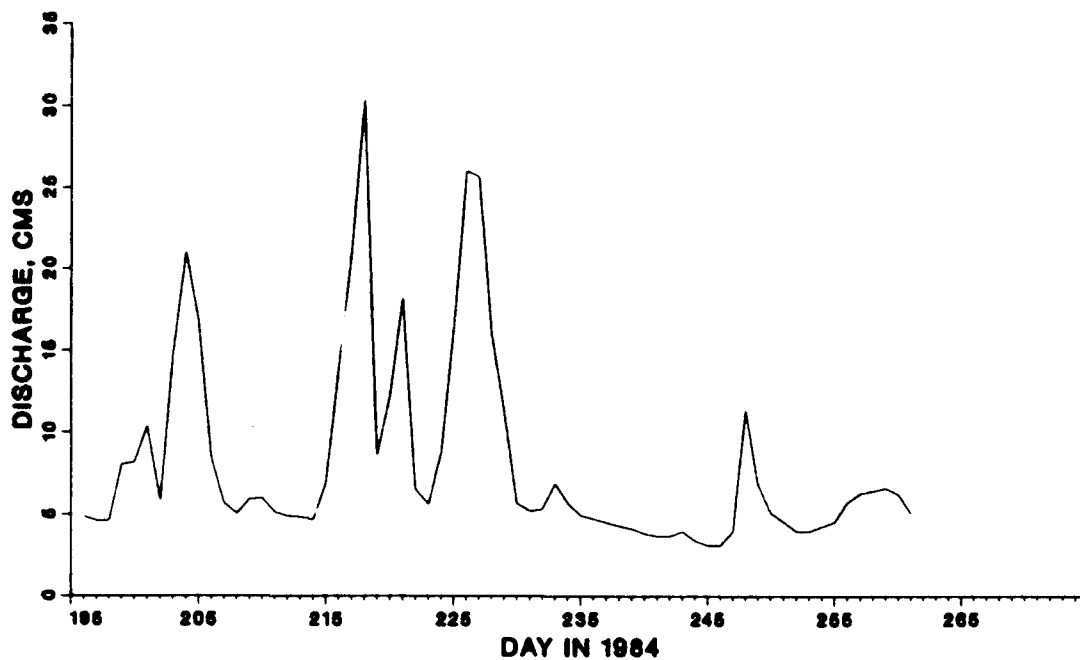
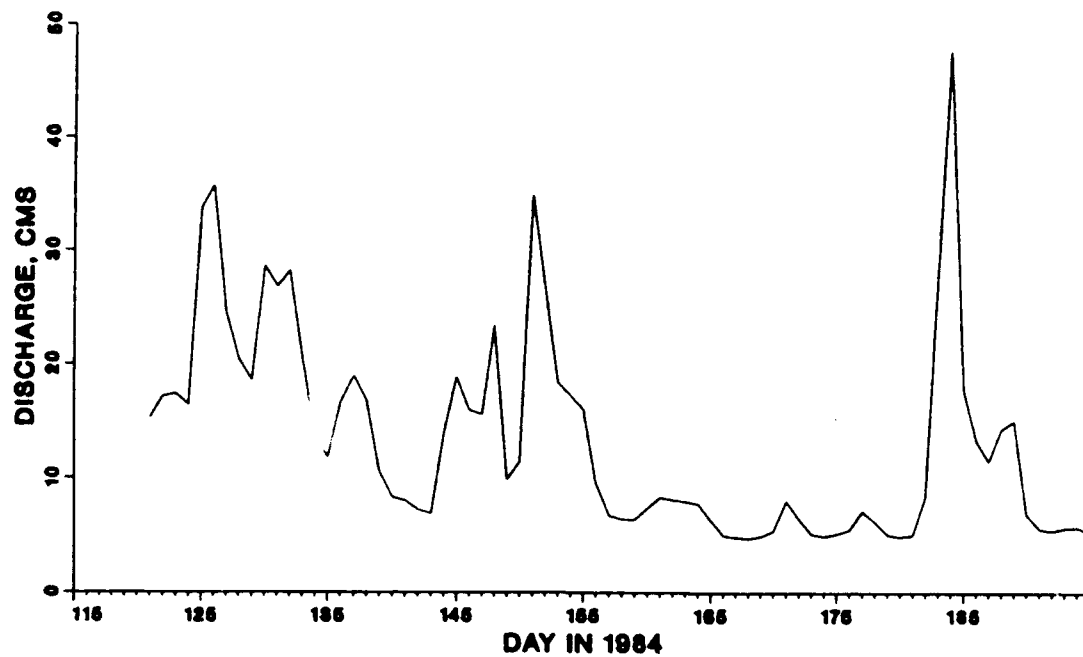


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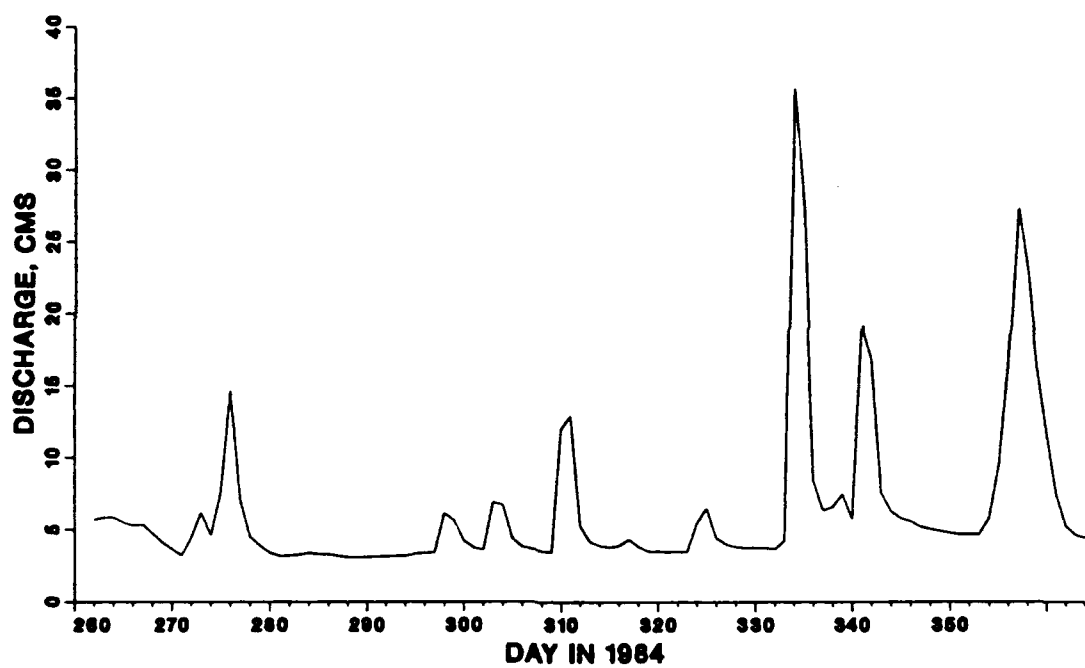


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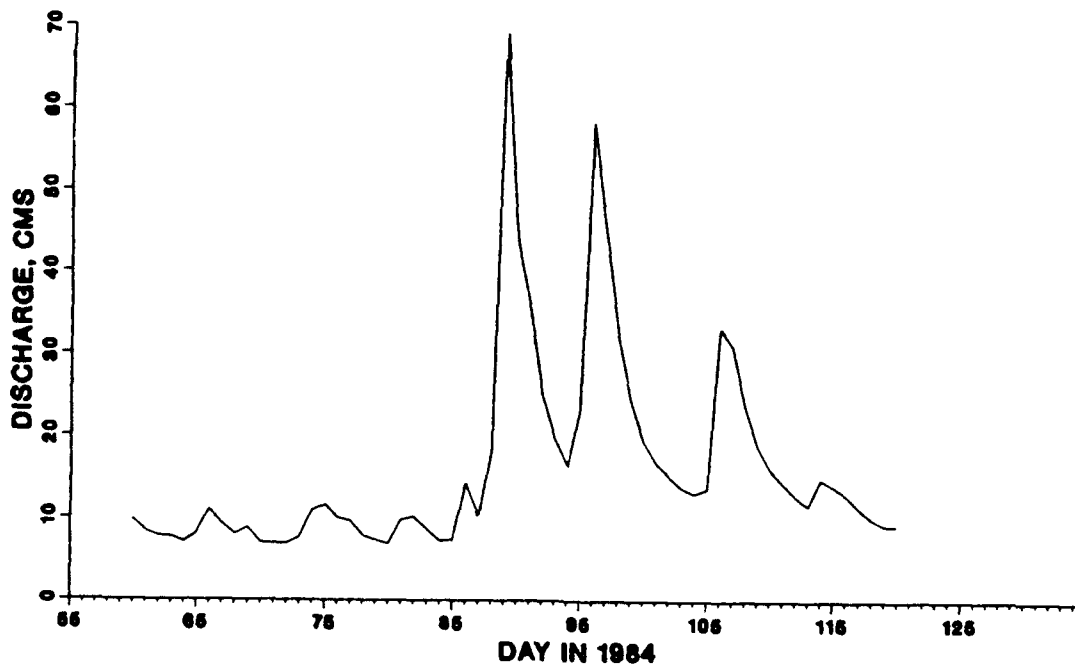
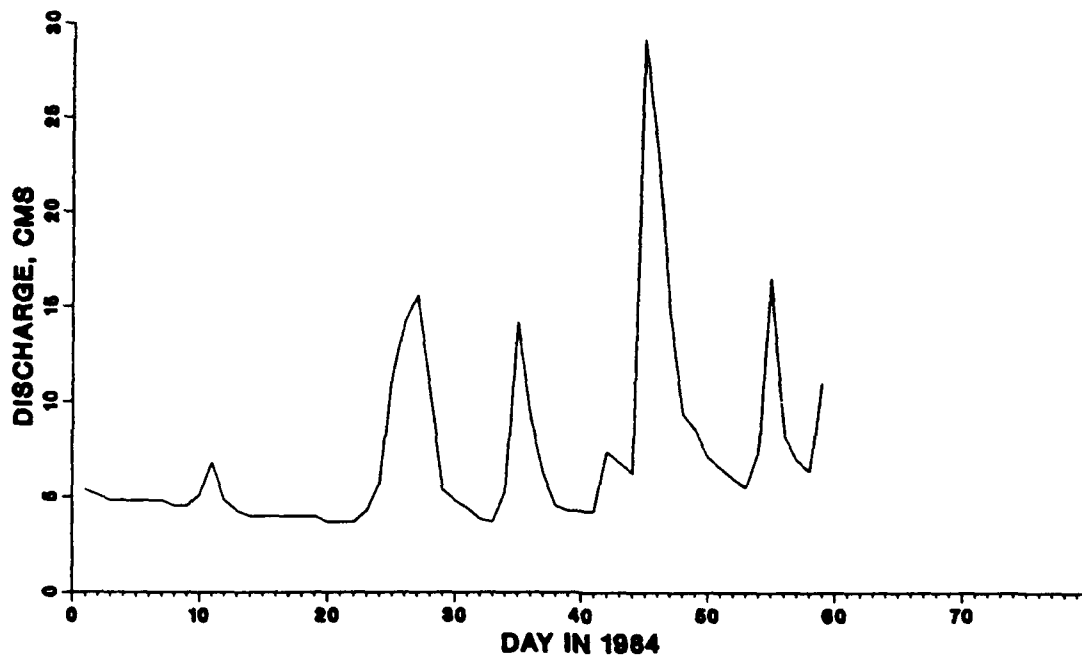


Figure A11. Freshwater inflow on Patapsco River during 1984 (Sheet 1 of 3)

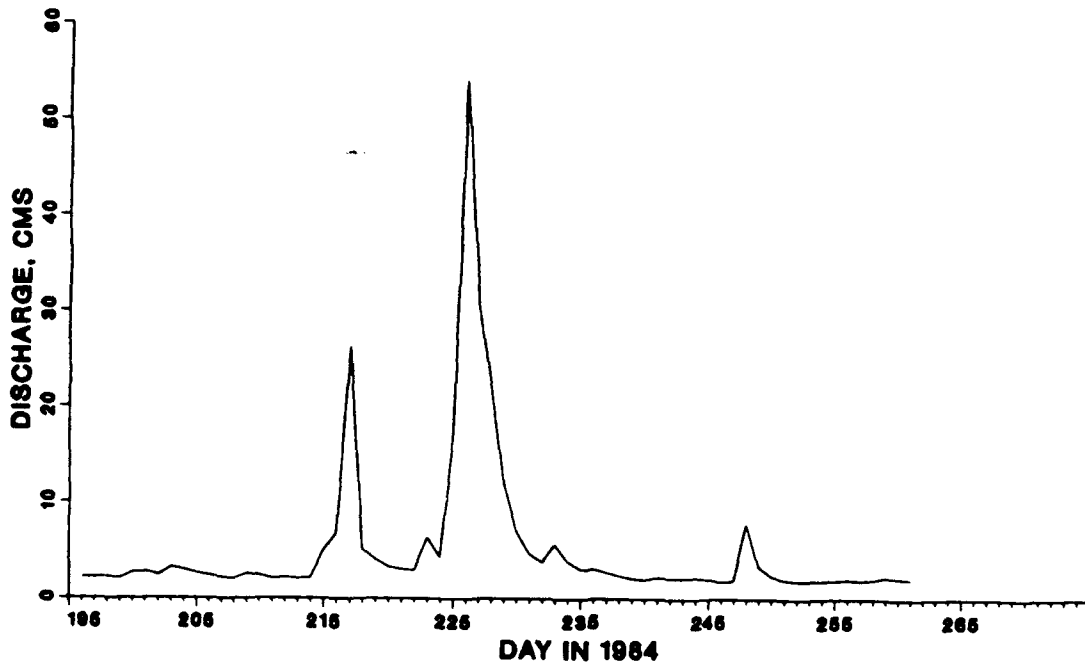
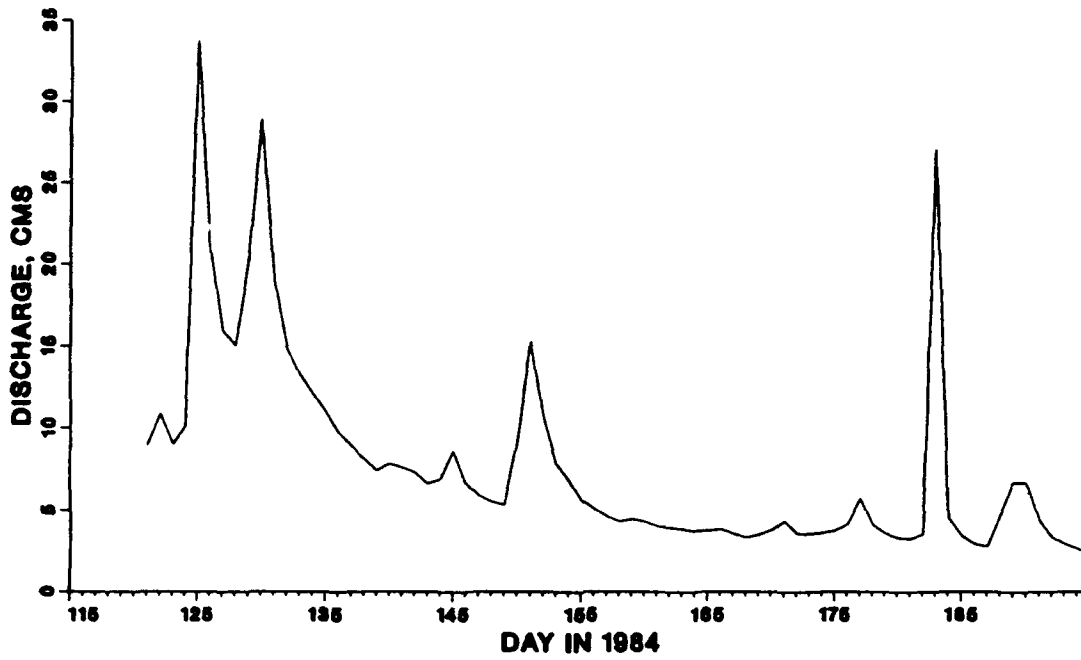


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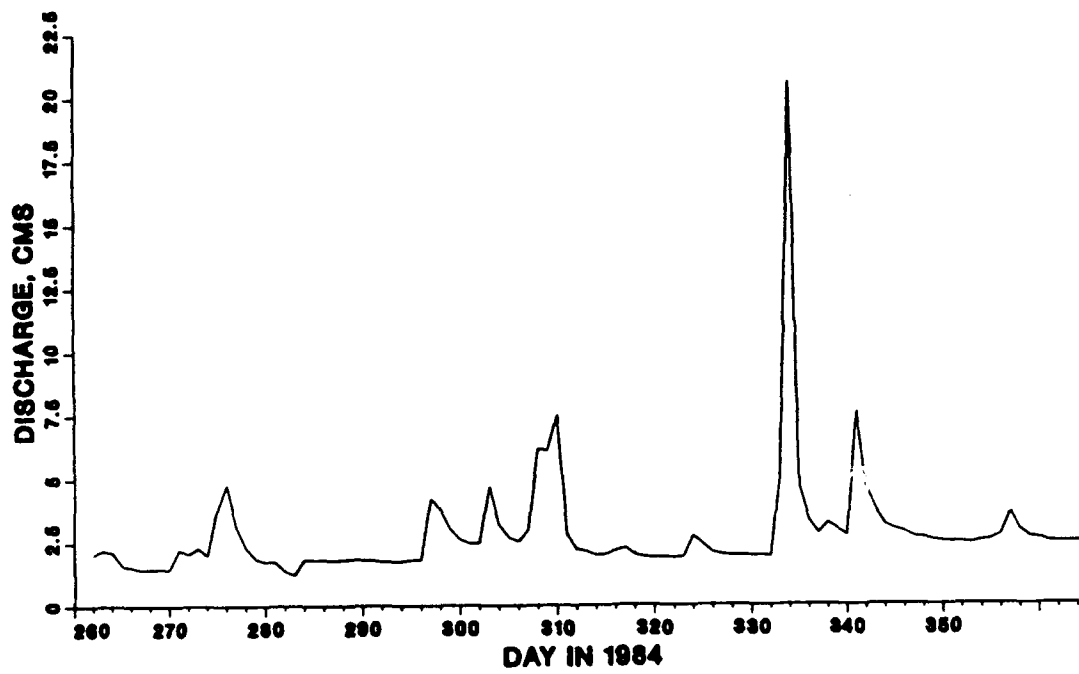


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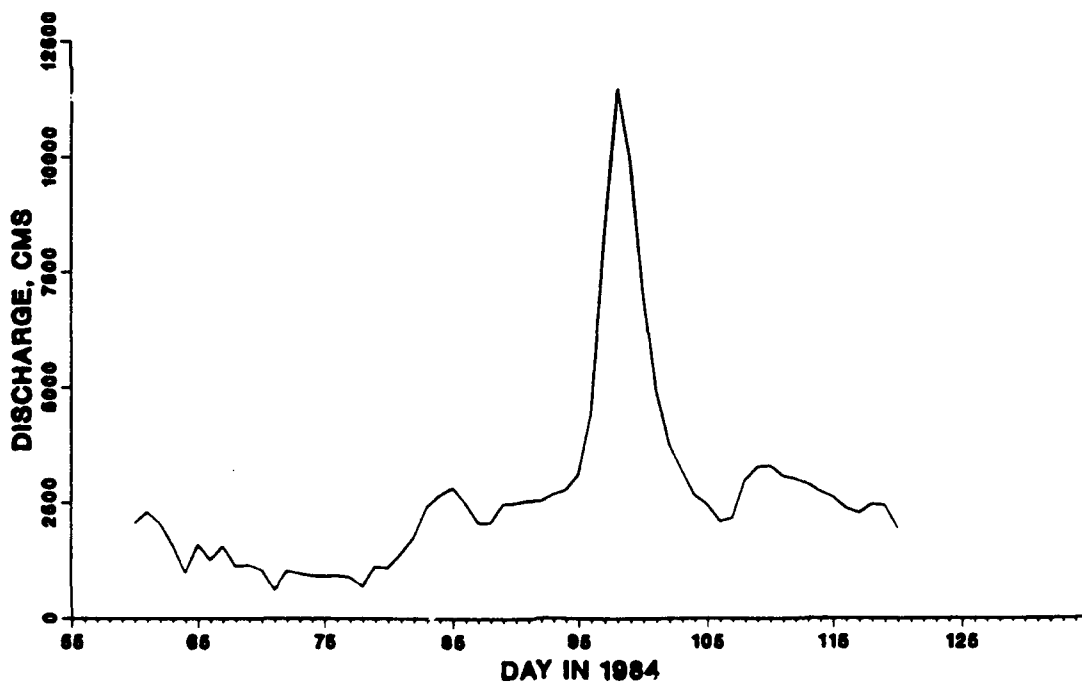
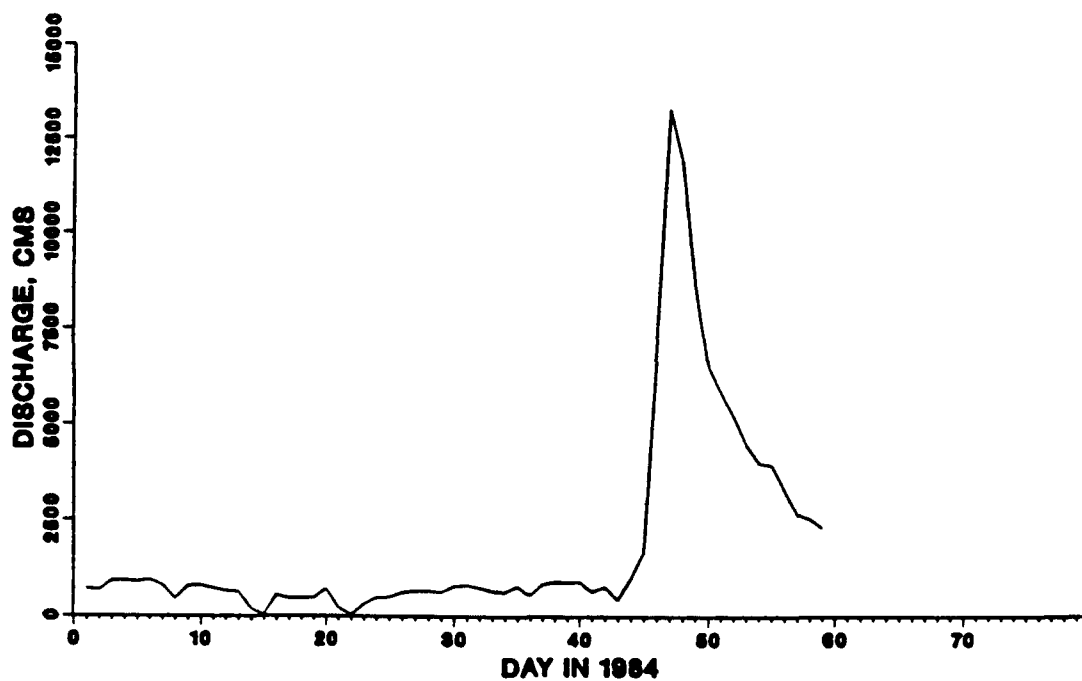


Figure A12. Freshwater inflow on Susquehanna River during 1984 (Sheet 1 of 3)

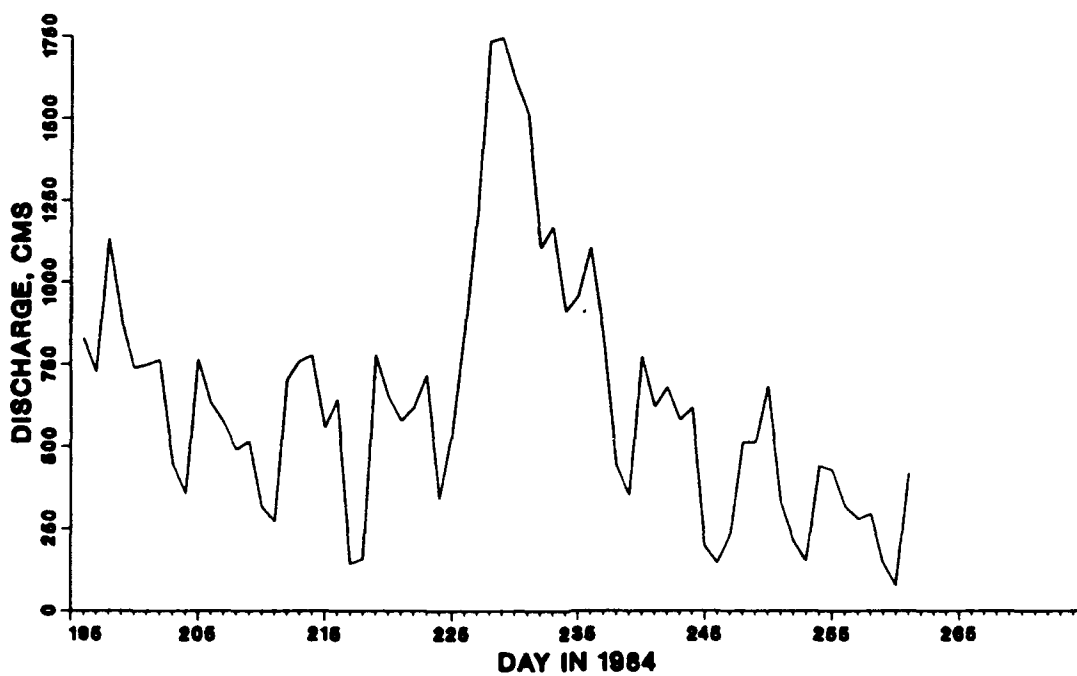
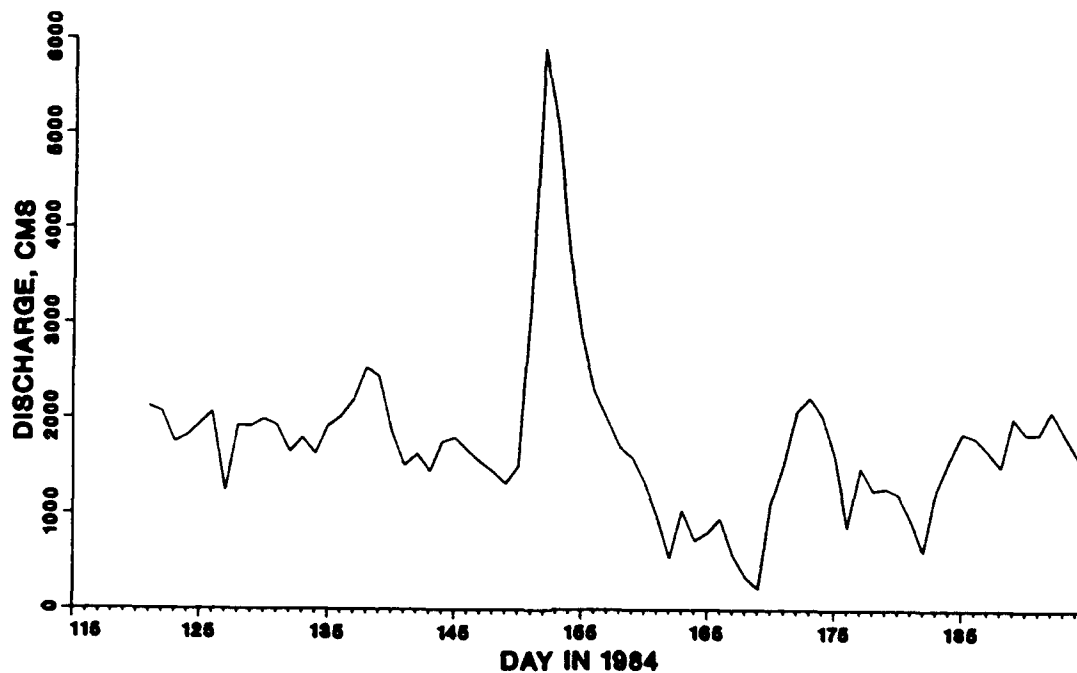


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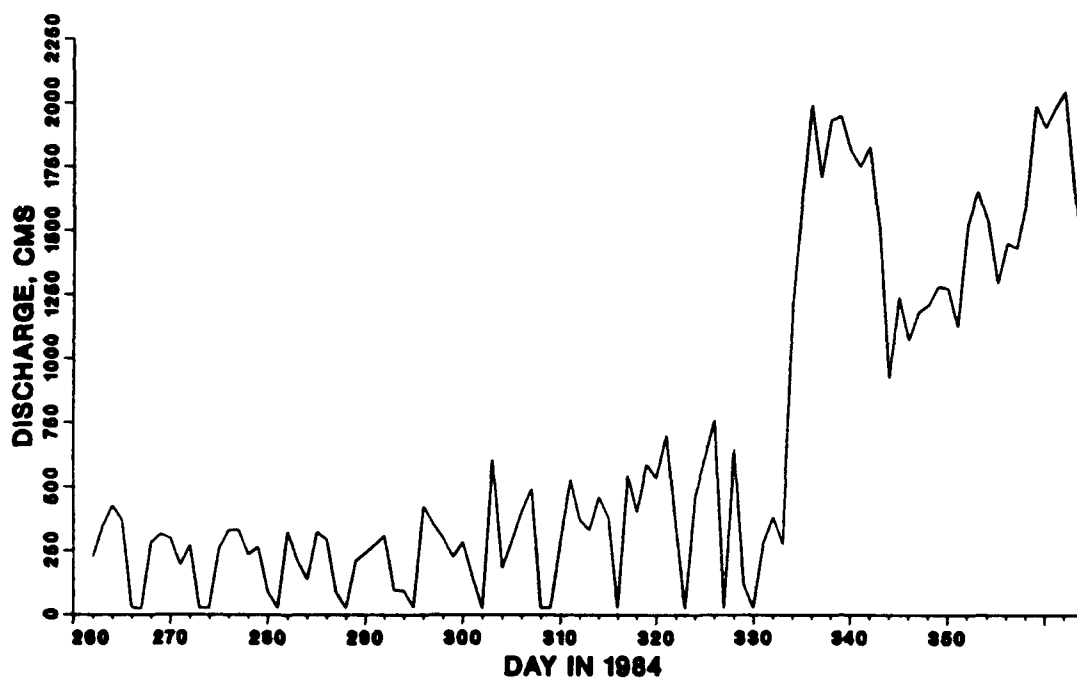


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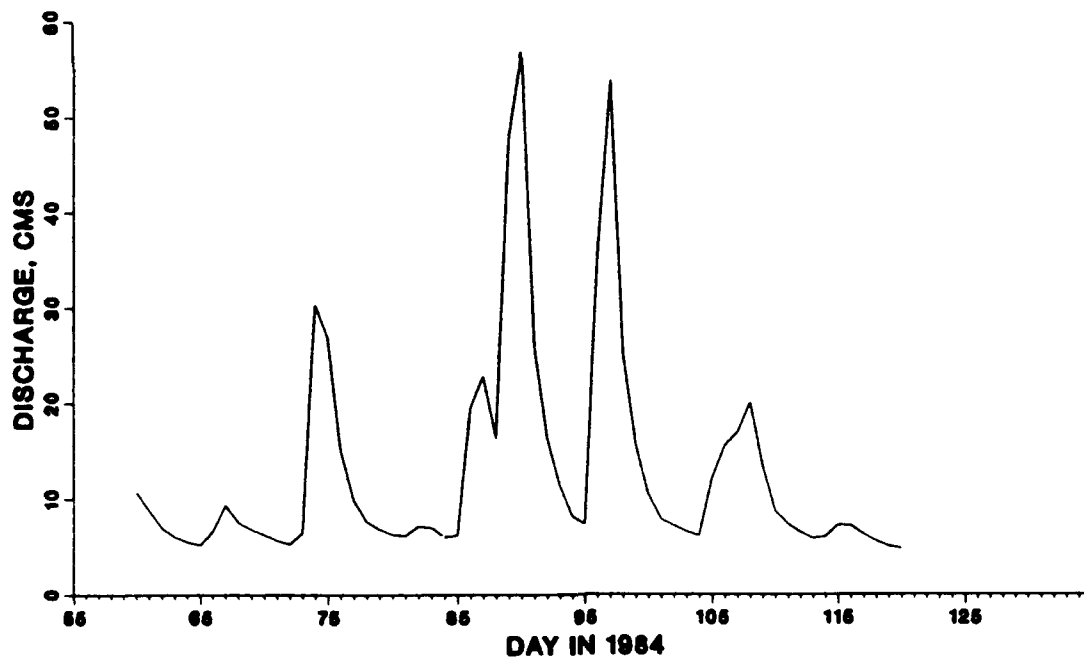
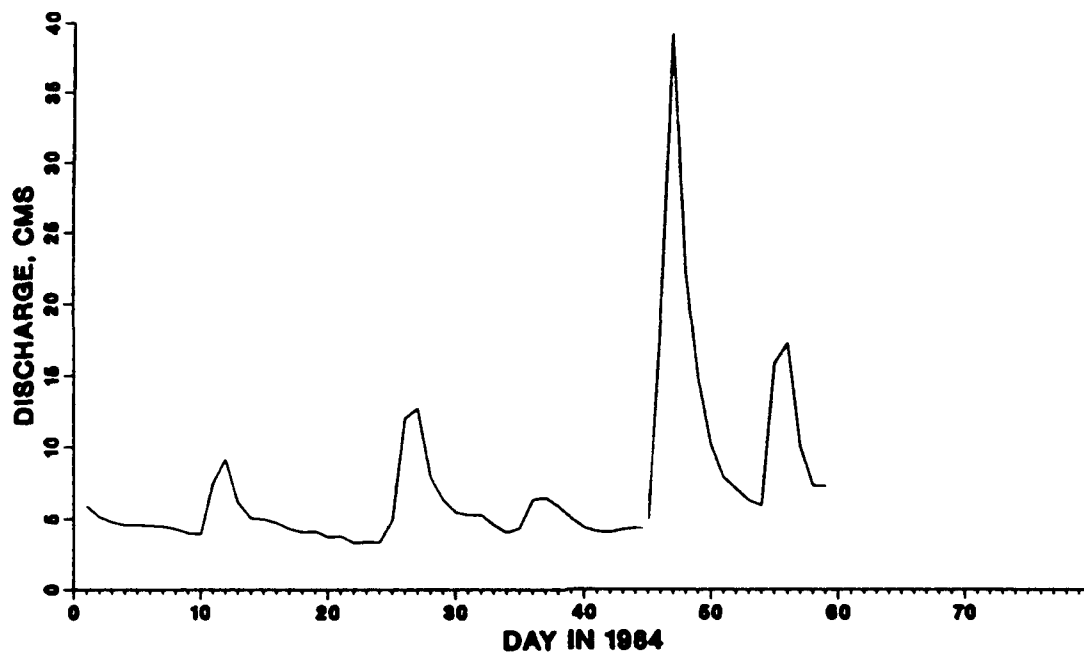


Figure A13. Freshwater inflow on Choptank River during 1984 (Sheet 1 of 3)

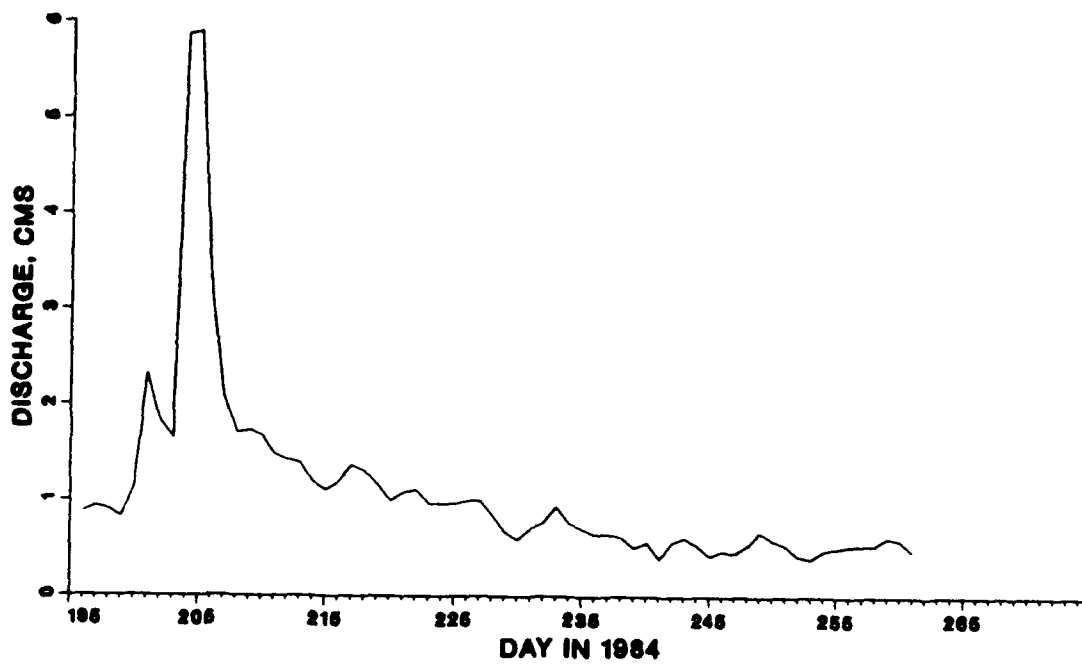
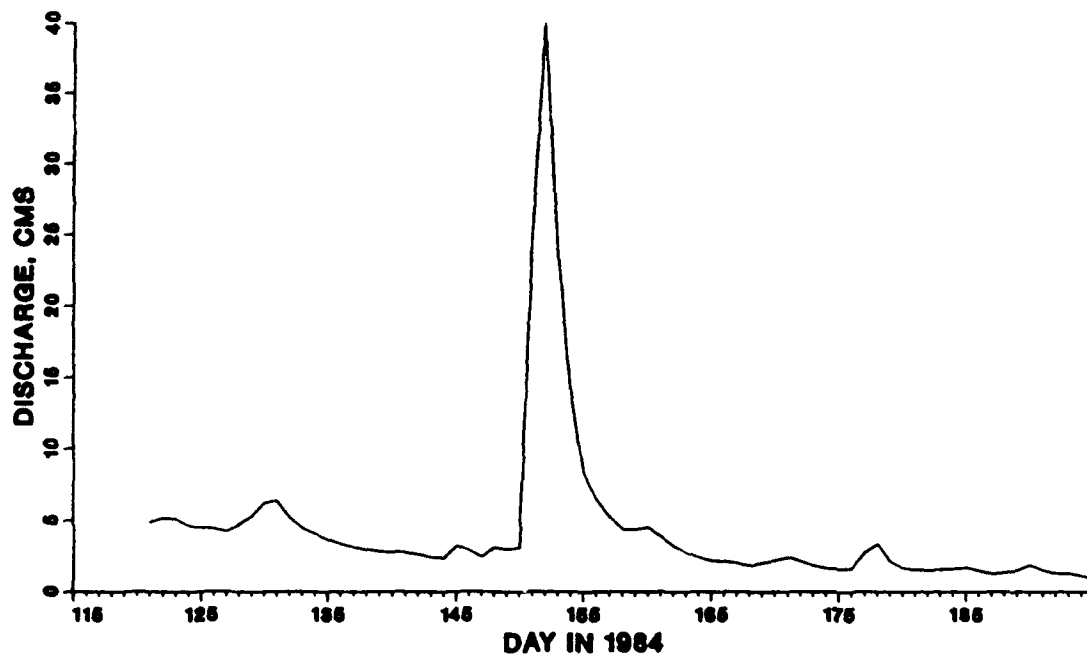


Figure A13. (Sheet 2 of 3)

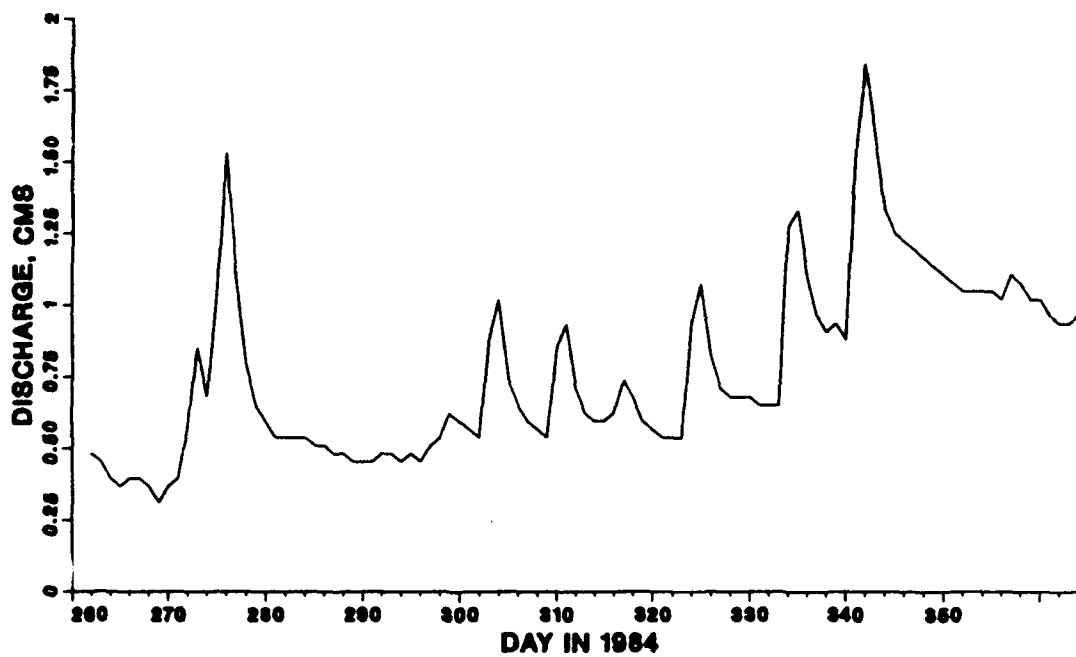


Figure A13. (Sheet 3 of 3)

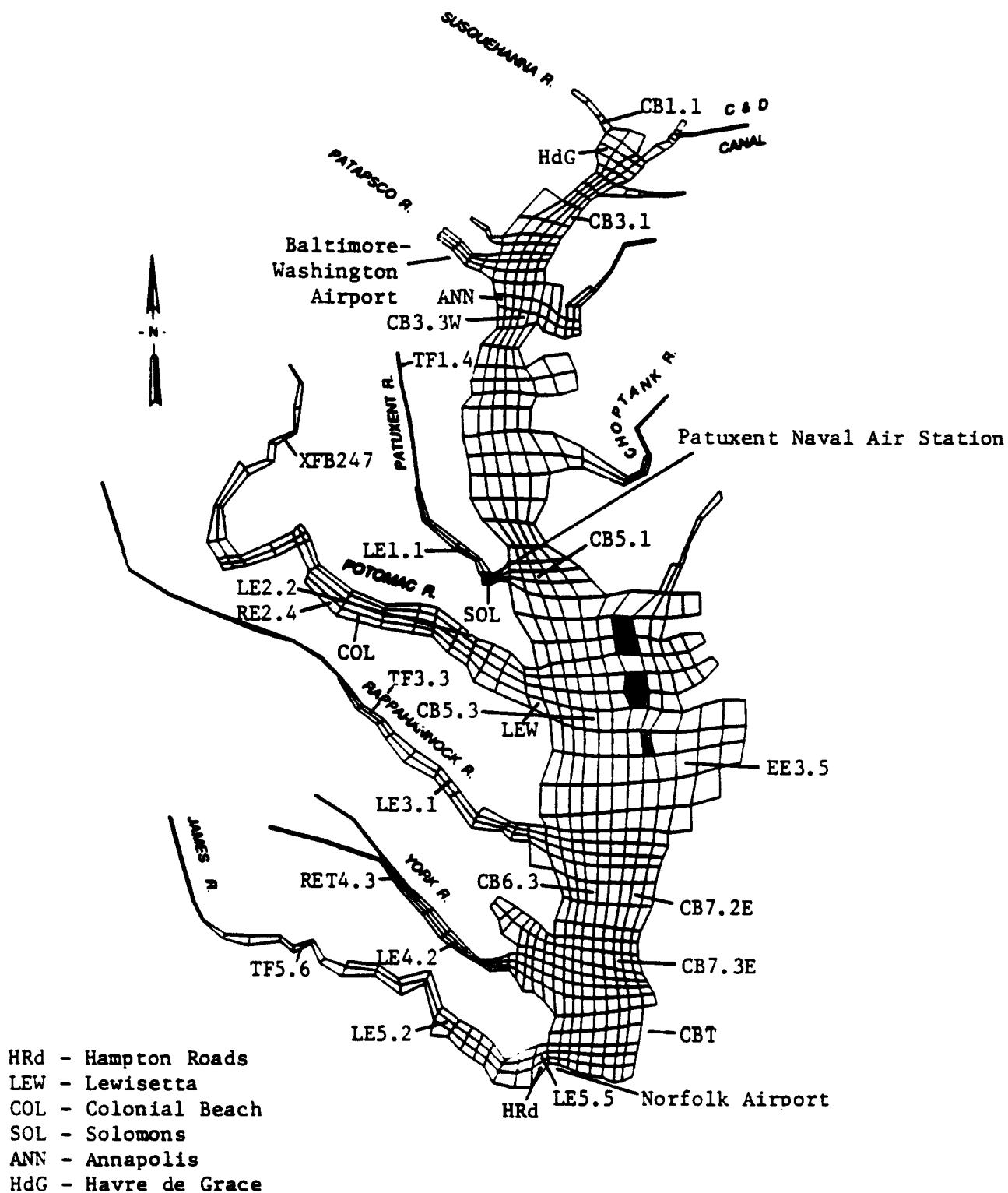


Figure A14. Location of 1984 data stations

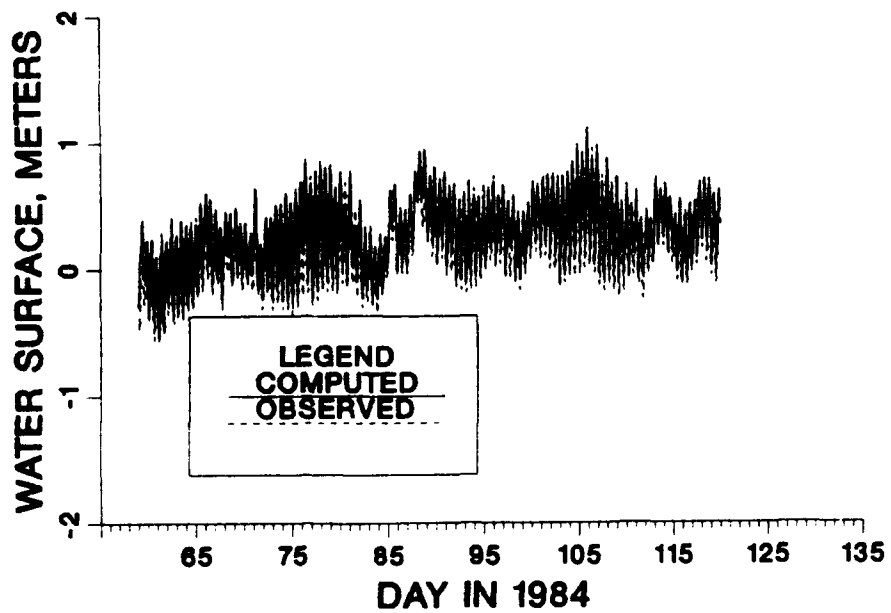
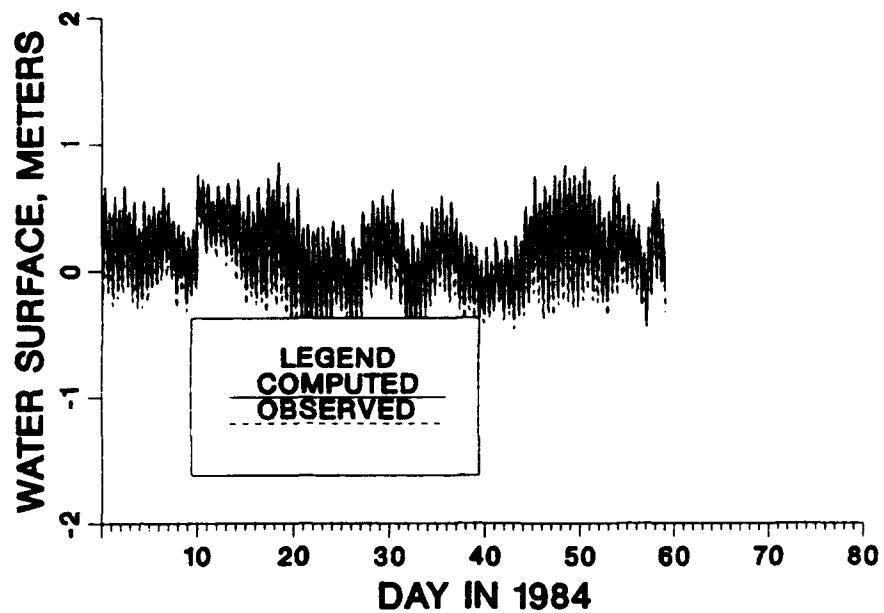


Figure A15. Comparison of computed and recorded tide at Hampton Roads, VA, during 1984 (Sheet 1 of 3)

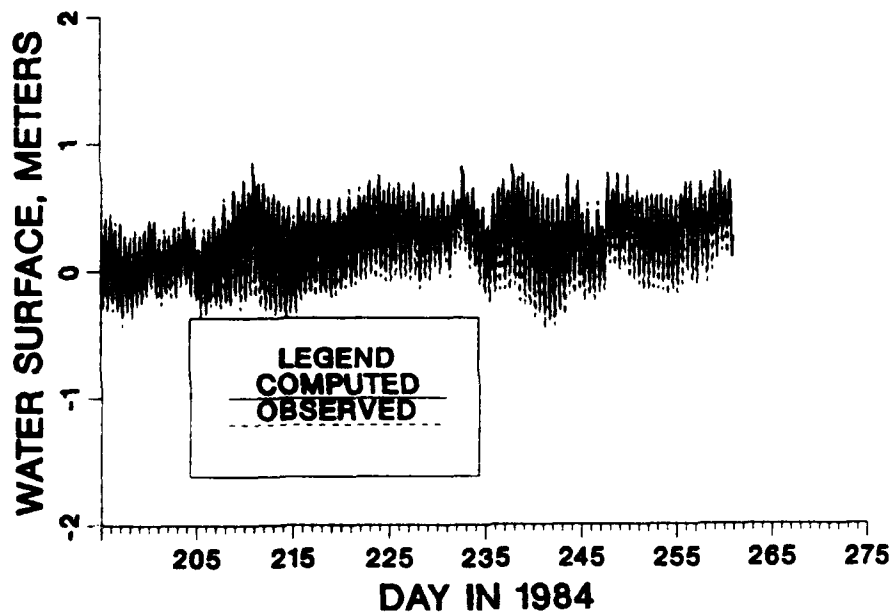
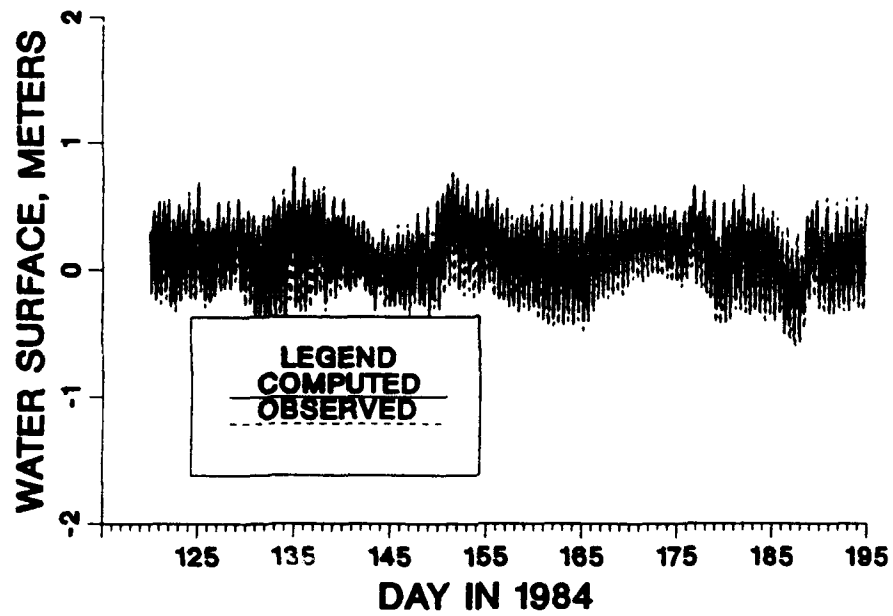


Figure A15. (Sheet 2 of 3)

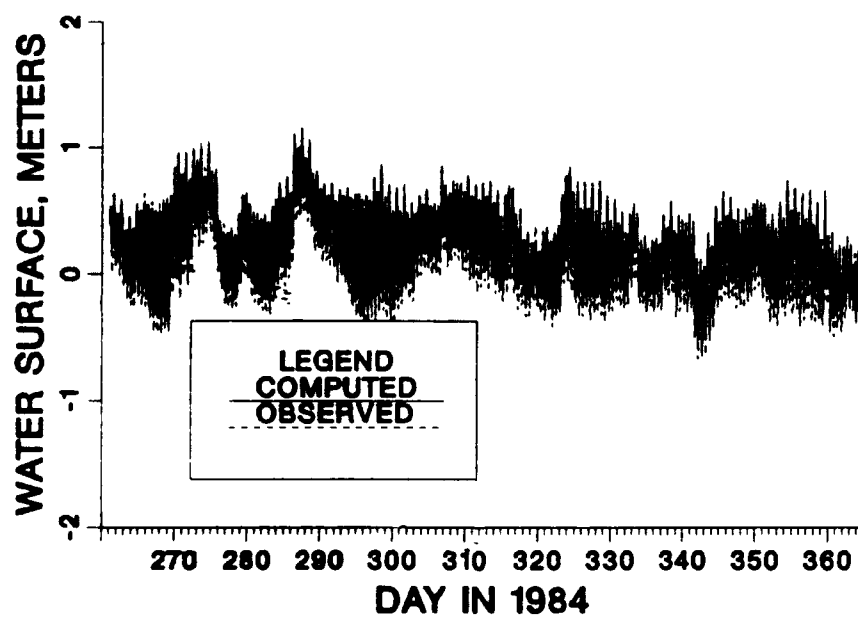


Figure A15. (Sheet 3 of 3)

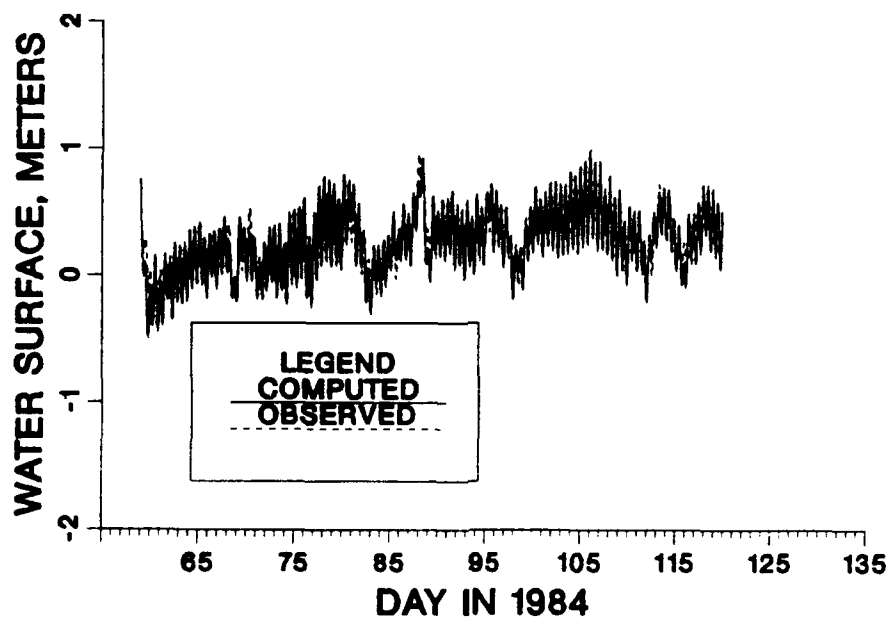
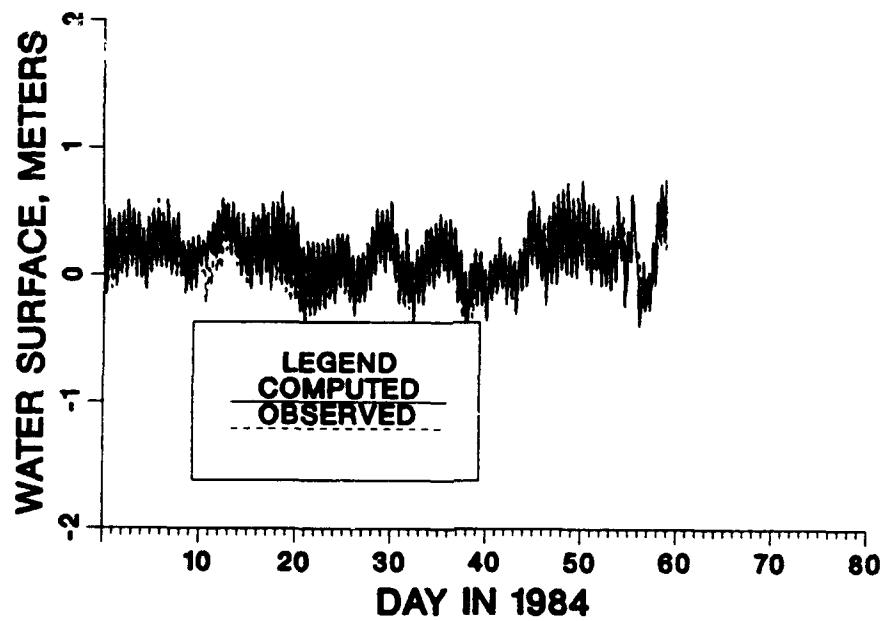


Figure A16. Comparison of computed and recorded tide at Lewisetta, VA, during 1984 (Sheet 1 of 3)

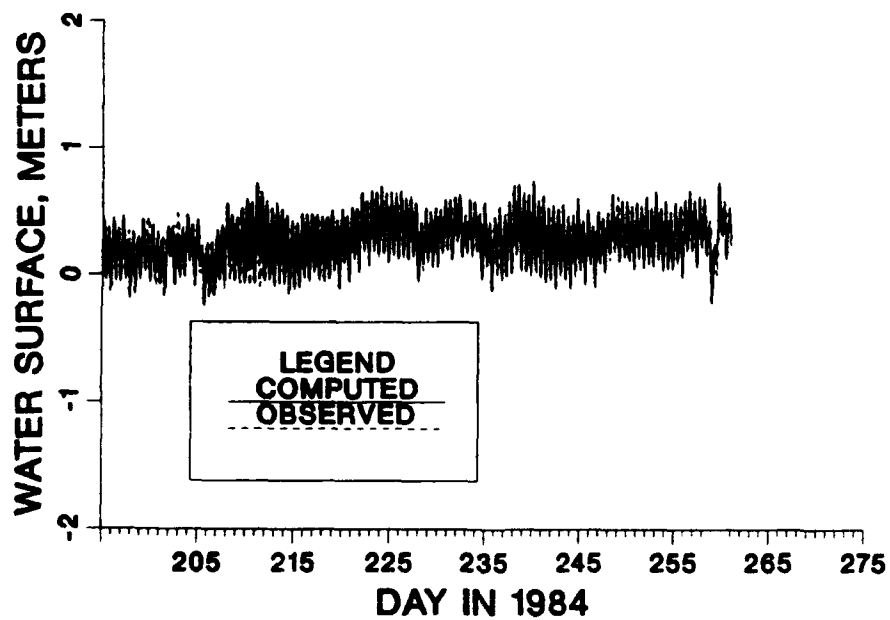
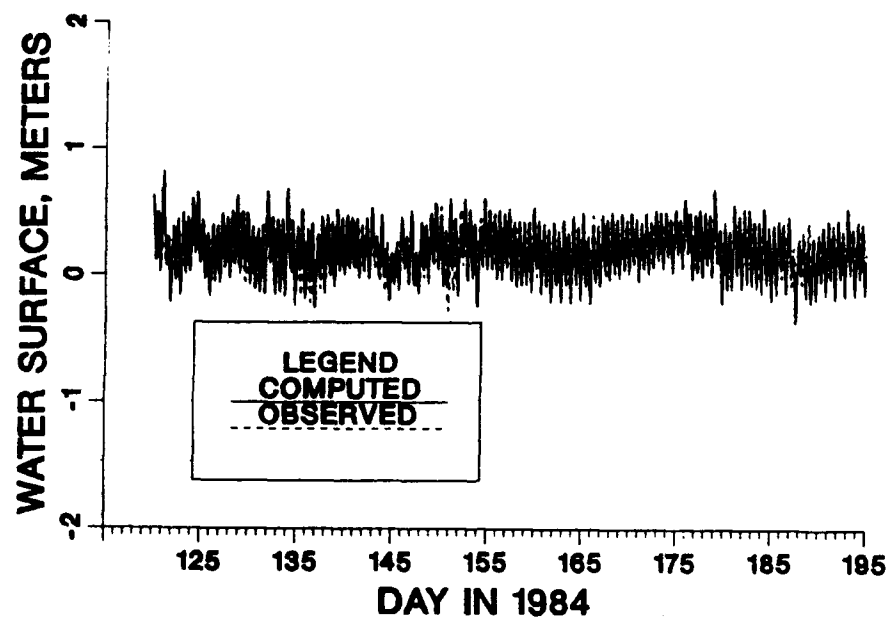


Figure A16. (Sheet 2 of 3)

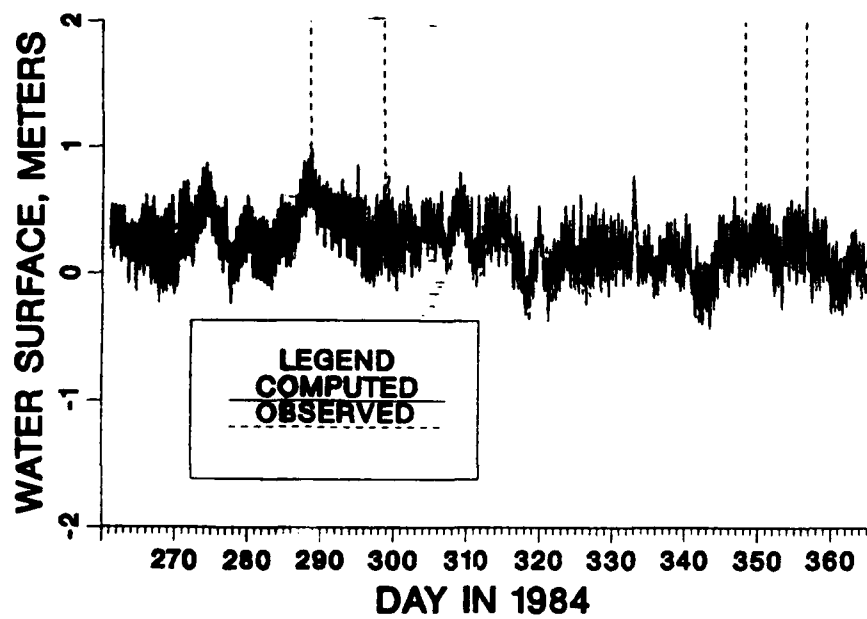


Figure A16. (Sheet 3 of 3)

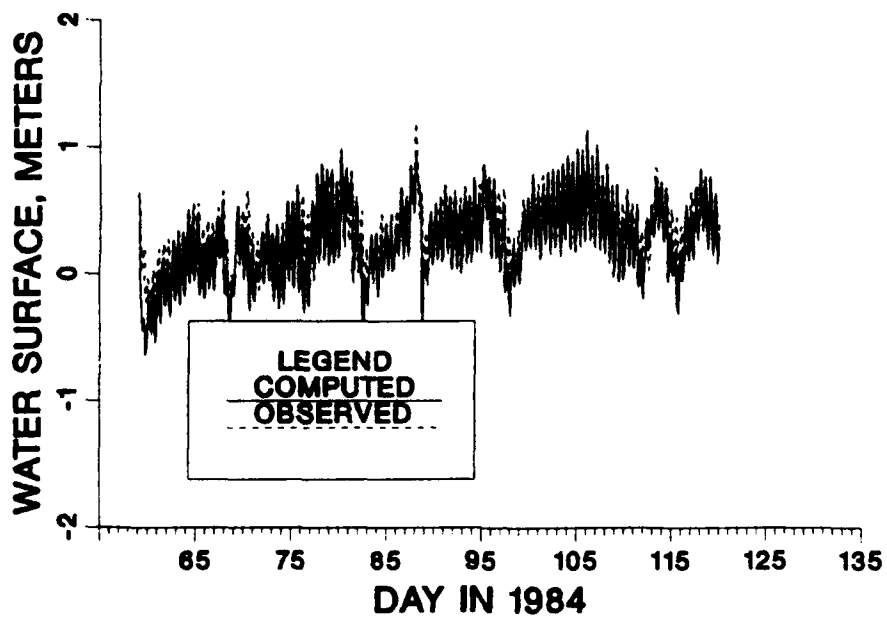
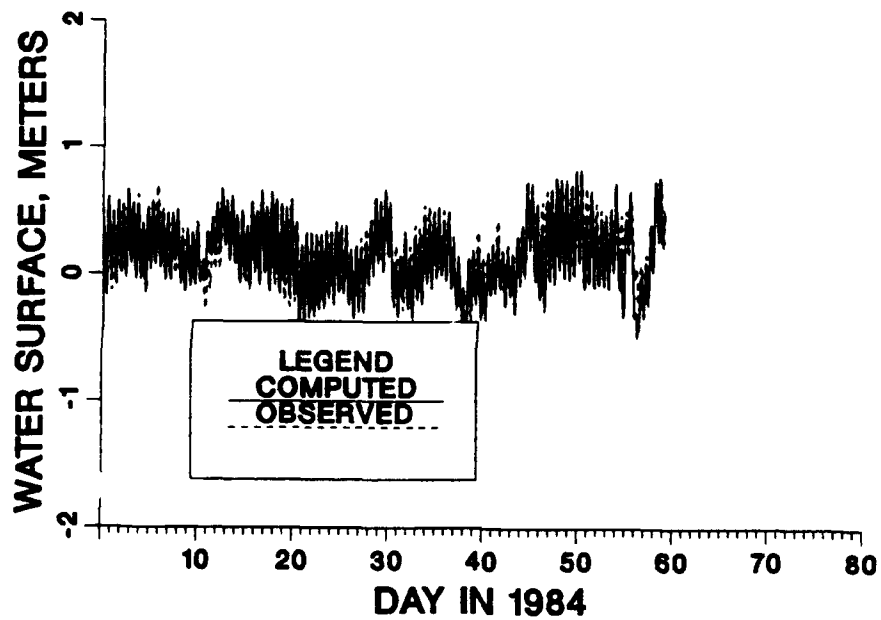


Figure A17. Comparison of computed and recorded tide at Colonial Beach, VA, during 1984 (Sheet 1 of 3)

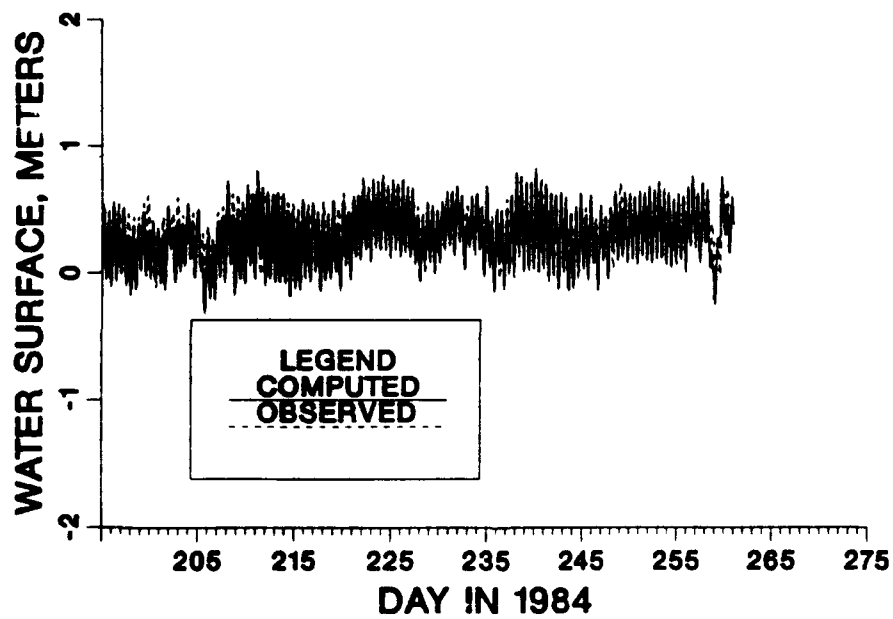
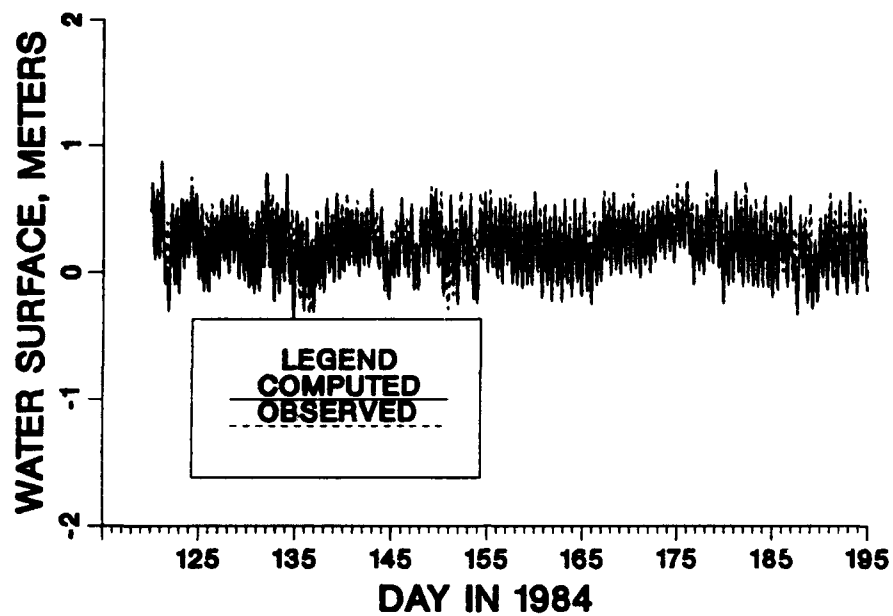


Figure A17. (Sheet 2 of 3)

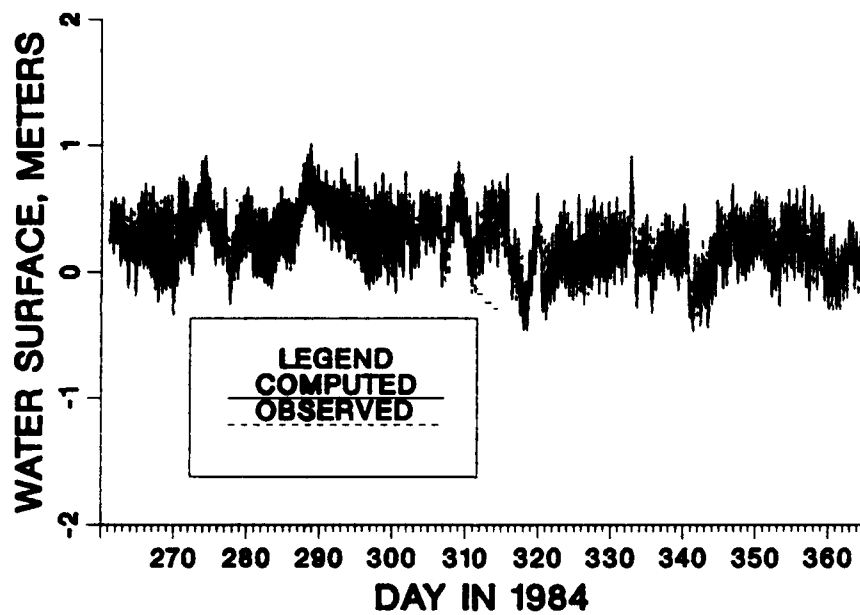


Figure A17. (Sheet 3 of 3)

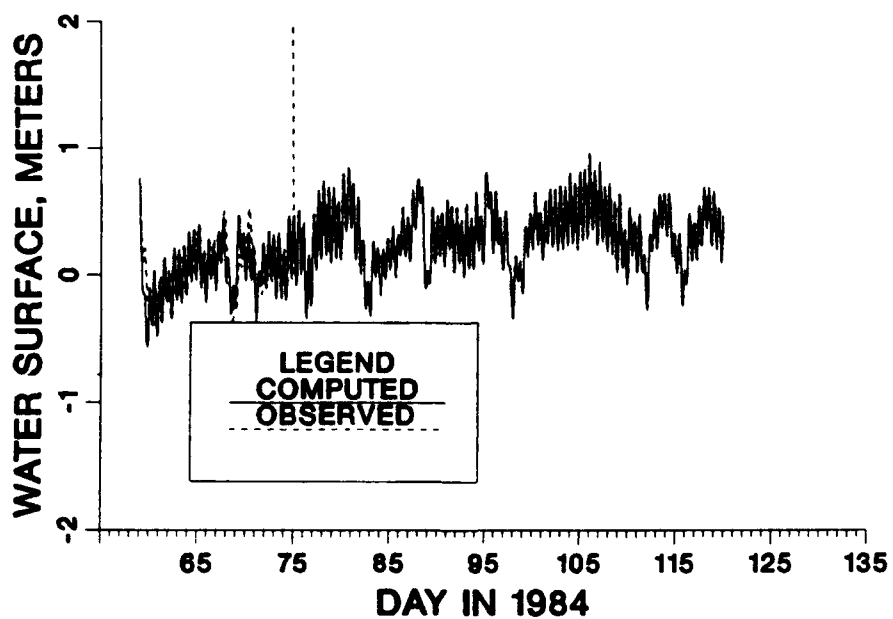
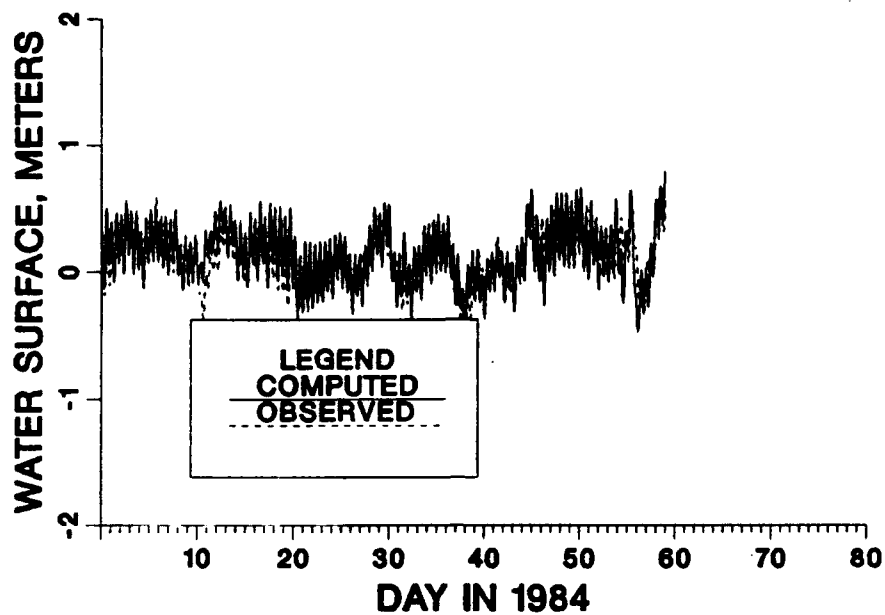


Figure A18. Comparison of computed and recorded tide at Solomons, MD, during 1984 (Sheet 1 of 3)

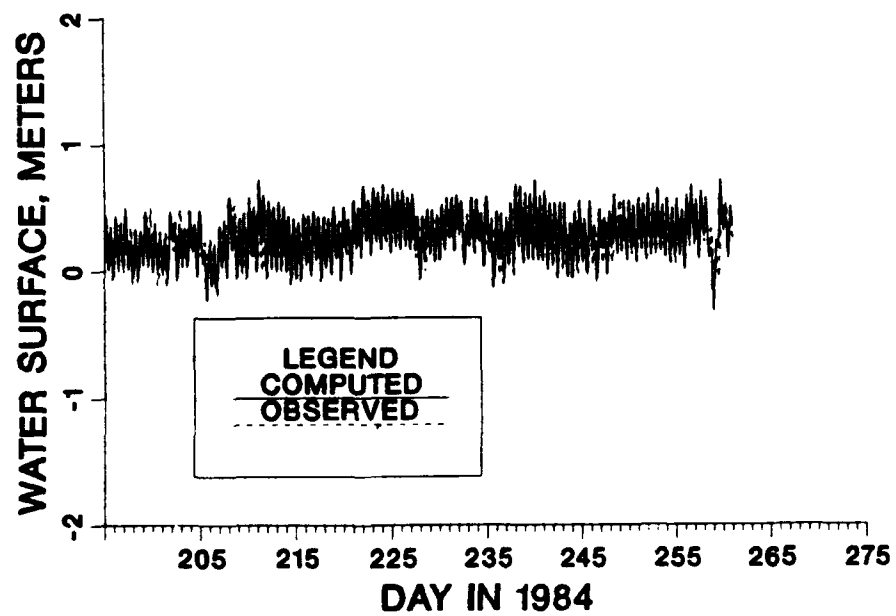
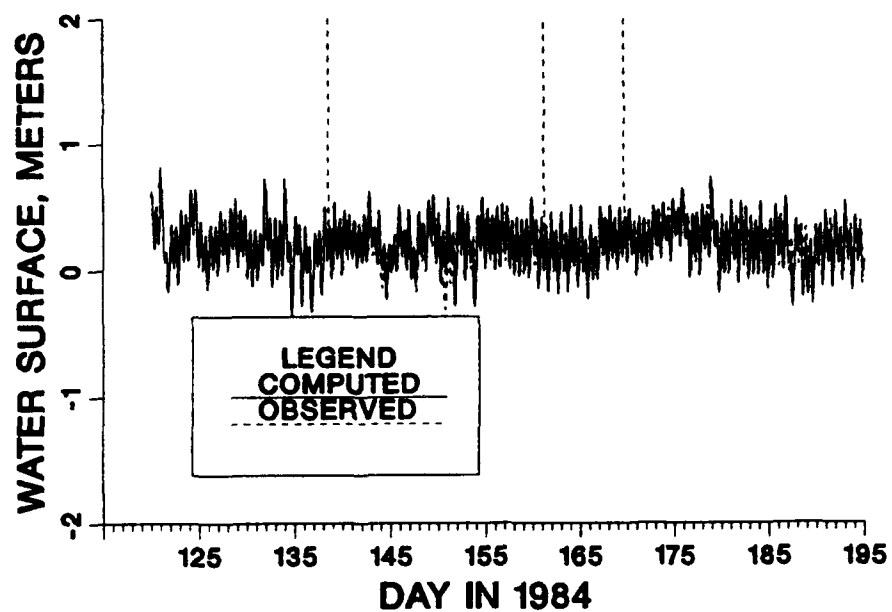


Figure A18. (Sheet 2 of 3)

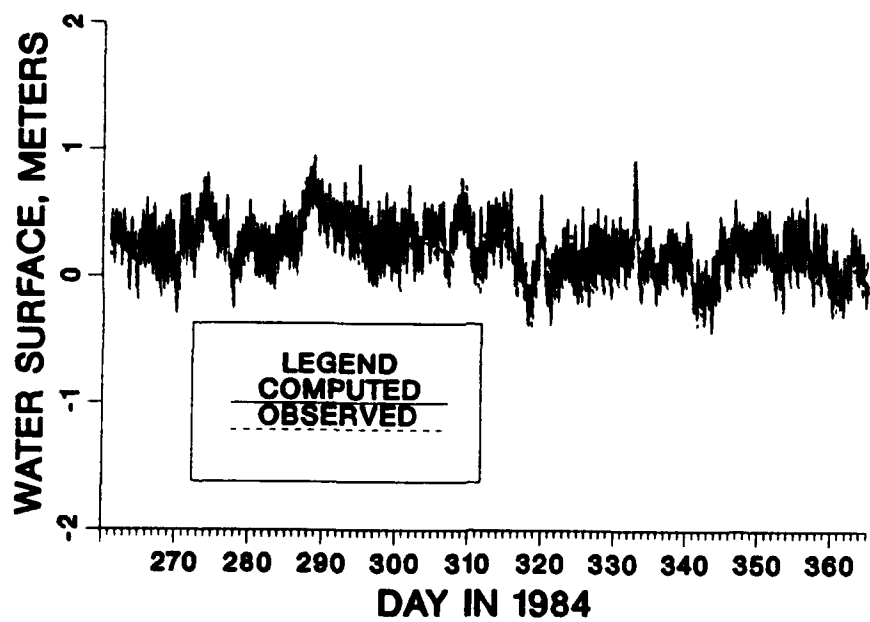


Figure A18. (Sheet 3 of 3)

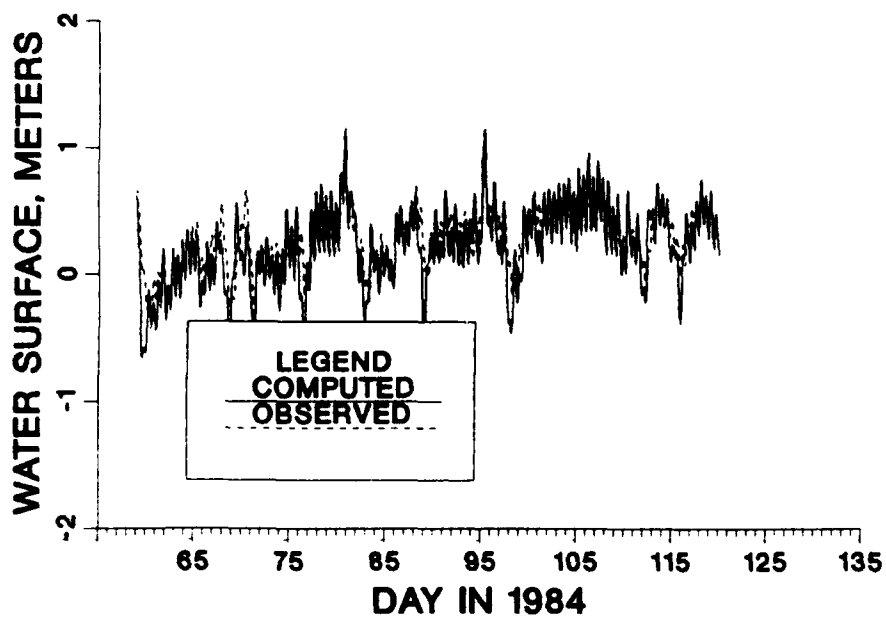
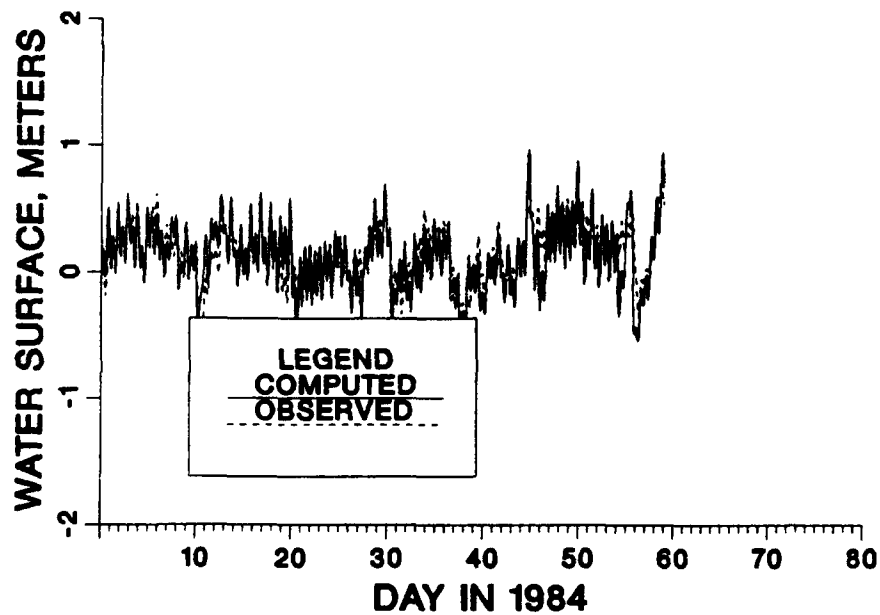


Figure A19. Comparison of computed and recorded tide at Annapolis, MD, during 1984 (Sheet 1 of 3)

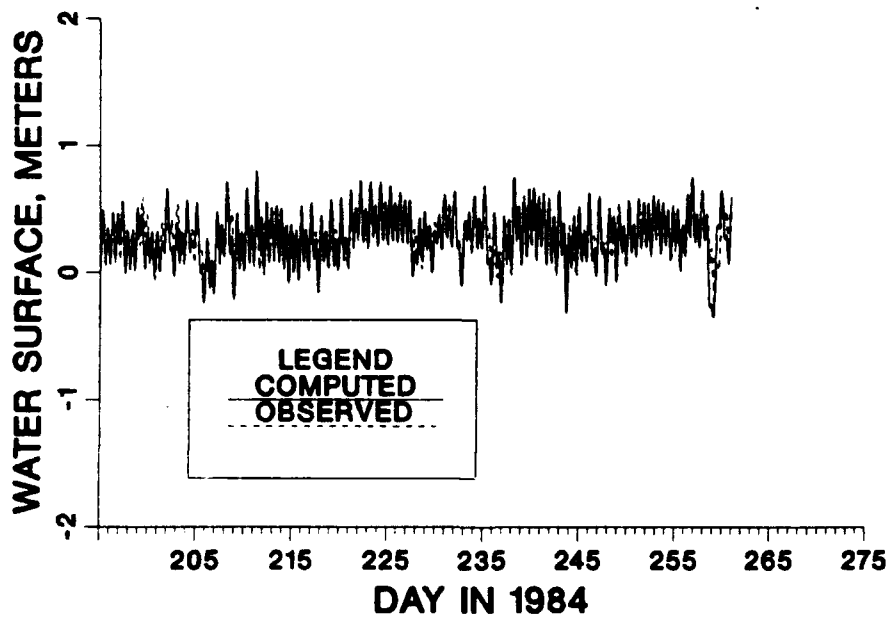
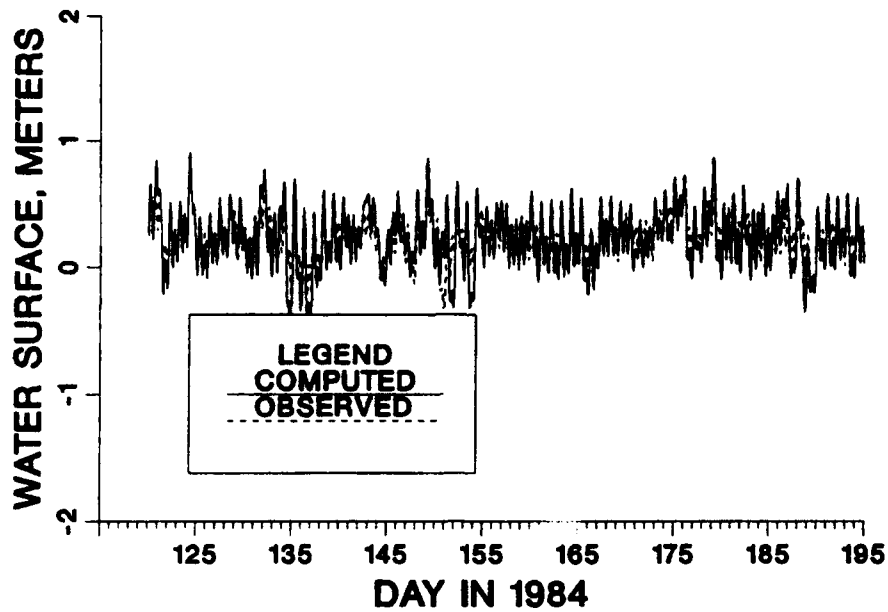


Figure A19. (Sheet 2 of 3)

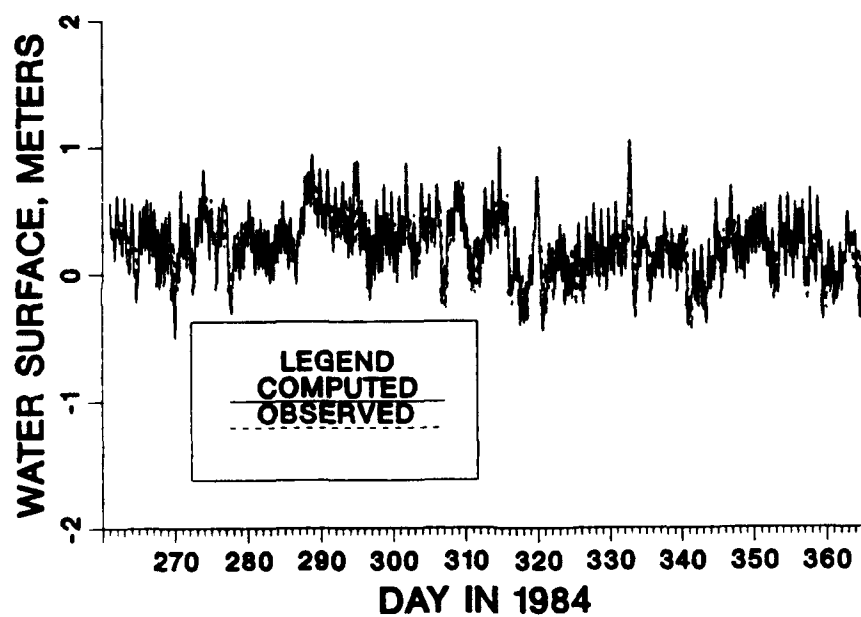


Figure A19. (Sheet 3 of 3)

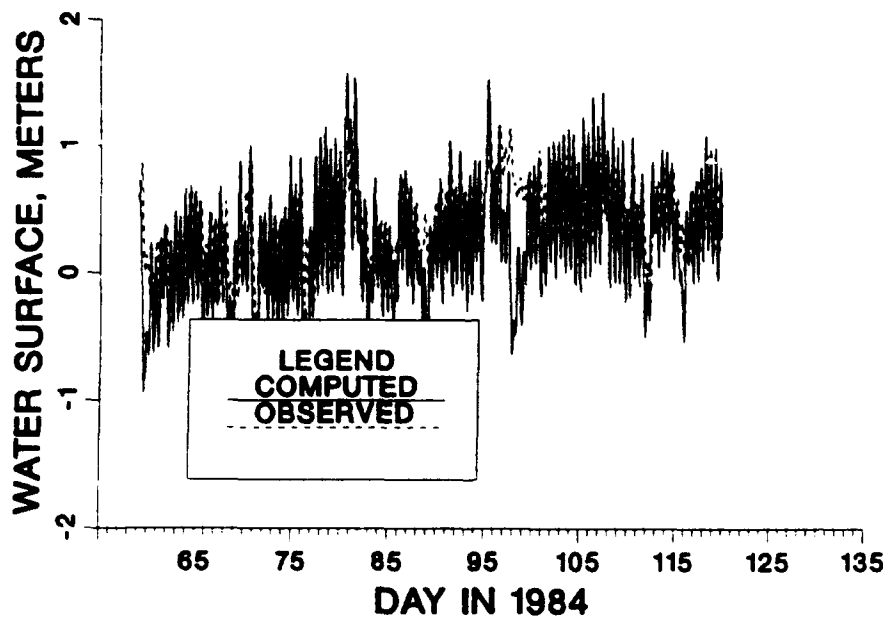
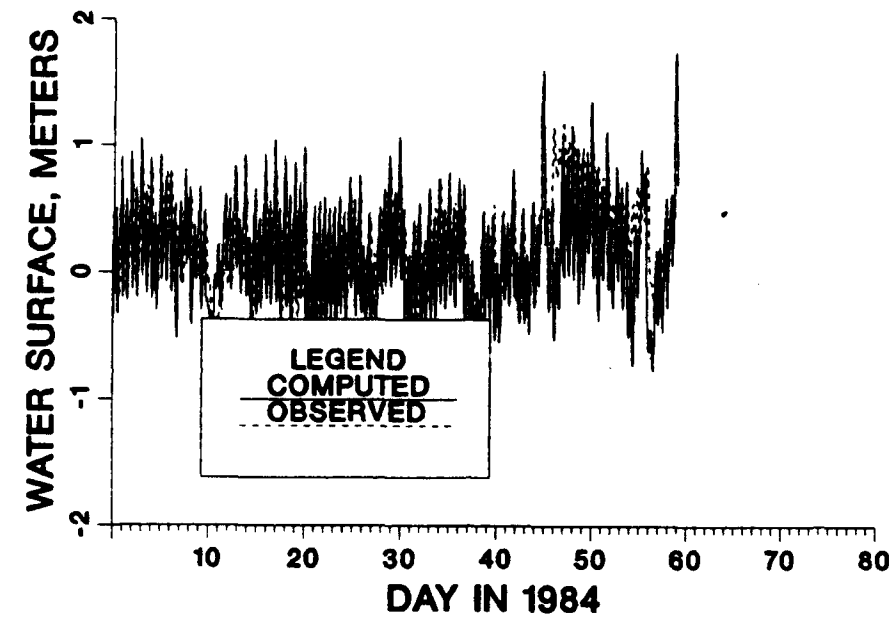


Figure A20. Comparison of computed and recorded tide at Havre de Grace, MD, during 1984 (Sheet 1 of 3)

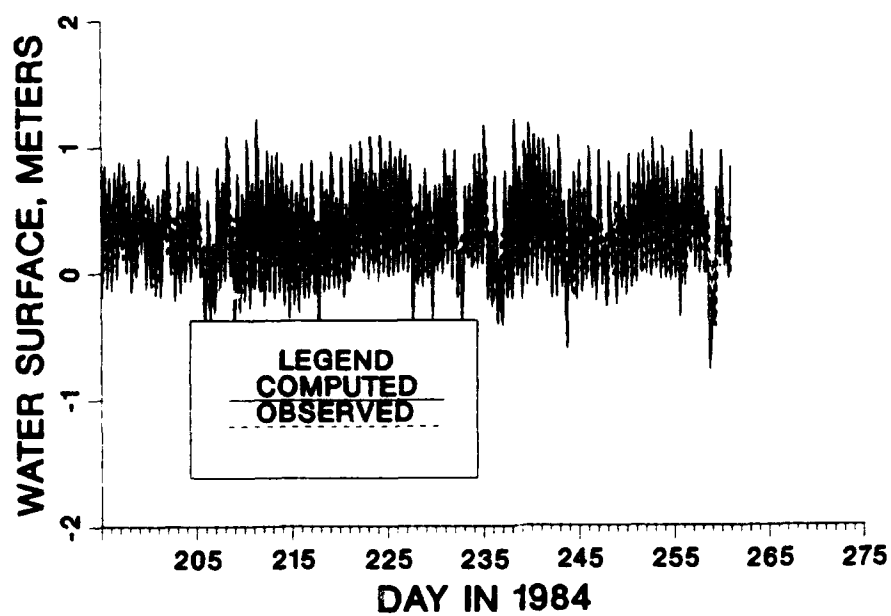
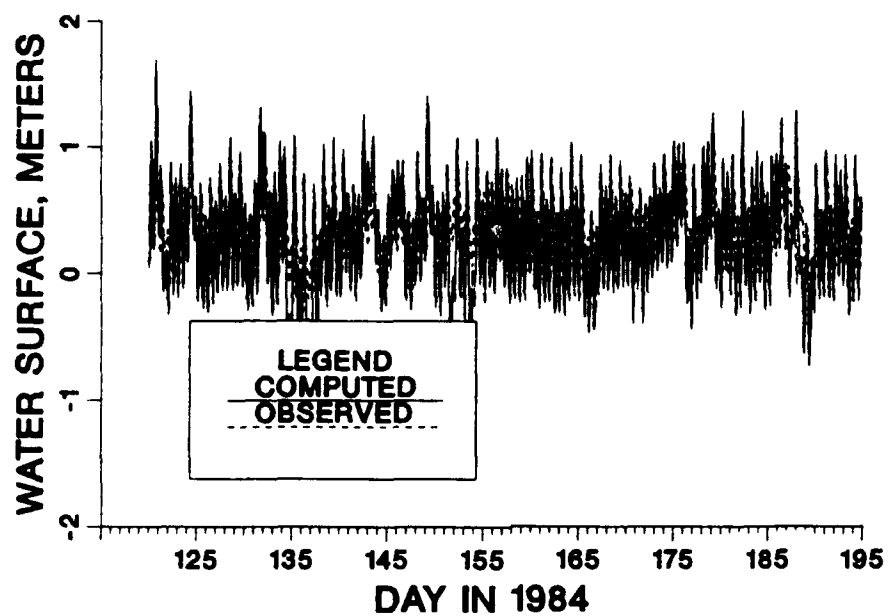


Figure A20. (Sheet 2 of 3)

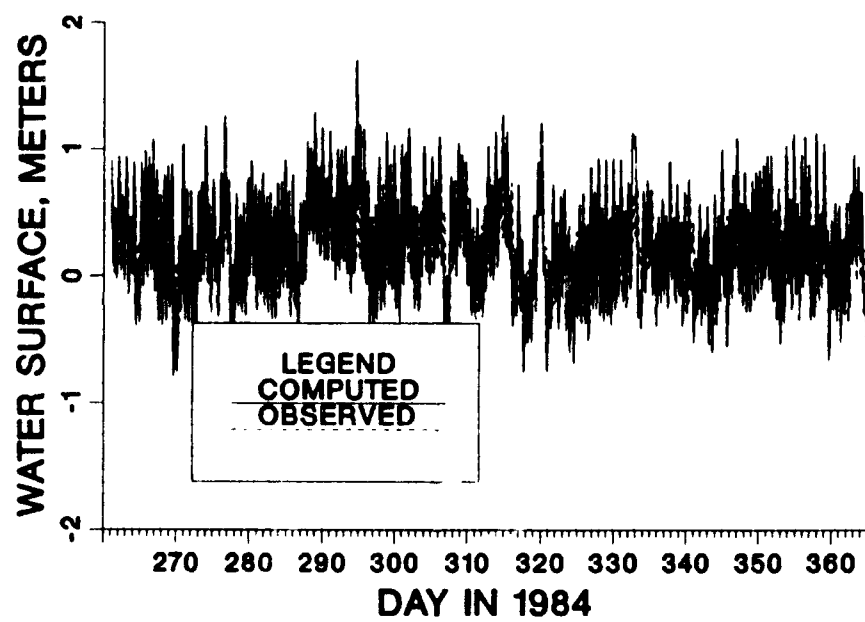


Figure A20. (Sheet 3 of 3)

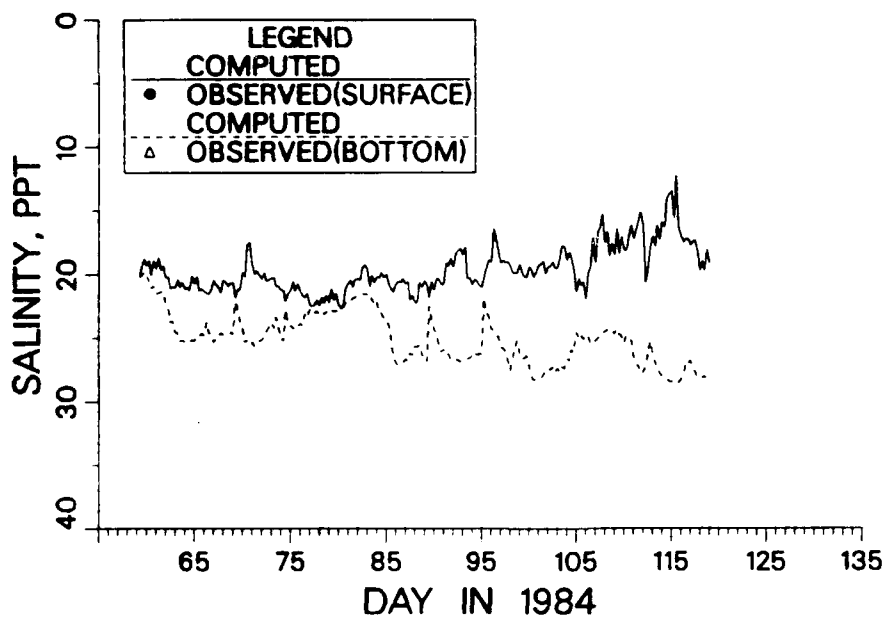
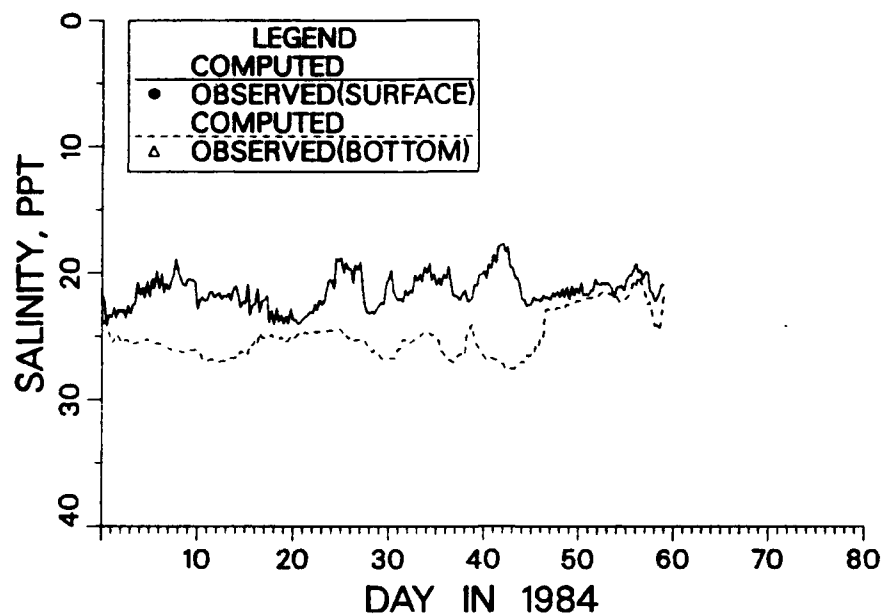


Figure A21. Comparison of computed and recorded salinity at sta CB 7.3E during 1984 (Sheet 1 of 3)

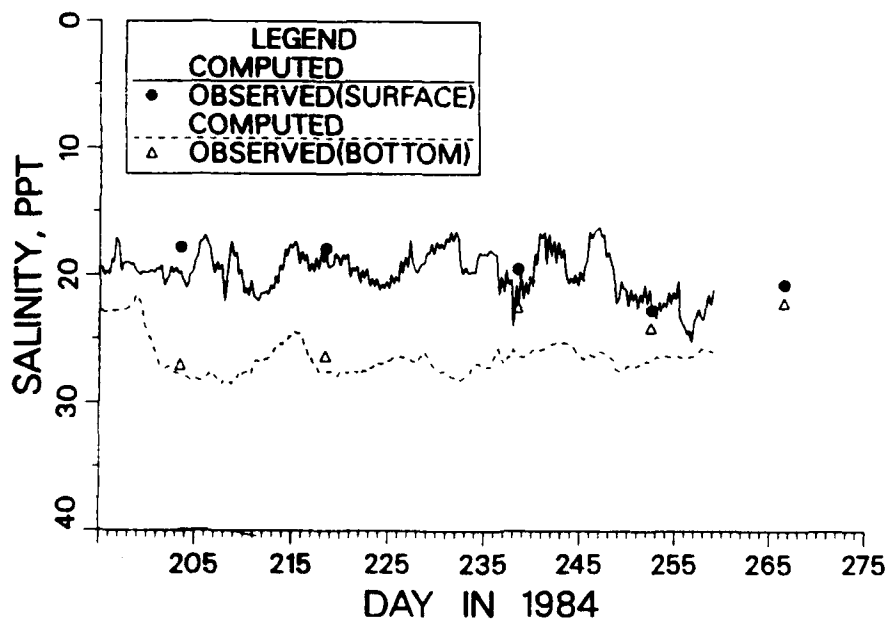
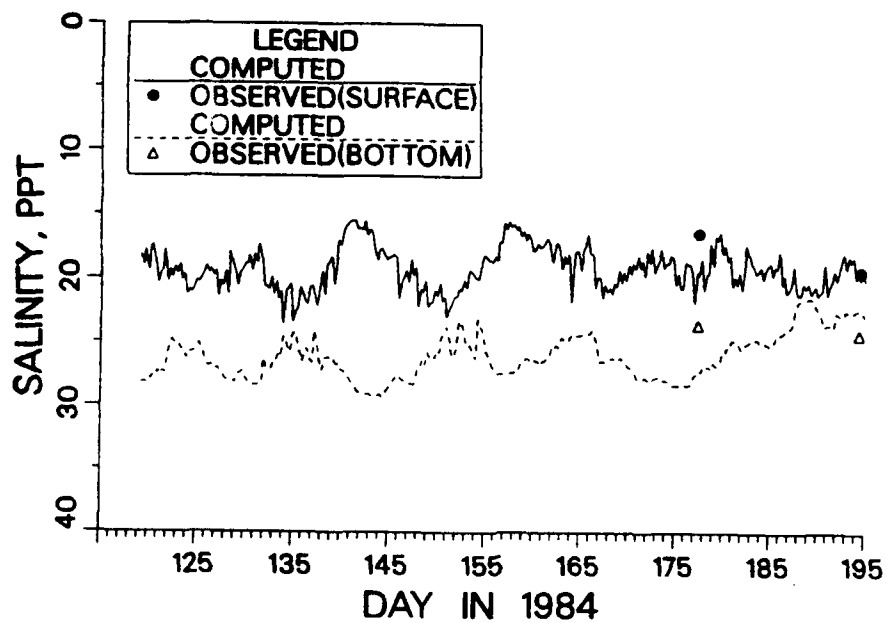


Figure A21. (Sheet 2 of 3)

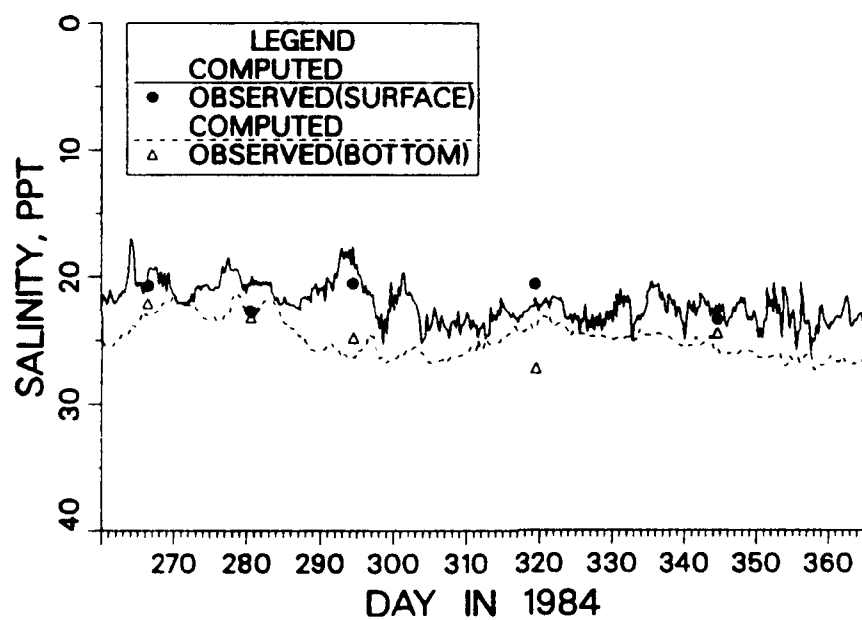


Figure A21. (Sheet 3 of 3)

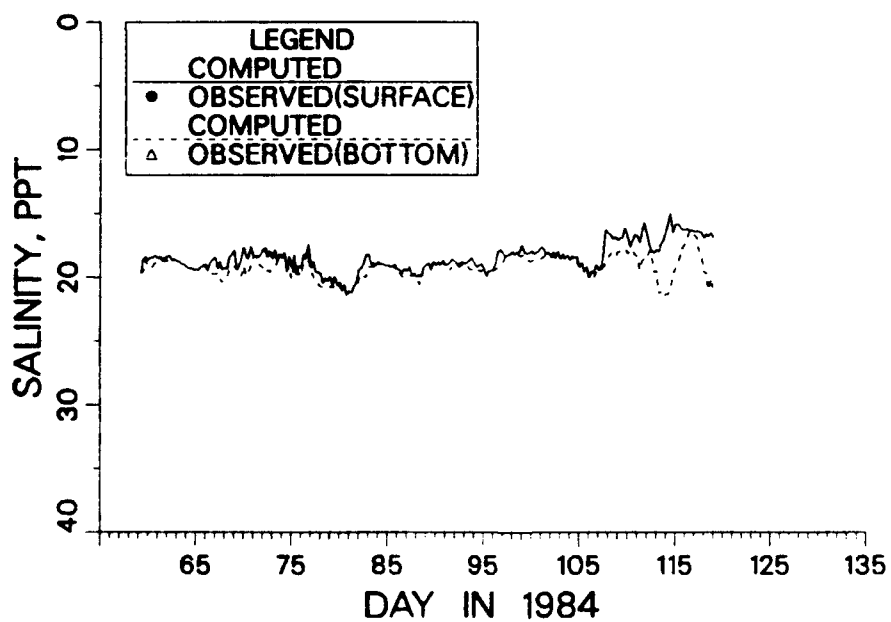
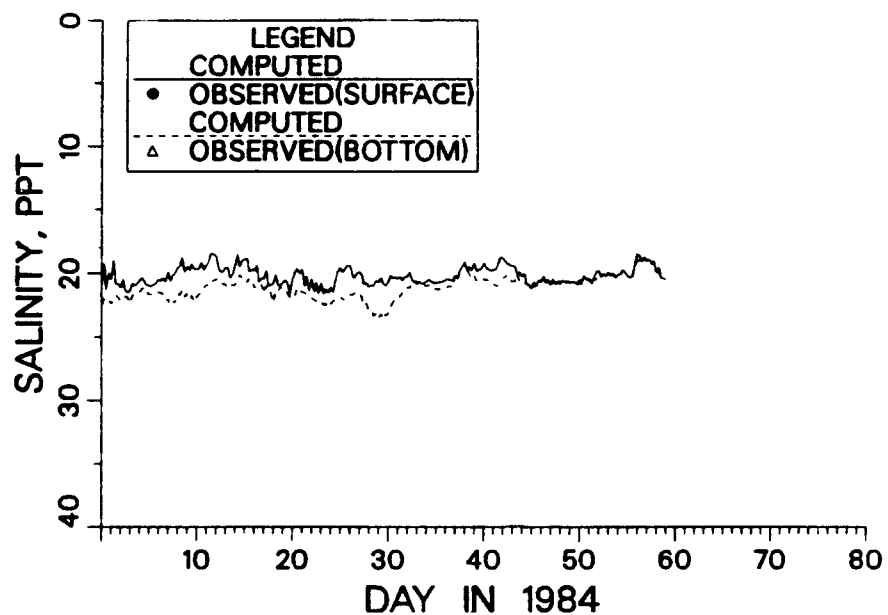


Figure A22. Comparison of computed and recorded salinity at sta CB 7.2E during 1984 (Sheet 1 of 3)

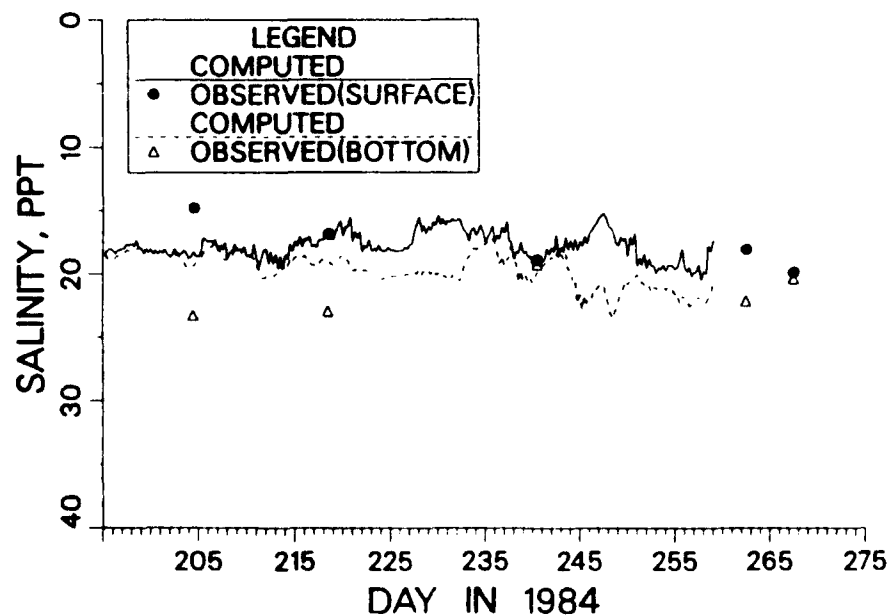
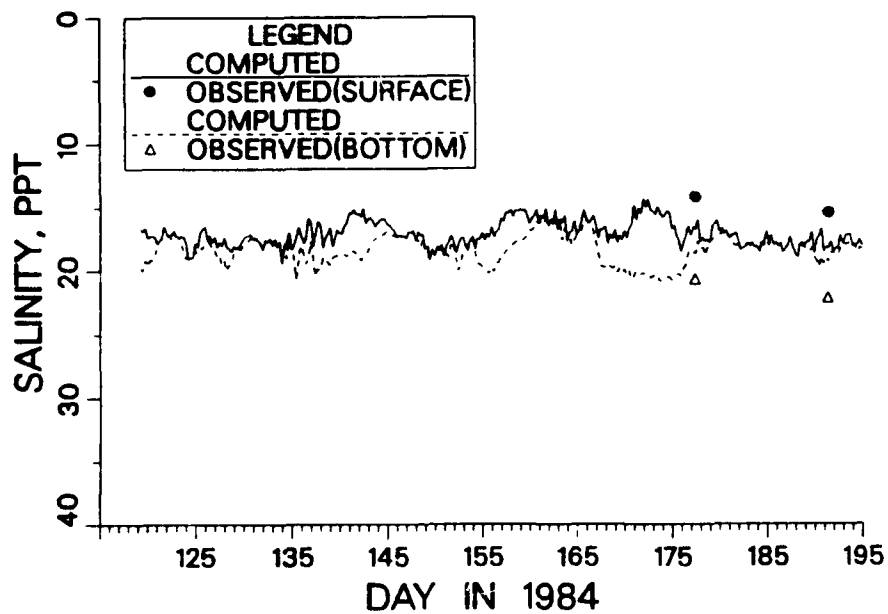


Figure A22. (Sheet 2 of 3)

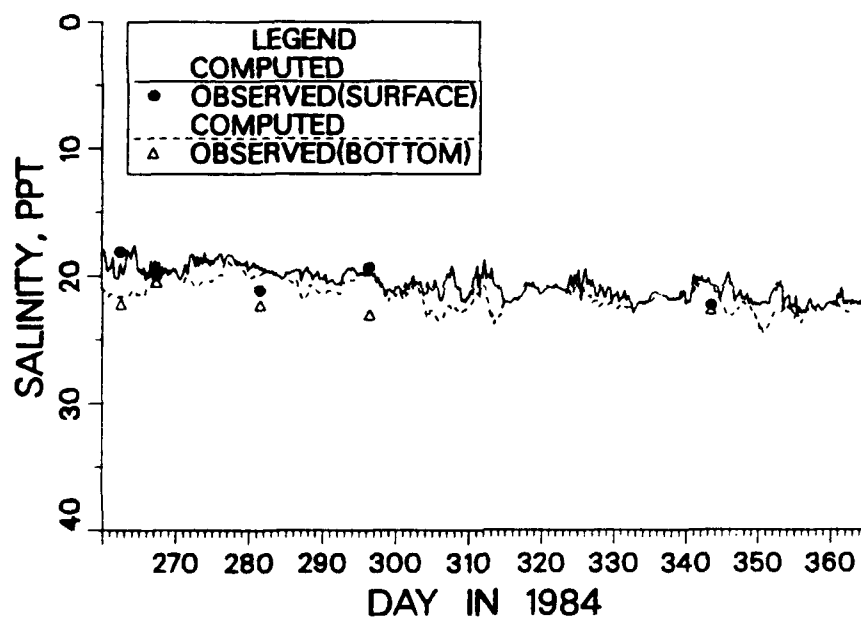


Figure A22. (Sheet 3 of 3)

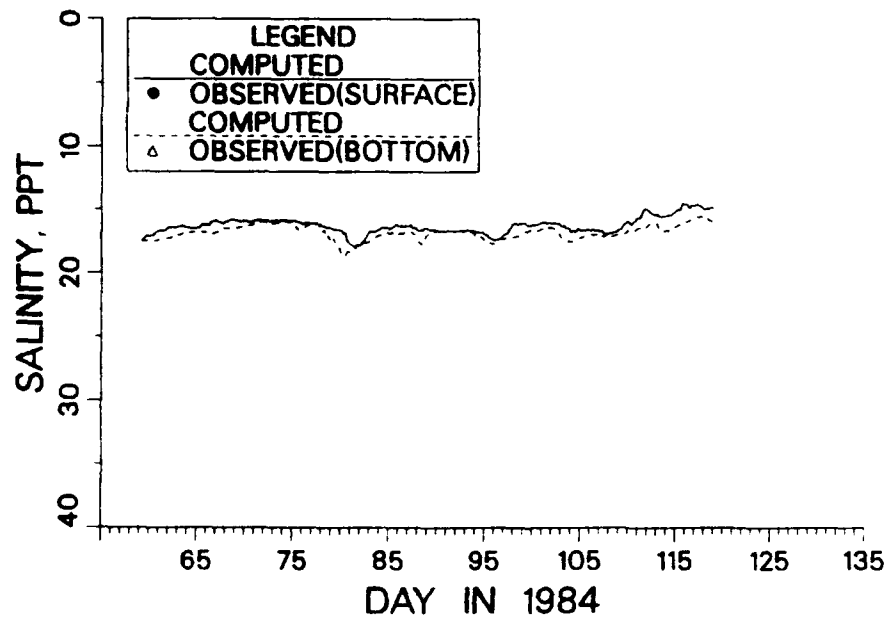
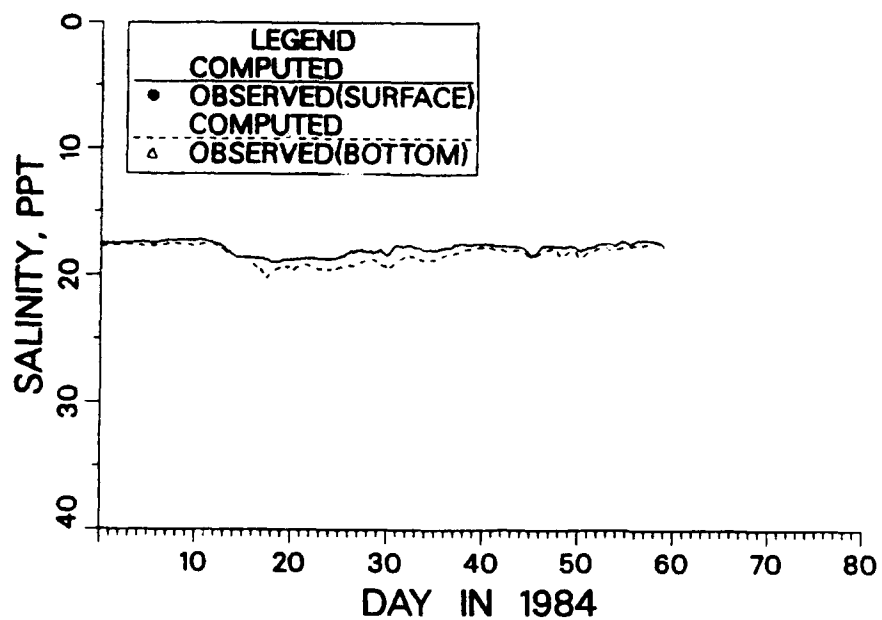


Figure A23. Comparison of computed and recorded salinity at sta EE 3.5 during 1984 (Sheet 1 of 3)

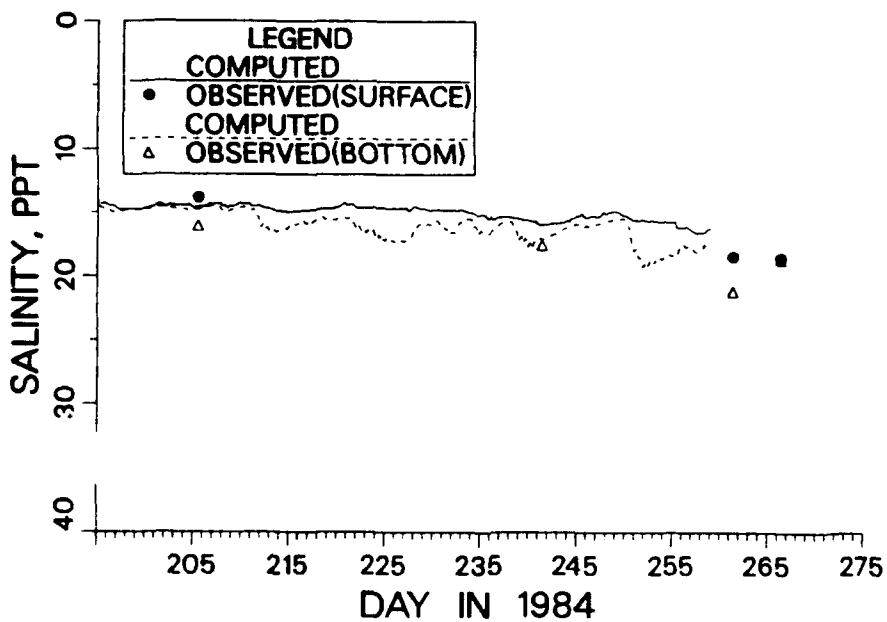
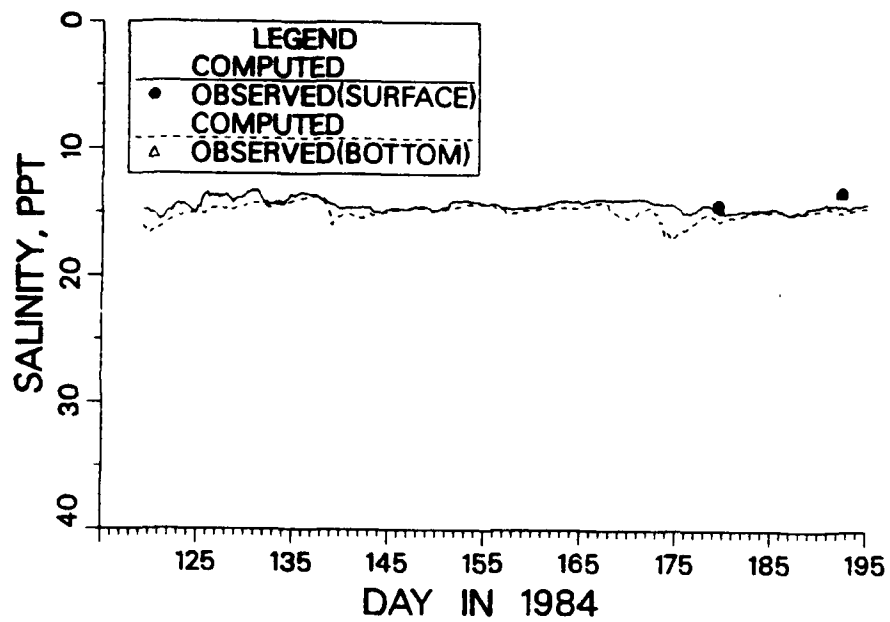


Figure A23. (Sheet 2 of 3)

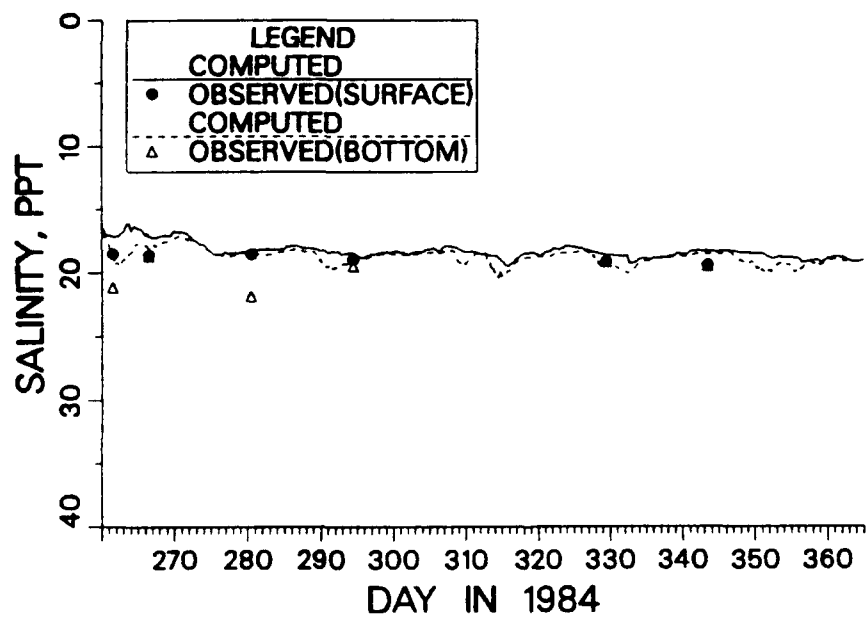


Figure A23. (Sheet 3 of 3)

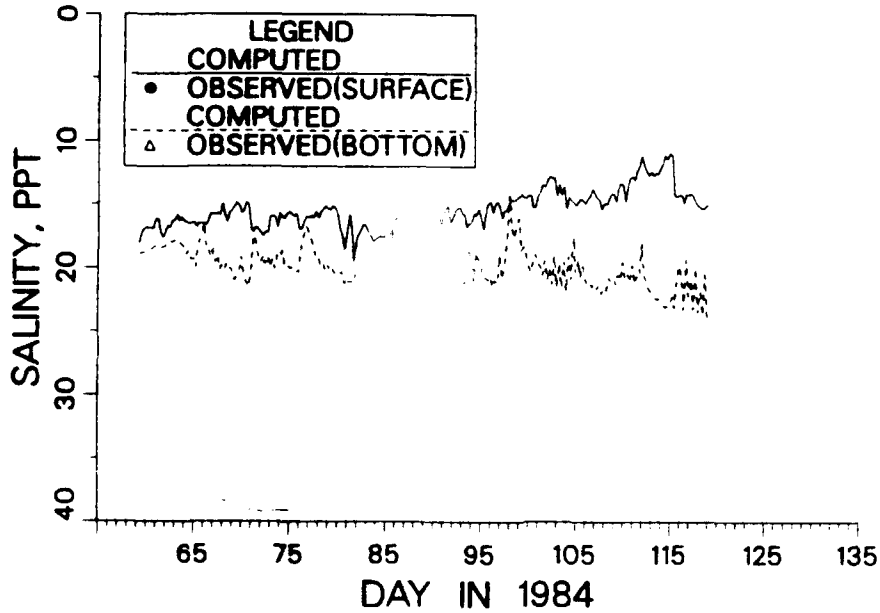
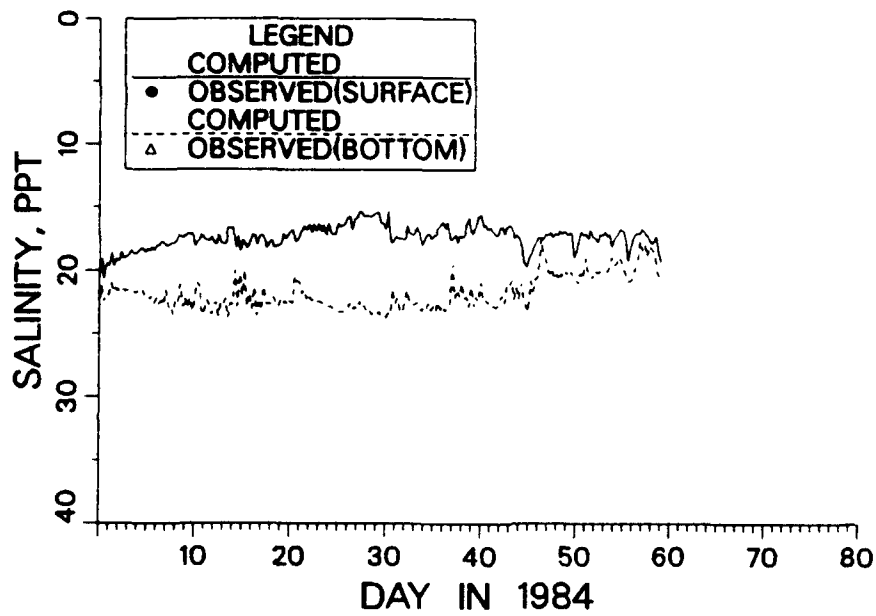


Figure A24. Comparison of computed and recorded salinity at sta CB 6.3 during 1984 (Sheet 1 of 3)

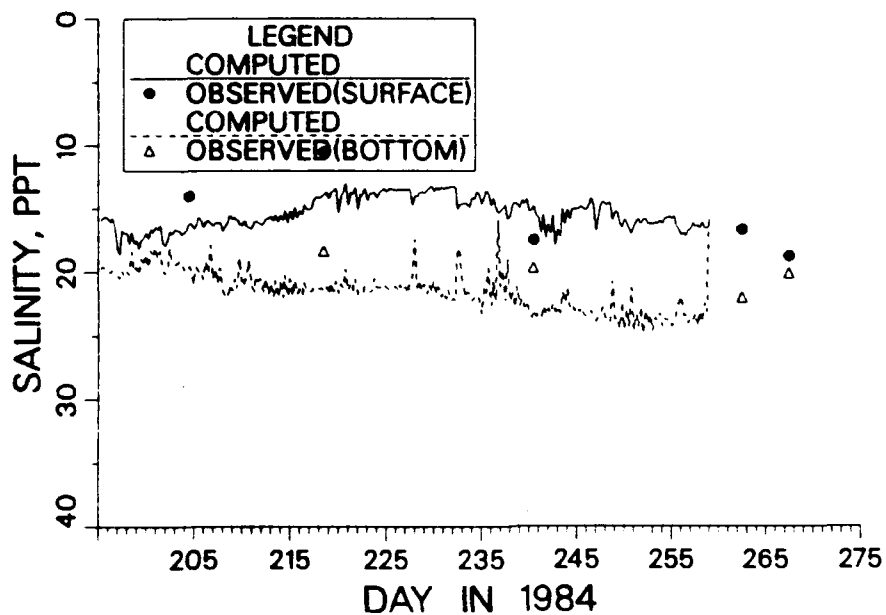
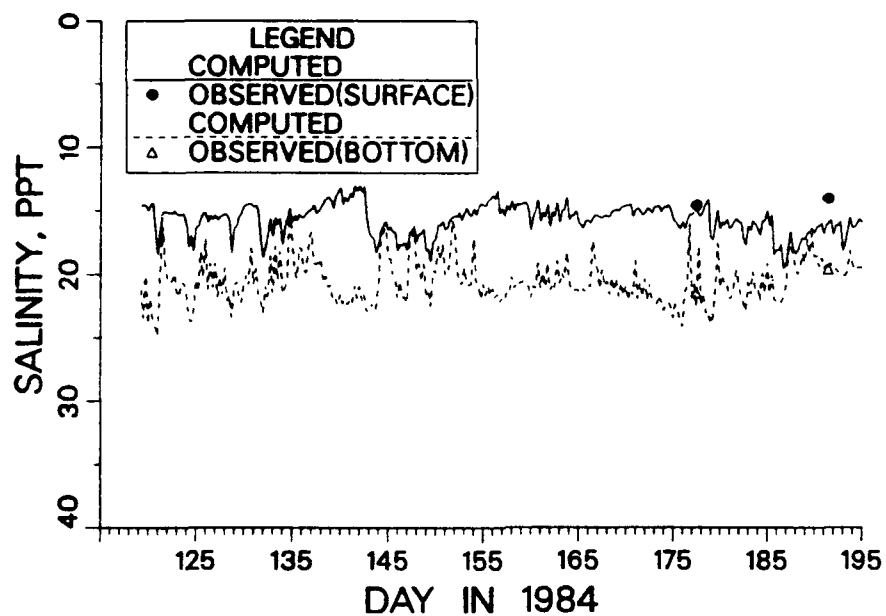


Figure A24. (Sheet 2 of 3)

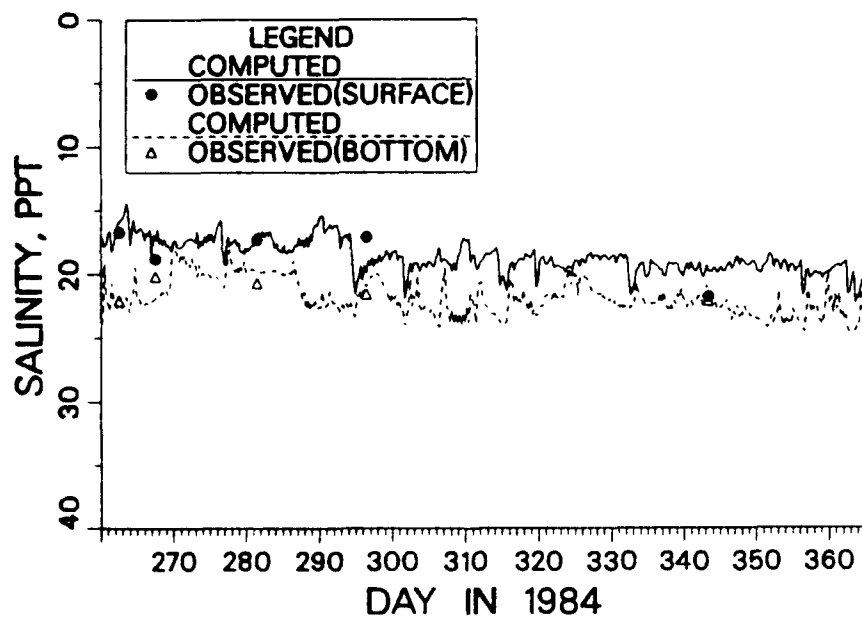


Figure A24. (Sheet 3 of 3)

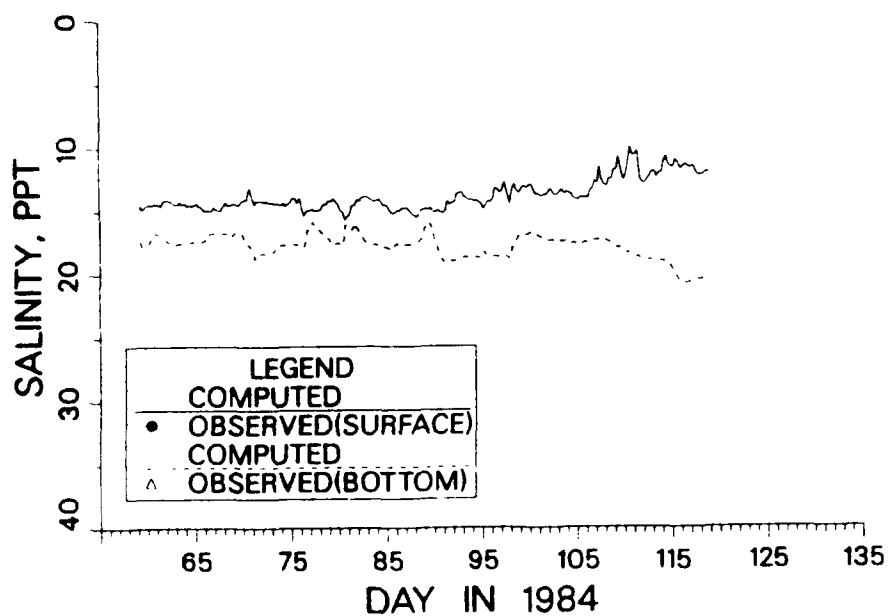
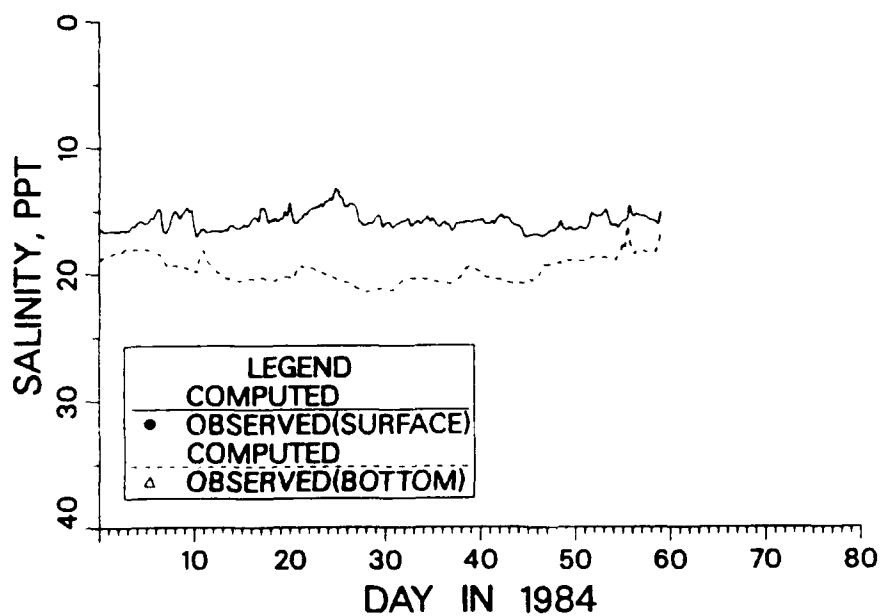


Figure A25. Comparison of computed and recorded salinity at sta CB 5.3 during 1984 (Sheet 1 of 3)

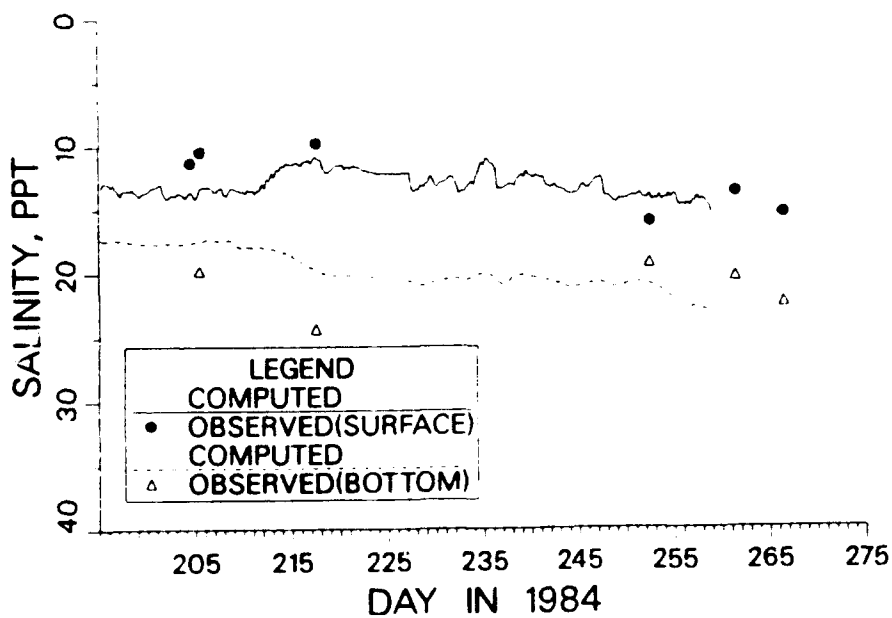
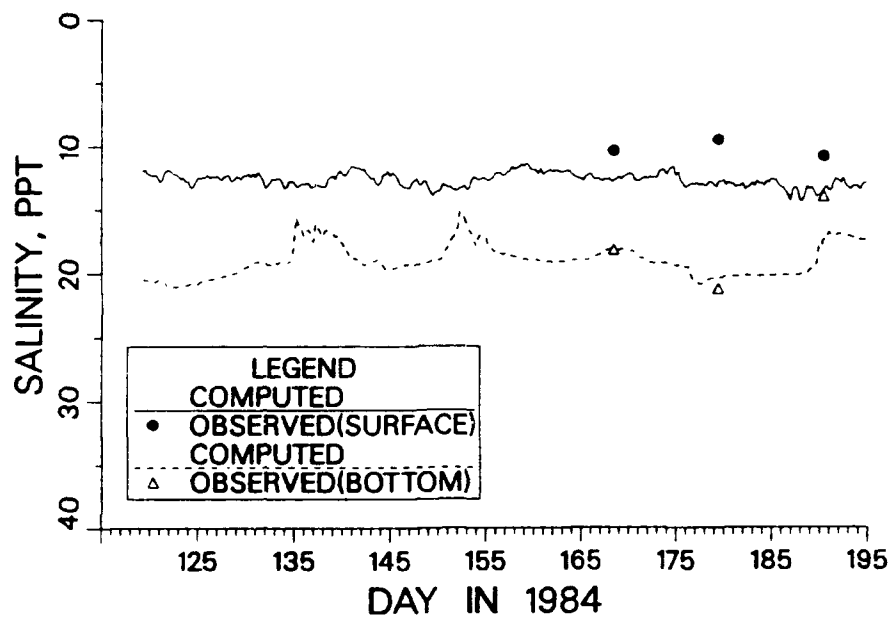


Figure A25. (Sheet 2 of 3)

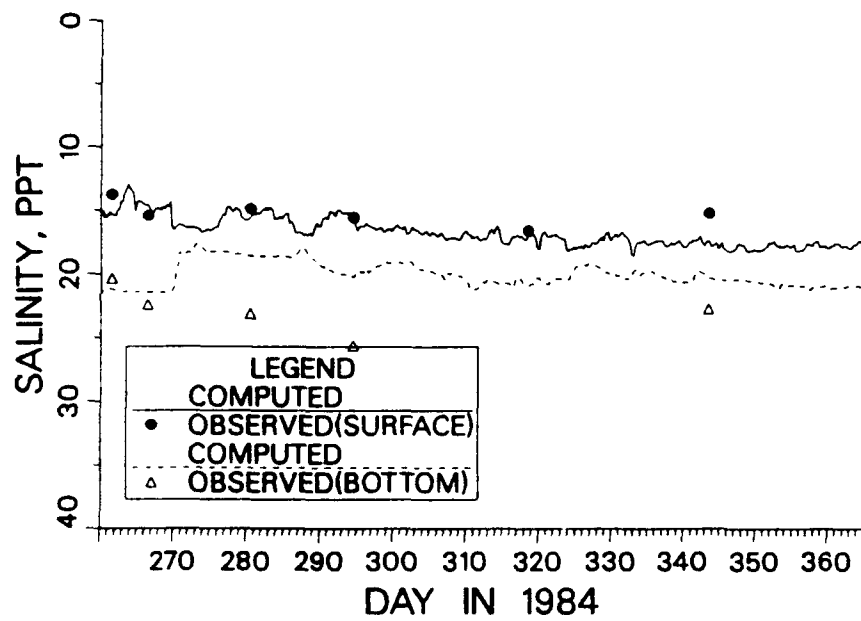


Figure A25. (Sheet 3 of 3)

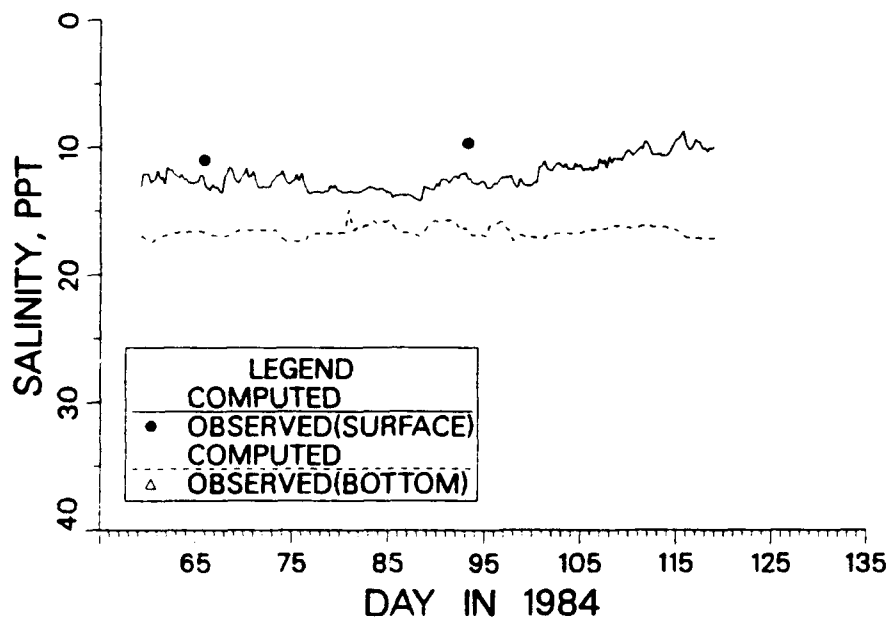
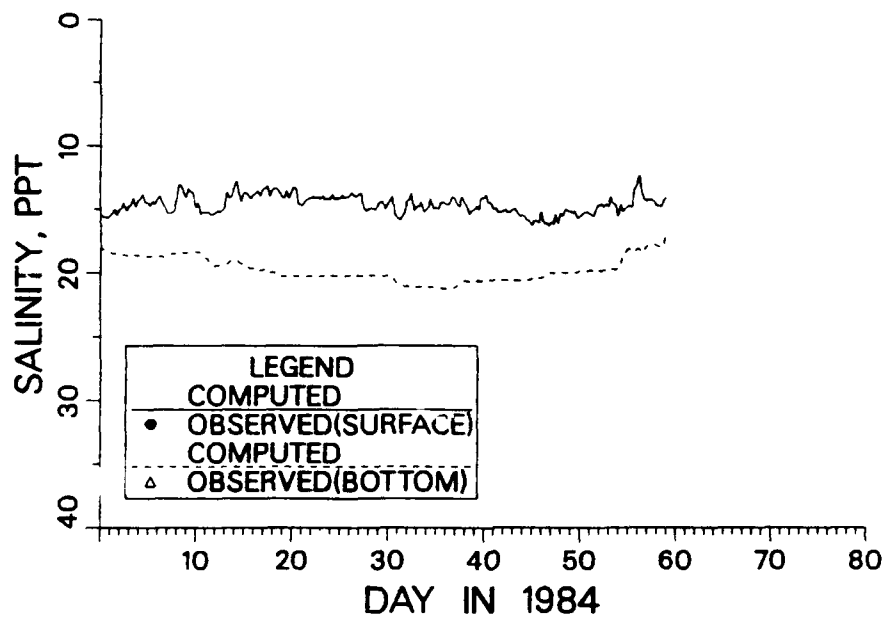


Figure A26. Comparison of computed and recorded salinity at sta CB 5.1 during 1984 (Sheet 1 of 3)

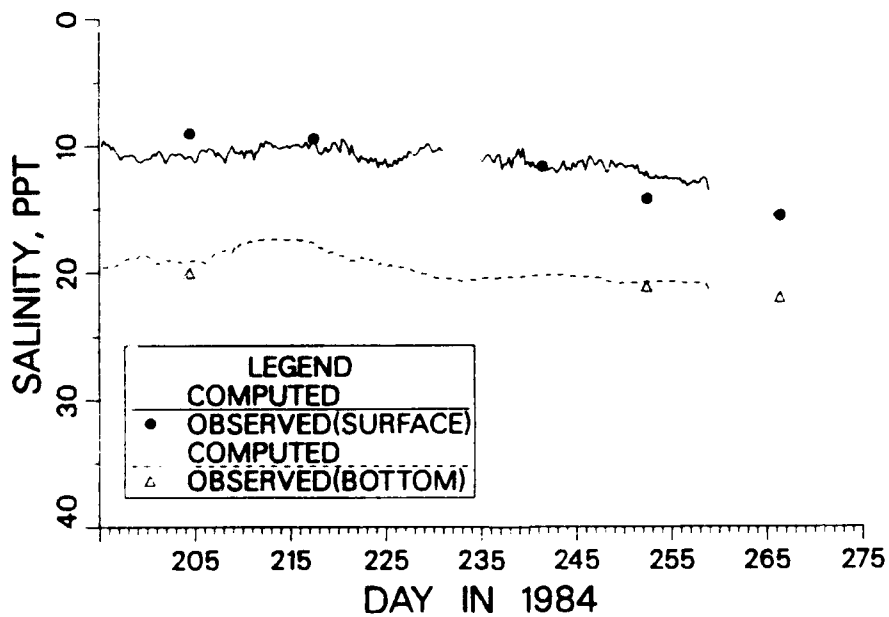
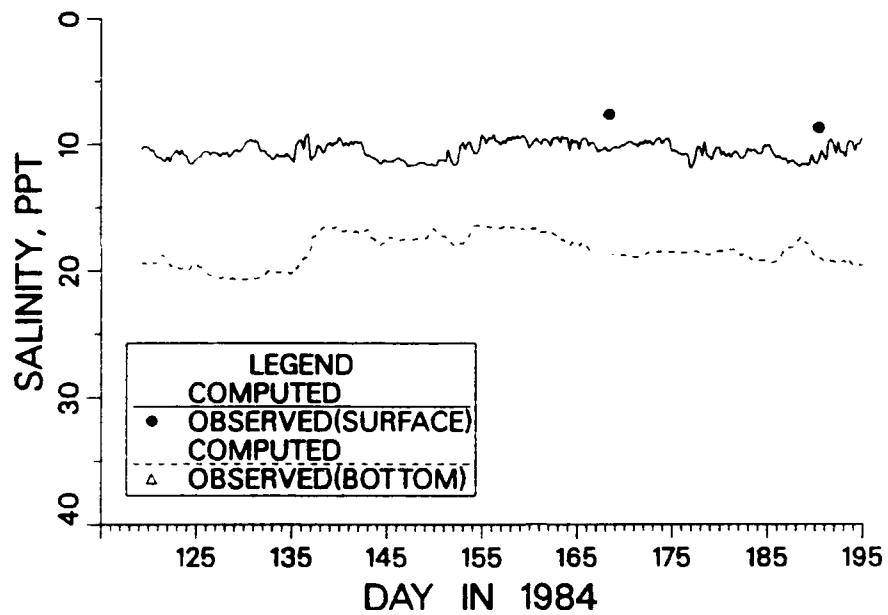


Figure A26. (Sheet 2 of 3)

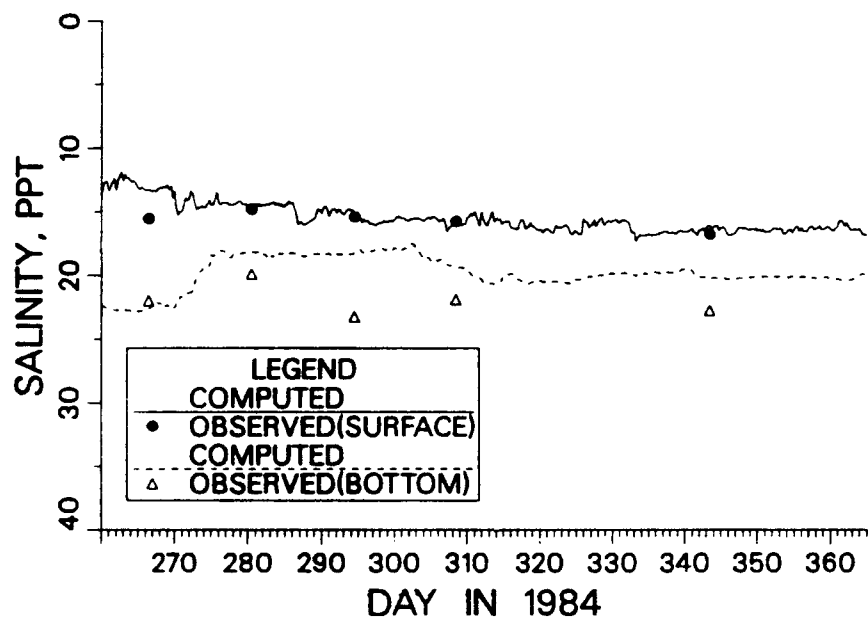


Figure A26. (Sheet 3 of 3)

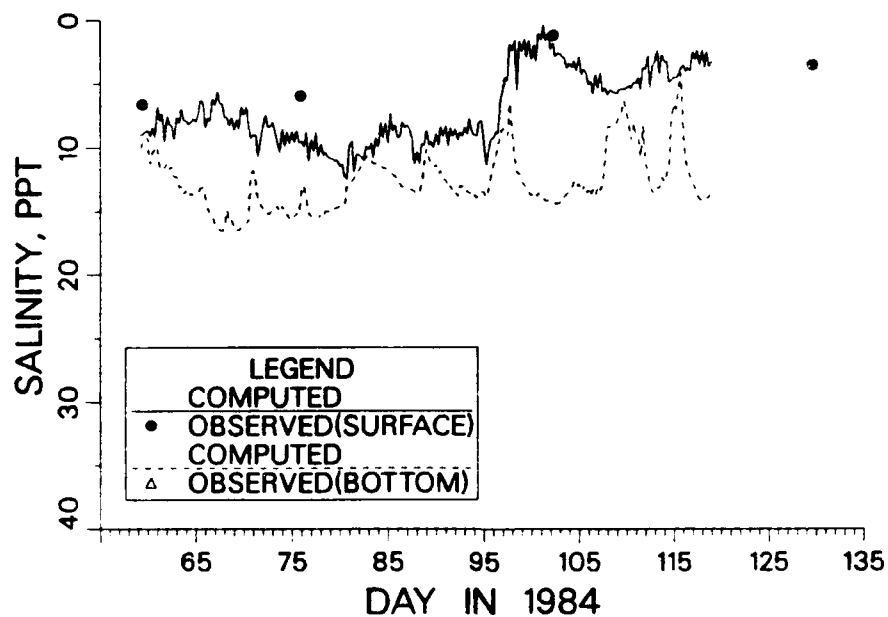
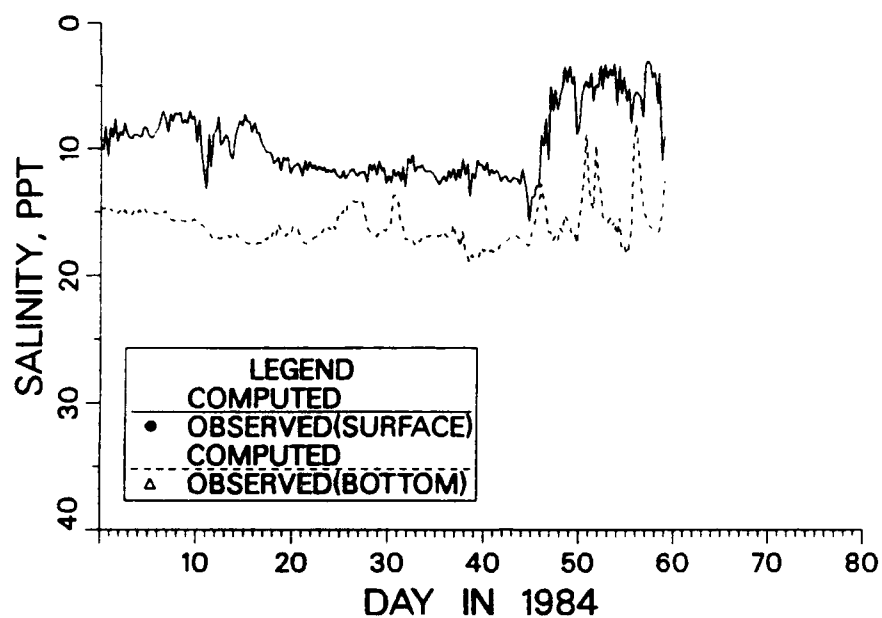


Figure A27. Comparison of computed and recorded salinity at sta CB 3.3W during 1984 (Sheet 1 of 3)

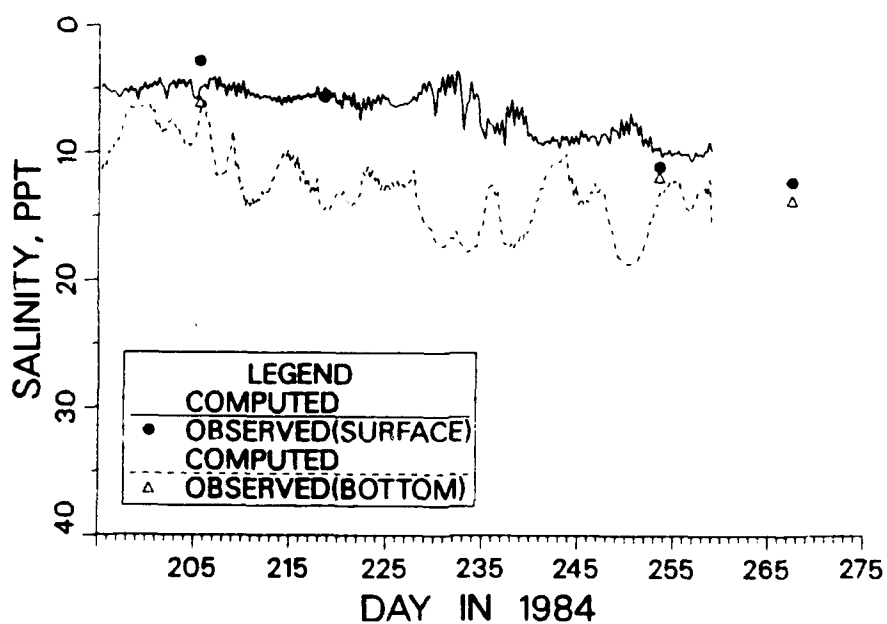
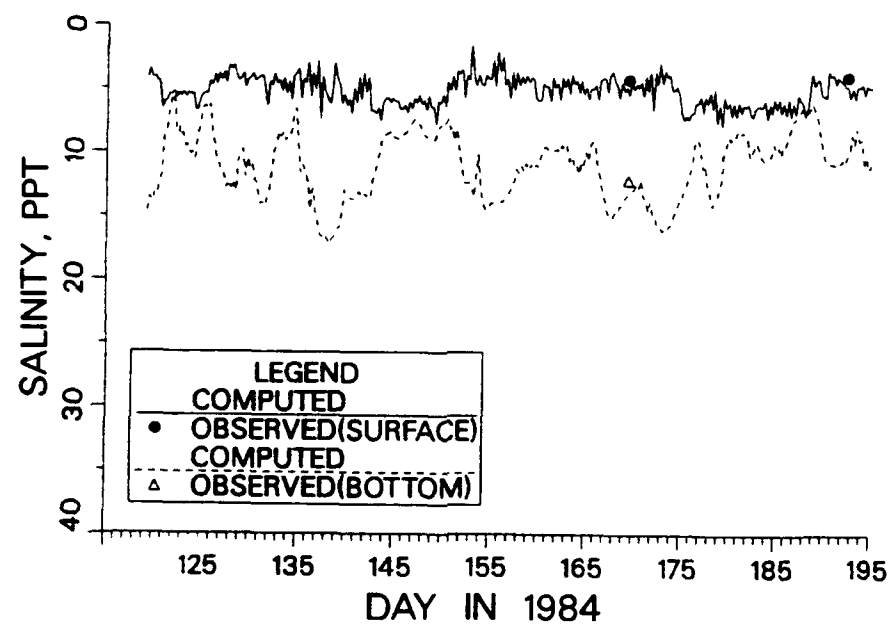


Figure A27. (Sheet 2 of 3)

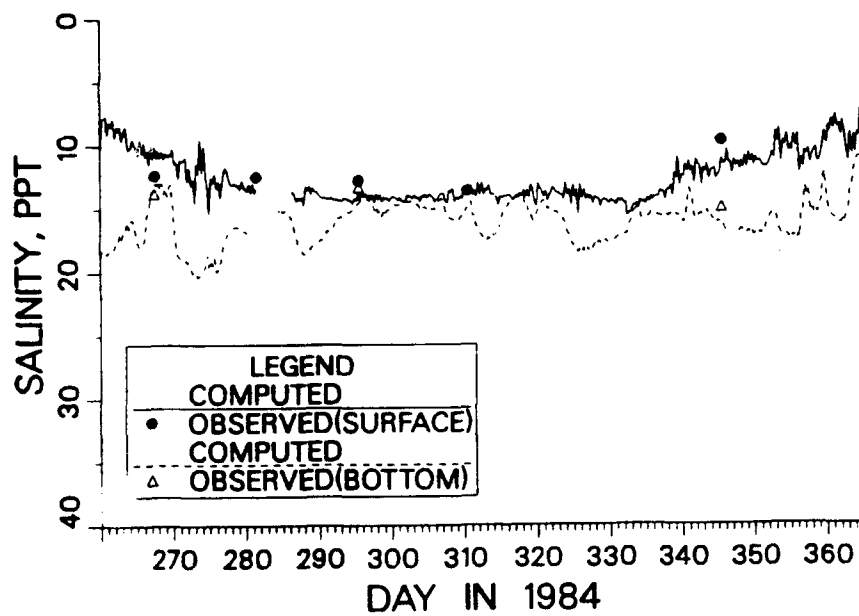


Figure A27. (Sheet 3 of 3)

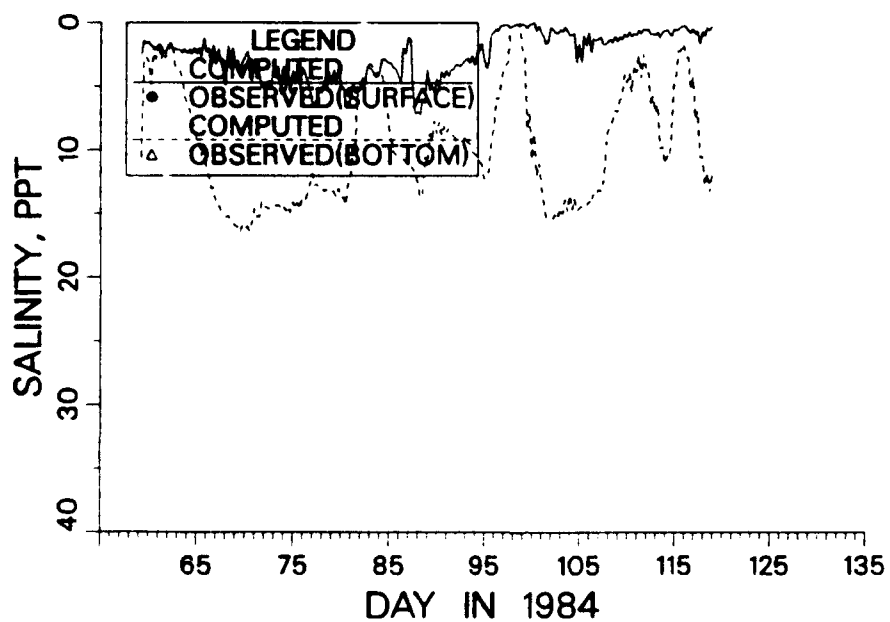
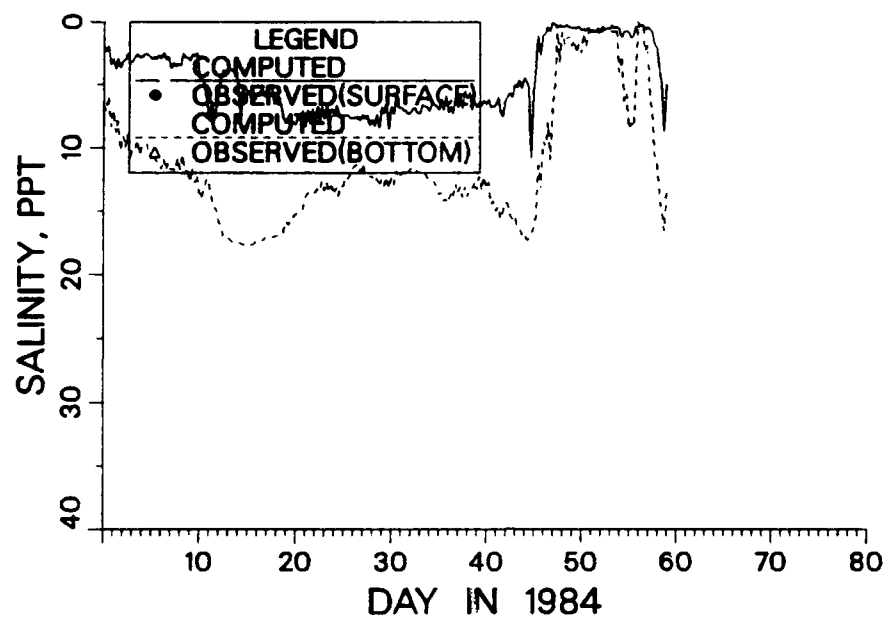


Figure A28. Comparison of computed and recorded salinity at sta CB 3.1 during 1984 (Sheet 1 of 3)

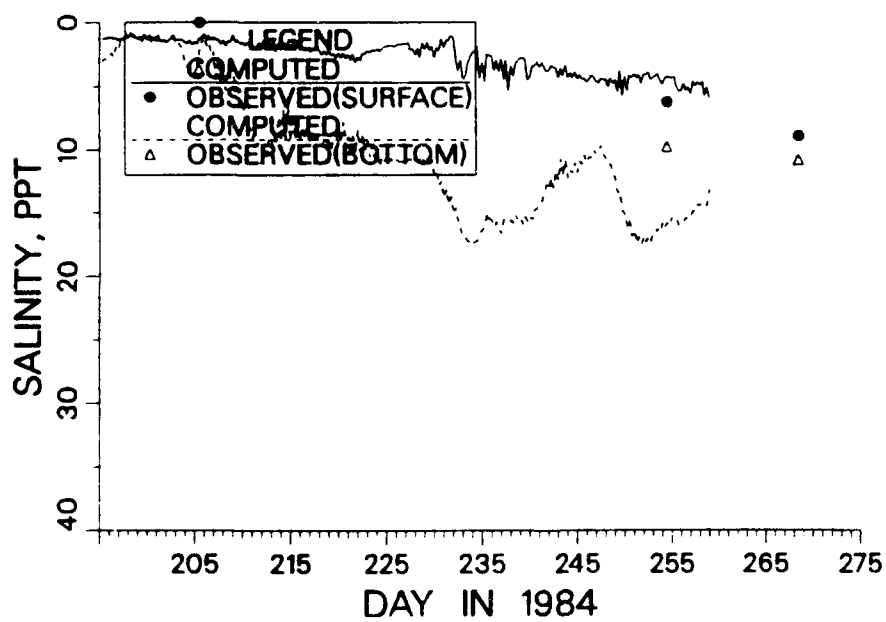
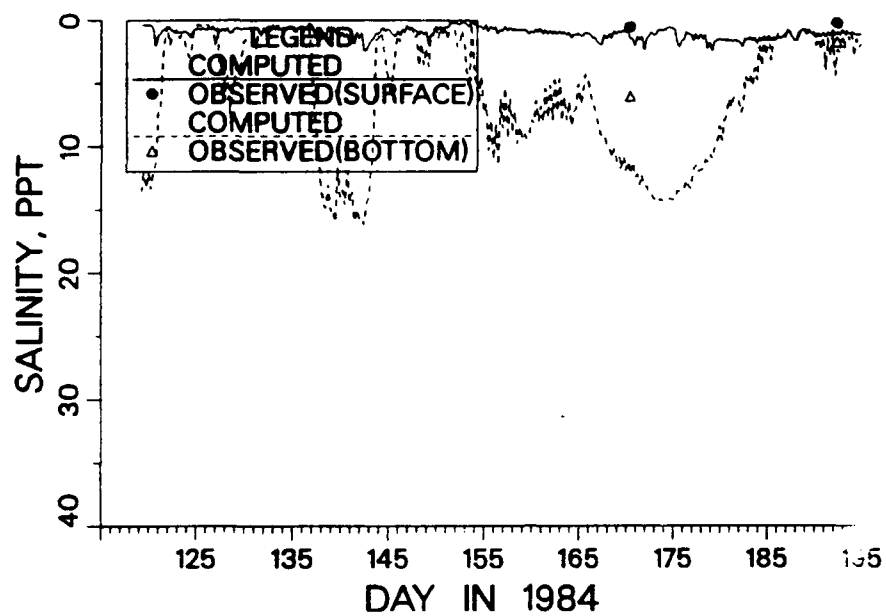


Figure A28. (Sheet 2 of 3)

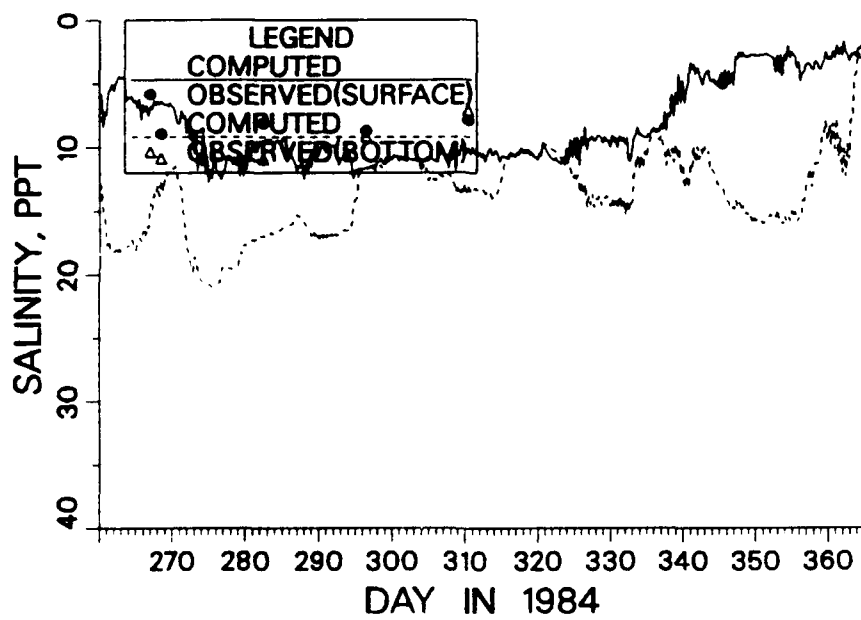


Figure A28. (Sheet 3 of 3)

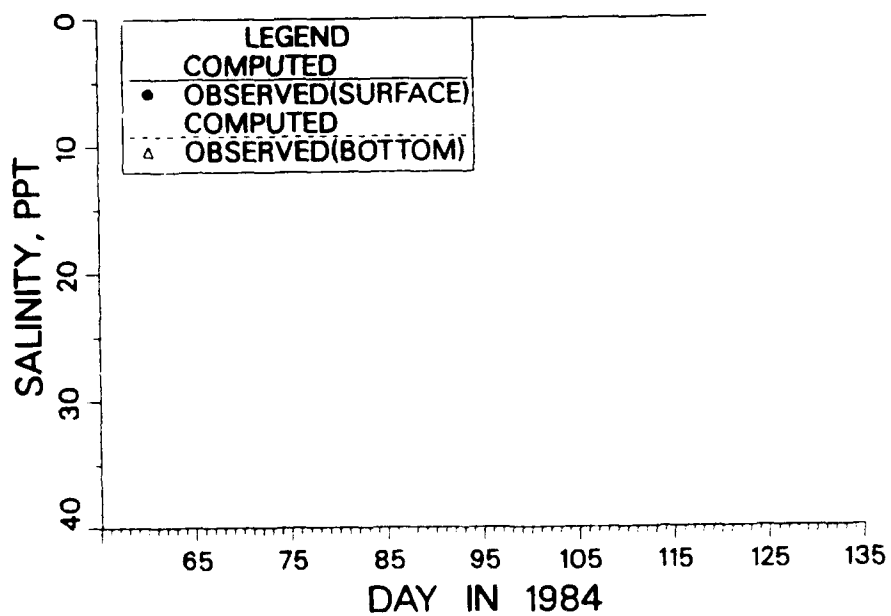
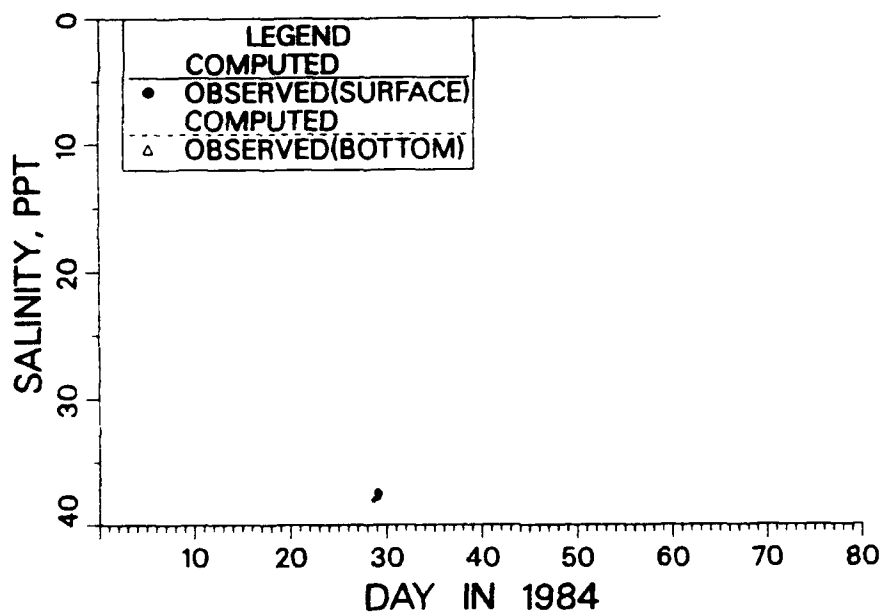


Figure A29. Comparison of computed and recorded salinity at sta CB 1.1 during 1984 (Sheet 1 of 3)

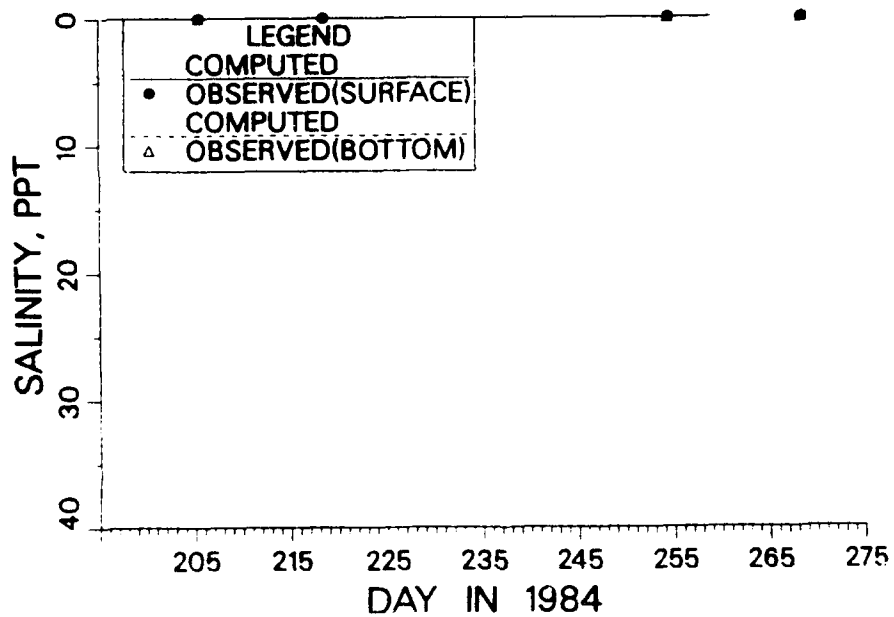
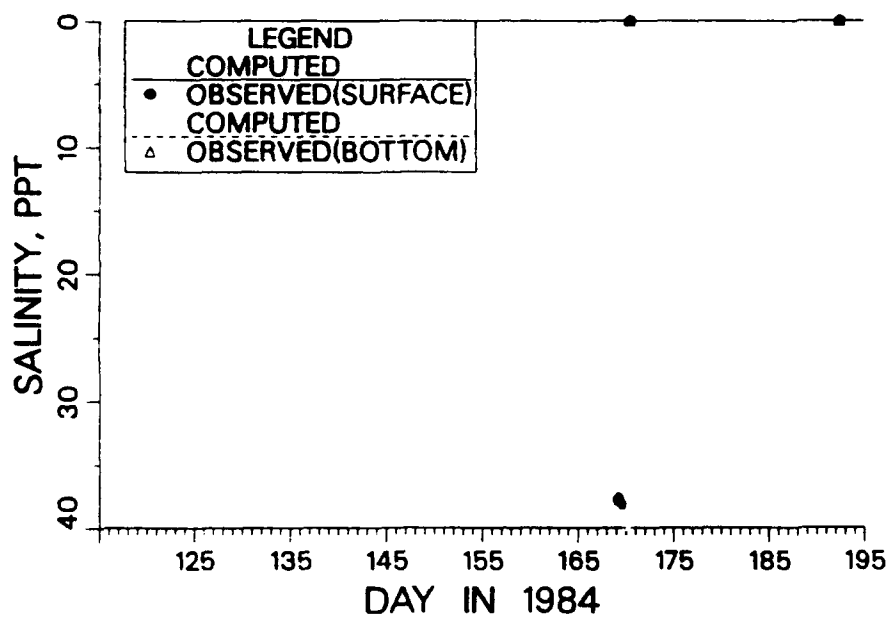


Figure A29. (Sheet 2 of 3)

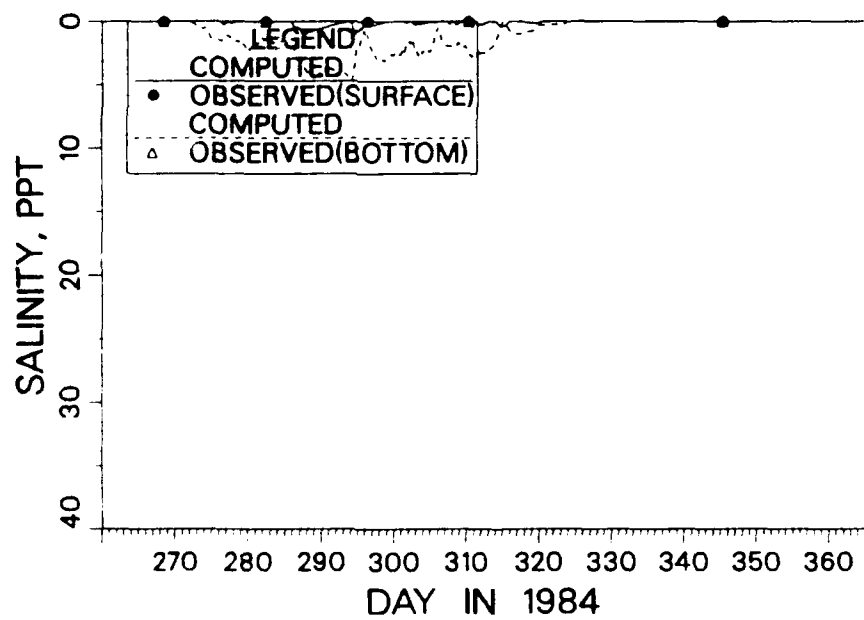


Figure A29. (Sheet 3 of 3)

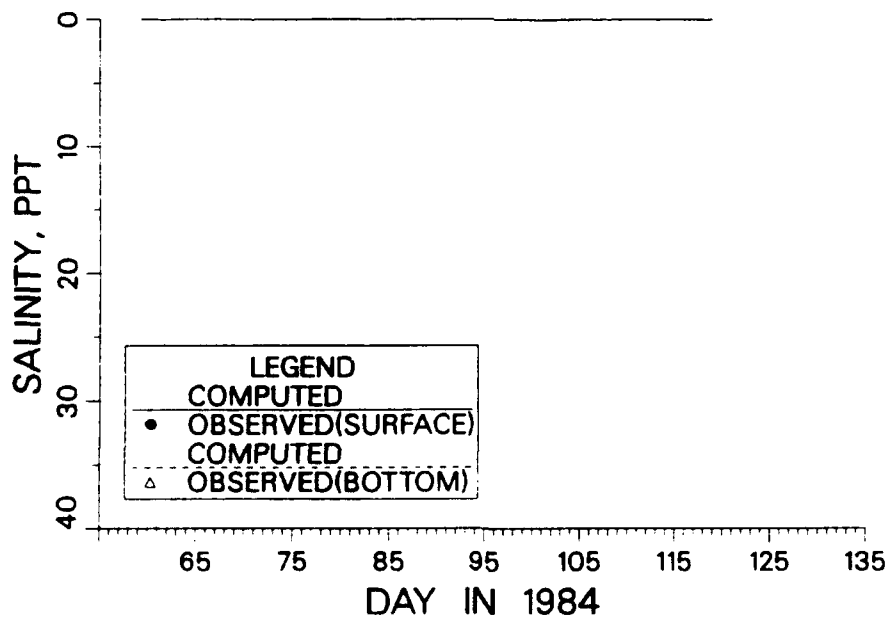
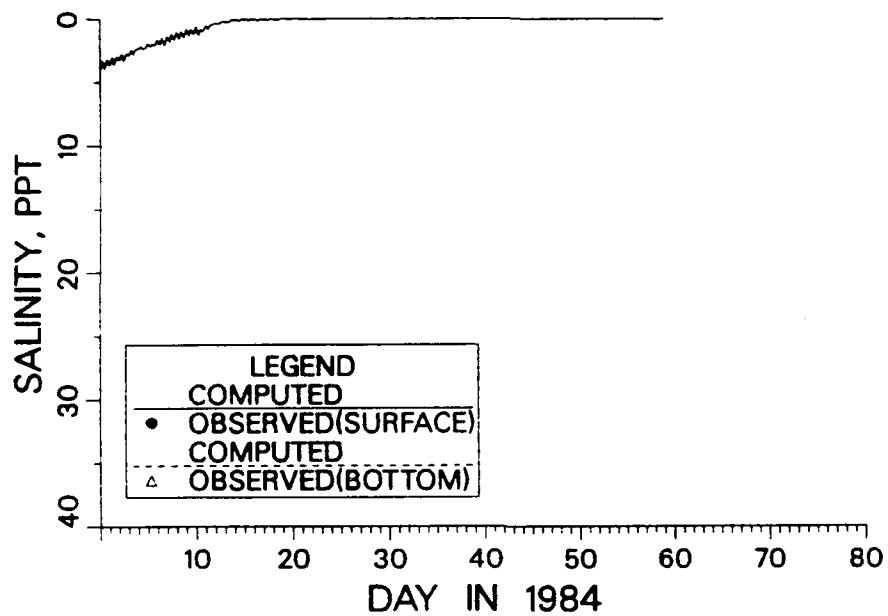


Figure A30. Comparison of computed and recorded salinity at sta TF 5.6 during 1984 (Sheet 1 of 3)

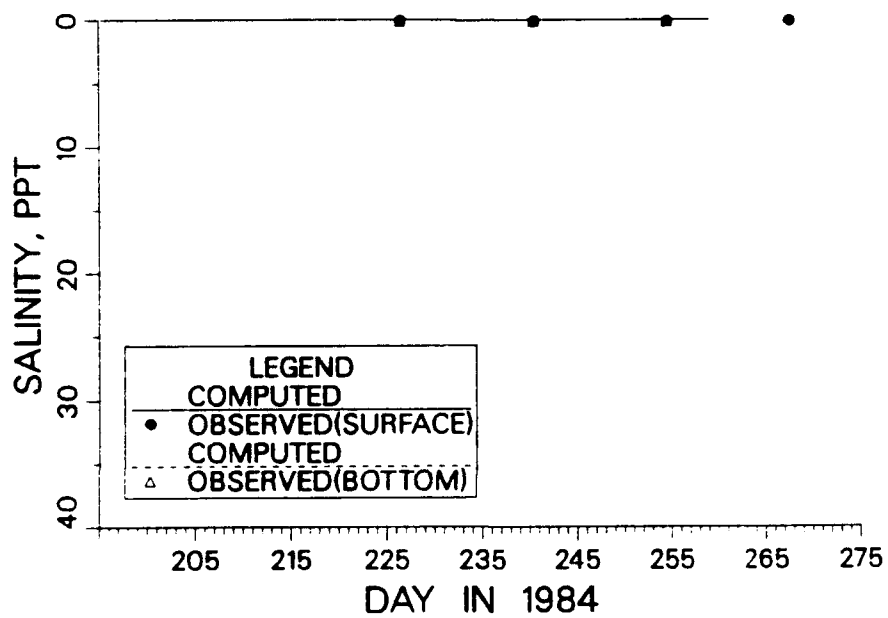
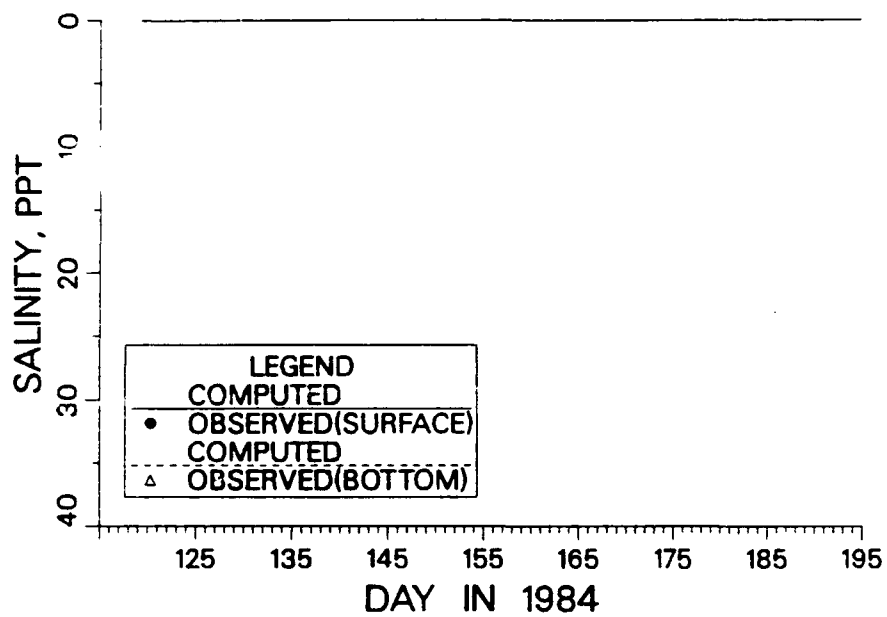


Figure A30. (Sheet 2 of 3)

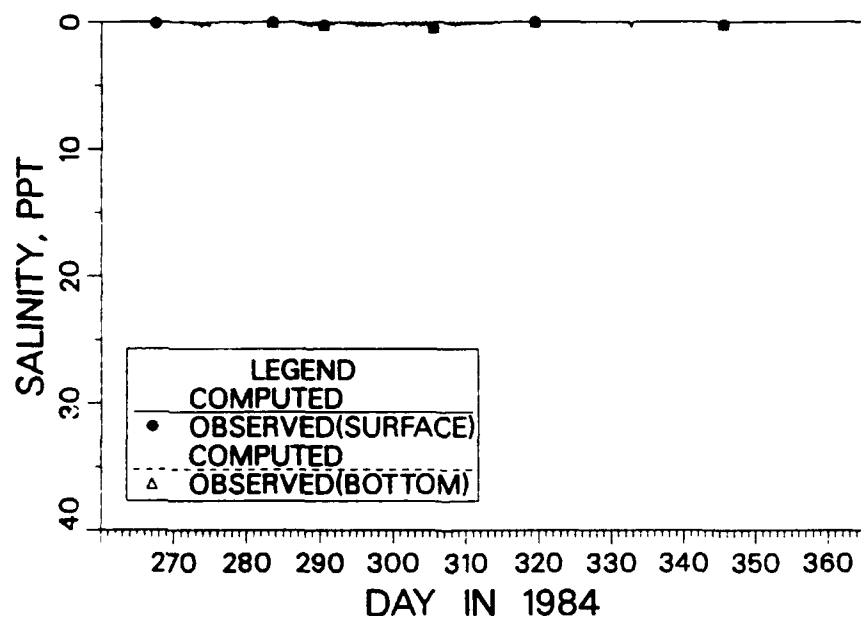


Figure A30. (Sheet 3 of 3)

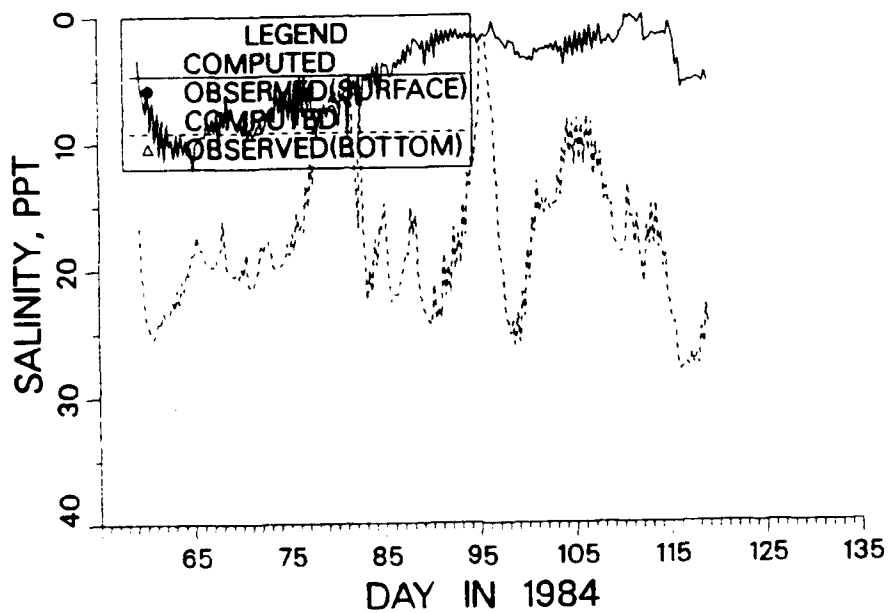
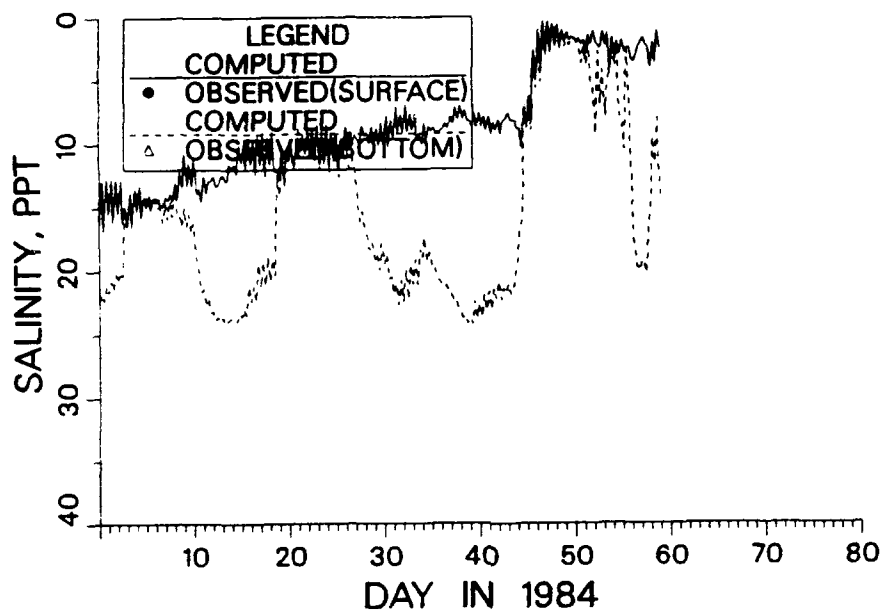


Figure A31. Comparison of computed and recorded salinity at sta LE 5.2 during 1984 (Sheet 1 of 3)

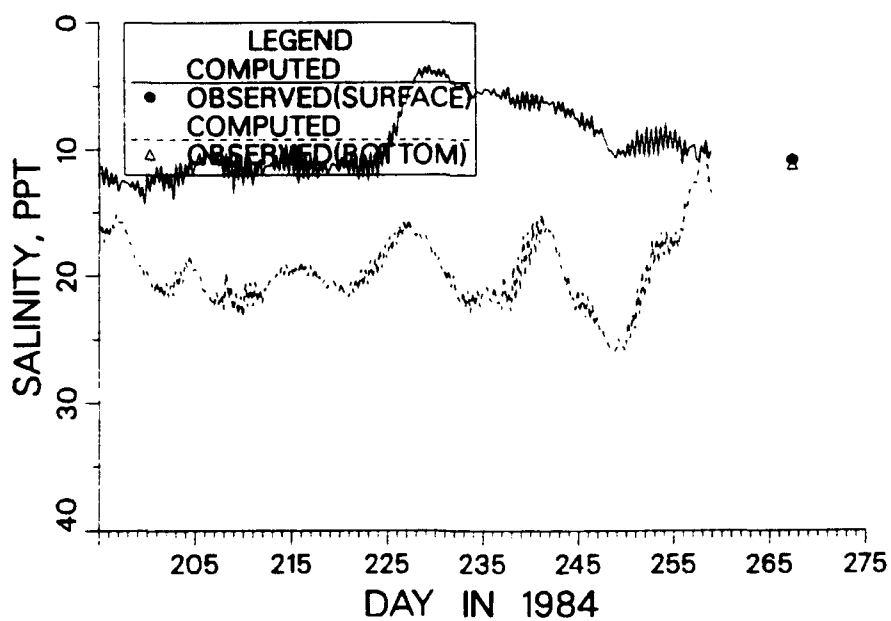
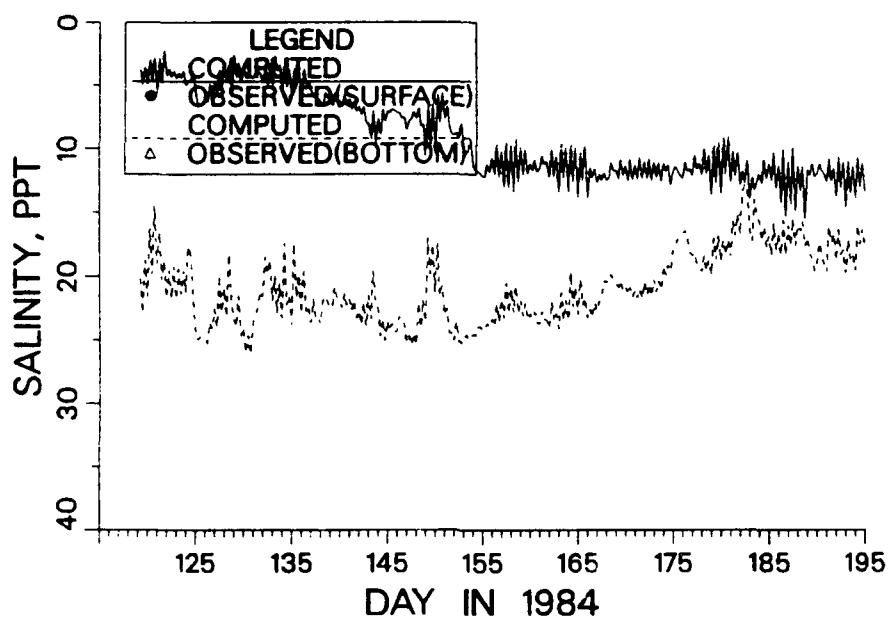


Figure A31. (Sheet 2 of 3)

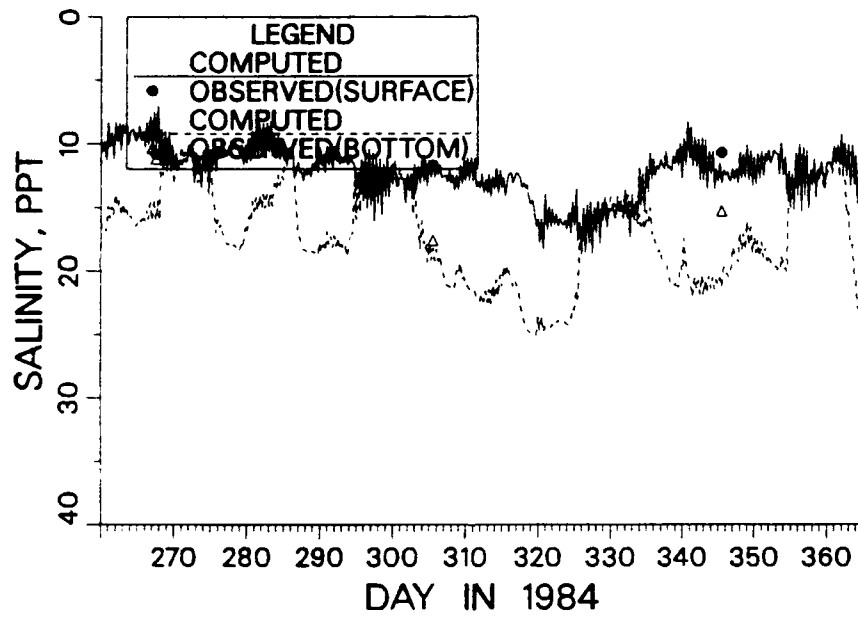


Figure A31. (Sheet 3 of 3)

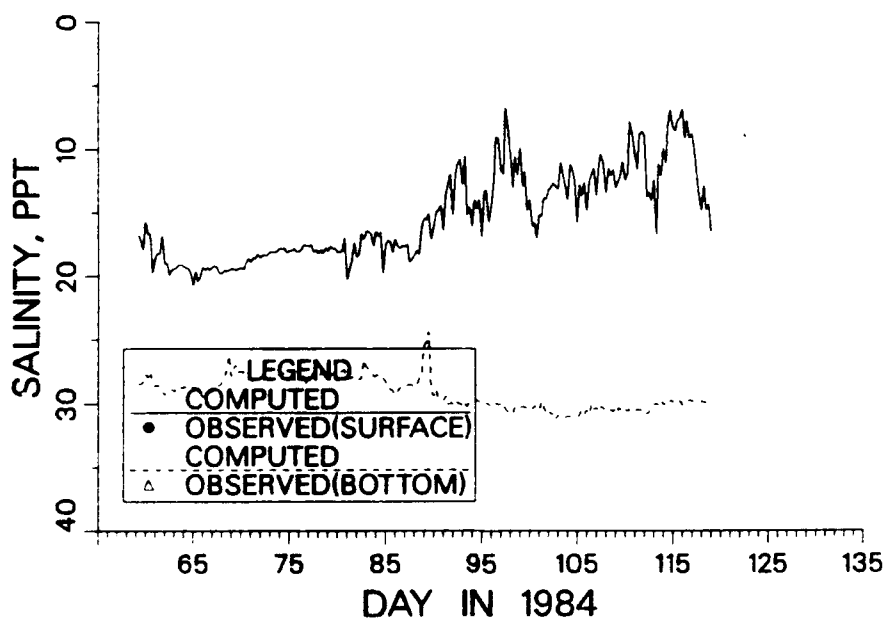
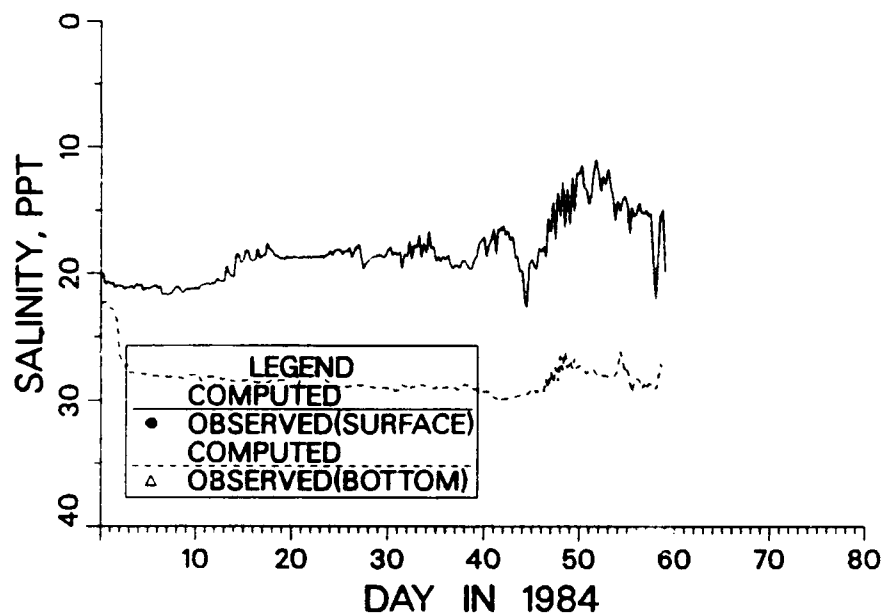


Figure A32. Comparison of computed and recorded salinity at sta LE 5.5 during 1984 (Sheet 1 of 3)

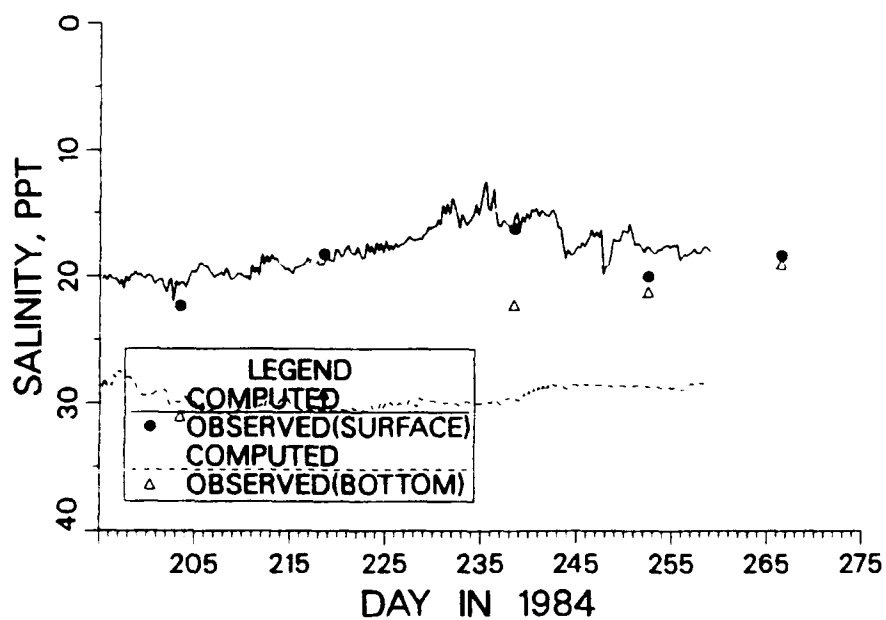
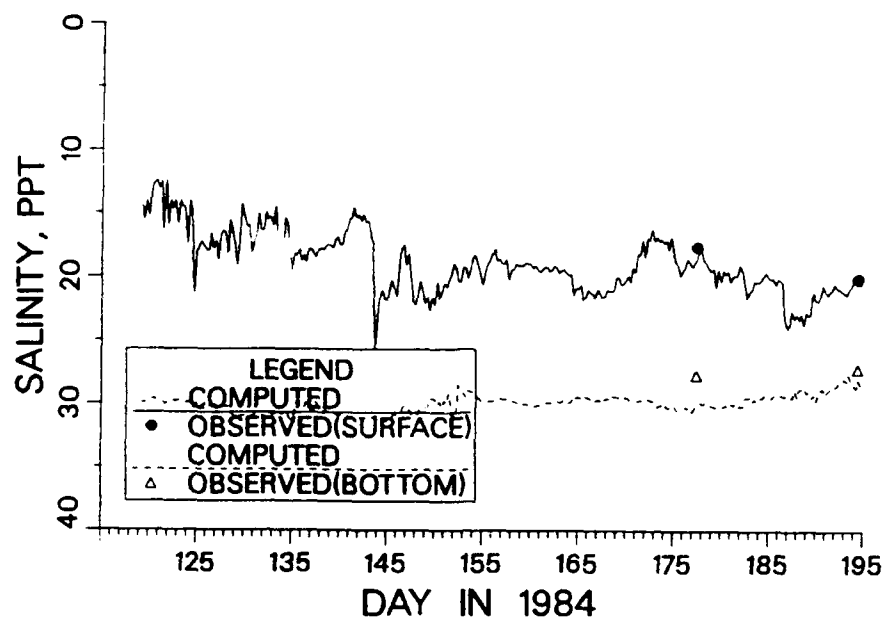


Figure A32. (Sheet 2 of 3)

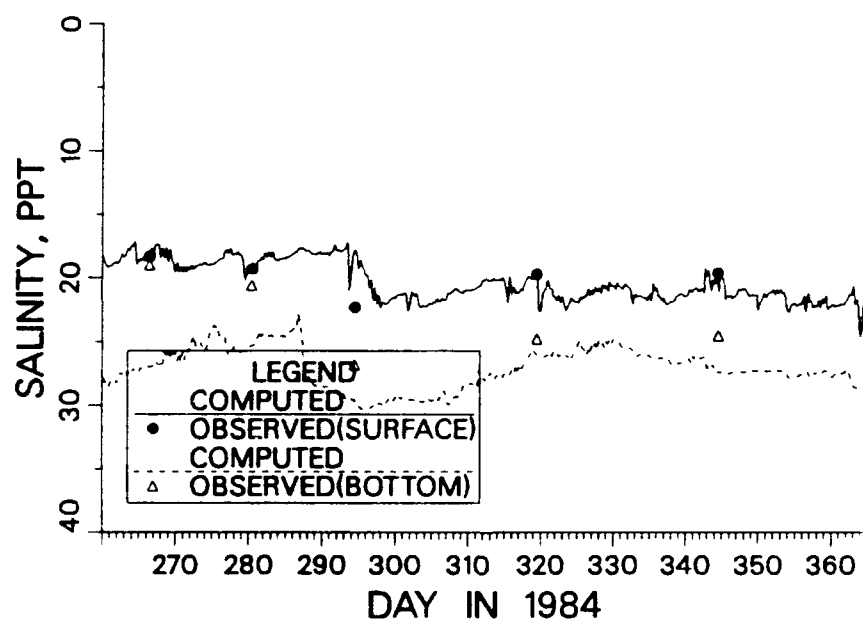


Figure A32. (Sheet 3 of 3)

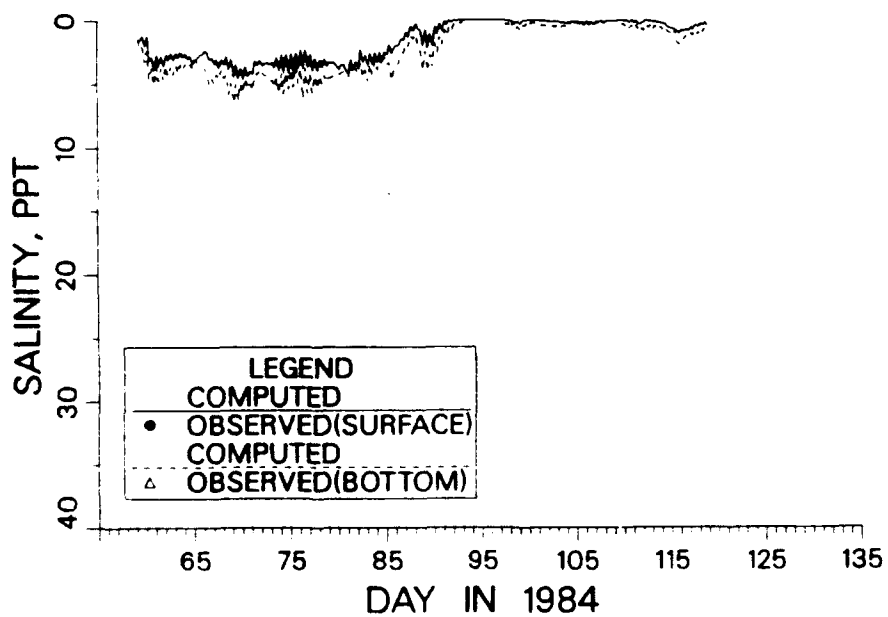
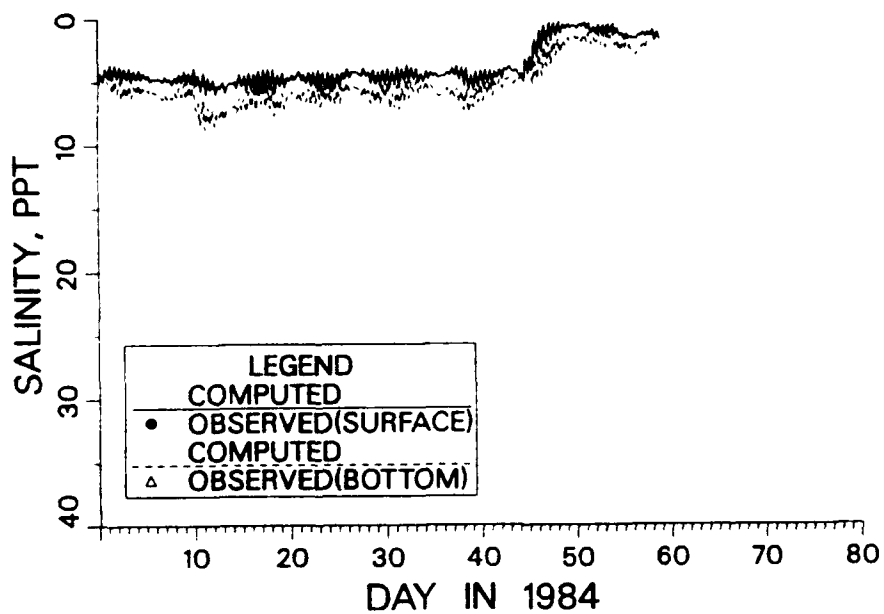


Figure A33. Comparison of computed and recorded salinity at sta RET 4.3 during 1984 (Sheet 1 of 3)

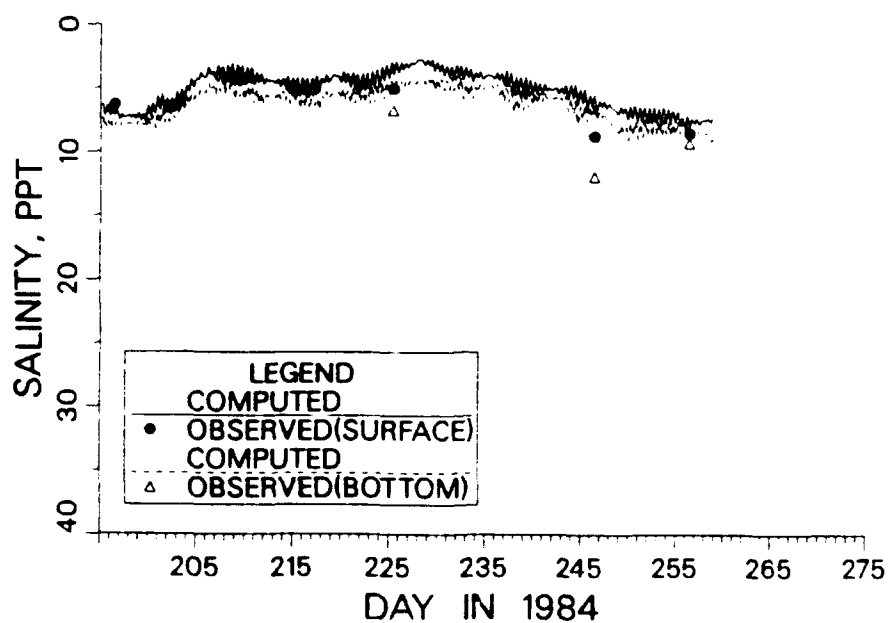
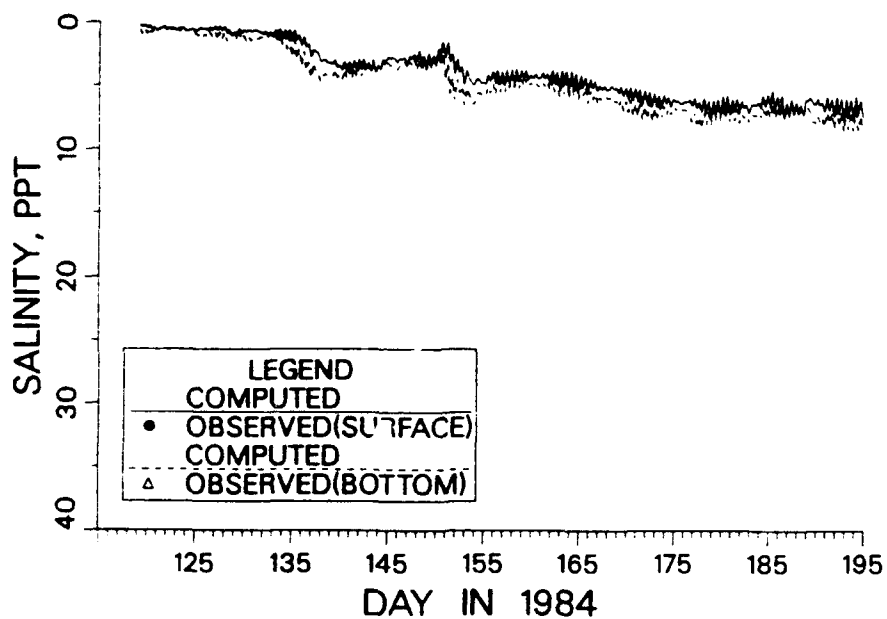


Figure A33. (Sheet 2 of 3)

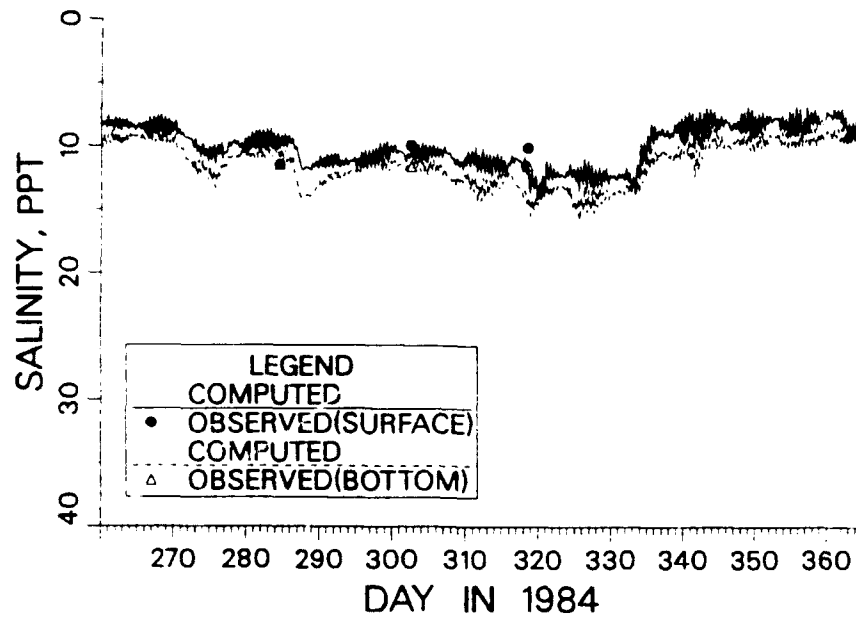


Figure A33. (Sheet 3 of 3)

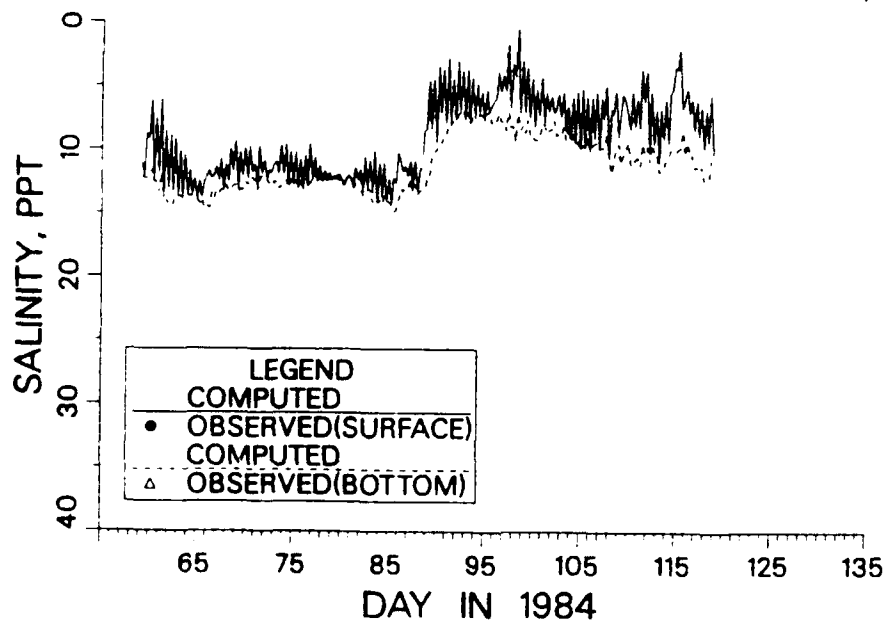
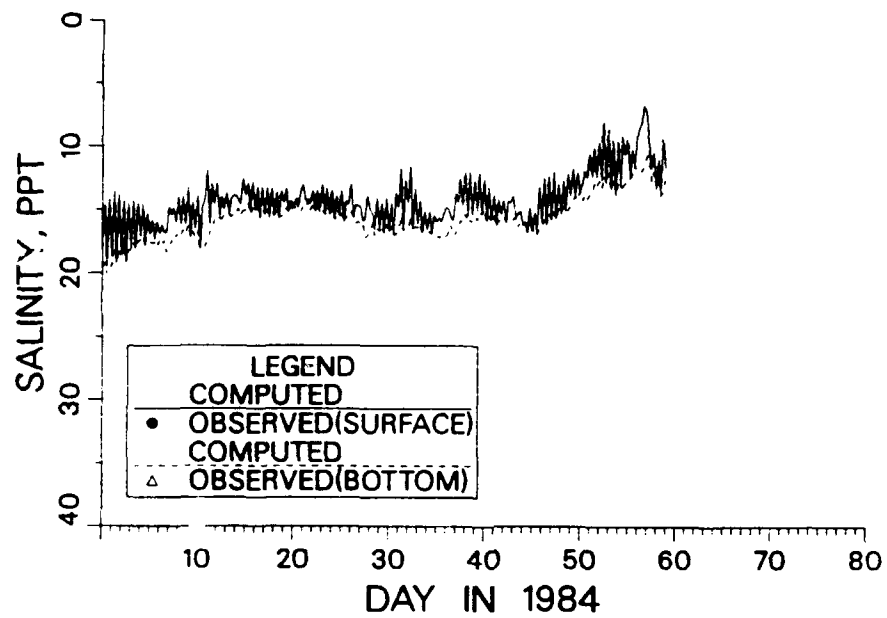


Figure A34. Comparison of computed and recorded salinity at sta LE 4.2 during 1984 (Sheet 1 of 3)

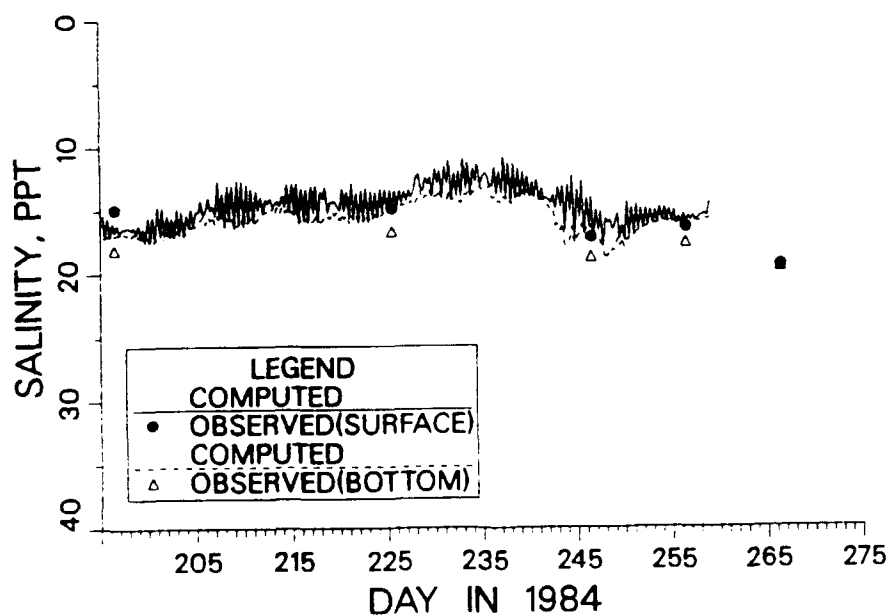
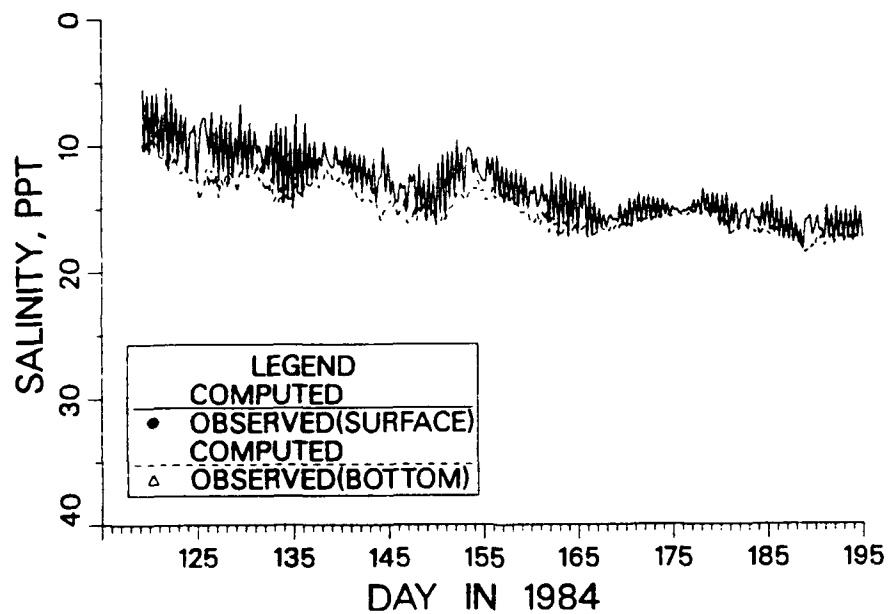


Figure A34. (Sheet 2 of 3)

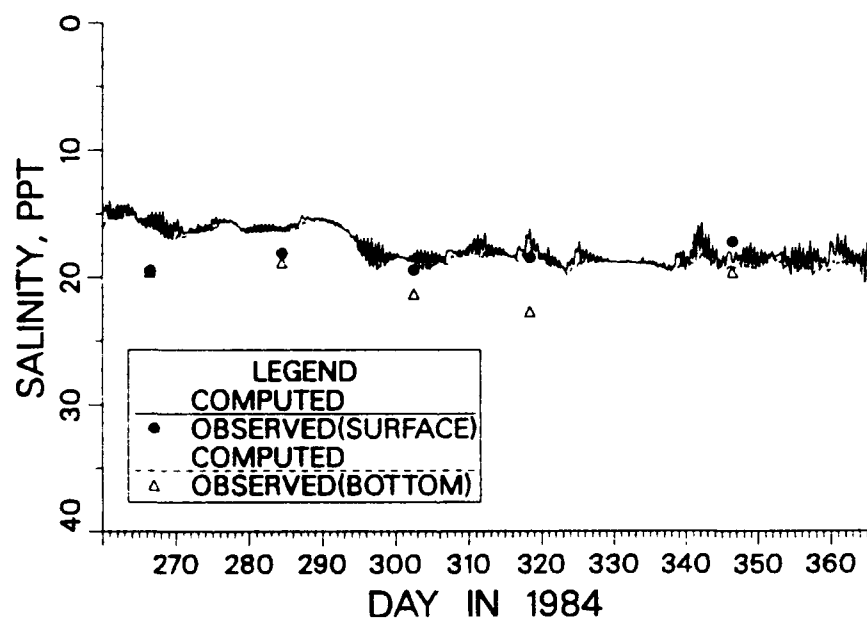


Figure A34. (Sheet 3 of 3)

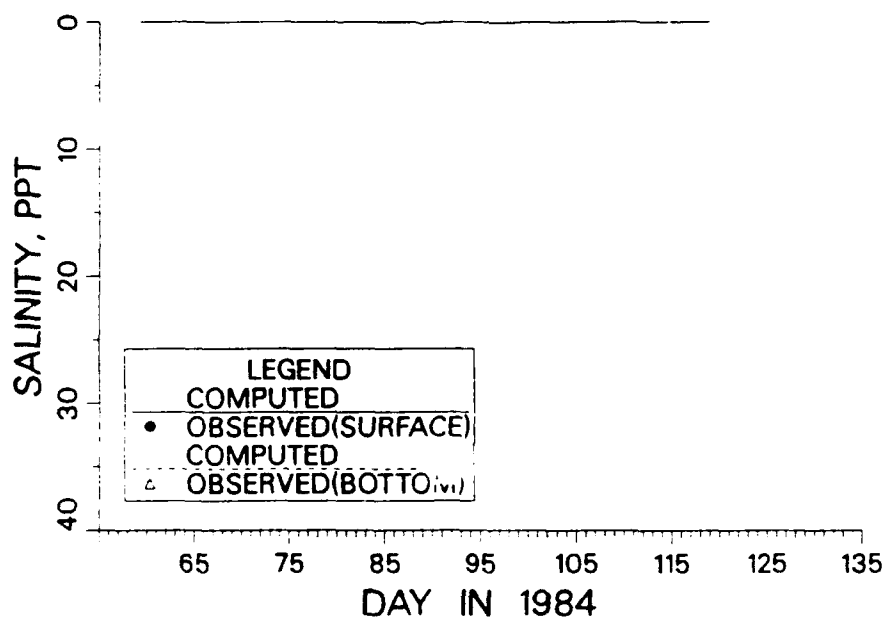
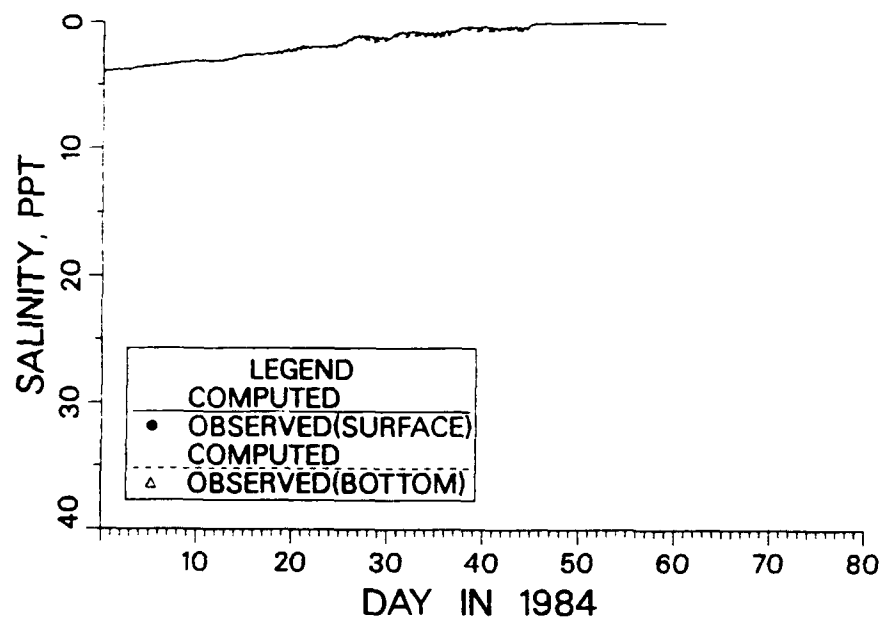


Figure A35. Comparison of computed and recorded salinity at sta TF 3.3 during 1984 (Sheet 1 of 3)

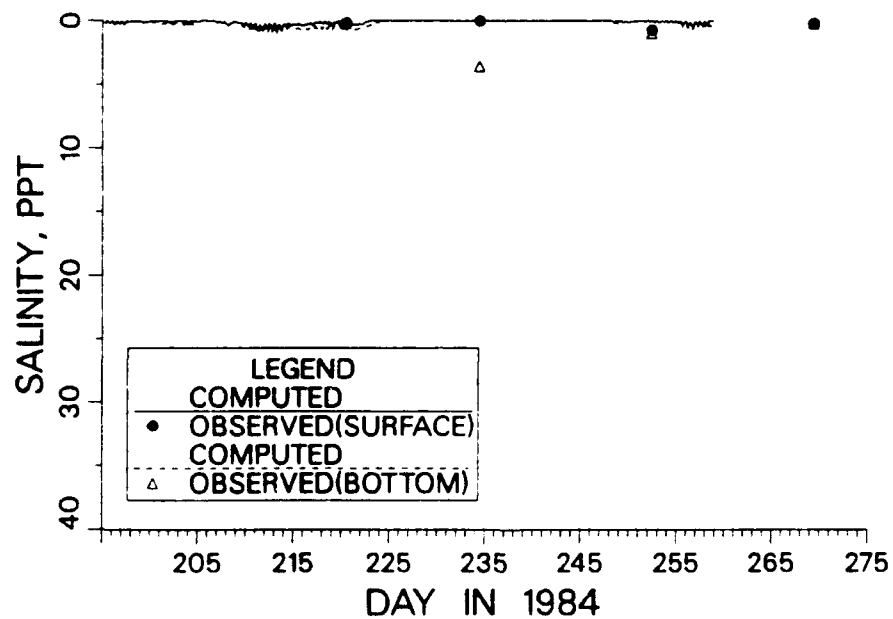
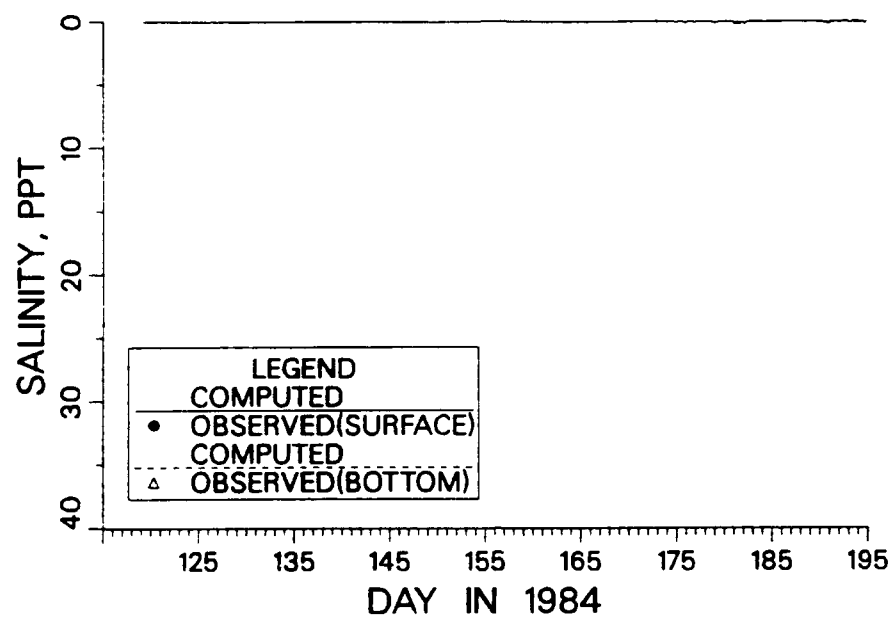


Figure A35. (Sheet 2 of 3)

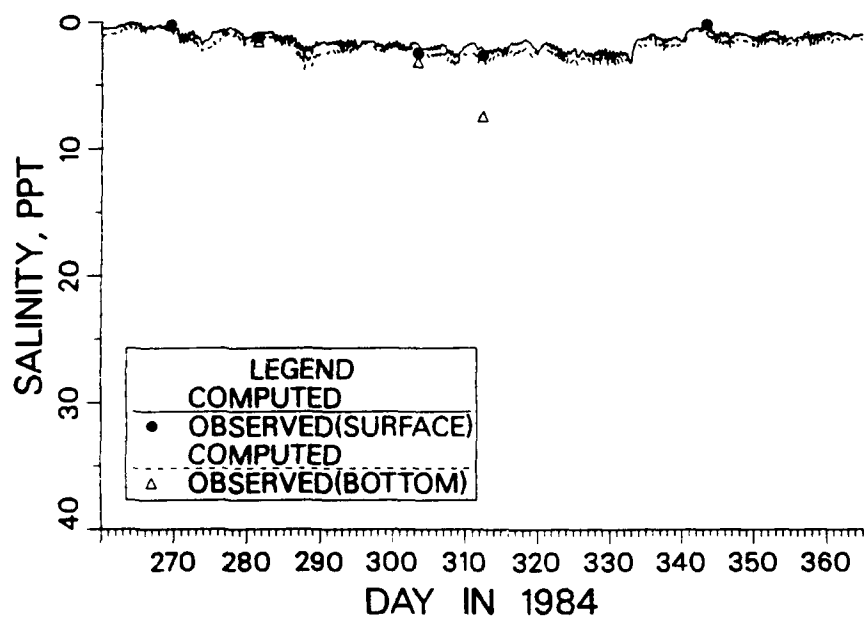


Figure A35. (Sheet 3 of 3)

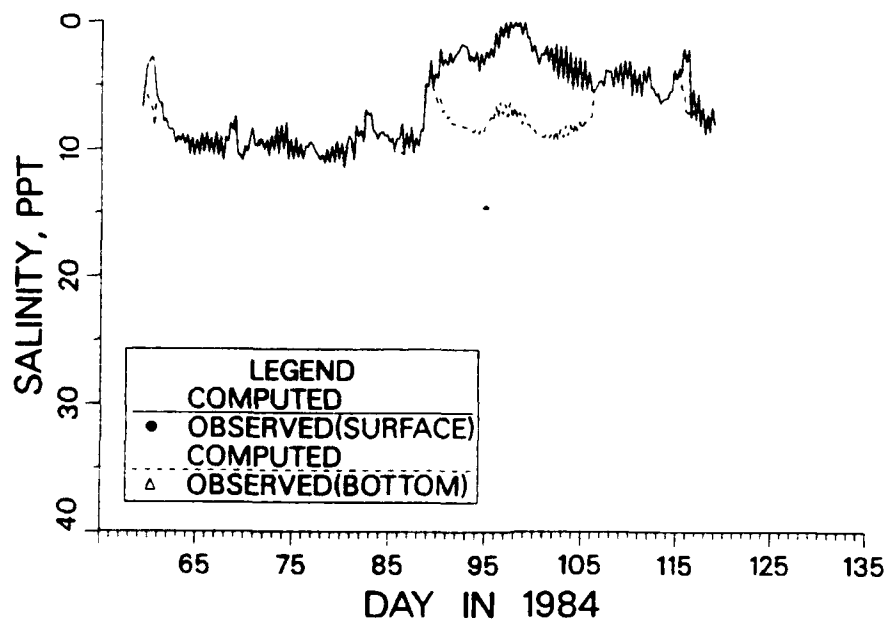
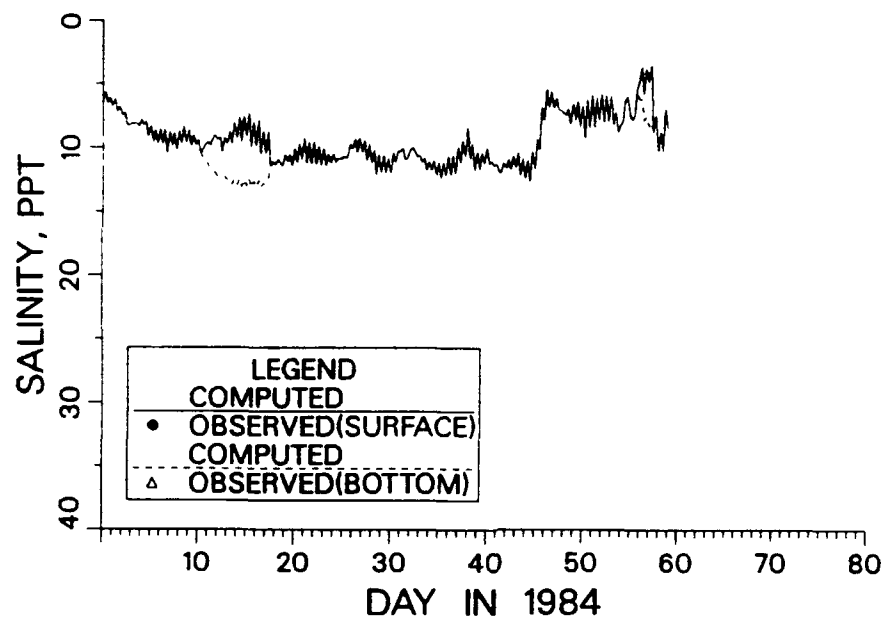


Figure A36. Comparison of computed and recorded salinity at sta LE 3.1 during 1984 (Sheet 1 of 3)

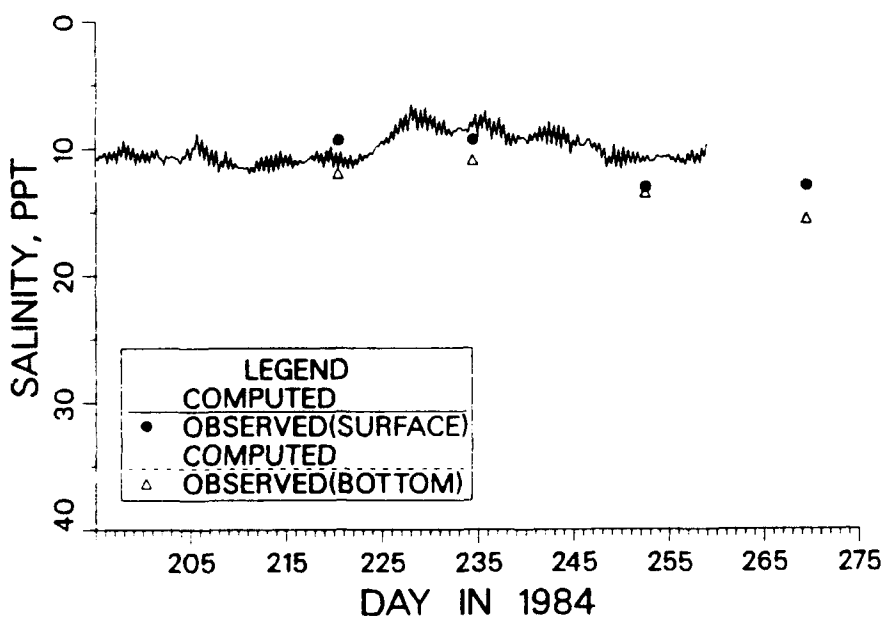
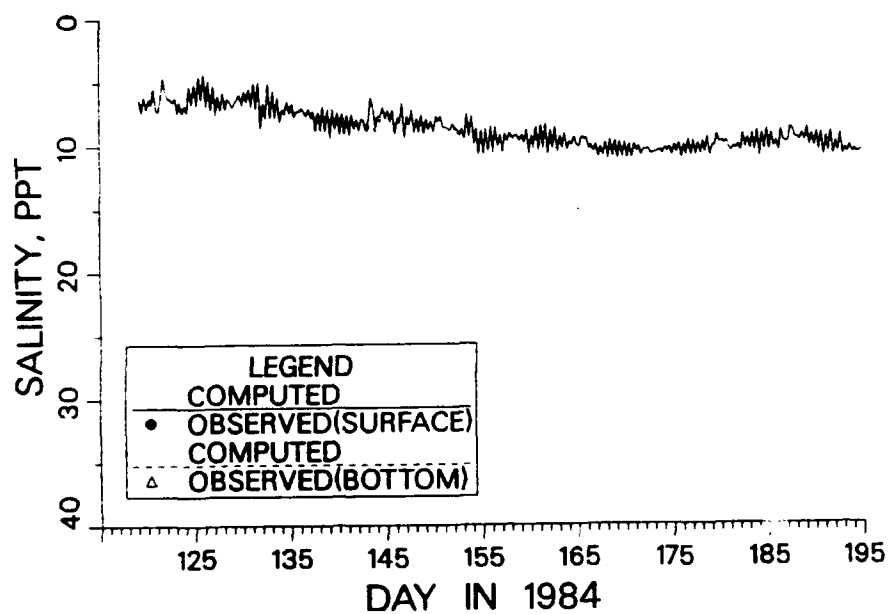


Figure A36. (Sheet 2 of 3)

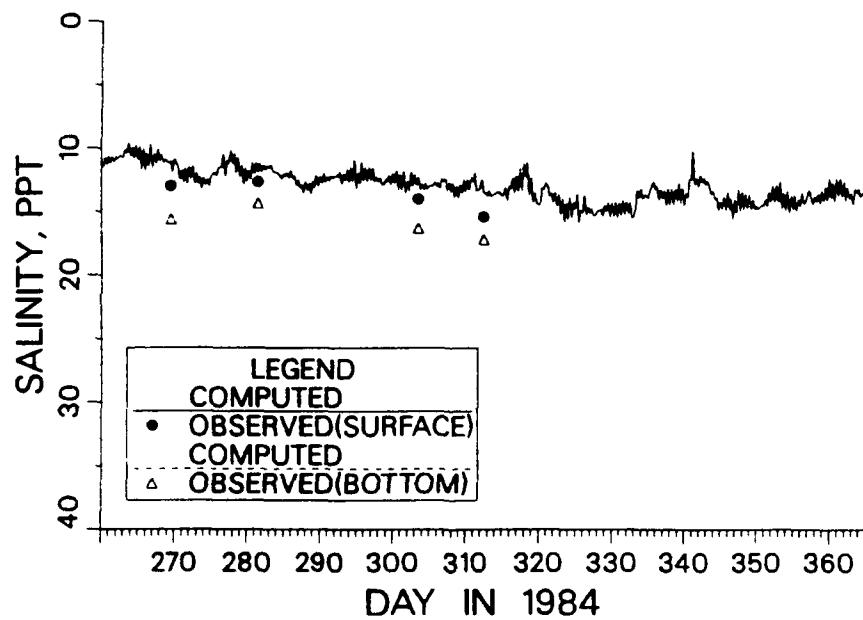


Figure A36. (Sheet 3 of 3)

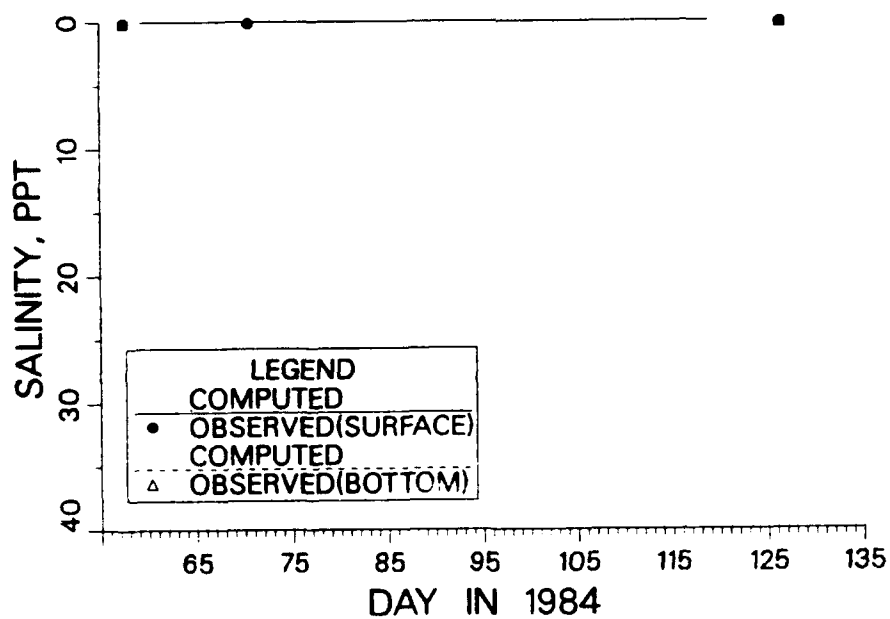
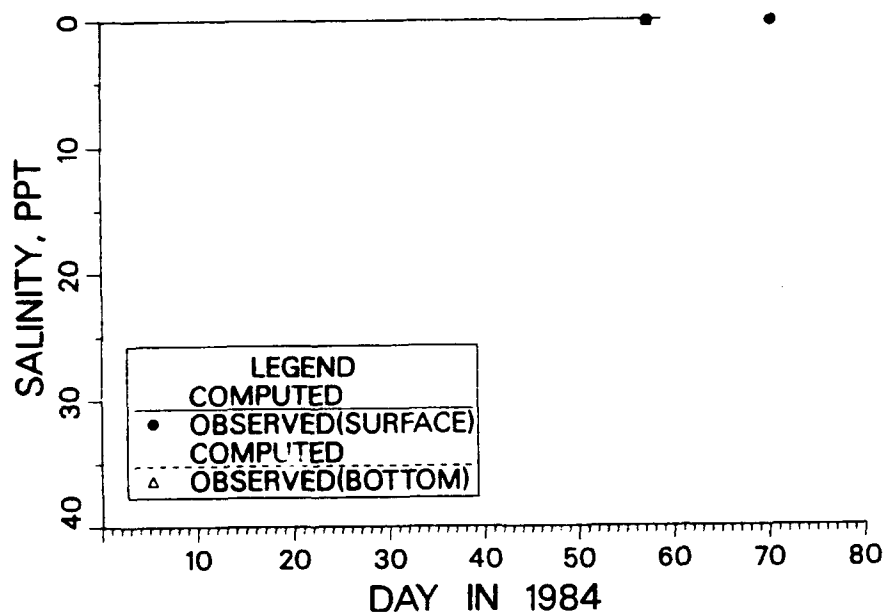


Figure A37. Comparison of computed and recorded salinity at sta XFB 247 during 1984 (Sheet 1 of 3)

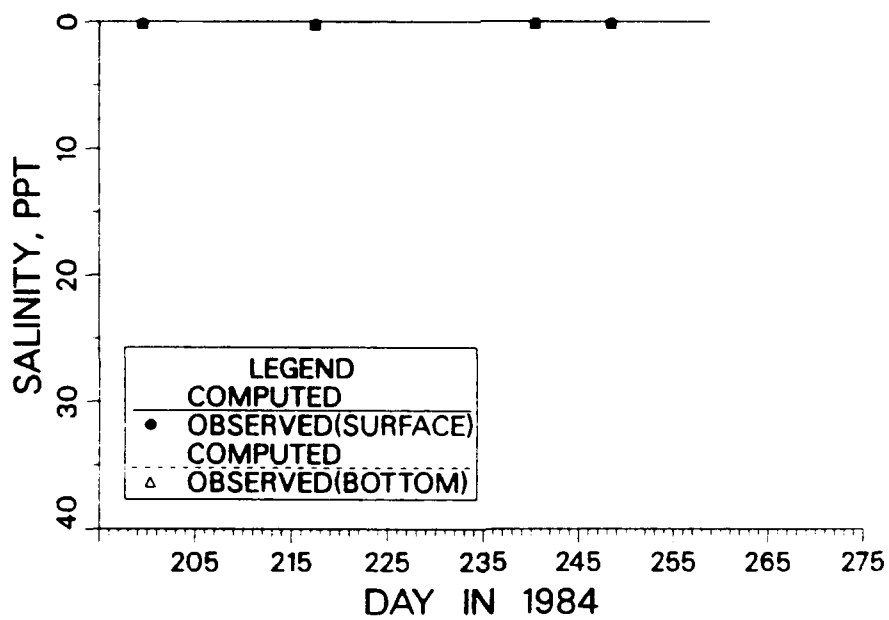
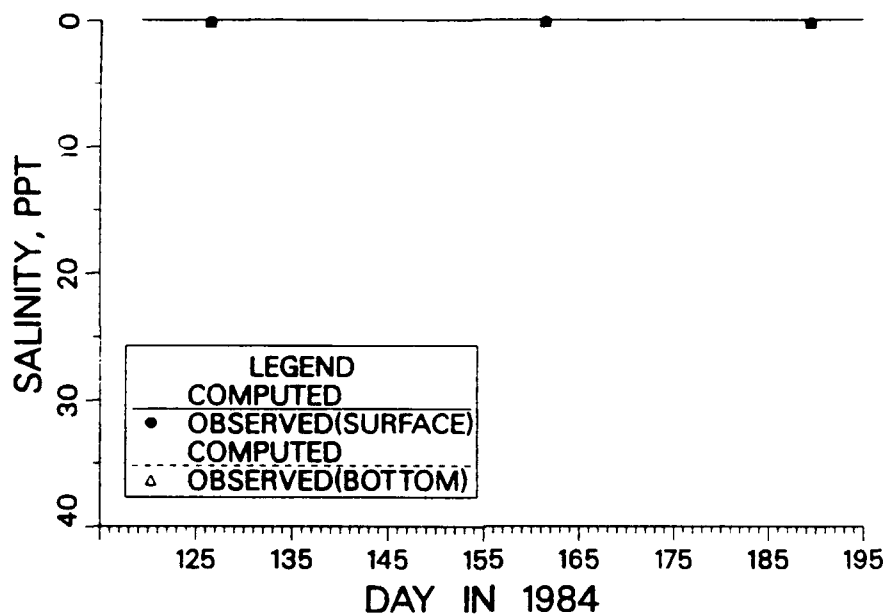


Figure A37. (Sheet 2 of 3)

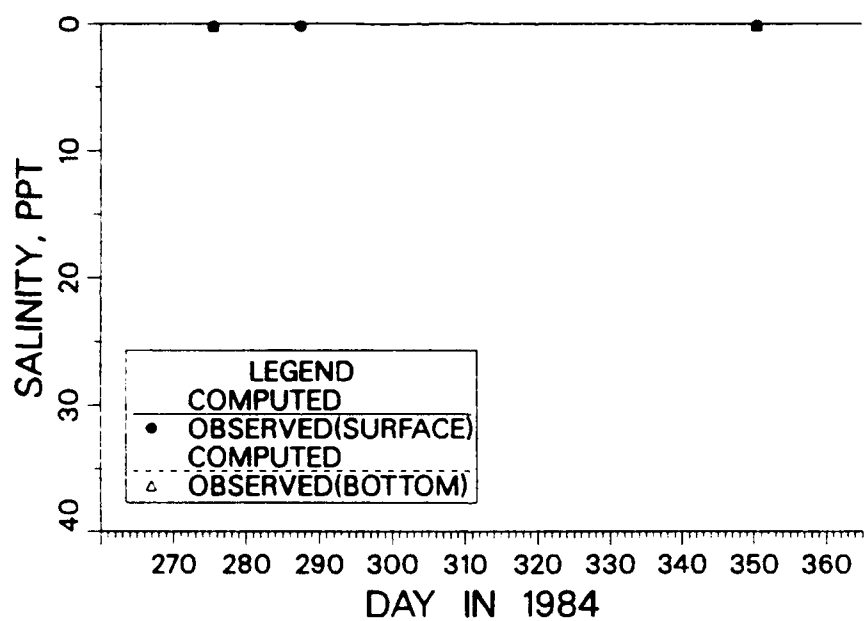


Figure A37. (Sheet 3 of 3)

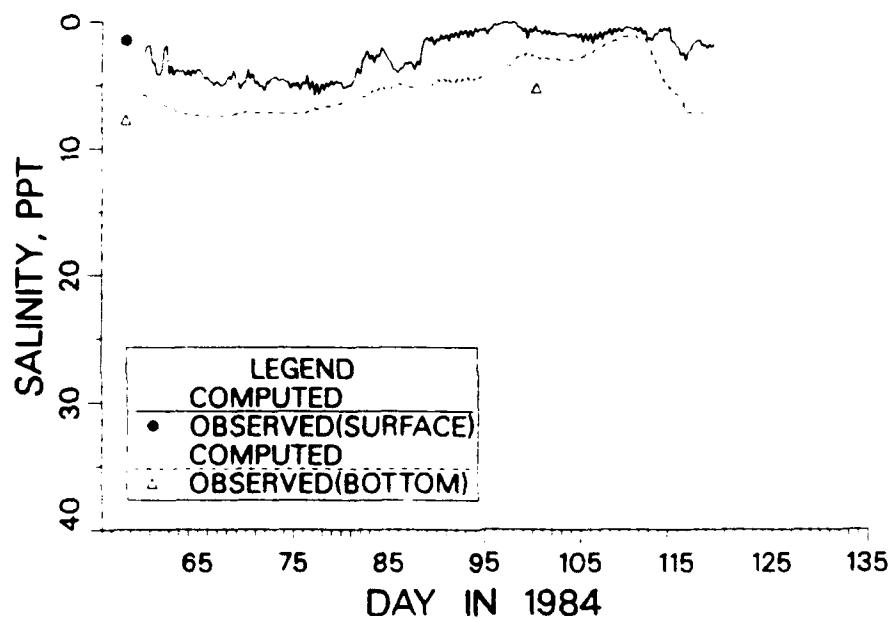
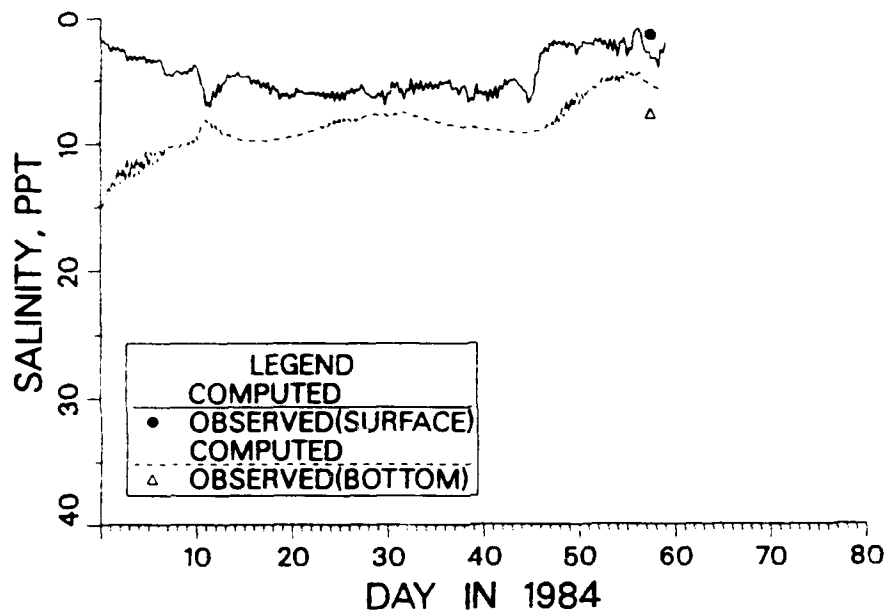


Figure A38. Comparison of computed and recorded salinity at sta RET 2.4 during 1984 (Sheet 1 of 3)

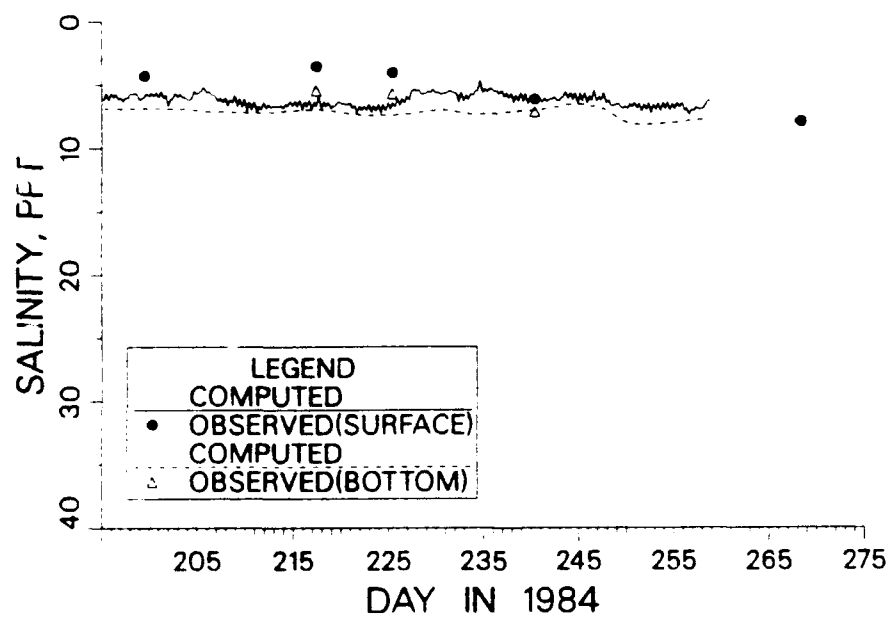
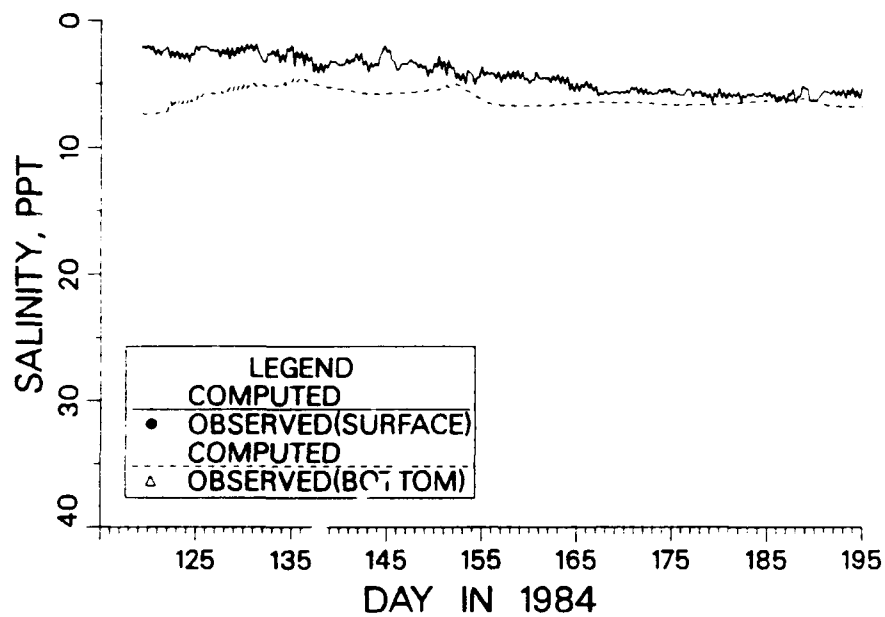


Figure A38. (Sheet 2 of 3)

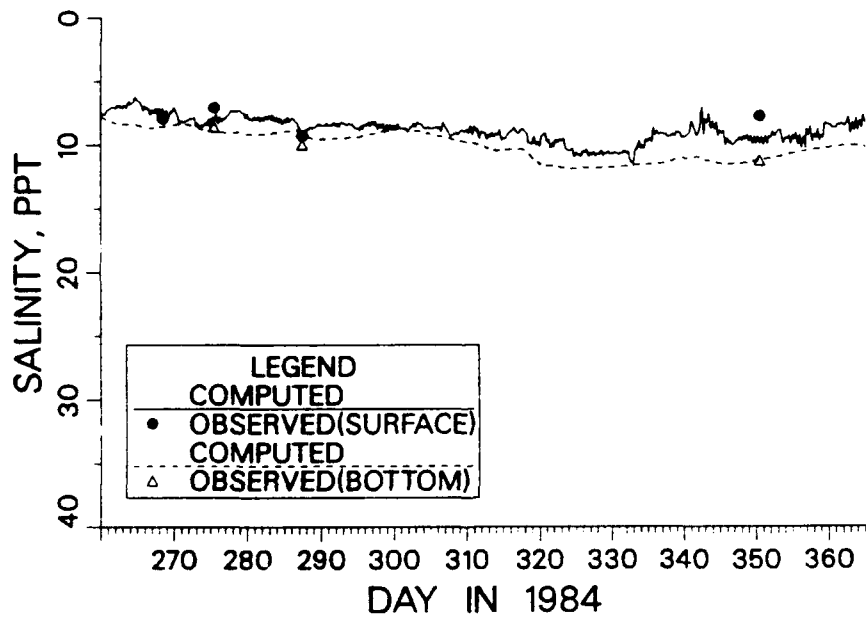


Figure A38. (Sheet 3 of 3)

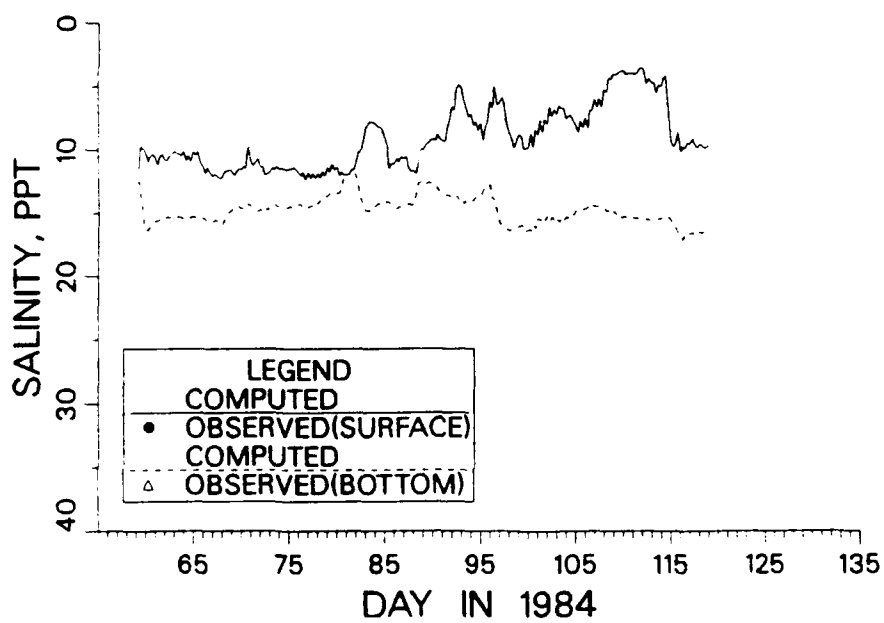
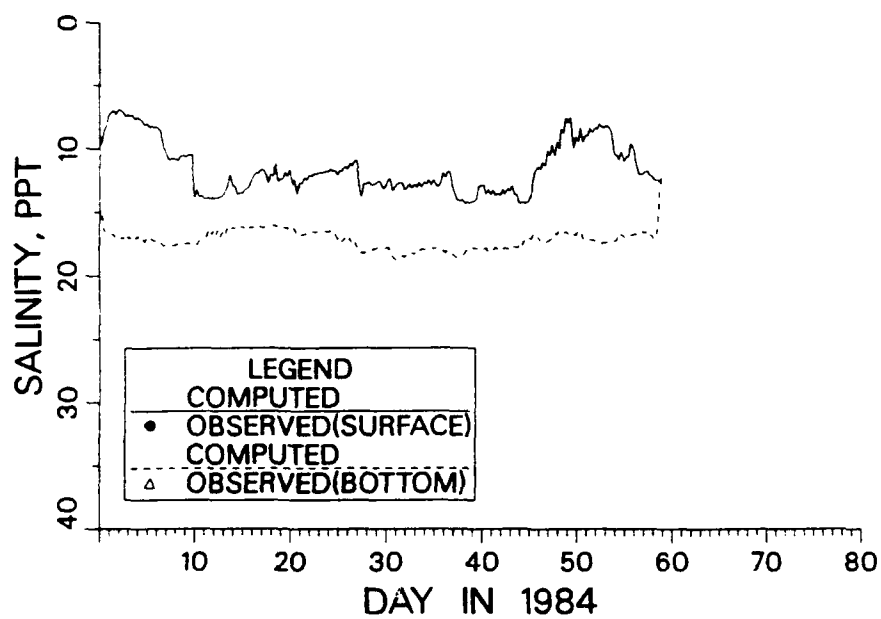


Figure A39. Comparison of computed and recorded salinity at sta LE 2.2 during 1984 (Sheet 1 of 3)

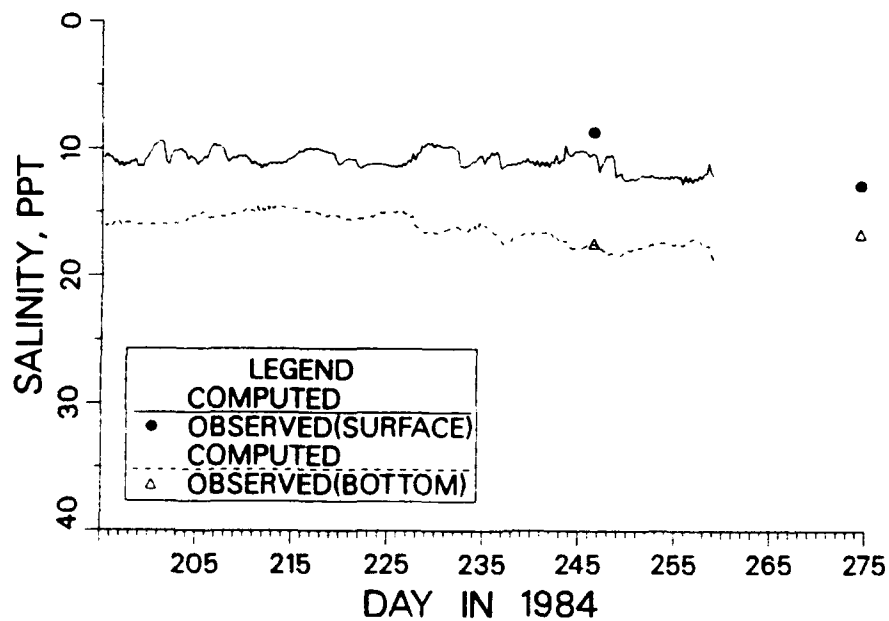
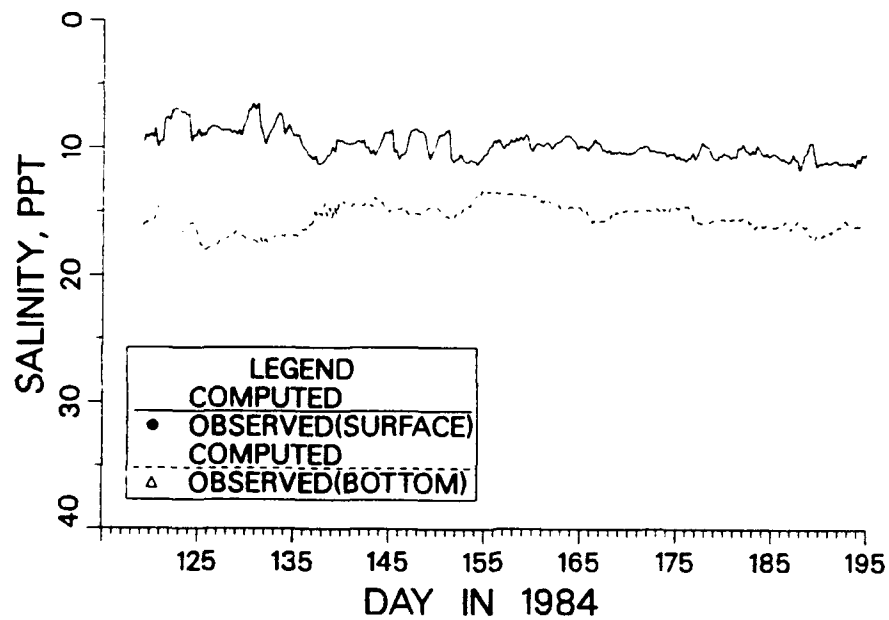


Figure A39. (Sheet 2 of 3)

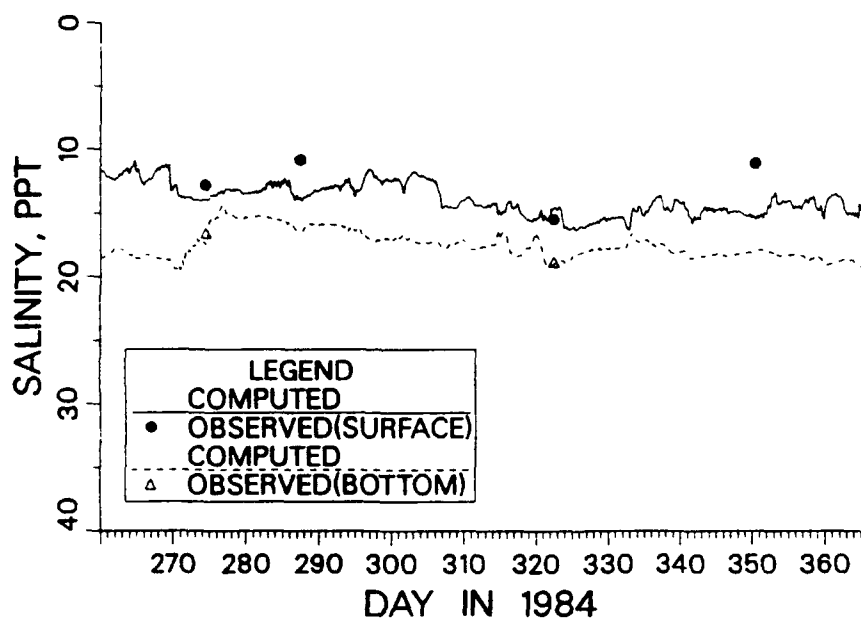


Figure A39. (Sheet 3 of 3)

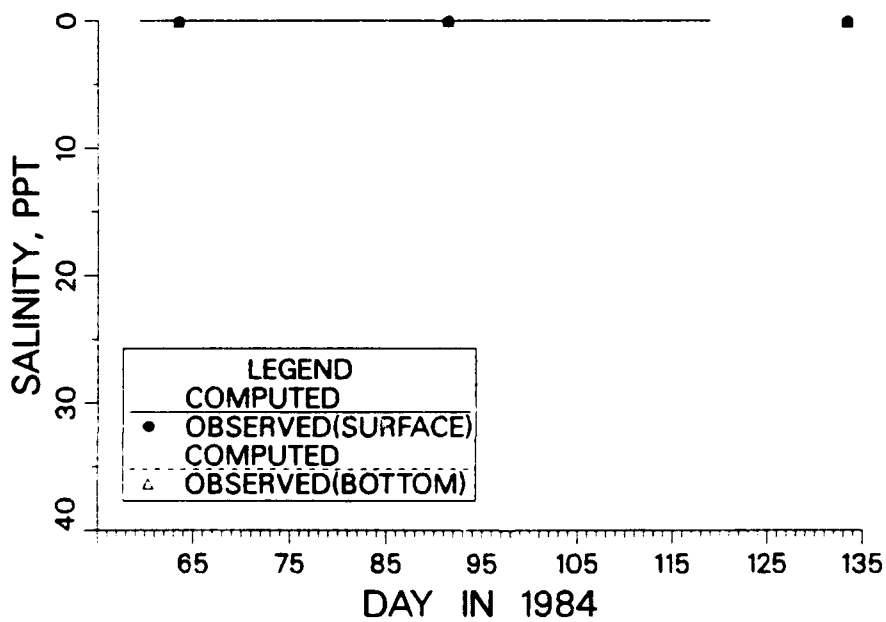
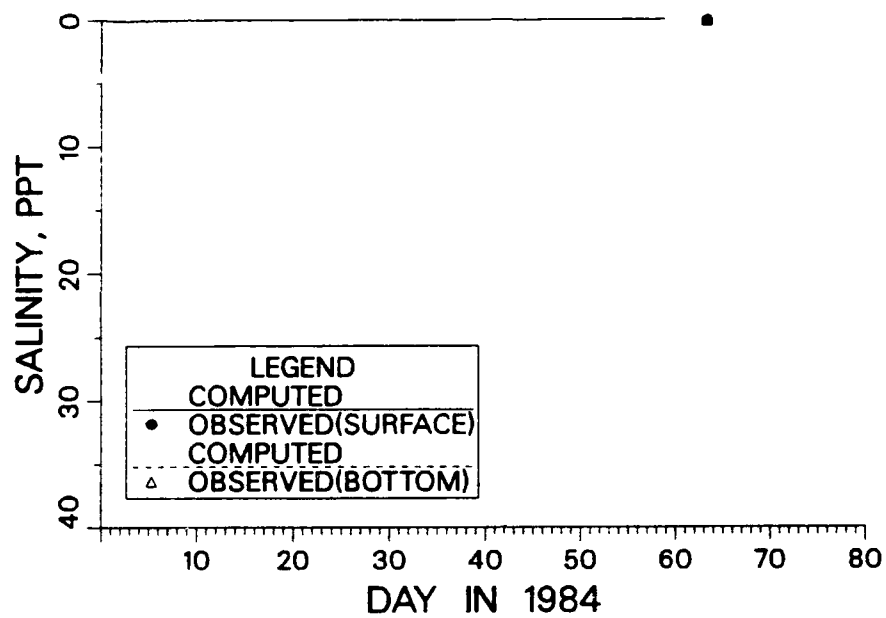


Figure A40. Comparison of computed and recorded salinity at sta TF 1.4 during 1984 (Sheet 1 of 3)

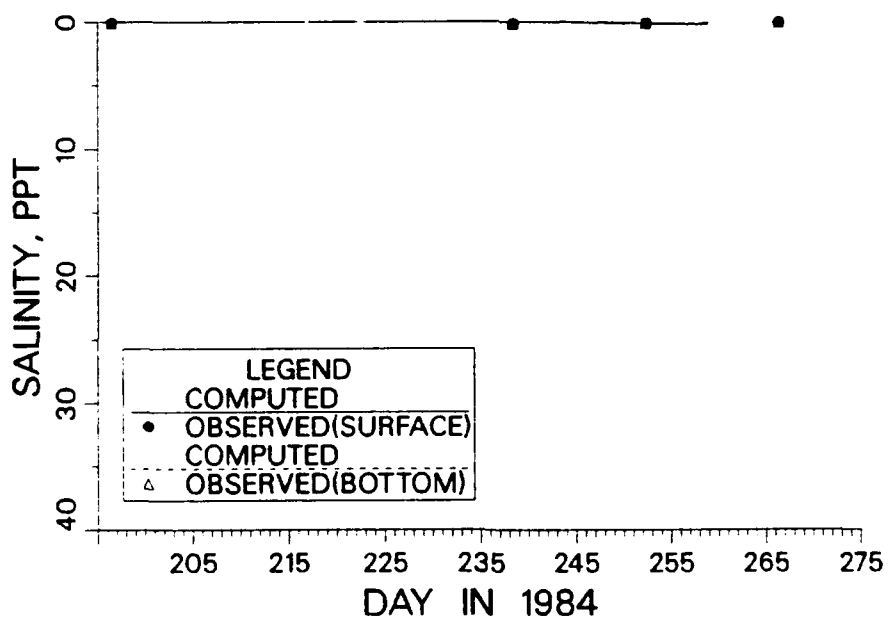
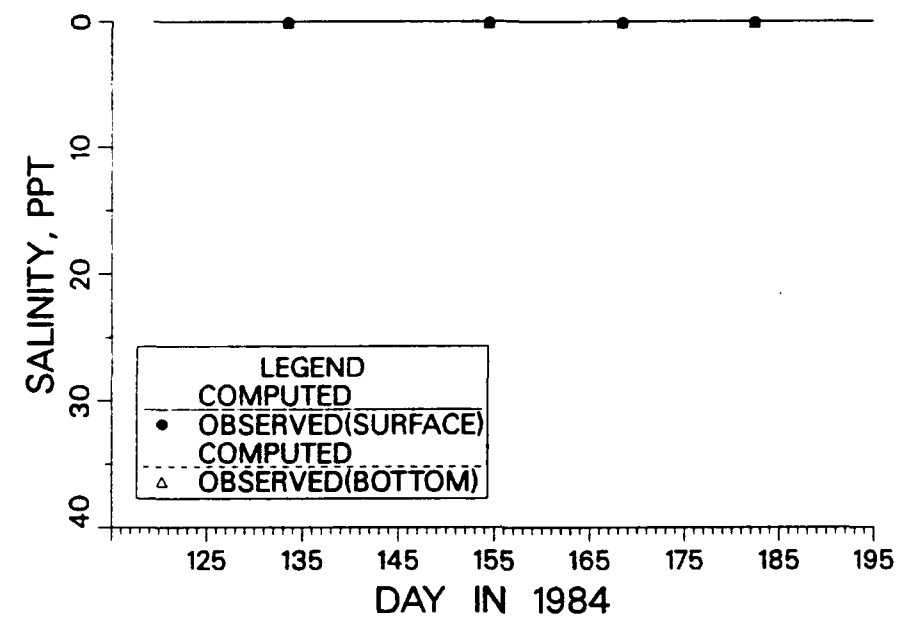


Figure A40. (Sheet 2 of 3)

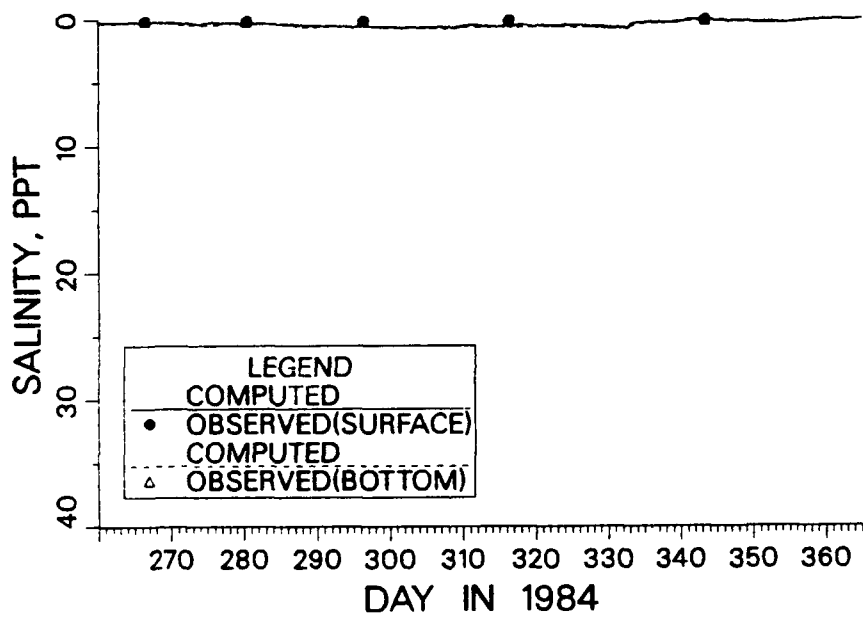


Figure A40. (Sheet 3 of 3)

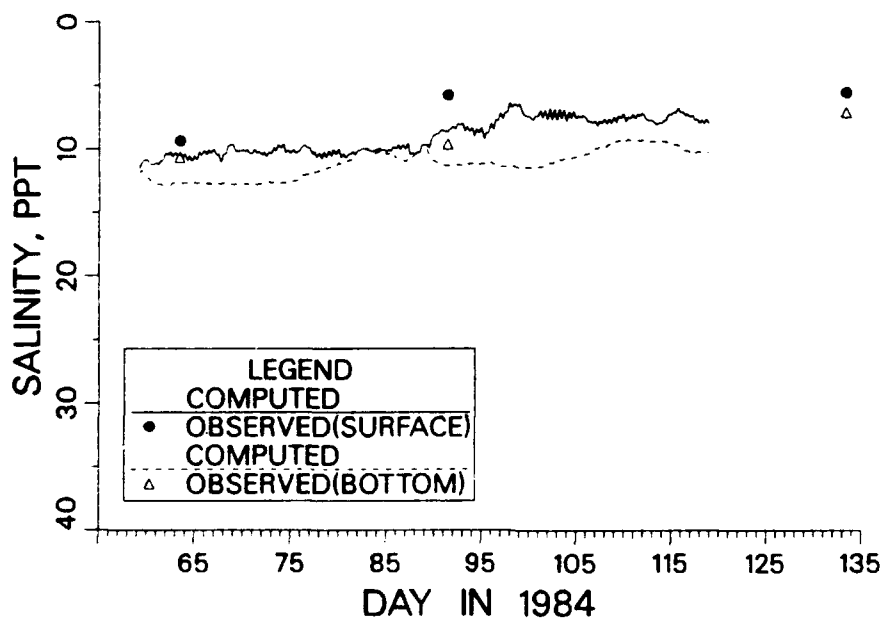
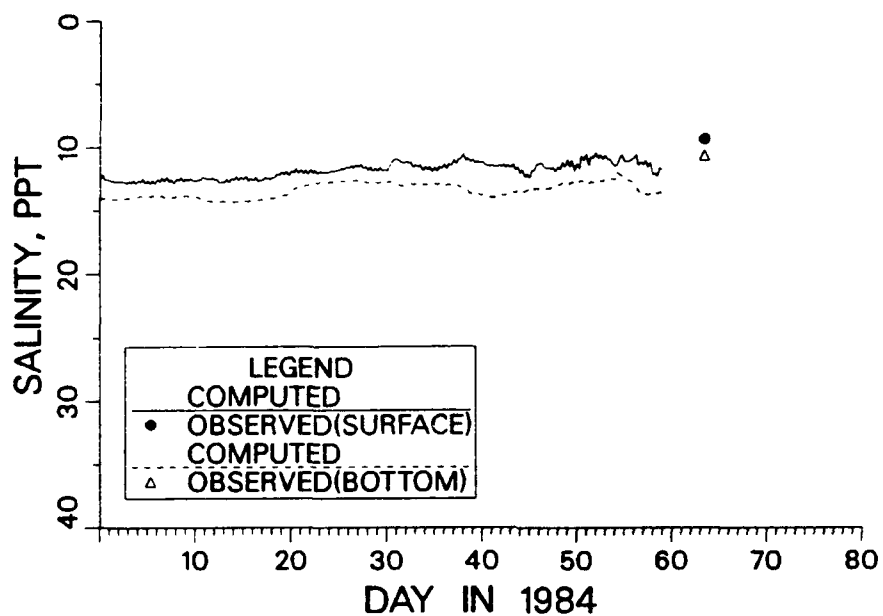


Figure A41. Comparison of computed and recorded salinity at sta LE 1.1 during 1984 (Sheet 1 of 3)

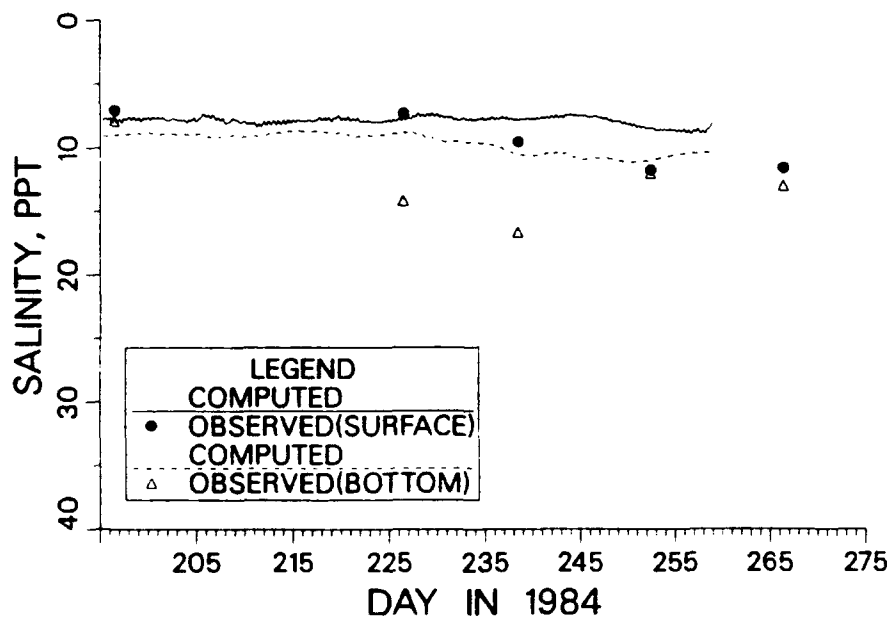
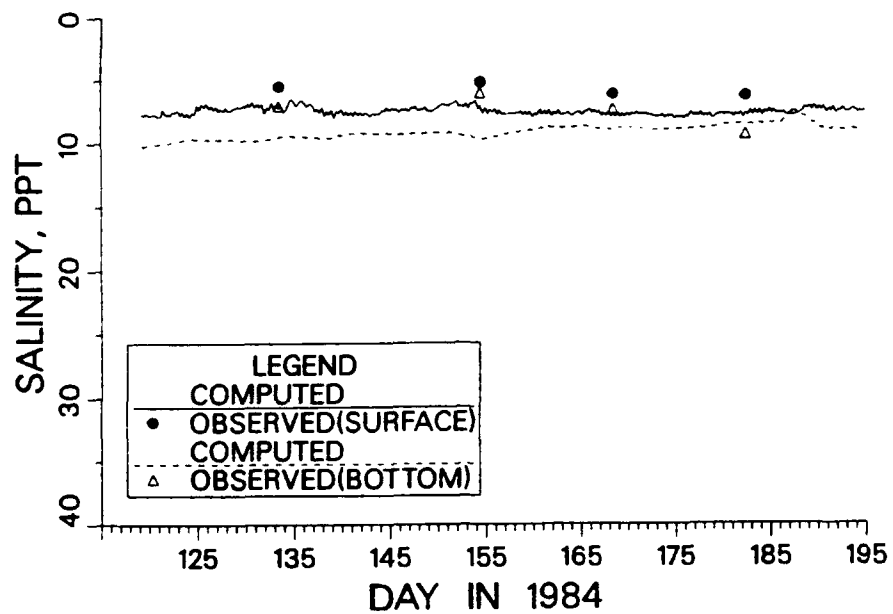


Figure A41. (Sheet 2 of 3)

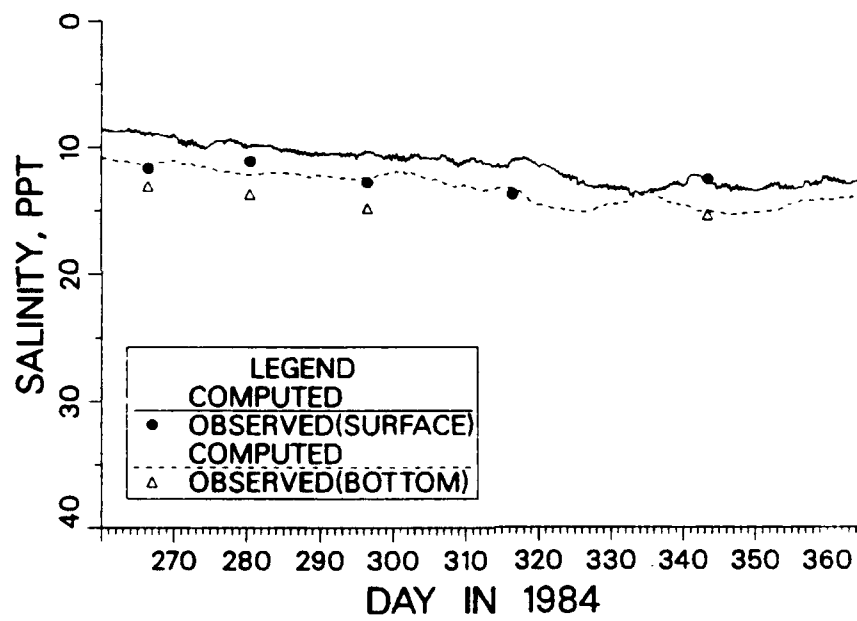


Figure A41. (Sheet 3 of 3)

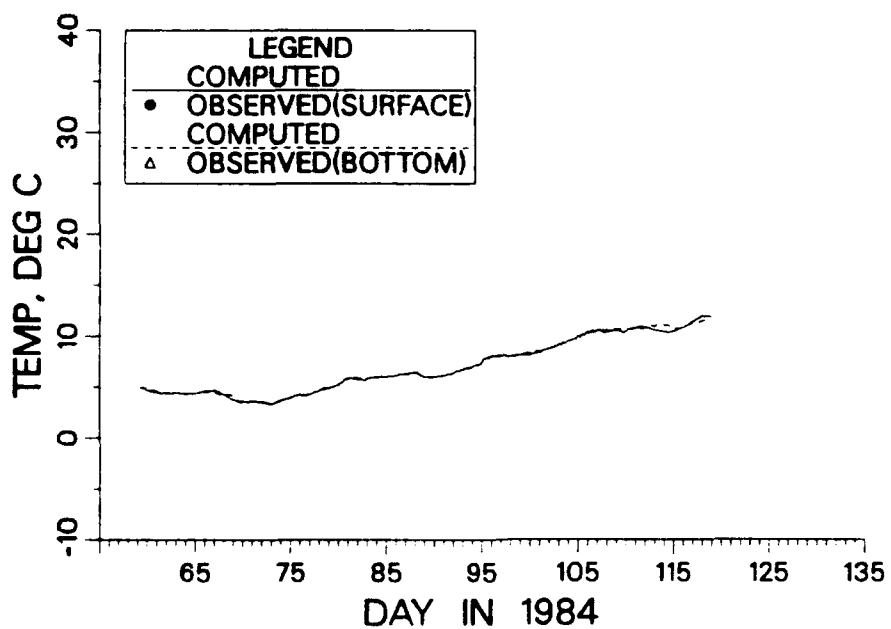
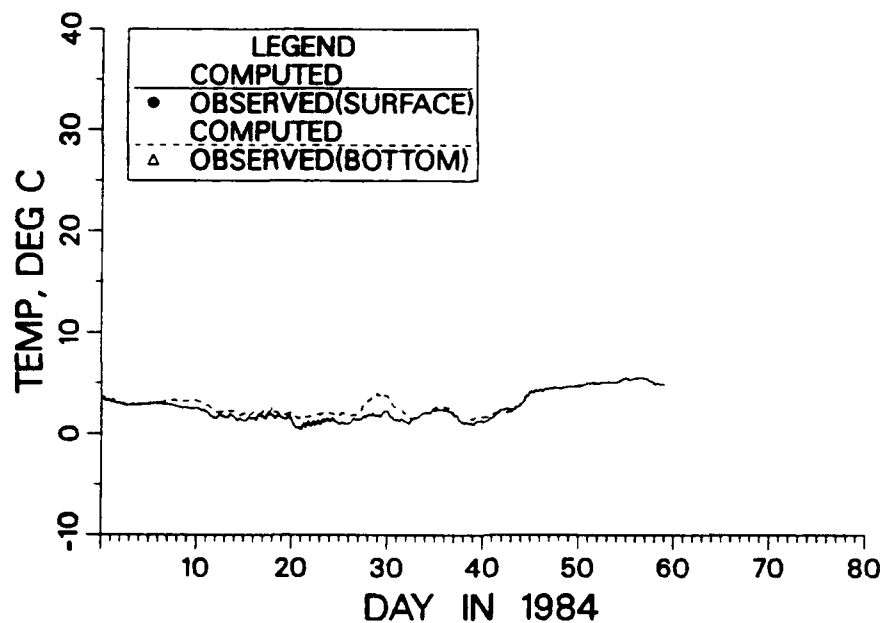


Figure A42. Comparison of computed and recorded temperature at sta CB 7.2E during 1984 (Sheet 1 of 3)

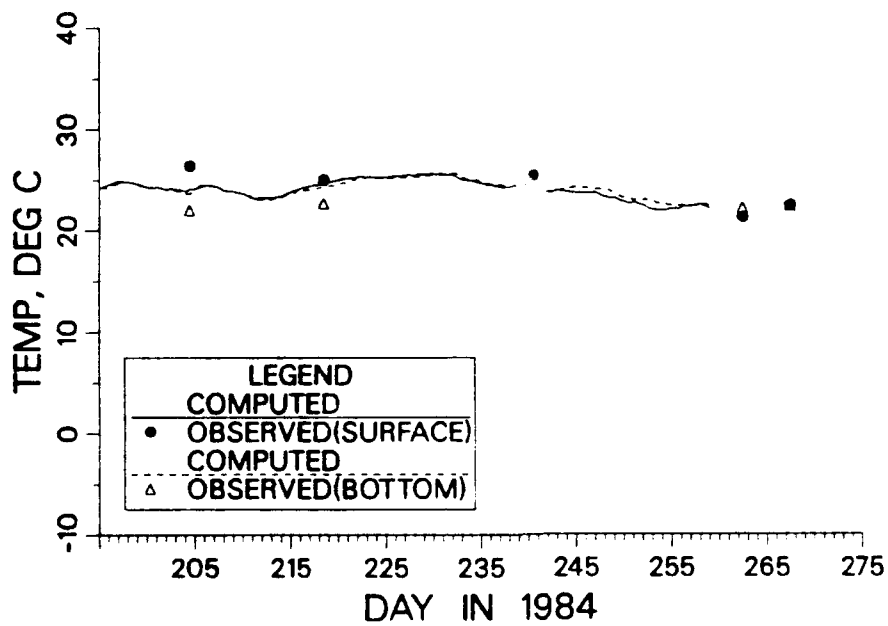
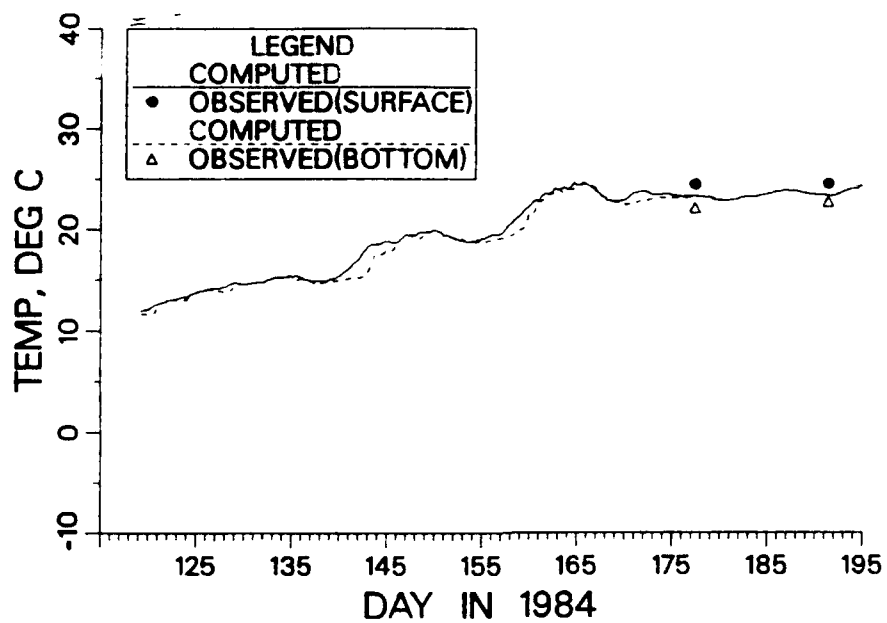


Figure A42. (Sheet 2 of 3)

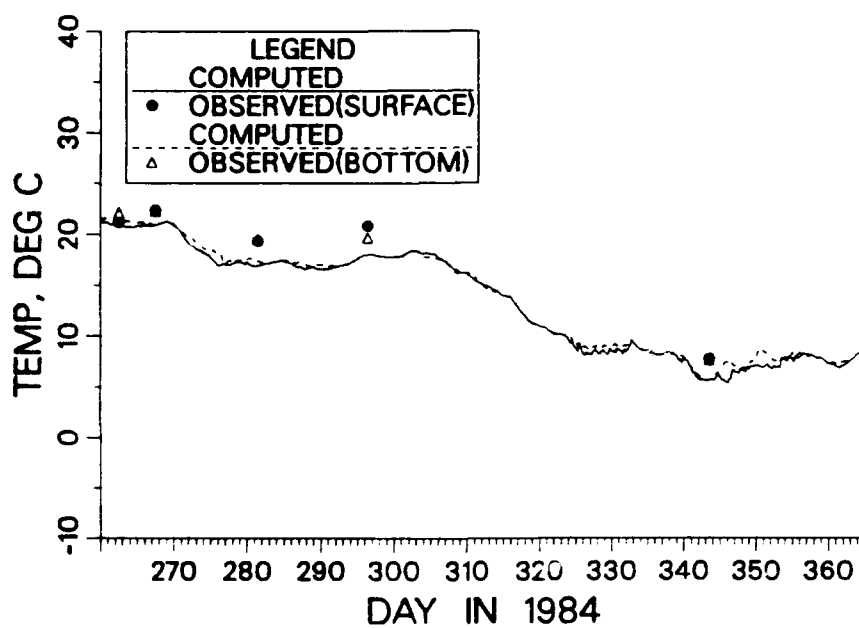


Figure A42. (Sheet 3 of 3)

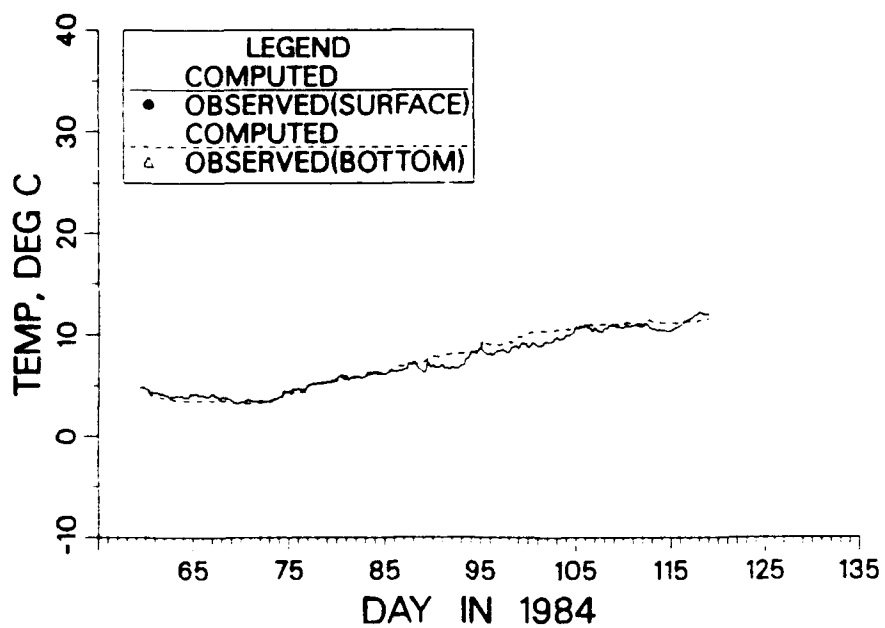
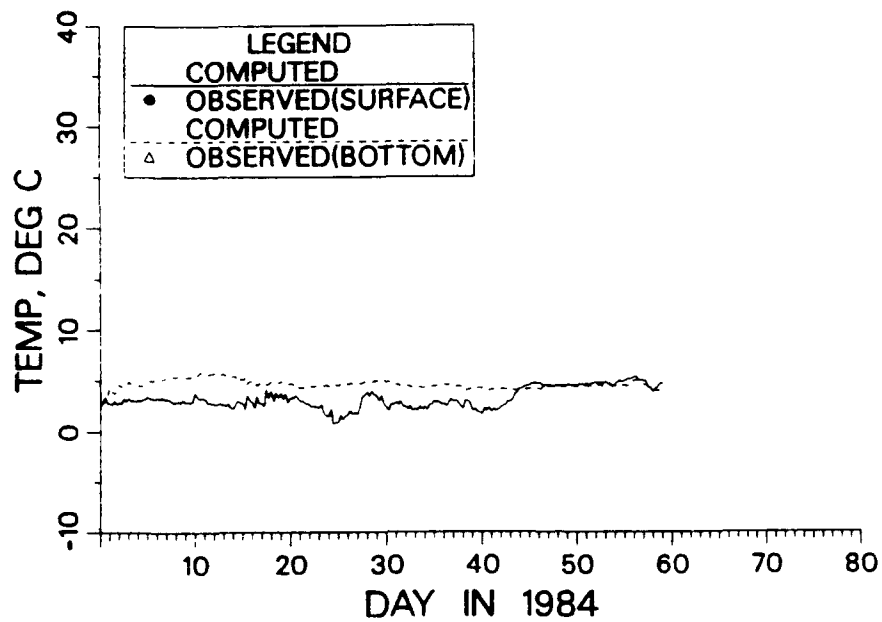


Figure A43. Comparison of computed and recorded temperature at sta CB 7.3E during 1984 (Sheet 1 of 3)

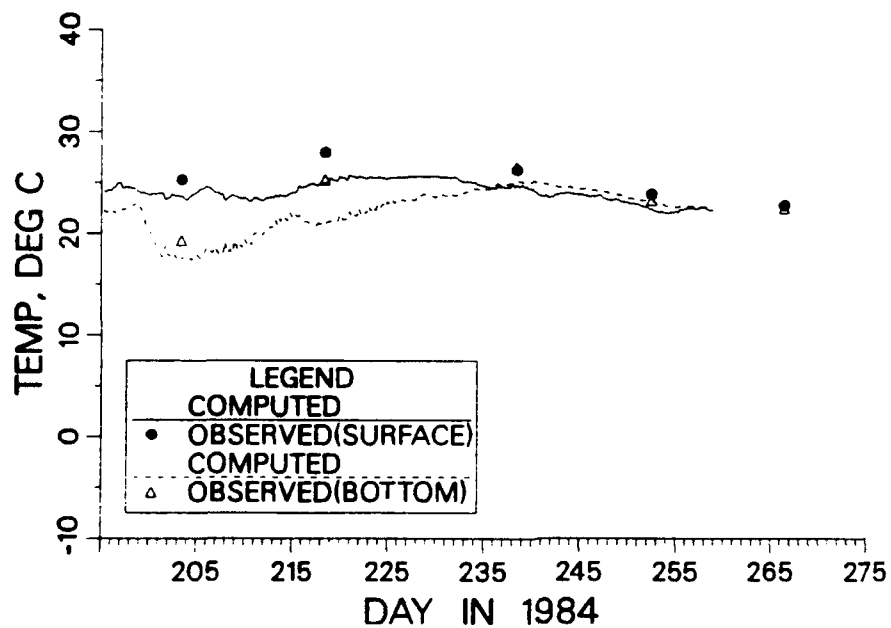
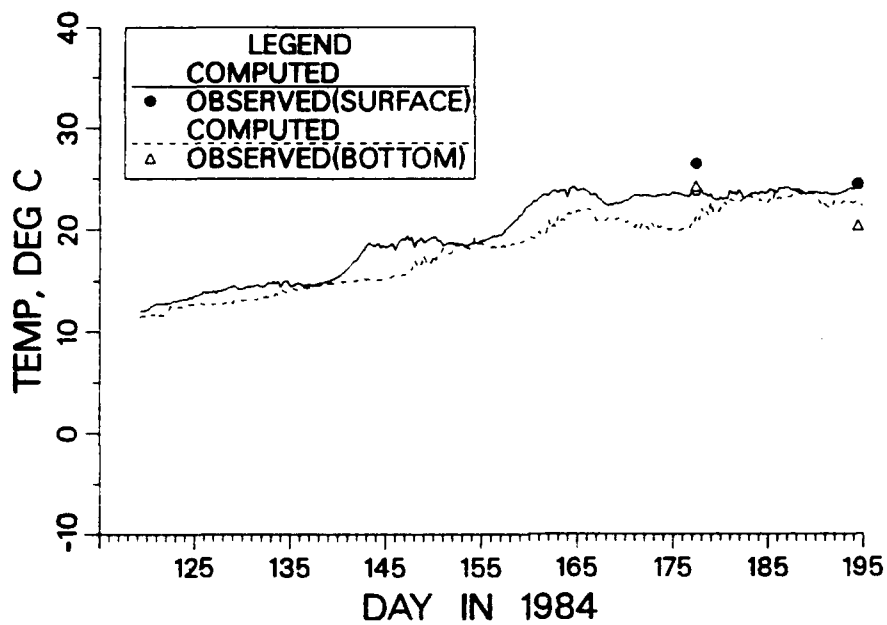


Figure A43. (Sheet 2 of 3)

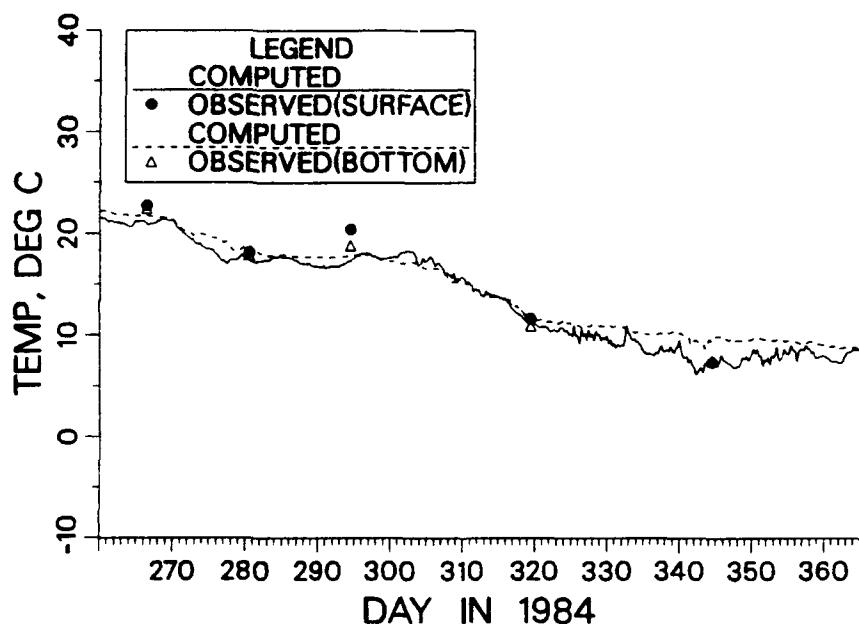


Figure A43. (Sheet 3 of 3)

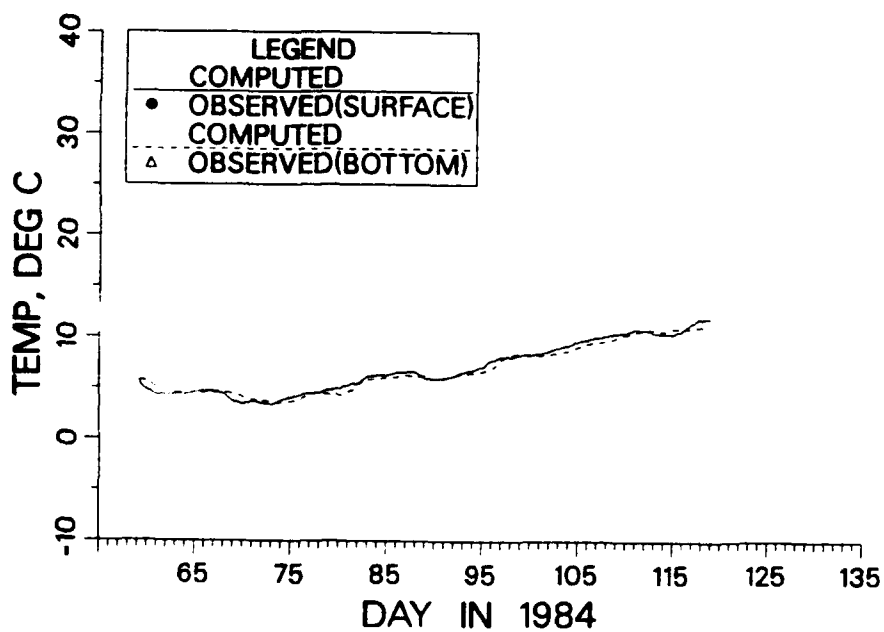
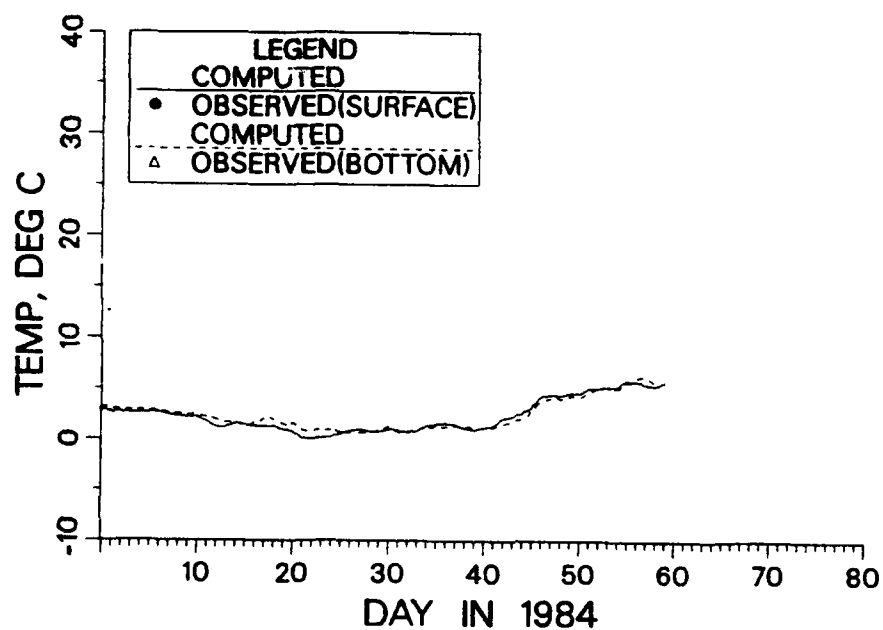


Figure A44. Comparison of computed and recorded temperature at sta EE 3.5 during 1984 (Sheet 1 of 3)

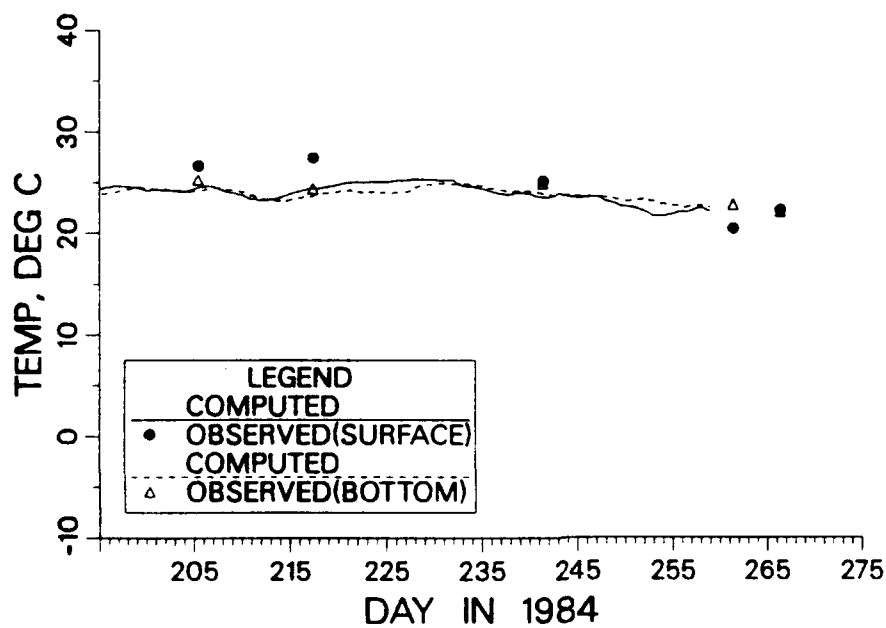
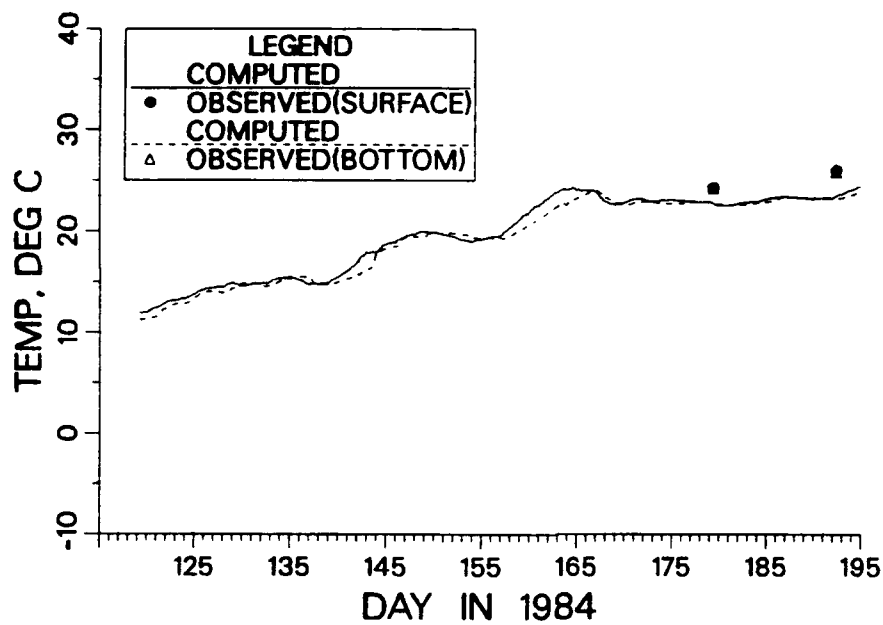


Figure A44. (Sheet 2 of 3)

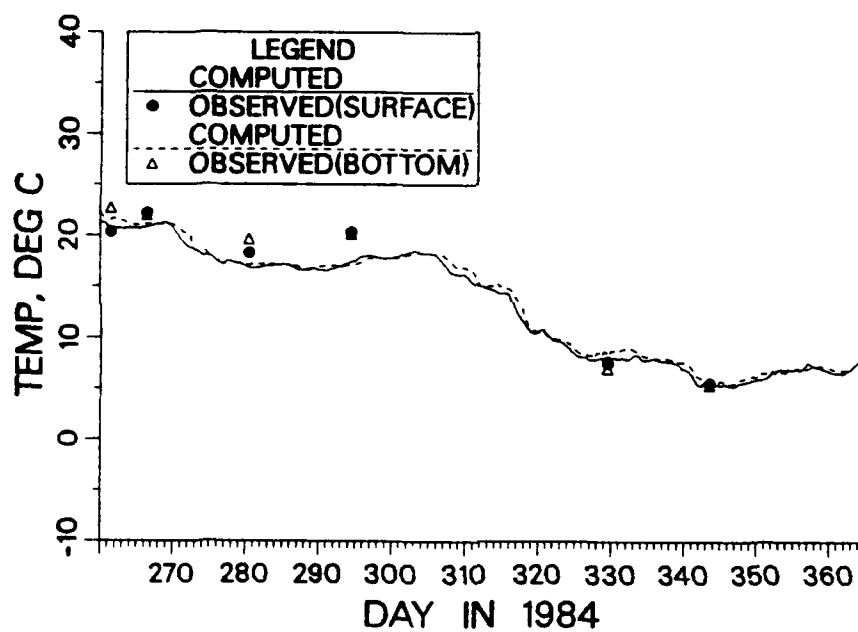


Figure A44. (Sheet 3 of 3)

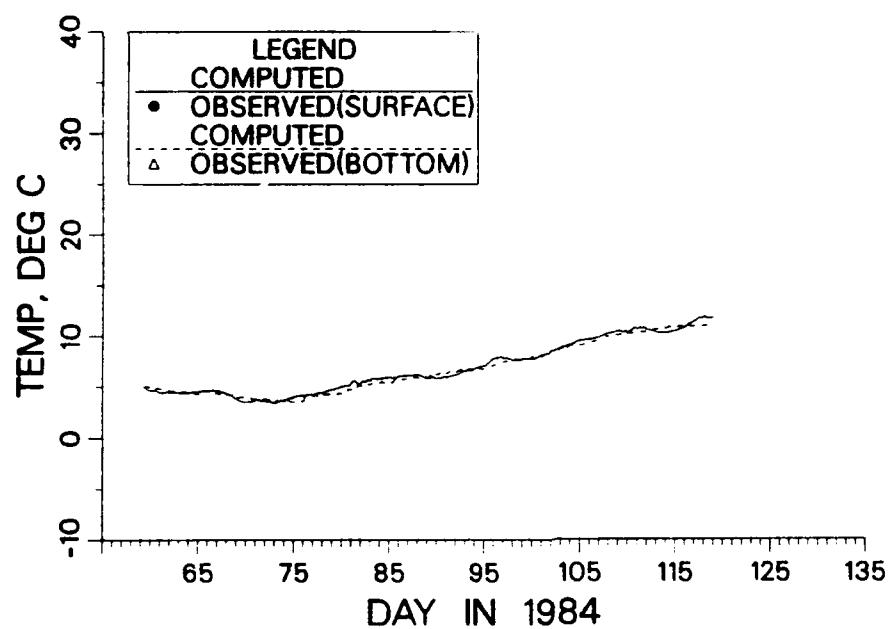
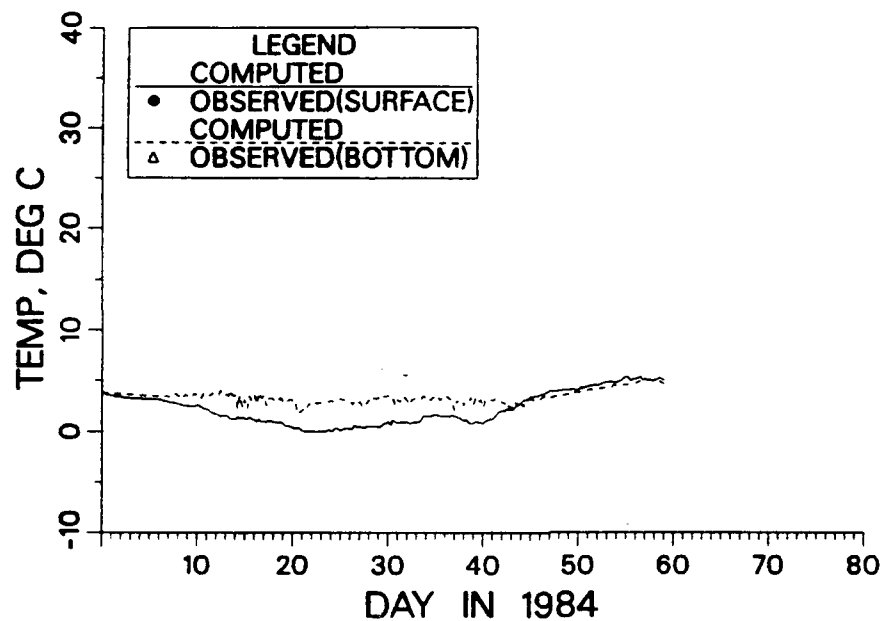


Figure A45. Comparison of computed and recorded temperature at sta CB 6.3 during 1984 (Sheet 1 of 3)

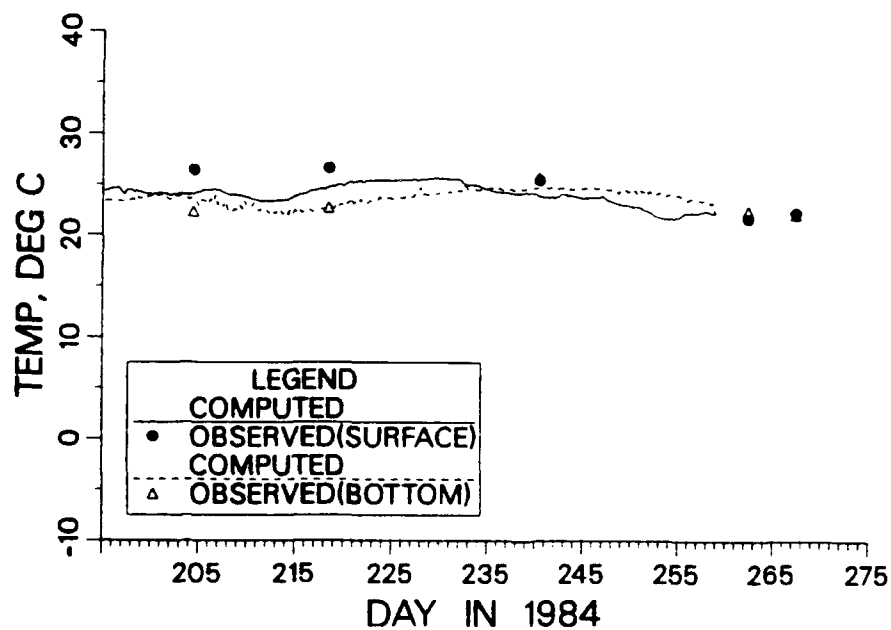
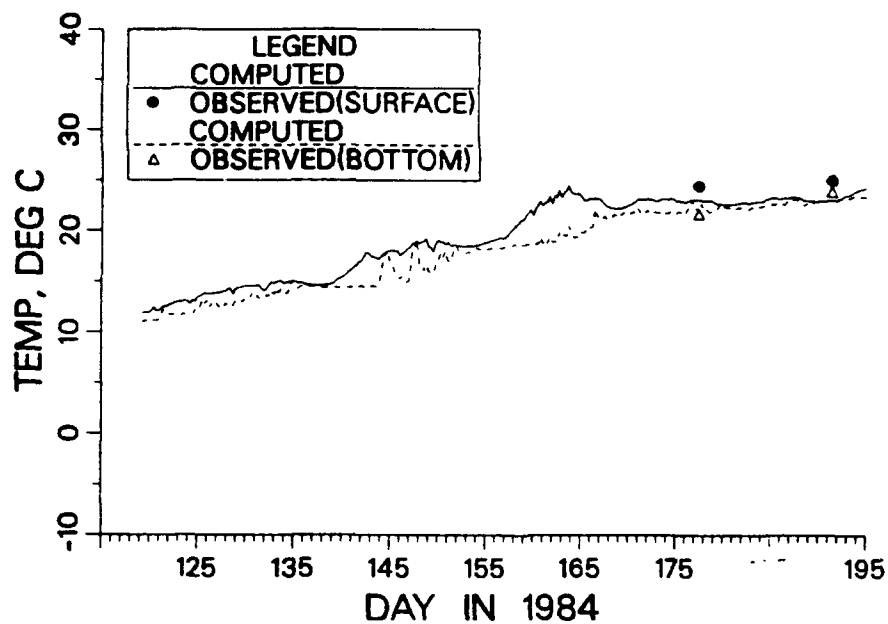


Figure A45. (Sheet 2 of 3)

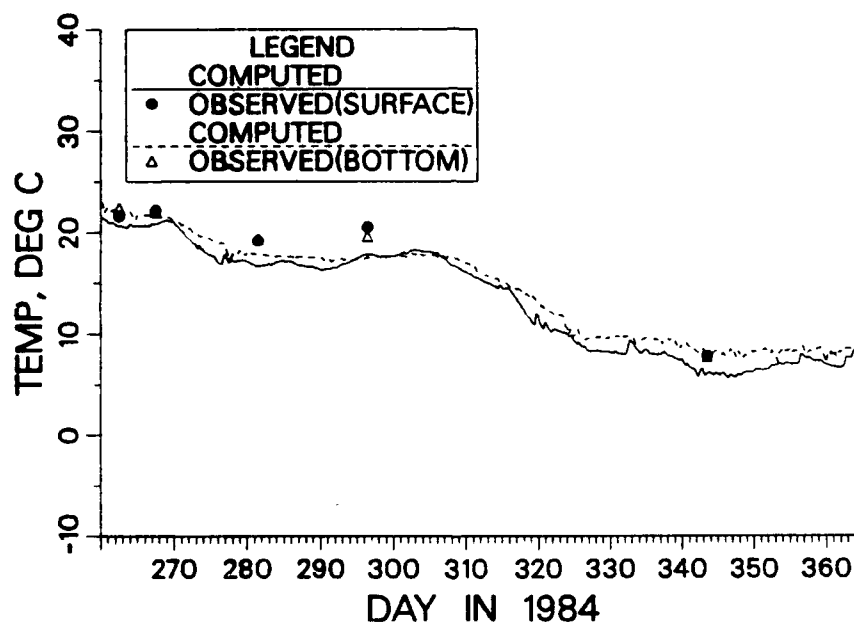


Figure A45. (Sheet 3 of 3)

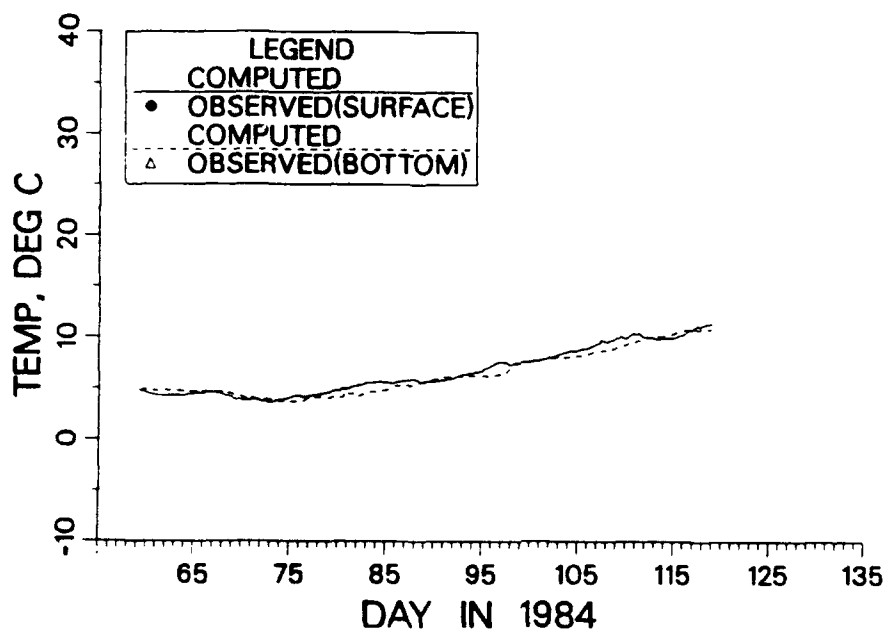
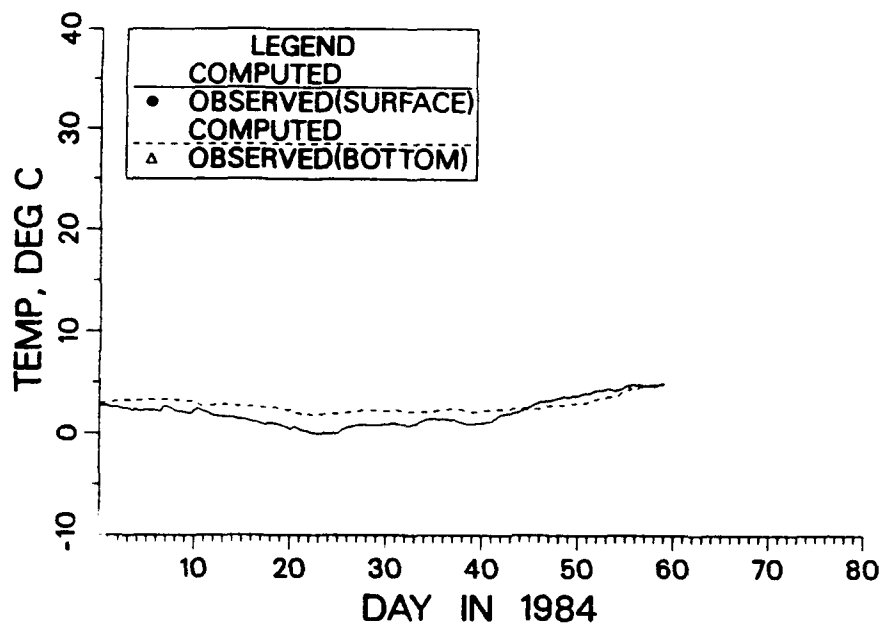


Figure A46. Comparison of computed and recorded temperature at sta CB 5.3 during 1984 (Sheet 1 of 3)

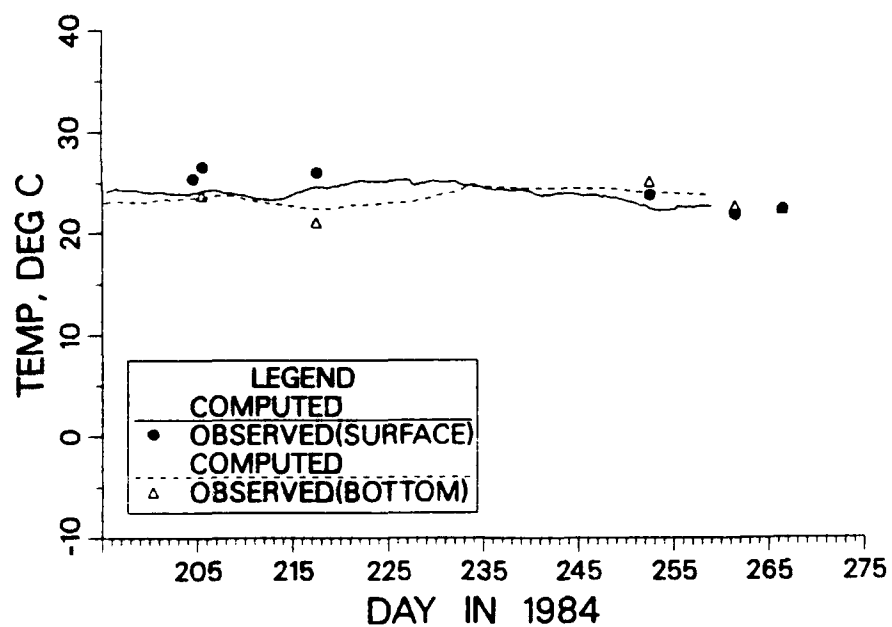
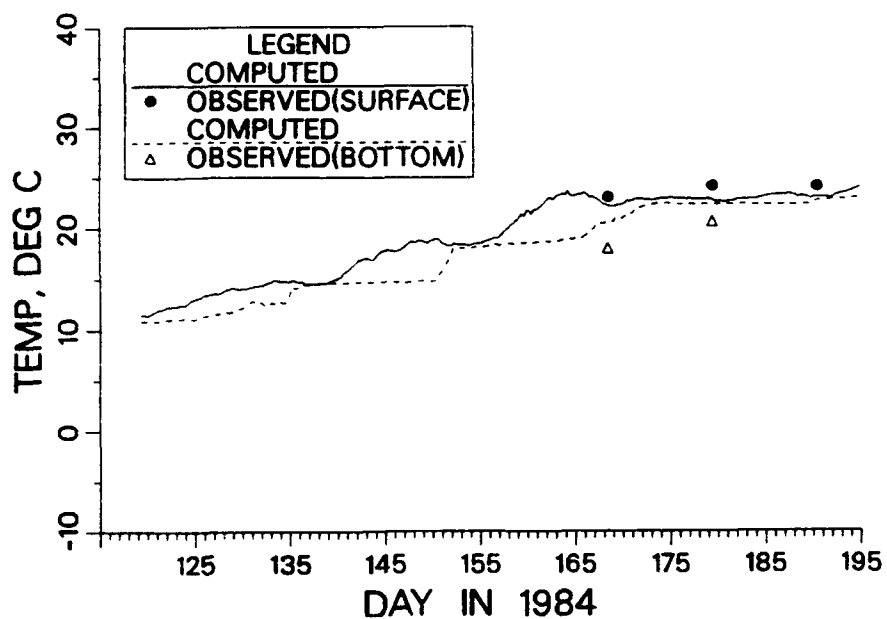


Figure A46. (Sheet 2 of 3)

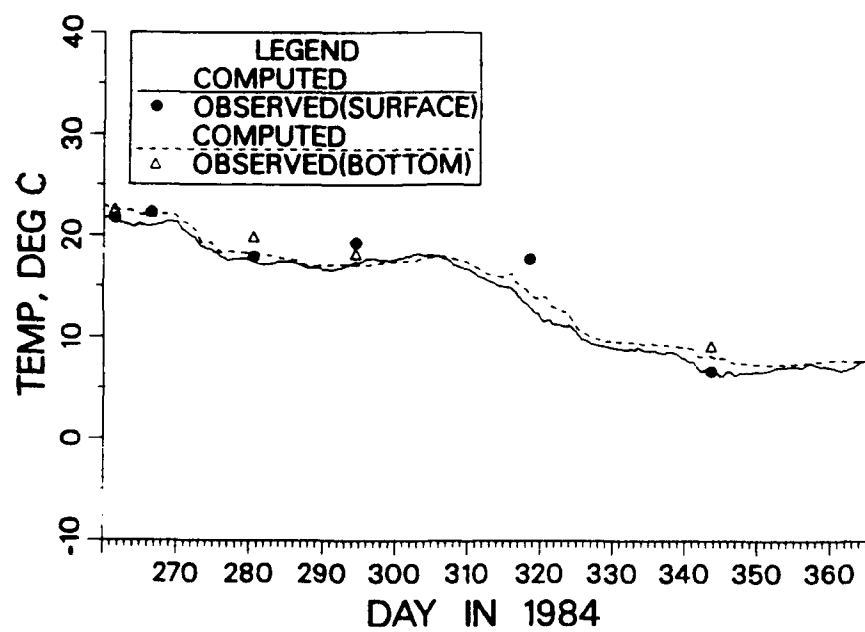


Figure A46. (Sheet 3 of 3)

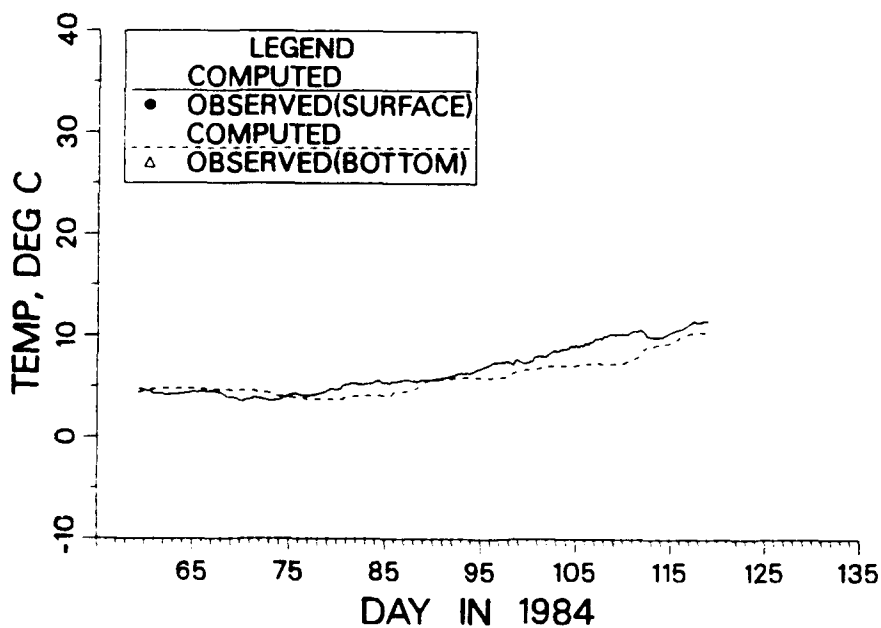
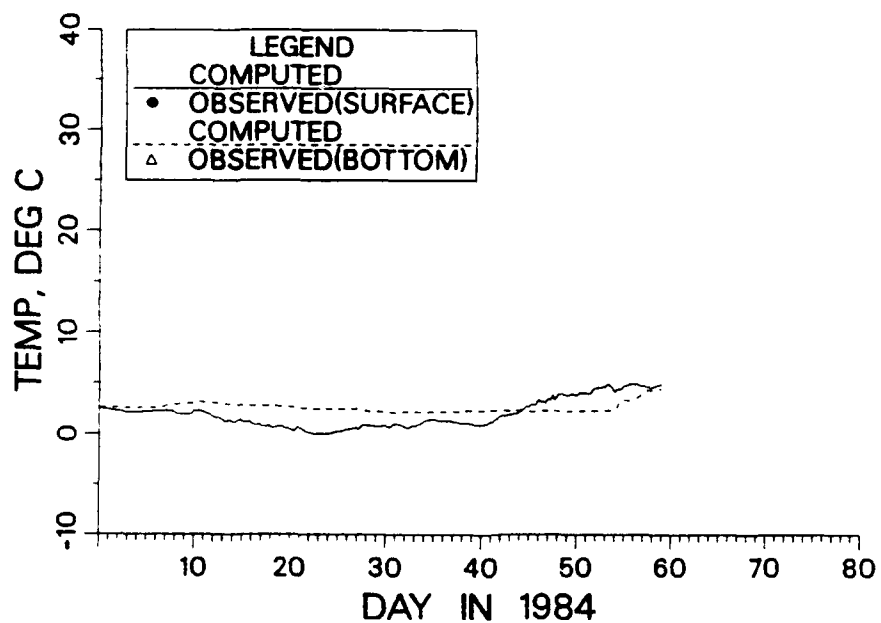


Figure A47. Comparison of computed and recorded temperature at sta CB 5.1 during 1984 (Sheet 1 of 3)

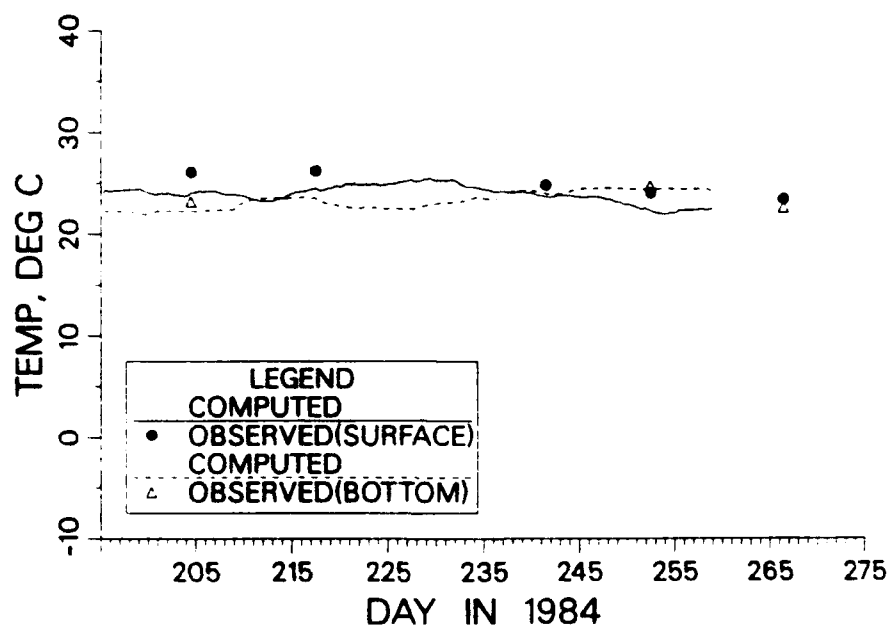
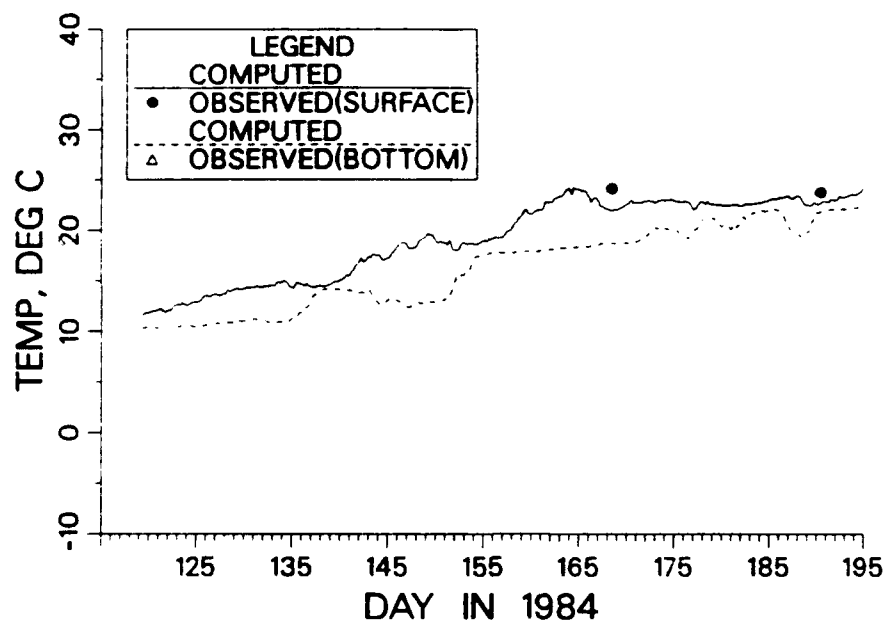


Figure A47. (Sheet 2 of 3)

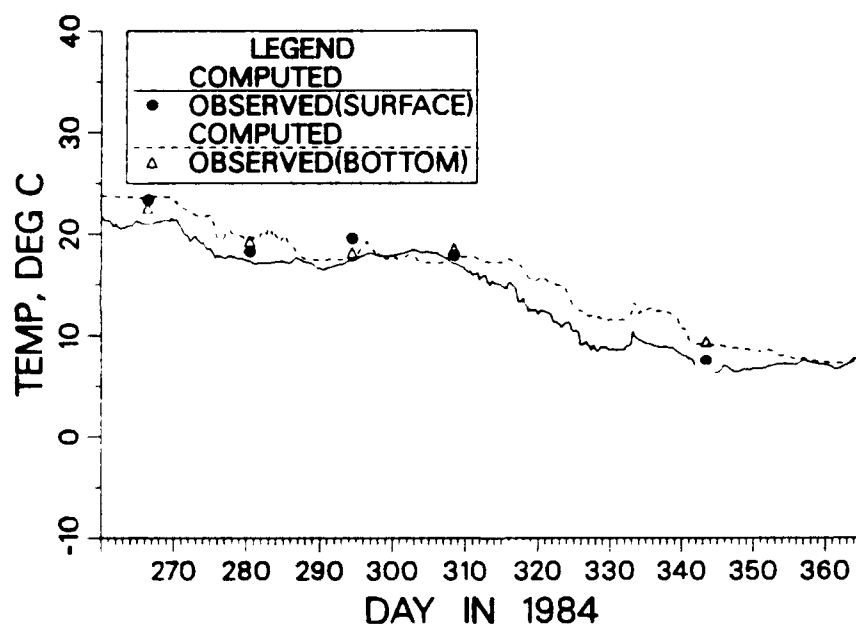


Figure A47. (Sheet 3 of 3)

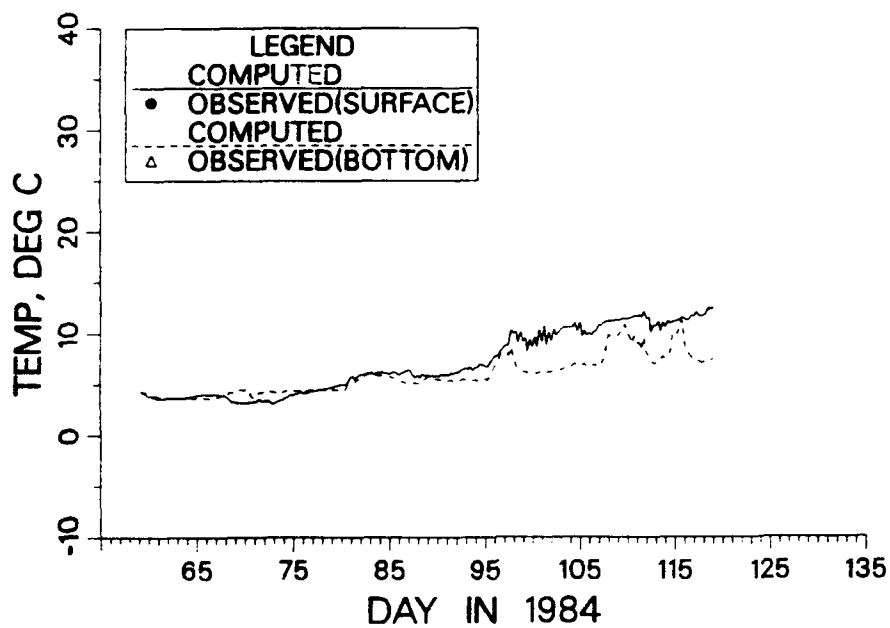
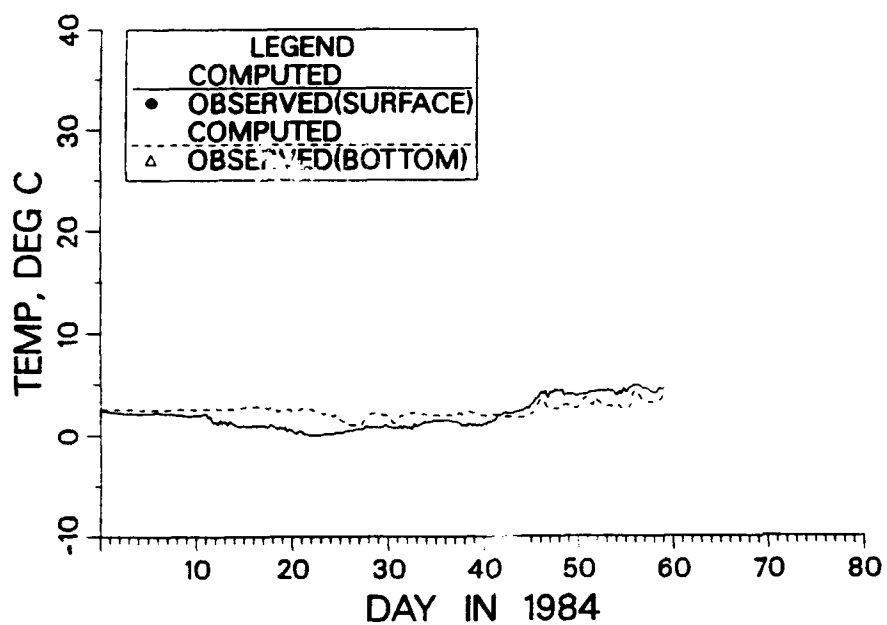


Figure A48. Comparison of computed and recorded temperature at sta CB 3.3W during 1984 (Sheet 1 of 3)

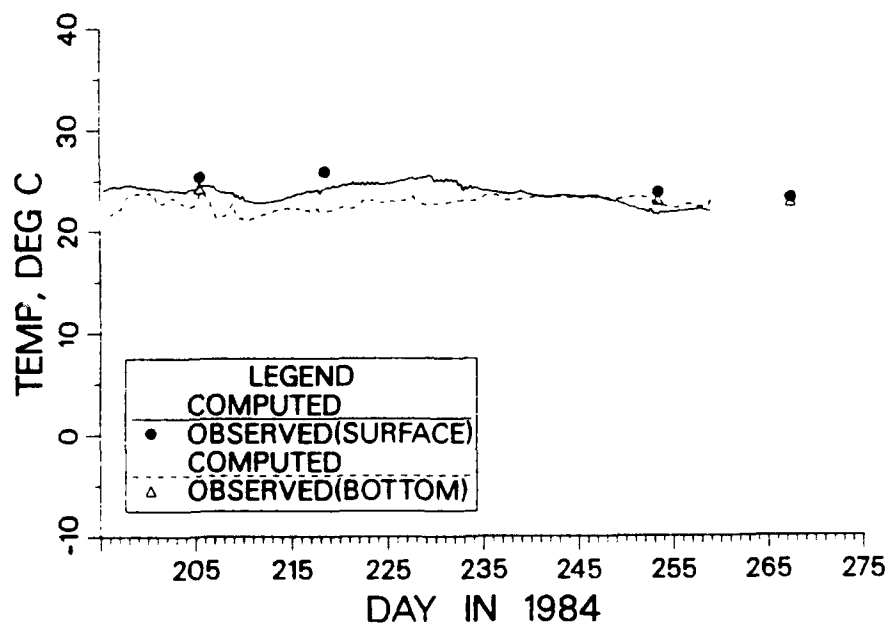
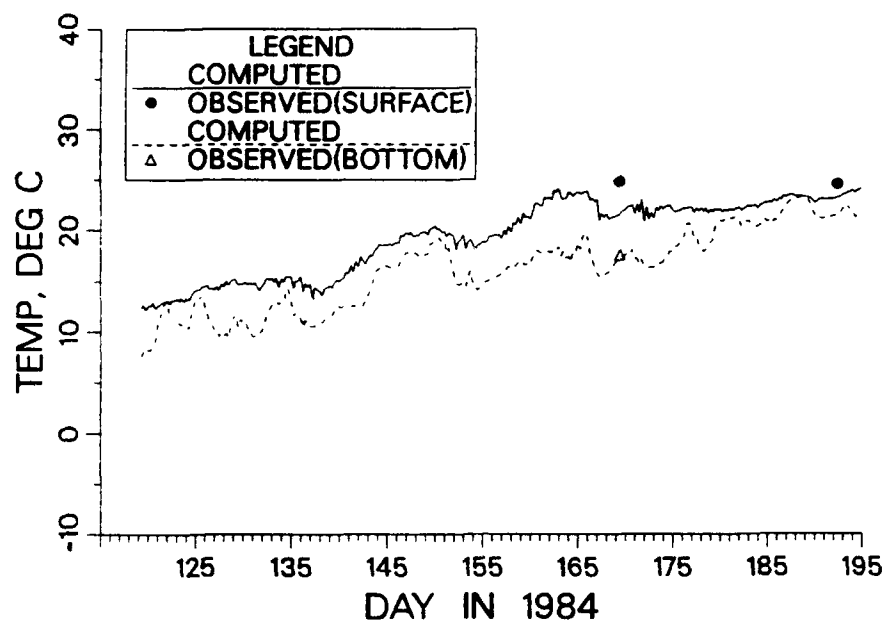


Figure A48. (Sheet 2 of 3)

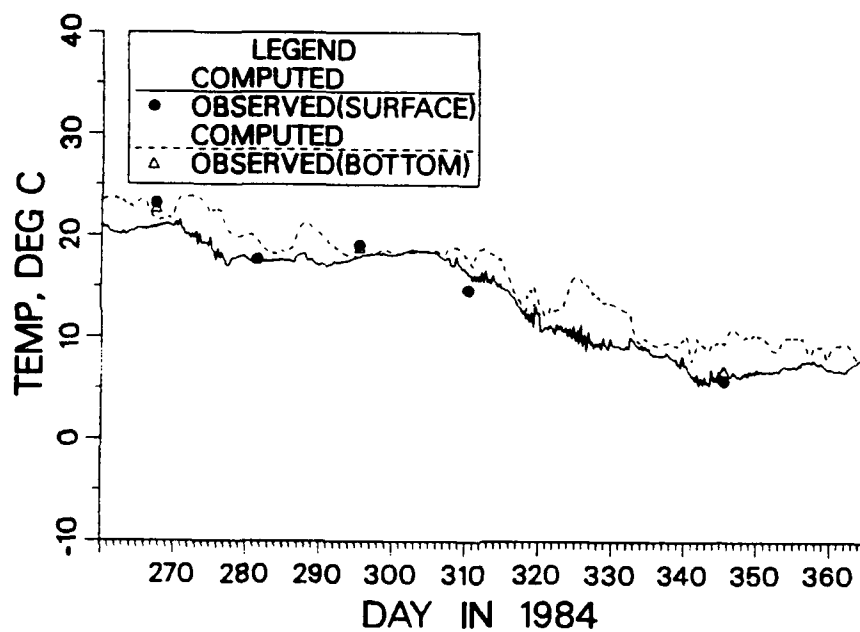


Figure A48. (Sheet 3 of 3)

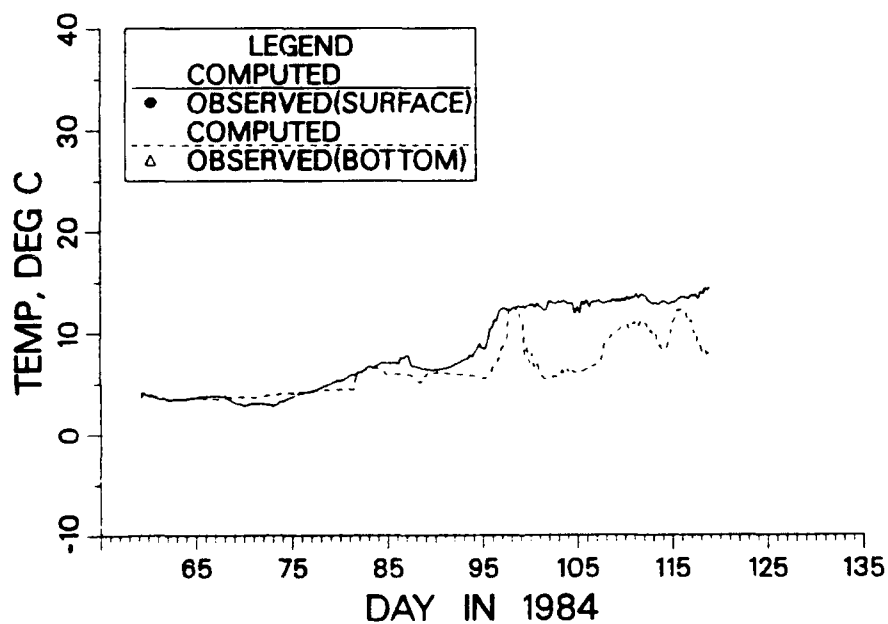
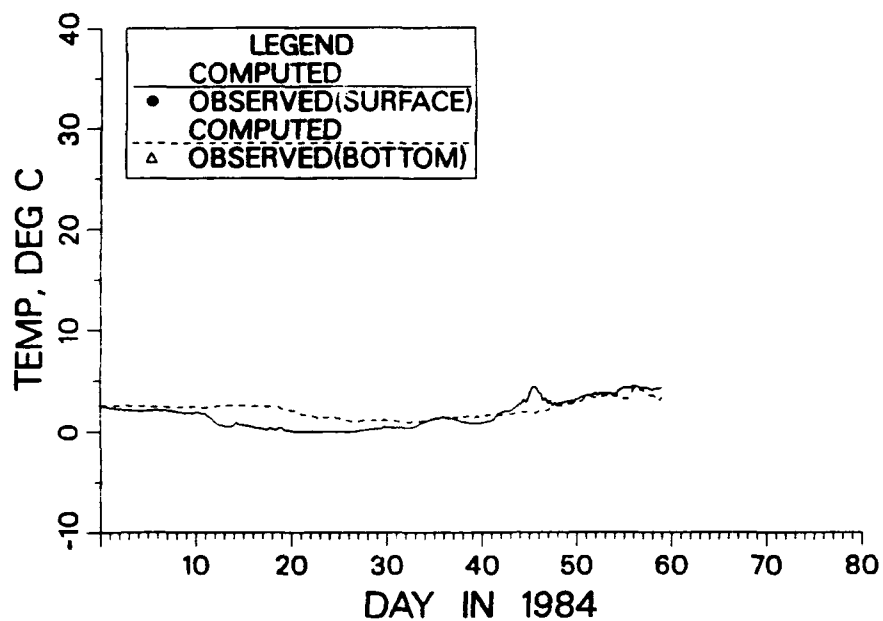


Figure A49. Comparison of computed and recorded temperature at sta CB 3.1 during 1984 (Sheet 1 of 3)

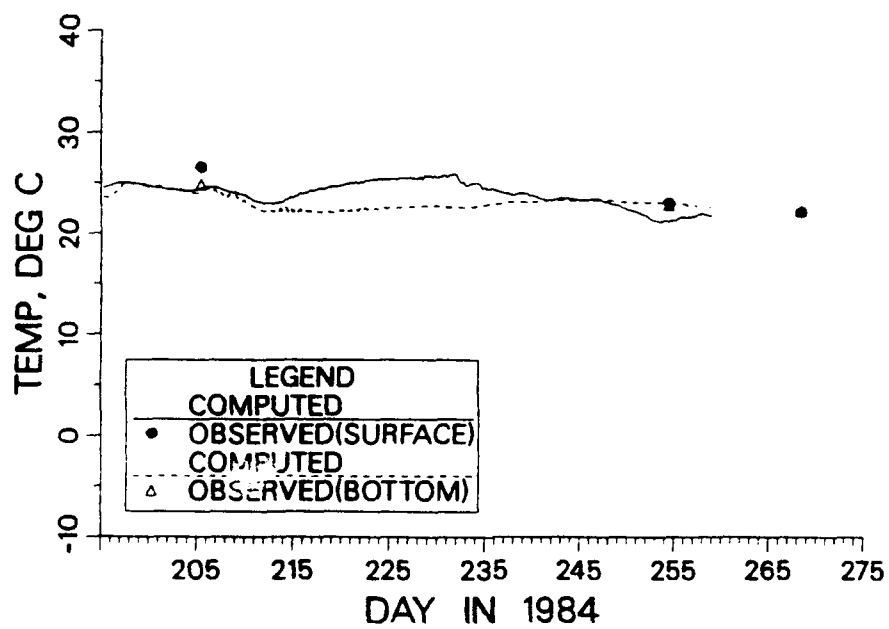
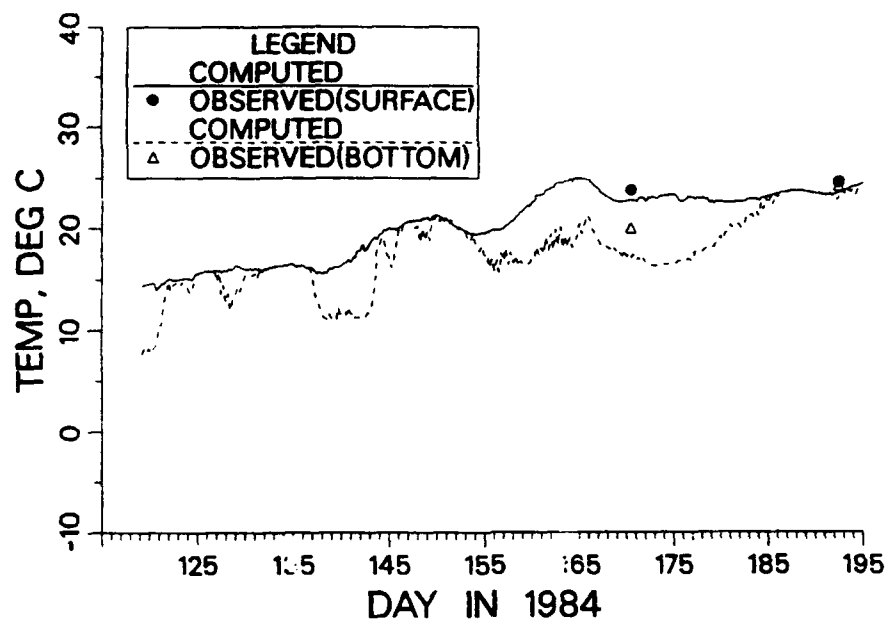


Figure A49. (Sheet 2 of 3)

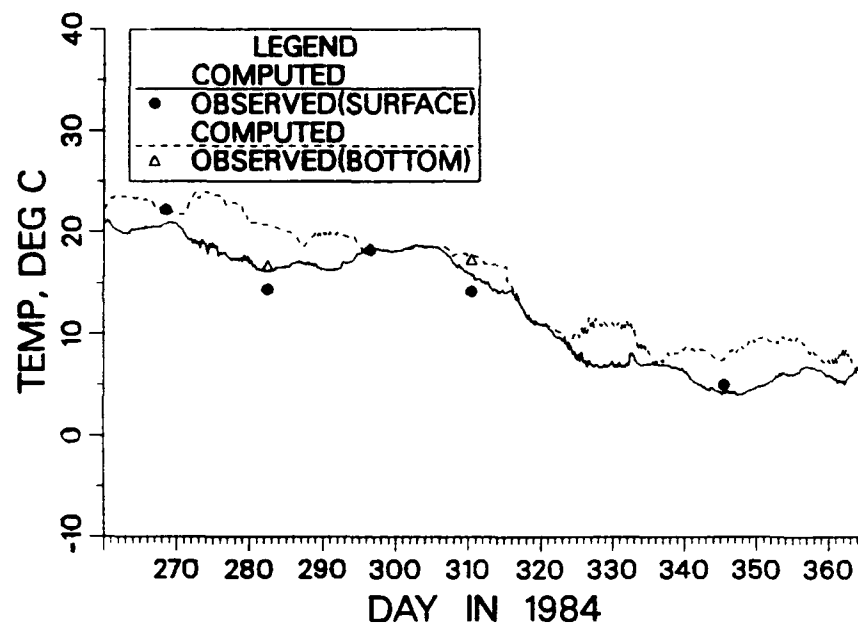


Figure A49. (Sheet 3 of 3)

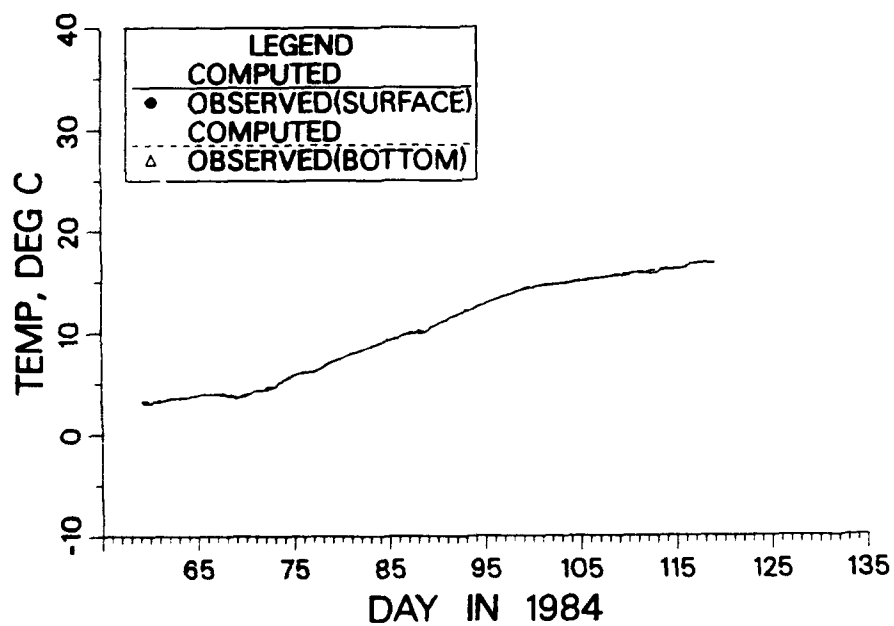
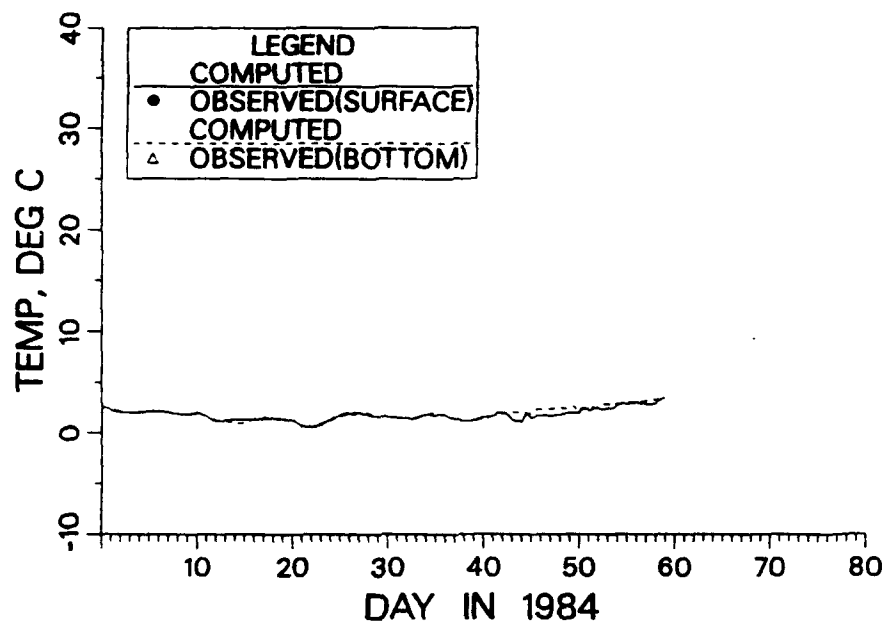


Figure A50. Comparison of computed and recorded temperature at sta CB 1.1 during 1984 (Sheet 1 of 3)

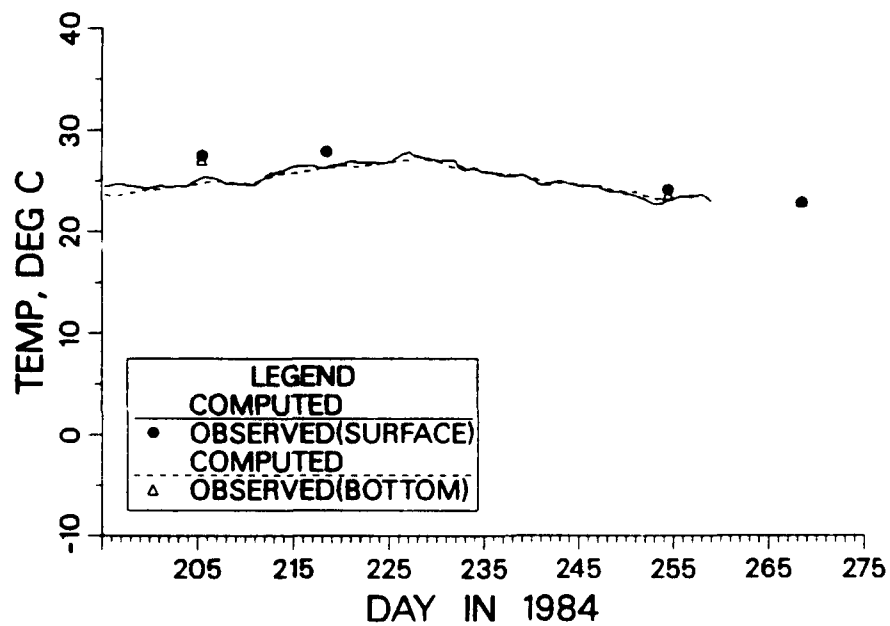
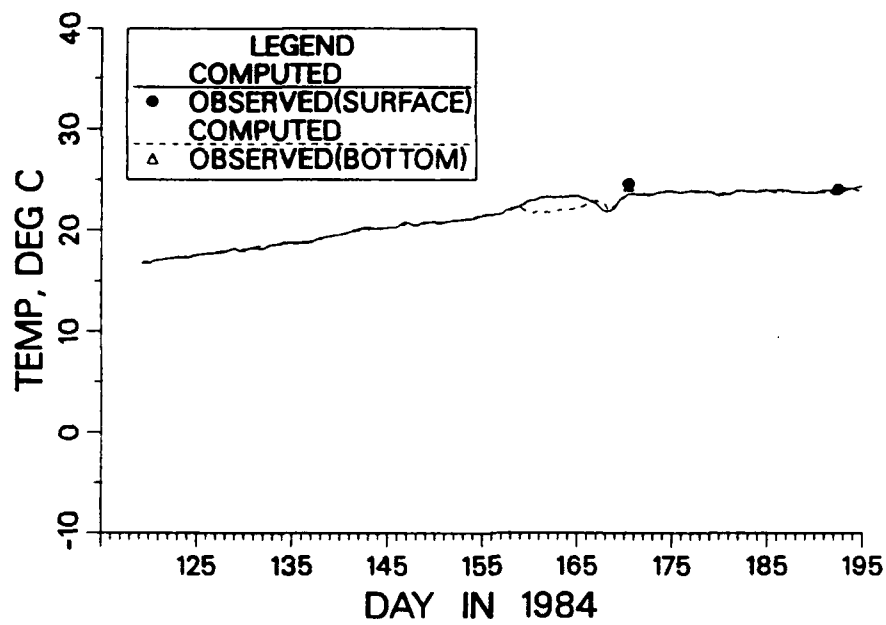


Figure A50. (Sheet 2 of 3)

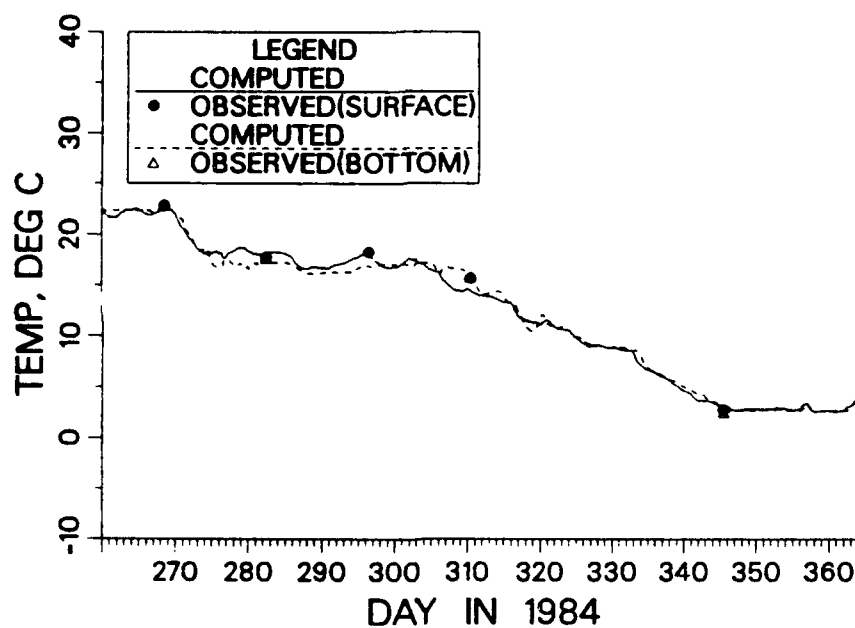


Figure A50. (Sheet 3 of 3)

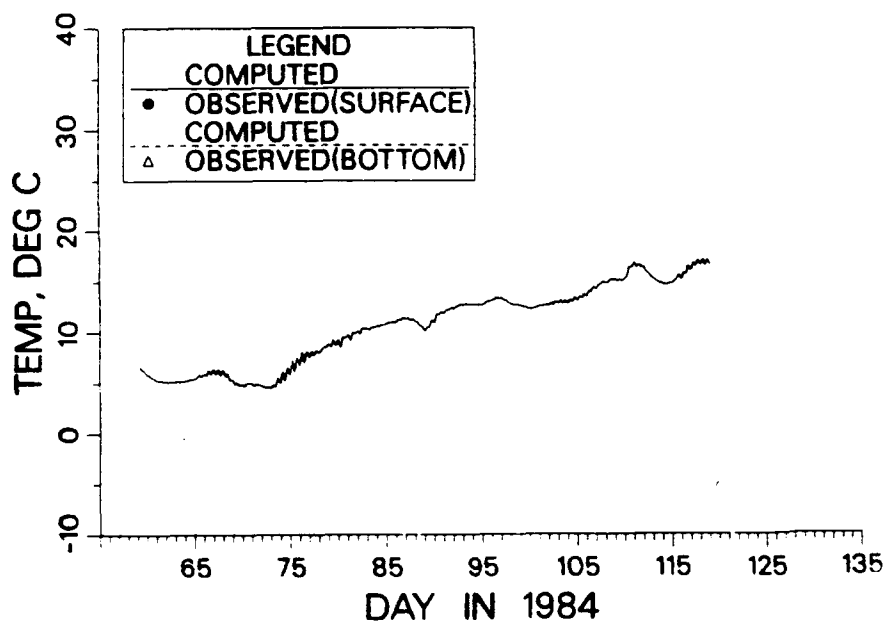
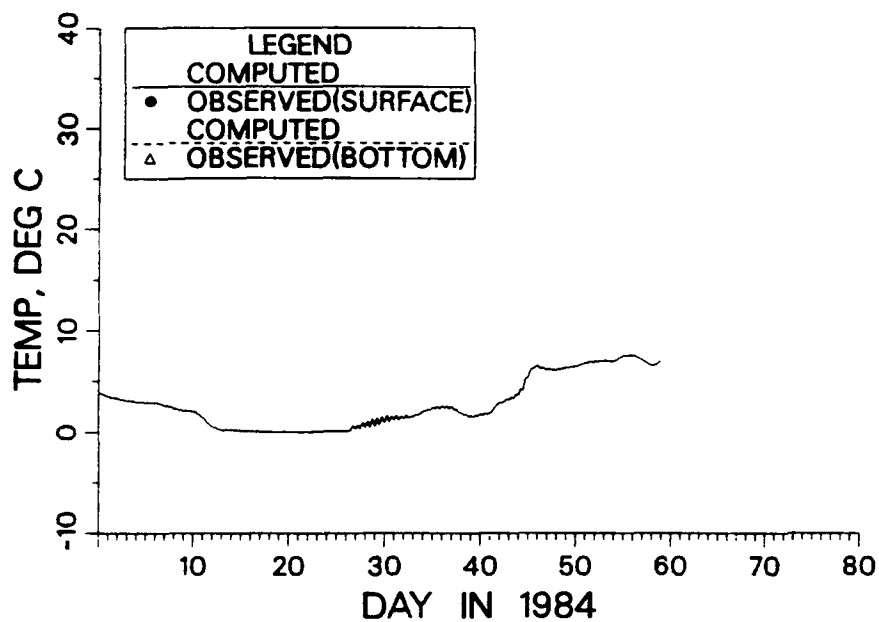


Figure A51. Comparison of computed and recorded temperature at sta TF 5.6 during 1984 (Sheet 1 of 3)

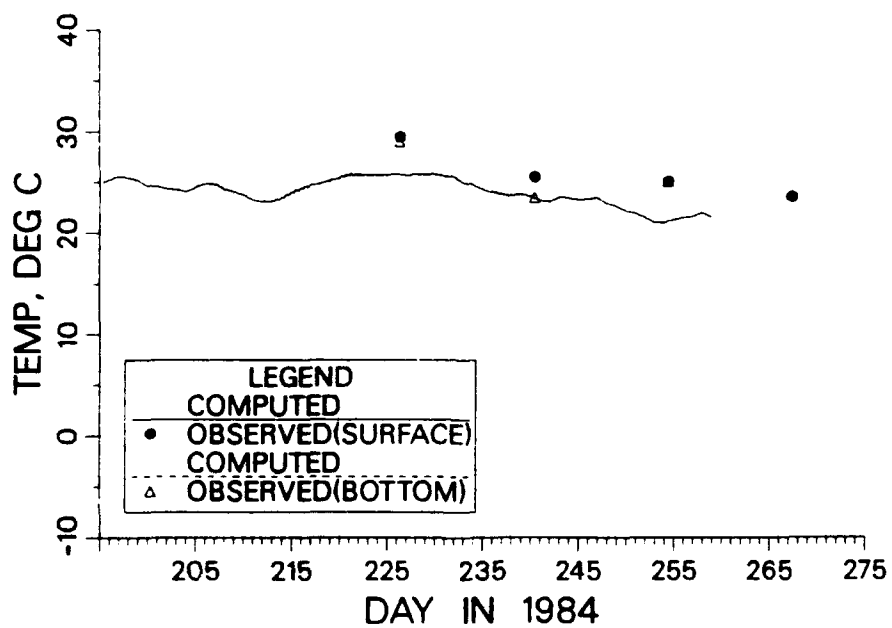
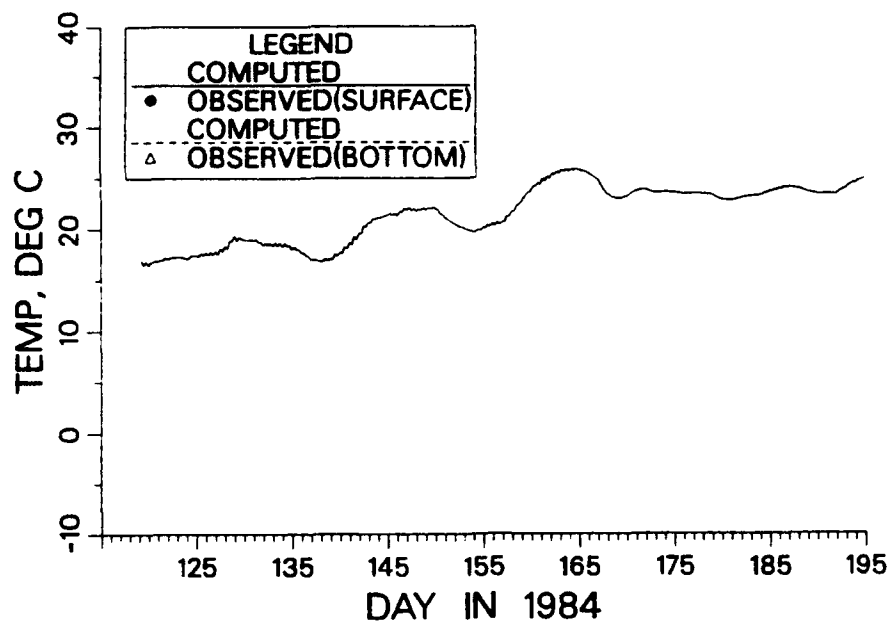


Figure A51. (Sheet 2 of 3)

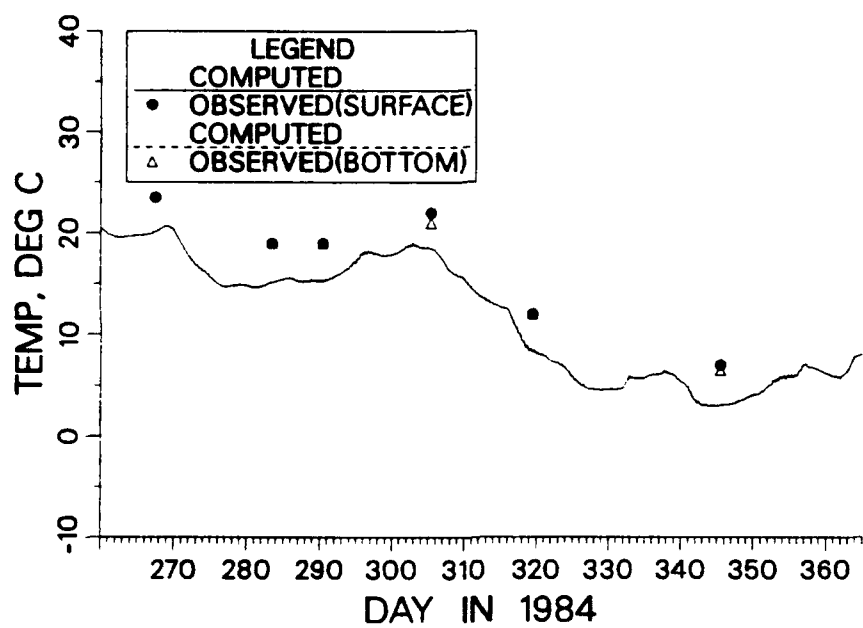


Figure A51. (Sheet 3 of 3)

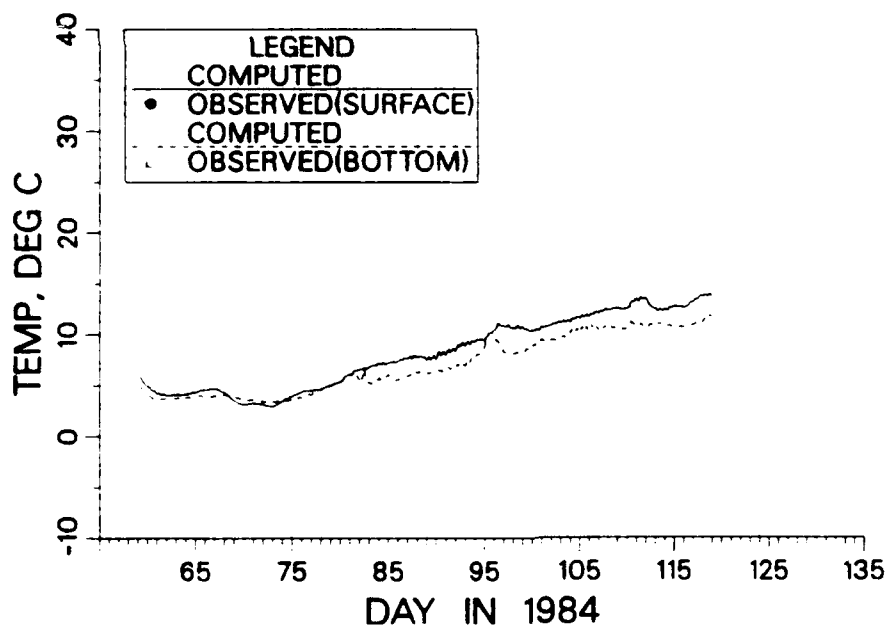
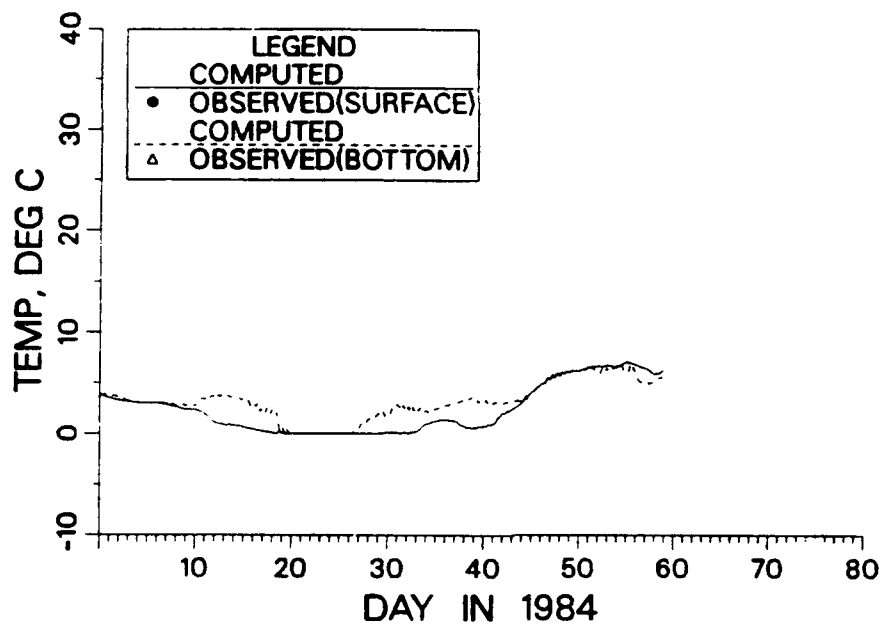


Figure A52. Comparison of computed and recorded temperature at sta LE 5.2 during 1984 (Sheet 1 of 3)

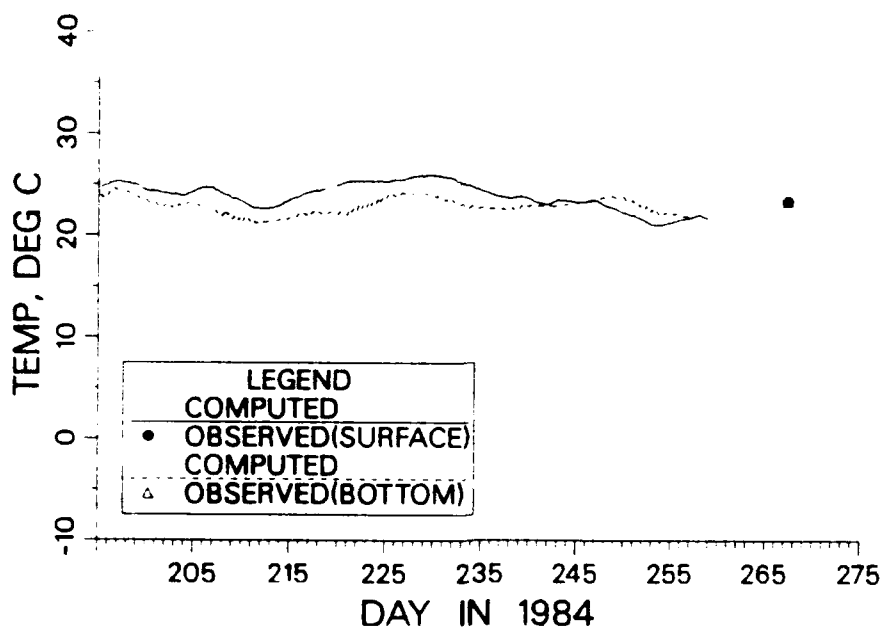
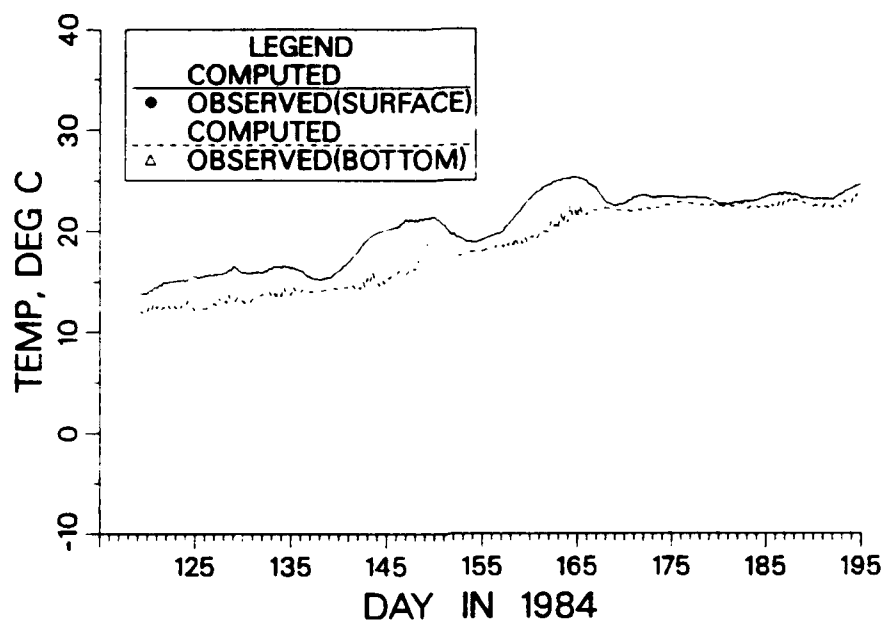


Figure A52. (Sheet 2 of 3)

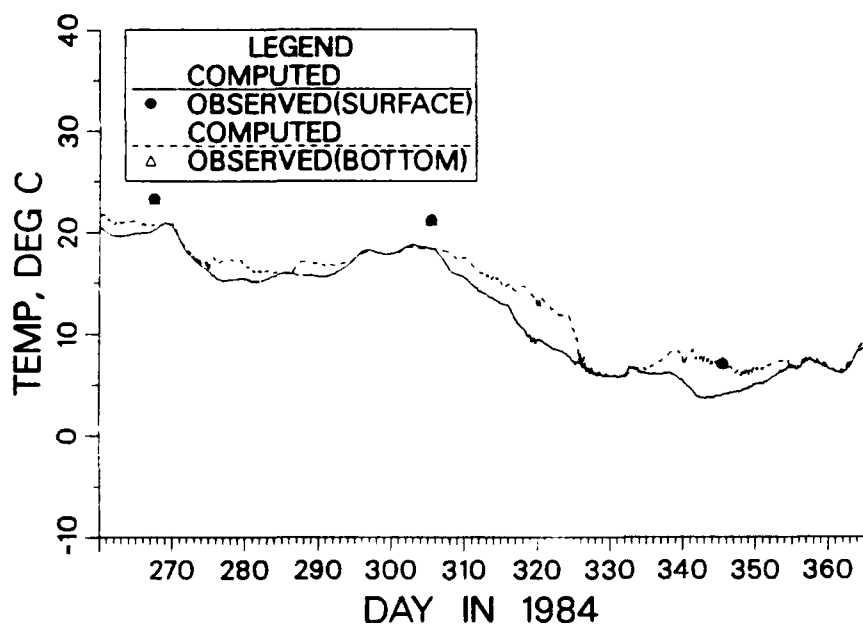


Figure A52. (Sheet 3 of 3)

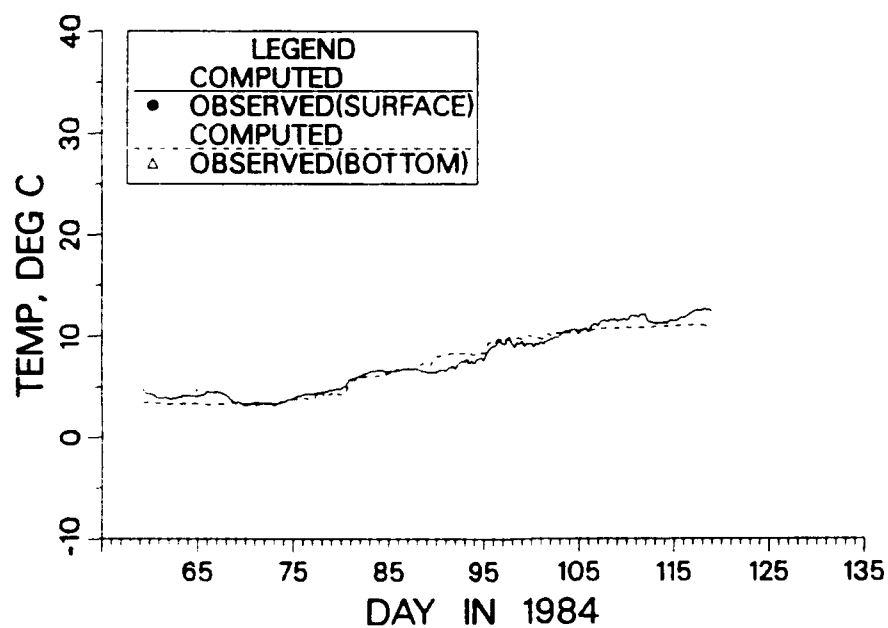
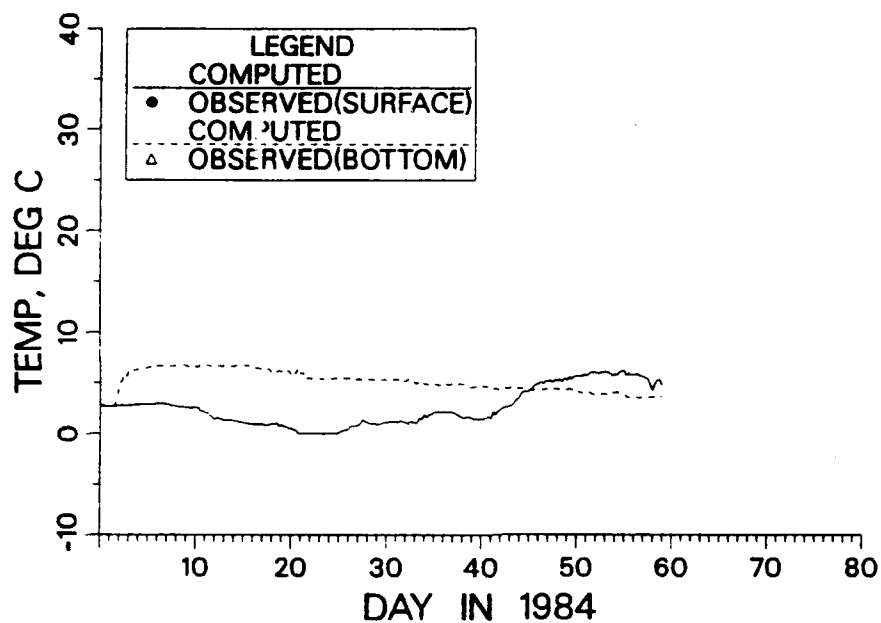


Figure A53. Comparison of computed and recorded temperature at sta LE 5.5 during 1984 (Sheet 1 of 3)

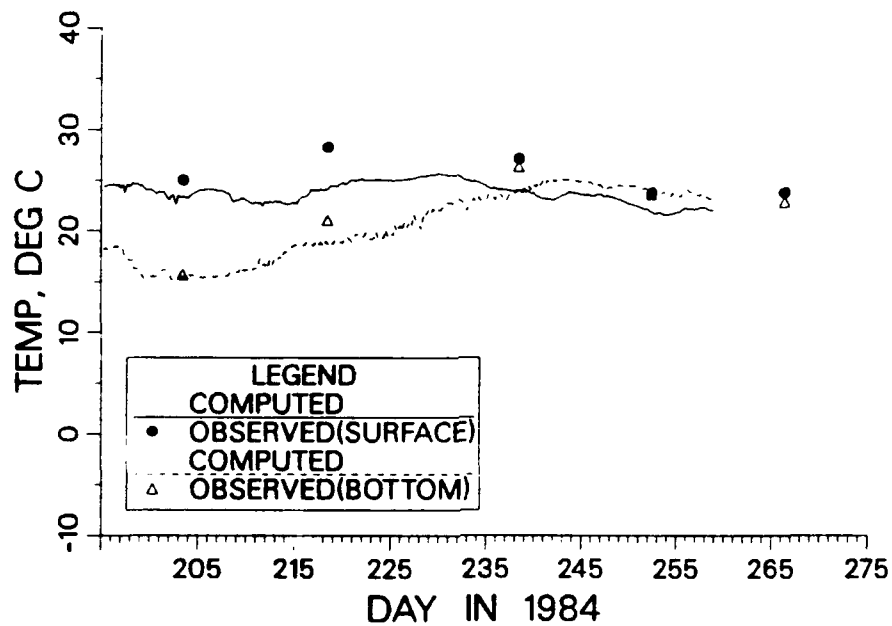
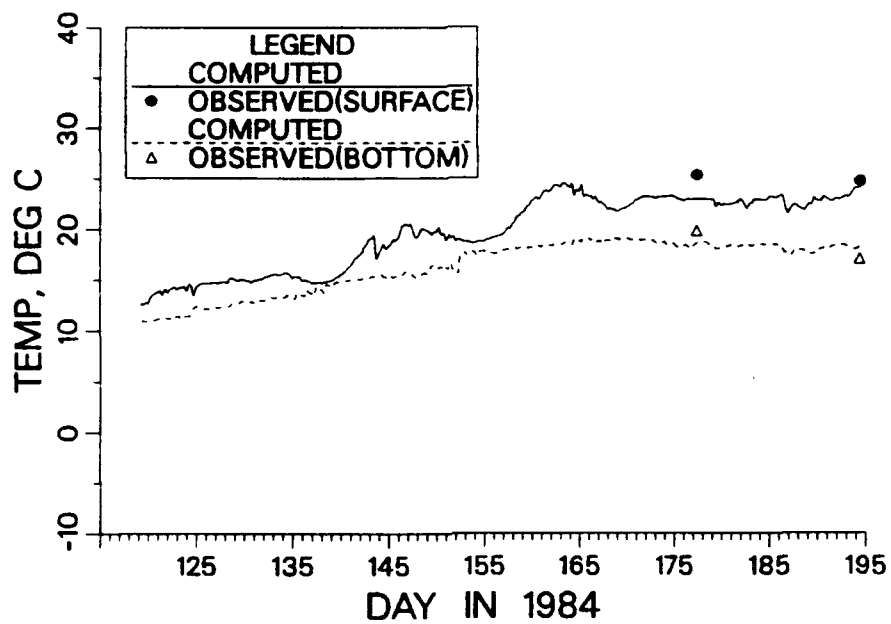


Figure A53. (Sheet 2 of 3)

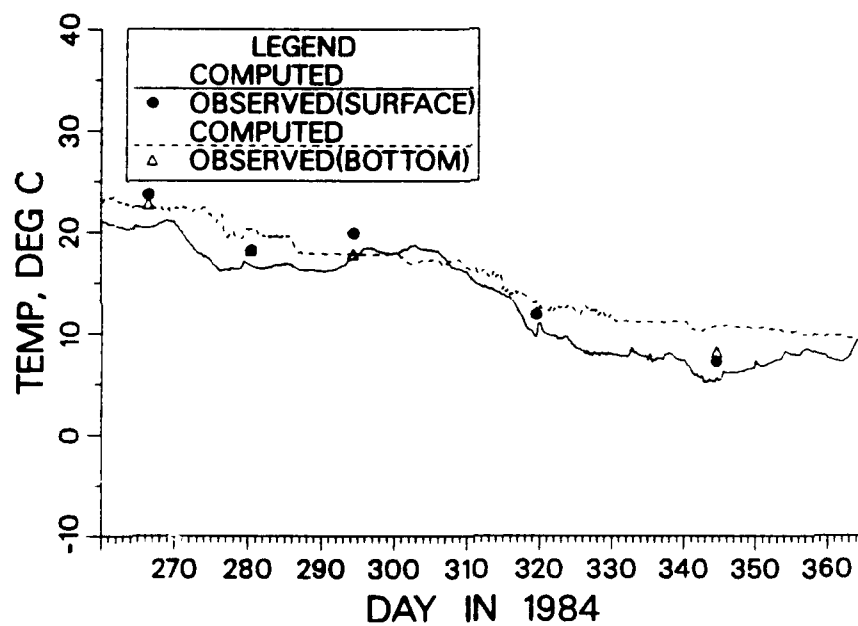


Figure A53. (Sheet 3 of 3)

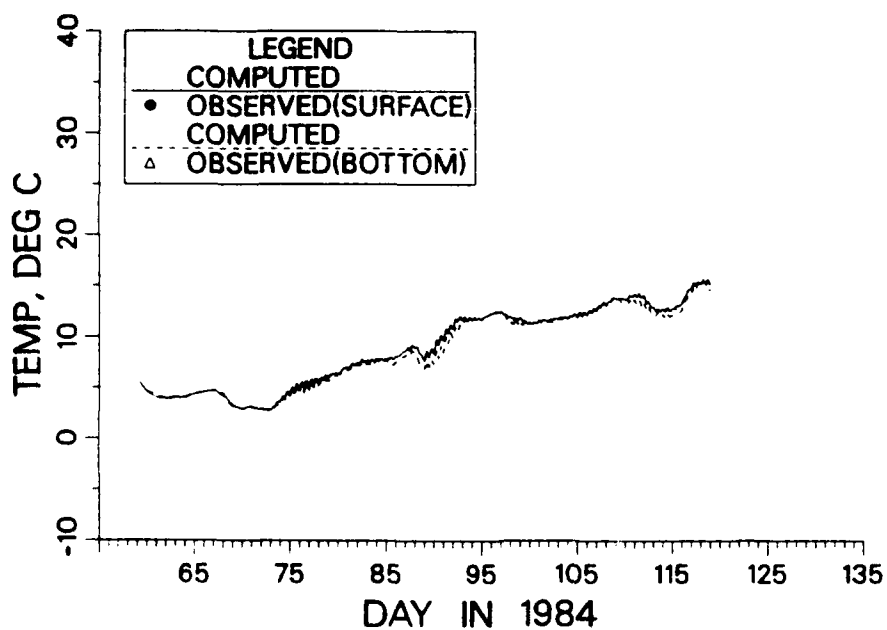
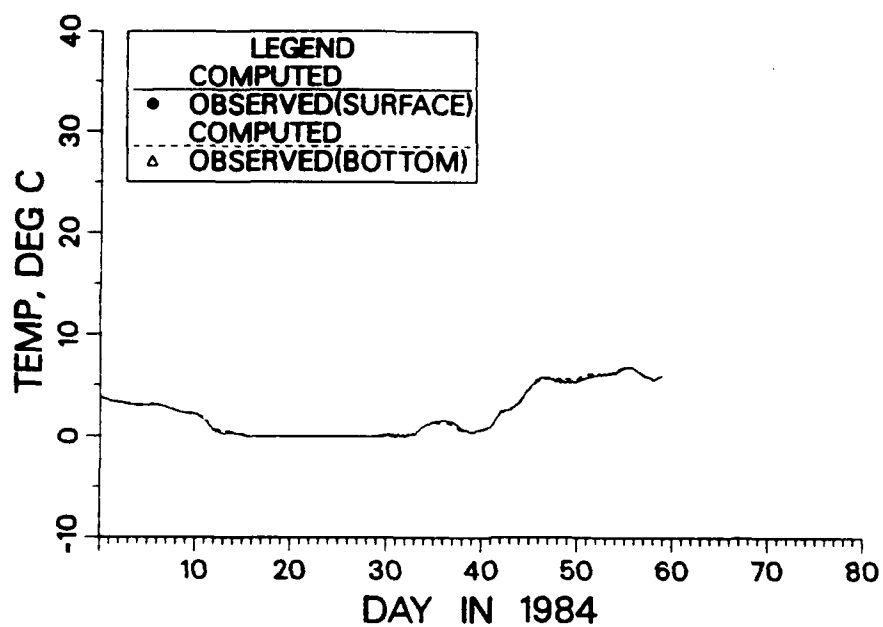


Figure A54. Comparison of computed and recorded temperature at sta RET 4.3 during 1984 (Sheet 1 of 3)

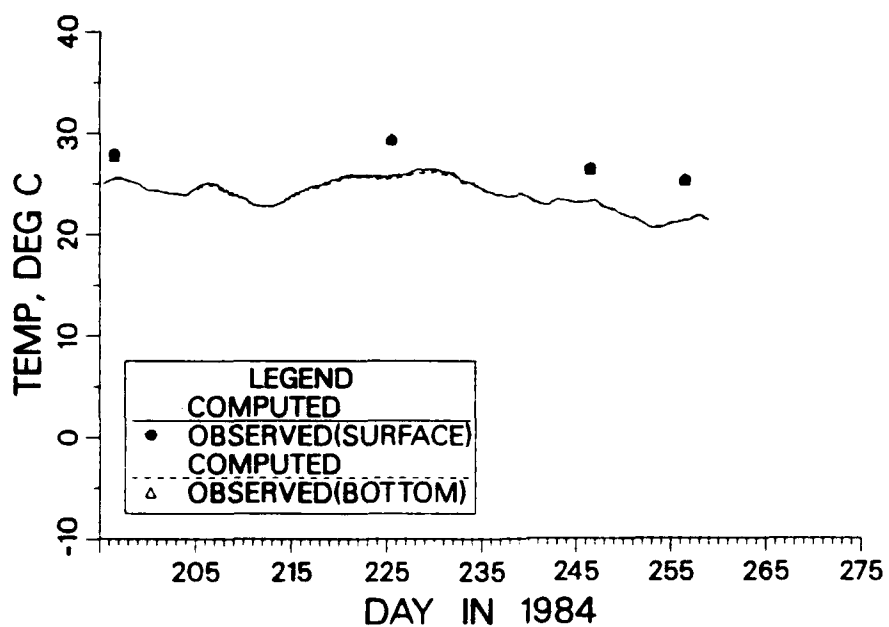
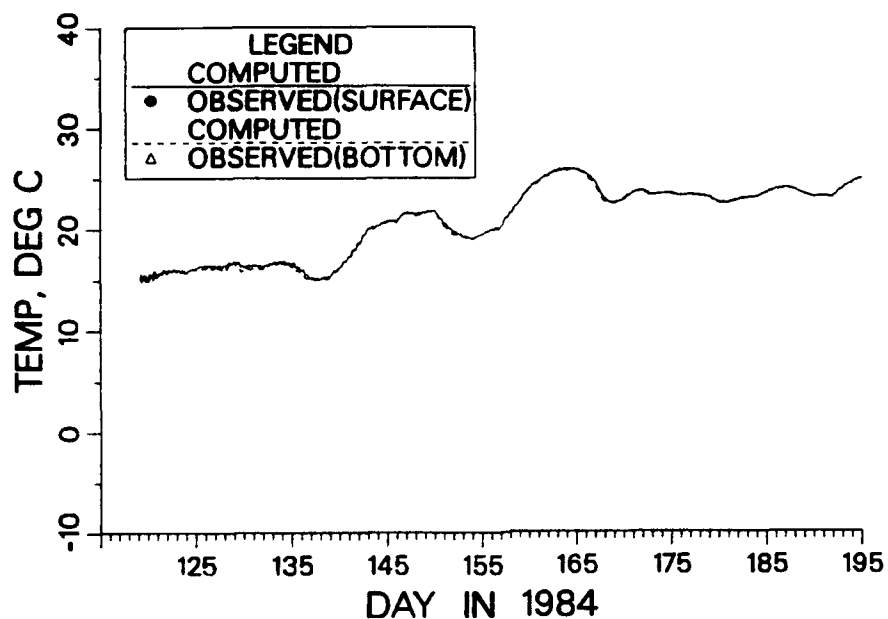


Figure A54. (Sheet 2 of 3)

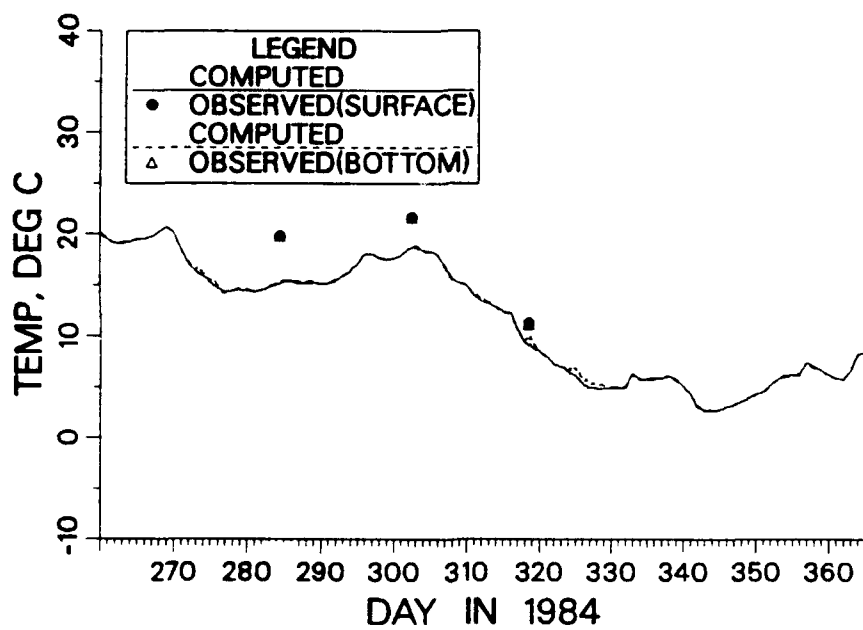


Figure A54. (Sheet 3 of 3)

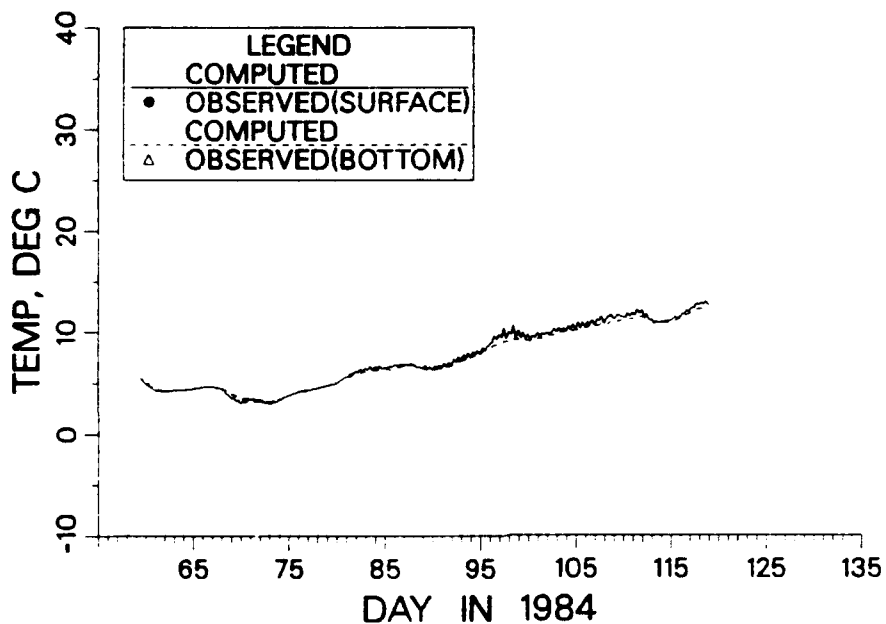
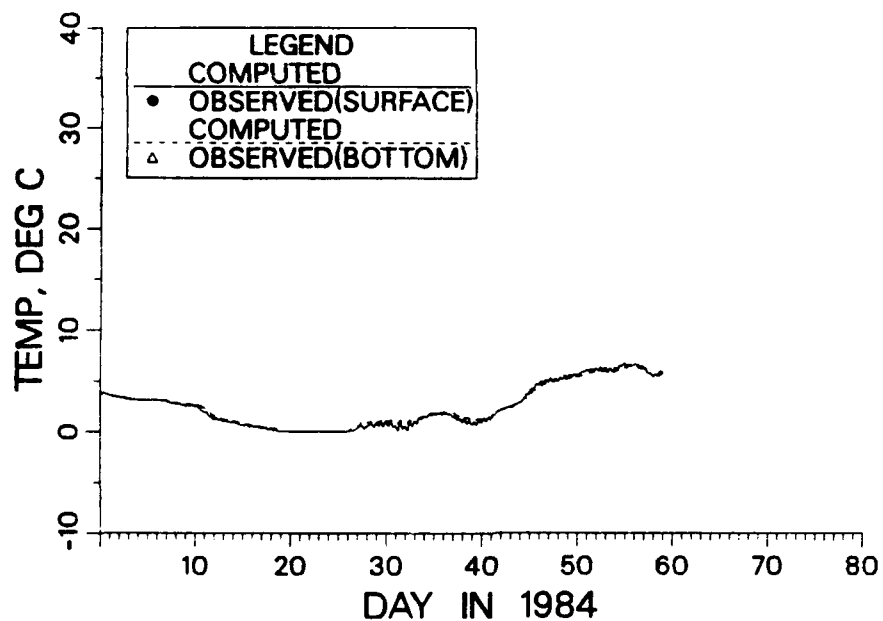


Figure A55. Comparison of computed and recorded temperature at sta LE 4.2 during 1984 (Sheet 1 of 3)

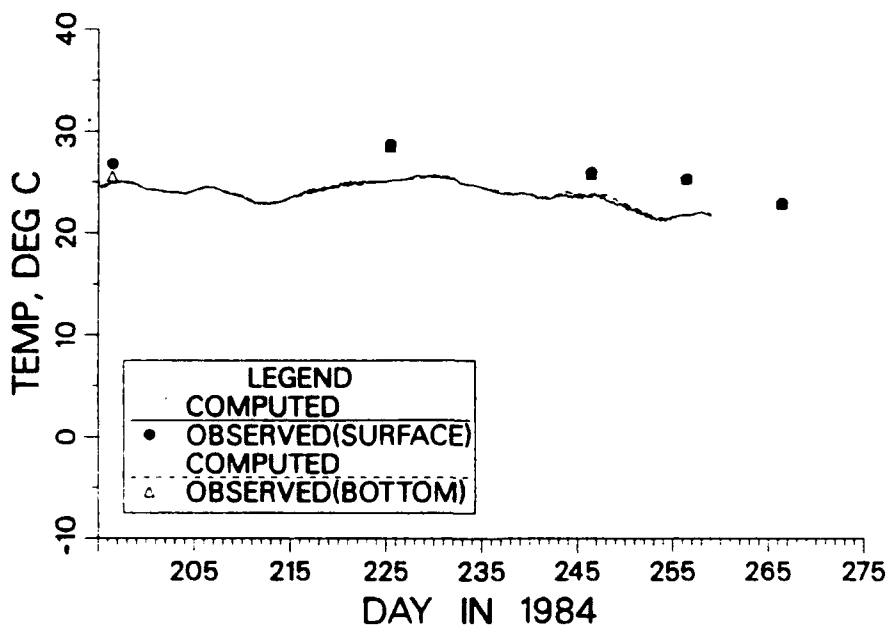
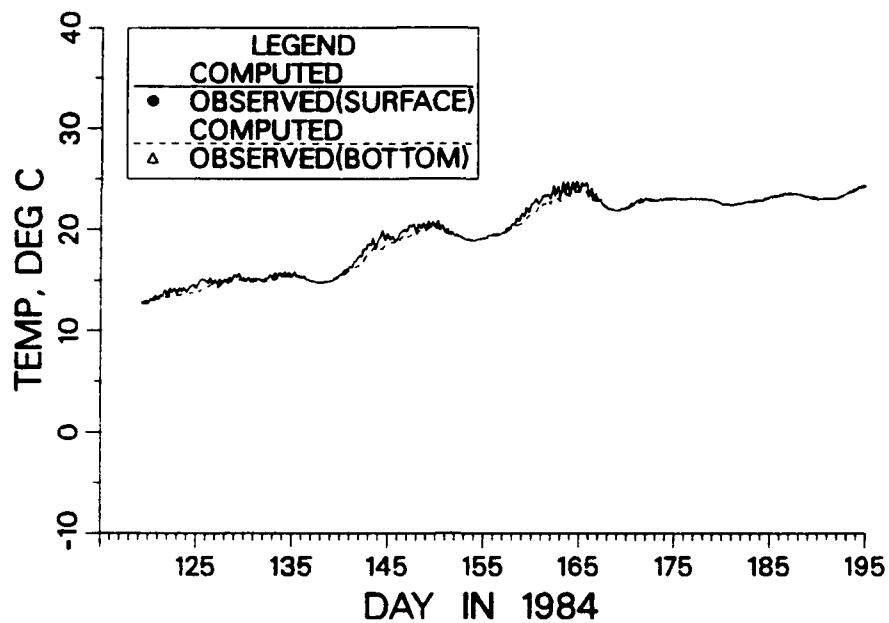


Figure A55. (Sheet 2 of 3)

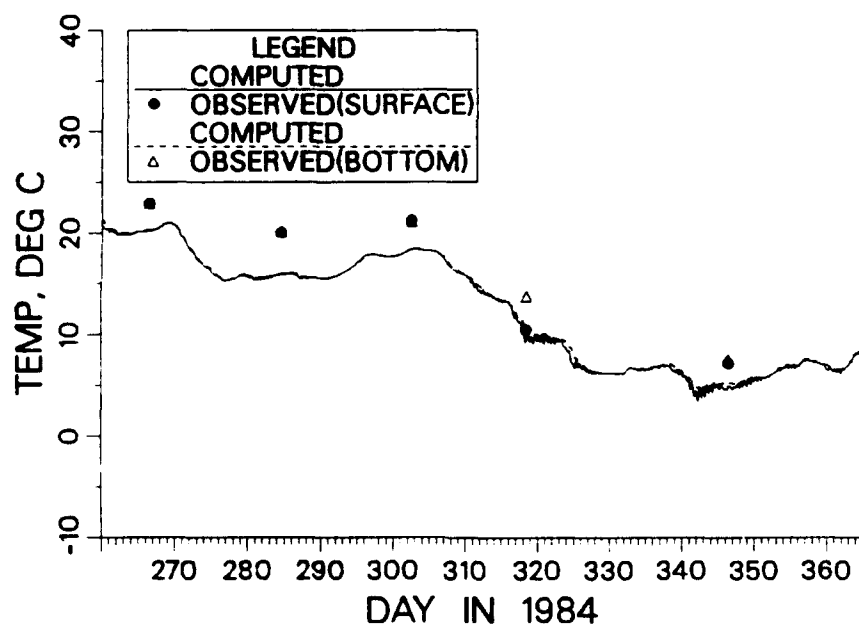


Figure A55. (Sheet 3 of 3)

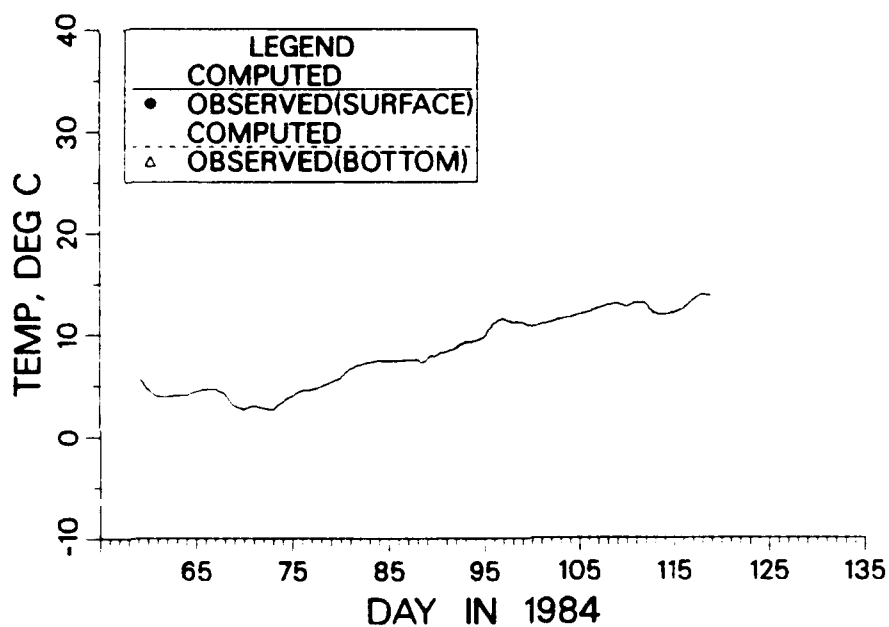
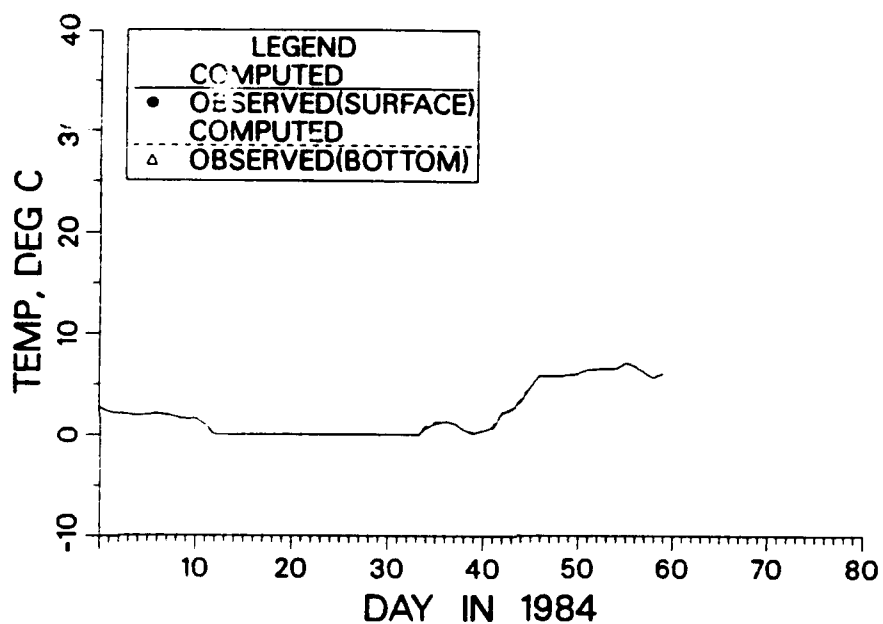


Figure A56. Comparison of computed and recorded temperature at sta TF 3.3 during 1984 (Sheet 1 of 3)

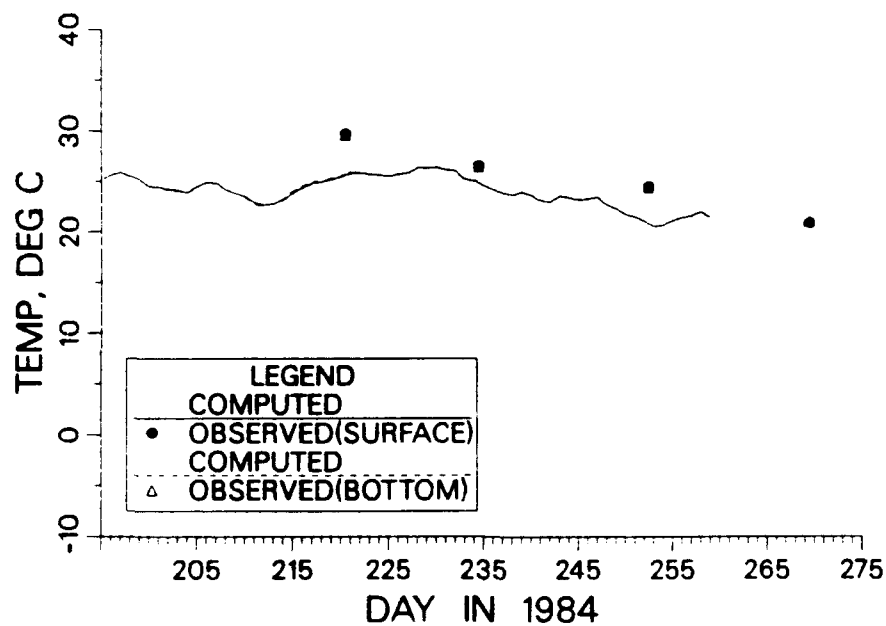
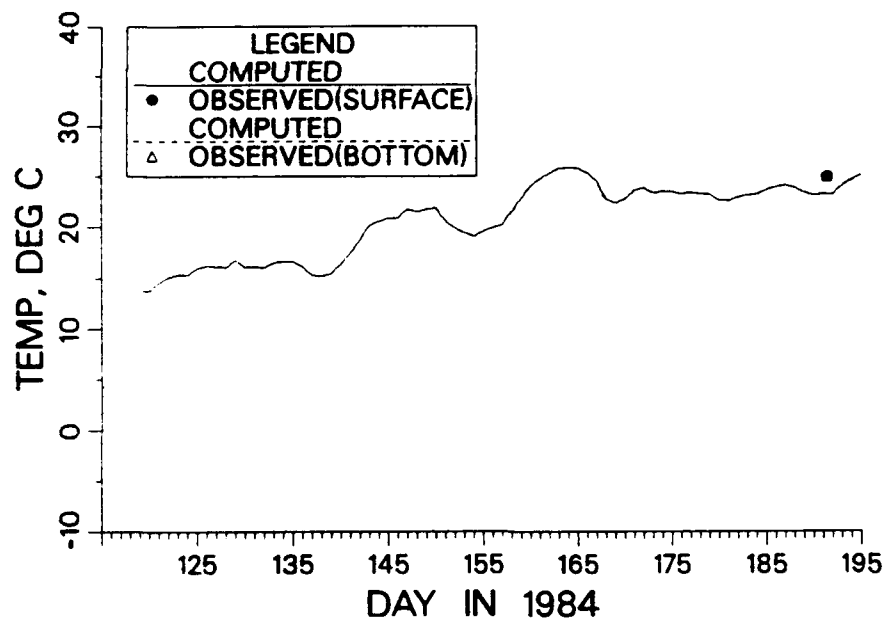


Figure A56. (Sheet 2 of 3)

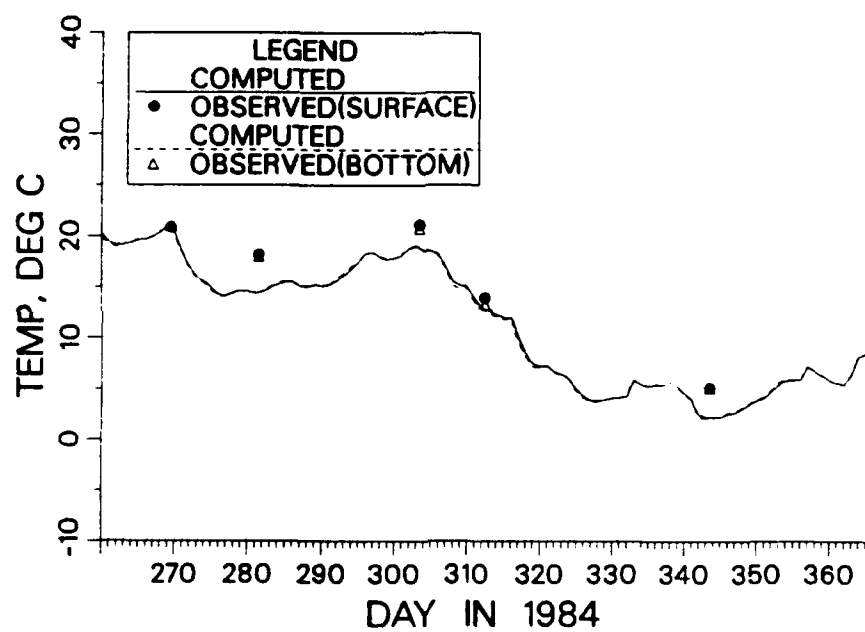


Figure A56. (Sheet 3 of 3)

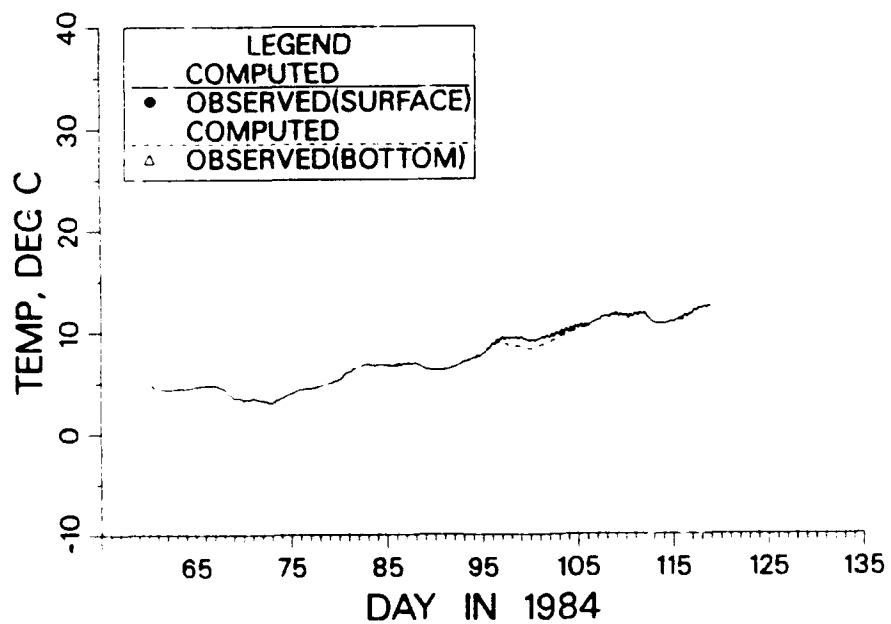
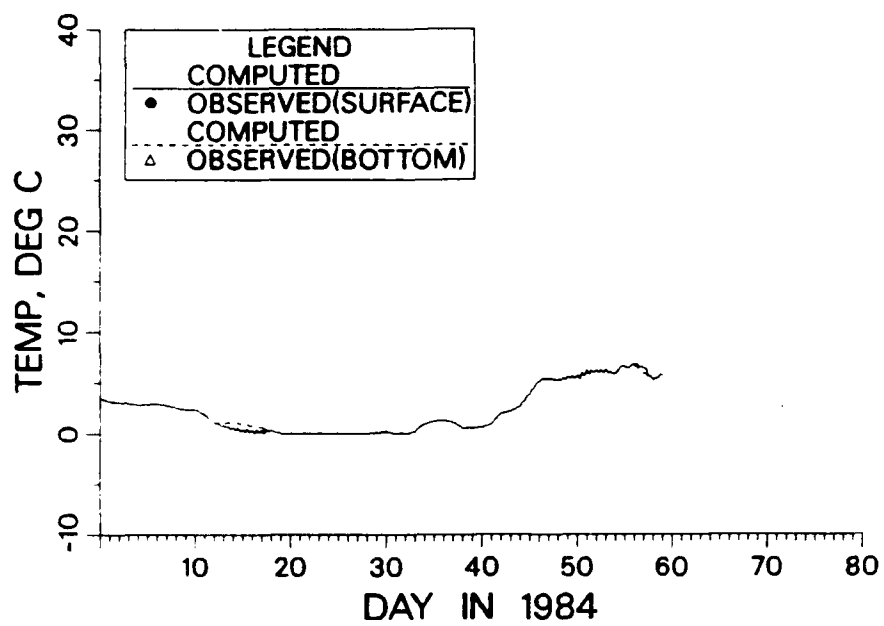


Figure A57. Comparison of computed and recorded temperature at sta LE 3.1 during 1984 (Sheet 1 of 3)

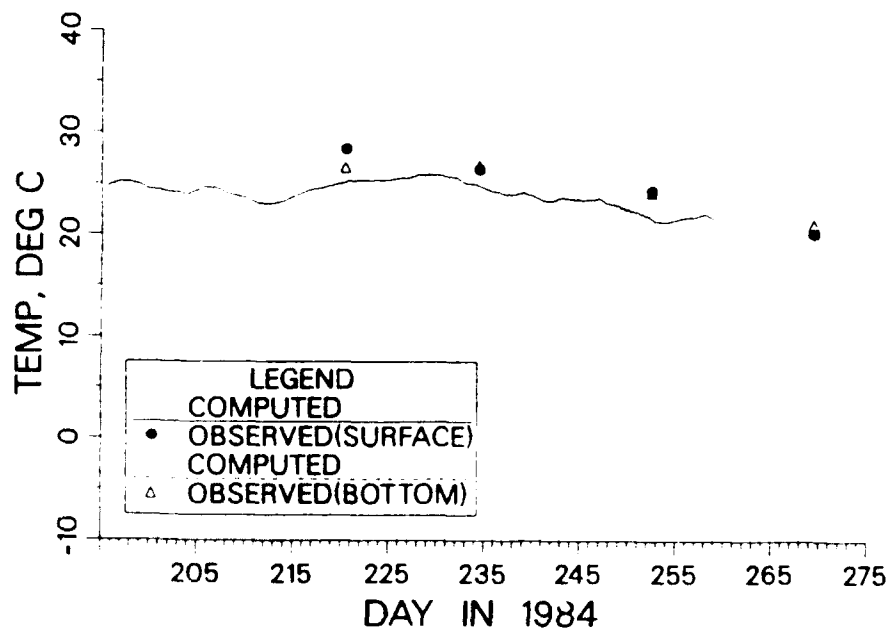
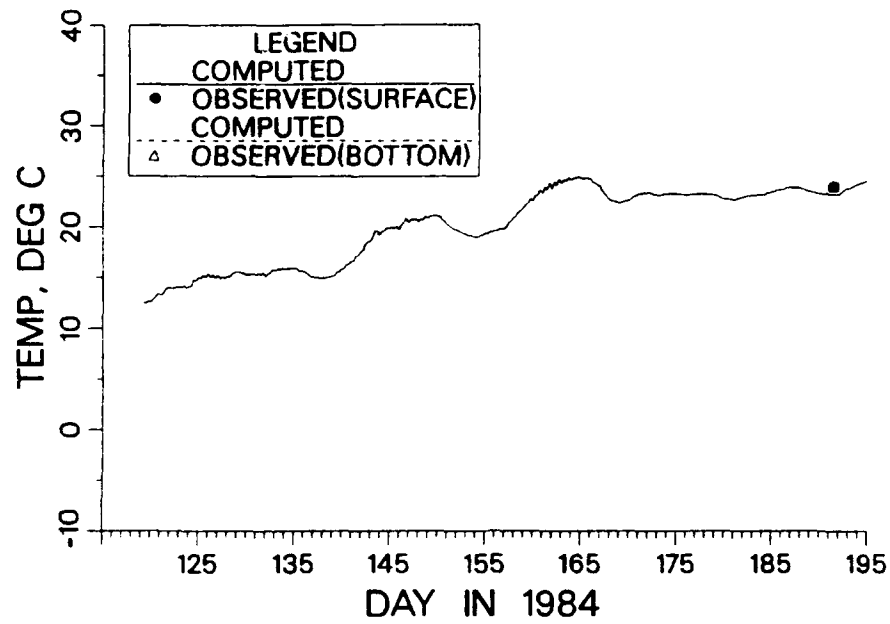


Figure A57. (Sheet 2 of 3)

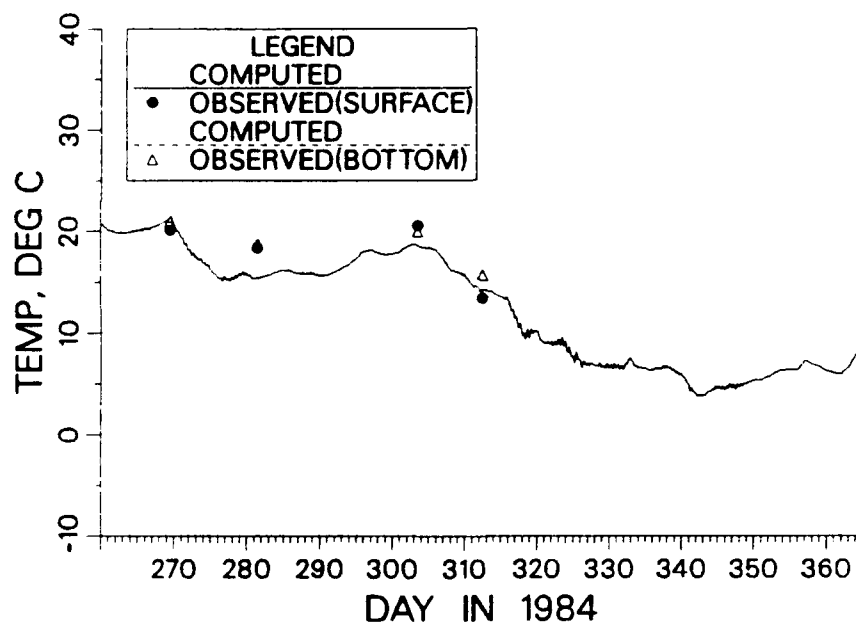


Figure A57. (Sheet 3 of 3)

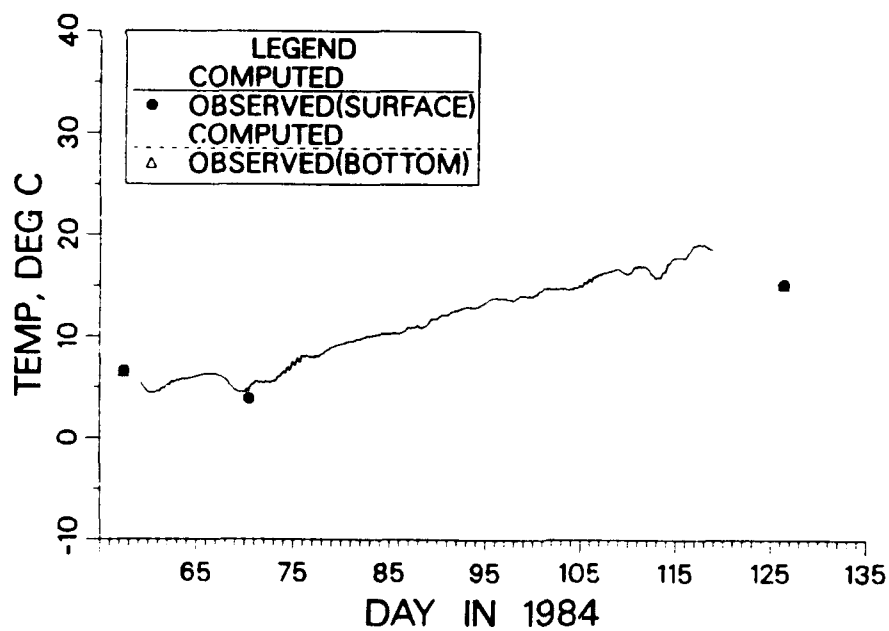
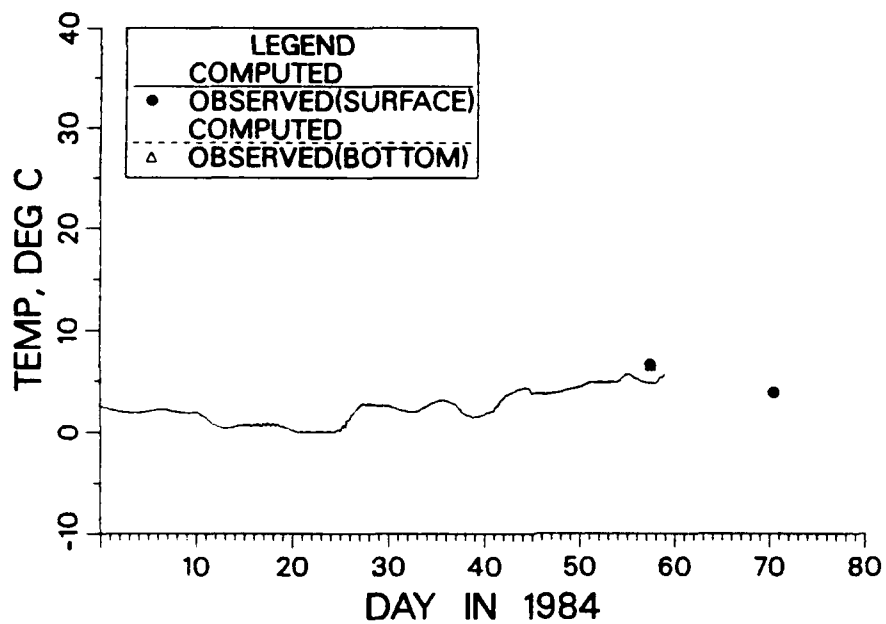


Figure A58. Comparison of computed and recorded temperature at sta XFB 247 during 1984 (Sheet 1 of 3)

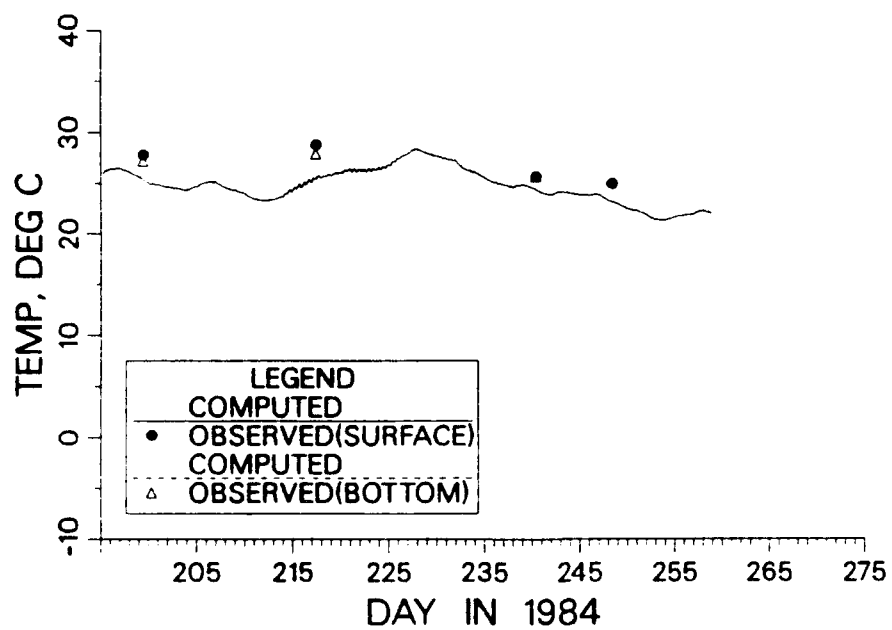
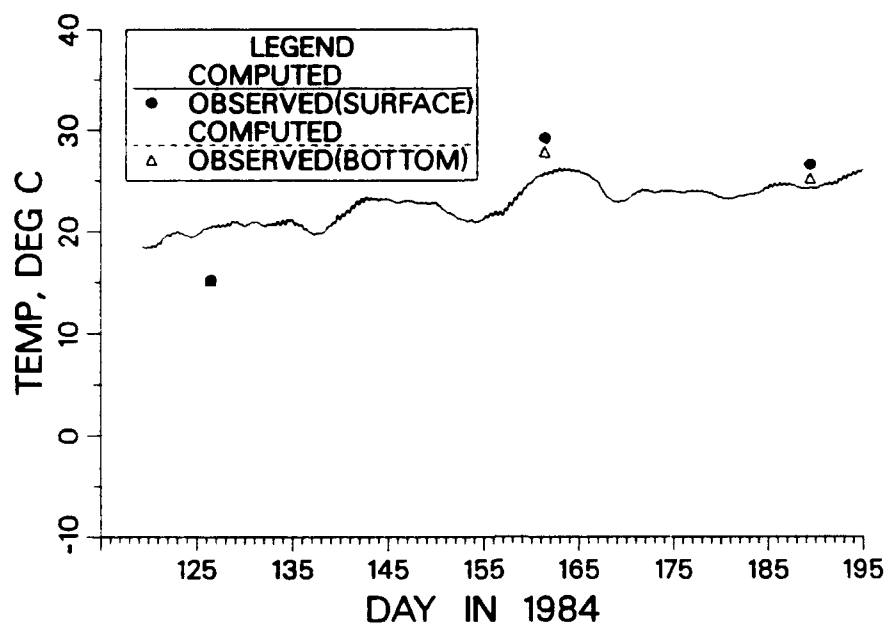


Figure A58. (Sheet 2 of 3)

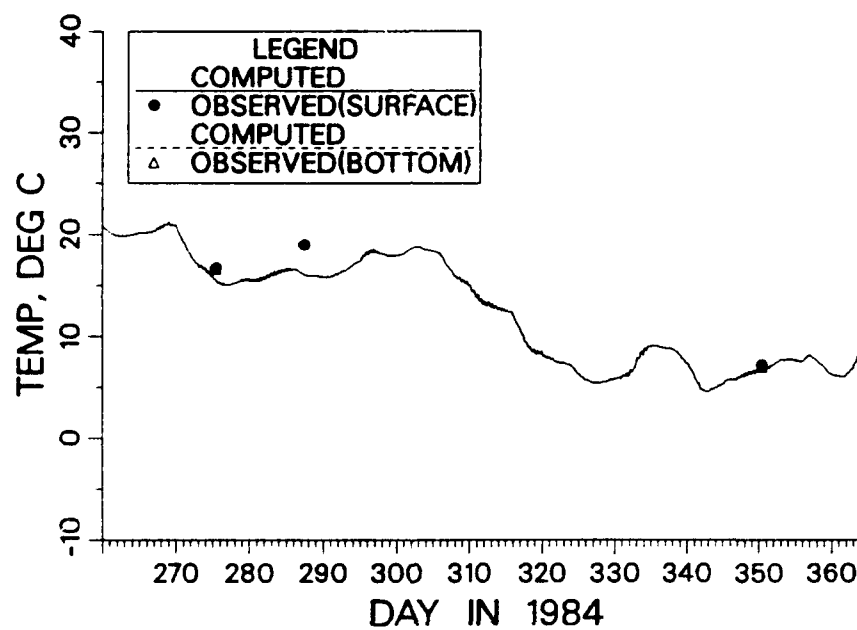


Figure A58. (Sheet 3 of 3)

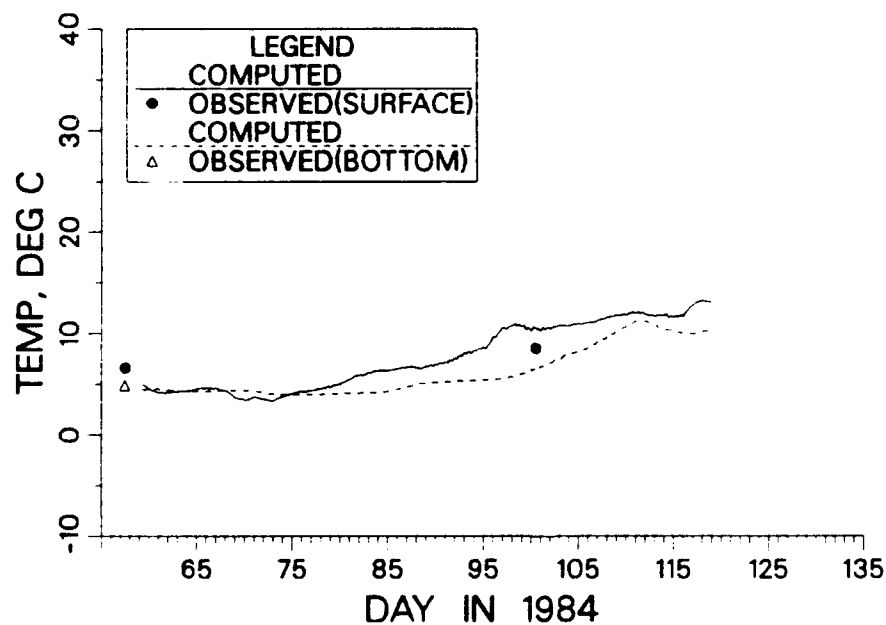
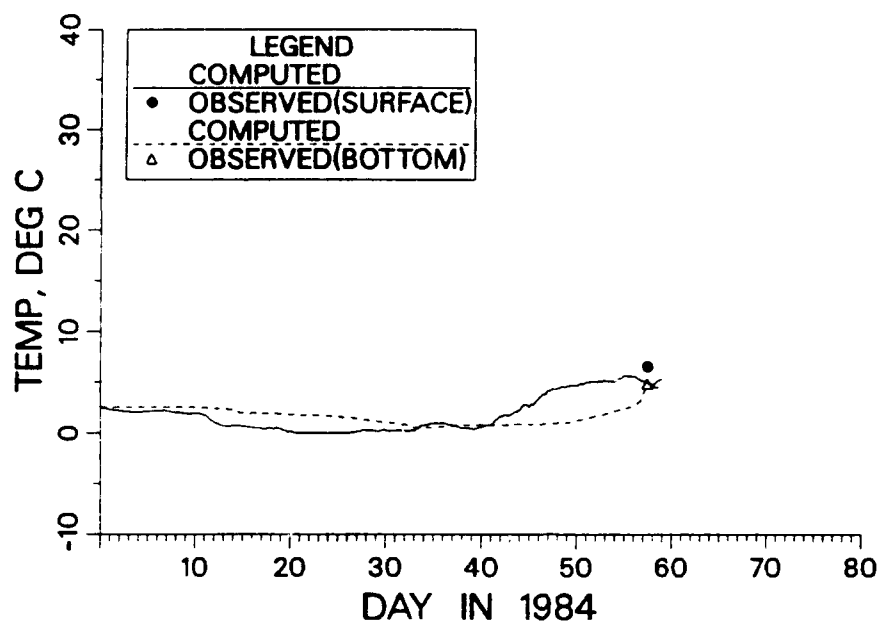


Figure A59. Comparison of computed and recorded temperature at sta RET 2.4 during 1984 (Sheet 1 of 3)

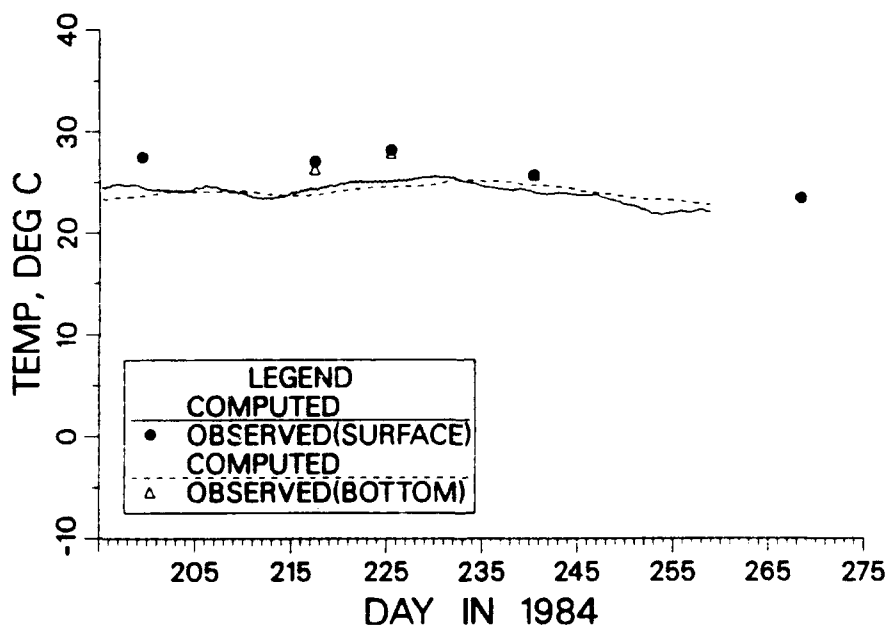
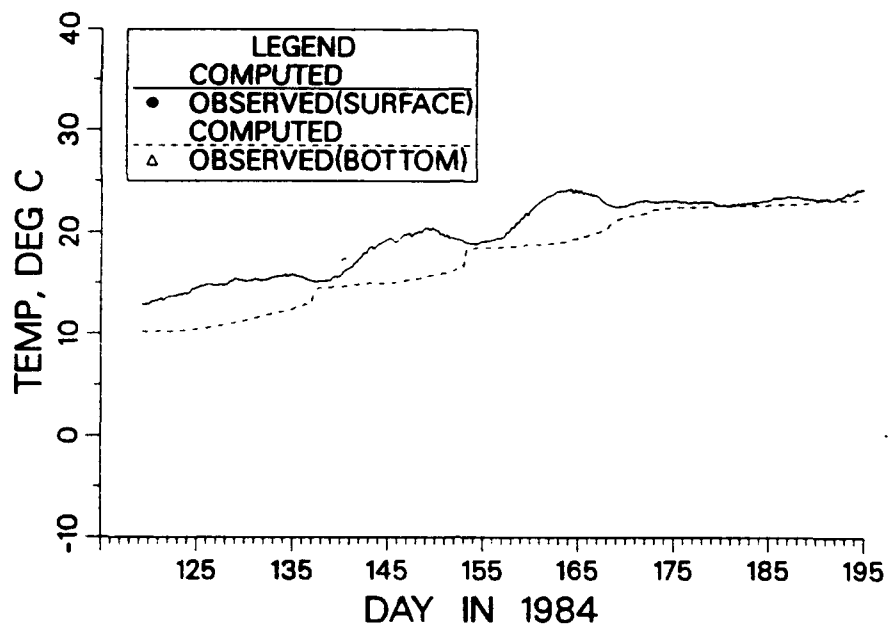


Figure A59. (Sheet 2 of 3)

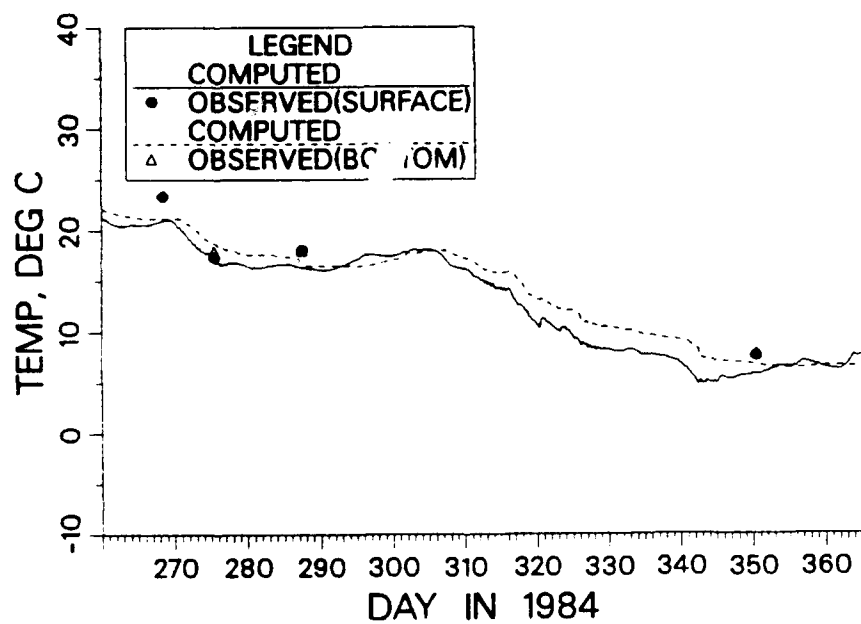


Figure A59. (Sheet 3 of 3)

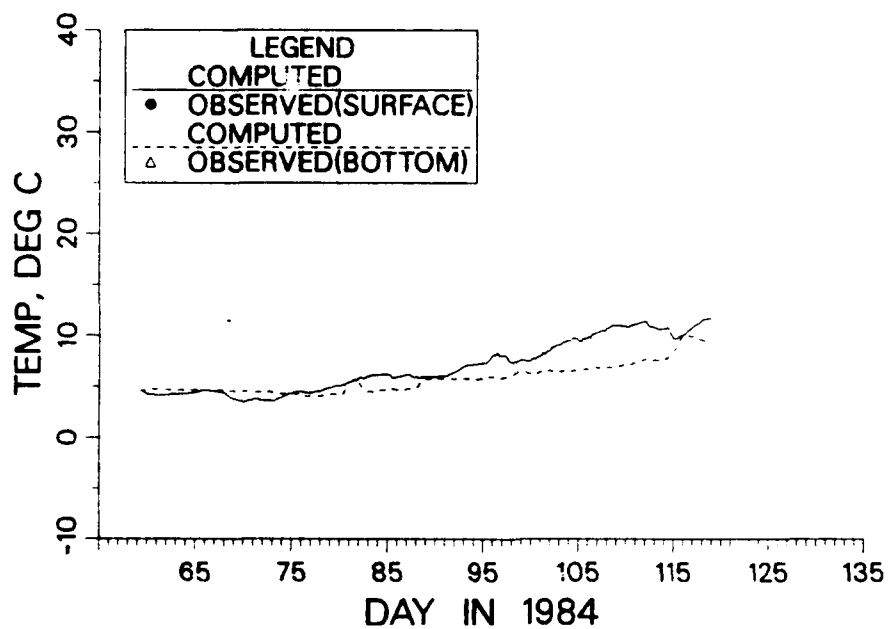
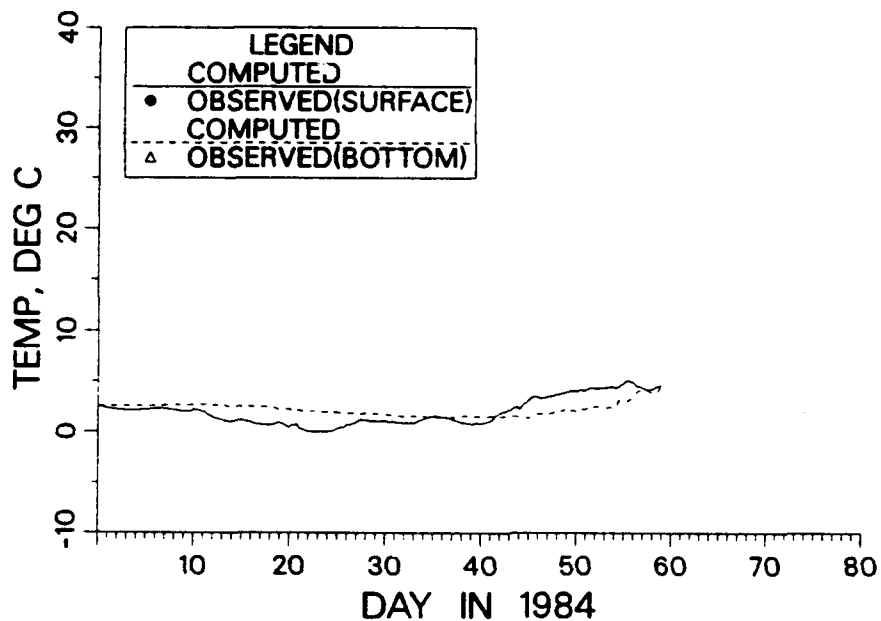


Figure A60. Comparison of computed and recorded temperature at sta LE 2.2 during 1984 (Sheet 1 of 3)

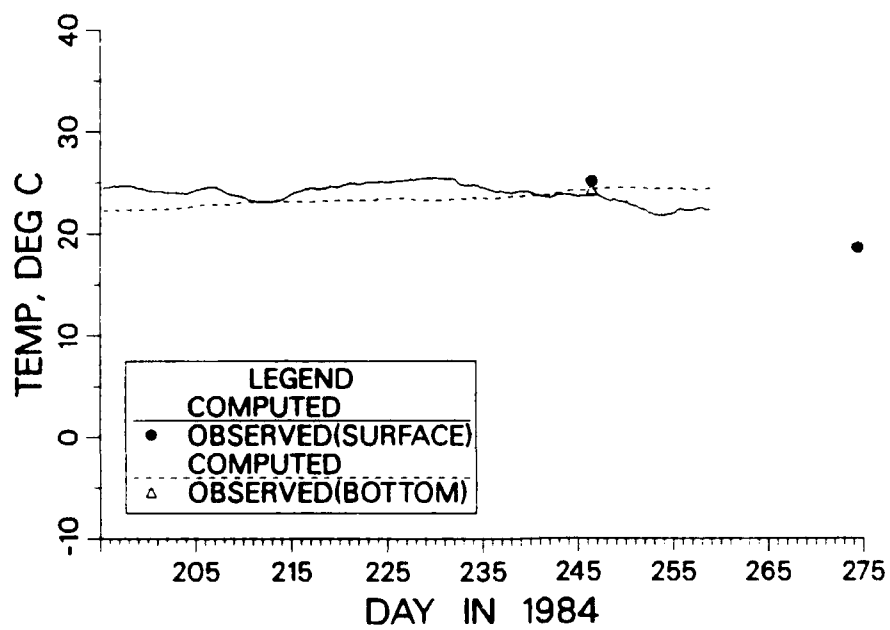
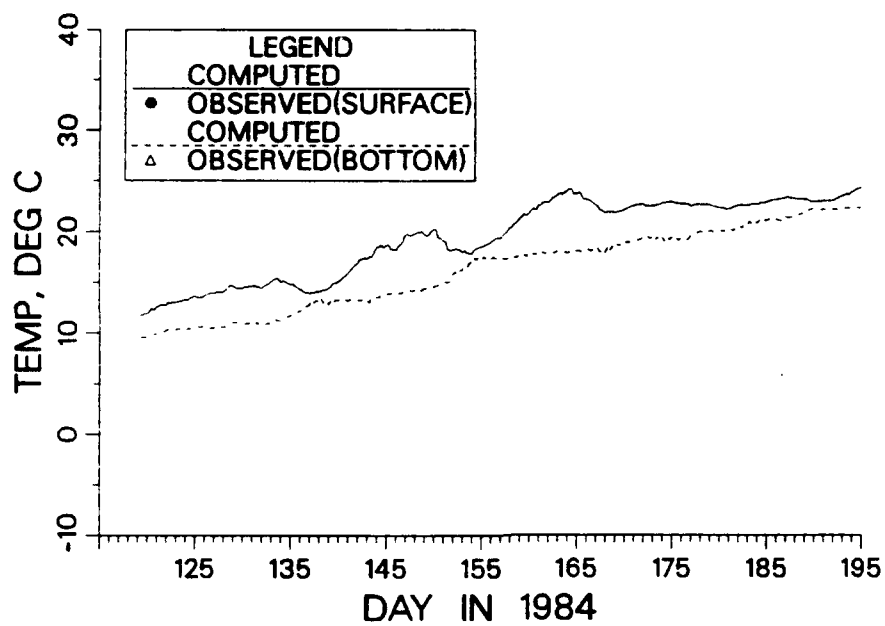


Figure A60. (Sheet 2 of 3)

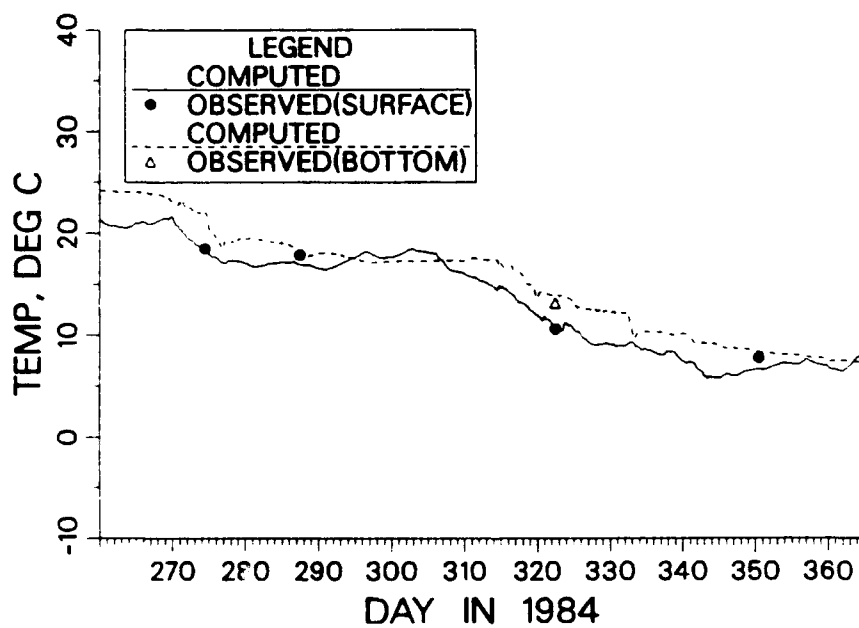


Figure A60. (Sheet 3 of 3)

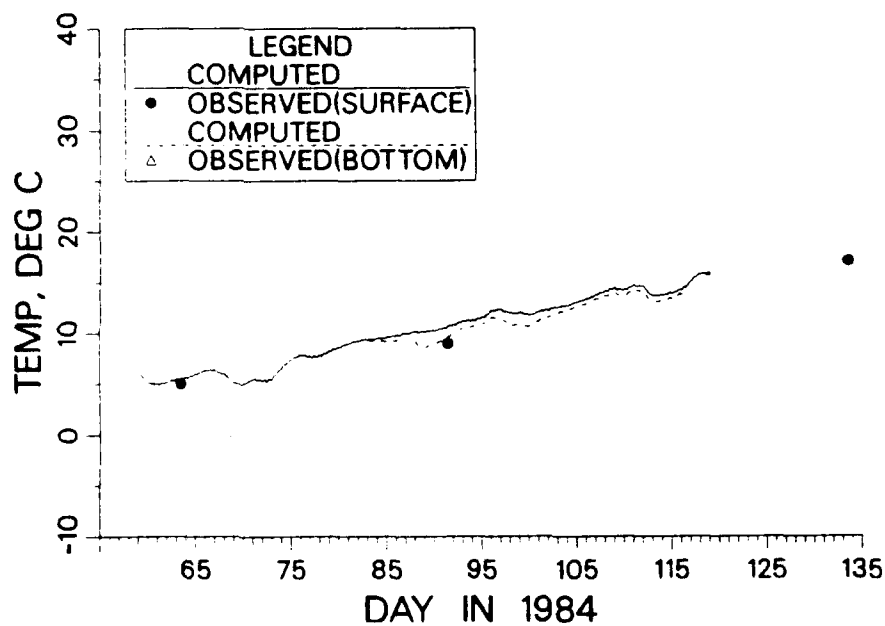
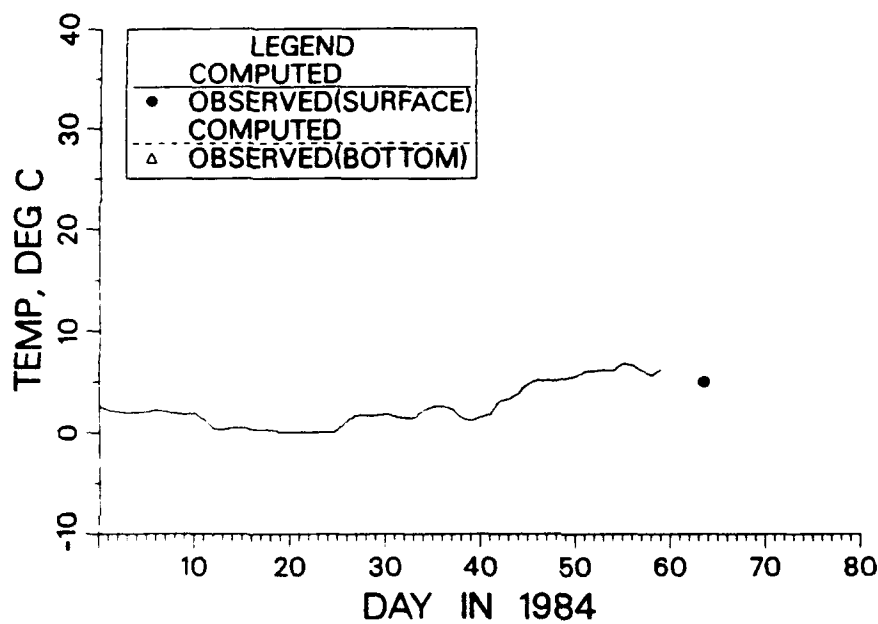


Figure A61. Comparison of computed and recorded temperature at sta TF 1.4 during 1984 (Sheet 1 of 3)

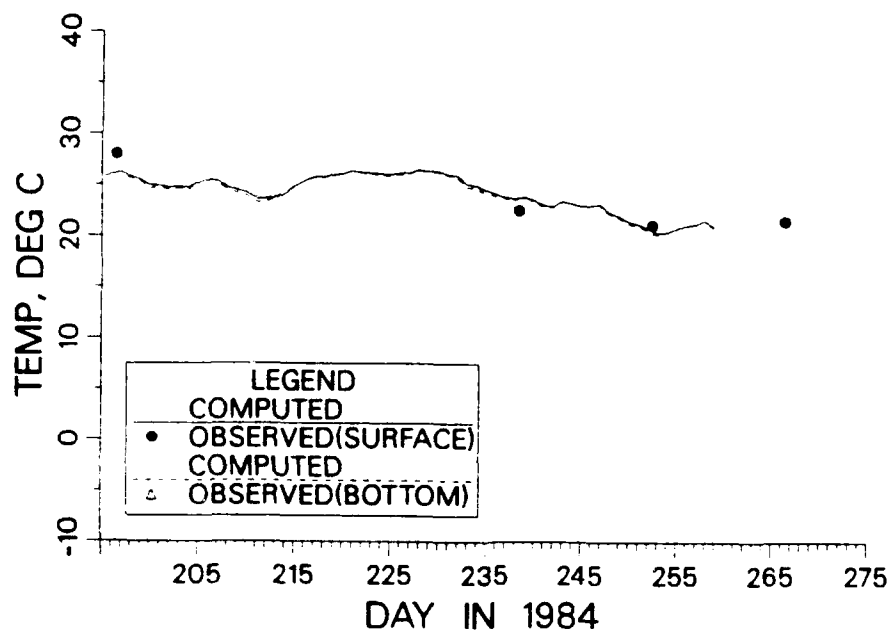
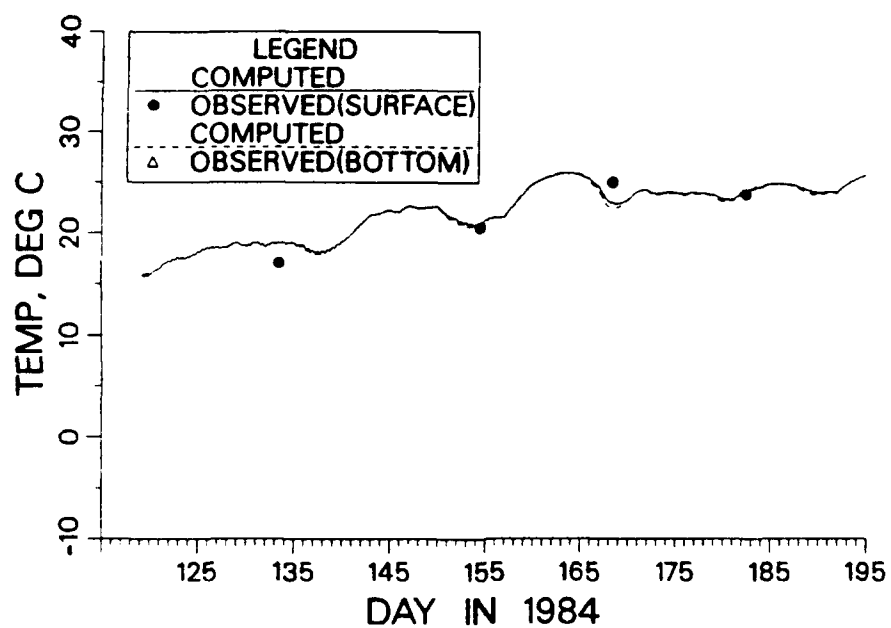


Figure A61. (Sheet 2 of 3)

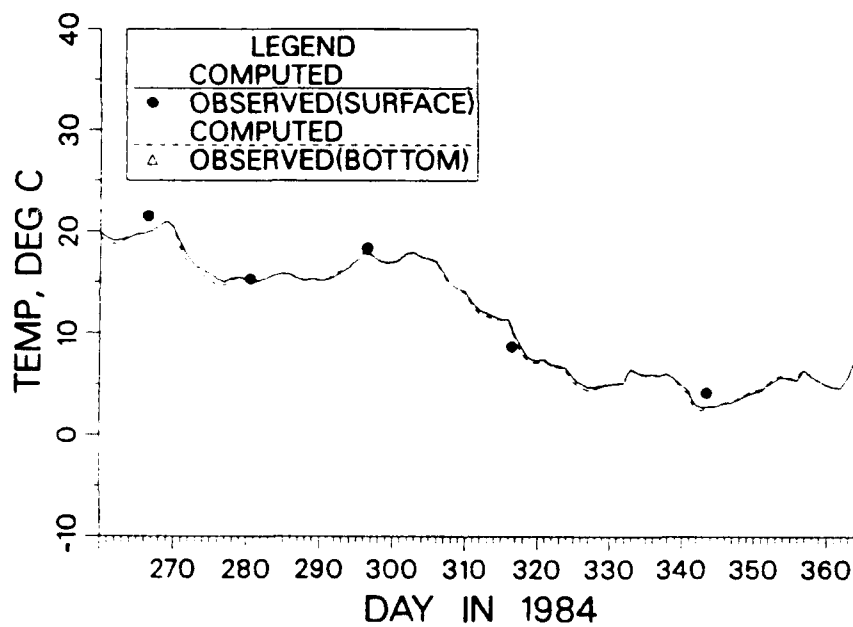


Figure A61. (Sheet 3 of 3)

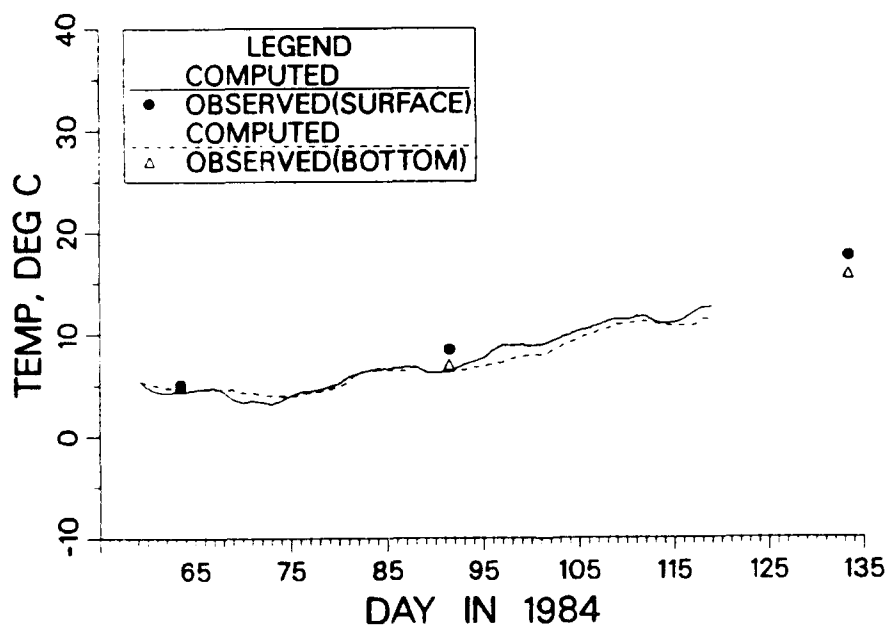
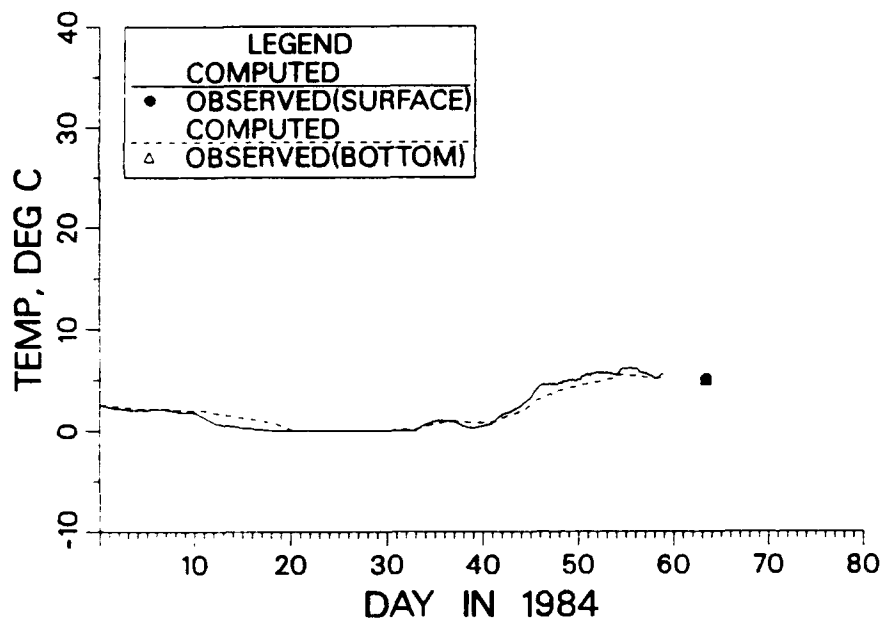


Figure A62. Comparison of computed and recorded temperature at sta LE 1.1 during 1984 (Sheet 1 of 3)

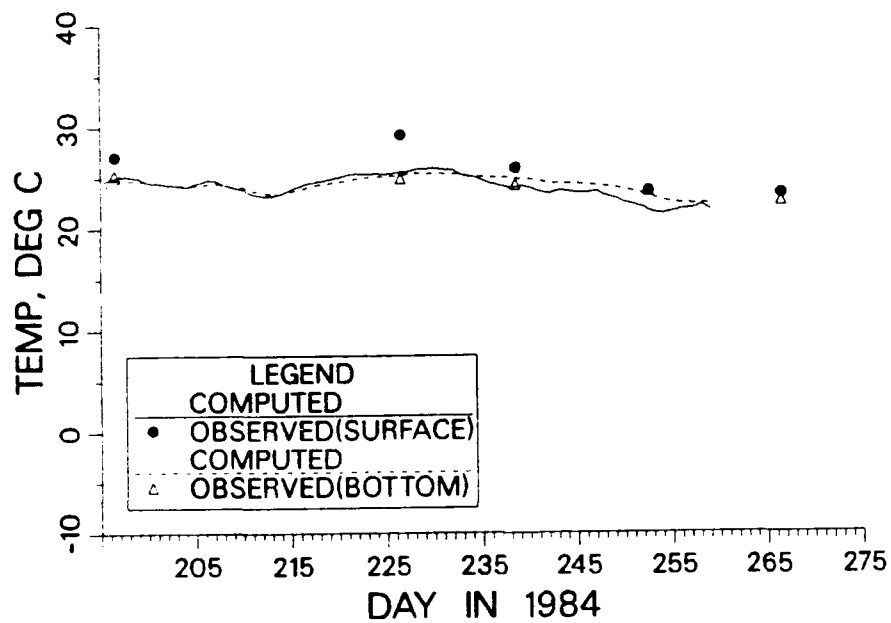
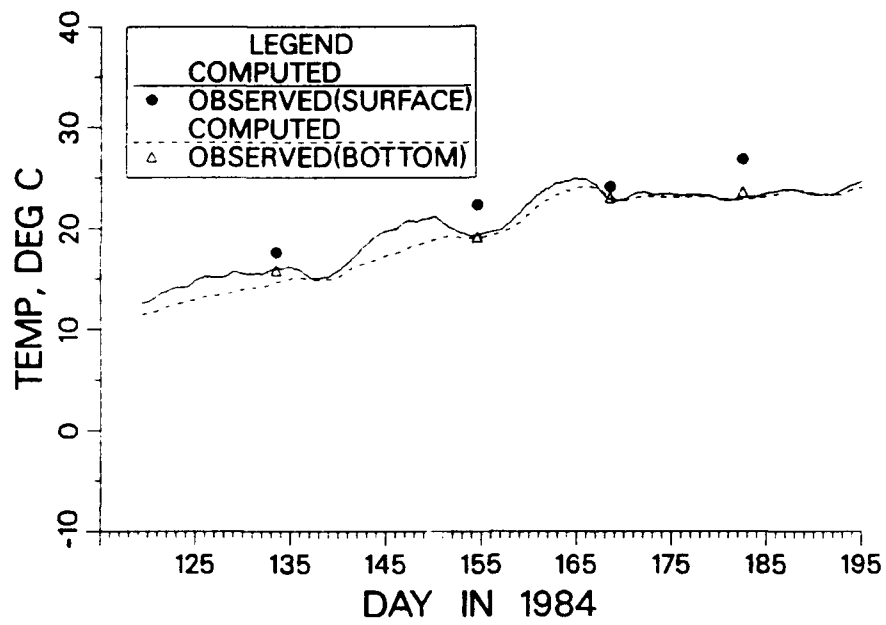


Figure A62. (Sheet 2 of 3)

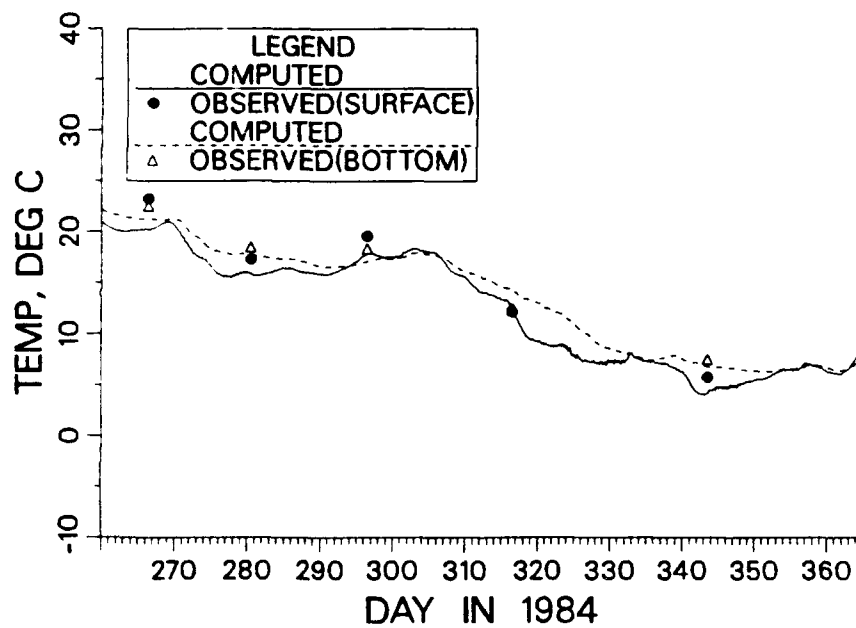


Figure A62. (Sheet 3 of 3)

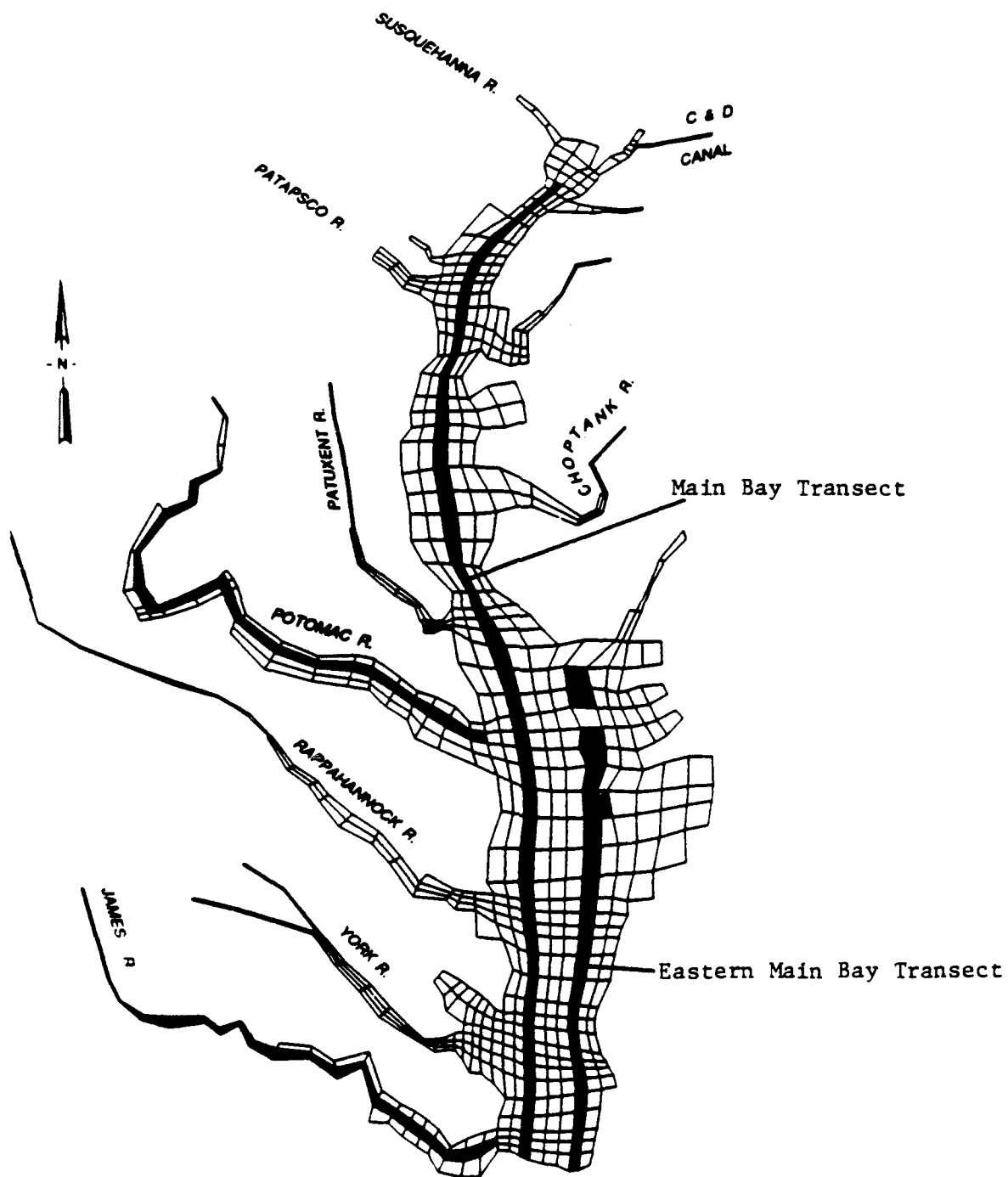
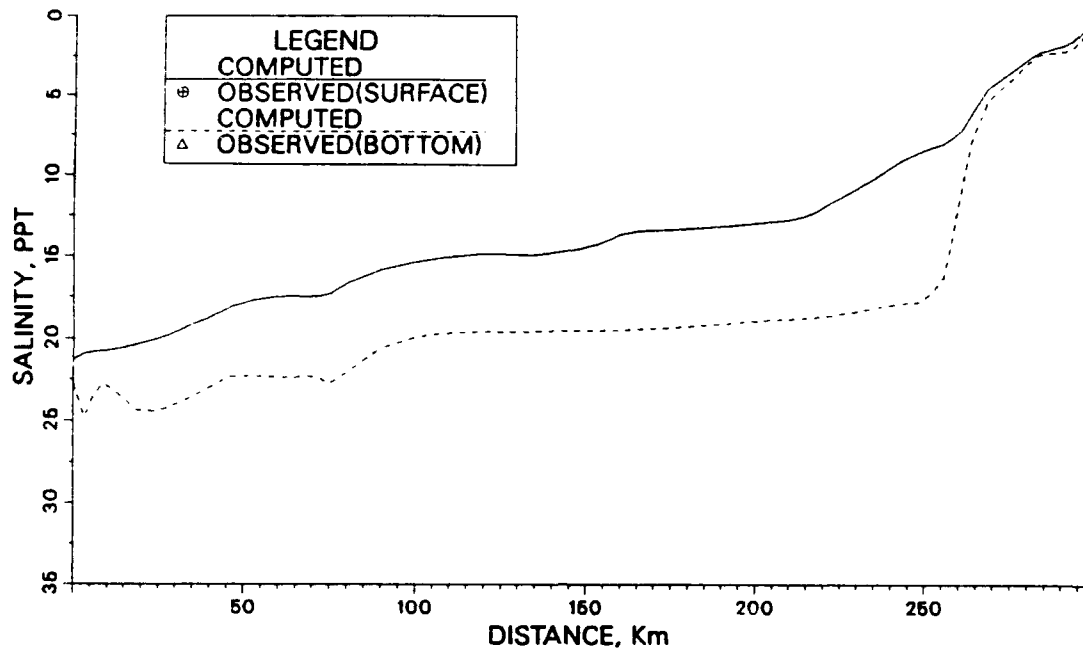
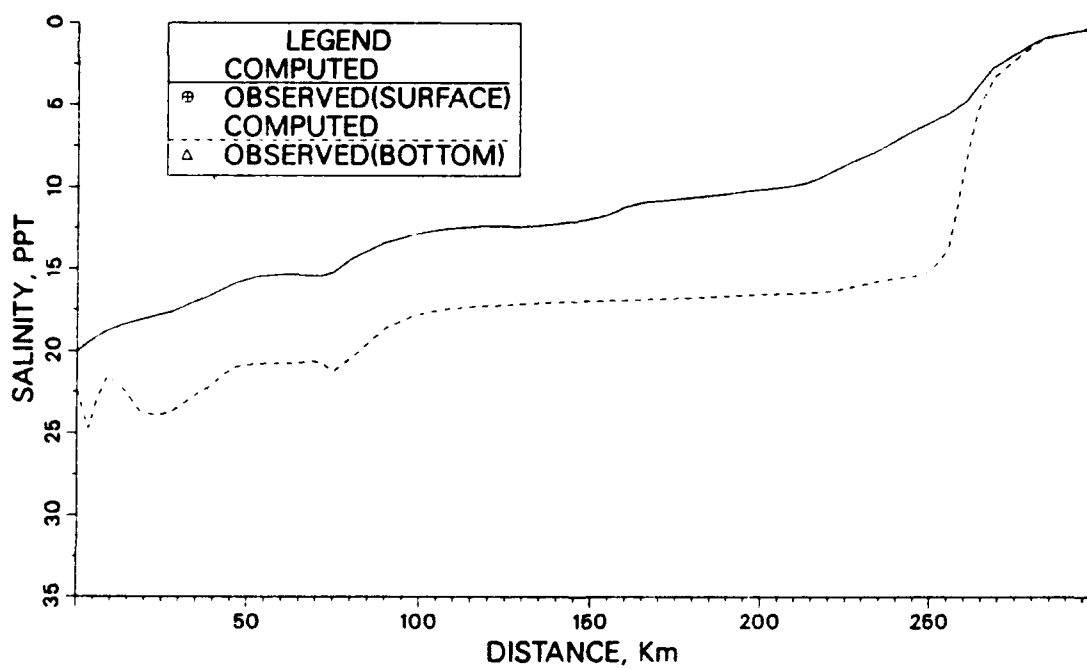


Figure A63. Location of seasonally averaged transects

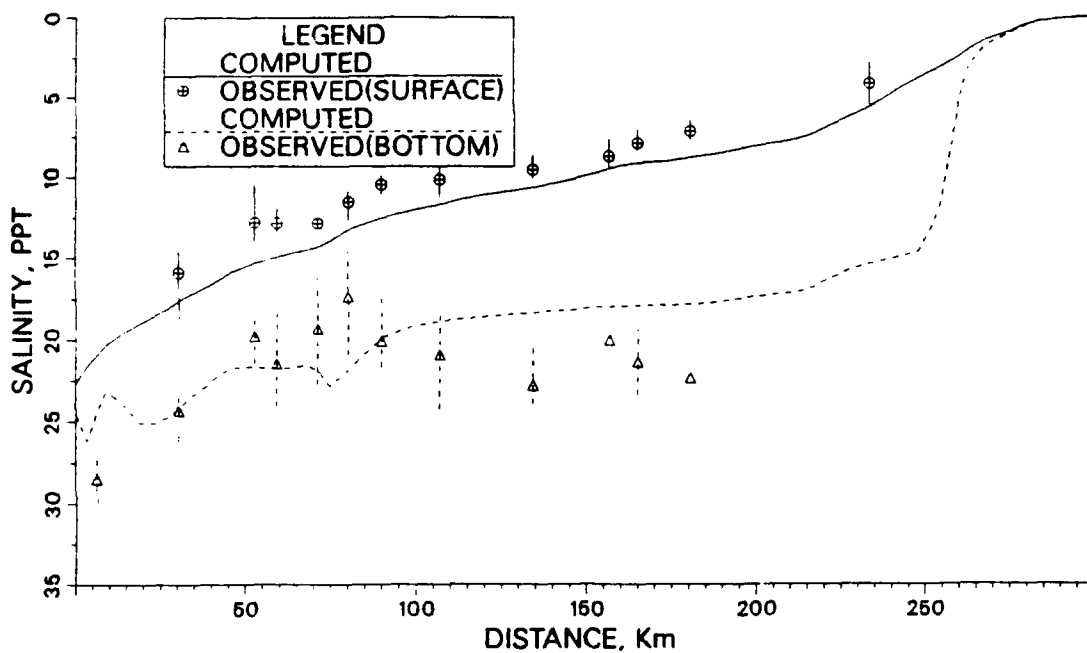


a. Season 1

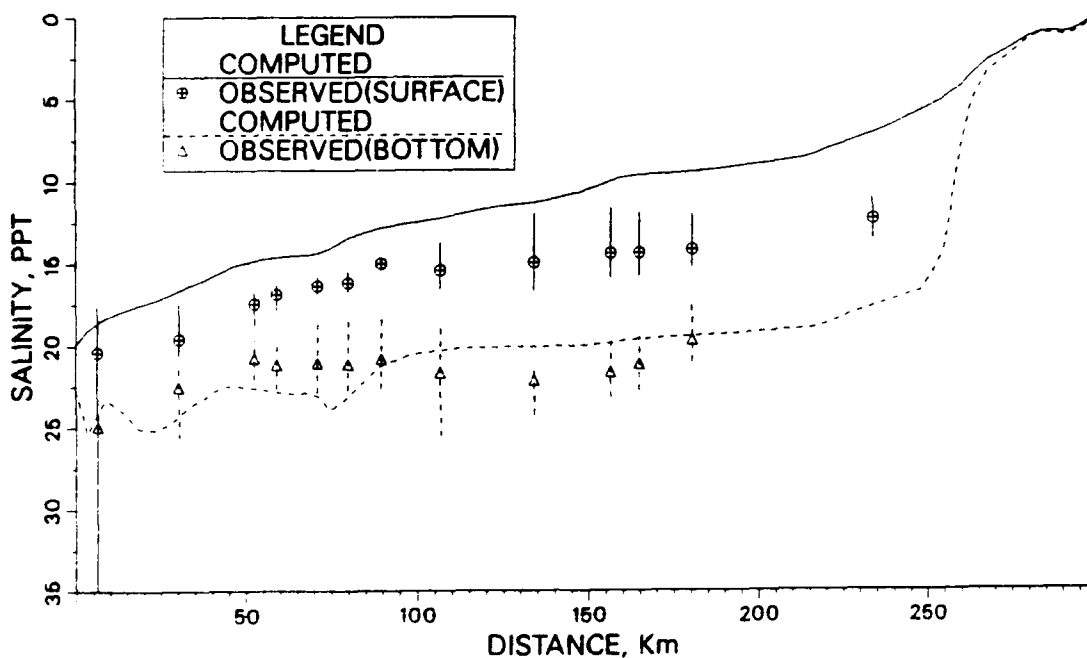


b. Season 2

Figure A64. Comparison of seasonally averaged salinities along main bay transect during 1984 (Sheet 1 of 3)

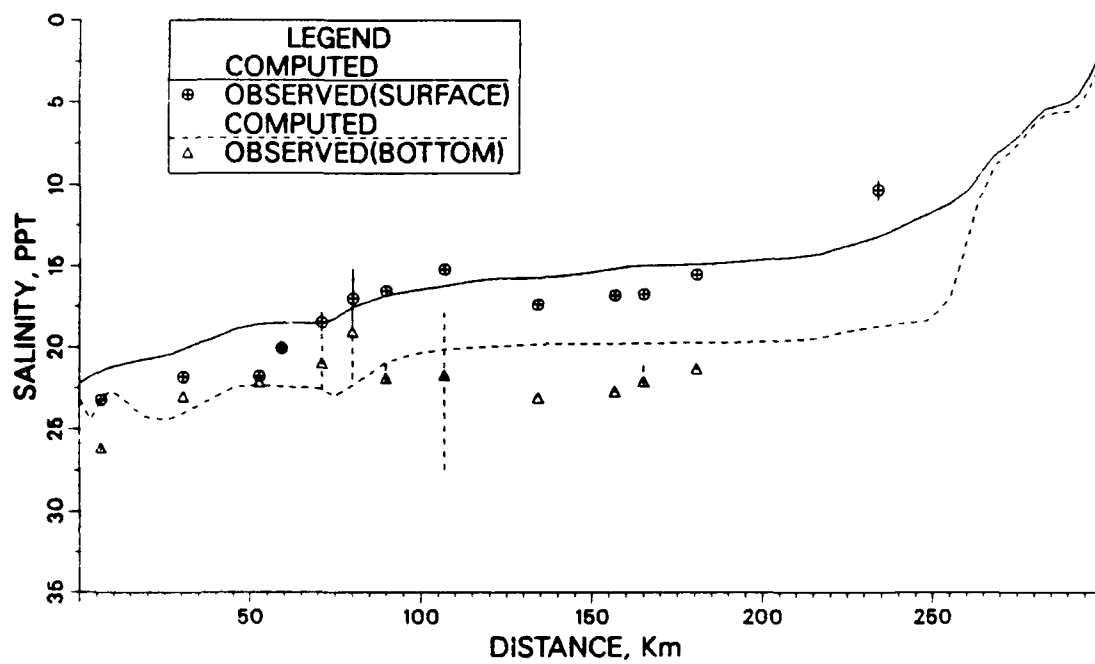


c. Season 3



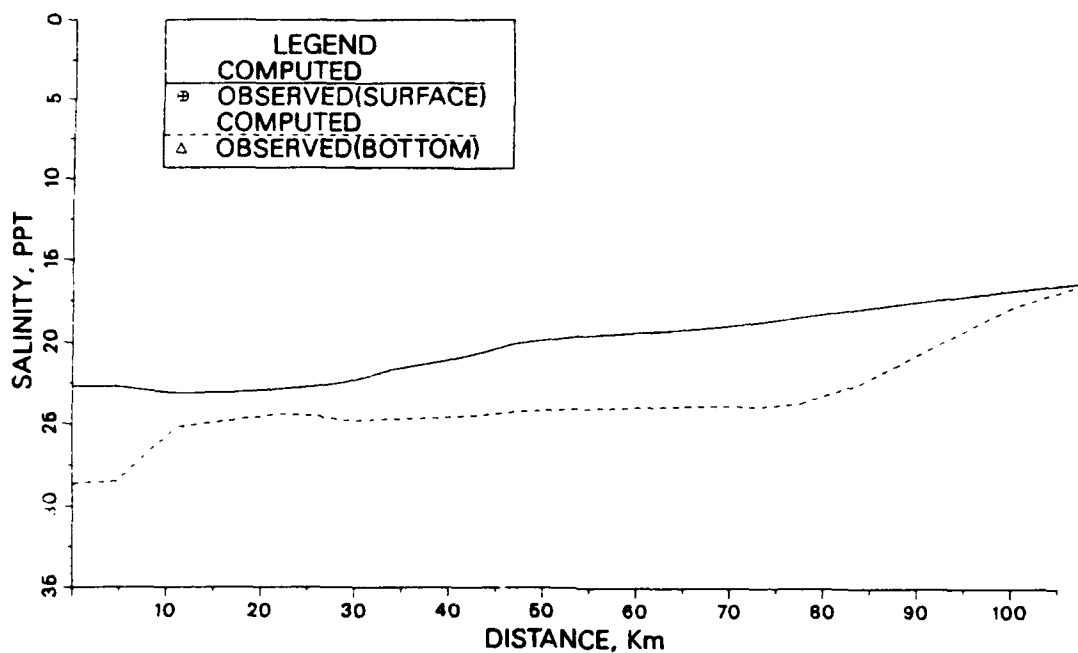
d. Season 4

Figure A64. (Sheet 2 of 3)

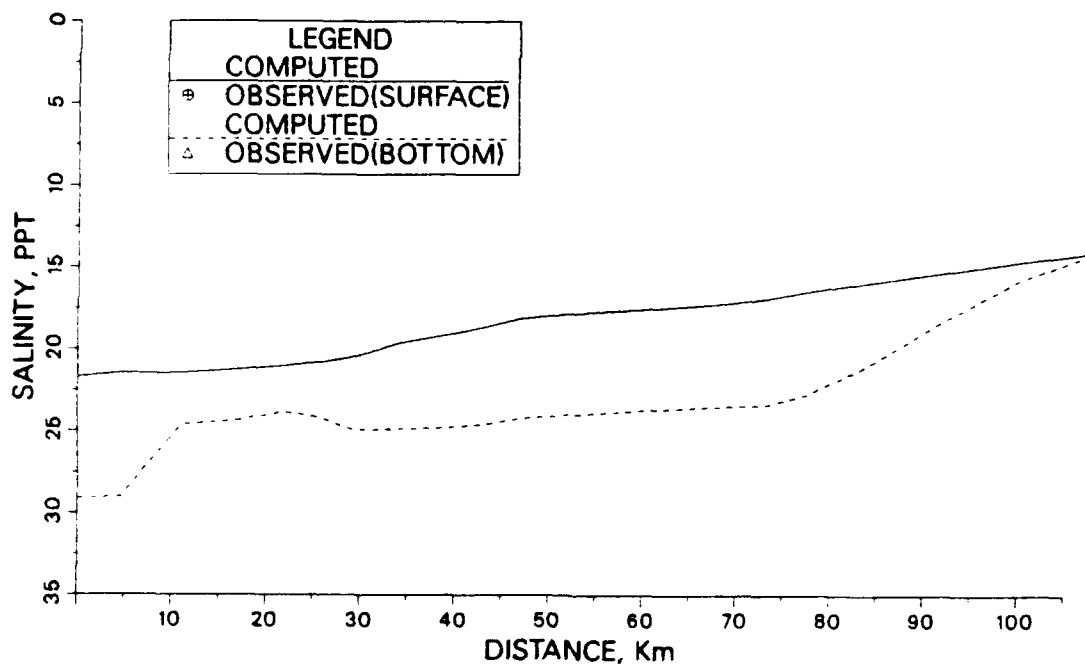


e. Season 5

Figure A64. (Sheet 3 of 3)

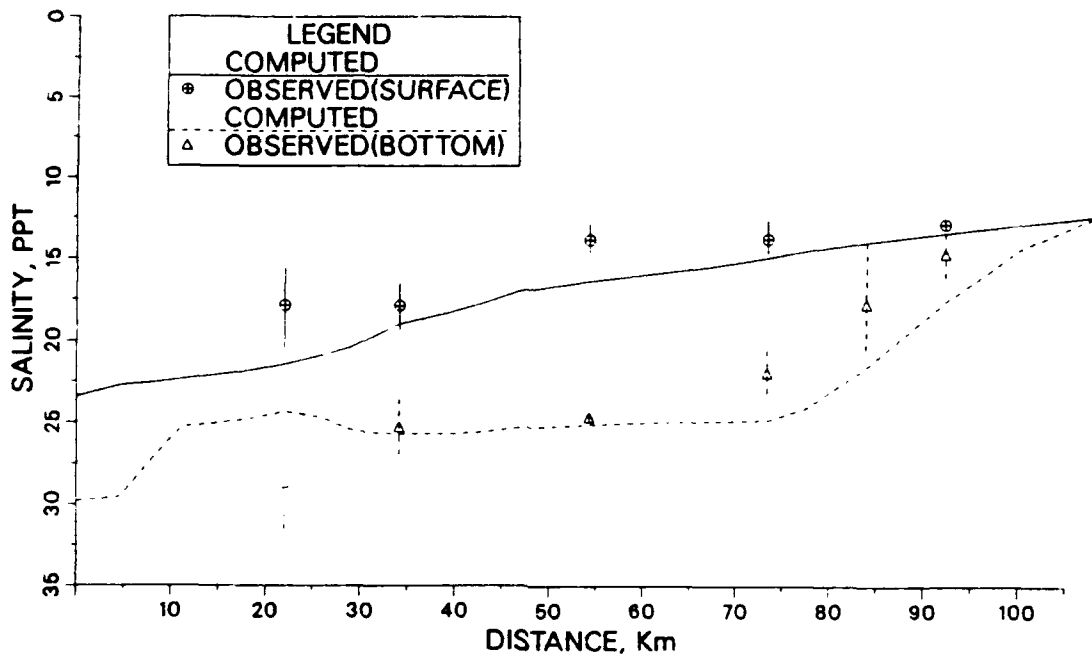


a. Season 1

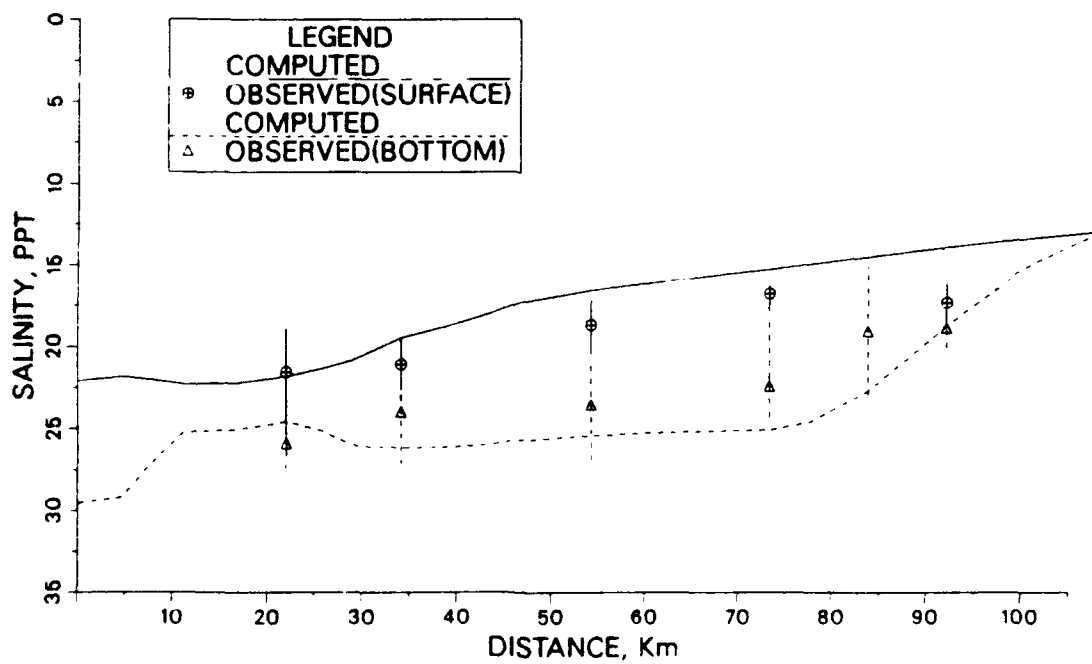


b. Season 2

Figure A65. Comparison of seasonally averaged salinities along eastern main bay transect during 1984 (Sheet 1 of 3)

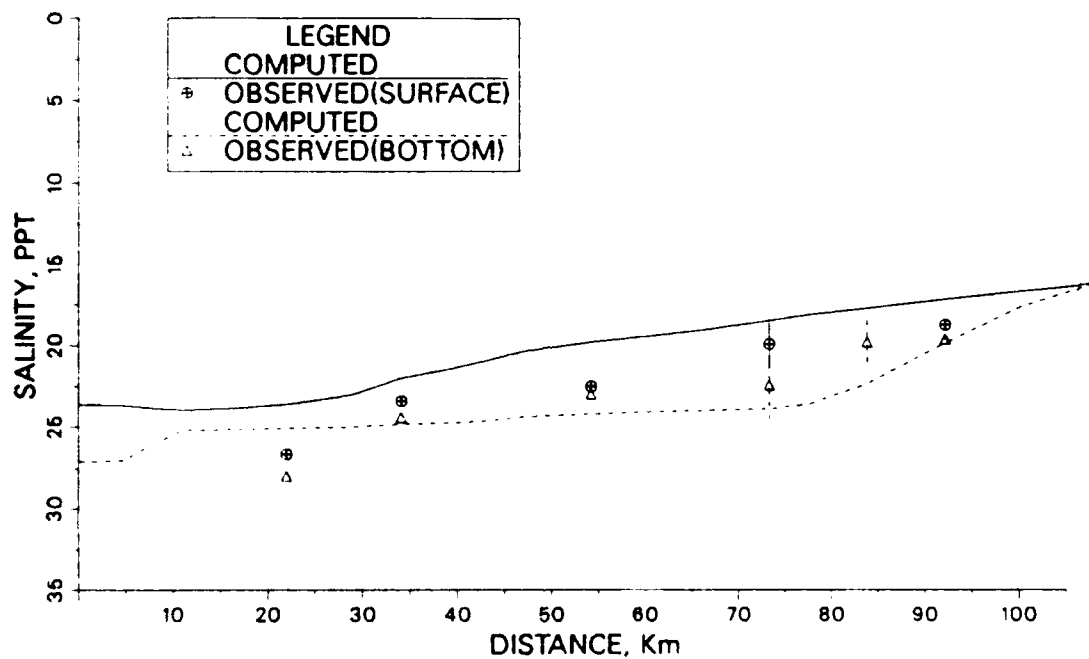


c. Season 3



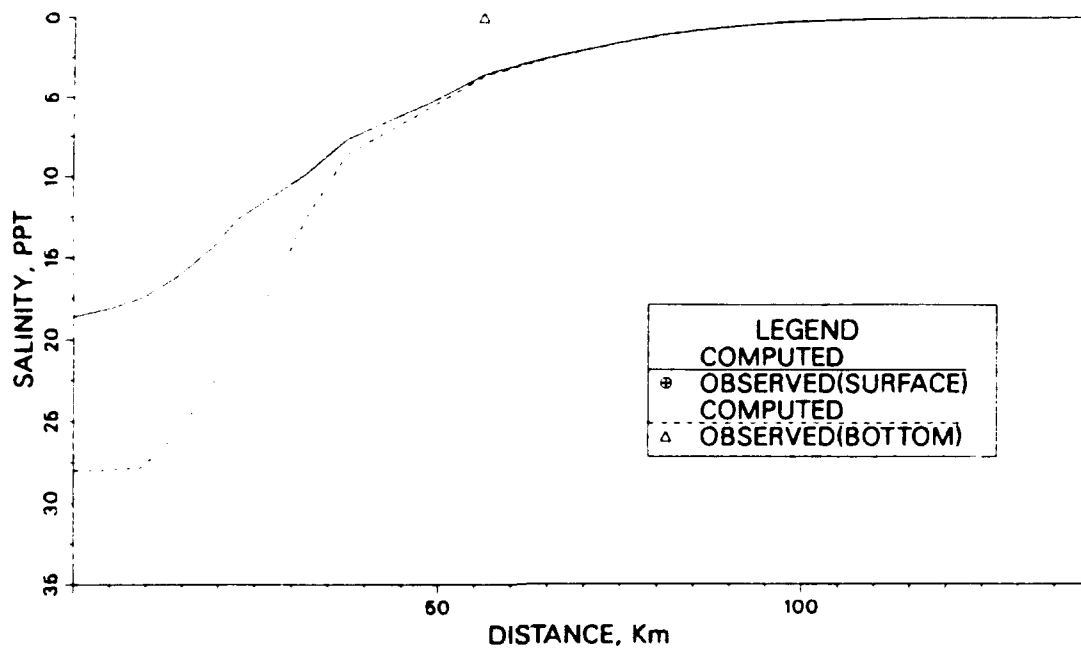
d. Season 4

Figure A65. (Sheet 2 of 3)

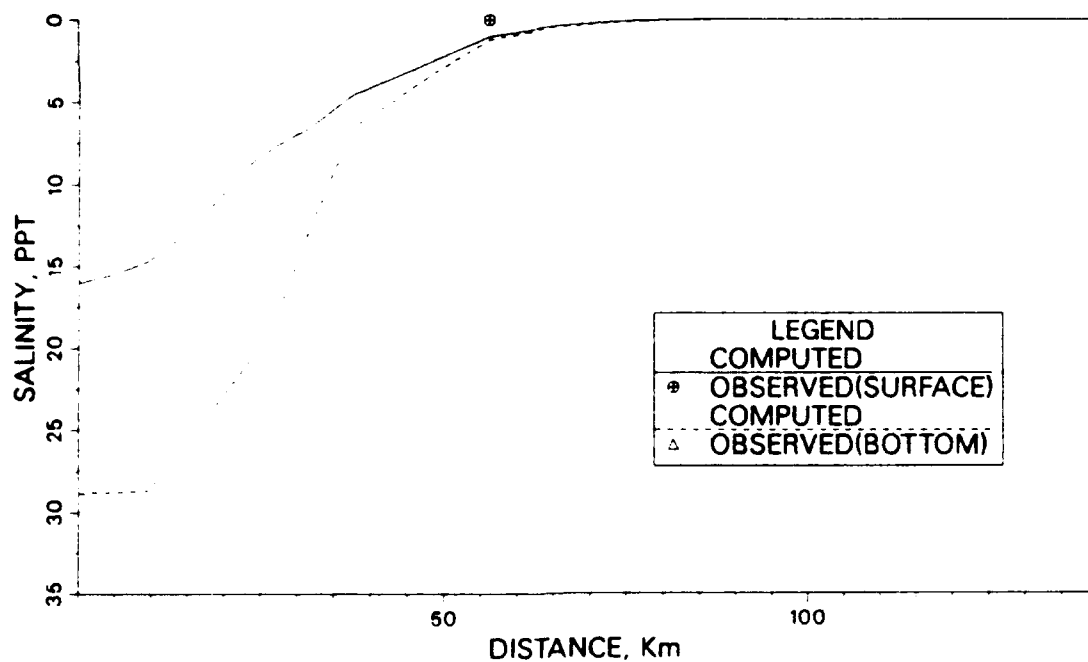


e. Season 5

Figure A65. (Sheet 3 of 3)

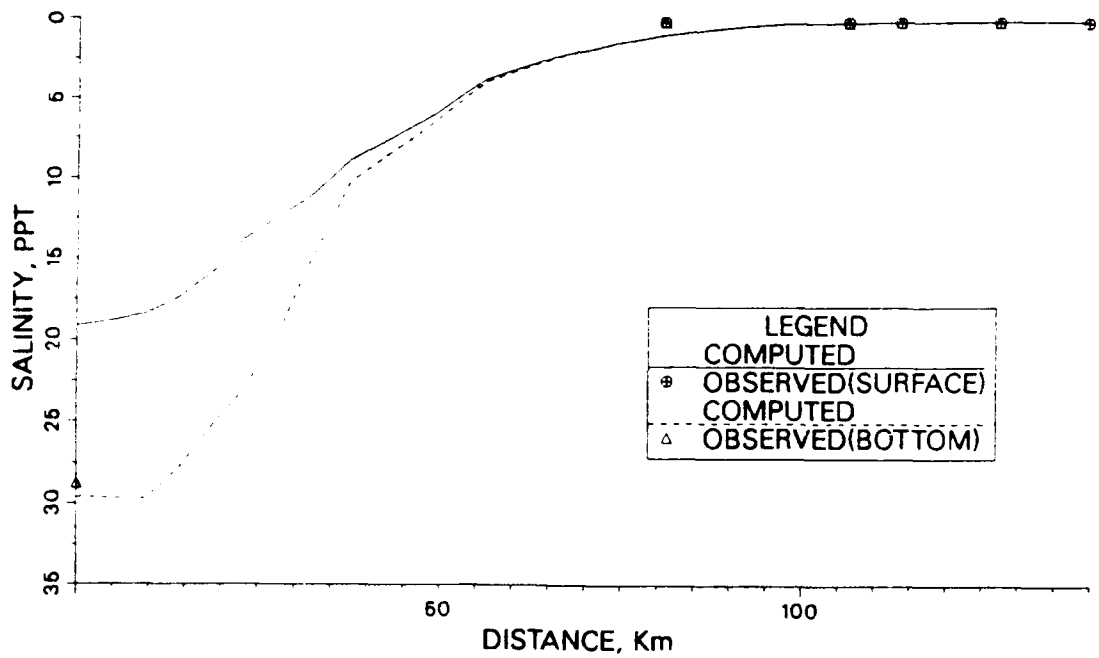


a. Season 1

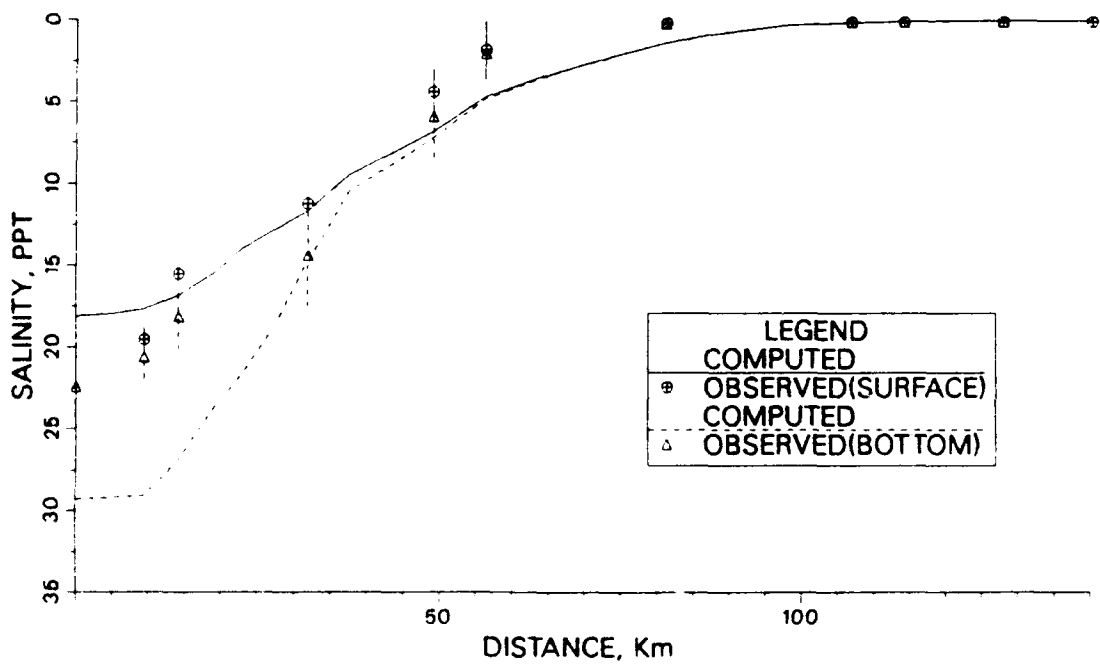


b. Season 2

Figure A66. Comparison of seasonally averaged salinities along James River during 1984 (Sheet 1 of 3)

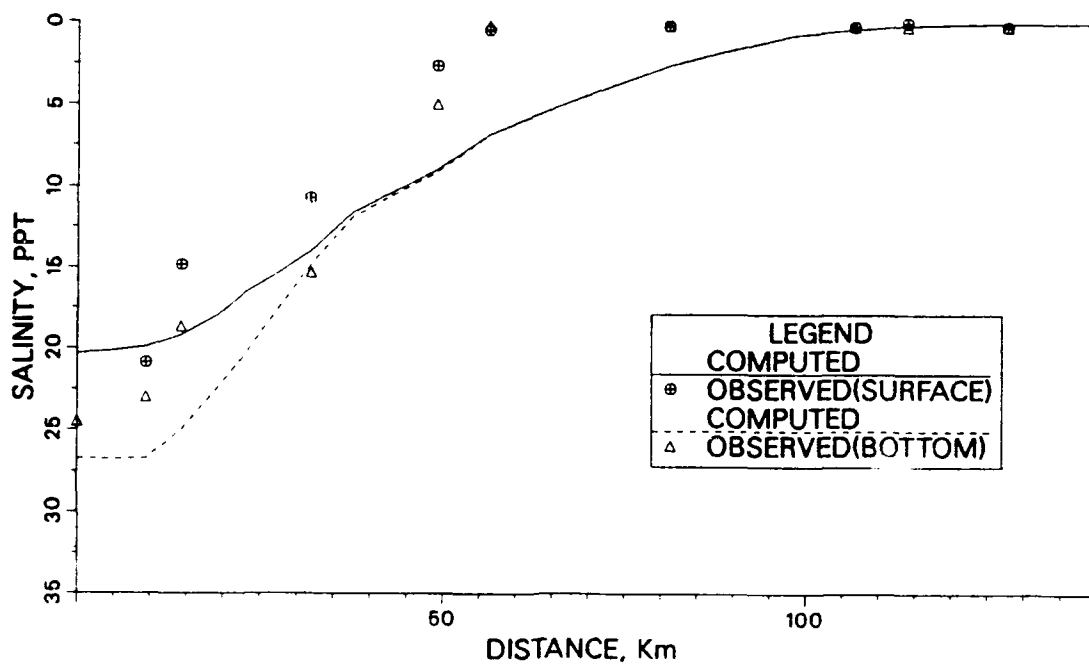


c. Season 3



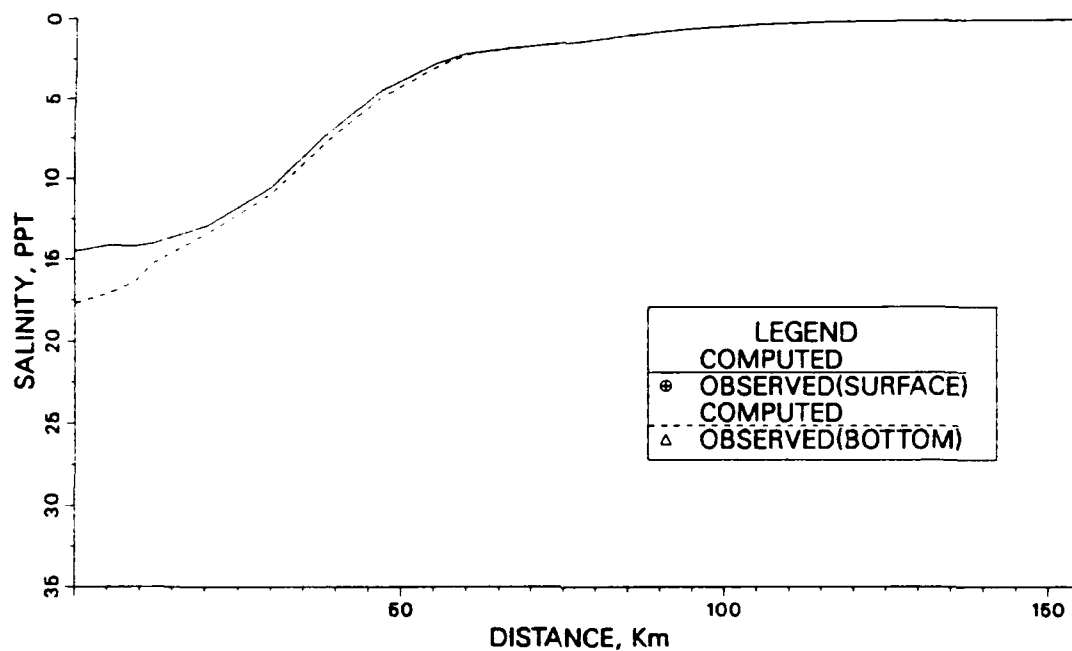
d. Season 4

Figure A66. (Sheet 2 of 3)

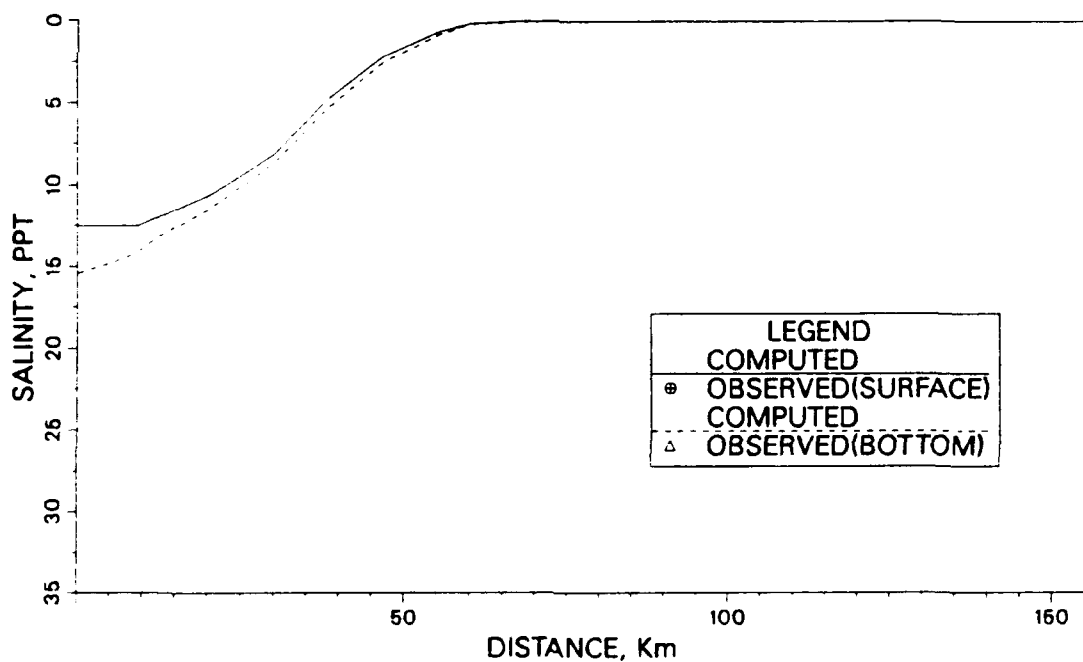


e. Season 5

Figure A66. (Sheet 3 of 3)

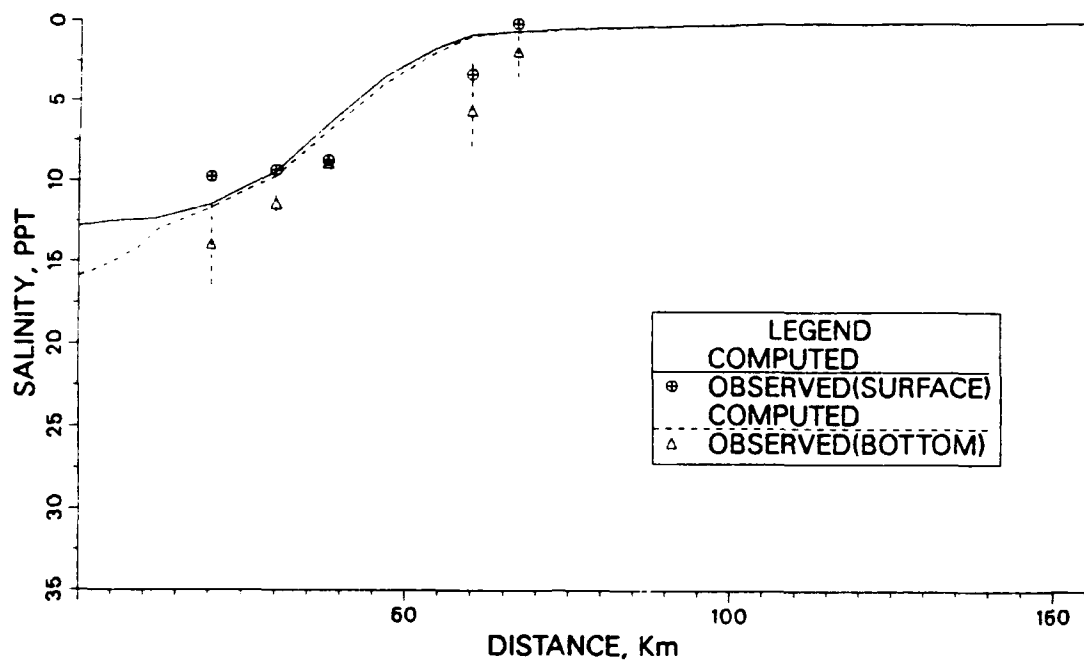


a. Season 1

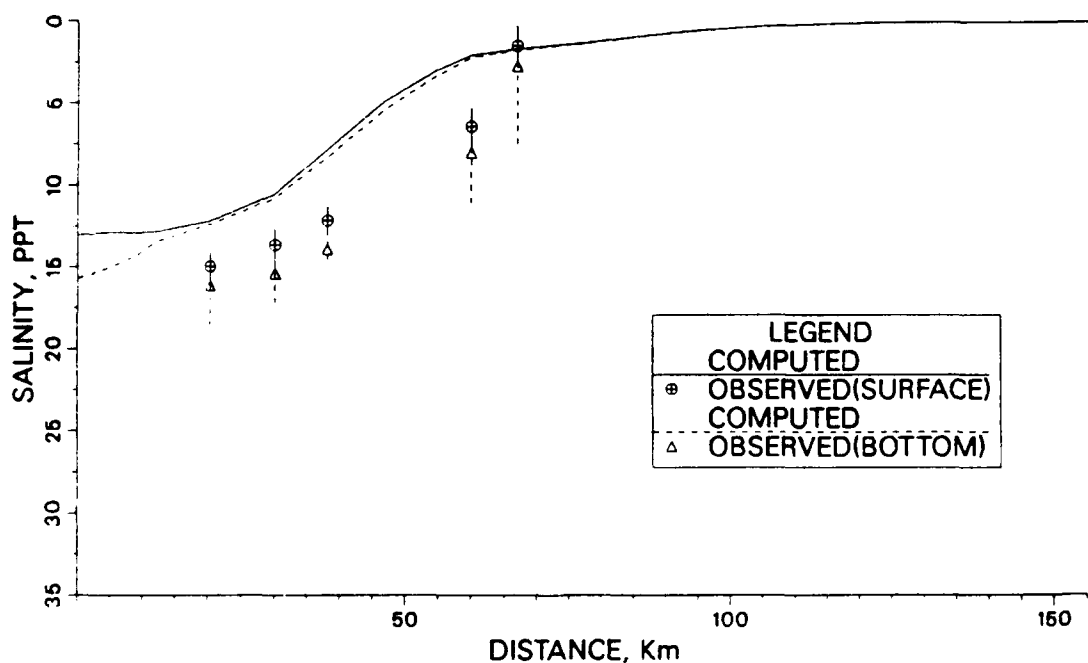


b. Season 2

Figure A67. Comparison of seasonally averaged salinities along Rappahannock River during 1984 (Sheet 1 of 3)

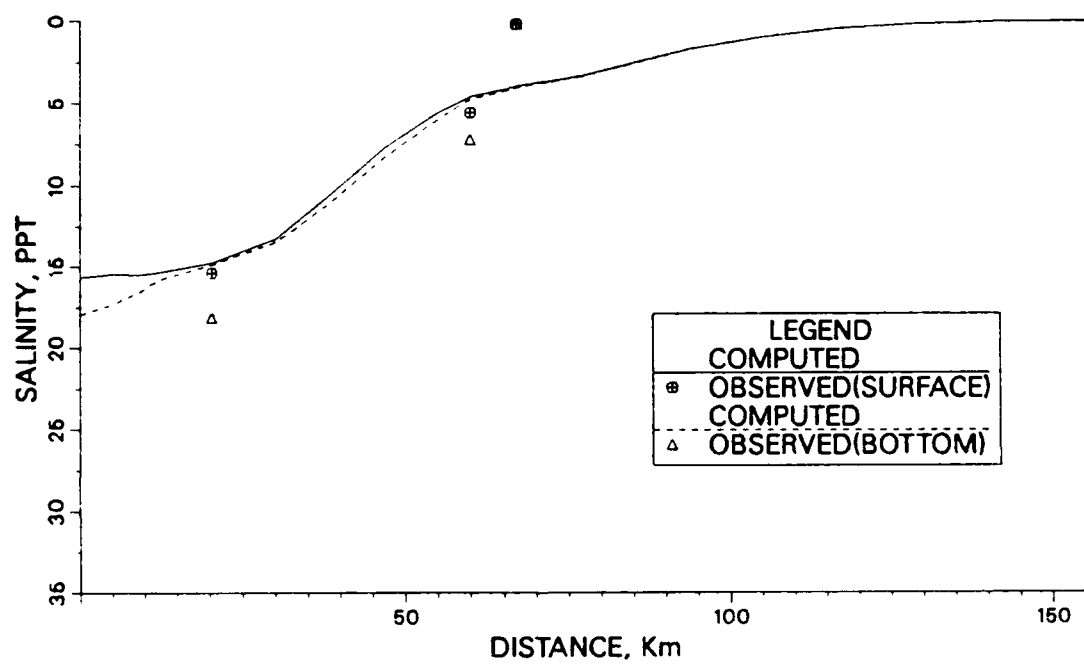


c. Season 3



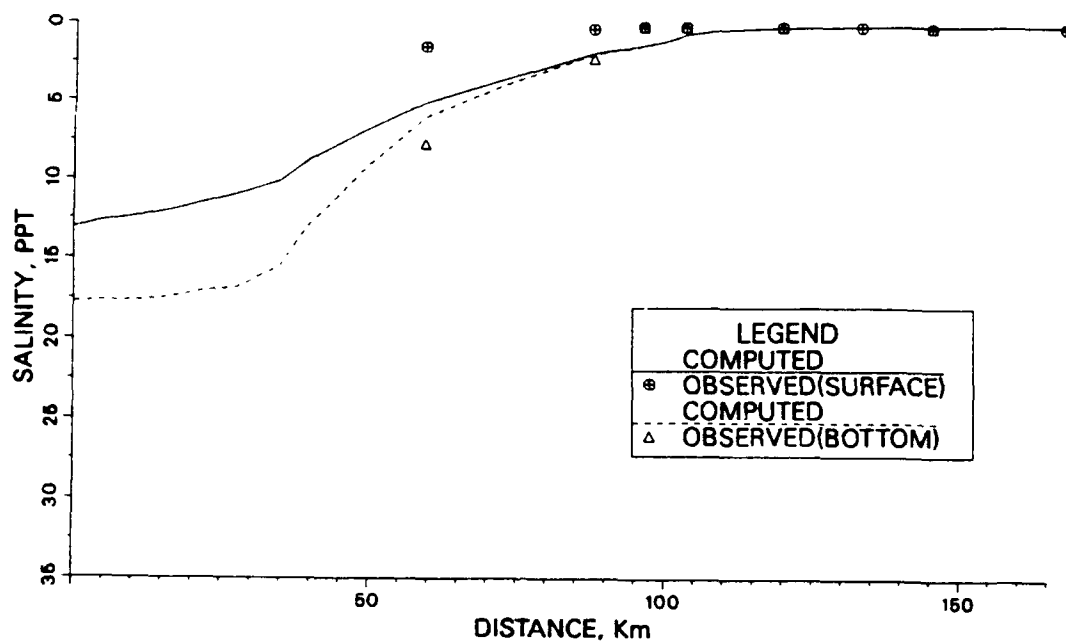
d. Season 4

Figure A67. (Sheet 2 of 3)

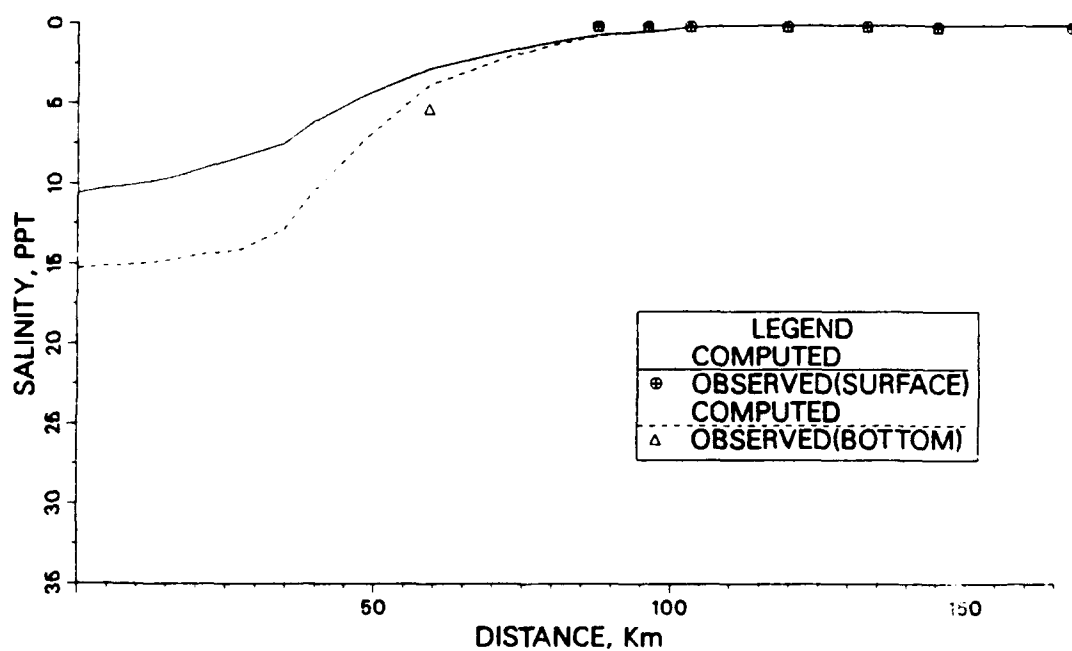


e. Season 5

Figure A67. (Sheet 3 of 3)

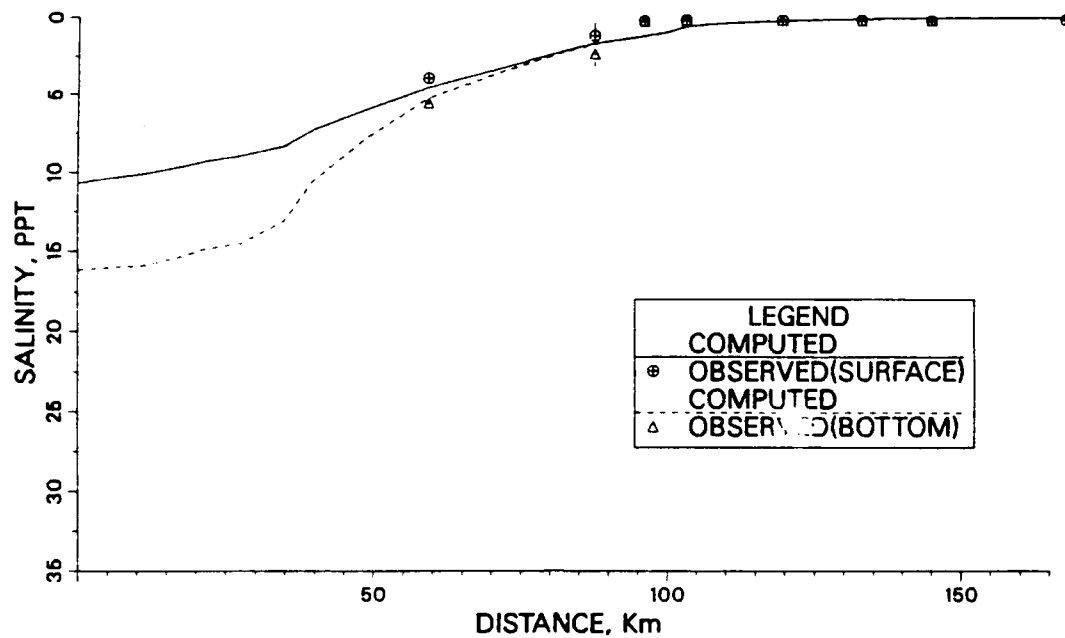


a. Season 1

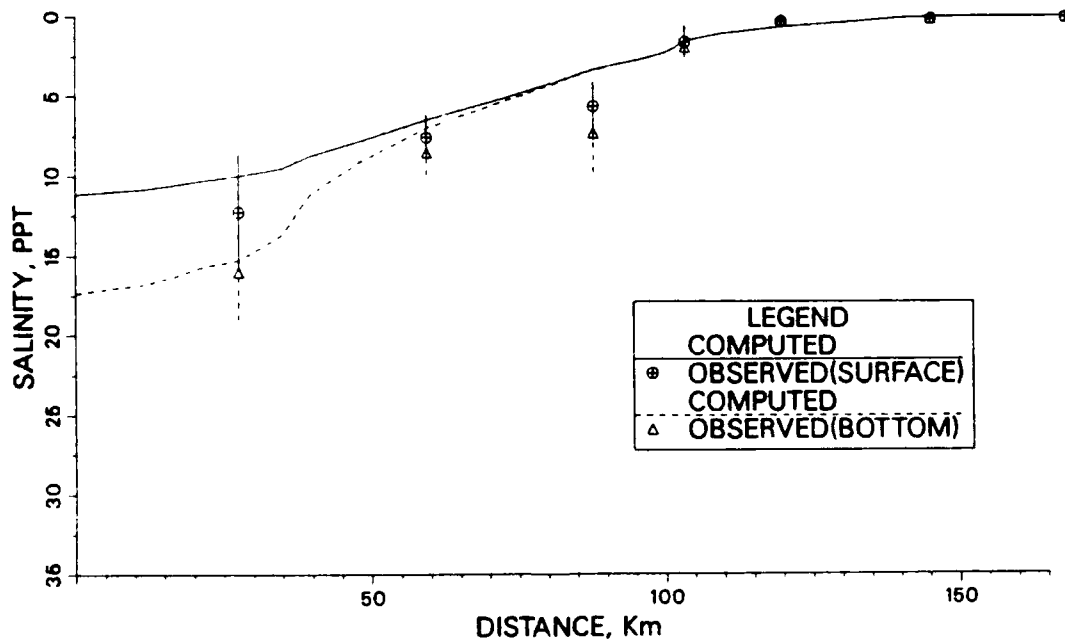


b. Season 2

Figure A68. Comparison of seasonally averaged salinities along Potomac River during 1984 (Sheet 1 of 3)

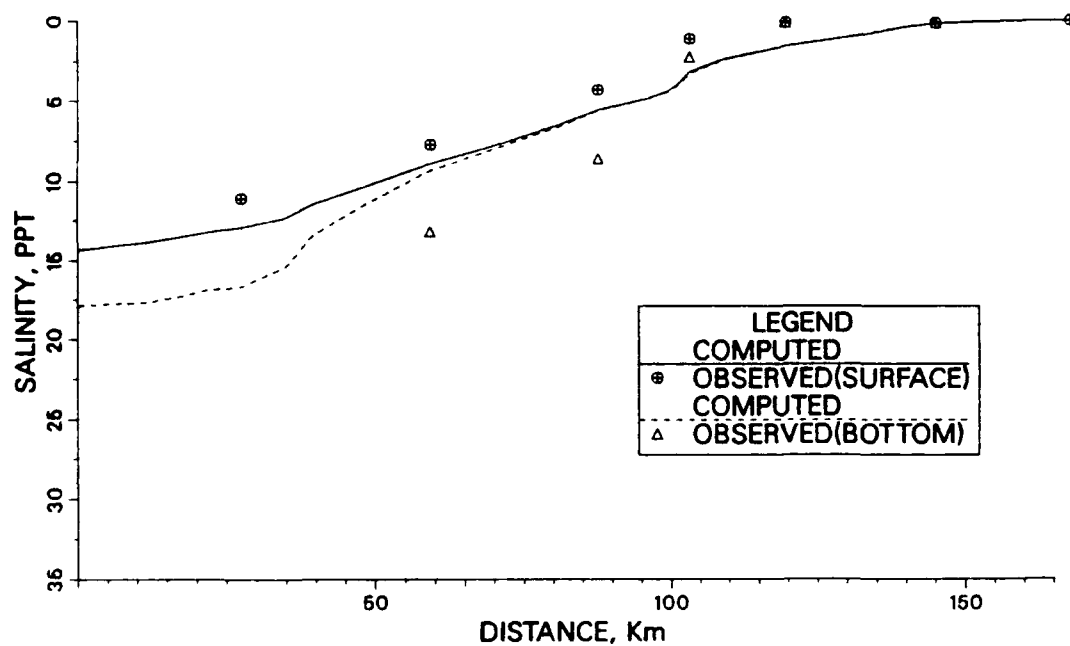


c. Season 3



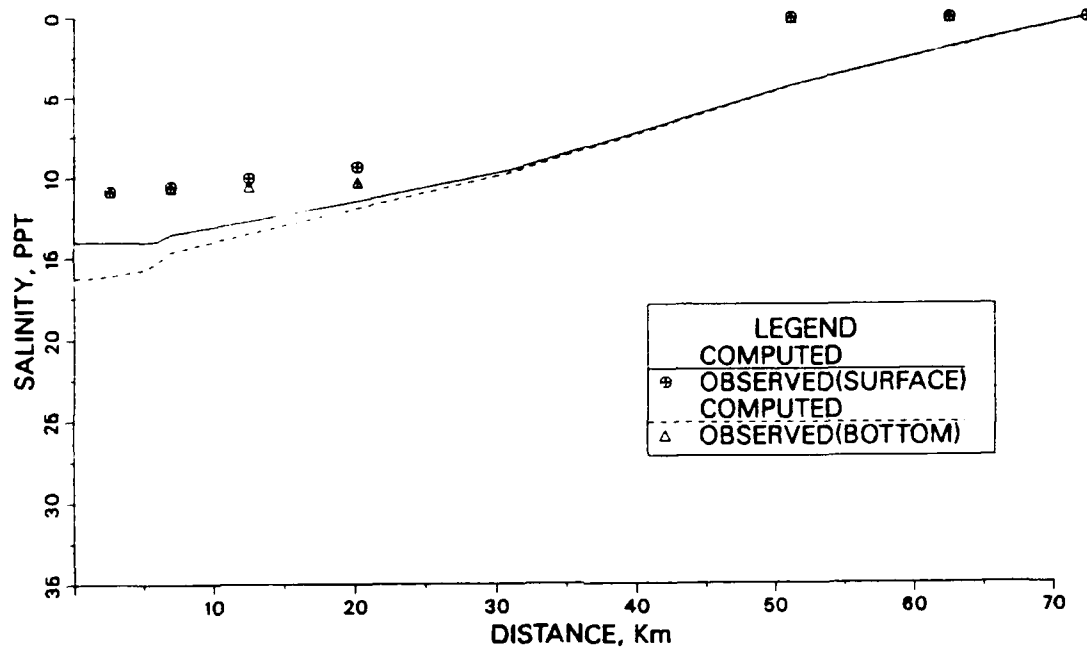
d. Season 4

Figure A68. (Sheet 2 of 3)

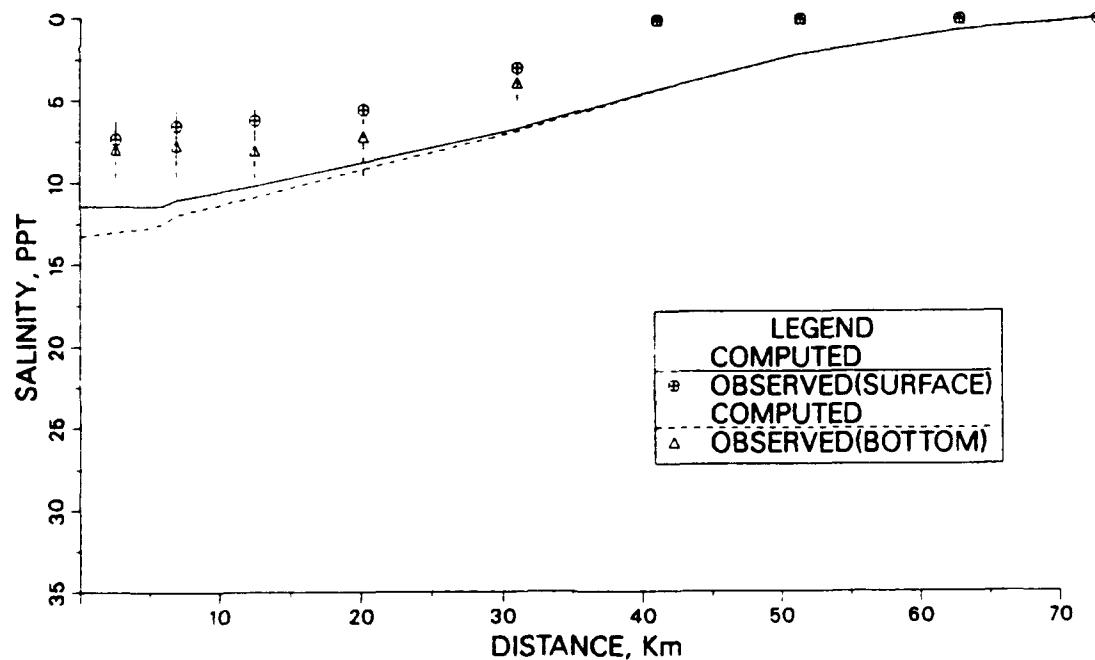


e. Season 5

Figure A68. (Sheet 3 of 3)

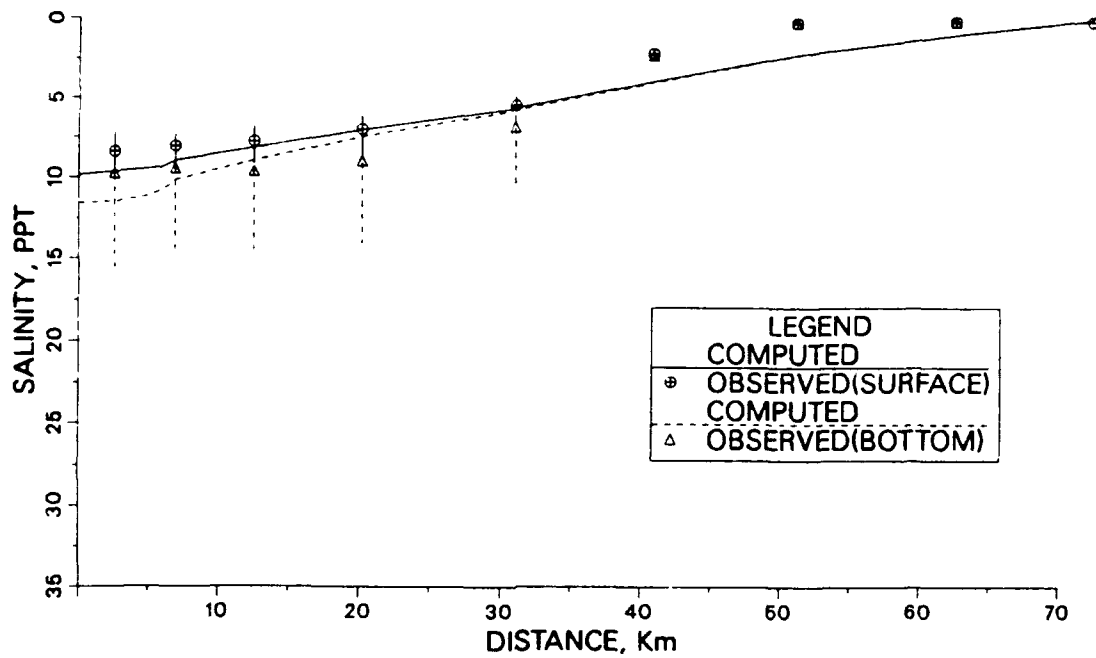


a. Season 1

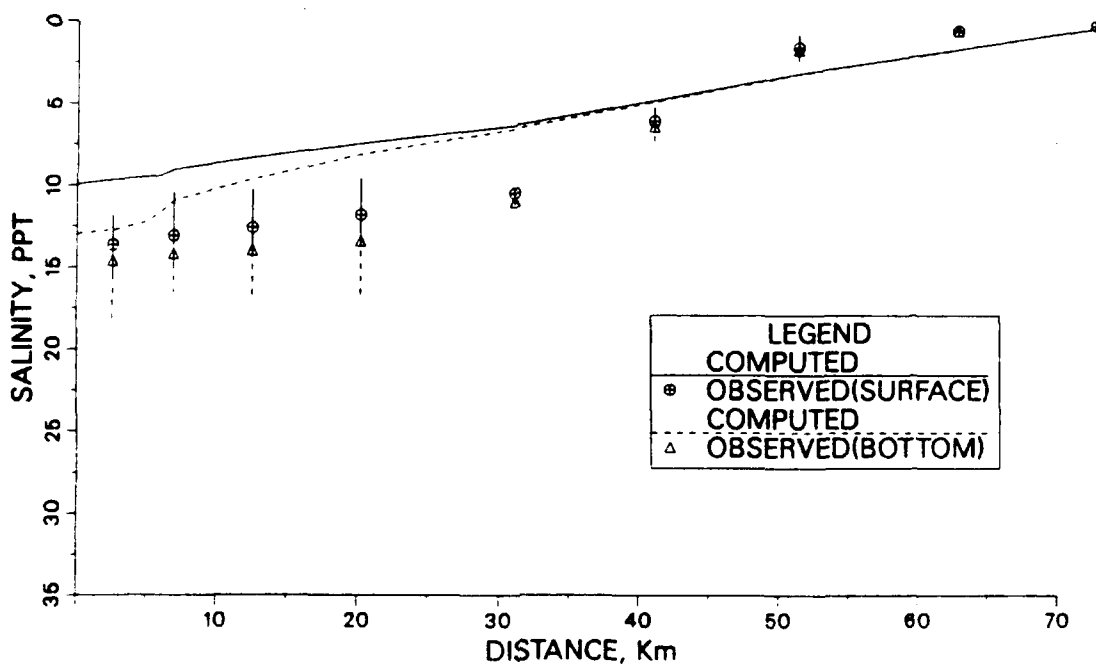


b. Season 2

Figure A69. Comparison of seasonally averaged salinities along Patuxent River during 1984 (Sheet 1 of 3)

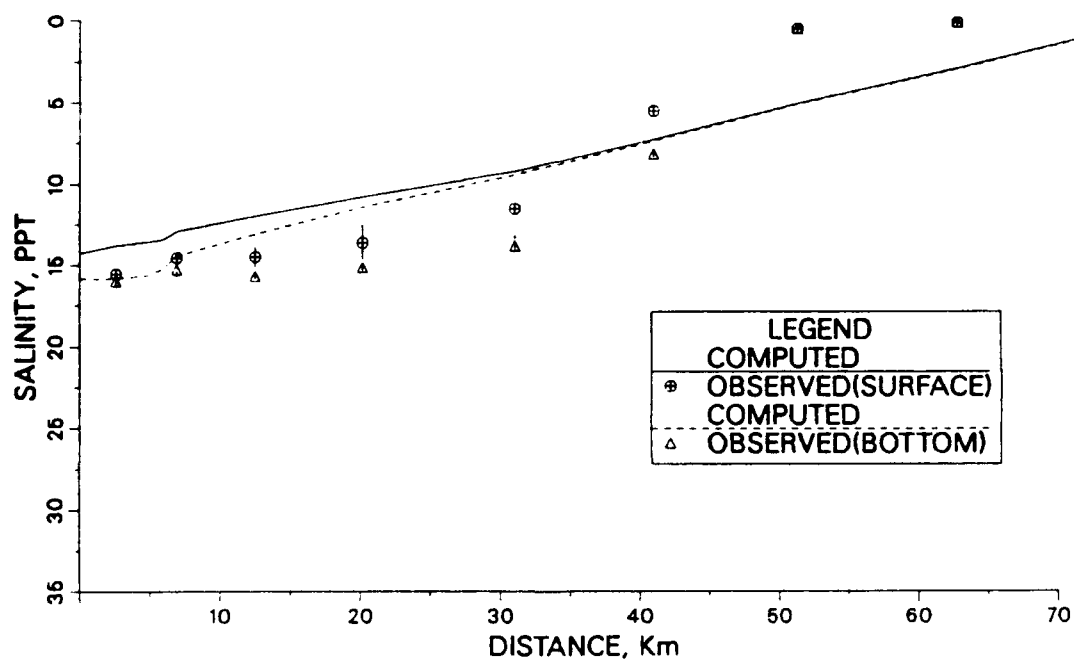


c. Season 3



d. Season 4

Figure A69. (Sheet 2 of 3)



e. Season 5

Figure A69. (Sheet 3 of 3)

Table A1
1984 Surface Heat Exchange Data

Day	Equilibrium Temperature	Surface Transfer Coefficient
	°C	cm/sec
0	-2.50000	0.36806E-03
1	-1.20000	0.22227E-03
2	-0.10000	0.32265E-03
3	1.50000	0.37284E-03
4	2.80000	0.23661E-03
5	3.40000	0.43498E-03
6	1.00000	0.62618E-03
7	-0.80000	0.41586E-03
8	-0.10000	0.39674E-03
9	2.20000	0.36089E-03
10	-2.40000	0.74568E-03
11	-6.10000	0.69549E-03
12	-2.30000	0.50429E-03
13	0.70000	0.46844E-03
14	-2.20000	0.42303E-03
15	-4.20000	0.21510E-03
16	-4.20000	0.22705E-03
17	-1.40000	0.45410E-03
18	-3.10000	0.61184E-03
19	-7.10000	0.34655E-03
20	-9.00000	0.46605E-03
21	-5.80000	0.23422E-03
22	-2.90000	0.21749E-03
23	1.50000	0.23661E-03
24	4.90000	0.32504E-03
25	7.10000	0.31309E-03
26	6.00000	0.24378E-03
27	0.70000	0.45649E-03
28	0.00000	0.22705E-03
29	2.30000	0.33699E-03
30	-0.40000	0.83172E-03
31	-1.00000	0.37523E-03
32	1.10000	0.77436E-03
33	5.20000	0.82694E-03
34	6.70000	0.30592E-03
35	2.40000	0.37284E-03
36	-1.00000	0.43020E-03
37	-2.50000	0.91059E-03
38	-1.70000	0.52341E-03
39	3.50000	0.34416E-03
40	4.10000	0.37284E-03
41	10.40000	0.68832E-03
42	6.60000	0.28202E-03

(Continued)

(Sheet 1 of 9)

Table A1. (Continued)

<u>Day</u>	<u>Equilibrium Temperature</u> °C	<u>Surface Transfer Coefficient</u> cm/sec
43	8.60000	0.51624E-03
44	8.60000	0.12787E-02
45	8.60000	0.12189E-02
46	8.40000	0.46366E-03
47	8.60000	0.49234E-03
48	9.20000	0.38957E-03
49	7.30000	0.55209E-03
50	9.60000	0.64530E-03
51	7.40000	0.47561E-03
52	7.70000	0.41825E-03
53	6.10000	0.63096E-03
54	9.80000	0.97273E-03
55	6.40000	0.13241E-02
56	3.00000	0.68593E-03
57	2.00000	0.70266E-03
58	7.80000	0.11592E-02
59	-0.30000	0.10110E-02
60	0.30000	0.65725E-03
61	3.40000	0.47800E-03
62	5.60000	0.33938E-03
63	4.30000	0.42303E-03
64	6.20000	0.74807E-03
65	6.20000	0.59750E-03
66	4.90000	0.47083E-03
67	2.10000	0.78153E-03
68	-1.70000	0.94405E-03
69	0.00000	0.58077E-03
70	4.90000	0.80782E-03
71	1.00000	0.54970E-03
72	1.70000	0.83411E-03
73	6.80000	0.88430E-03
74	9.80000	0.44215E-03
75	7.60000	0.68593E-03
76	5.00000	0.74090E-03
77	7.50000	0.53058E-03
78	10.00000	0.41586E-03
79	8.90000	0.55687E-03
80	9.50000	0.13360E-02
81	8.80000	0.97990E-03
82	8.20000	0.88669E-03
83	8.20000	0.62140E-03
84	7.30000	0.63335E-03
85	7.30000	0.74807E-03
86	8.70000	0.47800E-03
87	7.50000	0.12763E-02

(Continued)

(Sheet 2 of 9)

Table A1. (Continued)

Day	Equilibrium Temperature °C	Surface Transfer Coefficient cm/sec
88	4.00000	0.17758E-02
89	5.80000	0.11424E-02
90	7.20000	0.80304E-03
91	9.70000	0.54253E-03
92	12.00000	0.59511E-03
93	10.00000	0.69071E-03
94	10.70000	0.76241E-03
95	13.60000	0.10612E-02
	11.20000	0.83650E-03
	7.20000	0.81021E-03
98	10.30000	0.61662E-03
99	7.60000	0.55448E-03
100	13.90000	0.36567E-03
101	12.10000	0.67159E-03
102	12.90000	0.83650E-03
103	12.20000	0.99424E-03
104	13.40000	0.75524E-03
105	13.20000	0.52819E-03
106	13.90000	0.71461E-03
107	13.60000	0.92254E-03
108	13.60000	0.54970E-03
109	10.50000	0.96556E-03
110	16.20000	0.51146E-03
111	11.80000	0.74090E-03
112	5.90000	0.72417E-03
113	10.30000	0.54492E-03
114	11.40000	0.82933E-03
115	13.00000	0.12285E-02
116	20.40000	0.54970E-03
117	17.20000	0.81260E-03
118	12.80000	0.74807E-03
119	14.10000	0.80065E-03
120	17.10000	0.12213E-02
121	17.80000	0.68593E-03
122	17.50000	0.44693E-03
123	15.20000	0.96078E-03
124	17.10000	0.17638E-02
125	17.00000	0.91298E-03
126	15.50000	0.64052E-03
127	15.60000	0.74329E-03
128	18.70000	0.13336E-02
129	13.20000	0.10038E-02
130	16.20000	0.73373E-03
131	15.80000	0.14149E-02
132	17.70000	0.14794E-02

(Continued)

(Sheet 3 of 9)

Table A1. (Continued)

Day	Equilibrium Temperature	Surface Transfer Coefficient
	°C	cm/sec
133	17.30000	0.93210E-03
134	16.30000	0.94166E-03
135	13.80000	0.86040E-03
136	11.60000	0.87952E-03
137	14.90000	0.68354E-03
138	18.60000	0.37284E-03
139	20.30000	0.91537E-03
140	22.10000	0.89386E-03
141	25.00000	0.80304E-03
142	23.80000	0.14770E-02
143	21.60000	0.17184E-02
144	22.40000	0.77436E-03
145	20.90000	0.12571E-02
146	23.30000	0.19335E-02
147	20.60000	0.97273E-03
148	22.40000	0.14412E-02
149	22.20000	0.15392E-02
150	14.30000	0.82694E-03
151	16.50000	0.83650E-03
152	17.70000	0.10612E-02
153	18.00000	0.12380E-02
154	22.30000	0.72895E-03
155	22.20000	0.75524E-03
156	20.80000	0.13145E-02
157	25.60000	0.12500E-02
158	29.00000	0.81738E-03
159	27.90000	0.12834E-02
160	26.70000	0.14316E-02
161	26.60000	0.15583E-02
162	27.00000	0.13862E-02
163	26.20000	0.13025E-02
164	25.70000	0.17997E-02
165	24.20000	0.14603E-02
166	21.40000	0.10134E-02
167	17.20000	0.12691E-02
168	20.60000	0.85801E-03
169	24.30000	0.10970E-02
170	27.90000	0.77436E-03
171	25.20000	0.75285E-03
172	21.80000	0.12452E-02
173	24.60000	0.71222E-03
174	23.40000	0.89386E-03
175	22.50000	0.10851E-02
176	23.90000	0.93688E-03
177	22.90000	0.74807E-03

(Continued)

(Sheet 4 of 9)

Table A1. (Continued)

Day	Equilibrium Temperature	Surface Transfer Coefficient
	°C	cm/sec
178	22.90000	0.11472E-02
179	21.20000	0.15248E-02
180	22.40000	0.96556E-03
181	24.90000	0.74090E-03
182	23.80000	0.12787E-02
183	23.60000	0.97751E-03
184	25.40000	0.97512E-03
185	24.70000	0.13910E-02
186	24.40000	0.21653E-02
187	23.50000	0.19168E-02
188	22.30000	0.14292E-02
189	21.70000	0.74090E-03
190	24.10000	0.57121E-03
191	22.90000	0.68354E-03
192	26.90000	0.11878E-02
193	27.30000	0.87474E-03
194	27.90000	0.71222E-03
195	28.00000	0.76480E-03
196	26.80000	0.11472E-02
197	24.70000	0.16515E-02
198	24.10000	0.11257E-02
199	22.20000	0.11352E-02
200	24.20000	0.82216E-03
201	23.40000	0.11400E-02
202	23.60000	0.74807E-03
203	23.40000	0.13312E-02
204	26.70000	0.10420E-02
205	25.90000	0.15272E-02
206	24.30000	0.59272E-03
207	21.30000	0.92254E-03
208	22.80000	0.12595E-02
209	21.30000	0.58794E-03
210	19.50000	0.80782E-03
211	21.70000	0.61901E-03
212	23.60000	0.60467E-03
213	25.40000	0.68115E-03
214	27.60000	0.75285E-03
215	27.20000	0.69788E-03
216	26.60000	0.95839E-03
217	25.30000	0.10731E-02
218	26.40000	0.10229E-02
219	26.30000	0.10970E-02
220	27.80000	0.72417E-03
221	25.70000	0.10229E-02
222	25.40000	0.84128E-03

(Continued)

(Sheet 5 of 9)

Table A1. (Continued)

Day	Equilibrium Temperature	Surface Transfer Coefficient
	°C	cm/sec
223	25.50000	0.10301E-02
224	25.00000	0.11329E-02
225	26.10000	0.13958E-02
226	25.90000	0.88430E-03
227	28.80000	0.57121E-03
228	26.00000	0.87952E-03
229	26.60000	0.83172E-03
230	24.20000	0.59750E-03
231	25.40000	0.52580E-03
232	21.60000	0.10181E-02
233	24.20000	0.53058E-03
234	22.20000	0.99663E-03
235	22.50000	0.95600E-03
236	22.70000	0.82216E-03
237	22.70000	0.83650E-03
238	26.90000	0.47322E-03
239	22.20000	0.92015E-03
240	21.70000	0.14125E-02
241	22.50000	0.10659E-02
242	25.50000	0.12213E-02
243	22.90000	0.10731E-02
244	21.70000	0.61184E-03
245	23.70000	0.85562E-03
246	24.00000	0.14460E-02
247	19.40000	0.91776E-03
248	20.20000	0.67637E-03
249	18.20000	0.65725E-03
250	19.60000	0.56643E-03
251	18.80000	0.79109E-03
252	19.10000	0.13934E-02
253	21.10000	0.12930E-02
254	23.80000	0.64530E-03
255	22.80000	0.92015E-03
256	22.30000	0.89386E-03
257	24.30000	0.85801E-03
258	19.30000	0.11759E-02
259	13.90000	0.83650E-03
260	15.80000	0.77197E-03
261	16.90000	0.58794E-03
262	19.60000	0.49234E-03
263	20.50000	0.85323E-03
264	20.60000	0.87713E-03
265	20.10000	0.93210E-03
266	20.80000	0.96556E-03
267	22.50000	0.87235E-03

(Continued)

(Sheet 6 of 9)

Table A1. (Continued)

Day	Equilibrium Temperature	Surface Transfer Coefficient
	°C	cm/sec
268	23.80000	0.73134E-03
269	18.70000	0.10588E-02
270	10.80000	0.95122E-03
271	10.50000	0.91776E-03
272	12.70000	0.11854E-02
273	13.50000	0.95839E-03
274	12.00000	0.91776E-03
275	10.90000	0.87952E-03
276	13.20000	0.76719E-03
277	17.50000	0.41586E-03
278	16.70000	0.38240E-03
279	14.60000	0.76241E-03
280	13.10000	0.71700E-03
281	16.30000	0.41347E-03
282	19.50000	0.34894E-03
283	18.00000	0.50429E-03
284	18.30000	0.39913E-03
285	15.90000	0.56882E-03
286	13.80000	0.11998E-02
287	14.80000	0.95839E-03
288	16.60000	0.60467E-03
289	14.70000	0.10898E-02
290	15.80000	0.83650E-03
291	20.70000	0.36089E-03
292	18.90000	0.77436E-03
293	22.90000	0.39674E-03
294	19.70000	0.12691E-02
295	20.60000	0.15368E-02
296	19.20000	0.62379E-03
297	14.70000	0.47800E-03
298	15.70000	0.48995E-03
299	18.40000	0.74807E-03
300	19.70000	0.74807E-03
301	21.00000	0.12093E-02
302	20.60000	0.81021E-03
303	15.80000	0.70744E-03
304	18.10000	0.41586E-03
305	16.30000	0.62140E-03
306	11.90000	0.89386E-03
307	6.40000	0.66920E-03
308	12.30000	0.66442E-03
309	14.30000	0.70744E-03
310	7.90000	0.79348E-03
311	6.30000	0.51385E-03
312	7.20000	0.29158E-03

(Continued)

(Sheet 7 of 9)

Table A1. (Continued)

Day	Equilibrium Temperature °C	Surface Transfer Coefficient cm/sec
313	8.30000	0.40152E-03
314	10.30000	0.87235E-03
315	12.10000	0.86040E-03
316	3.80000	0.11305E-02
317	3.00000	0.10874E-02
318	3.80000	0.95600E-03
319	5.80000	0.74090E-03
320	7.50000	0.10086E-02
321	2.90000	0.64291E-03
322	4.70000	0.34655E-03
323	3.40000	0.56643E-03
324	-0.60000	0.75285E-03
325	0.00000	0.58555E-03
326	0.70000	0.52102E-03
327	2.90000	0.27724E-03
328	5.50000	0.33221E-03
329	5.60000	0.34416E-03
330	5.30000	0.31070E-03
331	5.60000	0.33221E-03
332	10.60000	0.13169E-02
333	3.30000	0.78631E-03
334	4.90000	0.56882E-03
335	6.40000	0.65725E-03
336	4.80000	0.35850E-03
337	8.00000	0.52819E-03
338	1.10000	0.42064E-03
339	0.50000	0.60228E-03
340	1.10000	0.87474E-03
341	-4.40000	0.83650E-03
342	0.30000	0.48278E-03
343	3.80000	0.23900E-03
344	3.80000	0.24617E-03
345	5.30000	0.45410E-03
346	4.10000	0.40869E-03
347	7.80000	0.33699E-03
348	8.60000	0.34416E-03
349	8.50000	0.36806E-03
350	6.70000	0.40869E-03
351	10.50000	0.48039E-03
352	13.00000	0.39196E-03
353	9.10000	0.45649E-03
354	6.80000	0.25812E-03
355	6.10000	0.52580E-03
356	11.40000	0.12763E-02
357	2.30000	0.49234E-03

(Continued)

(Sheet 8 of 9)

Table A1. (Concluded)

Day	Equilibrium Temperature	Surface Transfer Coefficient
	°C	cm/sec
358	4.00000	0.51385E-03
359	3.40000	0.80065E-03
360	1.00000	0.22227E-03
361	3.50000	0.28441E-03
362	11.40000	0.73134E-03
363	13.60000	0.12309E-02
364	9.90000	0.72178E-03
365	9.50000	0.74329E-03
366	9.50000	0.81260E-03
367	0.30000	0.83172E-03

(Sheet 9 of 9)

APPENDIX B: 1985 RESULTS

Boundary Conditions

1. The ocean boundary tide at the Chesapeake Bay tunnel is shown in Figure B1 with the time-varying salinity and temperature at the ocean boundary given in Figures B2 and B3. Wind forcing data corrected to reflect the wind over open water are given in Figures B4 and B5. These wind data were collected at the Norfolk and Baltimore-Washington International Airports. Freshwater inflows on the James, York, Rappahannock, Potomac, Patuxent, Patapsco, Susquehanna, and Choptank Rivers are presented in Figures B6-B13. Surface heat exchange data for the complete year are listed in Table B1.

Results

2. The 1985 year was broken into five seasons as follows for the purpose of generating seasonally averaged longitudinal transects of salinity:

- Season 1 -> 1 Jan - 28 Feb
- Season 2 -> 1 Mar - 30 Apr
- Season 3 -> 1 May - 15 Jul
- Season 4 -> 16 Jul - 18 Sep
- Season 5 -> 19 Sep - 31 Dec

3. Comparisons of computed water-surface elevation, salinity, and temperature are presented at the locations shown in Figure B14. Figures B15-B20 show the water-surface elevation comparisons at Hampton Roads, VA; Lewisetta, VA; Colonial Beach, VA; Solomons, MD; Annapolis, MD; and Havre de Grace, MD. Figures B21-B39 present the salinity comparisons at seven main bay stations and twelve tributary stations. Figures B40-B58 are similar plots showing the comparison of computed and recorded temperatures.

4. Figures B59-B65 present vertical profiles of the water density at different times of the year at four main bay stations as well as stations on the James, Potomac, and Patuxent Rivers.

5. The location of the transects for generating seasonally averaged plots for the previously listed seasons are shown in Figure B66. The longitudinal plots of seasonally averaged salinities for the two main-bay transects and those on the James, Rappahannock, Potomac, and Patuxent Rivers are given in Figures B67-B72.

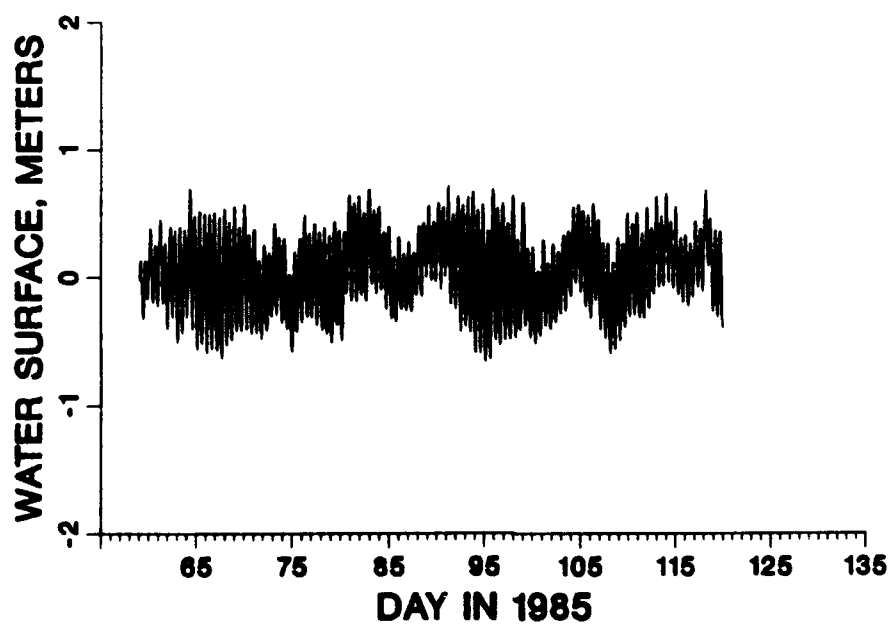
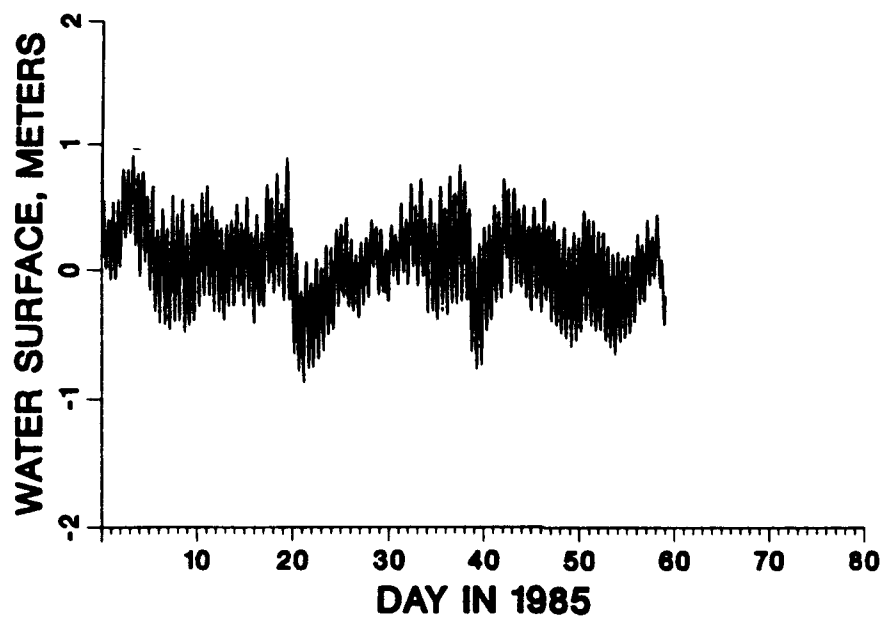


Figure B1. Ocean boundary tide during 1985 (Sheet 1 of 3)

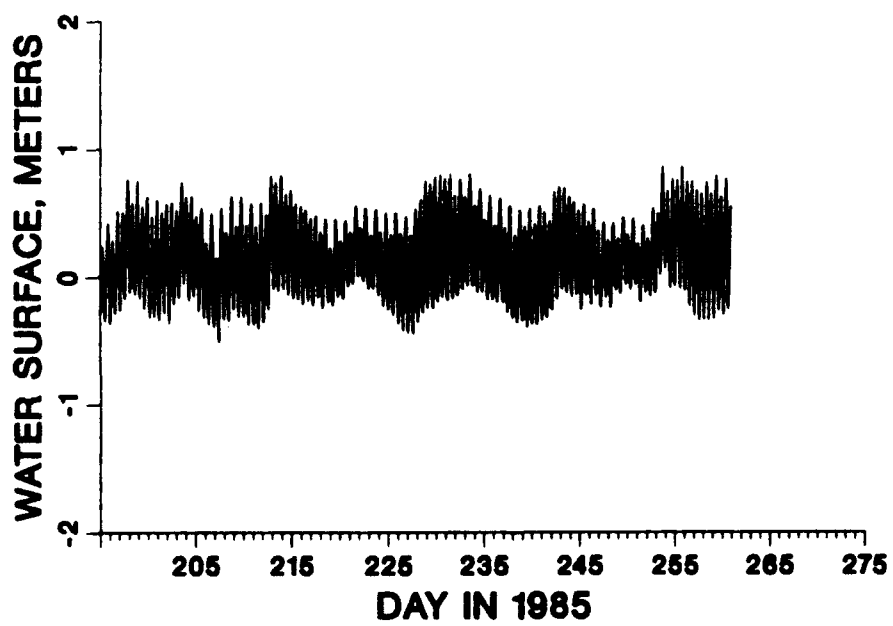
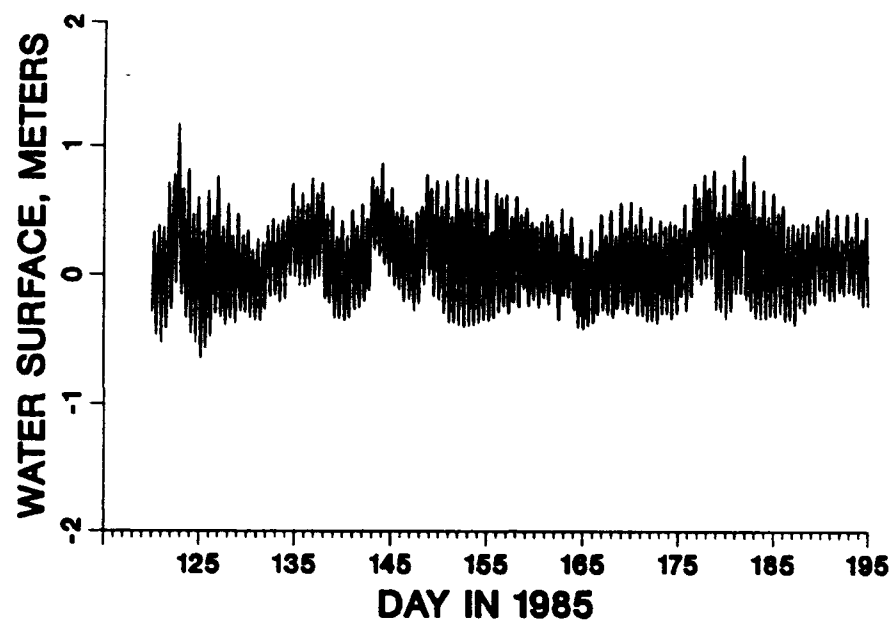


Figure B1. (Sheet 2 of 3)

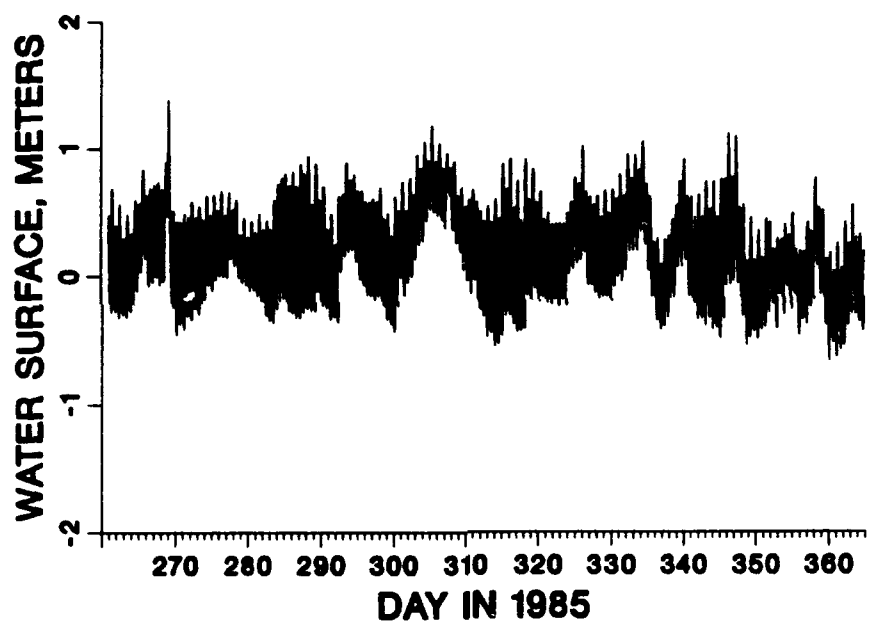


Figure B1. (Sheet 3 of 3)

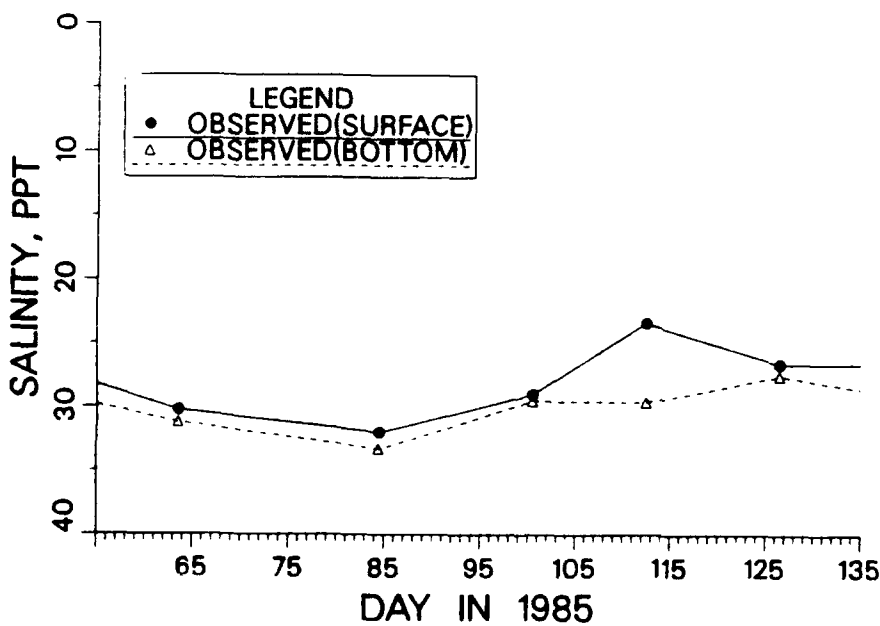
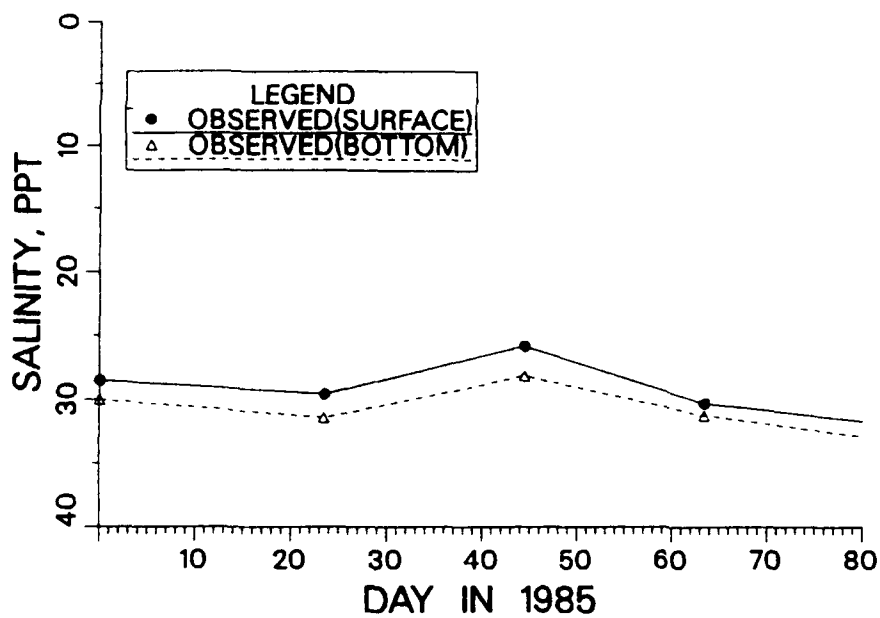


Figure B2. Ocean boundary salinity during 1985 (Sheet 1 of 3)

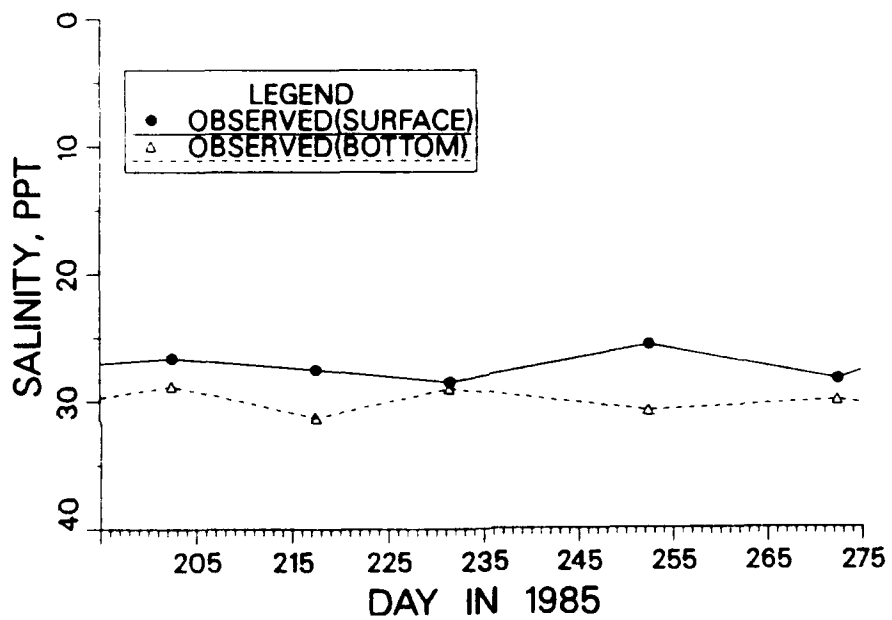
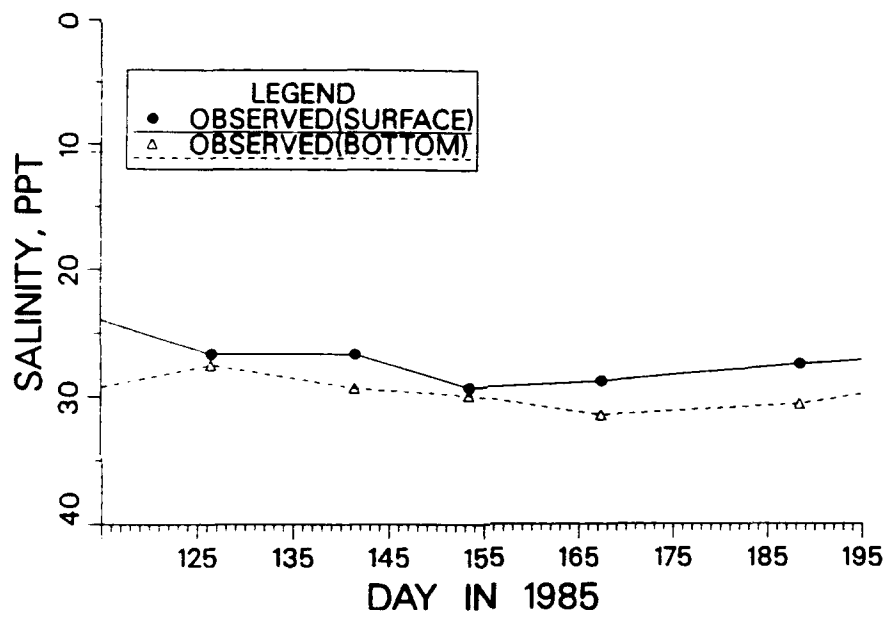


Figure B2. (Sheet 2 of 3)

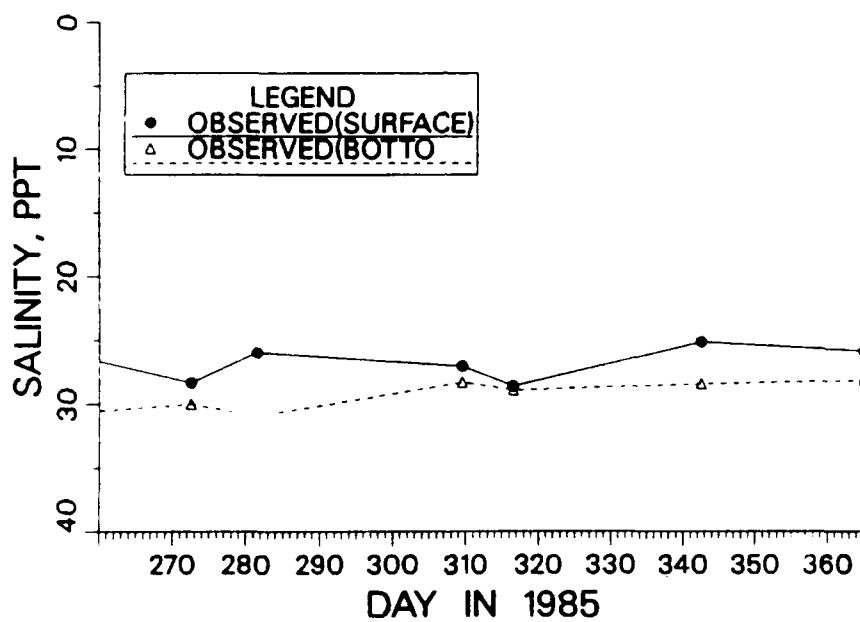


Figure B2. (Sheet 3 of 3)

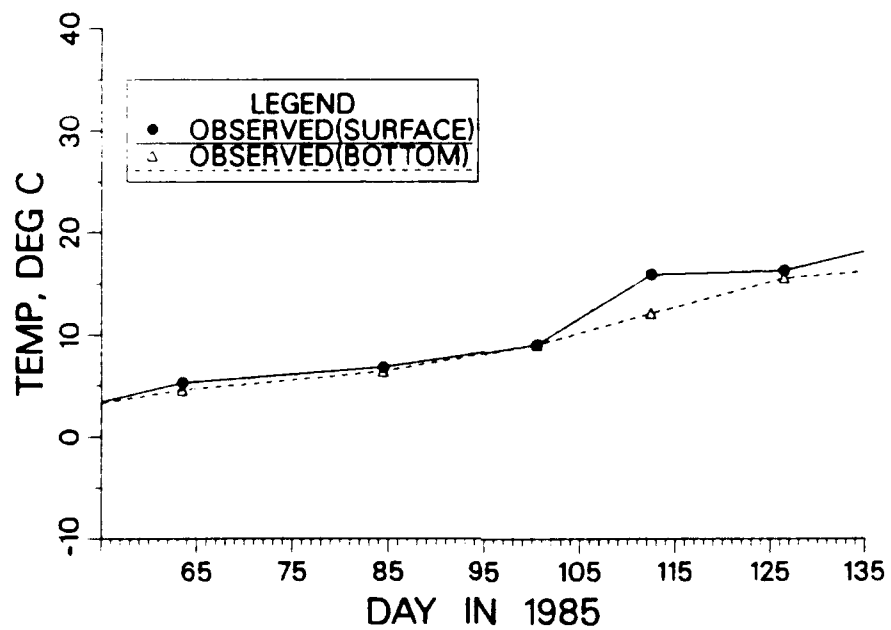
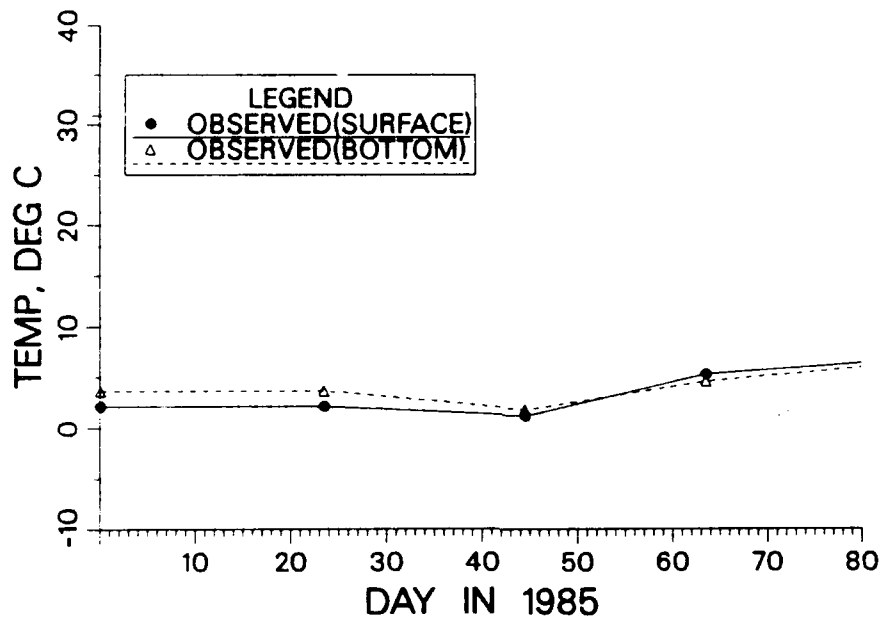


Figure B3. Ocean boundary temperature during 1985 (Sheet 1 of 3)

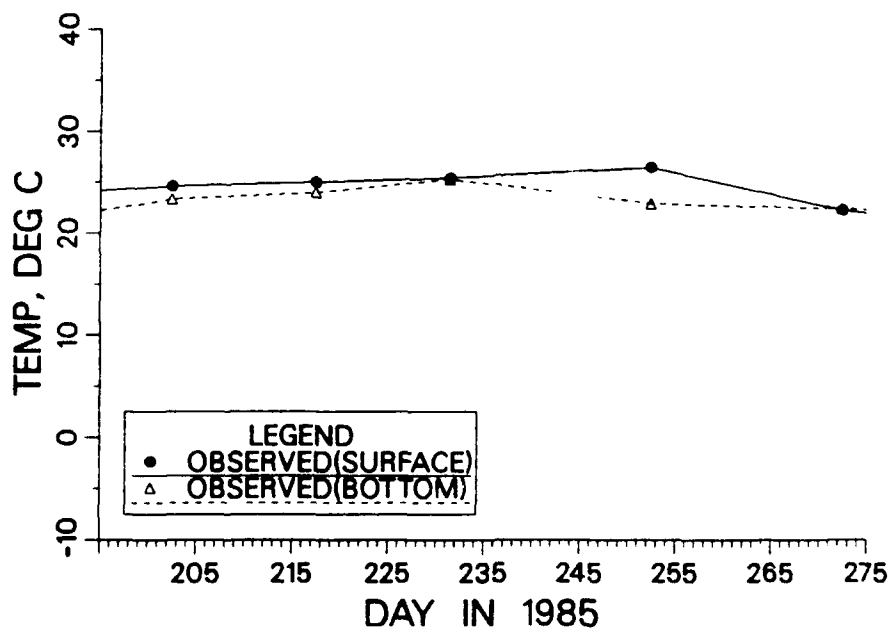
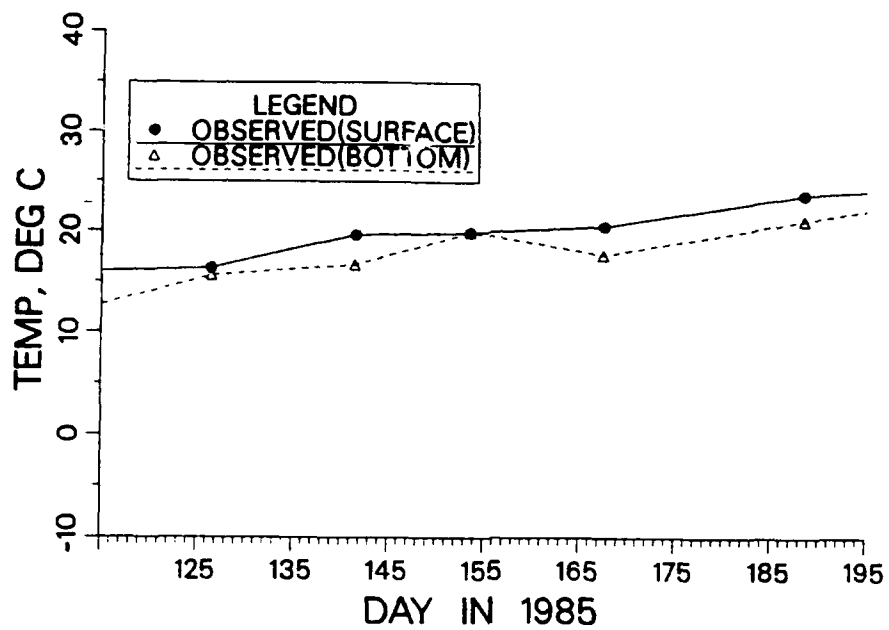


Figure B3. (Sheet 2 of 3)

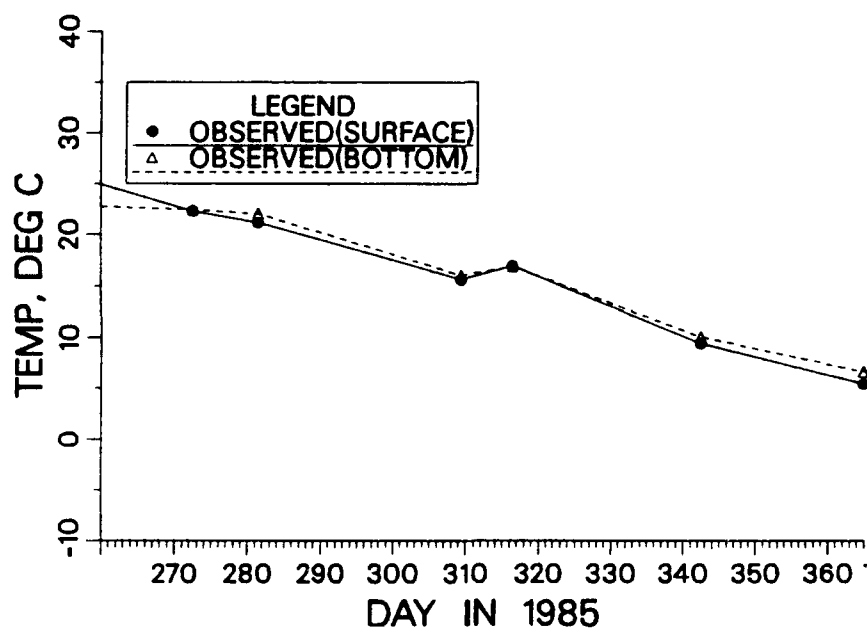
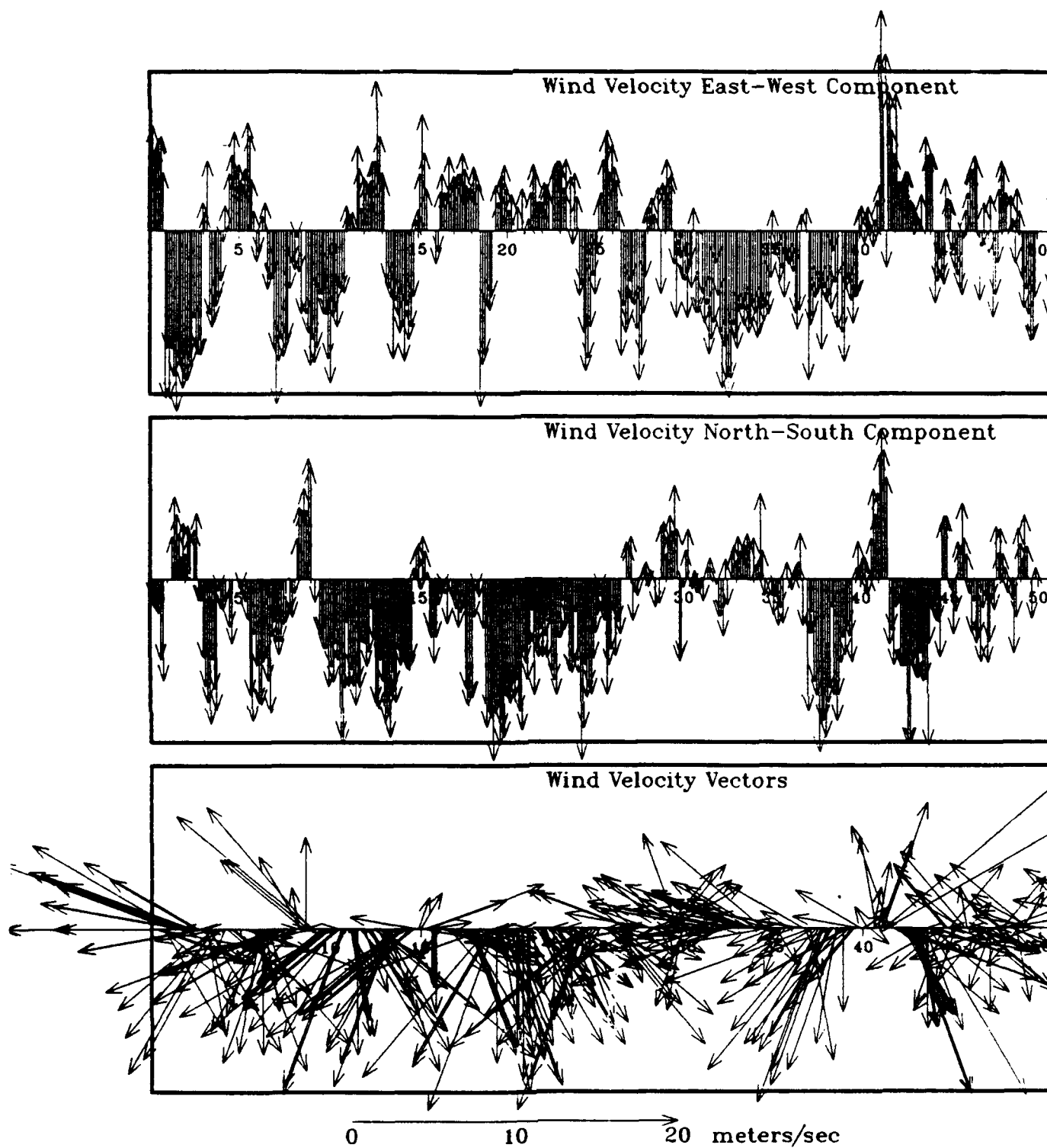
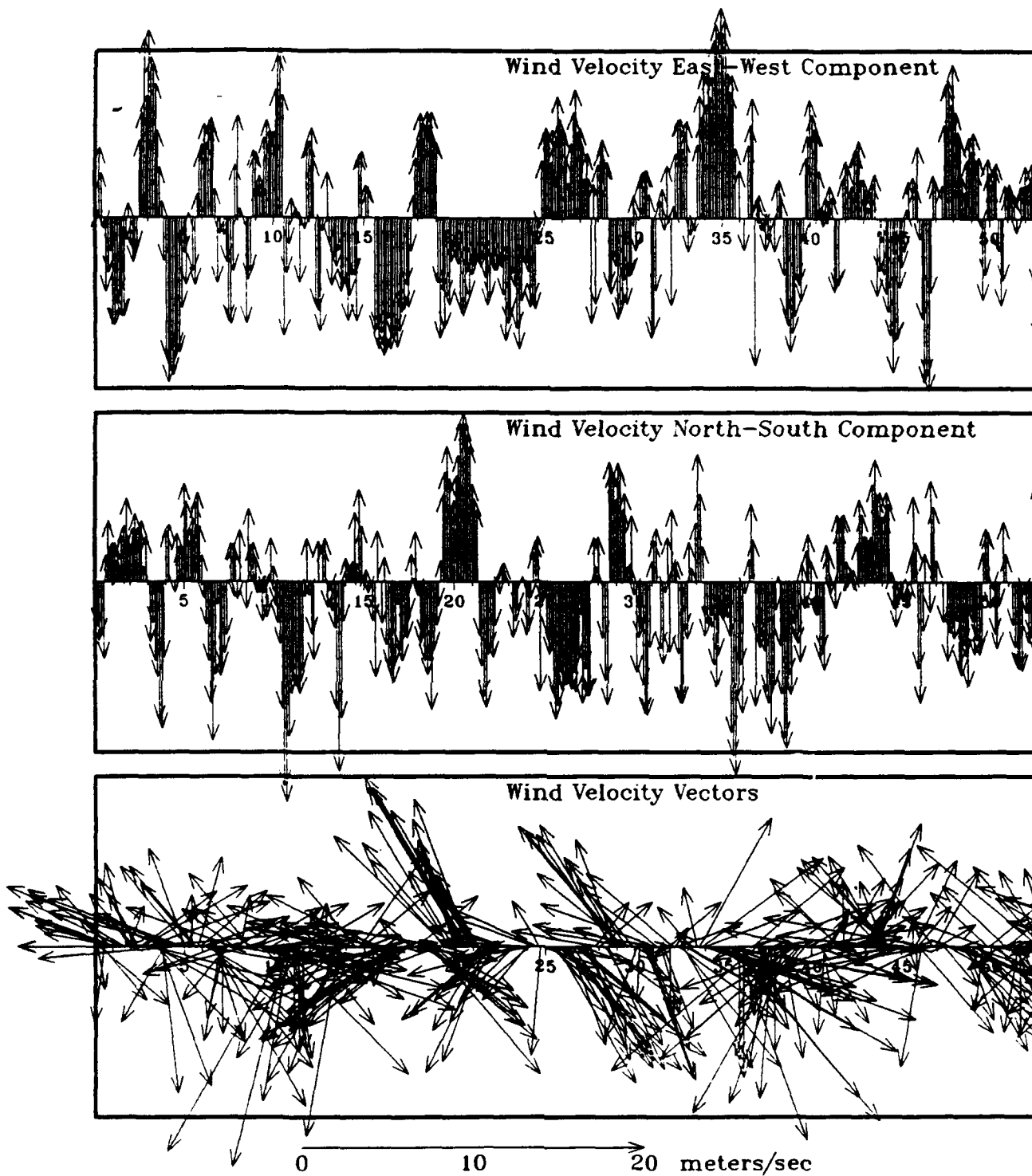


Figure B3. (Sheet 3 of 3)



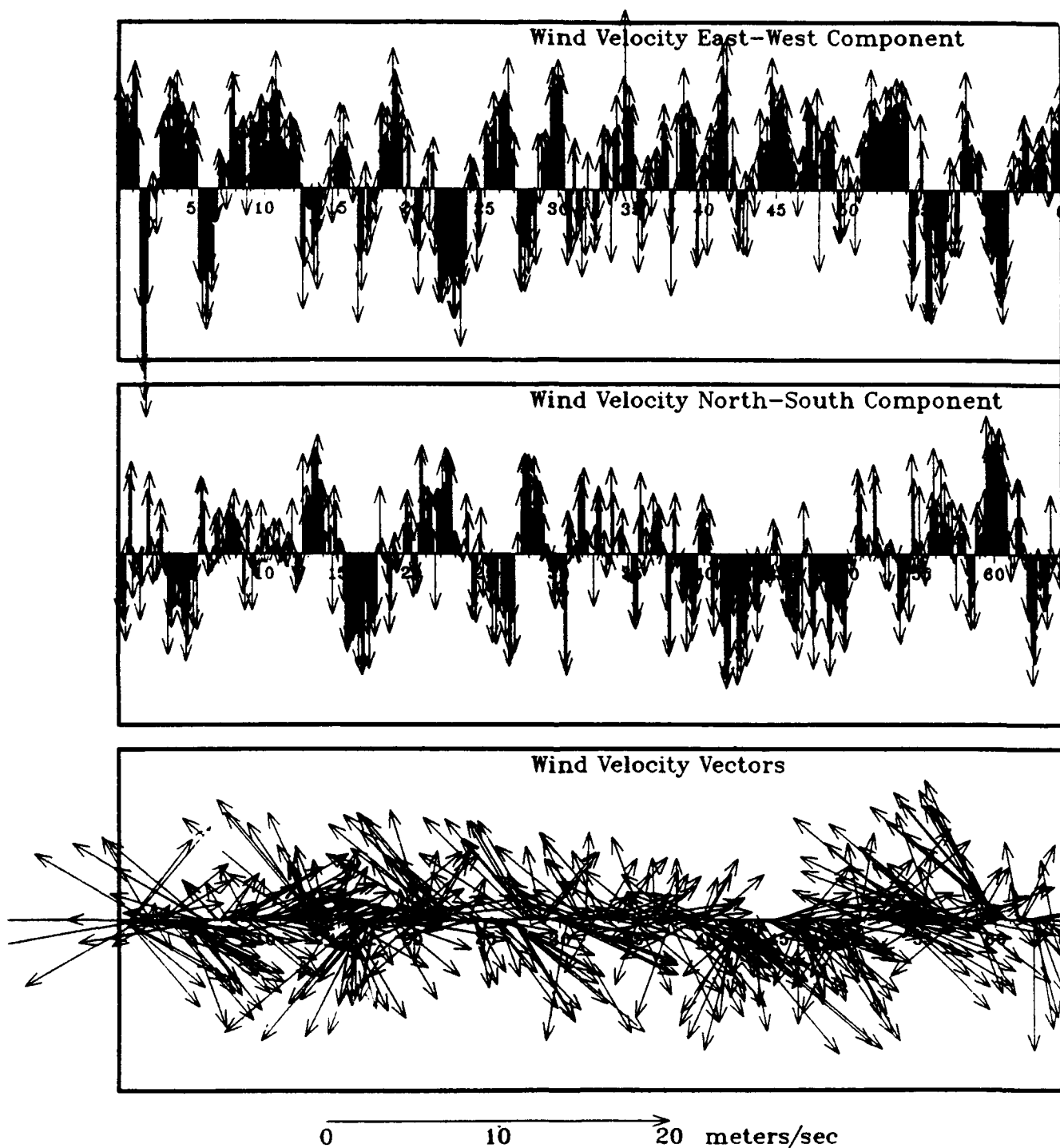
a. Day 0 is 1 January

Figure B4. Wind at Norfolk International Airport during 1985 (Sheet 1 of 5)



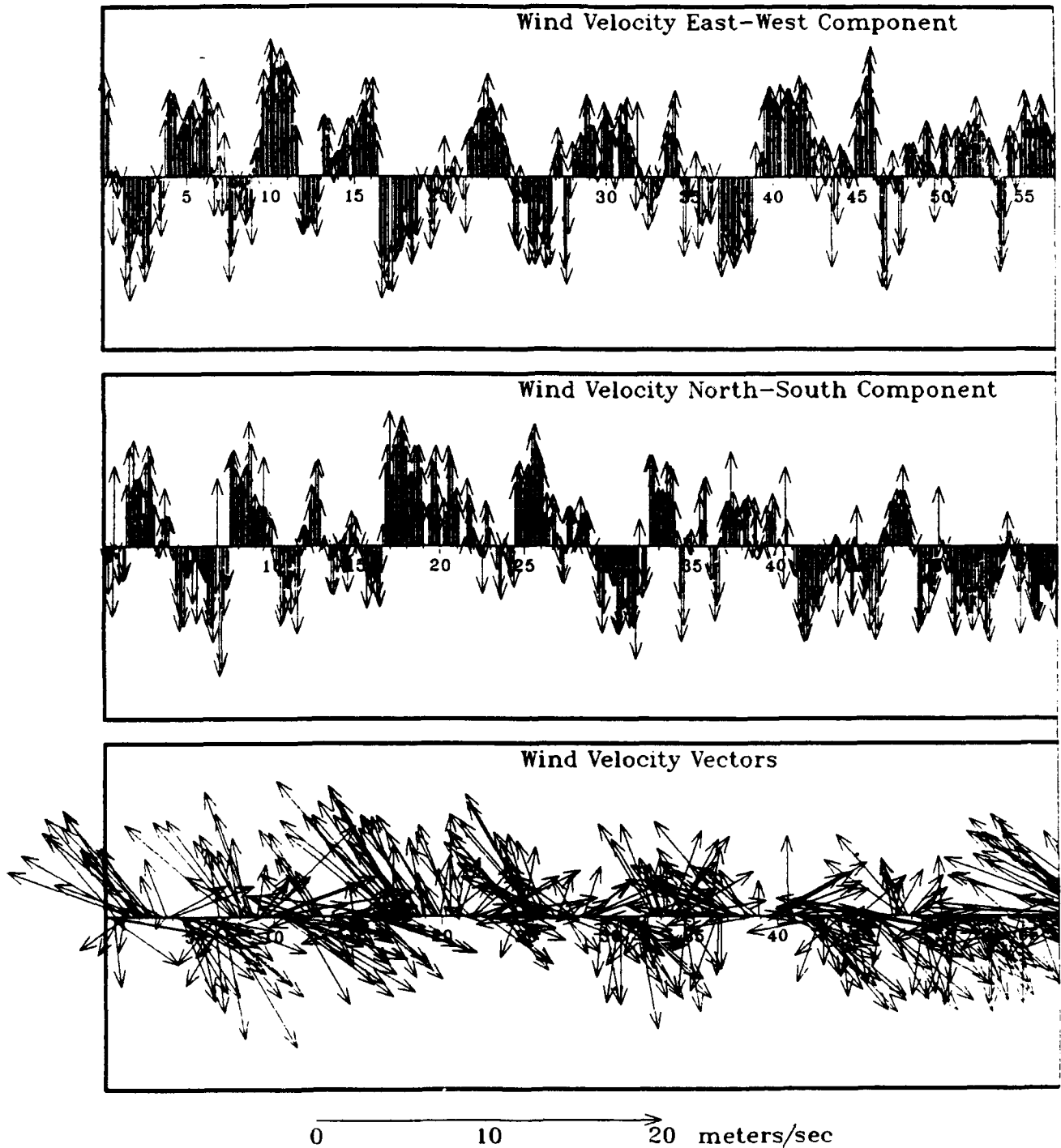
b. Day 0 is 1 March

Figure B4. (Sheet 2 of 5)



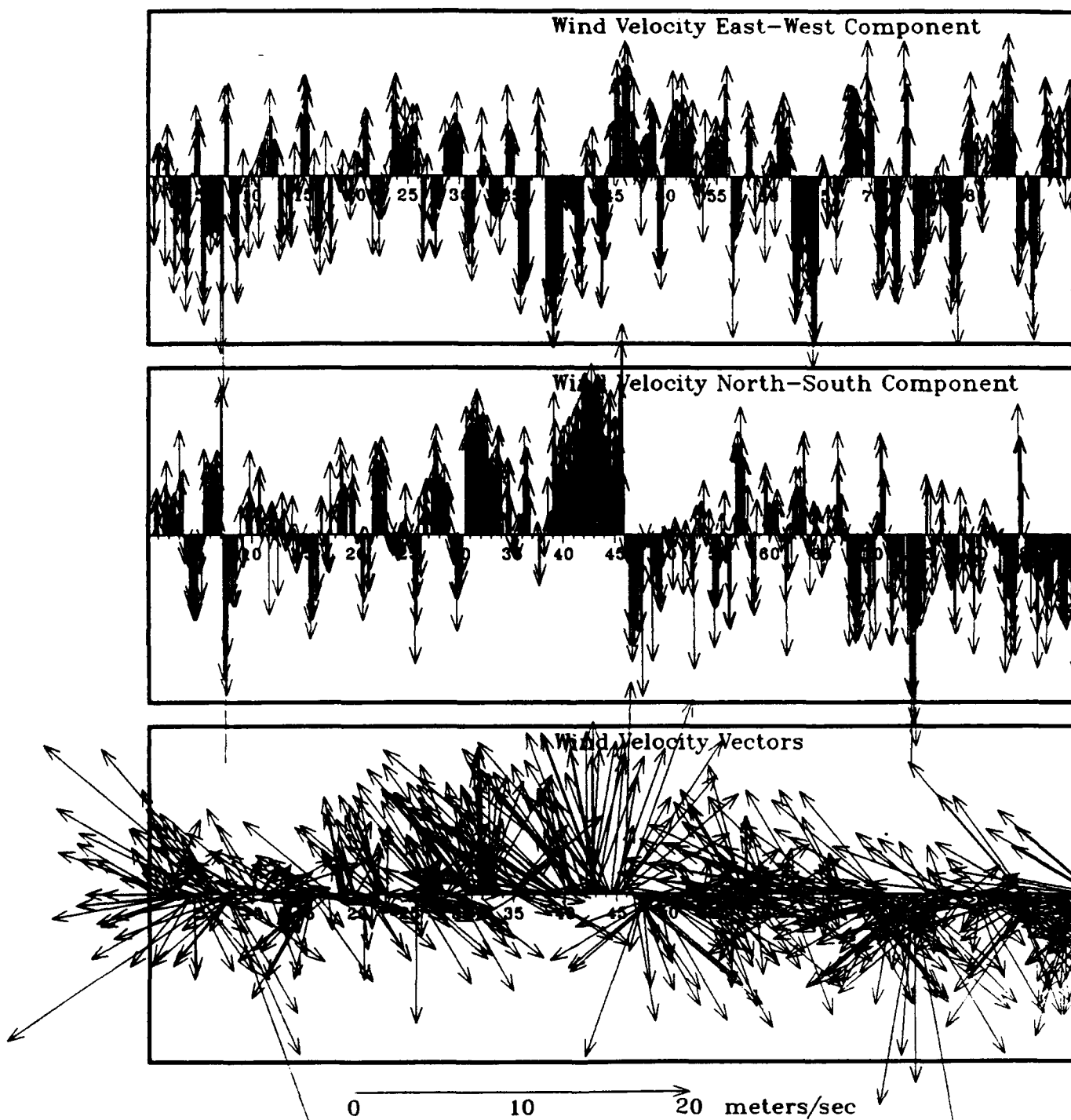
c. Day 0 is 1 May

Figure B4. (Sheet 3 of 5)



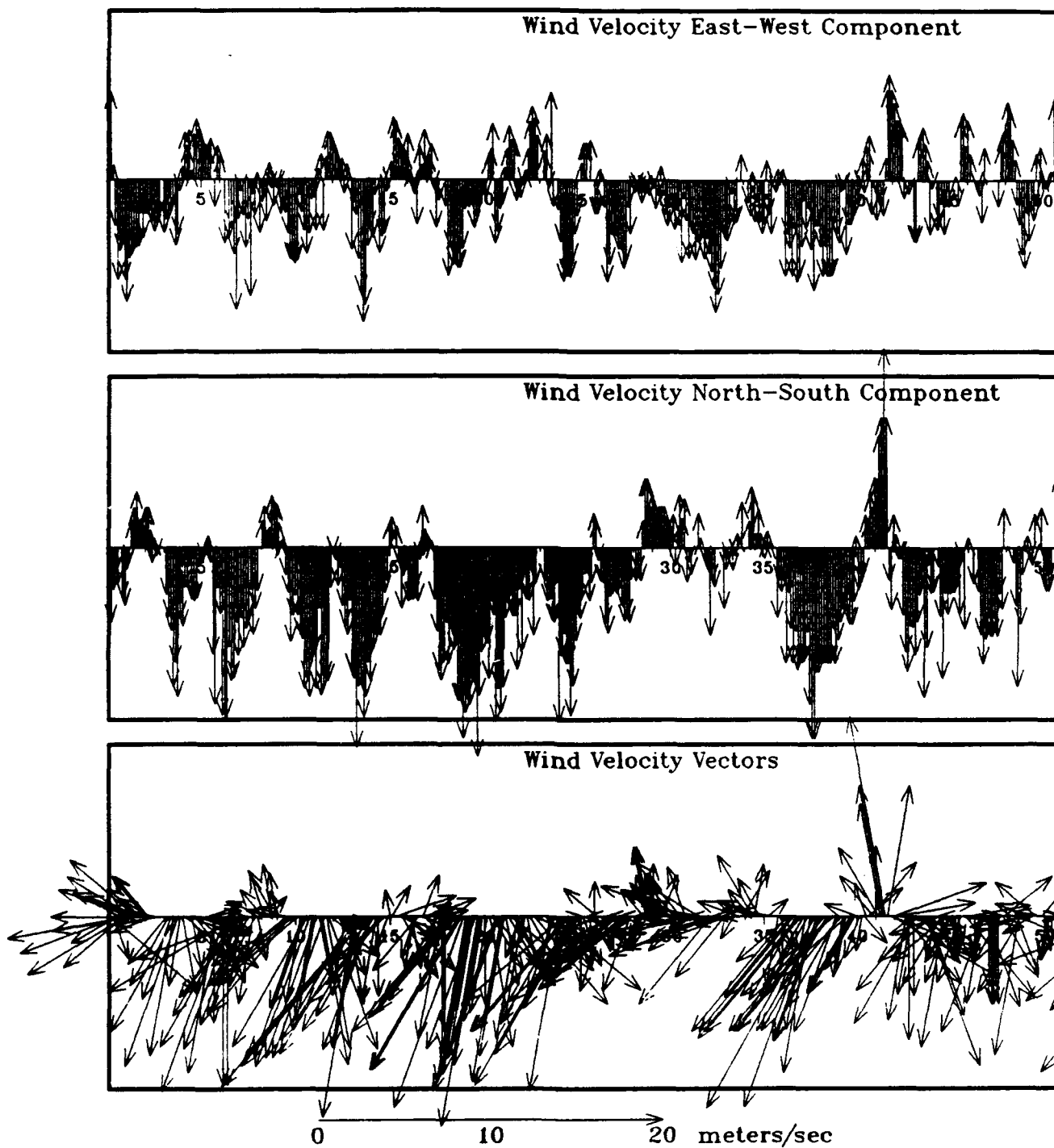
d. Day 0 is 16 July

Figure B4. (Sheet 4 of 5)



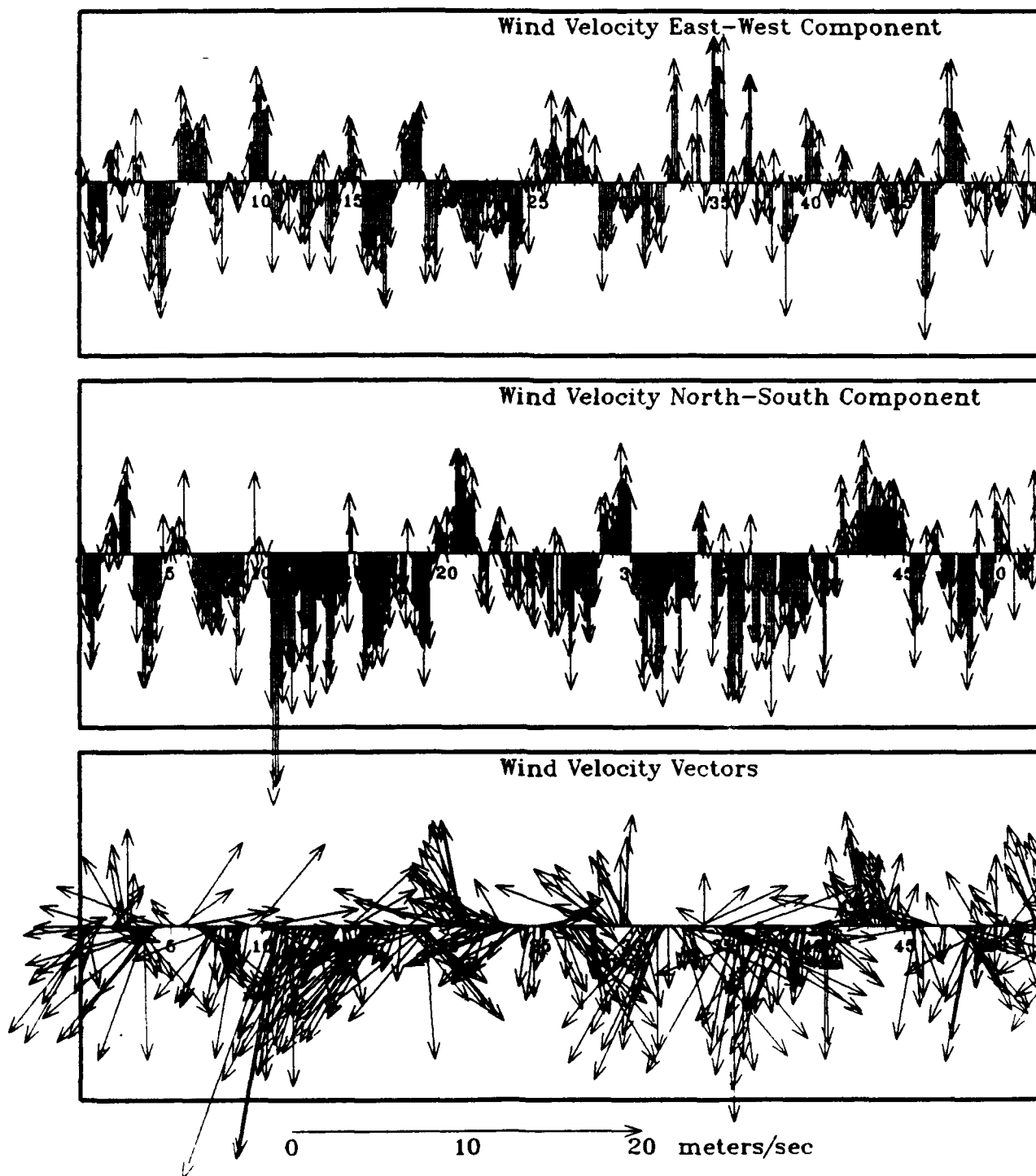
e. Day 0 is 19 September

Figure B4. (Sheet 5 of 5)



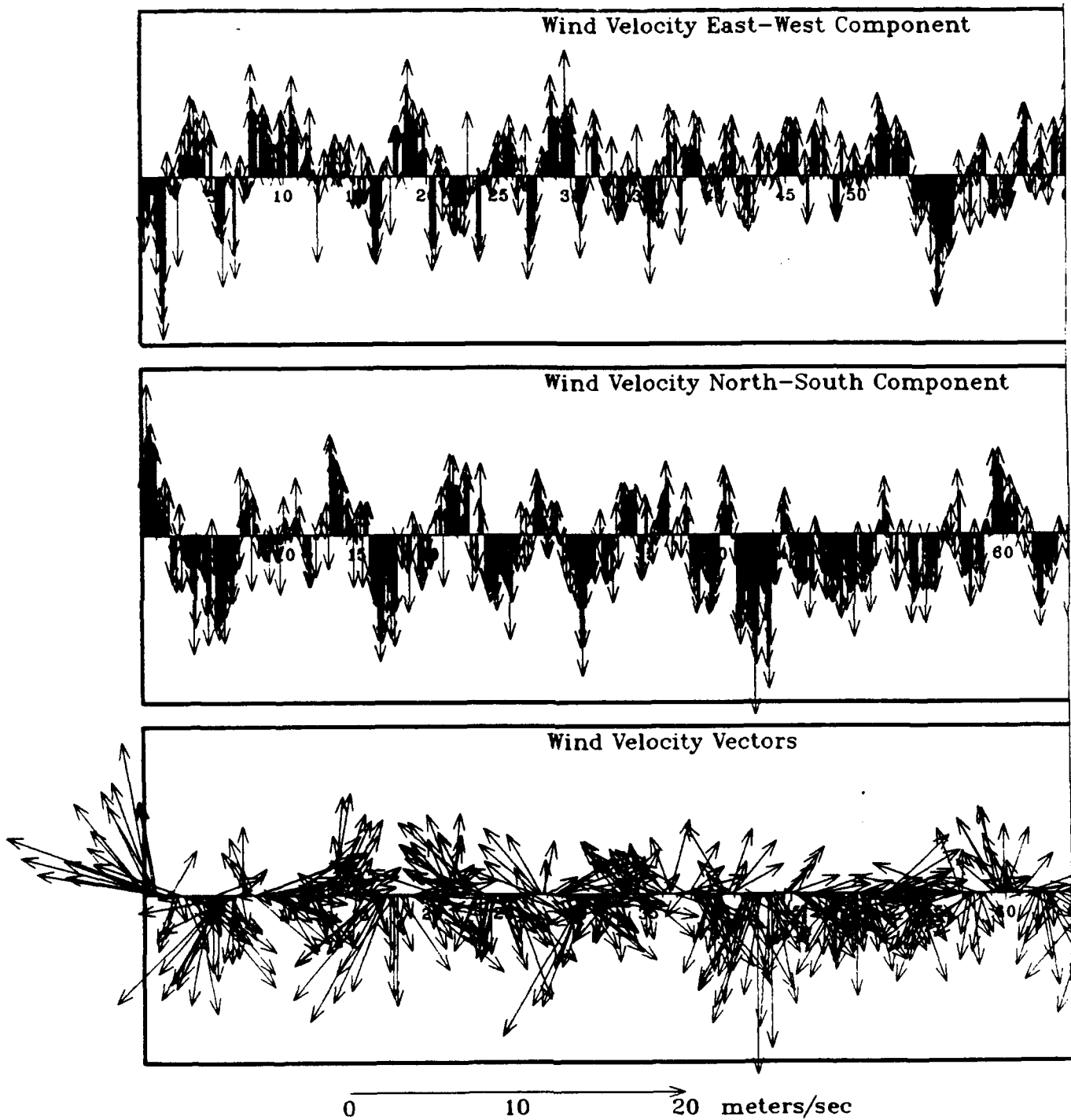
a. Day 0 is 1 January

Figure B5. Wind at Baltimore-Washington International Airport during 1985 (Sheet 1 of 5)



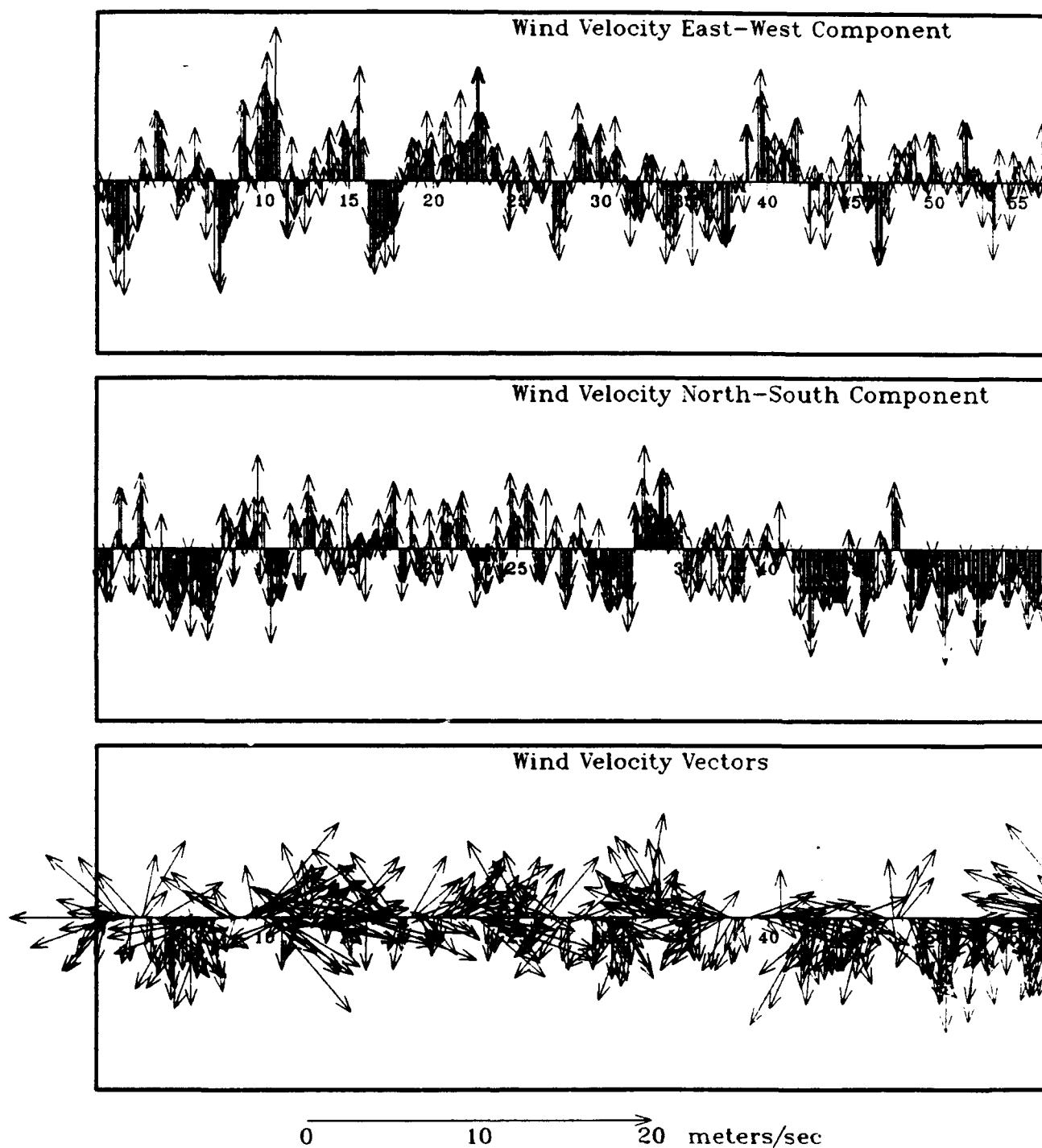
b. Day 0 is 1 March

Figure B5. (Sheet 2 of 5)



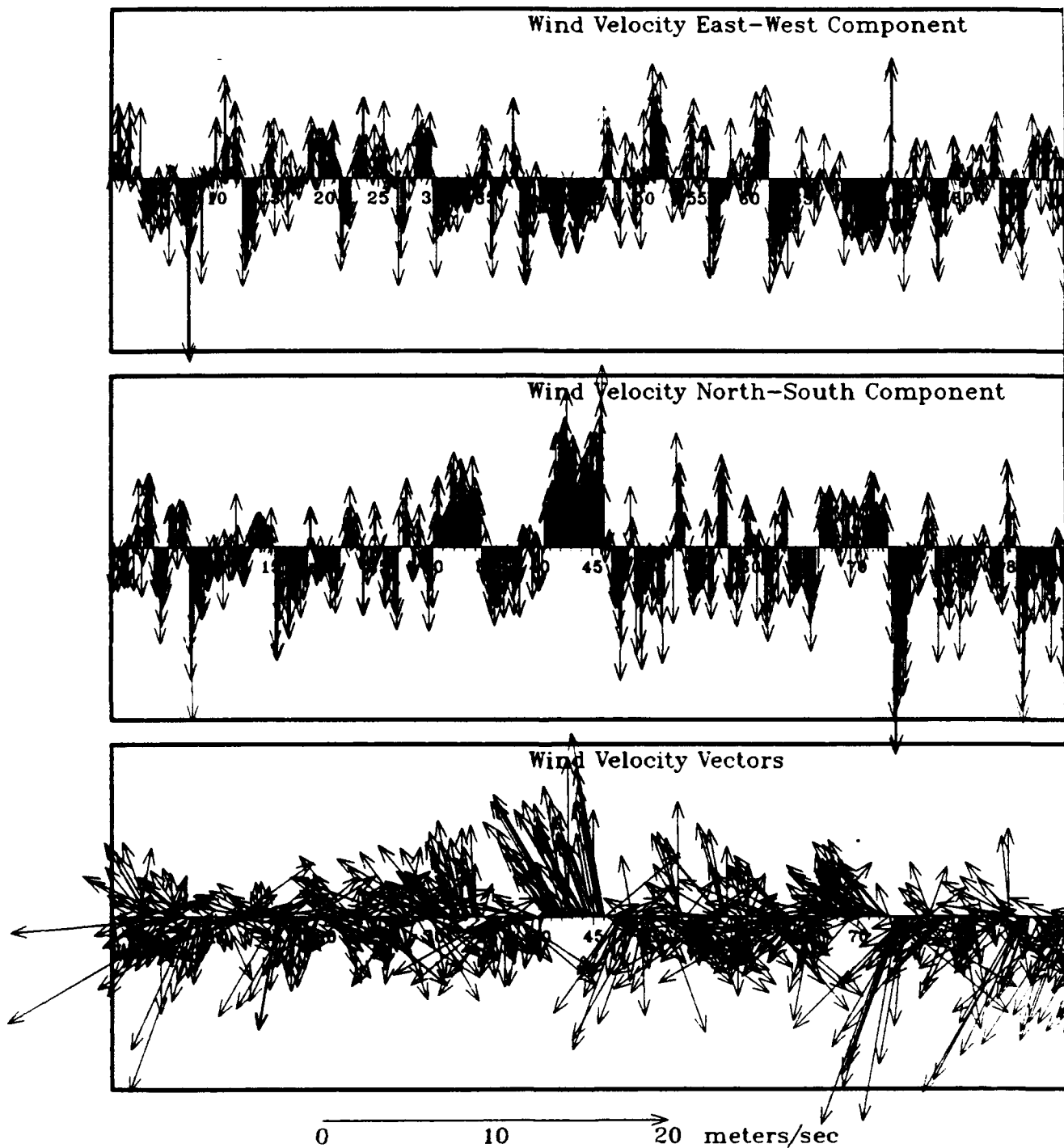
c. Day 0 is 1 May

Figure B5. (Sheet 3 of 5)



d. Day 0 is 16 July

Figure B5. (Sheet 4 of 5)



e. Day 0 is 19 September

Figure B5. (Sheet 5 of 5)

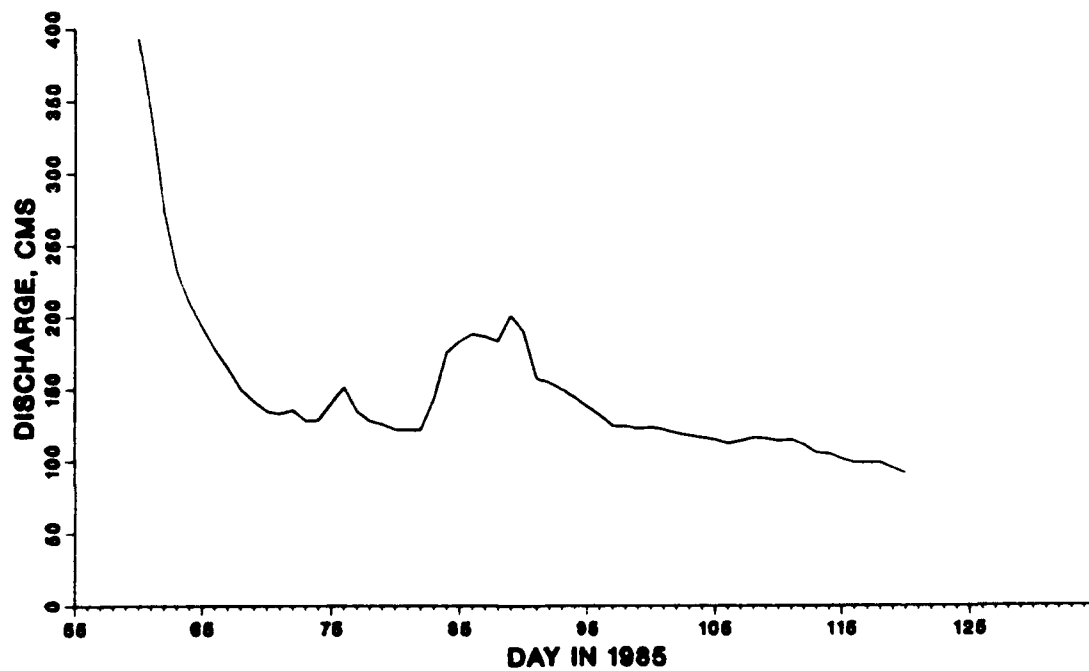
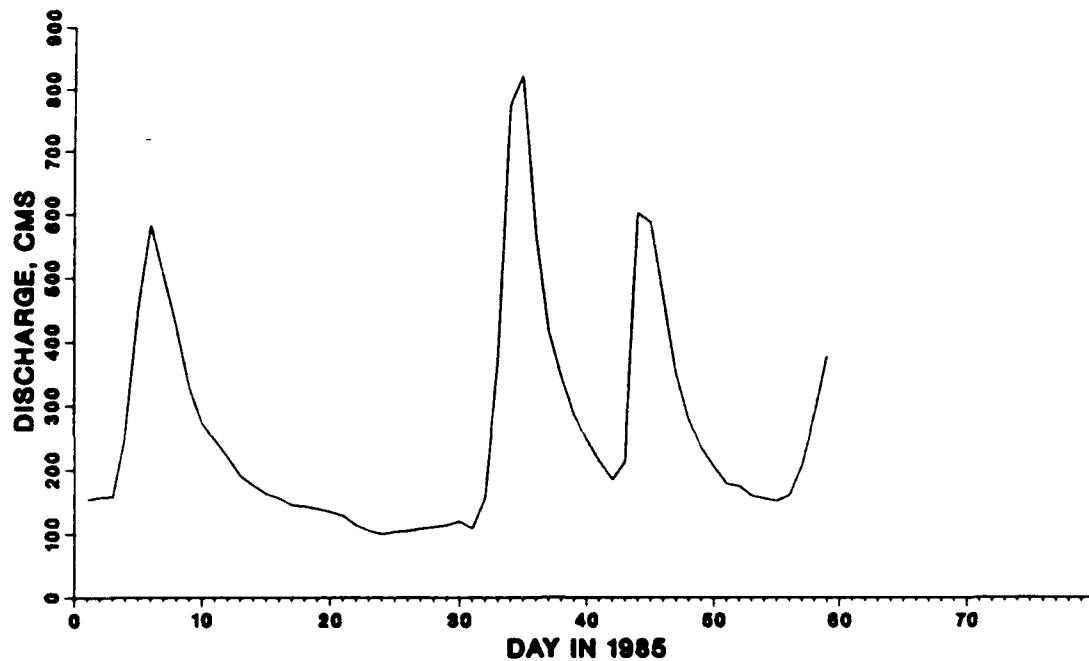


Figure B6. Freshwater inflow on James River during 1985 (Sheet 1 of 3)

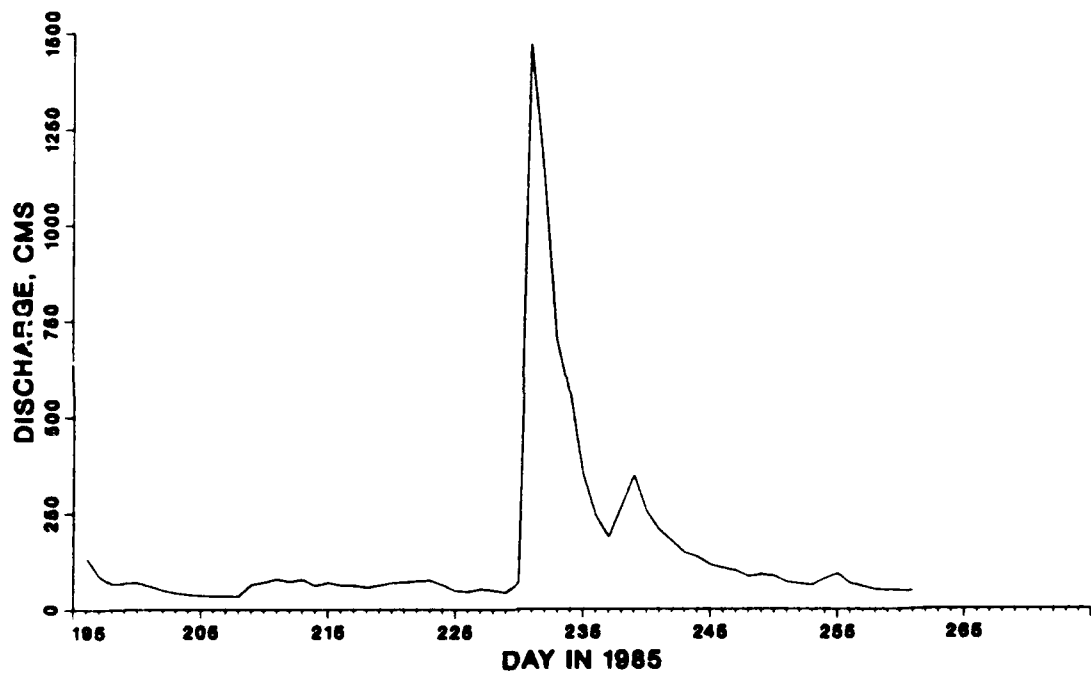
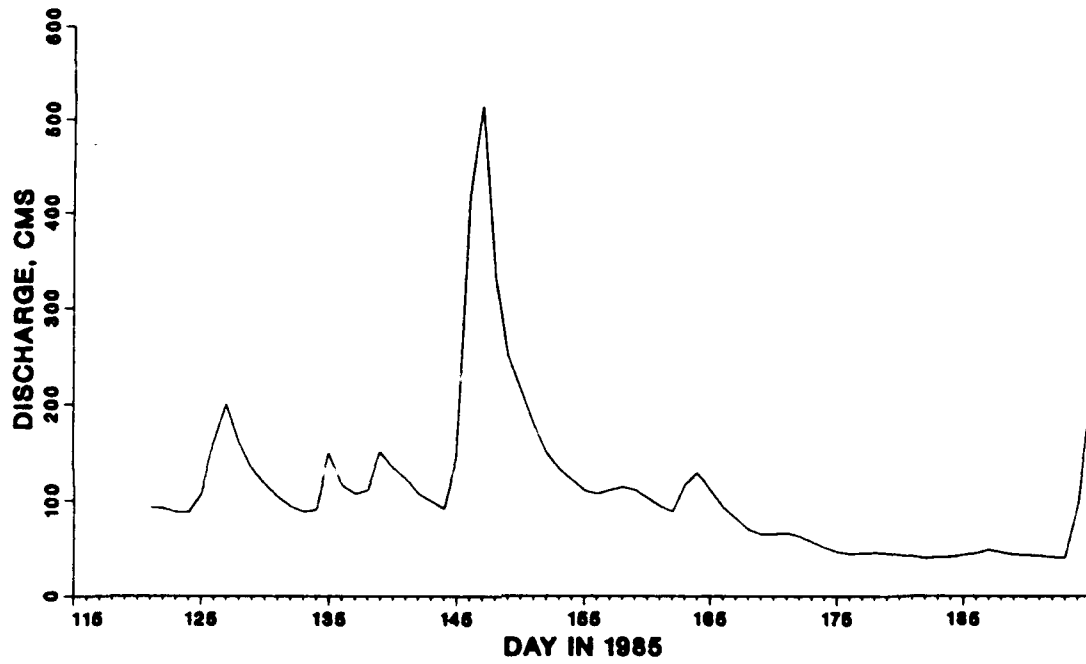


Figure B6. (Sheet 2 of 3)

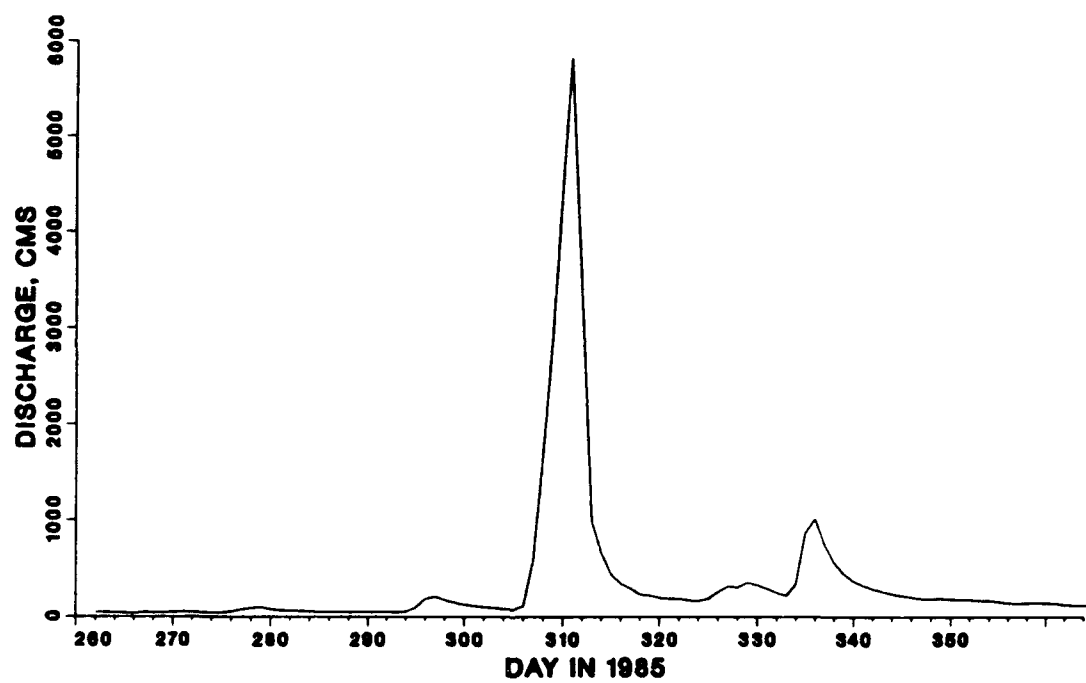


Figure B6. (Sheet 3 of 3)

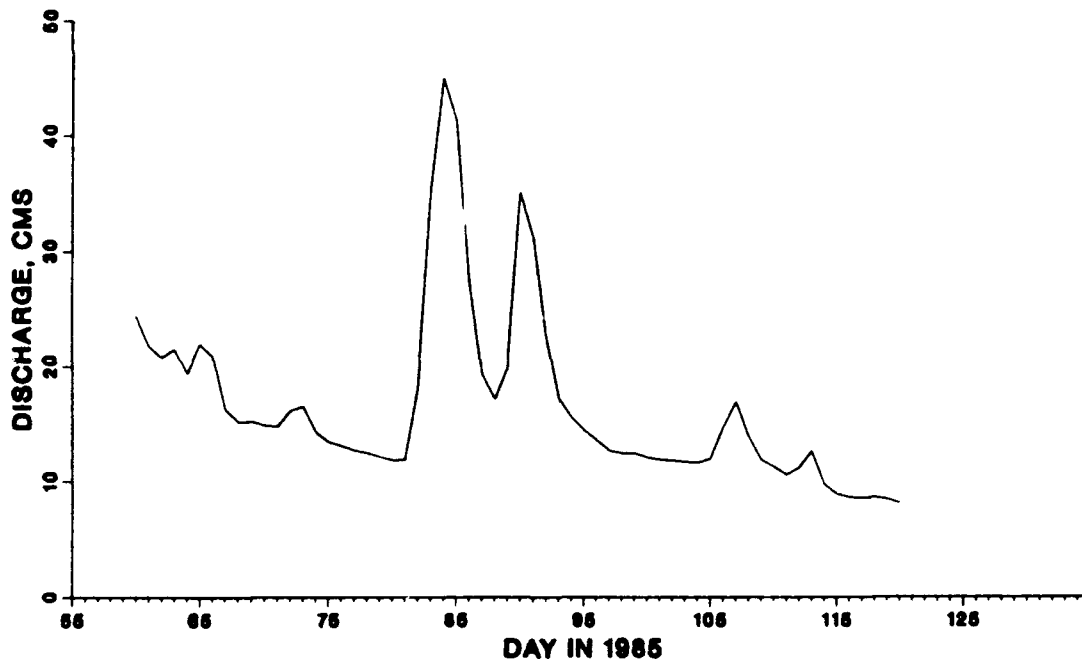
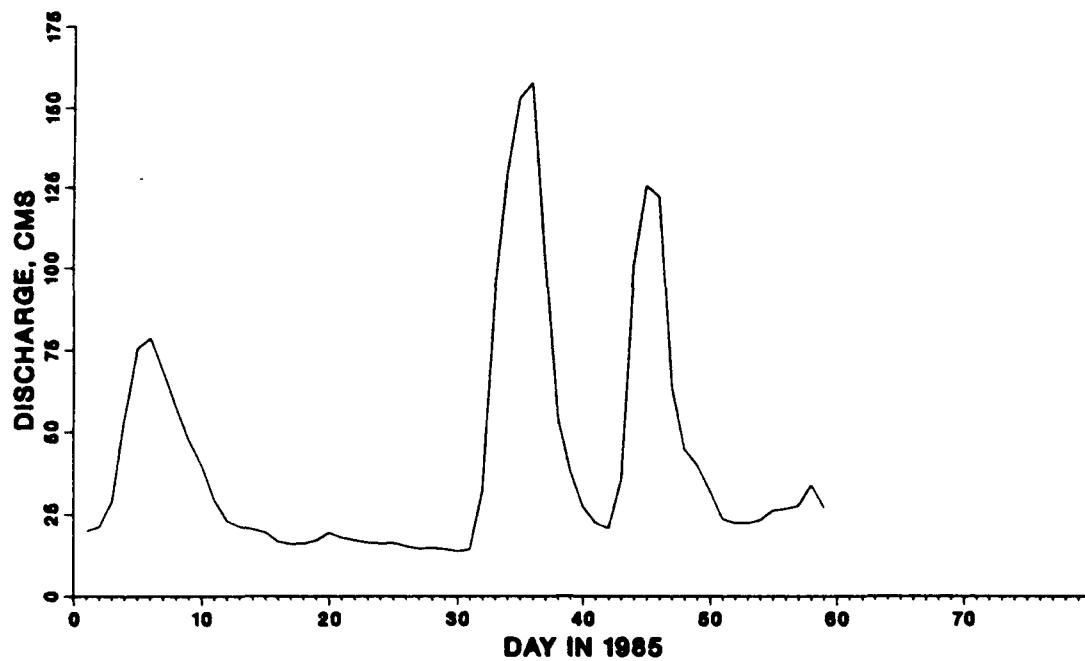


Figure B7. Freshwater inflow on York River during 1985 (Sheet 1 of 3)

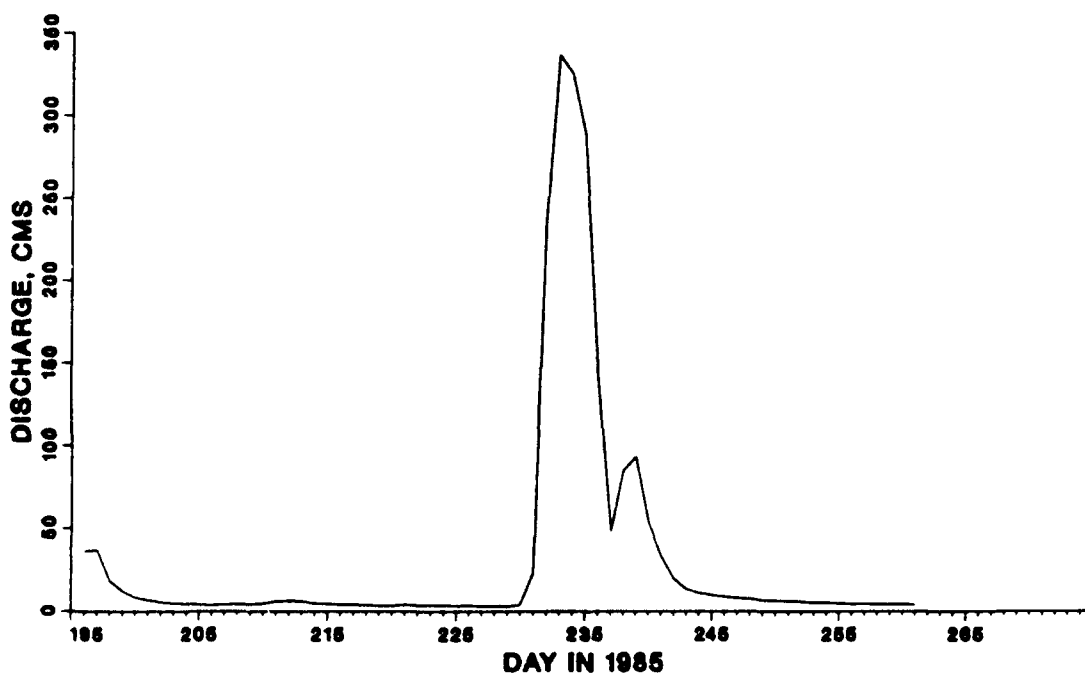
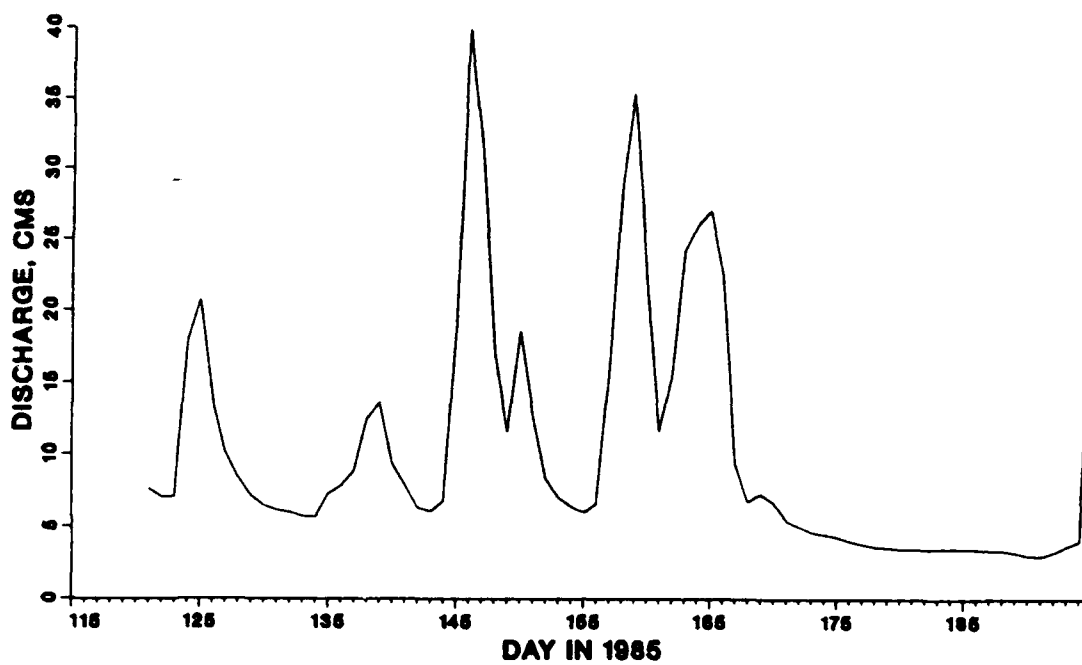


Figure B7. (Sheet 2 of 3)

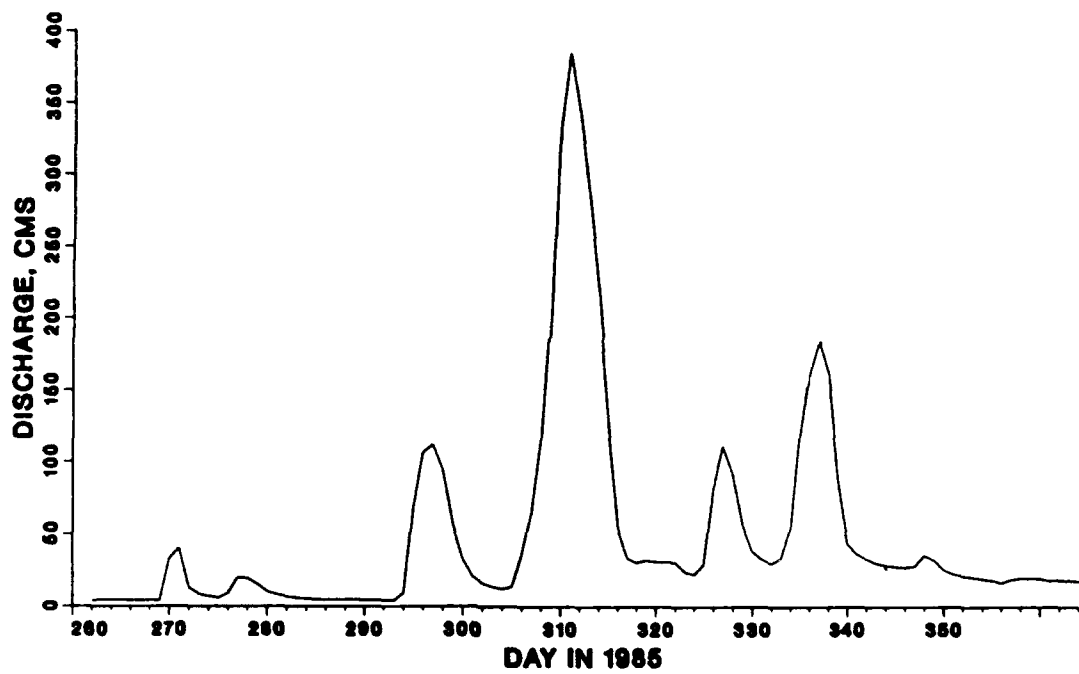


Figure B7. (Sheet 3 of 3)

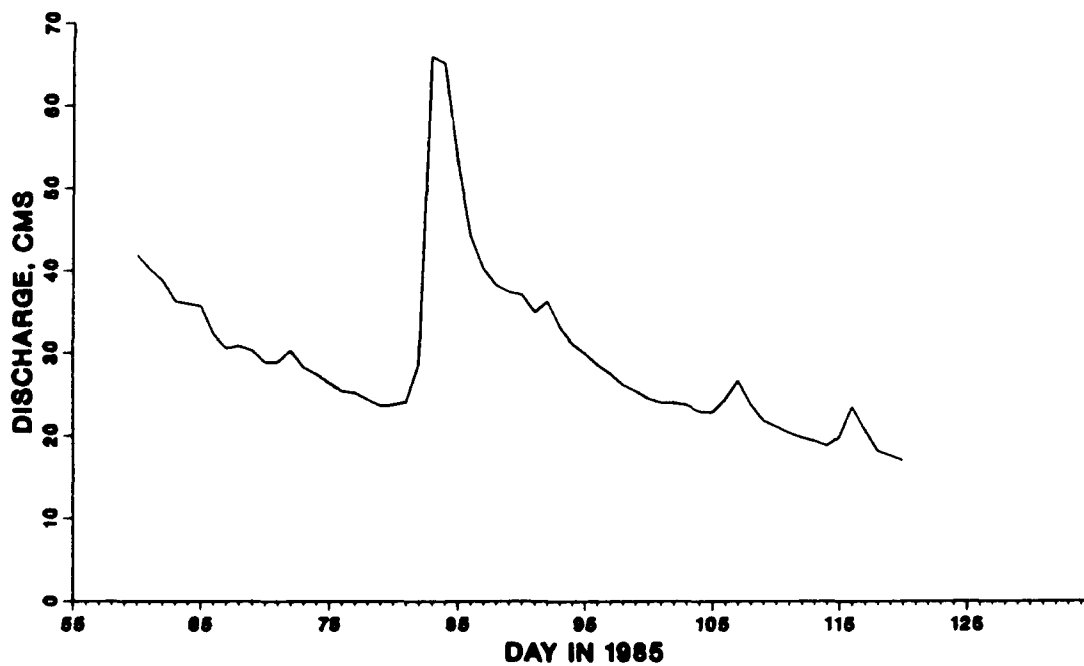
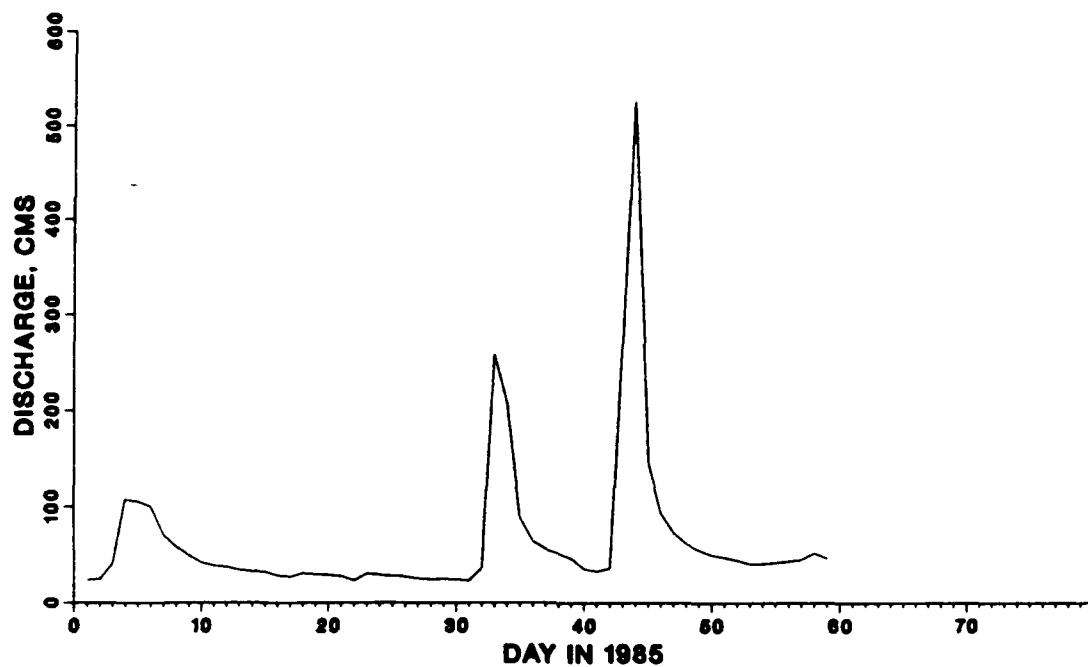


Figure B8. Freshwater inflow on Rappahannock River during 1985 (Sheet 1 of 3)

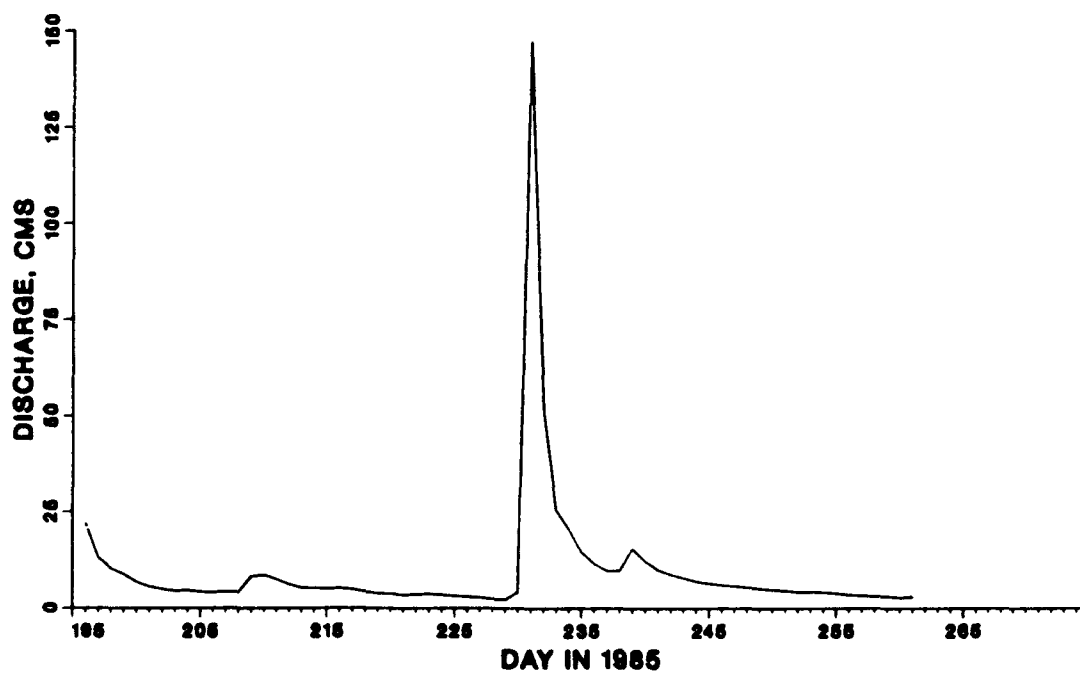
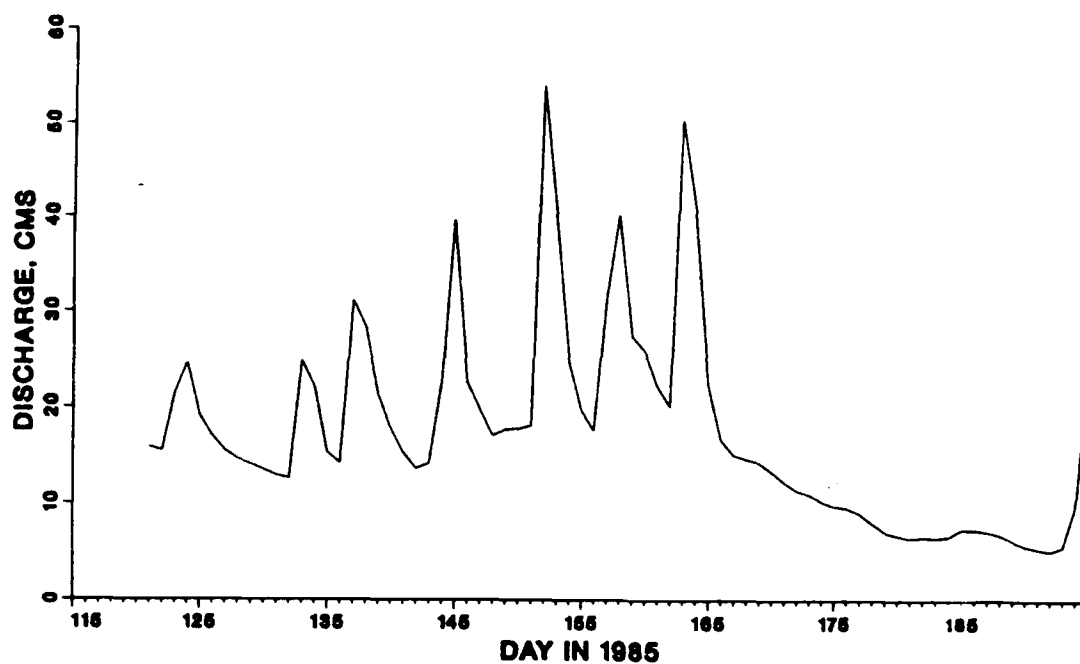


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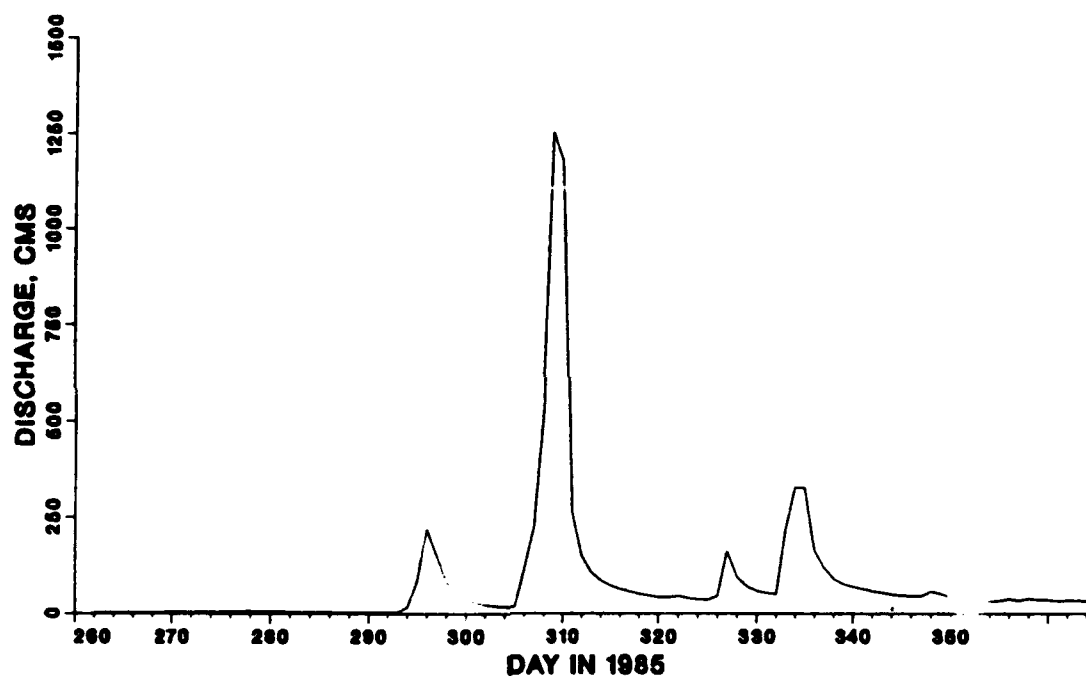


Figure B8. (Sheet 3 of 3)

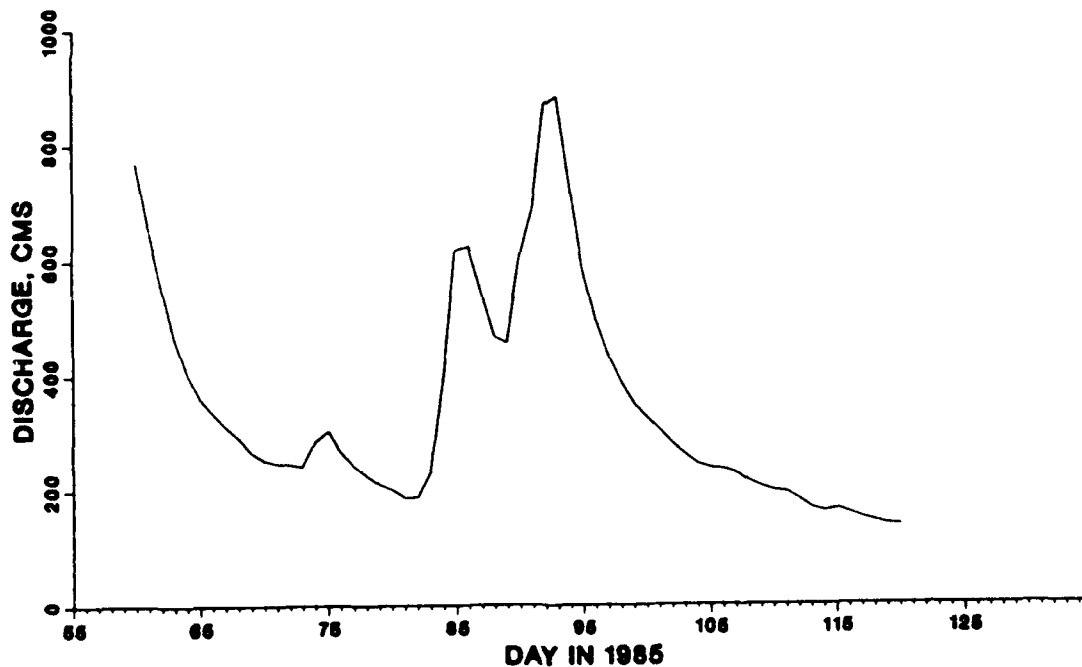
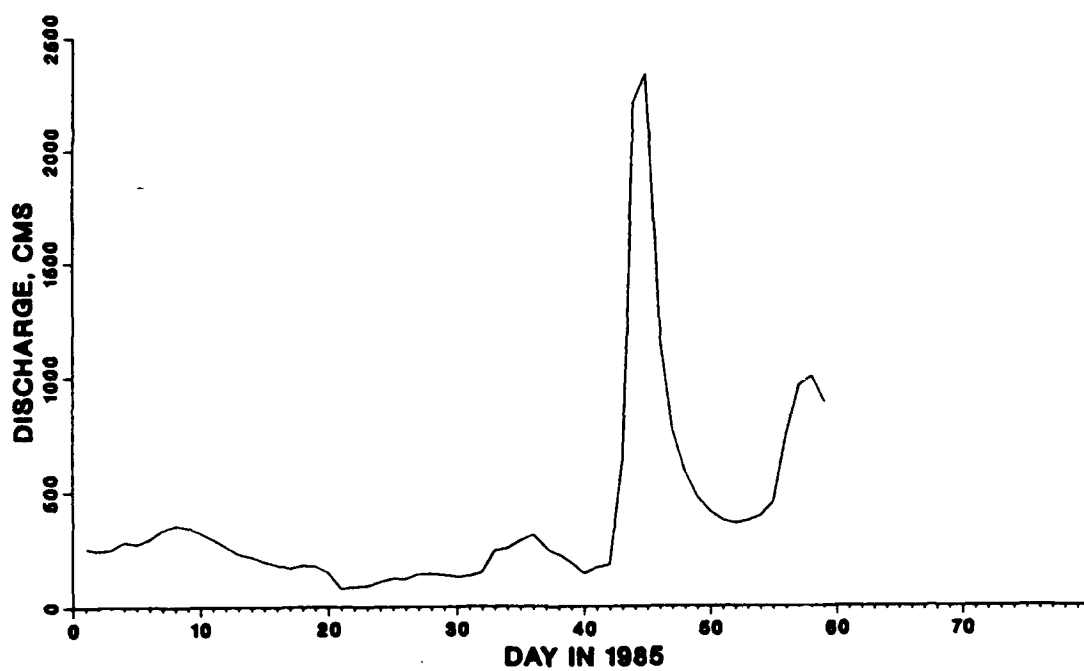


Figure B9. Freshwater inflow on Potomac River
during 1985 (Sheet 1 of 3)

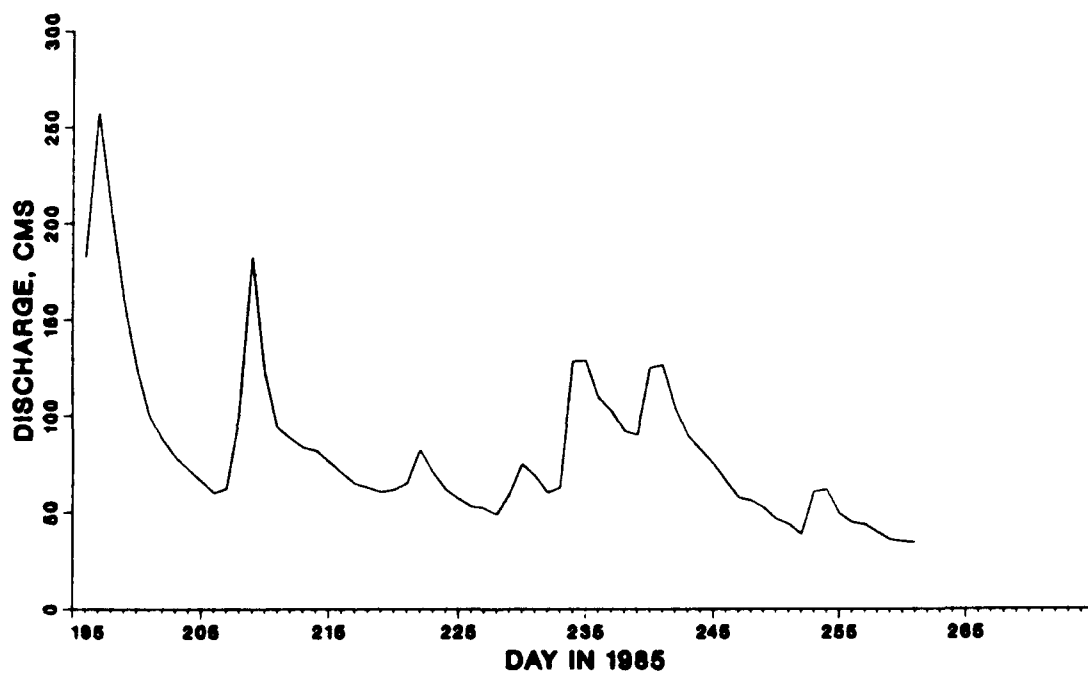
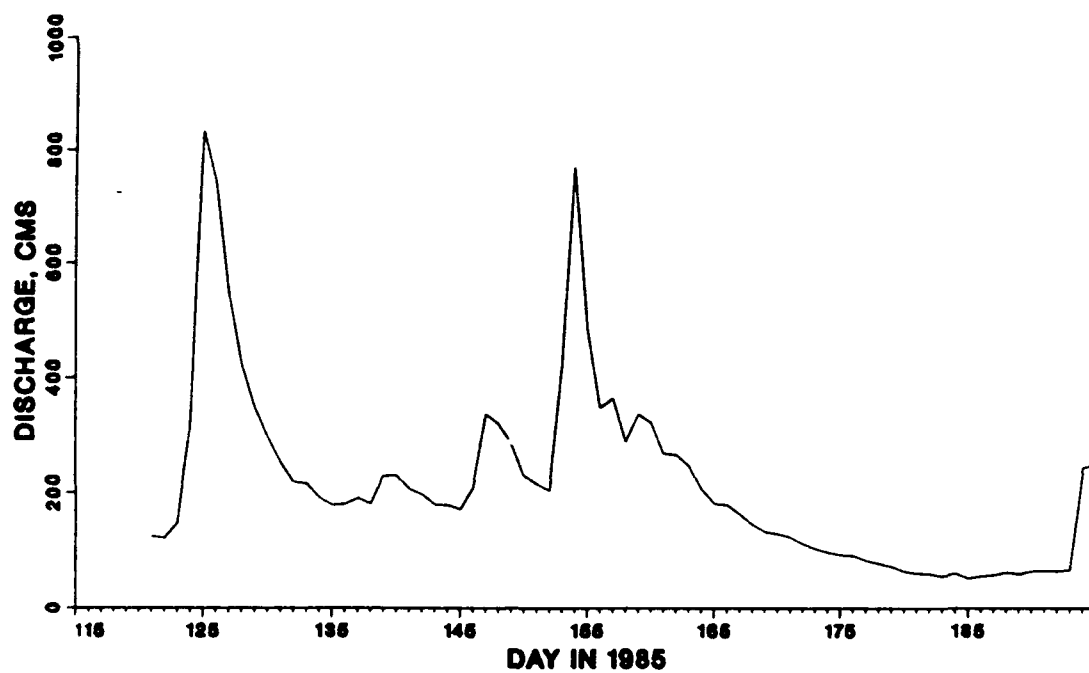


Figure B9. (Sheet 2 of 3)

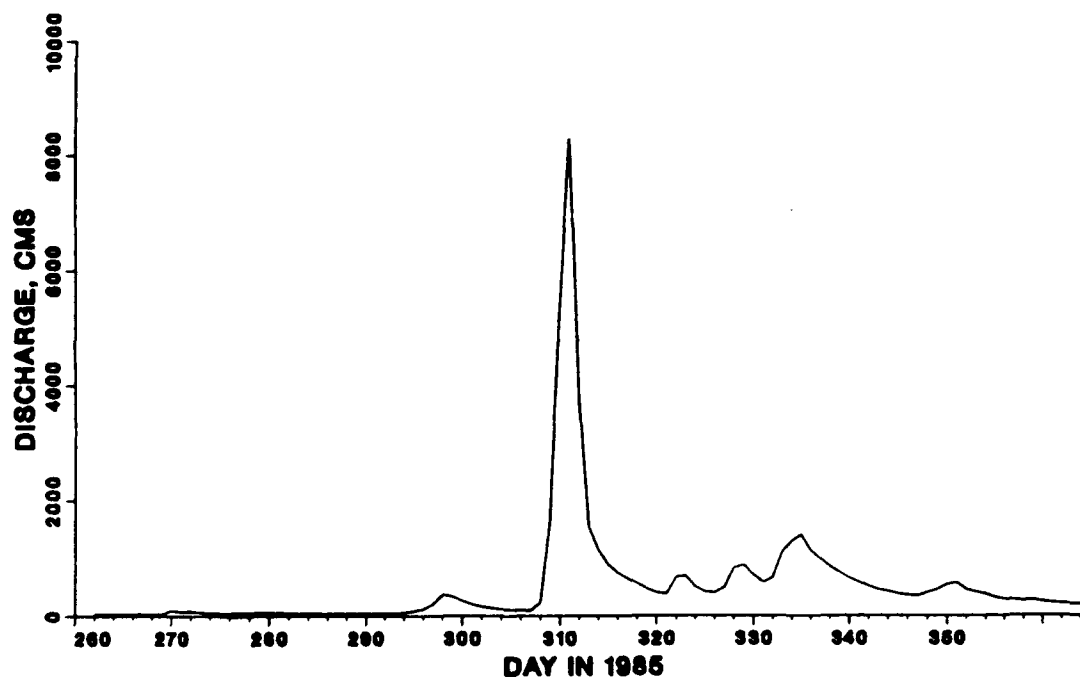


Figure B9. (Sheet 3 of 3)

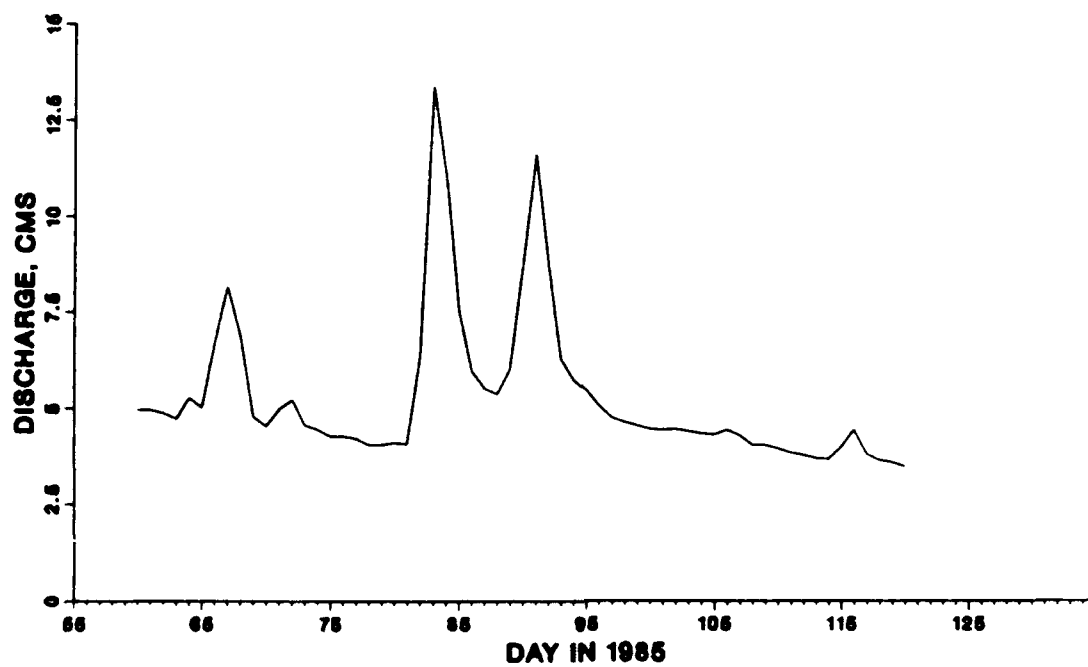
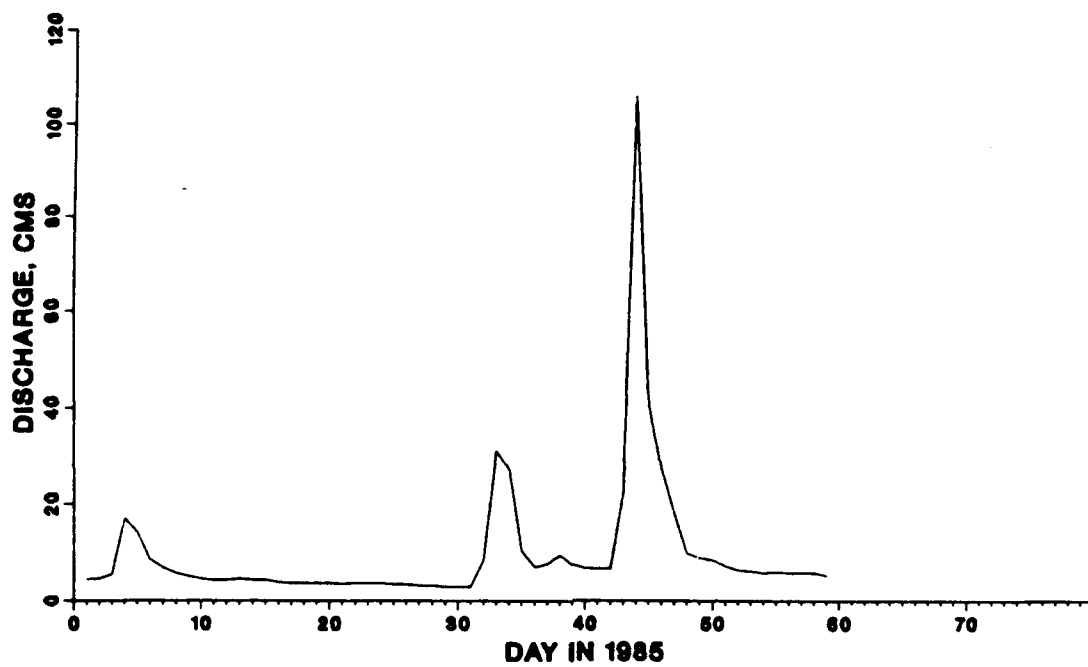


Figure B10. Freshwater inflow on Patuxent River during 1985 (Sheet 1 of 3)

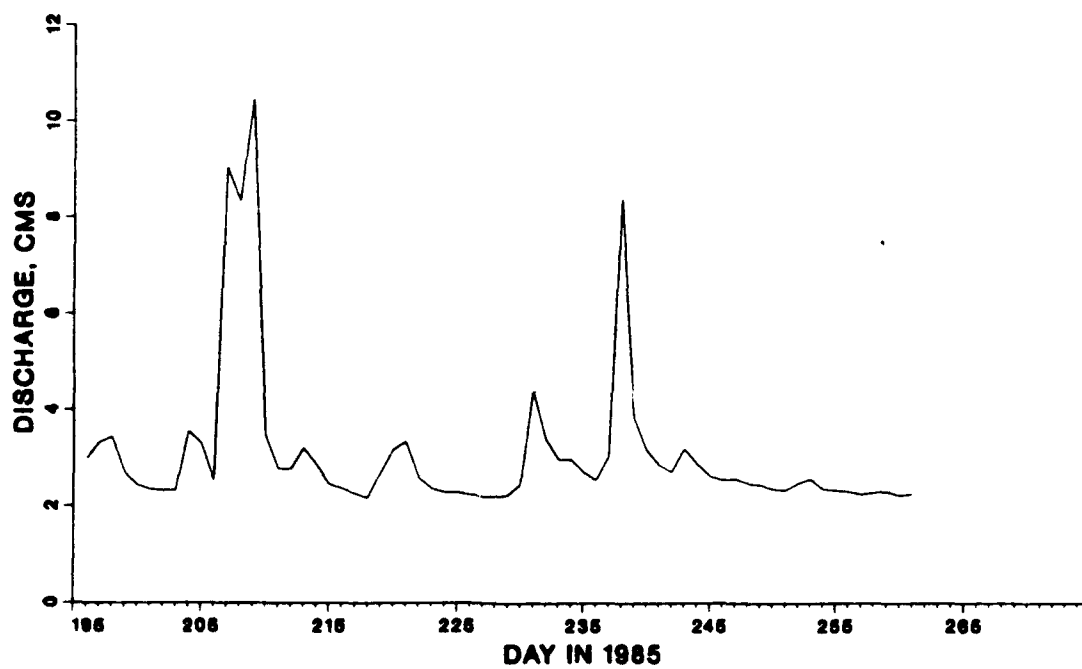
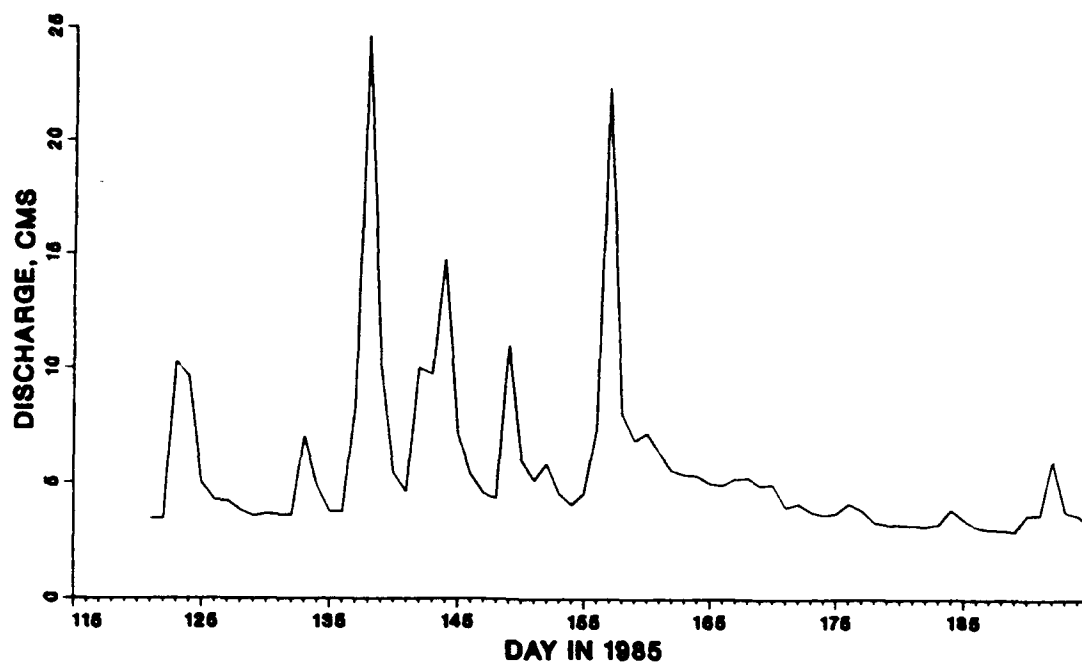


Figure B10. (Sheet 2 of 3)

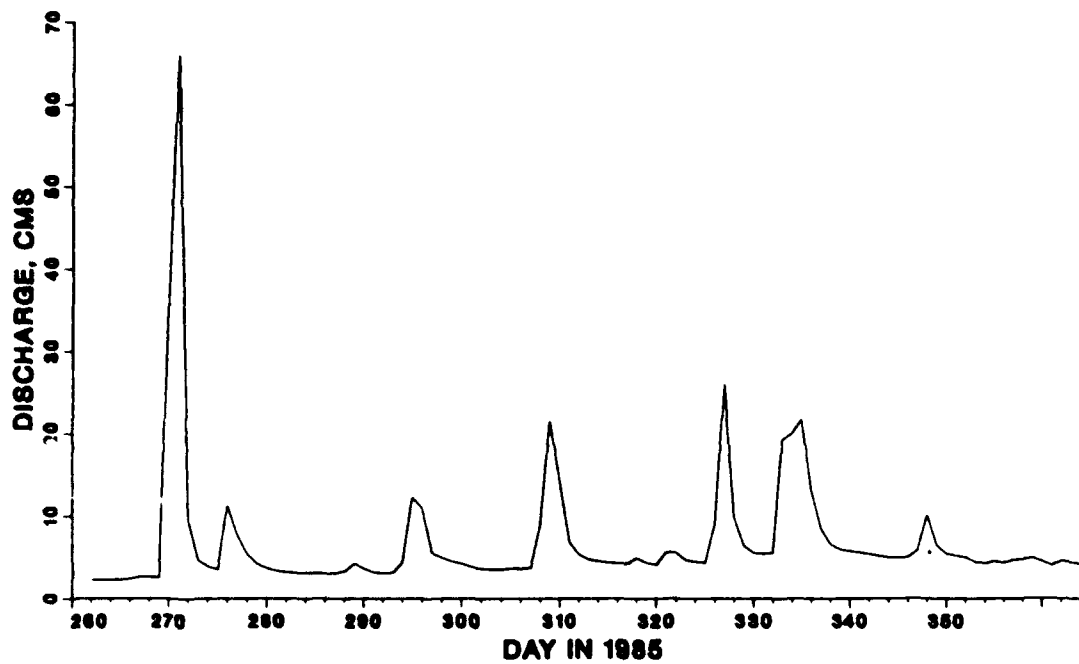


Figure B10. (Sheet 3 of 3)

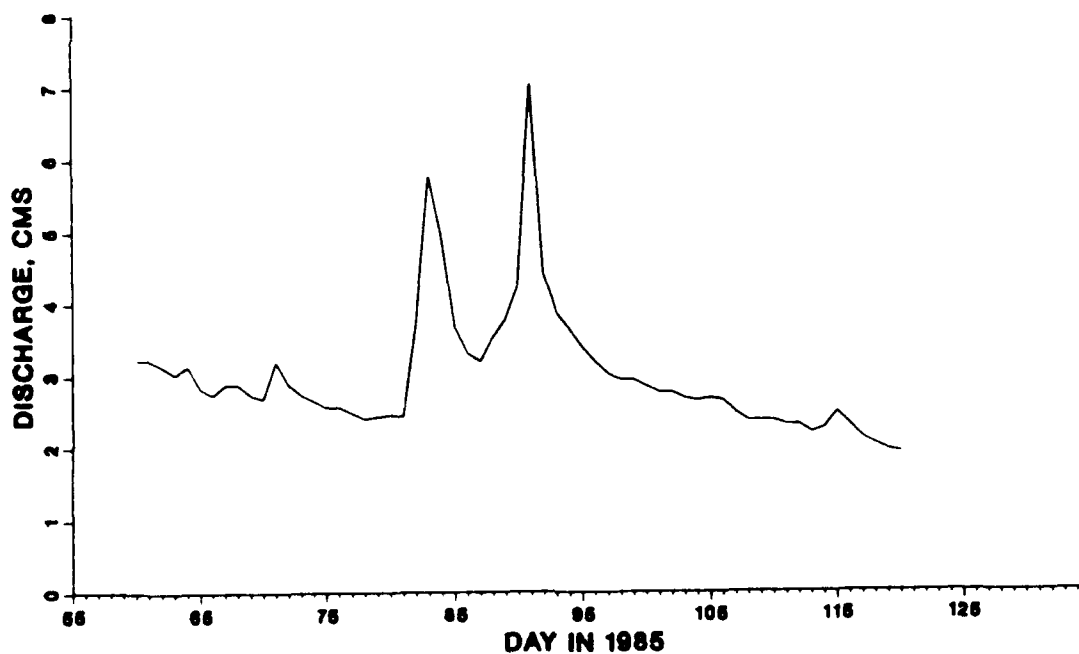
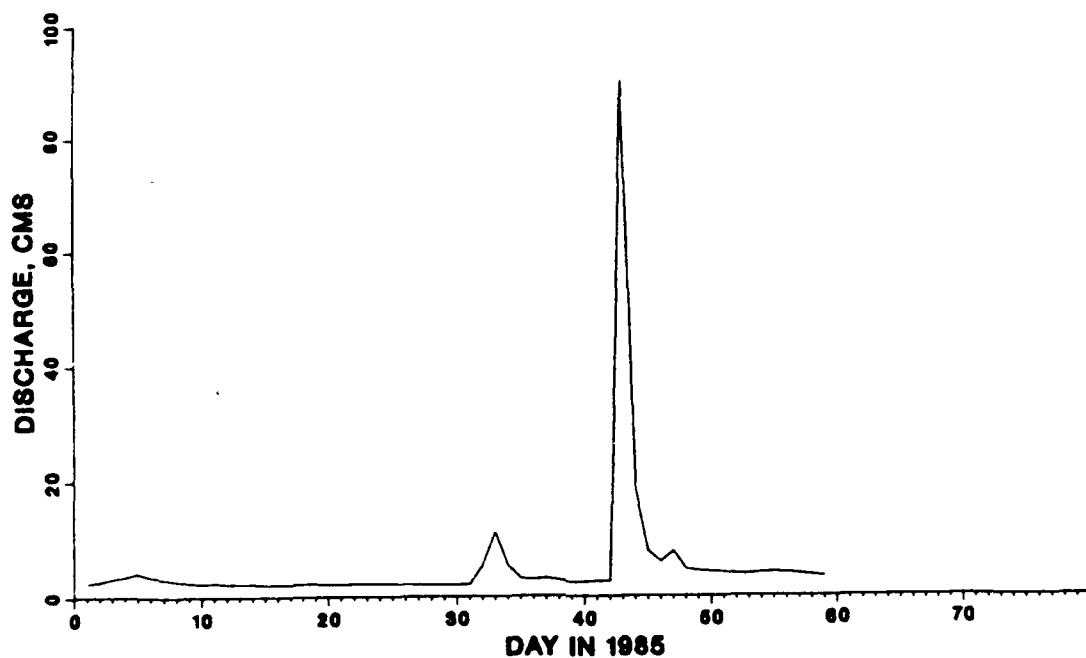


Figure B11. Freshwater inflow on Patapsco River
during 1985 (Sheet 1 of 3)

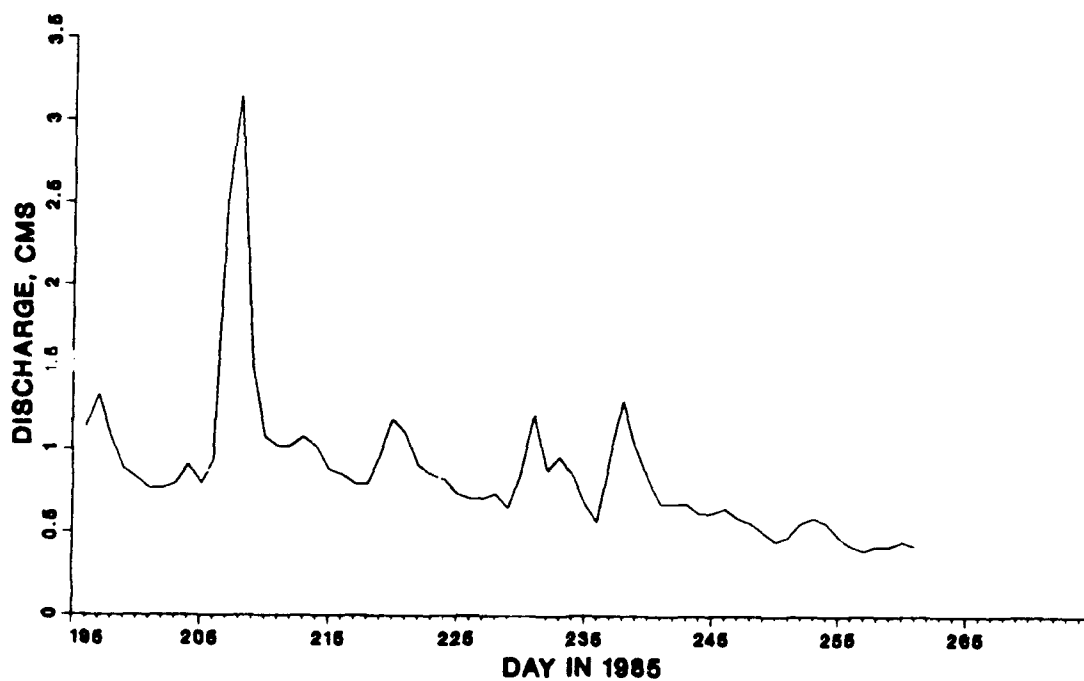
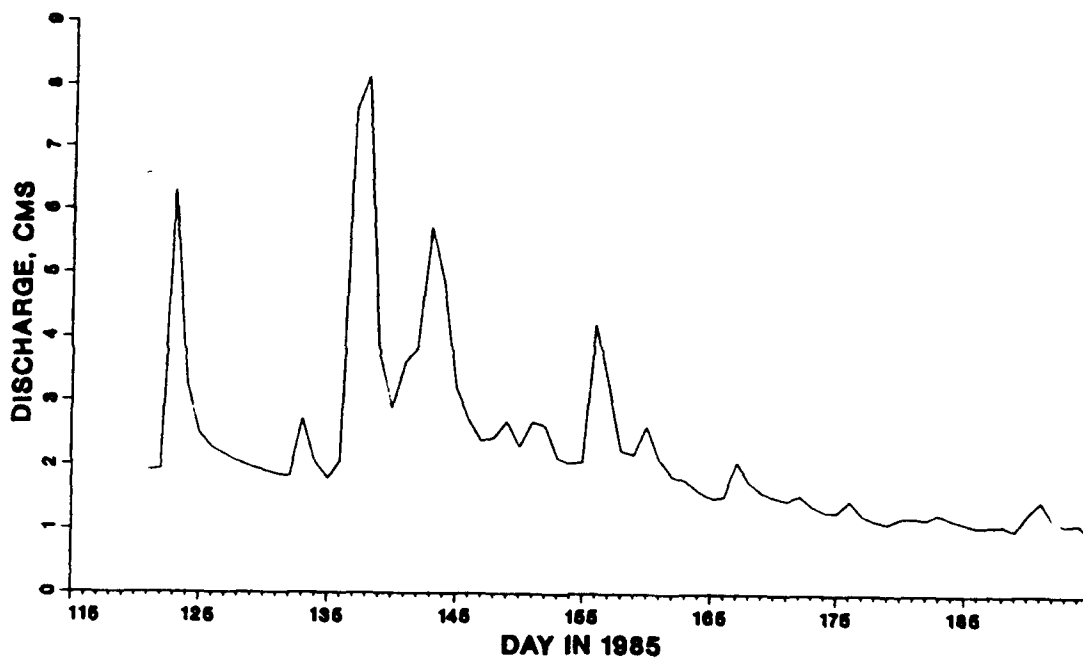


Figure B11. (Sheet 2 of 3)

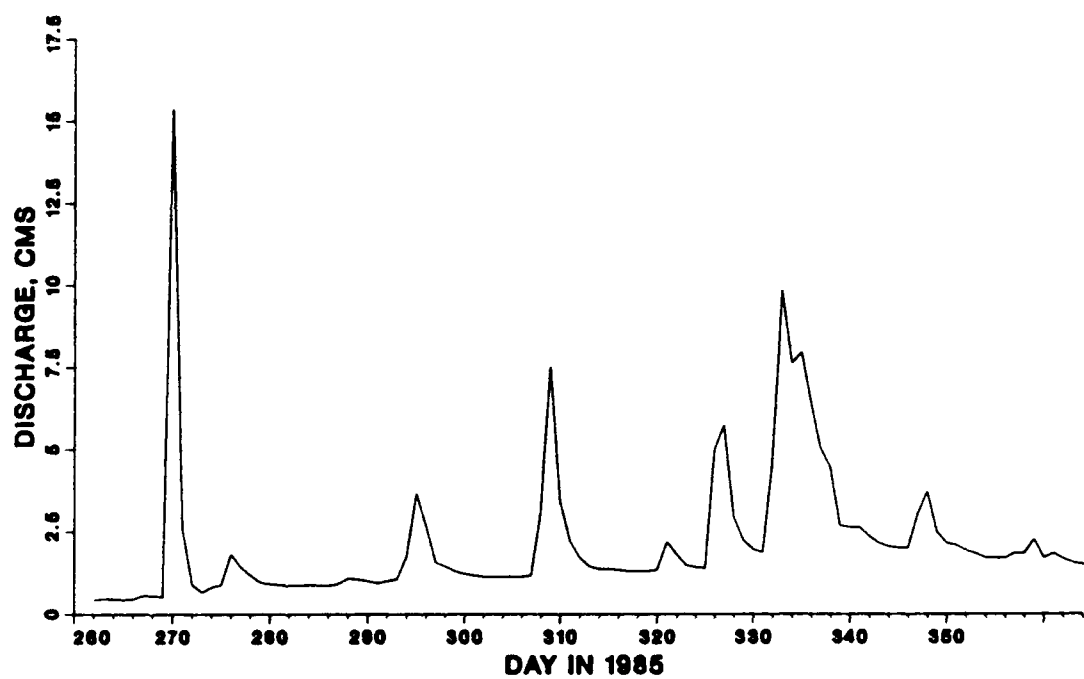


Figure B11. (Sheet 3 of 3)

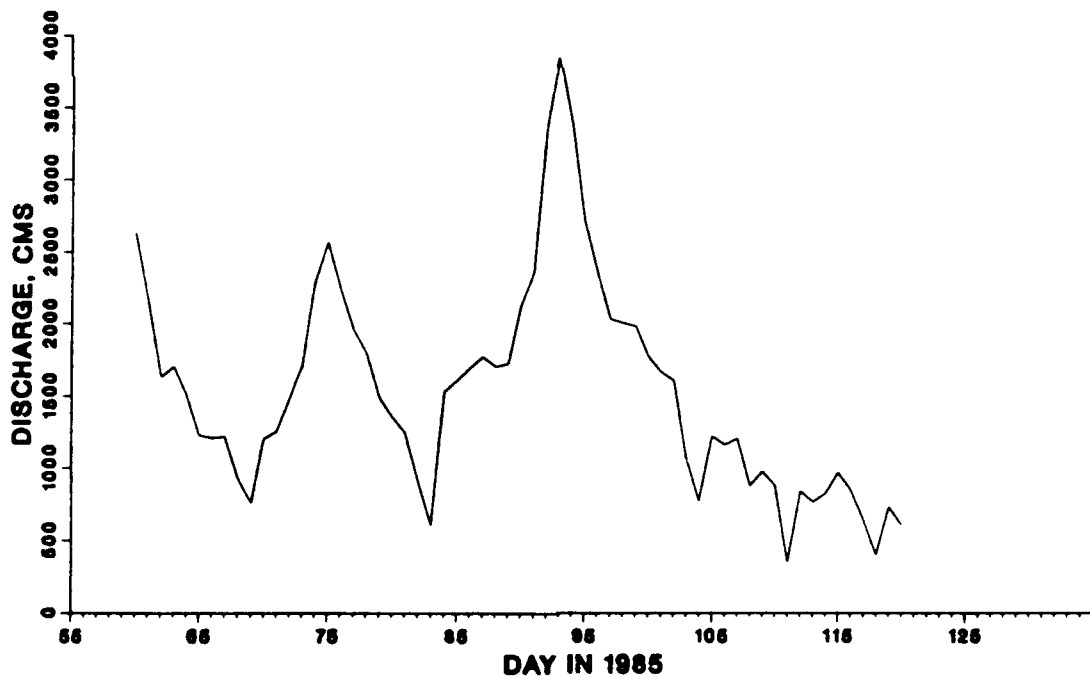
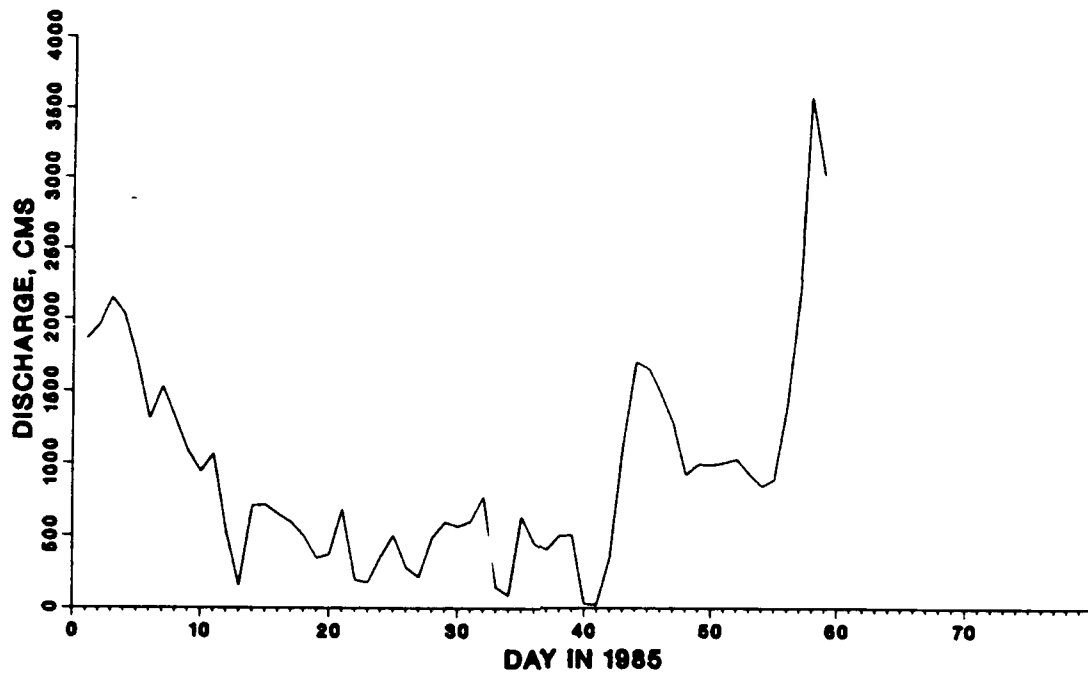


Figure B12. Freshwater inflow on Susquehanna River during 1985 (Sheet 1 of 3)

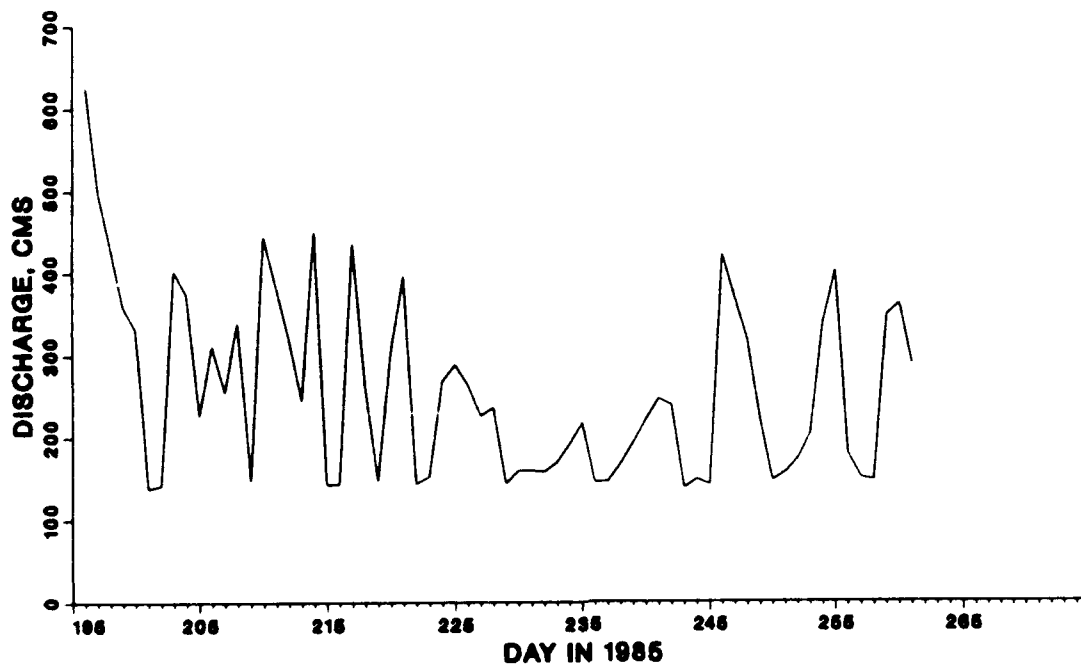
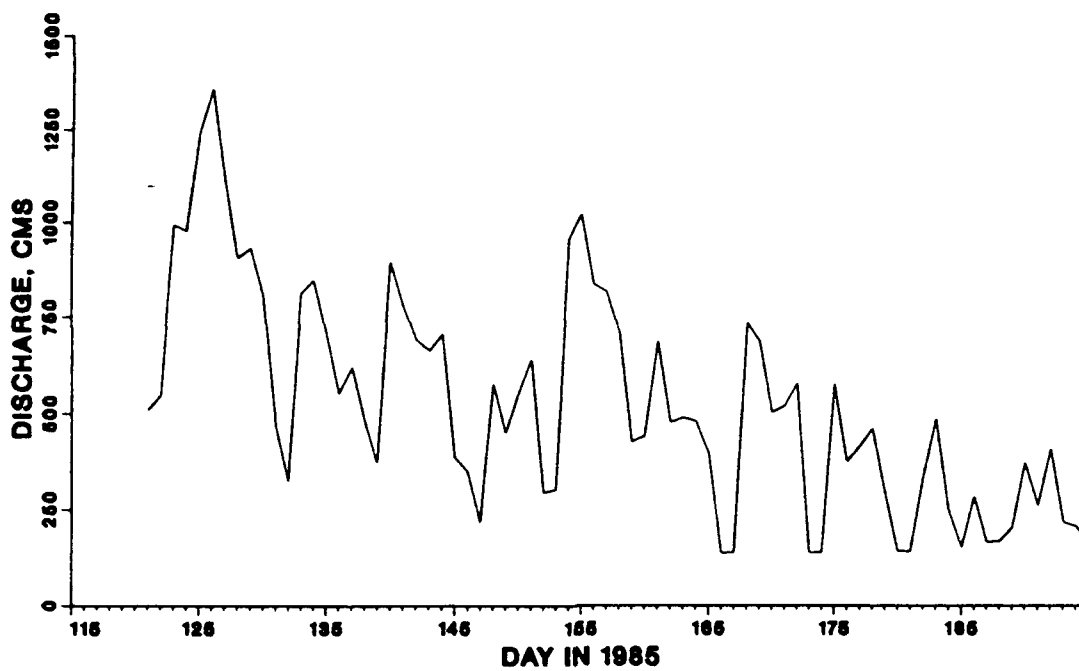


Figure B12. (Sheet 2 of 3)

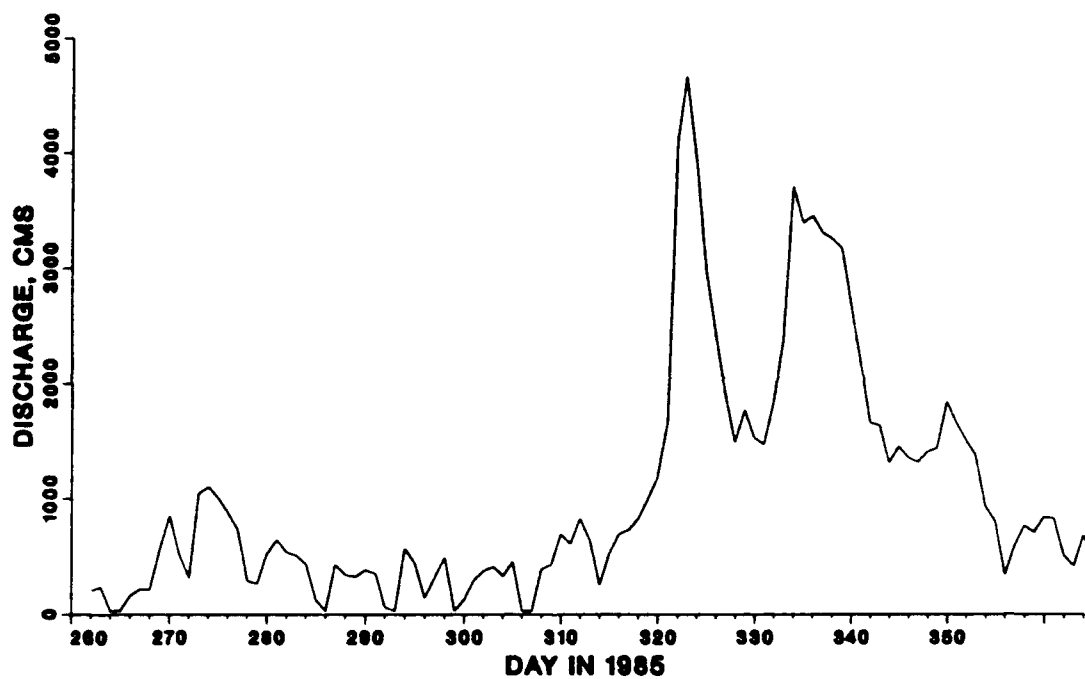


Figure B12. (Sheet 3 of 3)

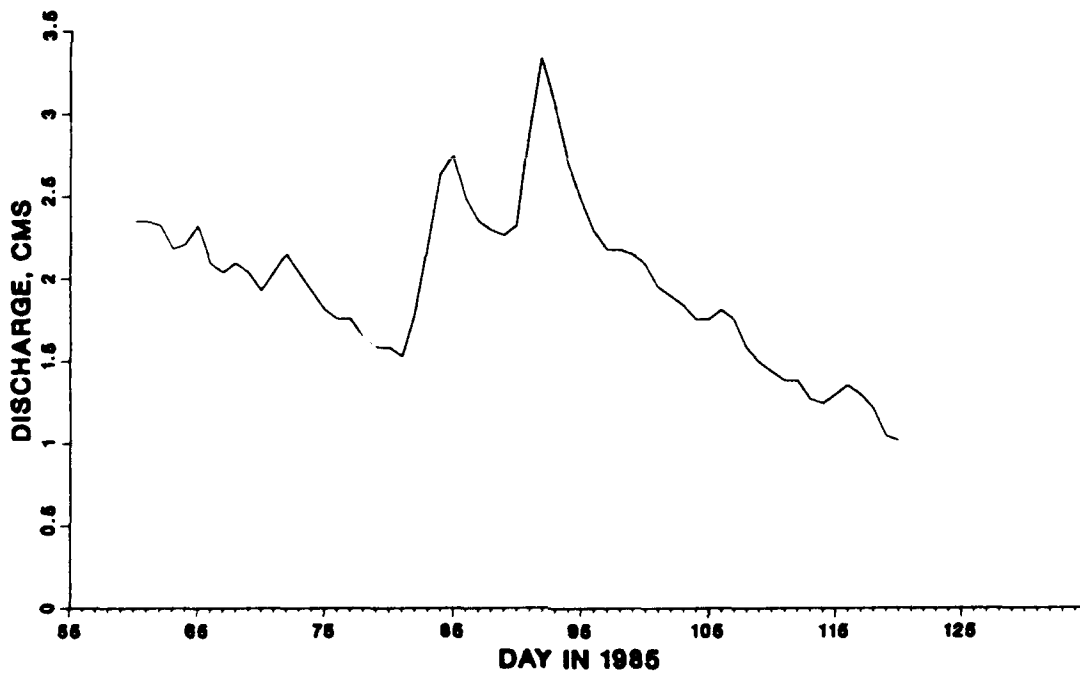
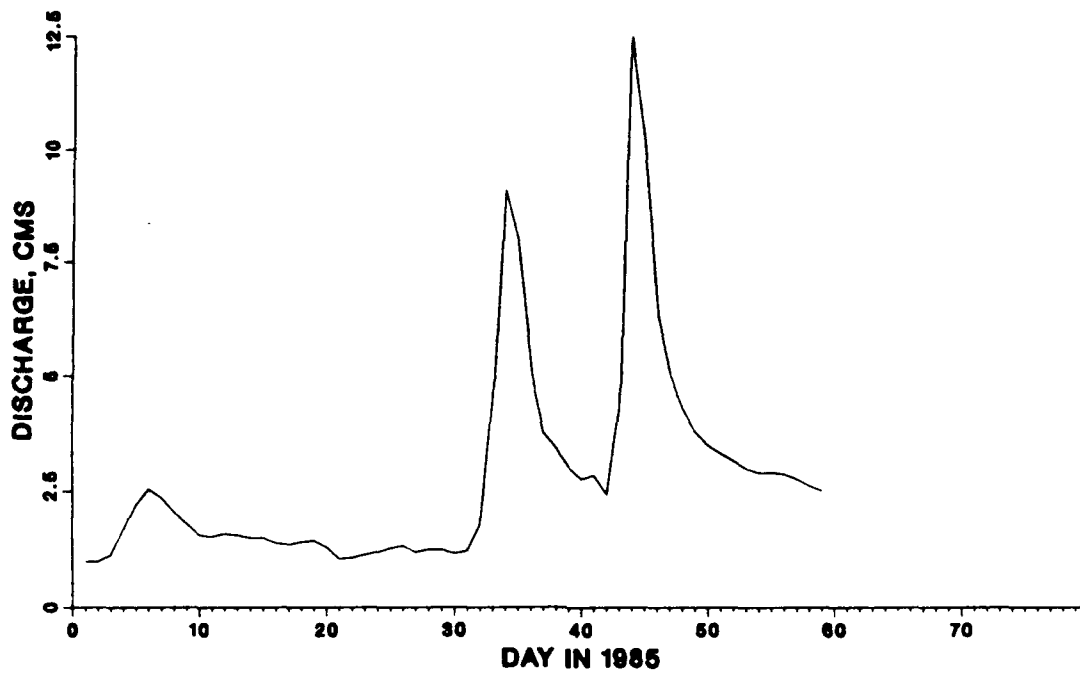


Figure B13. Freshwater inflow on Choptank River during 1985 (Sheet 1 of 3)

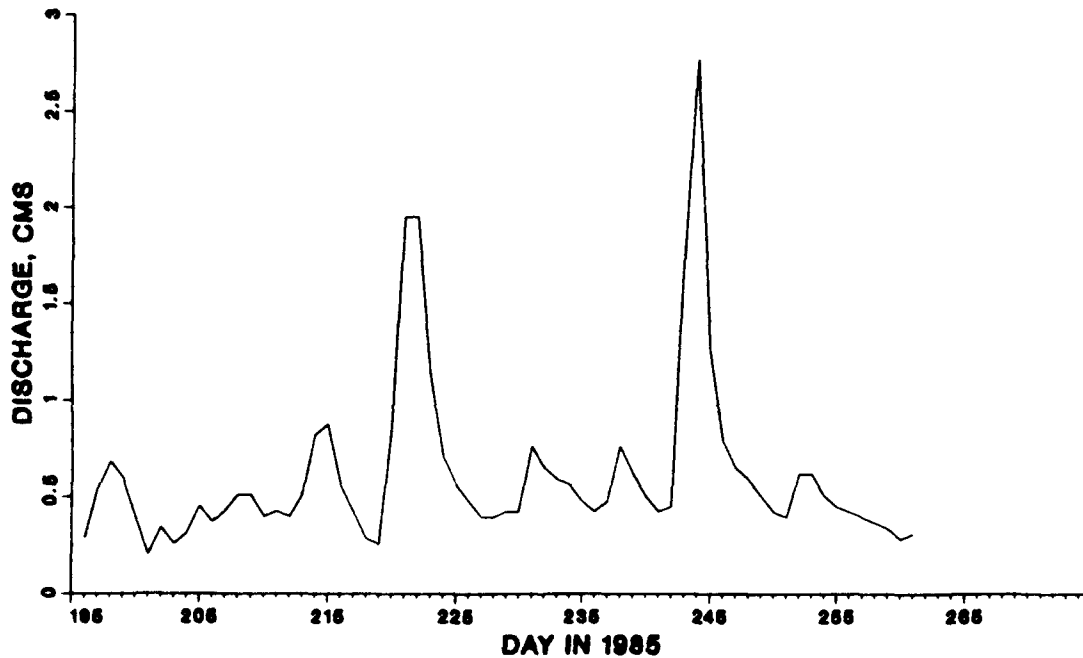
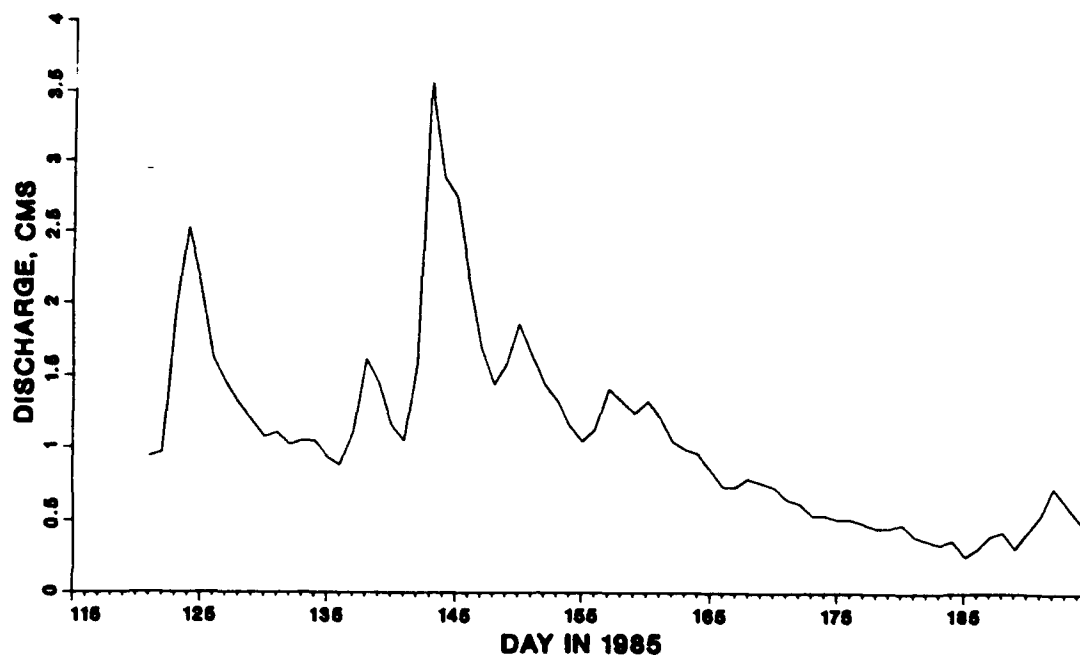


Figure B13. (Sheet 2 of 3)

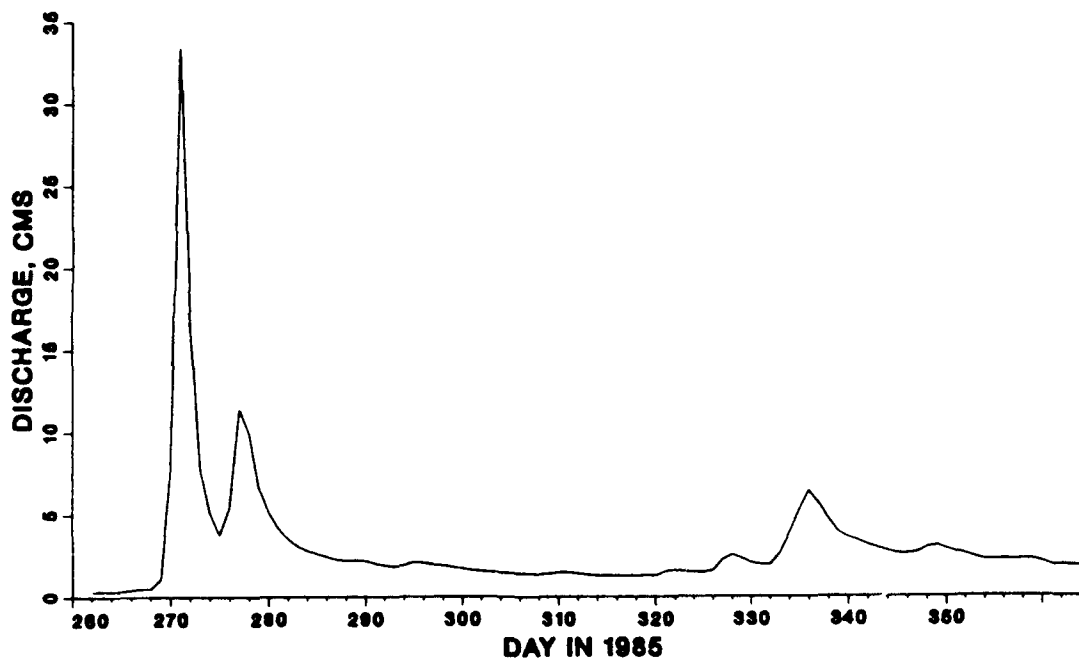


Figure B13. (Sheet 3 of 3)

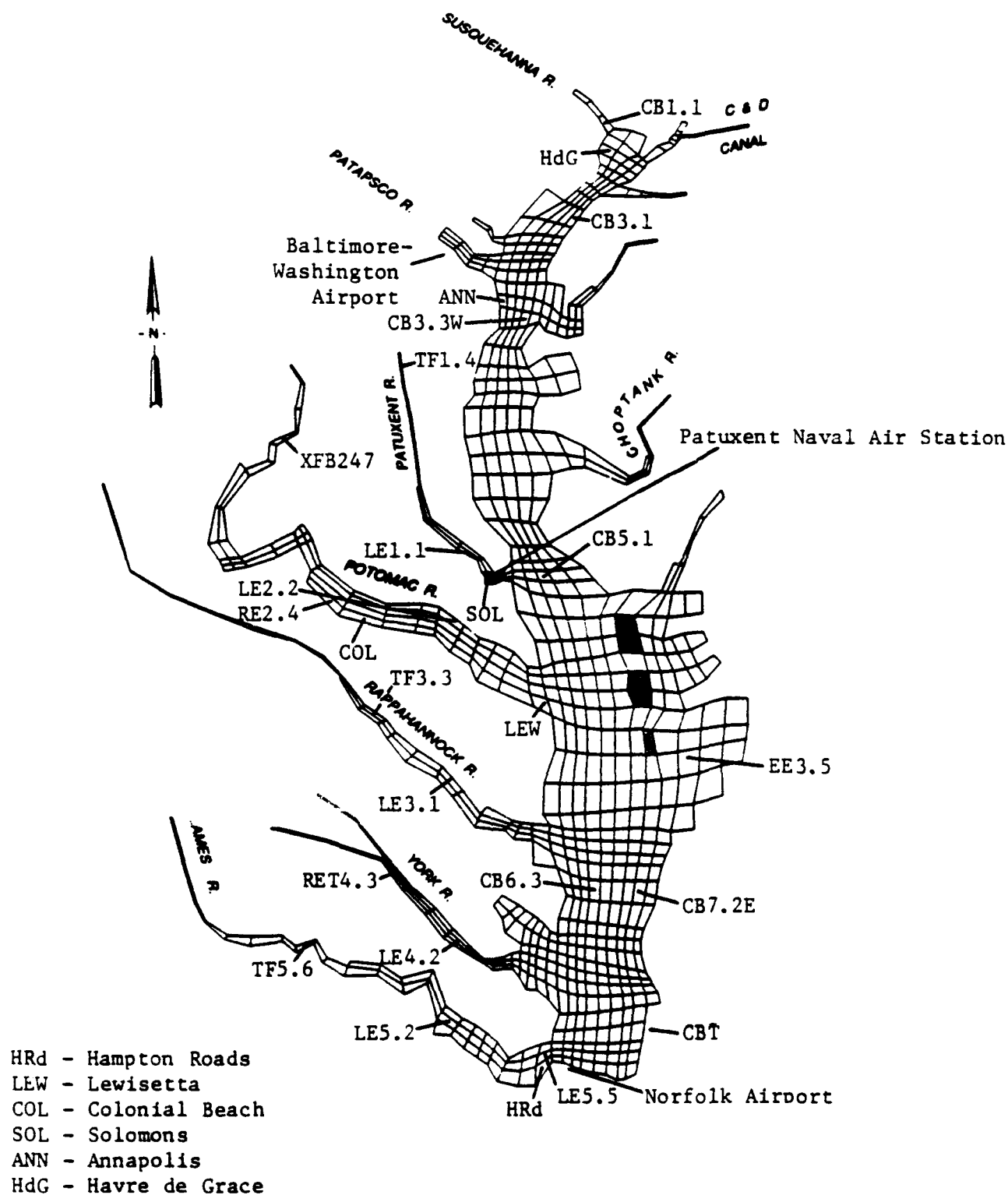


Figure B14. Location of 1985 data stations

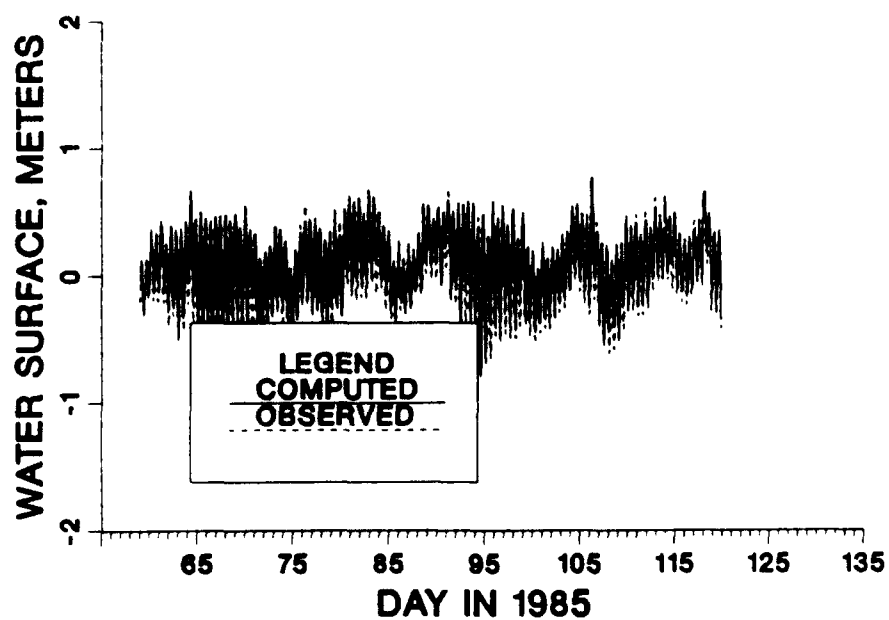
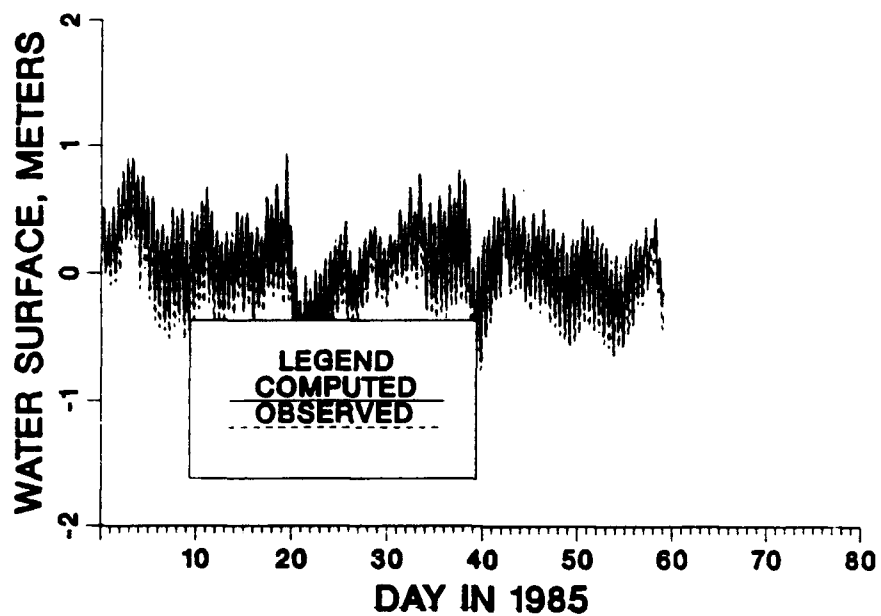


Figure B15. Comparison of computed and recorded tide at Hampton Roads, VA, during 1985 (Sheet 1 of 3)

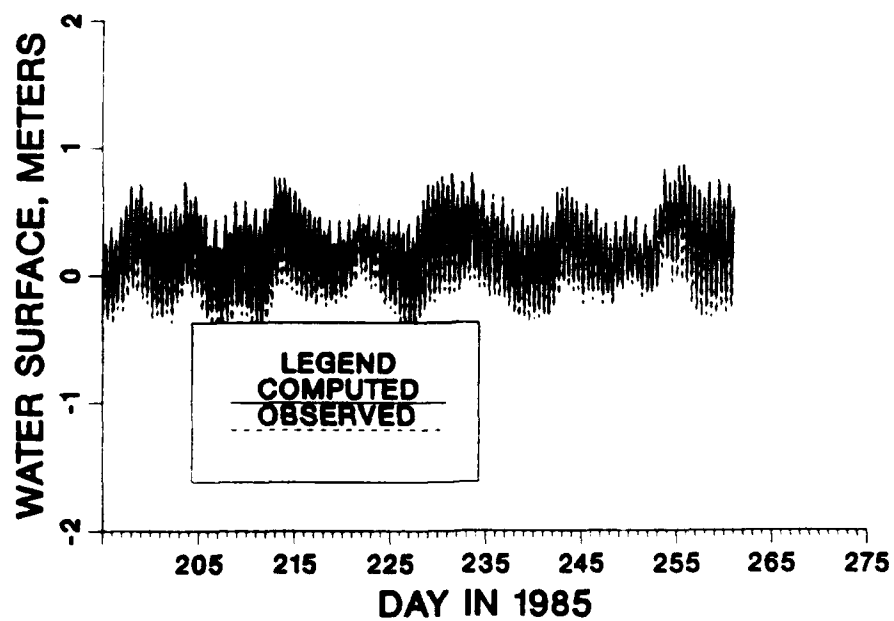
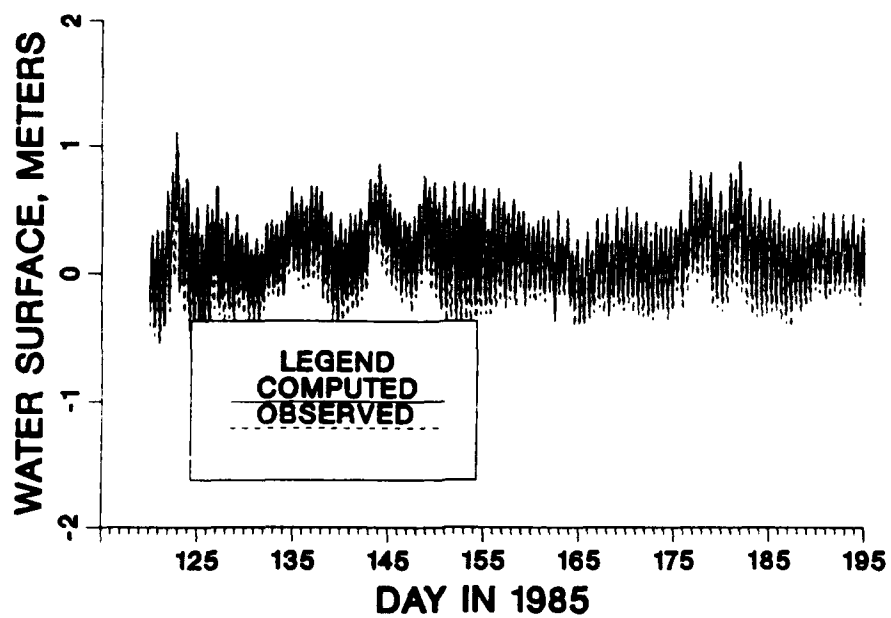


Figure B15. (Sheet 2 of 3)

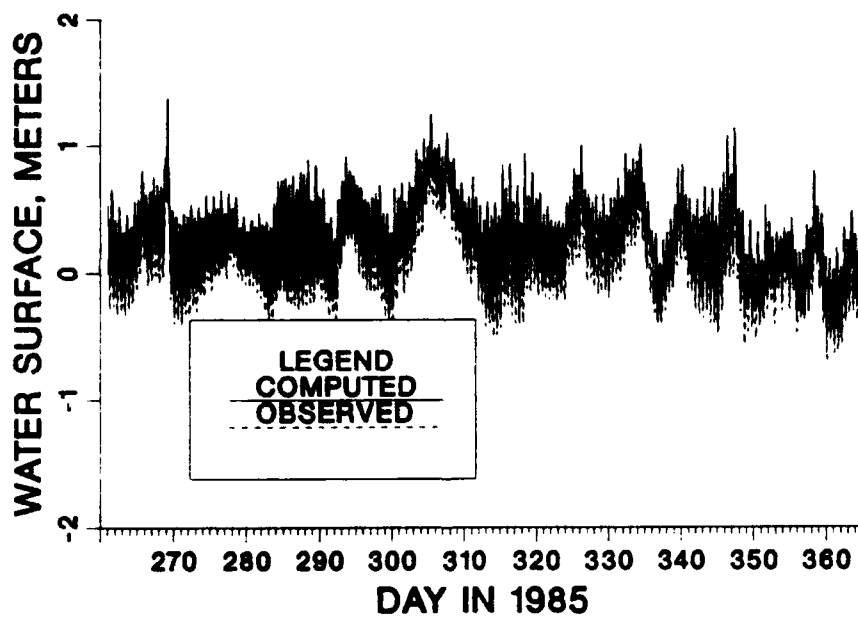


Figure B15. (Sheet 3 of 3)

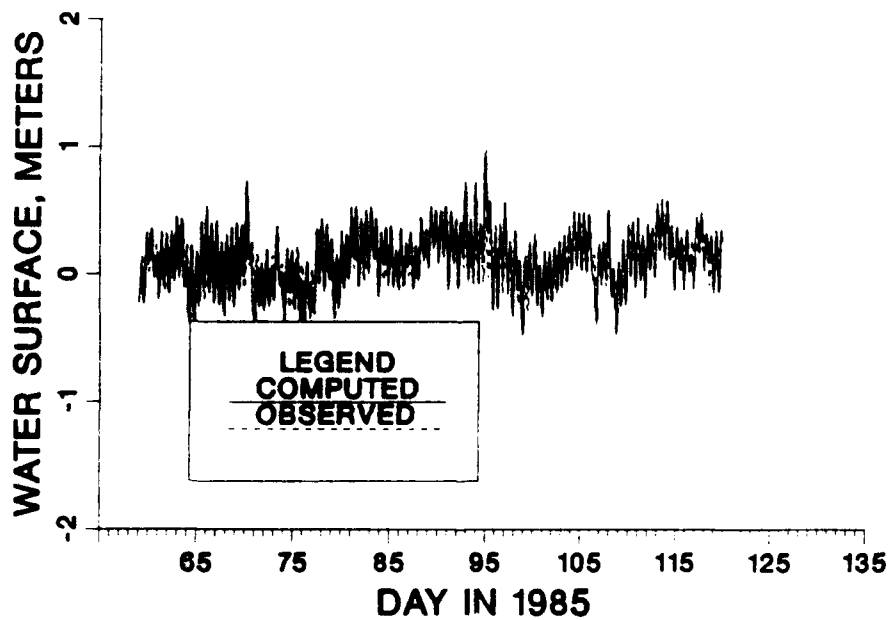
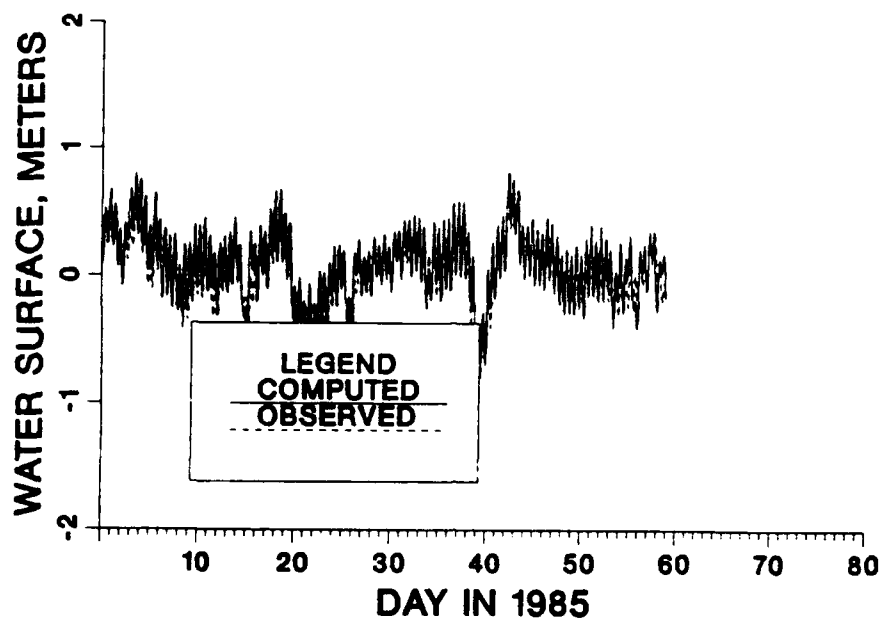


Figure B16. Comparison of computed and recorded tide at Lewisetta, VA, during 1985 (Sheet 1 of 3)

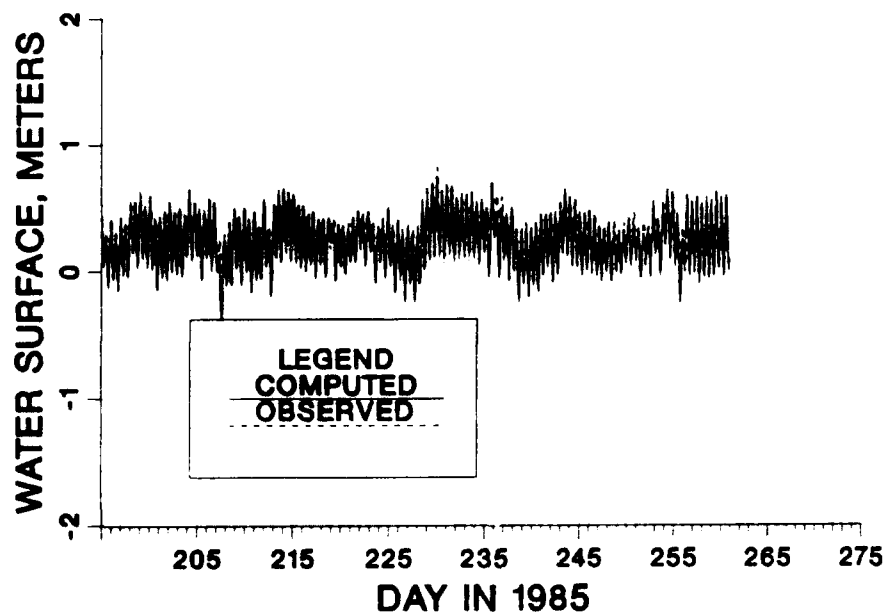
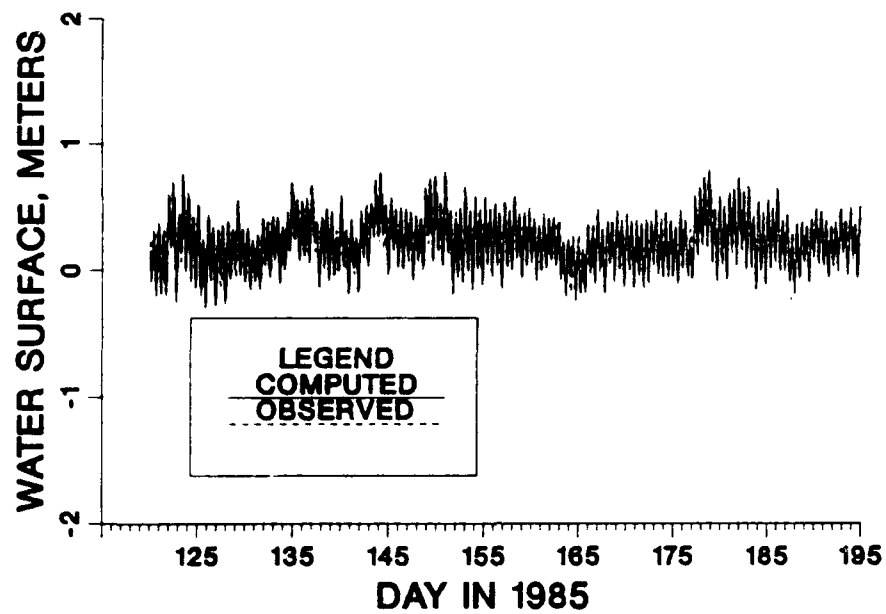


Figure B16. (Sheet 2 of 3)

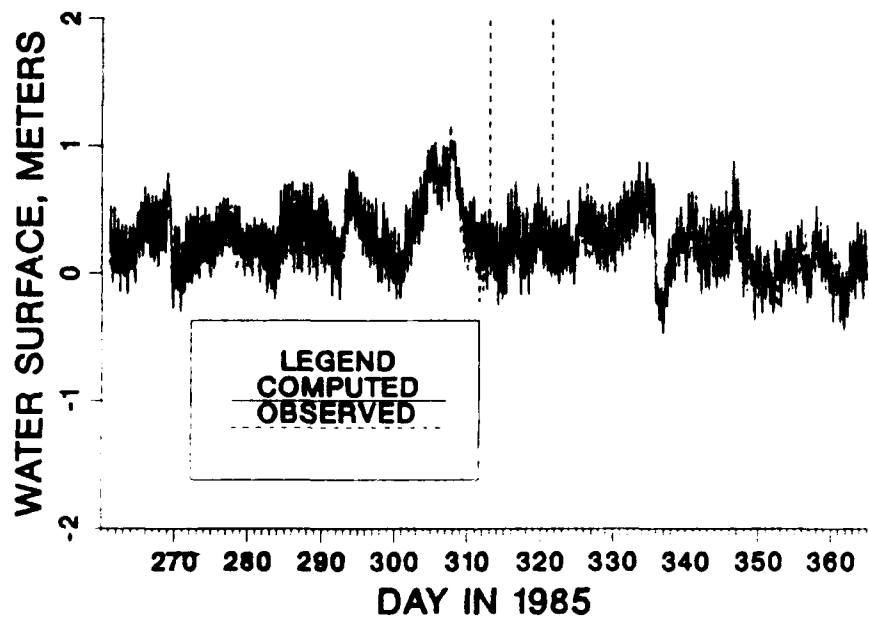


Figure 916. (Sheet 3 of 3)

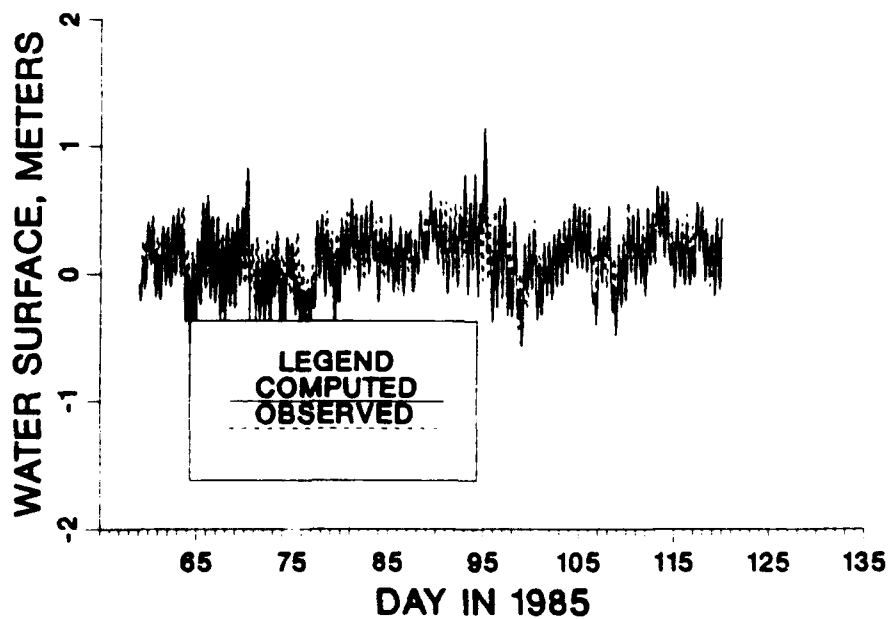
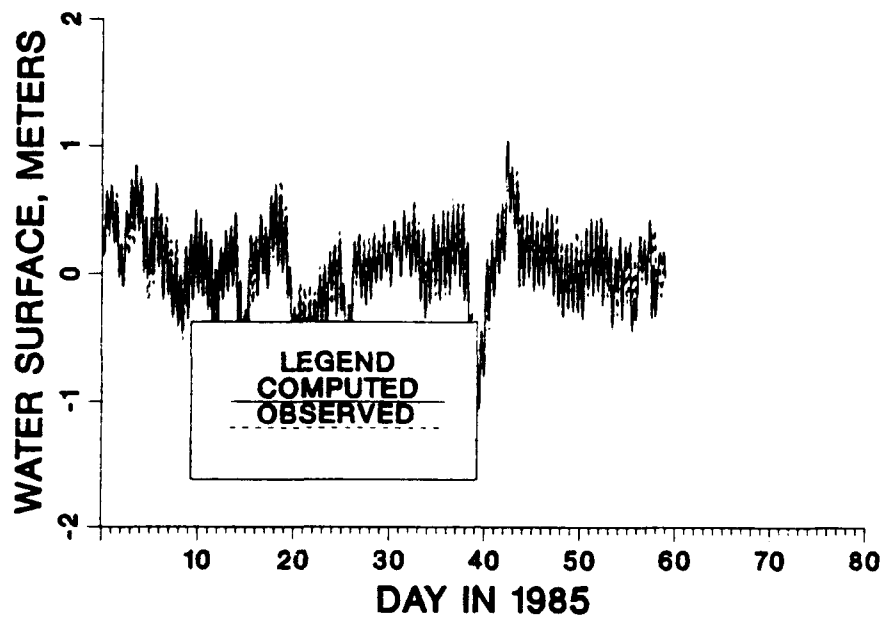


Figure B17. Comparison of computed and recorded tide at Colonial Beach, VA, during 1985 (Sheet 1 of 3)

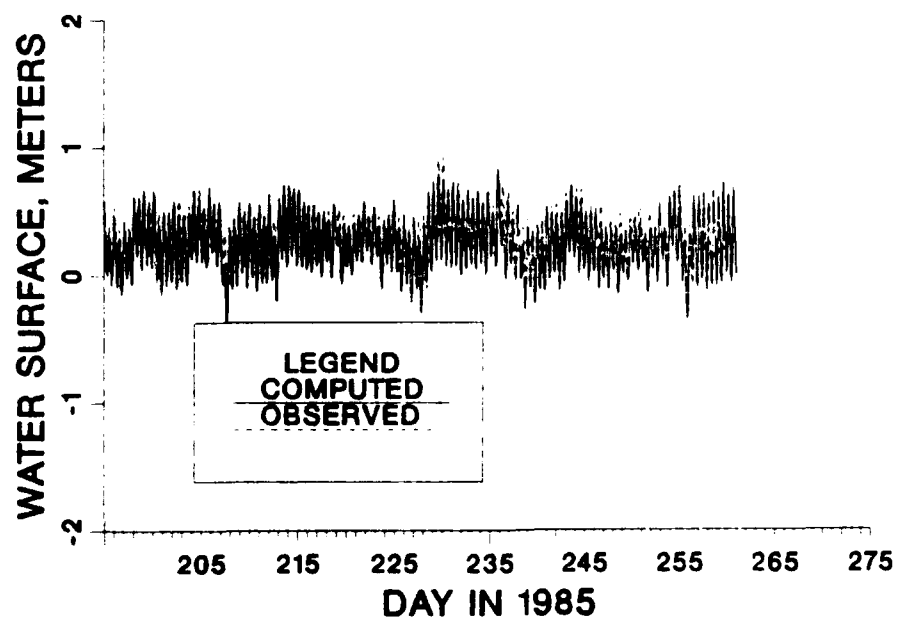
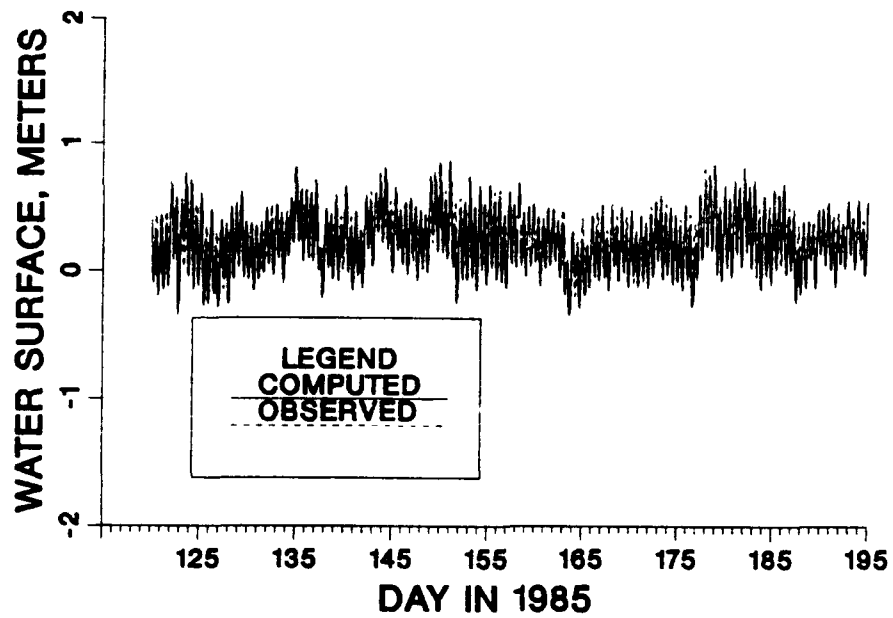


Figure B17. (Sheet 2 of 3)

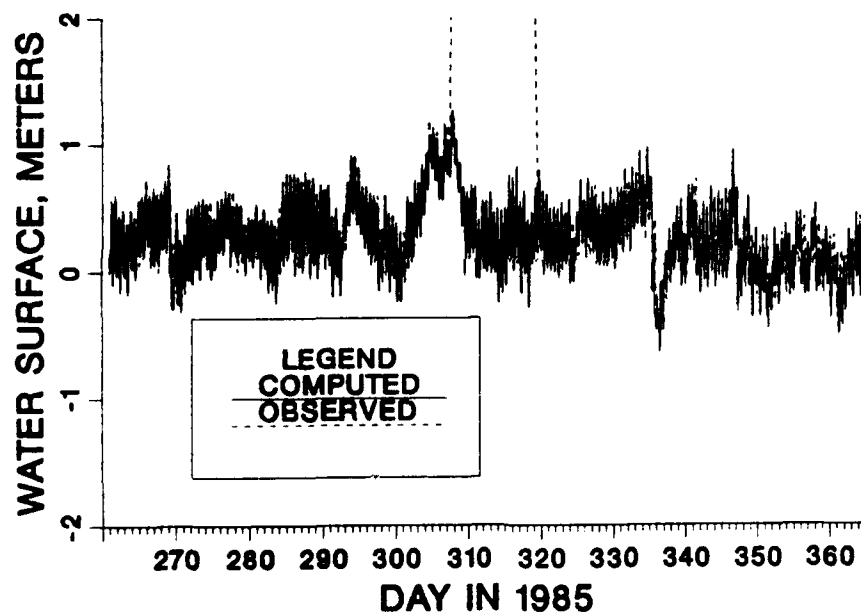


Figure B17. (Sheet 3 of 3)

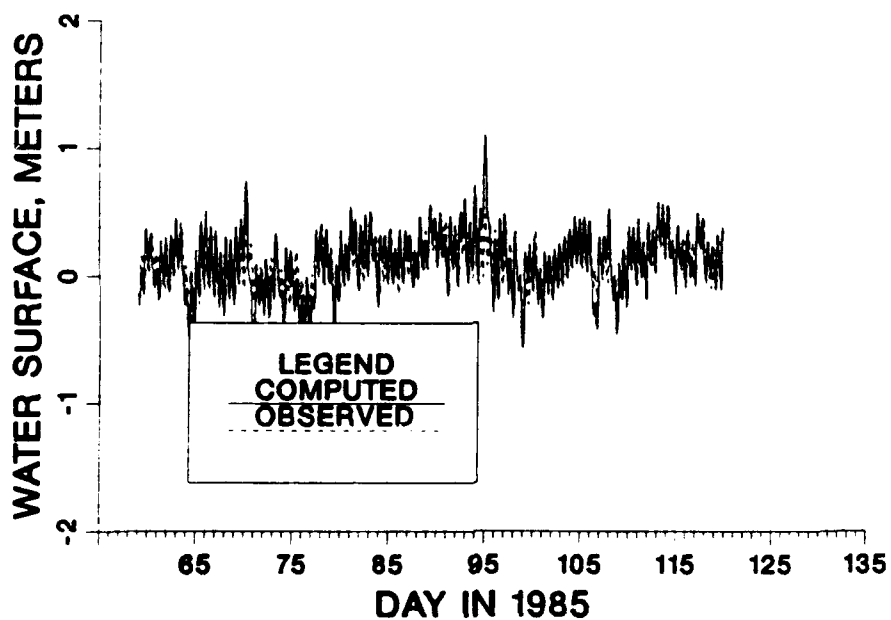
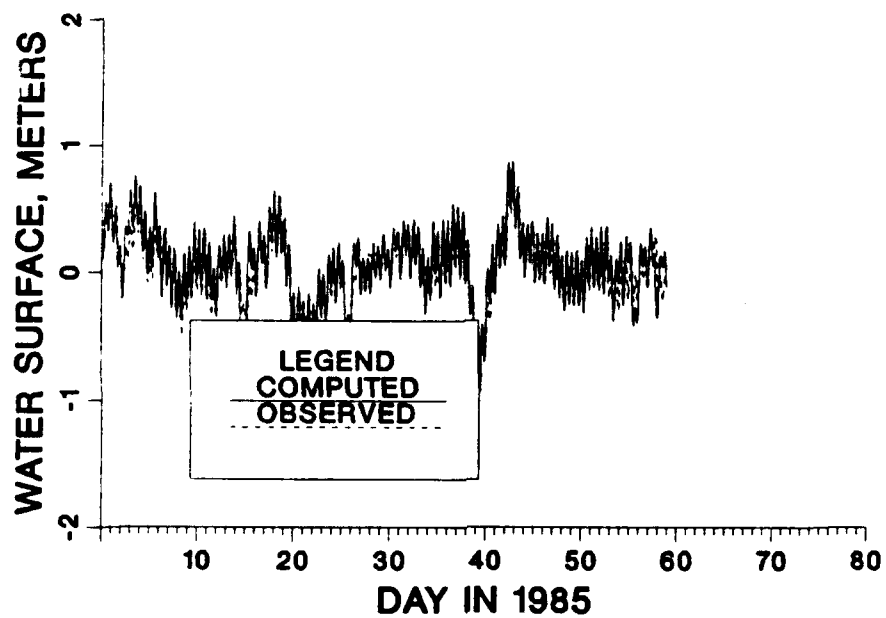


Figure B18. Comparison of computed and recorded tide at Solomons, MD, during 1985 (Sheet 1 of 3)

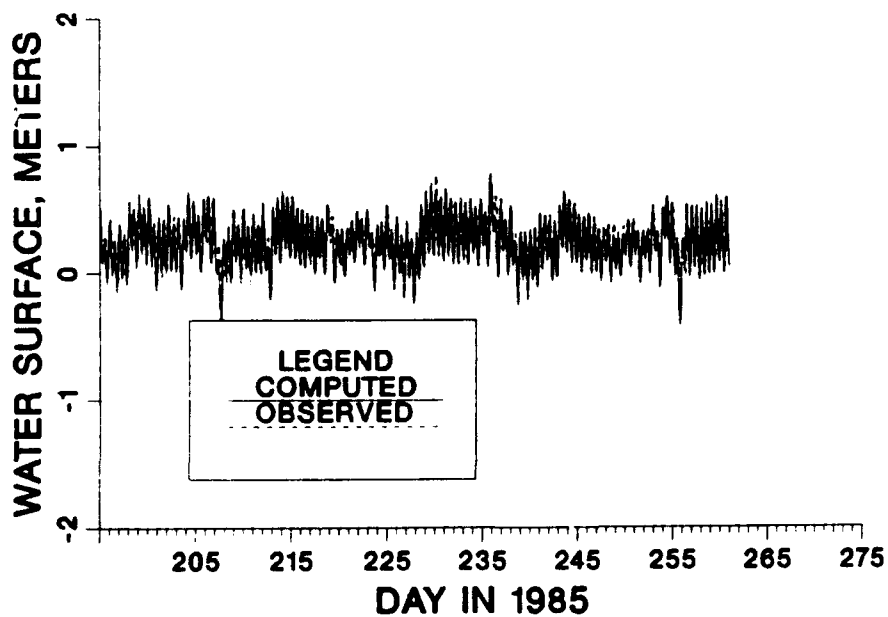
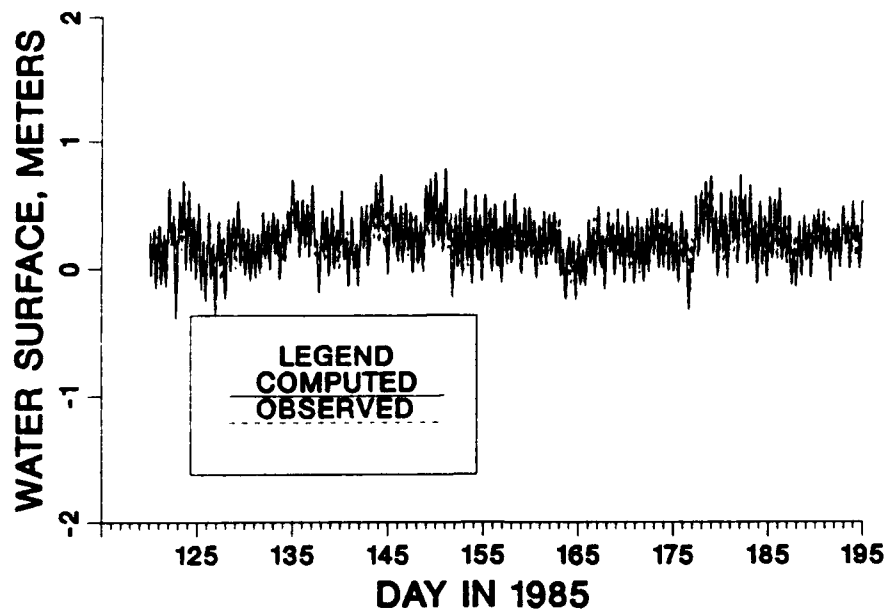


Figure B18. (Sheet 2 of 3)

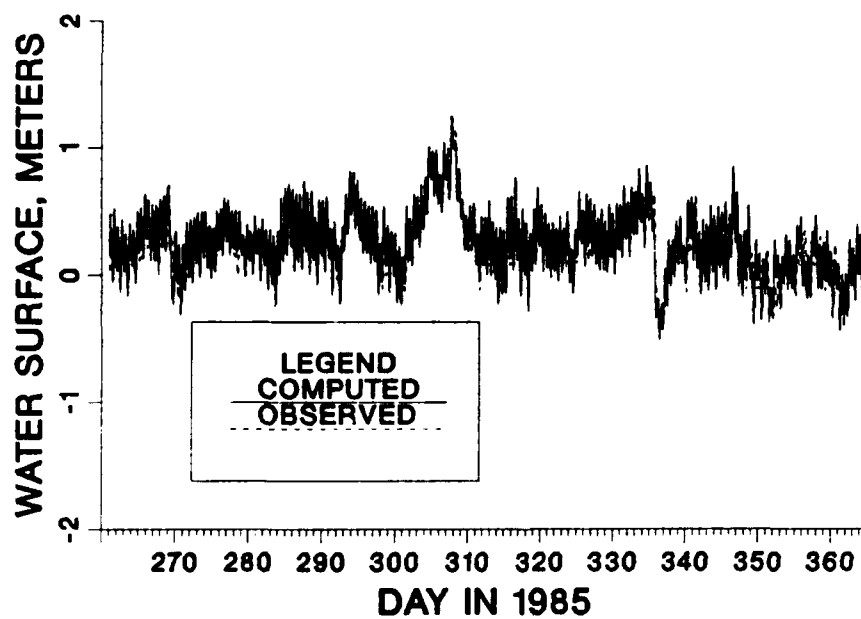


Figure B18. (Sheet 3 of 3)

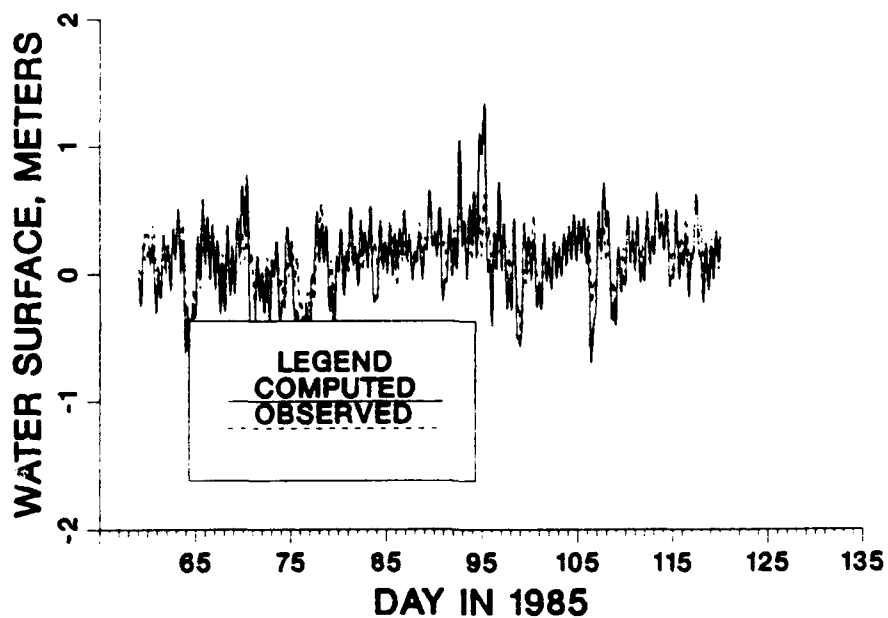
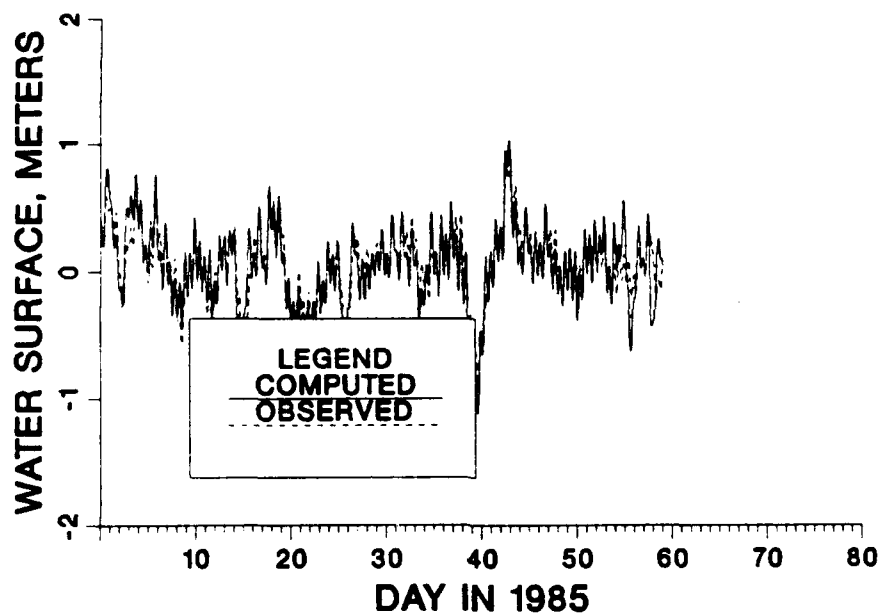


Figure B19. Comparison of computed and recorded tide at Annapolis, MD, during 1985 (Sheet 1 of 3)

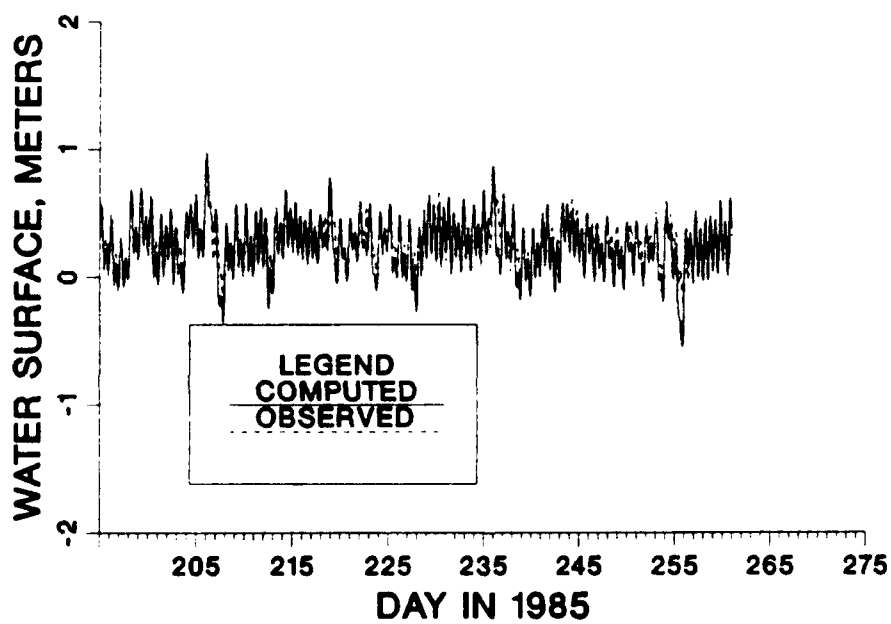
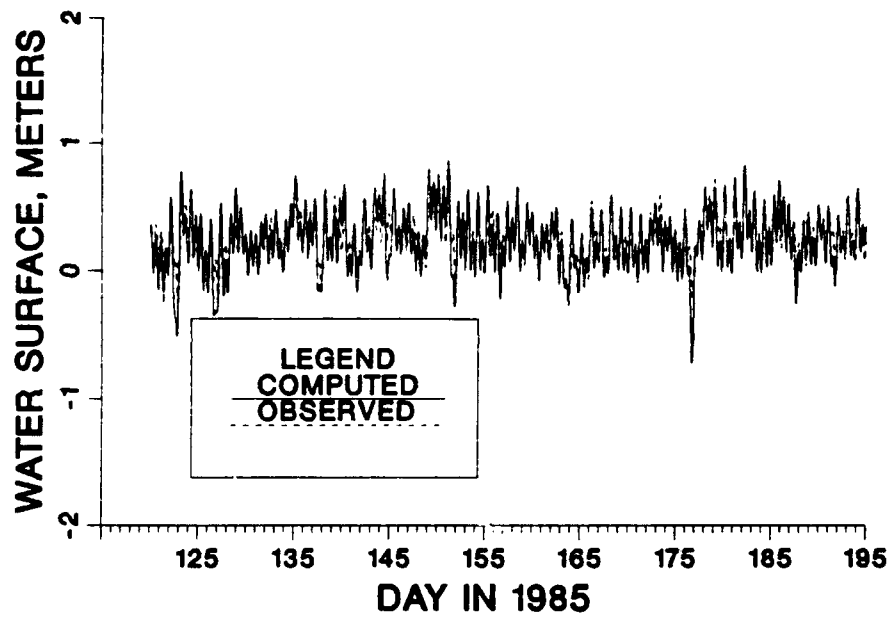


Figure B19. (Sheet 2 of 3)

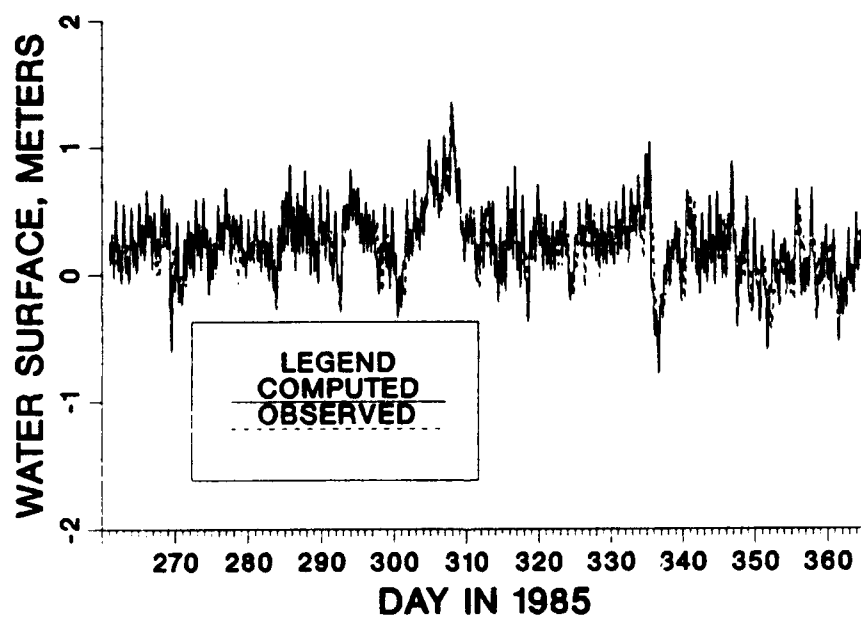


Figure B19. (Sheet 3 of 3)

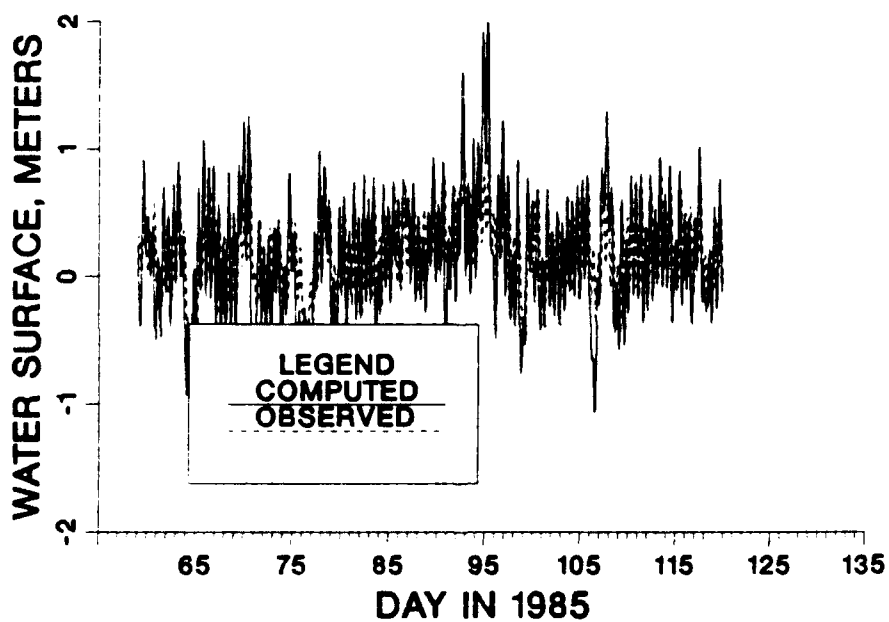
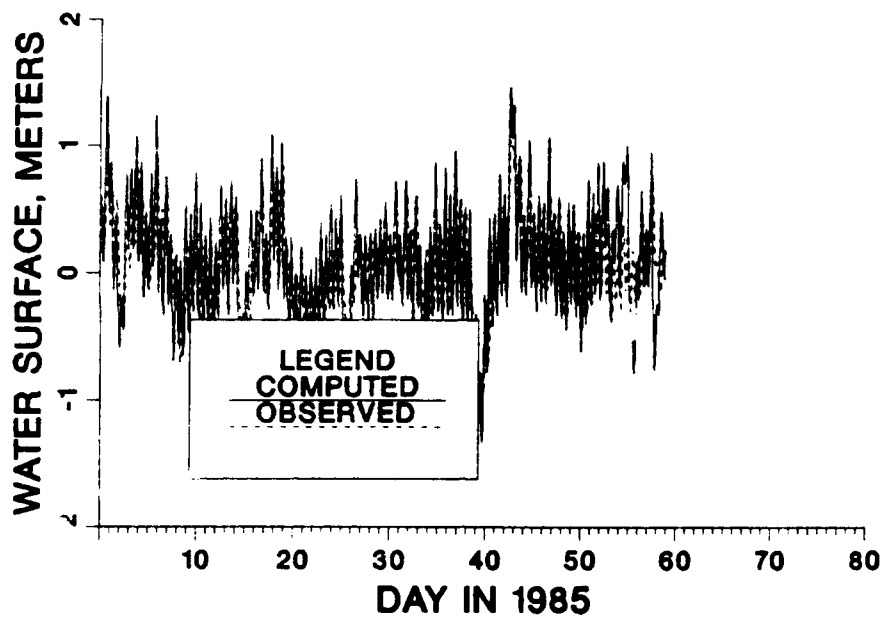


Figure B20. Comparison of computed and recorded tide at Havre de Grace, MD, during 1985 (Sheet 1 of 3)

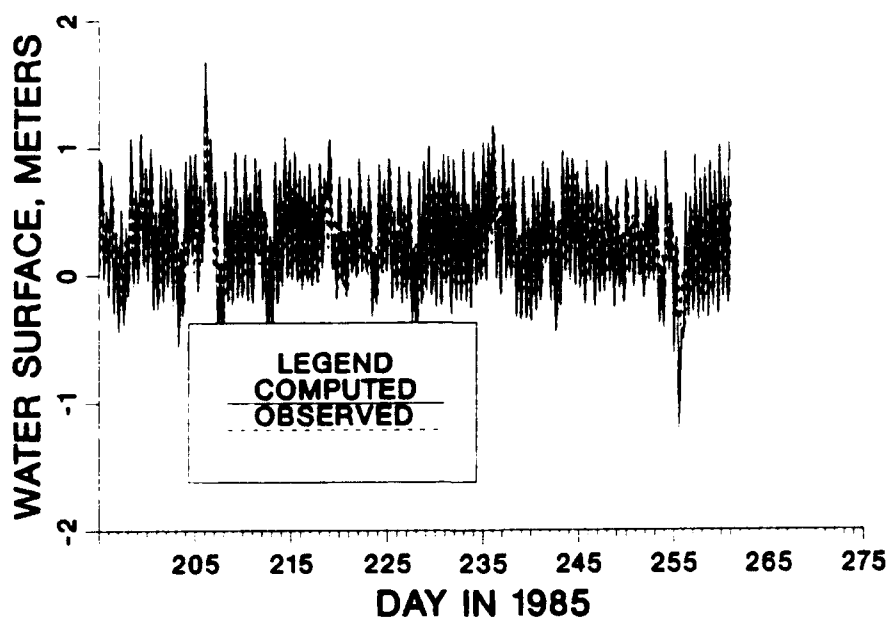
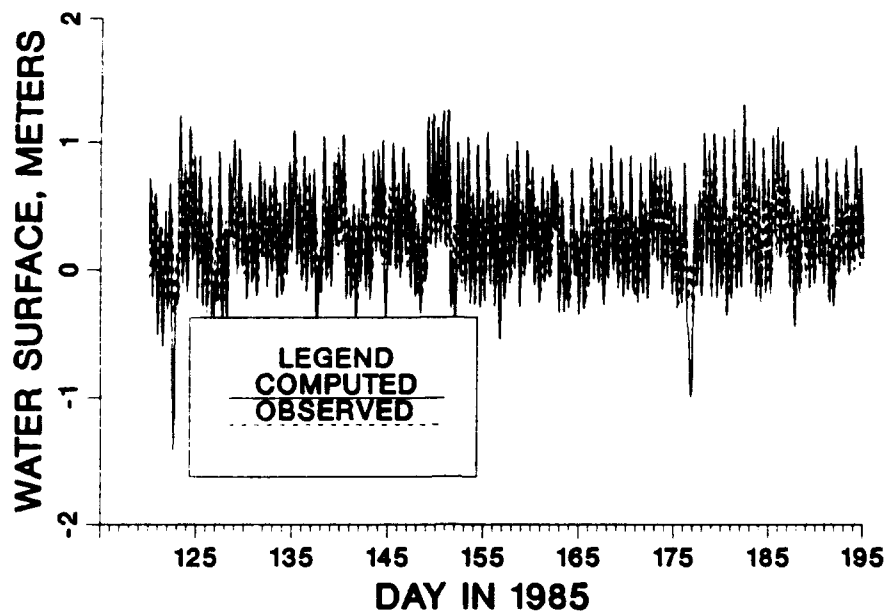


Figure B20. (Sheet 2 of 3)

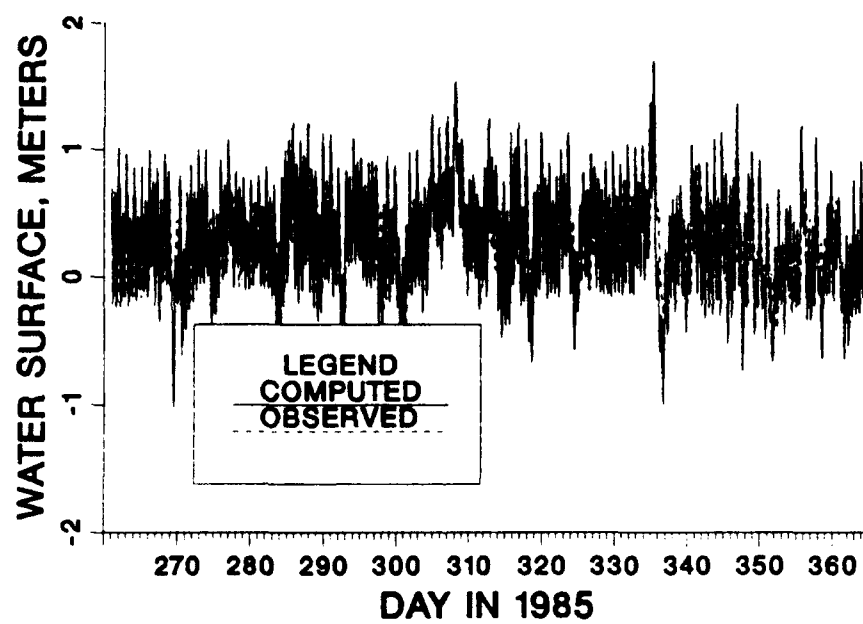


Figure B20. (Sheet 3 of 3)

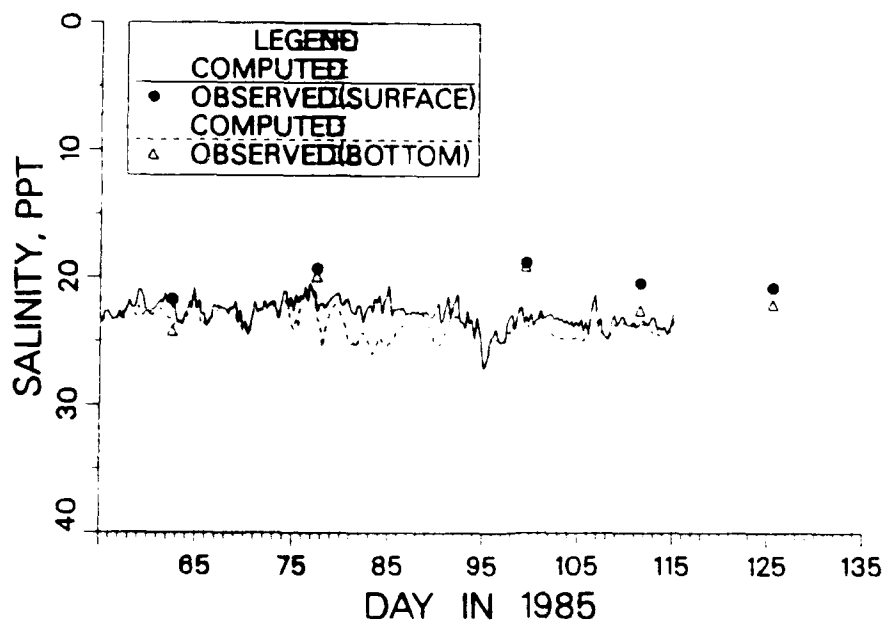
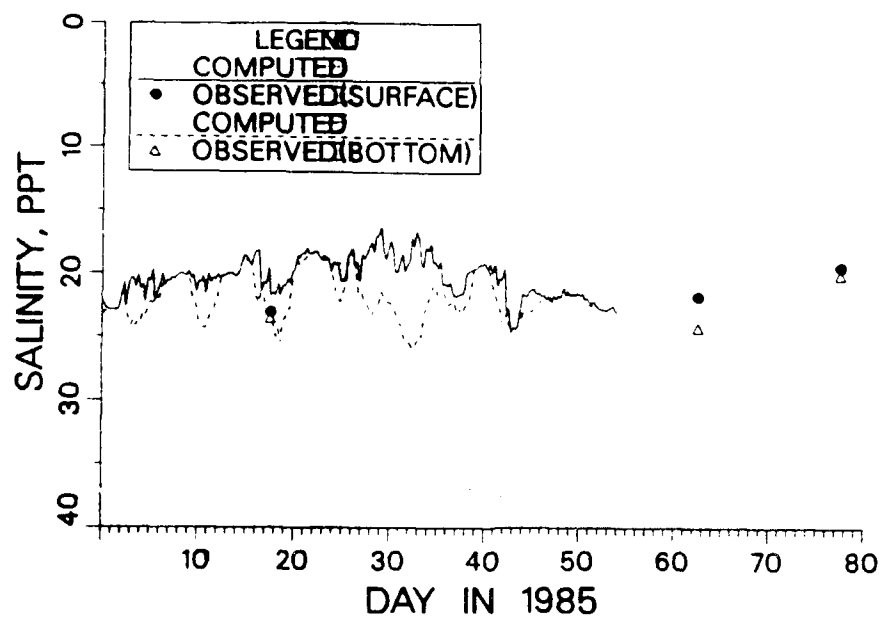


Figure B21. Comparison of computed and recorded salinity at sta CB 7.2E during 1985 (Sheet 1 of 3)

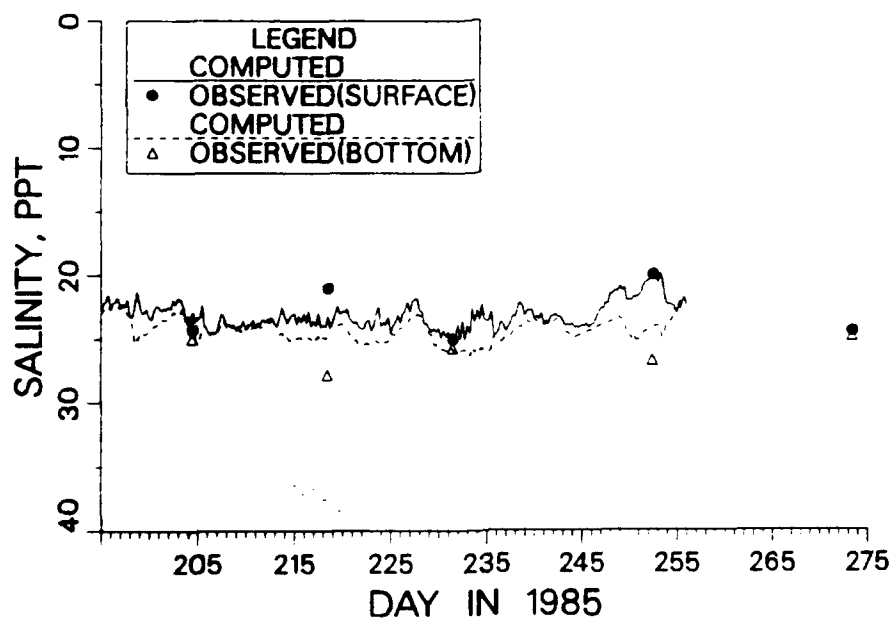
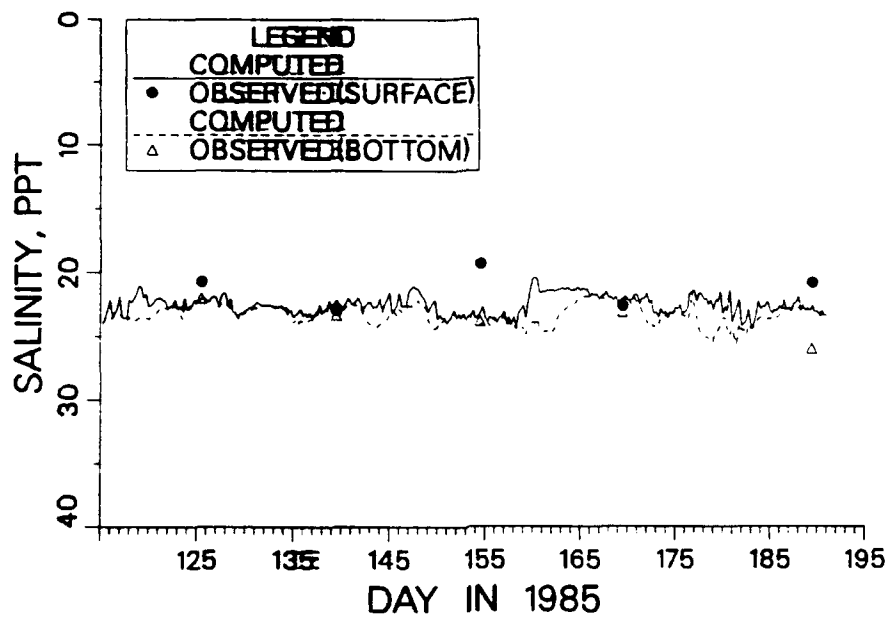


Figure B21. (Sheet 2 of 3)

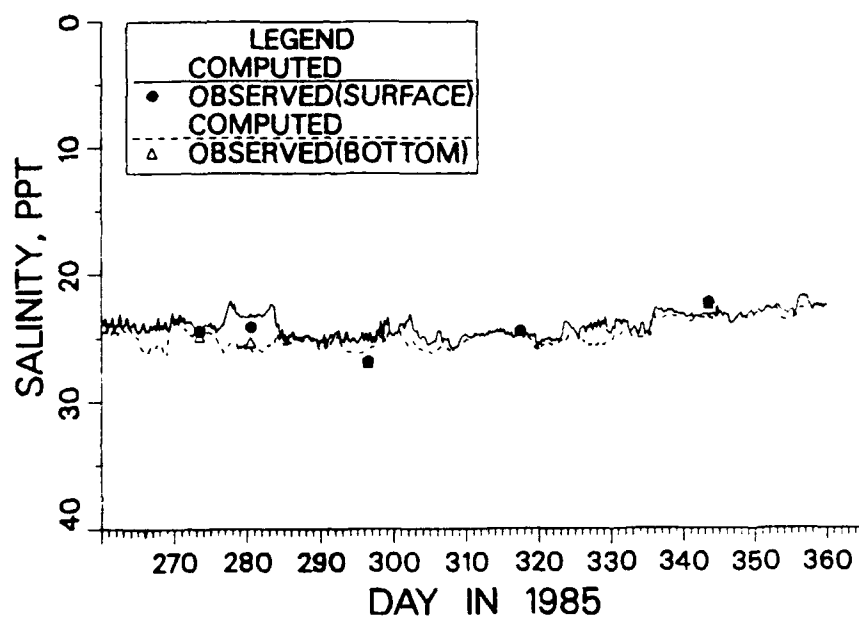


Figure B21. (Sheet 3 of 3)

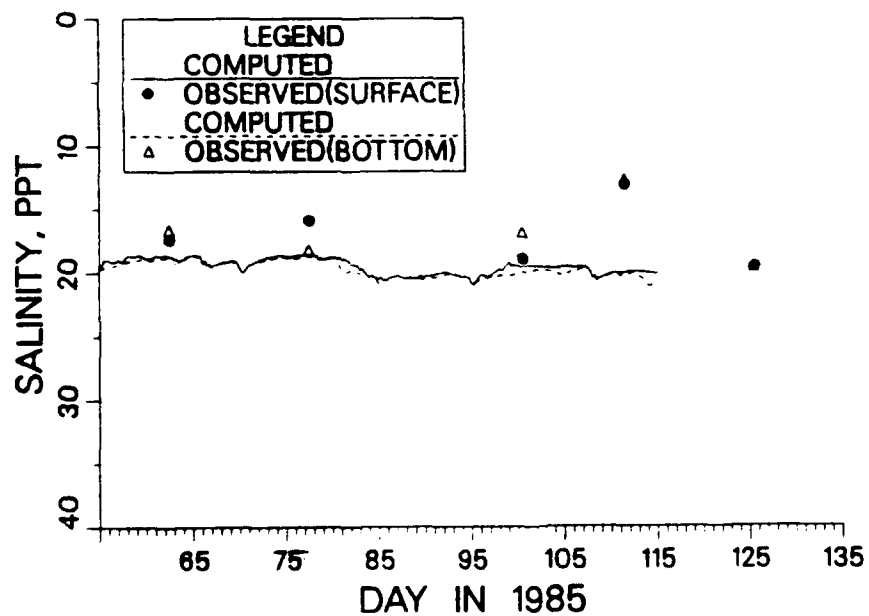
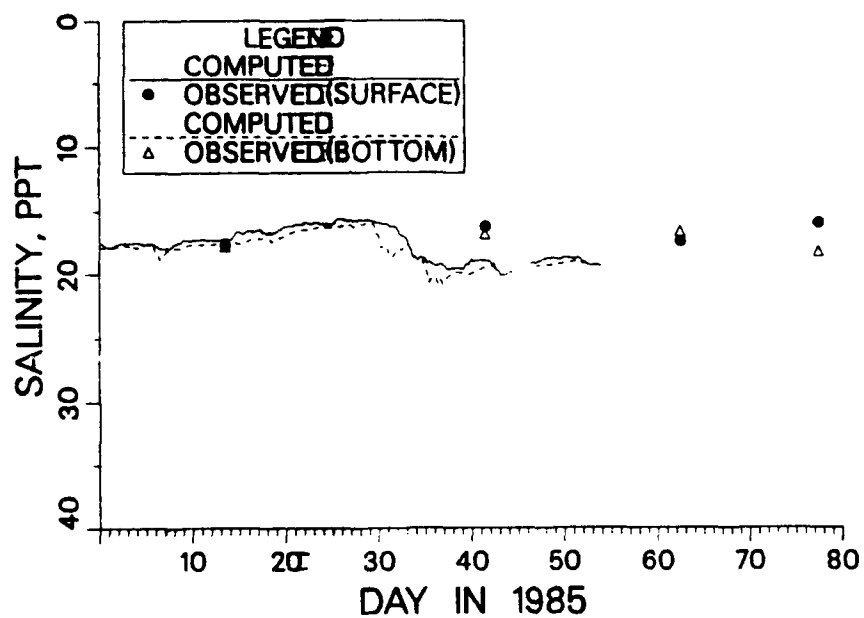


Figure B22. Comparison of computed and recorded salinity at sta EE 3.5 during 1985 (Sheet 1 of 3)

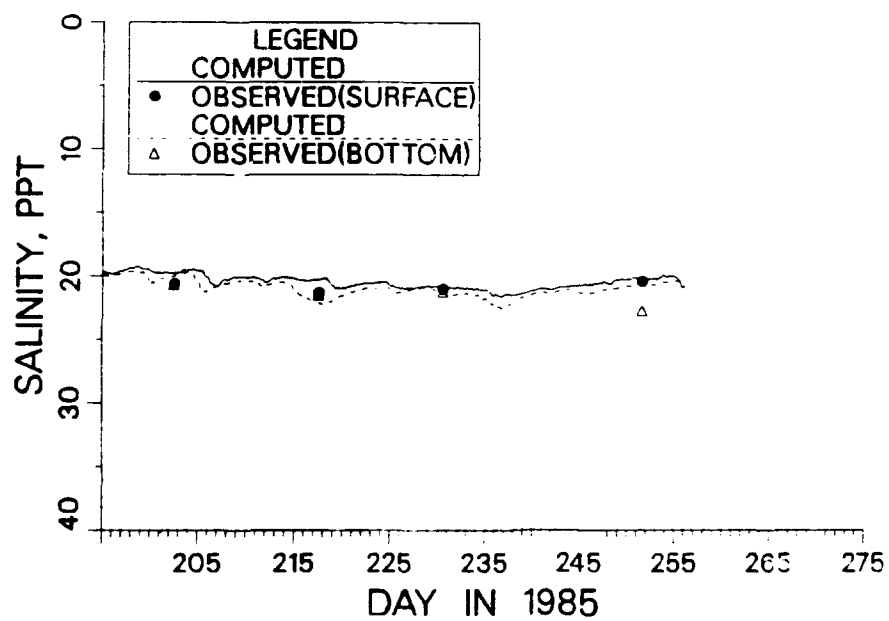
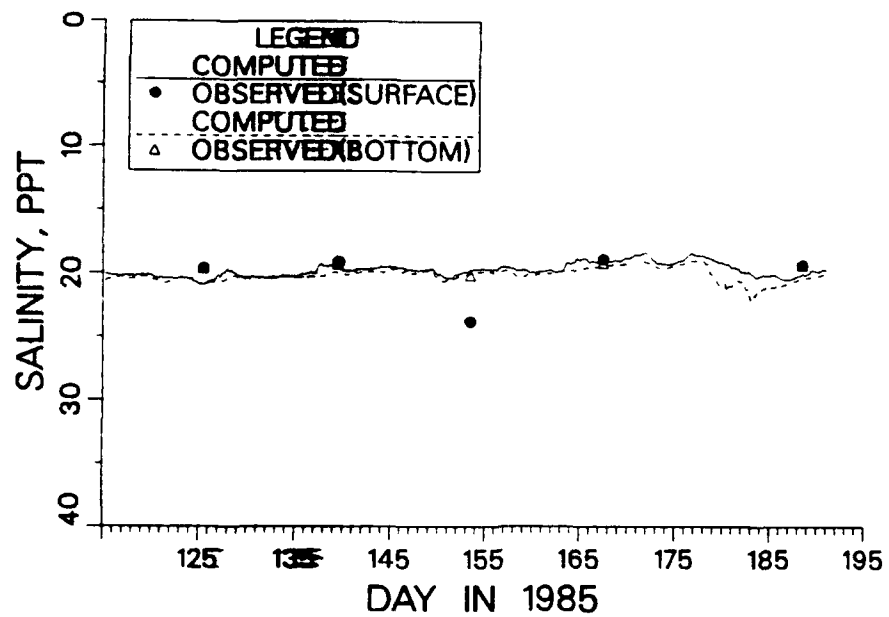


Figure B22. (Sheet 2 of 3)

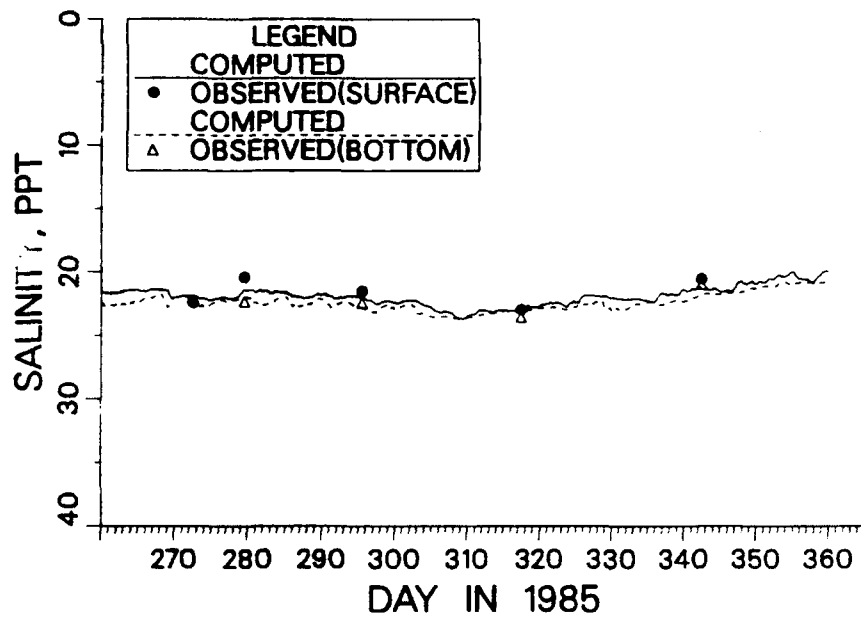


Figure B22. (Sheet 3 of 3)

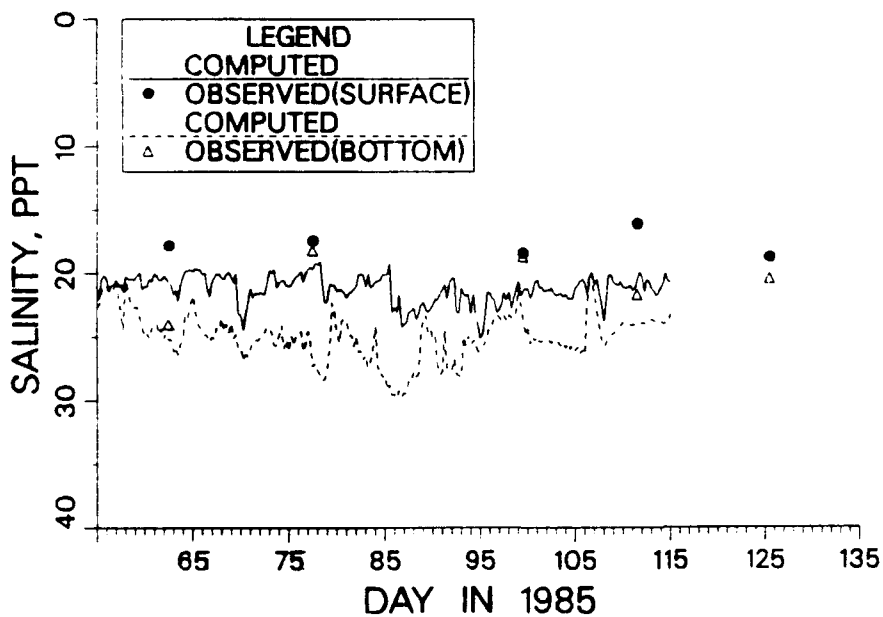
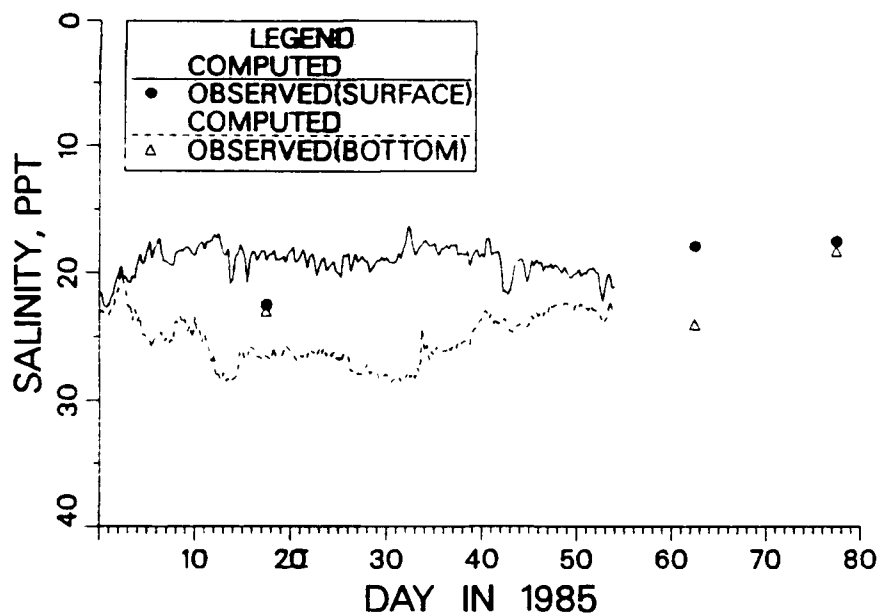


Figure B23. Comparison of computed and recorded salinity at sta CB 6.3 during 1985 (Sheet 1 of 3)

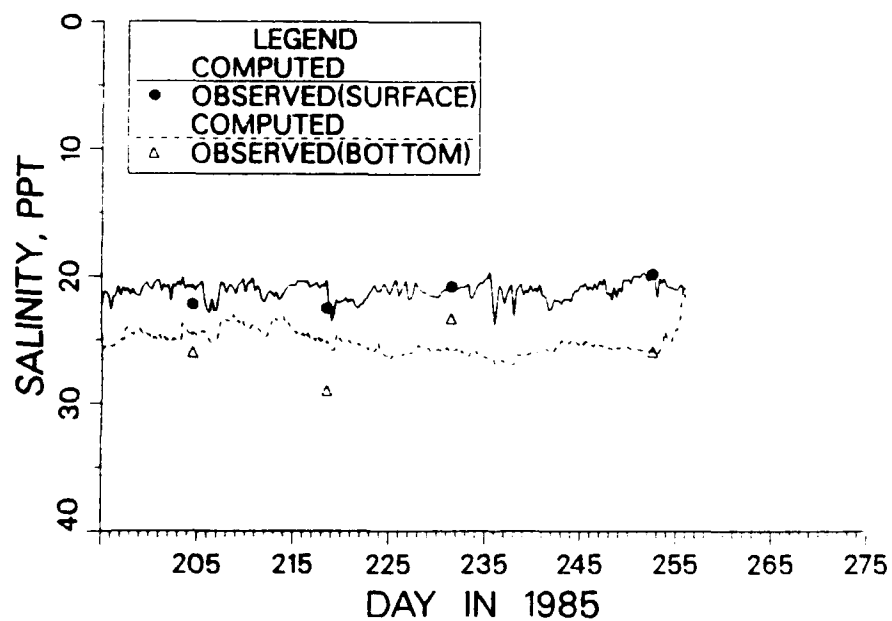
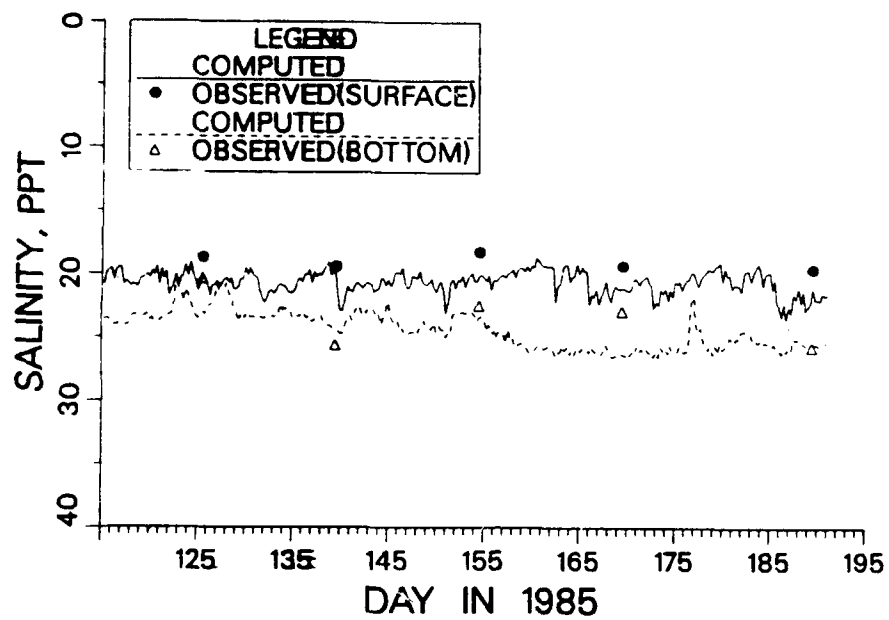


Figure B23. (Sheet 2 of 3)

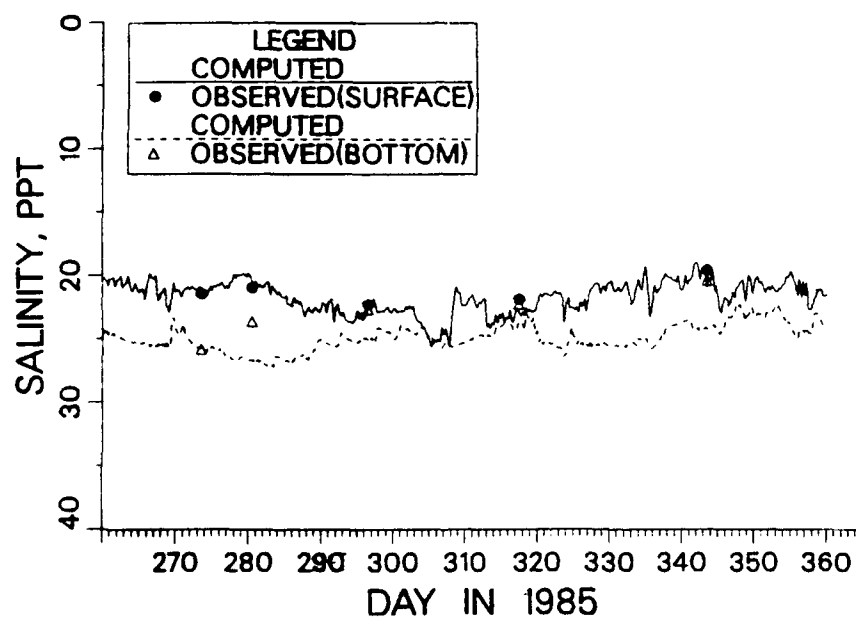


Figure B23. (Sheet 3 of 3)

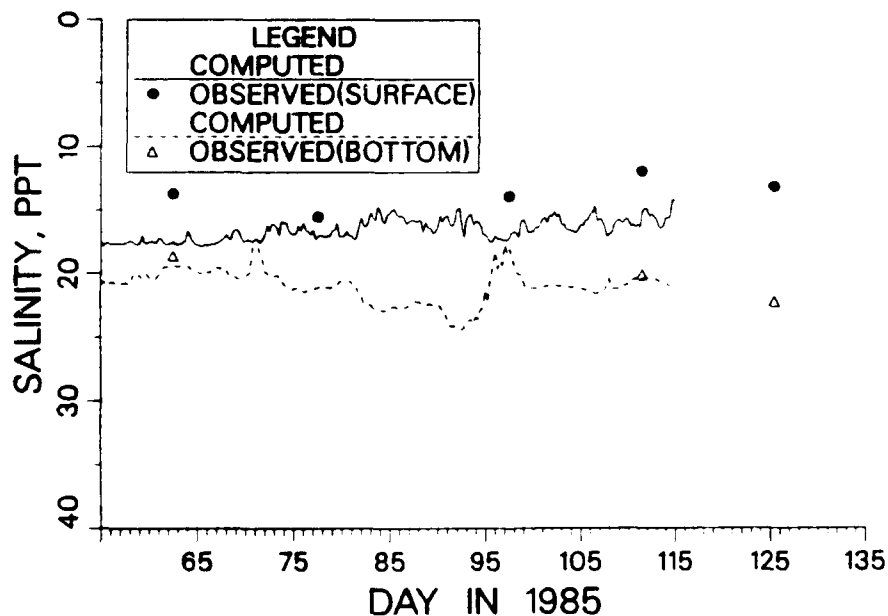
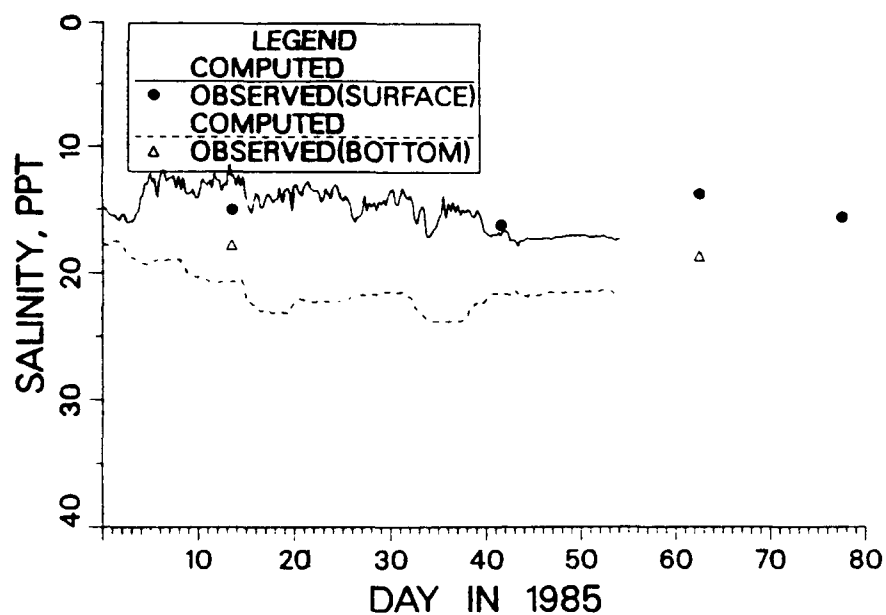


Figure B24. Comparison of computed and recorded salinity at sta CB 5.1 during 1985 (Sheet 1 of 3)

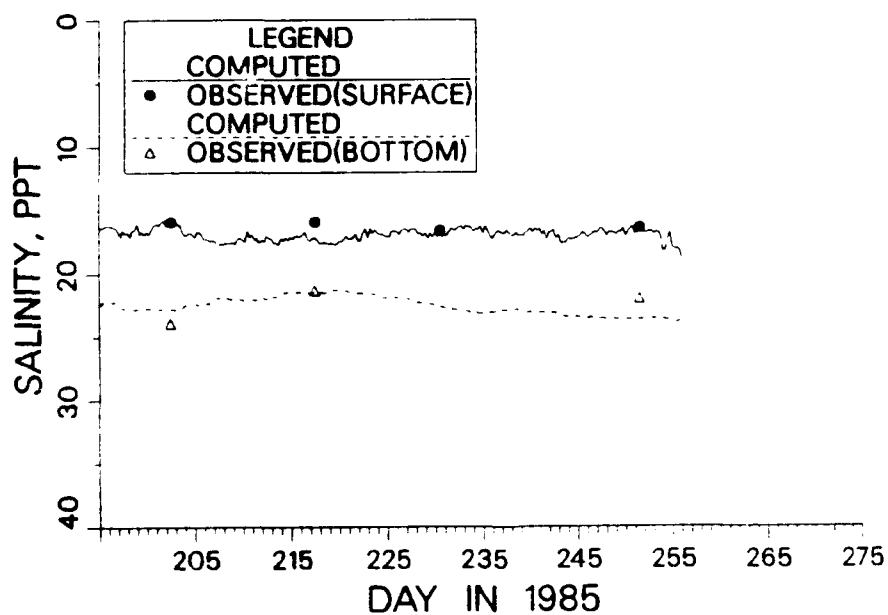
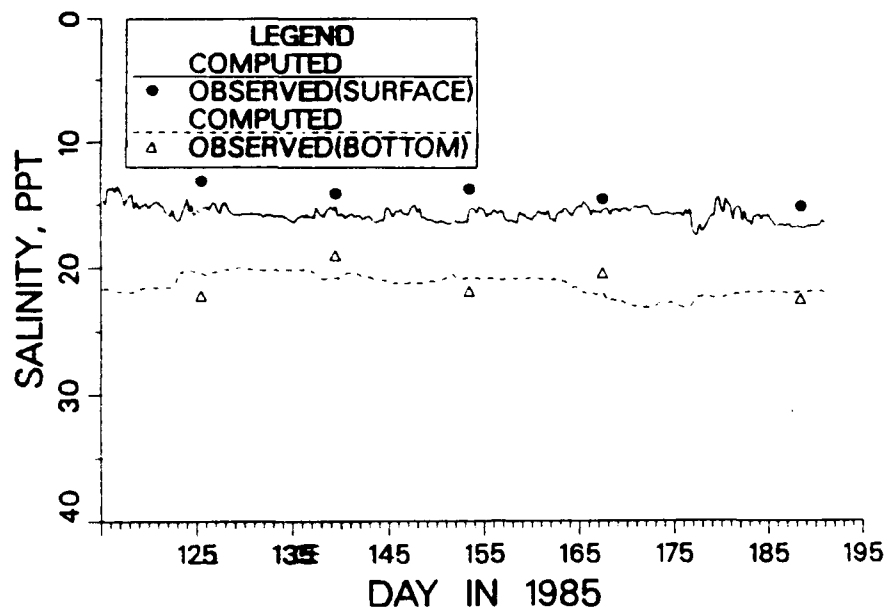


Figure B24. (Sheet 2 of 3)

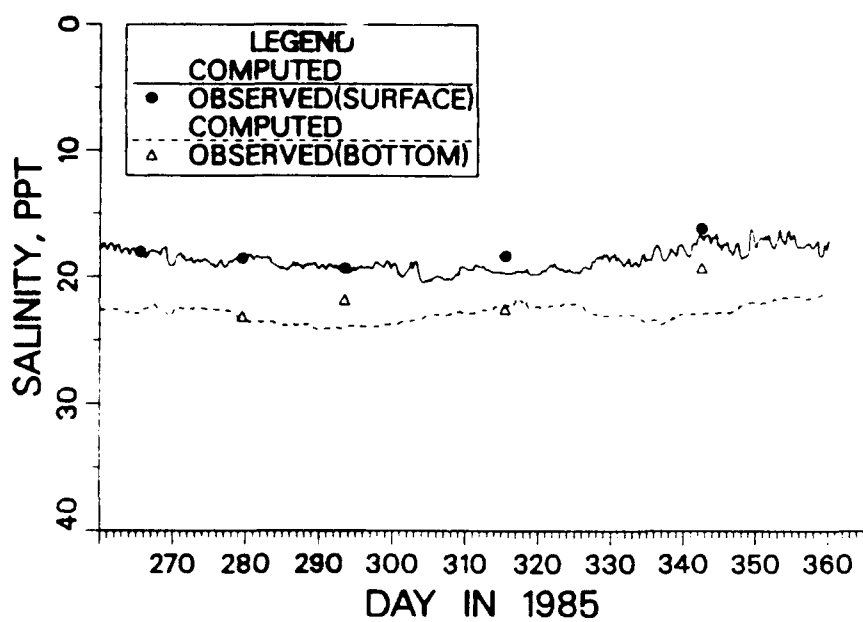


Figure B24. (Sheet 3 of 3)

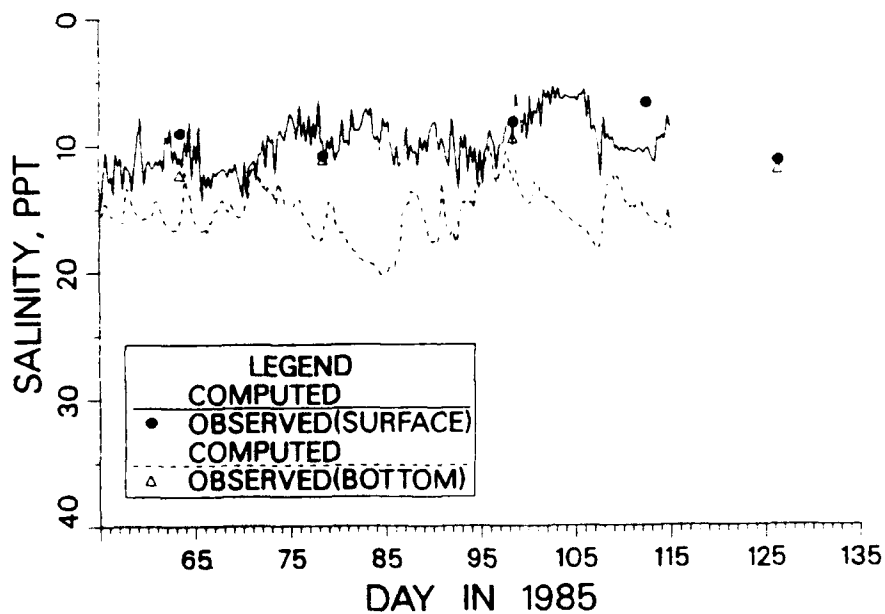
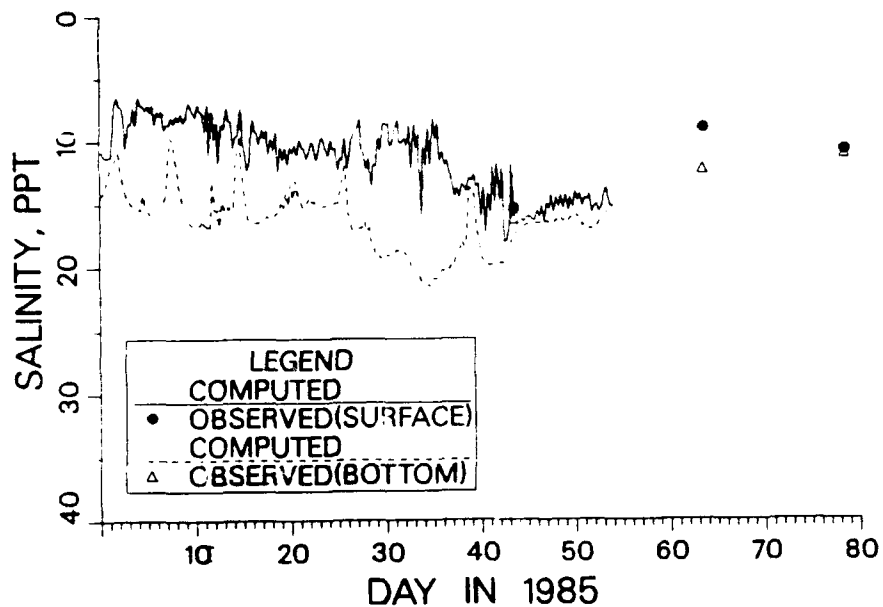


Figure B25. Comparison of computed and recorded salinity at sta CB 3.3W during 1985 (Sheet 1 of 3)

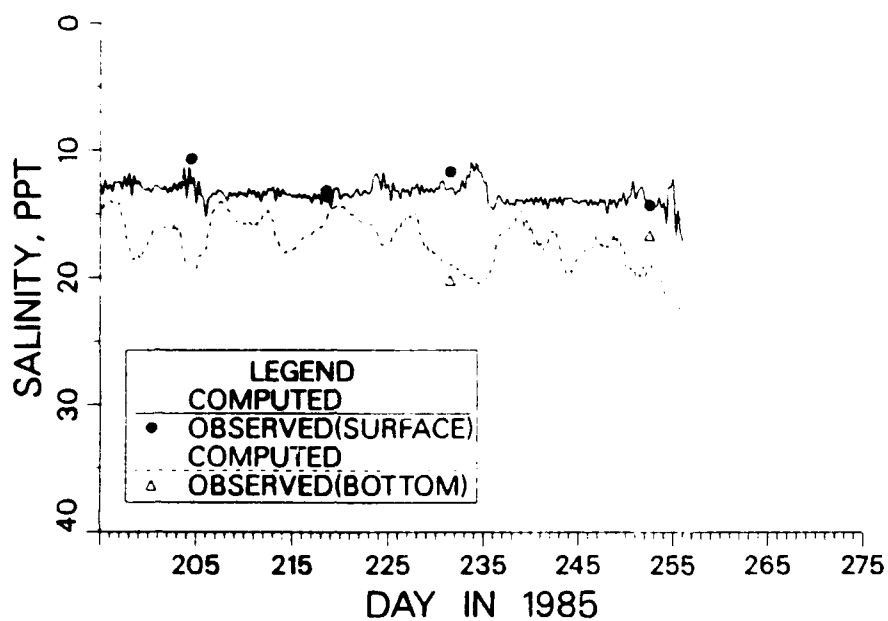
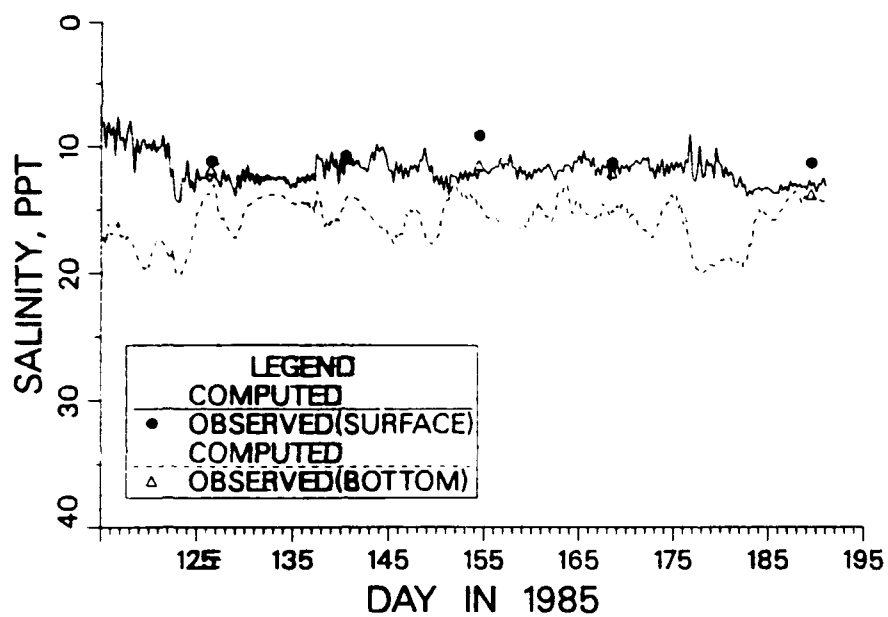


Figure B25. (Sheet 2 of 3)

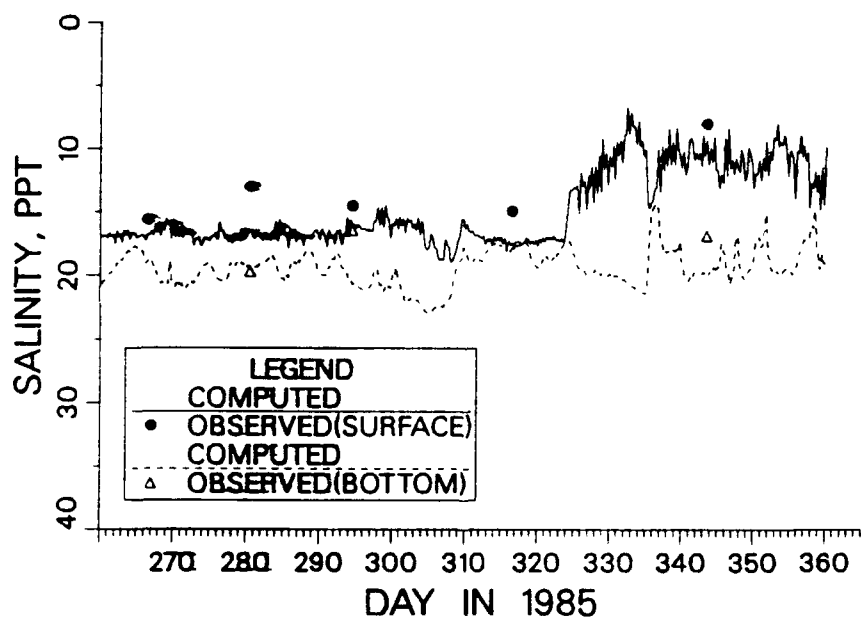


Figure B25. (Sheet 3 of 3)

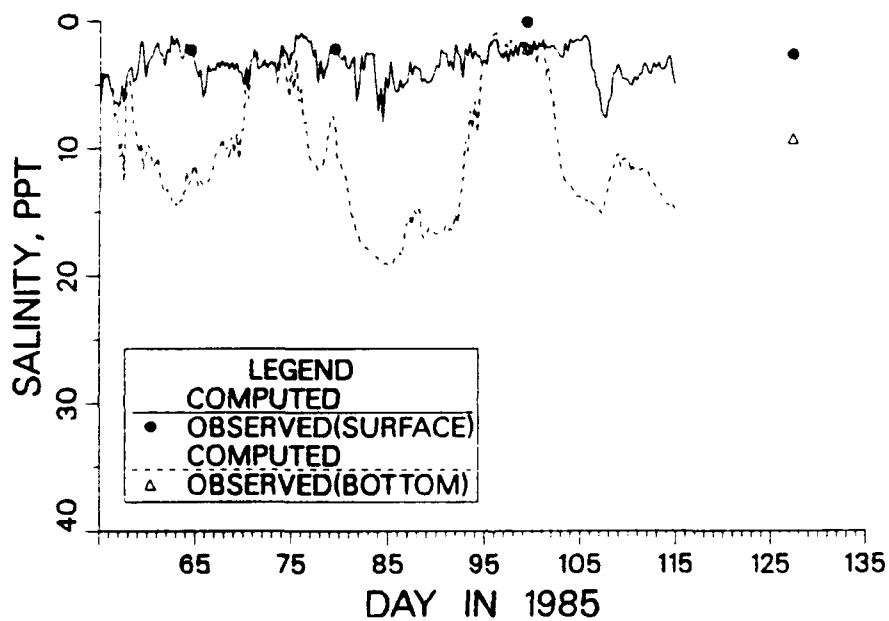
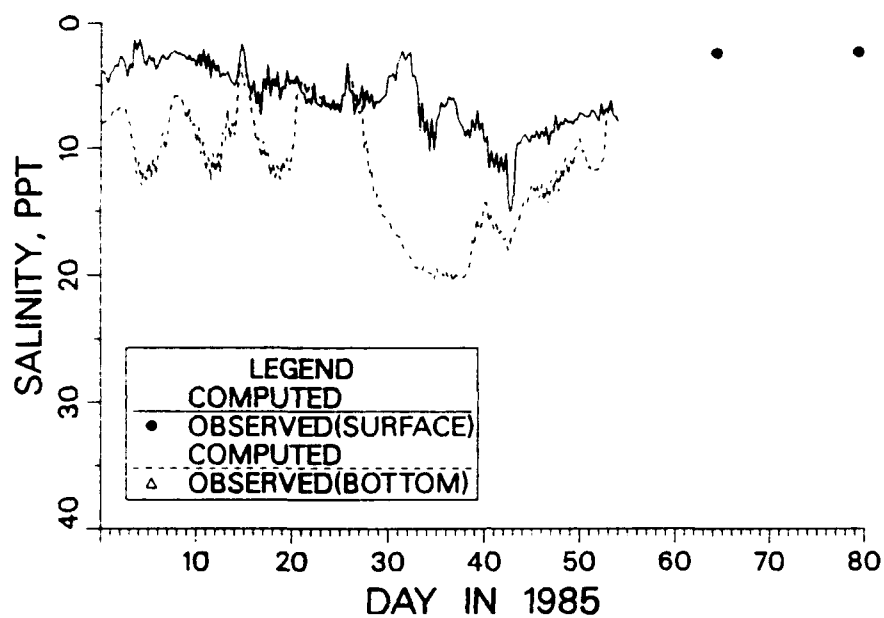


Figure B26. Comparison of computed and recorded salinity at sta CB 3.1 during 1985 (Sheet 1 of 3)

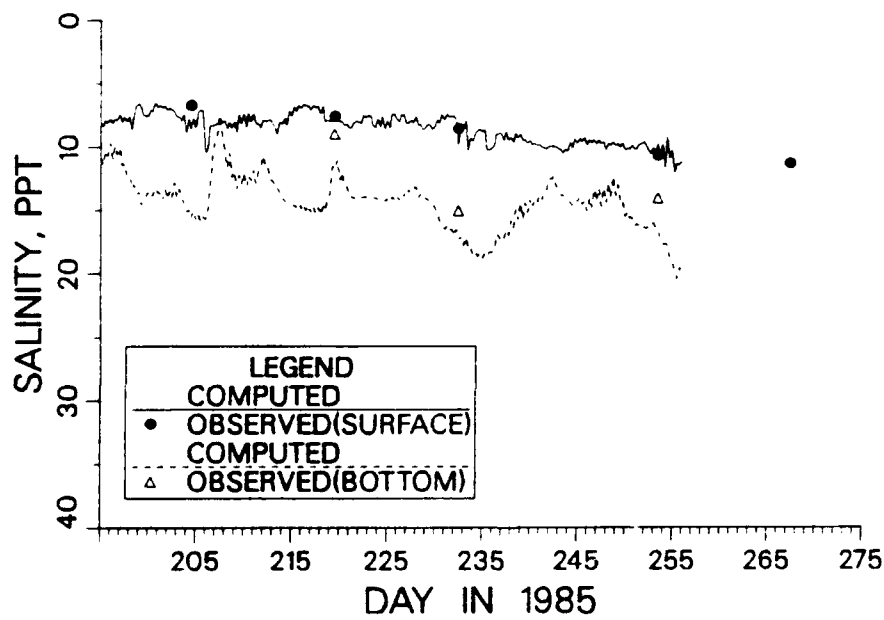
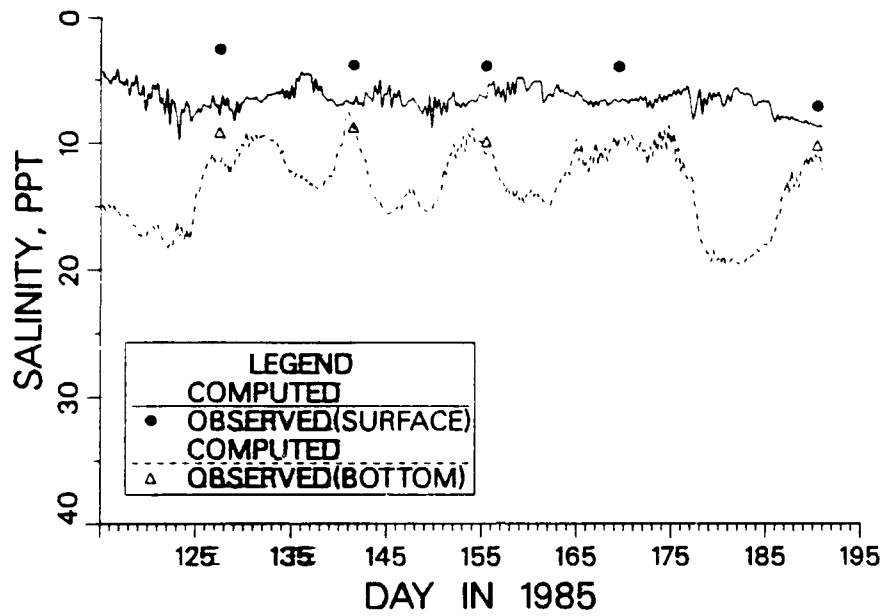


Figure B26. (Sheet 2 of 3)

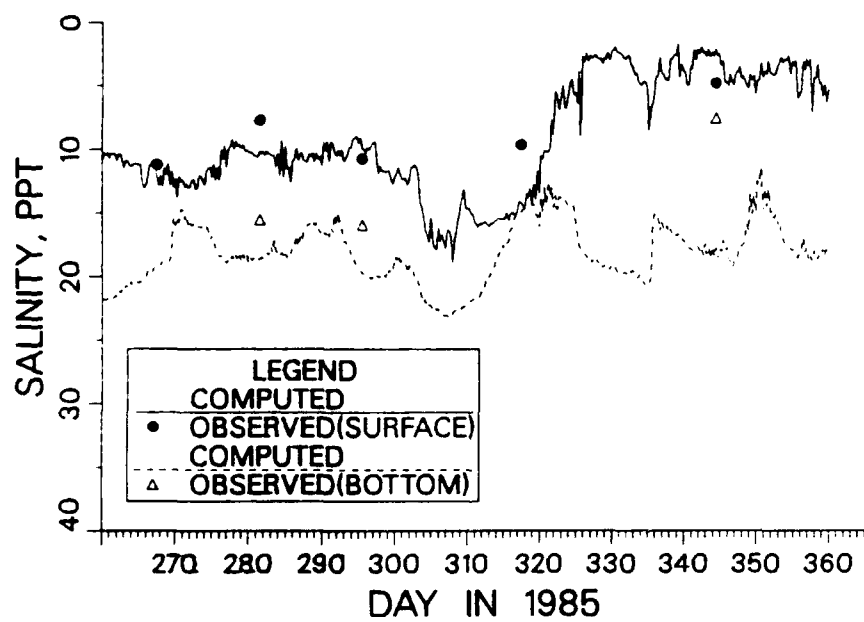


Figure B26. (Sheet 3 of 3)

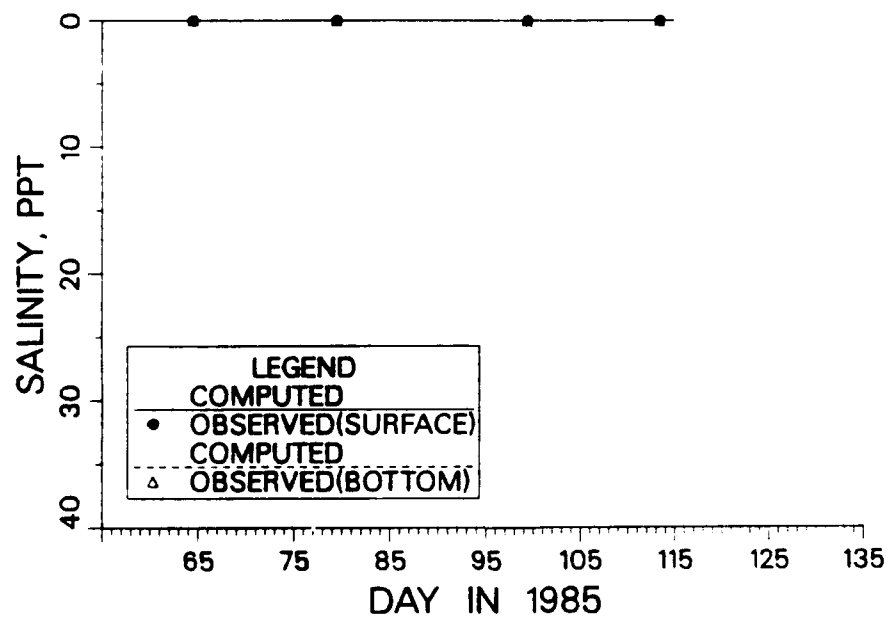
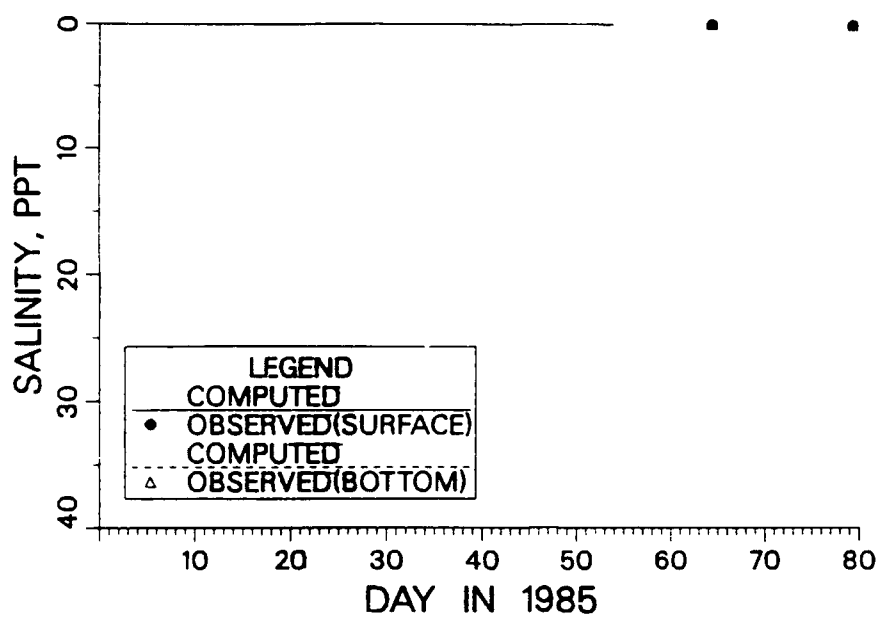


Figure B27. Comparison of computed and recorded salinity at sta CB 1.1 during 1985 (Sheet 1 of 3)

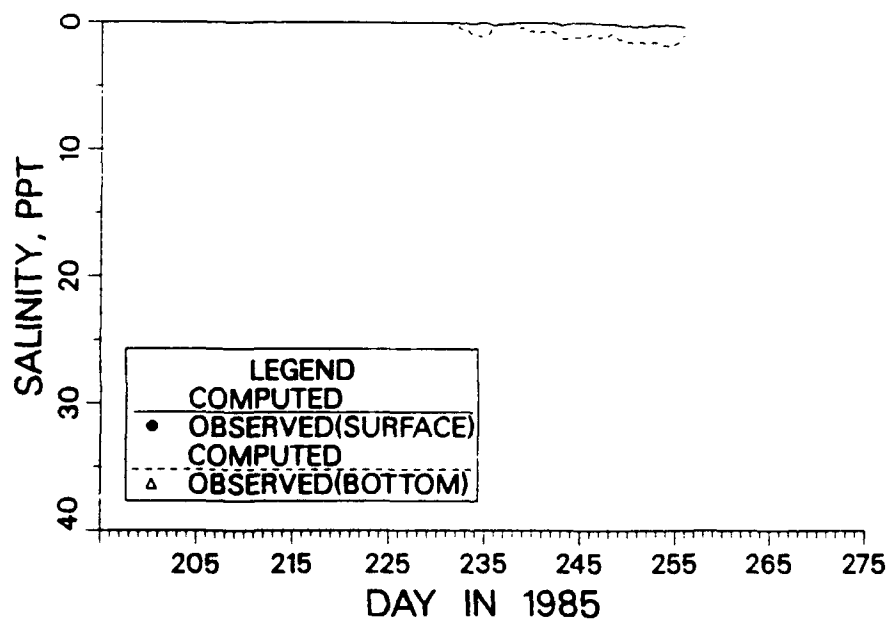
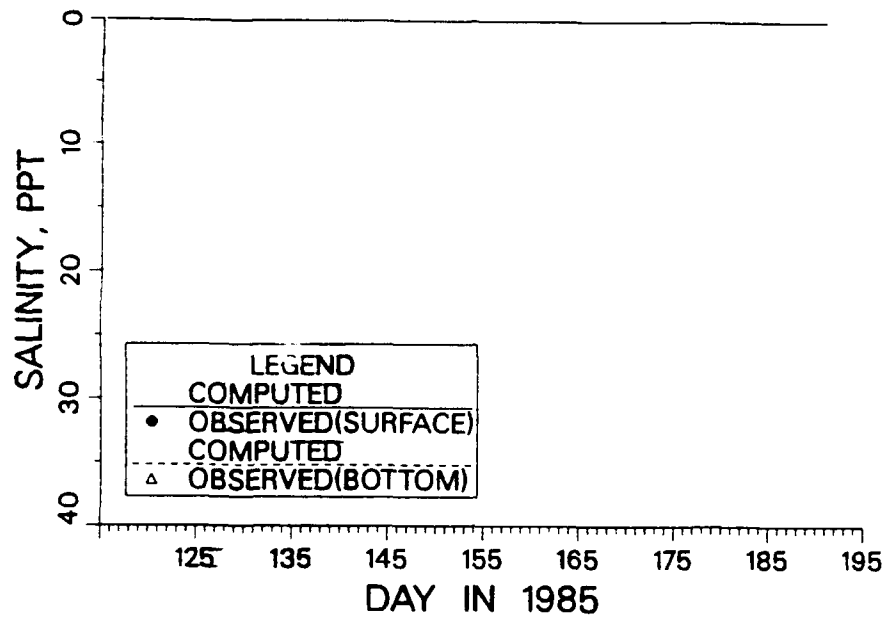


Figure B27. (Sheet 2 of 3)

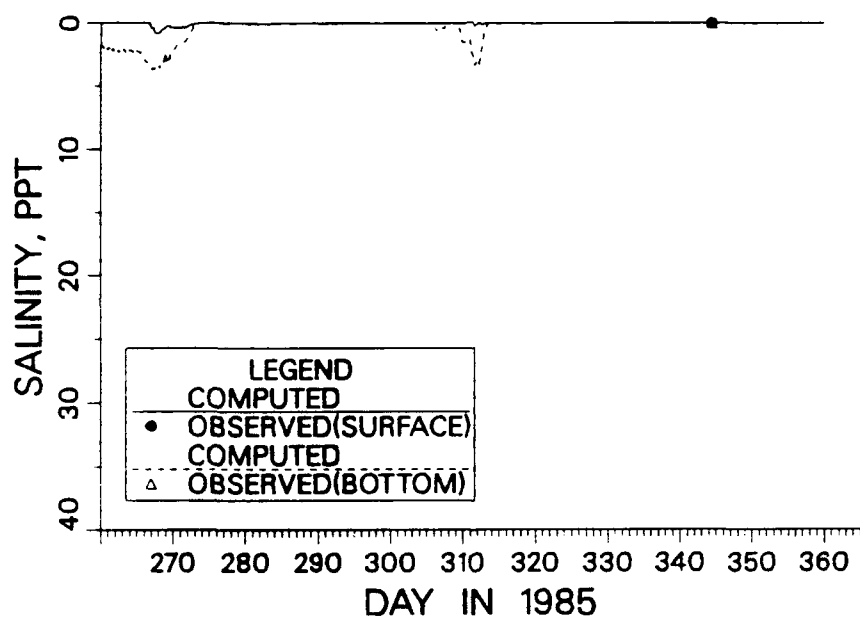


Figure B27. (Sheet 3 of 3)

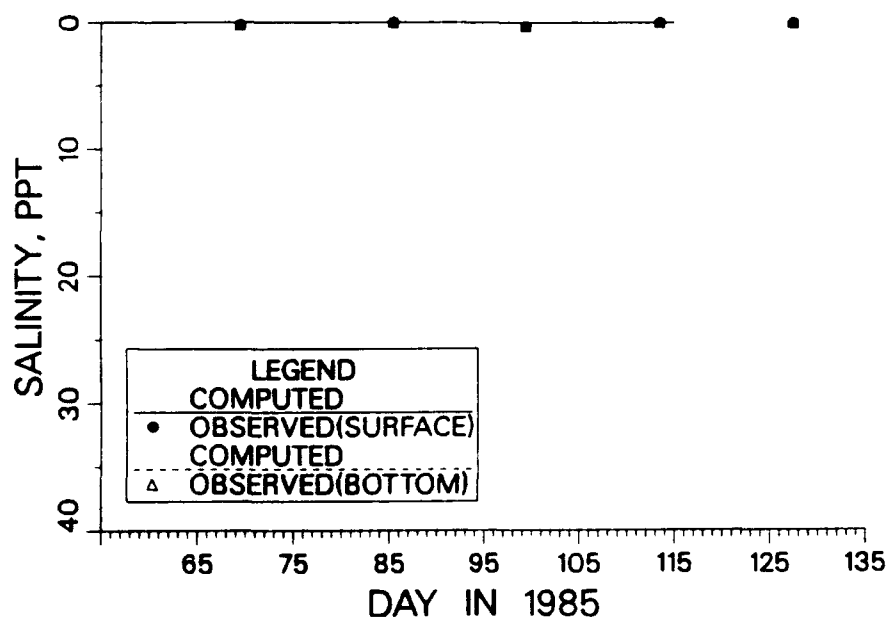
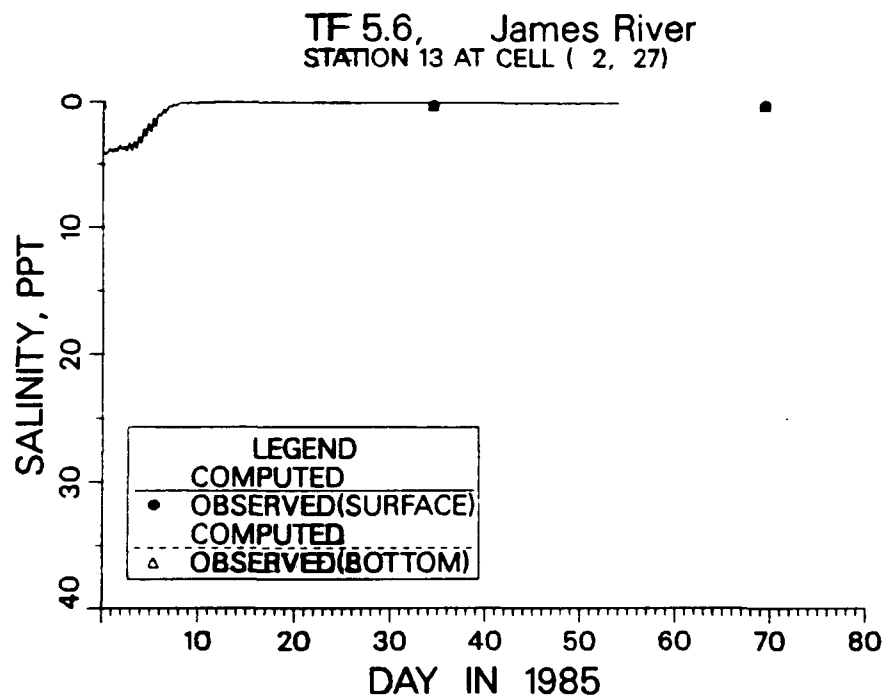


Figure B28. Comparison of computed and recorded salinity
at sta TF 5.6 during 1985 (Sheet 1 of 3)

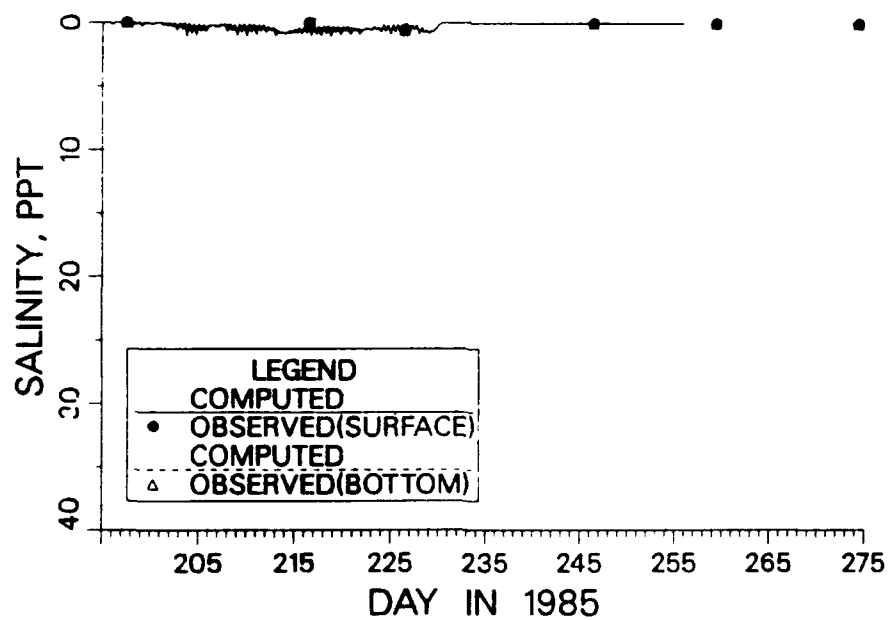
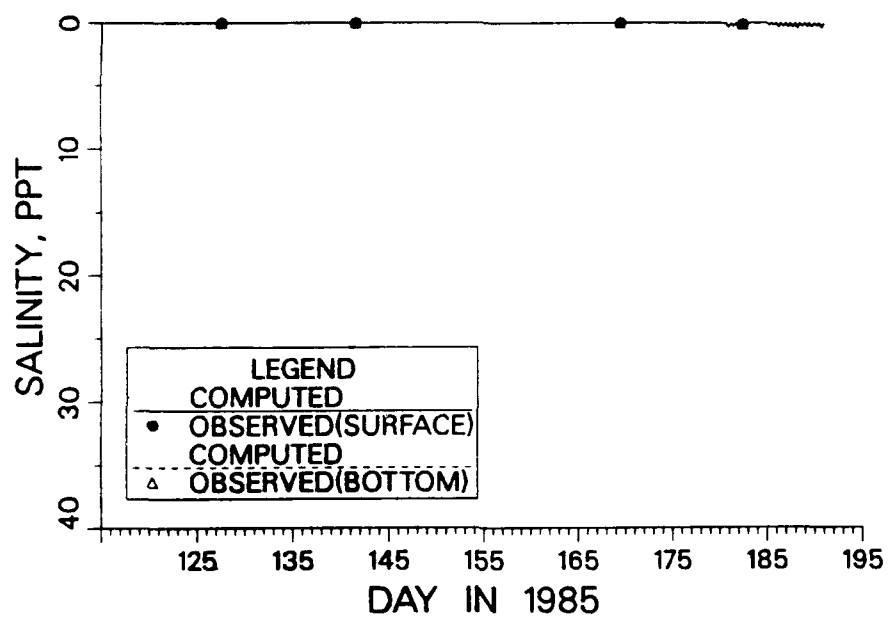


Figure B28. (Sheet 2 of 3)

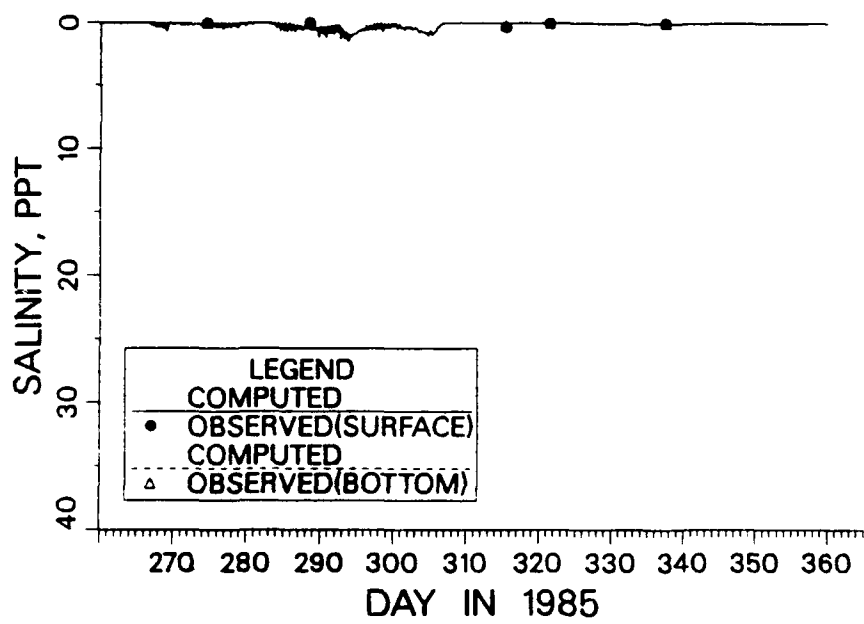


Figure B28. (Sheet 3 of 3)

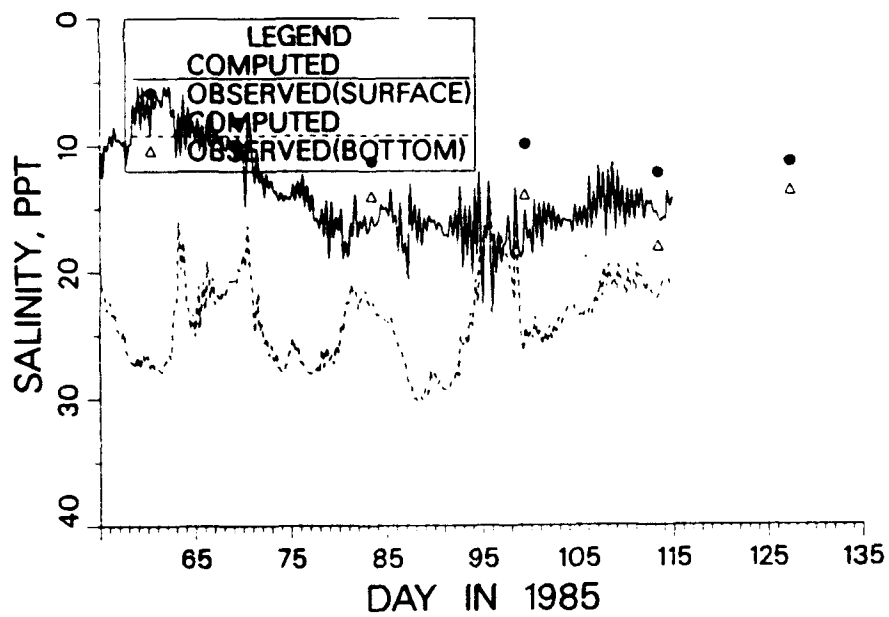
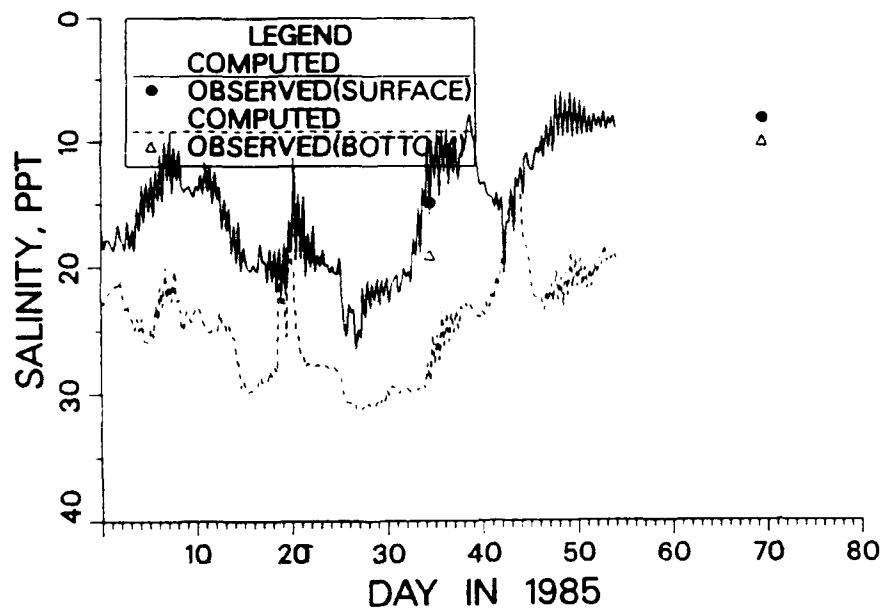


Figure B29. Comparison of computed and recorded salinity at sta LE 5.2 during 1985 (Sheet 1 of 3)

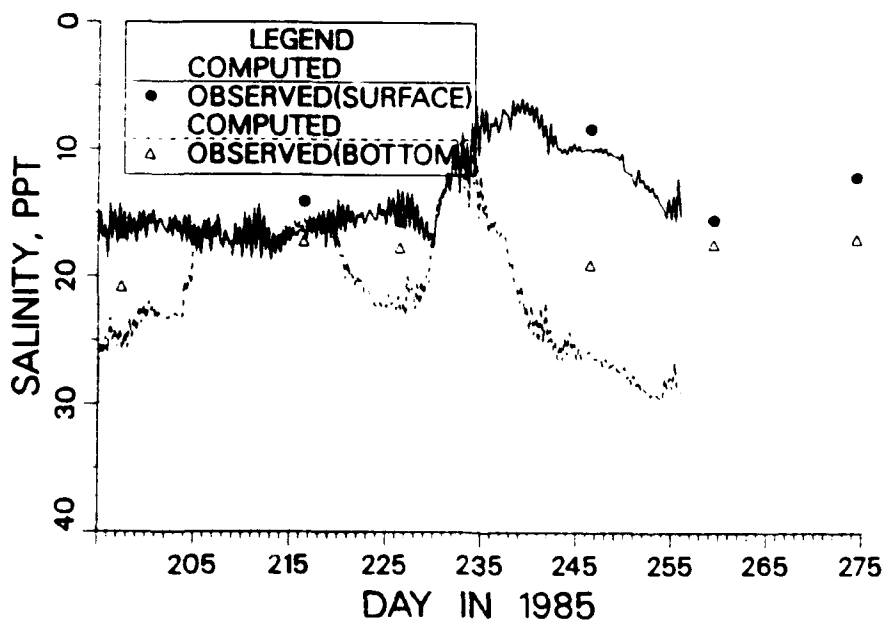
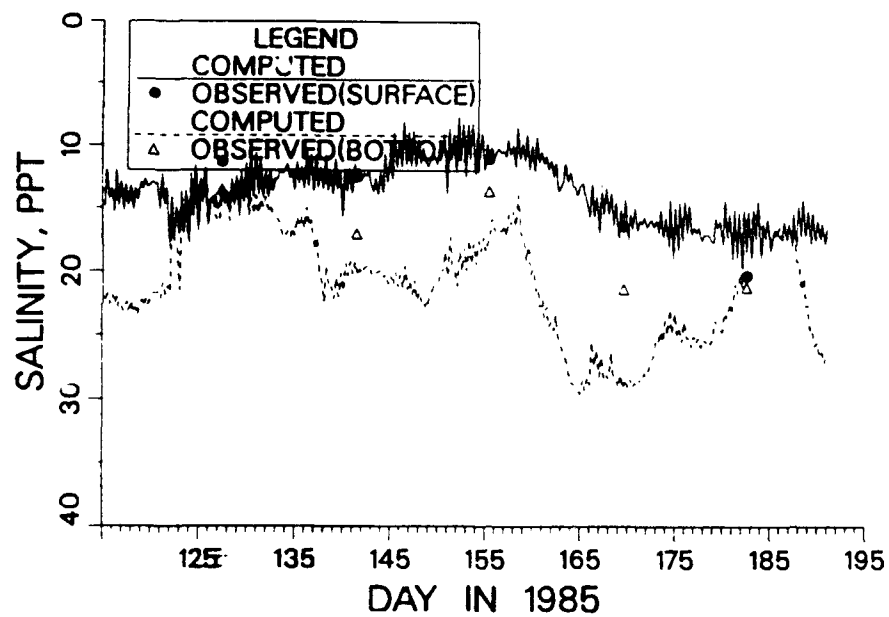


Figure B29. (Sheet 2 of 3)

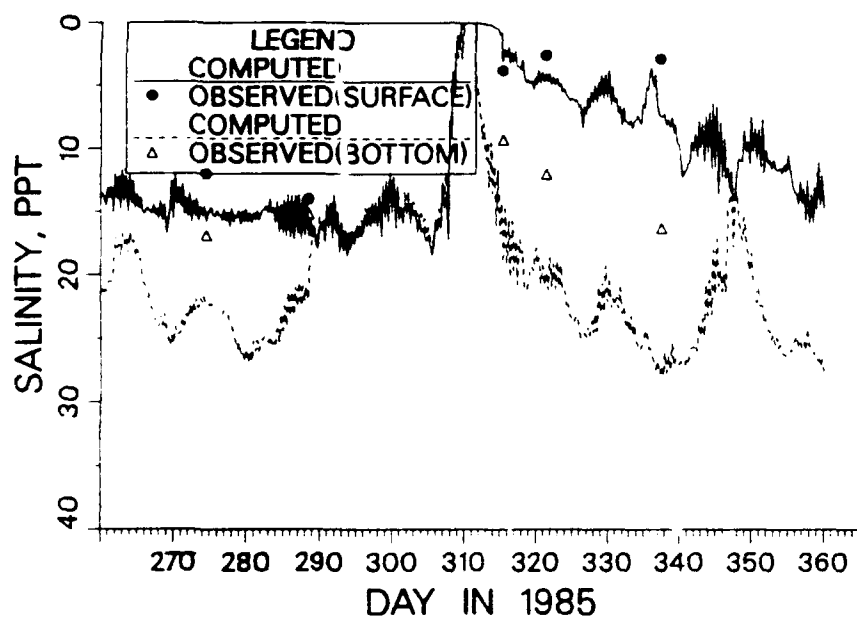


Figure B29. (Sheet 3 of 3)

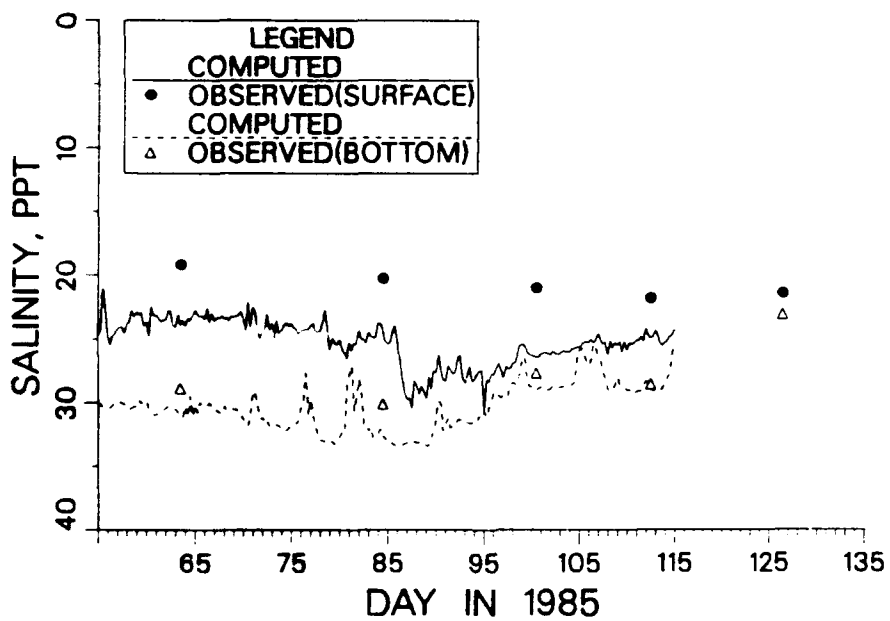
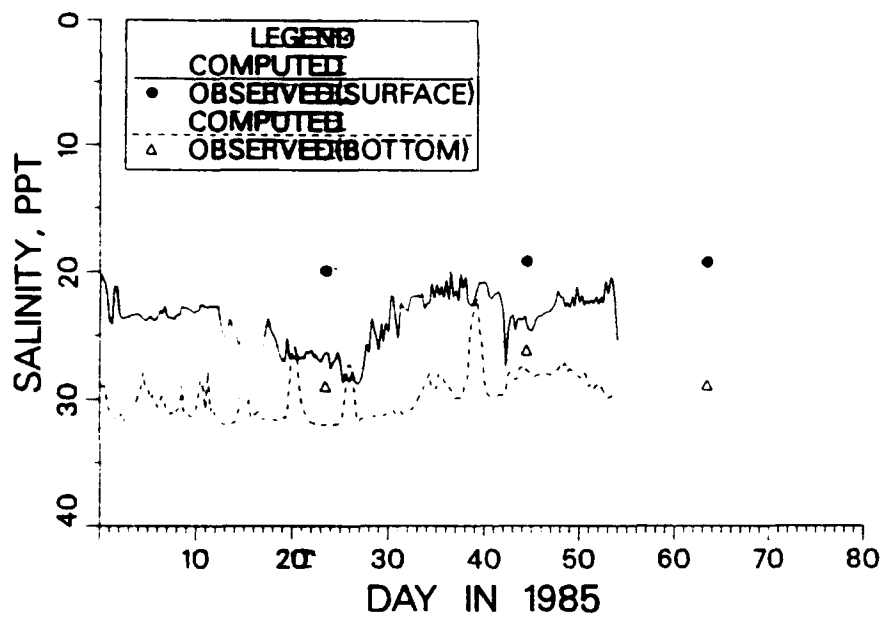


Figure B30. Comparison of computed and recorded salinity at sta LE 5.5 during 1985 (Sheet 1 of 3)

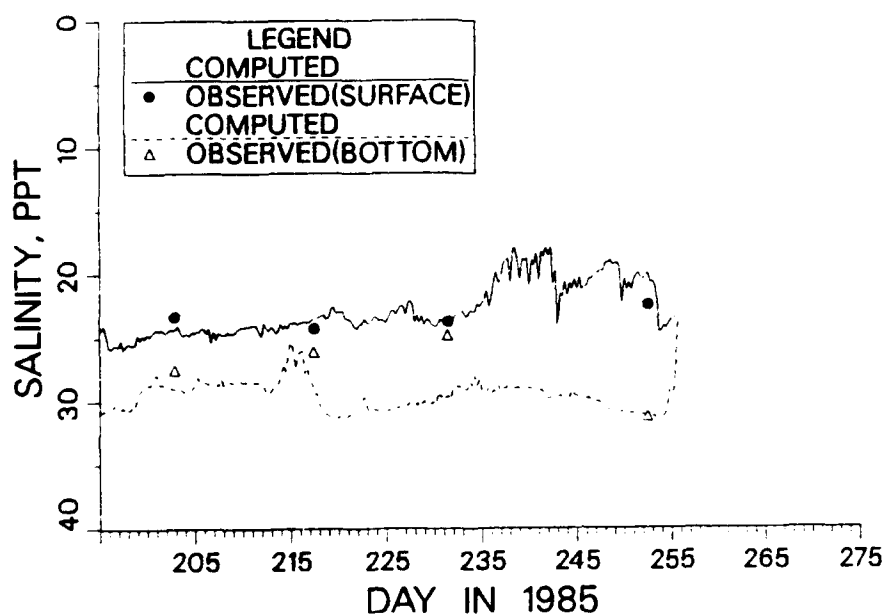
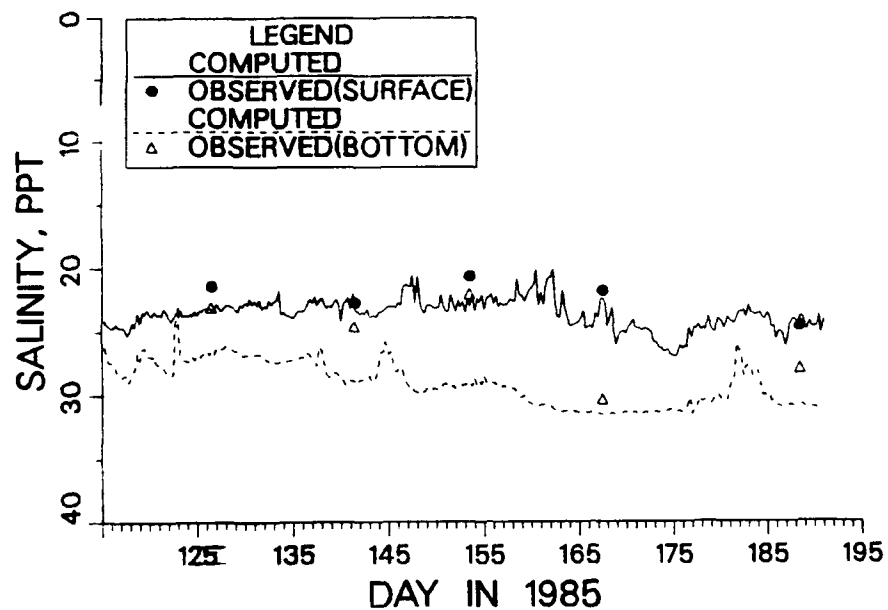


Figure B30. (Sheet 2 of 3)

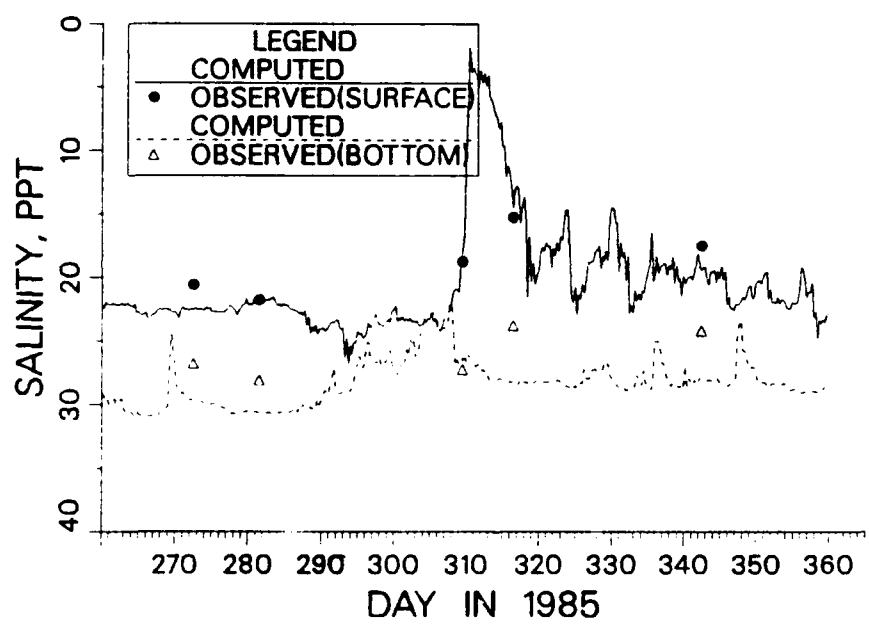


Figure B30. (Sheet 3 of 3)

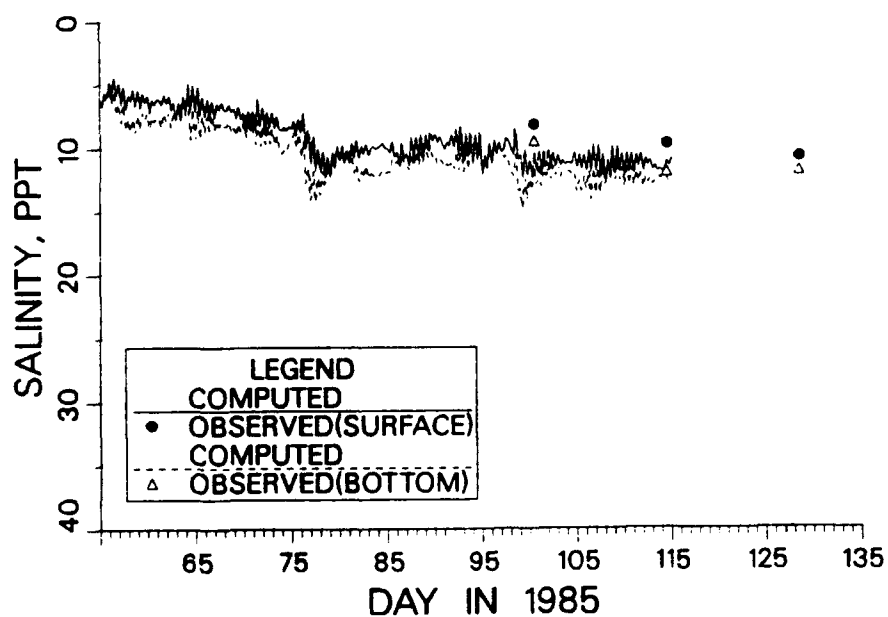
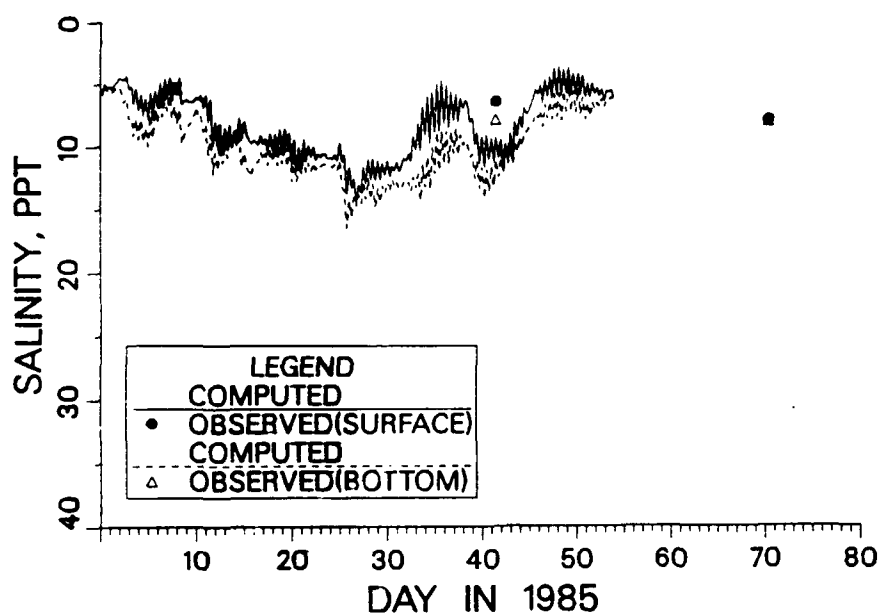


Figure B31. Comparison of computed and recorded salinity
at sta RET 4.3 during 1985 (Sheet 1 of 3)

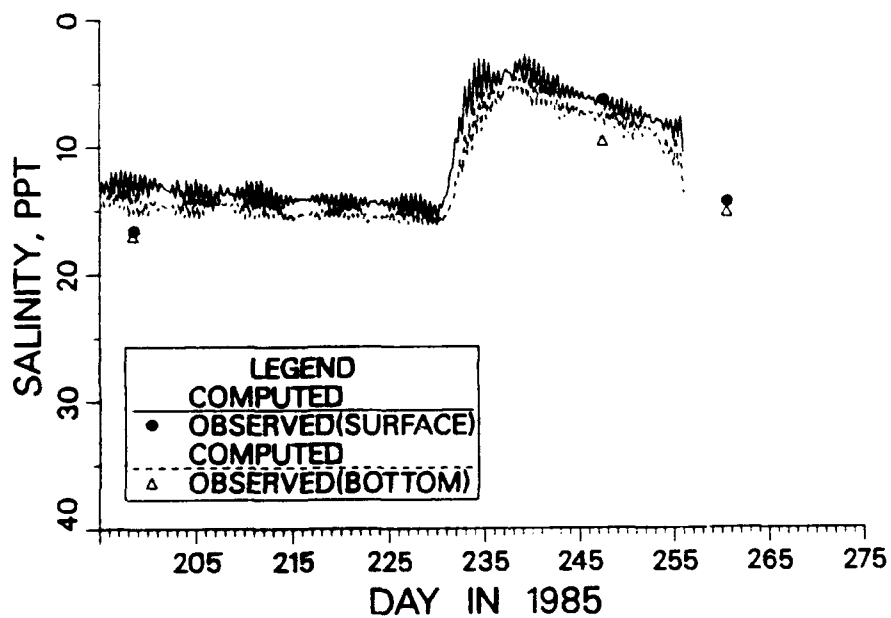
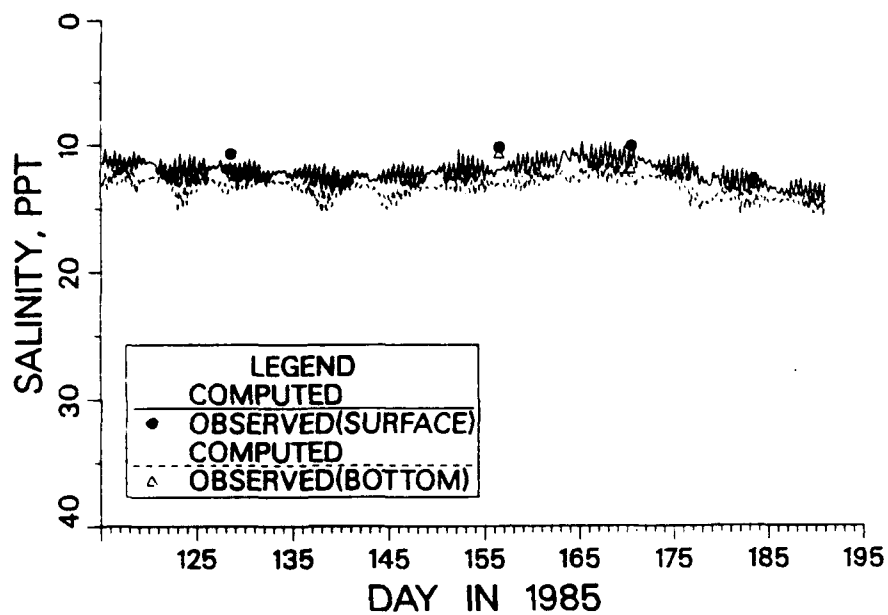


Figure B31. (Sheet 2 of 3)

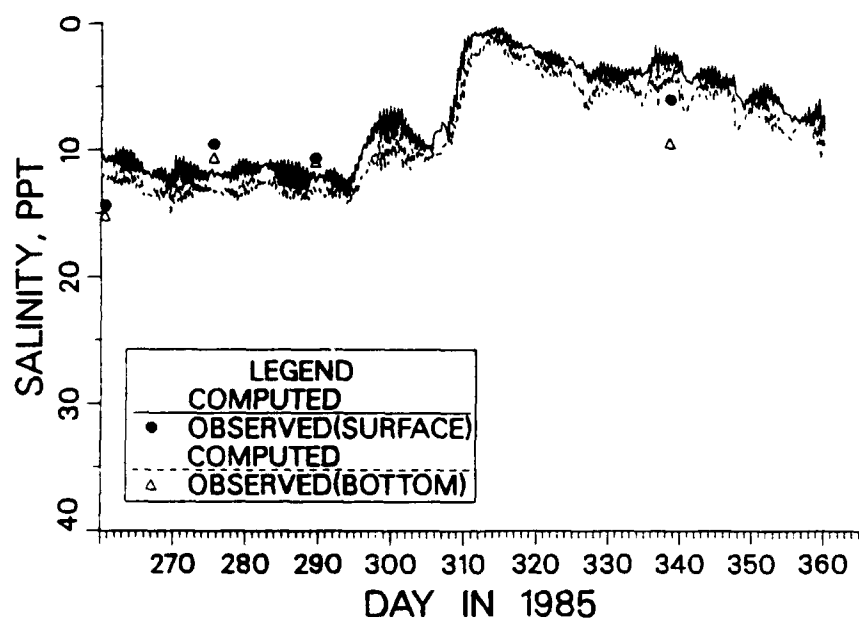


Figure B31. (Sheet 3 of 3)

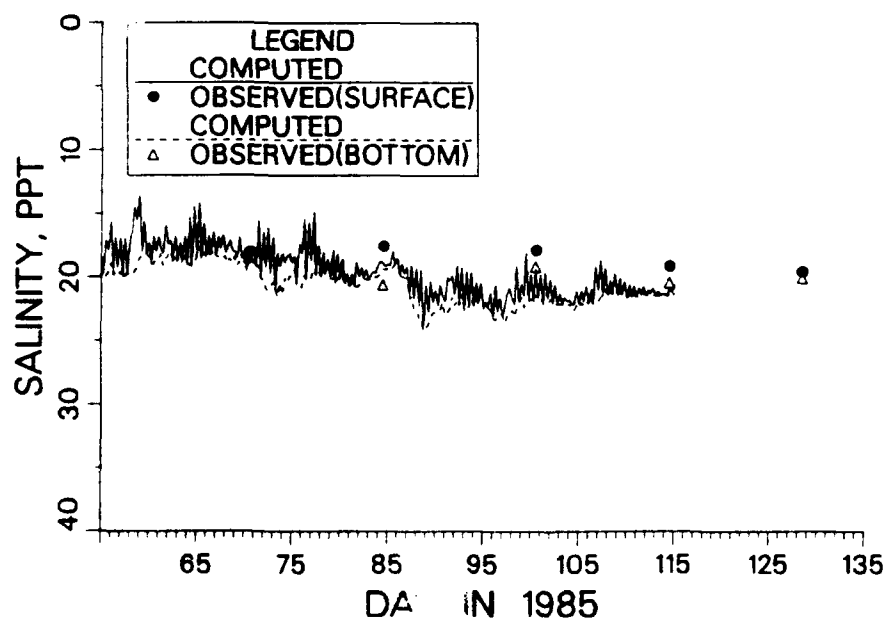
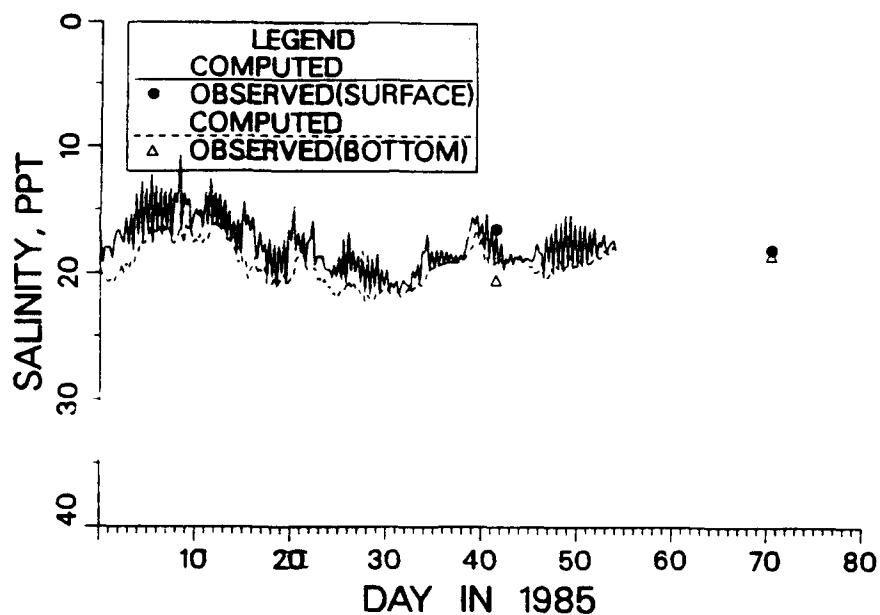


Figure B32. Comparison of computed and recorded salinity at sta LE 4.2 during 1985 (Sheet 1 of 3)

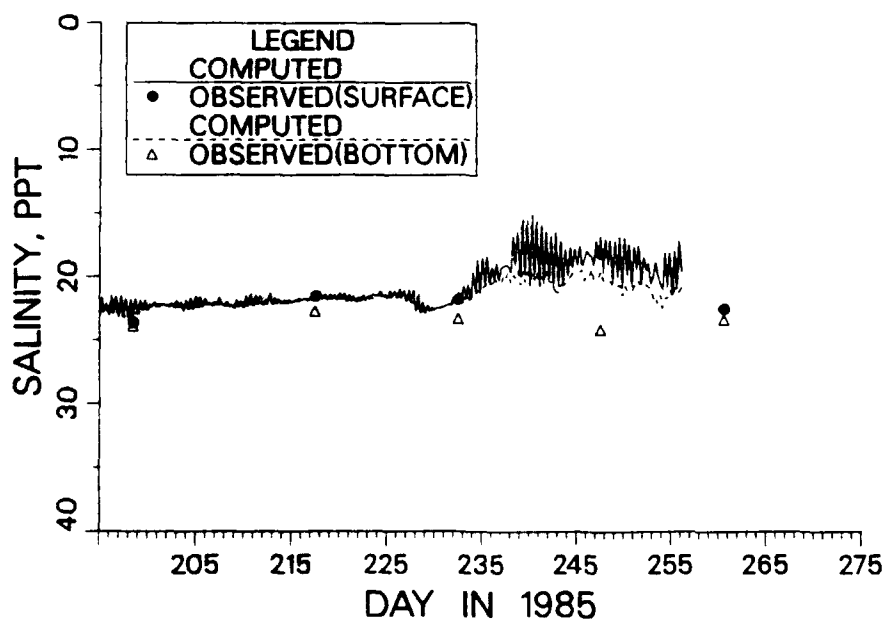
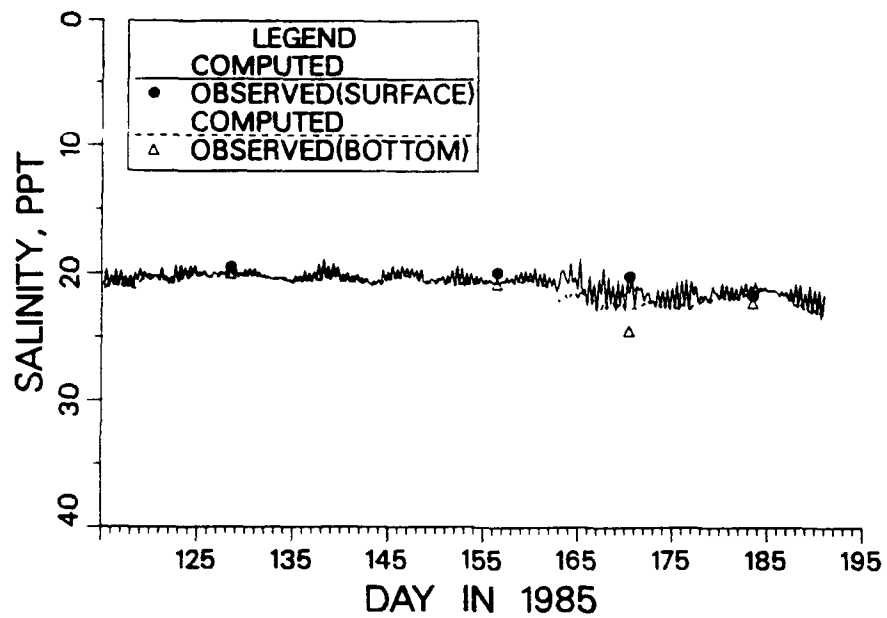


Figure B32. (Sheet 2 of 3)

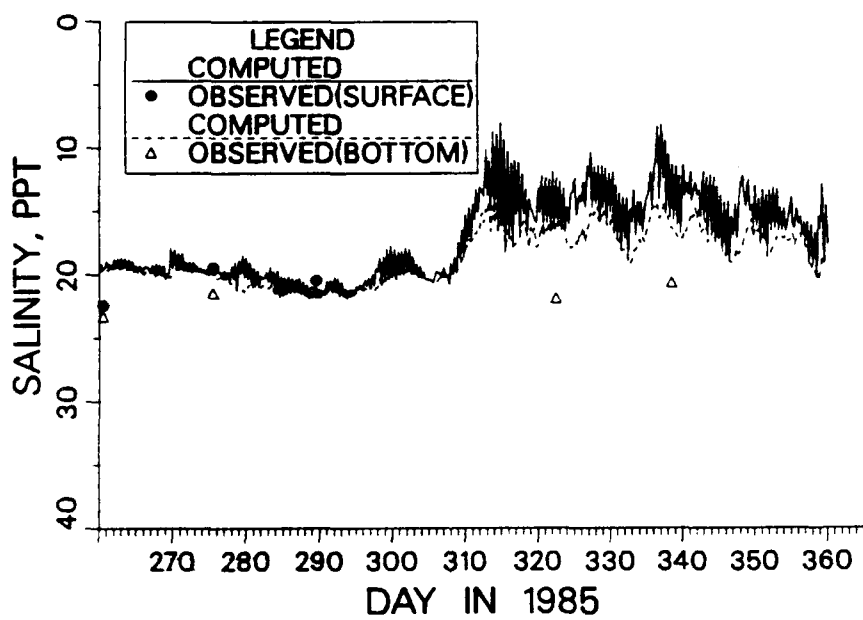


Figure B32. (Sheet 3 of 3)

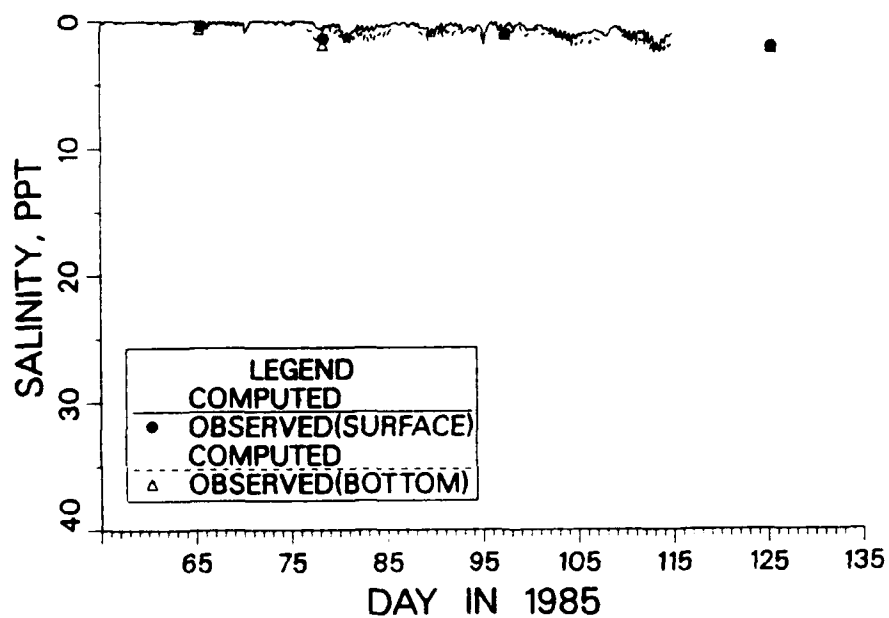
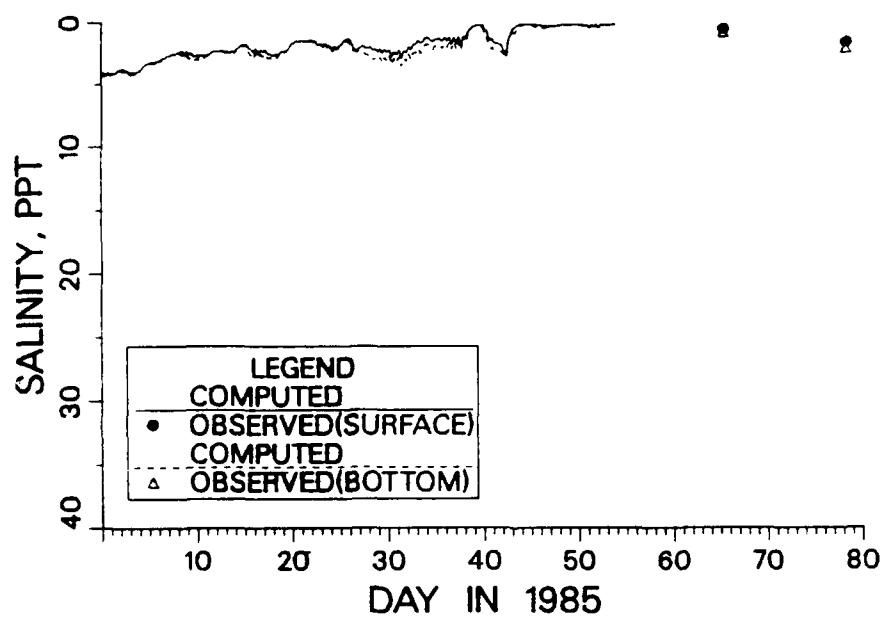


Figure B33. Comparison of computed and recorded salinity at sta TF 3.3 during 1985 (Sheet 1 of 3)

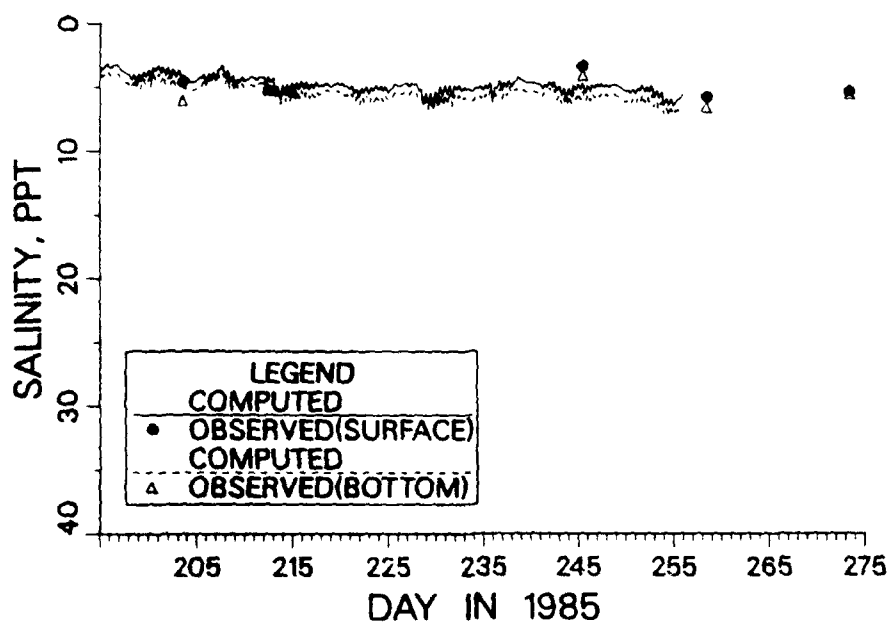
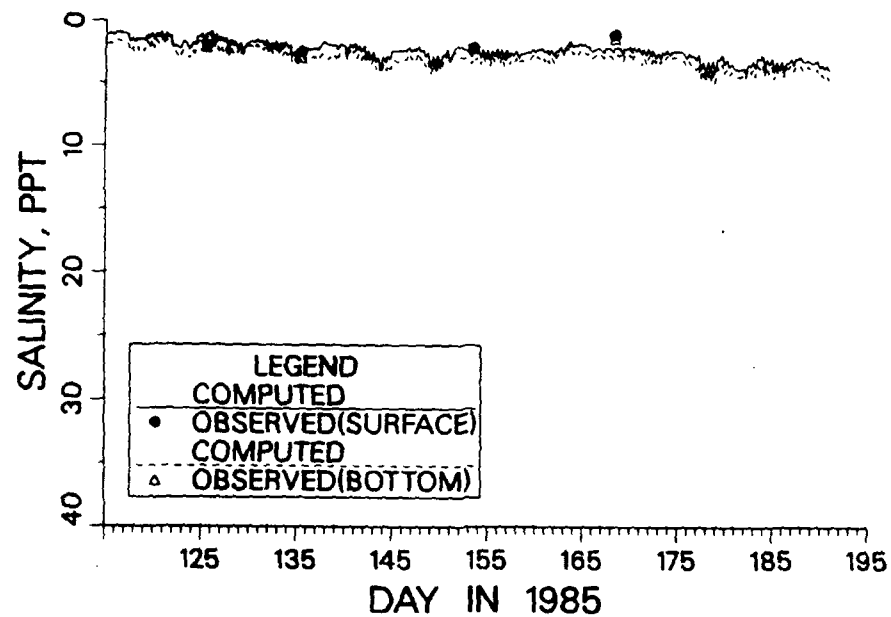


Figure B33. (Sheet 2 of 3)

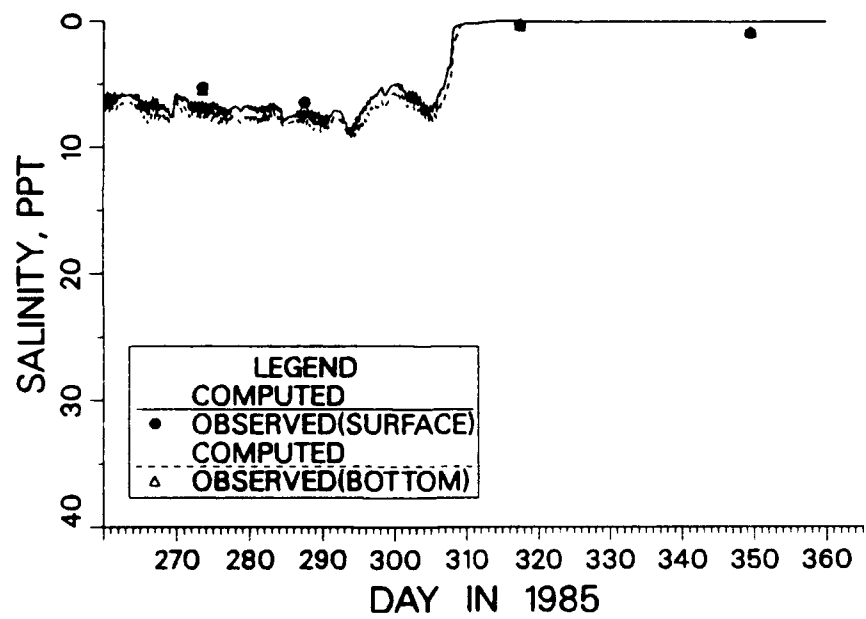


Figure B33. (Sheet 3 of 3)

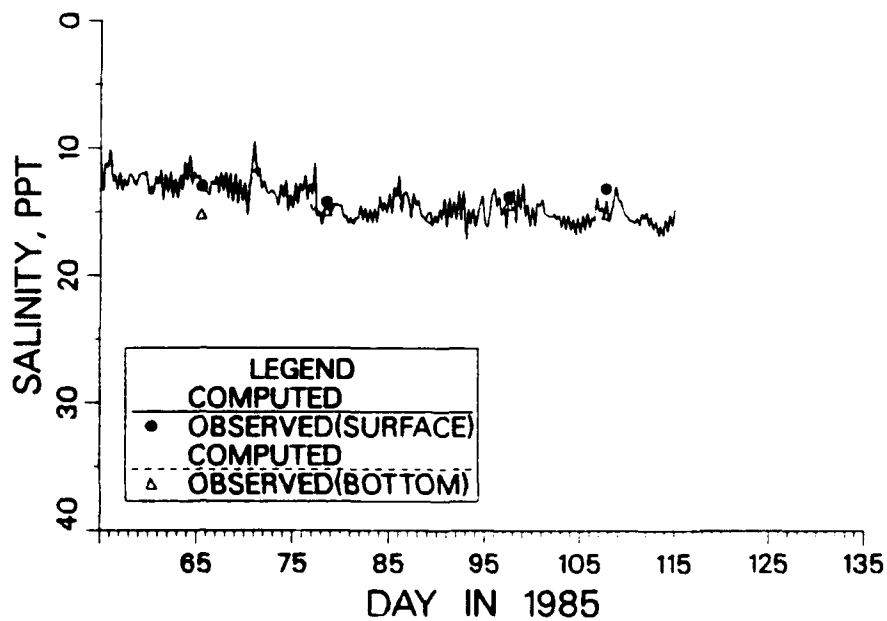
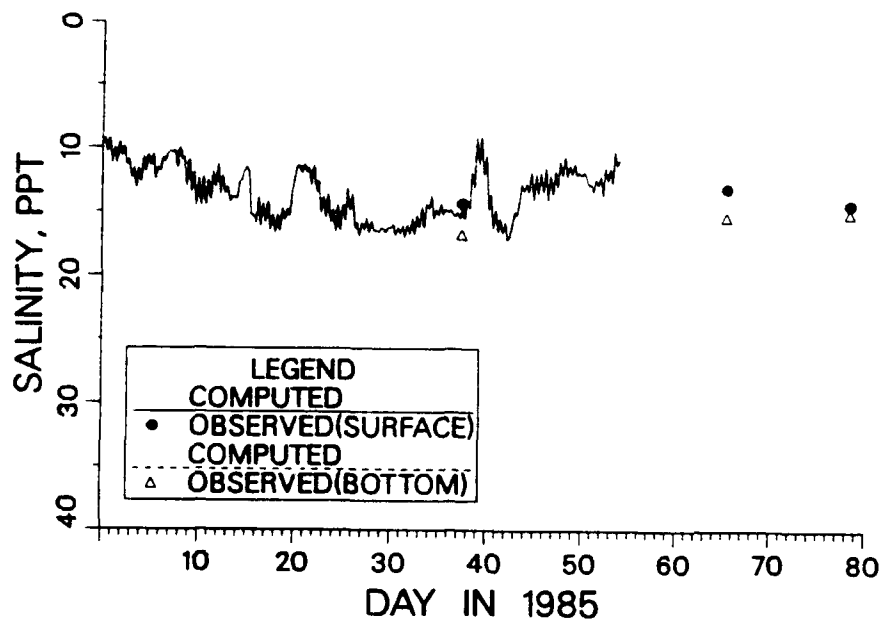


Figure B34. Comparison of computed and recorded salinity at sta LE 3.1 during 1985 (Sheet 1 of 3)

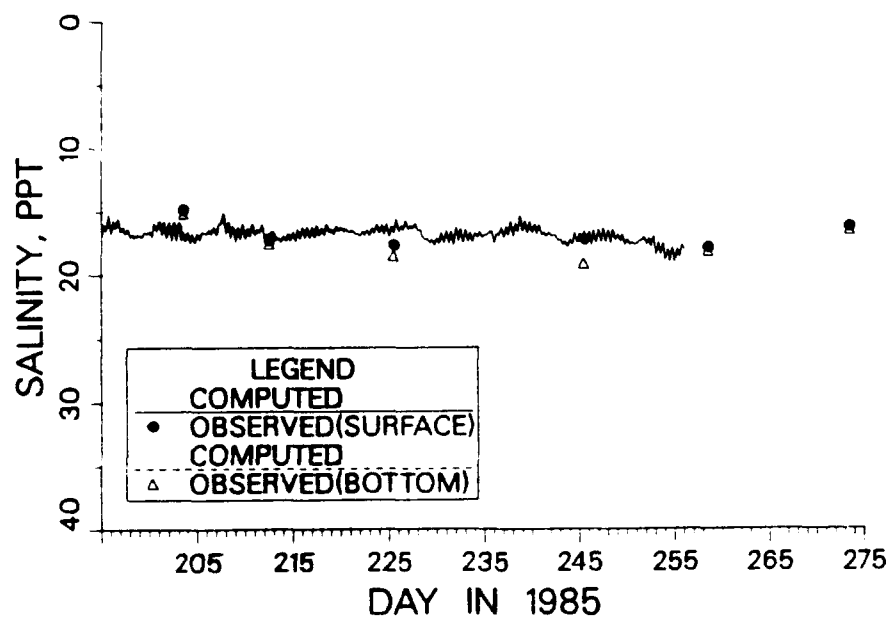
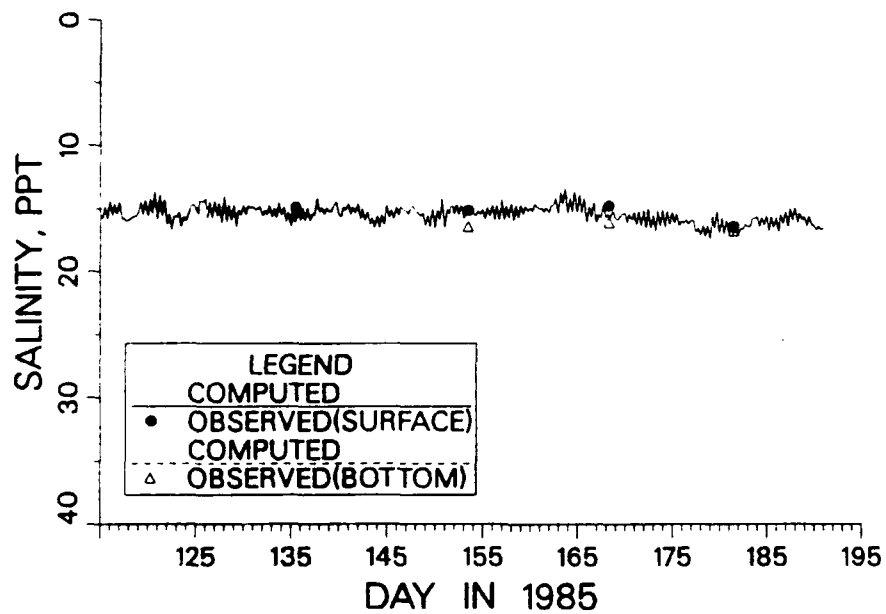


Figure B34. (Sheet 2 of 3)

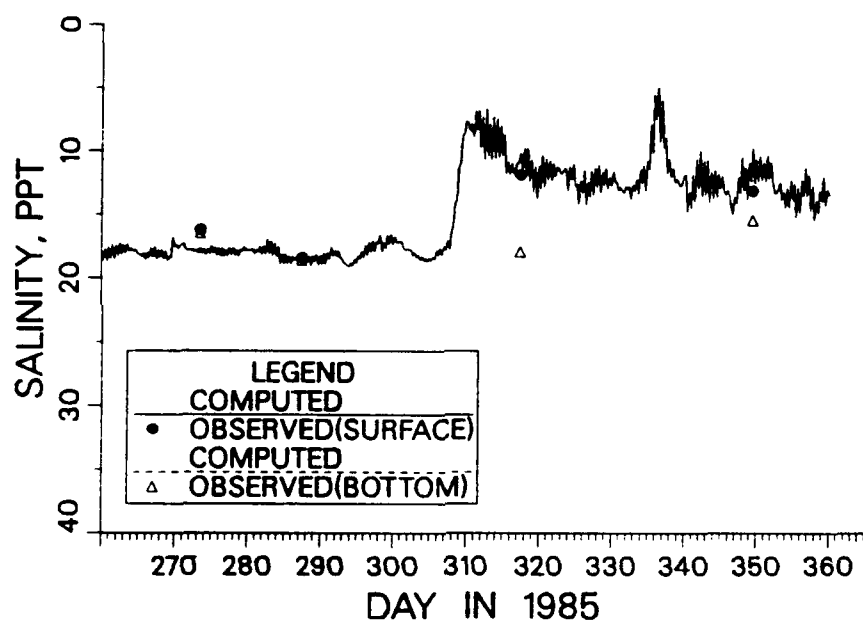


Figure B34. (Sheet 3 of 3)

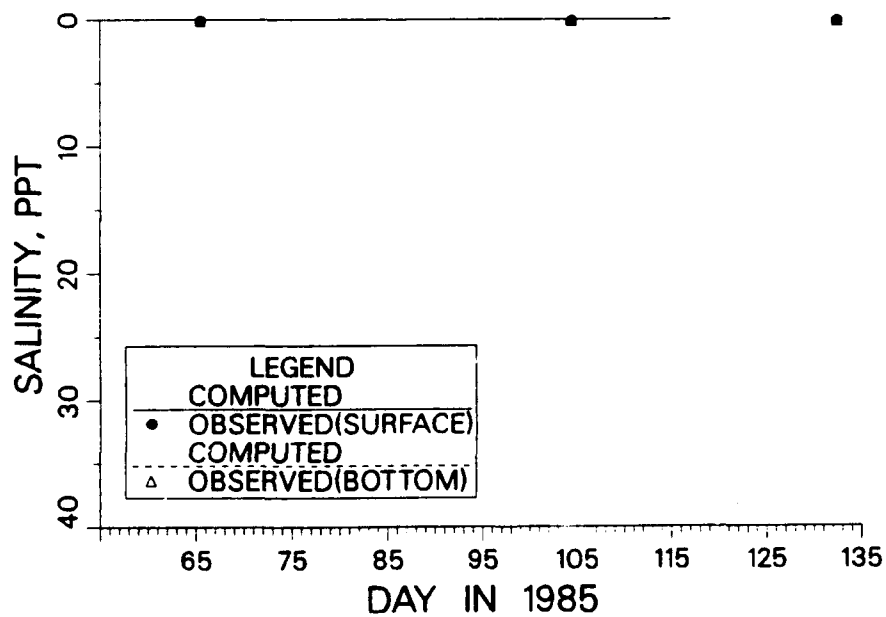
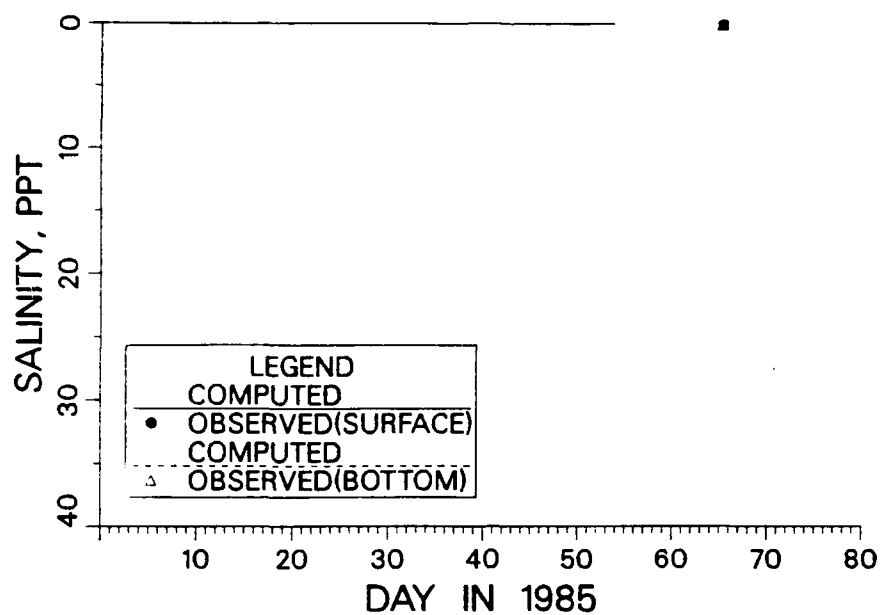


Figure B35. Comparison of computed and recorded salinity at sta XFB 247 during 1985 (Sheet 1 of 3)

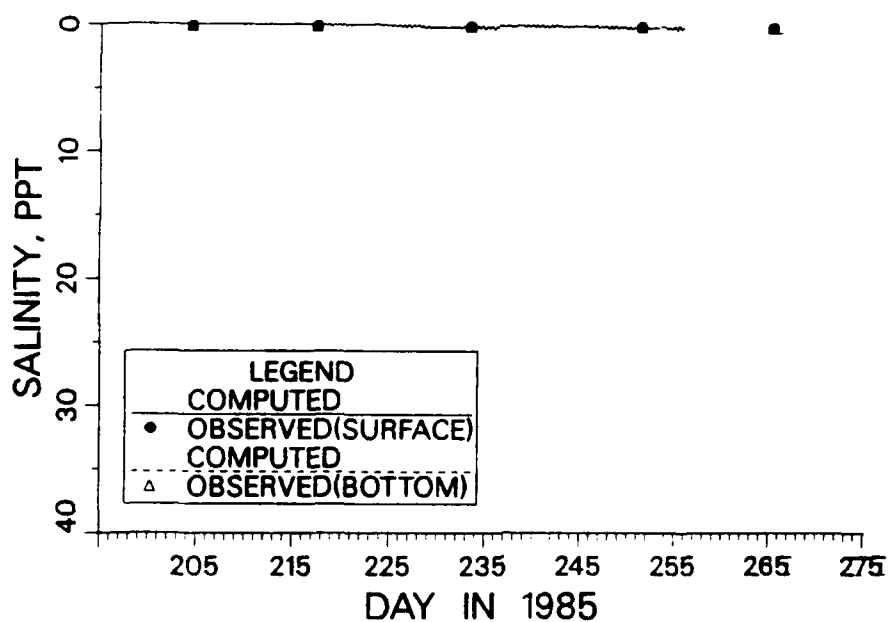
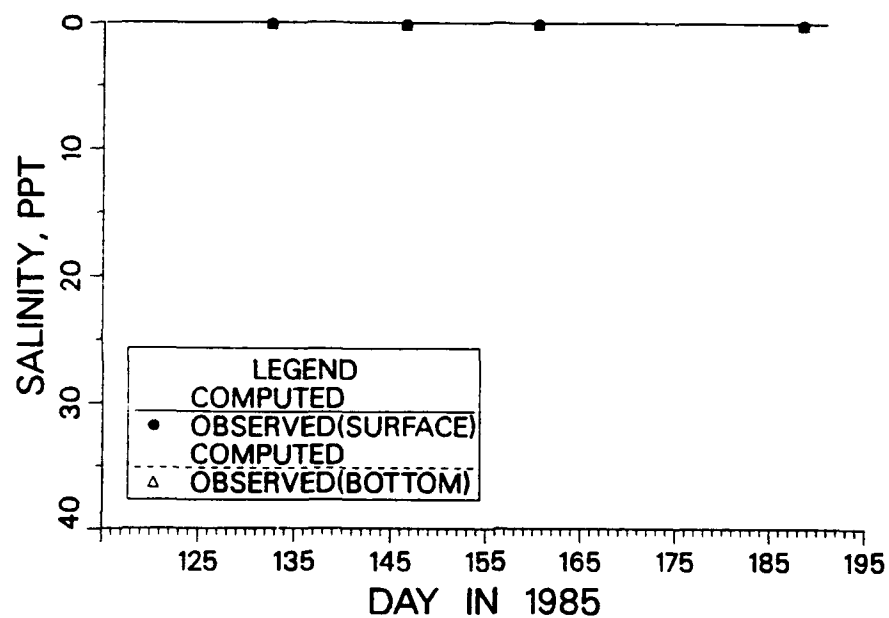


Figure B35. (Sheet 2 of 3)

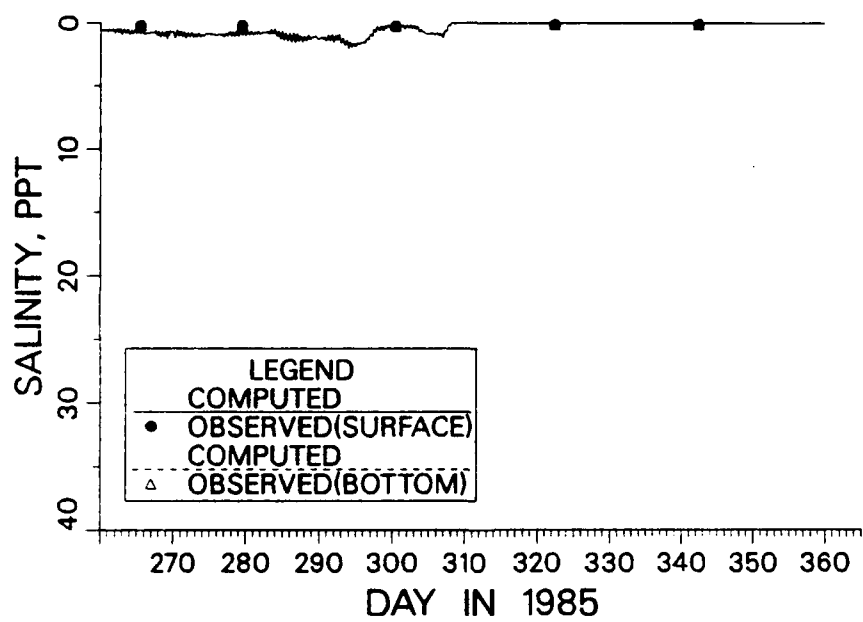


Figure B35. (Sheet 3 of 3)

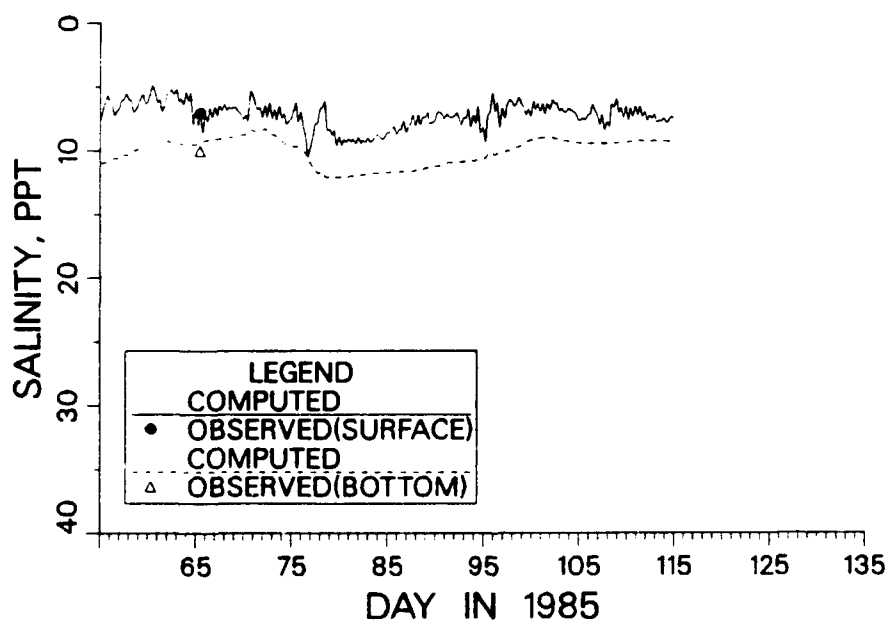
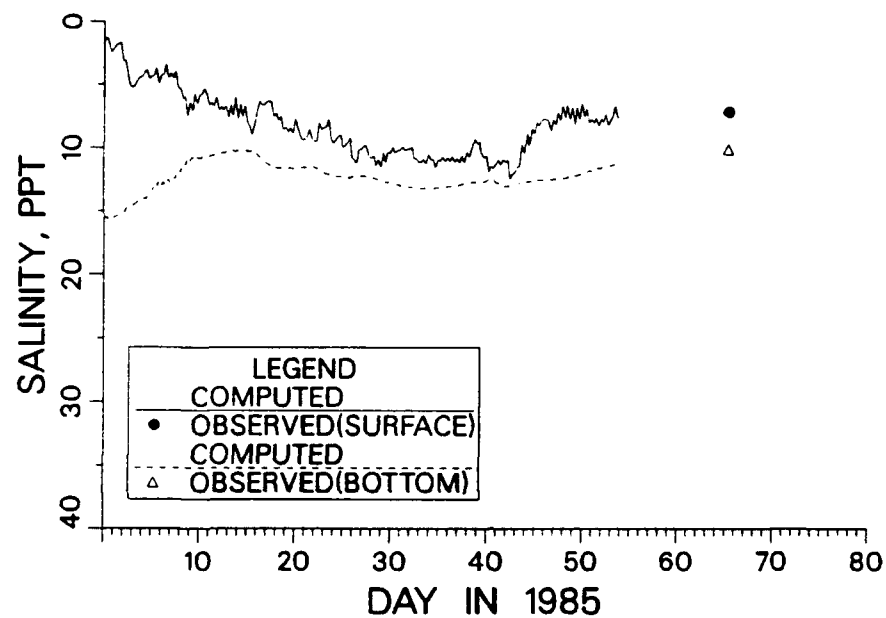


Figure B36. Comparison of computed and recorded salinity at sta RET 2.4 during 1985 (Sheet 1 of 3)

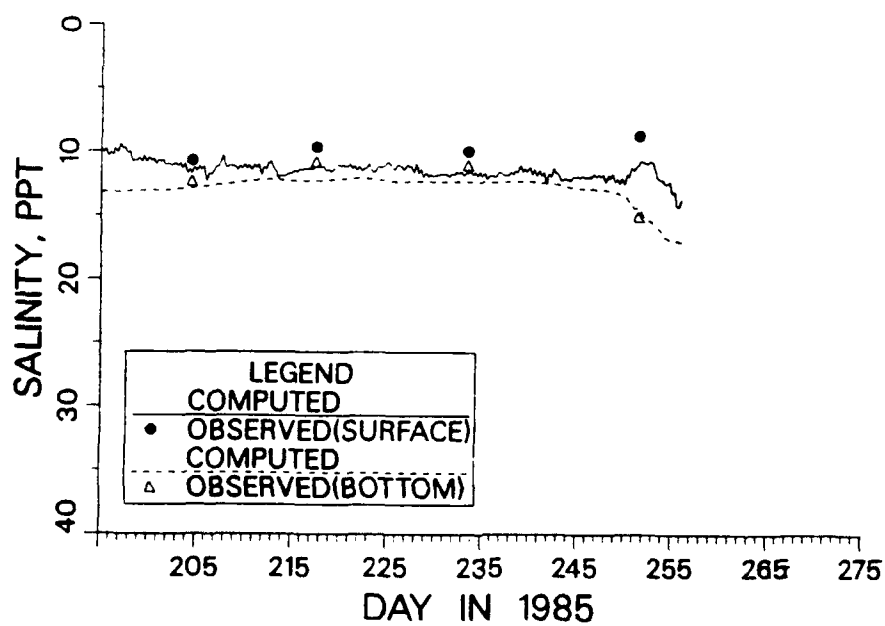
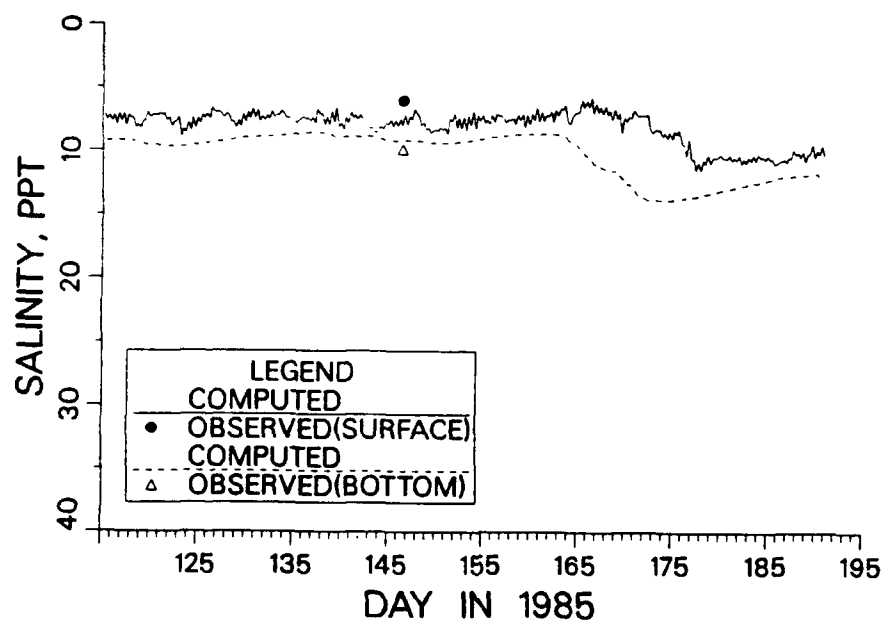


Figure B36. (Sheet 2 of 3)

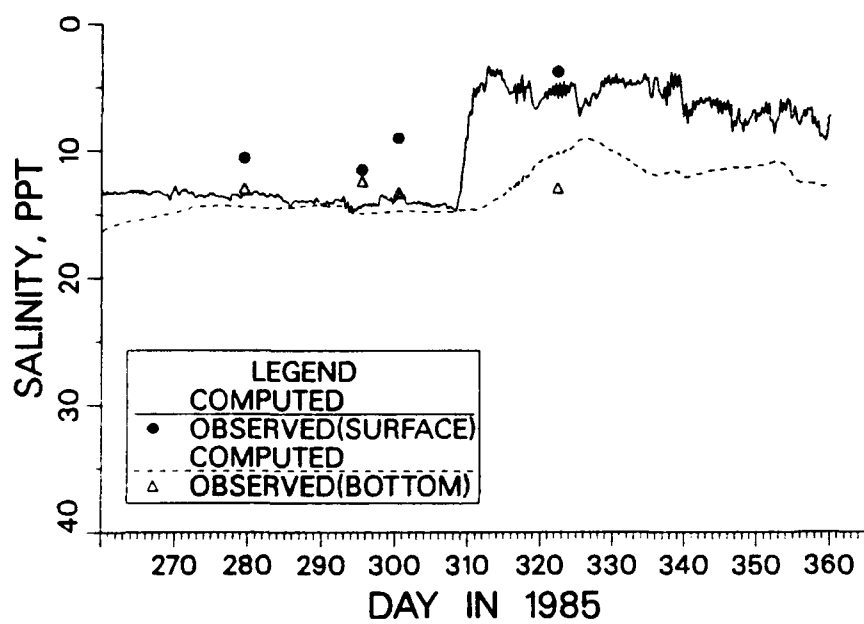


Figure B36. (Sheet 3 of 3)

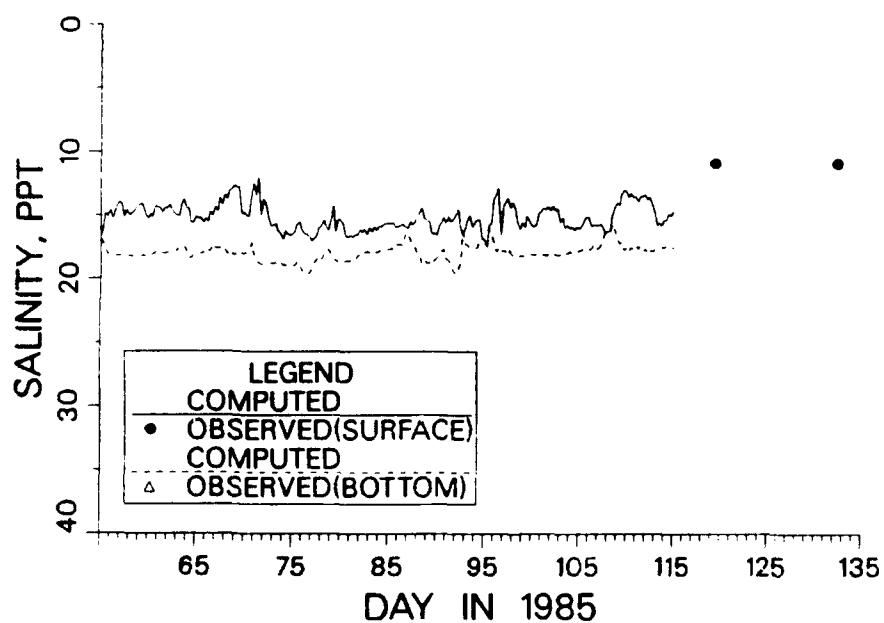
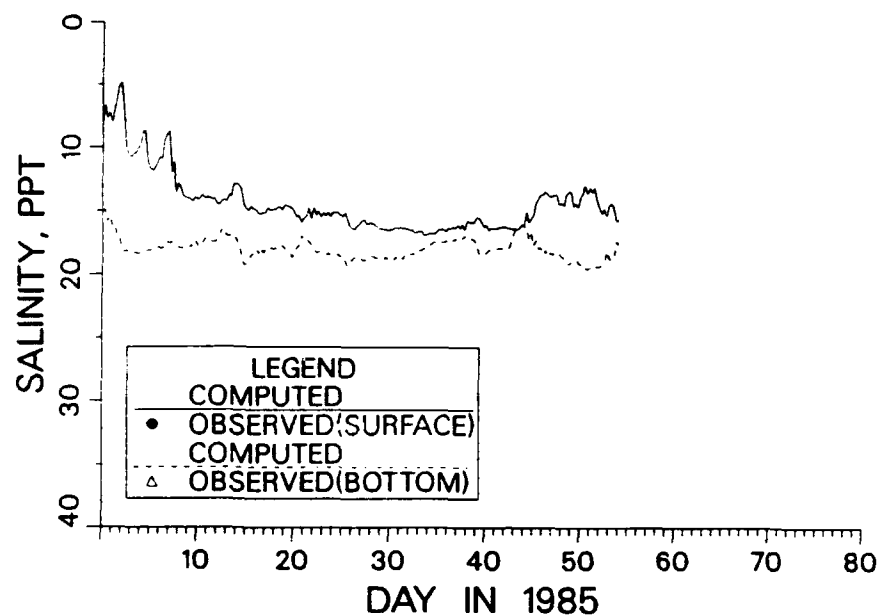


Figure B37. Comparison of computed and recorded salinity at sta LE 2.2 during 1985 (Sheet 1 of 3)

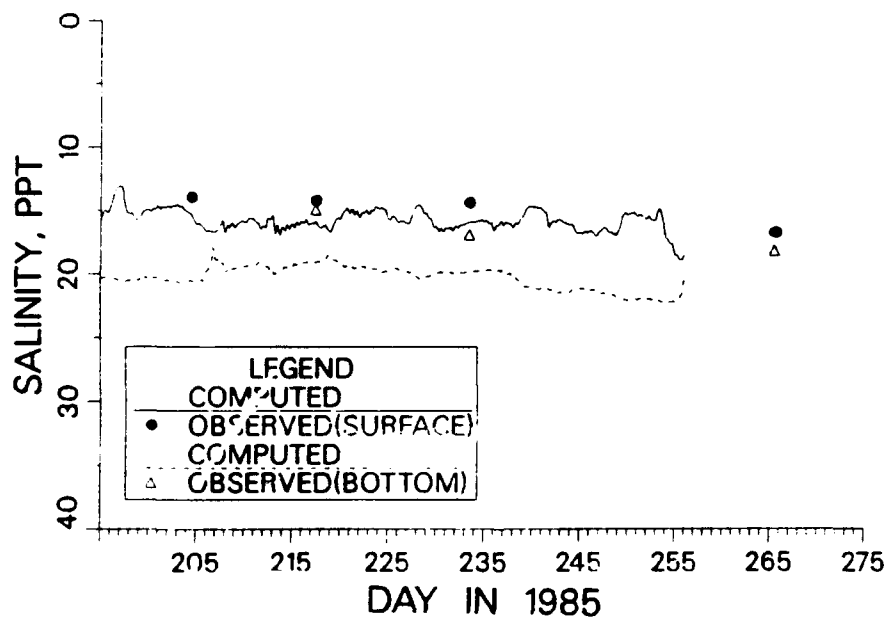
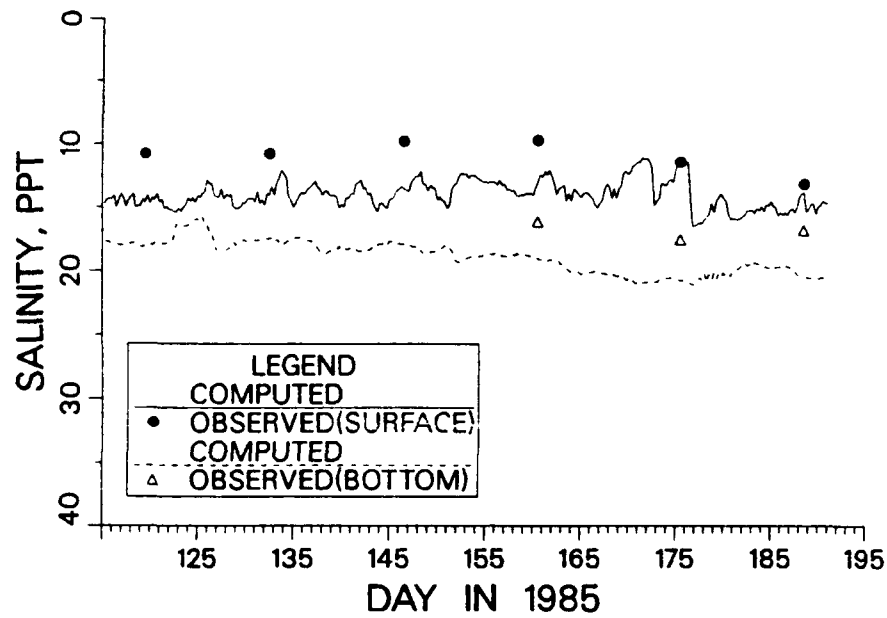


Figure B37. (Sheet 2 of 3)

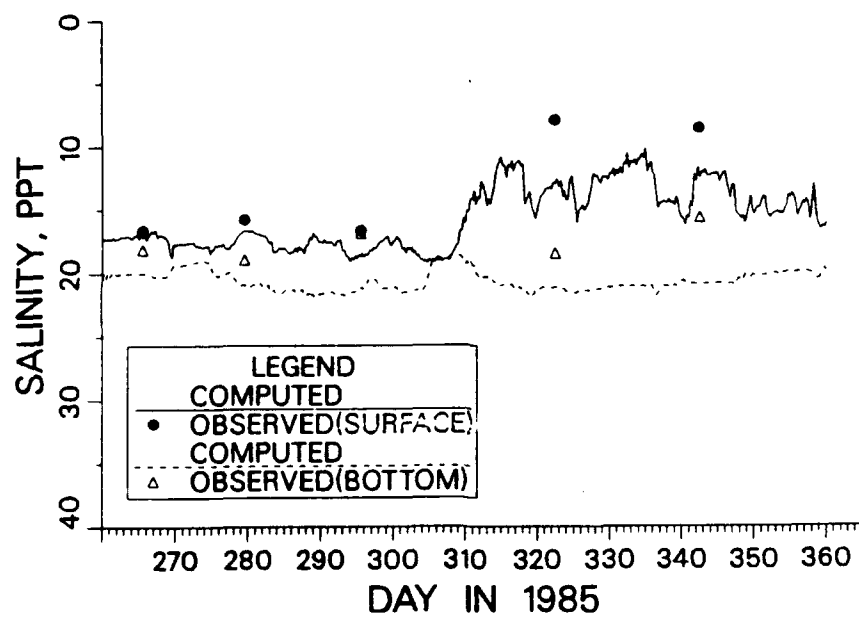


Figure B37. (Sheet 3 of 3)

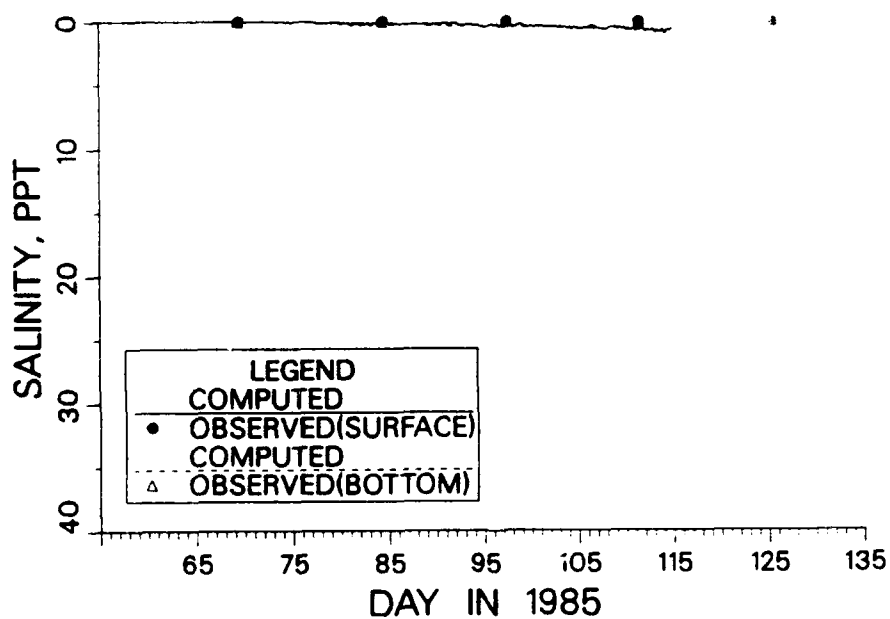
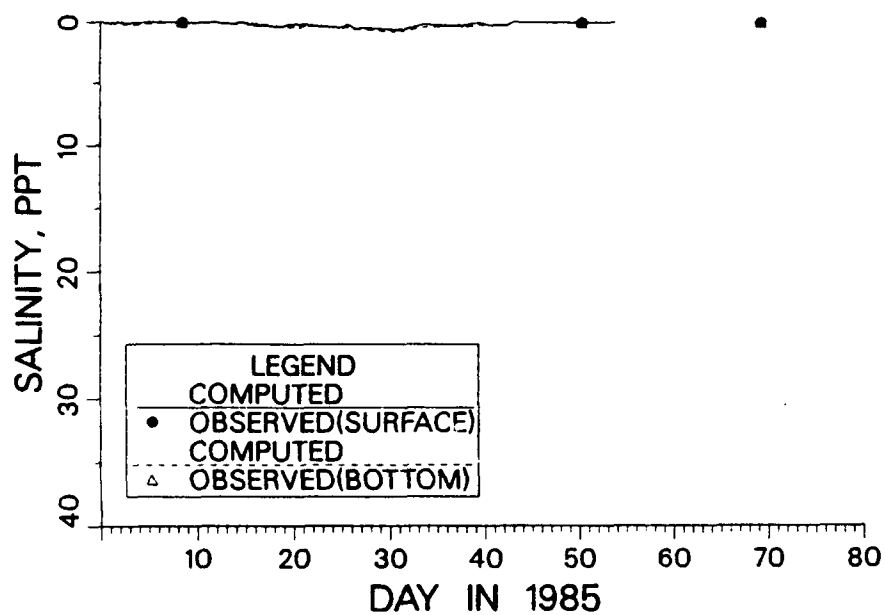


Figure B38. Comparison of computed and recorded salinity at sta TF 1.4 during 1985 (Sheet 1 of 3)

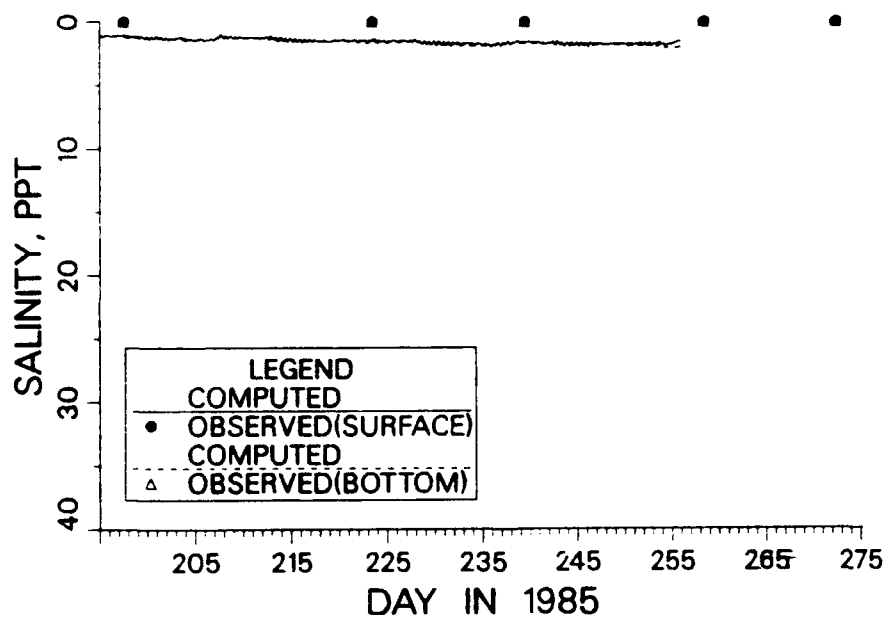
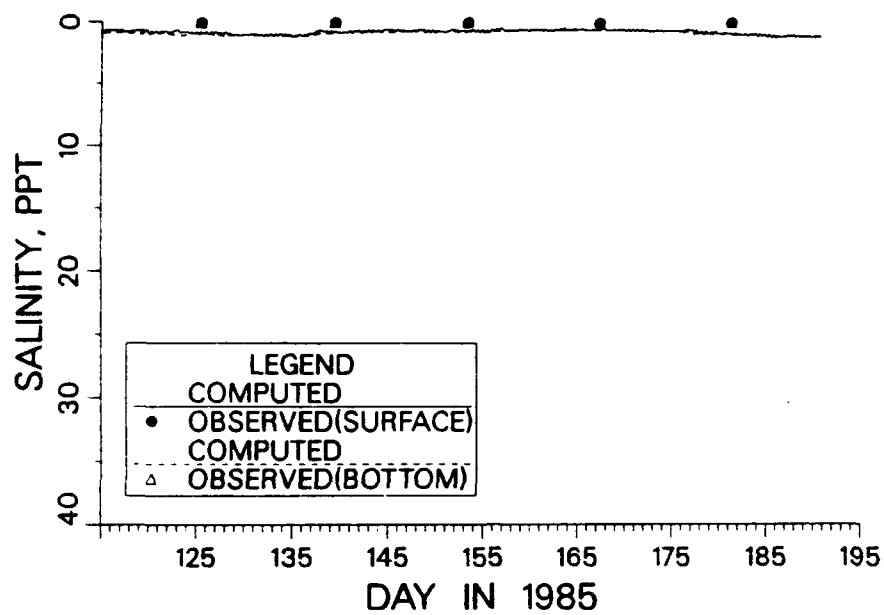


Figure B38. (Sheet 2 of 3)

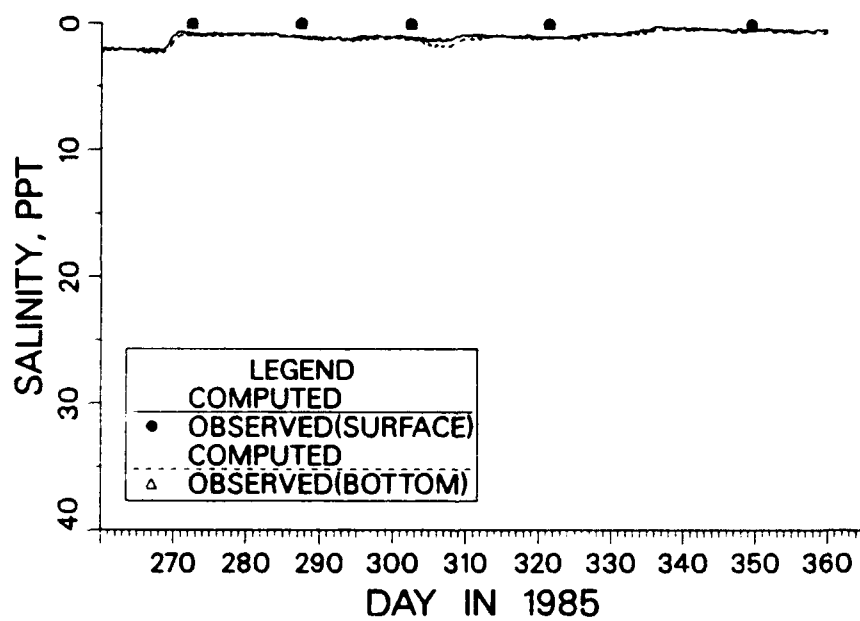


Figure B38. (Sheet 3 of 3)

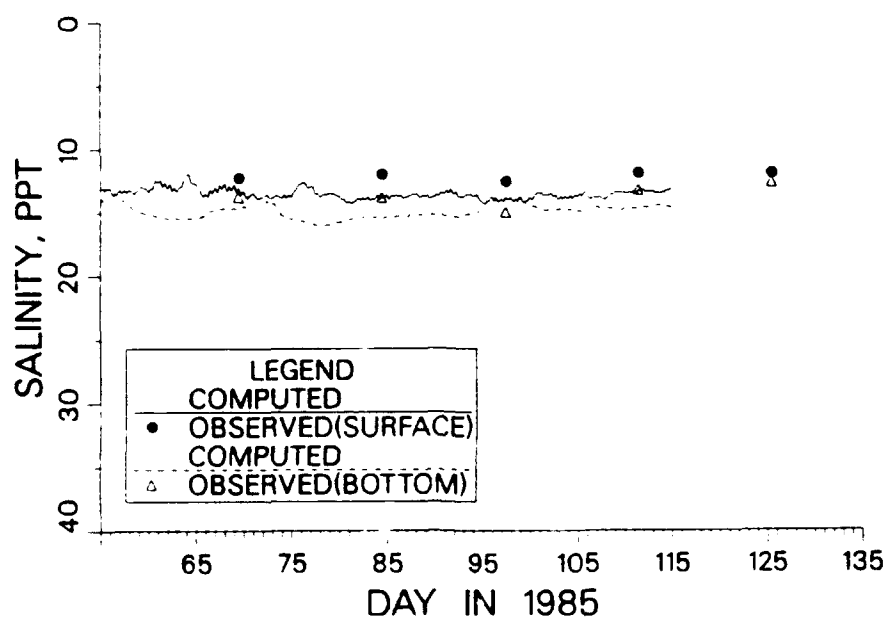
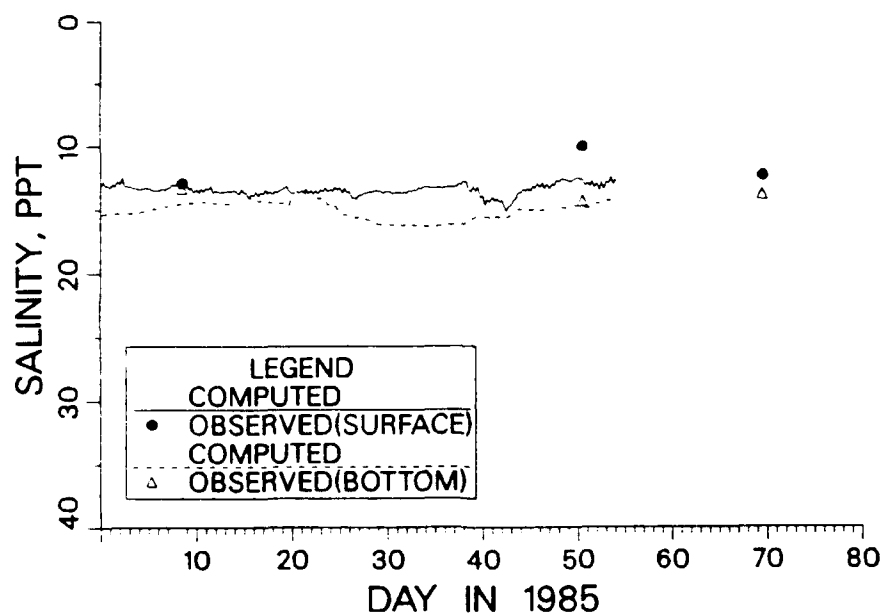


Figure B39. Comparison of computed and recorded salinity at sta LE 1.1 during 1985 (Sheet 1 of 3)

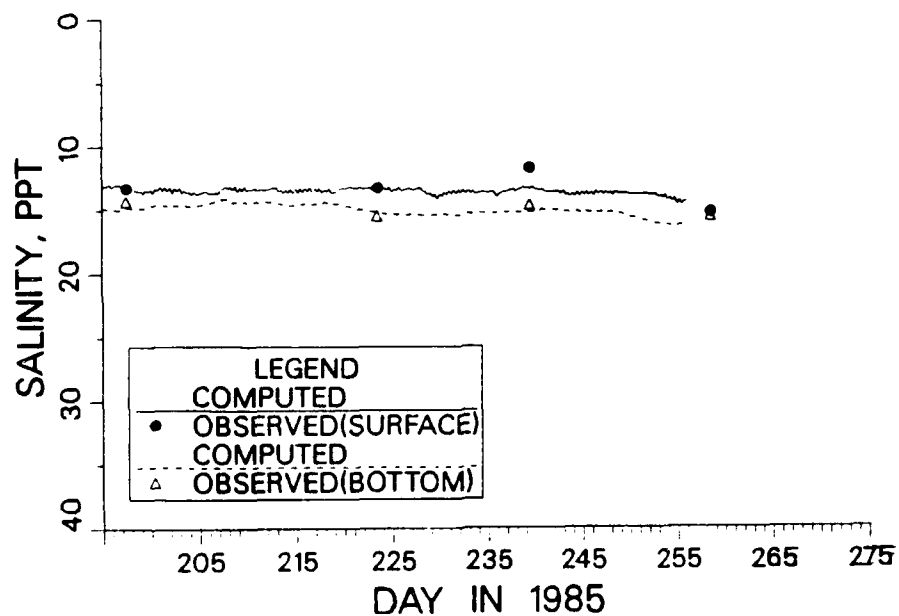
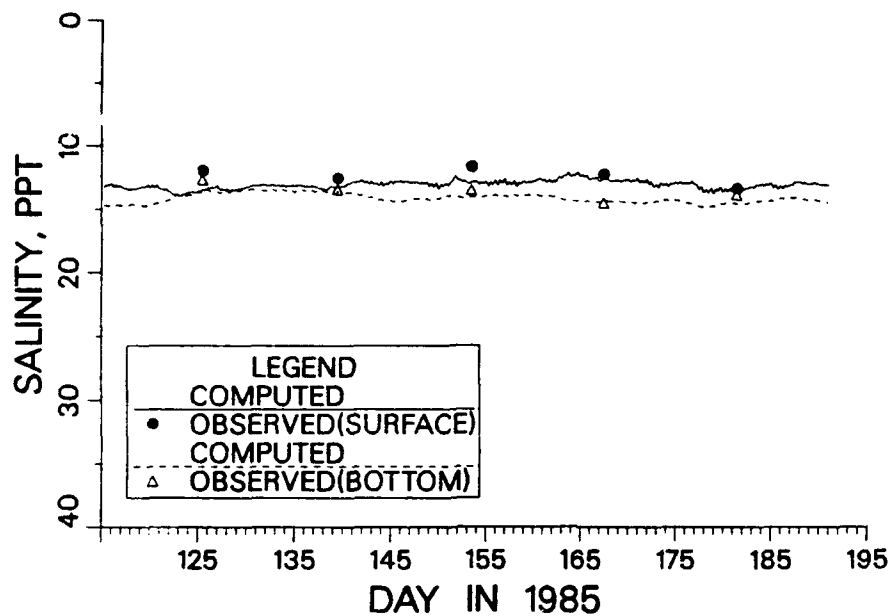


Figure B39. (Sheet 2 of 3)

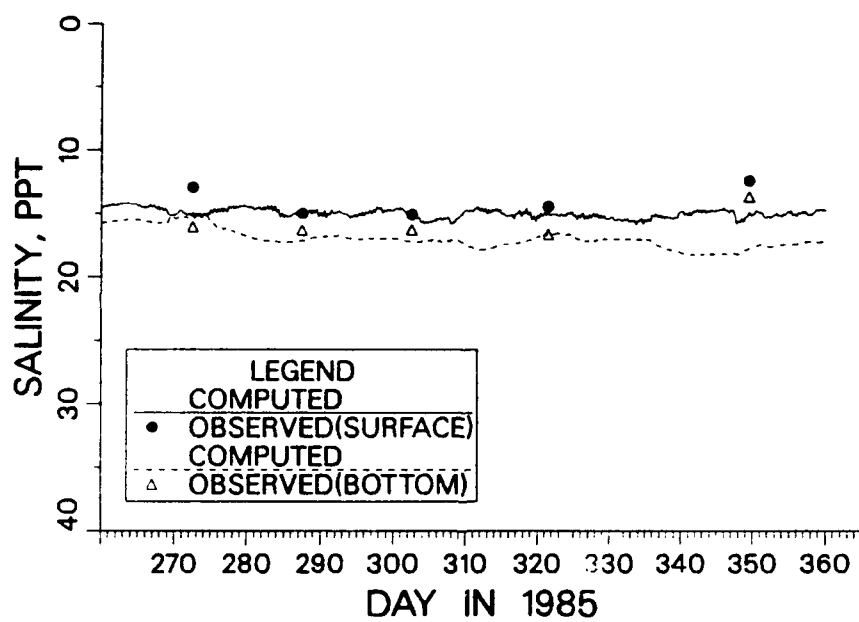


Figure B39. (Sheet 3 of 3)

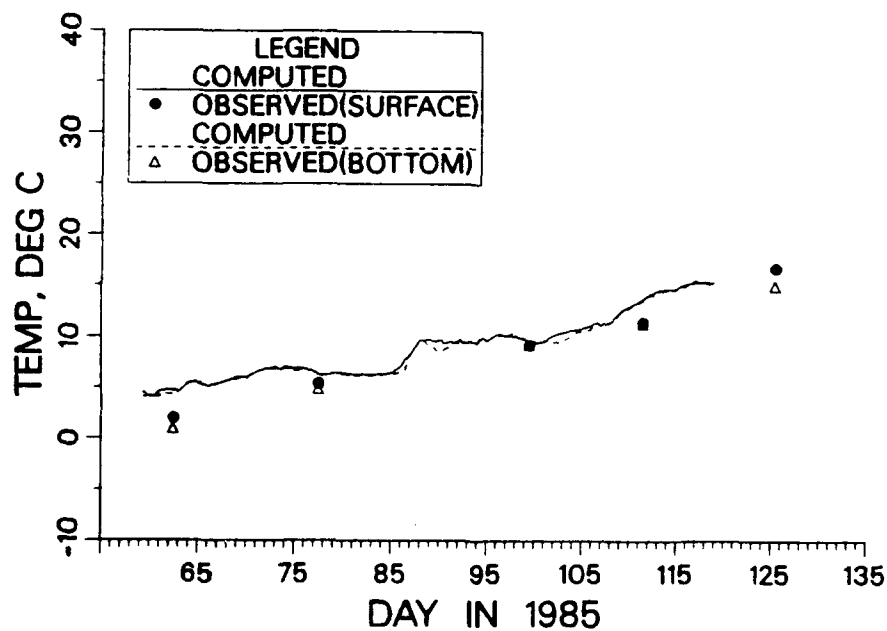
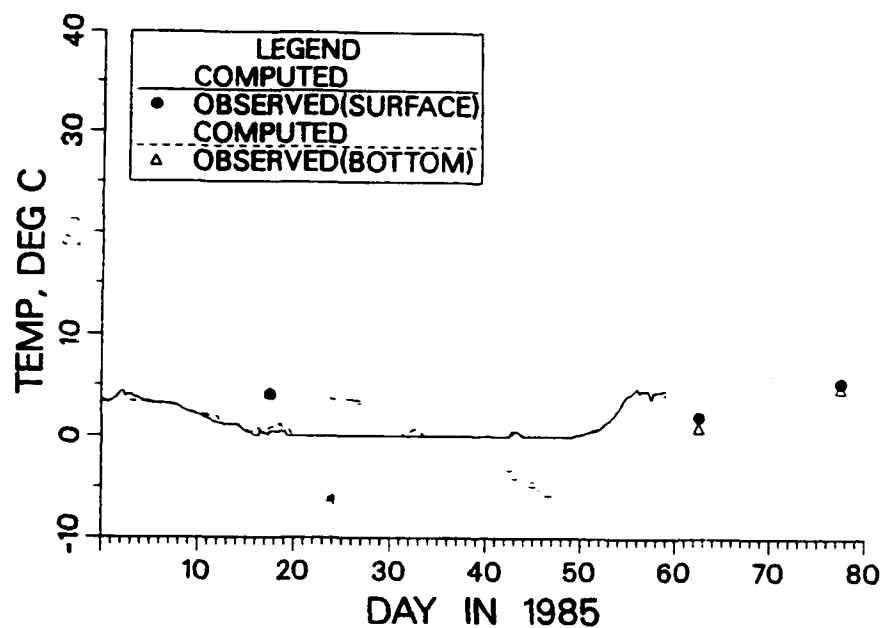


Figure B40. Comparison of computed and recorded temperature at sta CB 7.2E during 1985 (Sheet 1 of 3)

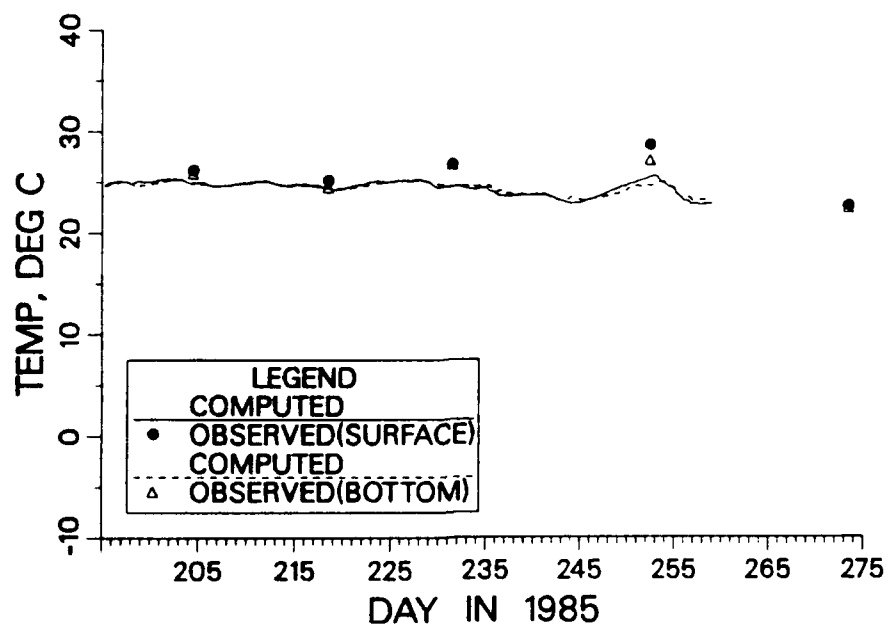
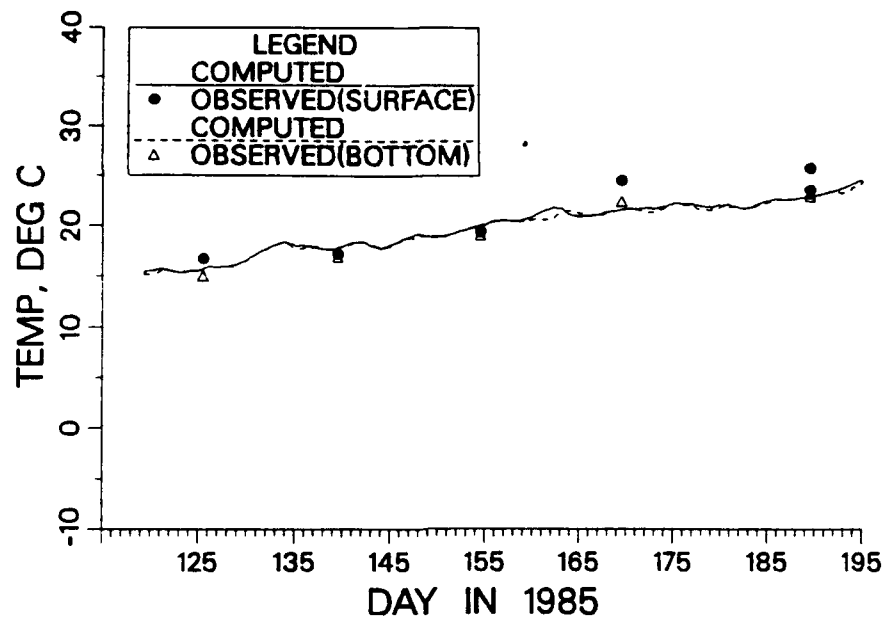


Figure B40. (Sheet 2 of 3)

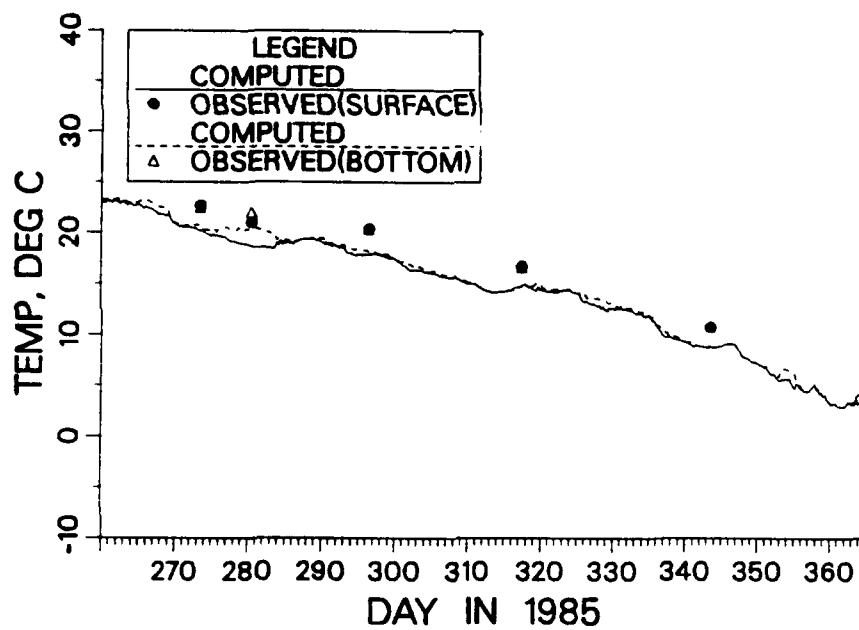


Figure B40. (Sheet 3 of 3)

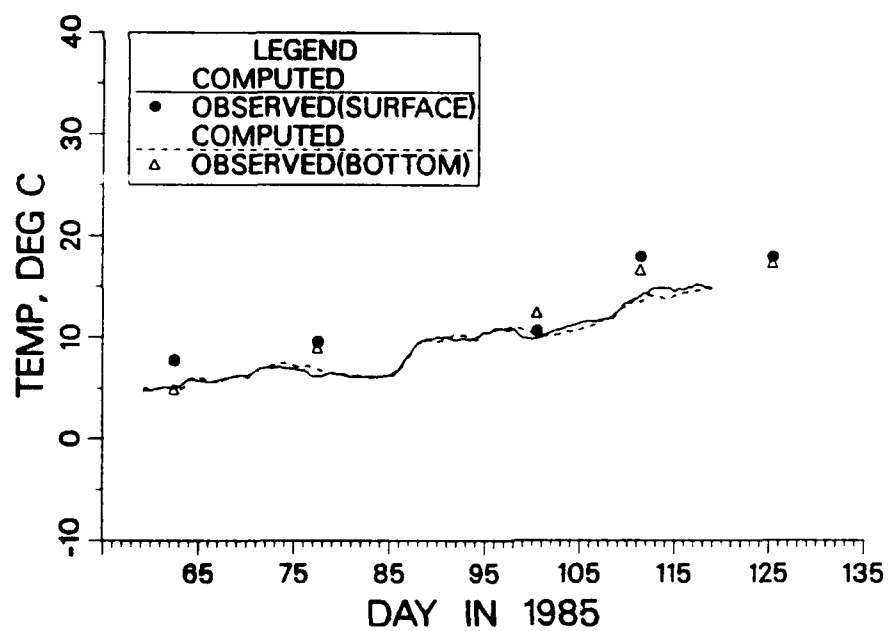
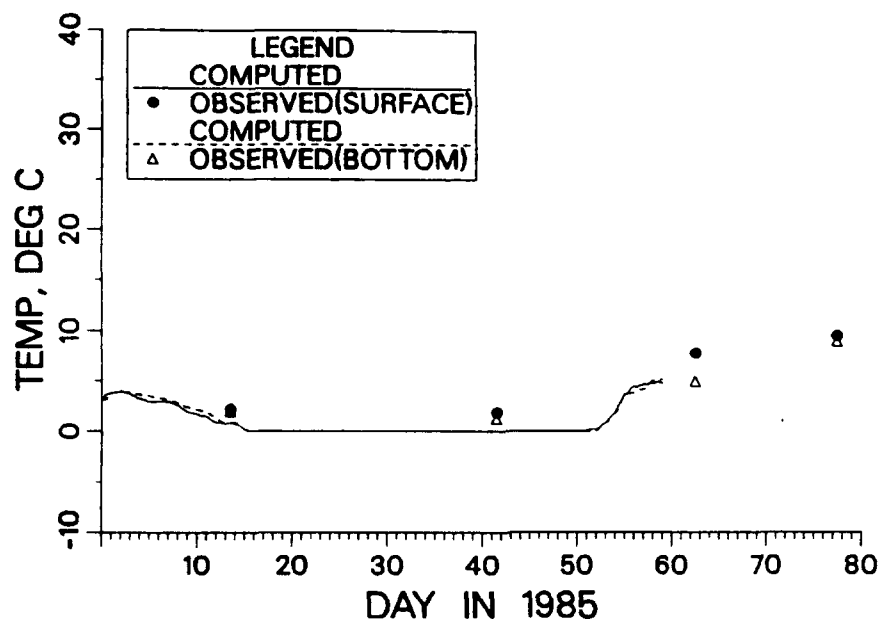


Figure B41. Comparison of computed and recorded temperature at sta EE 3.5 during 1985 (Sheet 1 of 3)

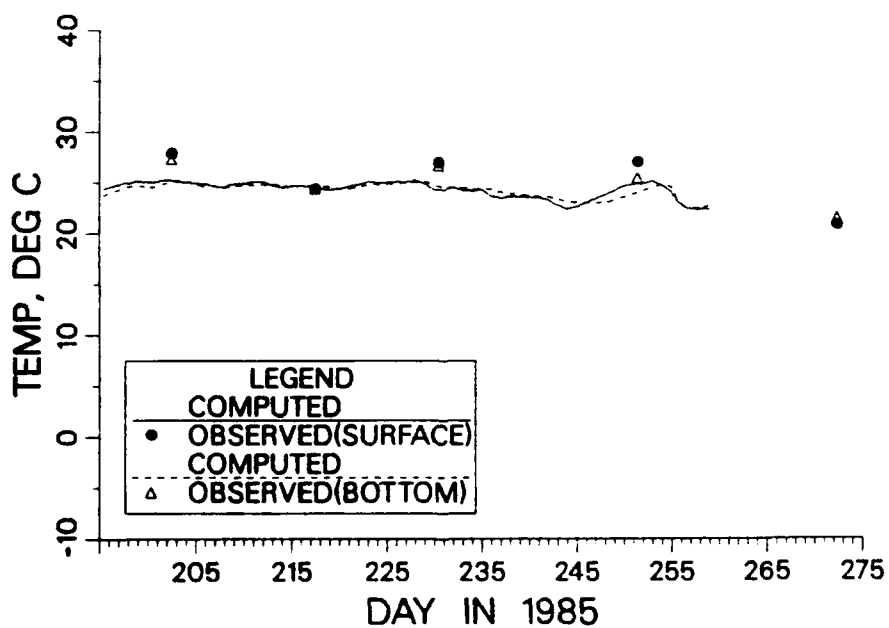
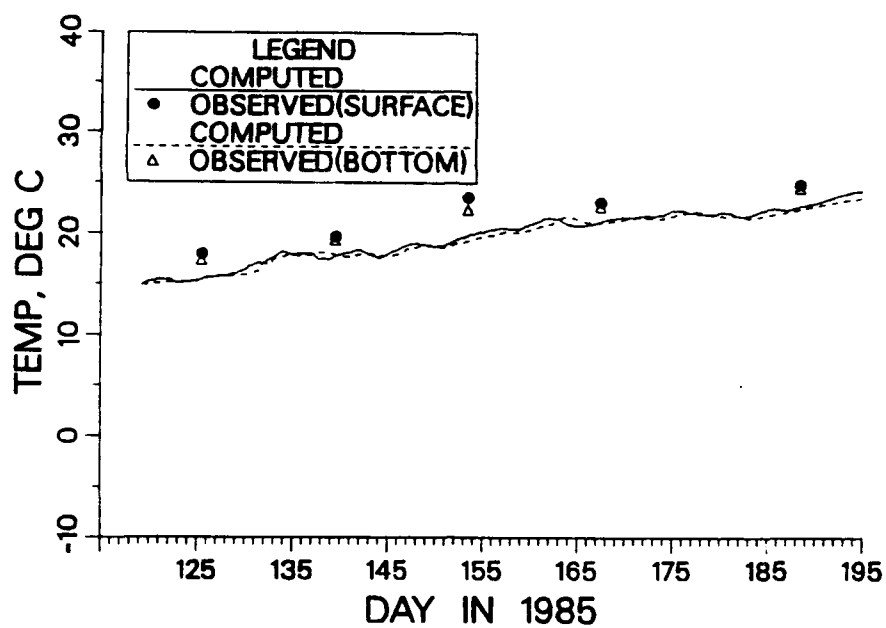


Figure B41. (Sheet 2 of 3)

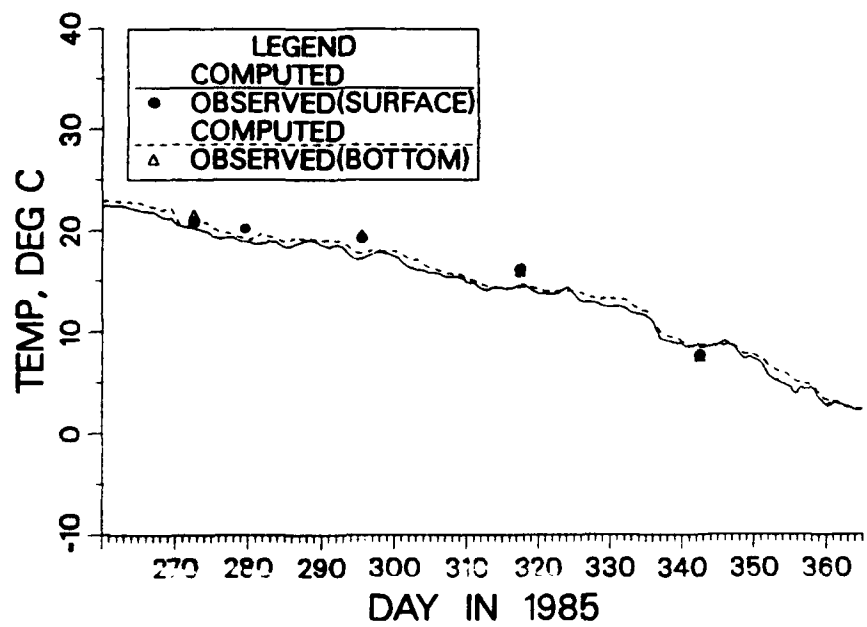


Figure B41. (Sheet 3 of 3)

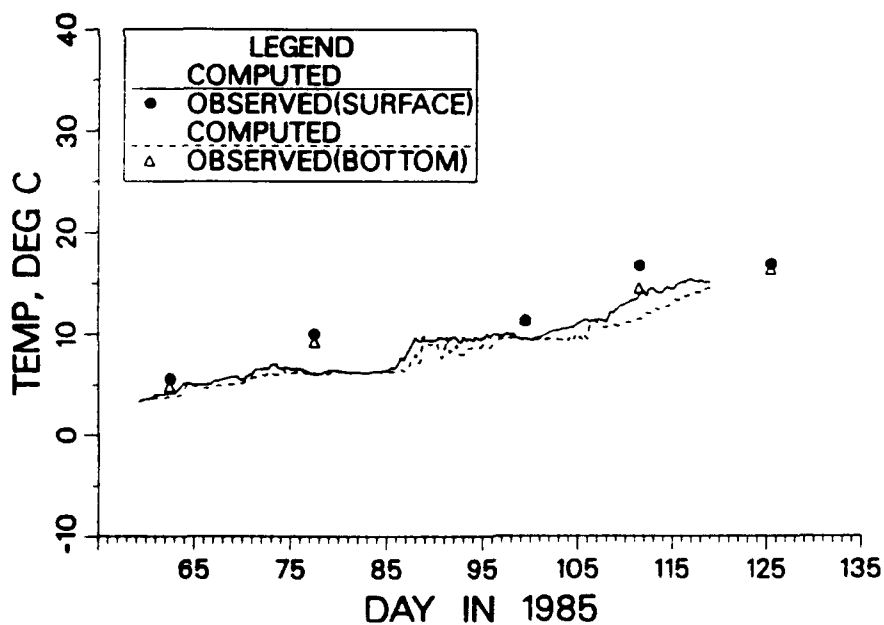
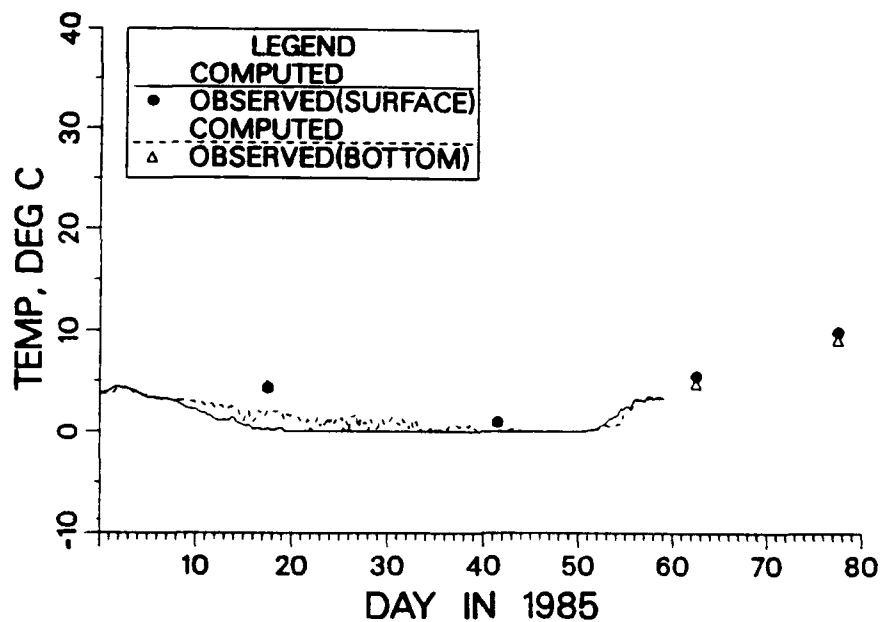


Figure B42. Comparison of computed and recorded temperature at sta CB 6.3 during 1985 (Sheet 1 of 3)

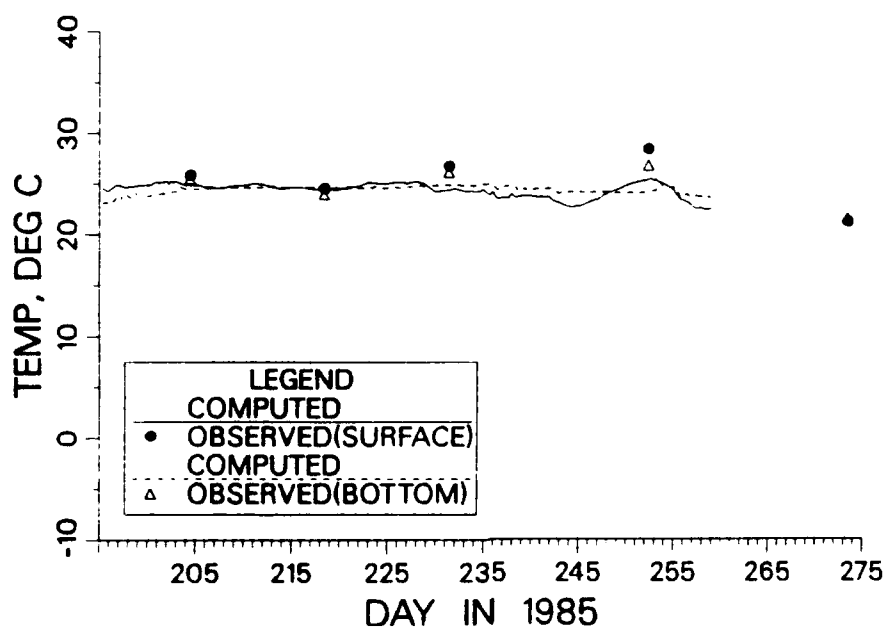
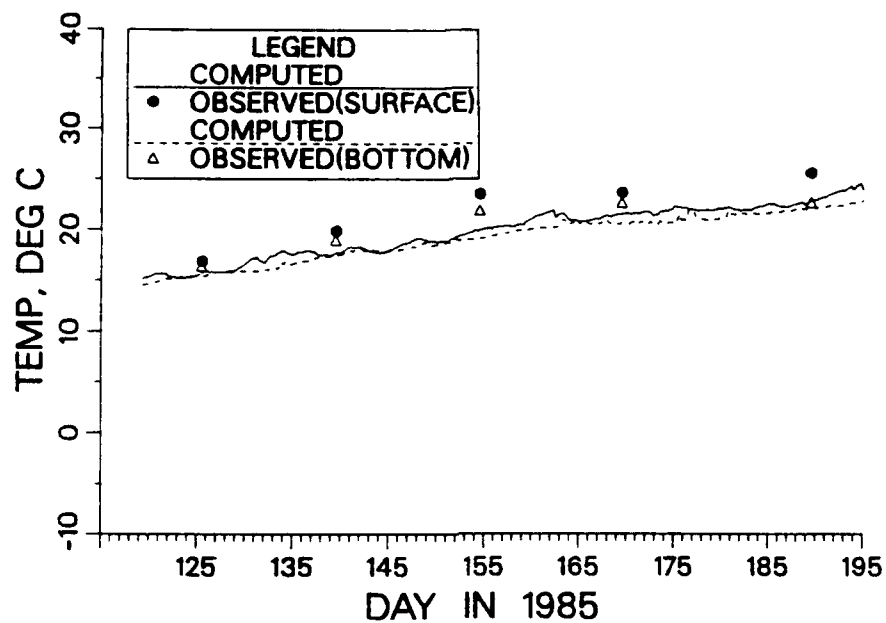


Figure B42. (Sheet 2 of 3)

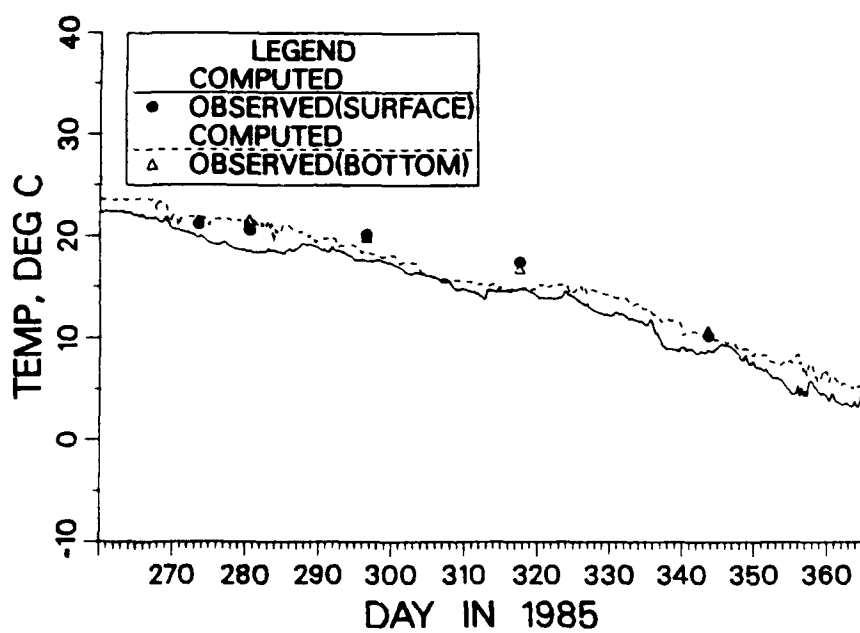


Figure B42. (Sheet 3 of 3)

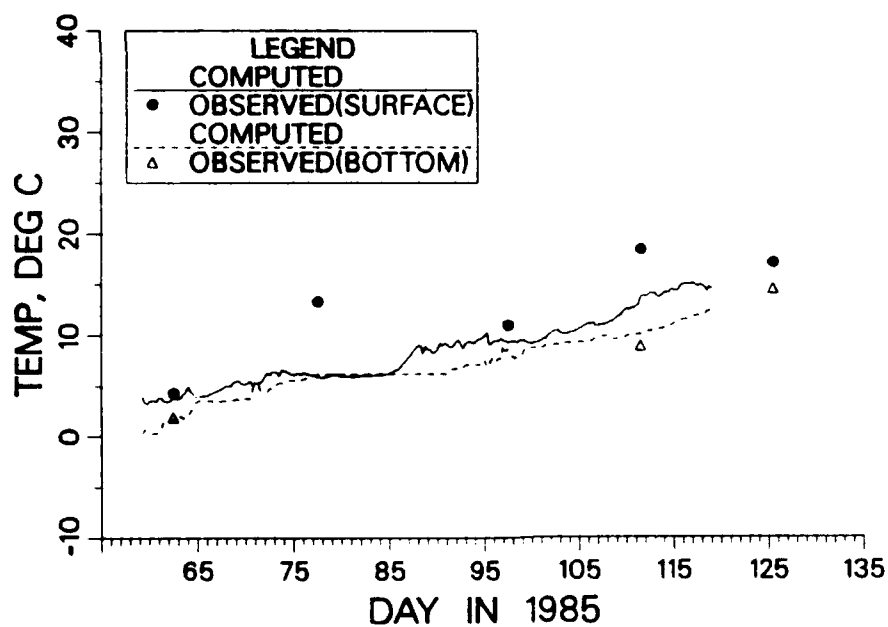
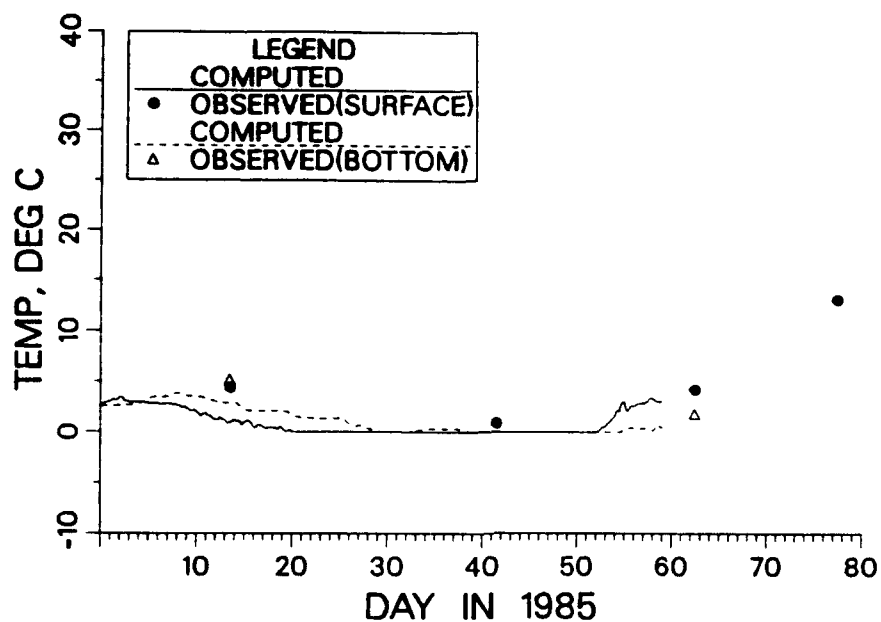


Figure B43. Comparison of computed and recorded temperature at sta CB 5.1 during 1985 (Sheet 1 of 3)

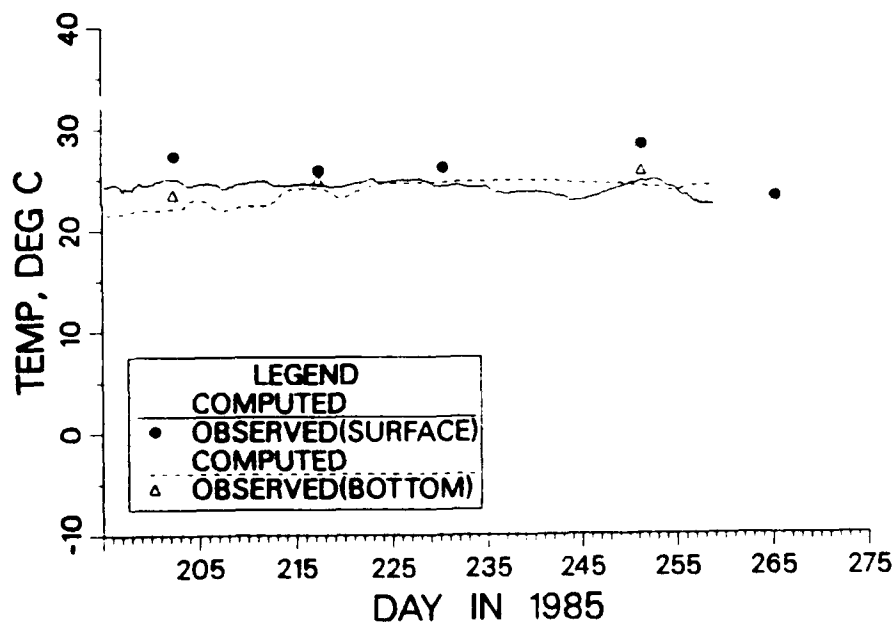
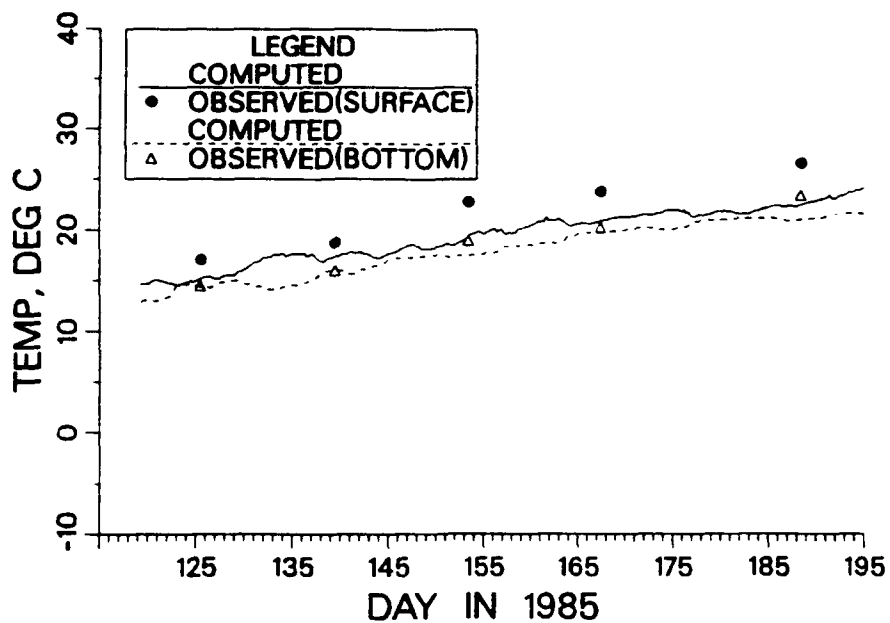


Figure B43. (Sheet 2 of 3)

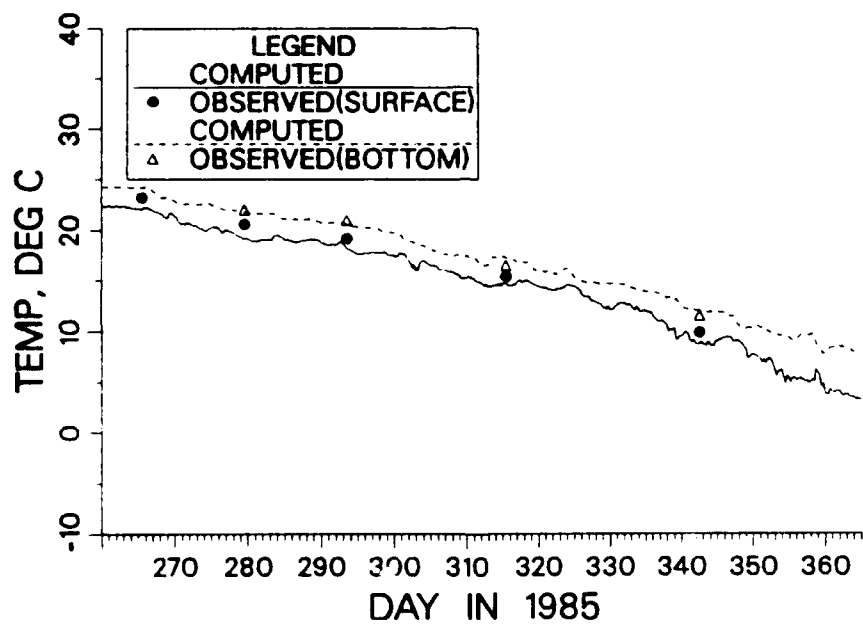


Figure B43. (Sheet 3 of 3)

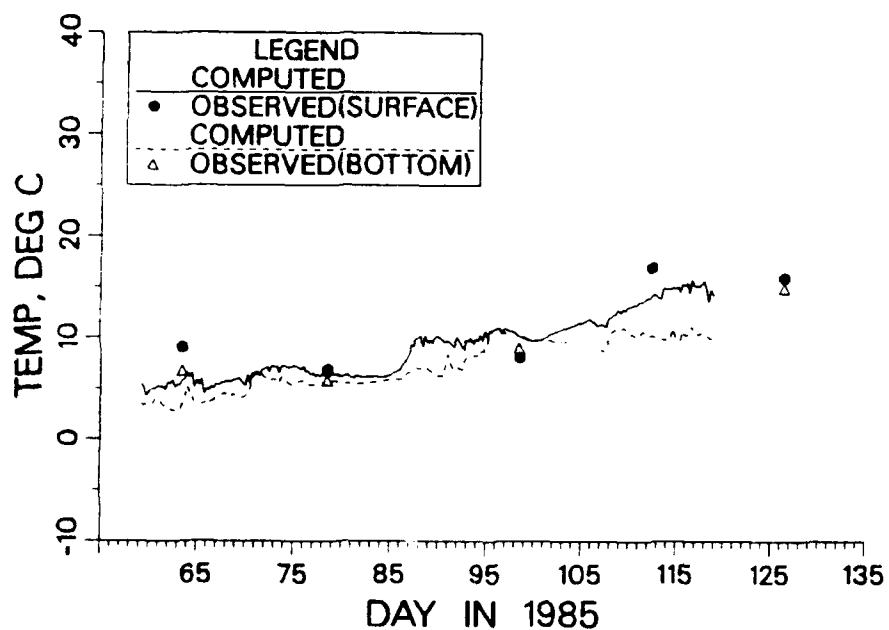
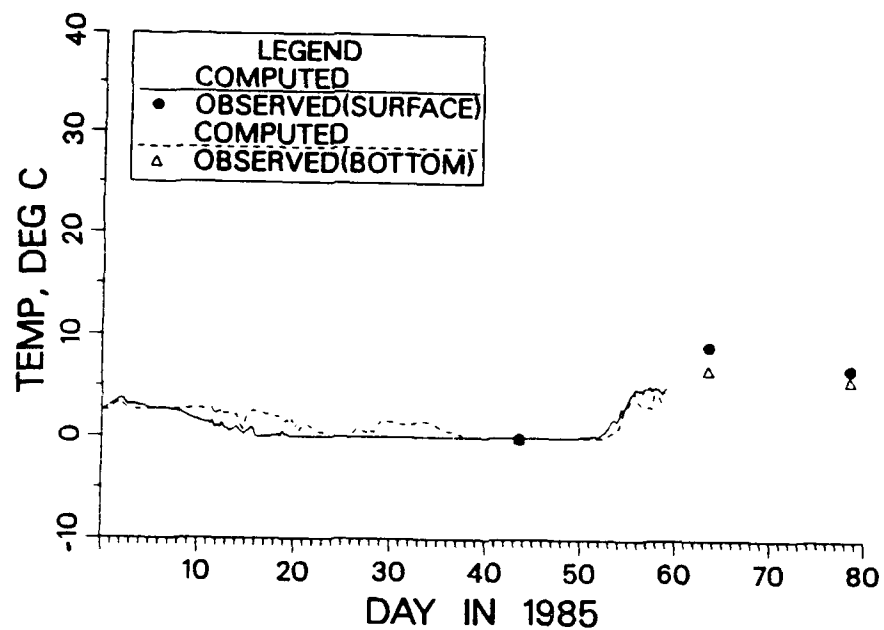


Figure B44. Comparison of computed and recorded temperature at sta CB 3.3W during 1985 (Sheet 1 of 3)

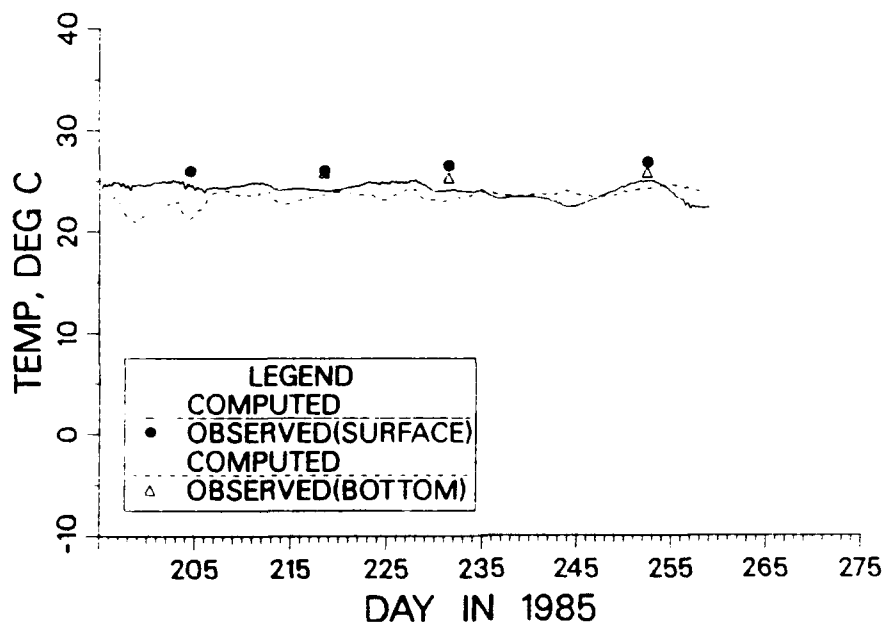
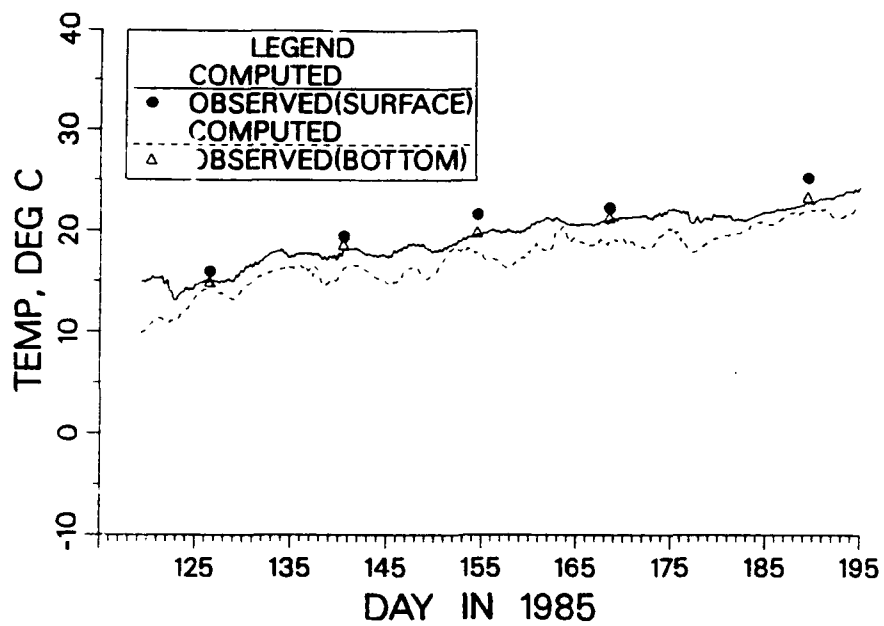


Figure B44. (Sheet 2 of 3)

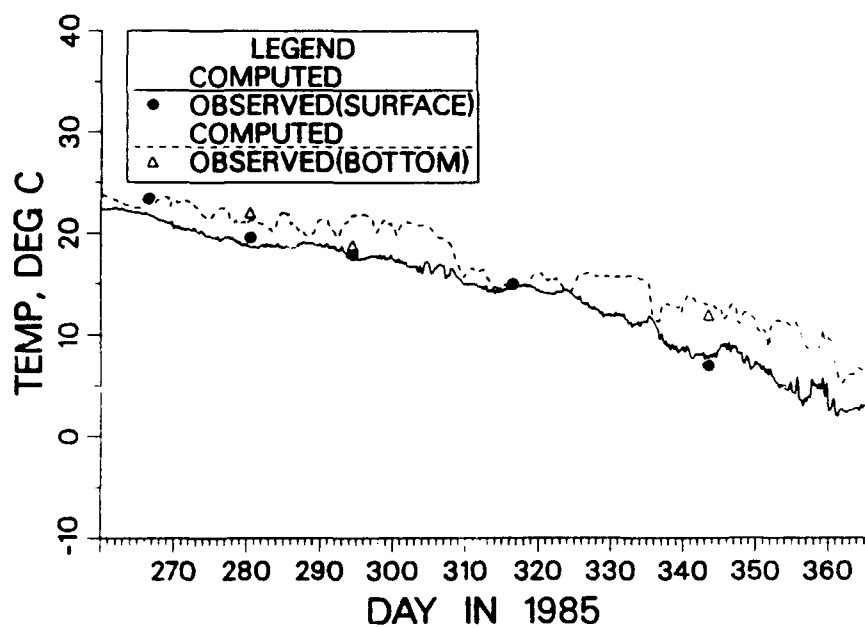


Figure B44. (Sheet 3 of 3)

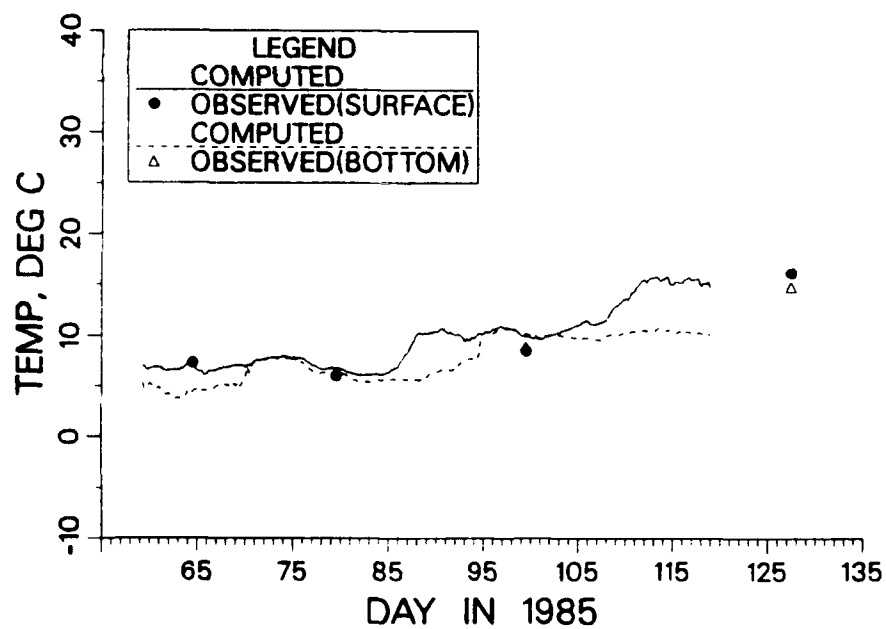
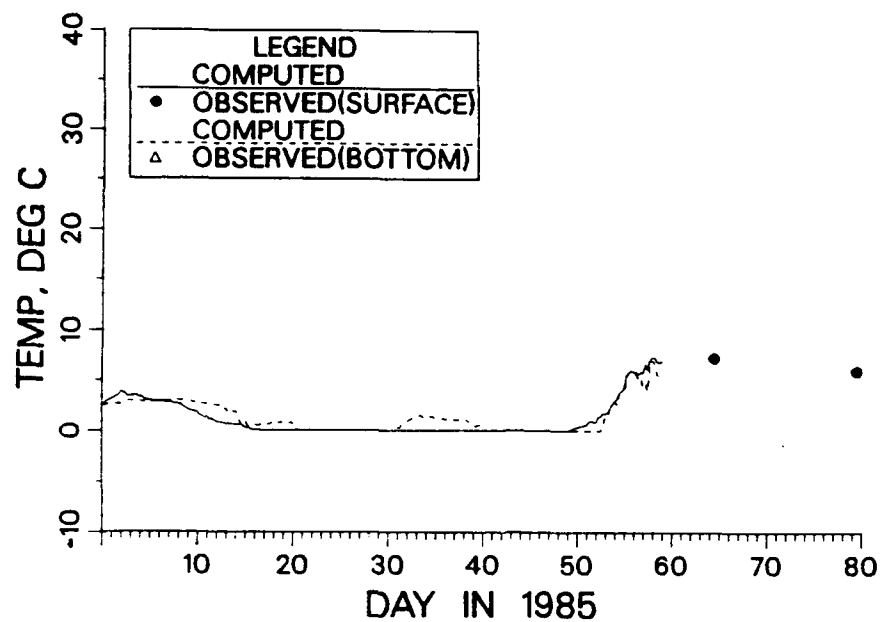


Figure B45. Comparison of computed and recorded temperature at sta CB 3.1 during 1985 (Sheet 1 of 3)

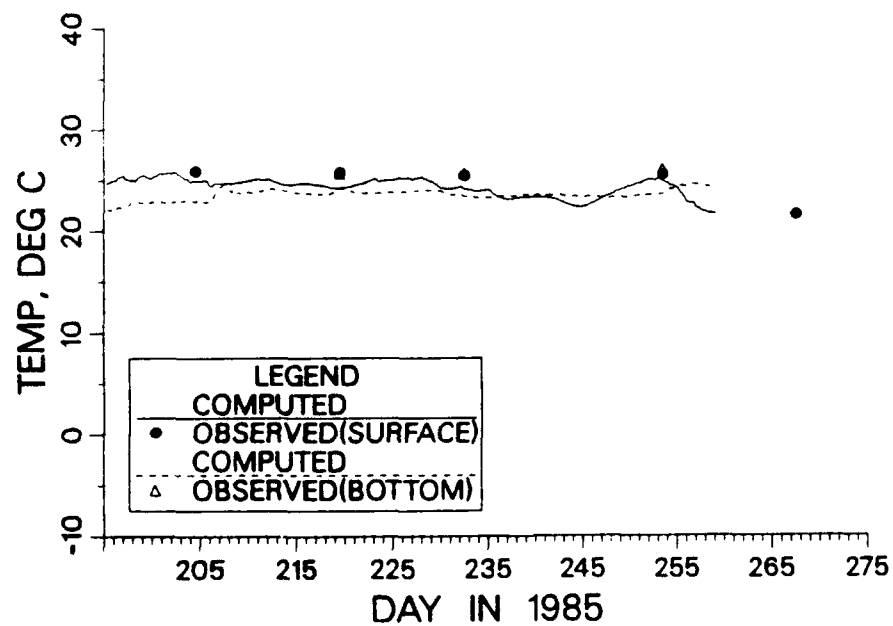
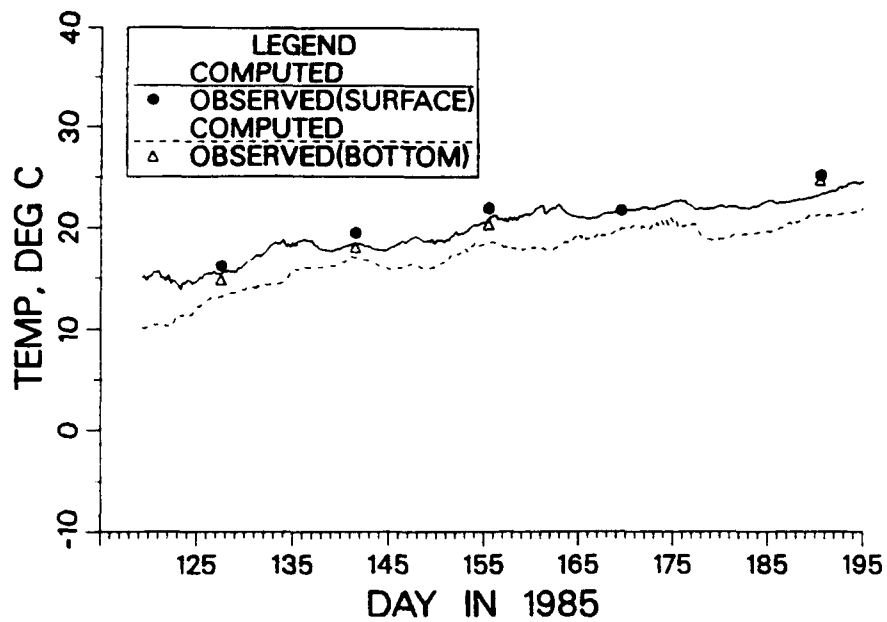


Figure B45. (Sheet 2 of 3)

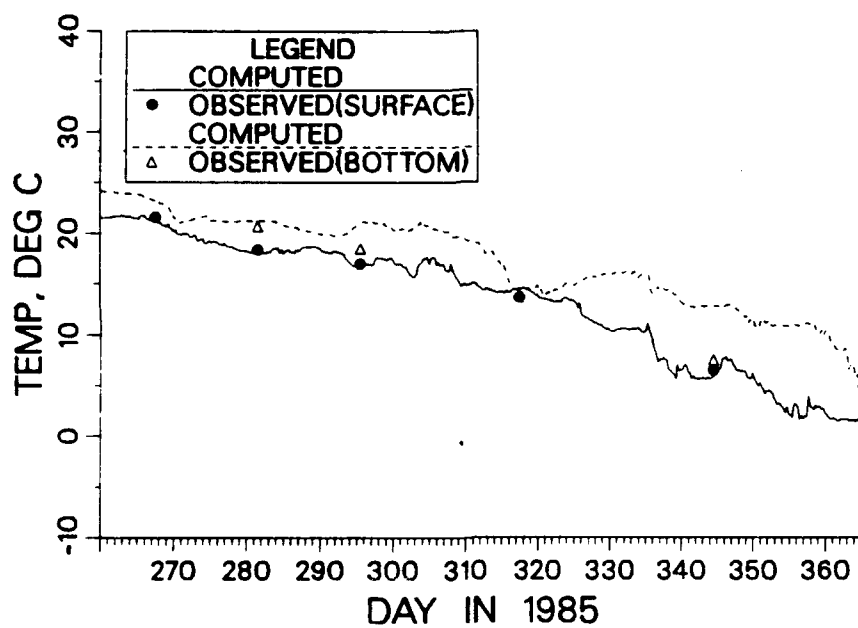


Figure B45. (Sheet 3 of 3)

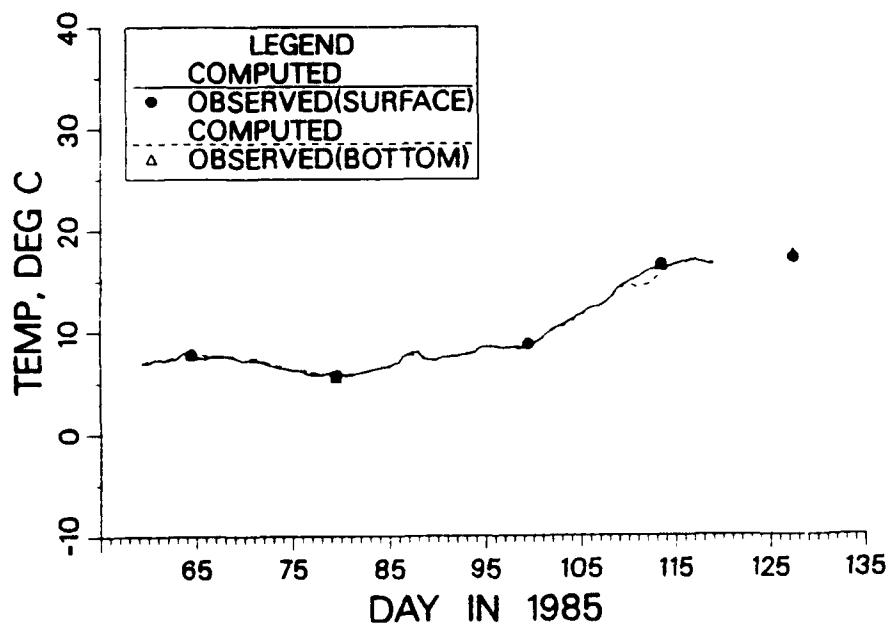
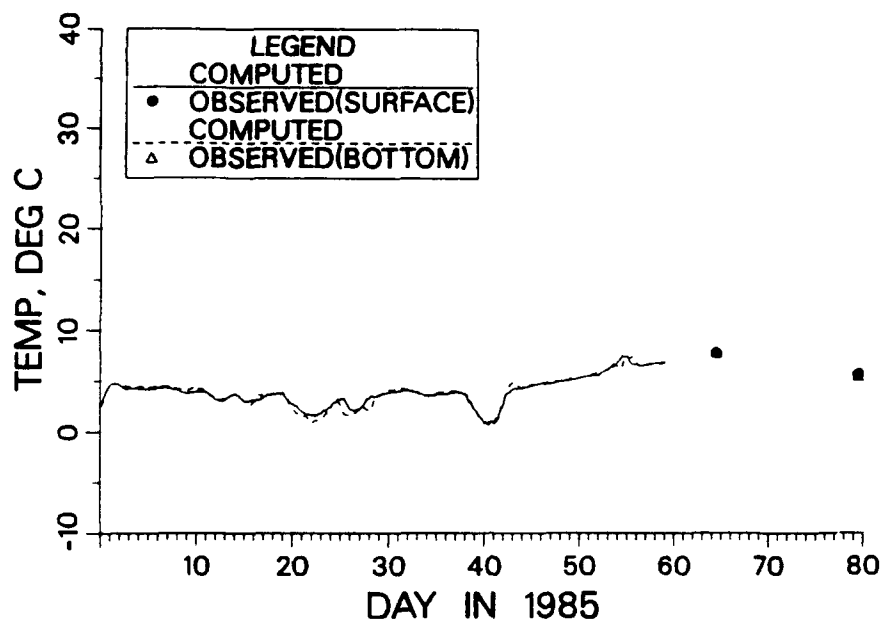


Figure B46. Comparison of computed and recorded temperature at sta CB 1.1 during 1985 (Sheet 1 of 3)

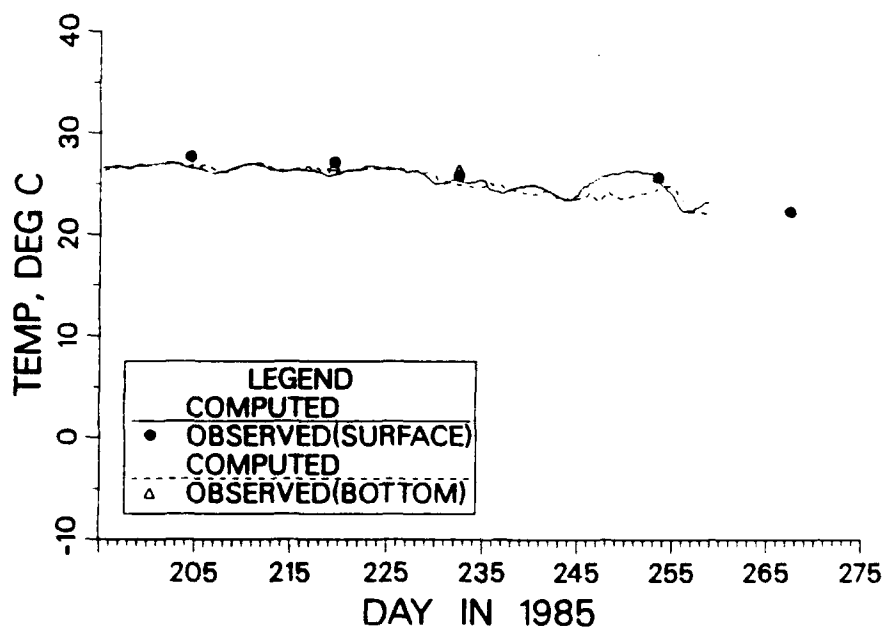
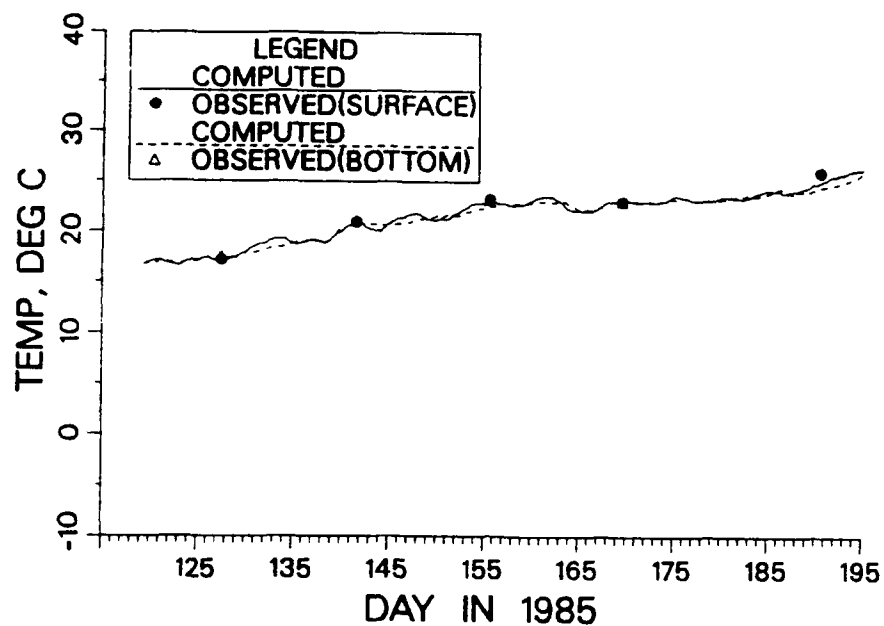


Figure B46. (Sheet 2 of 3)

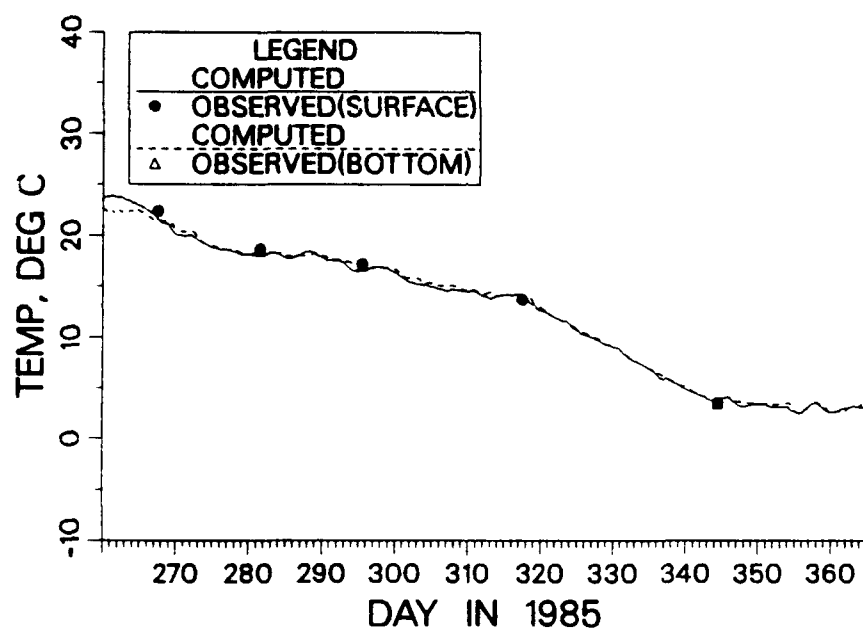


Figure B46. (Sheet 3 of 3)

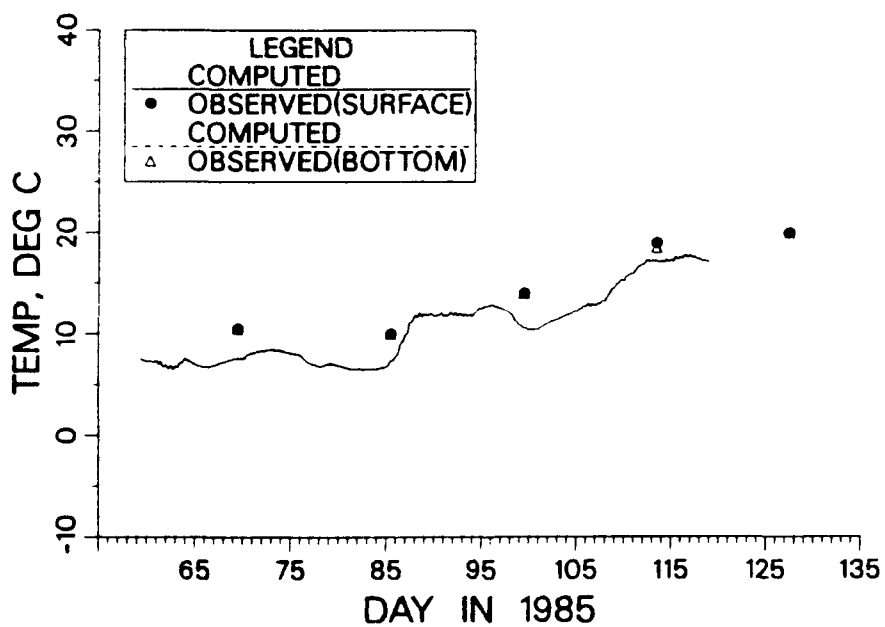
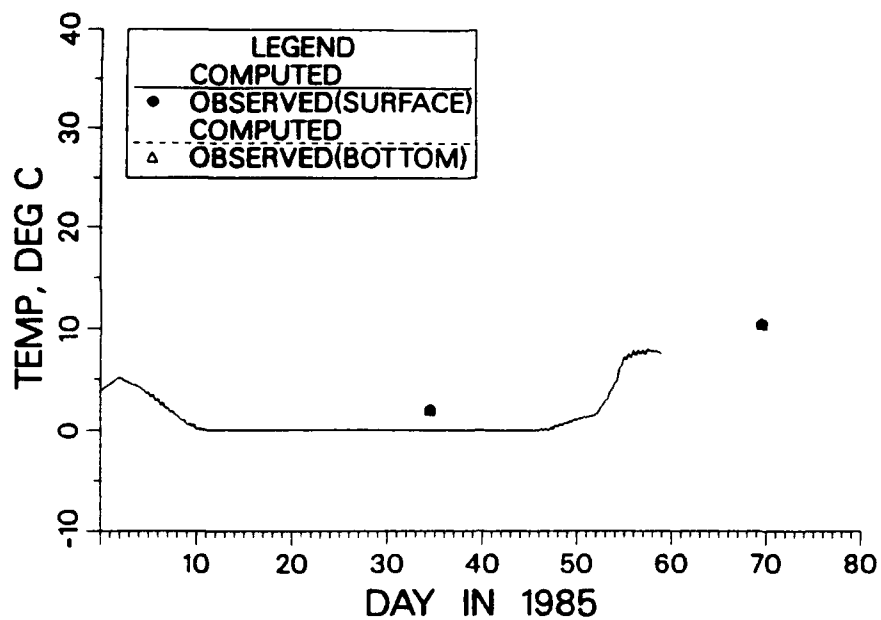


Figure B47. Comparison of computed and recorded temperature at sta TF 5.6 during 1985 (Sheet 1 of 3)

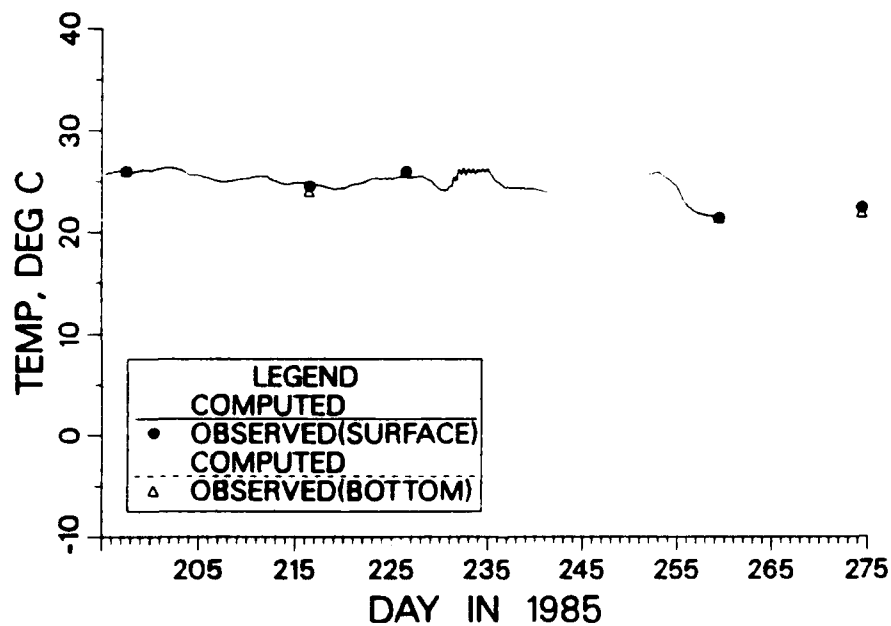
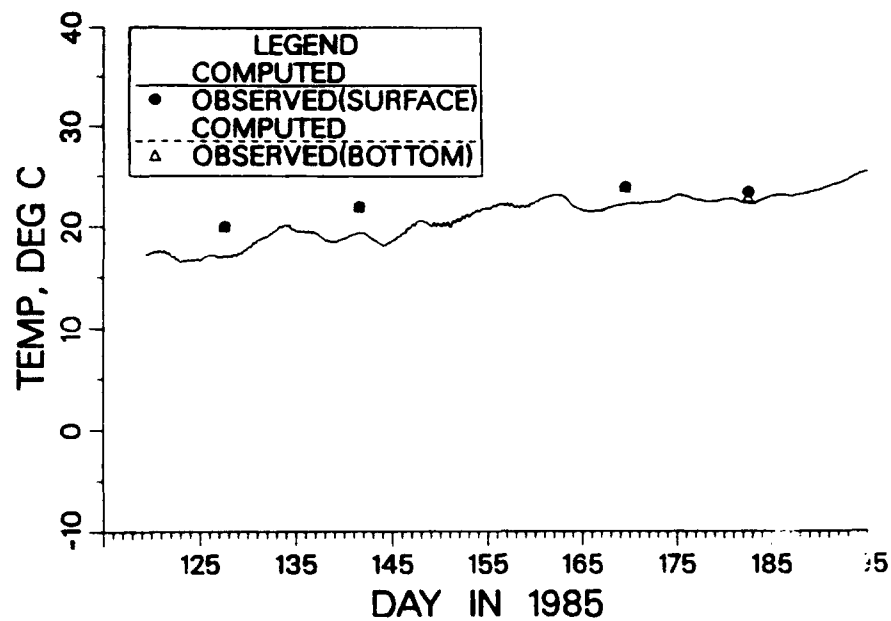


Figure B47. (Sheet 2 of 3)

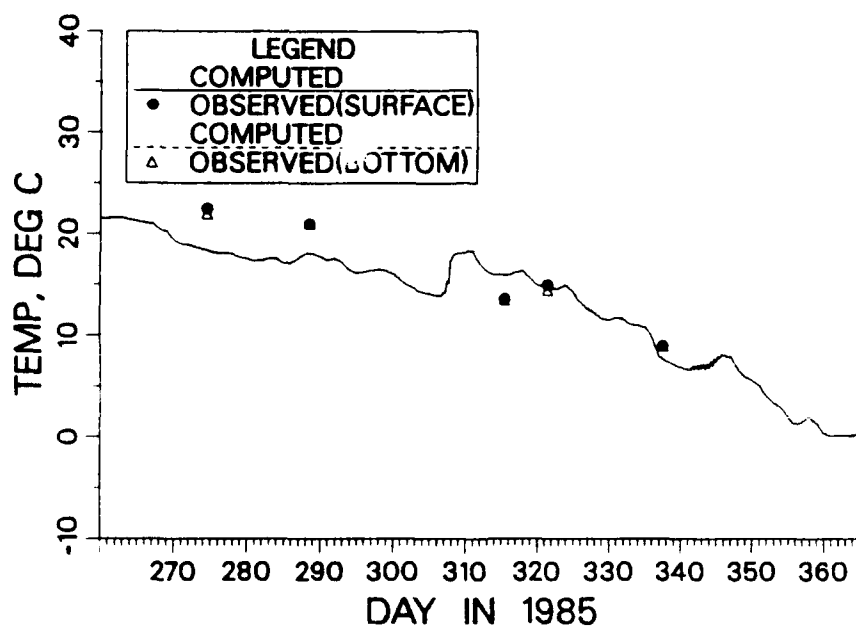


Figure B47. (Sheet 3 of 3)

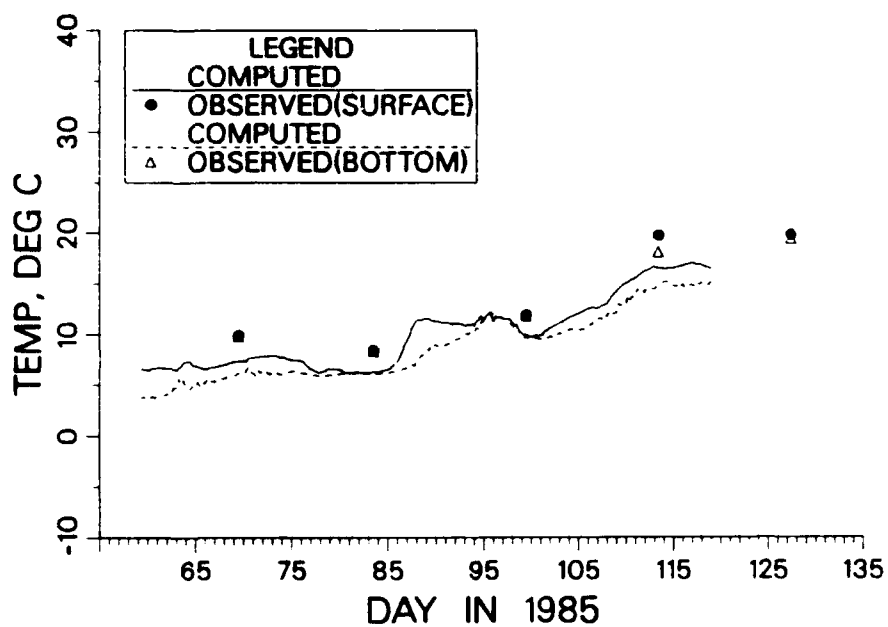
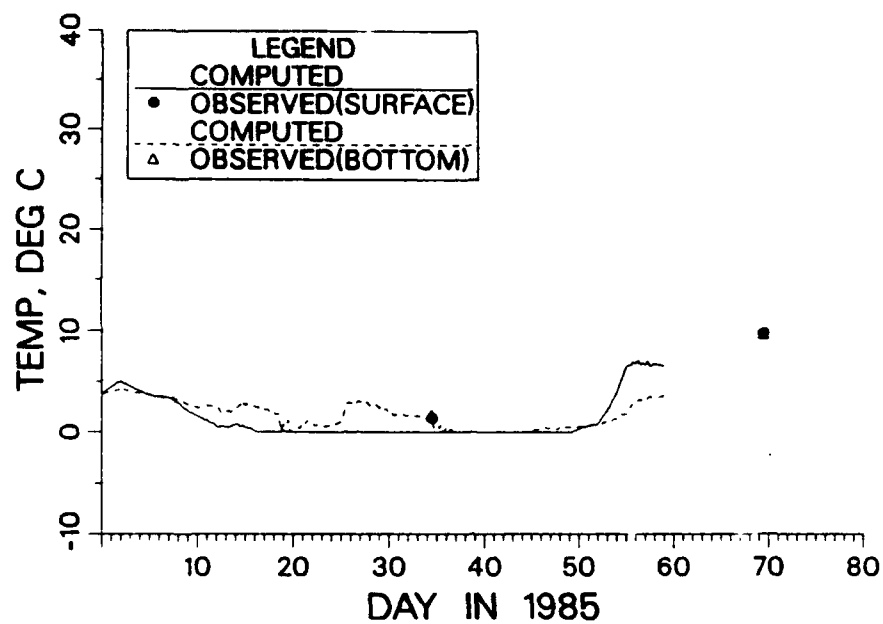


Figure B48. Comparison of computed and recorded temperature at sta LE 5.2 during 1985 (Sheet 1 of 3)

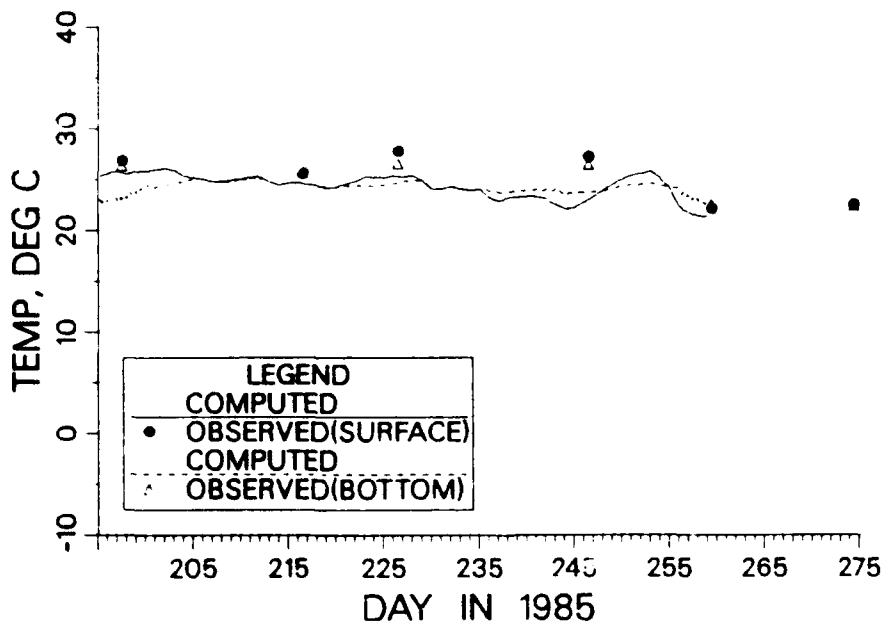
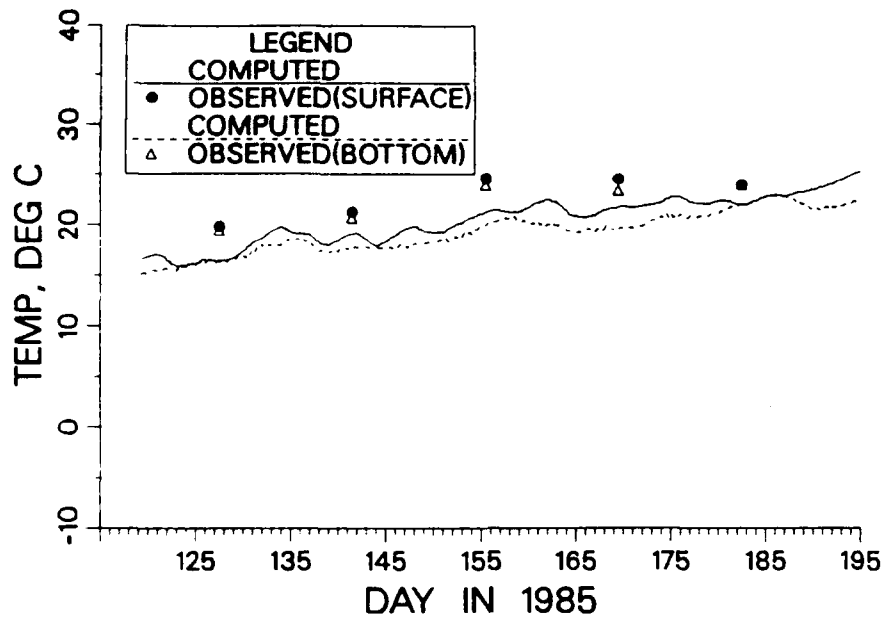


Figure B48. (Sheet 2 of 3)

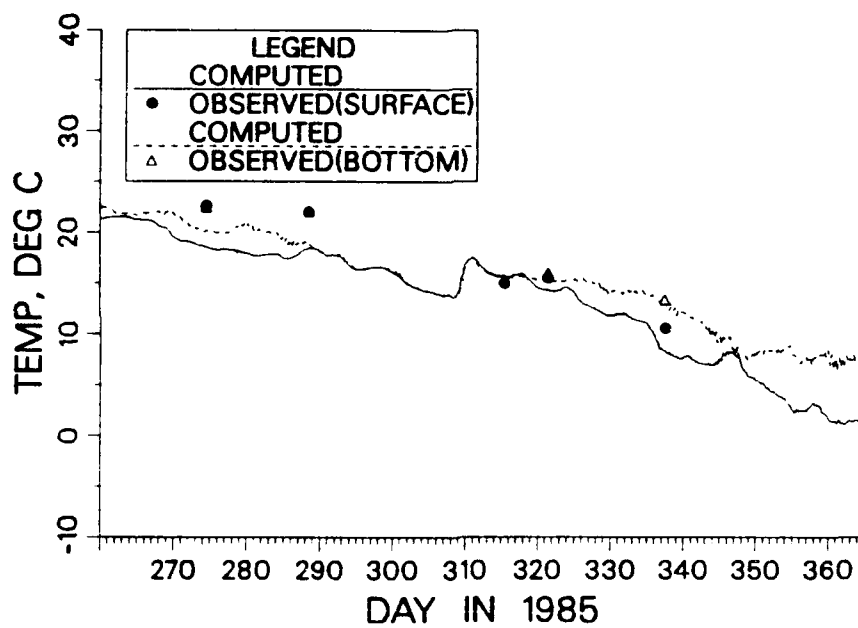


Figure B48. (Sheet 3 of 3)

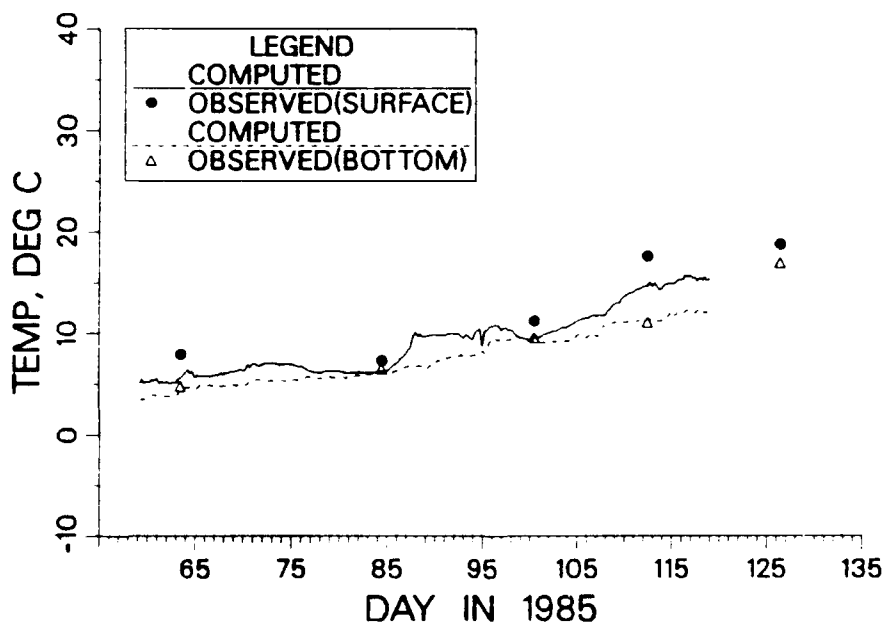
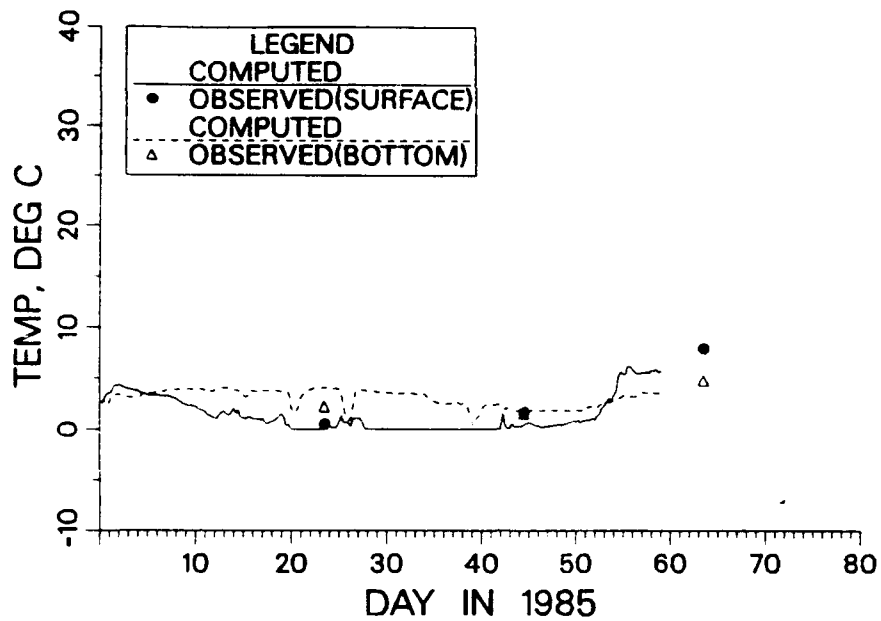


Figure B49. Comparison of computed and recorded temperature at sta LE 5.5 during 1985 (Sheet 1 of 3)

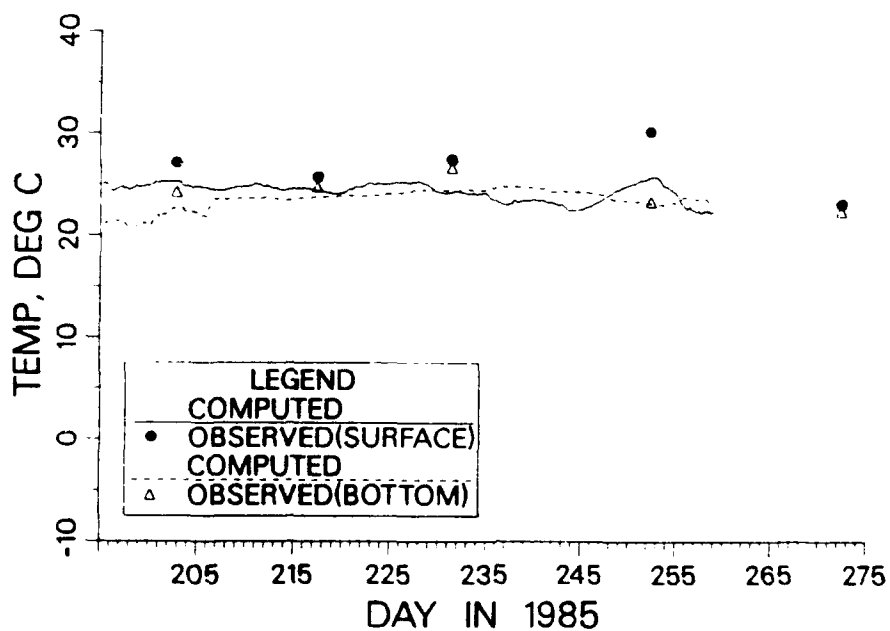
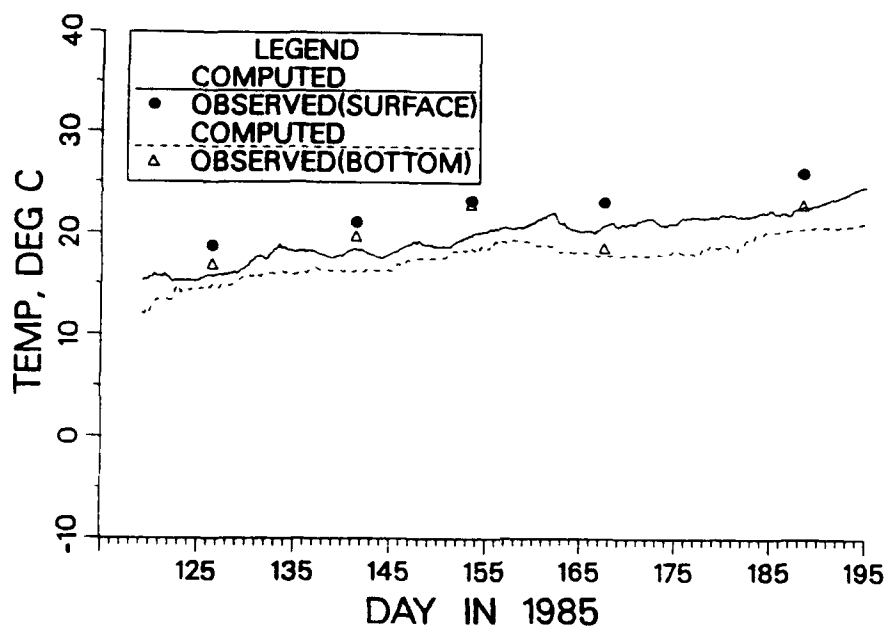


Figure B49. (Sheet 2 of 3)

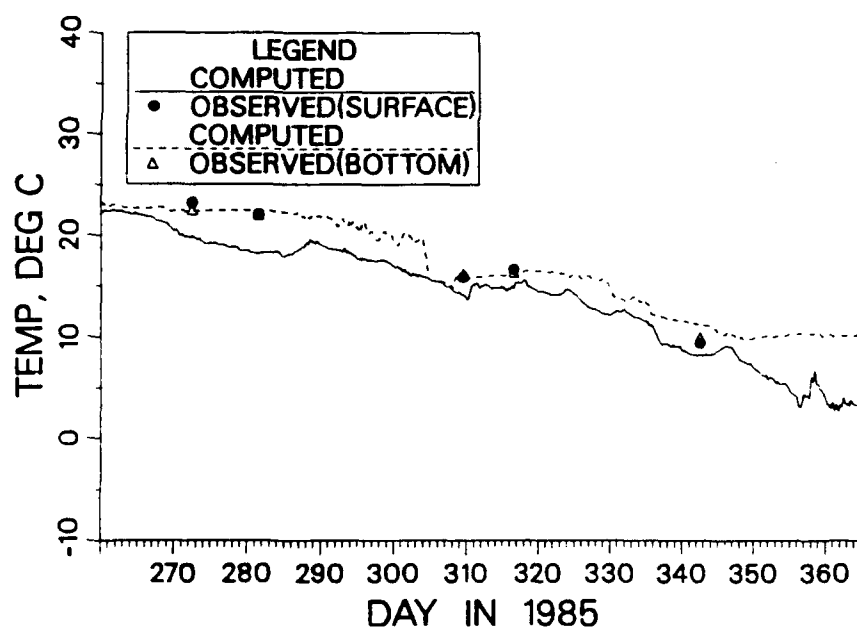


Figure B49. (Sheet 3 of 3)

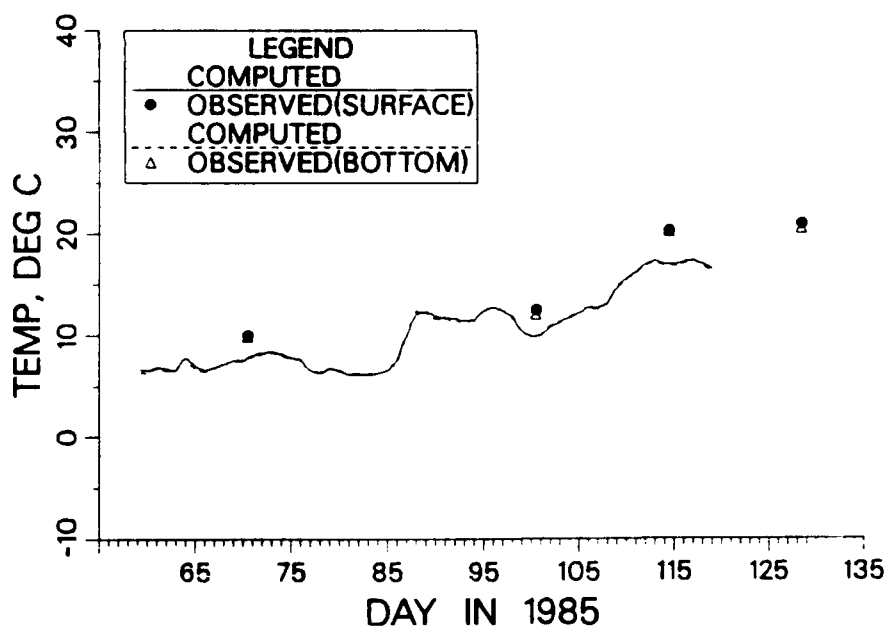
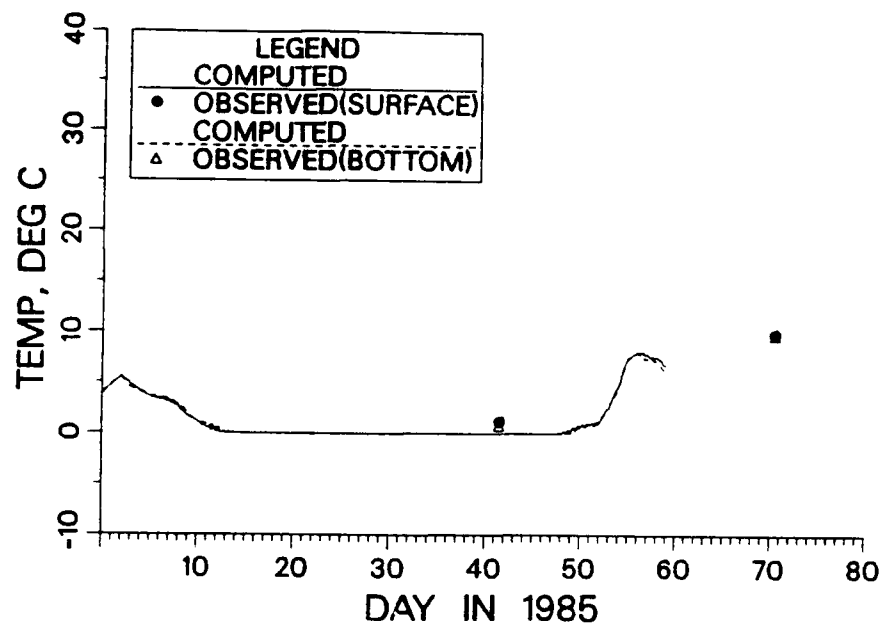


Figure B50. Comparison of computed and recorded temperature at sta RET 4.3 during 1985 (Sheet 1 of 3)

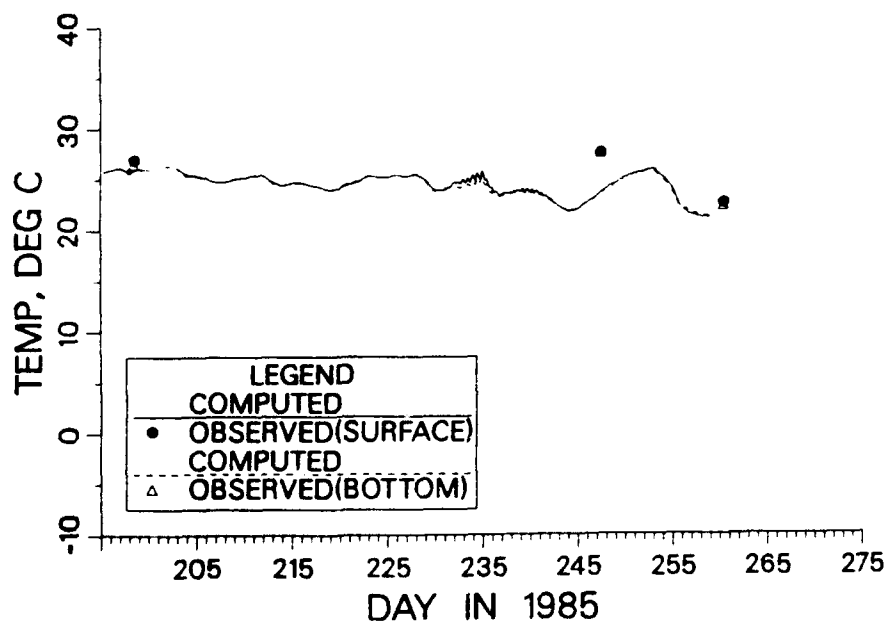
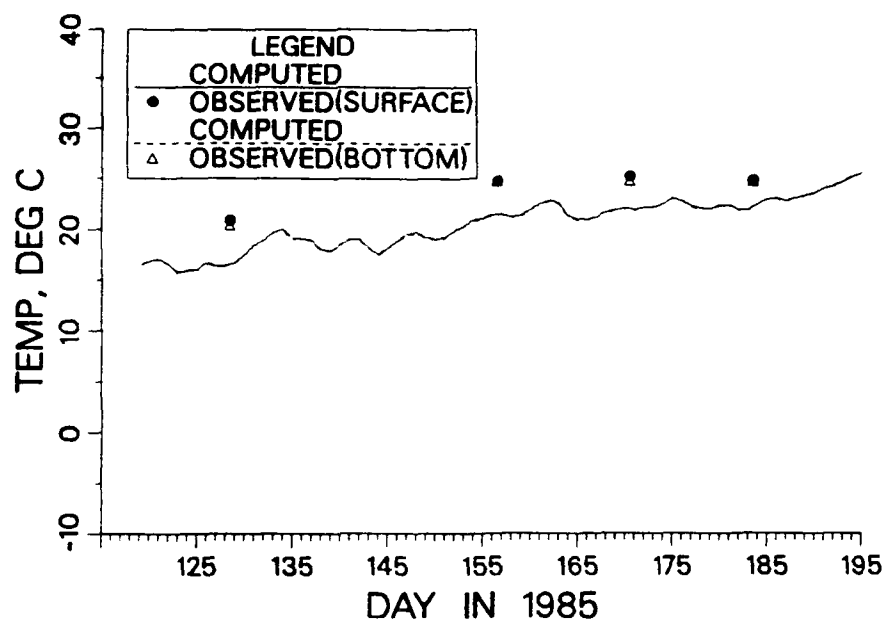


Figure B50. (Sheet 2 of 3)

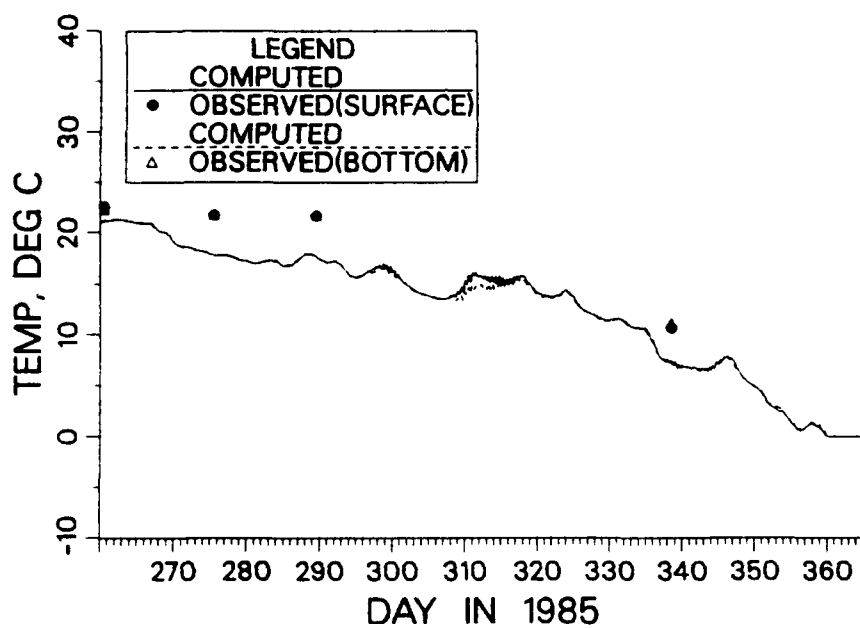


Figure B50. (Sheet 3 of 3)

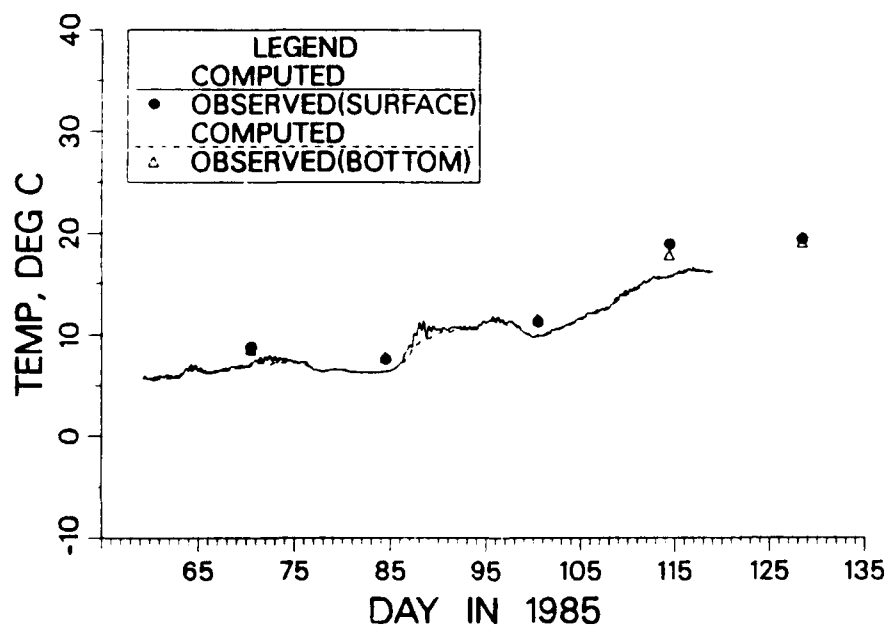
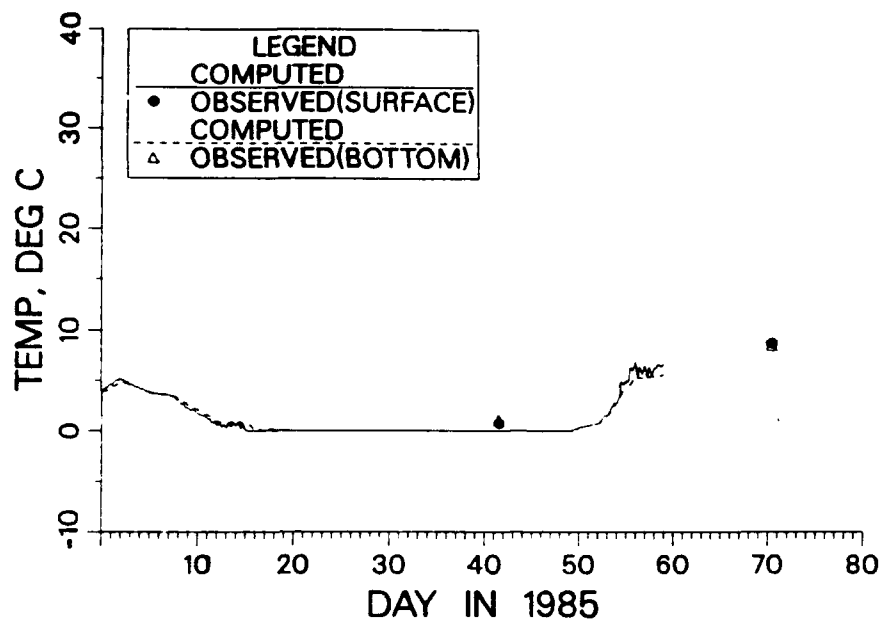


Figure B51. Comparison of computed and recorded temperature at sta LE 4.2 during 1985 (Sheet 1 of 3)

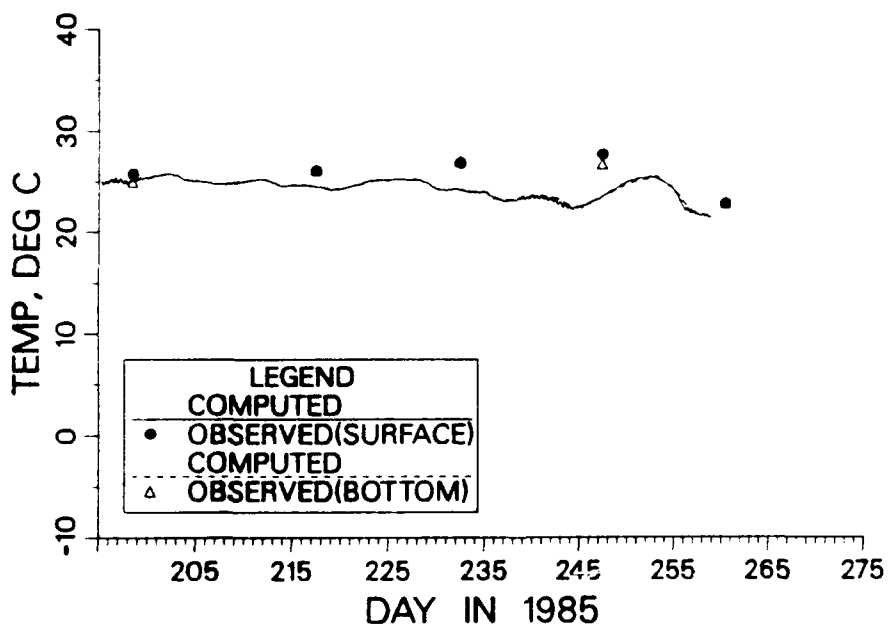
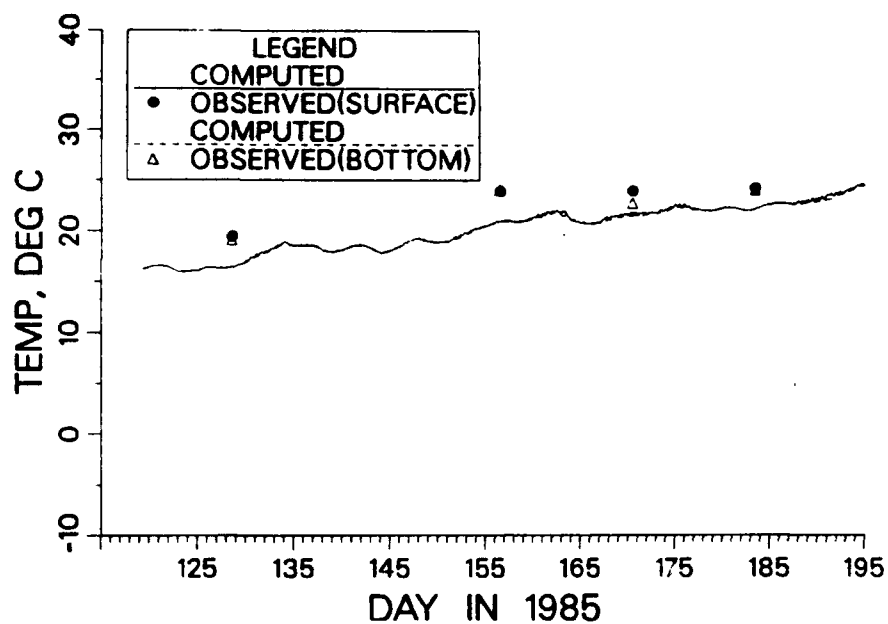


Figure B51. (Sheet 2 of 3)

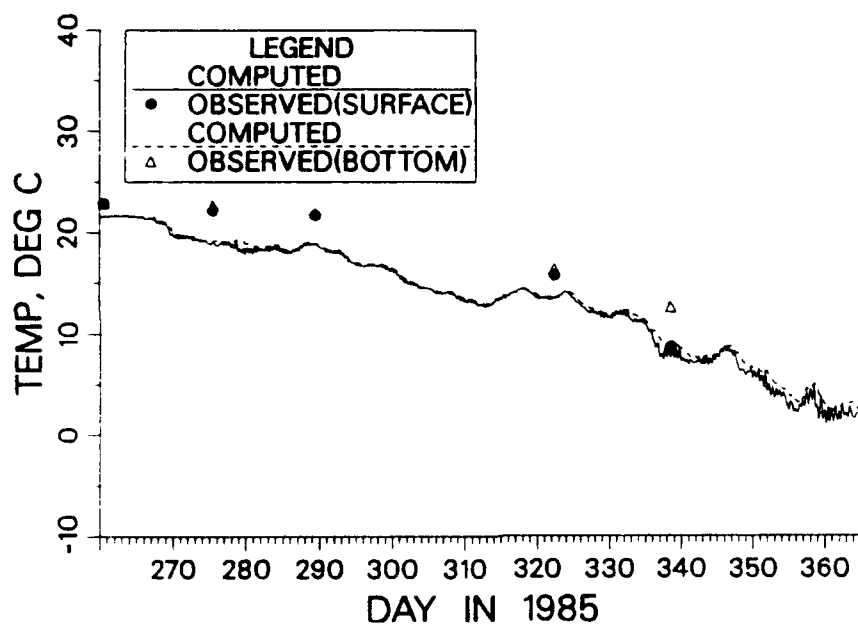


Figure B51. (Sheet 3 of 3)

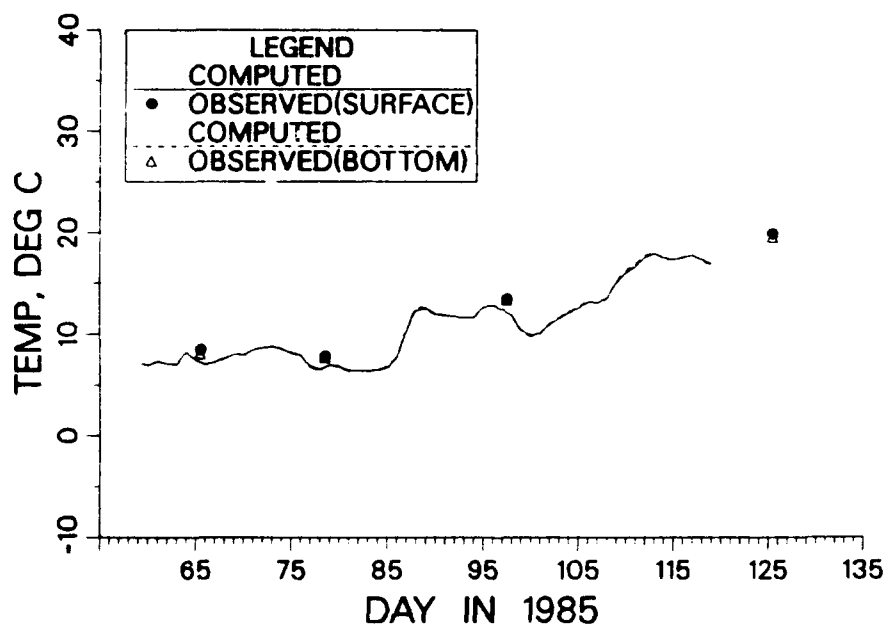
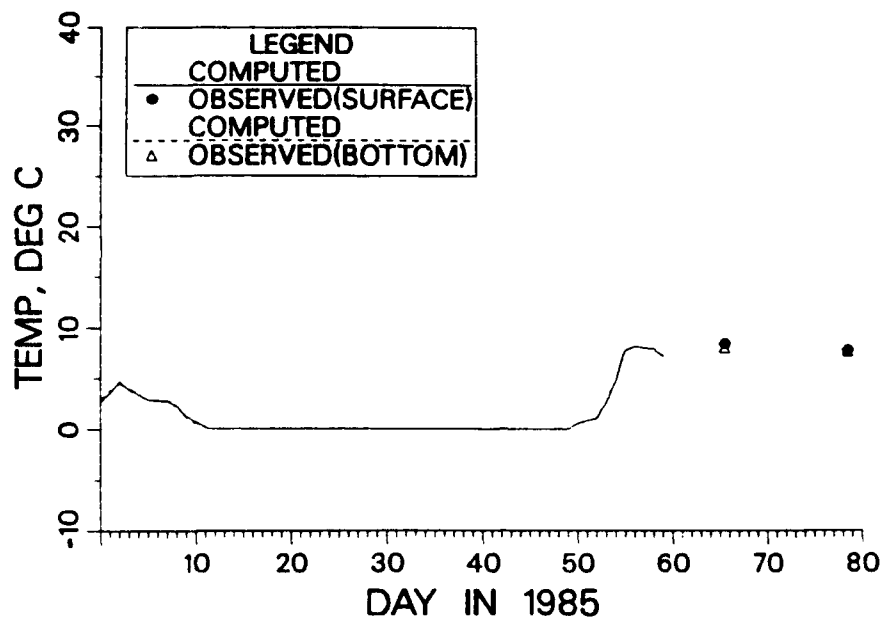


Figure B52. Comparison of computed and recorded temperature at sta TF 3.3 during 1985 (Sheet 1 of 3)

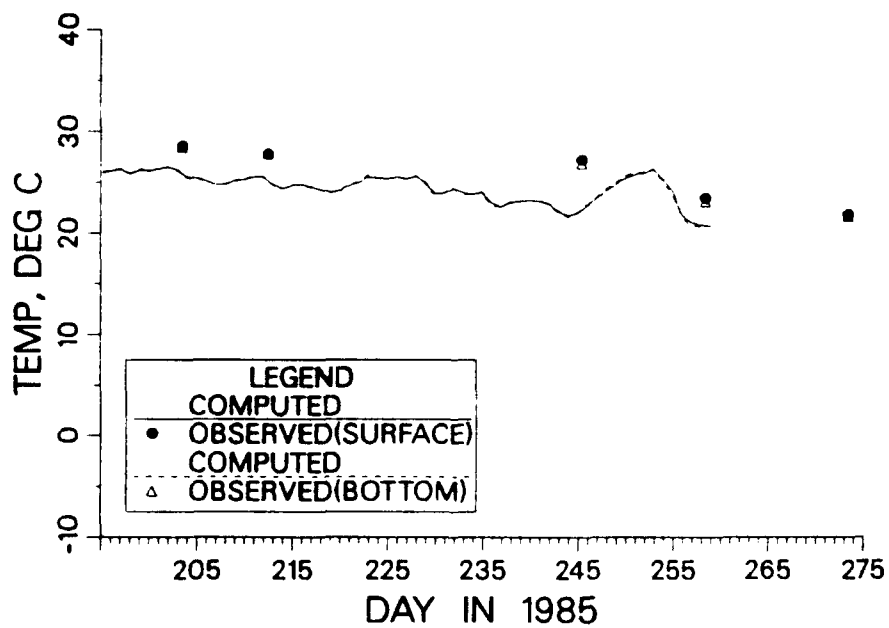
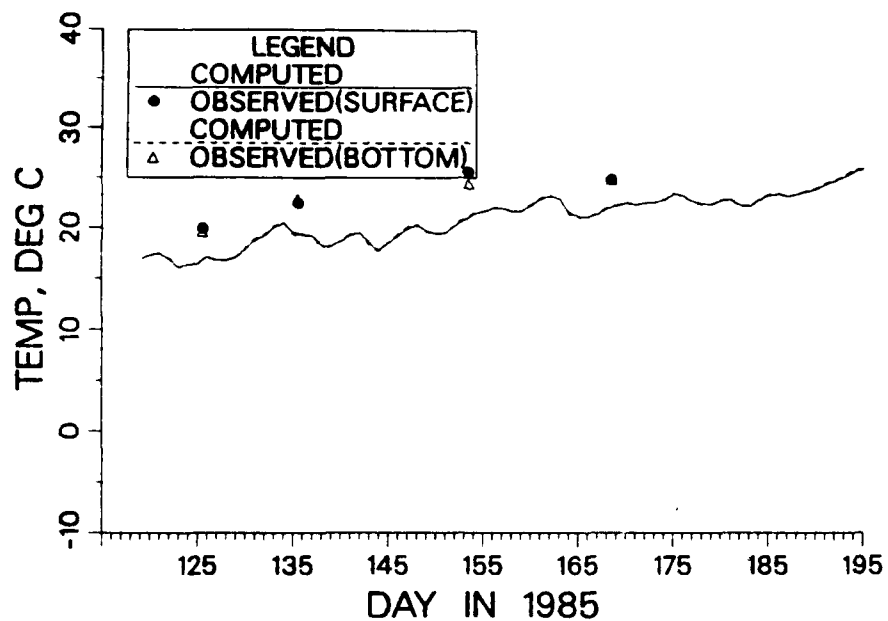


Figure B52. (Sheet 2 of 3)

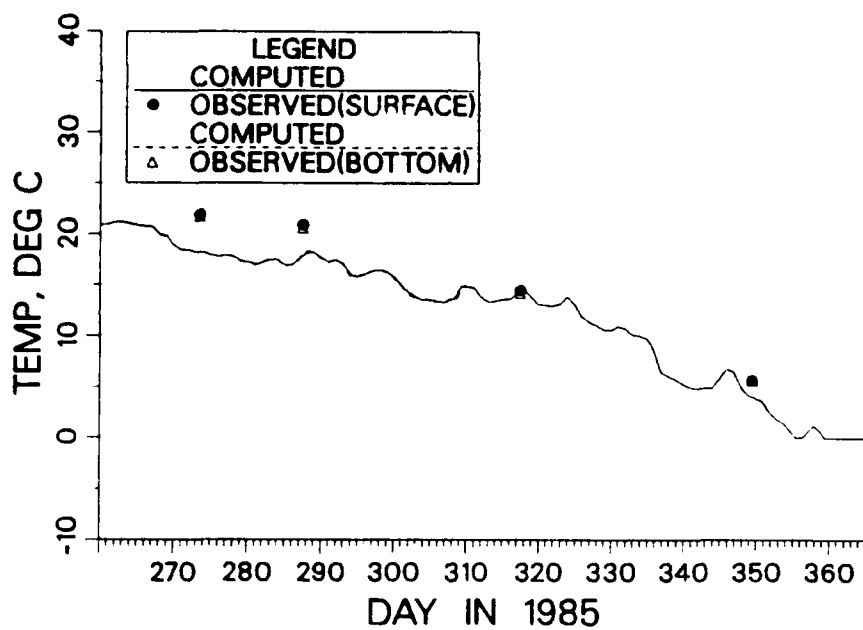


Figure B52. (Sheet 3 of 3)

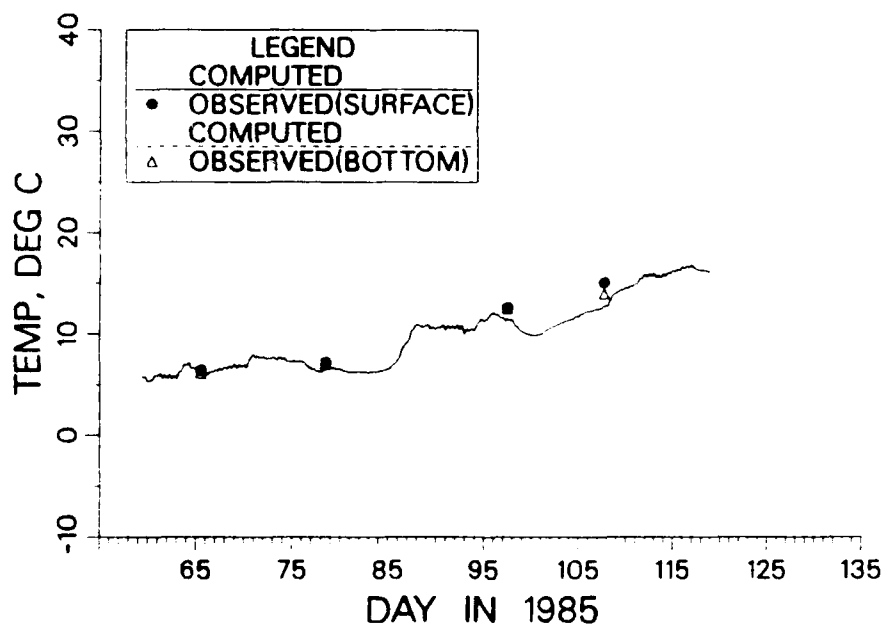
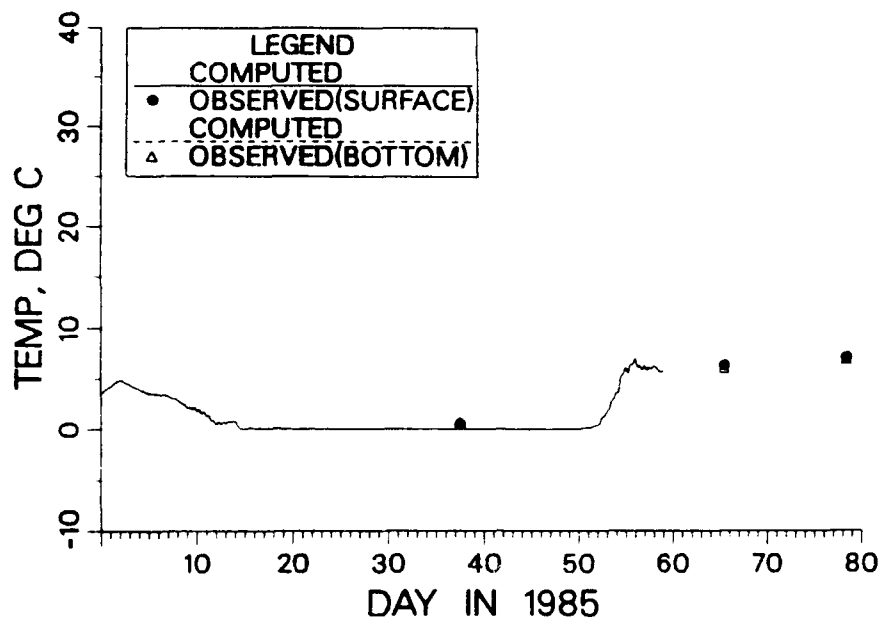


Figure B53. Comparison of computed and recorded temperature at sta LE 3.1 during 1985 (Sheet 1 of 3)

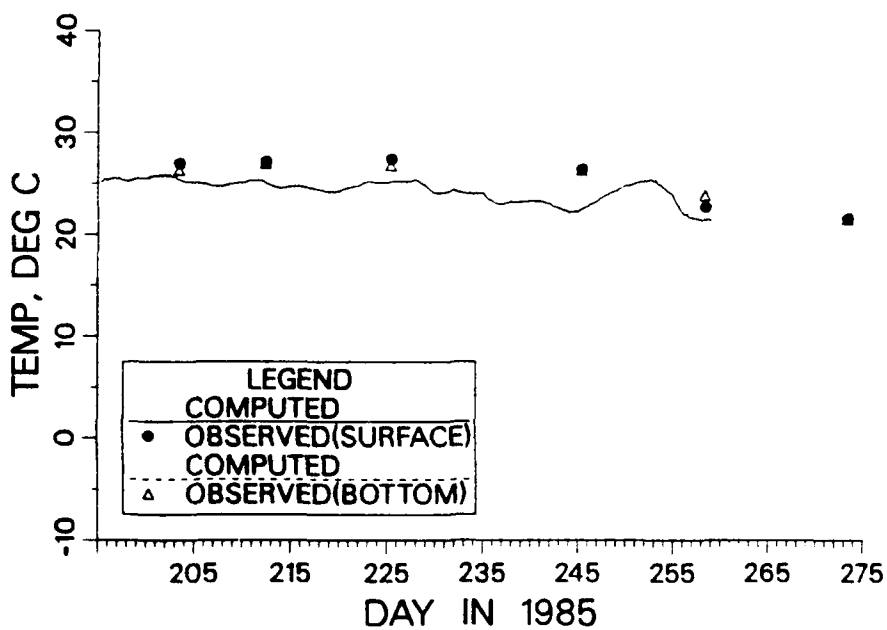
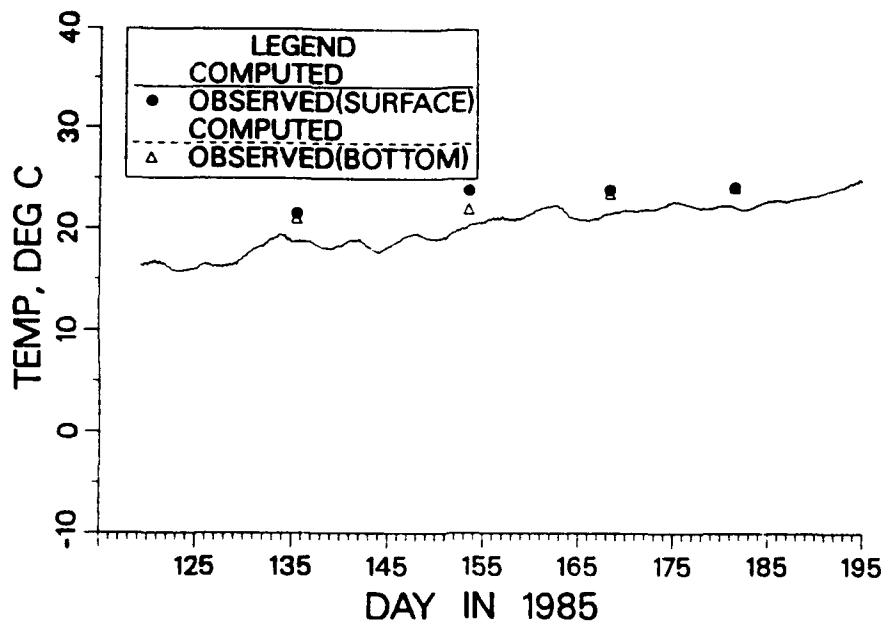


Figure B53. (Sheet 2 of 3)

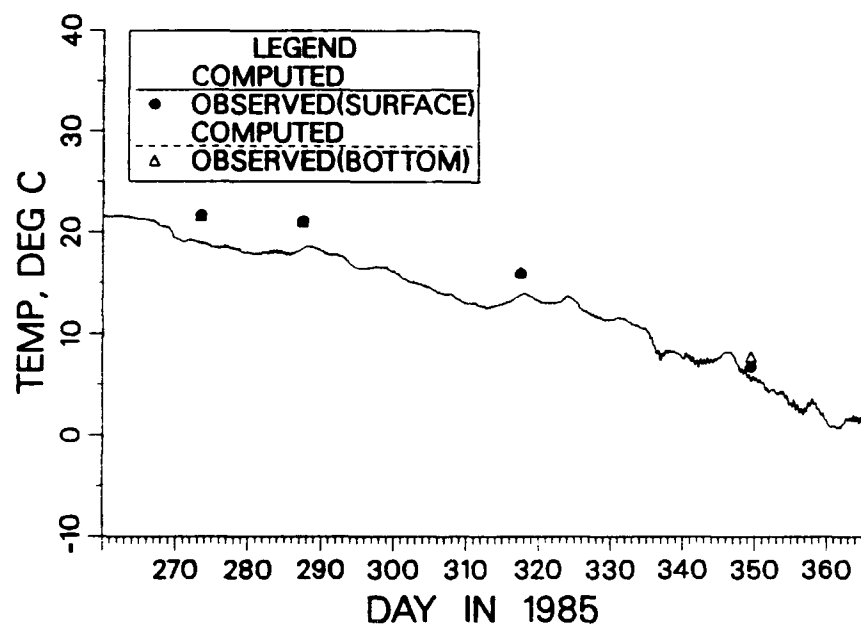


Figure B53. (Sheet 3 of 3)

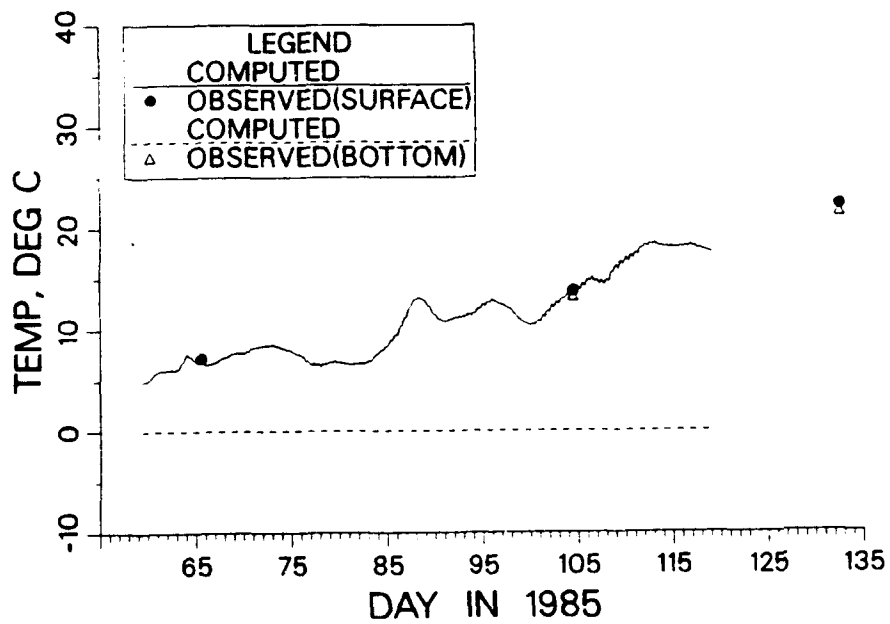
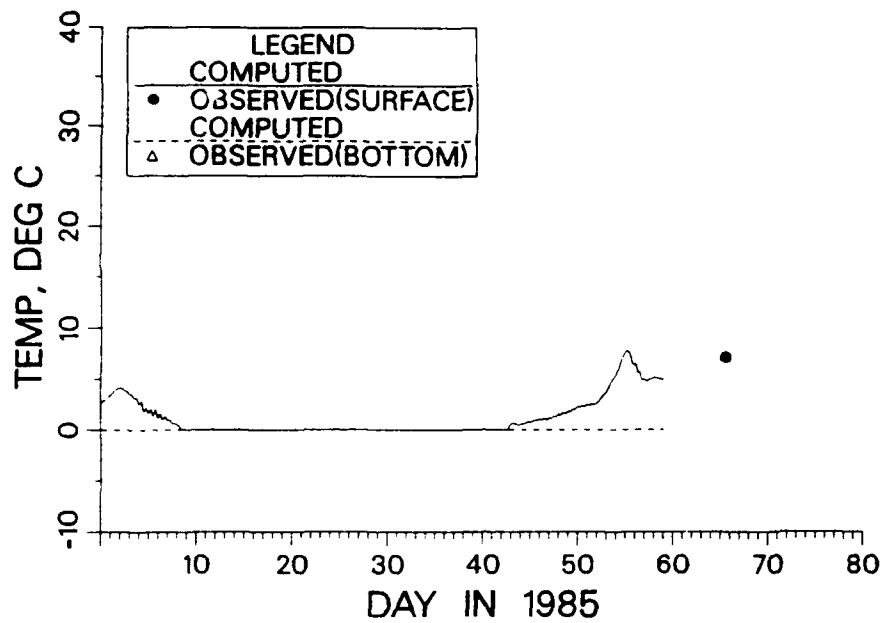


Figure B54. Comparison of computed and recorded temperature at sta XFB 247 during 1985 (Sheet 1 of 3)

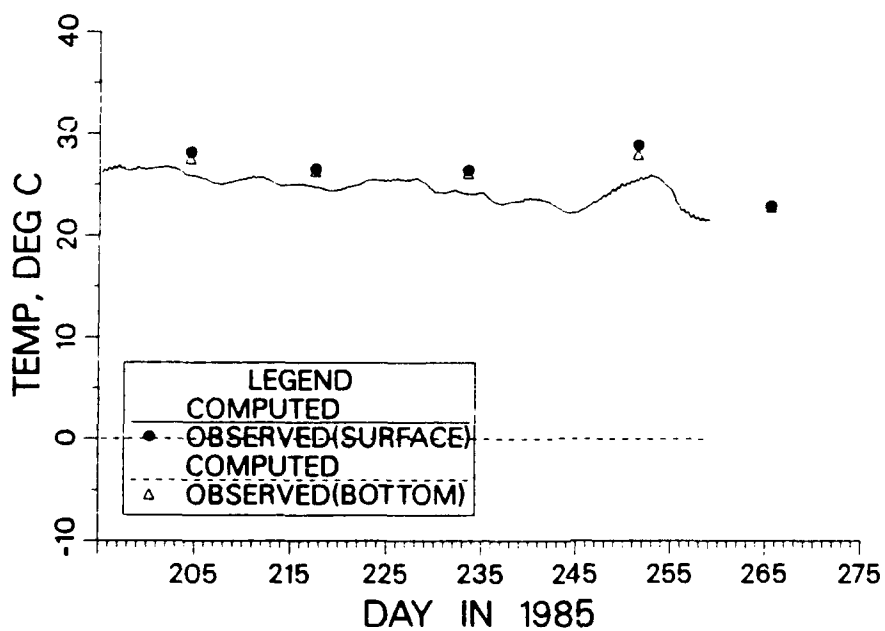
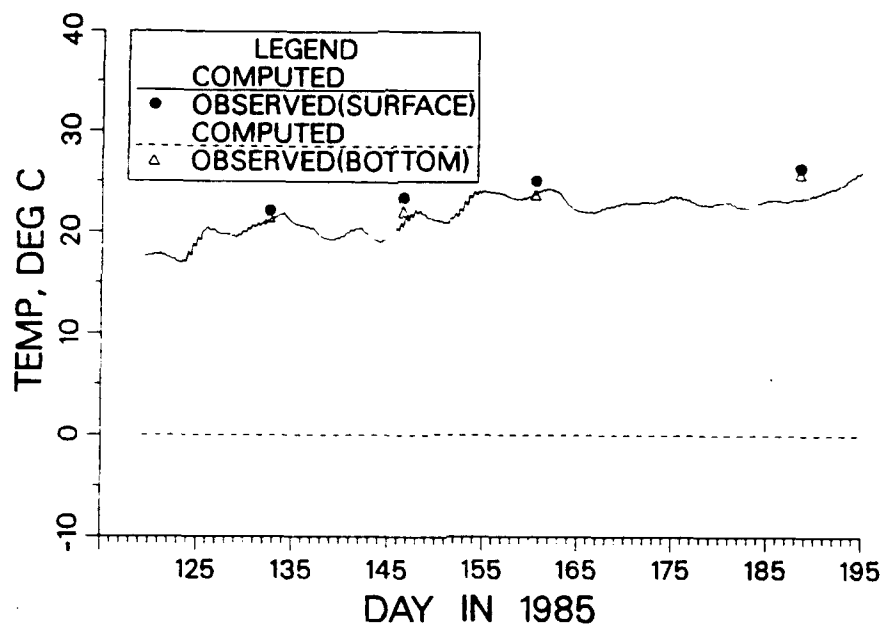


Figure B54. (Sheet 2 of 3)

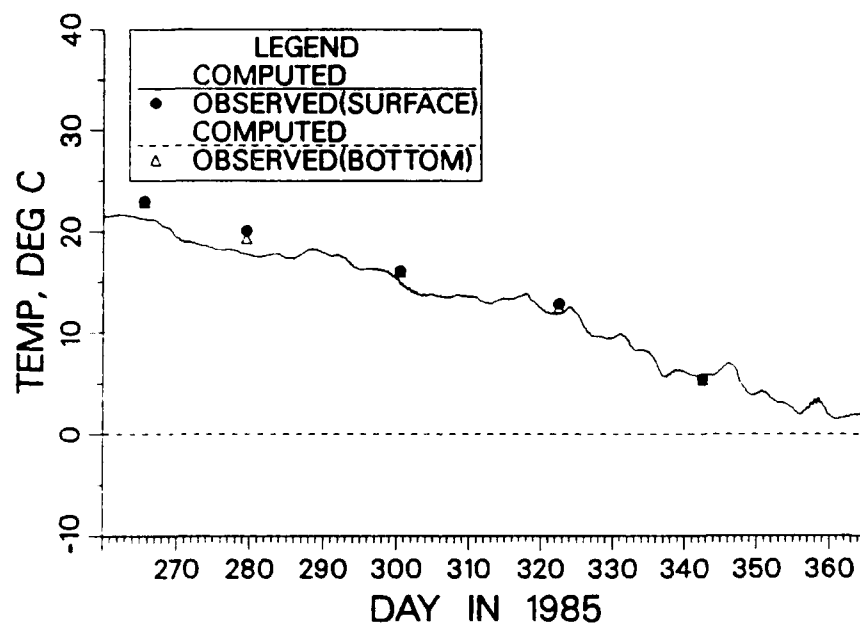


Figure B54. (Sheet 3 of 3)

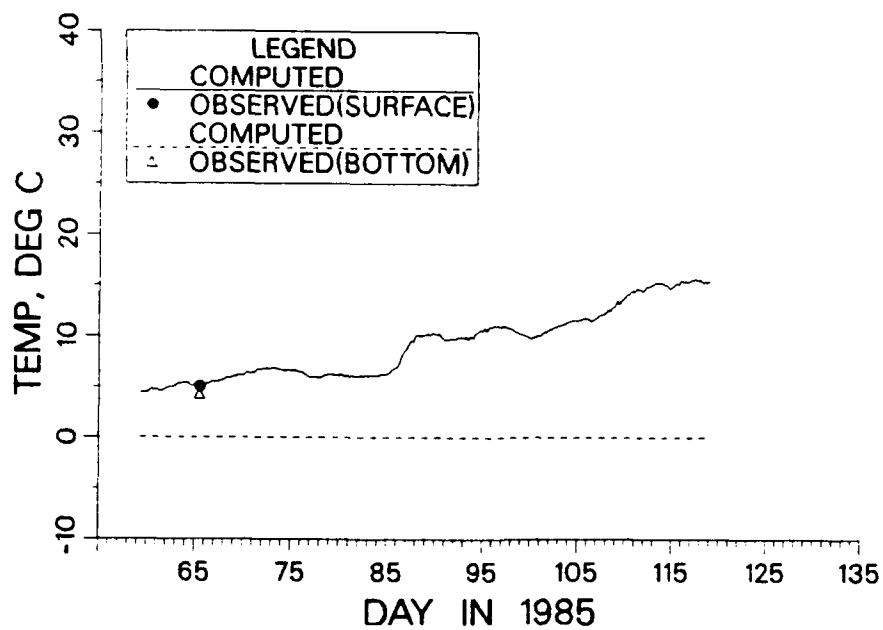
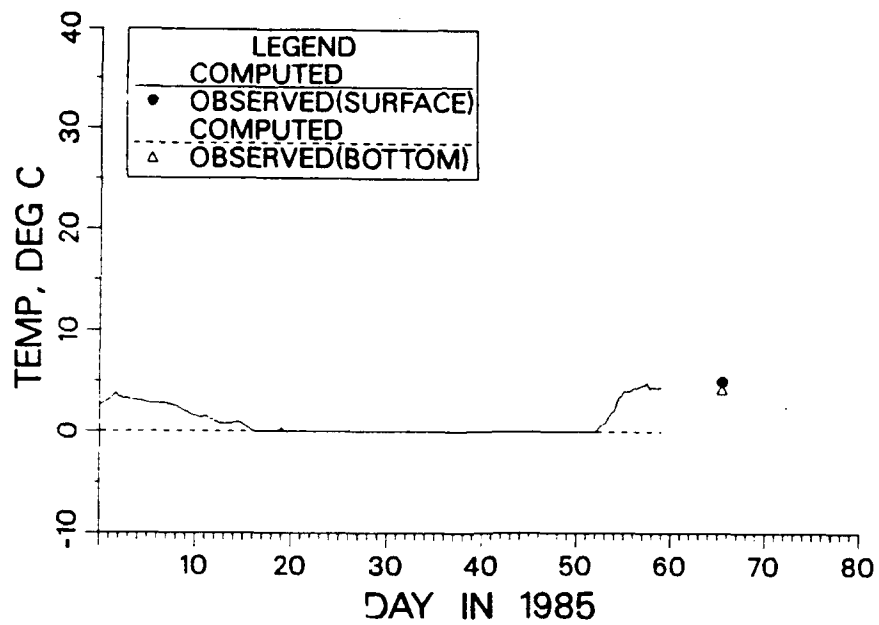


Figure B55. Comparison of computed and recorded temperature at sta RET 2.4 during 1985 (Sheet 1 of 3)

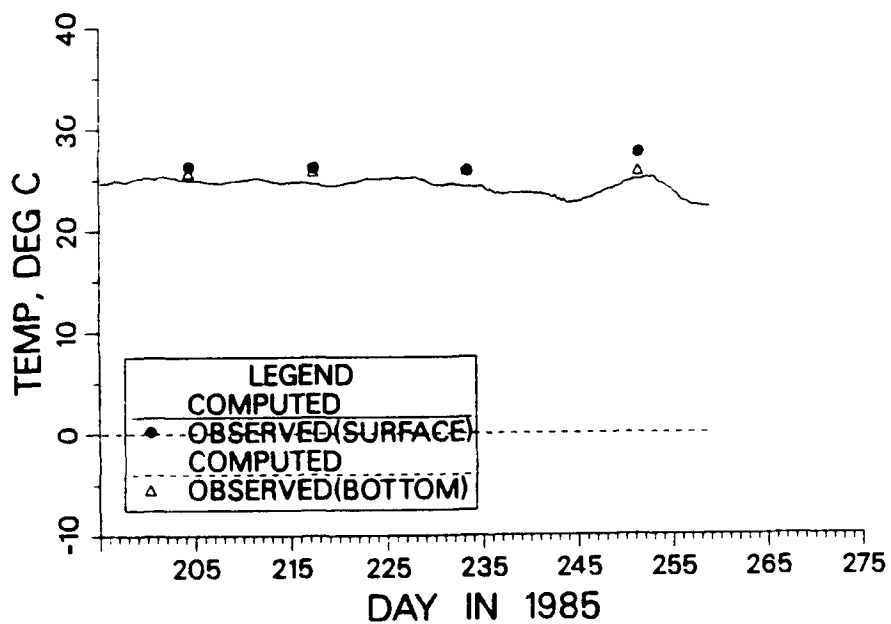
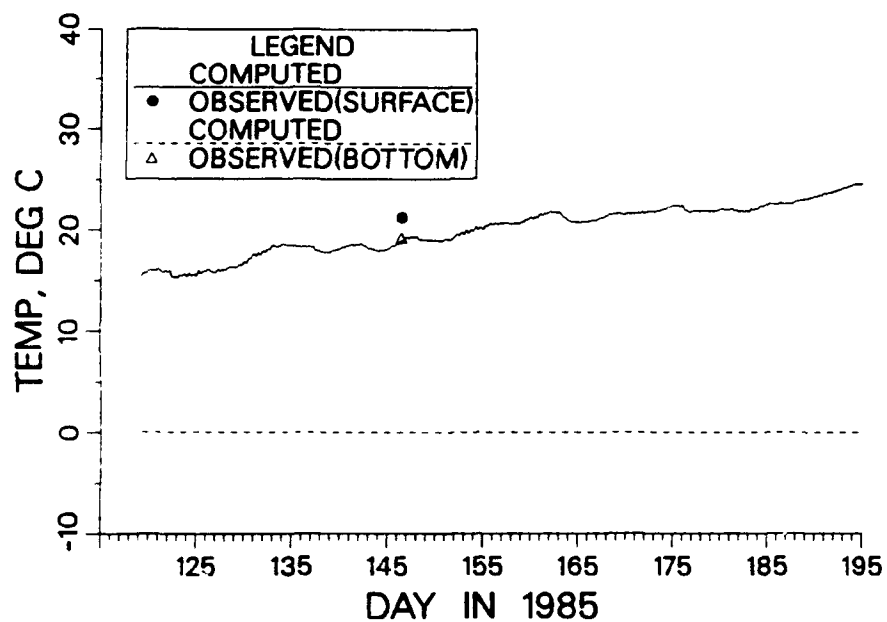


Figure B55. (Sheet 2 of 3)

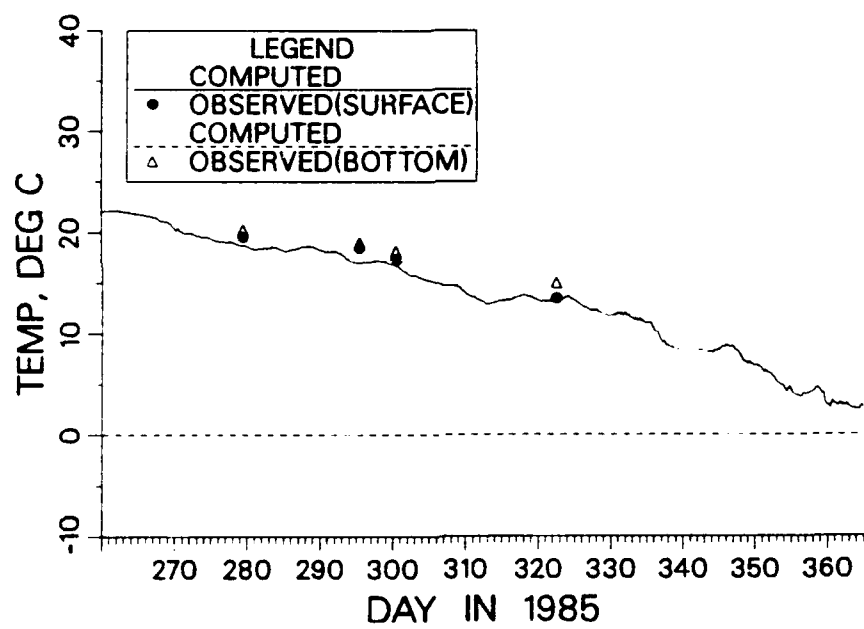


Figure B55. (Sheet 3 of 3)

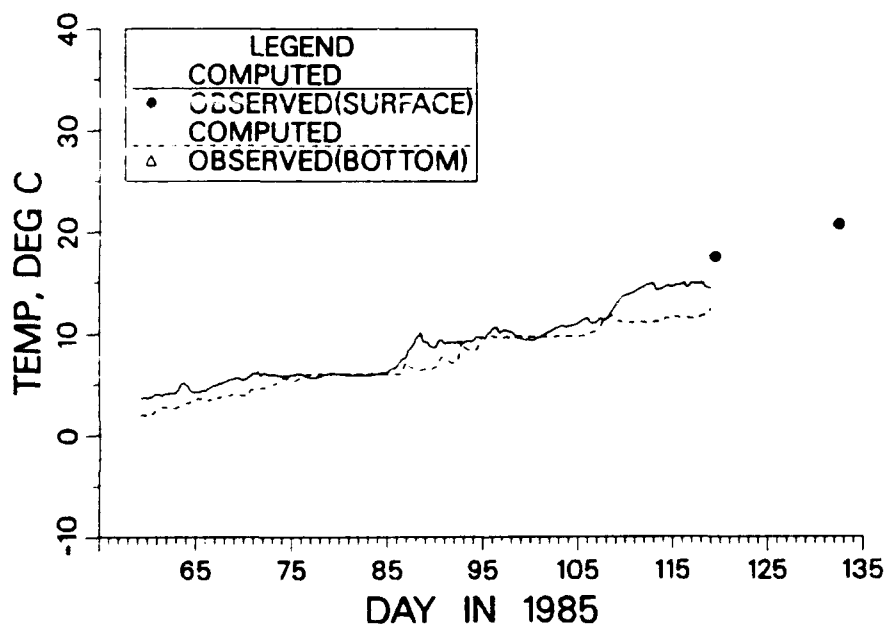
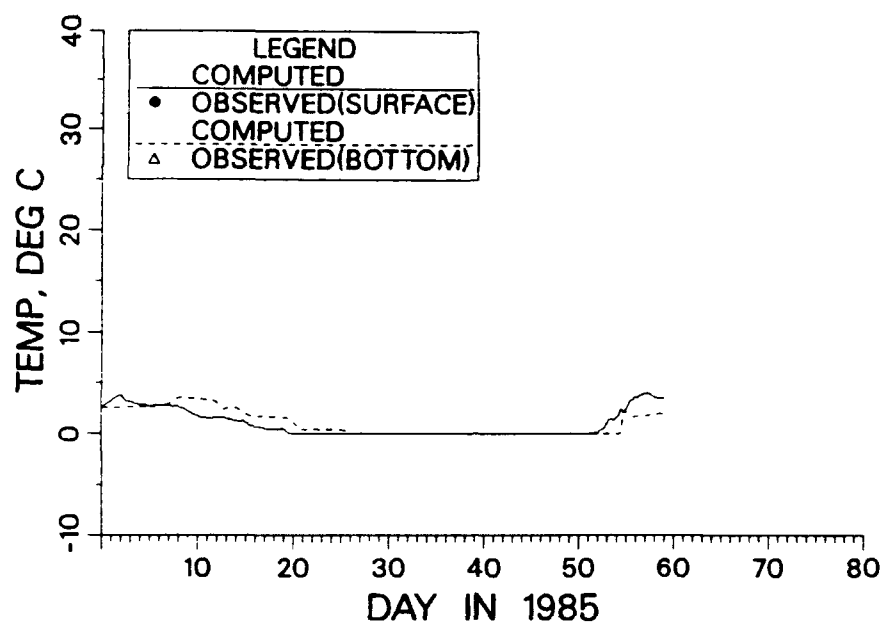


Figure B56. Comparison of computed and recorded temperature at sta LE 2.2 during 1985 (Sheet 1 of 3)

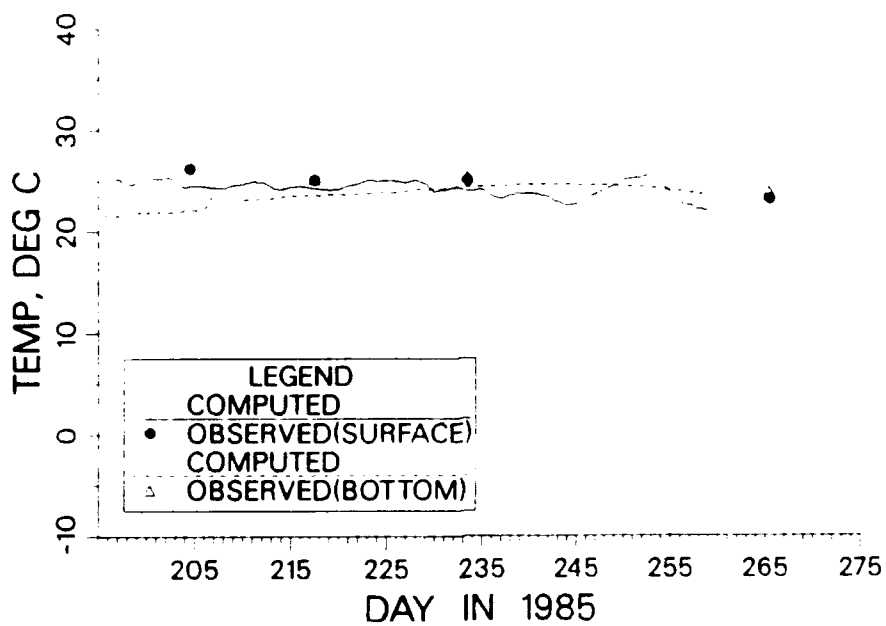
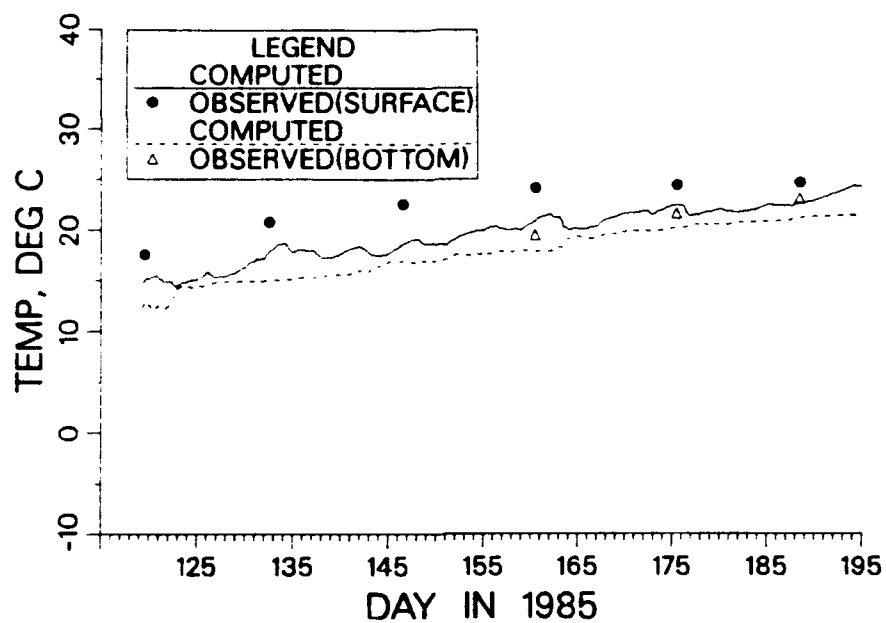


Figure B56. (Sheet 2 of 3)

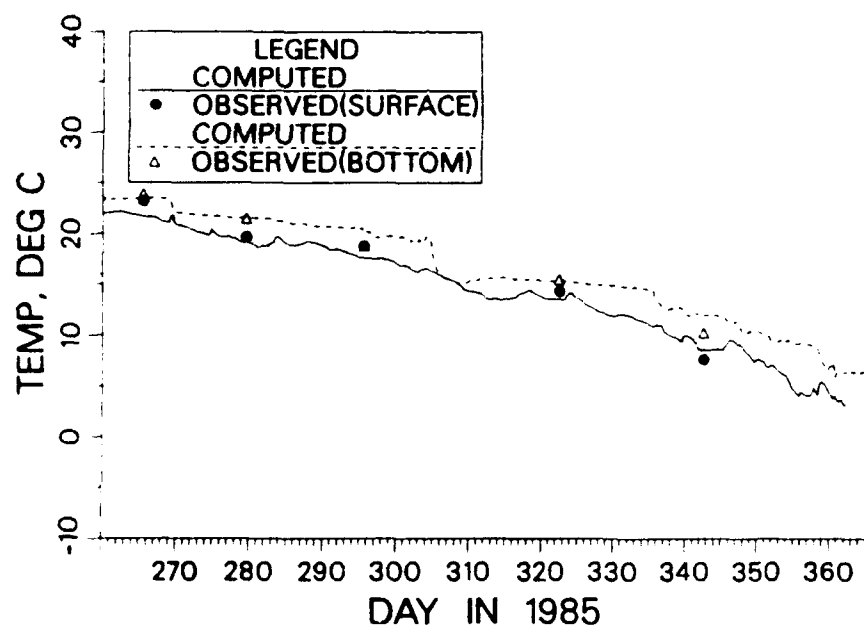


Figure B56. (Sheet 3 of 3)

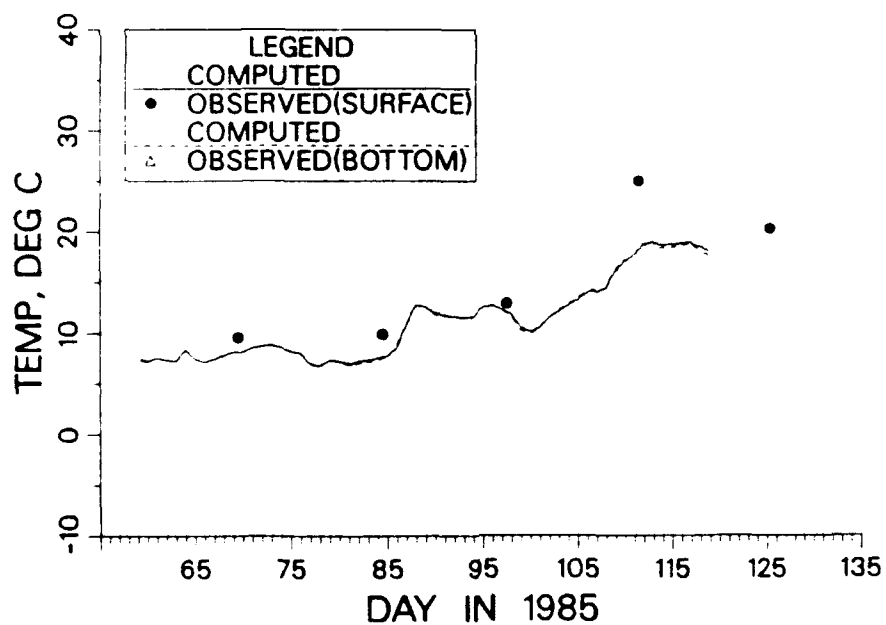
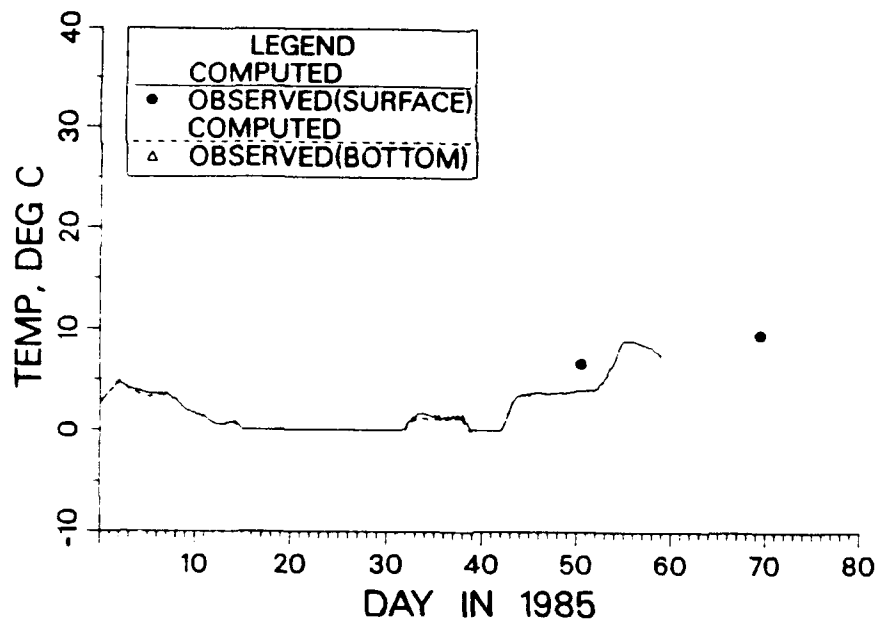


Figure B57. Comparison of computed and recorded temperature at sta TF 1.4 during 1985 (Sheet 1 of 3)

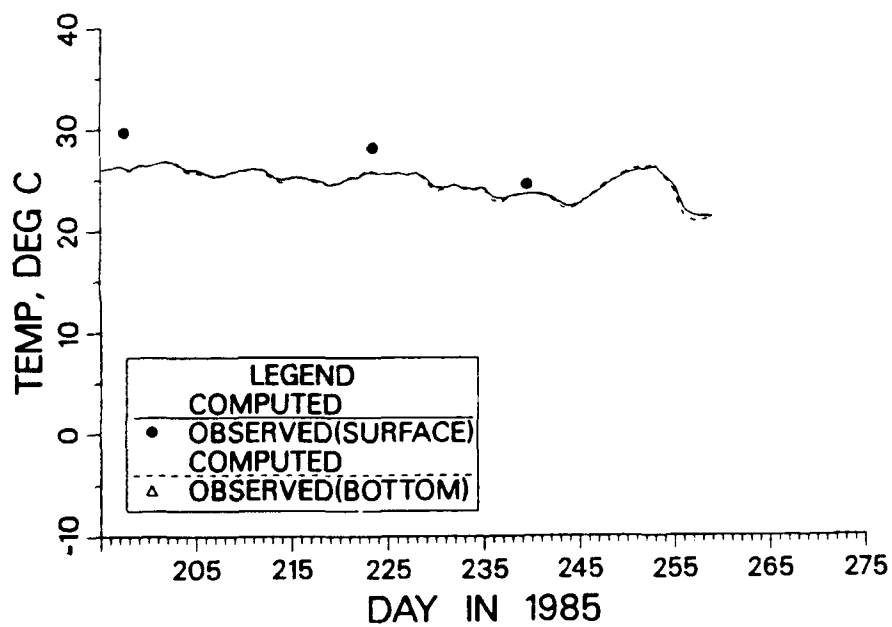
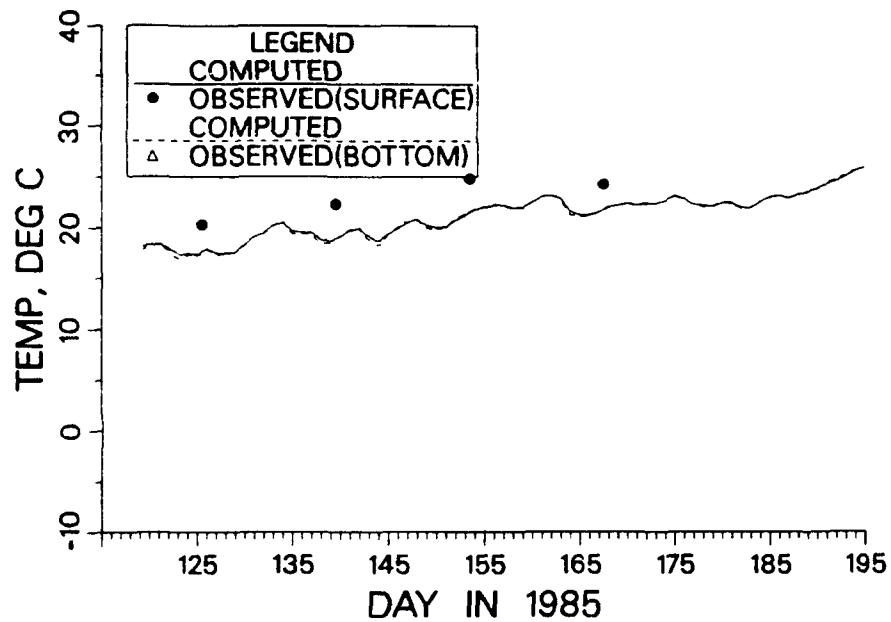


Figure B57. (Sheet 2 of 3)

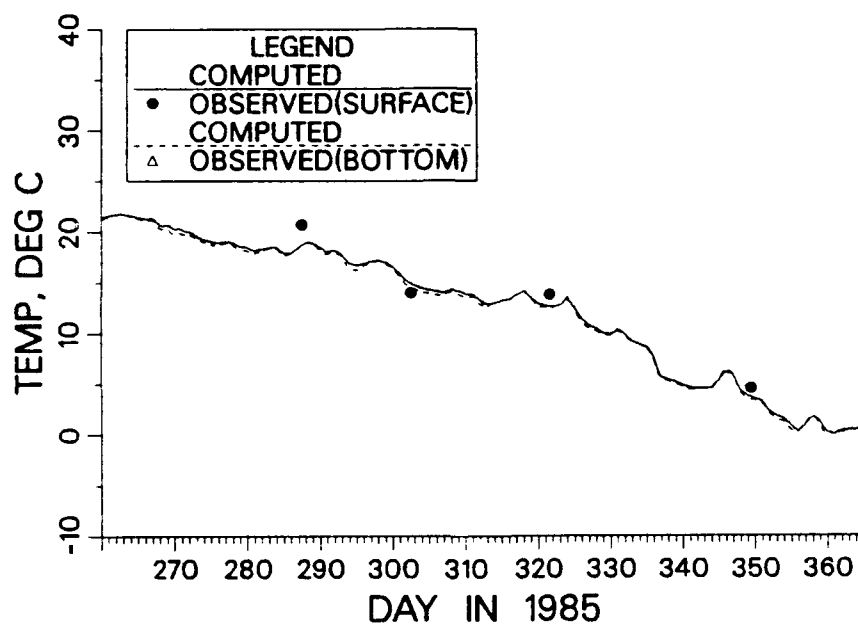


Figure B57. (Sheet 3 of 3)

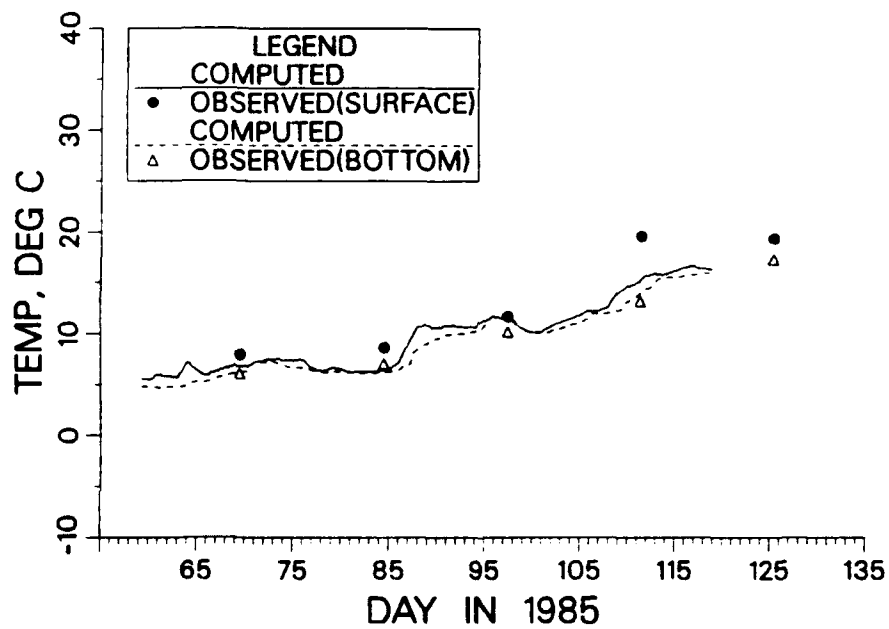
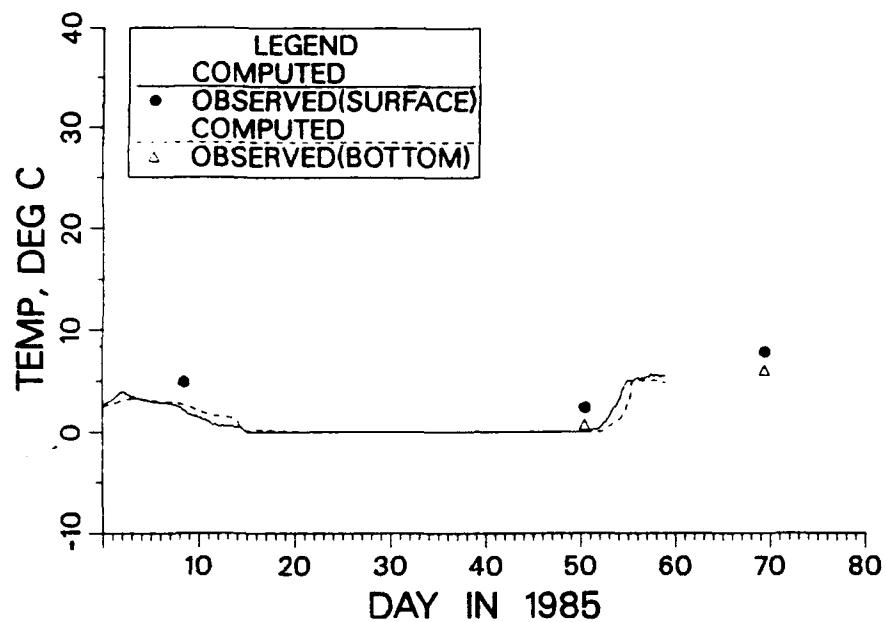


Figure B58. Comparison of computed and recorded temperature at sta LE 1.1 during 1985 (Sheet 1 of 3)

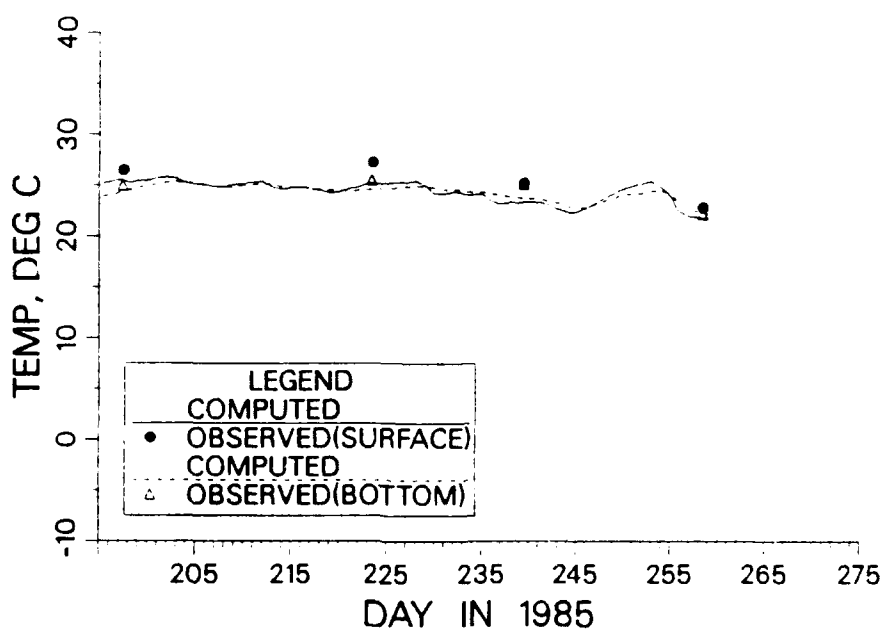
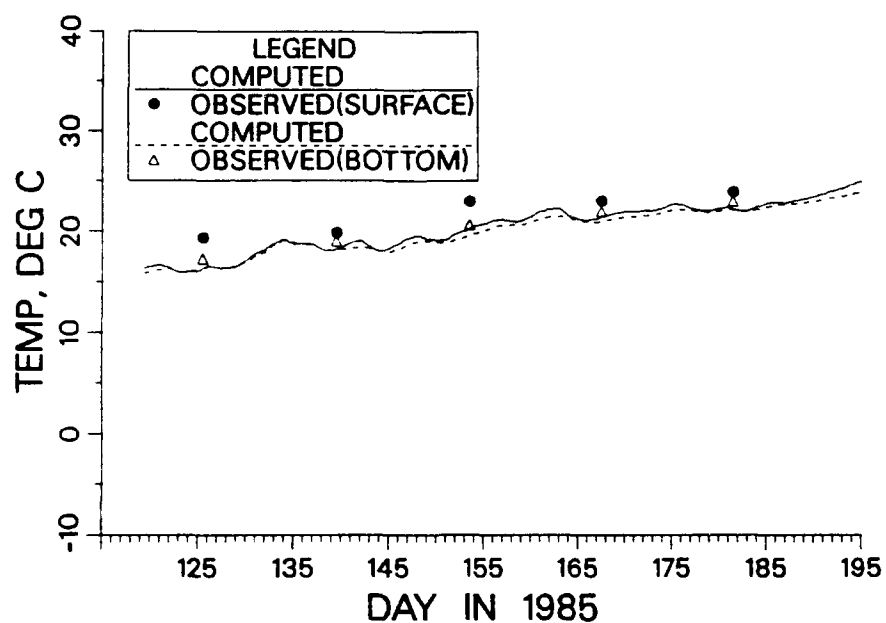


Figure B58. (Sheet 2 of 3)

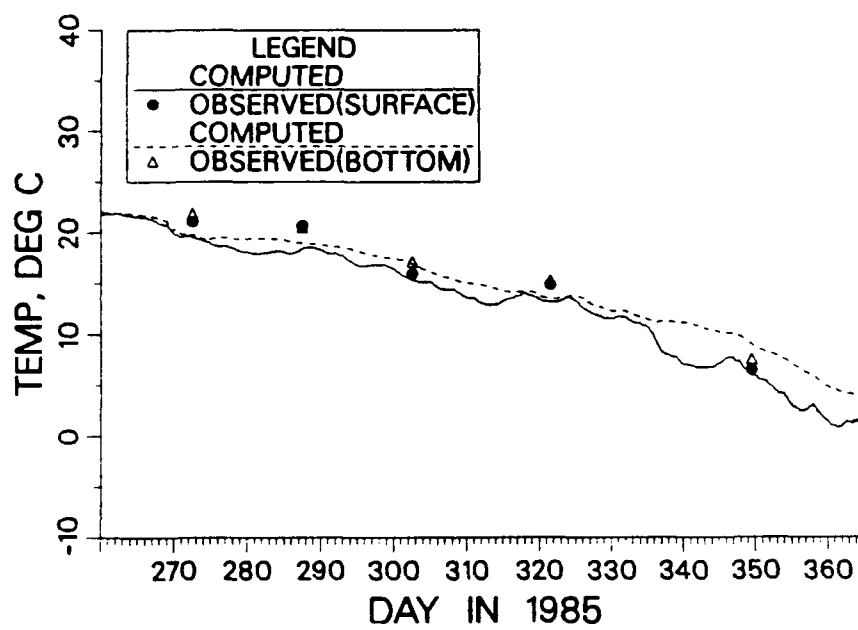
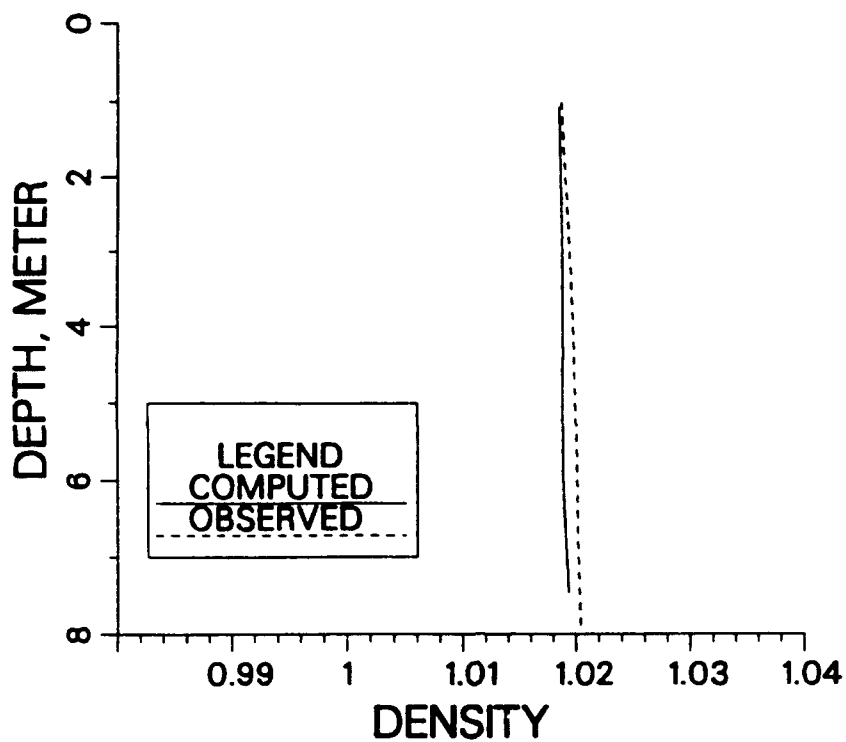
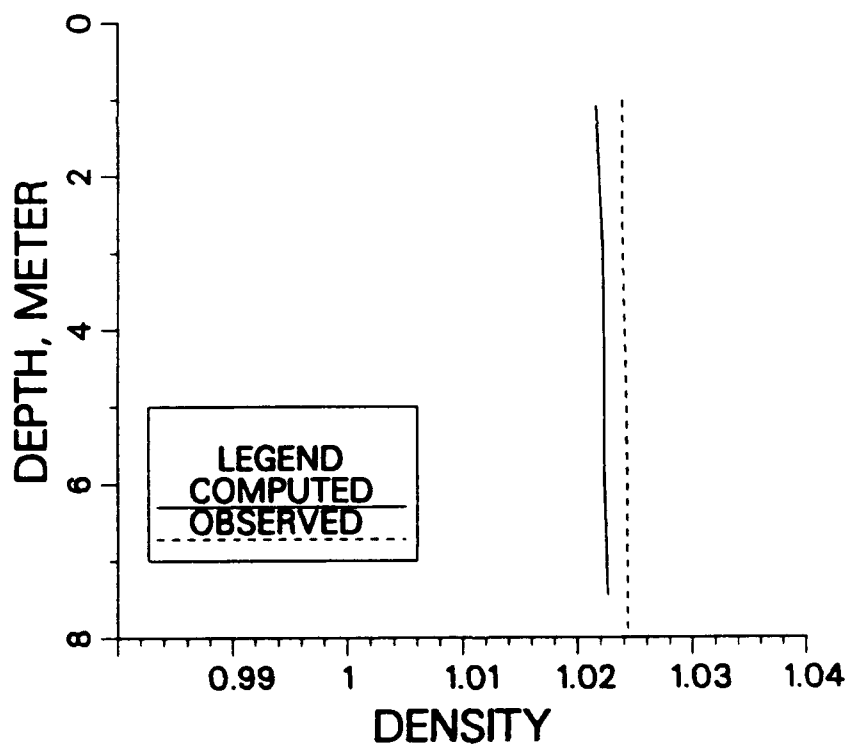


Figure B58. (Sheet 3 of 3)

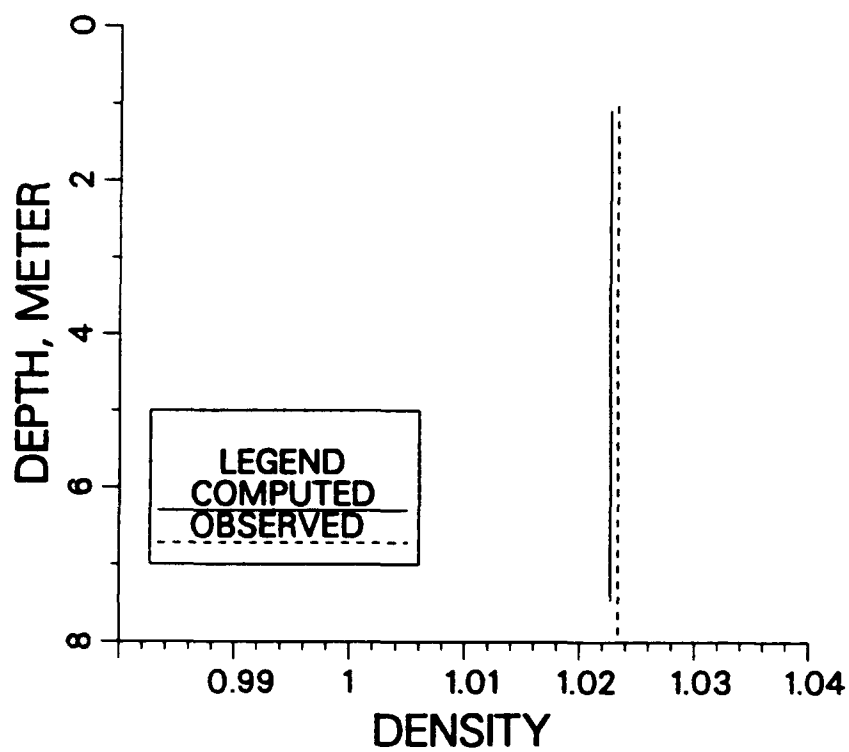


a. Day 63



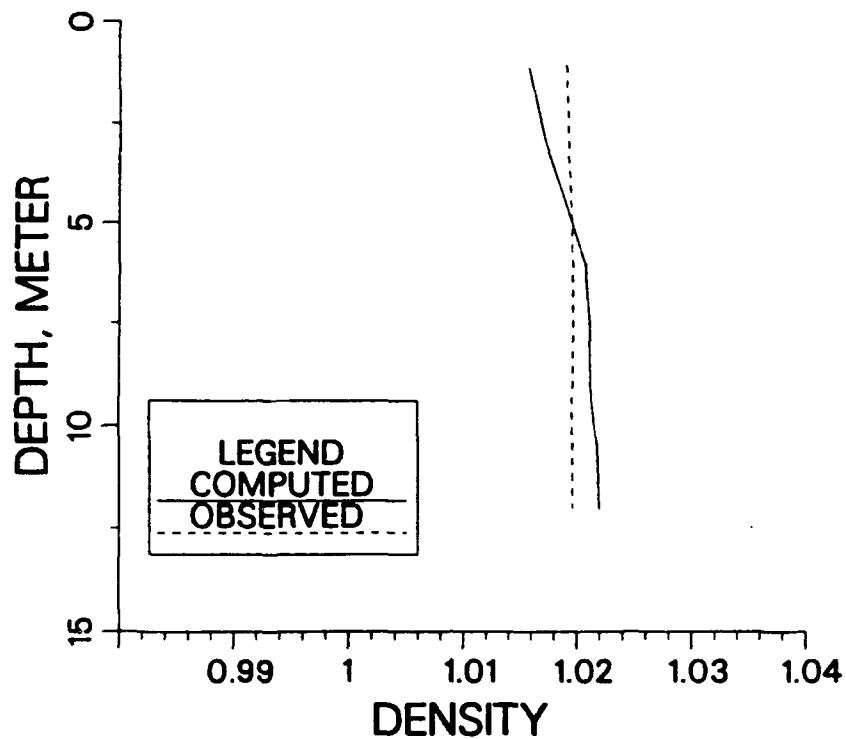
b. Day 205

Figure B59. Comparison of vertical density profile at sta CB 7.2E during 1985 (Continued)

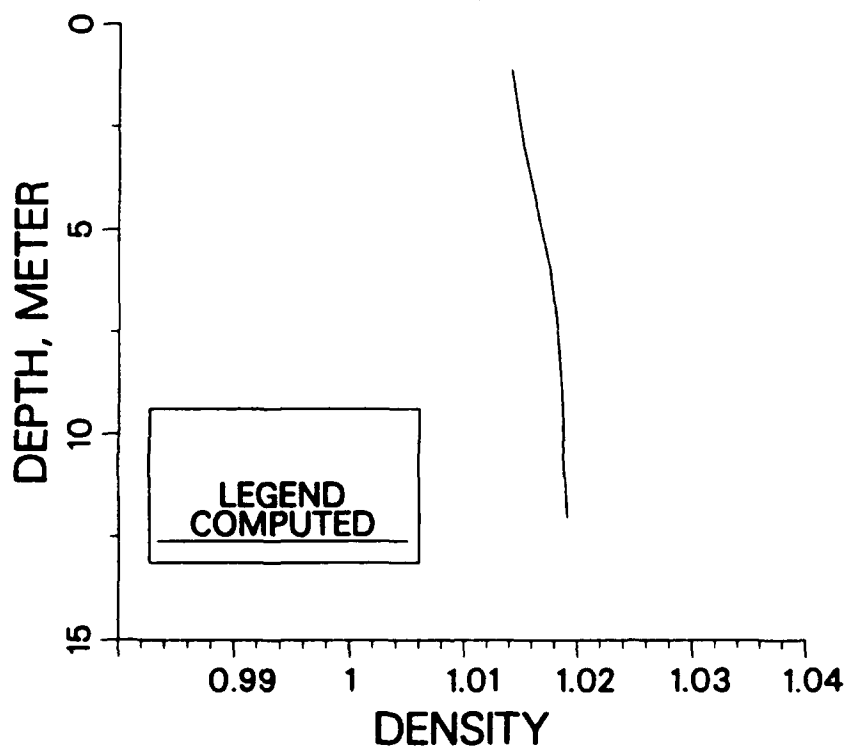


c. Day 318

Figure B59. (Concluded)

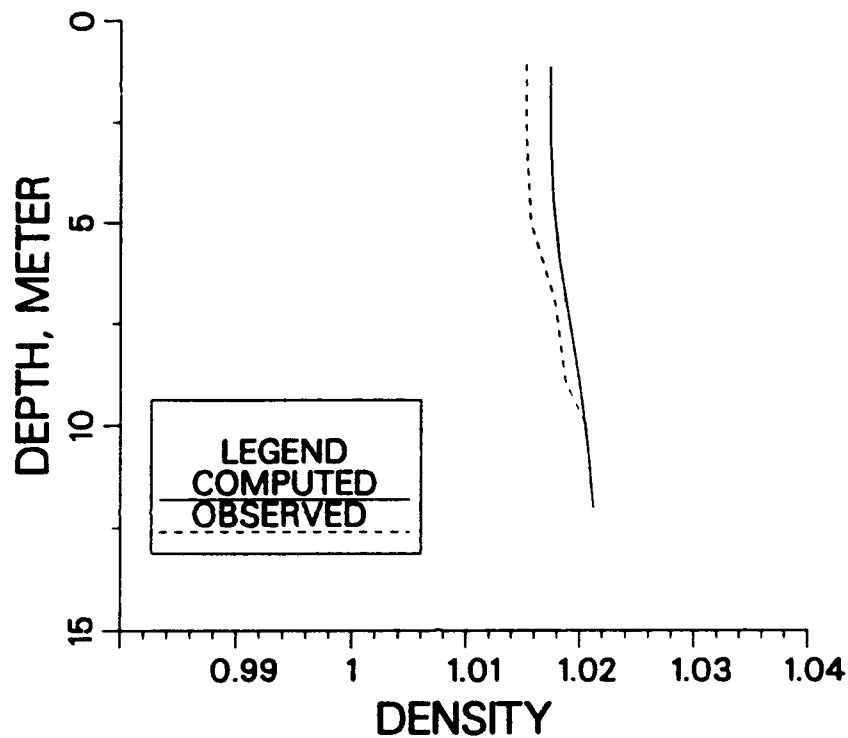


a. Day 18

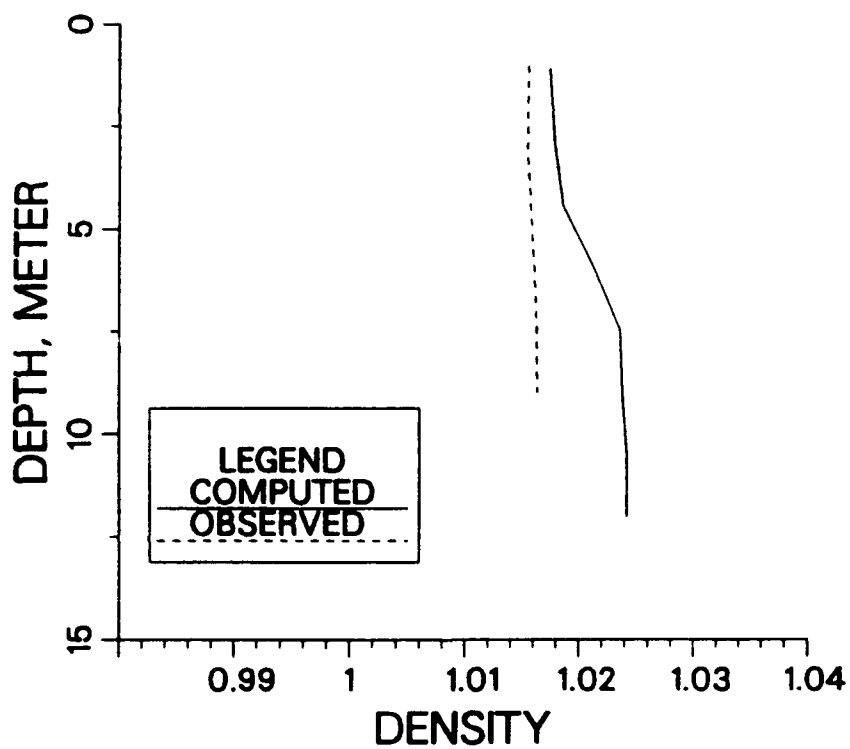


b. Day 42

Figure B60. Comparison of vertical density profile at sta CB 6.3 during 1985 (Sheet 1 of 10)

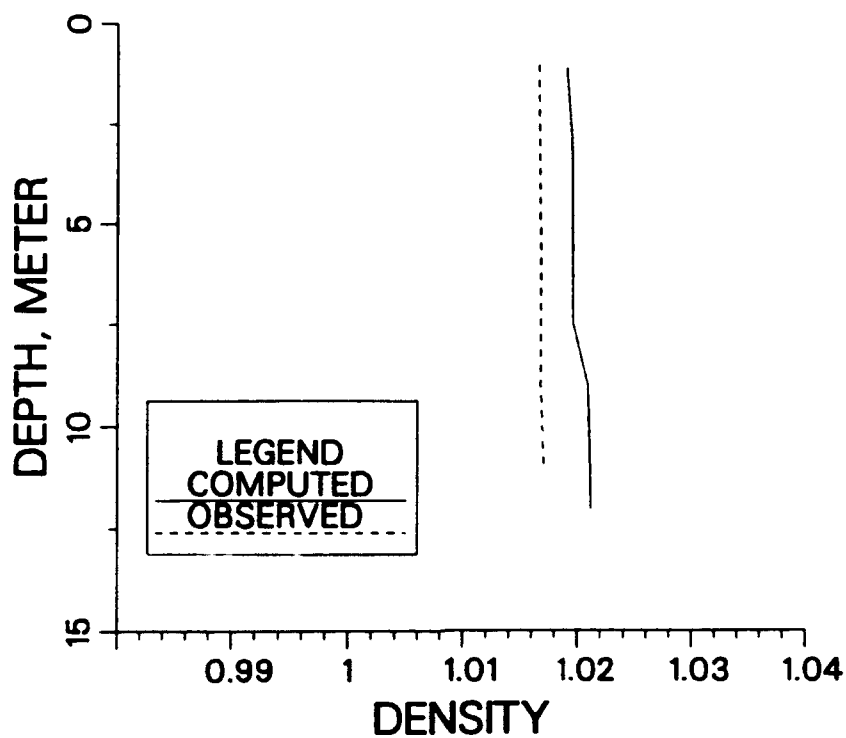


c. Day 63

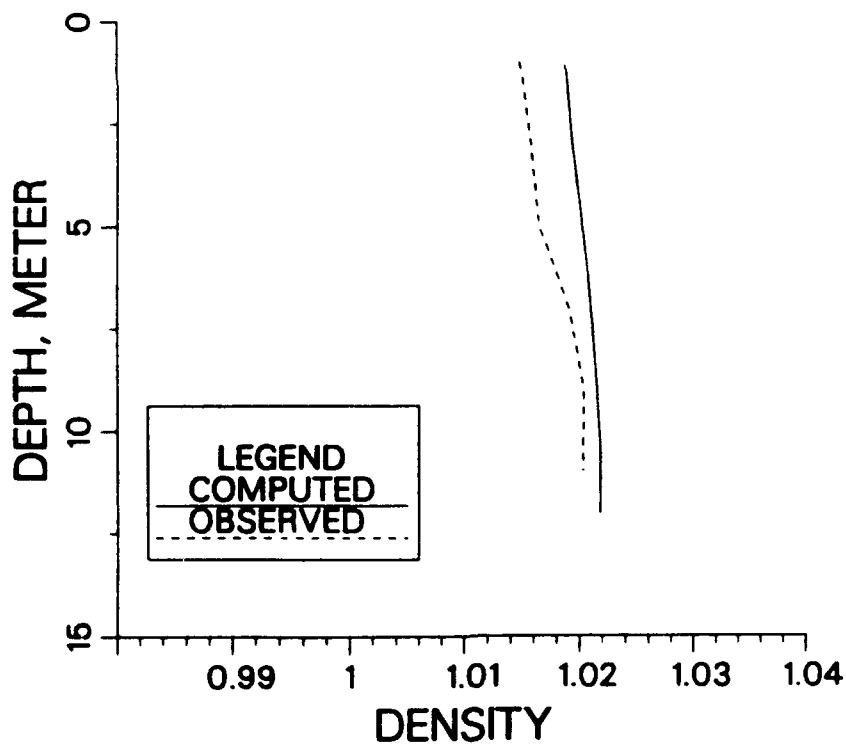


d. Day 78

Figure B60. (Sheet 2 of 10)

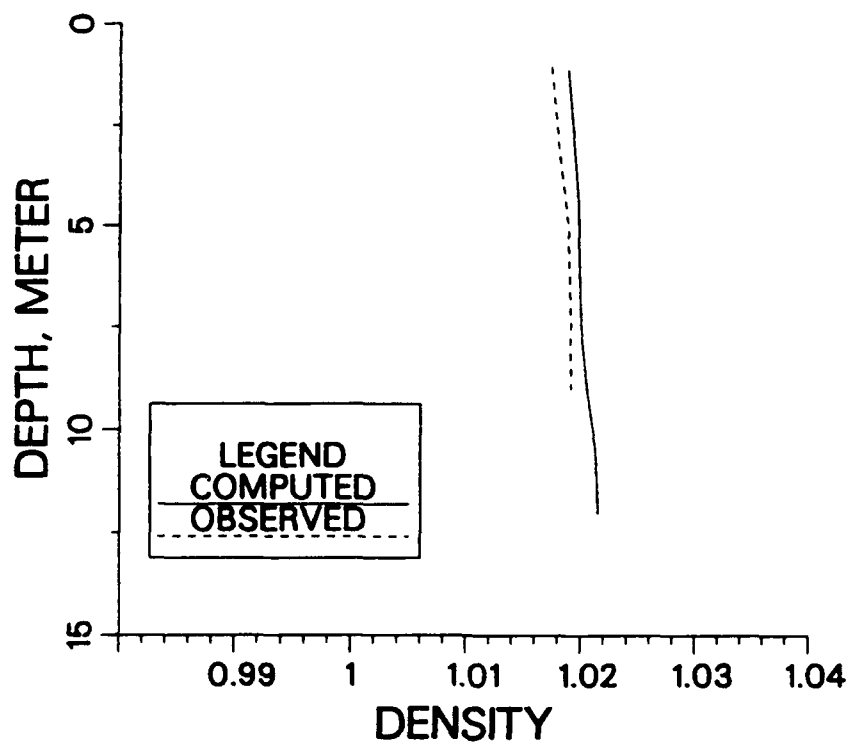


e. Day 100

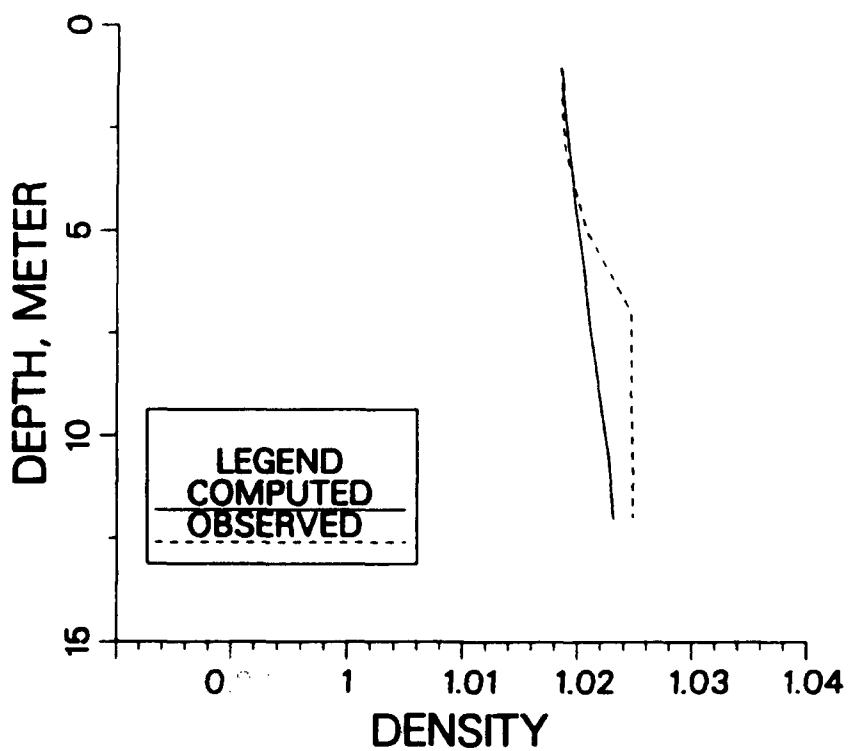


f. Day 112

Figure B60. (Sheet 3 of 10)

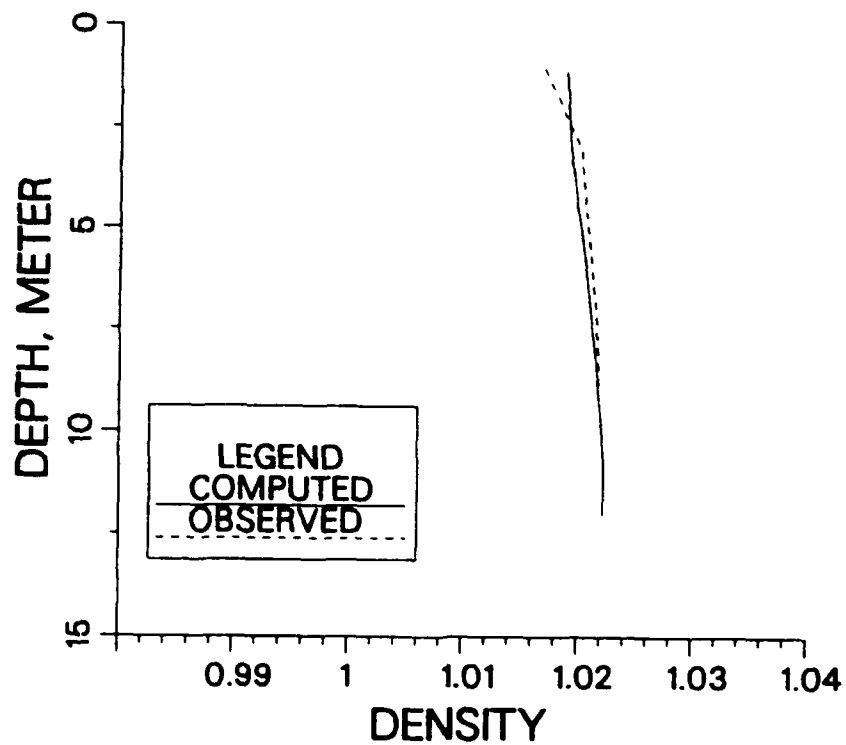


g. Day 126

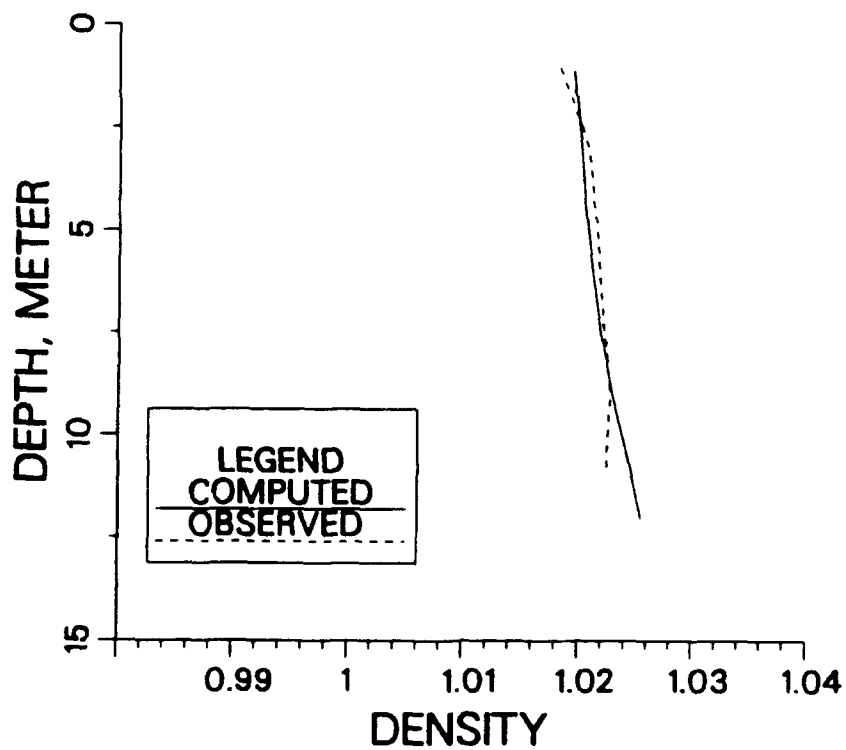


h. Day 140

Figure B60. (Sheet 4 of 10)

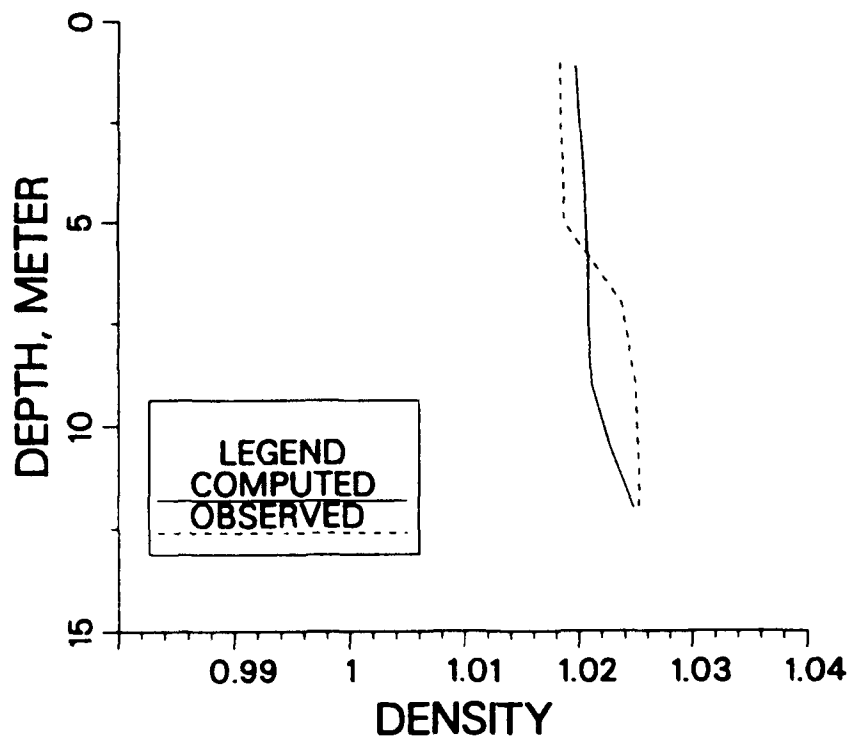


i. Day 155

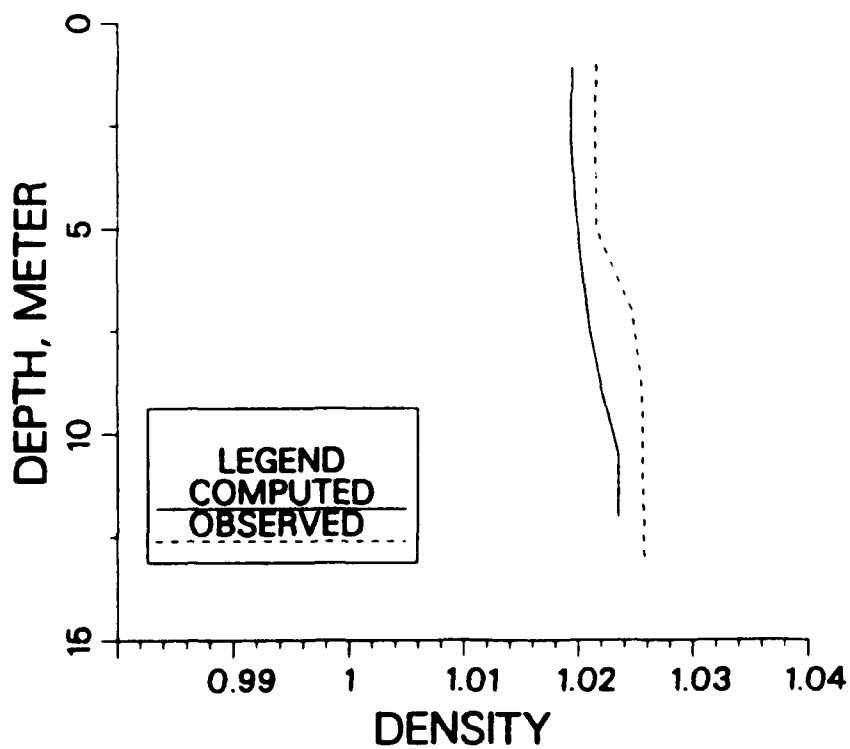


j. Day 170

Figure B60. (Sheet 5 of 10)

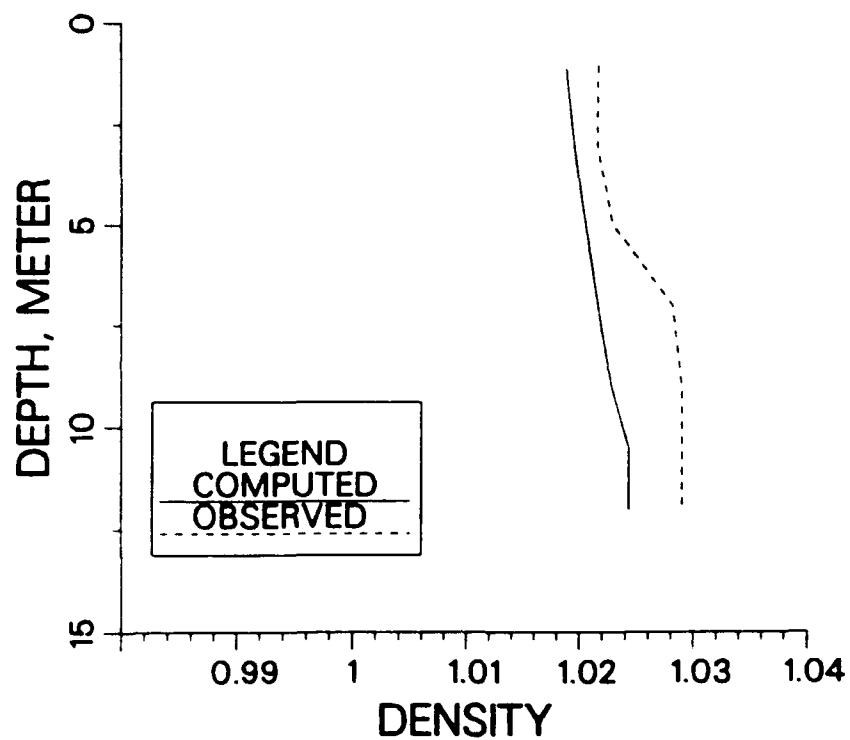


k. Day 190

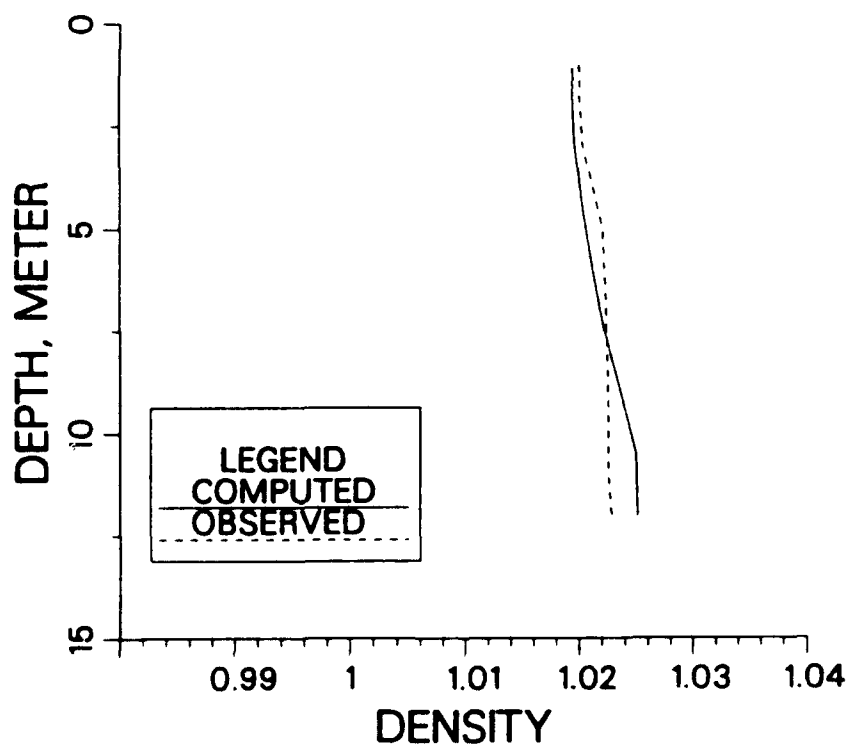


l. Day 205

Figure B60. (Sheet 6 of 10)



m. Day 219



n. Day 232

Figure B60. (Sheet 7 of 10)

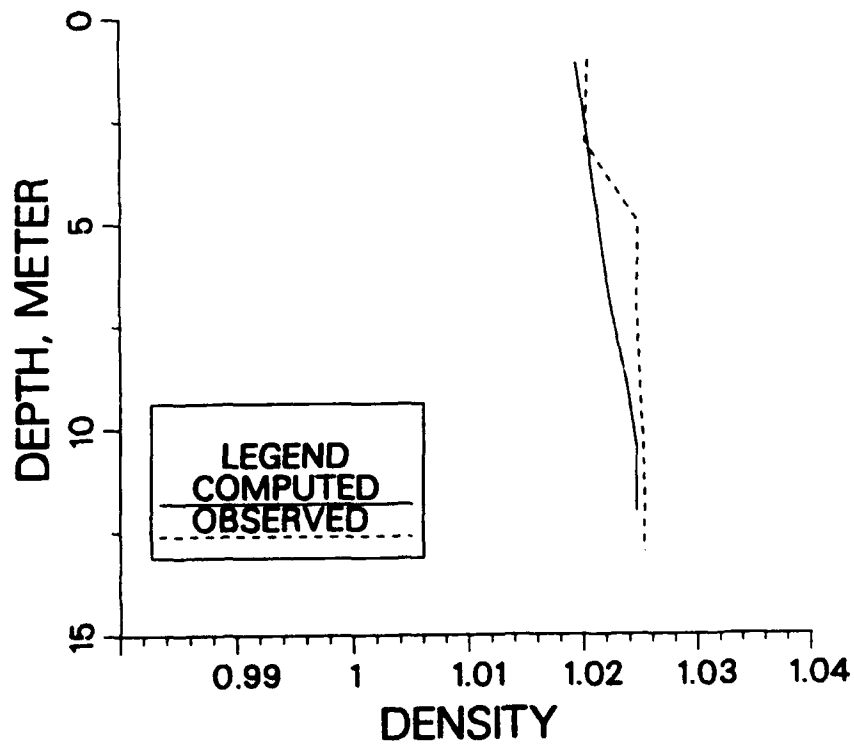
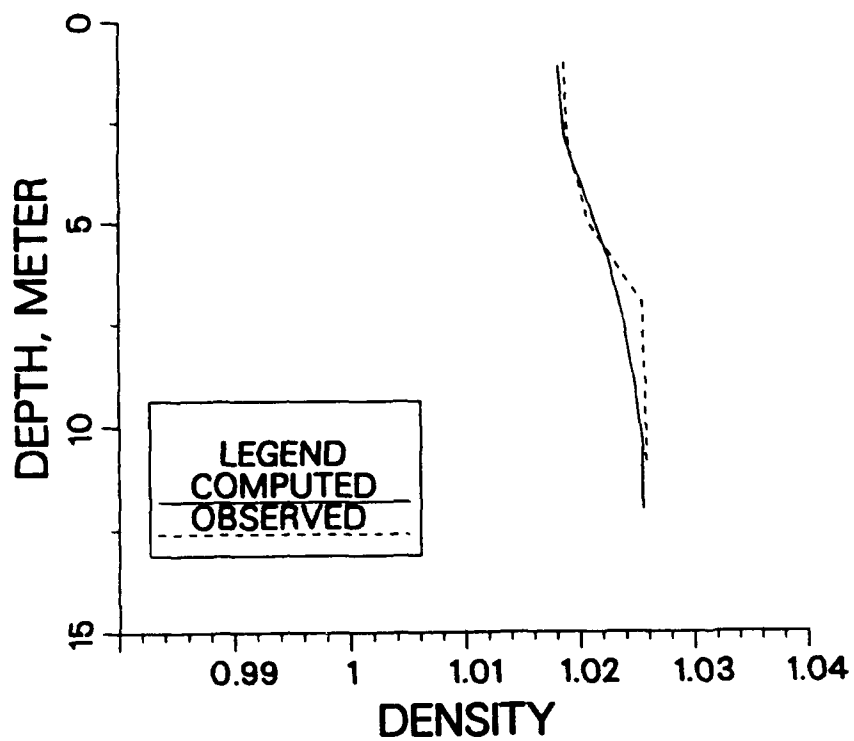
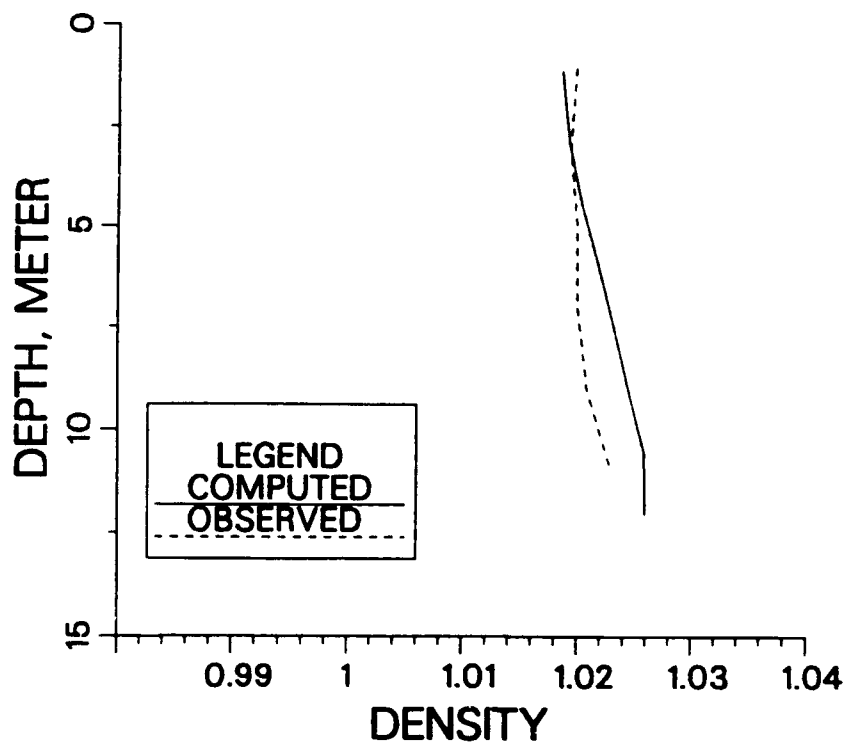
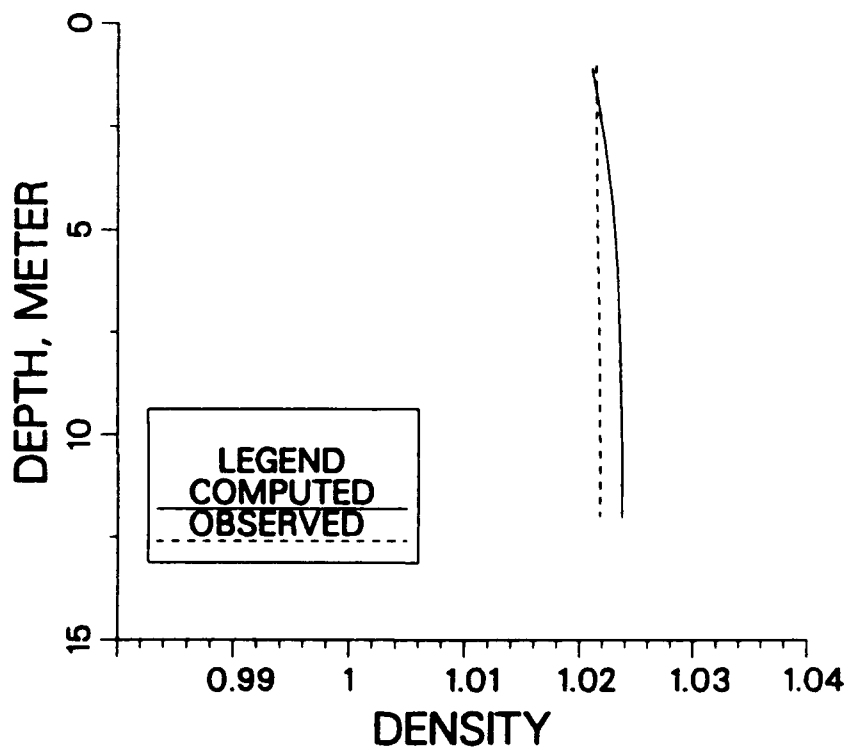


Figure B60. (Sheet 8 of 10)

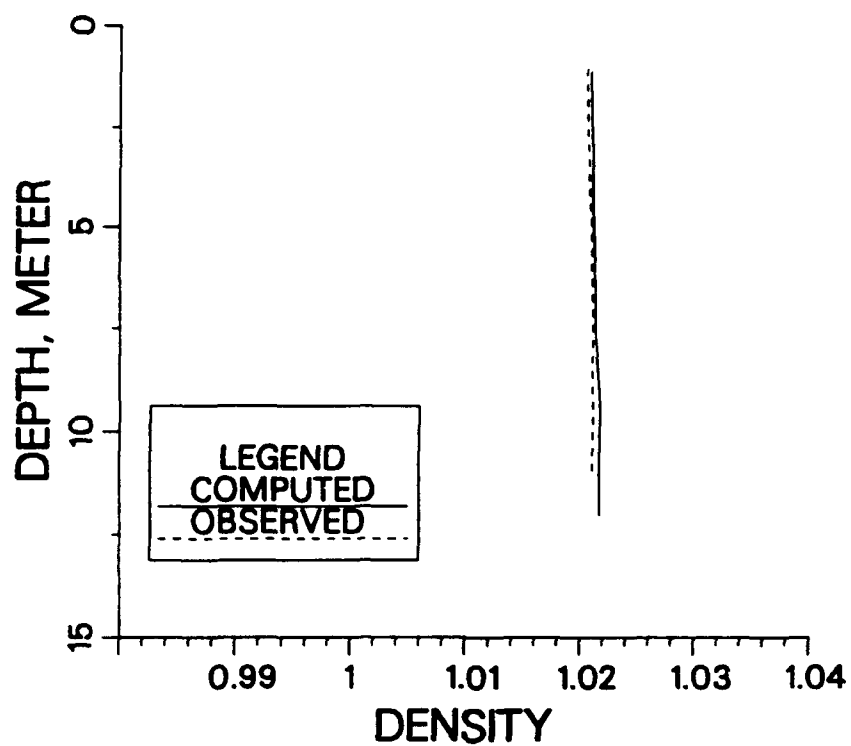


q. Day 281

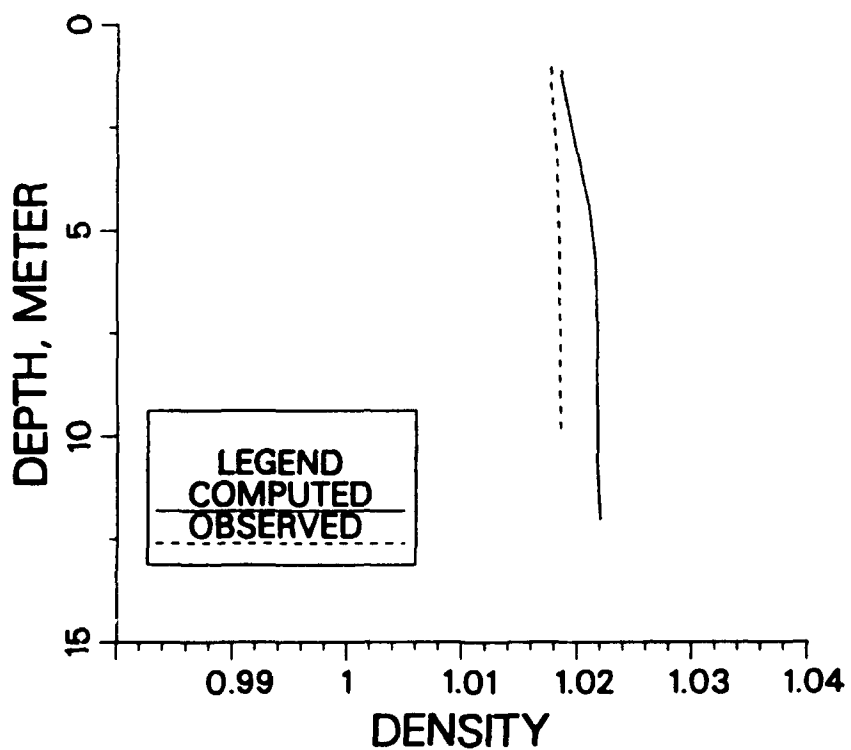


r. Day 297

Figure B60. (Sheet 9 of 10)

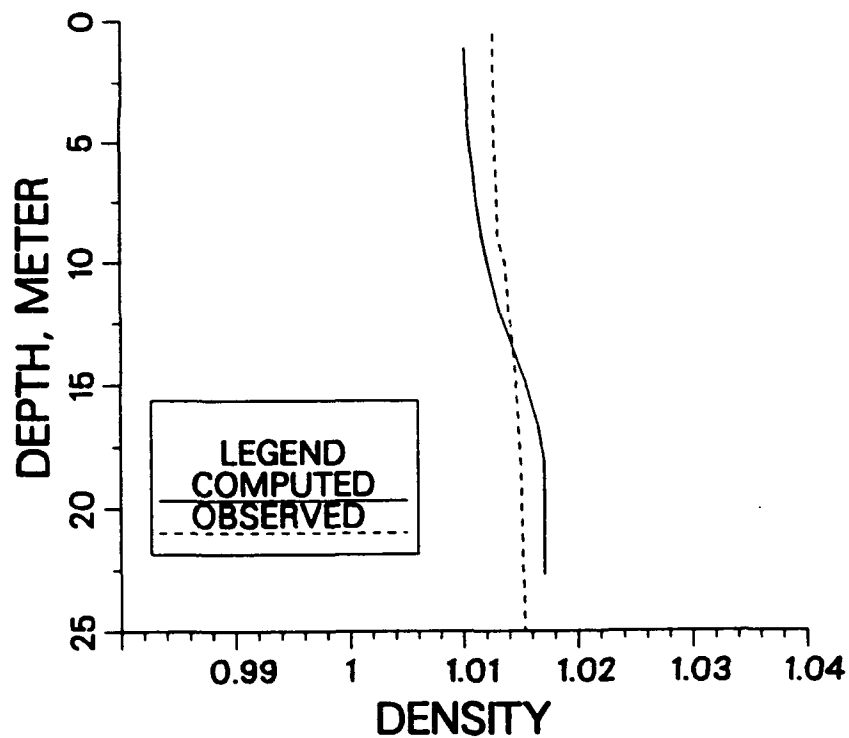


s. Day 318

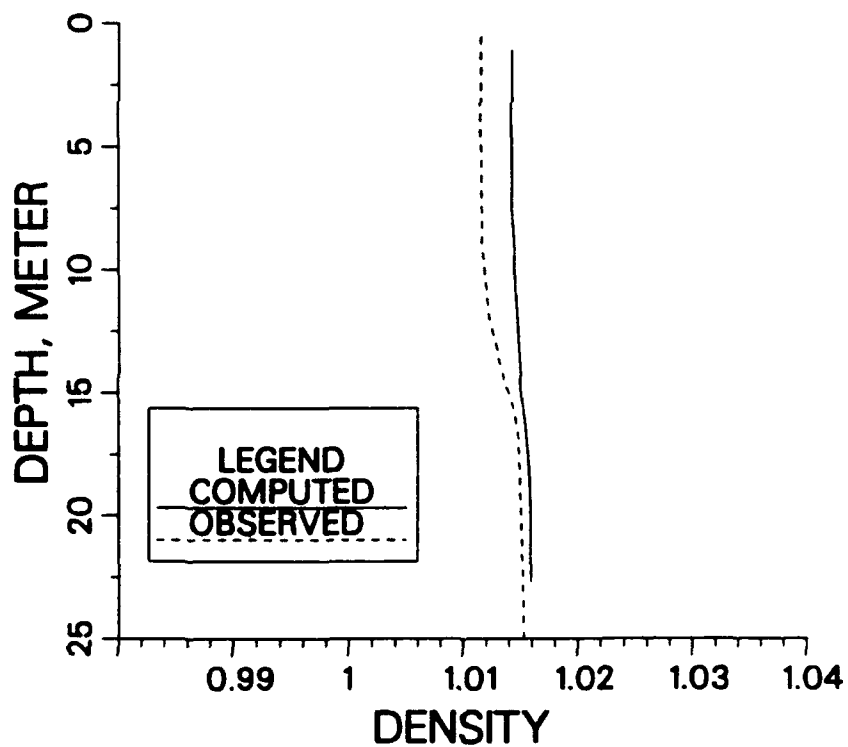


t. Day 344

Figure B60. (Sheet 10 of 10)

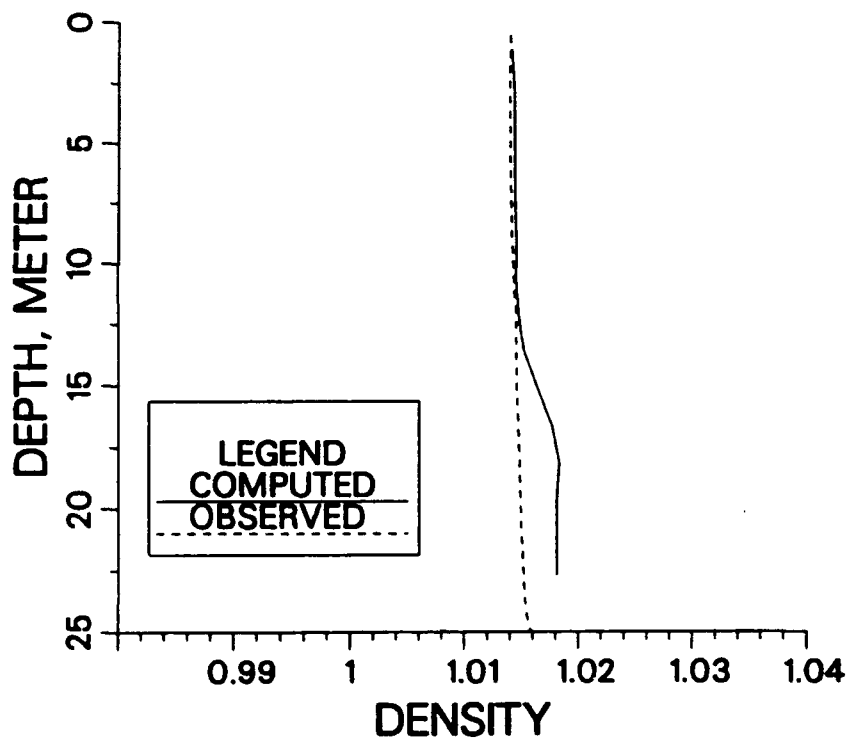


a. Day 14

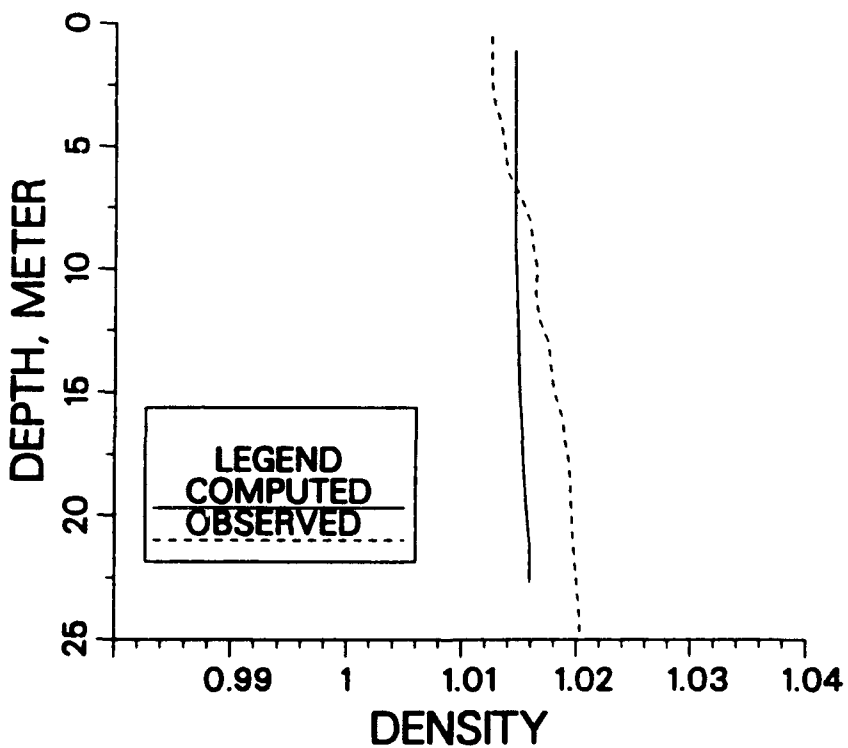


b. Day 63

Figure B61. Comparison of vertical density profile at sta CB 5.1 during 1985 (Sheet 1 of 7)

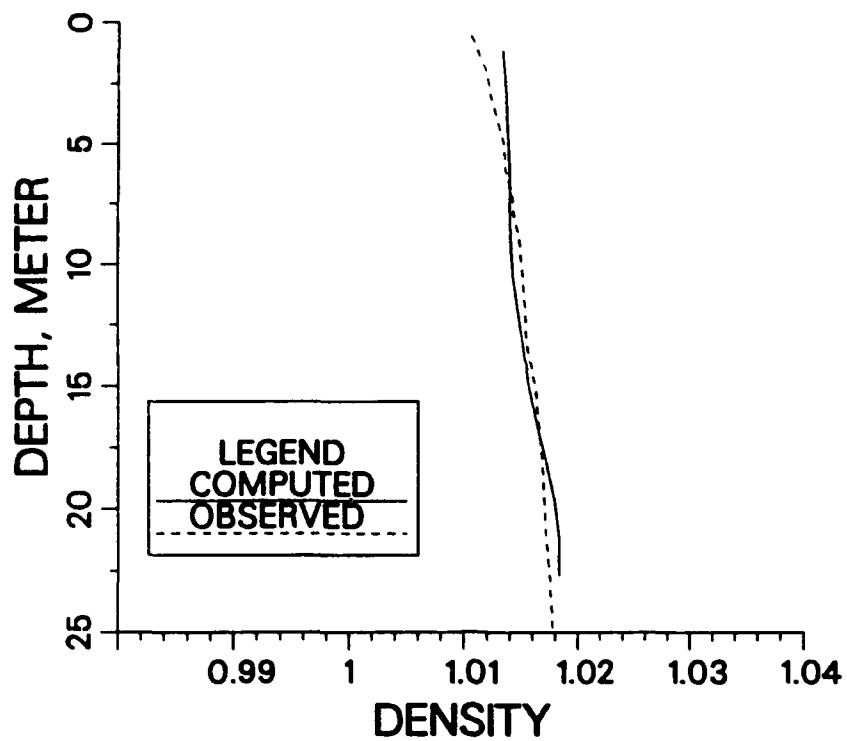


c. Day 78

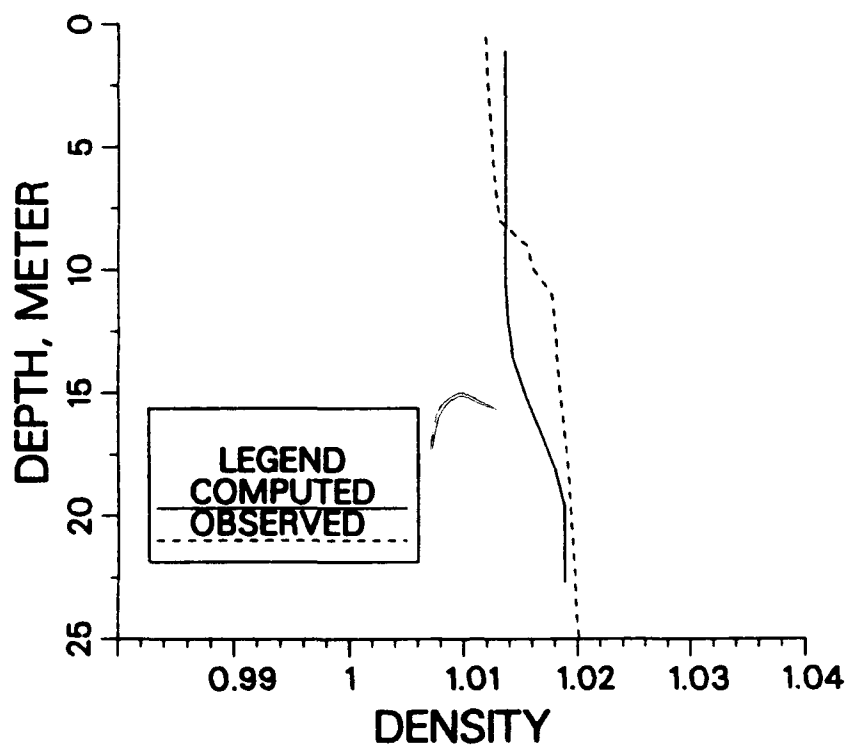


d. Day 98

Figure B61. (Sheet 2 of 7)



e. Day 112



f. Day 126

Figure B61. (Sheet 3 of 7)

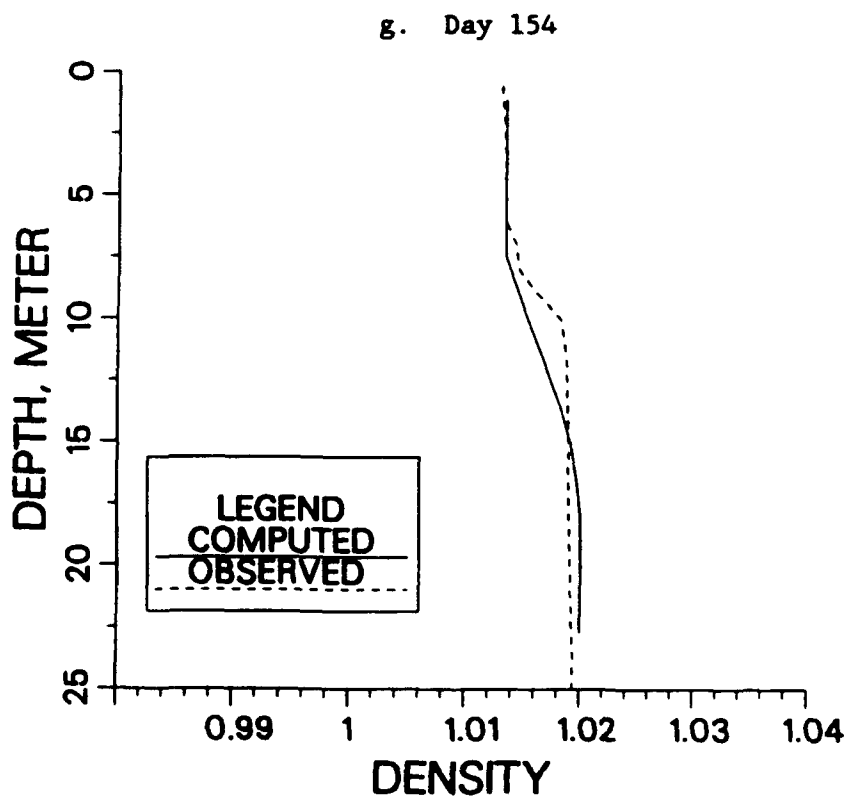
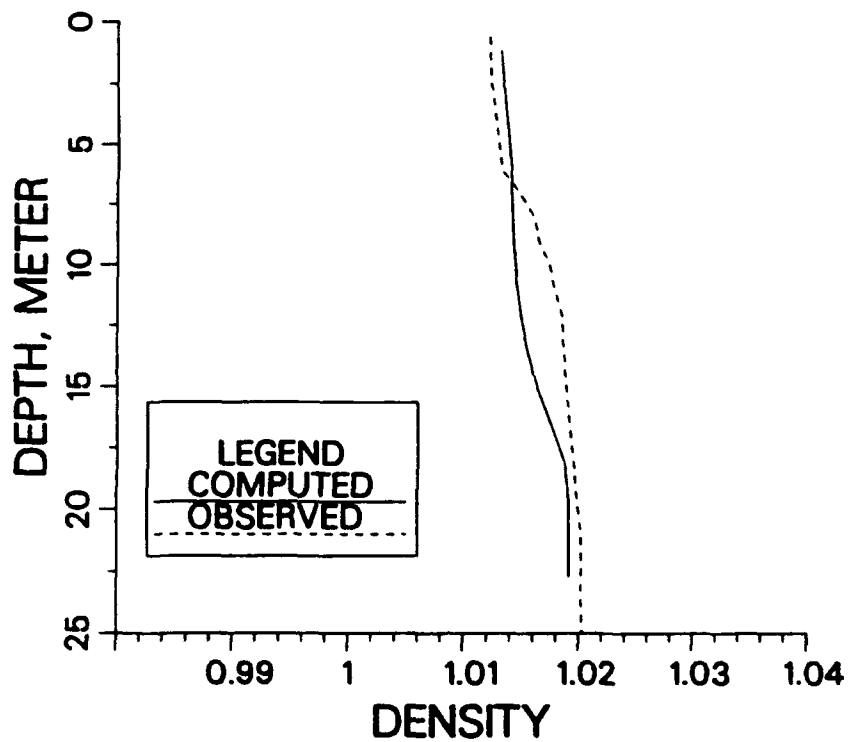
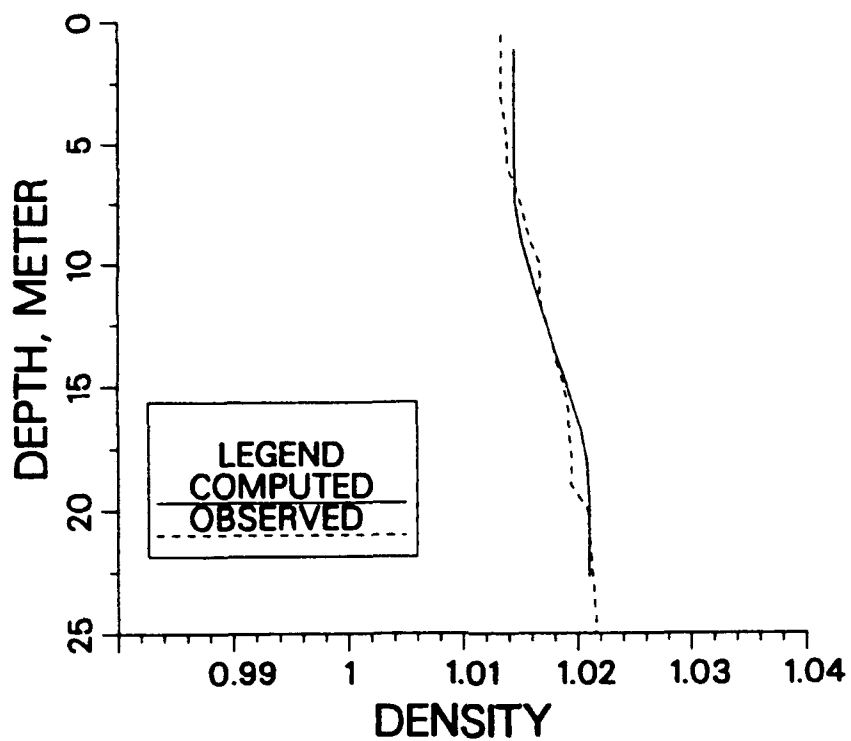
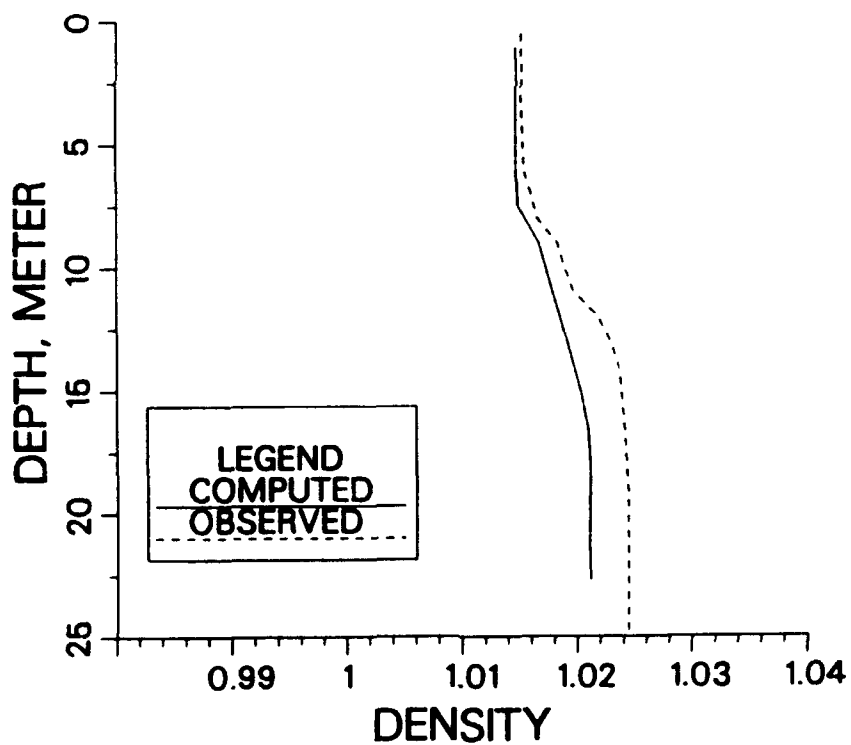


Figure B61. (Sheet 4 of 7)

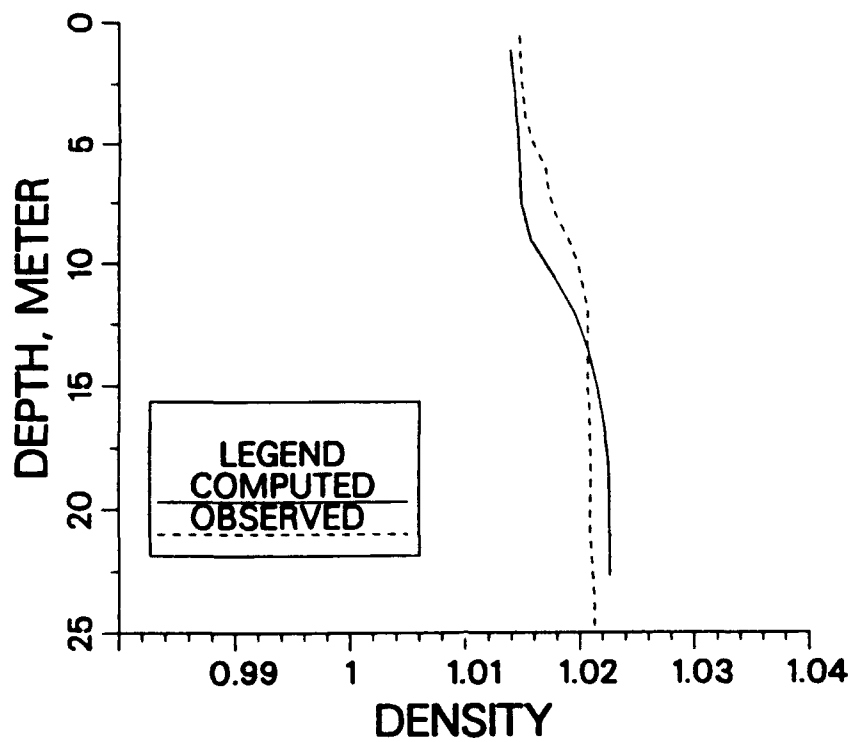


i. Day 189

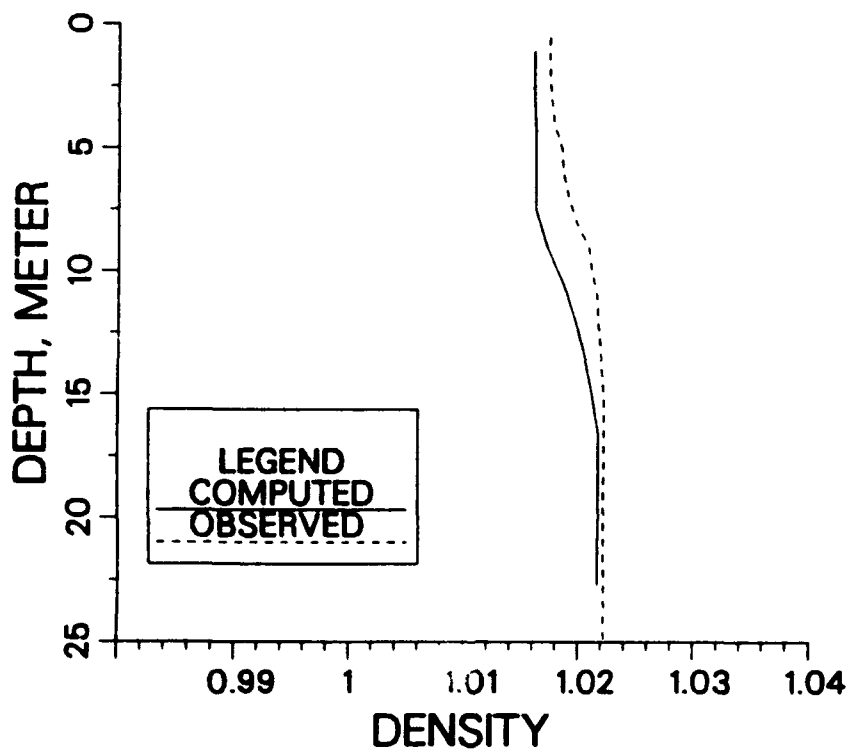


j. Day 231

Figure B61. (Sheet 5 of 7)

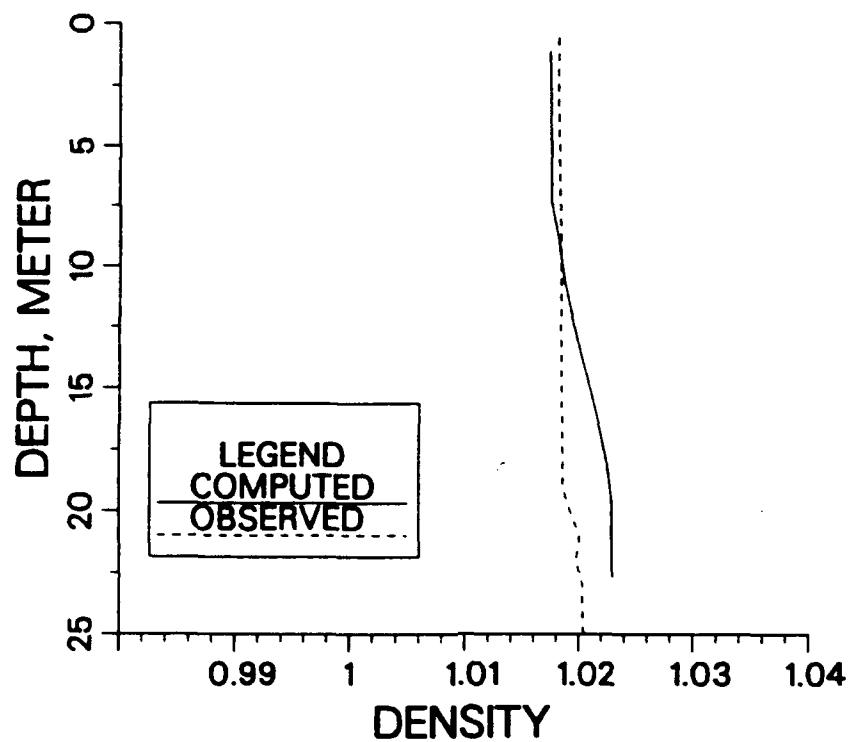


k. Day 252

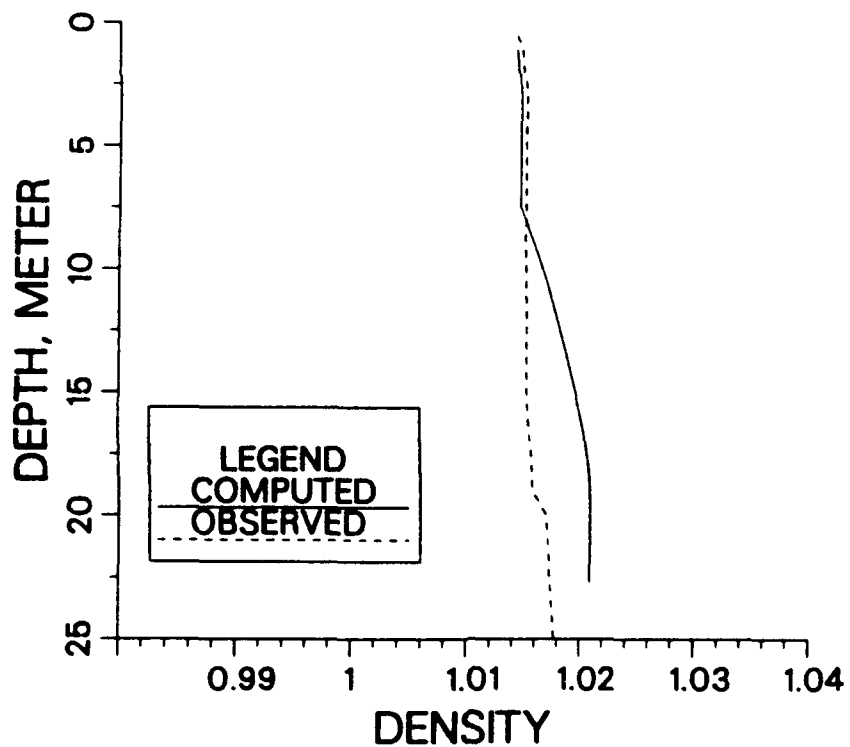


l. Day 280

Figure B61. (Sheet 6 of 7)

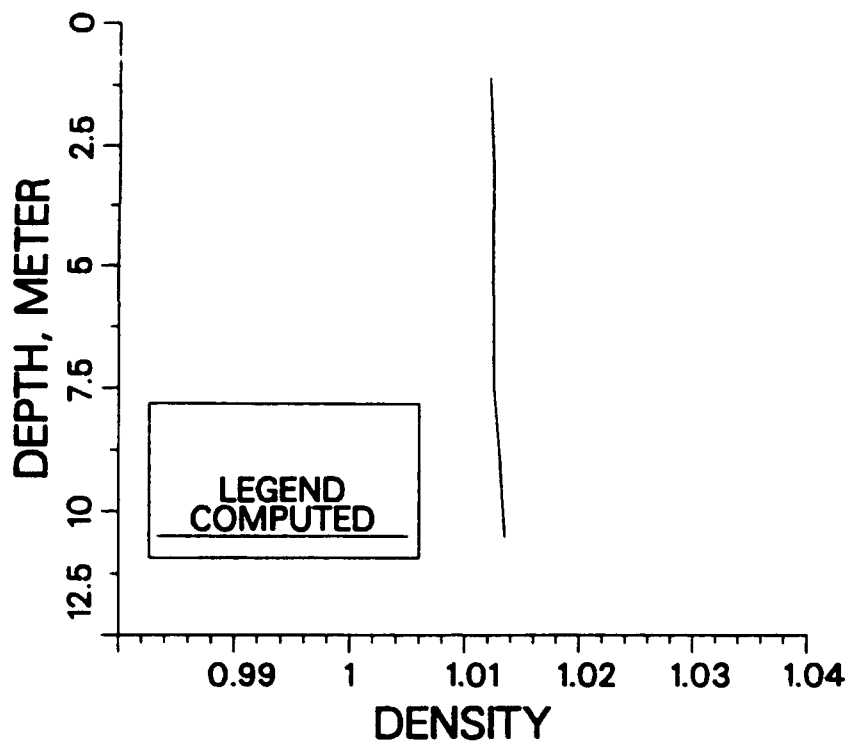


m. Day 294

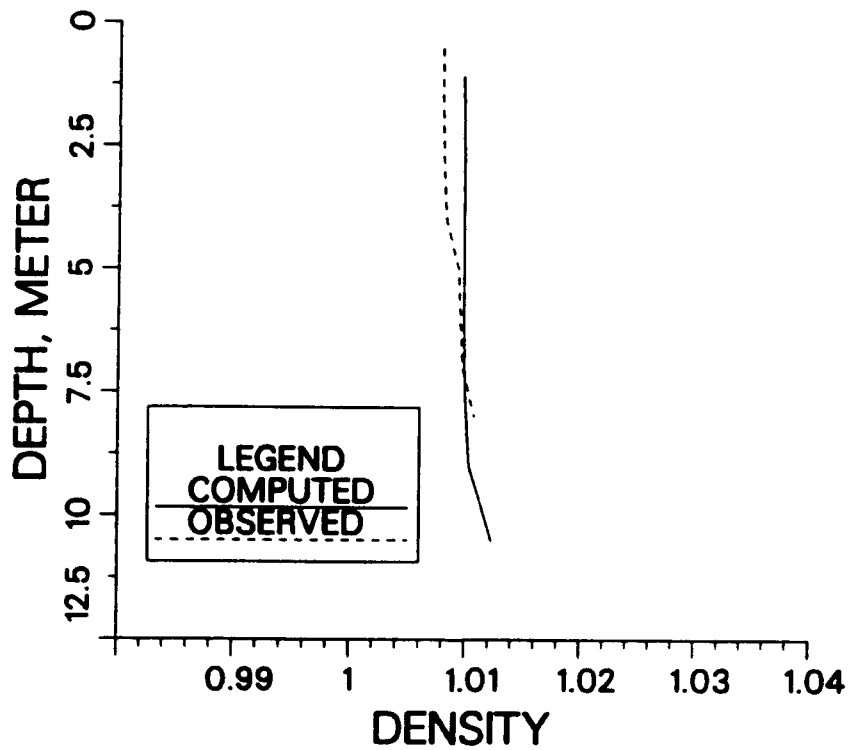


n. Day 343

Figure B61. (Sheet 7 of 7)

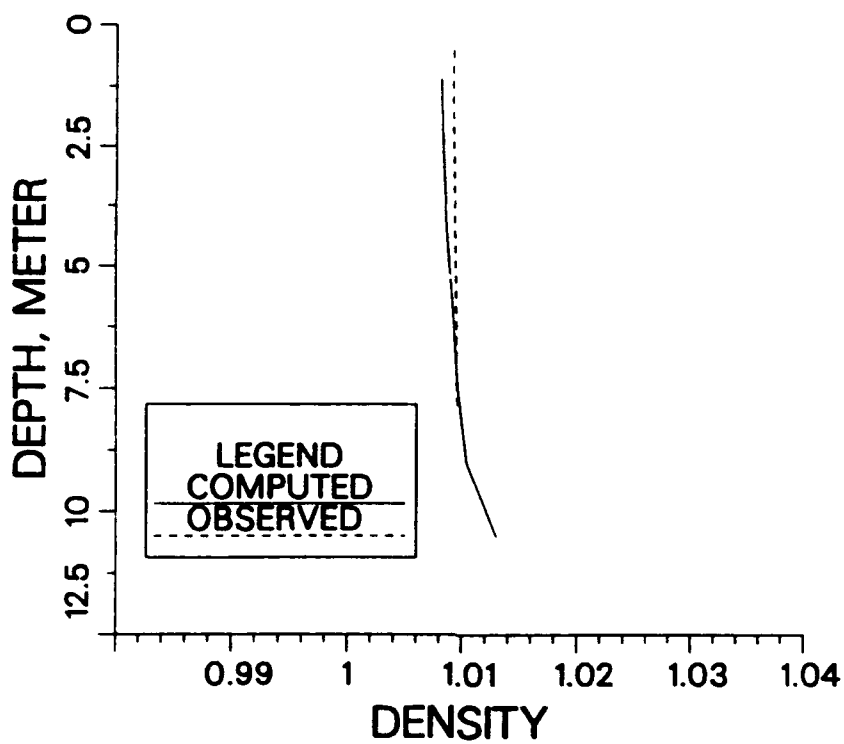


a. Day 44

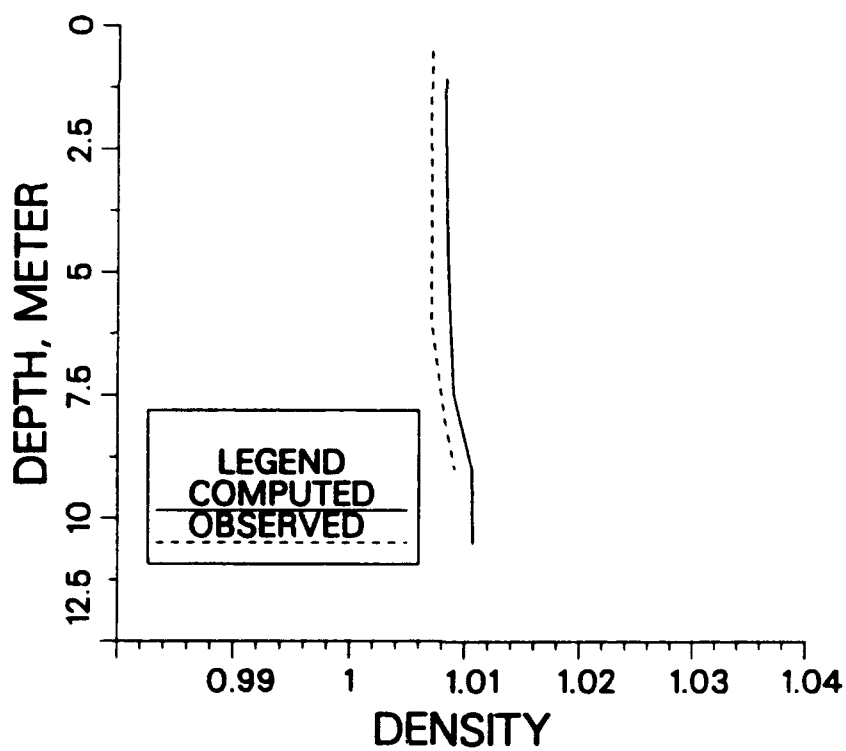


b. Day 64

Figure B62. Comparison of vertical density profile
at sta CB 3.3W during 1985 (Sheet 1 of 10)

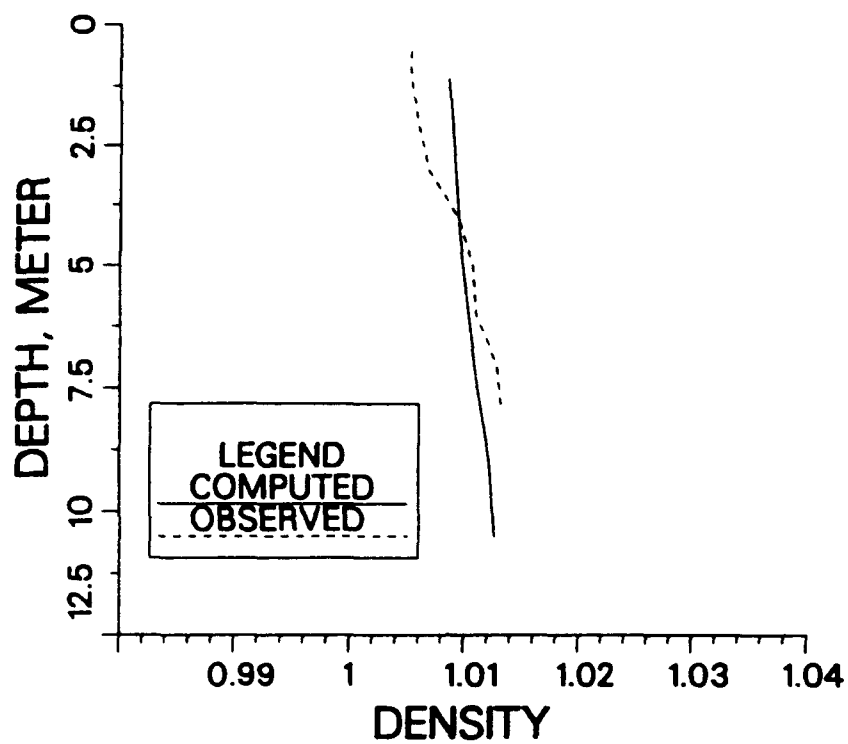


c. Day 79

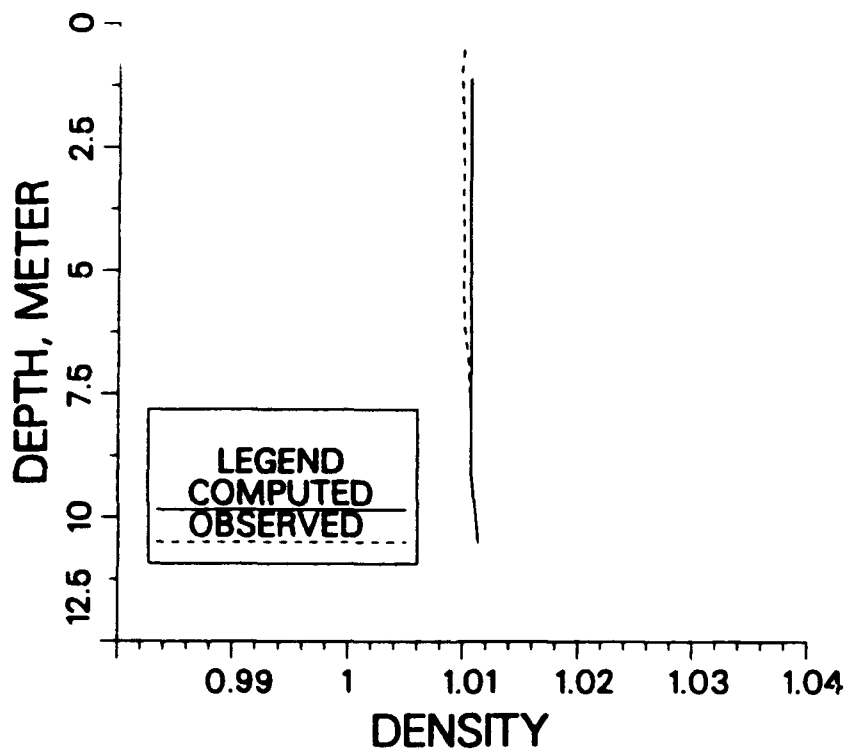


d. Day 99

Figure B62. (Sheet 2 of 10)

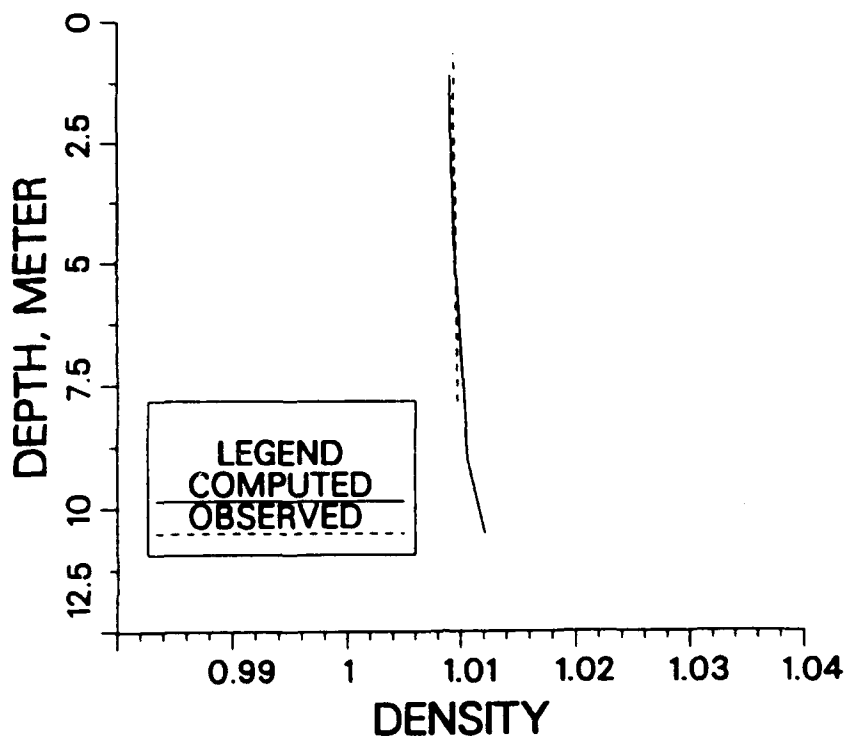


e. Day 113

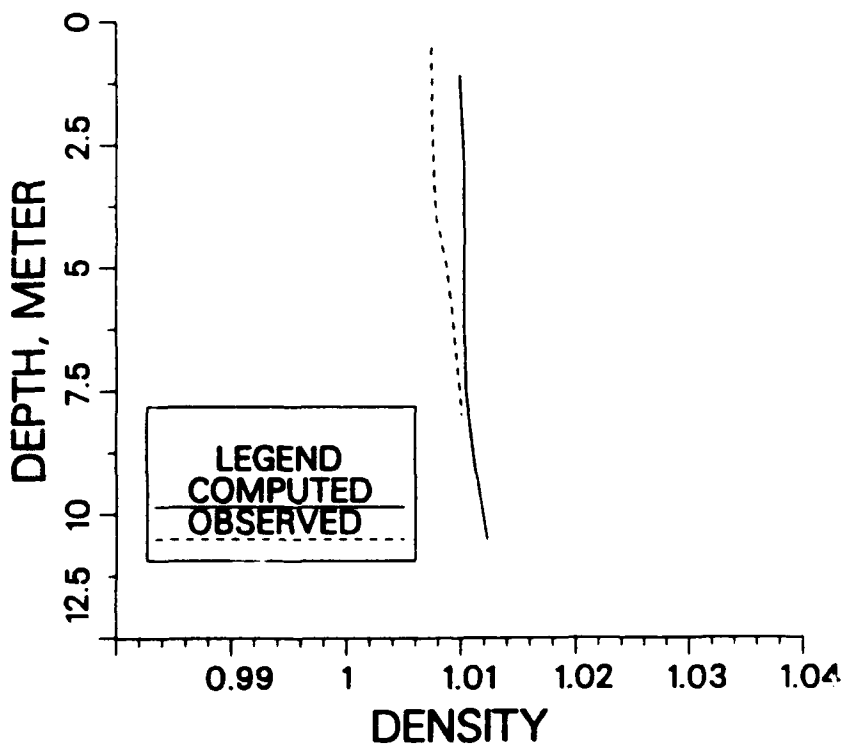


f. Day 127

Figure B62. (Sheet 3 of 10)

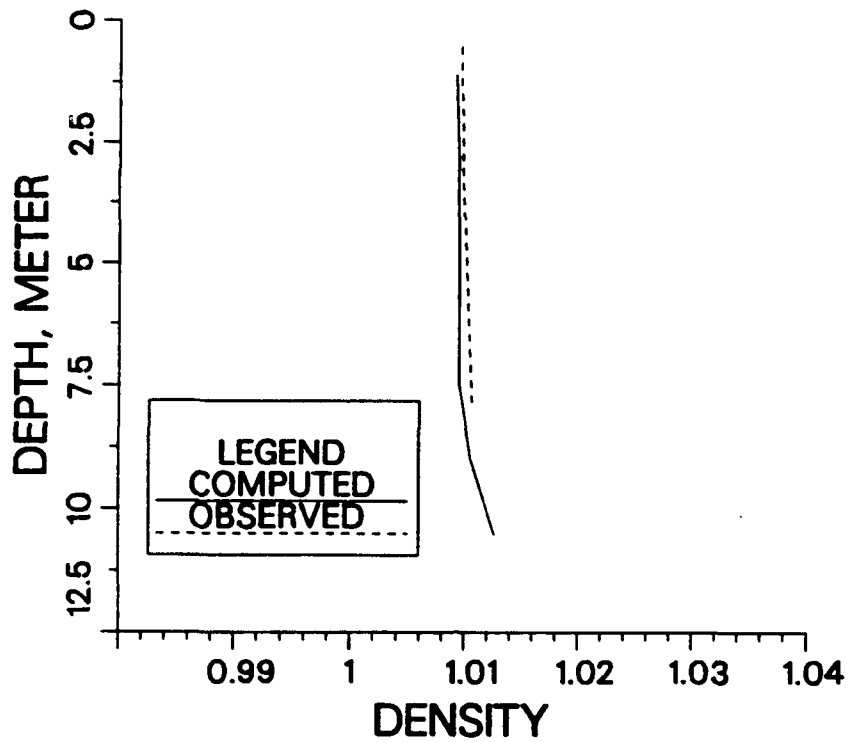


g. Day 141

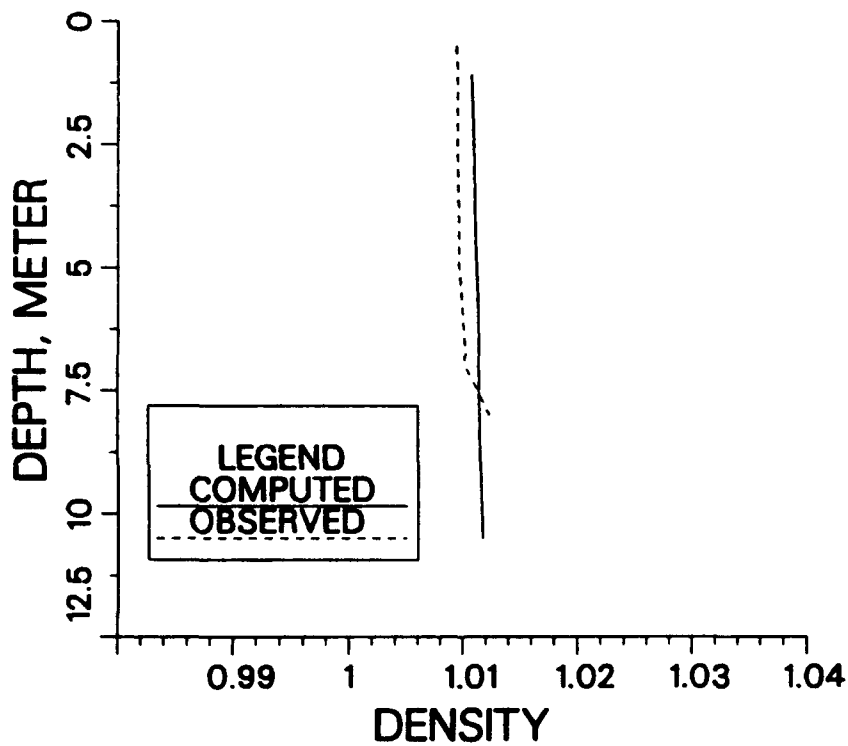


h. Day 155

Figure B62. (Sheet 4 of 10)

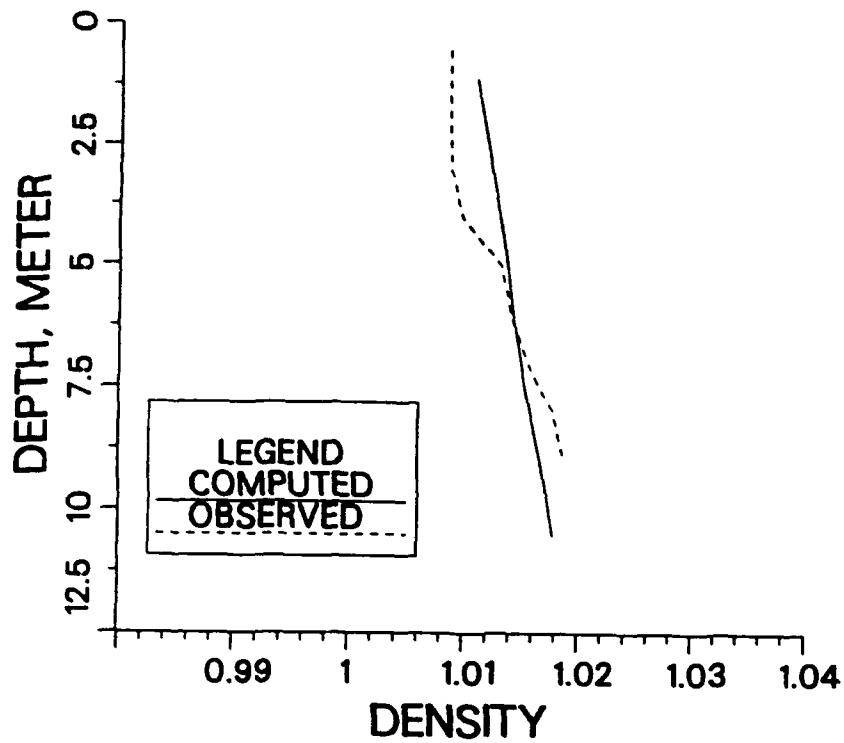


i. Day 169

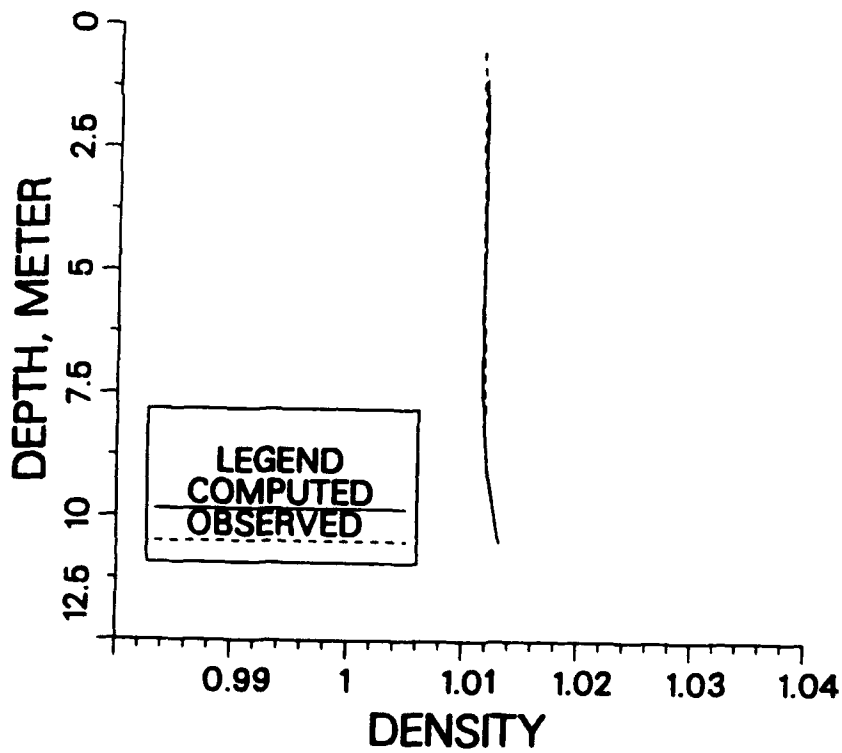


j. Day 190

Figure B62. (Sheet 5 of 10)

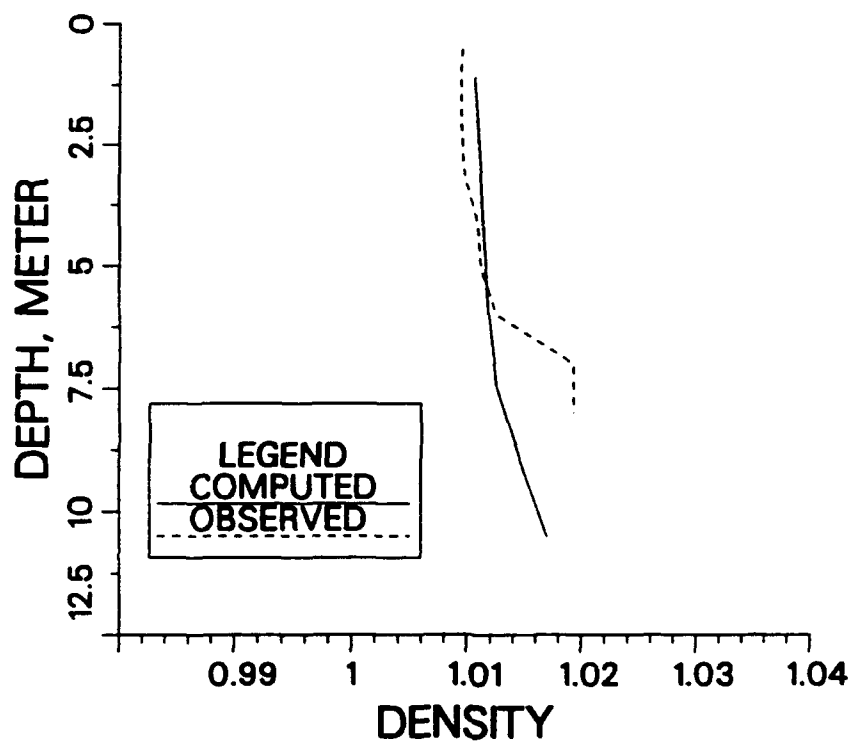


k. Day 205

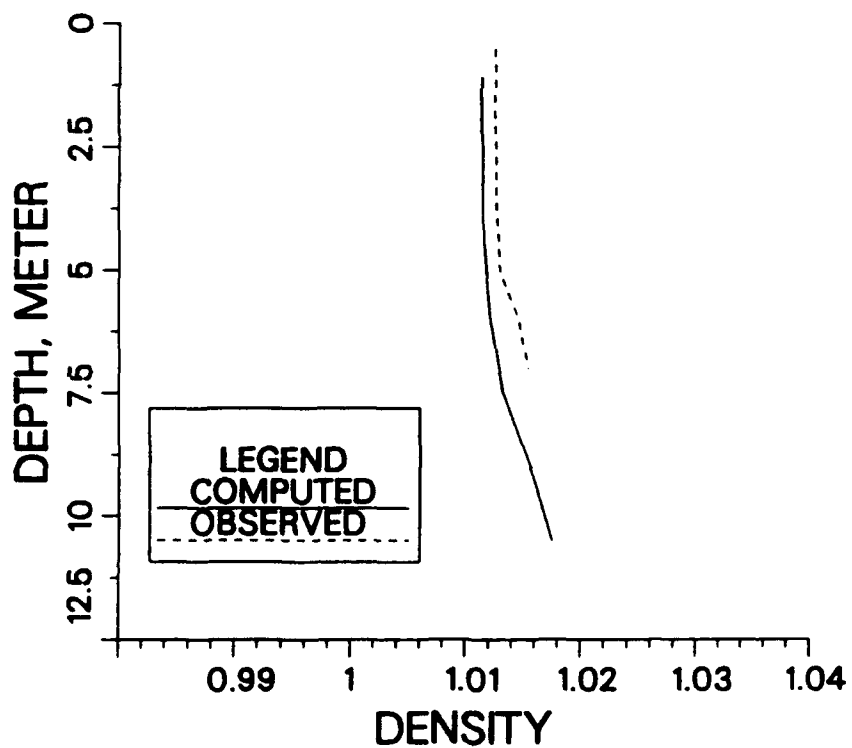


l. Day 219

Figure B62. (Sheet 6 of 10)

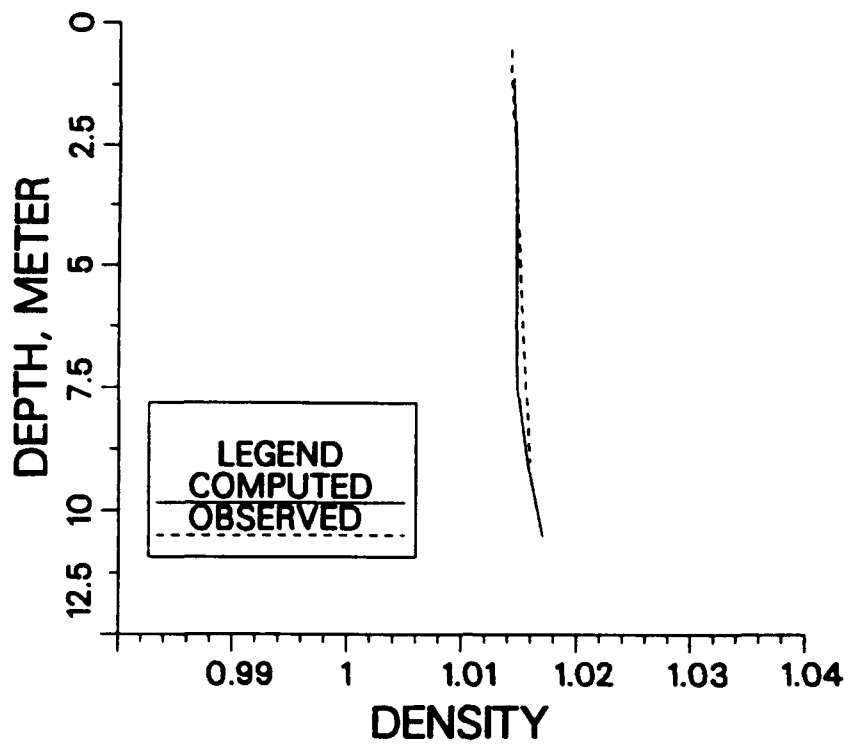


m. Day 232

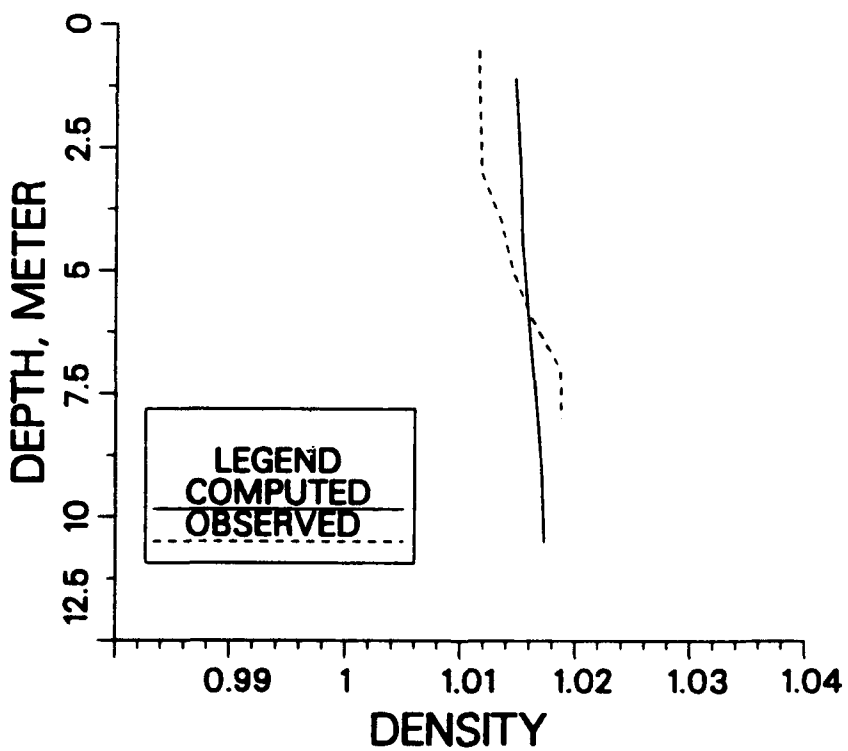


n. Day 253

Figure B62. (Sheet 7 of 10)

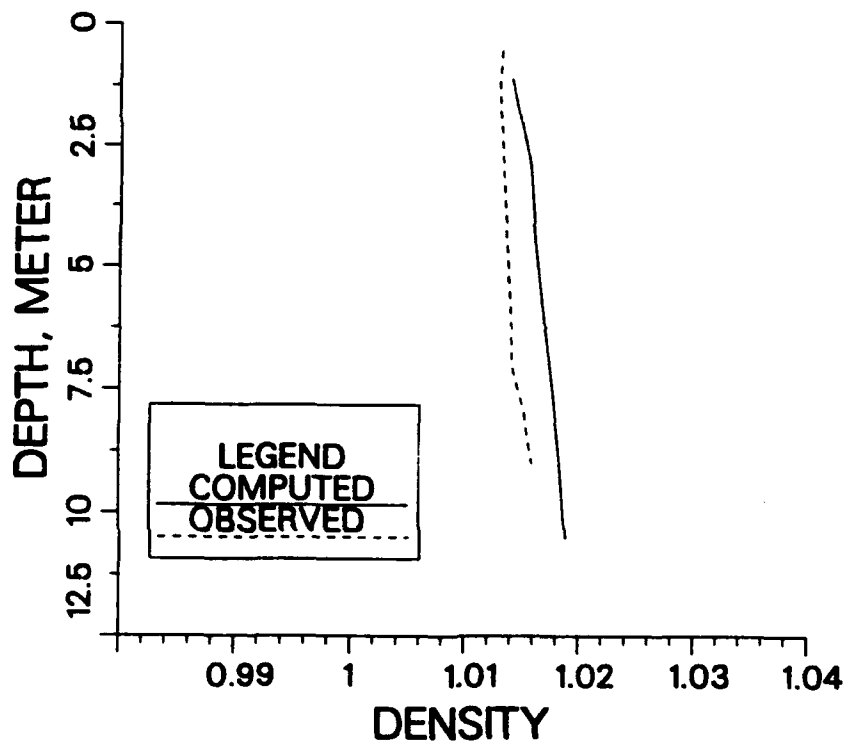


o. Day 267

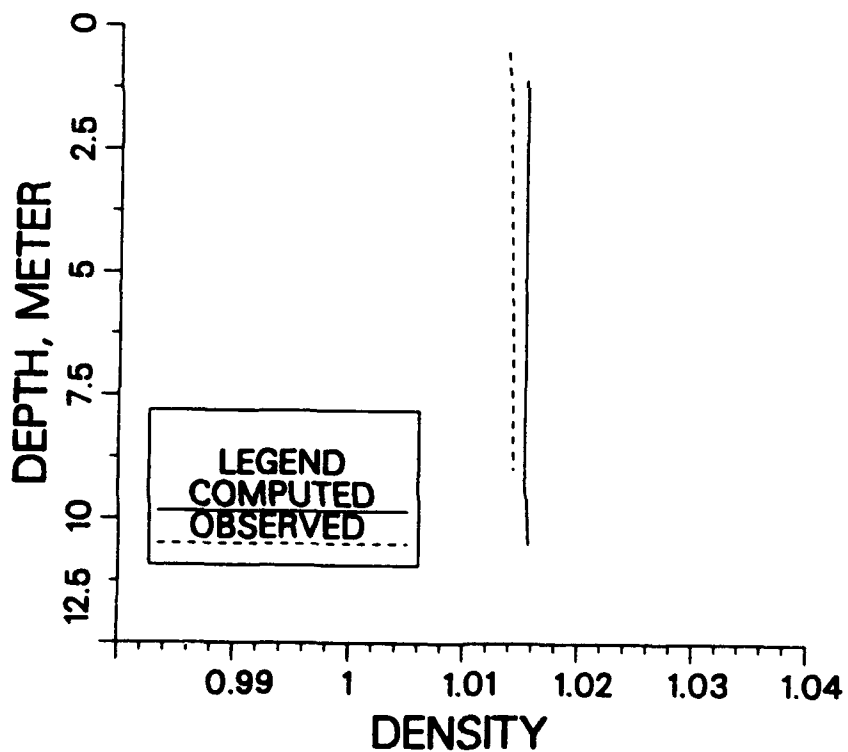


p. Day 281

Figure B62. (Sheet 8 of 10)

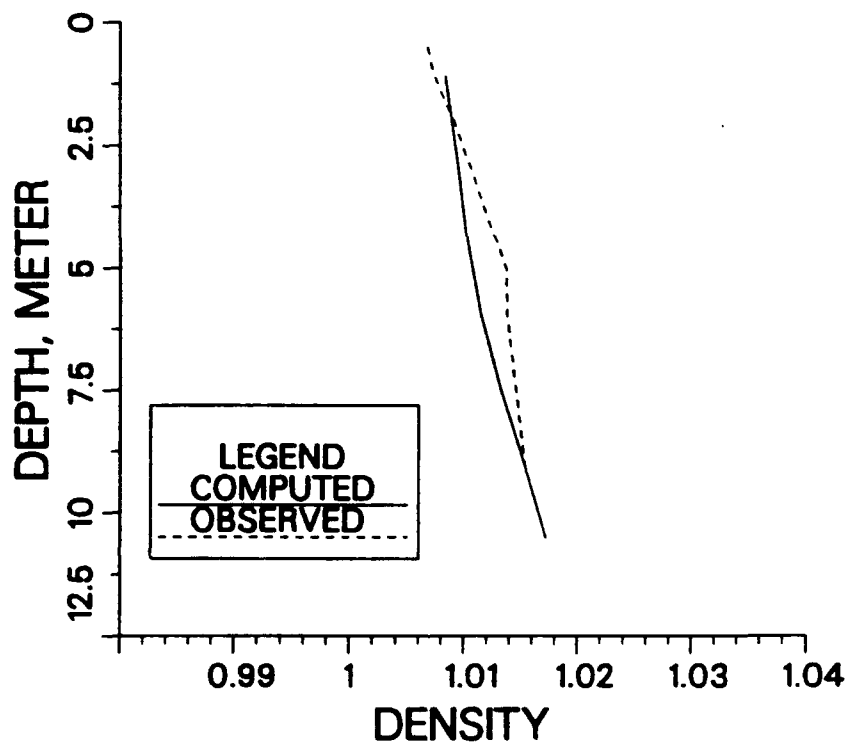


q. Day 295



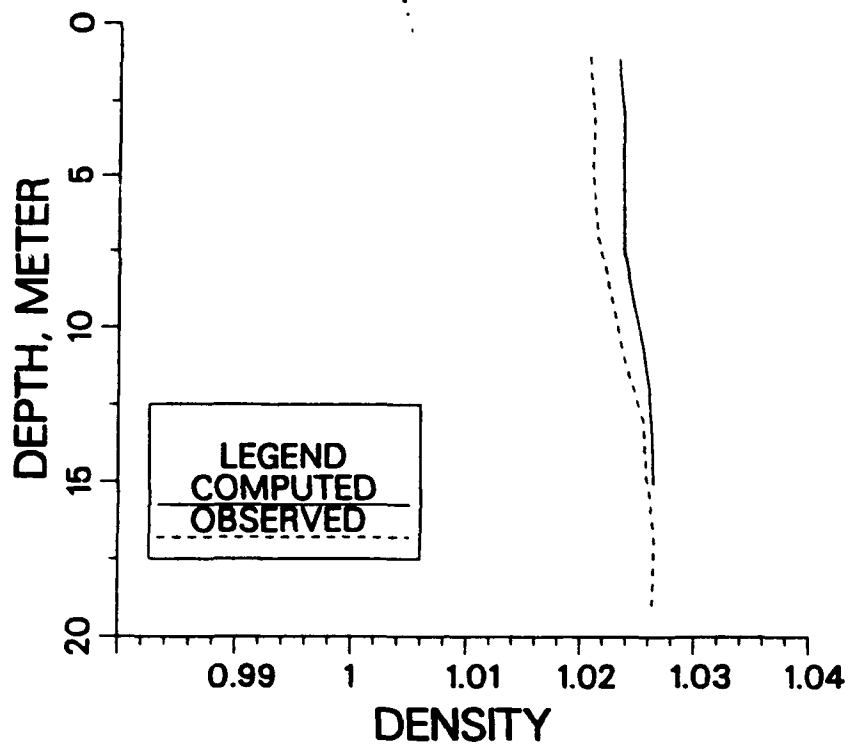
r. Day 317

Figure B62. (Sheet 9 of 10)

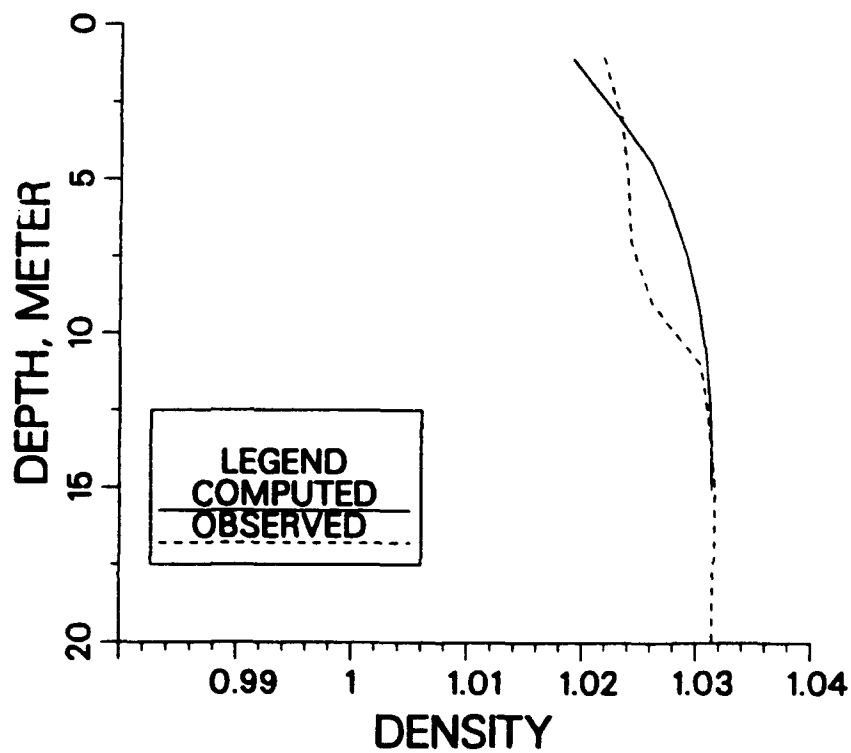


s. Day 344

Figure B62. (Sheet 10 of 10)

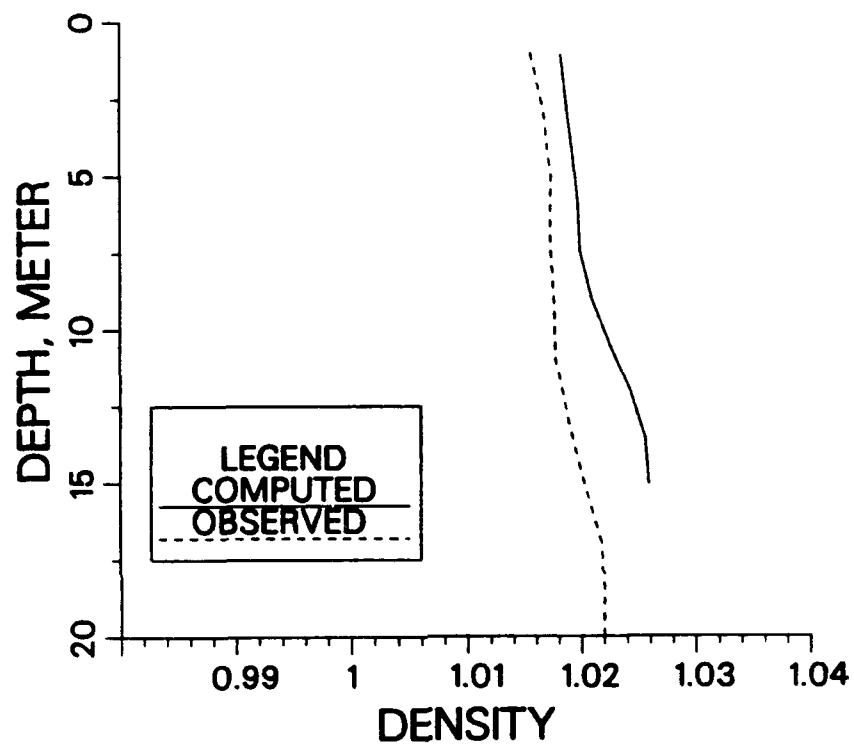


a. Day 113



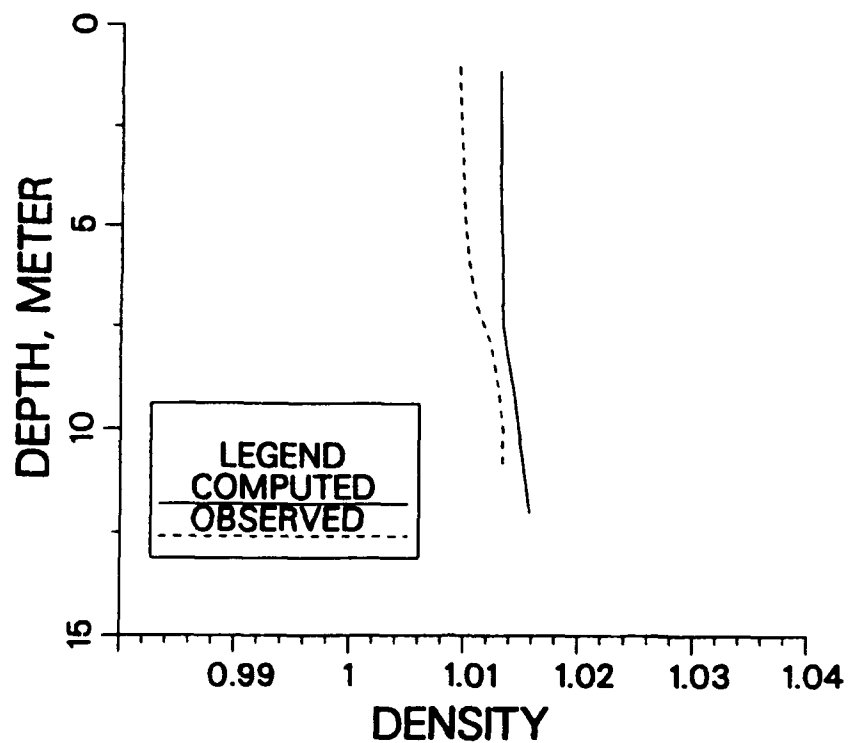
b. Day 253

Figure B63. Comparison of vertical density profile at sta LE 5.5 during 1985 (Continued)

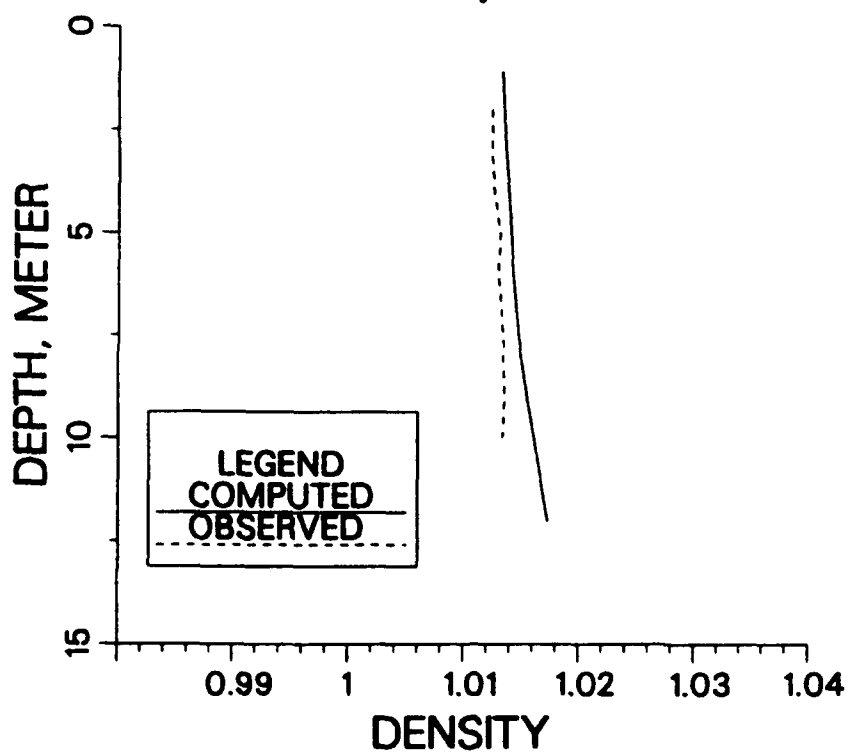


c. Day 343

Figure B63. (Concluded)

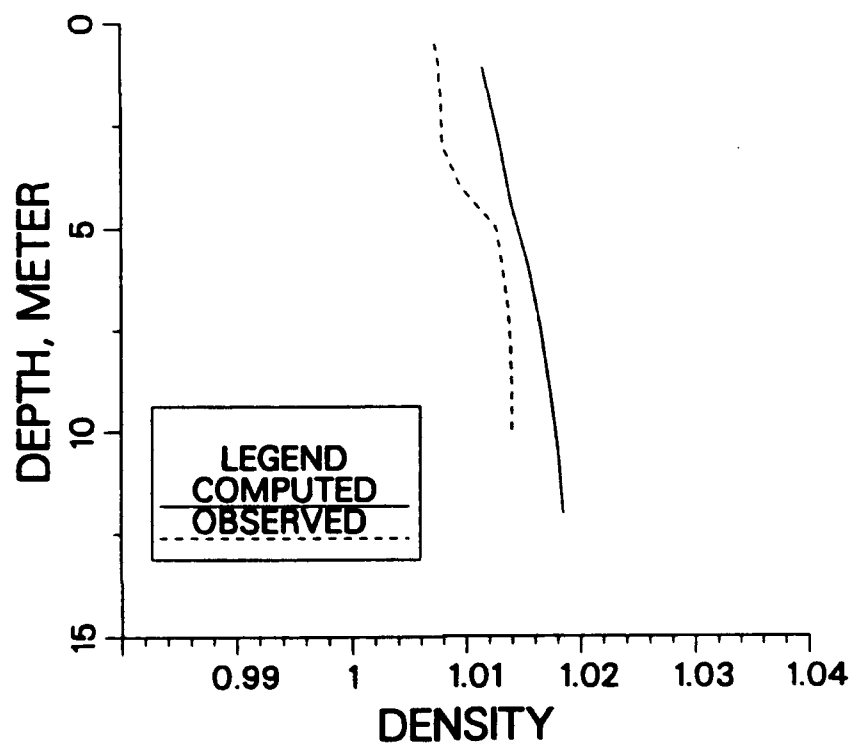


a. Day 120



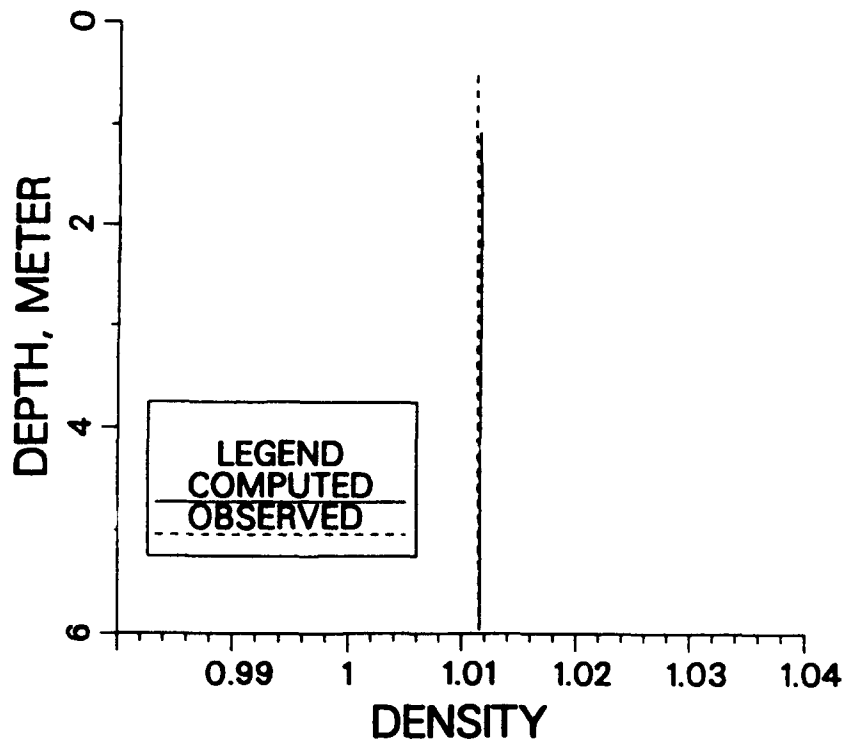
b. Day 218

Figure B64. Comparison of vertical density profile at sta LE 2.2 during 1985 (Continued)

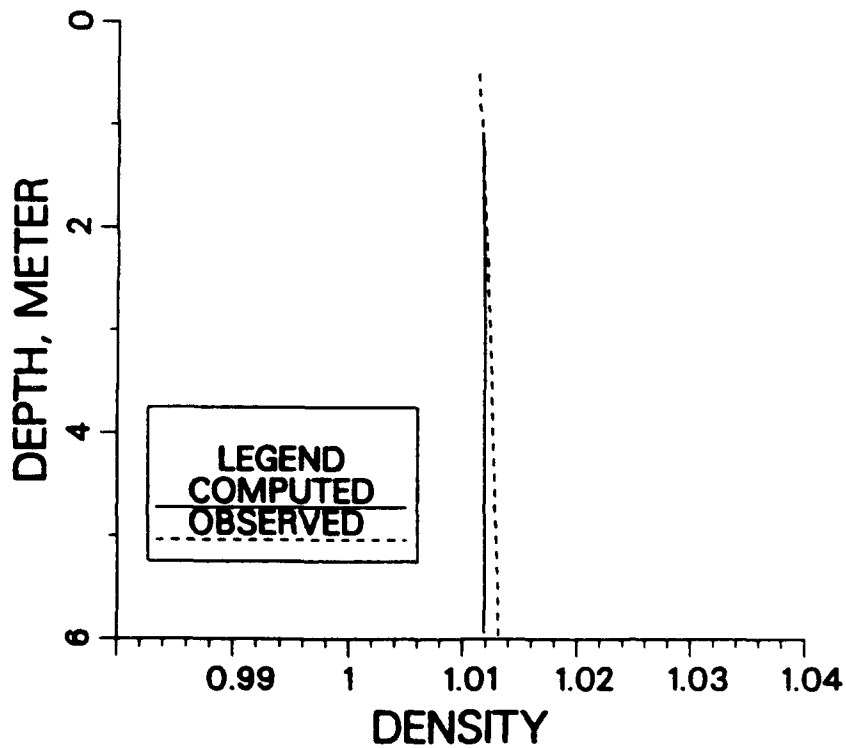


c. Day 343

Figure B64. (Concluded)

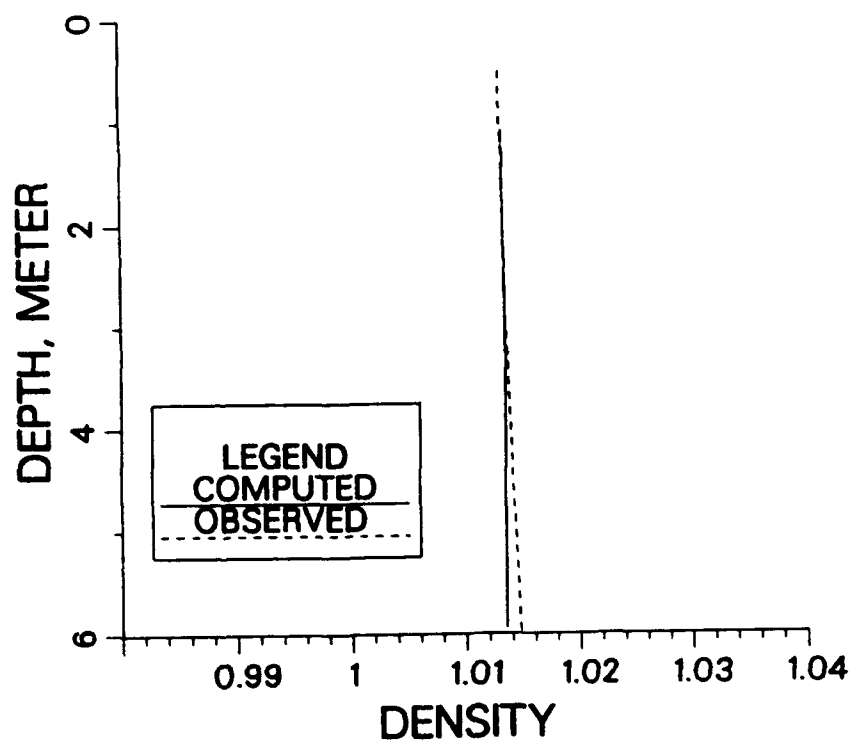


a. Day 98



b. Day 224

Figure B65. Comparison of vertical density profile at sta LE 1.1 during 1985 (Continued)



c. Day 322

Figure B65. (Concluded)

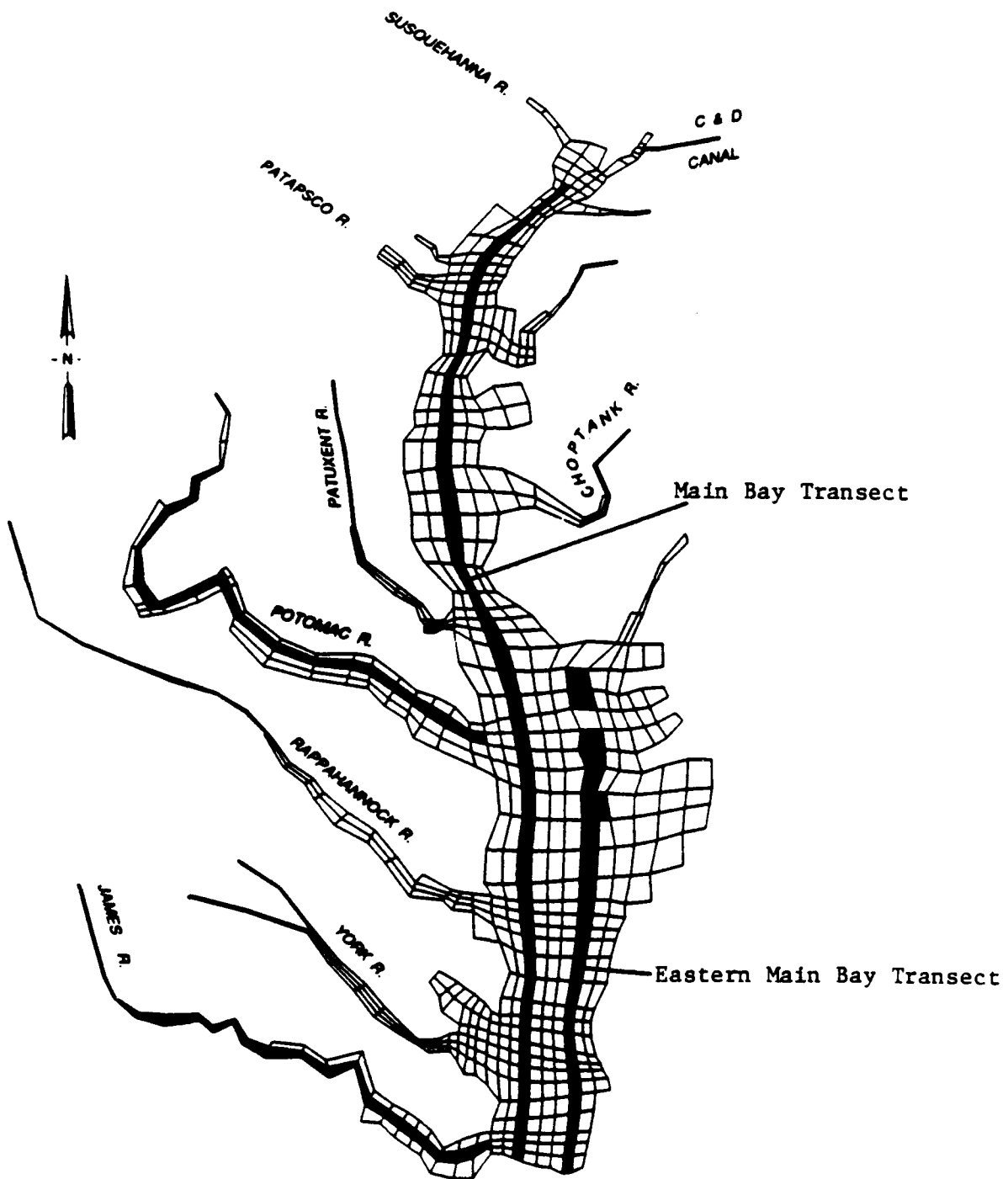


Figure B66. Location of seasonally averaged transects

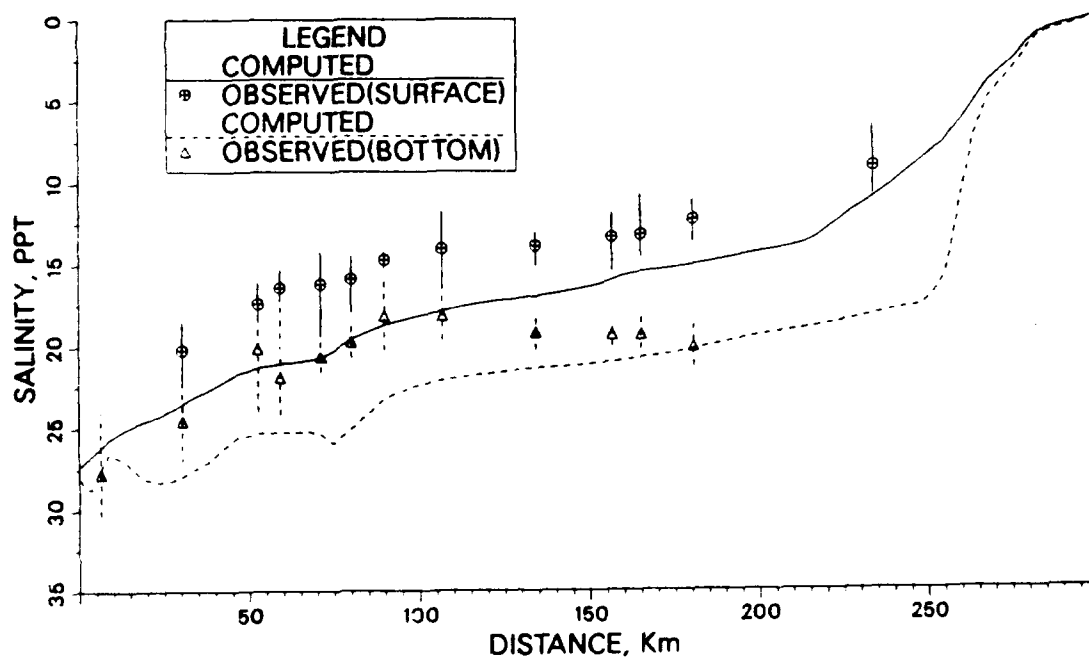
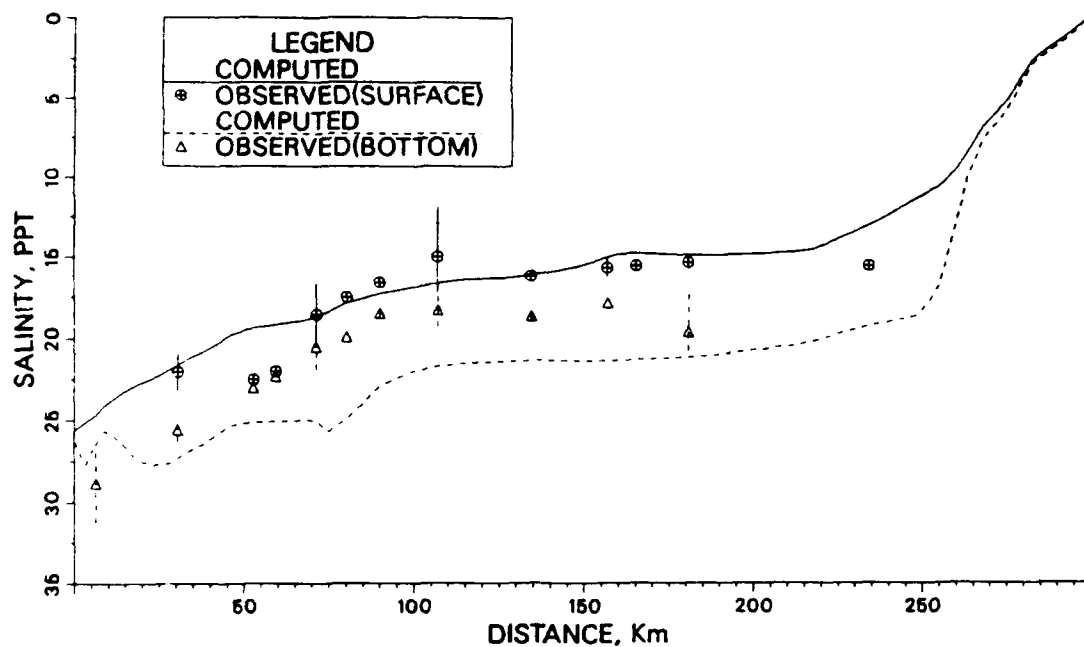
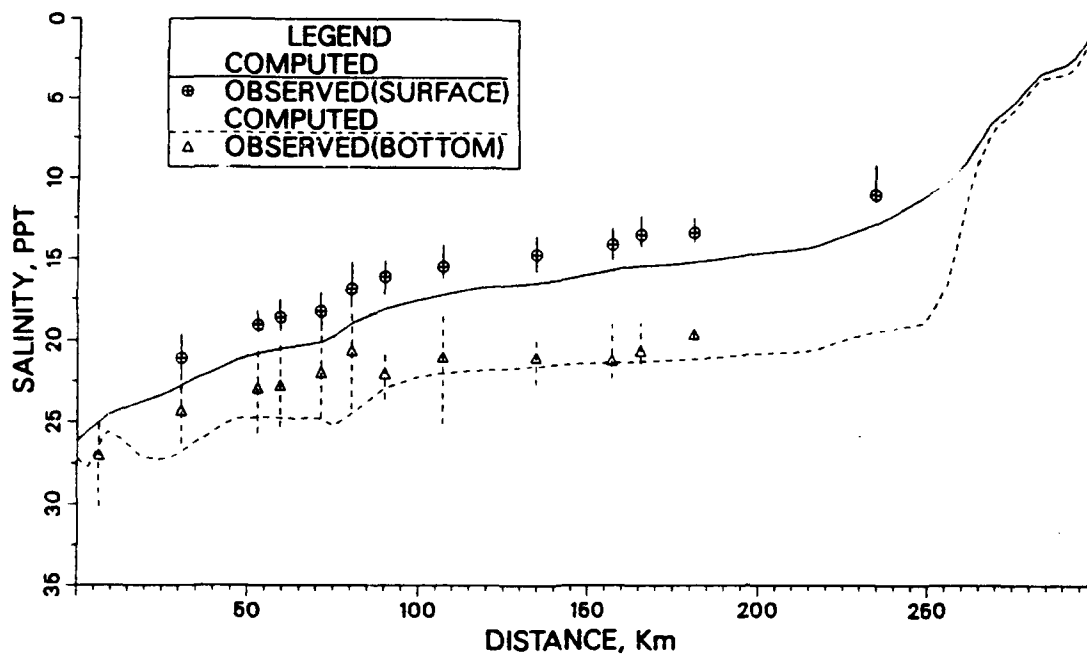
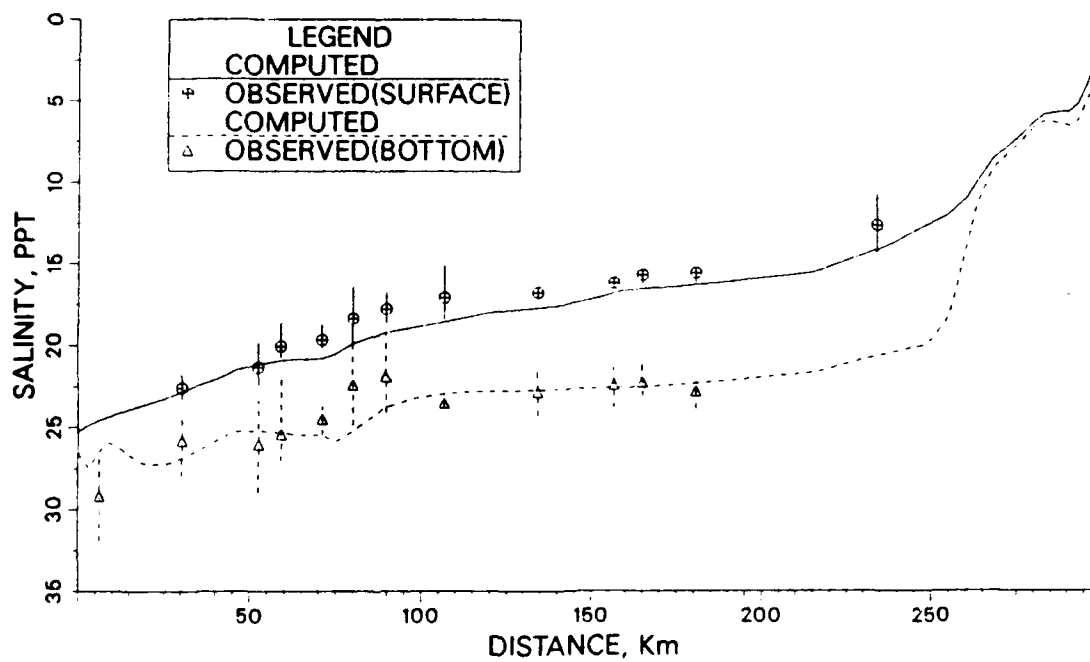


Figure B67. Comparison of seasonally averaged salinities along main bay transect during 1985 (Sheet 1 of 3)

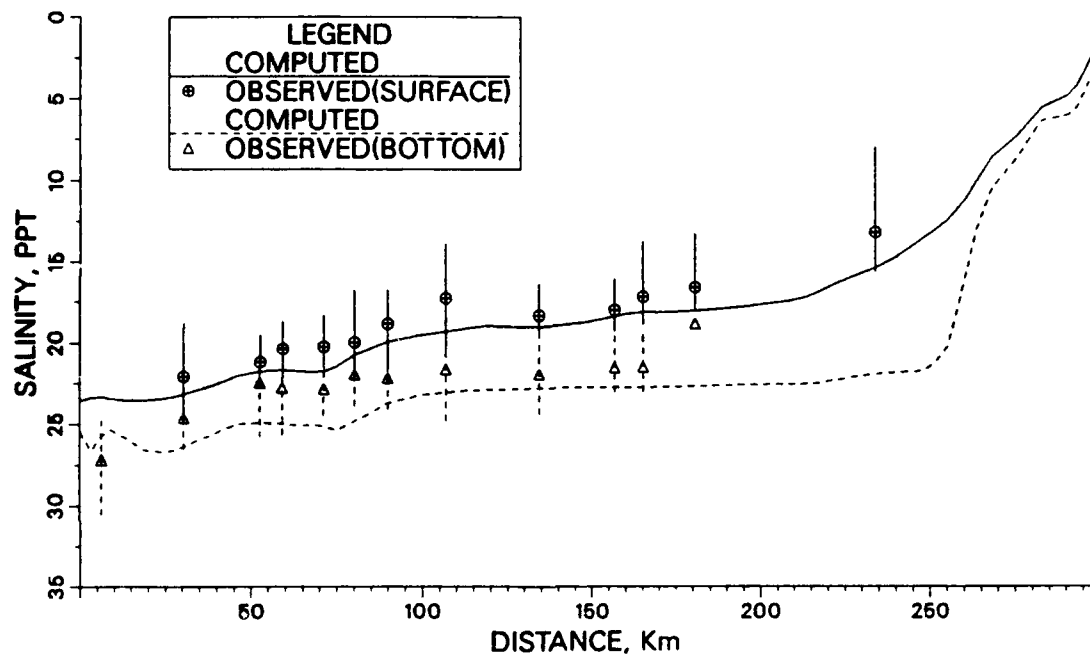


c. Season 3



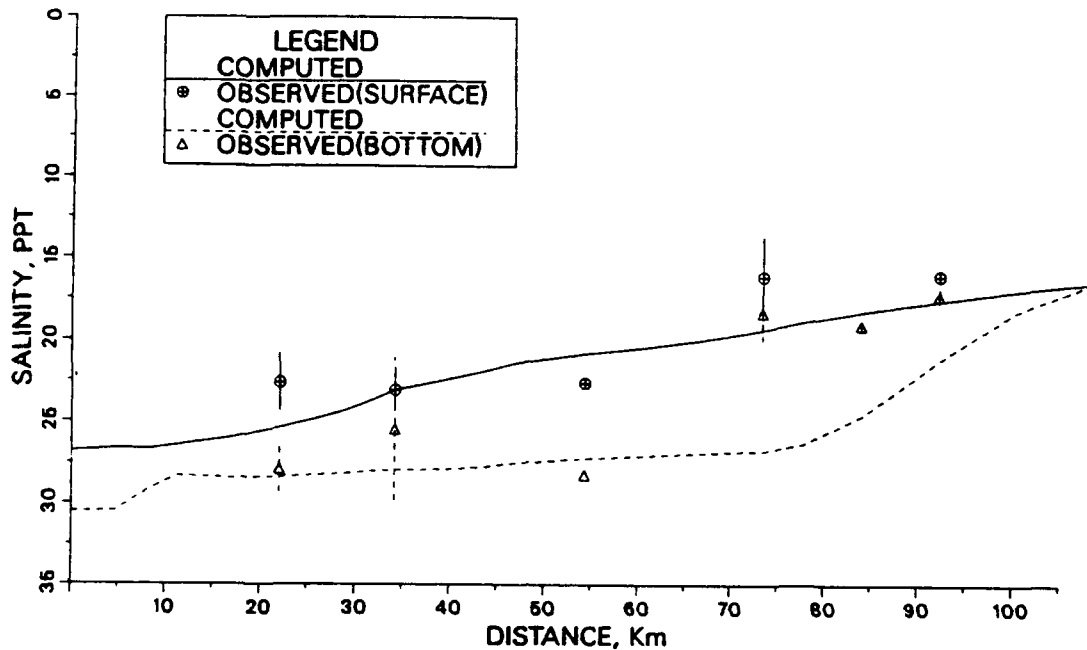
d. Season 4

Figure B67. (Sheet 2 of 3)

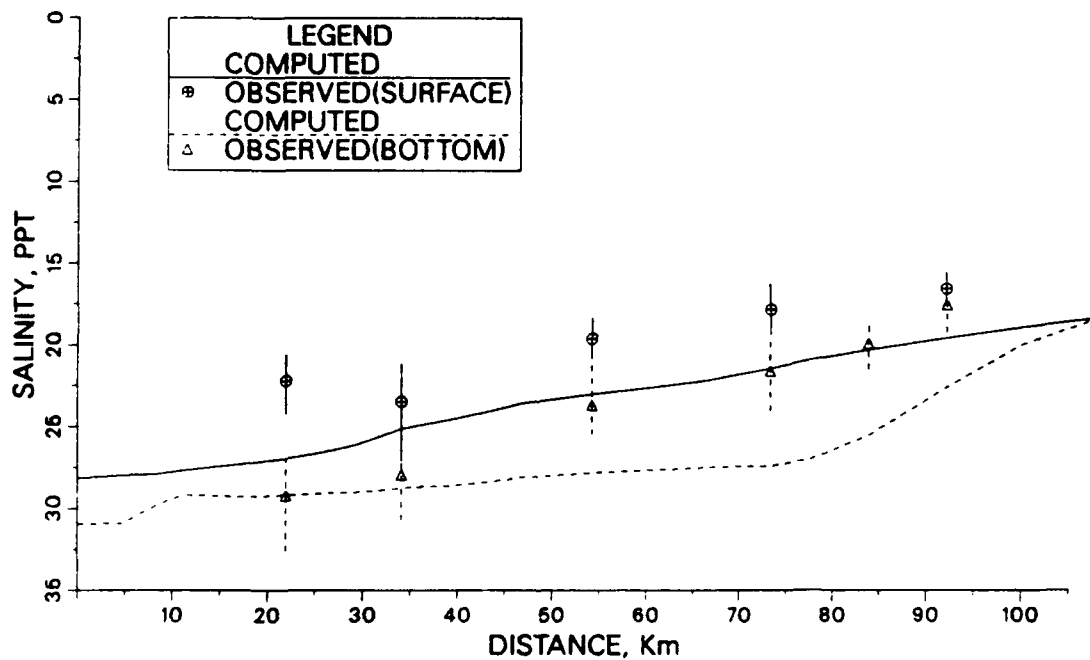


e. Season 5

Figure B67. (Sheet 3 of 3)

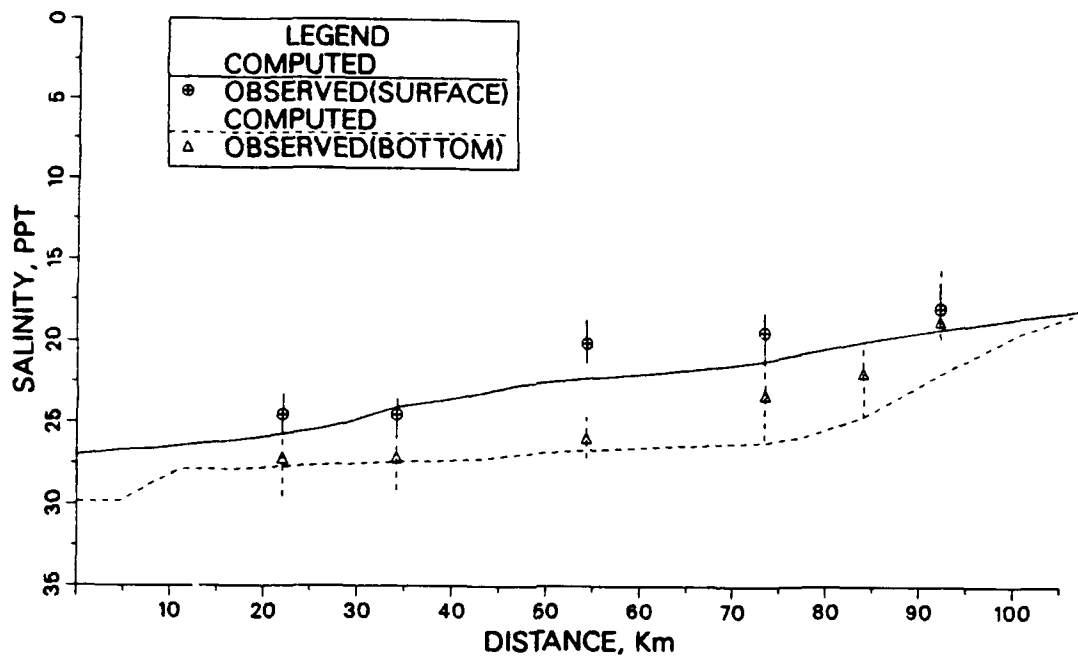


a. Season 1

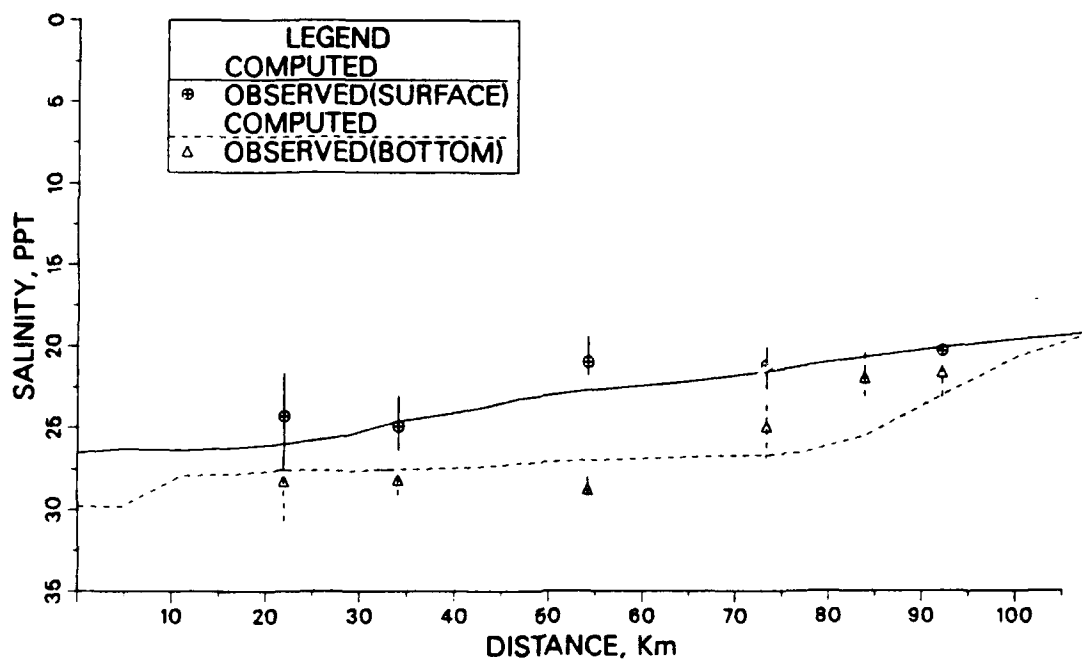


b. Season 2

Figure B68. Comparison of seasonally averaged salinities along eastern main bay transect during 1985 (Sheet 1 of 3)

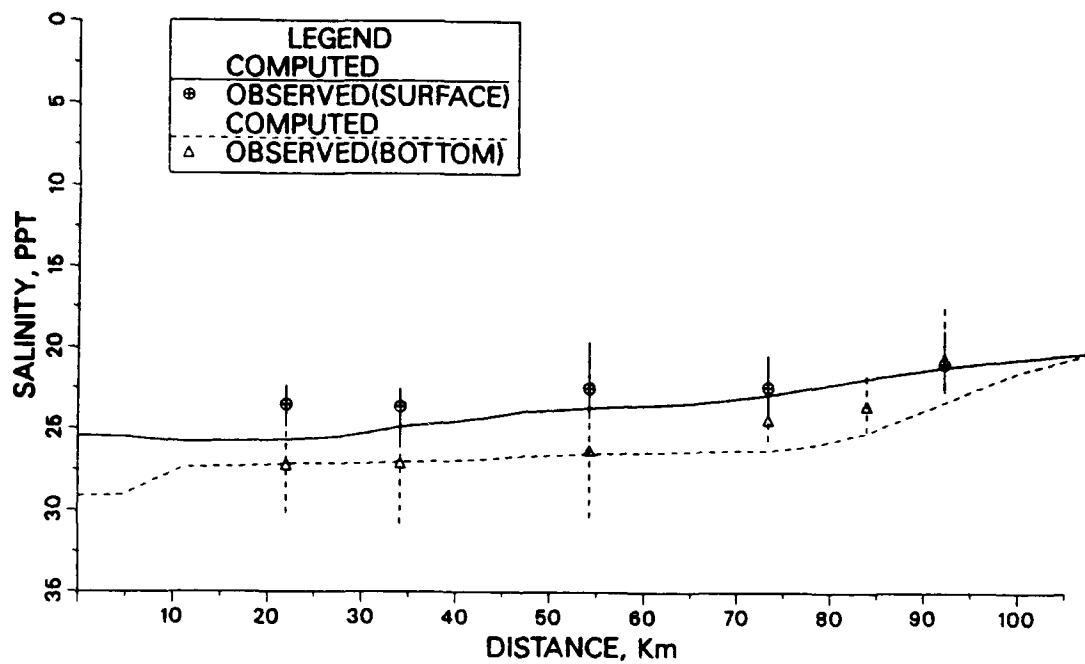


c. Season 3



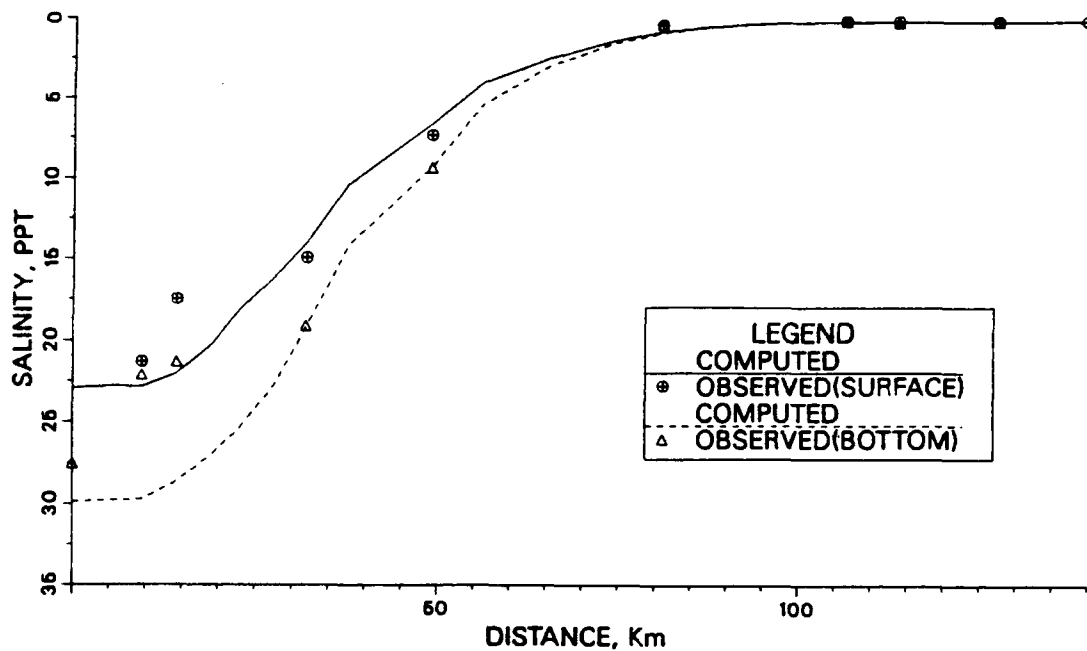
d. Season 4

Figure B68. (Sheet 2 of 3)

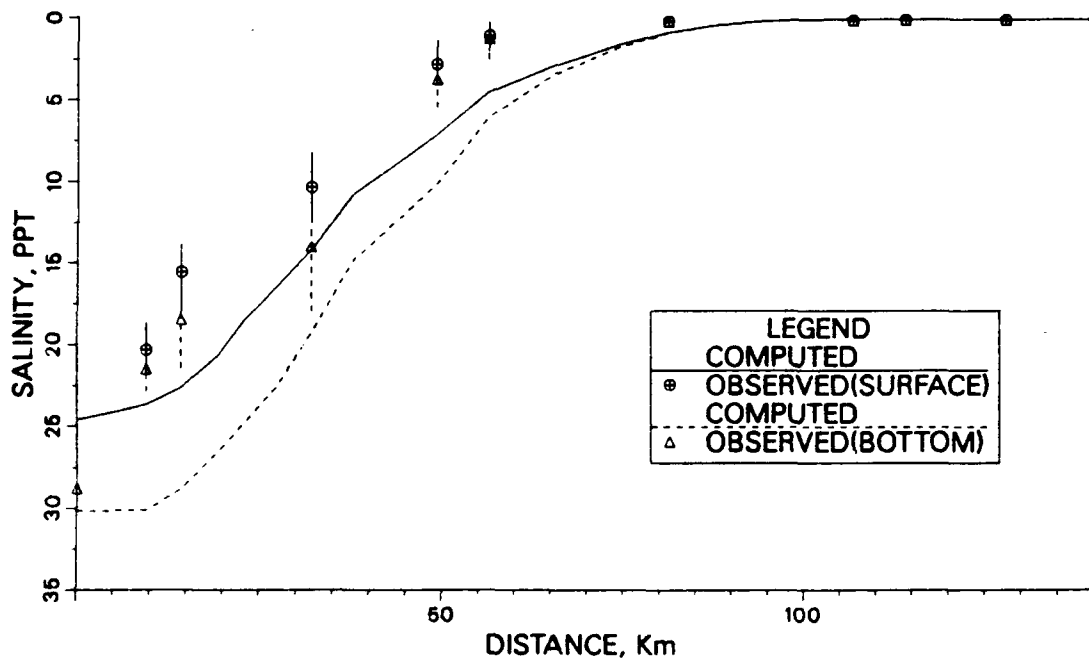


e. Season 5

Figure B68. (Sheet 3 of 3)

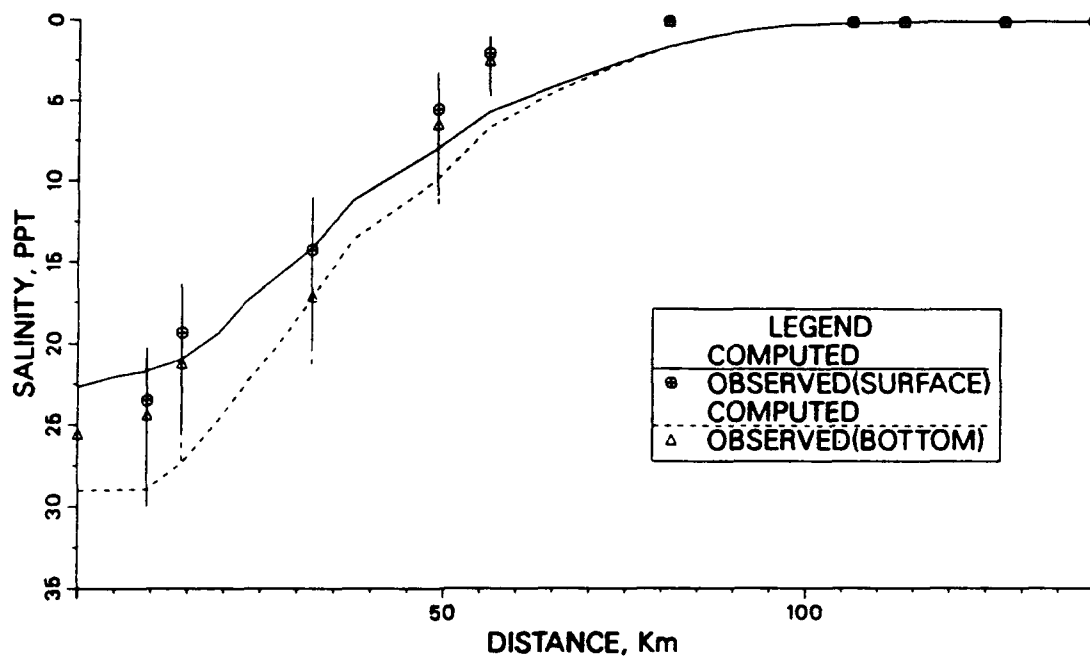


a. Season 1

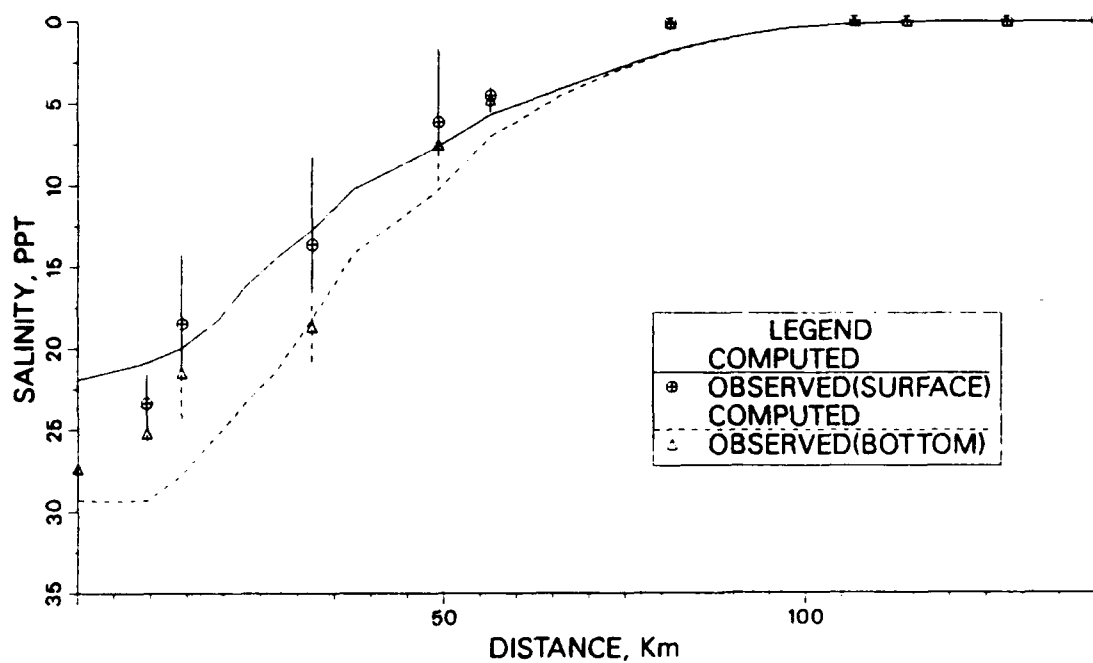


b. Season 2

Figure B69. Comparison of seasonally averaged salinities along James River during 1985 (Sheet 1 of 3)

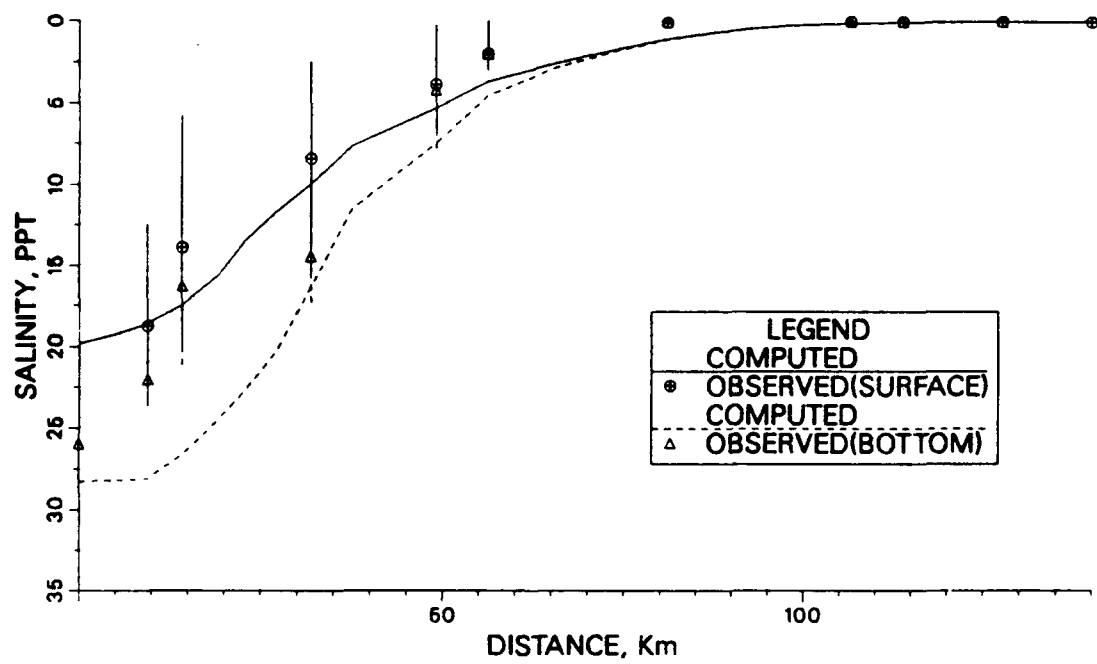


c. Season 3



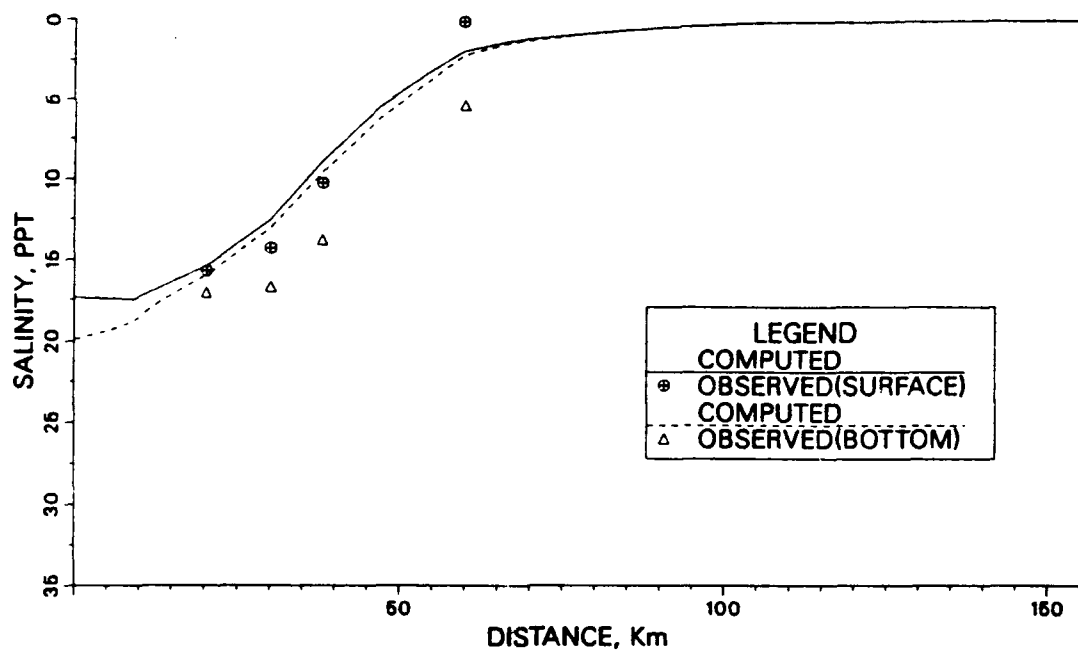
d. Season 4

Figure B69. (Sheet 2 of 3)

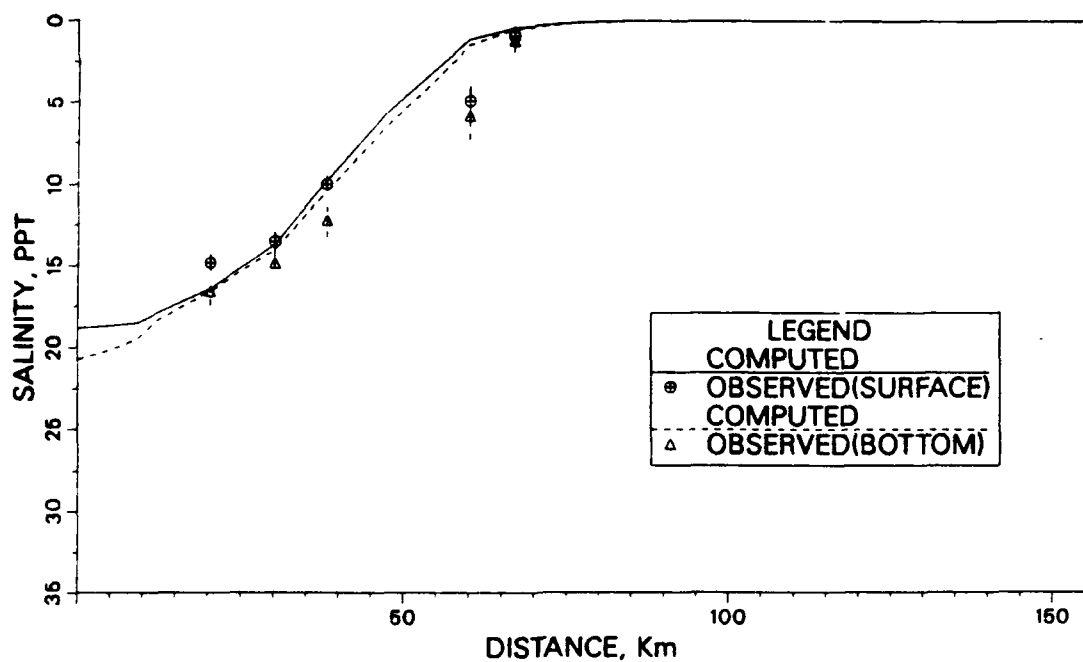


e. Season 5

Figure B69. (Sheet 3 of 3)

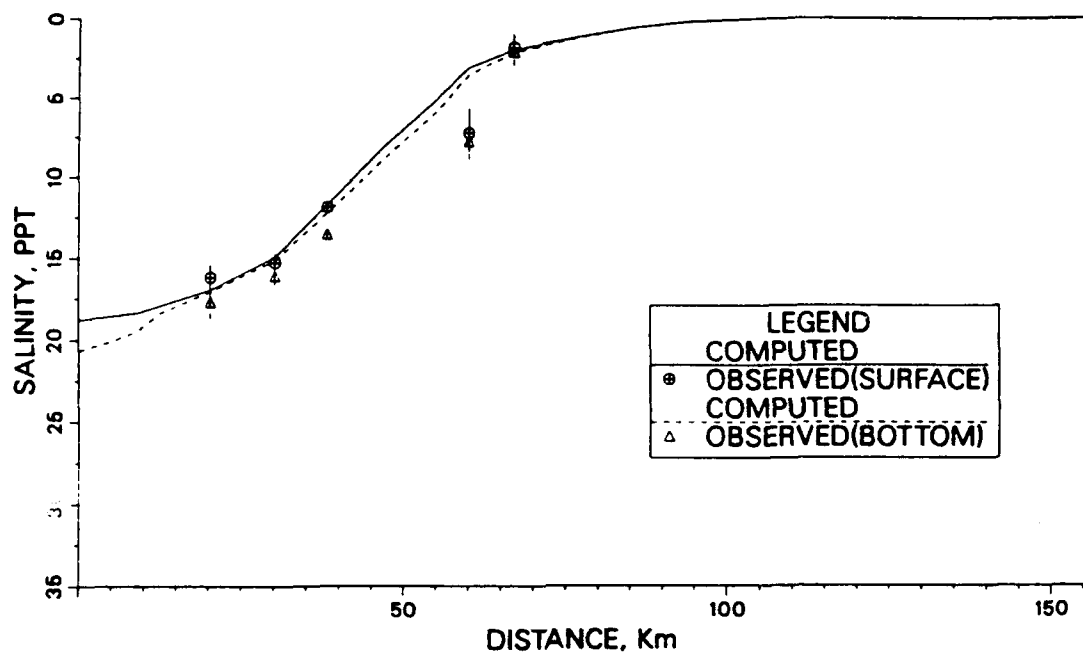


a. Season 1

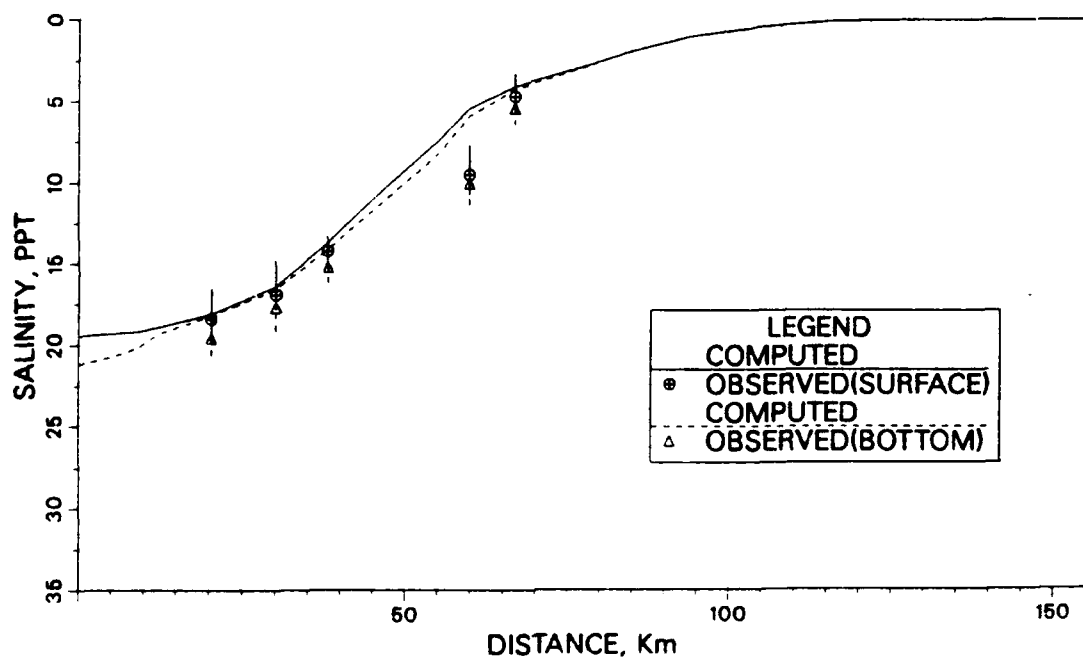


b. Season 2

Figure B70. Comparison of seasonally averaged salinities along Rappahannock River during 1985 (Sheet 1 of 3)

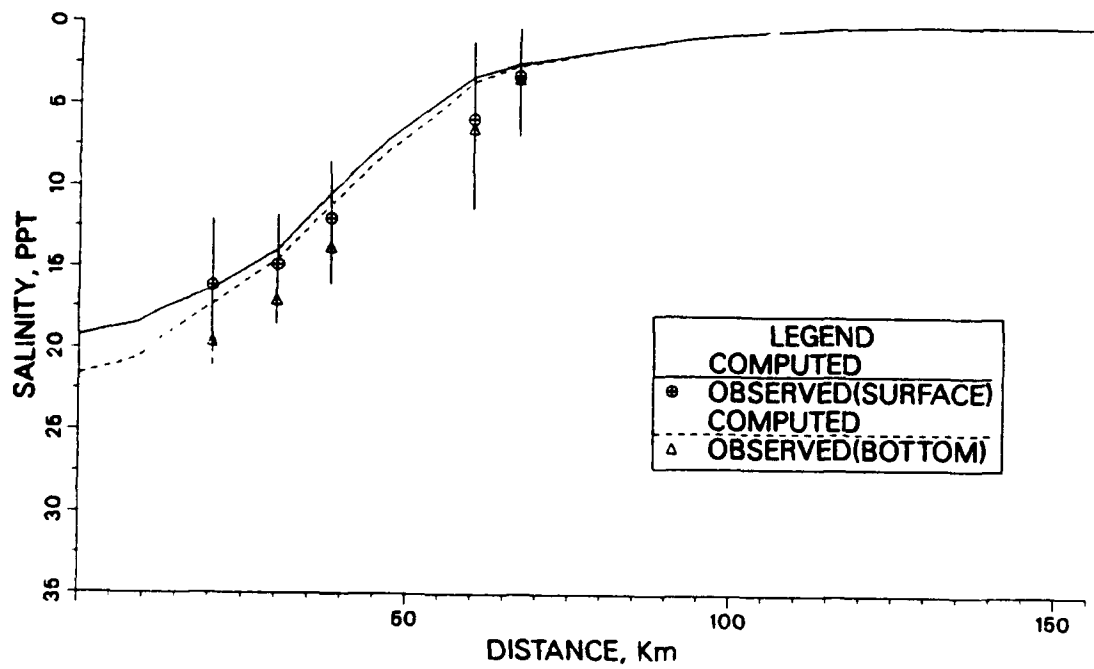


c. Season 3



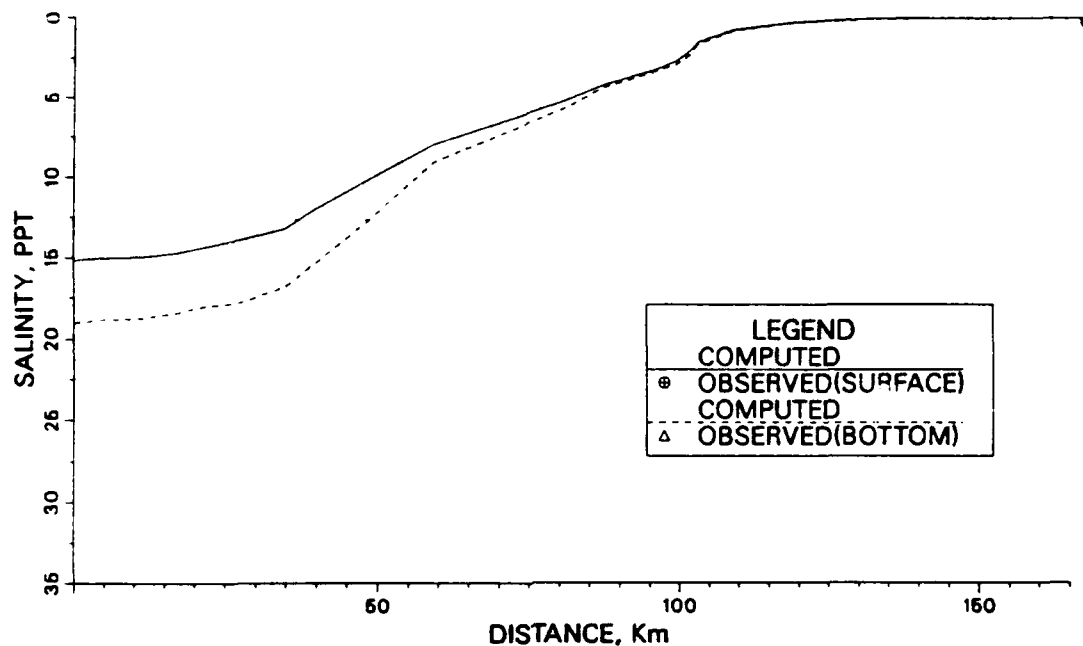
d. Season 4

Figure B70. (Sheet 2 of 3)

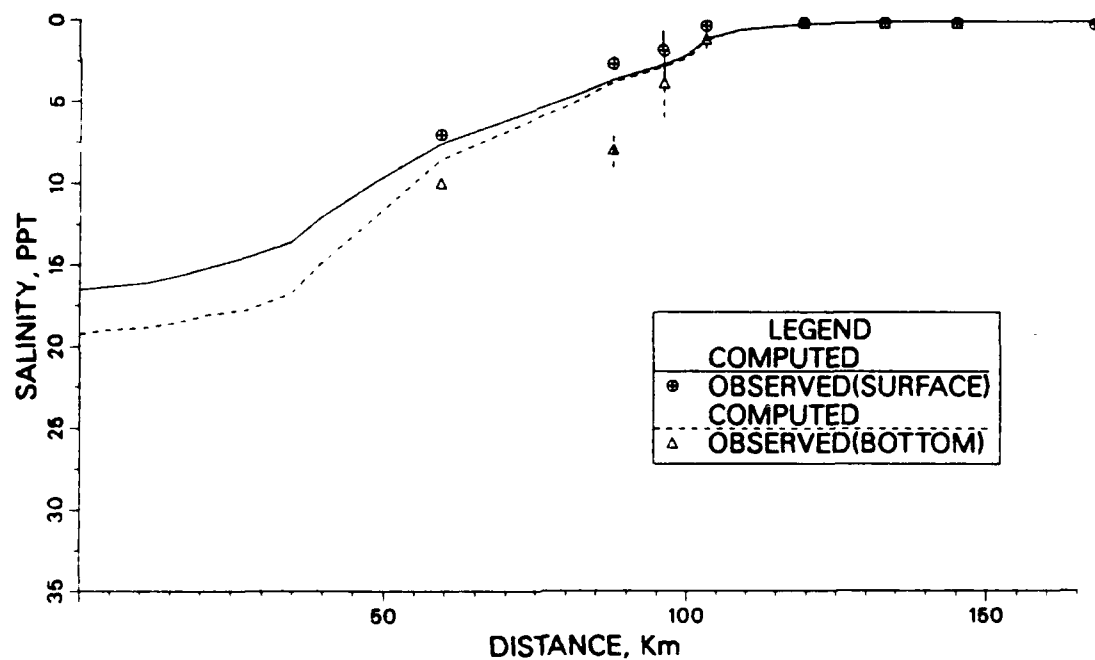


e. Season 5

Figure B70. (Sheet 3 of 3)

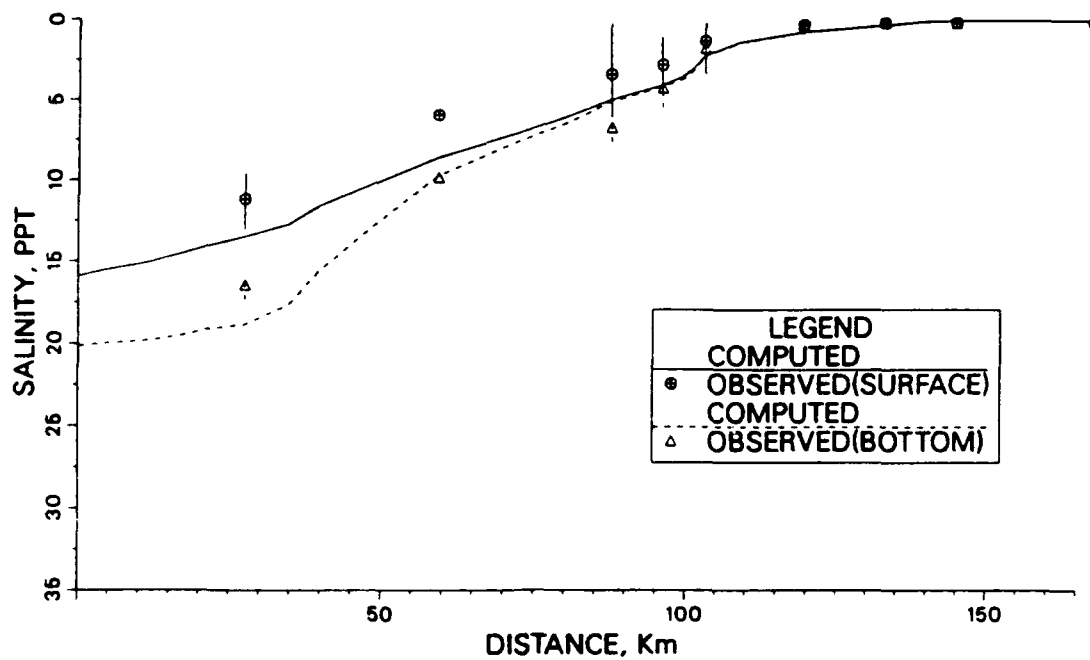


a. Season 1

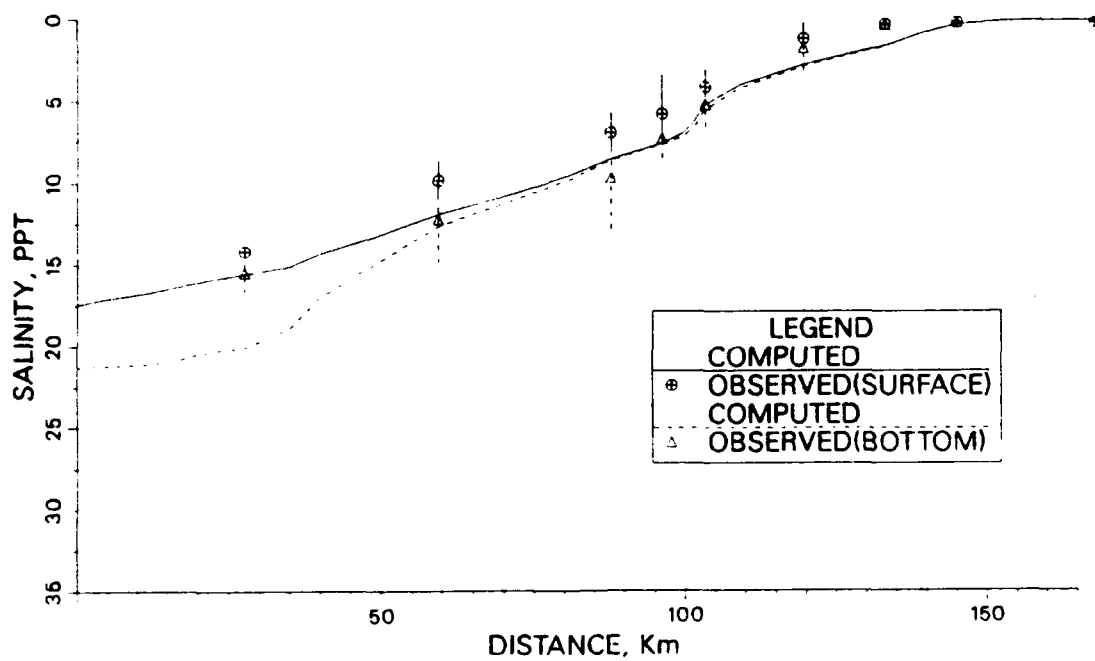


b. Season 2

Figure B71. Comparison of seasonally averaged salinities along Potomac River during 1985 (Sheet 1 of 3)

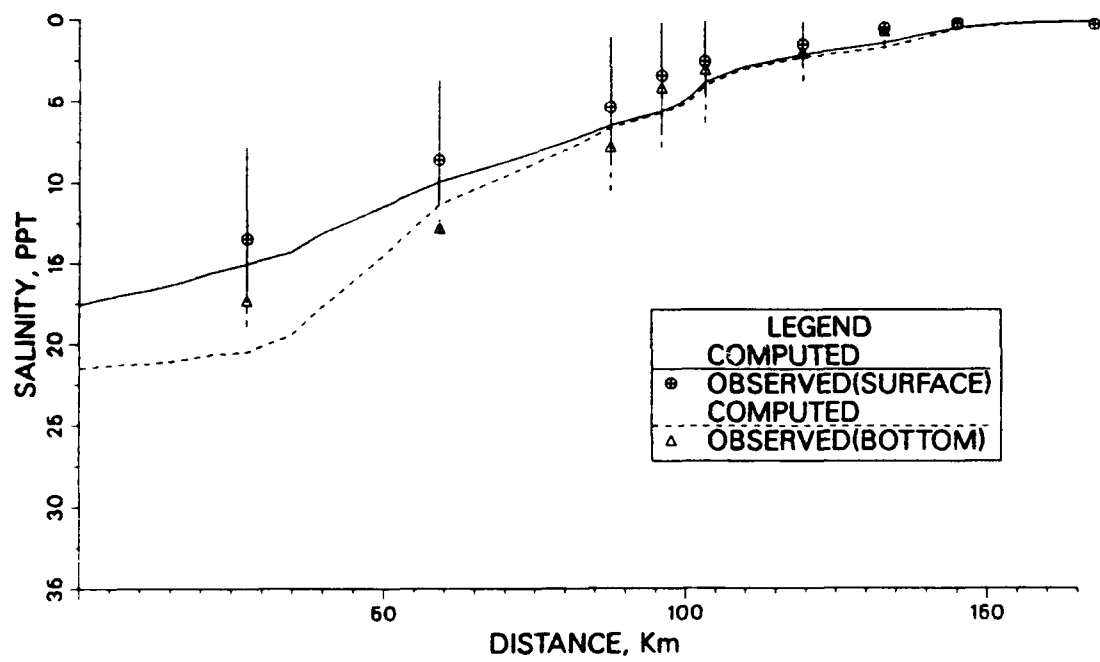


c. Season 3



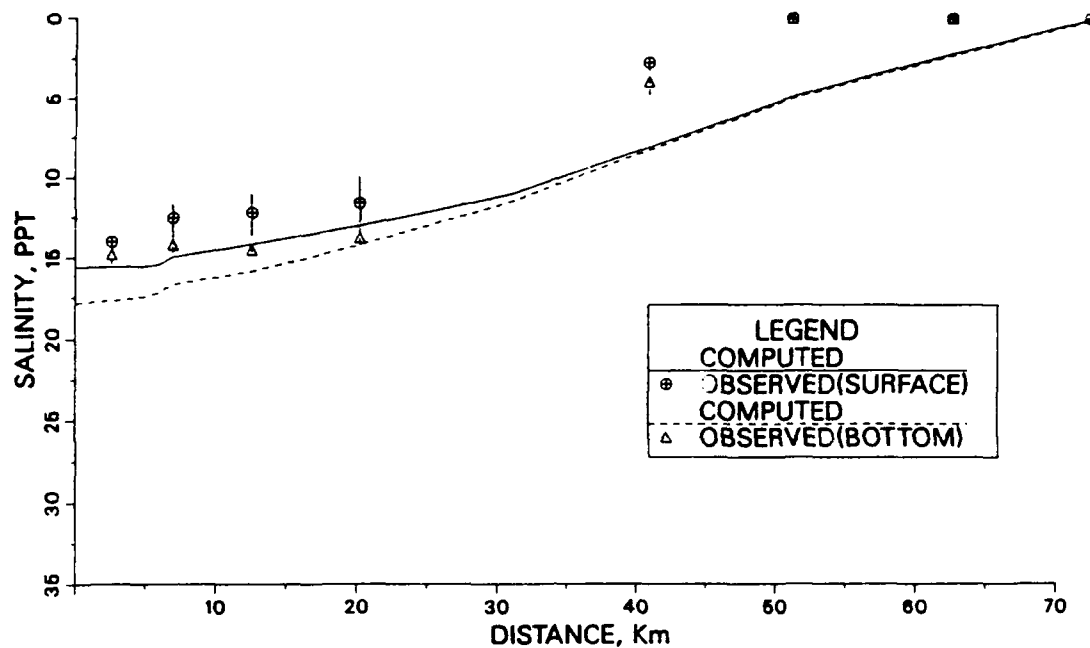
d. Season 4

Figure B71. (Sheet 2 of 3)

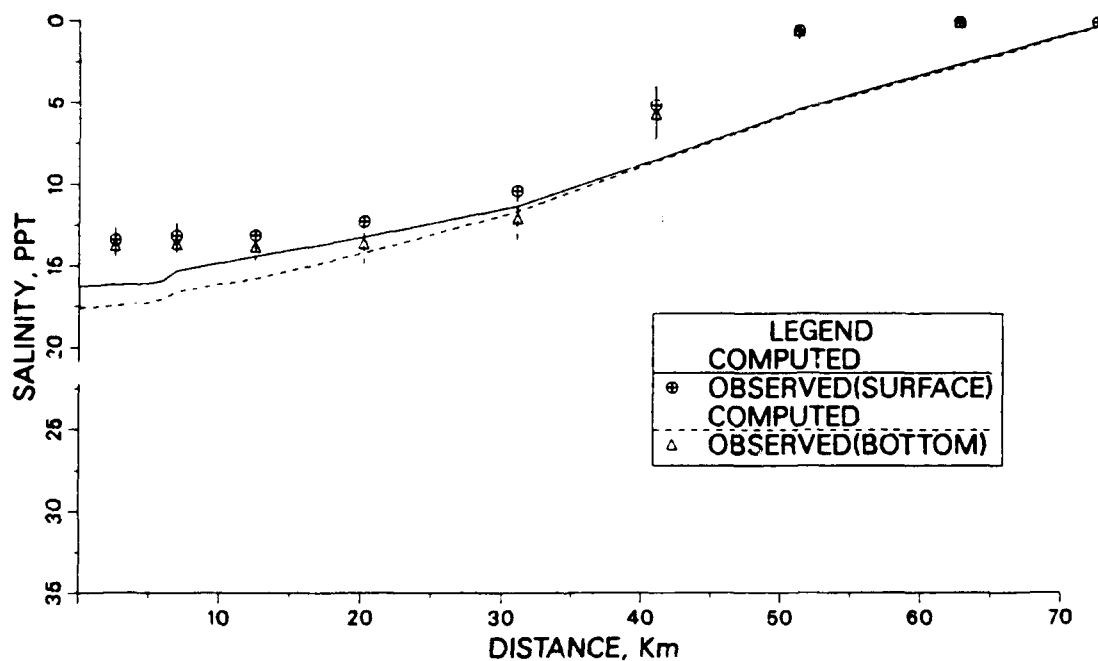


e. Season 5

Figure B71. (Sheet 3 of 3)

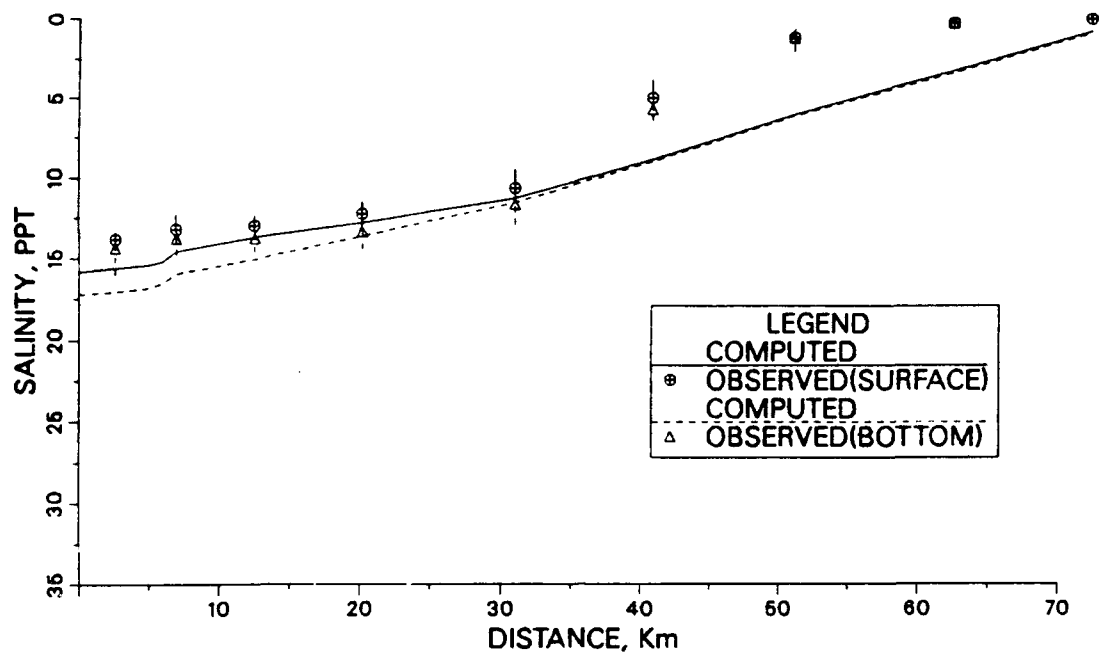


a. Season 1

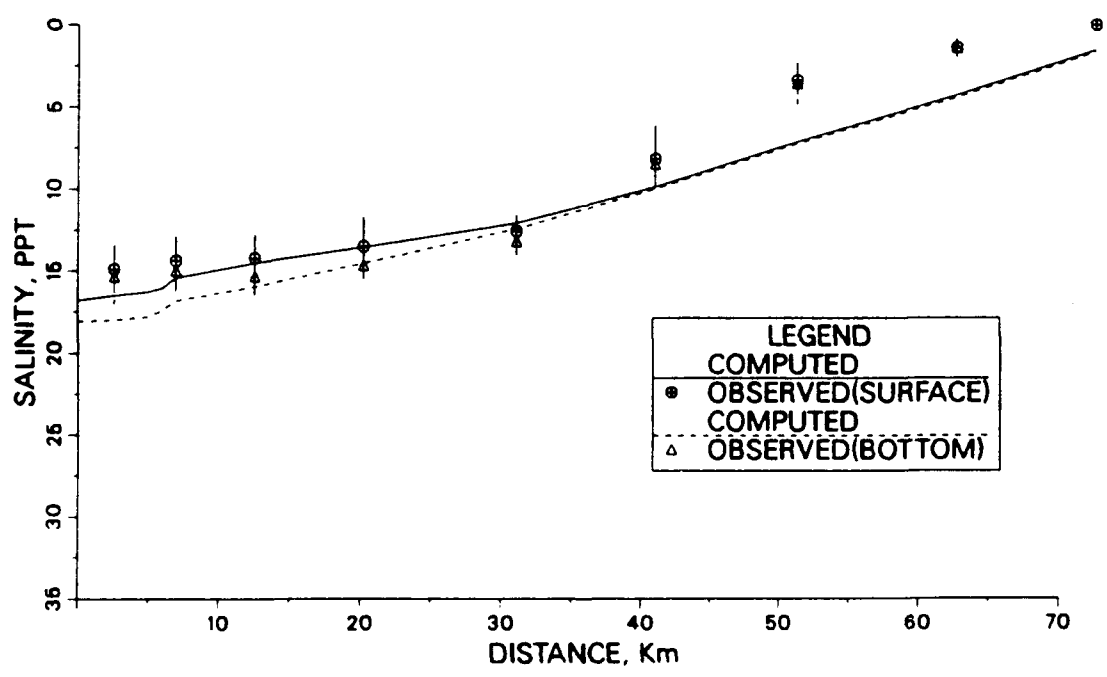


b. Season 2

Figure B72. Comparison of seasonally averaged salinities along Patuxent River during 1985 (Sheet 1 of 3)

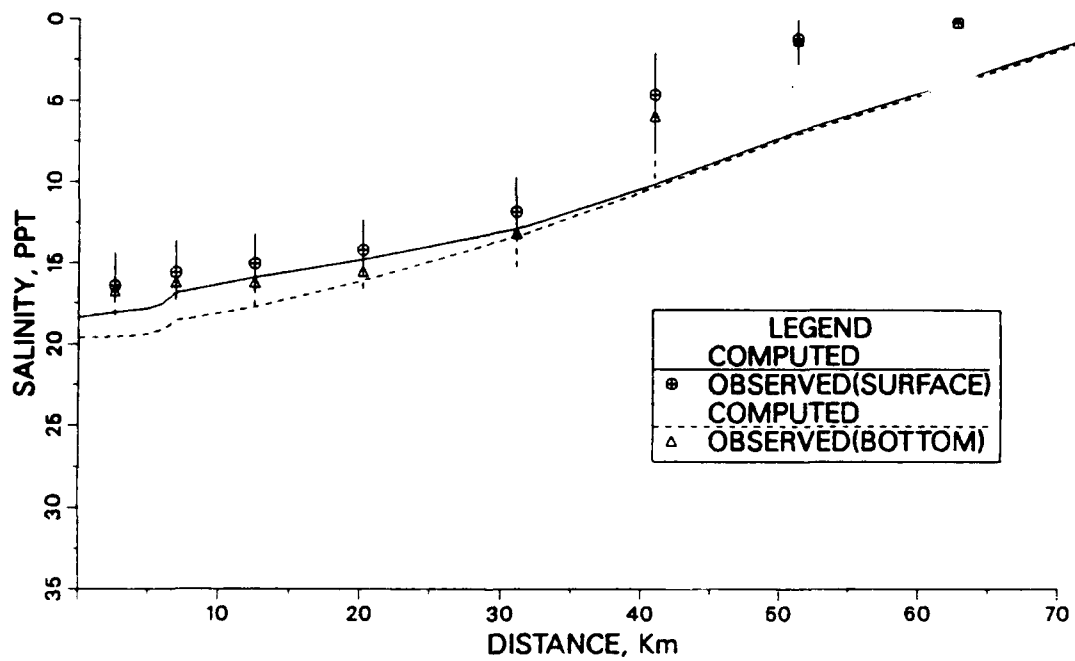


c. Season 3



d. Season 4

Figure B72. (Sheet 2 of 3)



e. Season 5

Figure B72. (Sheet 3 of 3)

Table B1
1985 Surface Heat Exchange Data

<u>Day</u>	<u>Equilibrium Temperature</u> °C	<u>Surface Transfer Coefficient</u> cm/sec
0	9.50000	0.74329E-03
1	9.50000	0.81260E-03
2	0.30000	0.83172E-03
3	-0.40000	0.56882E-03
4	0.90000	0.95839E-03
5	1.90000	0.40630E-03
6	2.20000	0.56882E-03
7	0.10000	0.87235E-03
8	-4.70000	0.66920E-03
9	-5.30000	0.36806E-03
10	-3.40000	0.54731E-03
11	-4.10000	0.88191E-03
12	-1.70000	0.67398E-03
13	1.00000	0.66920E-03
14	-3.70000	0.12954E-02
15	-5.40000	0.60945E-03
16	-2.00000	0.46605E-03
17	-0.90000	0.29875E-03
18	0.80000	0.55448E-03
19	-11.10000	0.88191E-03
20	-13.30000	0.65008E-03
21	-6.10000	0.80065E-03
22	-2.70000	0.43020E-03
23	-1.20000	0.40391E-03
24	1.20000	0.70266E-03
25	-4.80000	0.11711E-02
26	-3.90000	0.35611E-03
27	-1.30000	0.32743E-03
28	-0.30000	0.38240E-03
29	-2.50000	0.35850E-03
30	0.10000	0.58794E-03
31	0.60000	0.35850E-03
32	0.20000	0.51146E-03
33	-2.70000	0.59750E-03
34	-2.70000	0.33699E-03
35	-2.70000	0.37045E-03
36	0.30000	0.27246E-03
37	-1.10000	0.78870E-03
38	-6.00000	0.14149E-02
39	-4.30000	0.12380E-02
40	-1.70000	0.67637E-03
41	1.90000	0.29875E-03
42	3.30000	0.11854E-02
43	-0.10000	0.73612E-03

(Continued)

(Sheet 1 of 9)

Table B1 (Continued)

Day	Equilibrium Temperature	Surface Transfer Coefficient
	°C	cm/sec
44	0.00000	0.57121E-03
45	1.30000	0.35133E-03
46	0.00000	0.43259E-03
47	2.80000	0.45410E-03
48	2.70000	0.60467E-03
49	3.90000	0.61901E-03
50	3.90000	0.37762E-03
51	3.10000	0.44215E-03
52	9.60000	0.88430E-03
53	12.40000	0.98707E-03
54	14.90000	0.15200E-02
55	9.80000	0.88191E-03
56	6.30000	0.43498E-03
57	7.40000	0.90820E-03
58	2.70000	0.62618E-03
59	5.10000	0.63096E-03
60	10.30000	0.56165E-03
61	5.40000	0.60706E-03
62	6.40000	0.72417E-03
63	12.00000	0.12428E-02
64	2.80000	0.69788E-03
65	4.00000	0.59511E-03
66	8.40000	0.10086E-02
67	10.70000	0.46366E-03
68	11.70000	0.39674E-03
69	7.70000	0.58077E-03
70	9.40000	0.17782E-02
71	9.50000	0.87235E-03
72	9.90000	0.41347E-03
73	7.20000	0.76241E-03
74	5.60000	0.62618E-03
75	6.90000	0.86757E-03
76	2.10000	0.83172E-03
77	4.30000	0.58794E-03
78	9.00000	0.96317E-03
79	5.20000	0.60945E-03
80	3.90000	0.60706E-03
81	6.70000	0.65964E-03
82	5.70000	0.43498E-03
83	7.30000	0.62857E-03
84	7.90000	0.72417E-03
85	12.20000	0.88191E-03
86	16.00000	0.15750E-02
87	18.20000	0.14436E-02
88	12.60000	0.68354E-03

(Continued)

(Sheet 2 of 9)

Table B1 (Continued)

Day	Equilibrium Temperature	Surface Transfer Coefficient
	°C	cm/sec
89	8.80000	0.74329E-03
90	11.30000	0.91776E-03
91	11.20000	0.47800E-03
92	10.70000	0.69549E-03
93	11.70000	0.71461E-03
94	14.90000	0.15989E-02
95	13.40000	0.15941E-02
96	10.30000	0.77675E-03
97	8.90000	0.71700E-03
98	4.00000	0.86518E-03
99	6.90000	0.64052E-03
100	11.40000	0.65247E-03
101	17.60000	0.54253E-03
102	14.10000	0.81499E-03
103	17.10000	0.46127E-03
104	15.20000	0.65964E-03
105	19.20000	0.43737E-03
106	12.50000	0.79826E-03
107	15.50000	0.95122E-03
108	20.90000	0.96078E-03
109	22.00000	0.65725E-03
110	20.90000	0.56165E-03
111	25.80000	0.45410E-03
112	19.70000	0.76002E-03
113	15.50000	0.93688E-03
114	17.00000	0.73373E-03
115	18.50000	0.98946E-03
116	18.70000	0.77675E-03
117	15.30000	0.88430E-03
118	14.60000	0.78870E-03
119	19.90000	0.64291E-03
120	18.00000	0.10397E-02
121	14.50000	0.81021E-03
122	12.20000	0.81977E-03
123	18.30000	0.50668E-03
124	16.40000	0.12930E-02
125	20.00000	0.97512E-03
126	15.50000	0.11281E-02
127	17.20000	0.58794E-03
128	17.80000	0.12524E-02
129	21.10000	0.97034E-03
130	22.10000	0.10755E-02
131	20.90000	0.10349E-02
132	24.40000	0.78631E-03
133	22.50000	0.74329E-03

(Continued)

(Sheet 3 of 9)

Table B1 (Continued)

Day	Equilibrium Temperature	Surface Transfer Coefficient
	°C	cm/sec
133	22.50000	0.74329E-03
134	16.40000	0.12189E-02
135	18.70000	0.77914E-03
136	18.40000	0.68593E-03
137	15.10000	0.11615E-02
138	17.80000	0.89625E-03
139	20.30000	0.13503E-02
140	21.30000	0.11830E-02
141	20.10000	0.67159E-03
142	14.50000	0.99663E-03
143	14.40000	0.82455E-03
144	25.80000	0.44454E-03
145	22.60000	0.84606E-03
146	22.70000	0.10779E-02
147	21.70000	0.79587E-03
148	16.60000	0.85323E-03
149	18.30000	0.80065E-03
150	19.80000	0.13671E-02
151	23.20000	0.99424E-03
152	24.50000	0.60467E-03
153	25.50000	0.56643E-03
154	23.30000	0.56165E-03
155	23.30000	0.11185E-02
156	21.80000	0.66442E-03
157	19.90000	0.69549E-03
158	22.10000	0.92254E-03
159	24.50000	0.10588E-02
160	26.90000	0.63574E-03
161	24.30000	0.90342E-03
162	22.20000	0.14221E-02
163	16.70000	0.10707E-02
164	19.60000	0.85084E-03
165	21.20000	0.87952E-03
166	22.30000	0.12237E-02
167	23.90000	0.11281E-02
168	23.10000	0.10898E-02
169	24.30000	0.55687E-03
170	21.50000	0.80543E-03
171	23.80000	0.70266E-03
172	22.60000	0.10134E-02
173	23.80000	0.11042E-02
174	25.90000	0.92015E-03
175	22.00000	0.78392E-03
176	20.40000	0.89147E-03
177	21.10000	0.74807E-03

(Continued)

(Sheet 4 of 9)

Table B1 (Continued)

Day	Equilibrium Temperature °C	Surface Transfer Coefficient cm/sec
178	22.30000	0.50429E-03
179	25.80000	0.51385E-03
180	22.80000	0.91059E-03
181	19.50000	0.83411E-03
182	22.20000	0.72178E-03
183	25.40000	0.92493E-03
184	24.90000	0.10683E-02
185	23.80000	0.10444E-02
186	22.40000	0.15200E-02
187	24.70000	0.93449E-03
188	24.40000	0.11281E-02
189	25.50000	0.75763E-03
190	27.10000	0.69071E-03
191	26.50000	0.69788E-03
192	28.30000	0.54970E-03
193	30.50000	0.48995E-03
194	26.90000	0.95839E-03
195	26.70000	0.14985E-02
196	27.10000	0.85562E-03
197	24.00000	0.96317E-03
198	29.90000	0.50907E-03
199	25.50000	0.91776E-03
200	27.60000	0.77914E-03
201	27.40000	0.69310E-03
202	25.10000	0.10325E-02
203	22.20000	0.81977E-03
204	24.80000	0.75046E-03
205	24.60000	0.15559E-02
206	24.20000	0.21247E-02
207	25.00000	0.62618E-03
208	27.50000	0.59511E-03
209	26.40000	0.42542E-03
210	26.70000	0.91298E-03
211	25.50000	0.12739E-02
212	21.90000	0.95839E-03
213	22.50000	0.80543E-03
214	27.90000	0.45171E-03
215	24.90000	0.65964E-03
216	23.20000	0.78392E-03
217	23.10000	0.68593E-03
218	23.20000	0.13408E-02
219	25.30000	0.71939E-03
220	27.80000	0.67637E-03
221	26.10000	0.85323E-03
222	30.70000	0.48756E-03

(Continued)

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Table B1 (Continued)

Day	Equilibrium Temperature	Surface Transfer Coefficient
	°C	cm/sec
223	24.60000	0.79109E-03
224	25.30000	0.10588E-02
225	26.30000	0.10588E-02
226	24.90000	0.14483E-02
227	27.10000	0.80065E-03
228	22.00000	0.85084E-03
229	21.20000	0.15105E-02
230	24.30000	0.11926E-02
231	27.50000	0.49951E-03
232	21.90000	0.84845E-03
233	23.00000	0.52819E-03
234	26.20000	0.41586E-03
235	19.50000	0.13049E-02
236	21.80000	0.12165E-02
237	24.60000	0.10659E-02
238	23.60000	0.79348E-03
239	23.60000	0.89625E-03
240	23.00000	0.12763E-02
241	22.40000	0.17758E-02
242	20.10000	0.13241E-02
243	20.50000	0.13432E-02
244	22.90000	0.13719E-02
245	26.00000	0.86518E-03
246	26.10000	0.99185E-03
247	28.10000	0.81738E-03
248	27.00000	0.10707E-02
249	30.70000	0.50429E-03
250	28.90000	0.48517E-03
251	27.00000	0.72656E-03
252	28.20000	0.65964E-03
253	20.60000	0.83650E-03
254	17.40000	0.68115E-03
255	13.00000	0.10373E-02
256	16.30000	0.65247E-03
257	18.70000	0.46127E-03
258	20.40000	0.45649E-03
259	20.80000	0.51863E-03
260	22.90000	0.35850E-03
261	22.50000	0.48995E-03
262	21.30000	0.65486E-03
263	20.40000	0.86996E-03
264	19.80000	0.60945E-03
265	20.50000	0.10659E-02
266	20.80000	0.98946E-03
267	16.20000	0.79826E-03

(Continued)

(Sheet 6 of 9)

Table B1 (Continued)

Day	Equilibrium Temperature	Surface Transfer Coefficient
	°C	cm/sec
268	19.00000	0.73851E-03
269	17.00000	0.18690E-02
270	16.20000	0.76480E-03
271	18.60000	0.52580E-03
272	17.30000	0.10086E-02
273	18.10000	0.16252E-02
274	16.90000	0.96317E-03
275	16.80000	0.65008E-03
276	19.50000	0.39435E-03
277	17.30000	0.94883E-03
278	13.80000	0.49951E-03
279	15.90000	0.38240E-03
280	15.60000	0.71939E-03
281	18.90000	0.52102E-03
282	18.70000	0.76241E-03
283	17.80000	0.71700E-03
284	12.30000	0.55209E-03
285	17.50000	0.78870E-03
286	21.30000	0.62379E-03
287	20.50000	0.11233E-02
288	18.20000	0.60945E-03
289	14.60000	0.67159E-03
290	15.50000	0.92493E-03
291	18.70000	0.74090E-03
292	14.60000	0.65725E-03
293	11.30000	0.91059E-03
294	14.60000	0.10062E-02
295	17.30000	0.72417E-03
296	18.90000	0.43976E-03
297	17.70000	0.47800E-03
298	14.10000	0.35611E-03
299	12.30000	0.52341E-03
300	10.70000	0.63335E-03
301	6.50000	0.43498E-03
302	10.30000	0.45171E-03
303	12.40000	0.10277E-02
304	13.50000	0.11042E-02
305	12.20000	0.82694E-03
306	13.10000	0.10588E-02
307	14.40000	0.16252E-02
308	10.20000	0.59272E-03
309	10.50000	0.70266E-03
310	13.60000	0.28680E-03
311	8.20000	0.65725E-03
312	9.70000	0.67876E-03

(Continued)

(Sheet 7 of 9)

Table B1 (Continued)

Day	Equilibrium Temperature	Surface Transfer Coefficient
	°C	cm/sec
313	13.80000	0.80782E-03
314	15.10000	0.44932E-03
315	14.60000	0.31309E-03
316	17.70000	0.61901E-03
317	17.00000	0.63813E-03
318	10.30000	0.73134E-03
319	8.60000	0.70266E-03
320	12.00000	0.40391E-03
321	11.80000	0.31070E-03
322	15.20000	0.47322E-03
323	17.30000	0.89386E-03
324	7.50000	0.59989E-03
325	4.50000	0.64530E-03
326	5.40000	0.42542E-03
327	7.10000	0.33699E-03
328	5.20000	0.37284E-03
329	10.00000	0.46605E-03
330	13.40000	0.68832E-03
331	8.20000	0.39435E-03
332	5.50000	0.60228E-03
333	8.80000	0.60228E-03
334	8.20000	0.67398E-03
335	5.10000	0.12930E-02
336	-1.80000	0.91298E-03
337	0.60000	0.26290E-03
338	0.90000	0.26290E-03
339	2.30000	0.54970E-03
340	1.50000	0.42303E-03
341	3.70000	0.28202E-03
342	5.80000	0.24617E-03
343	5.70000	0.30353E-03
344	10.20000	0.76958E-03
345	11.50000	0.90820E-03
346	4.20000	0.56165E-03
347	-1.20000	0.97751E-03
348	-2.40000	0.47322E-03
349	1.30000	0.42064E-03
350	1.70000	0.66203E-03
351	-3.50000	0.68593E-03
352	-6.10000	0.36806E-03
353	-4.90000	0.24139E-03
354	-4.70000	0.72178E-03
355	-5.10000	0.57599E-03
356	3.30000	0.81977E-03
357	6.20000	0.68832E-03

(Continued)

(Sheet 8 of 9)

Table B1 (Concluded)

Day	Equilibrium Temperature	Surface Transfer Coefficient
	°C	cm/sec
358	-2.90000	0.69310E-03
359	-8.60000	0.67876E-03
360	-1.70000	0.87474E-03
361	0.60000	0.49712E-03
362	1.00000	0.28919E-03
363	-0.70000	0.57838E-03
364	1.30000	0.87474E-03
365	0.80000	0.58077E-03
366	1.10000	0.48517E-03

(Sheet 9 of 9)

APPENDIX C: 1986 RESULTS

Boundary Conditions

1. The ocean boundary tide at the Chesapeake Bay tunnel is shown in Figure C1 with the time-varying salinity and temperature at the ocean boundary given in Figures C2 and C3. Wind forcing data corrected to reflect the wind over open water are given in Figures C4 and C5. As in 1984 and 1985, these data are from the Norfolk and Baltimore-Washington International Airports. Freshwater inflows on the James, York, Rappahannock, Potomac, Patuxent, Patapsco, Susquehanna, and Choptank Rivers are presented in Figures C6-C13. Surface heat exchange data for the complete year are listed in Table C1.

Results

2. The 1986 year was broken into five seasons as follows for the purpose of generating seasonally averaged longitudinal transects of salinity:

Season 1 => 1 Jan - 16 Feb
Season 2 => 17 Feb - 3 May
Season 3 => 4 May - 2 Aug
Season 4 => 3 Aug - 9 Nov
Season 5 => 10 Nov - 31 Dec

3. Comparisons of computed water-surface elevation, salinity, and temperature are presented at the locations shown in Figure C14. Figures C15-C20 show the water-surface elevation comparisons at Hampton Roads, VA; Lewisetta, VA; Colonial Beach, VA; Solomons, MD; Annapolis, MD; and Havre de Grace, MD. Figures C21-C39 present the salinity comparisons at seven main bay stations and twelve tributary stations. Figures C40-C58 are similar plots for the comparison of computed and recorded temperatures.

4. The locations of the transects for generating seasonally averaged plots for the previously listed seasons are shown in Figure C59. The longitudinal plots of seasonally averaged salinities for the two main-bay transects and those on the James, Rappahannock, Potomac, and Patuxent Rivers are given in Figures C60-C65.

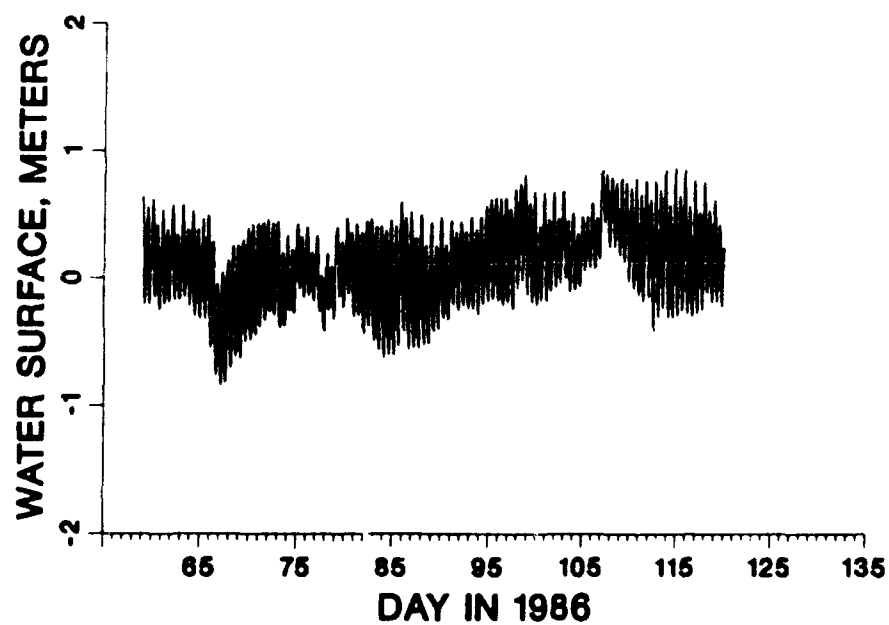
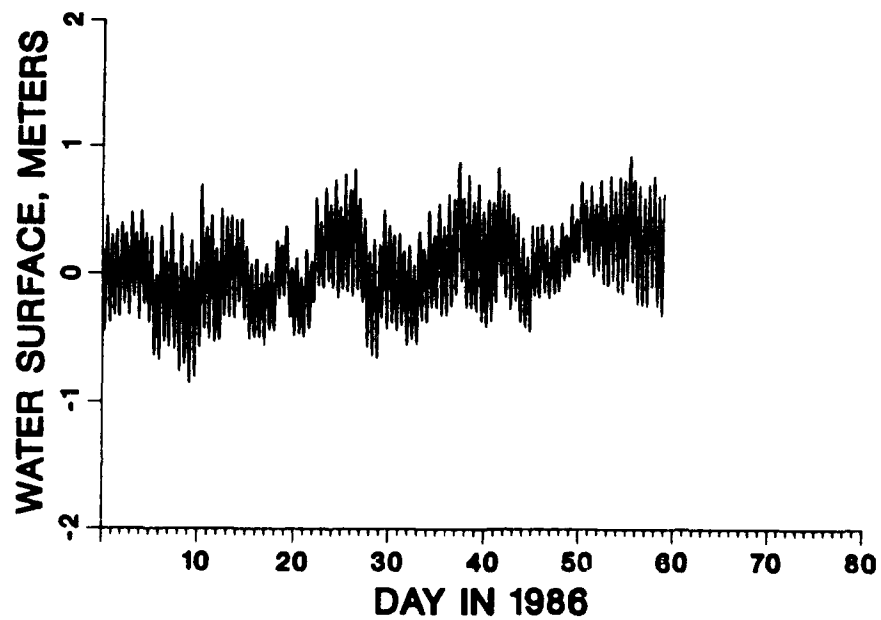


Figure C1. Ocean boundary tide during 1986 (Sheet 1 of 3)

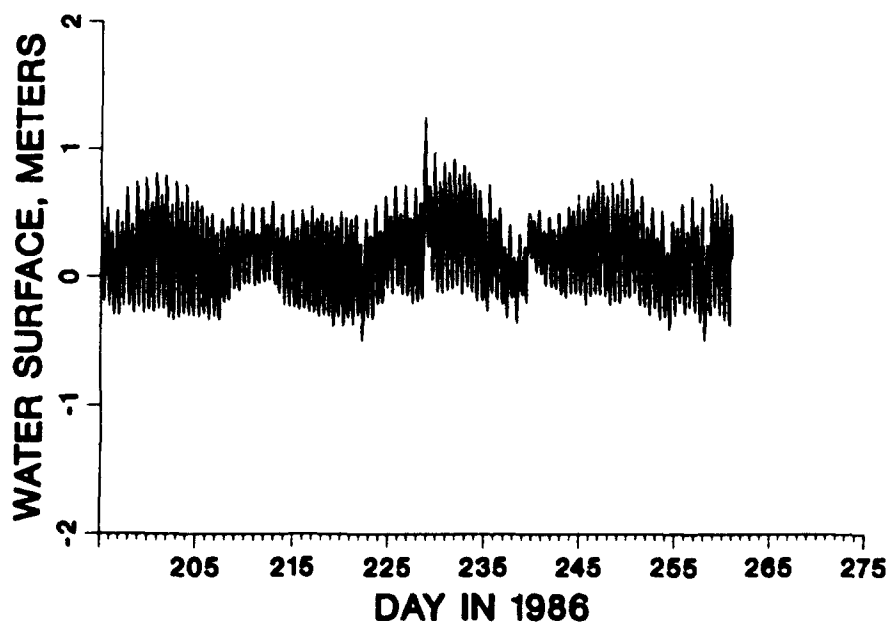
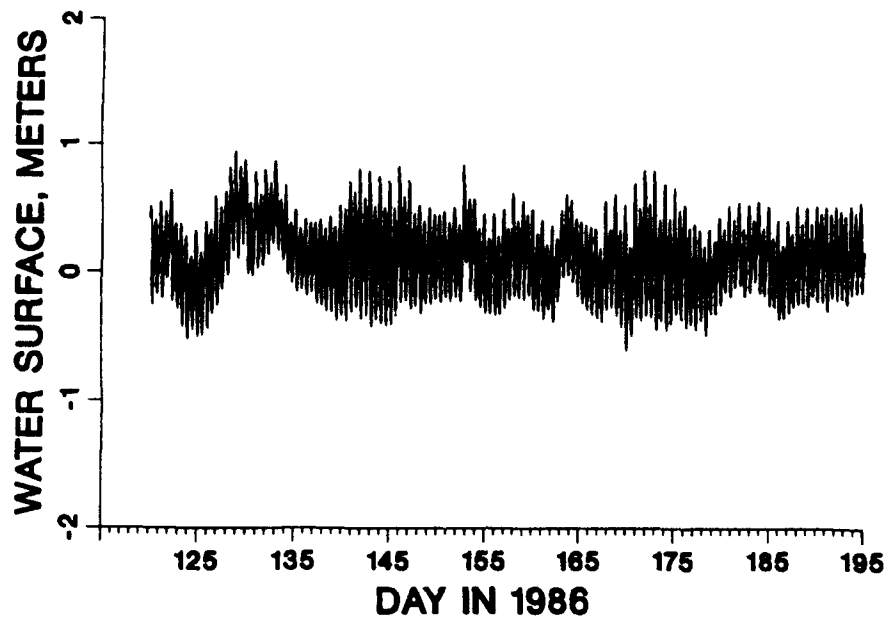


Figure C1. (Sheet 2 of 3)

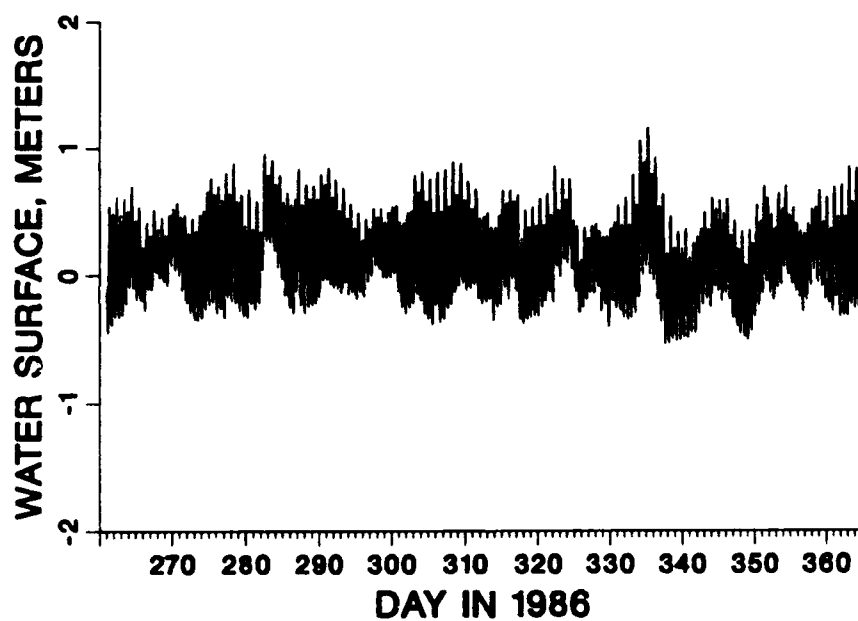


Figure C1. (Sheet 3 of 3)

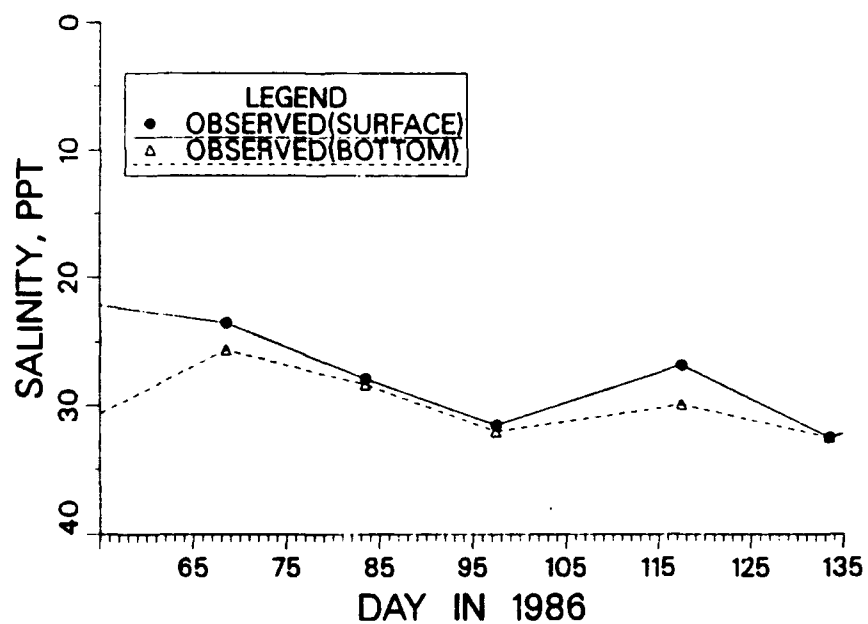
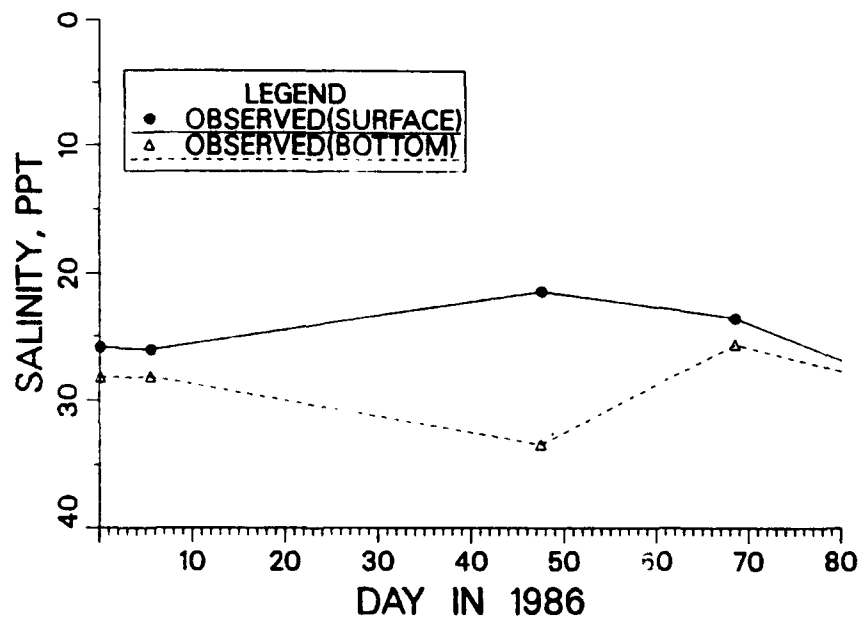


Figure C2. Ocean boundary salinity during 1986 (Sheet 1 of 3)

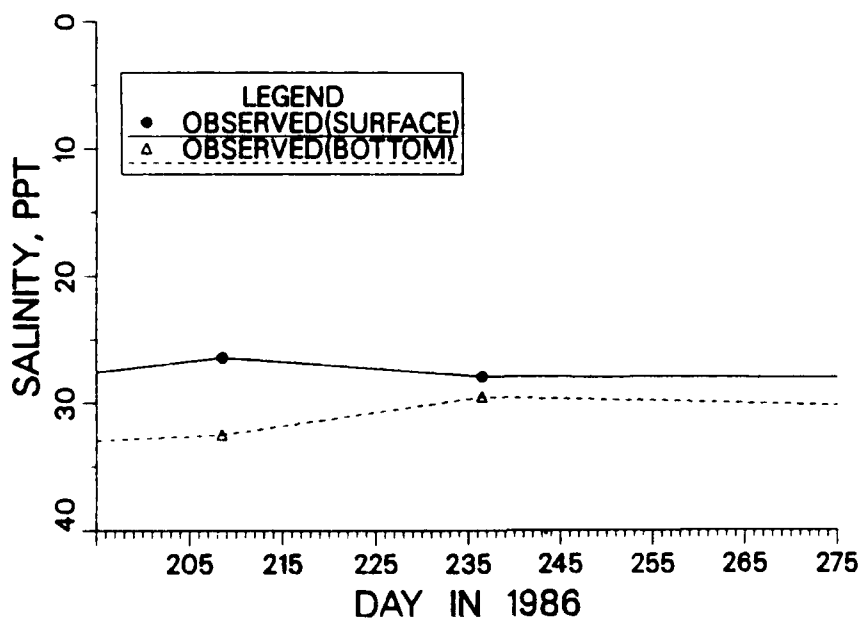
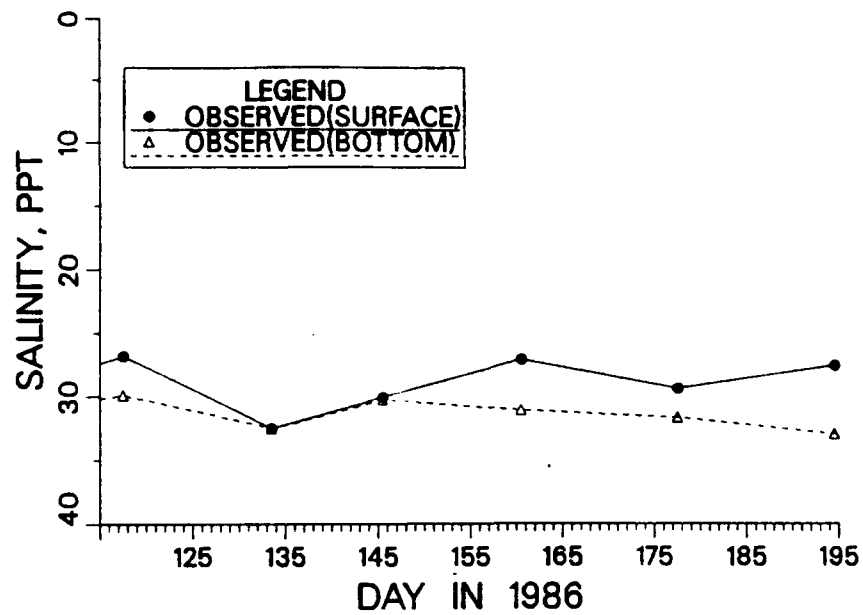


Figure C2. (Sheet 2 of 3)

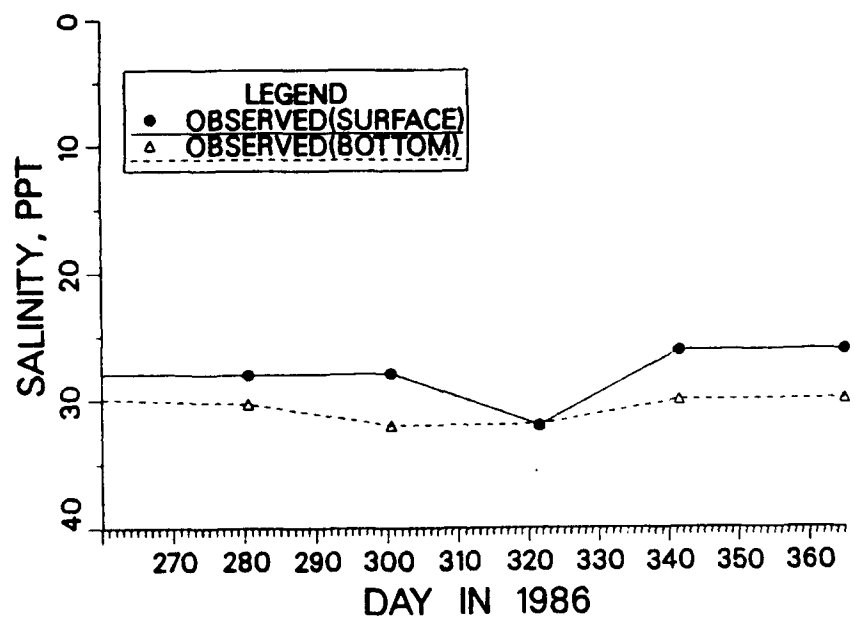


Figure C2. (Sheet 3 of 3)

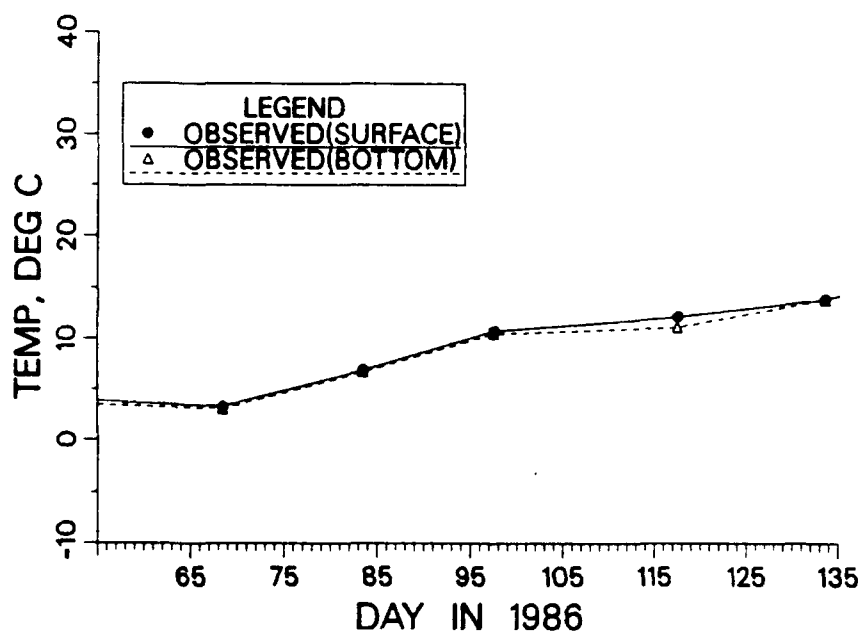
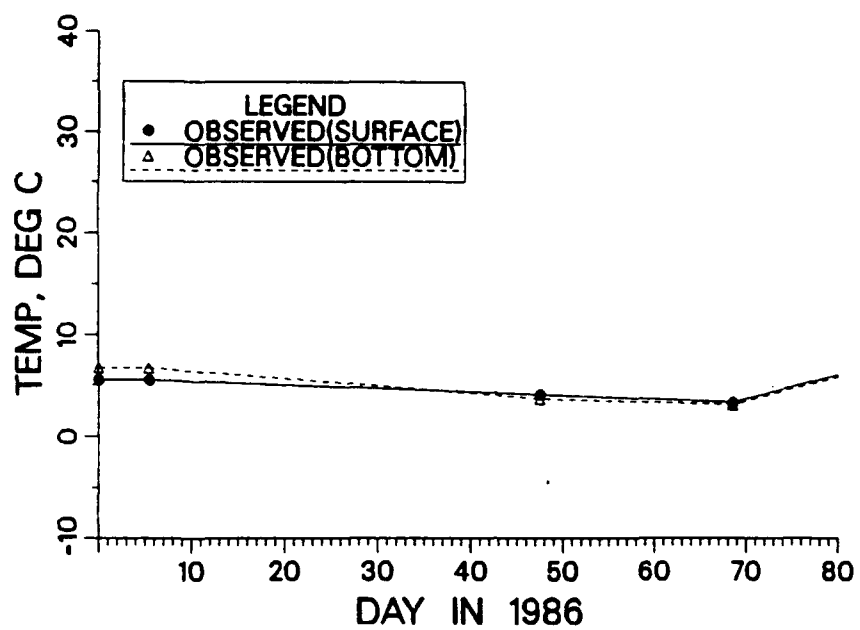


Figure C3. Ocean boundary temperature during 1986 (Sheet 1 of 3)

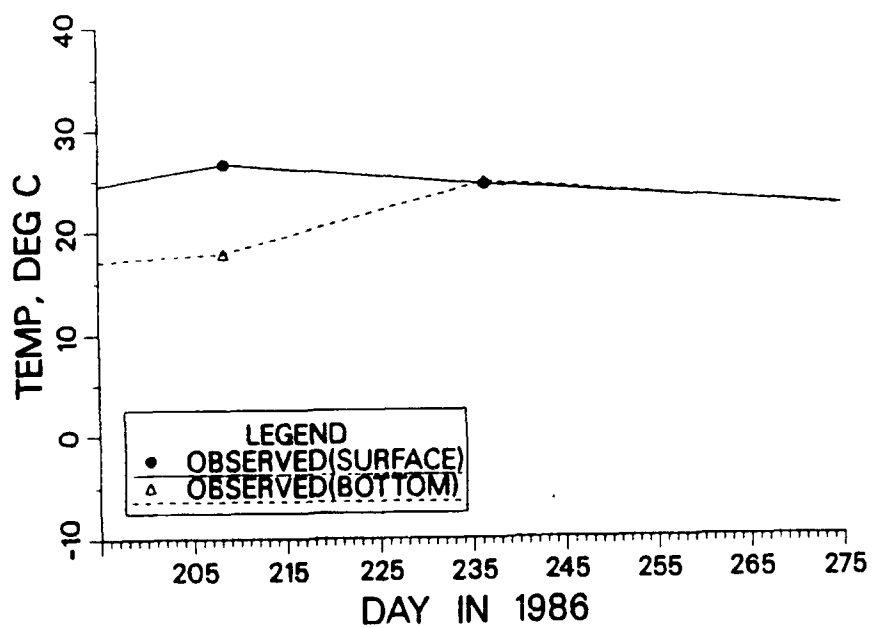
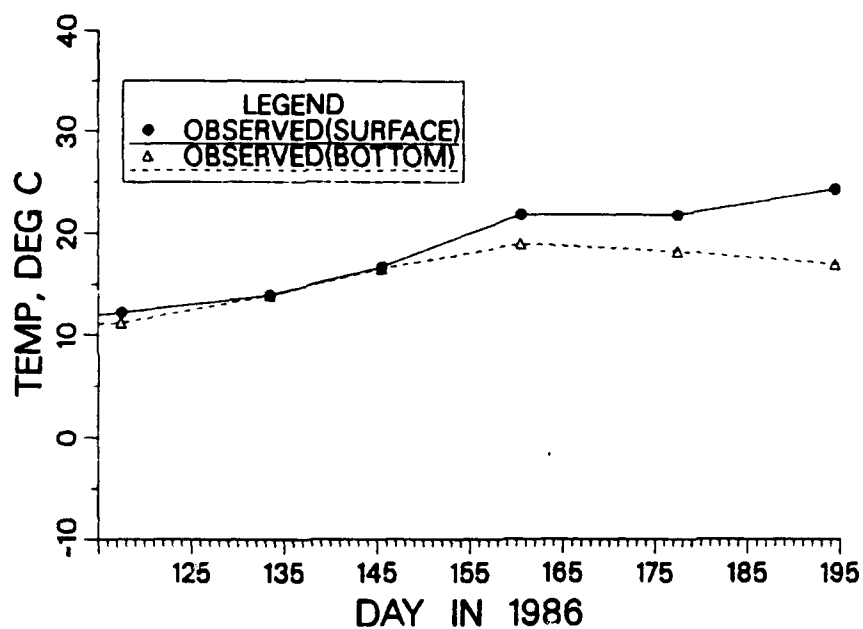


Figure C3. (Sheet 2 of 3)

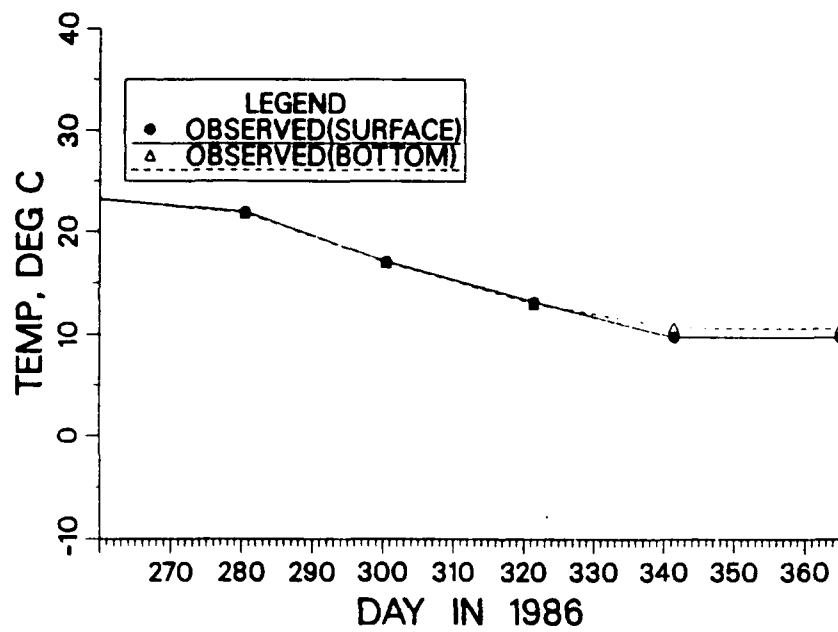
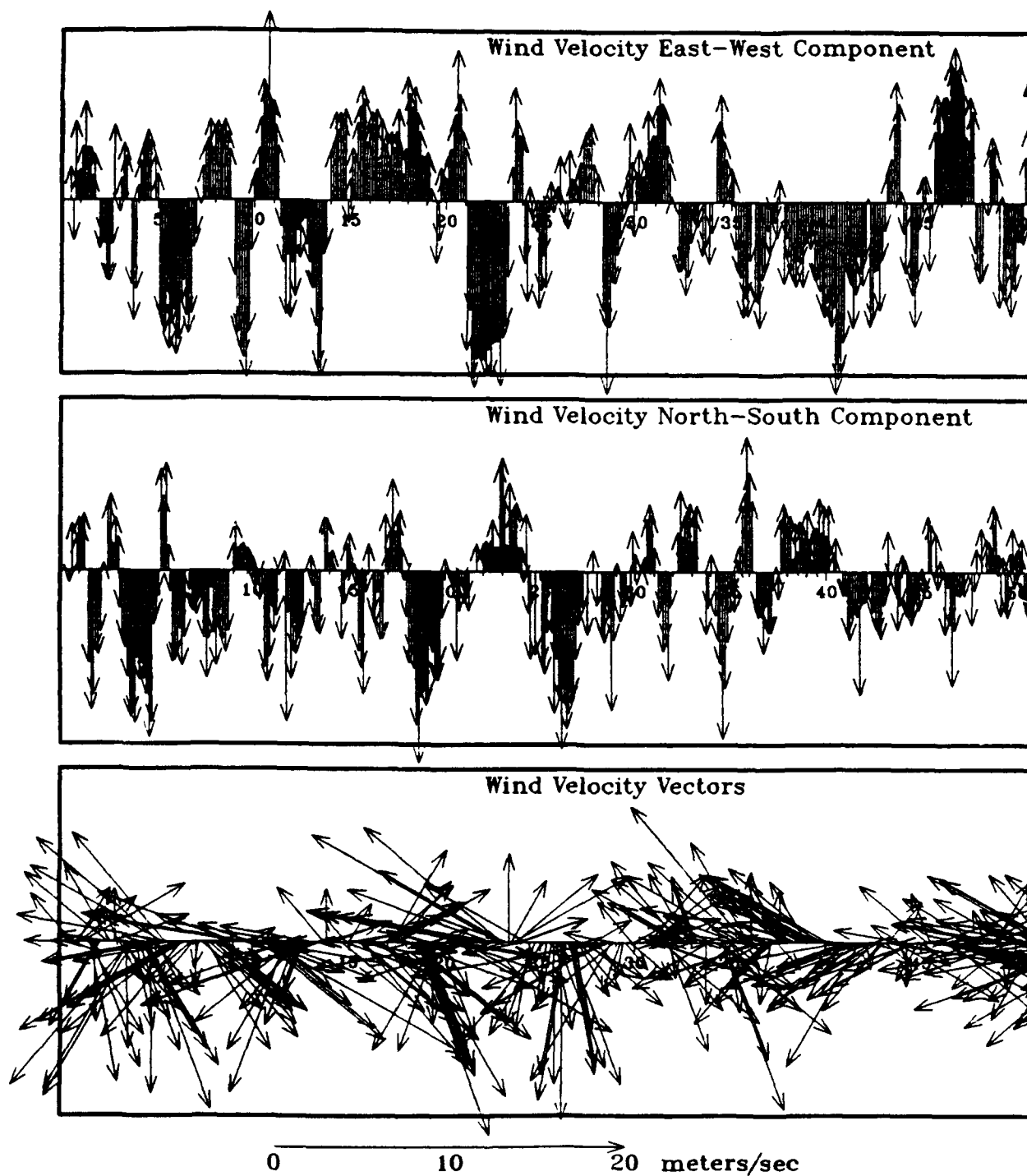
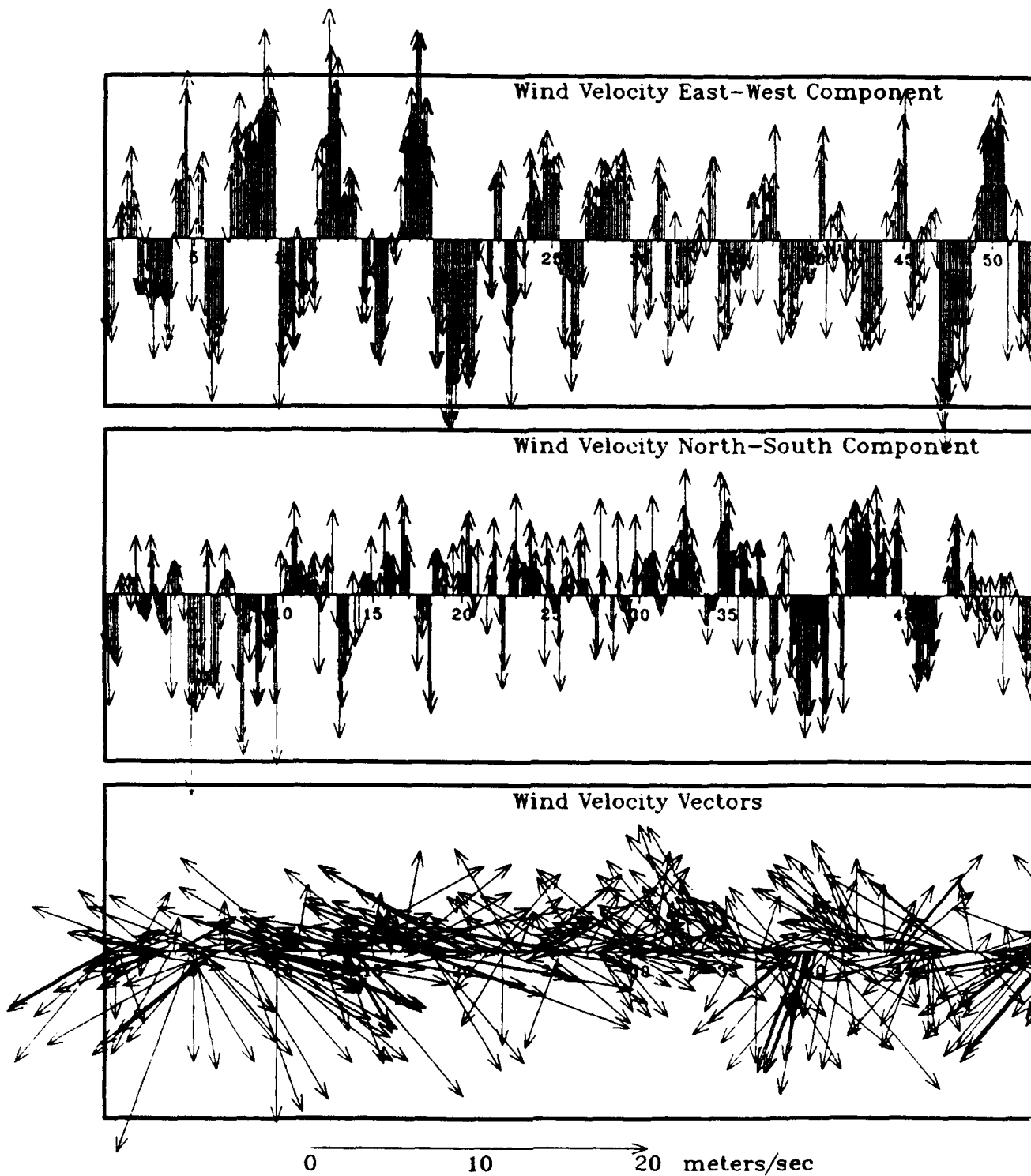


Figure C3. (Sheet 3 of 3)

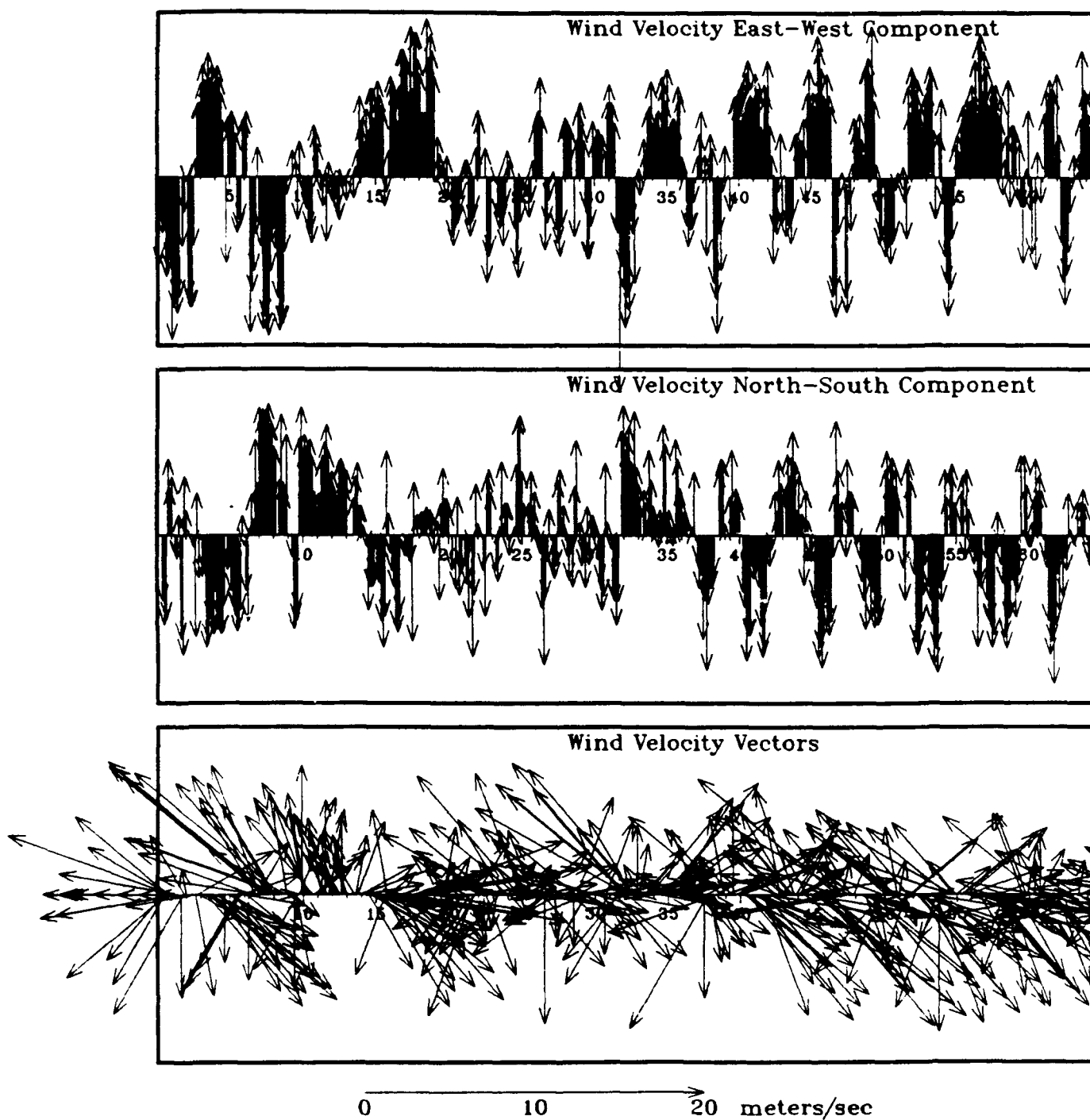


a. Day 0 is 1 January

Figure C4. Wind at Norfolk International Airport during 1986 (Sheet 1 of 5)

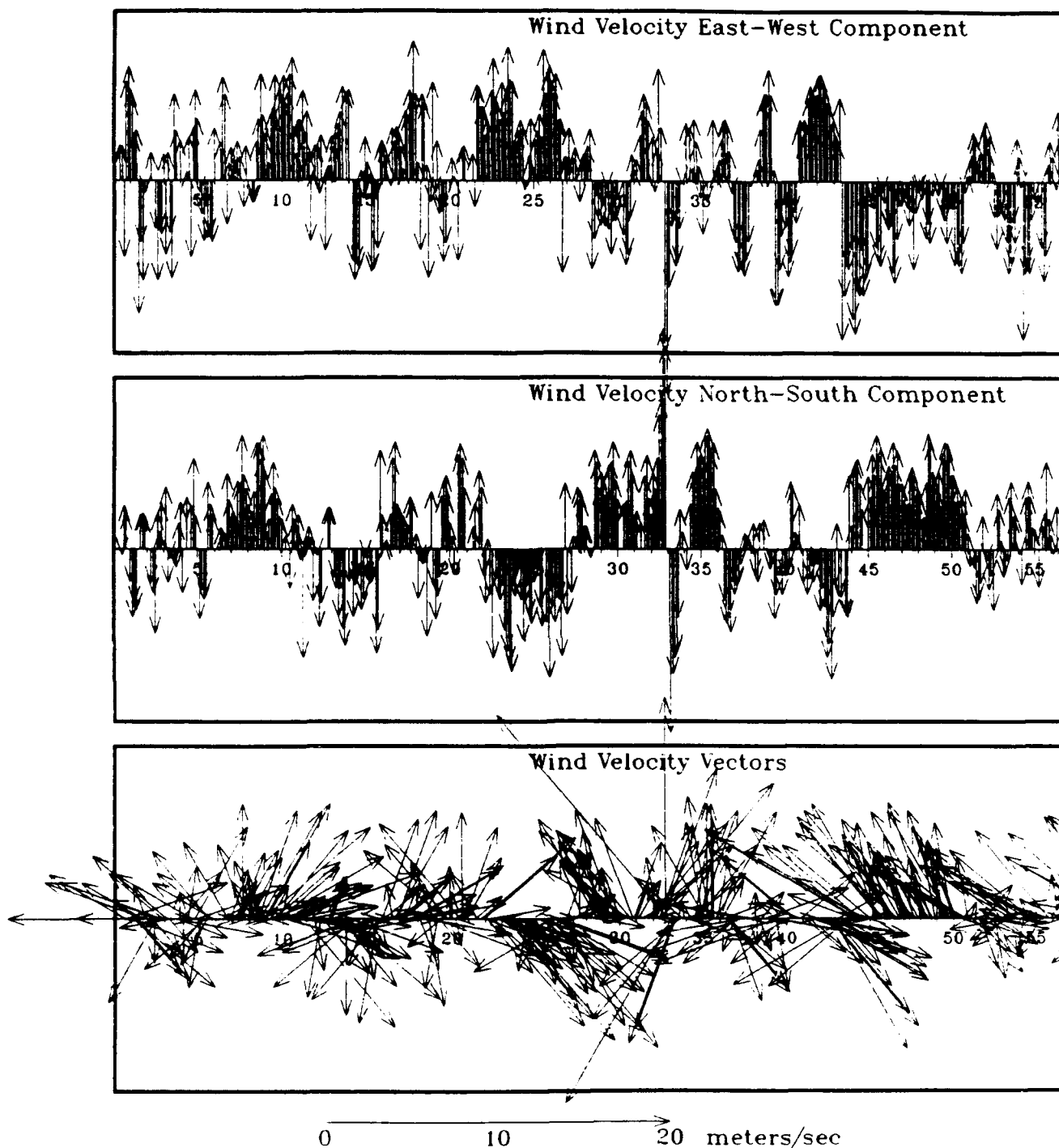


b. Day 0 is 1 March
Figure C4. (Sheet 2 of 5)



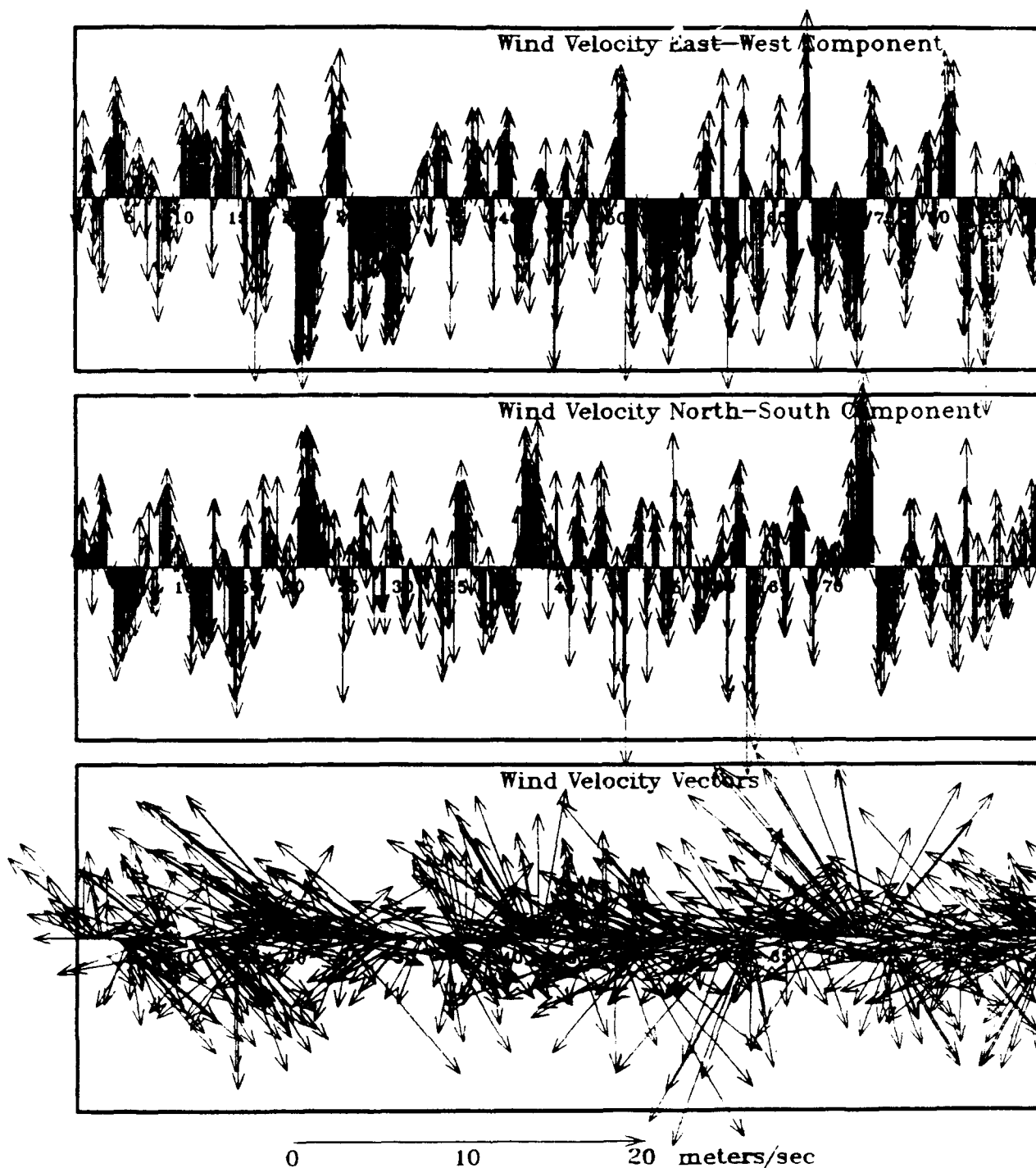
c. Day 0 is 1 May

Figure C4. (Sheet 3 of 5)



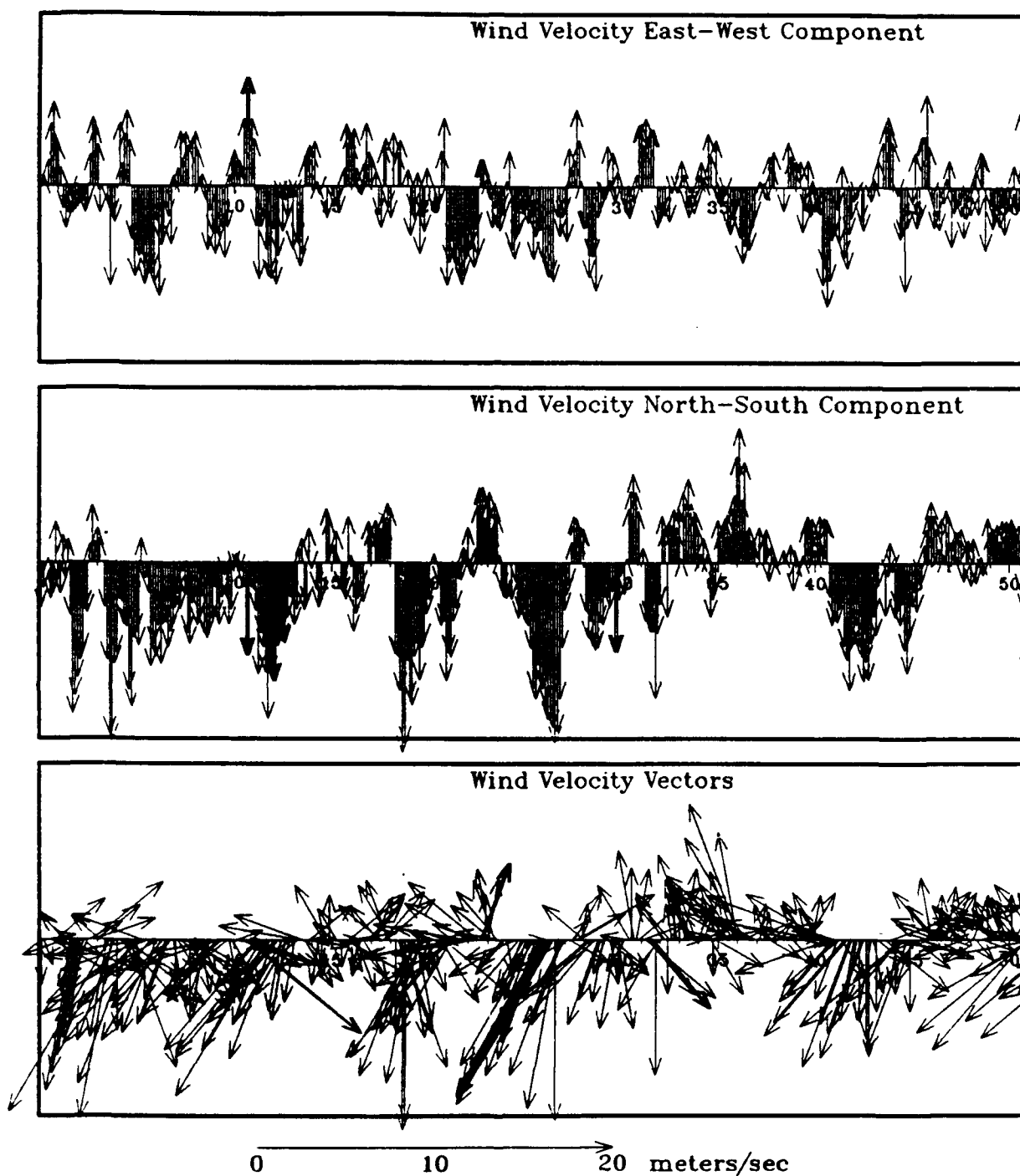
d. Day 0 is 16 July

Figure C4. (Sheet 4 of 5)



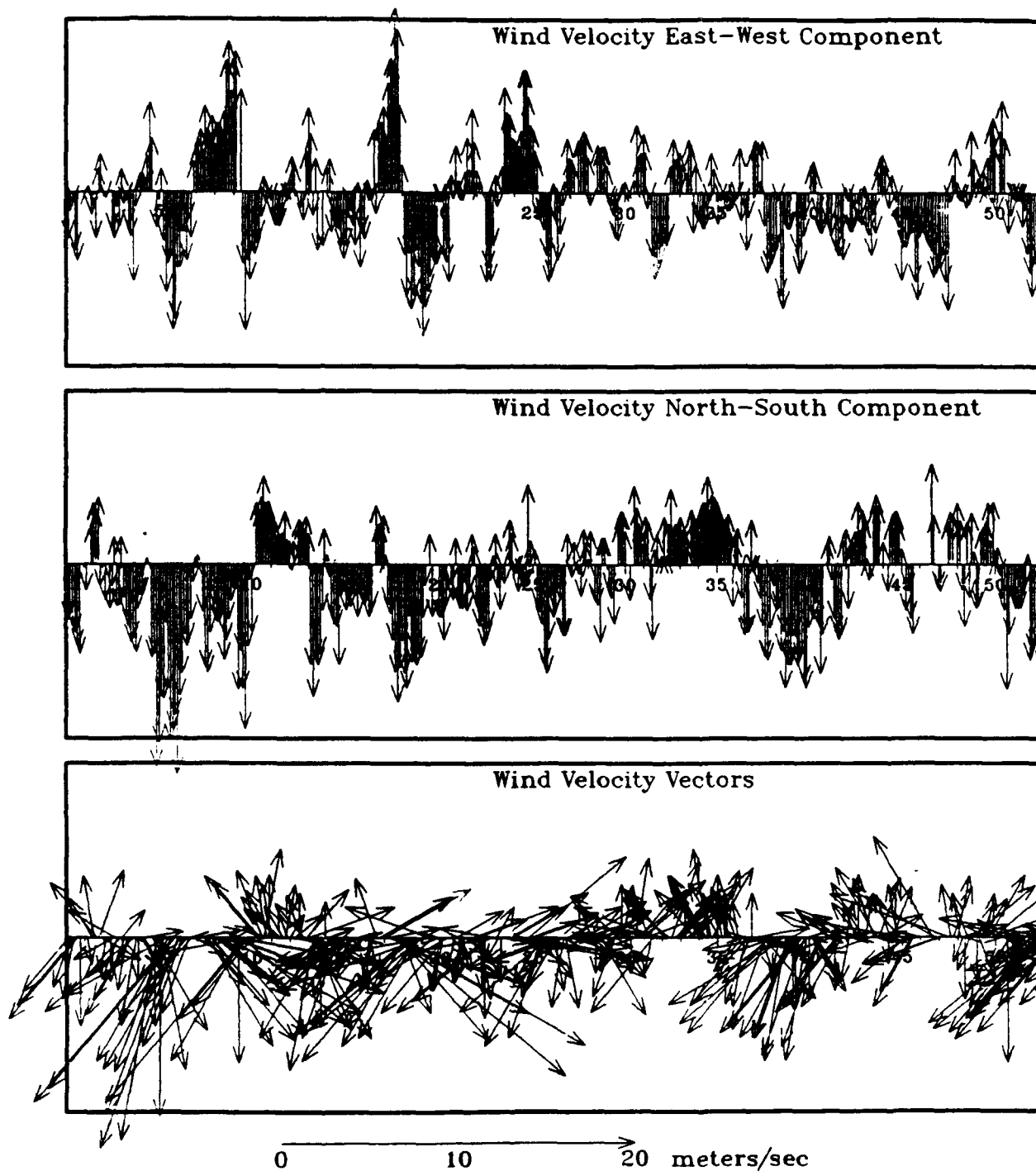
e. Day 0 is 19 September

Figure C4. (Sheet 5 of 5)



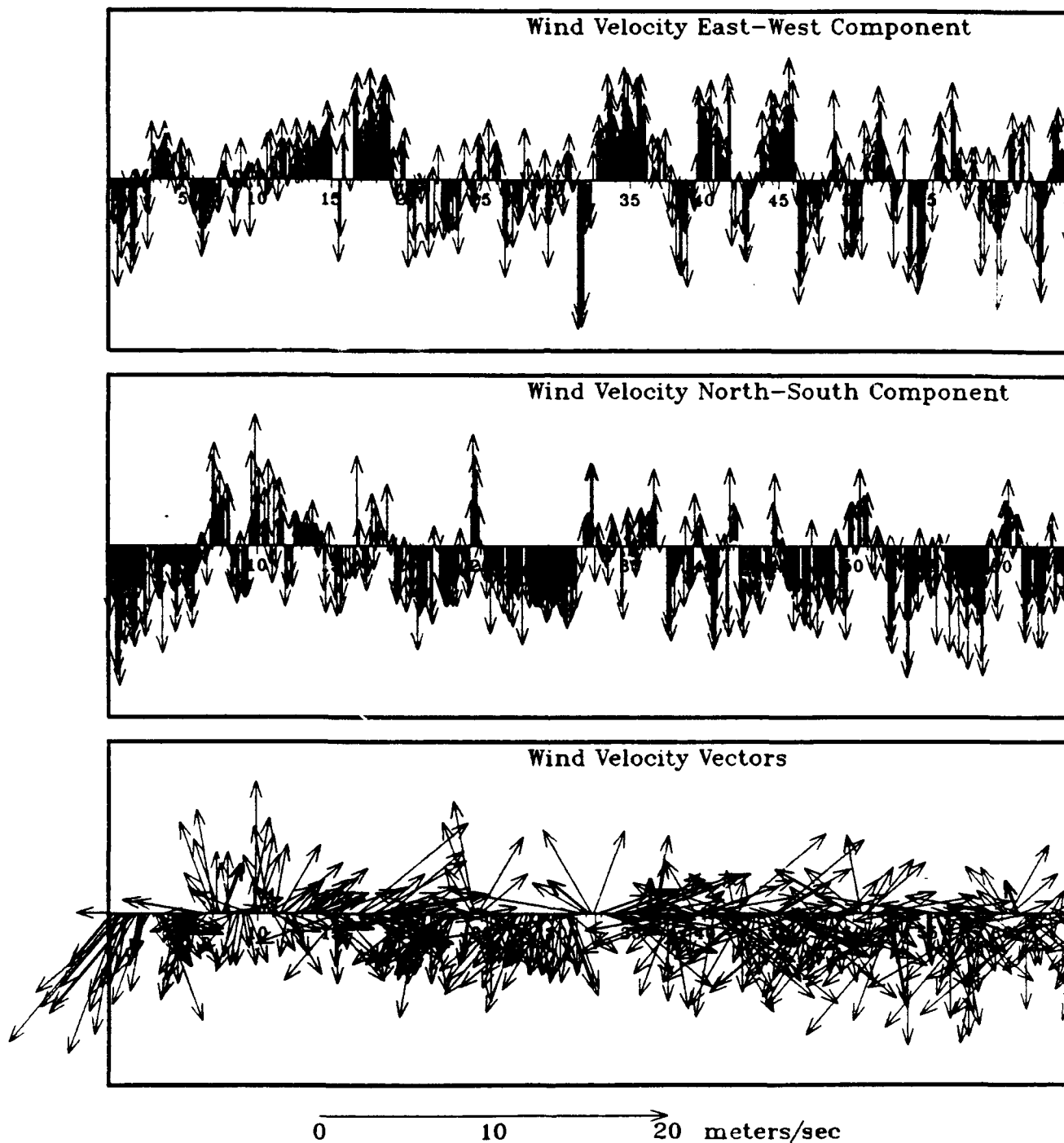
a. Day 0 is 1 January

Figure C5. Wind at Baltimore-Washington International Airport during 1986 (Sheet 1 of 5)



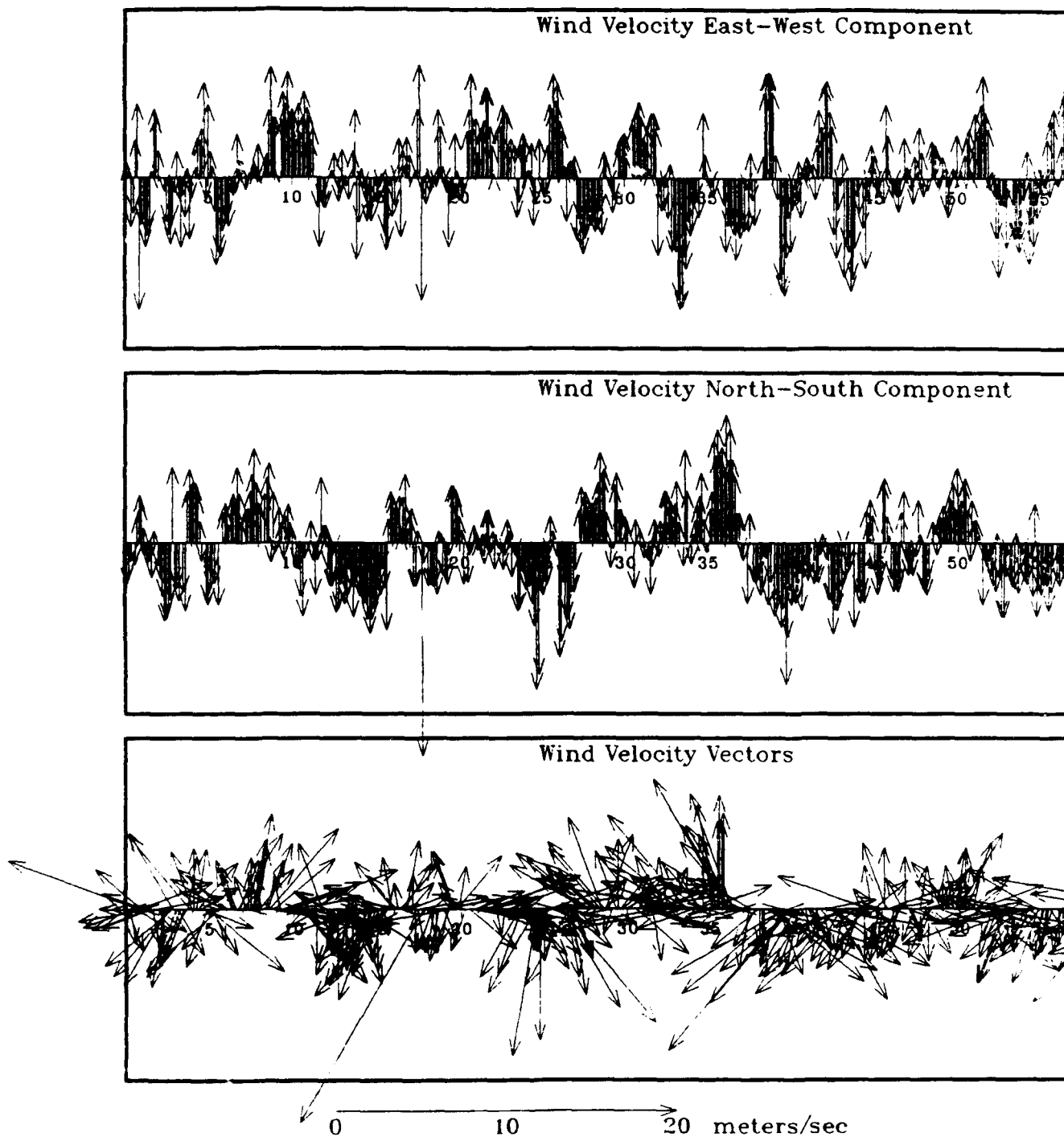
b. Day 0 is 1 March

Figure C5. (Sheet 2 of 5)



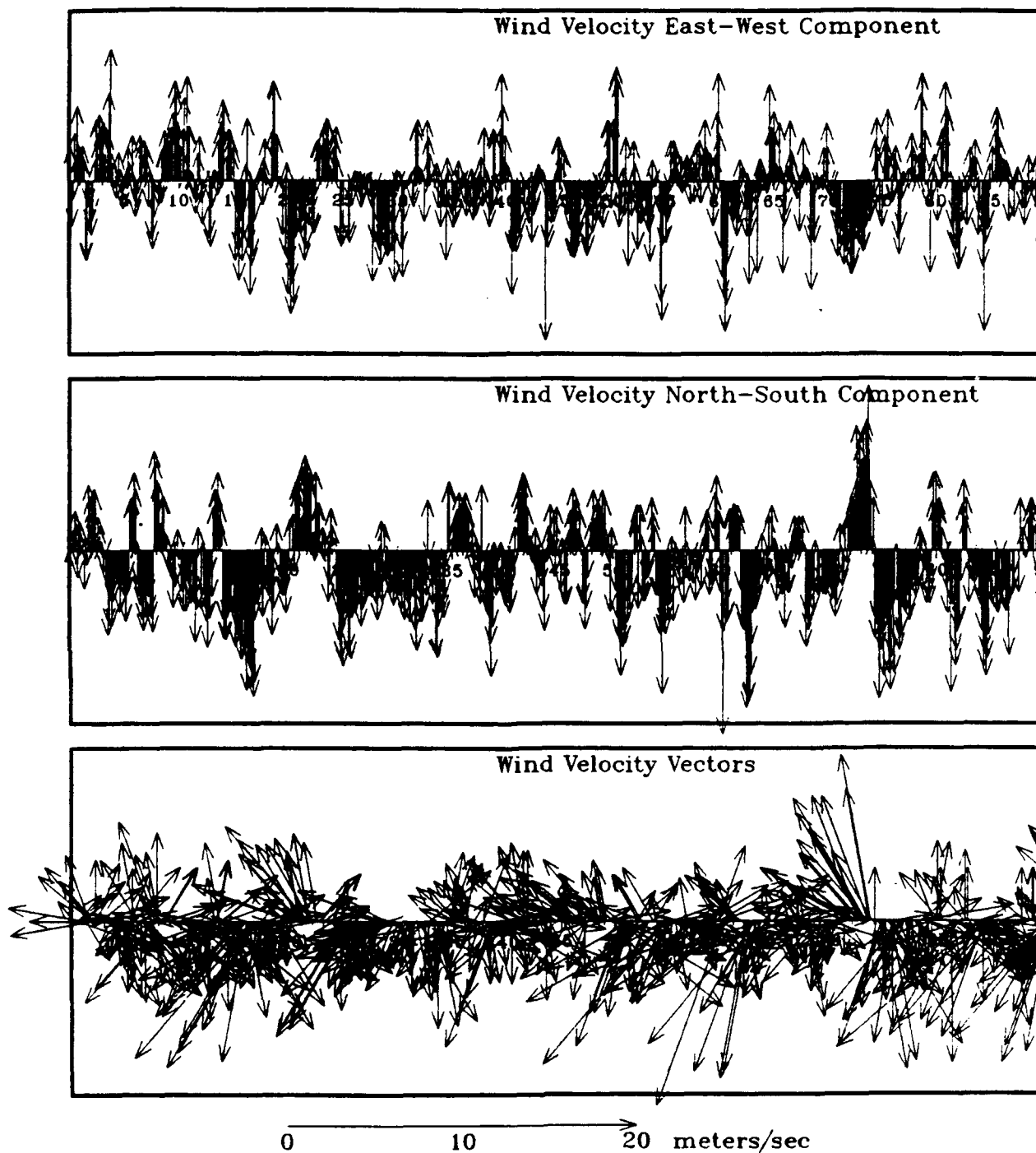
c. Day 0 is 1 May

Figure C5. (Sheet 3 or 5)



d. Day 0 is 16 July

Figure C5. (Sheet 4 of 5)



a. Day 0 is 19 September.

Figure C5. (Sheet 5 of 5)

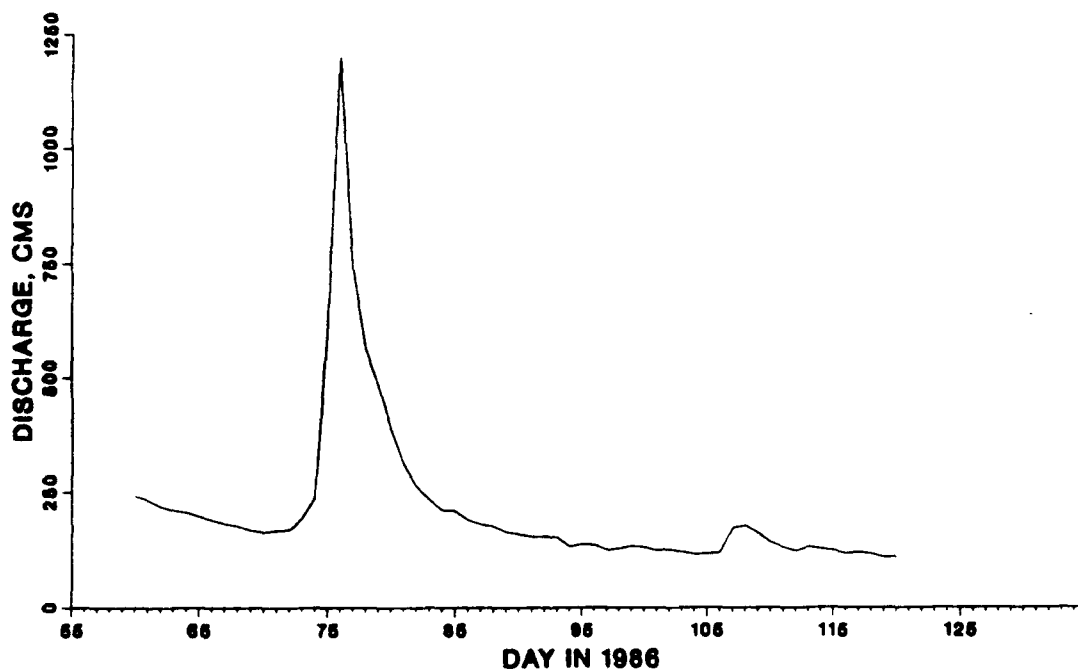
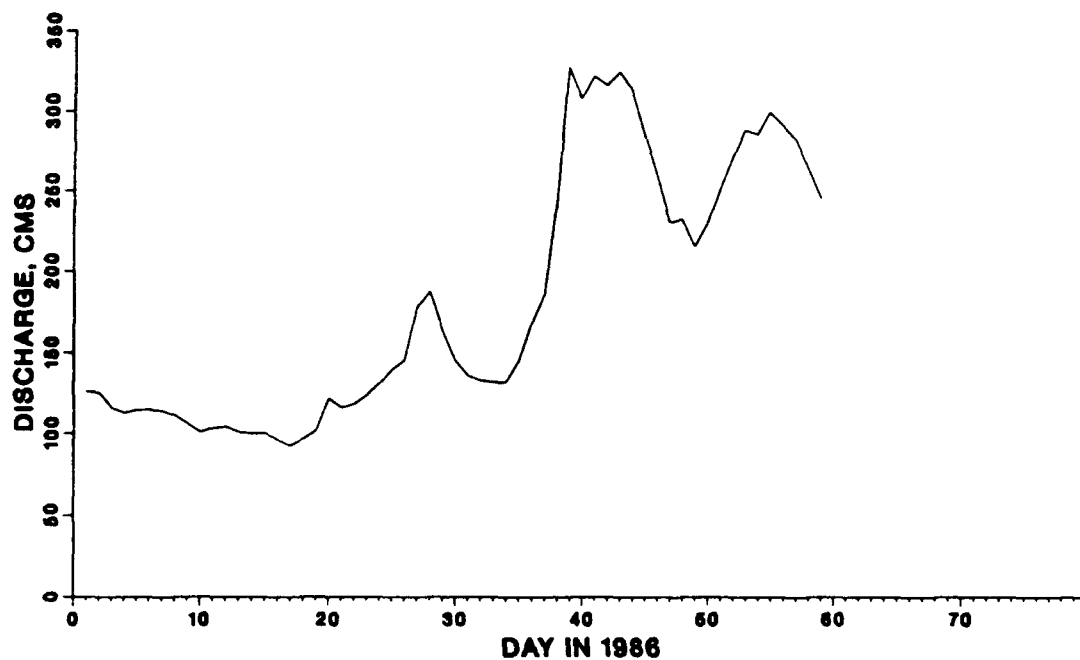


Figure C6. Freshwater inflow on James River during 1986 (Sheet 1 of 3)

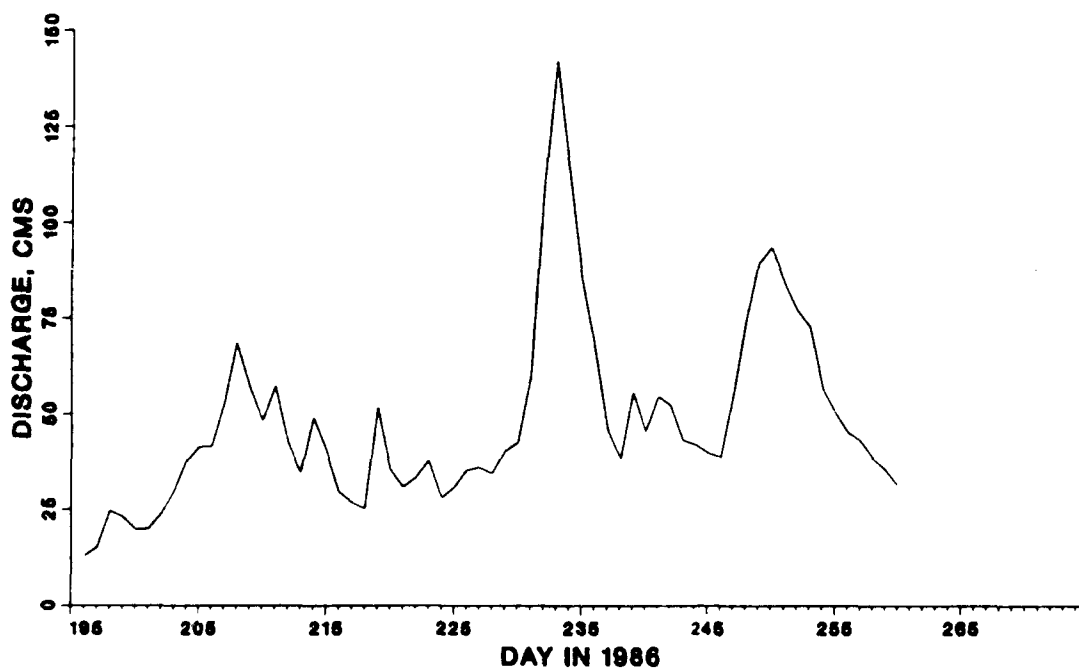
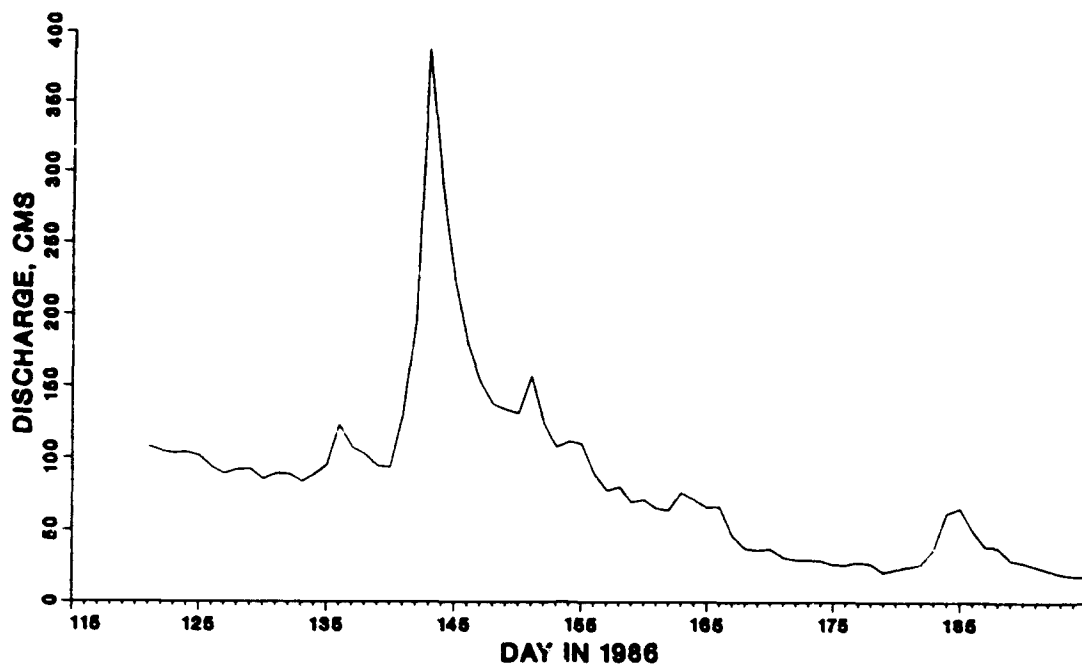


Figure C6. (Sheet 2 of 3)

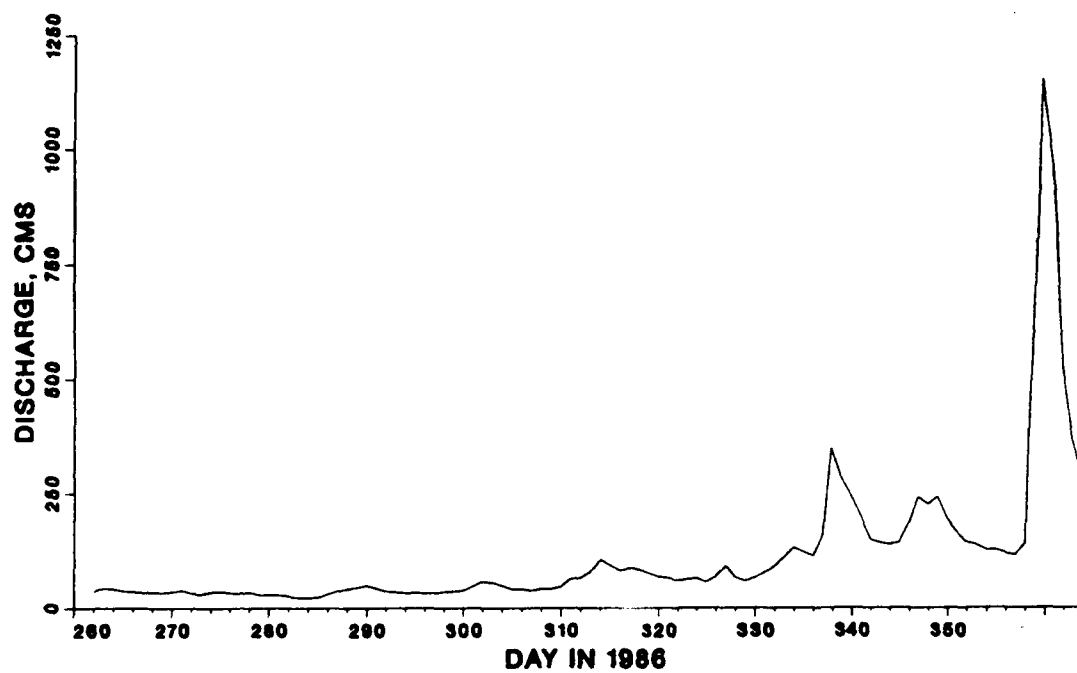


Figure C6. (Sheet 3 of 3)

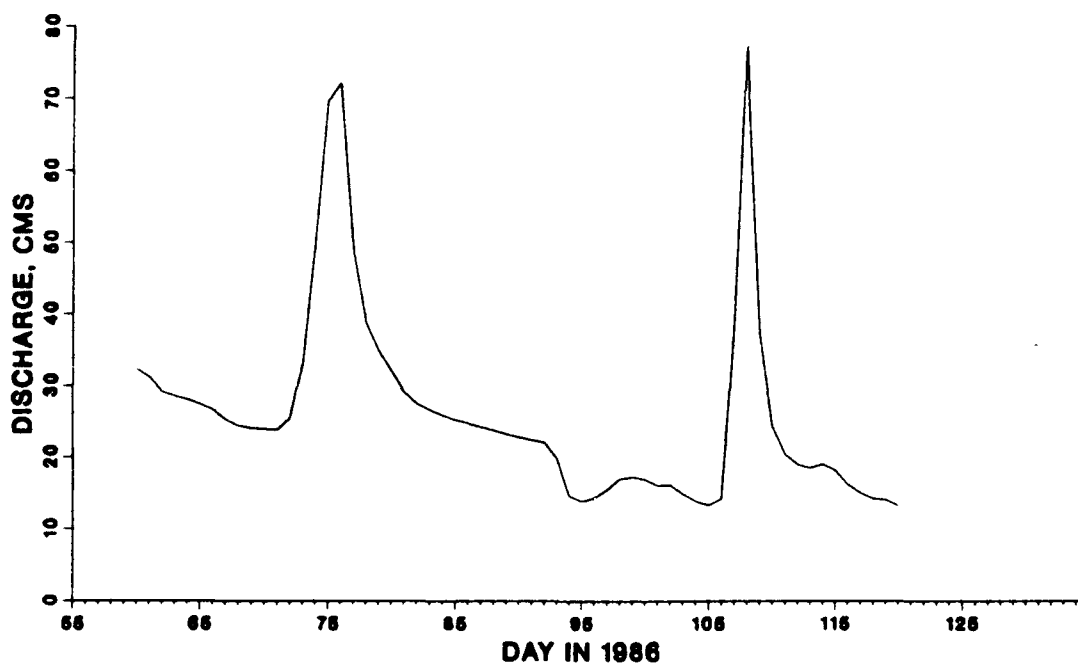
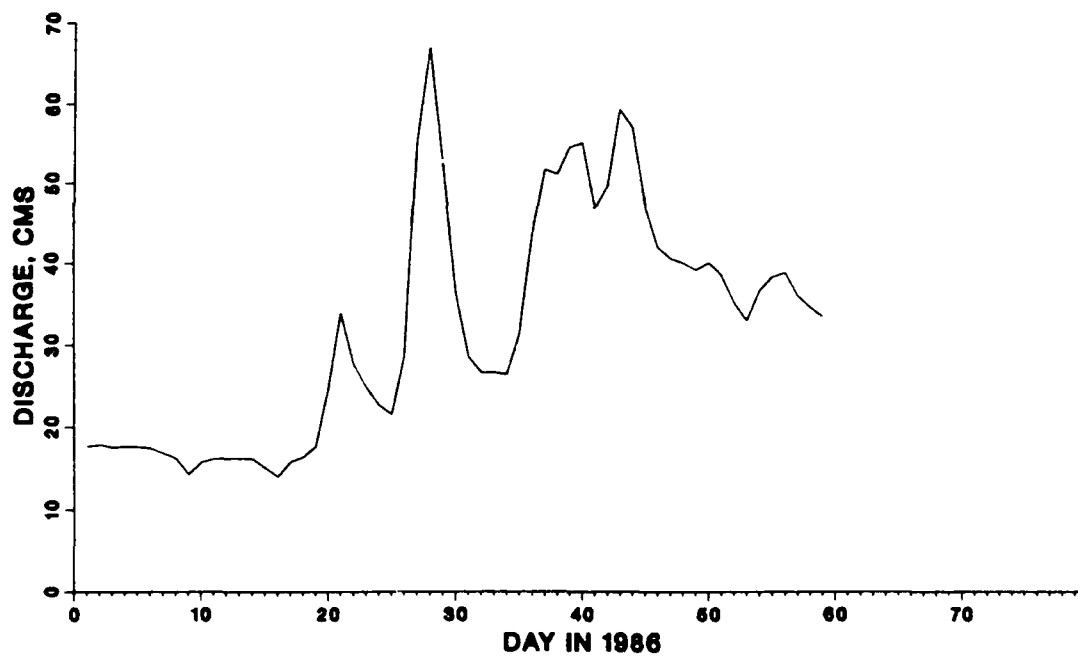


Figure C7. Freshwater inflow on York River during 1986 (Sheet 1 of 3)

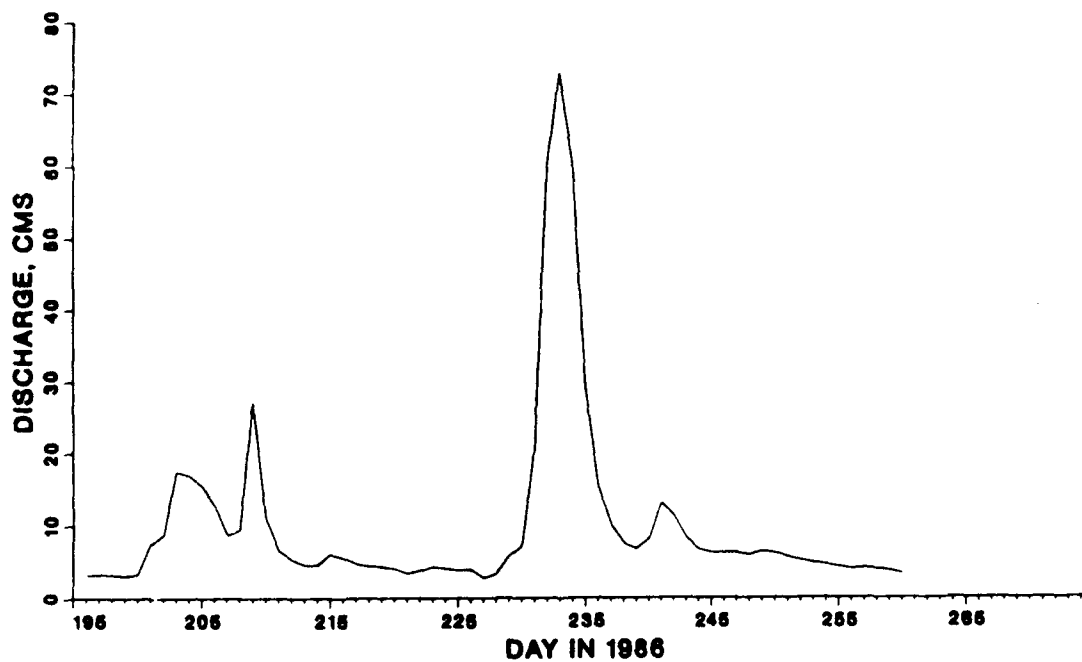
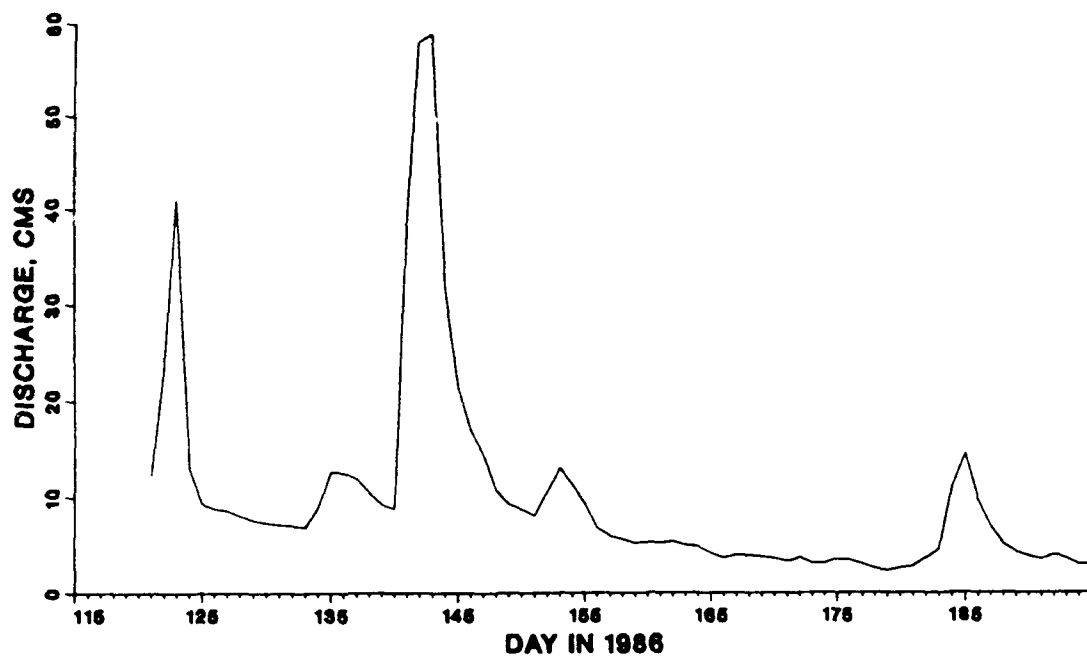


Figure C7. (Sheet 2 of 3)

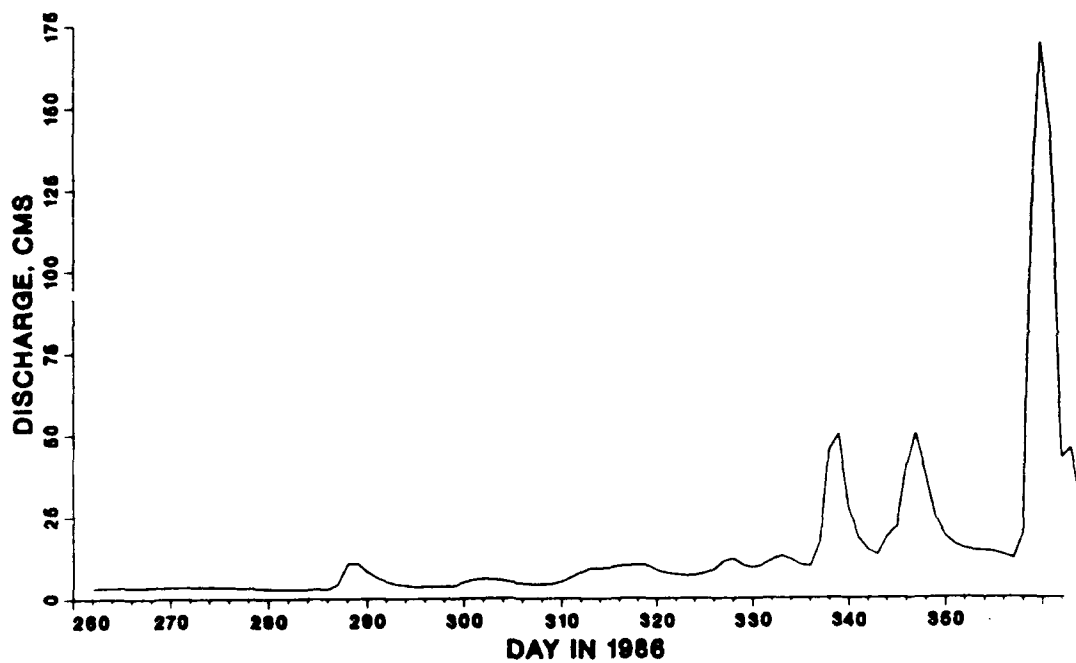


Figure C7. (Sheet 3 of 3)

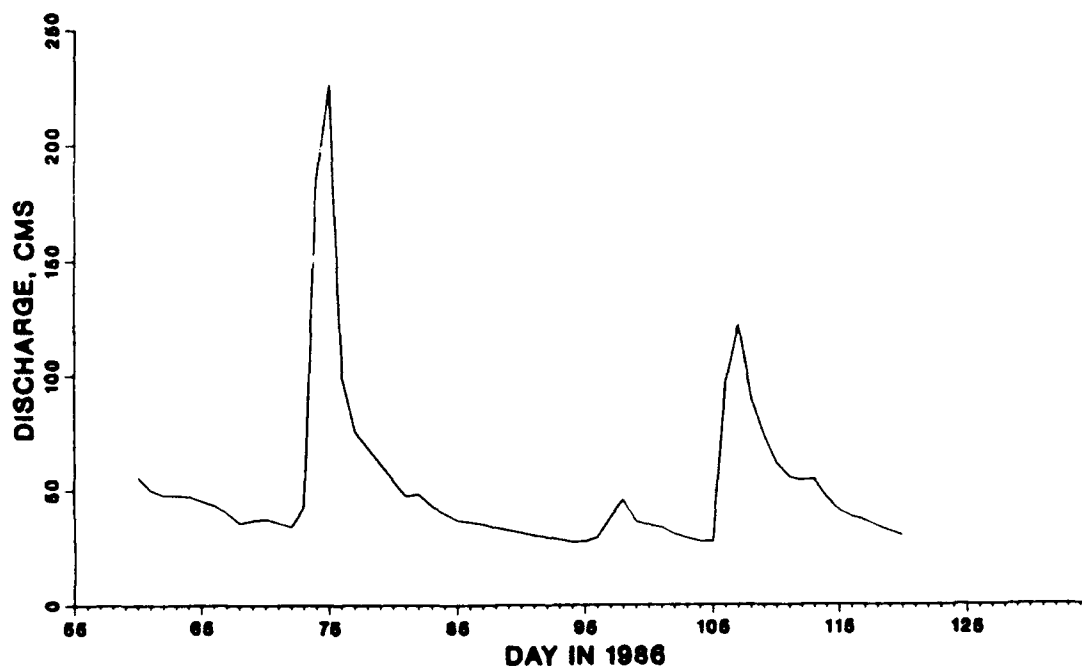
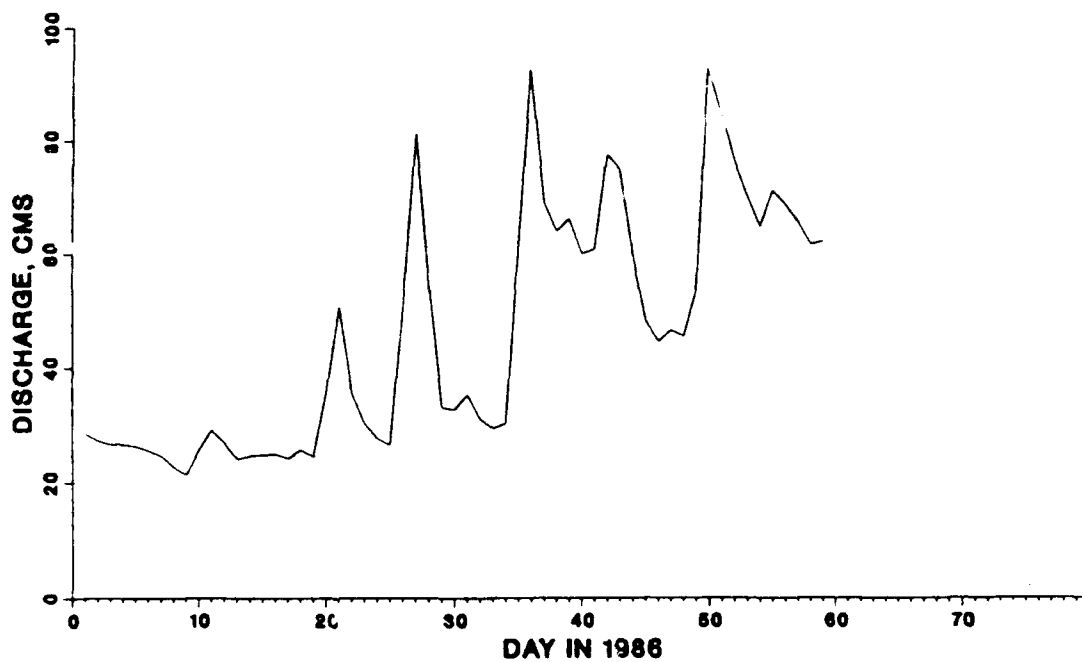


Figure C8. Freshwater inflow on Rappahannock River during 1986 (Sheet 1 of 3)

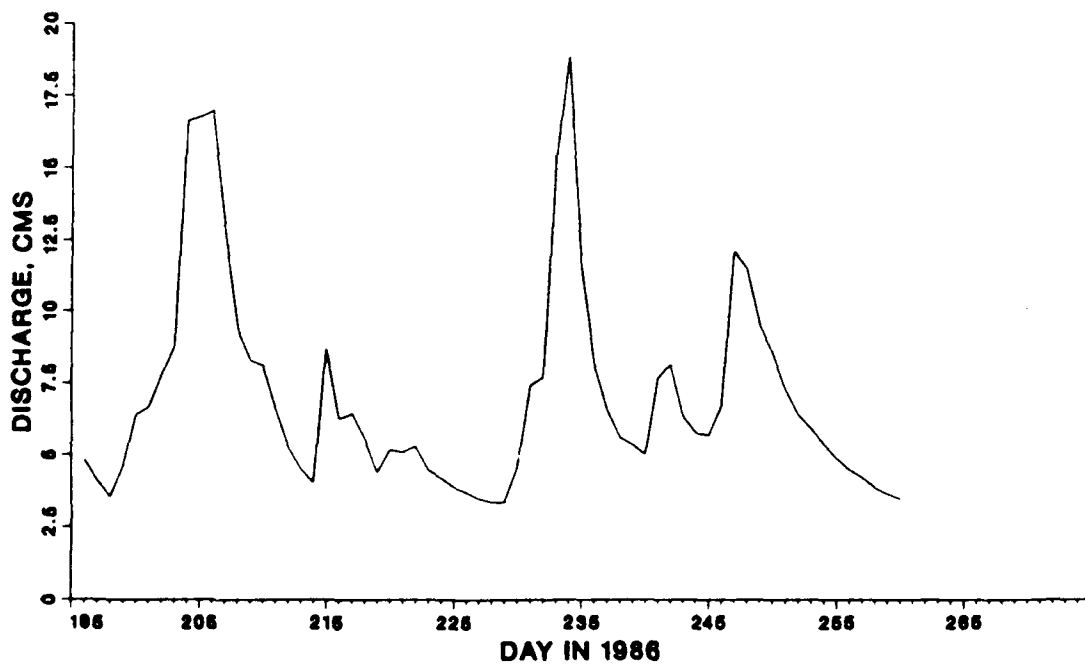
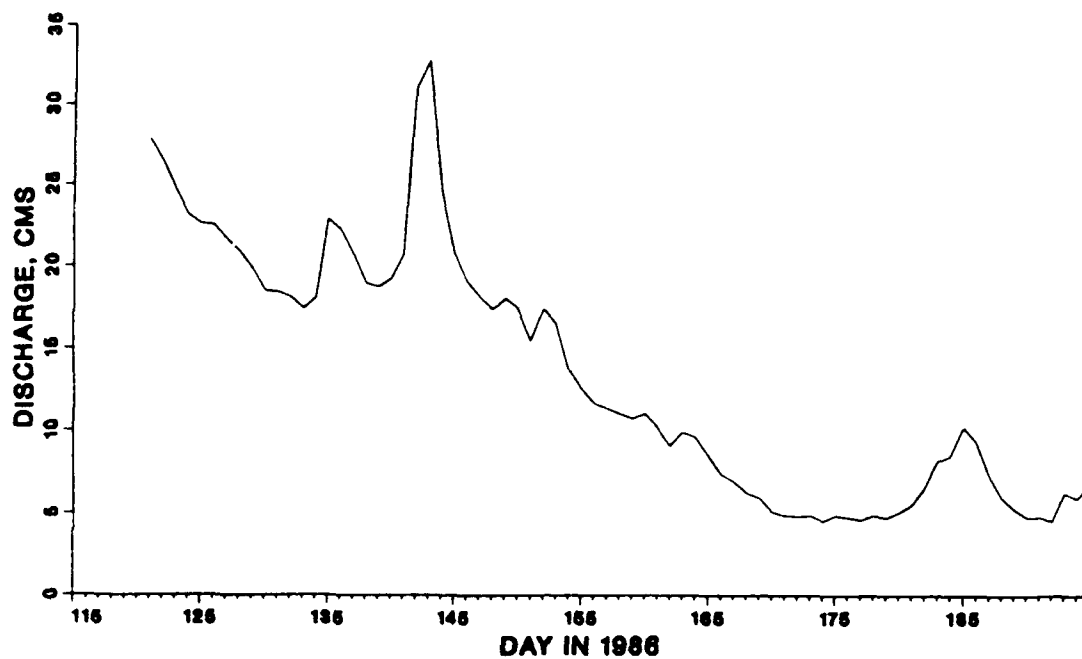


Figure C8. (Sheet 2 of 3)

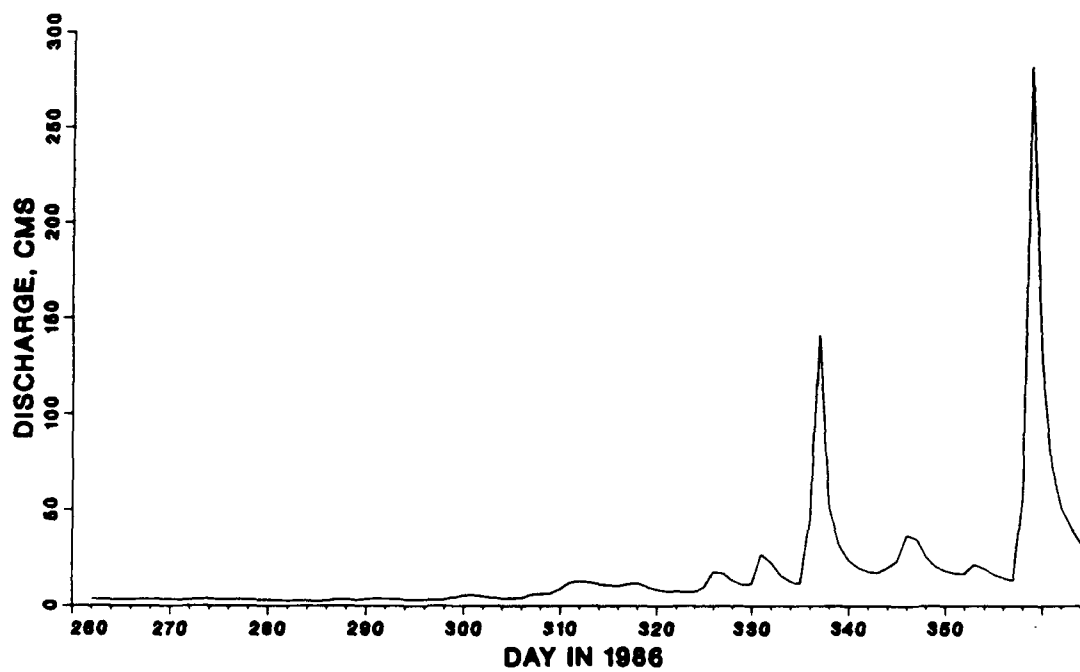


Figure C8. (Sheet 3 of 3)

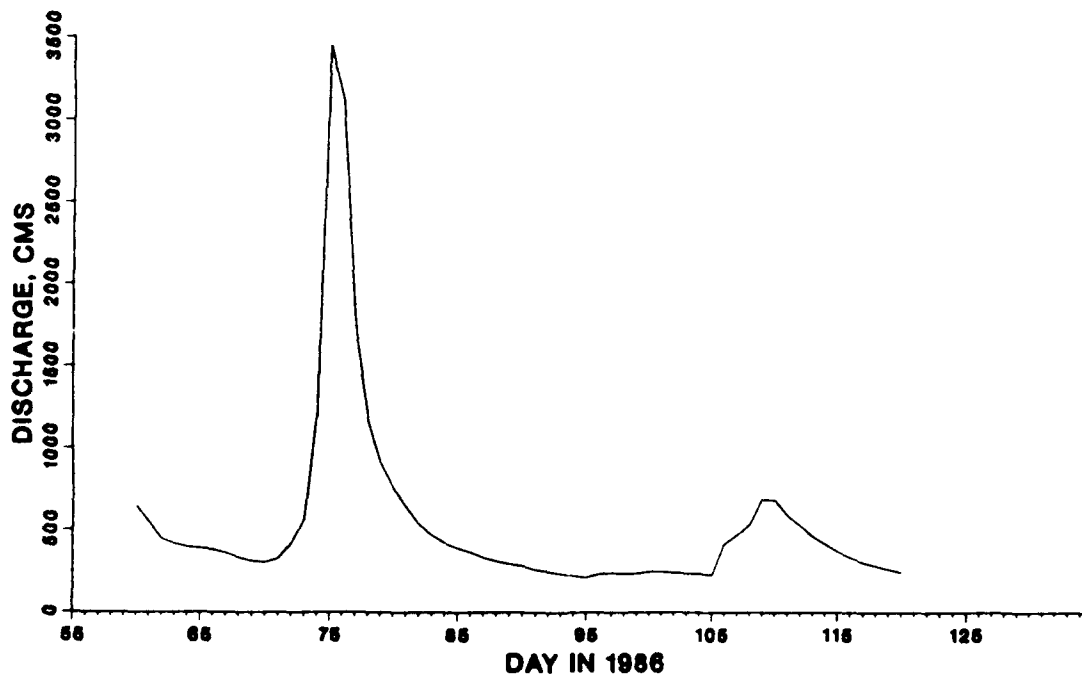
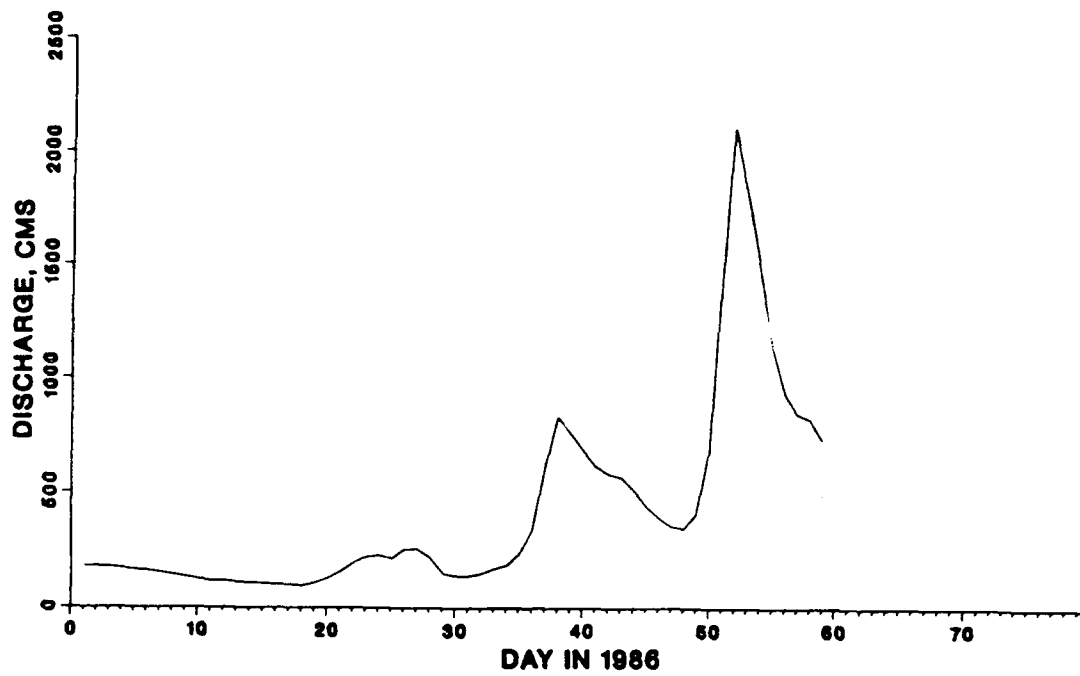


Figure C9. Freshwater inflow on Potomac River
during 1986 (Sheet 1 of 3)

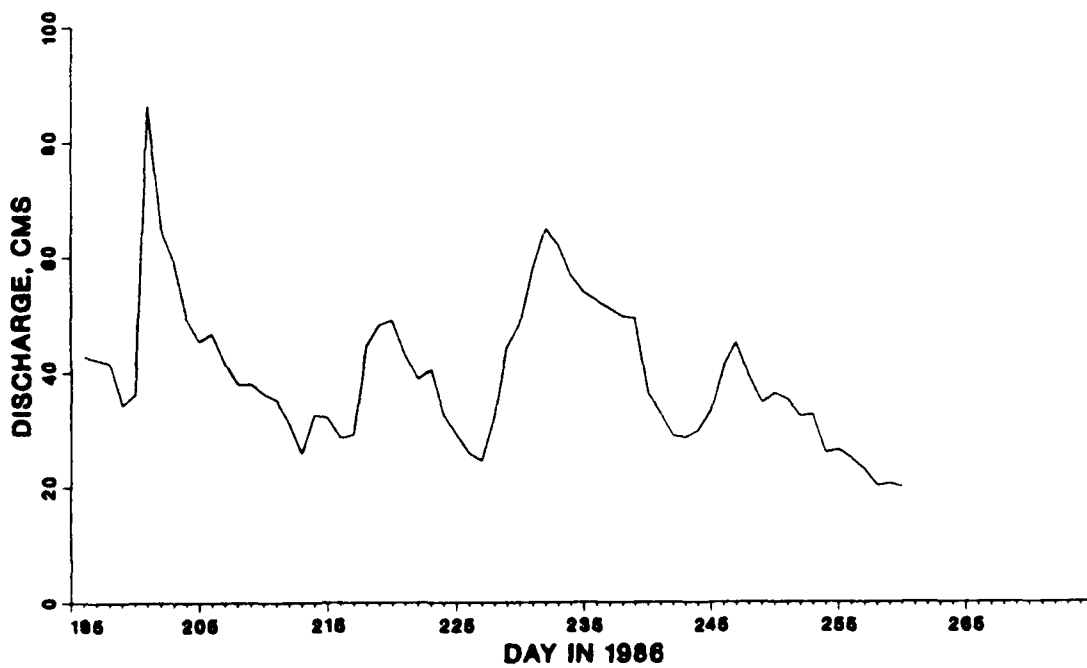
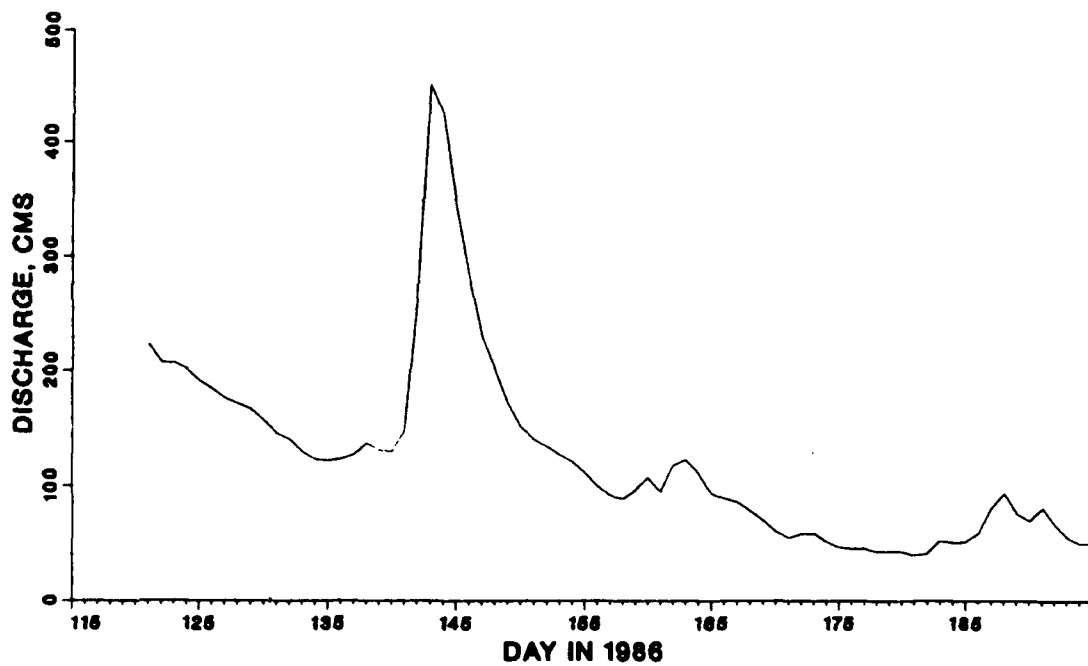


Figure C9. (Sheet 2 of 3)

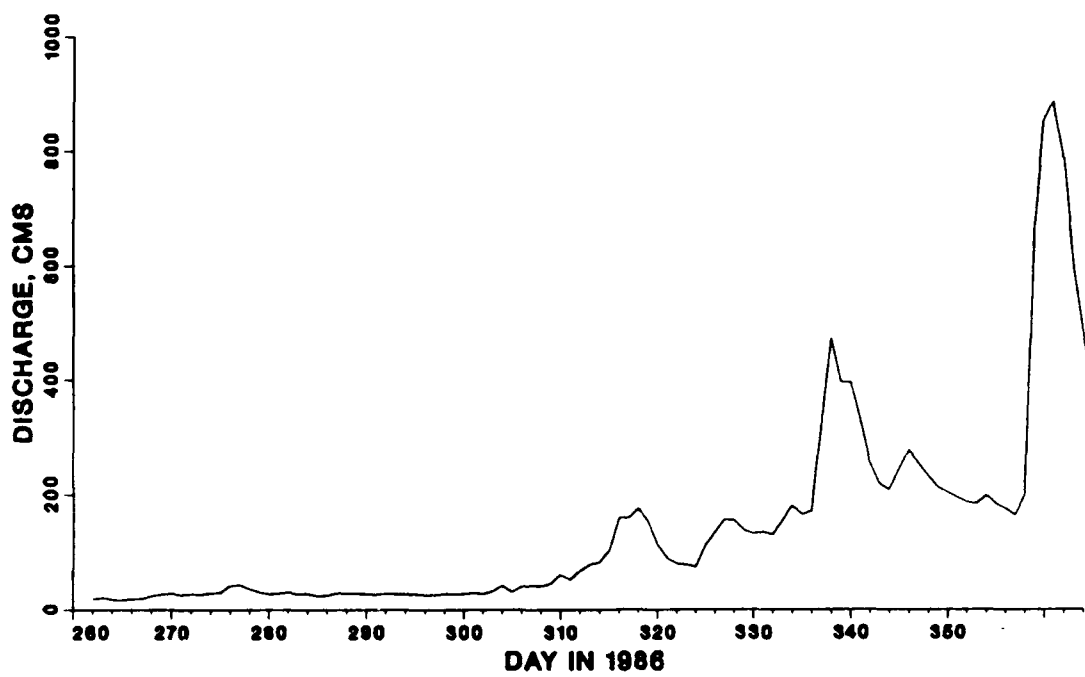


Figure C9. (Sheet 3 of 3)

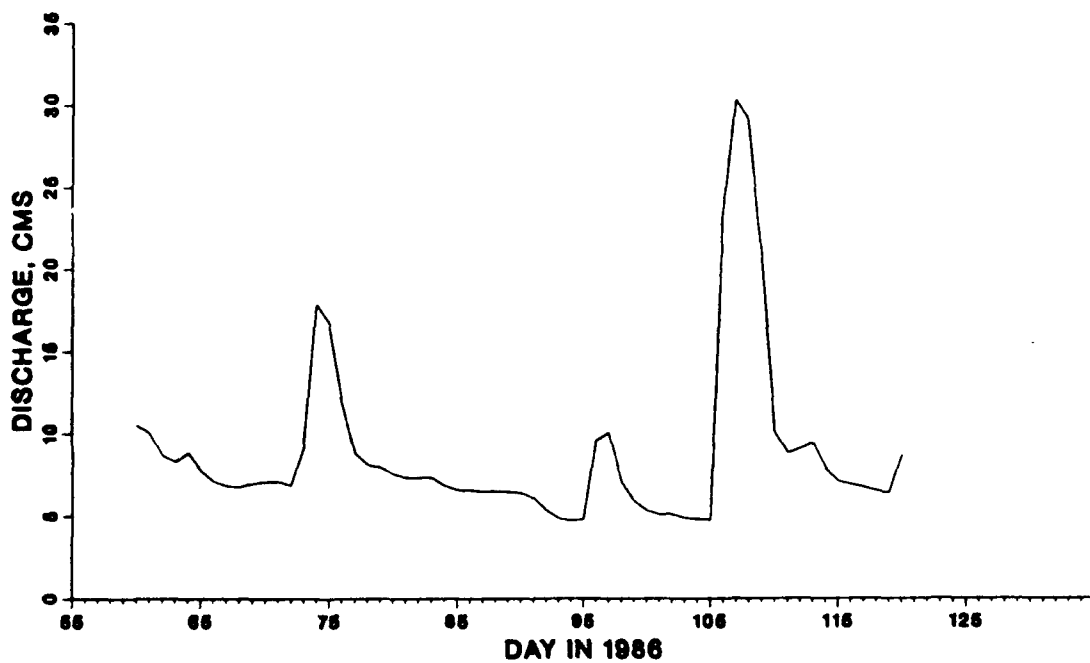
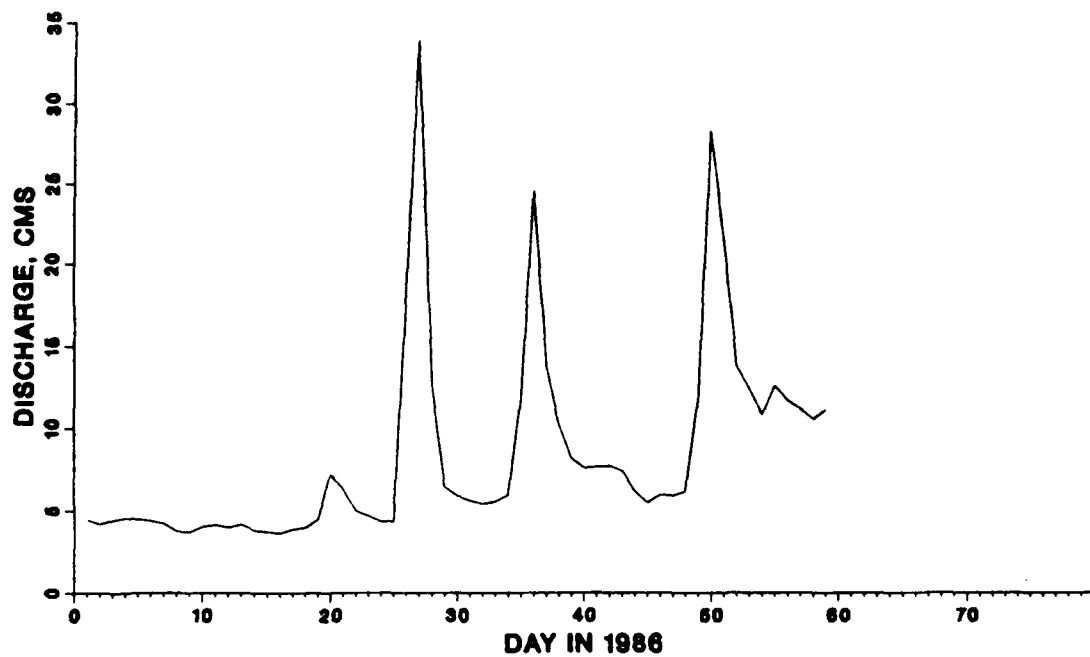


Figure C10. Freshwater inflow on Patuxent River during 1986 (Sheet 1 of 3)

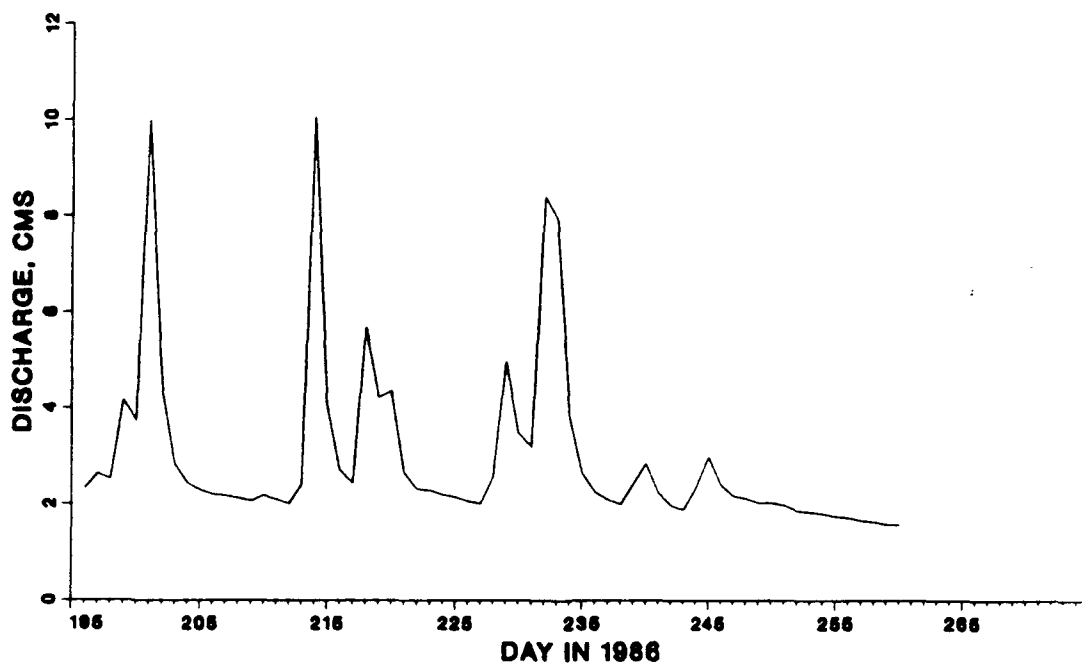
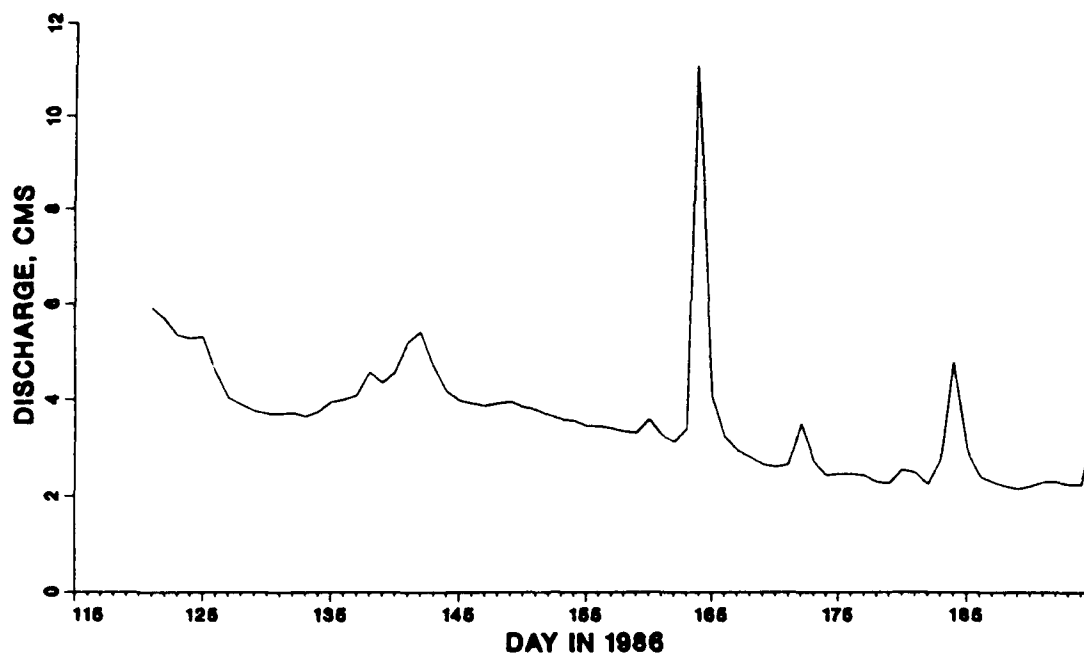


Figure C10. (Sheet 2 of 3)

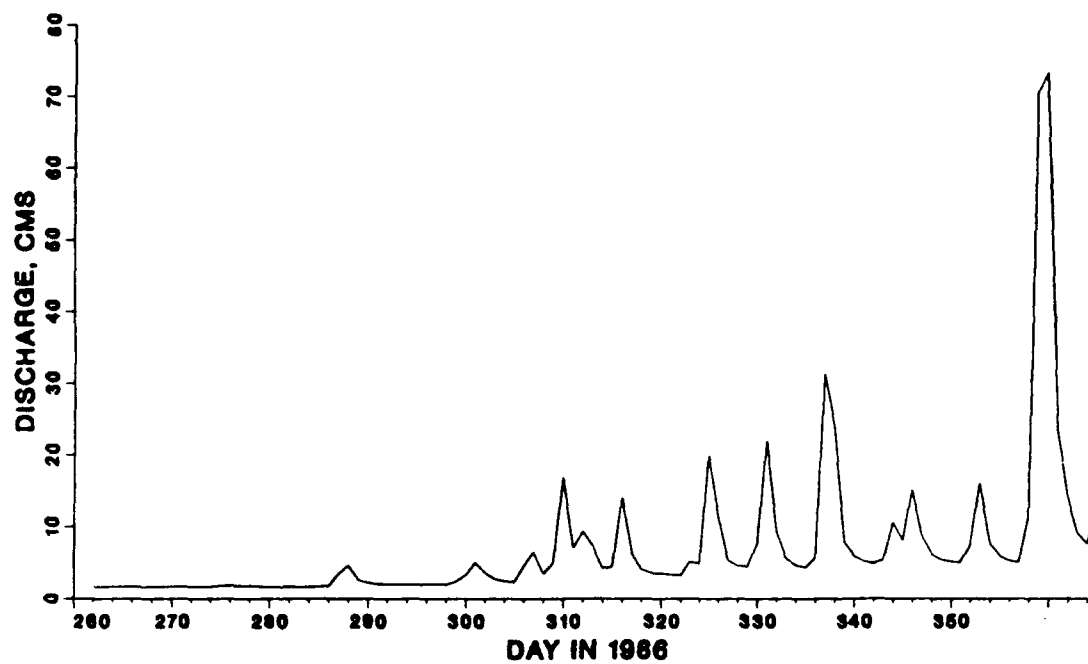


Figure C10. (Sheet 3 of 3)

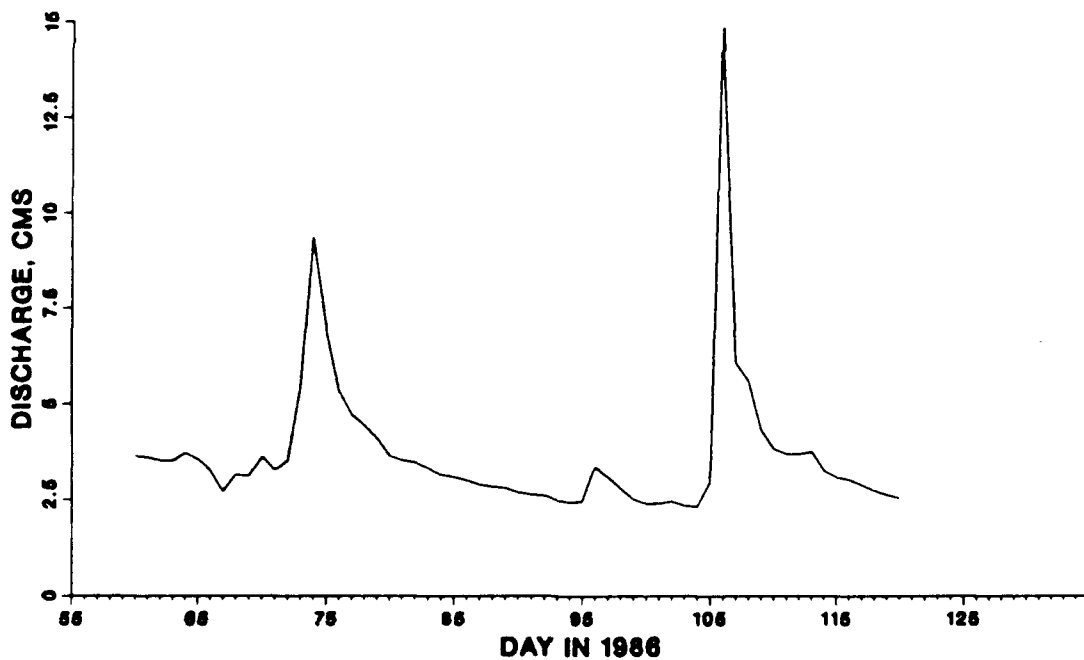
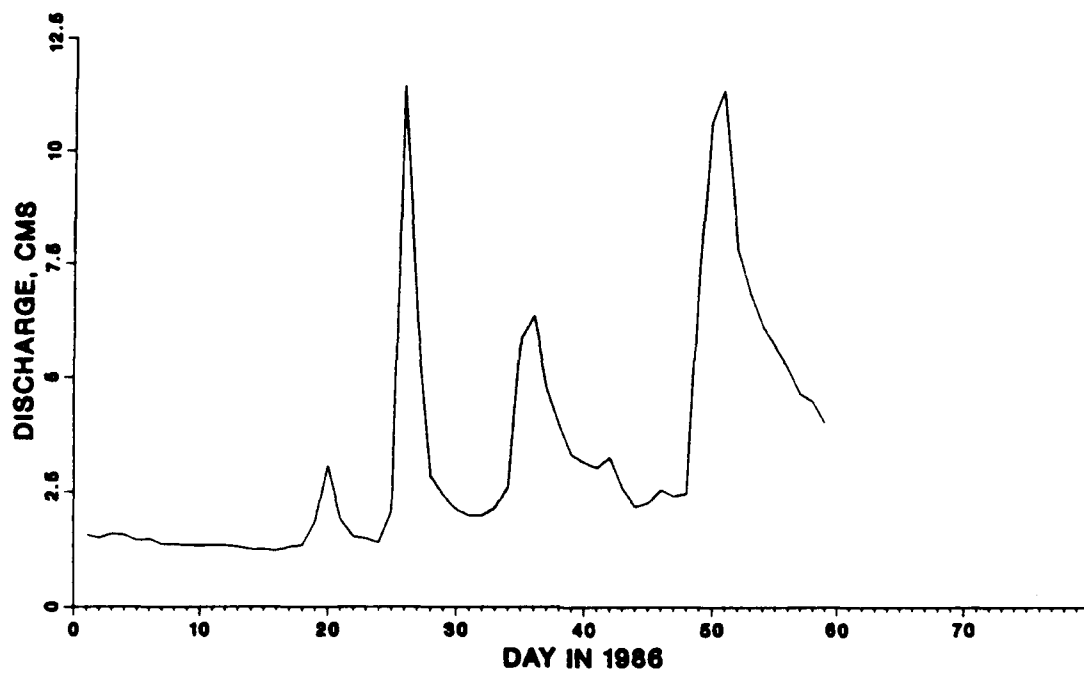


Figure C11. Freshwater inflow on Patapsco River during 1986 (Sheet 1 of 3)

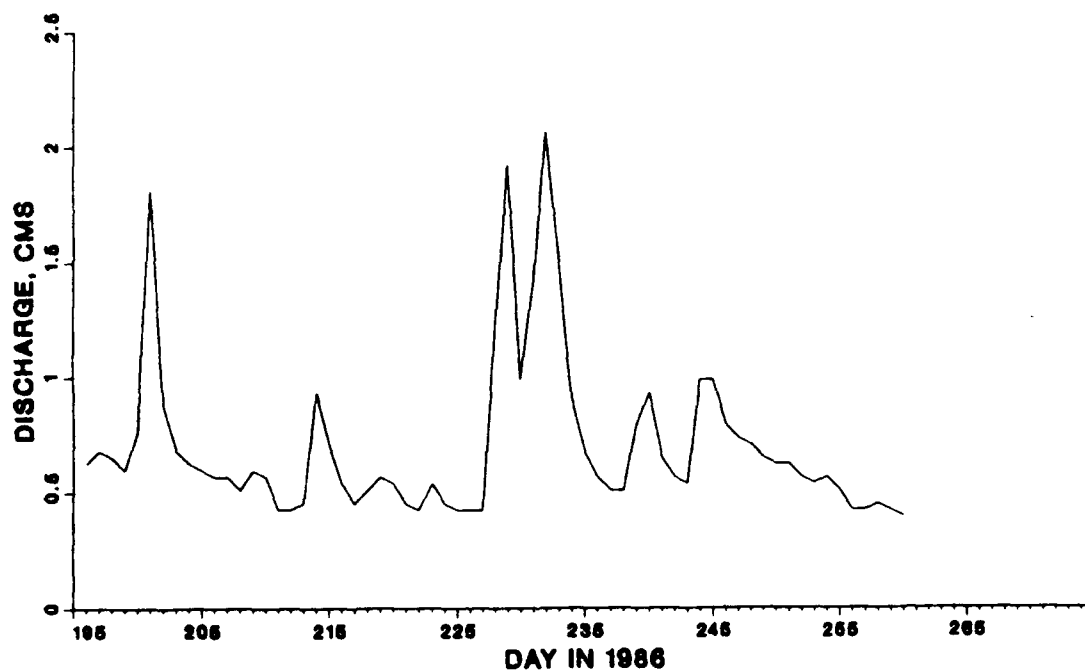
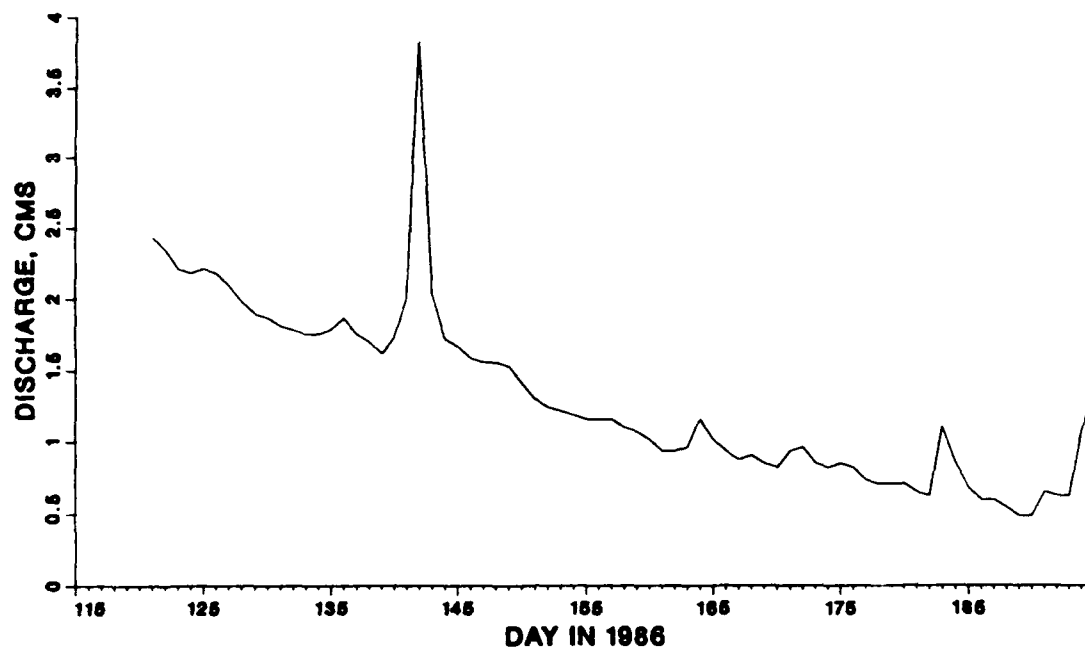


Figure C11. (Sheet 2 of 3)

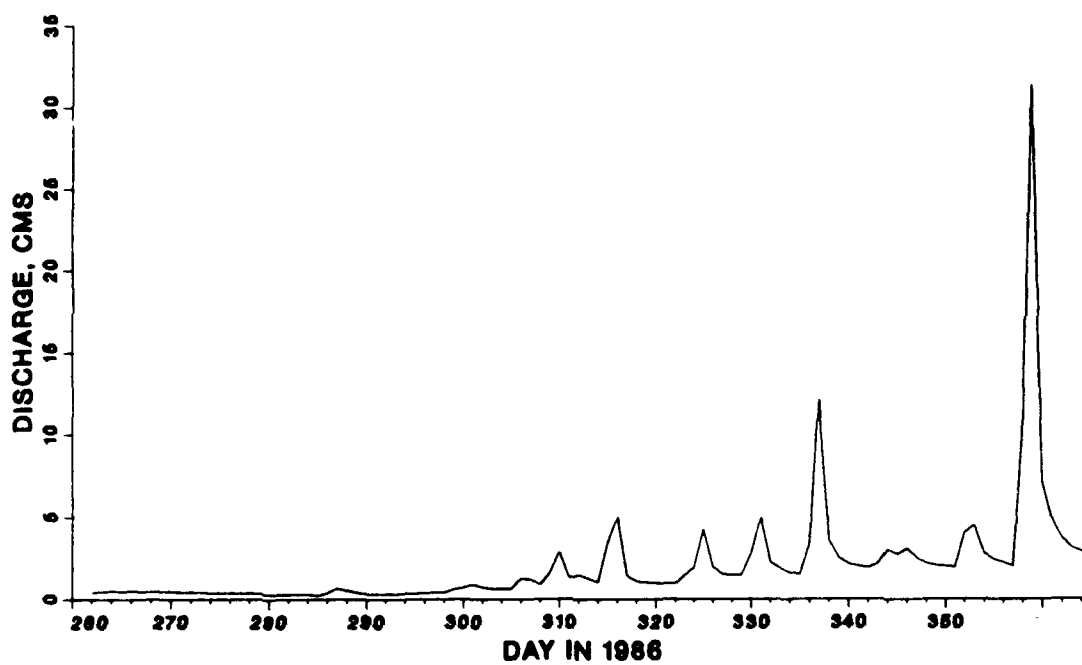


Figure C11. (Sheet 3 of 3)

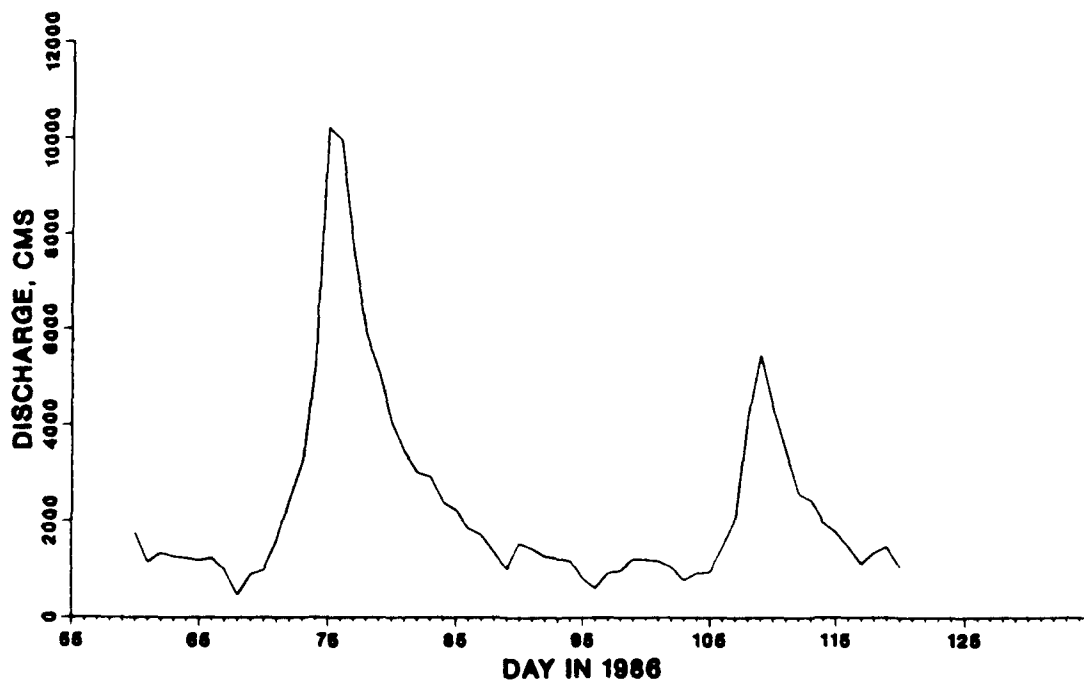
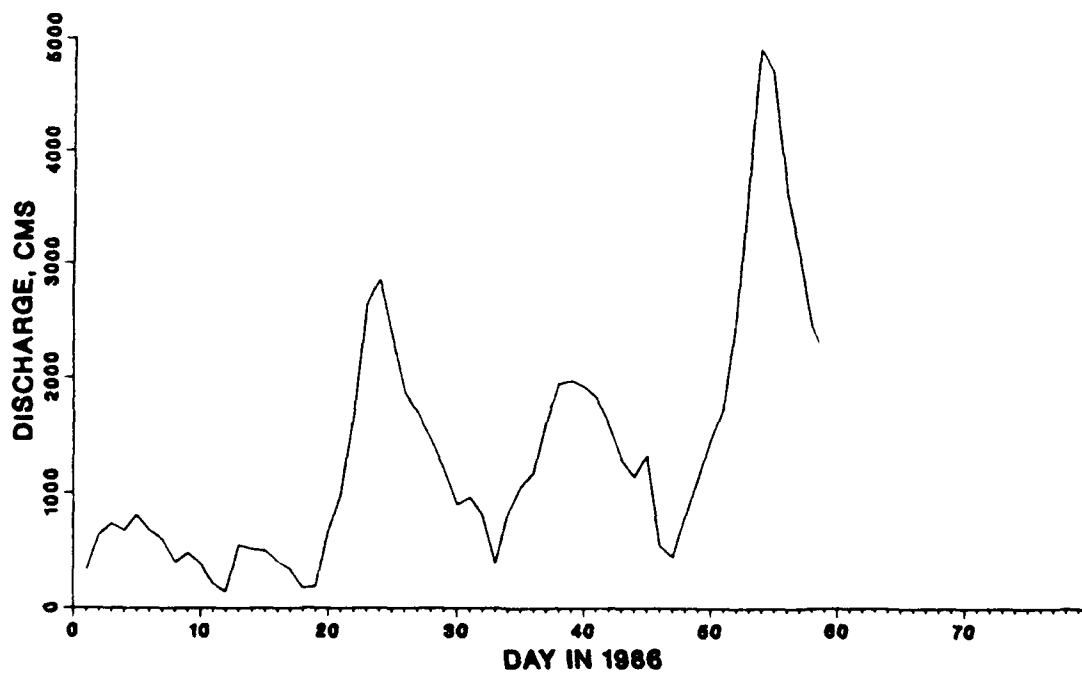


Figure C12. Freshwater inflow on Susquehanna River during 1986 (Sheet 1 of 3)

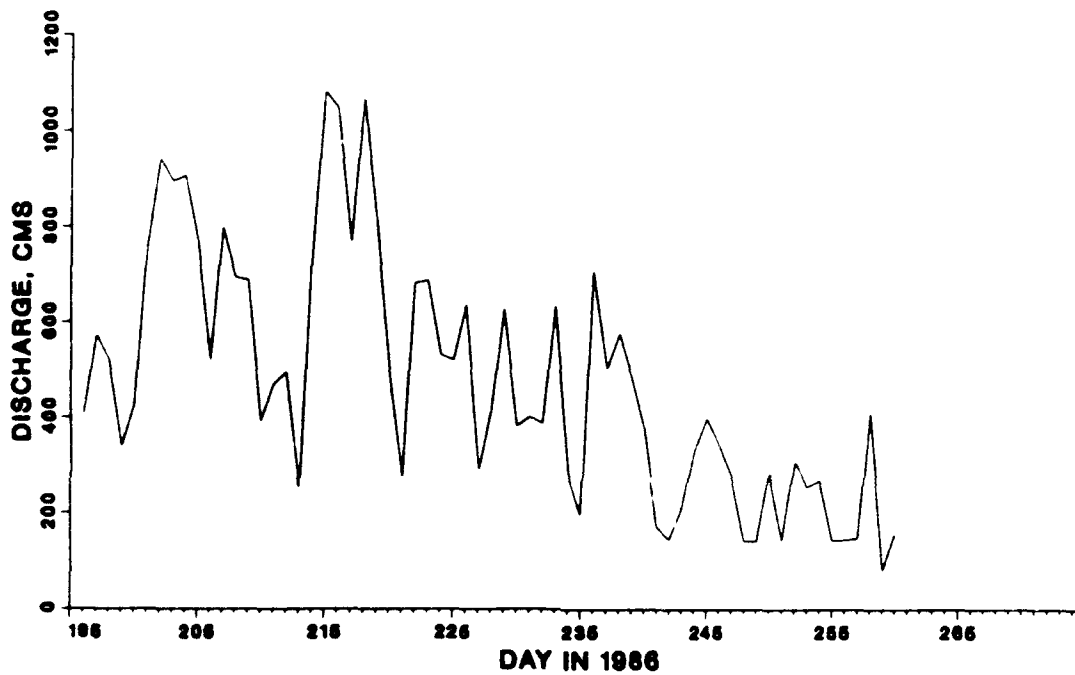
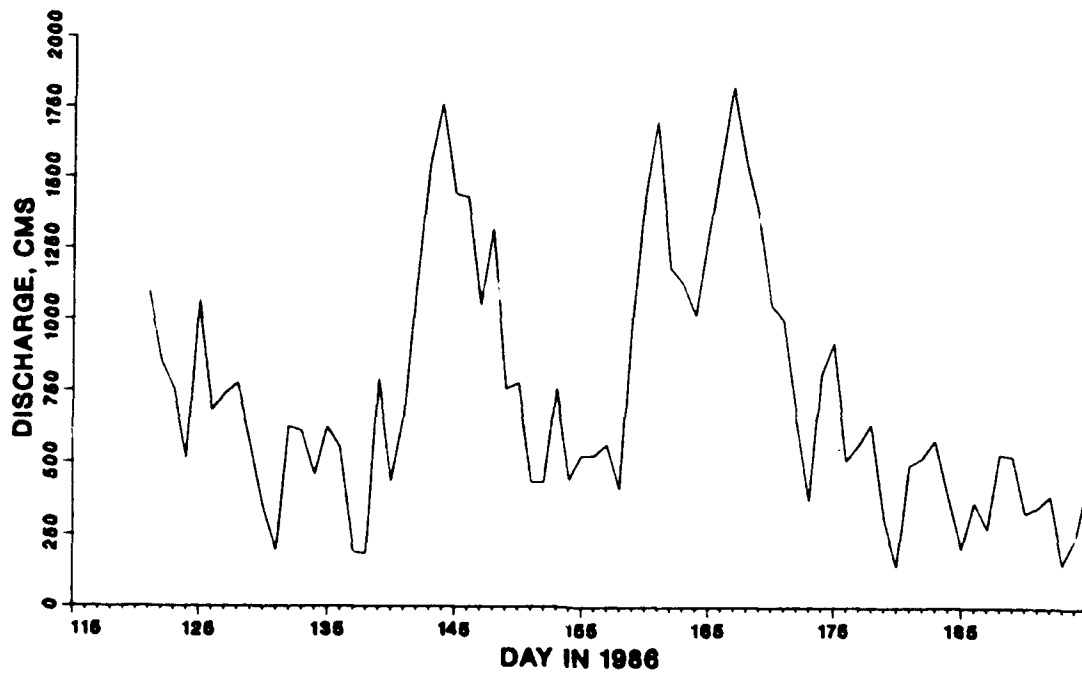


Figure C12. (Sheet 2 of 3)

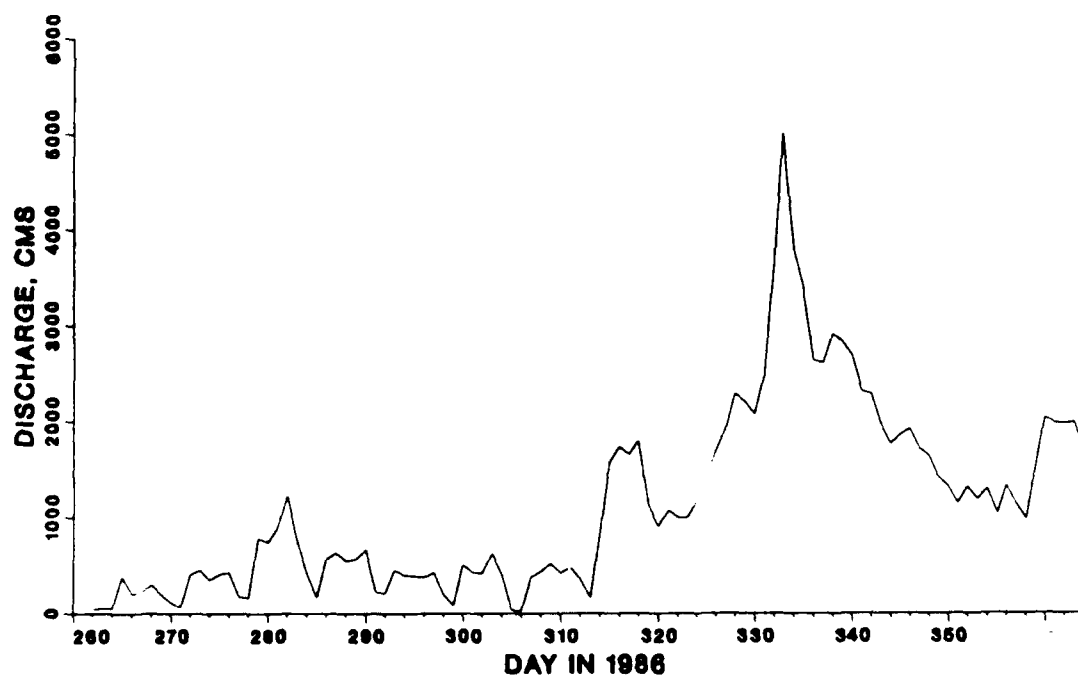


Figure C12. (Sheet 3 of 3)

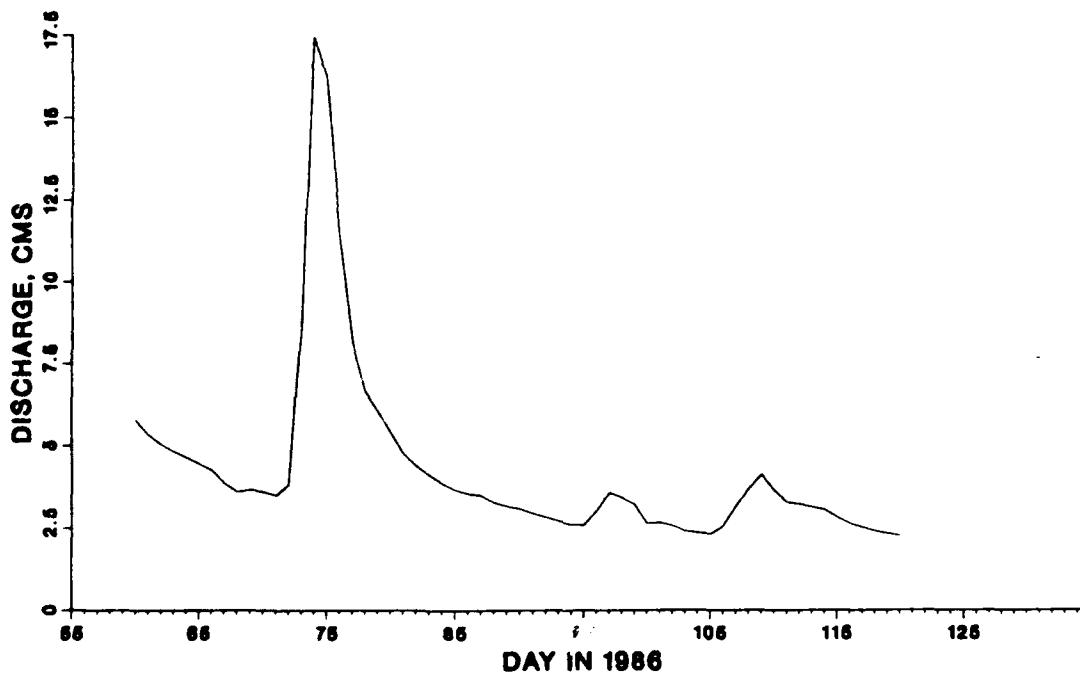
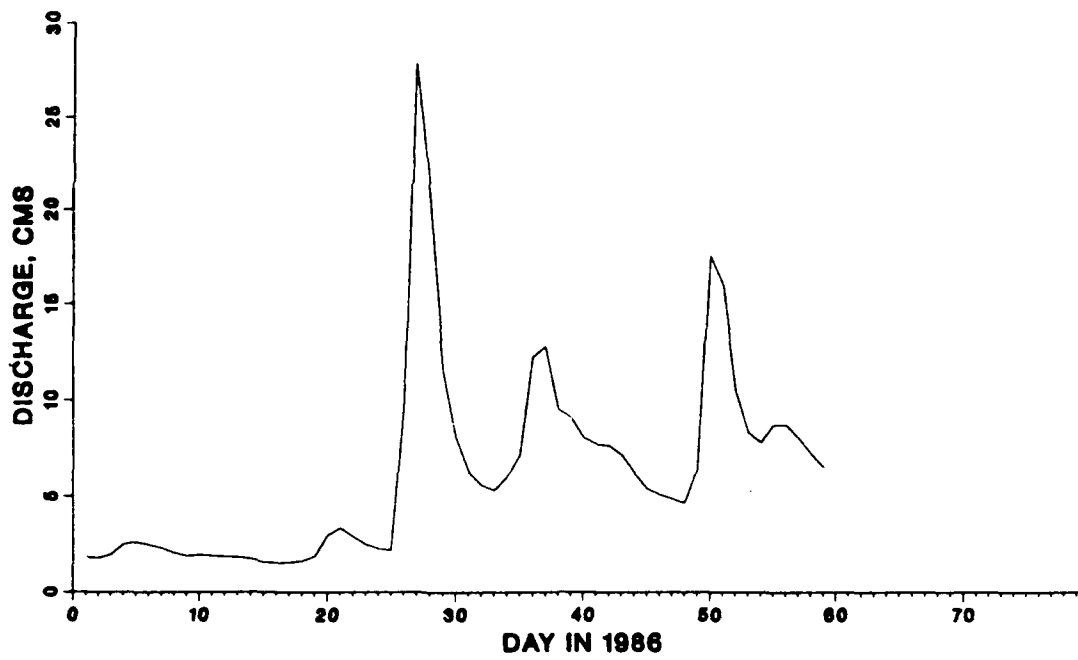


Figure C13. Freshwater inflow on Choptank River during 1986 (Sheet 1 of 3)

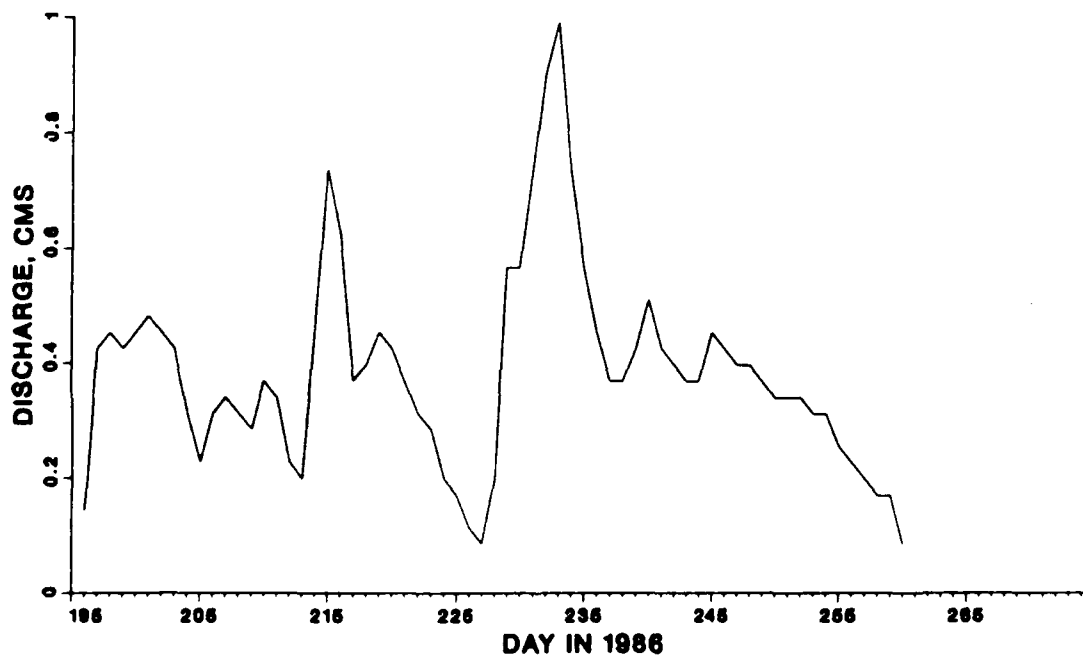
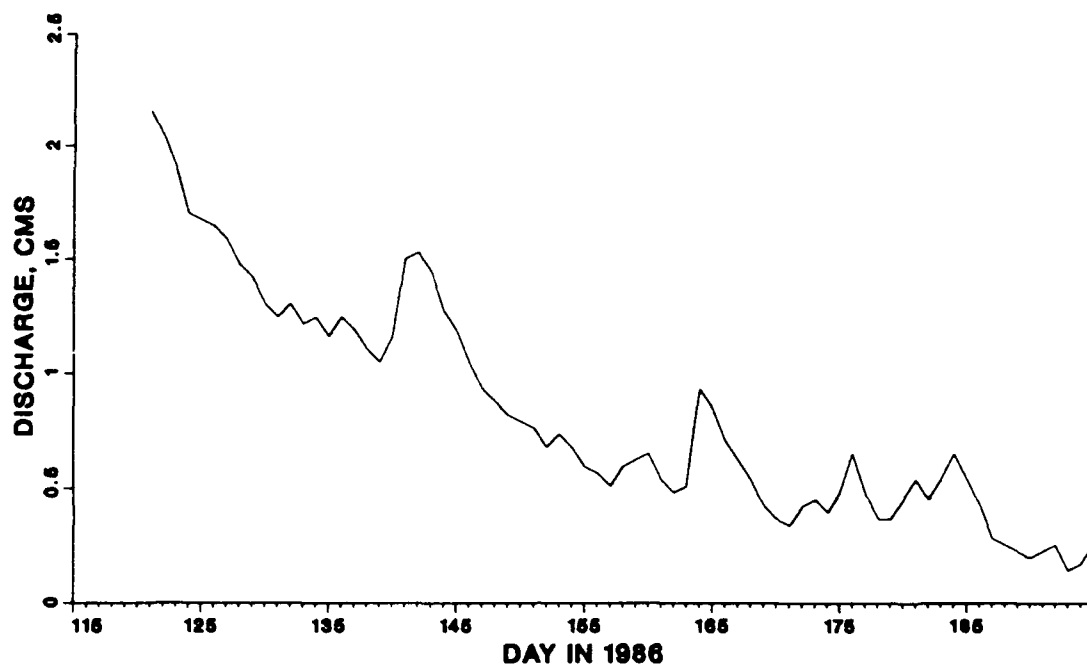


Figure C13. (Sheet 2 of 3)

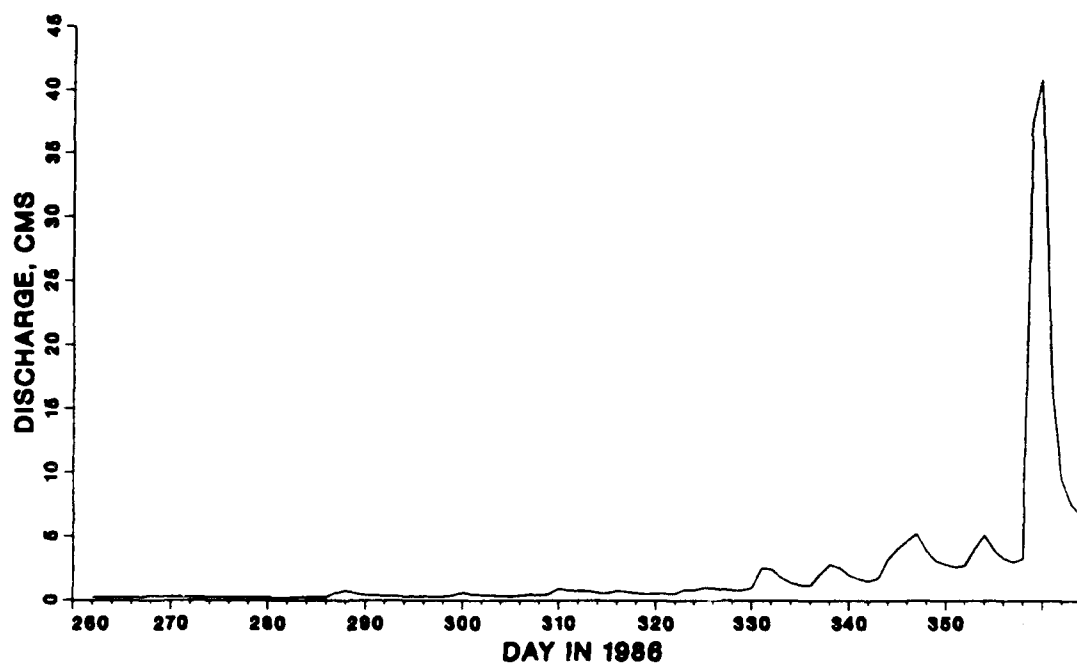


Figure C13. (Sheet 3 of 3)

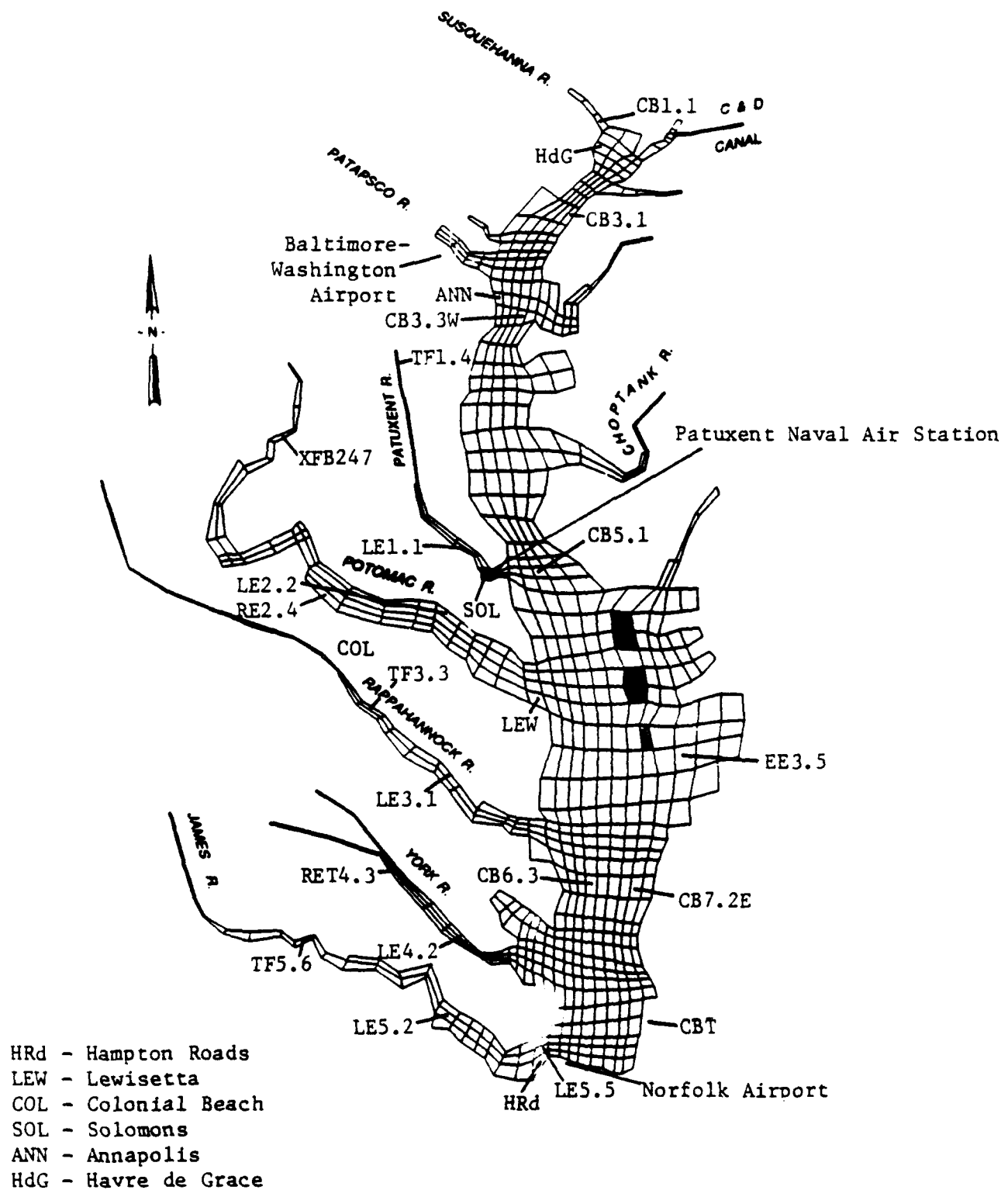


Figure C14. Location of 1986 data stations

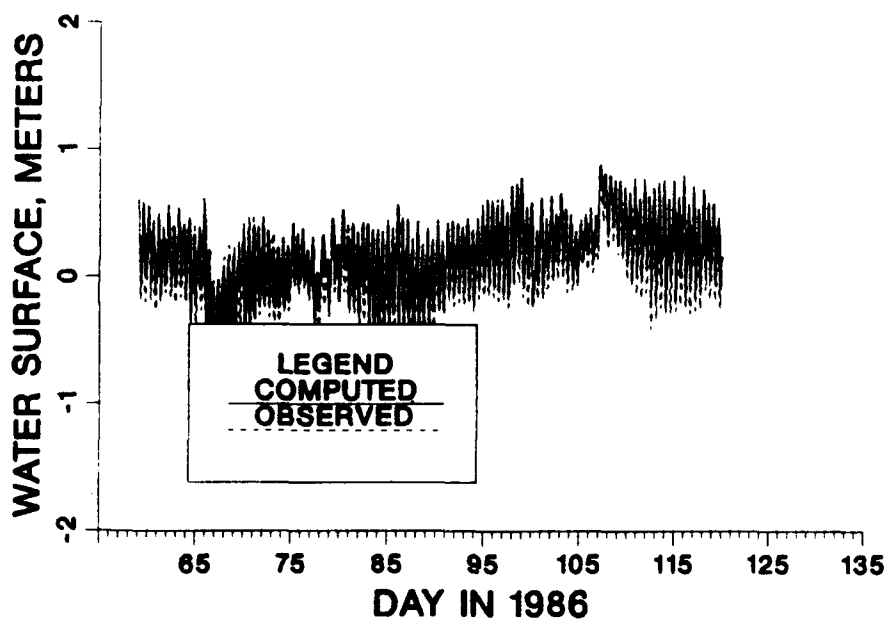
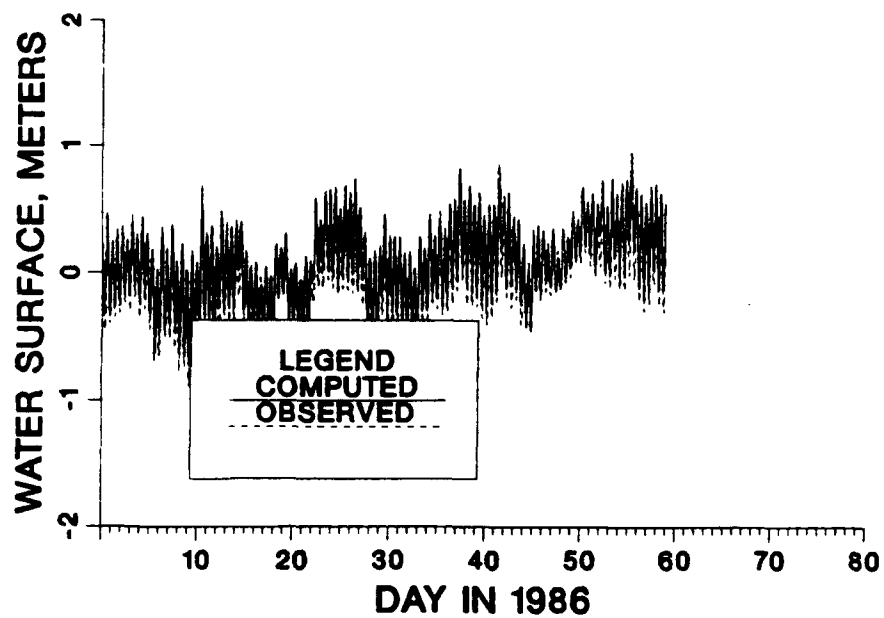


Figure C15. Comparison of computed and recorded tide at Hampton Roads, VA, during 1986 (Sheet 1 of 3)

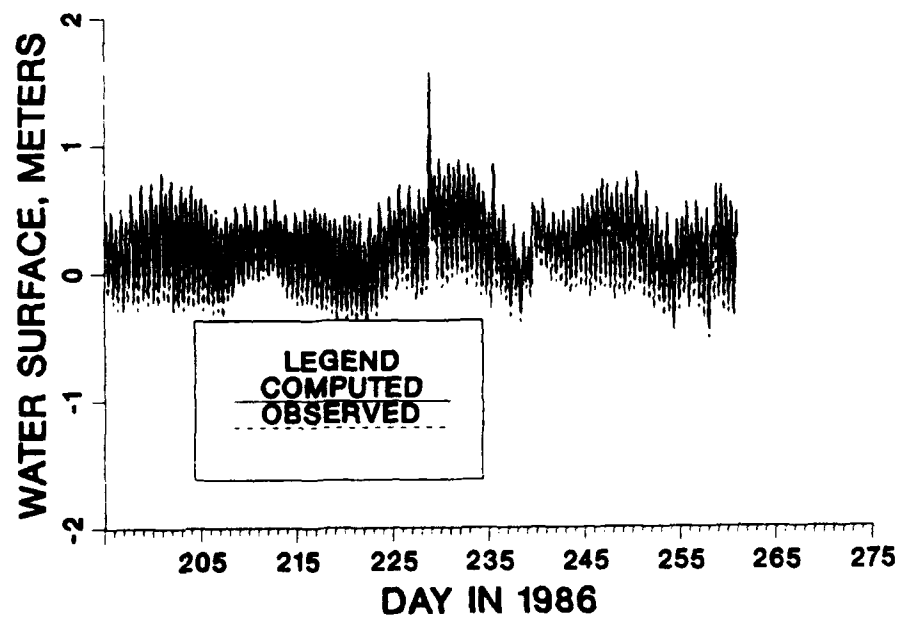
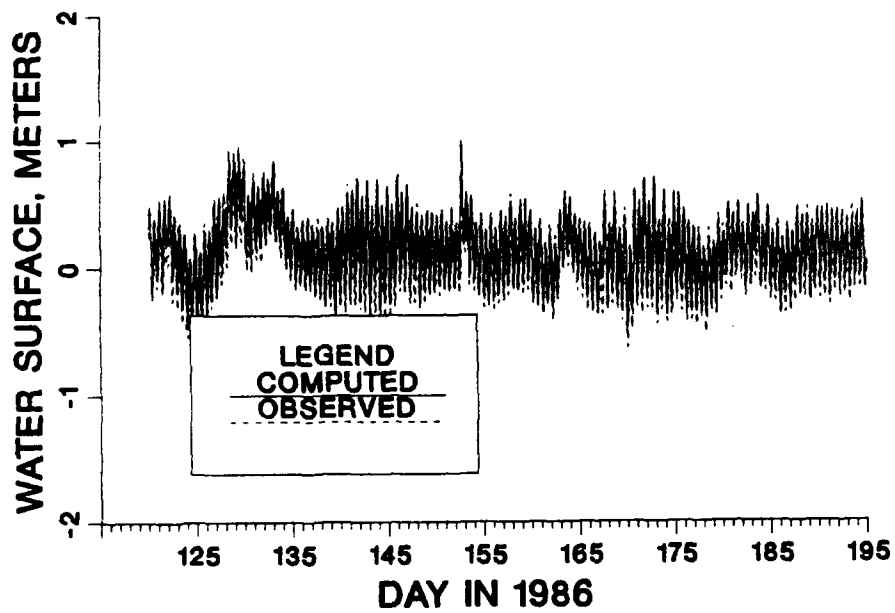


Figure C15. (Sheet 2 of 3)

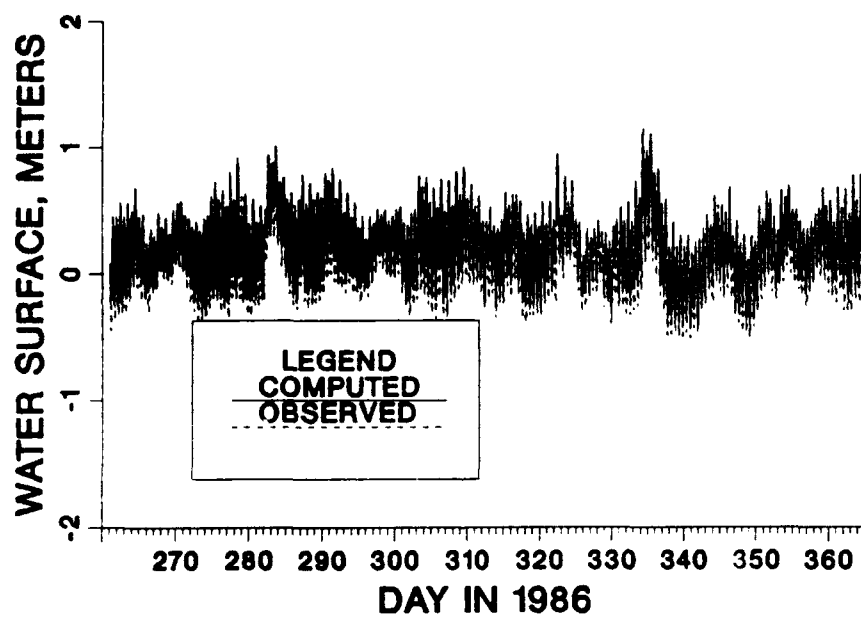


Figure C15. (Sheet 3 of 3)

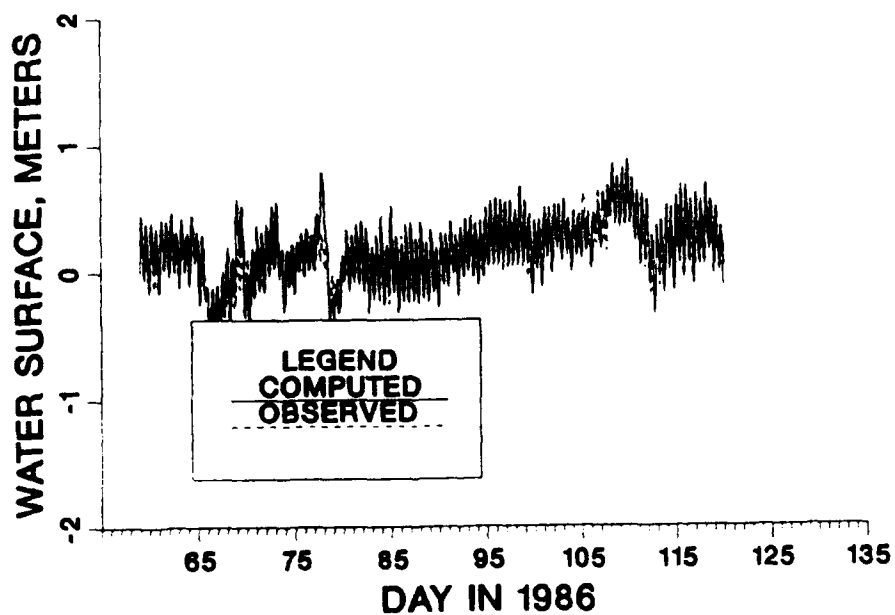
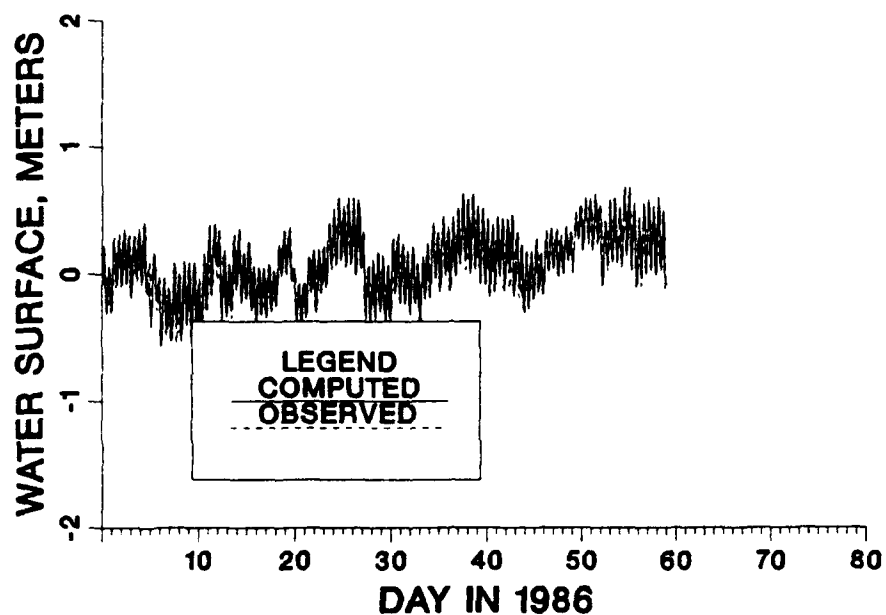


Figure C16. Comparison of computed and recorded tide at Lewisetta, VA, during 1986 (Sheet 1 of 3)

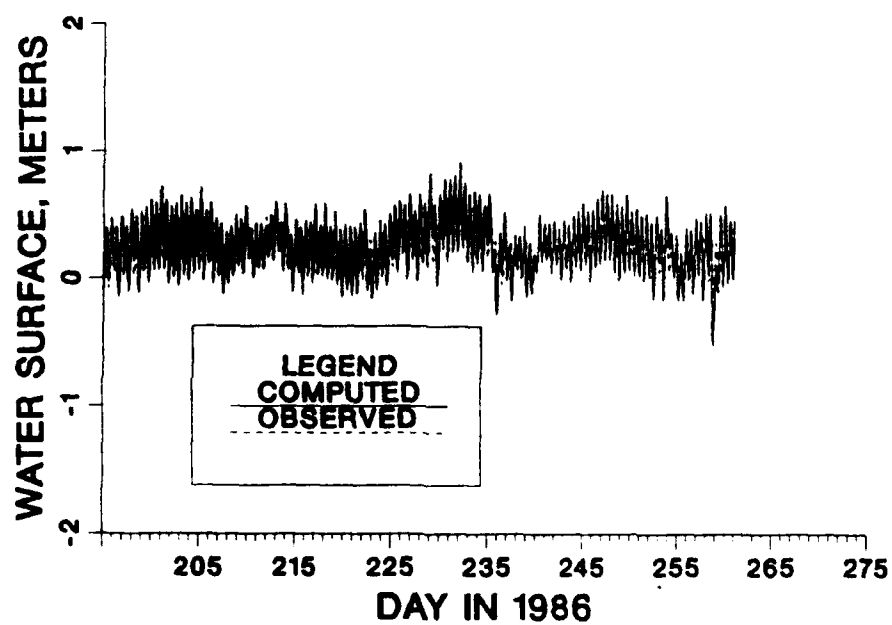
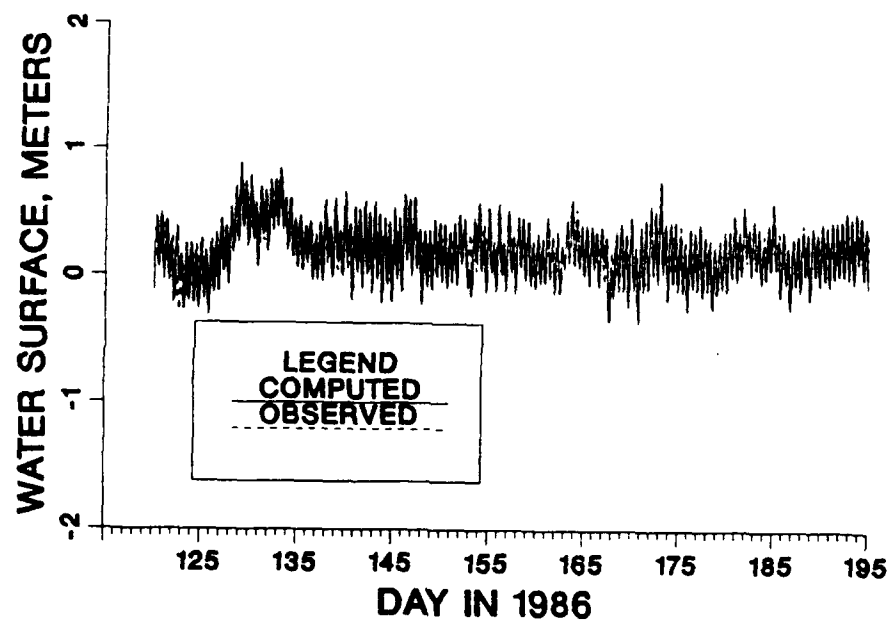


Figure C16. (Sheet 2 of 3)

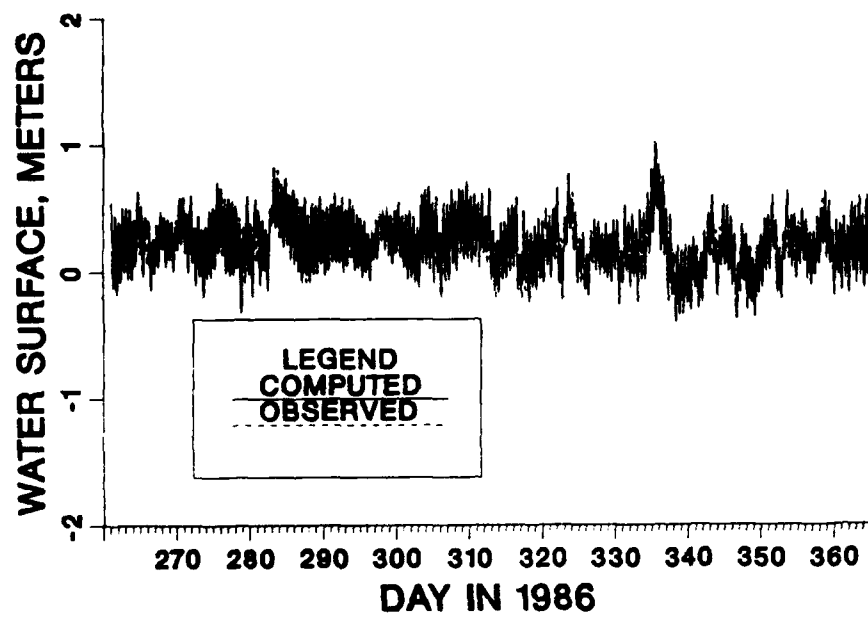


Figure C16. (Sheet 3 of 3)

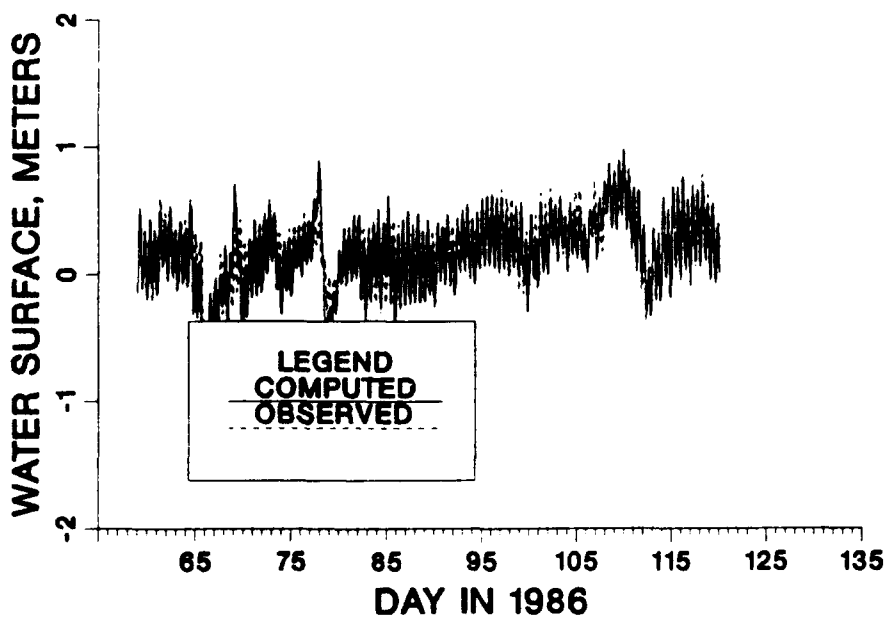
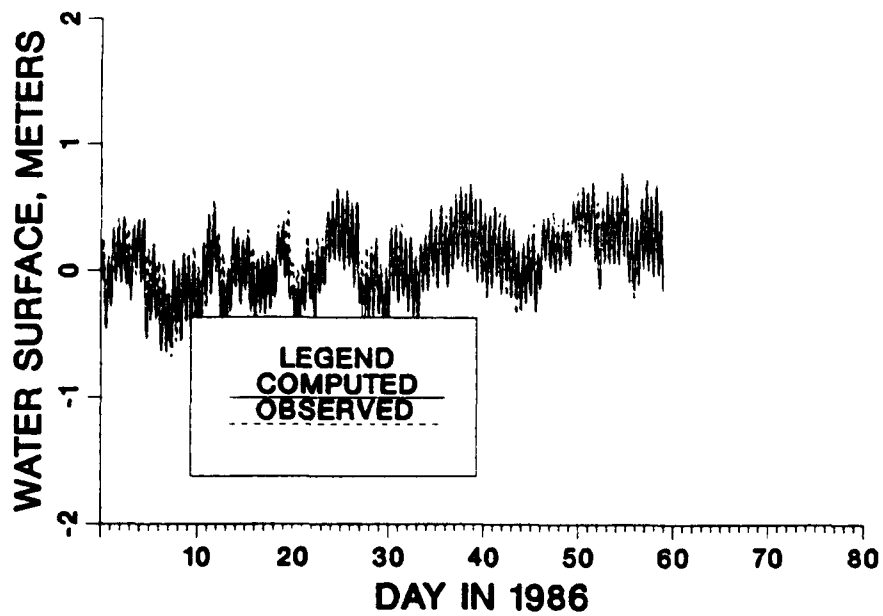


Figure C17. Comparison of computed and recorded tide at Colonial Beach, VA, during 1986 (Sheet 1 of 3)

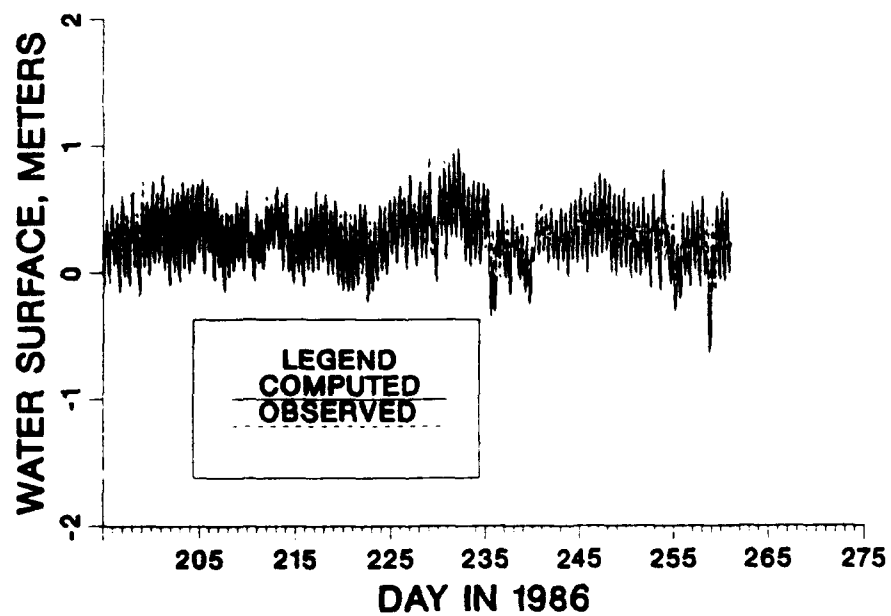
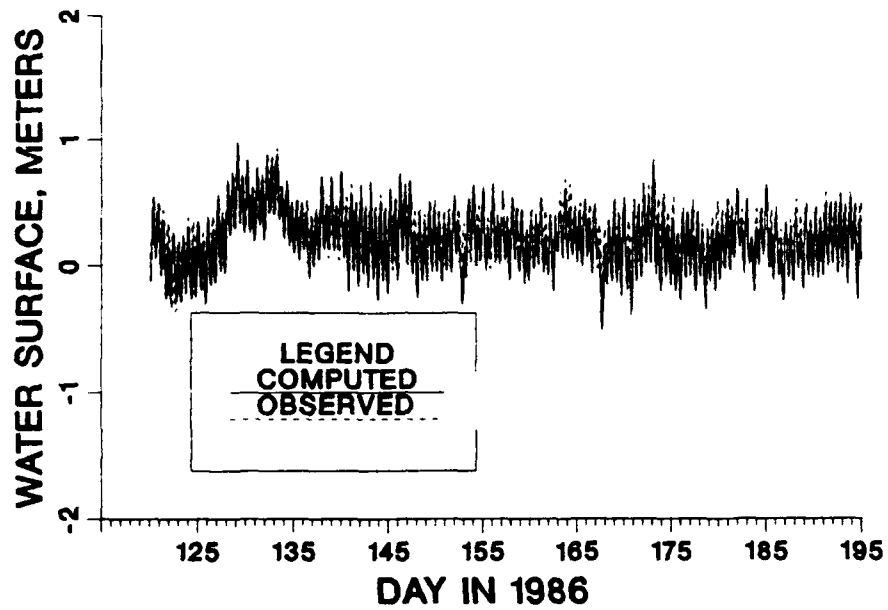


Figure C17. (Sheet 2 of 3)

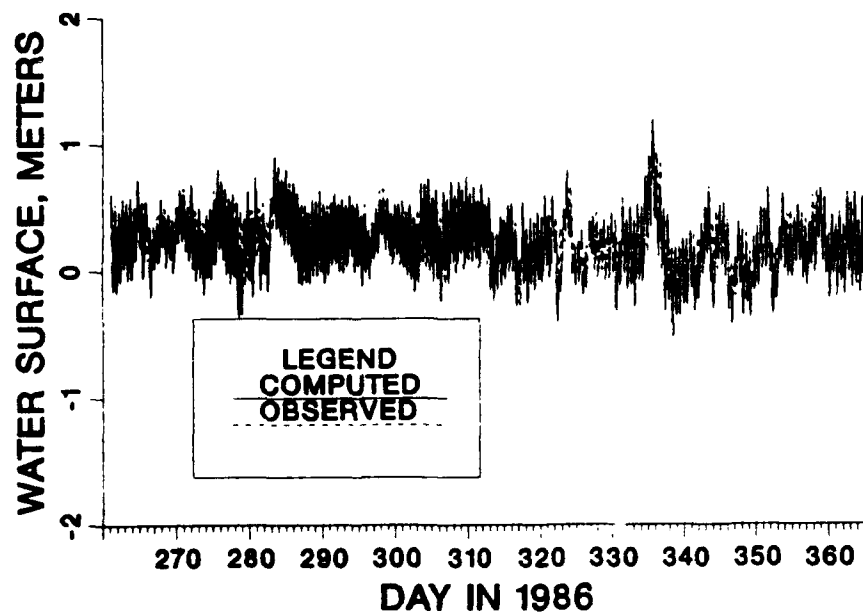


Figure C17. (Sheet 3 of 3)

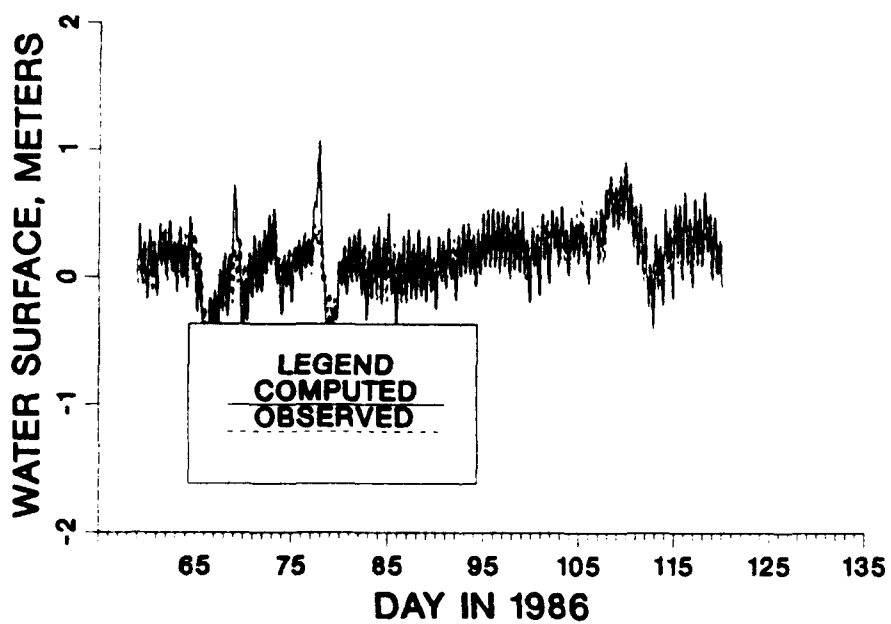
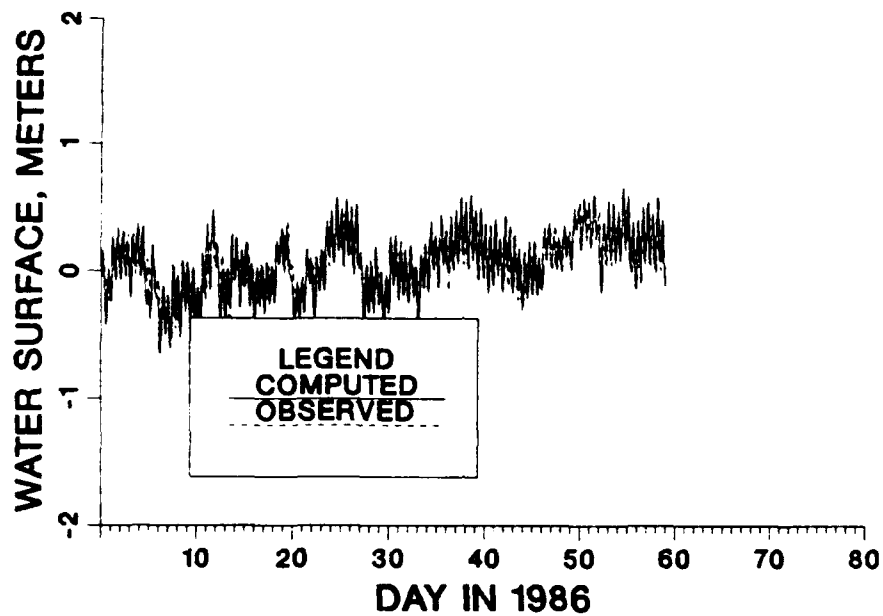


Figure C18. Comparison of computed and recorded tide at Solomons, MD, during 1986 (Sheet 1 of 3)

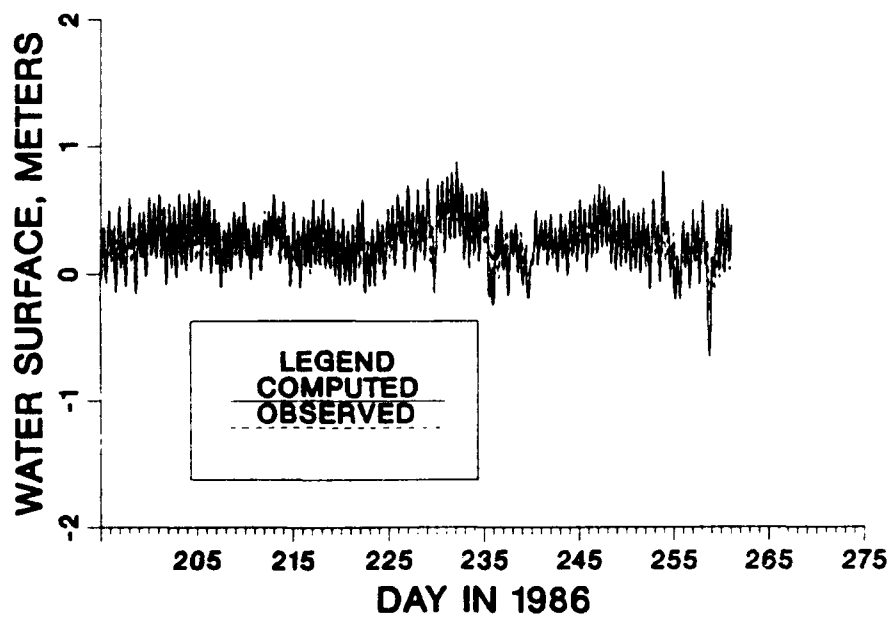
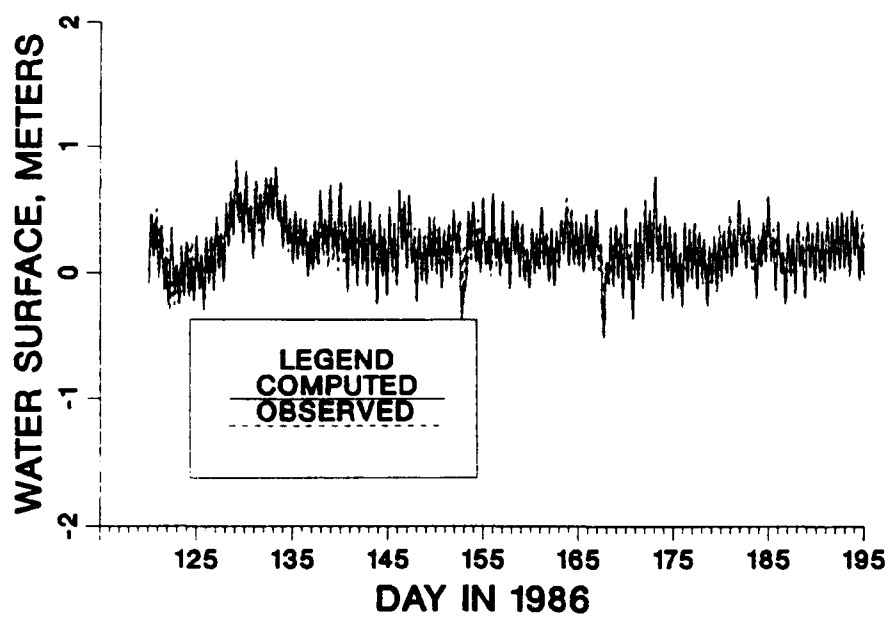


Figure C18. (Sheet 2 of 3)

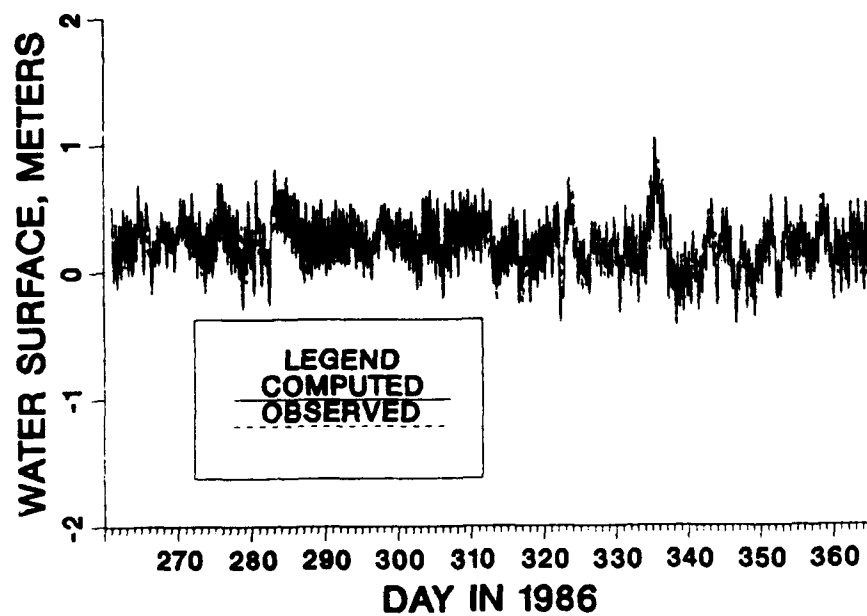


Figure C18. (Sheet 3 of 3)

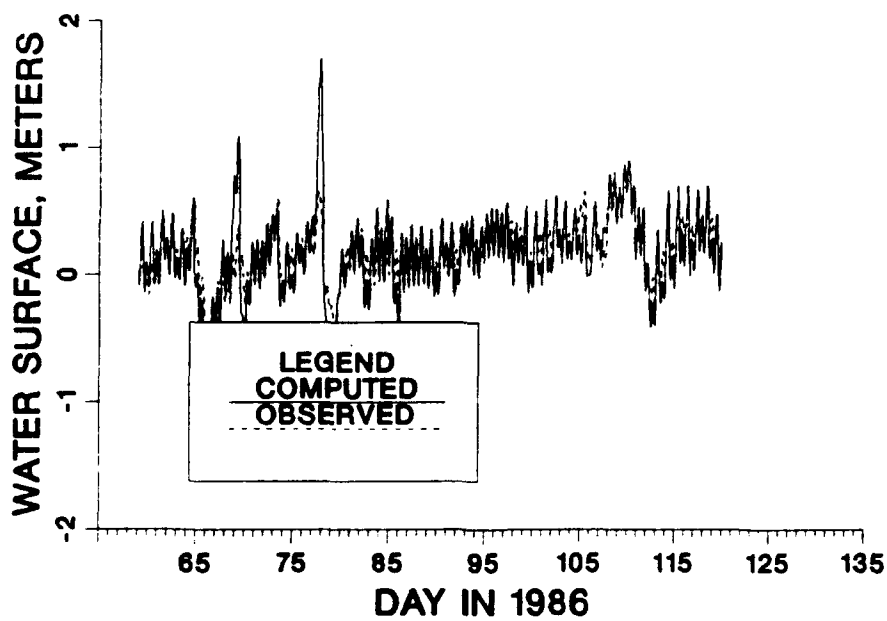
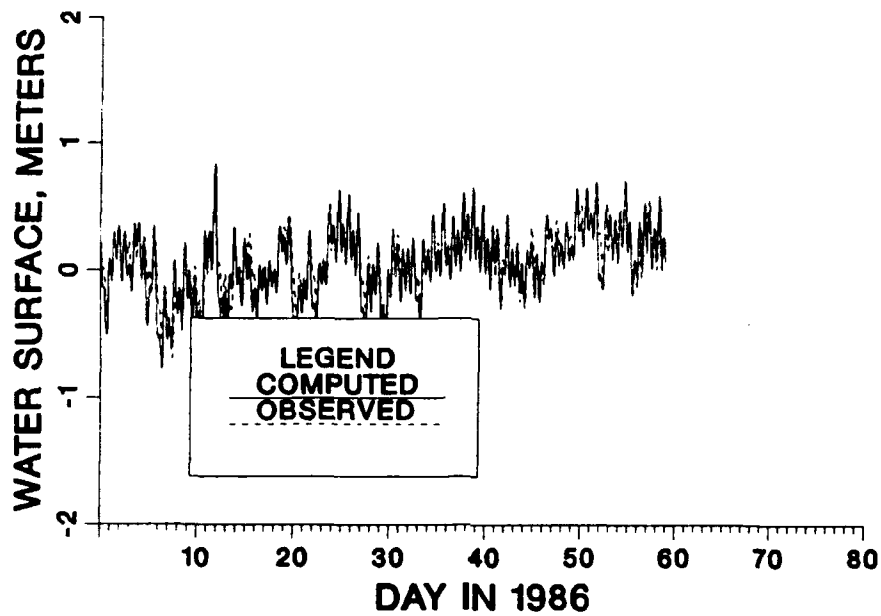


Figure C19. Comparison of computed and recorded tide at Annapolis, MD, during 1986 (Sheet 1 of 3)

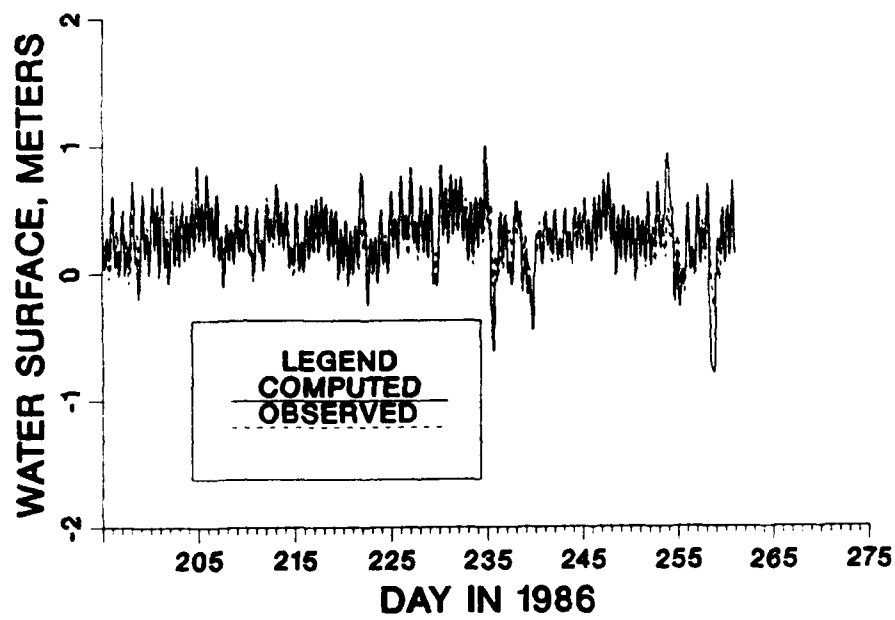
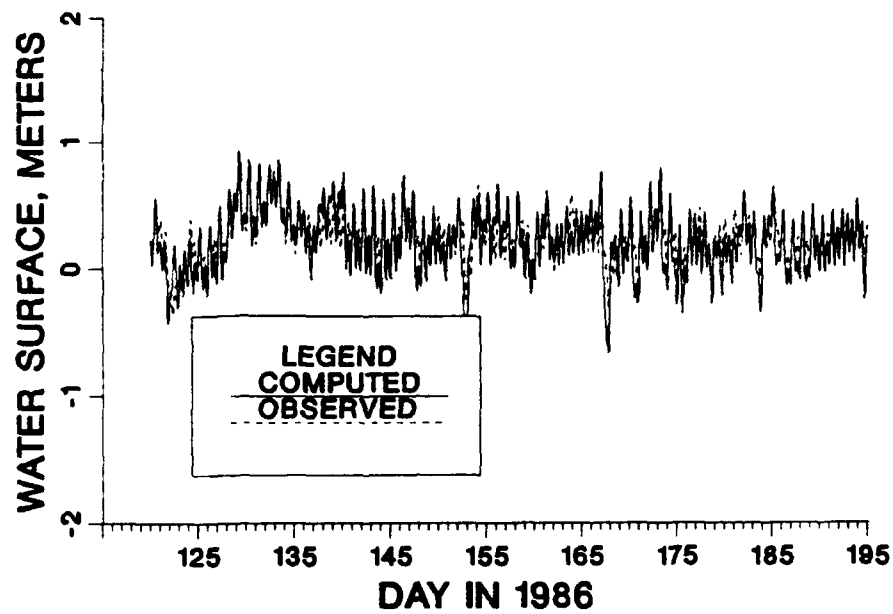


Figure C19. (Sheet 2 of 3)

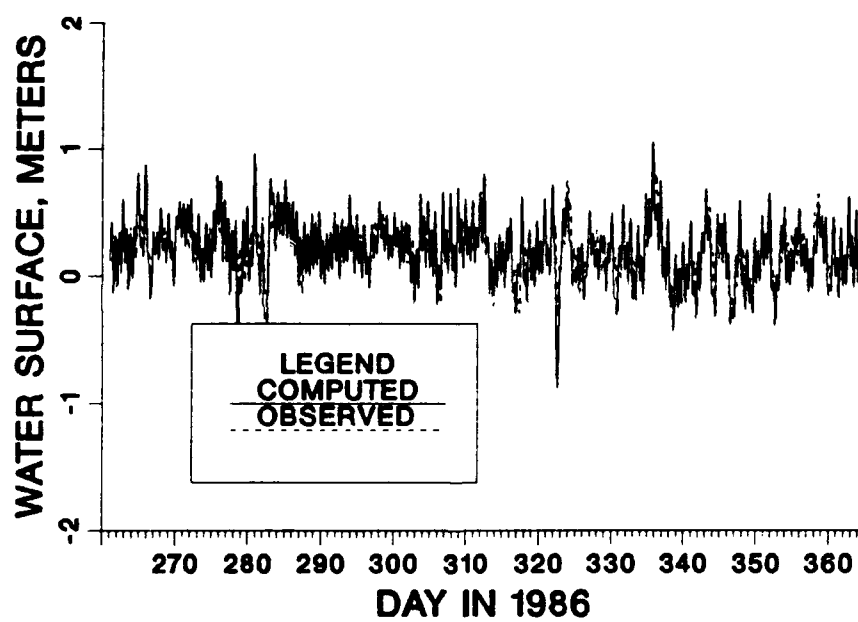


Figure C19. (Sheet 3 of 3)

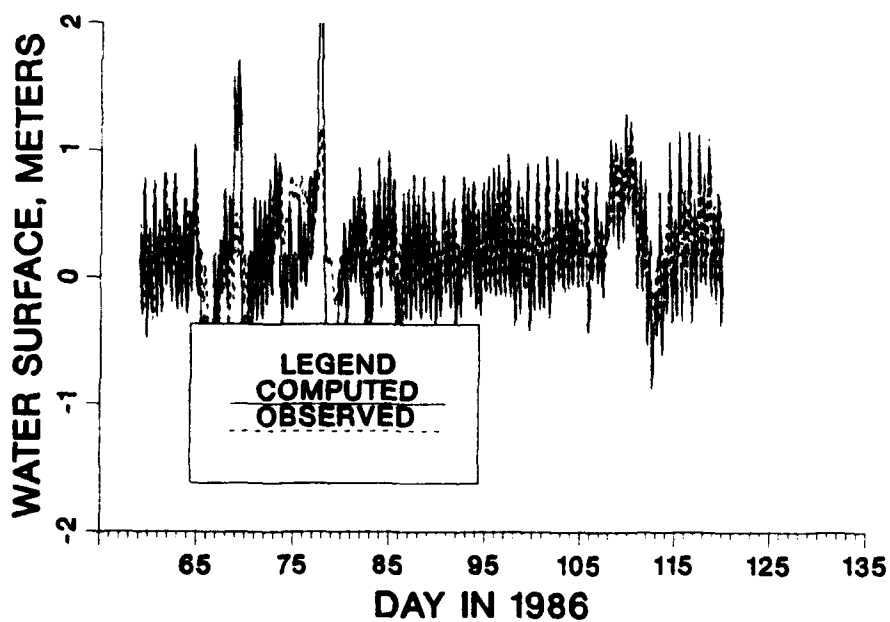
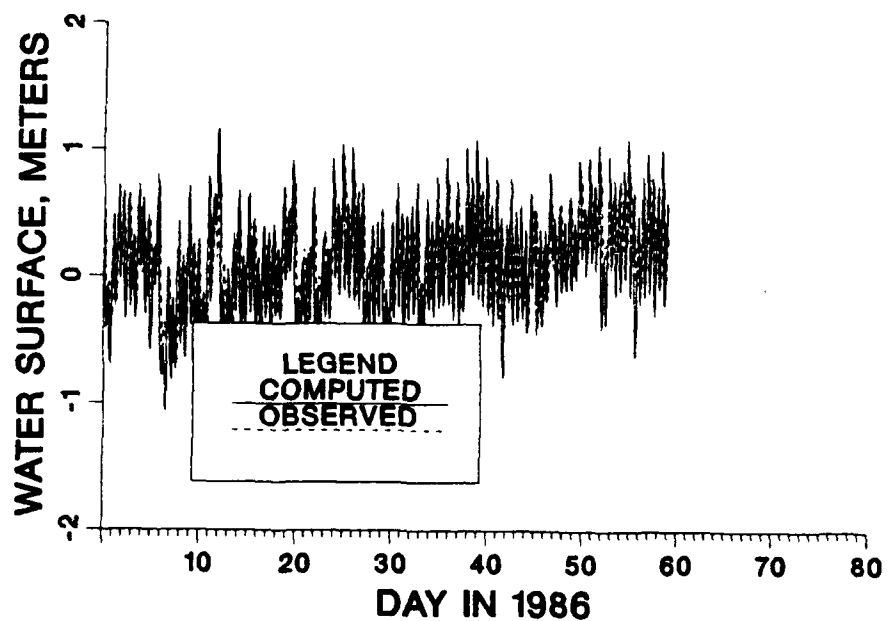


Figure C20. Comparison of computed and recorded tide at Havre de Grace, MD, during 1986 (Sheet 1 of 3)

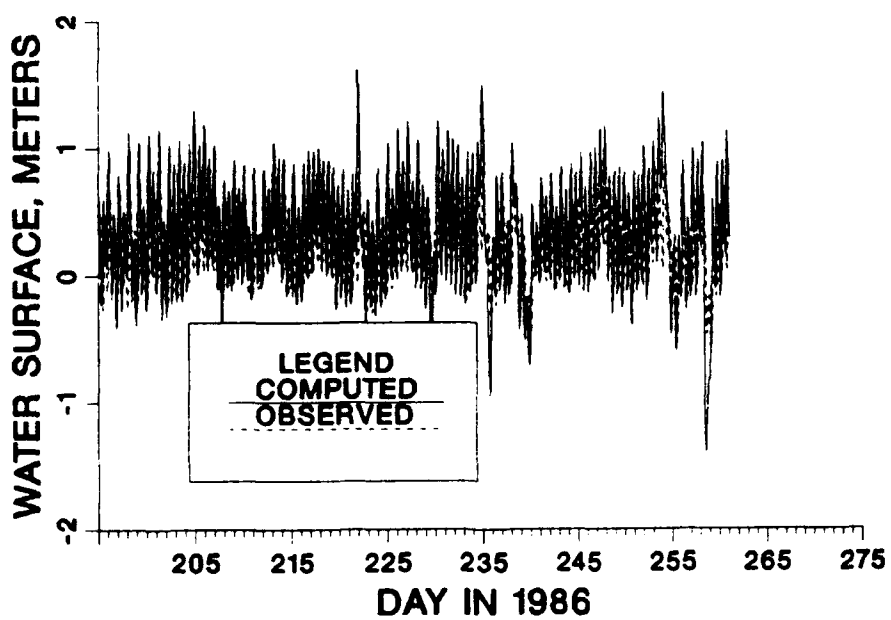
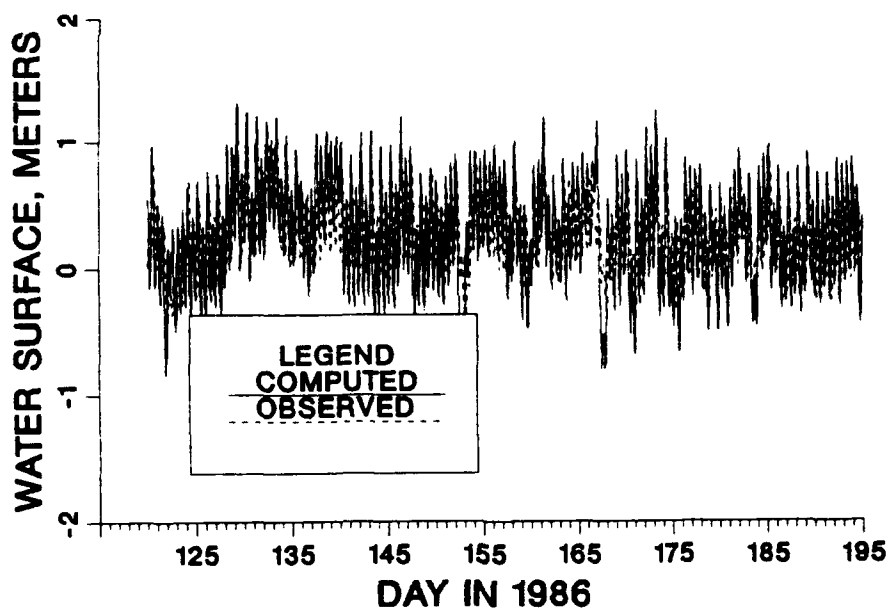


Figure C20. (Sheet 2 of 3)

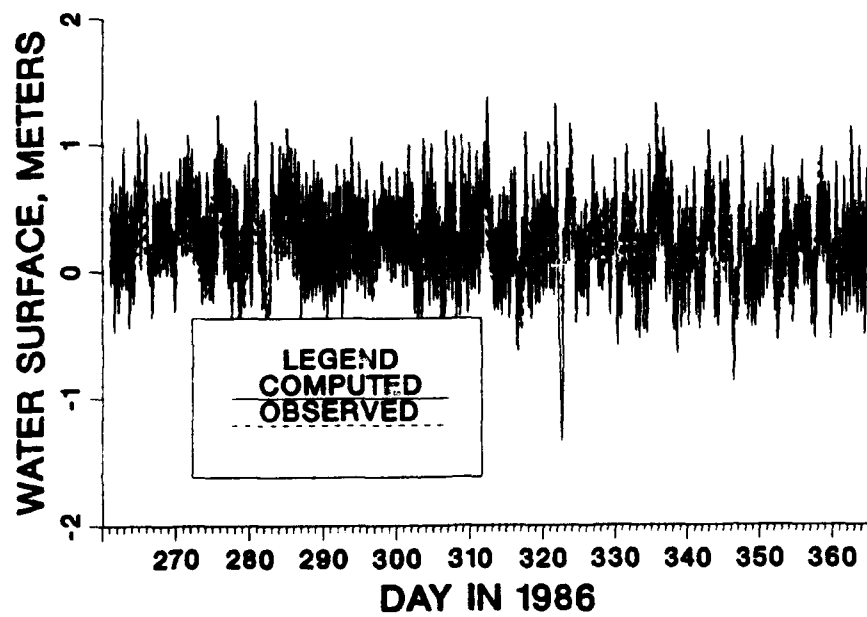


Figure C20. (Sheet 3 of 3)

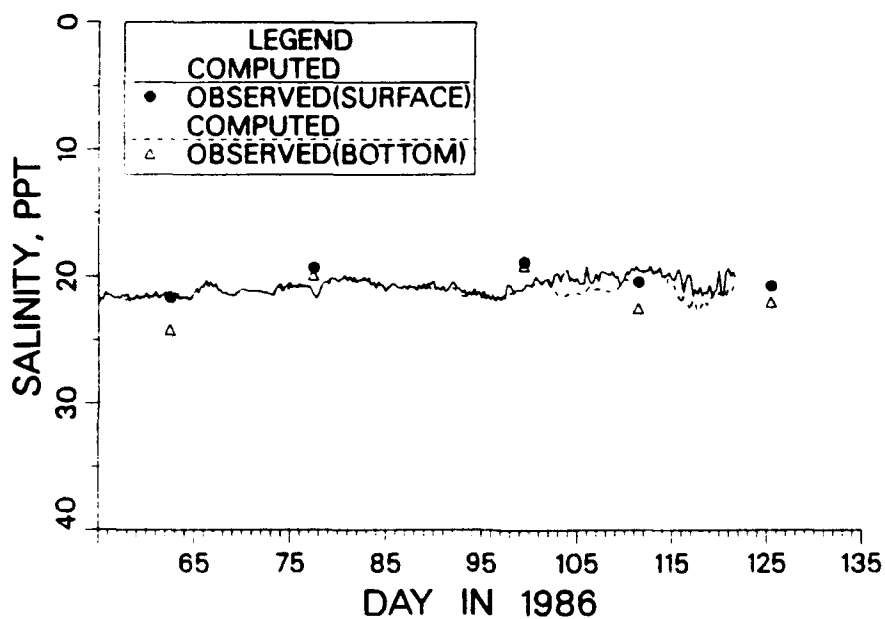
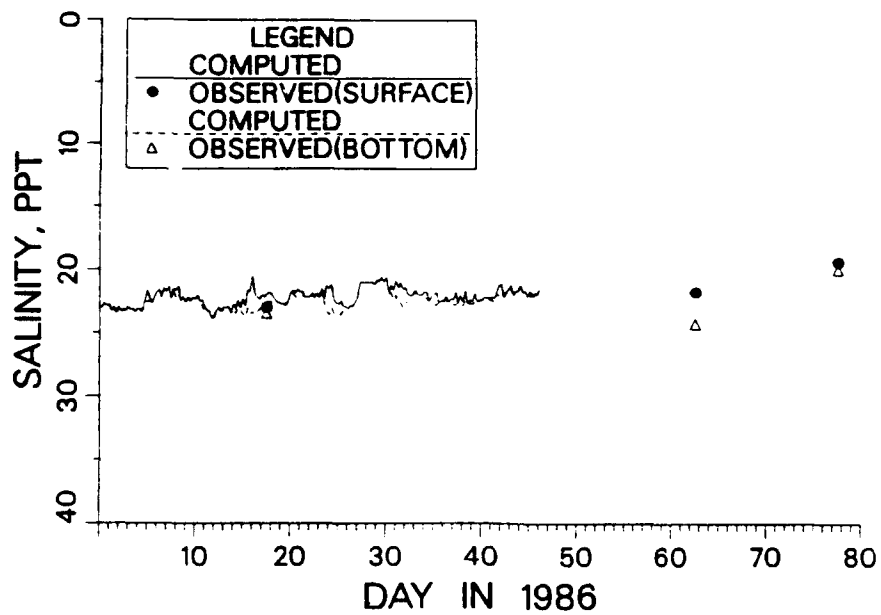


Figure C21. Comparison of computed and recorded salinity at sta CB 7.2E during 1986 (Sheet 1 of 3)

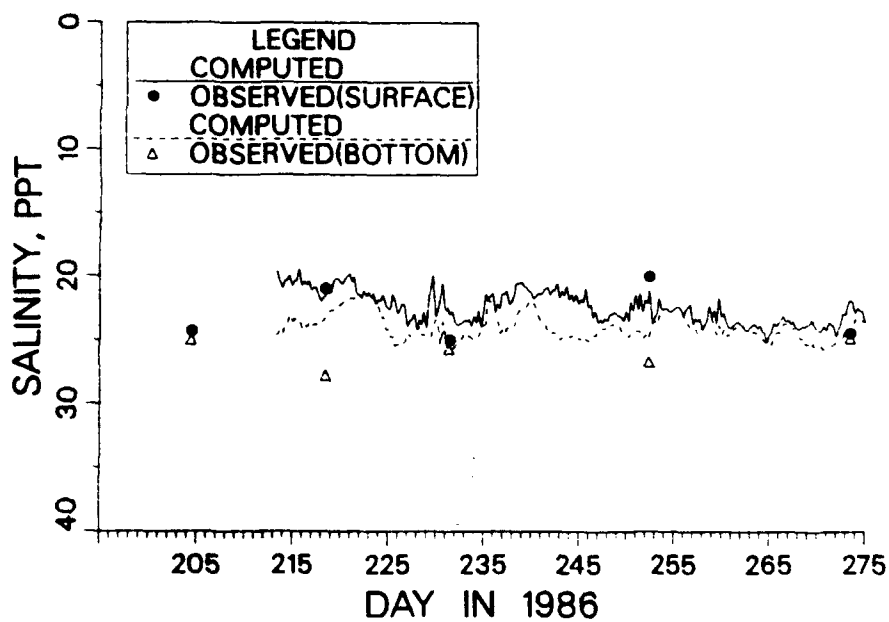
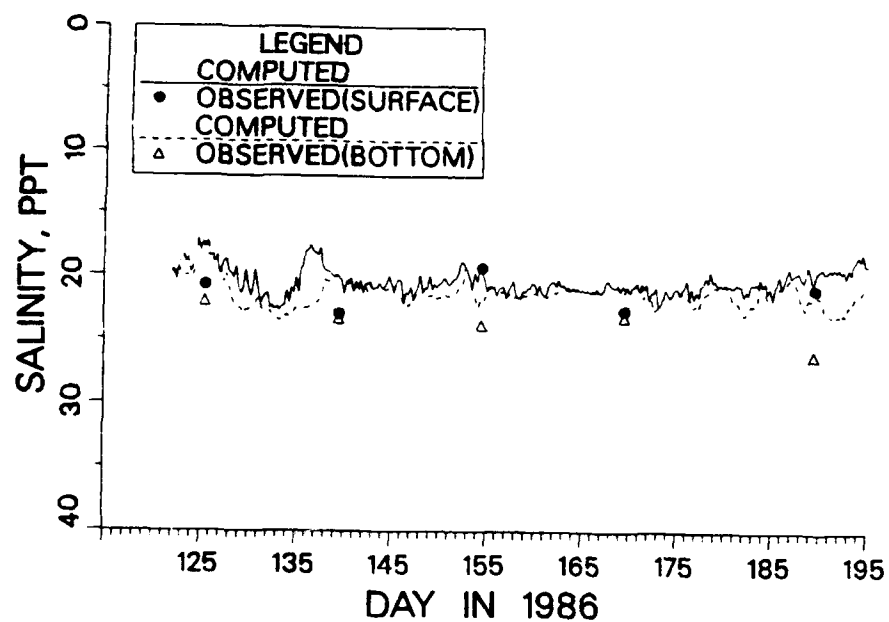


Figure C21. (Sheet 2 of 3)

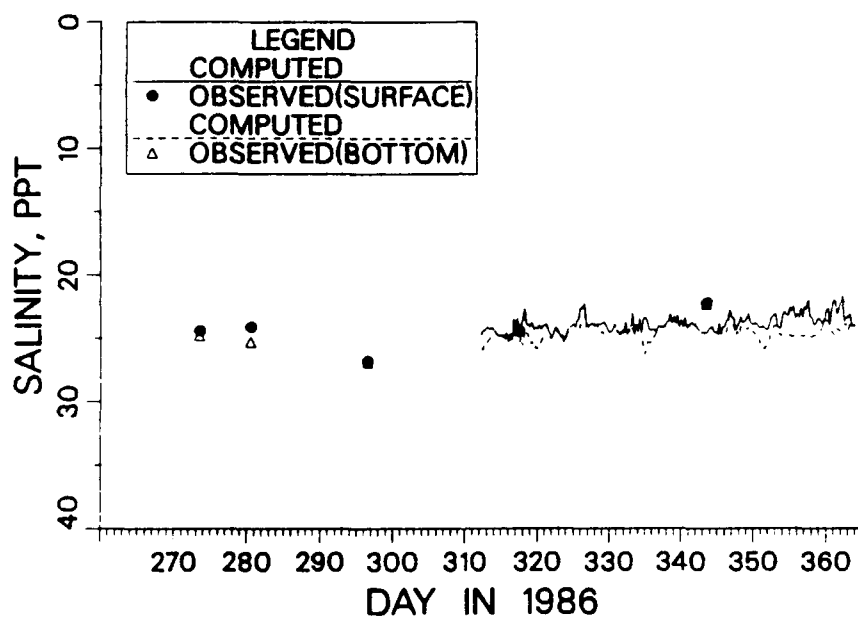


Figure C21. (Sheet 3 of 3)

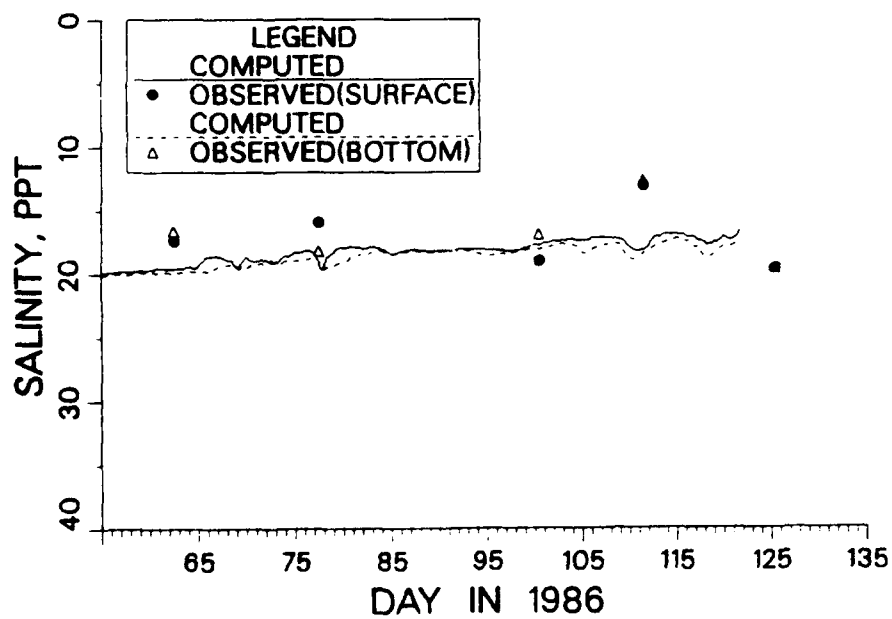
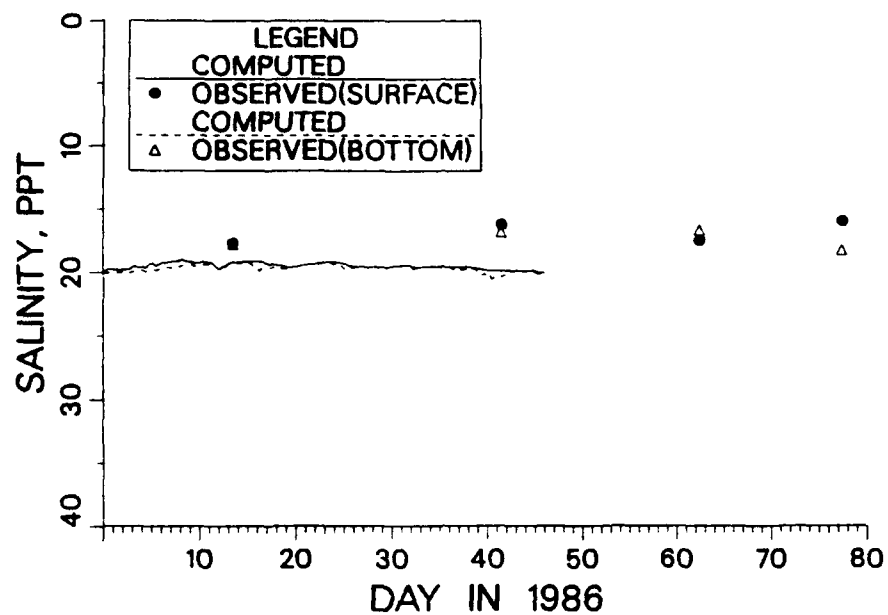


Figure C22. Comparison of computed and recorded salinity at sta EE 3.5 during 1986 (Sheet 1 of 3)

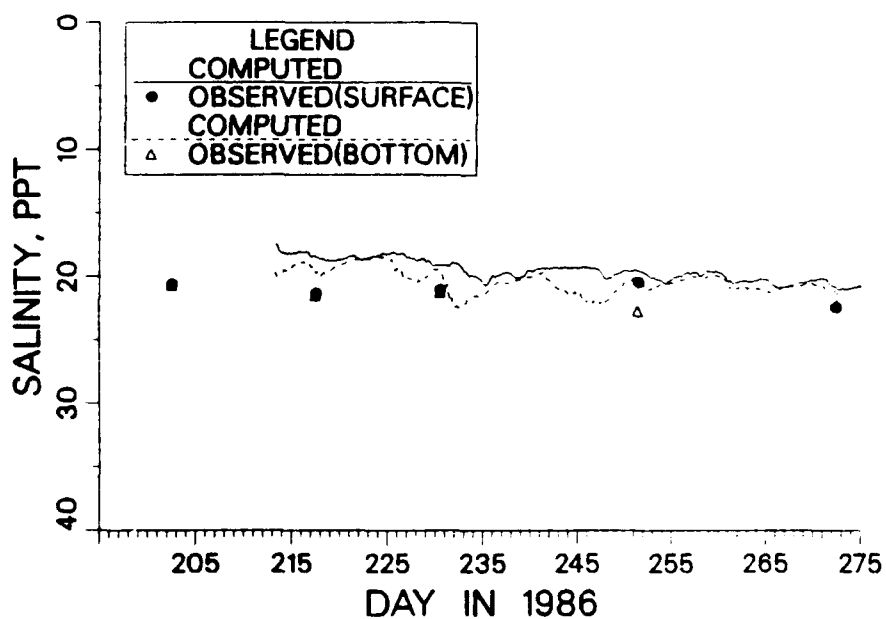
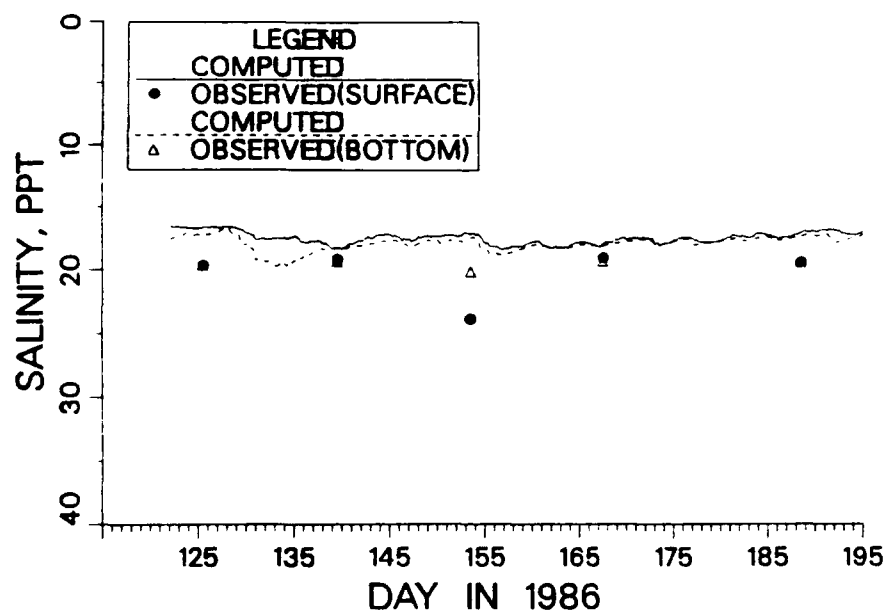


Figure C22. (Sheet 2 of 3)

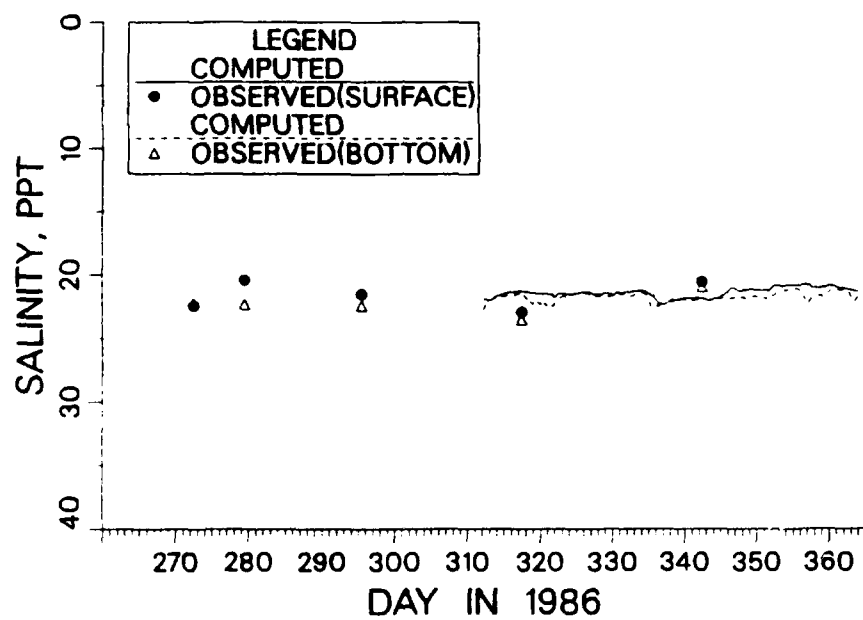


Figure C22. (Sheet 3 of 3)

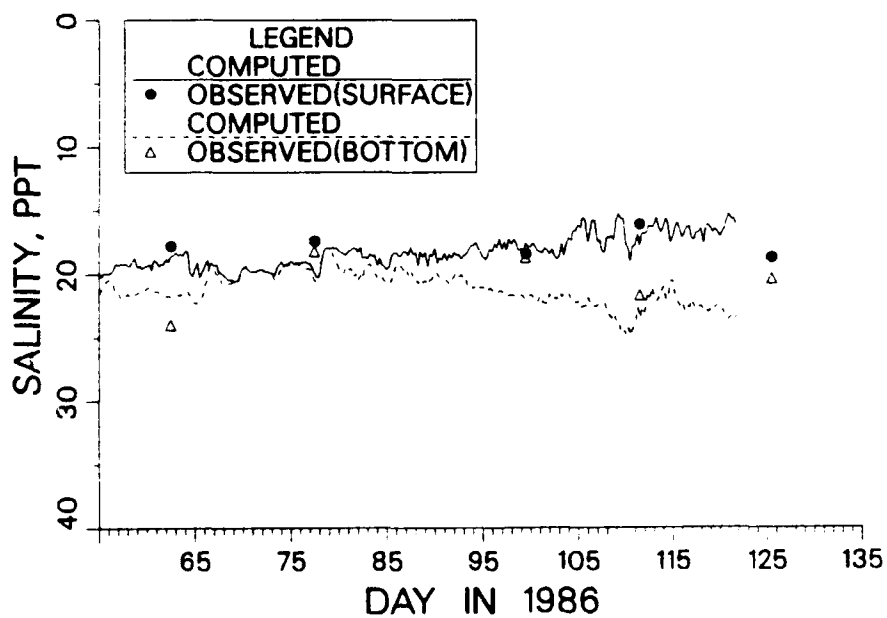
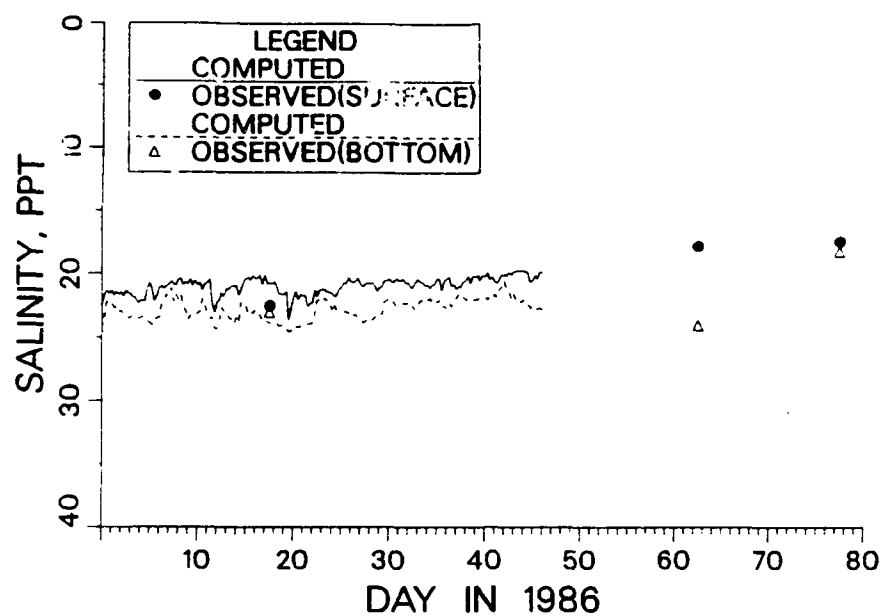


Figure C23. Comparison of computed and recorded salinity at sta CB 6.3 during 1986 (Sheet 1 of 3)

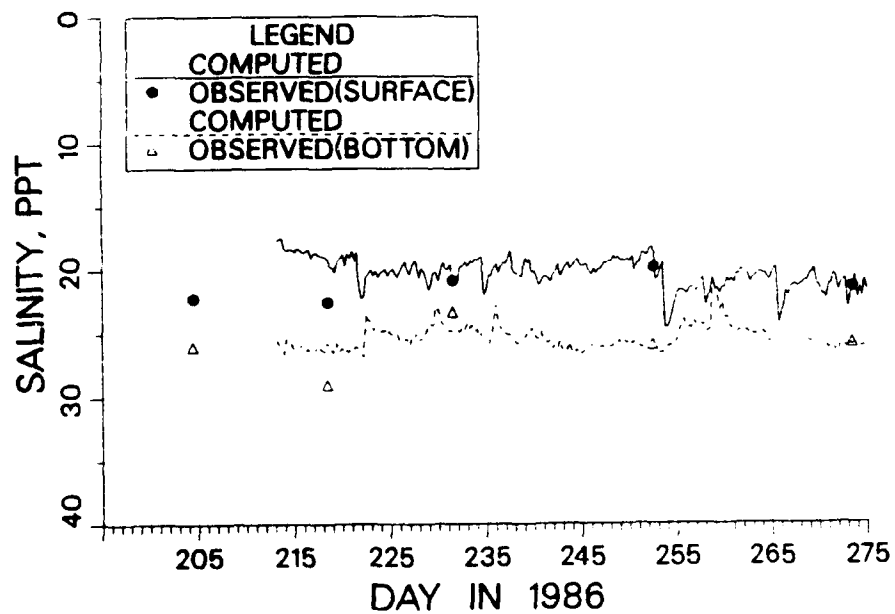
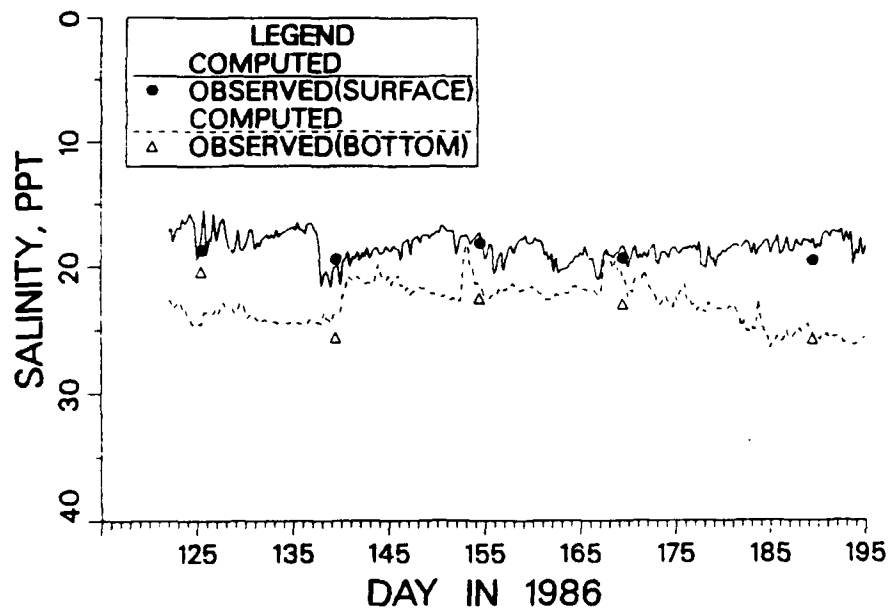


Figure C23. (Sheet 2 of 3)

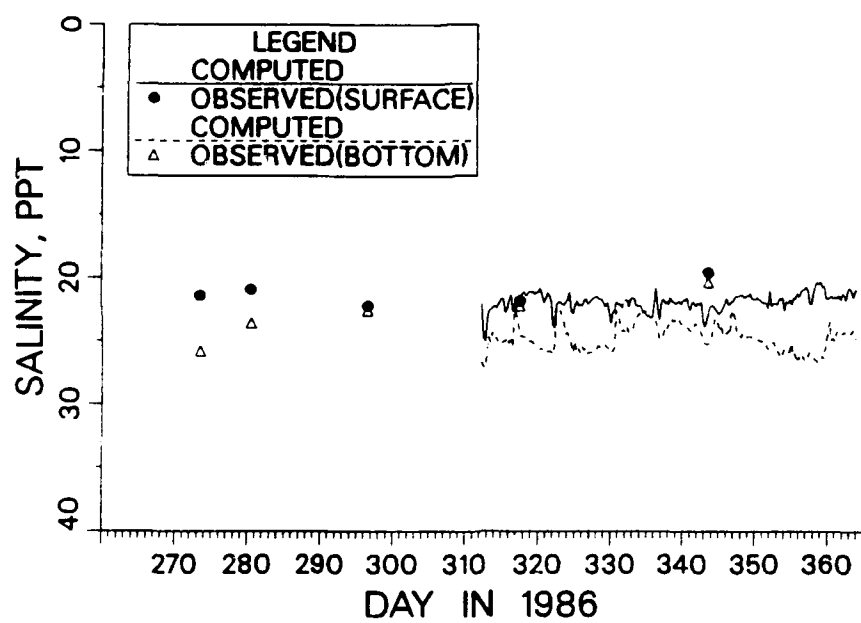


Figure C23. (Sheet 3 of 3)

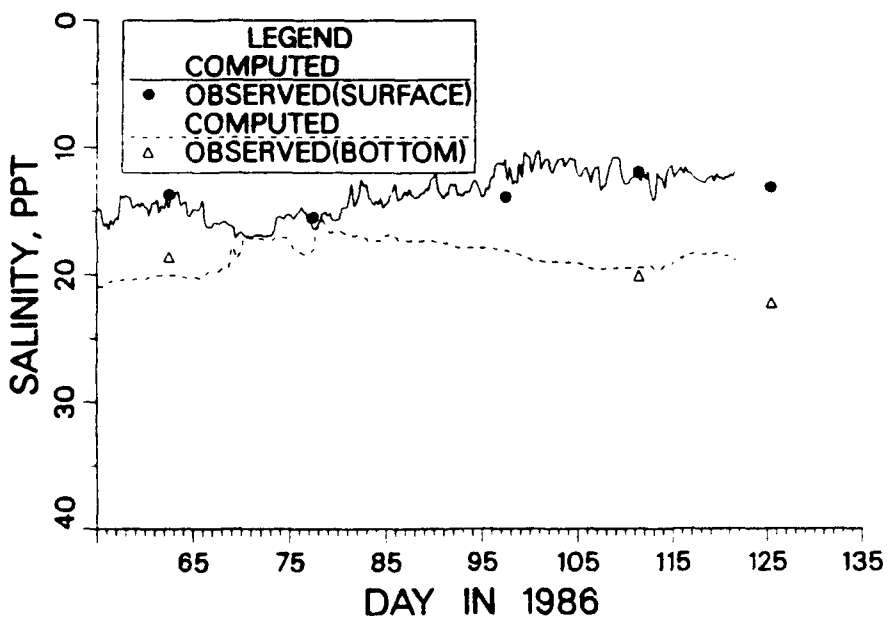
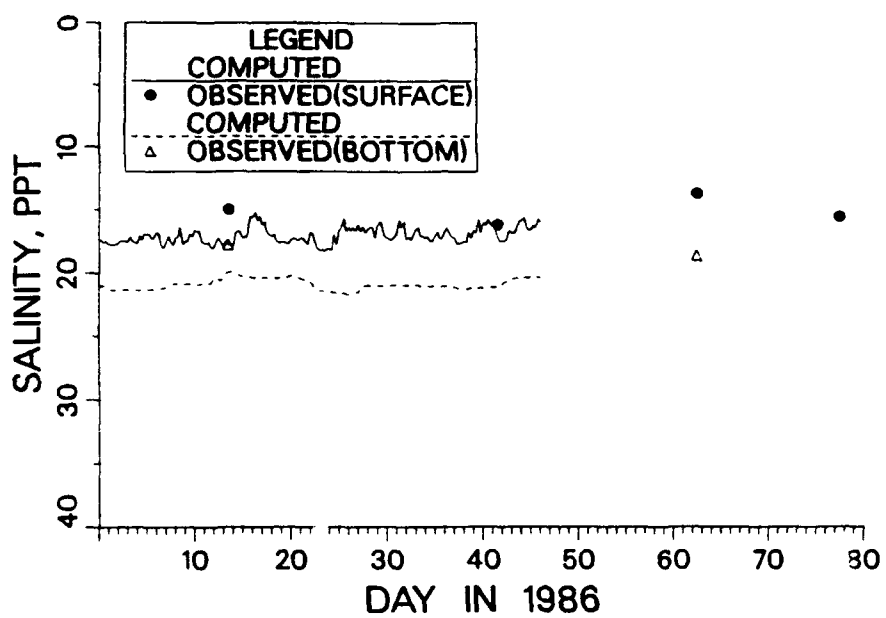


Figure C24. Comparison of computed and recorded salinity at sta CB 5.1 during 1986 (Sheet 1 of 3)

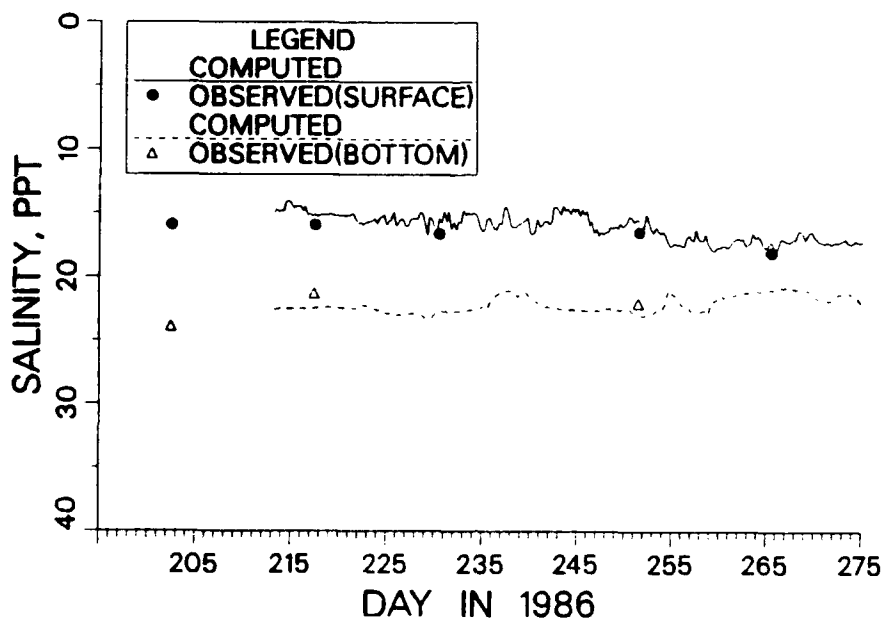
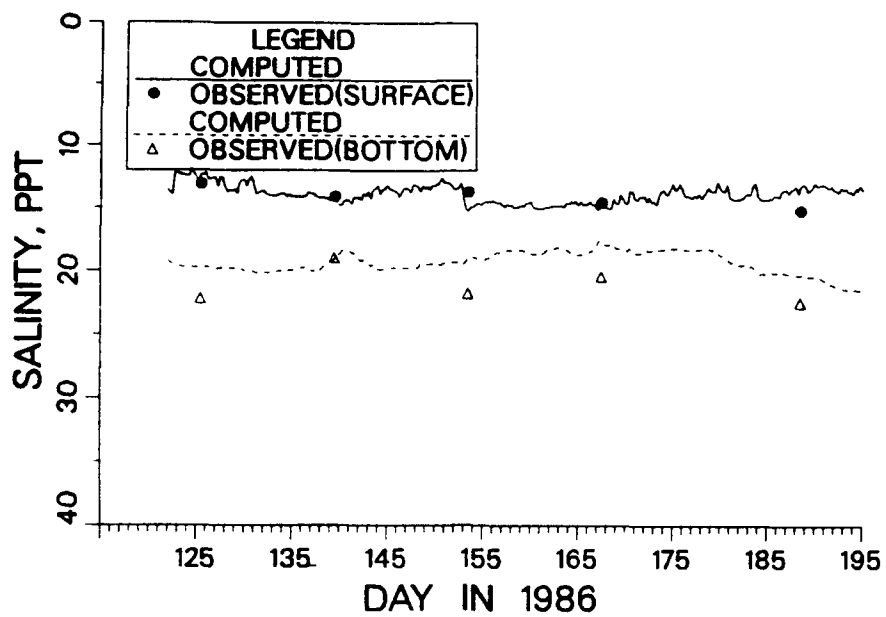


Figure C24. (Sheet 2 of 3)

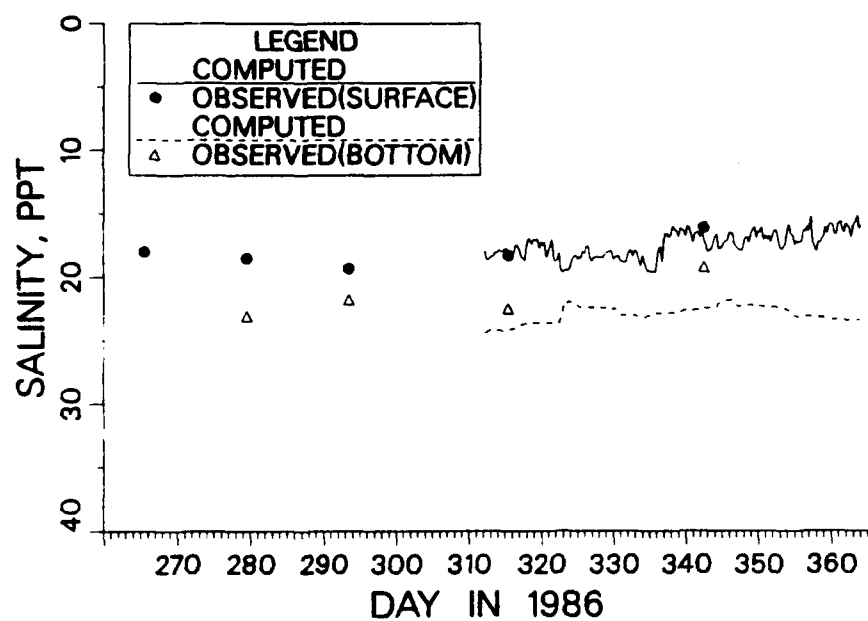


Figure C24. (Sheet 3 of 3)

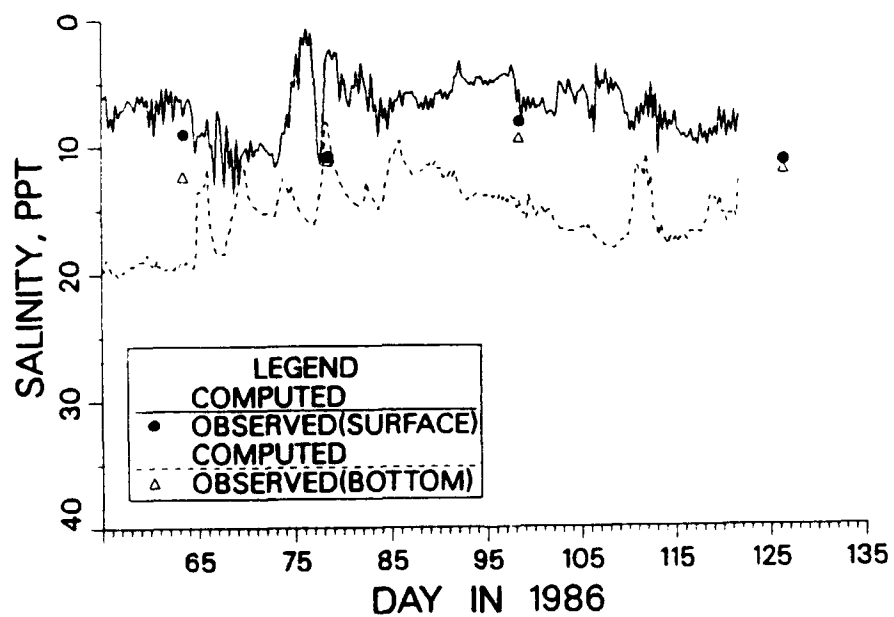
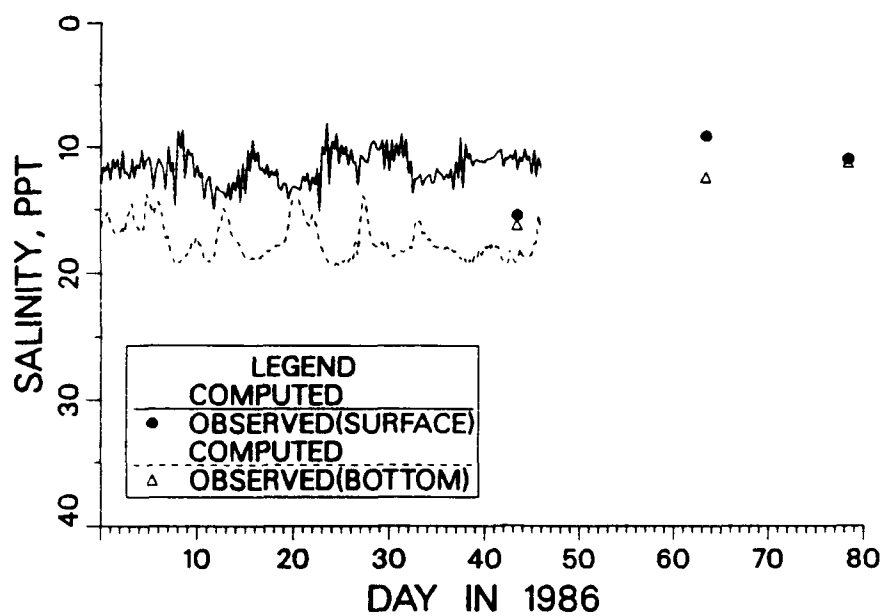


Figure C25. Comparison of computed and recorded salinity at sta CB 3.3W during 1986 (Sheet 1 of 3)

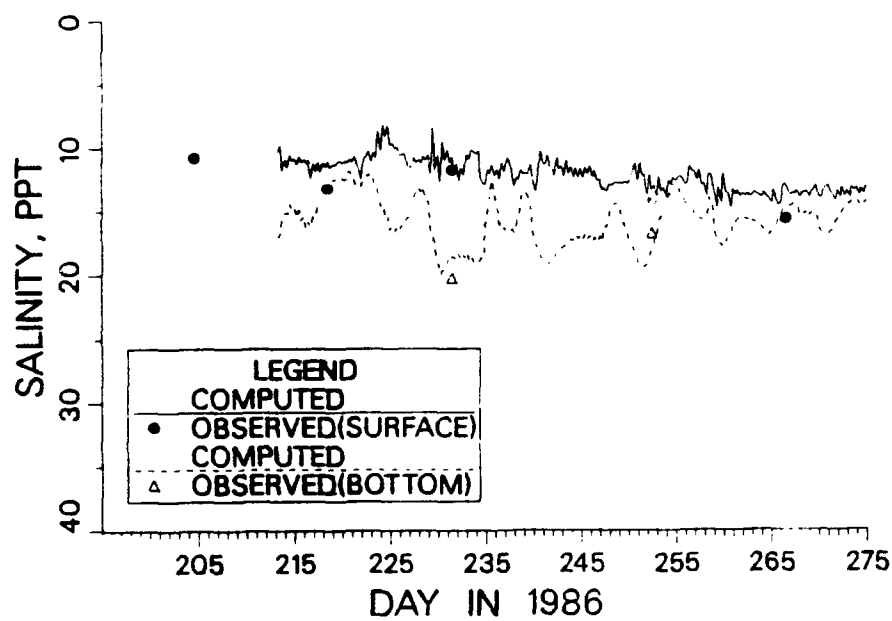
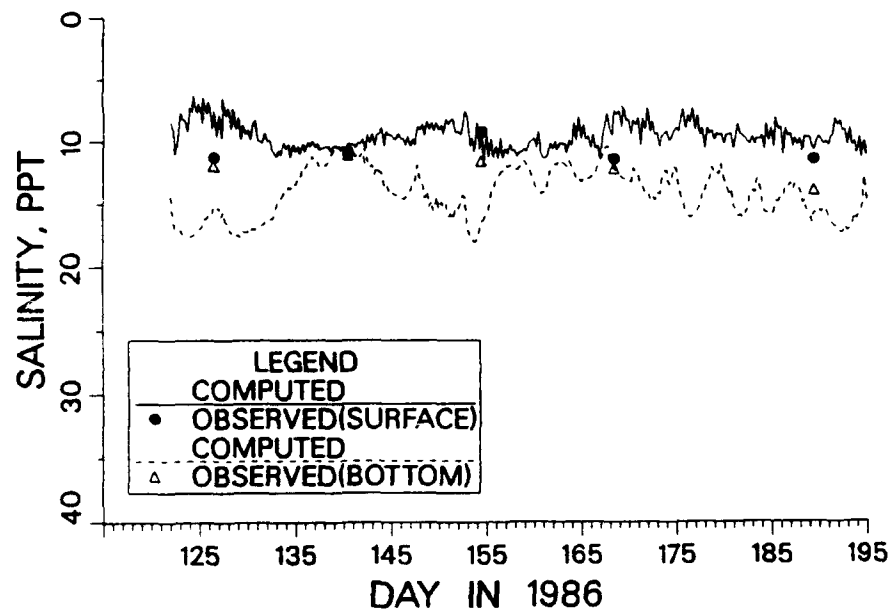


Figure C25. (Sheet 2 of 3)

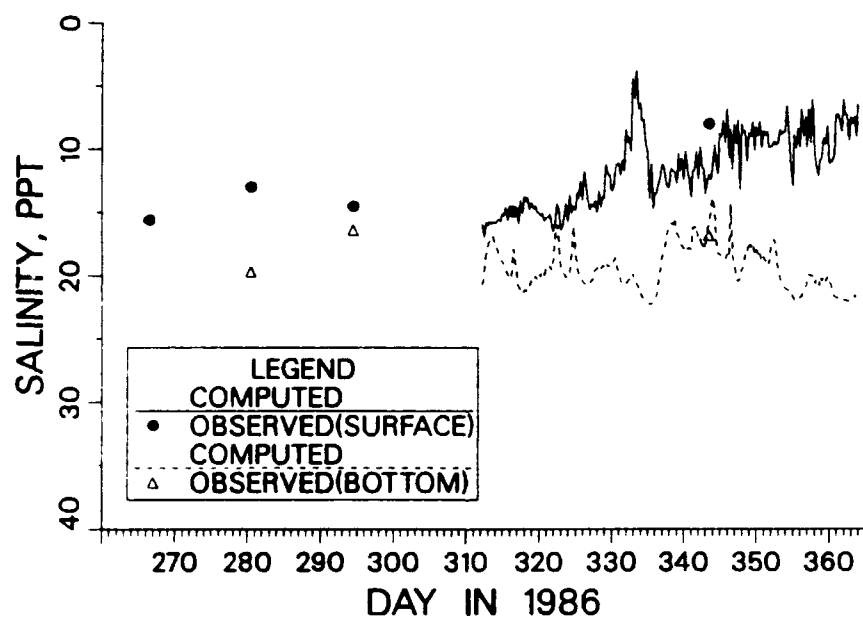


Figure C25. (Sheet 3 of 3)

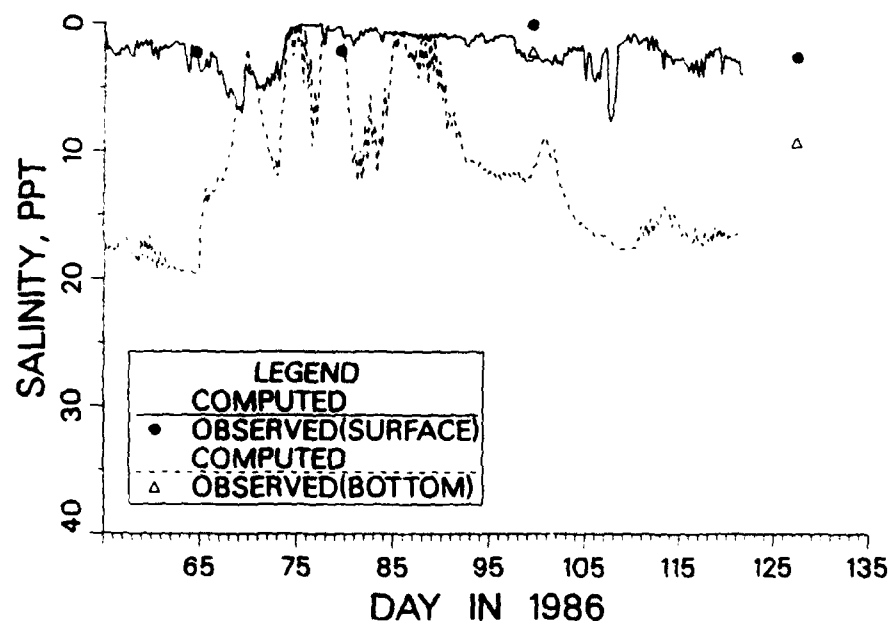
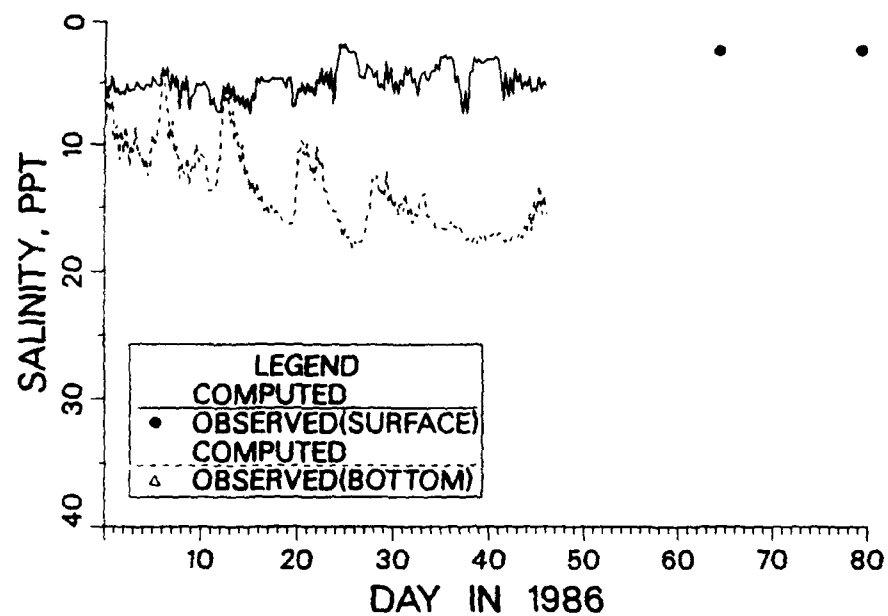


Figure C26. Comparison of computed and recorded salinity at sta CB 3.1 during 1986 (Sheet 1 of 3)

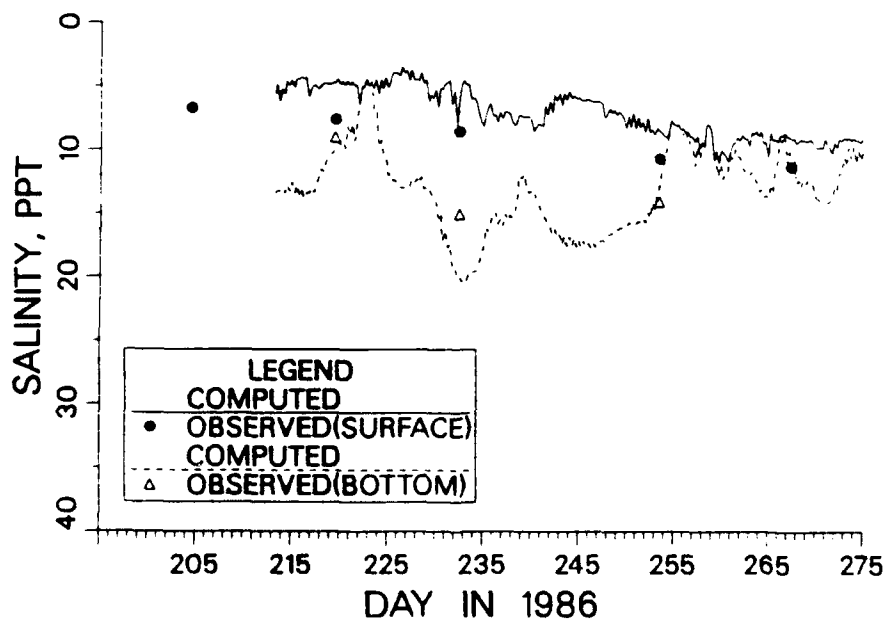
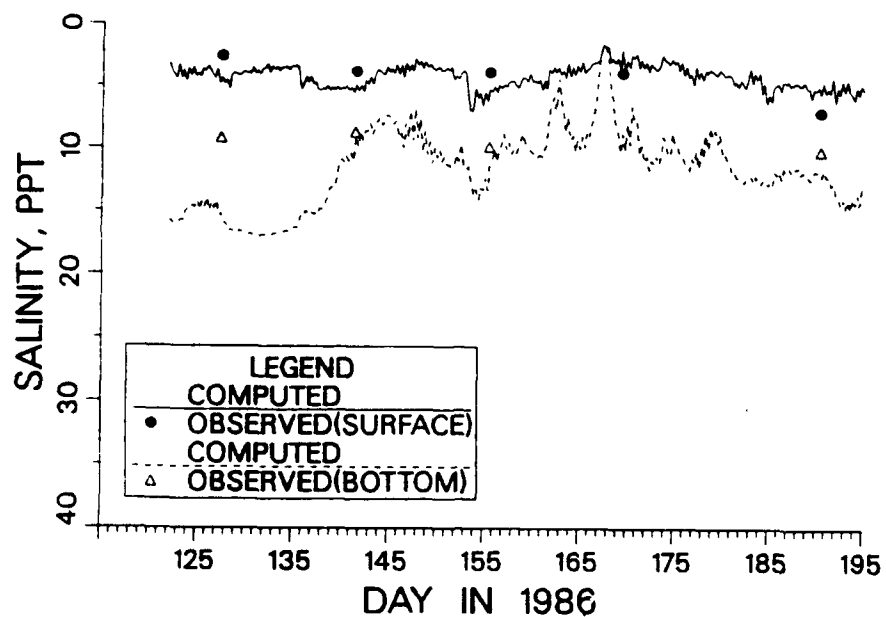


Figure C26. (Sheet 2 of 3)

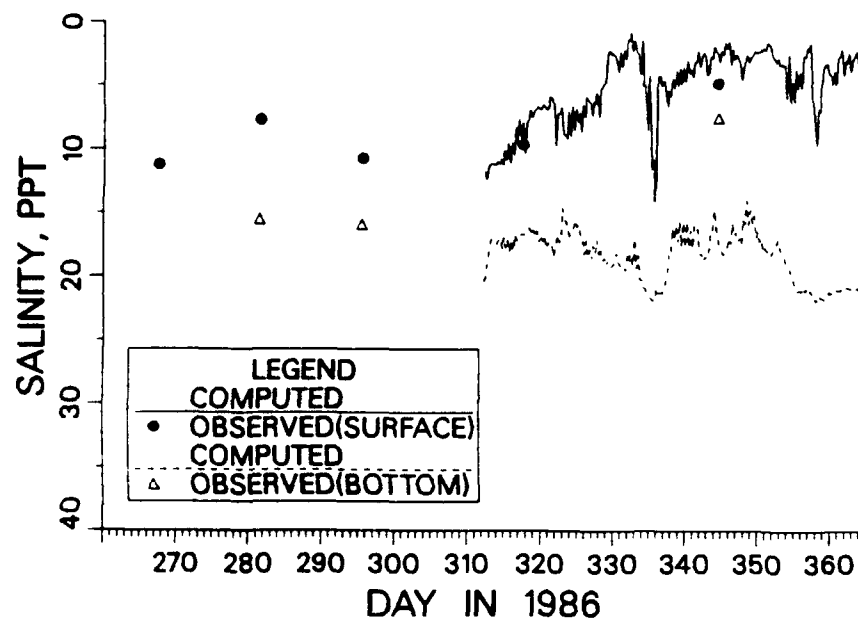


Figure C26. (Sheet 3 of 3)

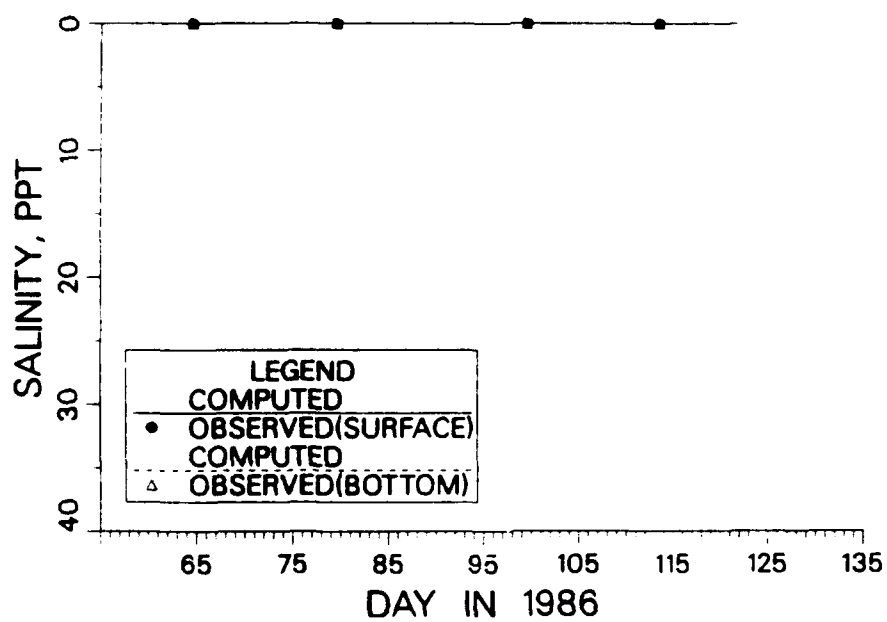
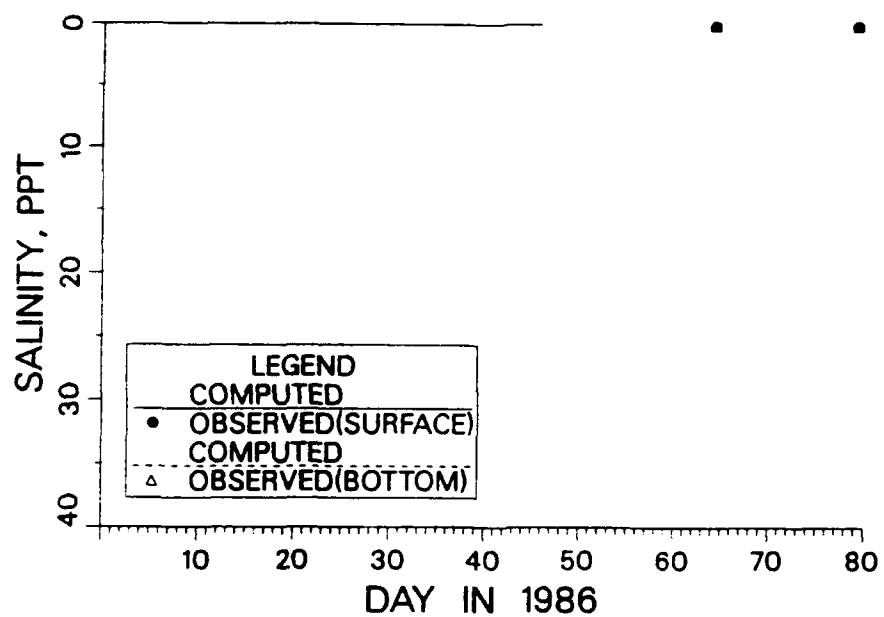
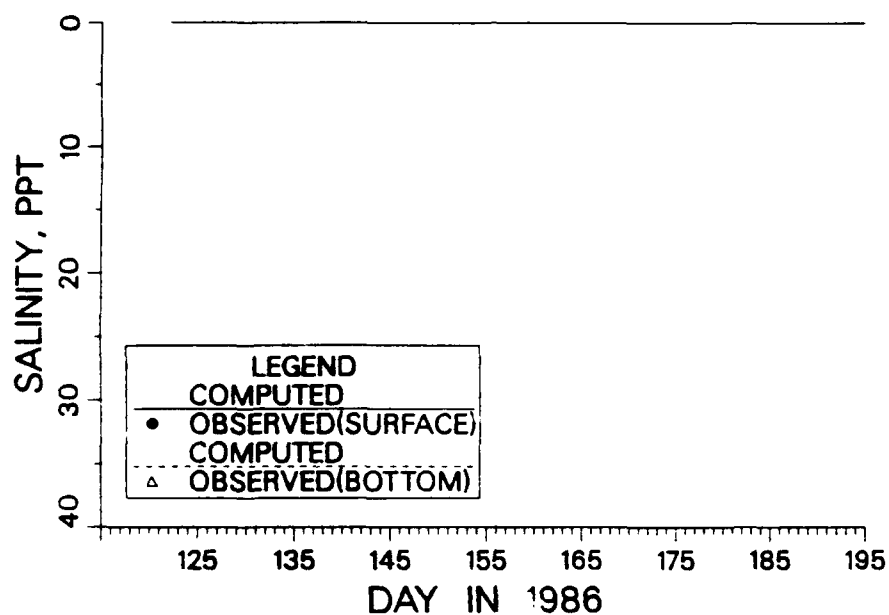


Figure C27. Comparison of computed and recorded salinity at sta CB 1.1 during 1986 (Sheet 1 of 3)



CB 1.1, Chesapeake Bay
 STATION 10 AT CELL (62, 13)

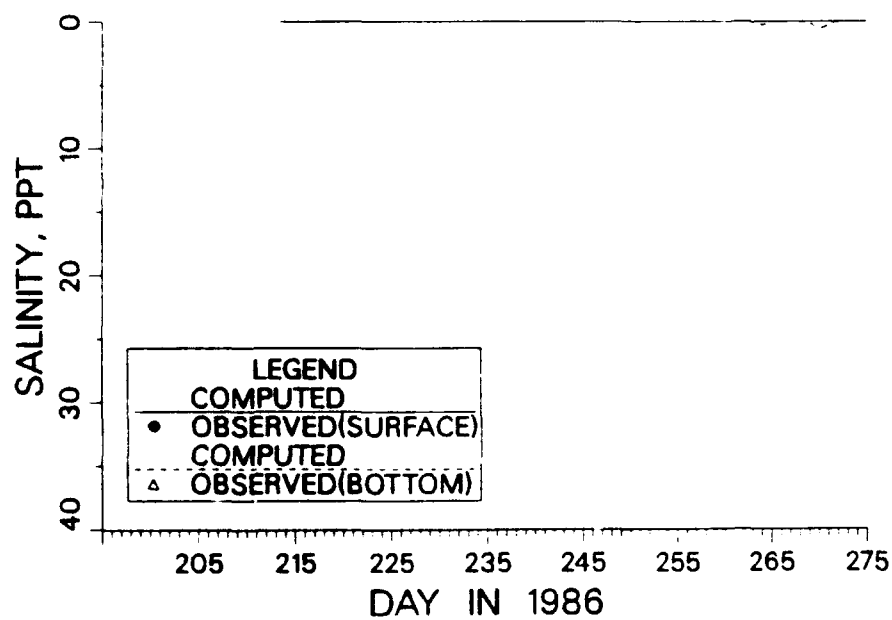


Figure C27. (Sheet 2 of 3)

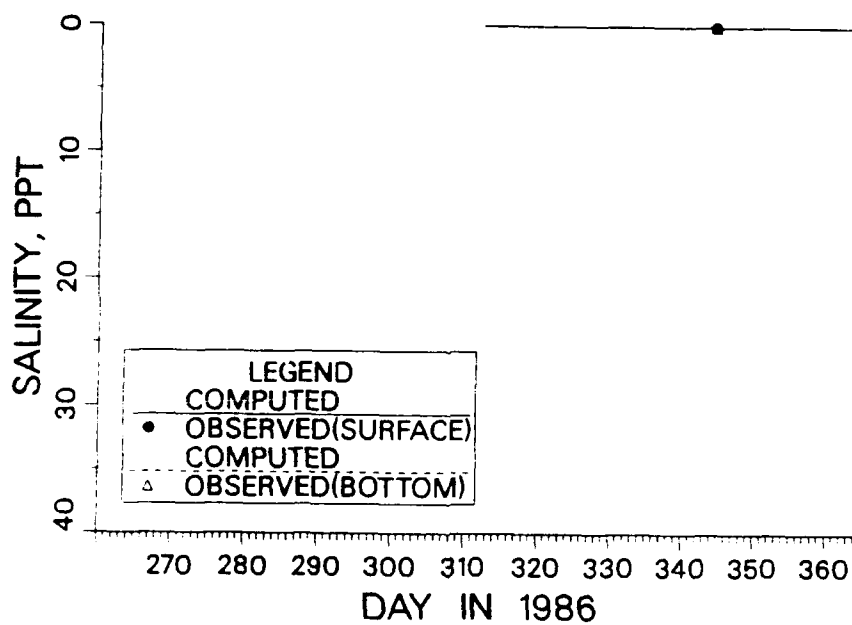


Figure C27. (Sheet 3 of 3)

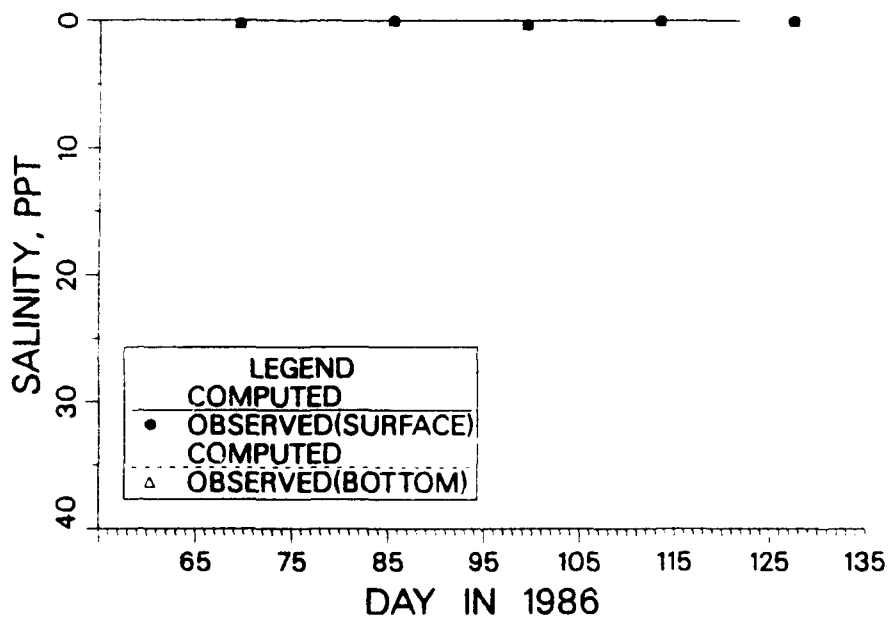
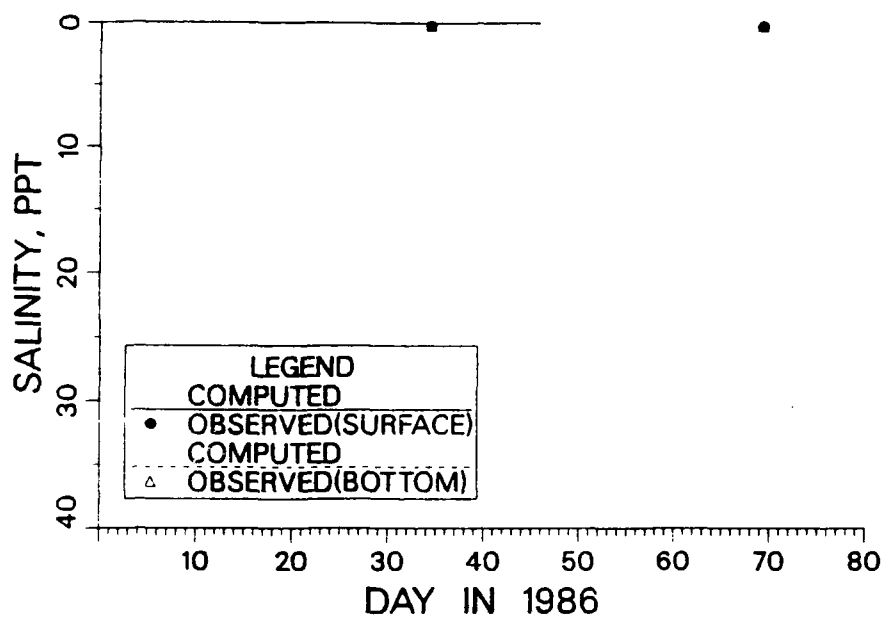


Figure C28. Comparison of computed and recorded salinity at sta TF 5.6 during 1986 (Sheet 1 of 3)

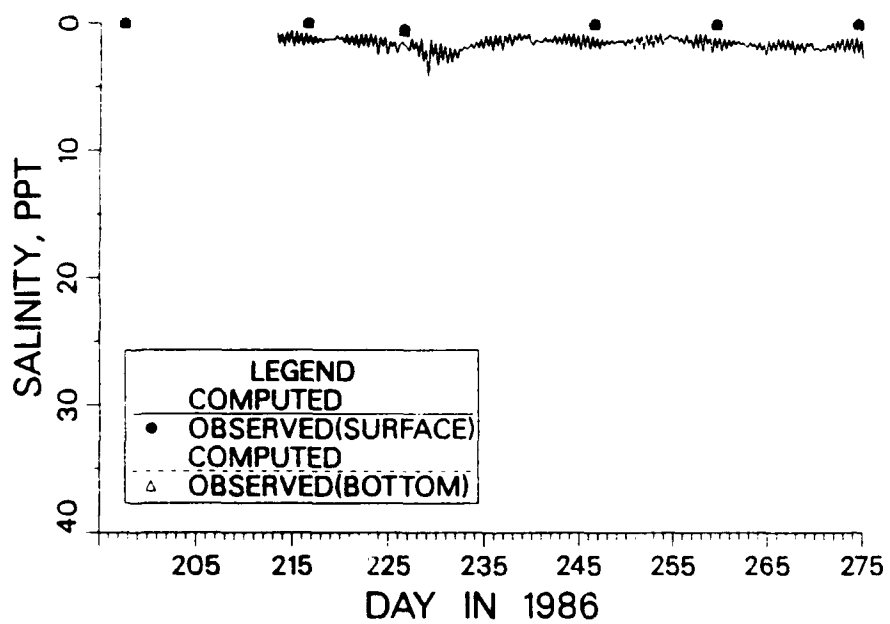
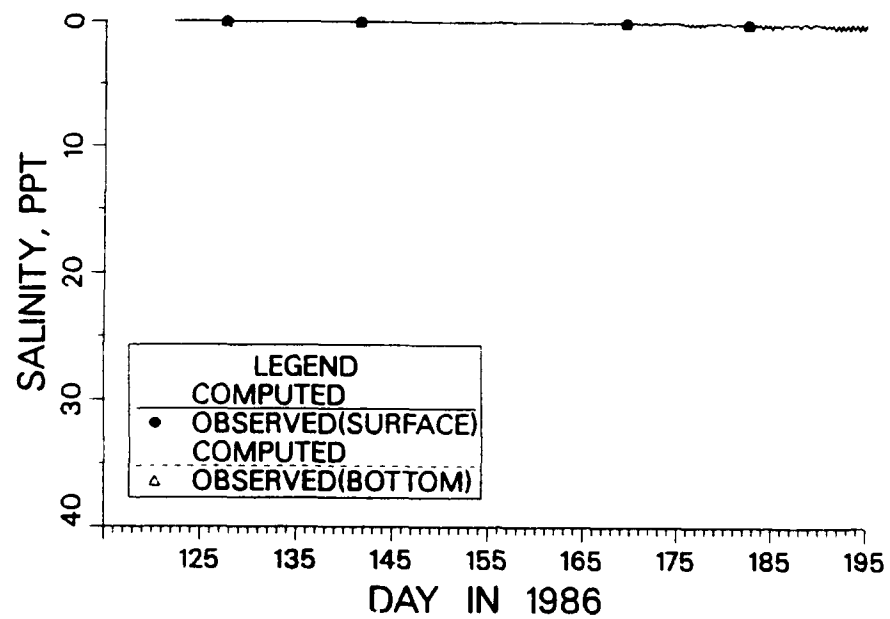


Figure C28. (Sheet 2 of 3)

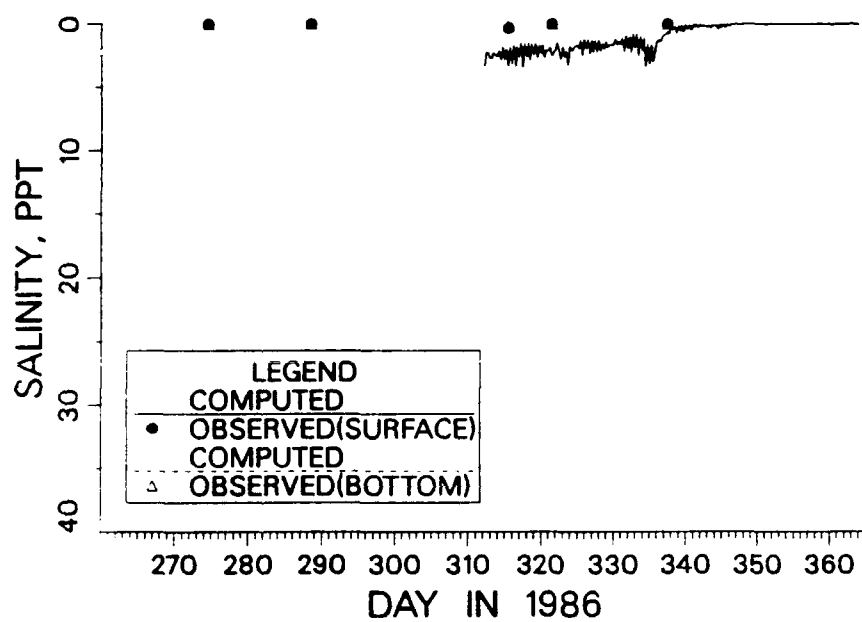


Figure C28. (Sheet 3 of 3)

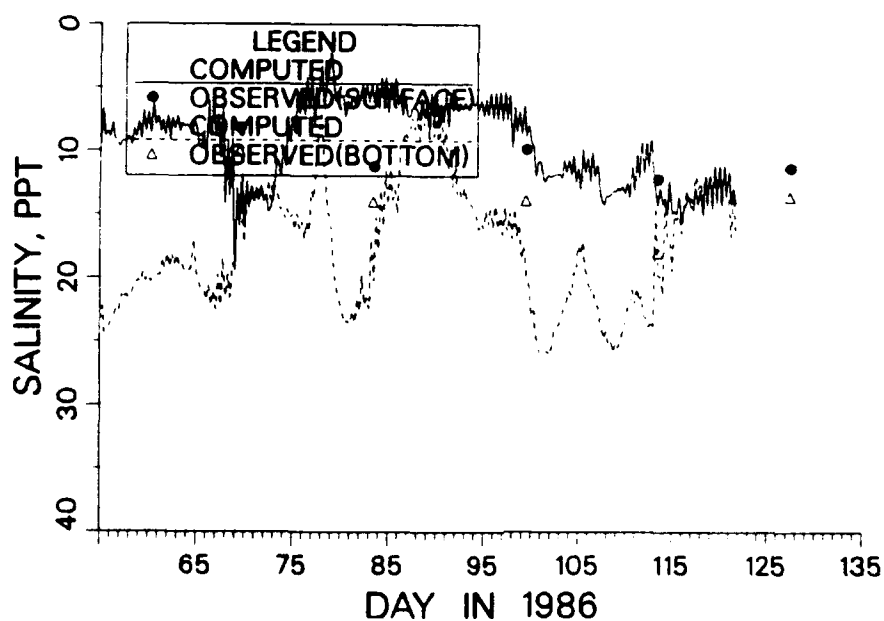
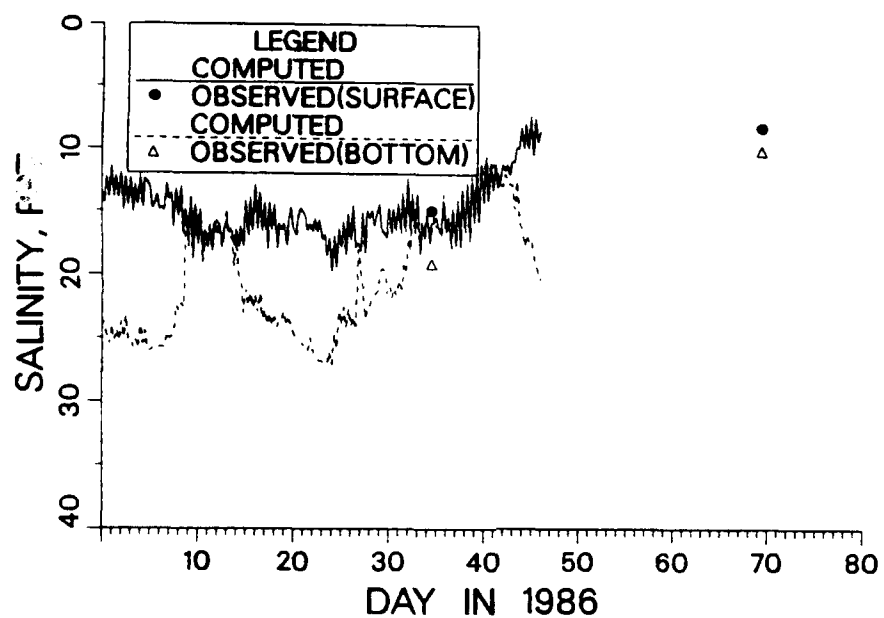


Figure C29. Comparison of computed and recorded salinity at sta LE 5.2 during 1986 (Sheet 1 of 3)

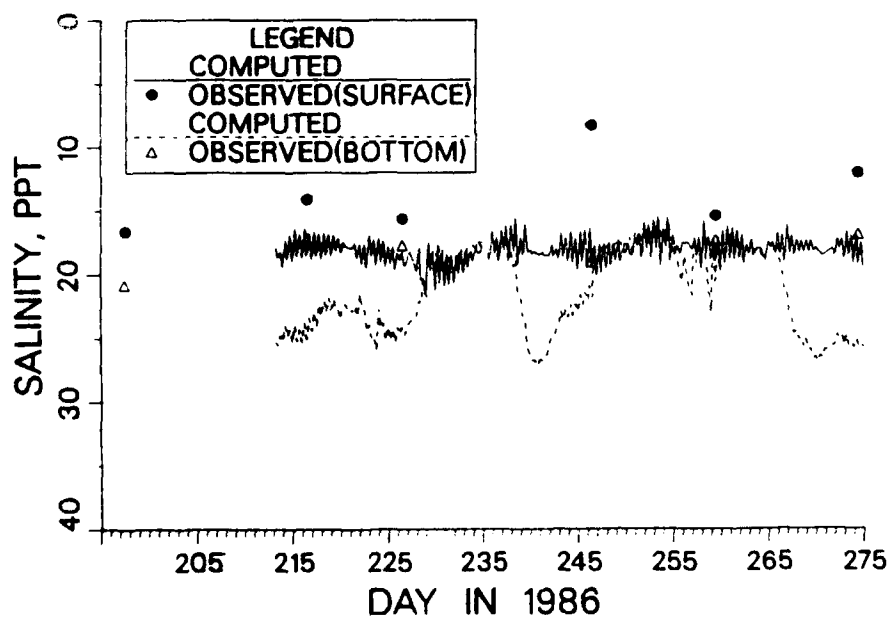
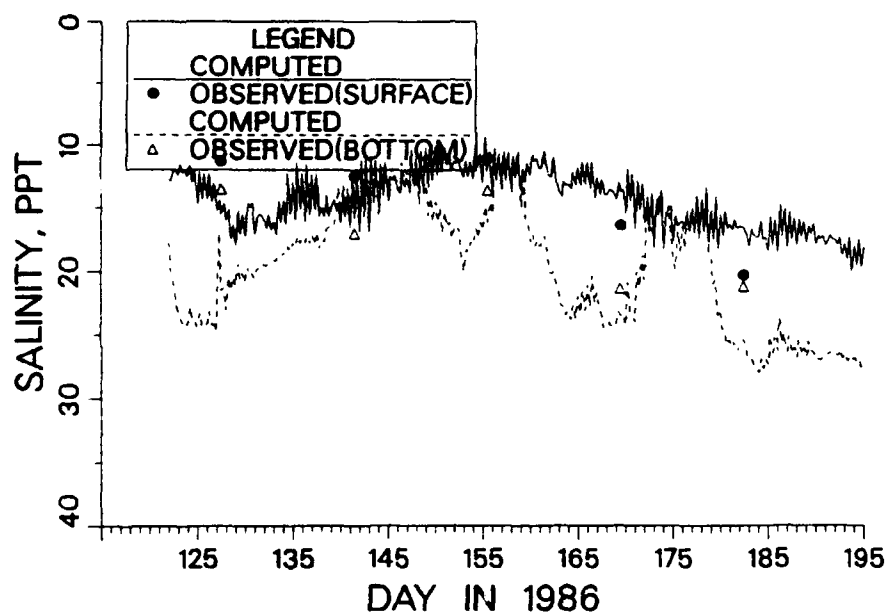


Figure C29. (Sheet 2 of 3)

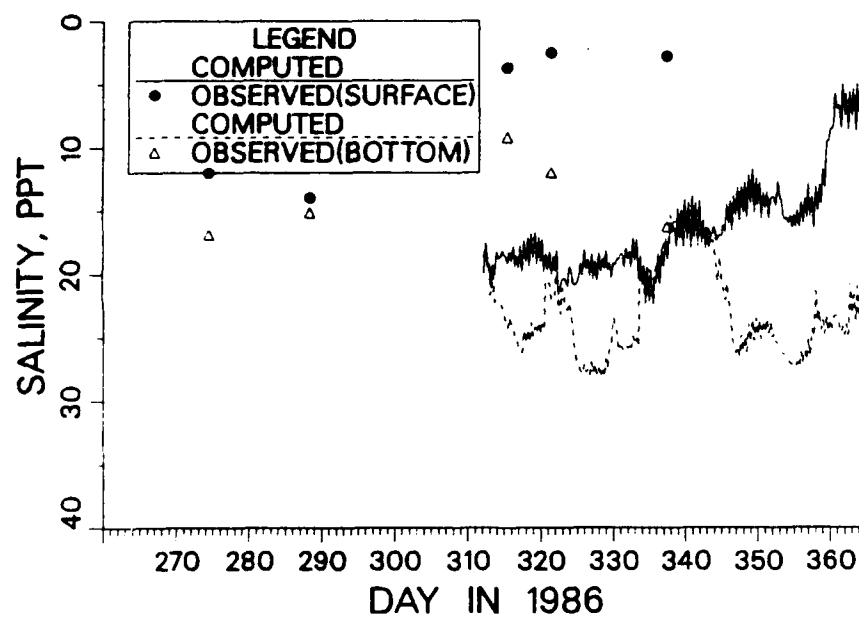


Figure C29. (Sheet 3 of 3)

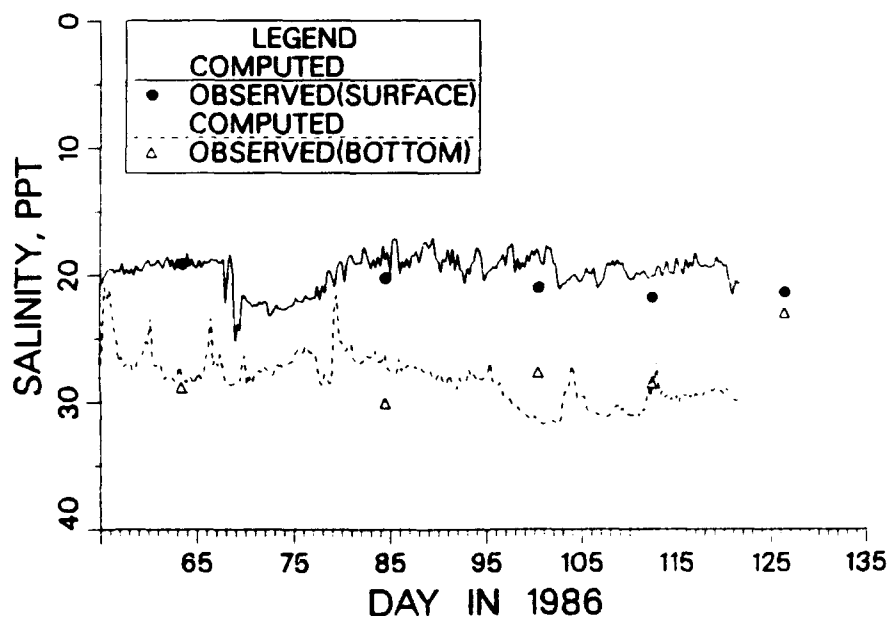
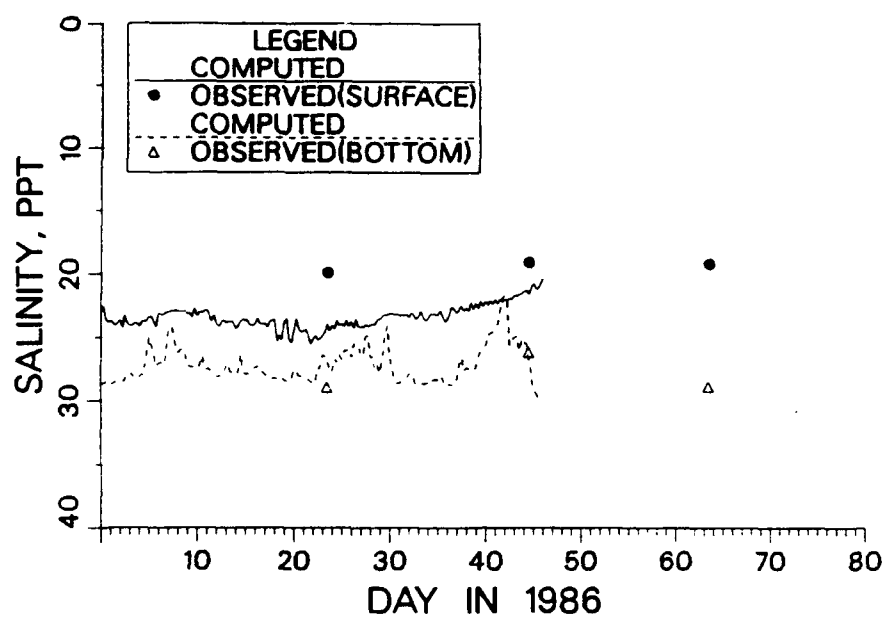


Figure C30. Comparison of computed and recorded salinity at sta LE 5.5 during 1986 (Sheet 1 of 3)

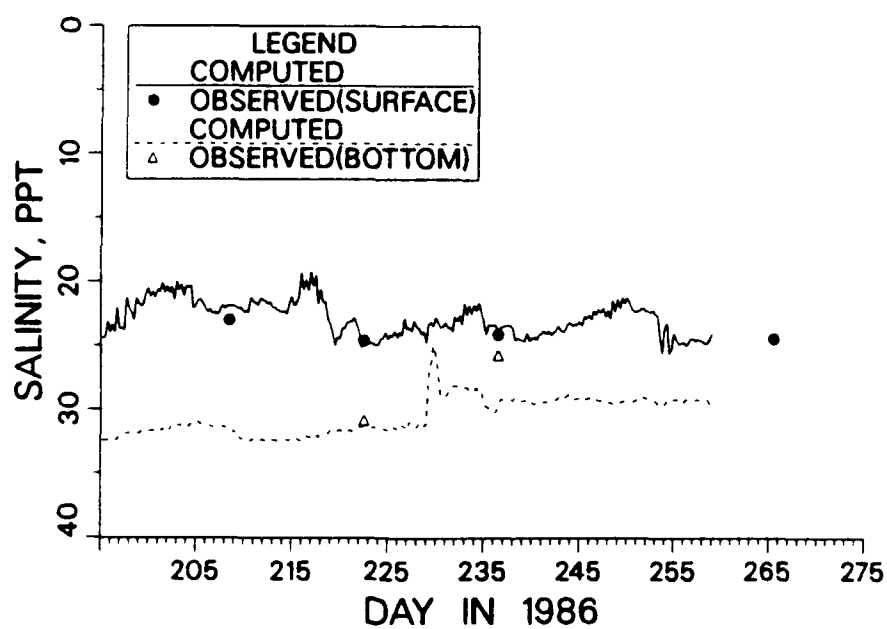
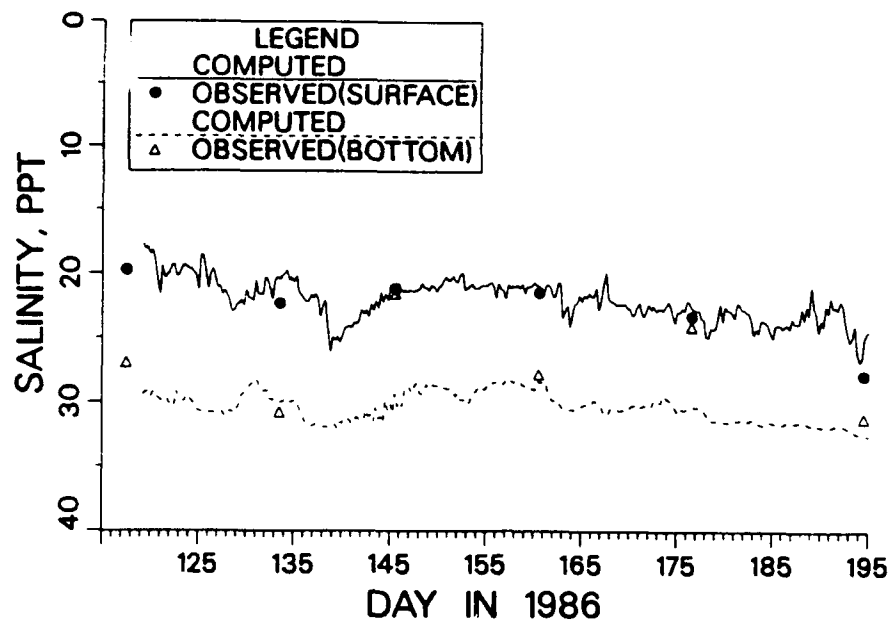


Figure C30. (Sheet 2 of 3)

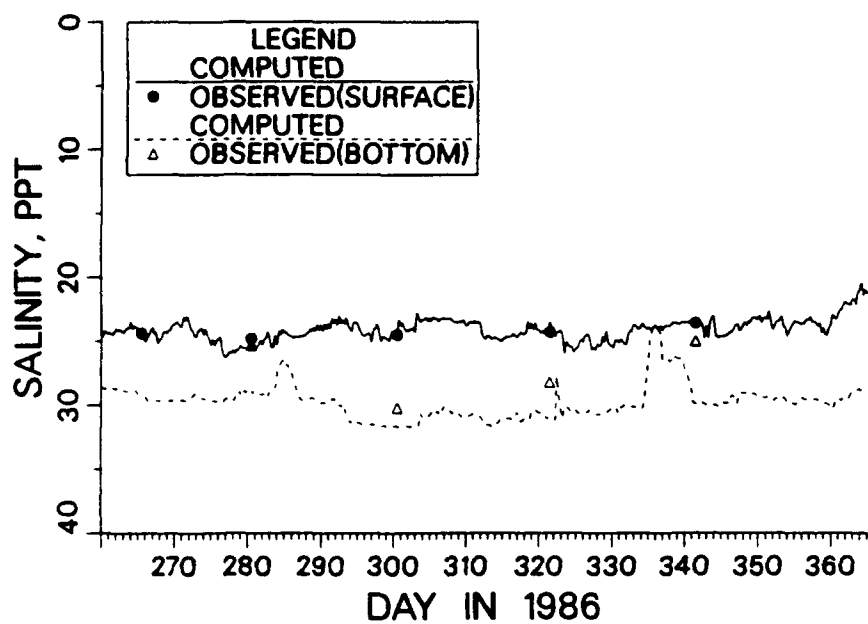


Figure C30. (Sheet 3 of 3)

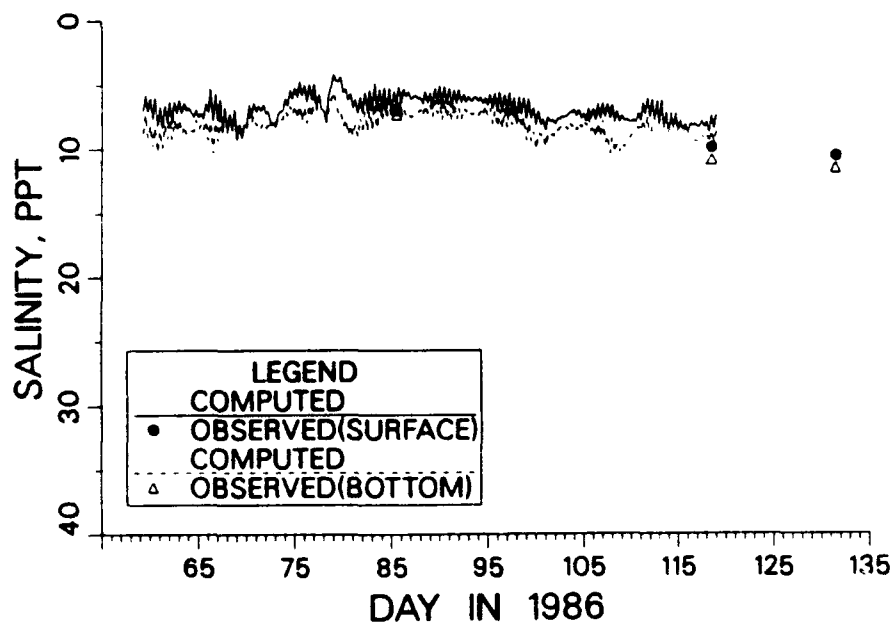
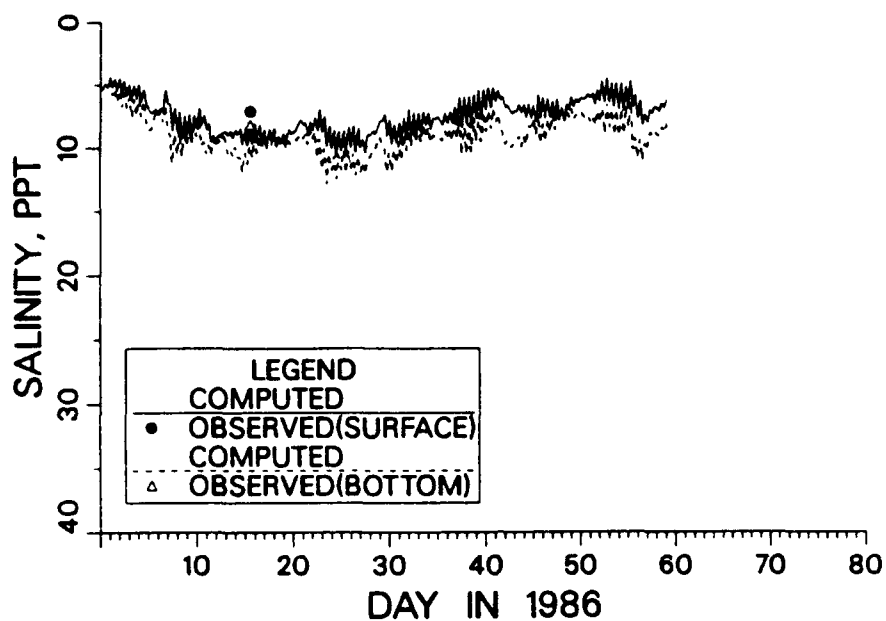


Figure C31. Comparison of computed and recorded salinity at sta RET 4.3 during 1986 (Sheet 1 of 3)

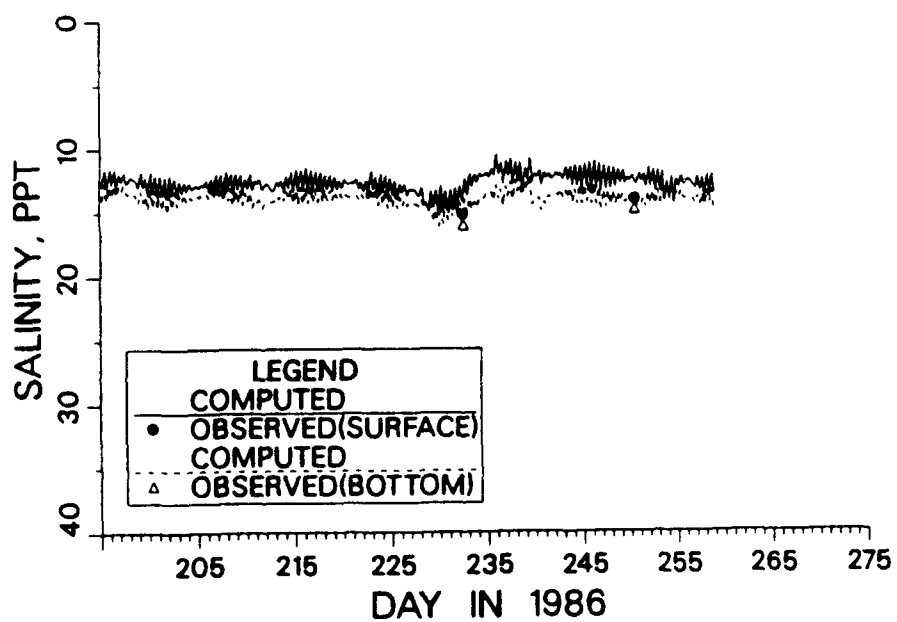
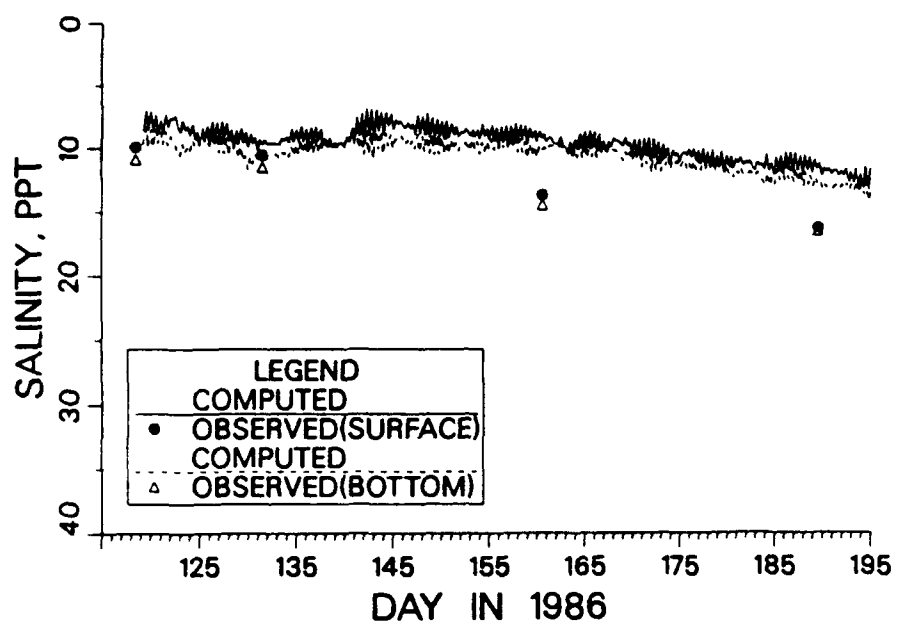


Figure C31. (Sheet 2 of 3)

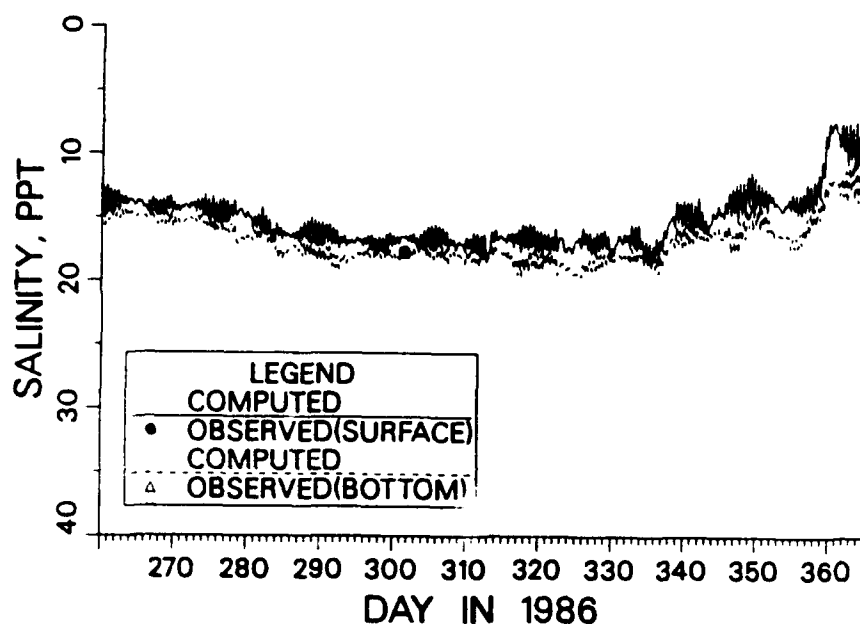


Figure C31. (Sheet 3 of 3)

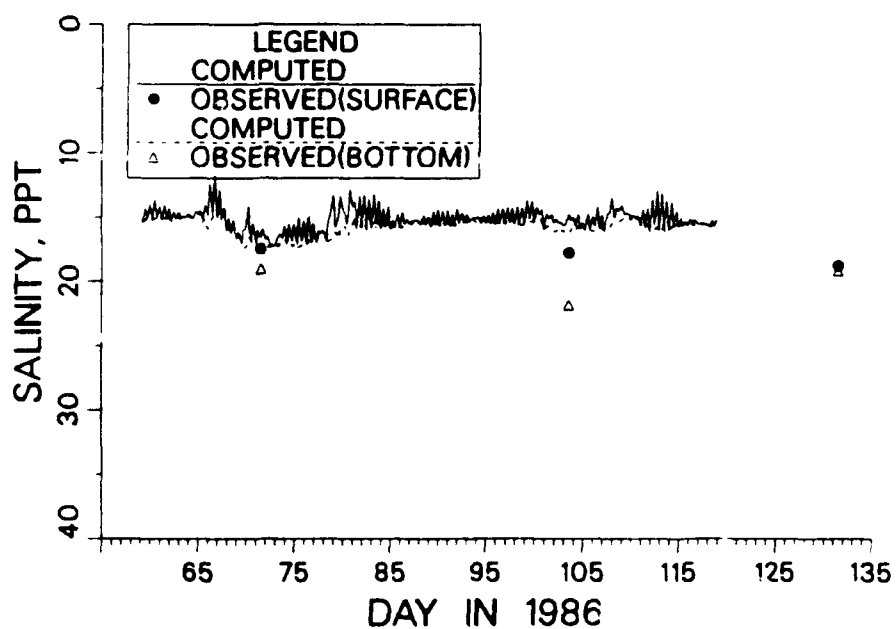
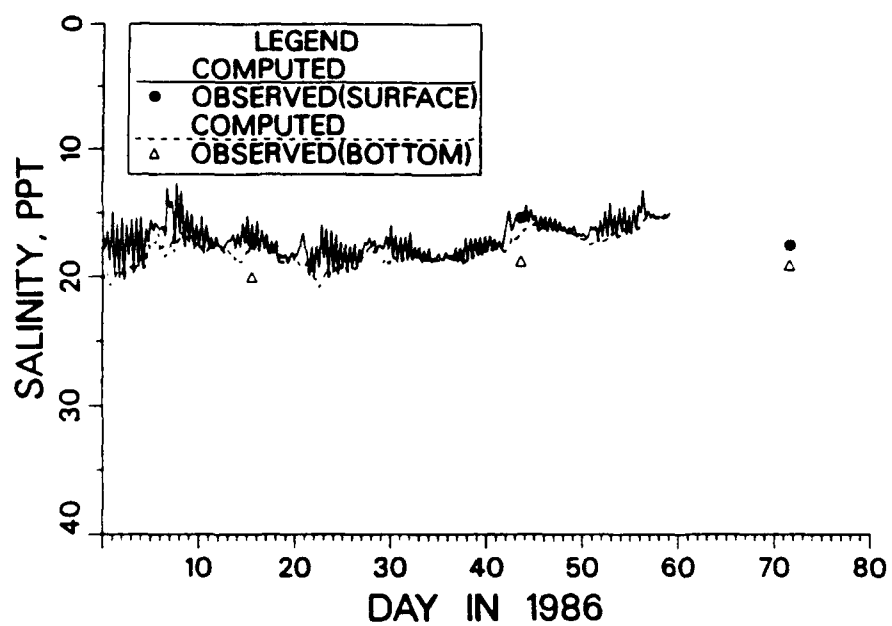


Figure C32. Comparison of computed and recorded salinity at sta LE 4.2 during 1986 (Sheet 1 of 3)

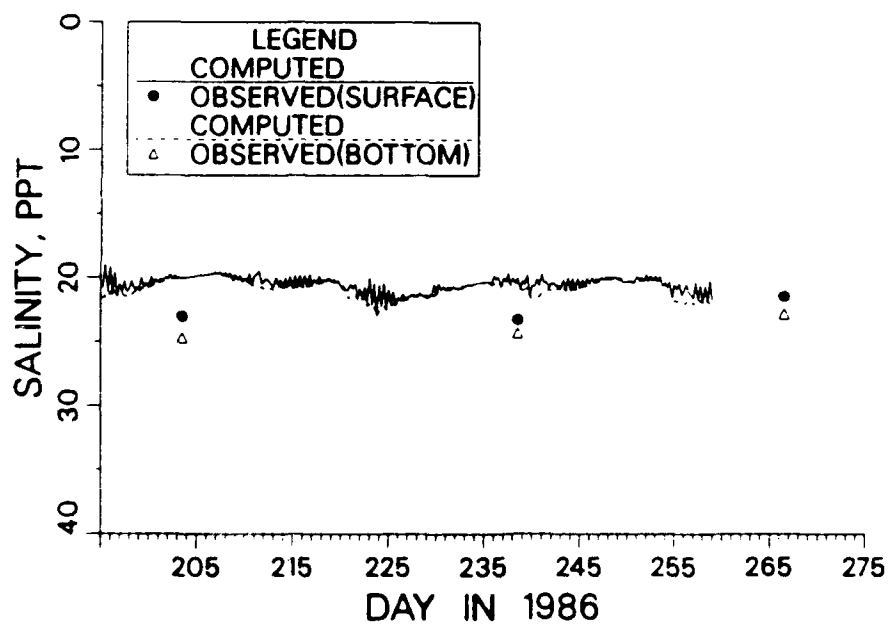
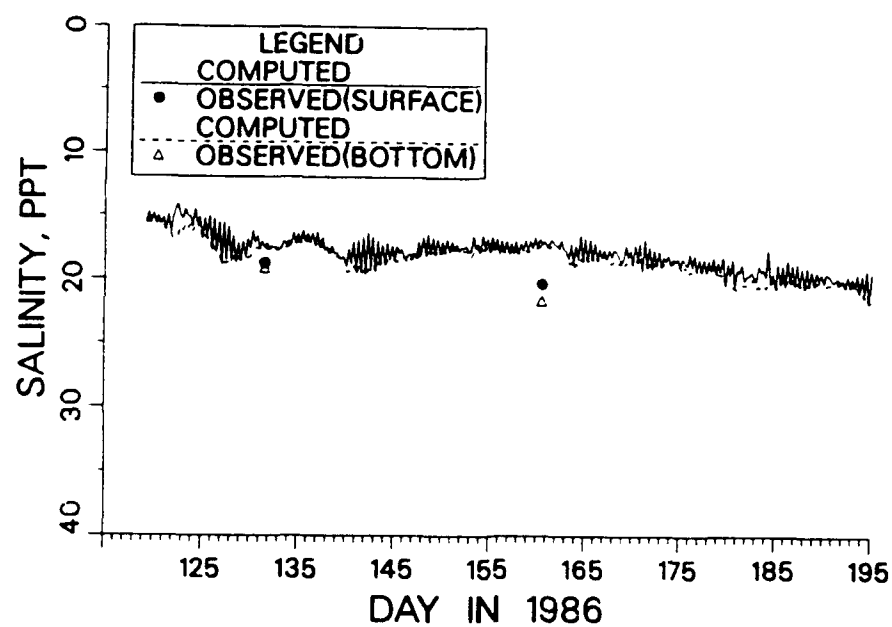


Figure C32. (Sheet 2 of 3)

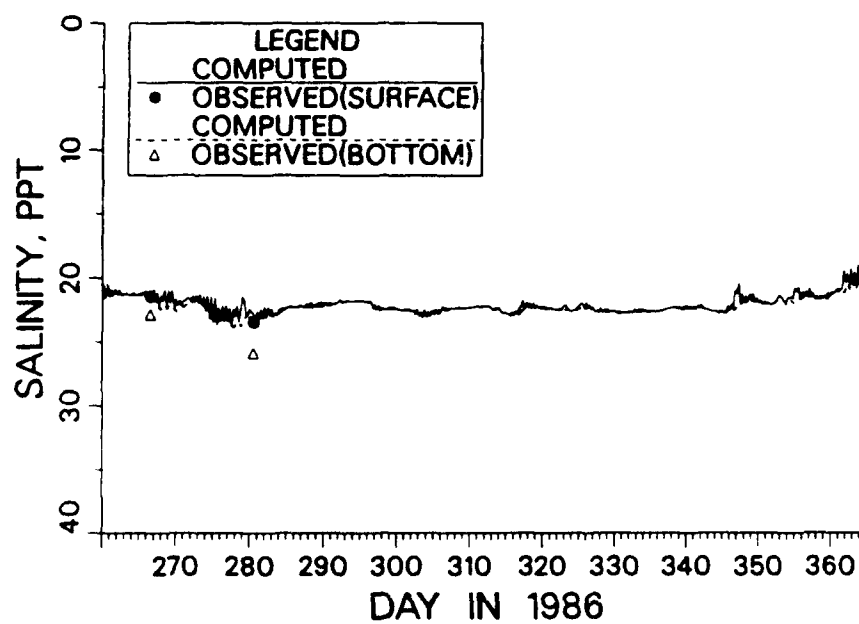


Figure C32. (Sheet 3 of 3)

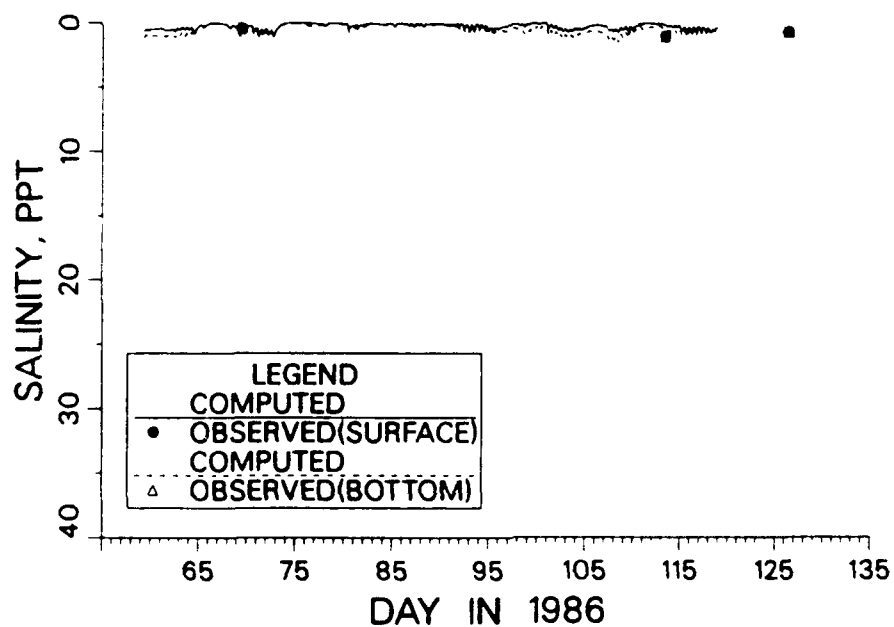
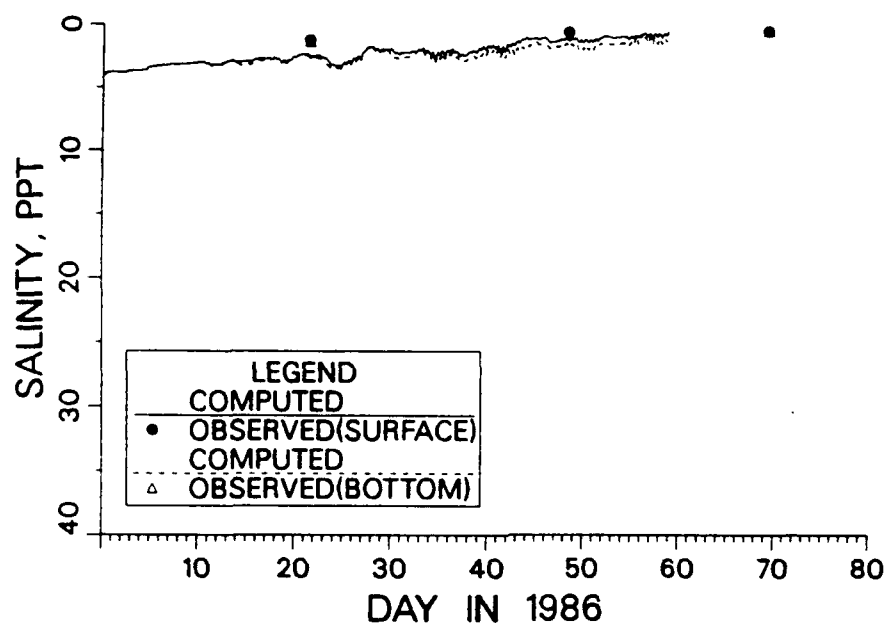


Figure C33. Comparison of computed and recorded salinity at sta TF 3.3 during 1986 (Sheet 1 of 3)

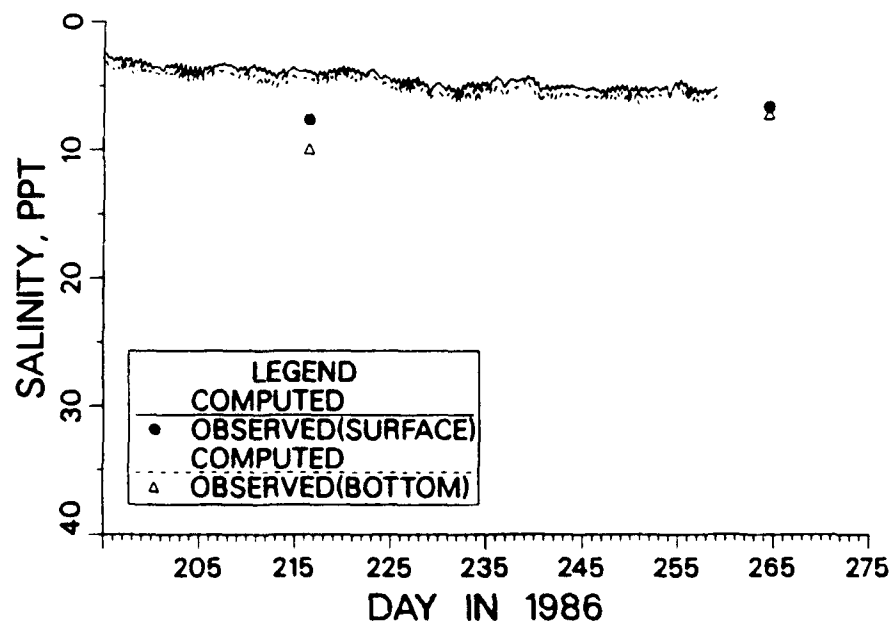
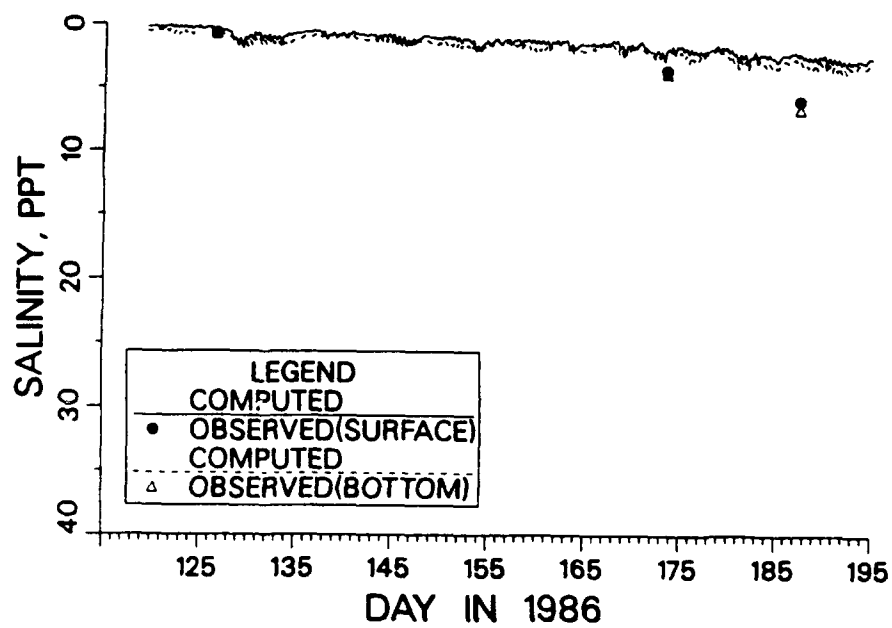


Figure C33. (Sheet 2 of 3)

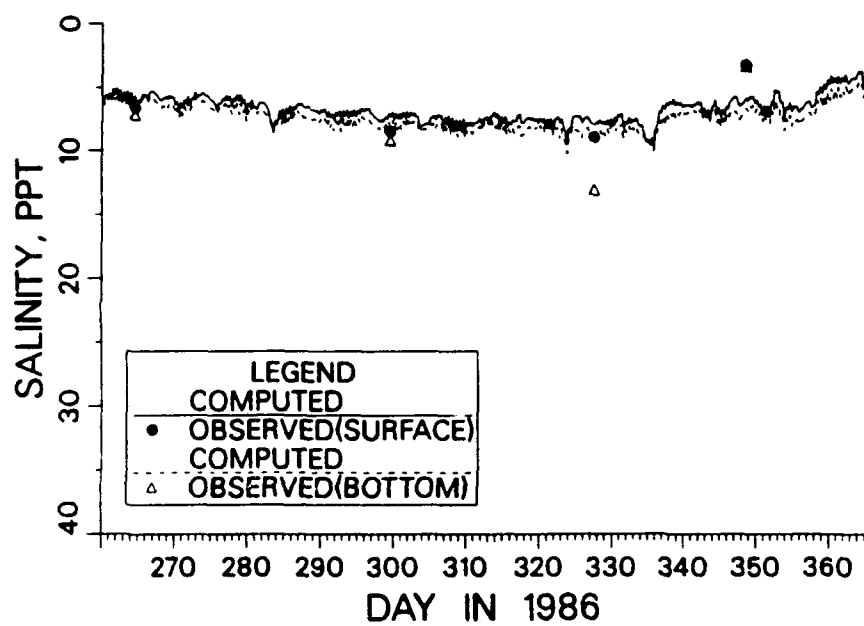


Figure C33. (Sheet 3 of 3)

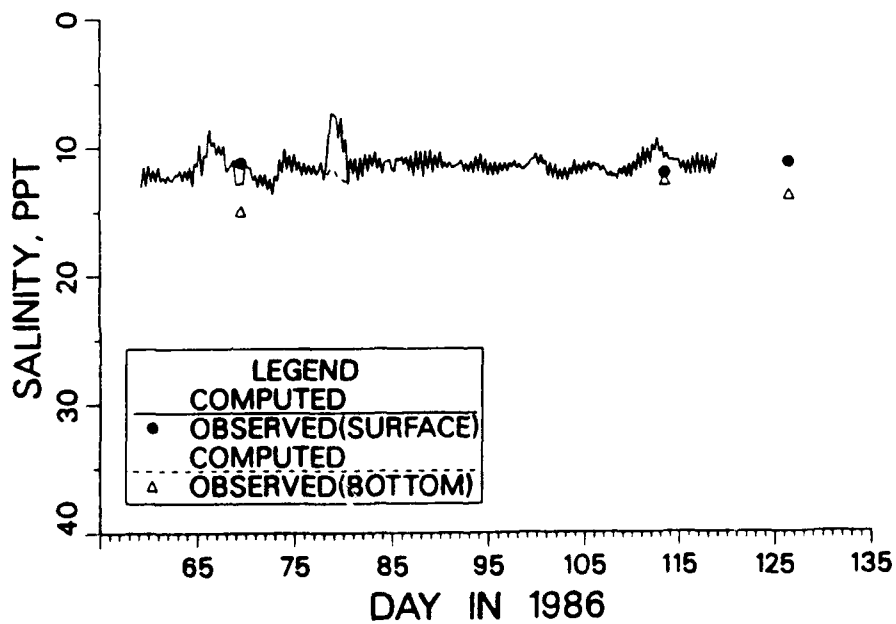
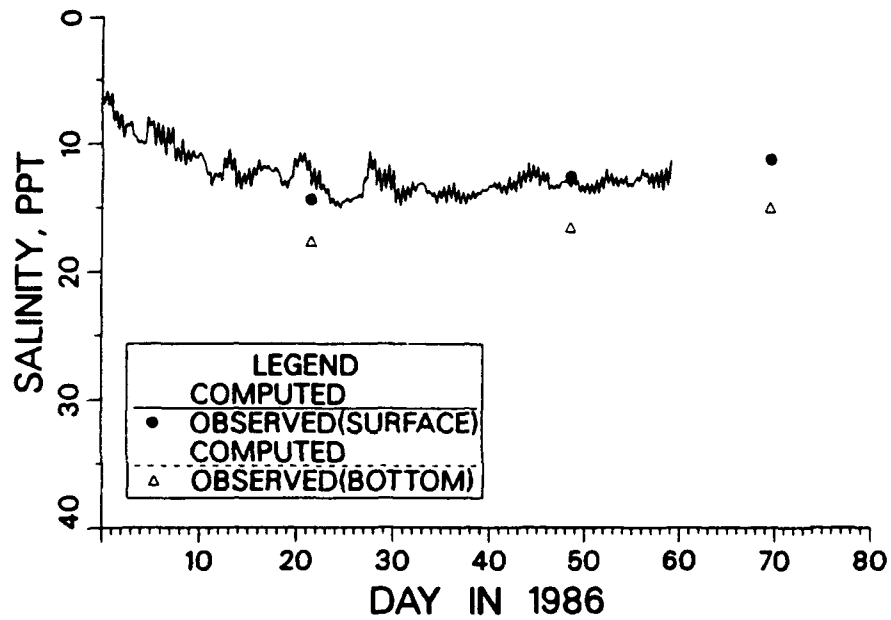


Figure C34. Comparison of computed and recorded salinity at sta LE 3.1 during 1986 (Sheet 1 of 3)

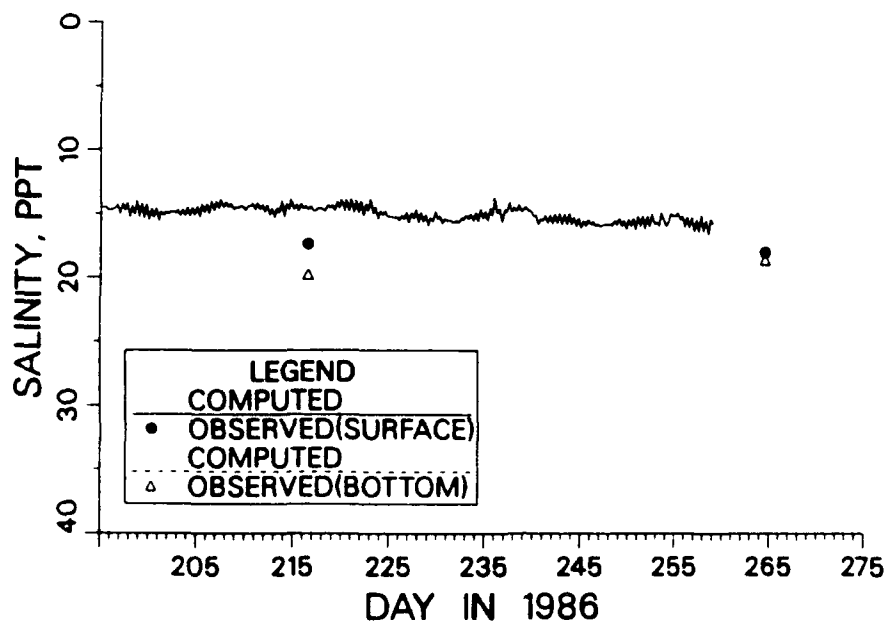
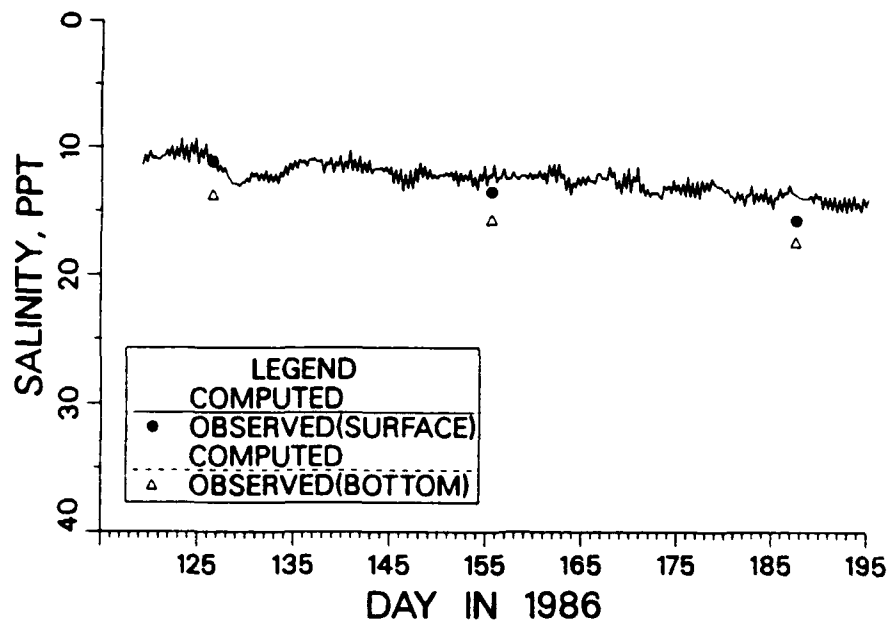


Figure C34. (Sheet 2 of 3)

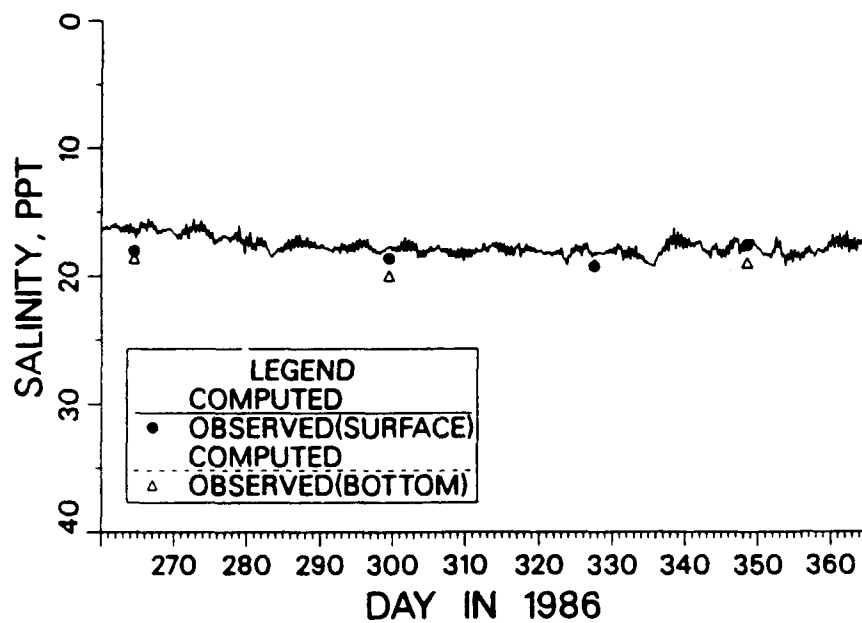


Figure C34. (Sheet 3 of 3)

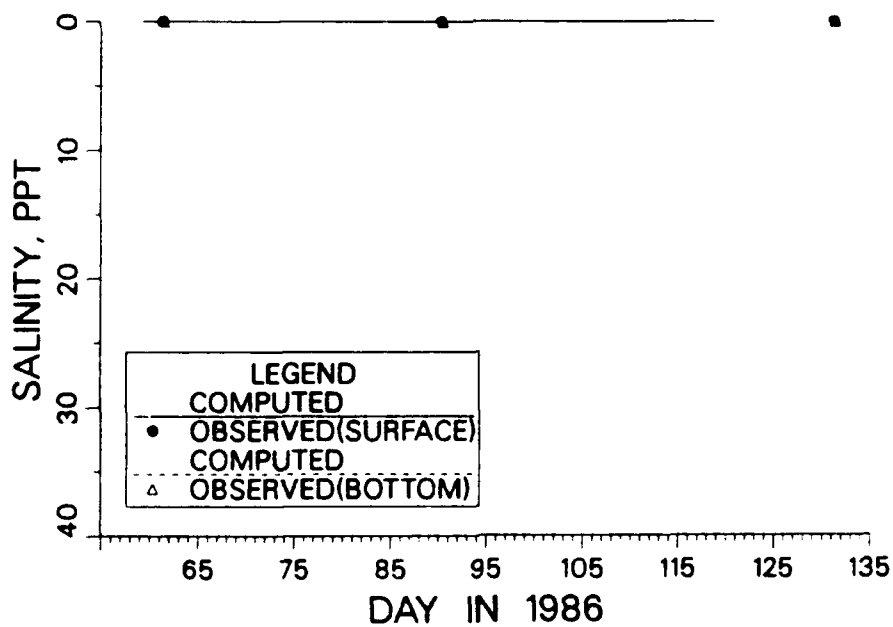
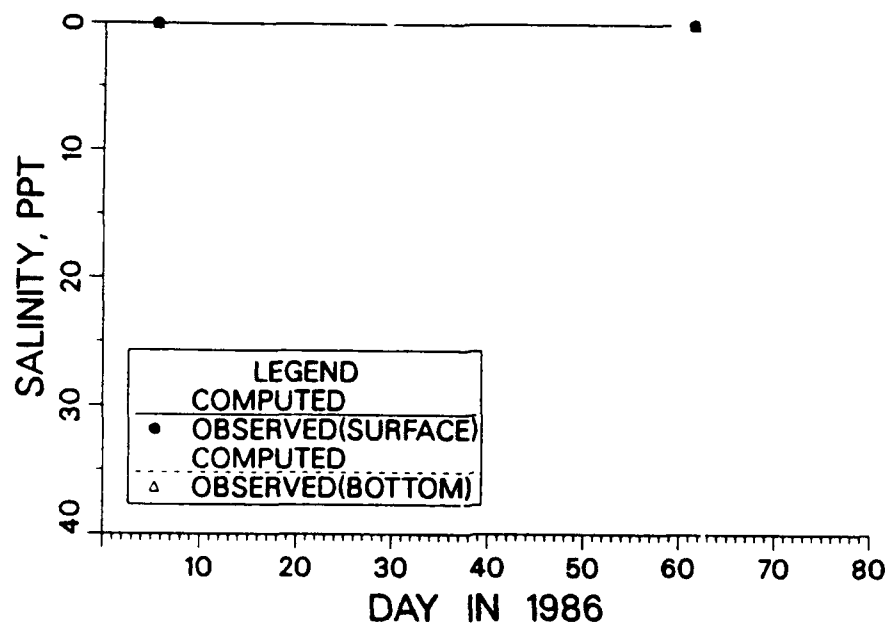


Figure C35. Comparison of computed and recorded salinity at sta XFB 247 during 1986 (Sheet 1 of 3)

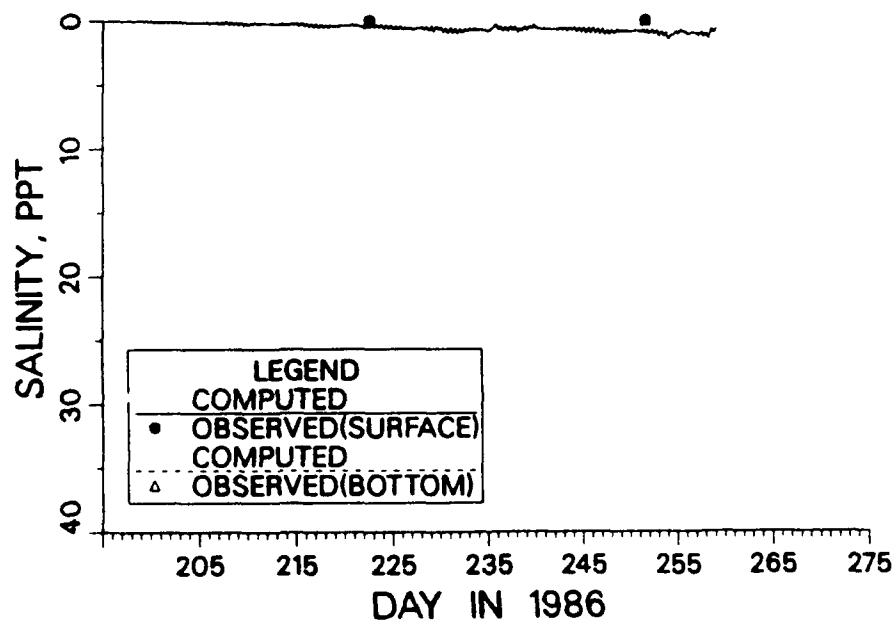
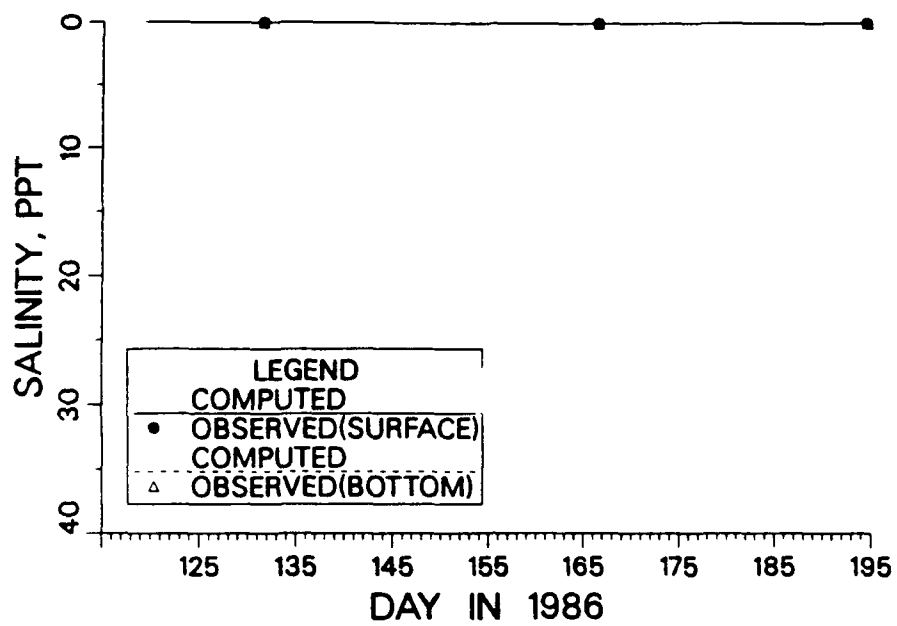


Figure C35. (Sheet 2 of 3)

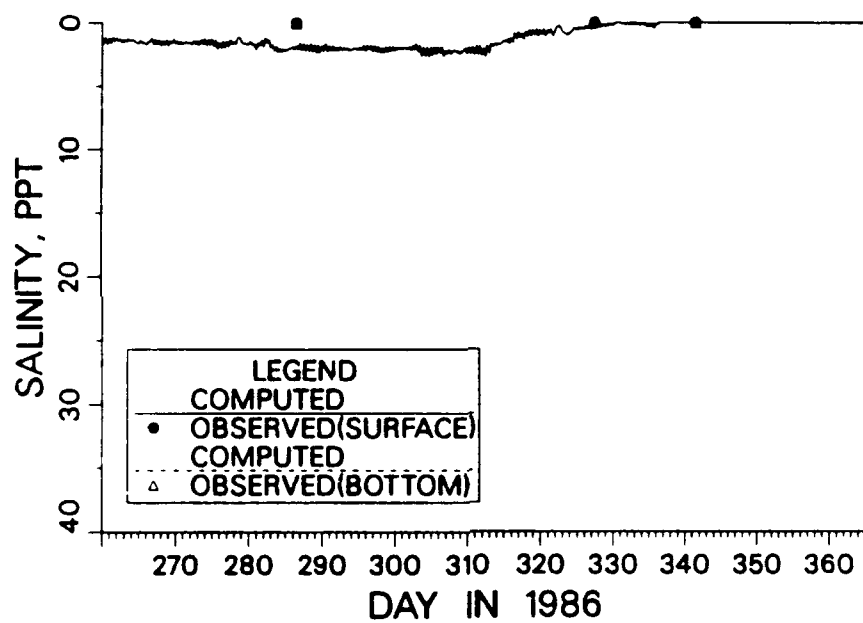


Figure C35. (Sheet 3 of 3)

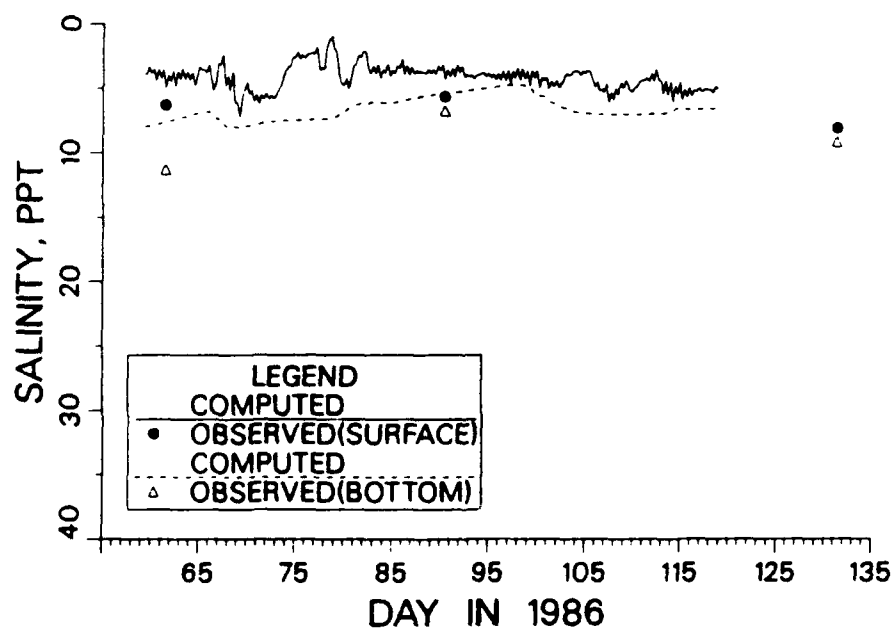
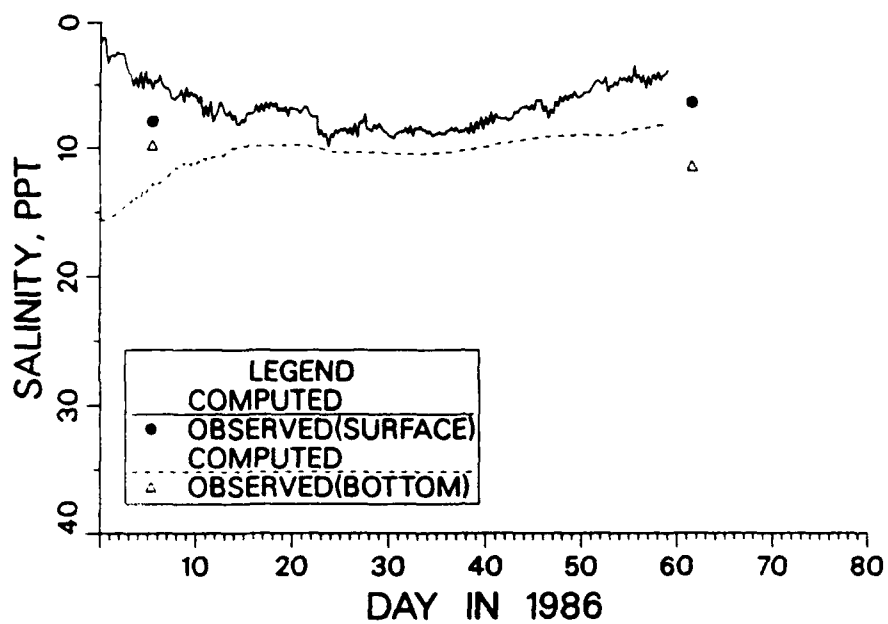


Figure C36. Comparison of computed and recorded salinity at sta RET 2.4 during 1986 (Sheet 1 of 3)

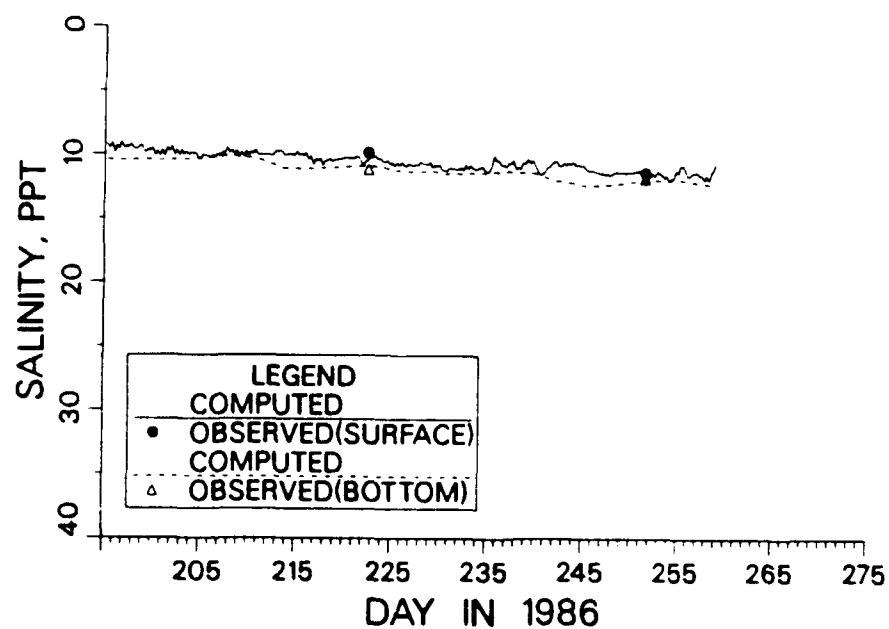
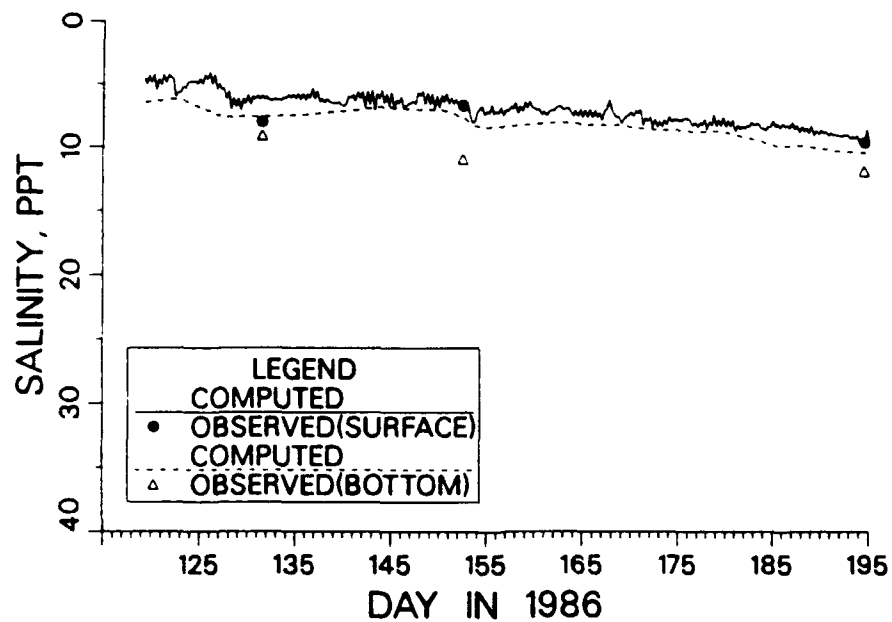


Figure C36. (Sheet 2 of 3)

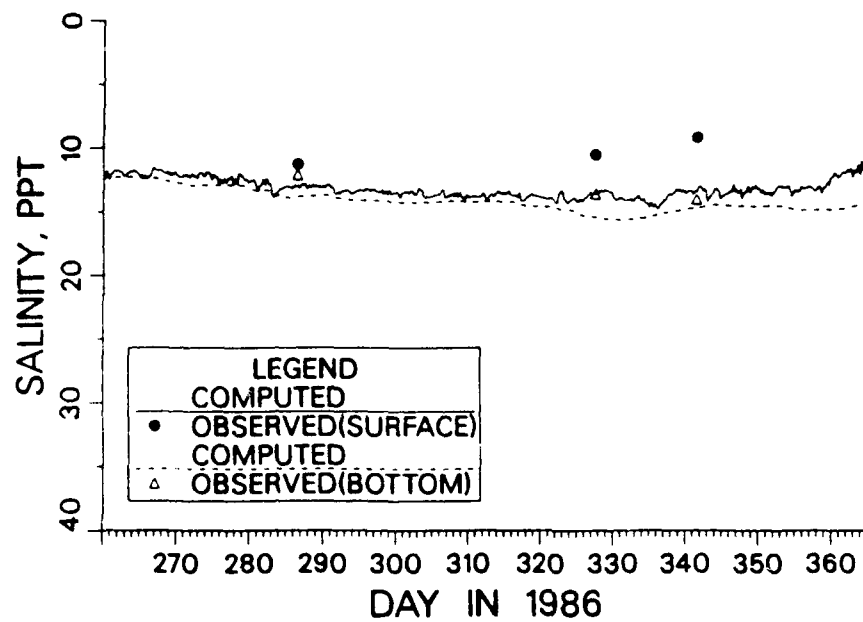


Figure C36. (Sheet 3 of 3)

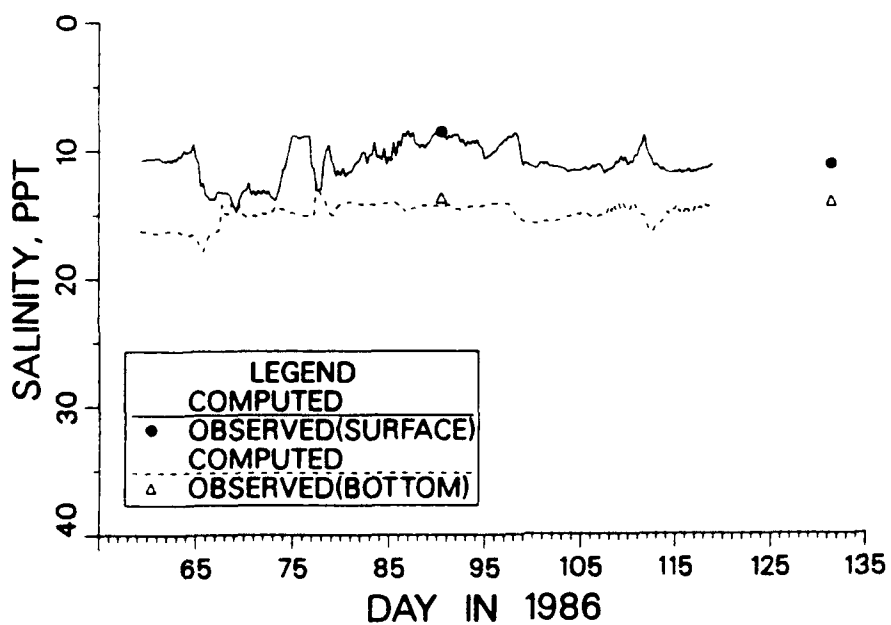
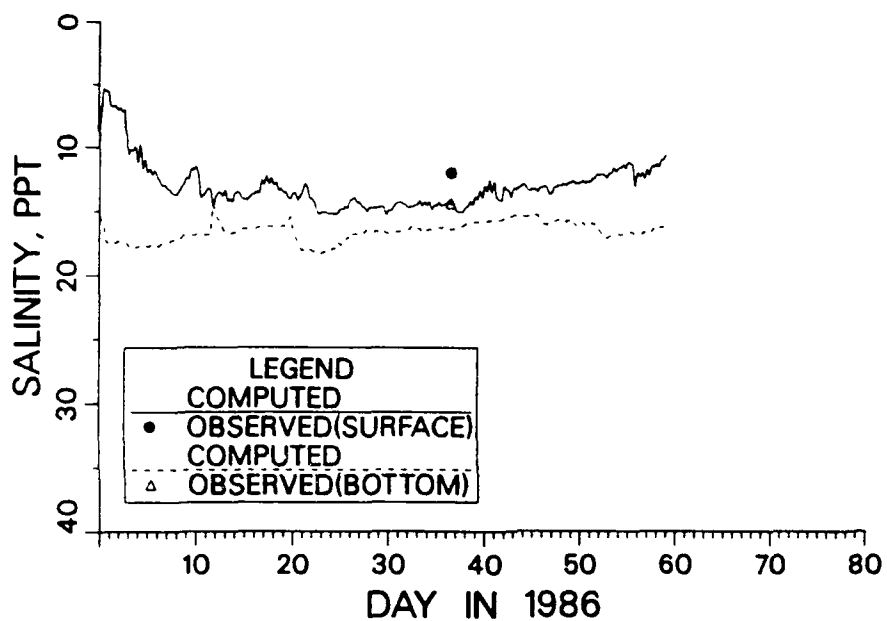


Figure C37. Comparison of computed and recorded salinity at sta LE 2.2 during 1986 (Sheet 1 of 3)

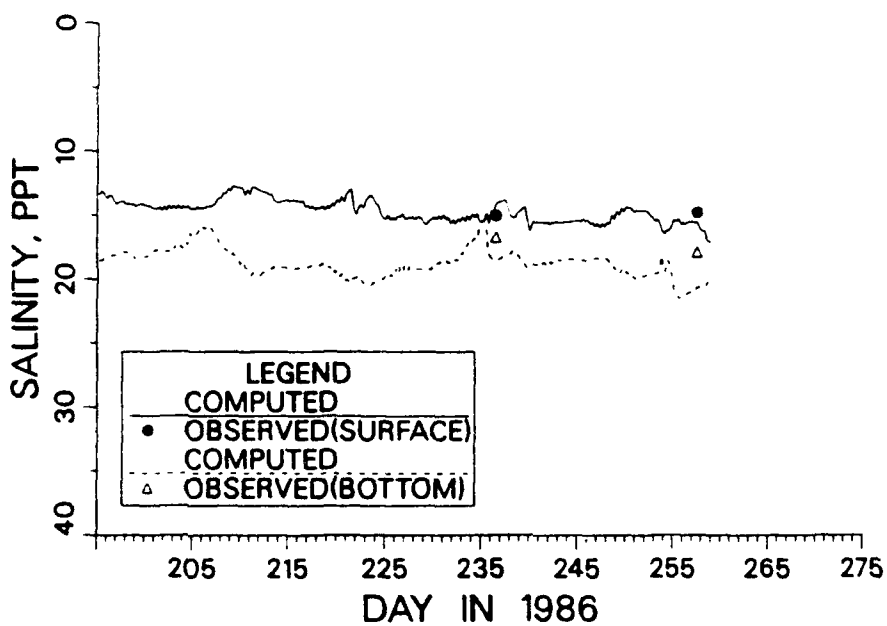
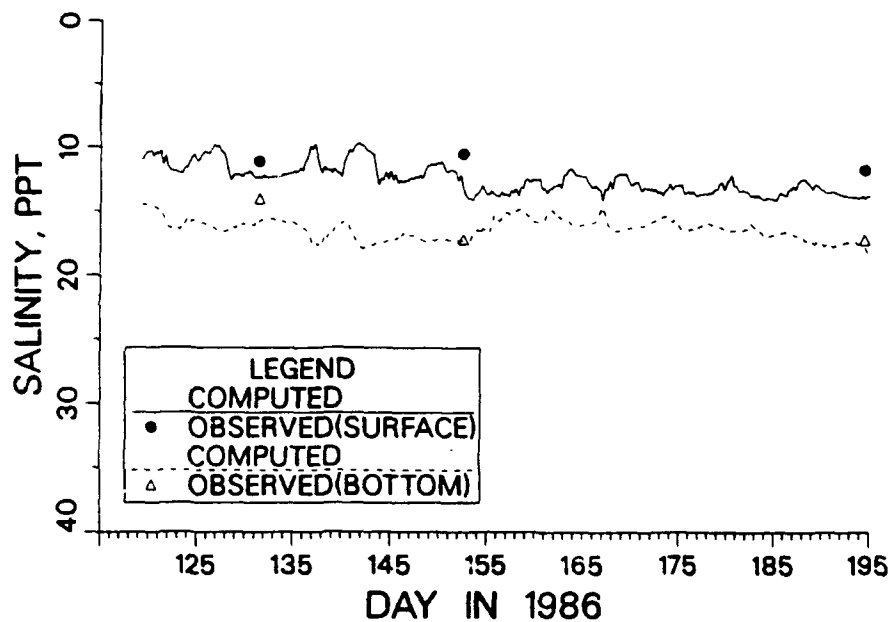


Figure C37. (Sheet 2 of 3)

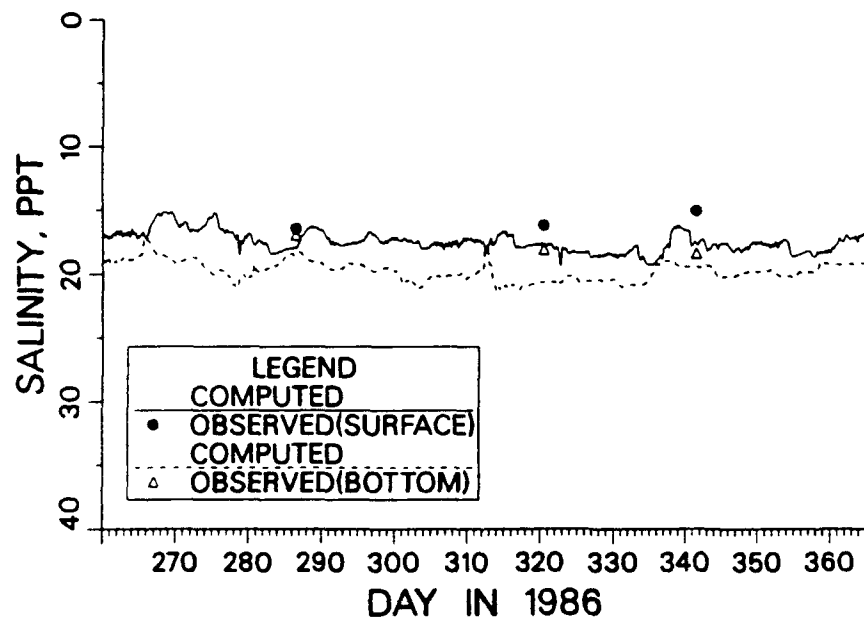


Figure C37. (Sheet 3 of 3)

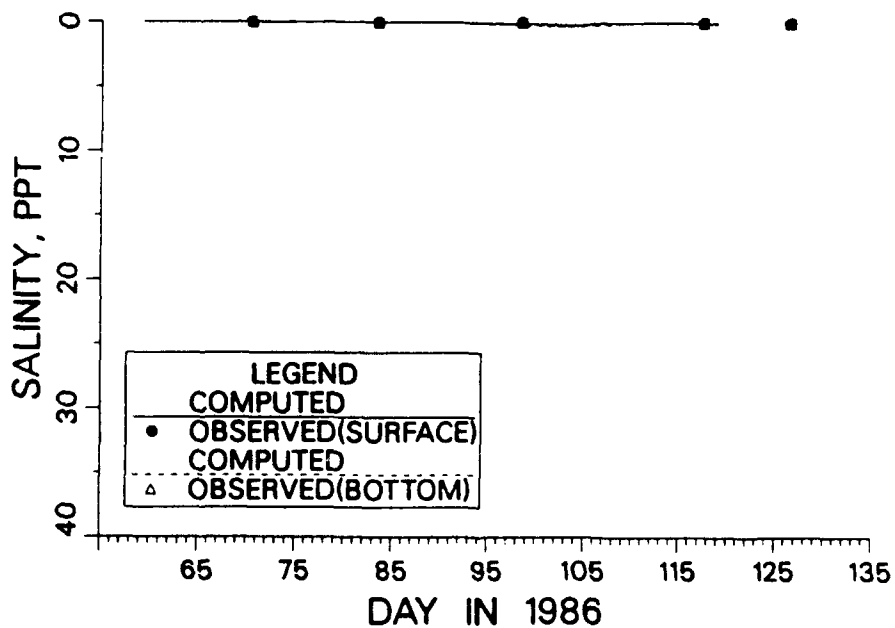
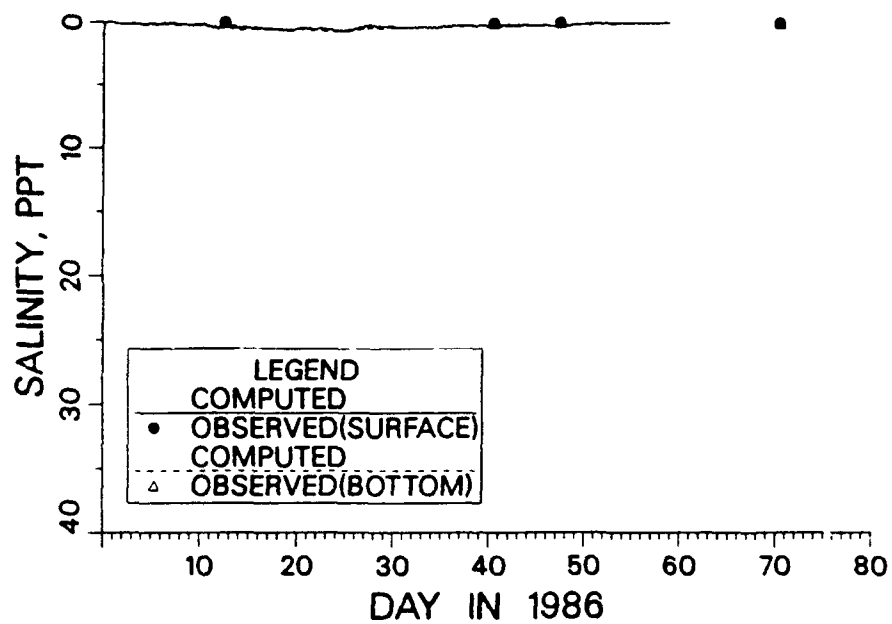


Figure C38. Comparison of computed and recorded salinity at sta TF 1.4 during 1986 (Sheet 1 of 3)

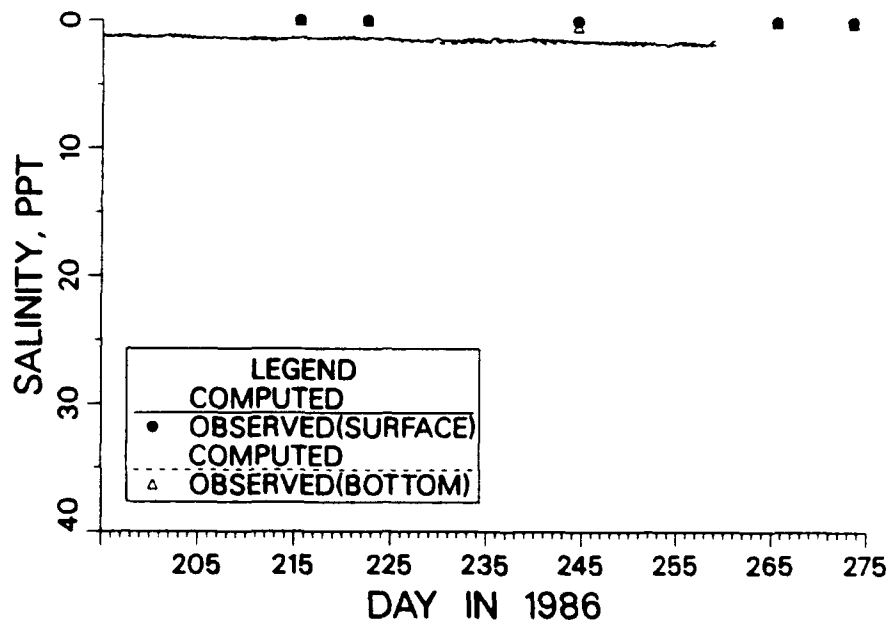
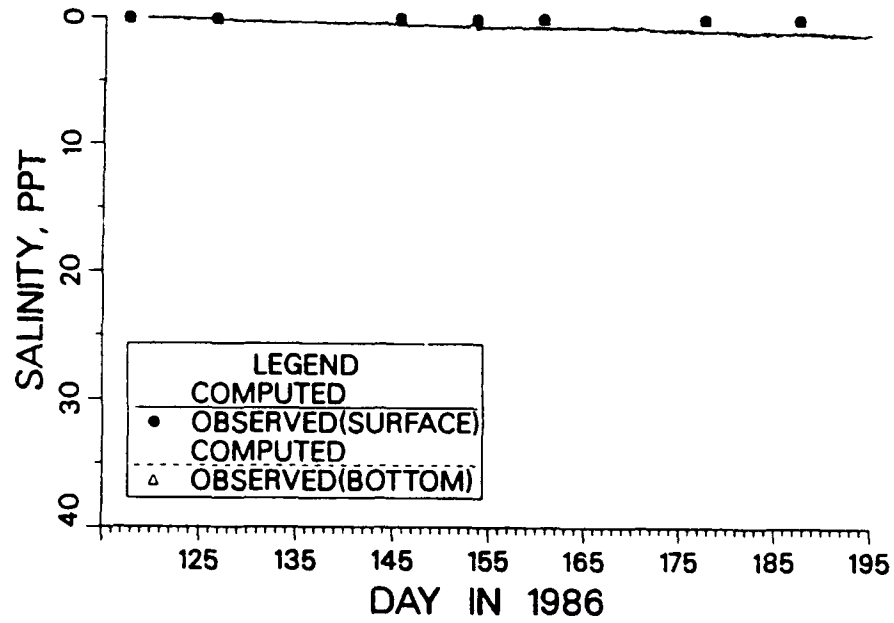


Figure C38. (Sheet 2 of 3)

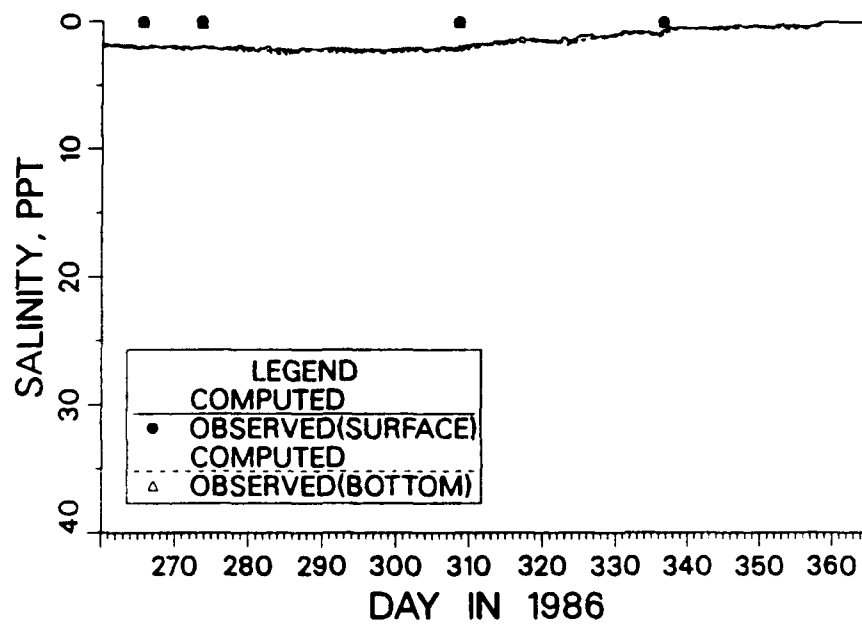


Figure C38. (Sheet 3 of 3)

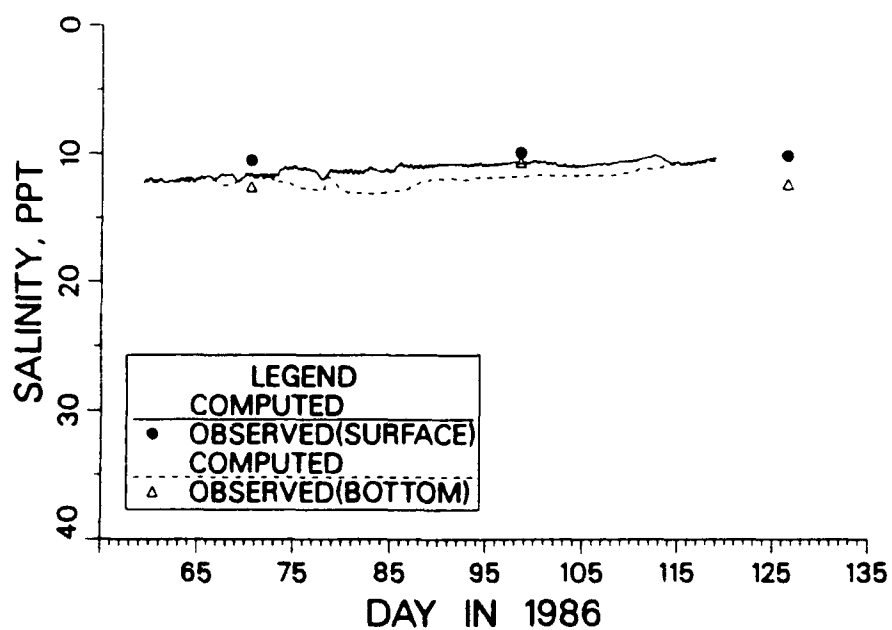
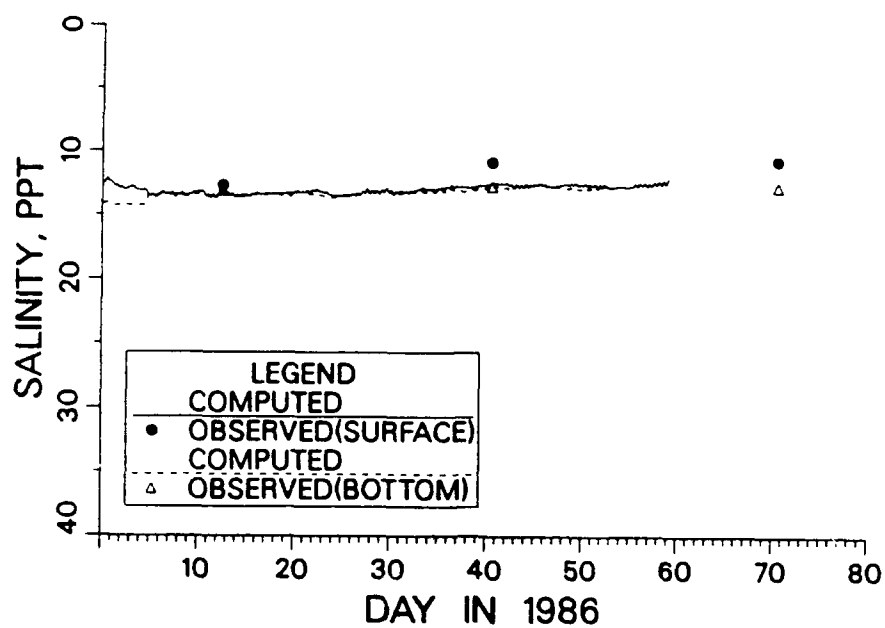


Figure C39. Comparison of computed and recorded salinity at sta LE 1.1 during 1986 (Sheet 1 of 3)

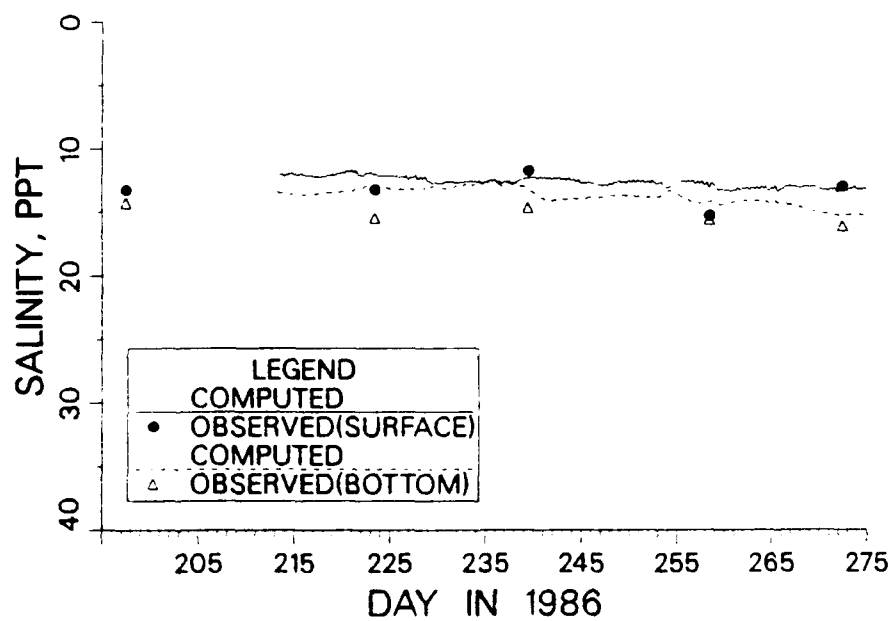
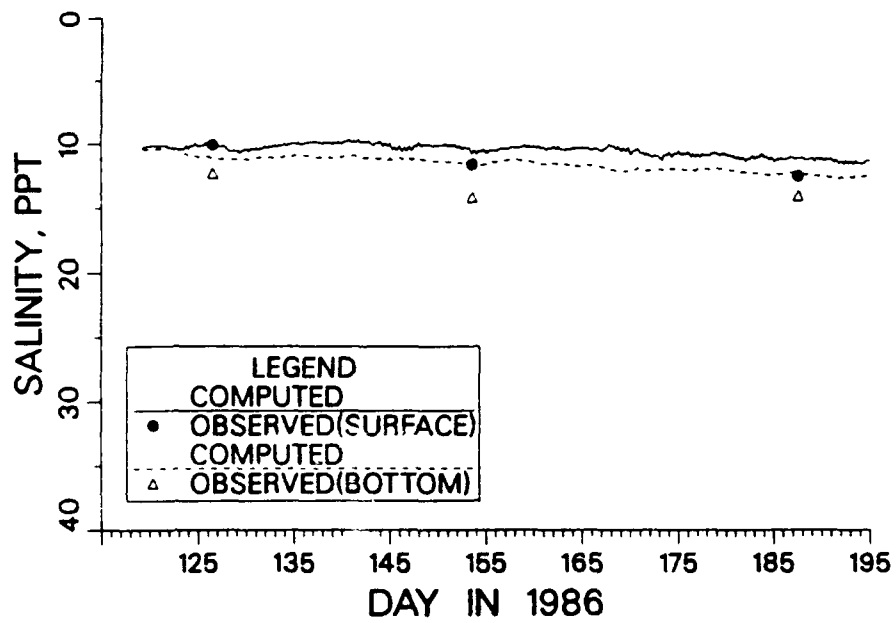


Figure C39. (Sheet 2 of 3)

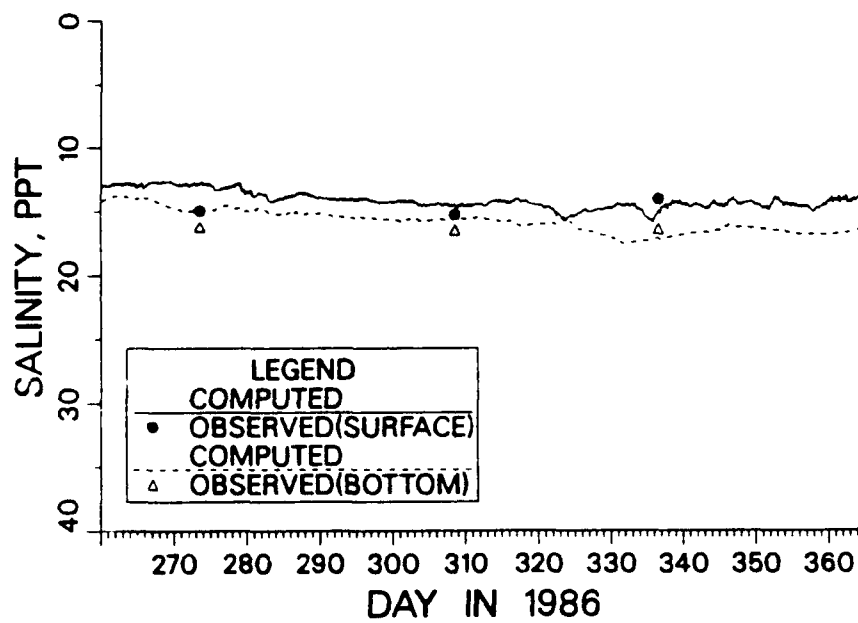


Figure C39. (Sheet 3 of 3)

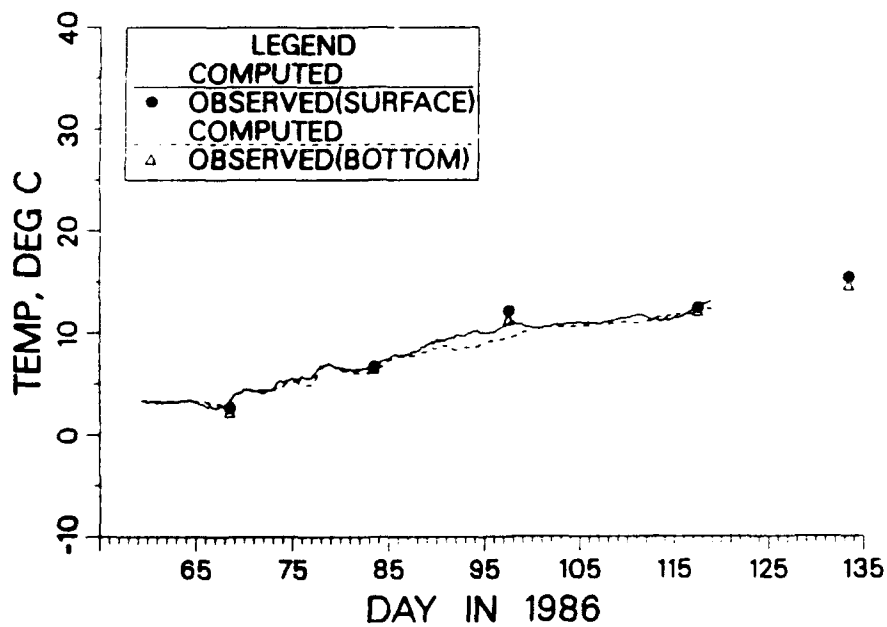
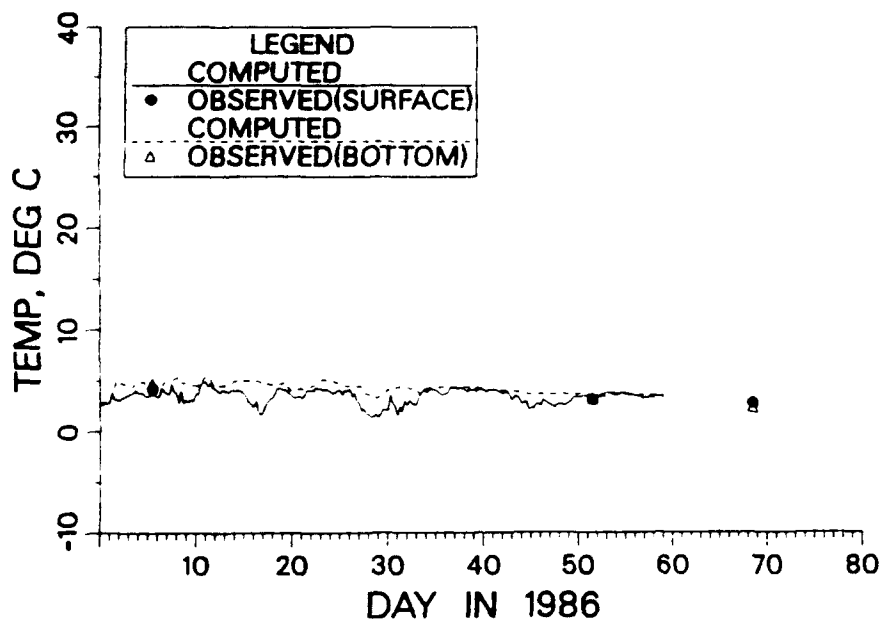


Figure C40. Comparison of computed and recorded temperature at sta CB 7.3E during 1986 (Sheet 1 of 3)

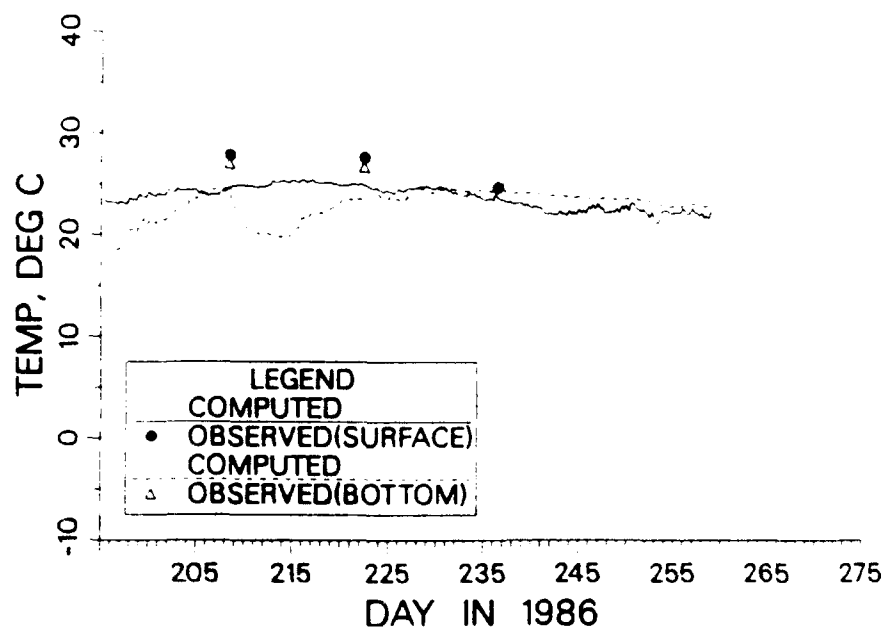
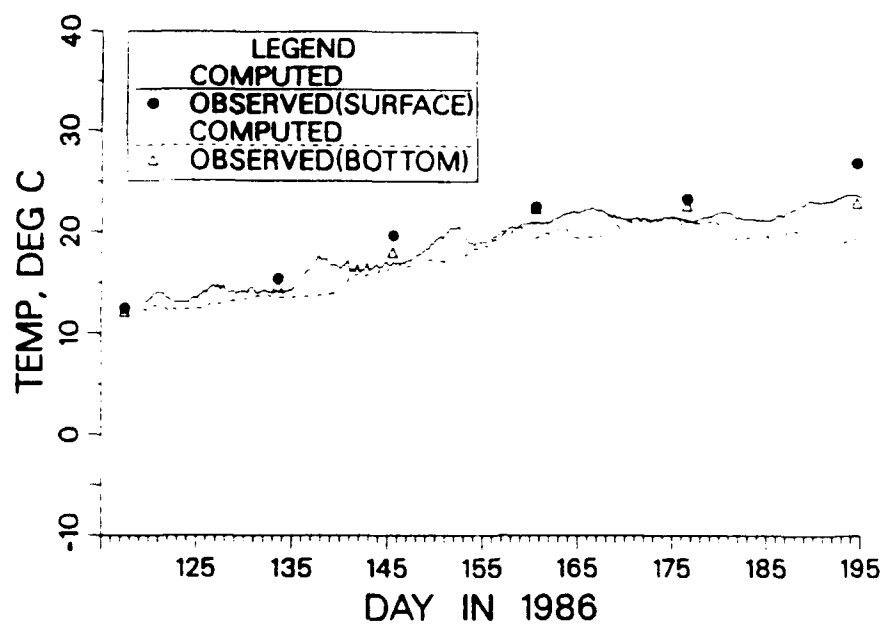


Figure C40. (Sheet 2 of 3)

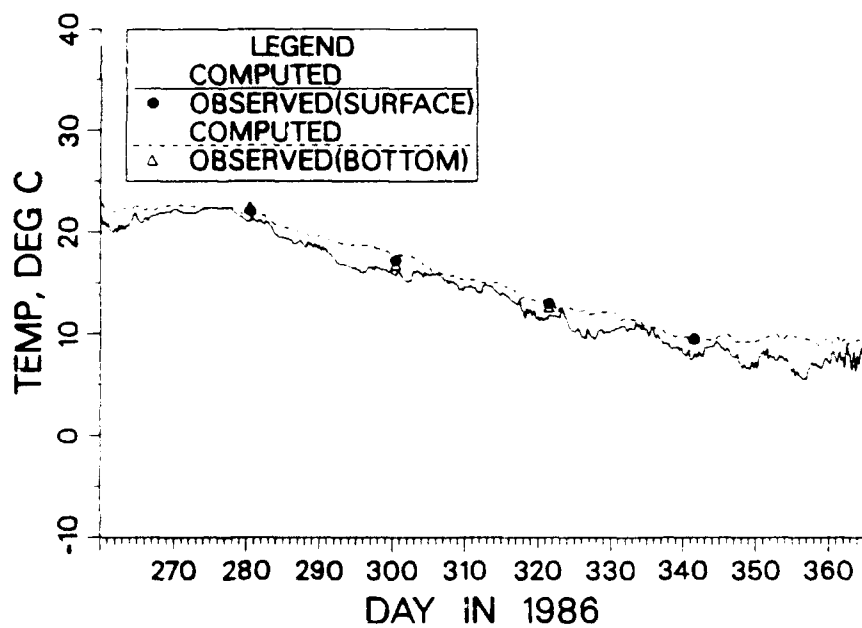


Figure C40. (Sheet 3 of 3)

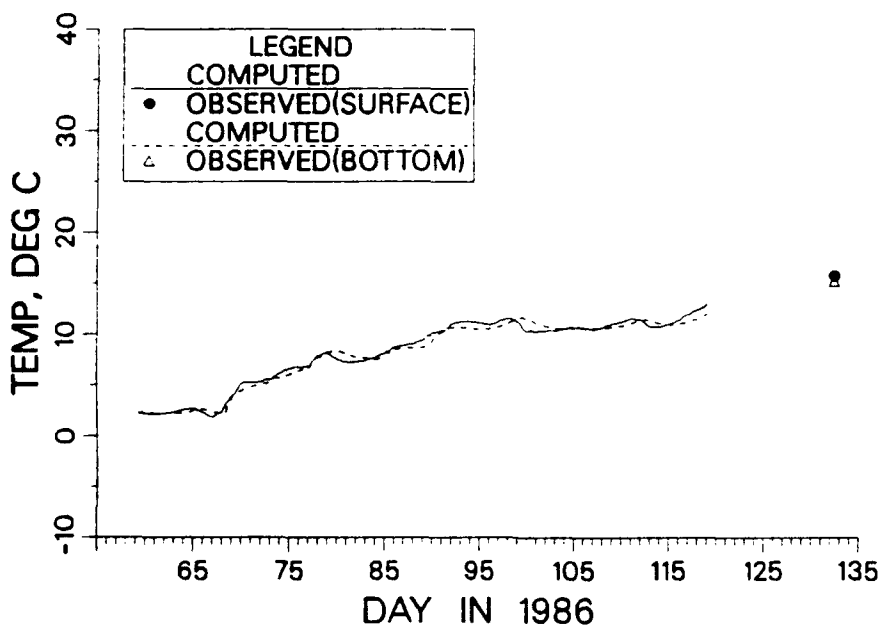
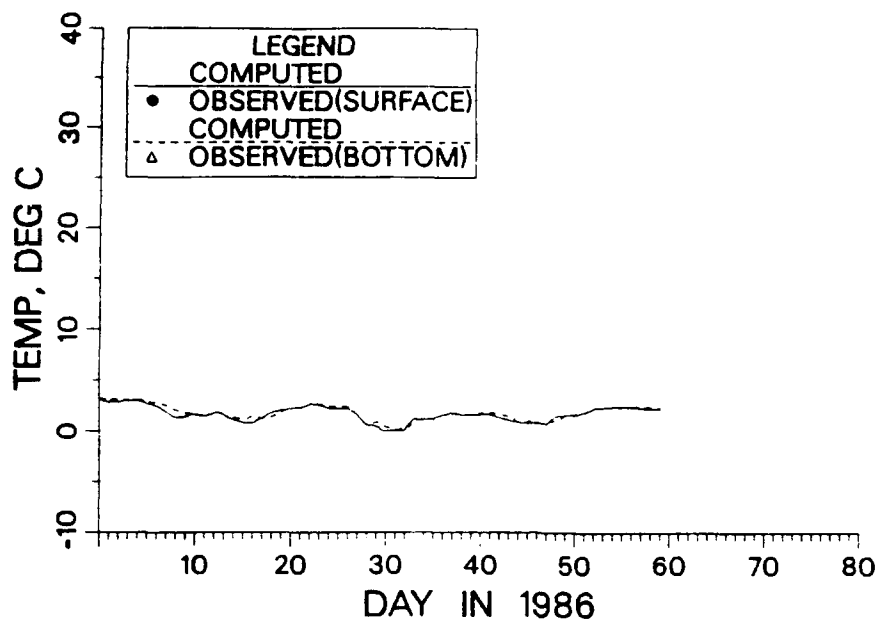


Figure C41. Comparison of computed and recorded temperature at sta EE 3.5 during 1986 (Sheet 1 of 3)

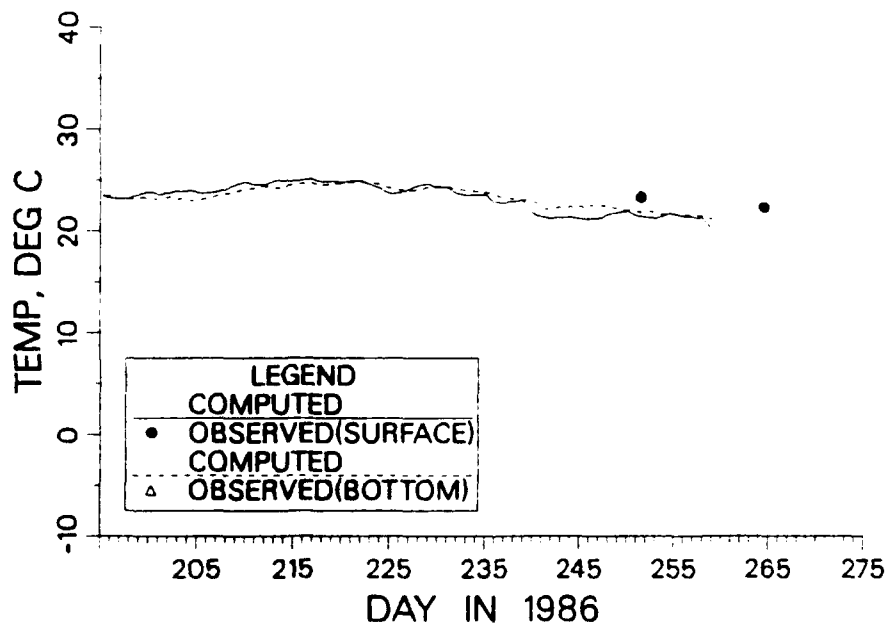
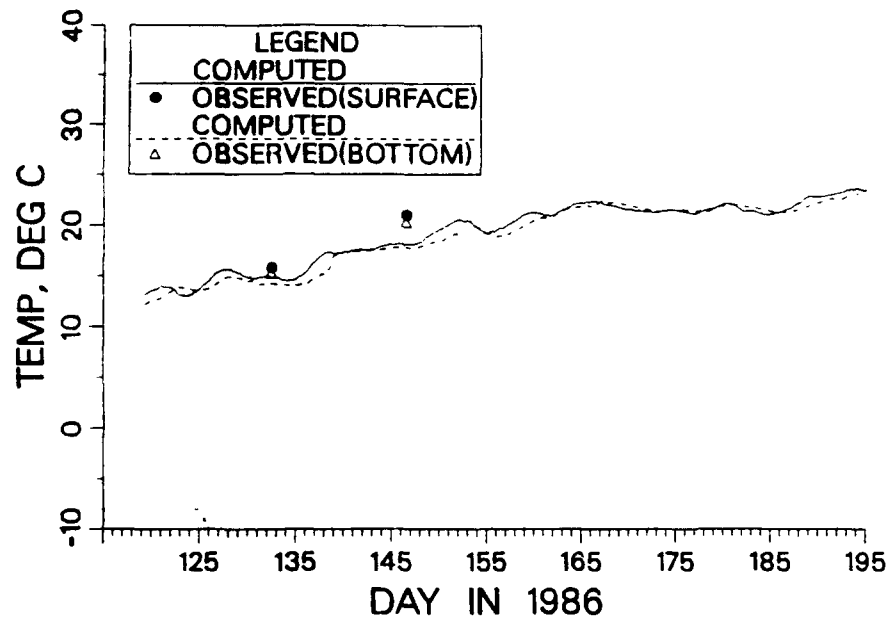


Figure C41. (Sheet 2 of 3)

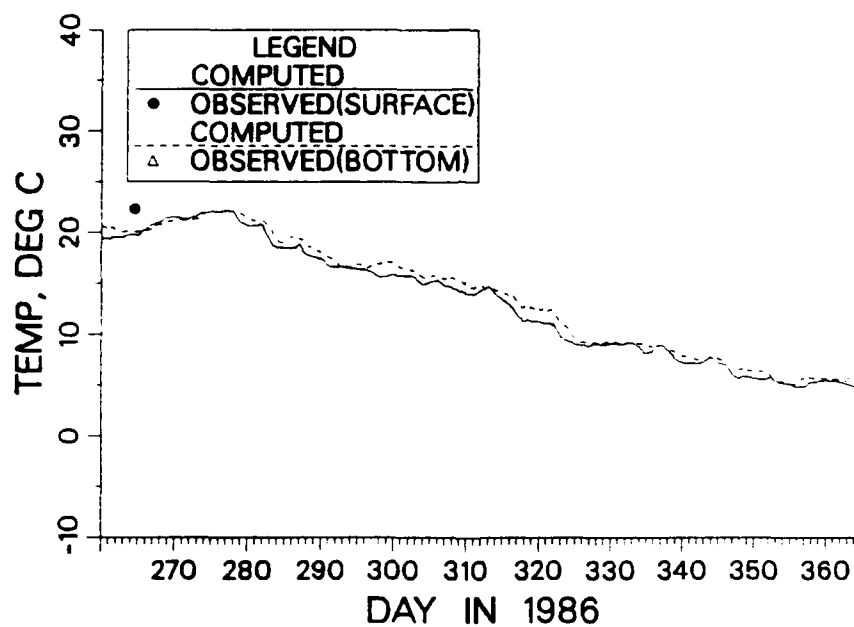


Figure C41. (Sheet 3 of 3)

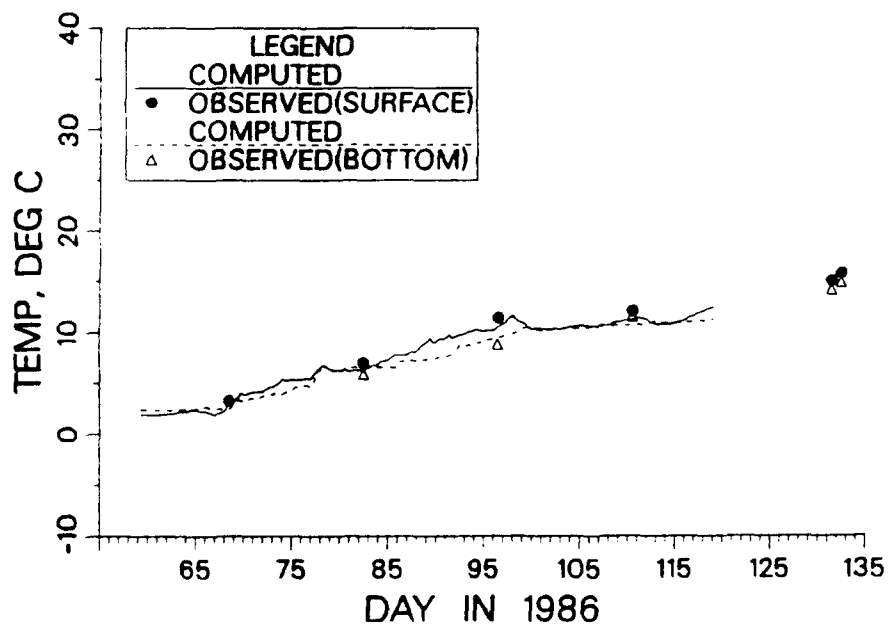
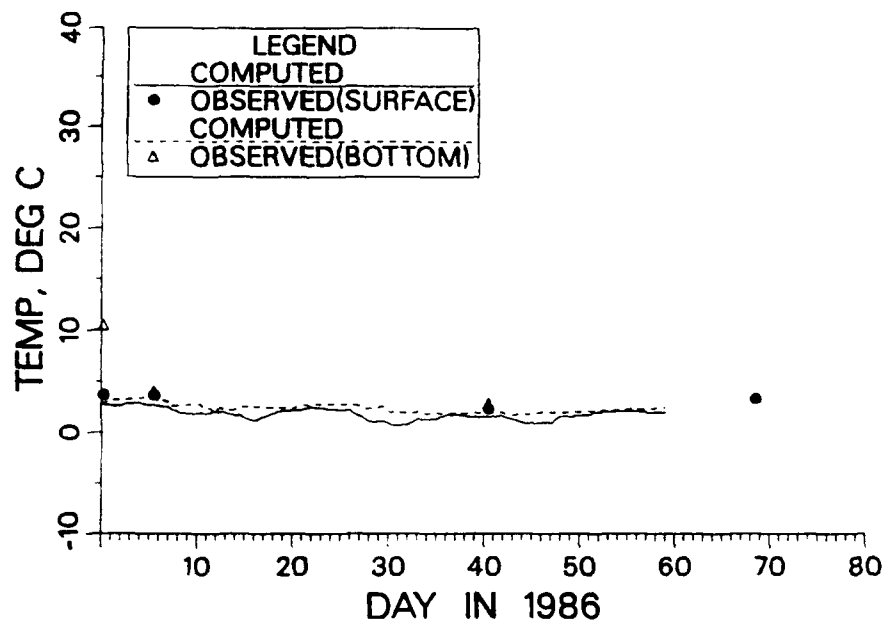


Figure C42. Comparison of computed and recorded temperature at sta CB 5.3 during 1986 (Sheet 1 of 3)

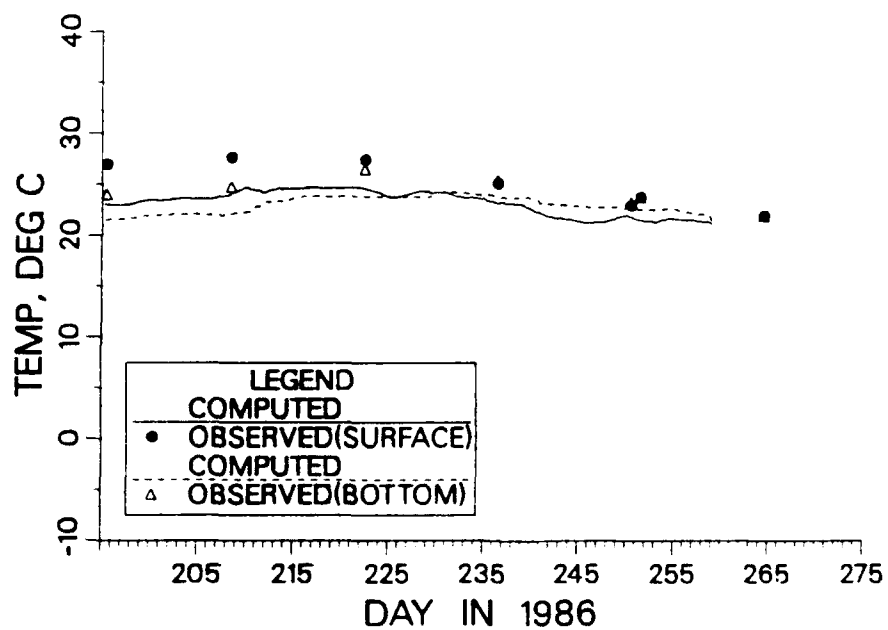
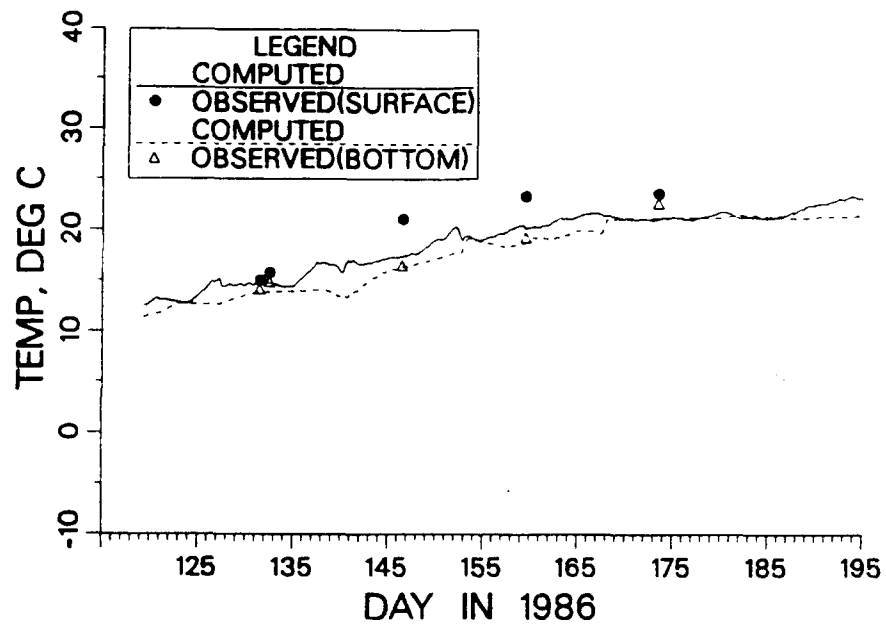


Figure C42. (Sheet 2 of 3)

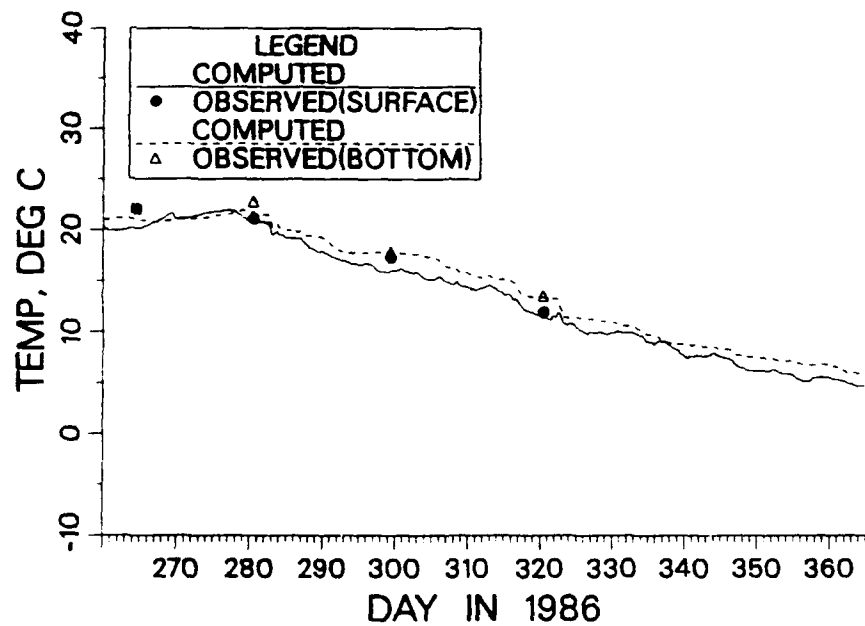


Figure C42. (Sheet 3 of 3)

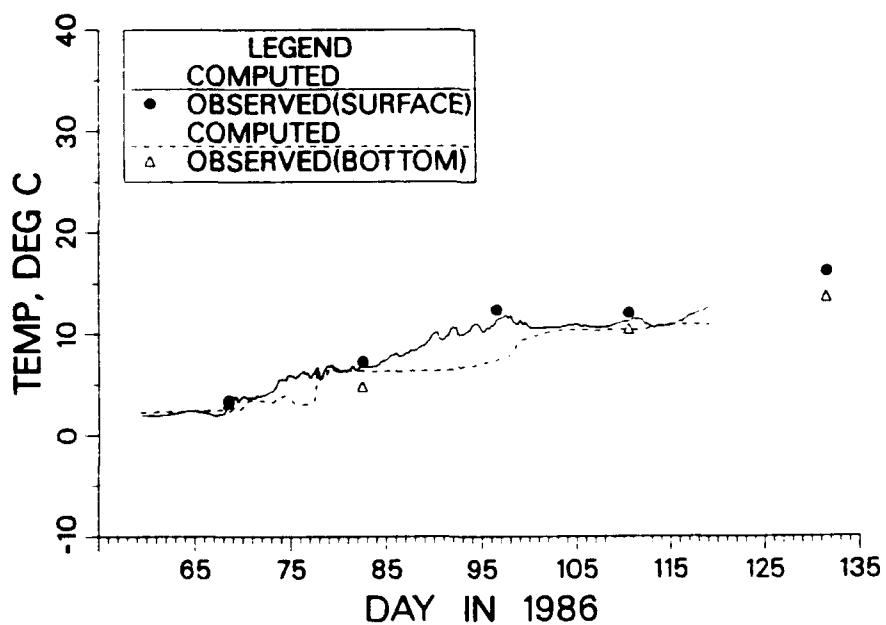
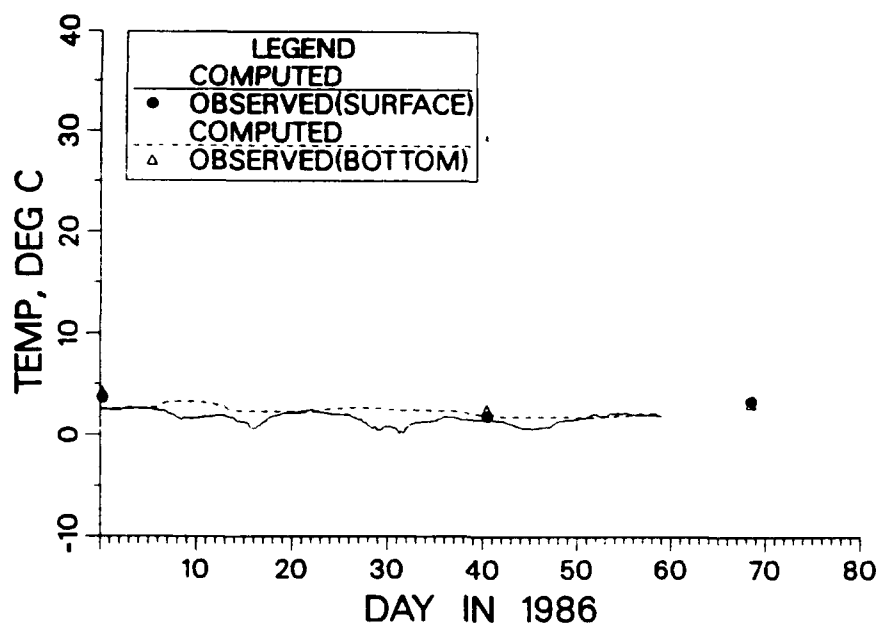


Figure C43. Comparison of computed and recorded temperature at sta CB 5.1 during 1986 (Sheet 1 of 3)

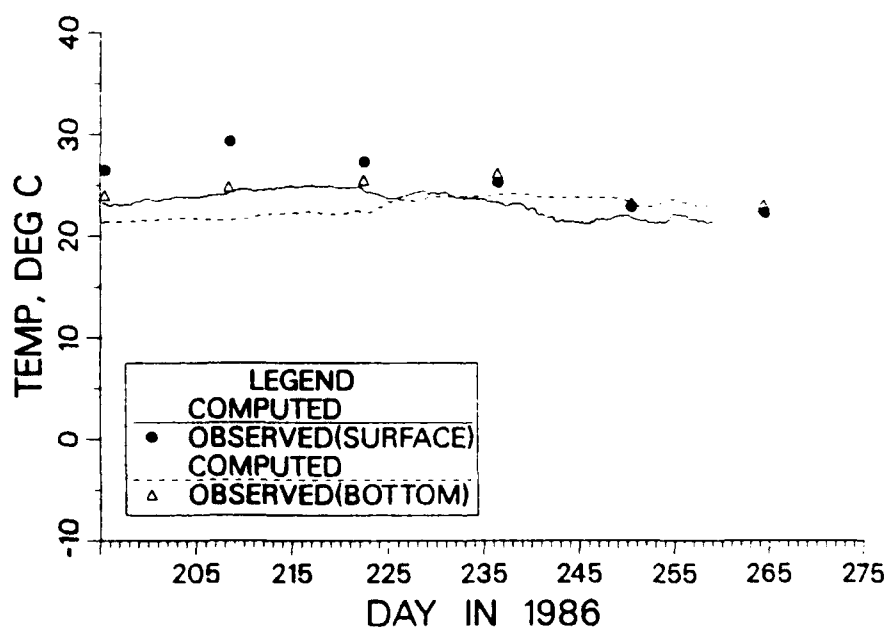
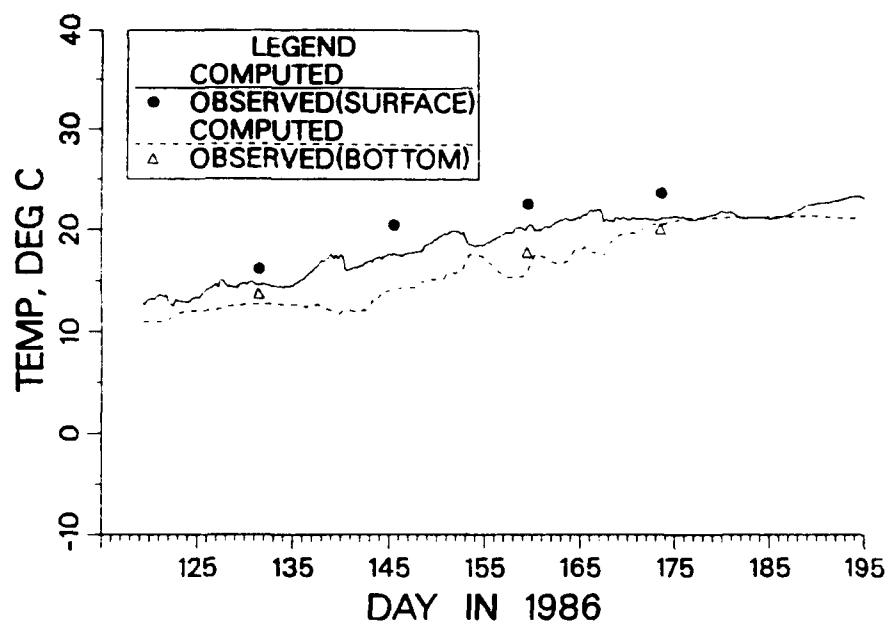


Figure C43. (Sheet 2 of 3)

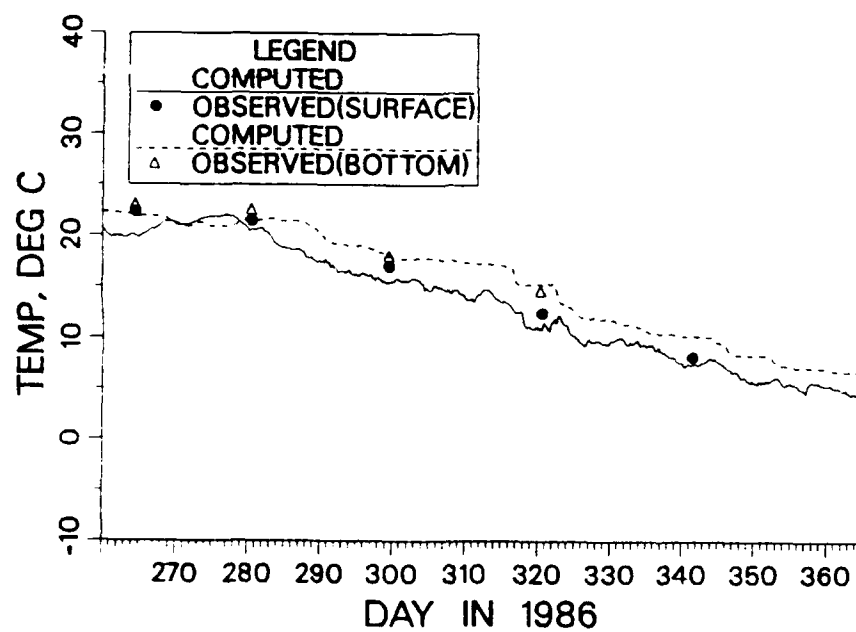


Figure C43. (Sheet 3 of 3)

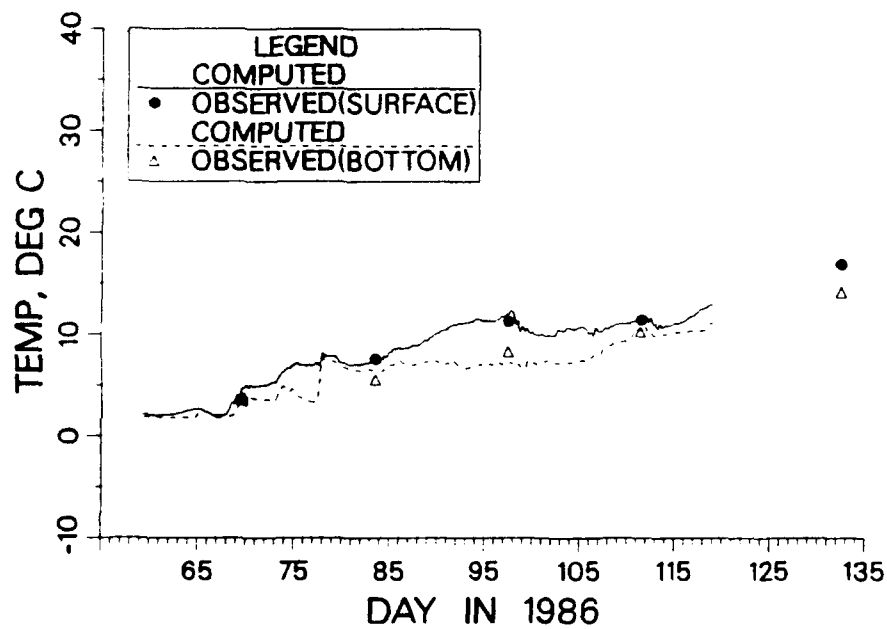
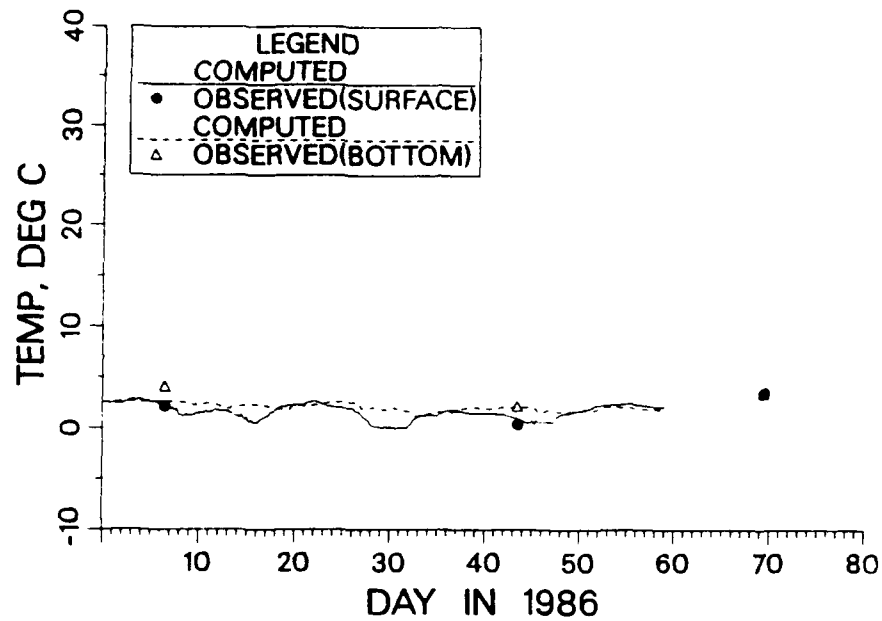


Figure C44. Comparison of computed and recorded temperature at sta CB 3.3W during 1986 (Sheet 1 of 3)

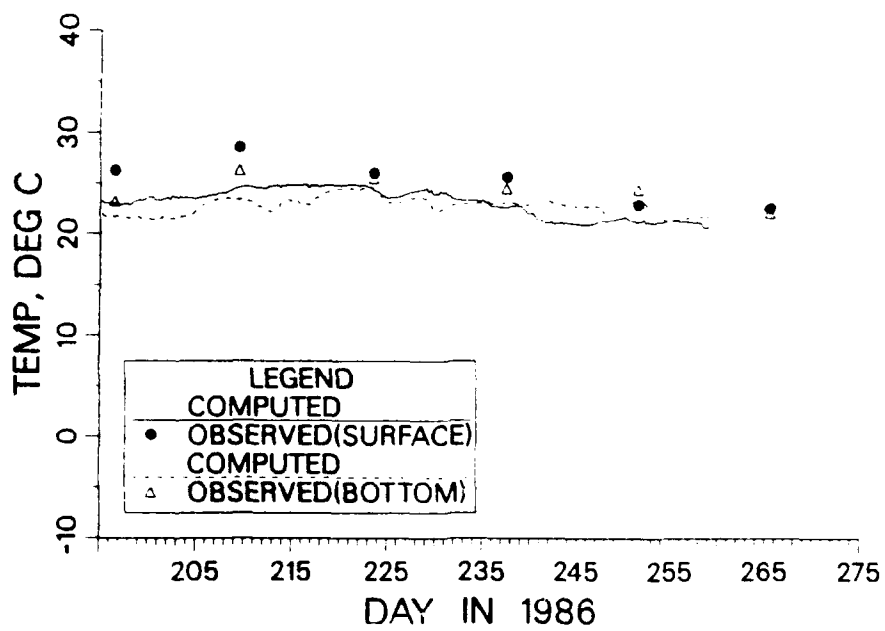
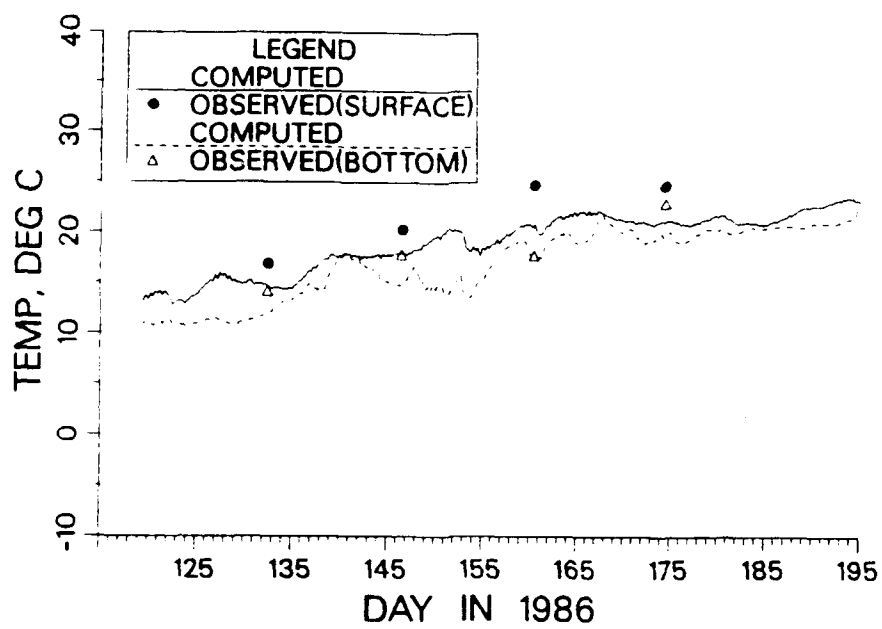


Figure C44. (Sheet 2 of 3)

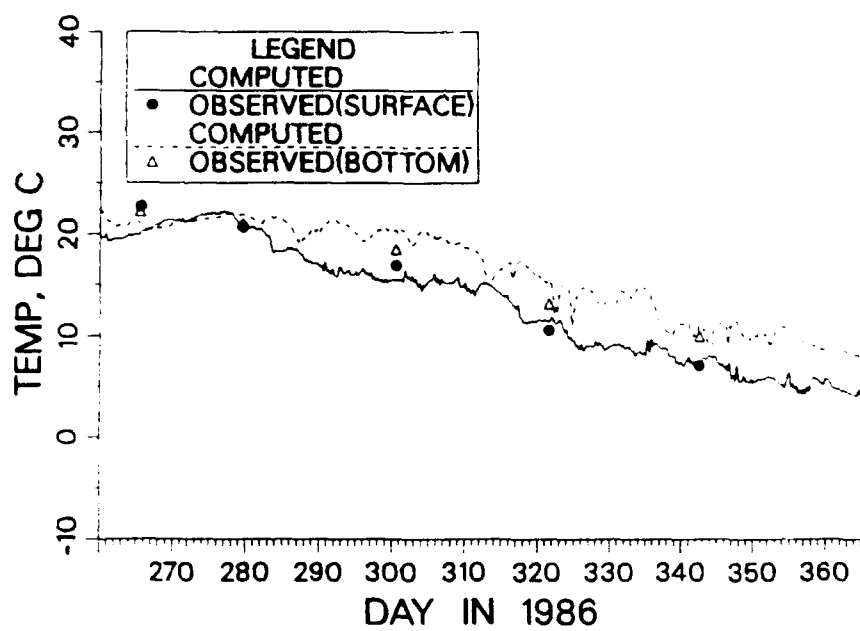


Figure C44. (Sheet 3 of 3)

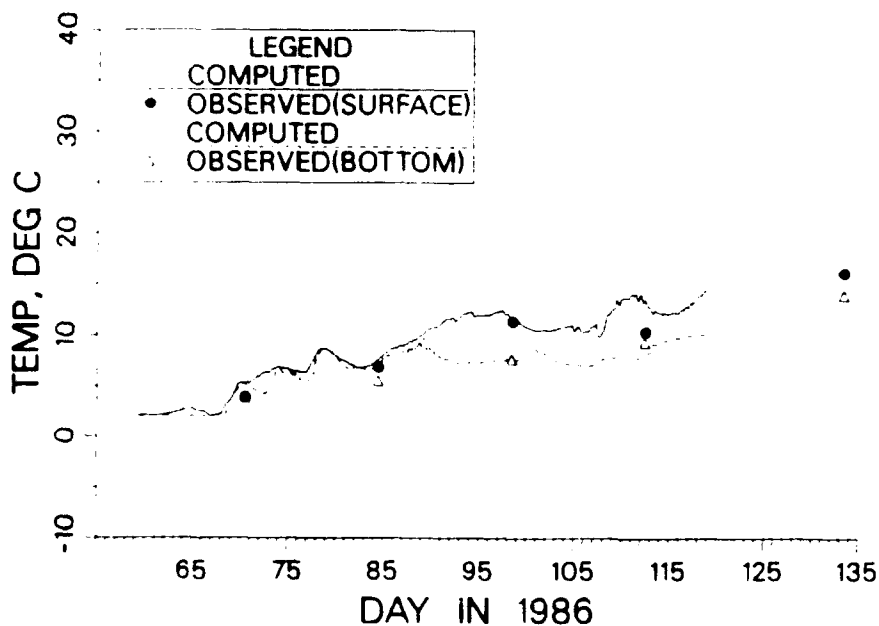
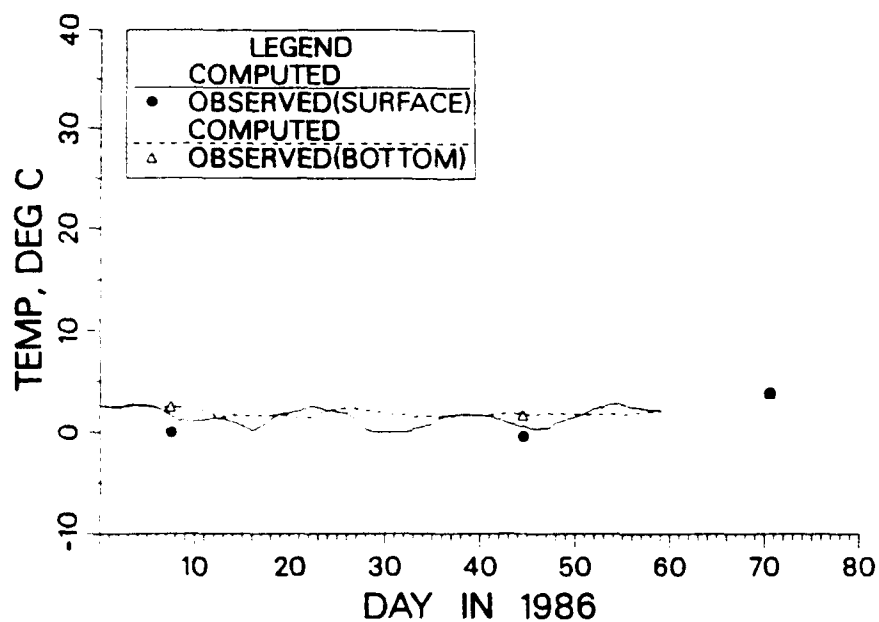


Figure C45. Comparison of computed and recorded temperature at sta CB 3.1 during 1986 (Sheet 1 of 3)

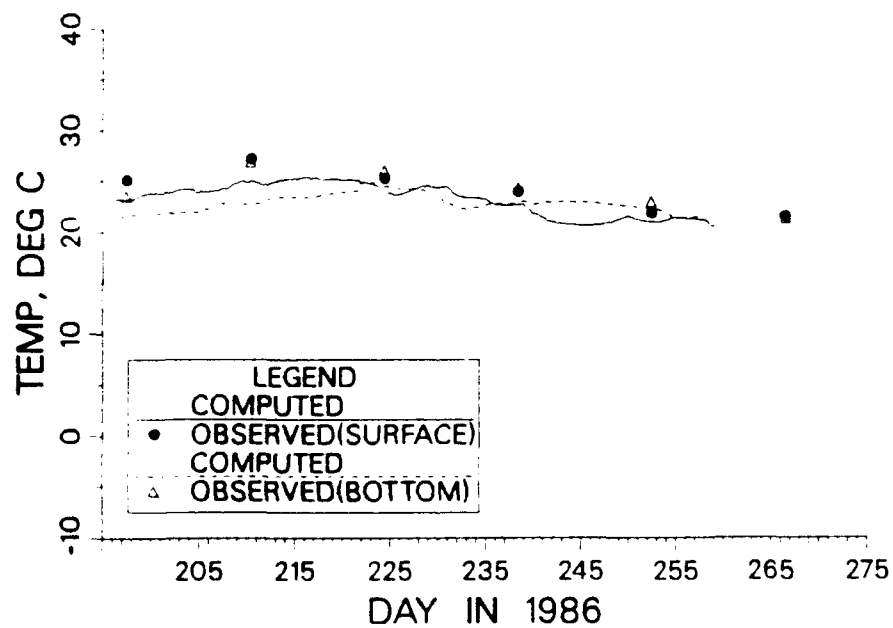
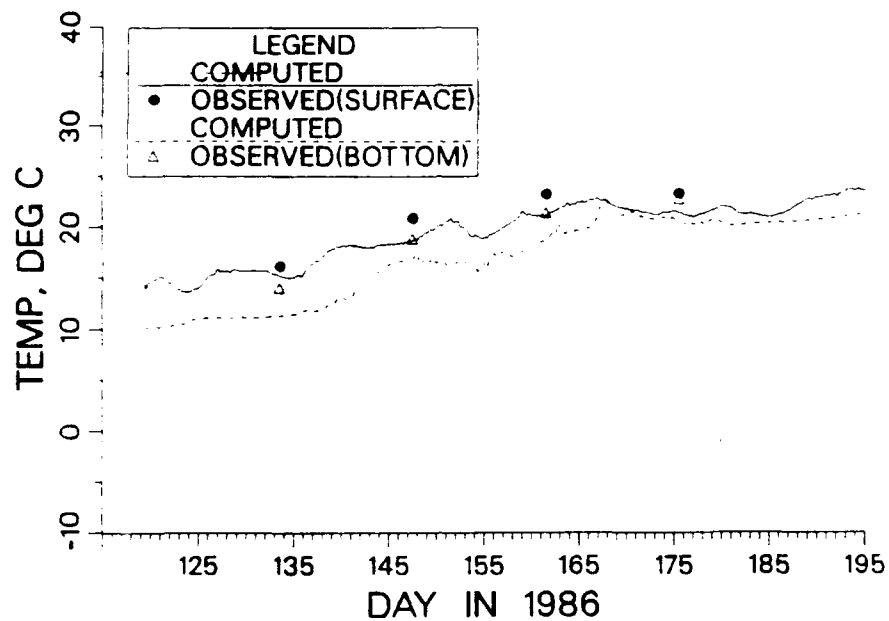


Figure C45. (Sheet 2 of 3)

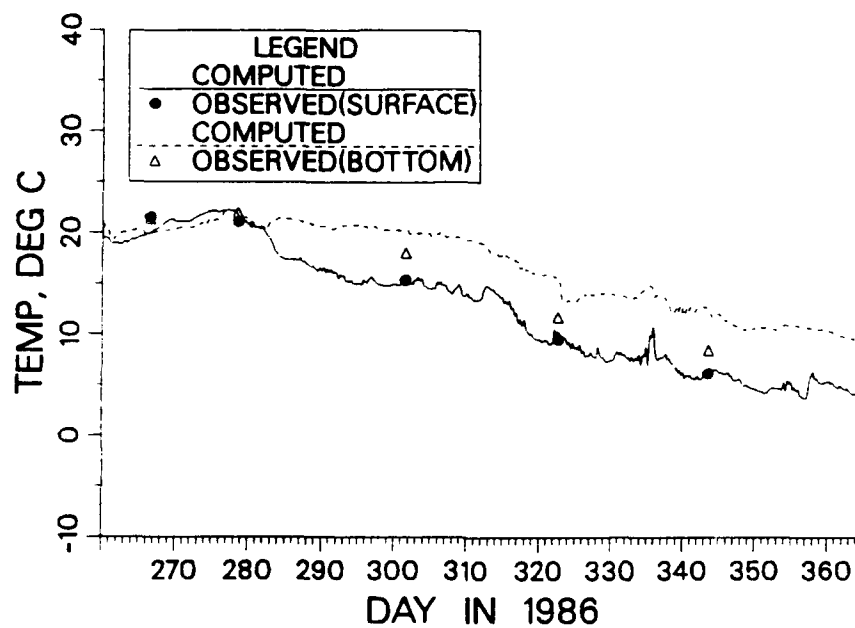


Figure C45. (Sheet 3 of 3)

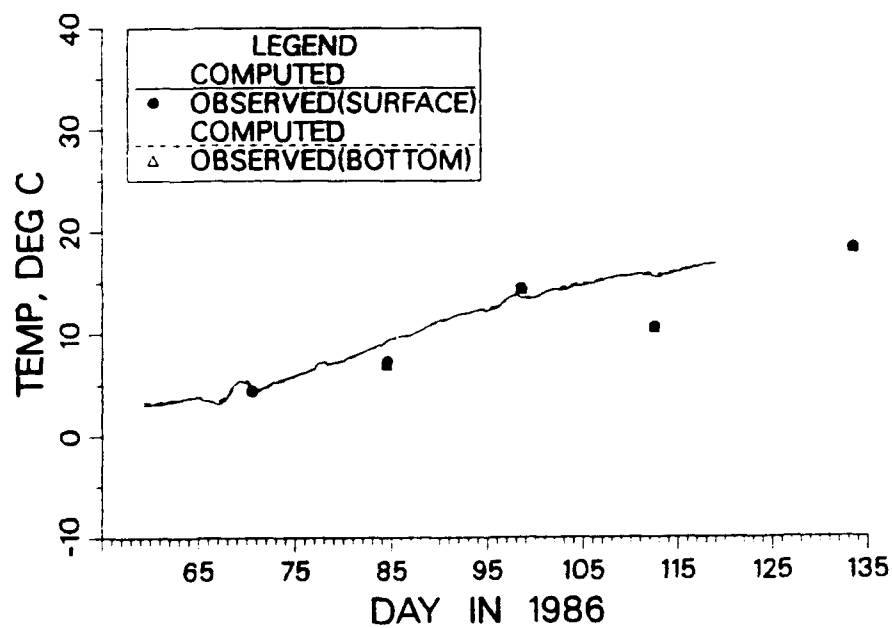
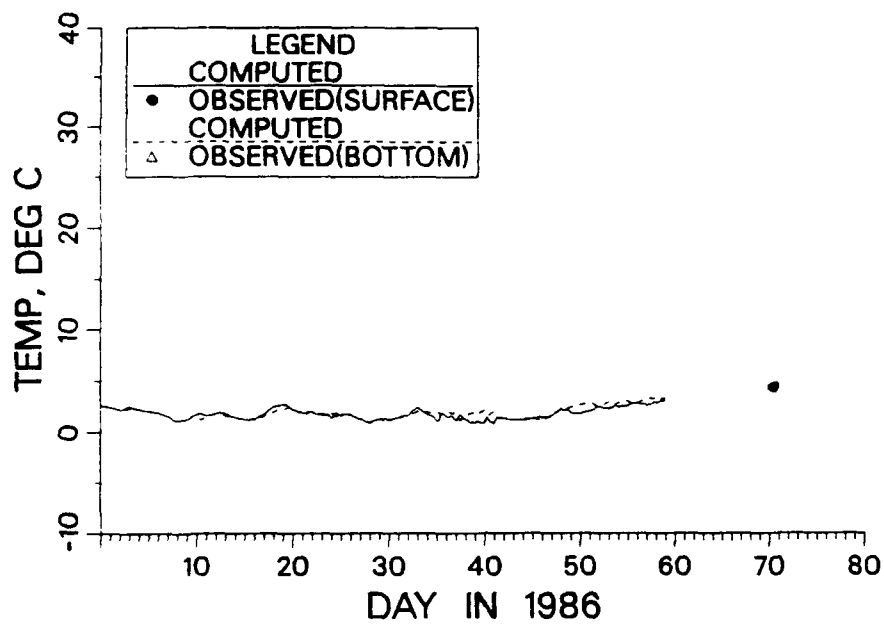


Figure C46. Comparison of computed and recorded temperature at sta CB 1.1 during 1986 (Sheet 1 of 3)

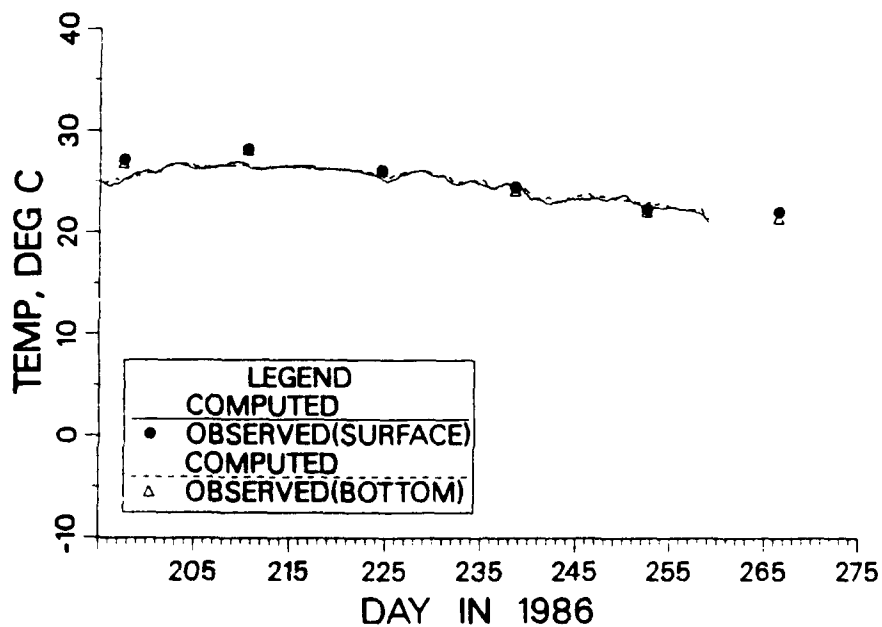
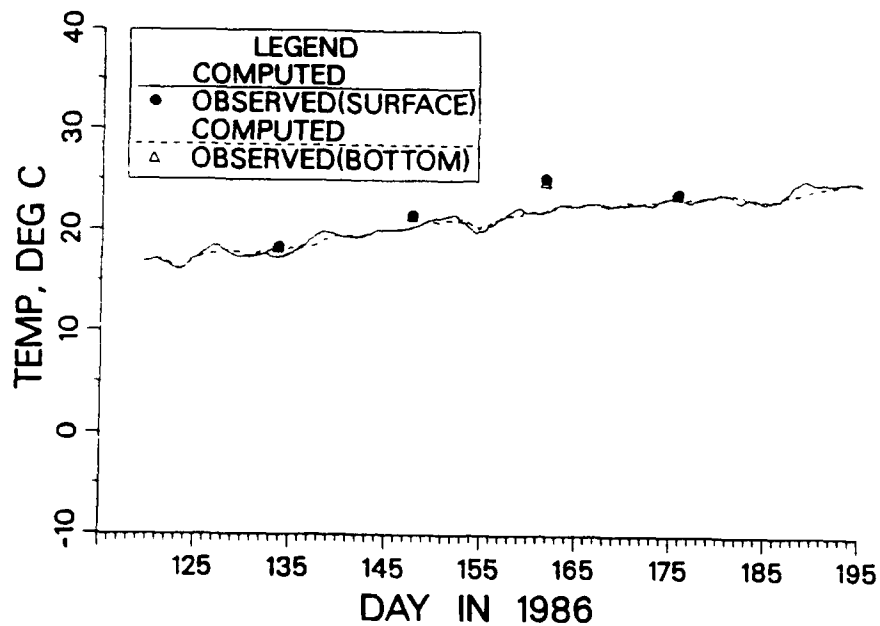


Figure C46. (Sheet 2 of 3)

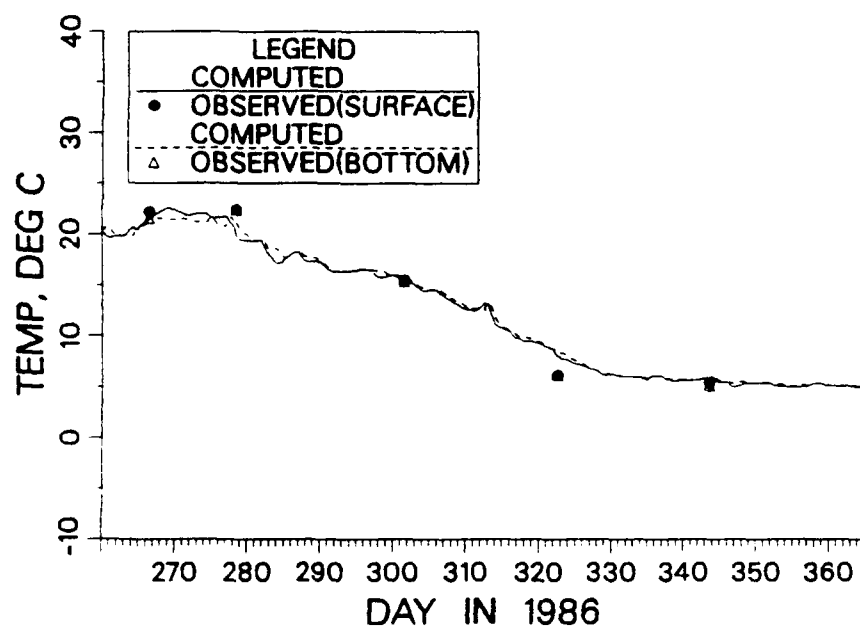


Figure C46. (Sheet 3 of 3)

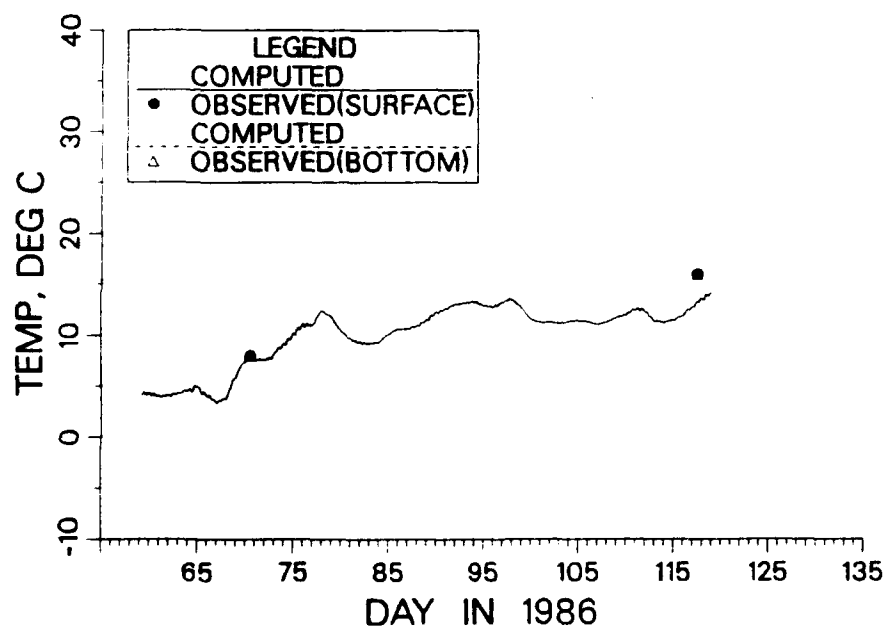
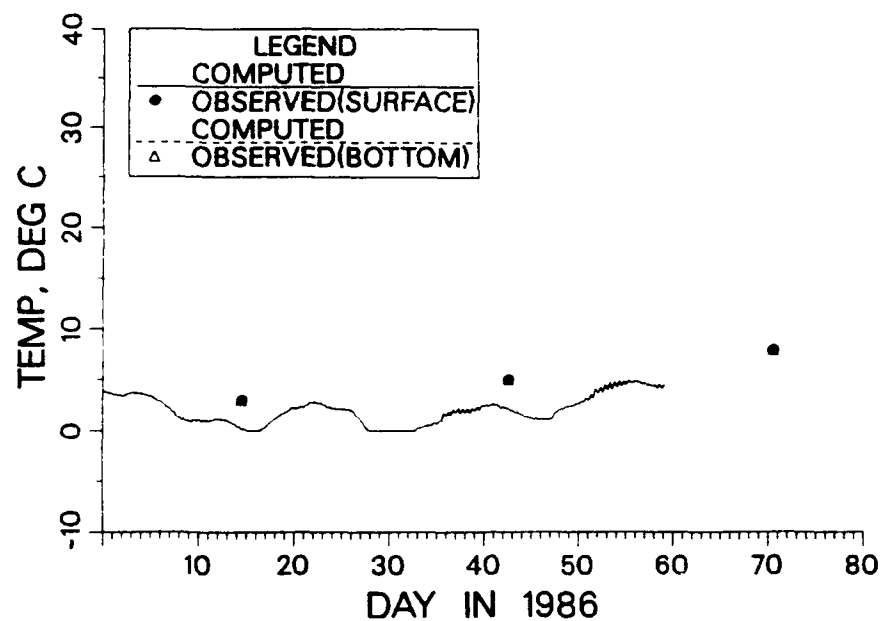


Figure C47. Comparison of computed and recorded temperature at sta TF 5.6 during 1986 (Sheet 1 of 3)

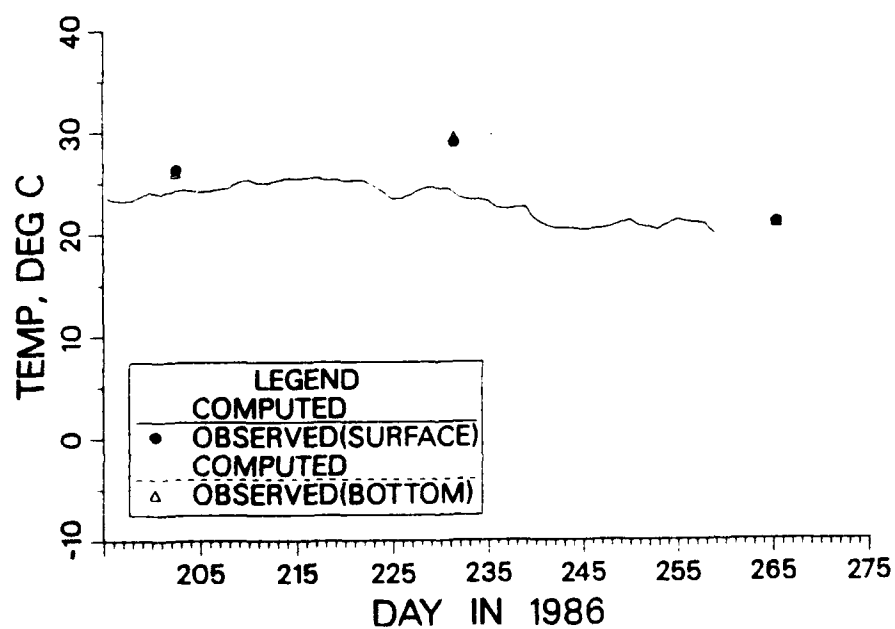
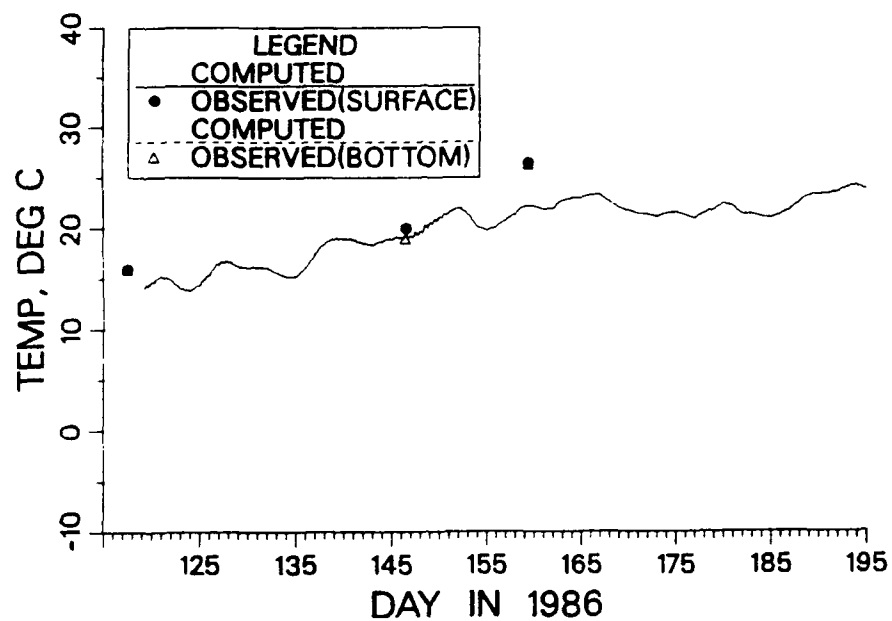


Figure C47. (Sheet 2 of 3)

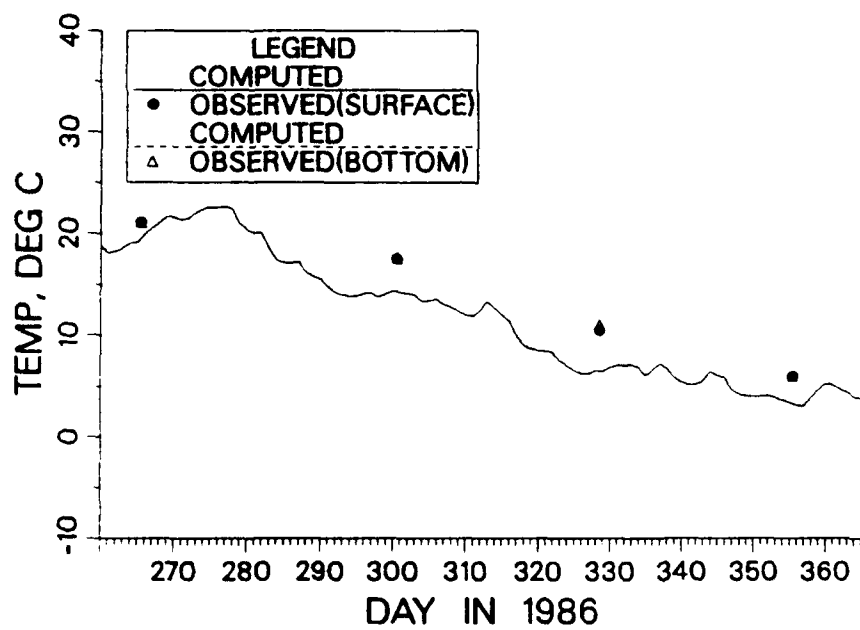


Figure C47. (Sheet 3 of 3)

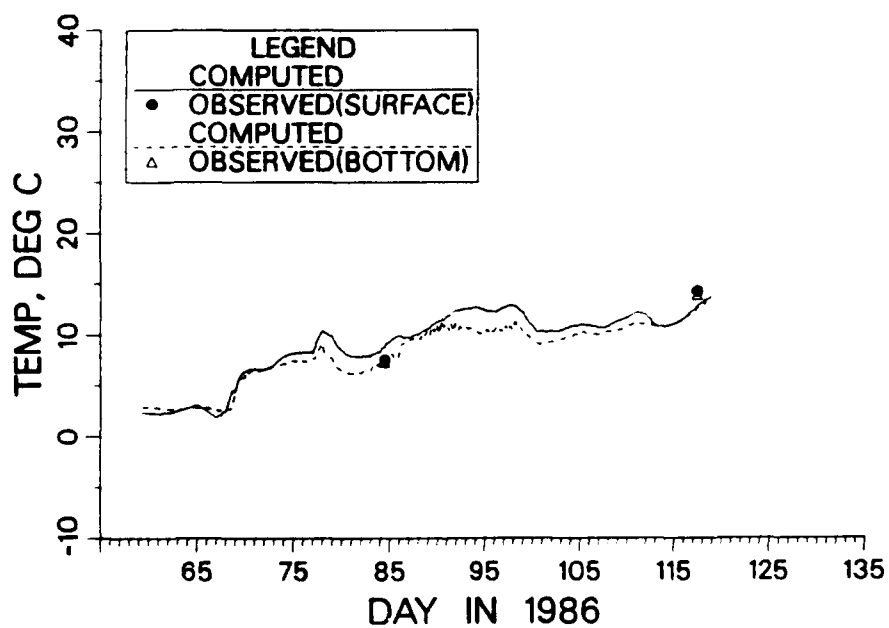
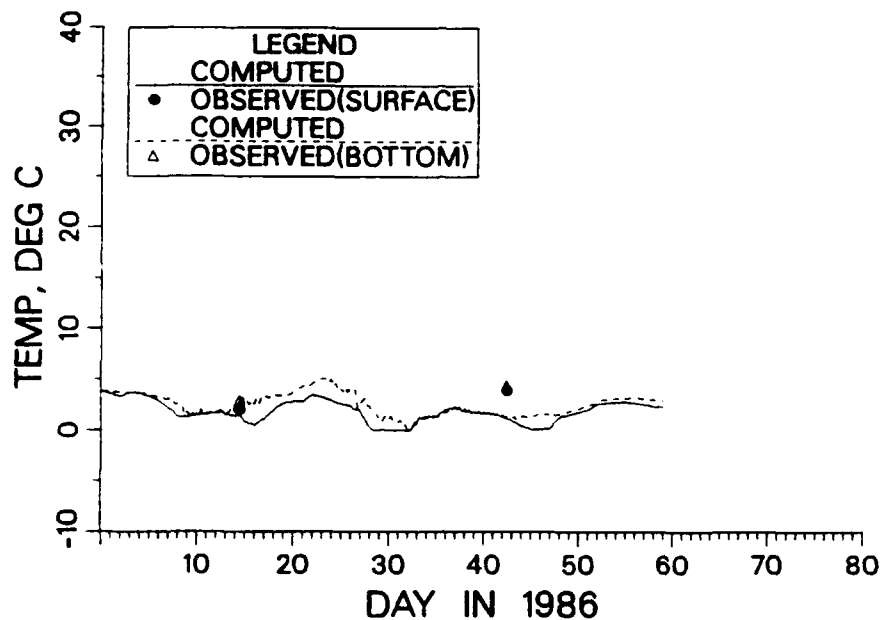


Figure C48. Comparison of computed and recorded temperature at sta LE 5.2 during 1986 (Sheet 1 of 3)

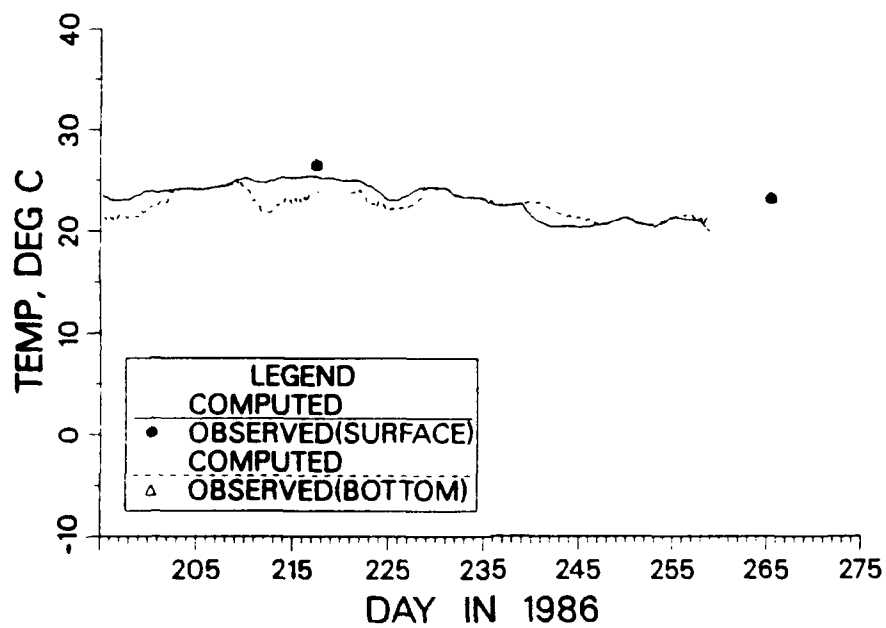
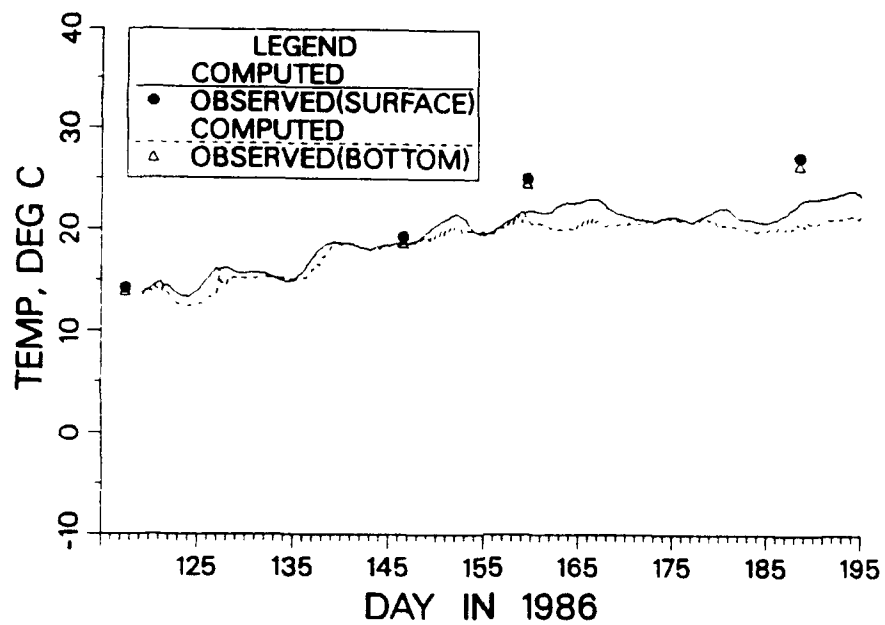


Figure C48. (Sheet 2 of 3)

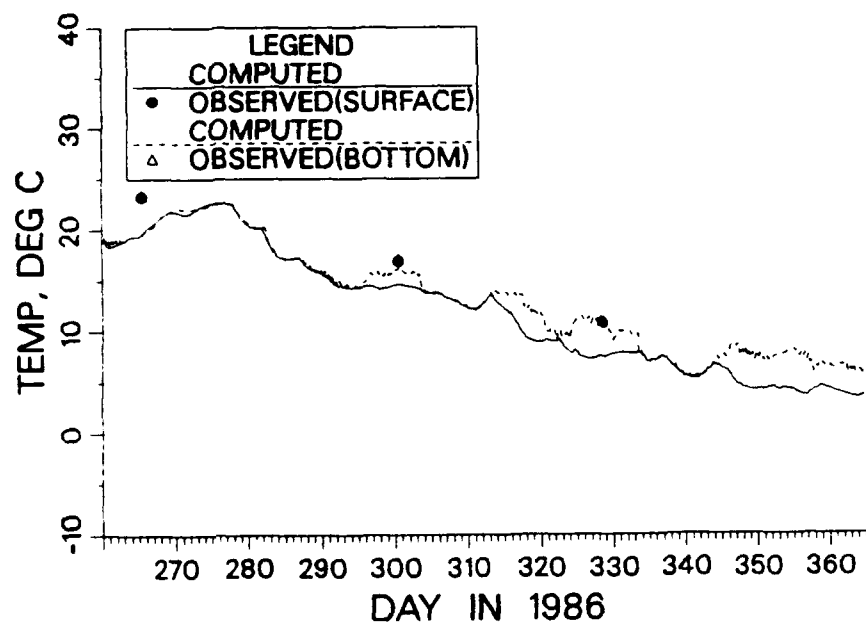


Figure C48. (Sheet 3 of 3)

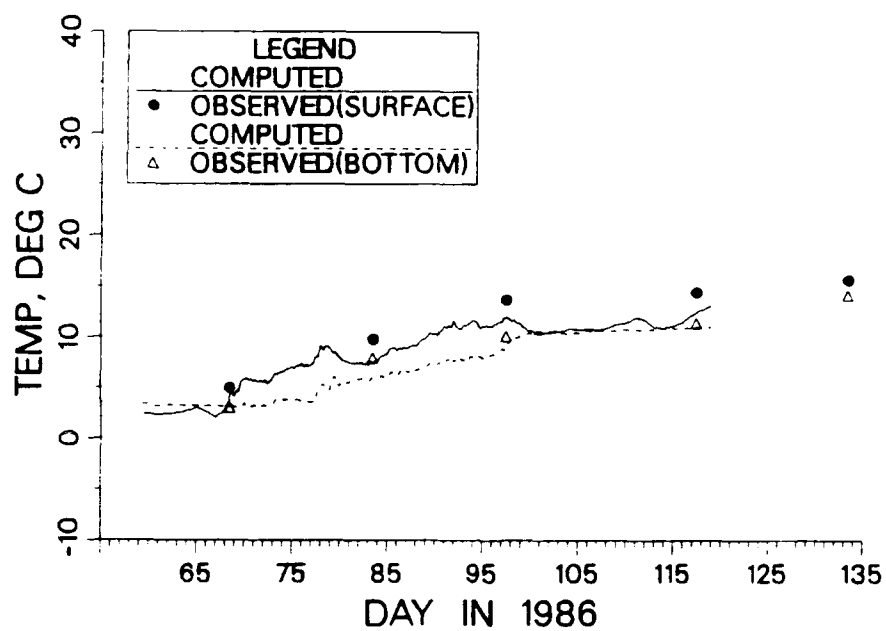
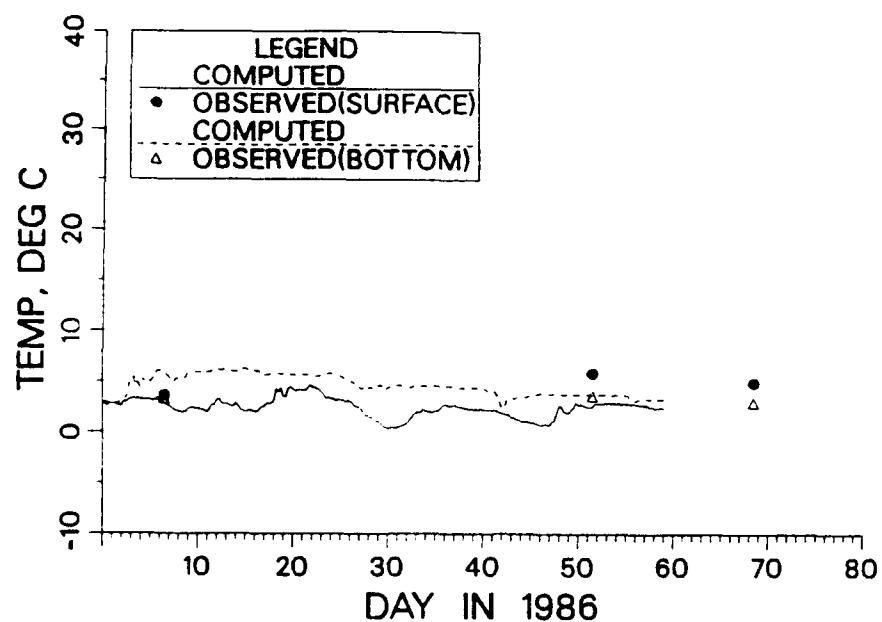


Figure C49. Comparison of computed and recorded temperature at sta LE 5.5 during 1986 (Sheet 1 of 3)

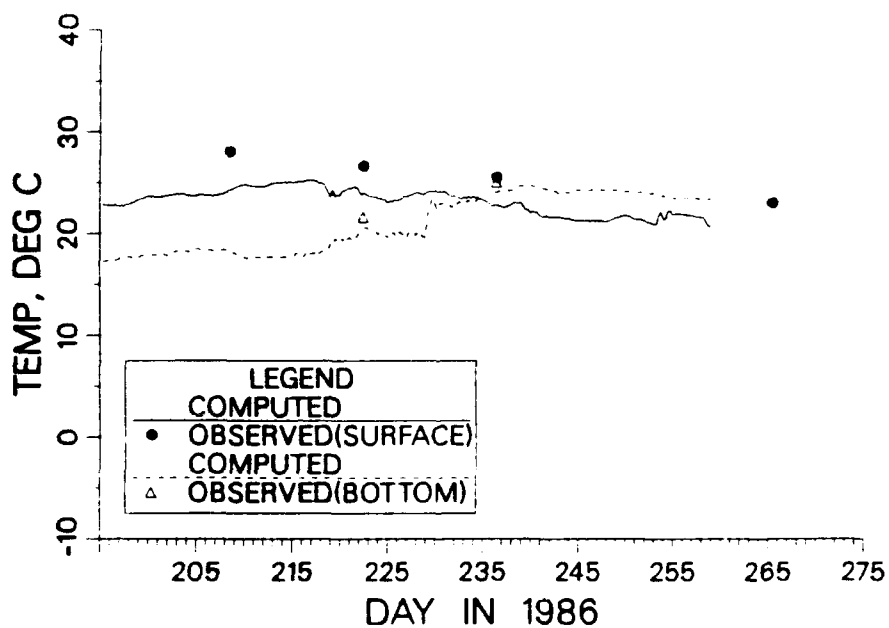
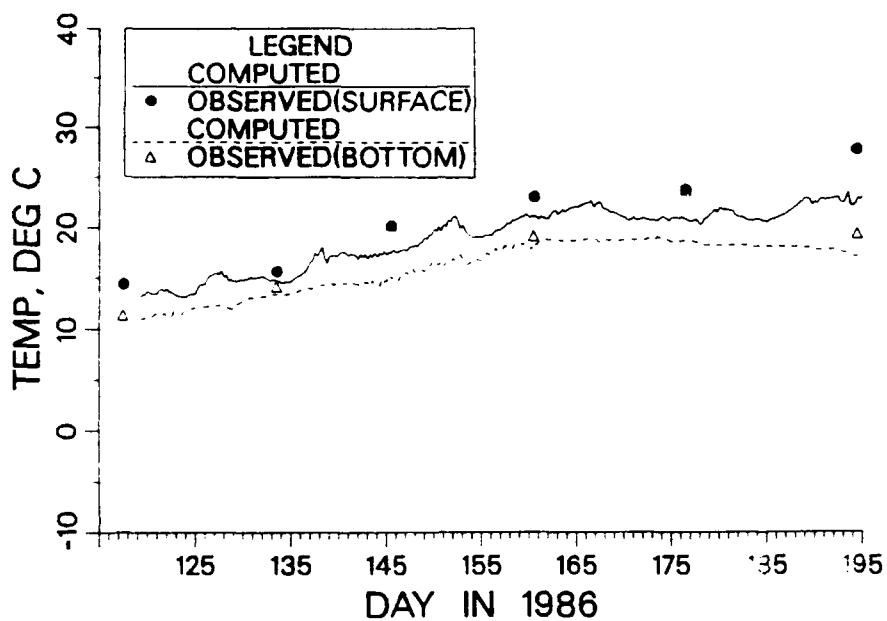


Figure C49. (Sheet 2 of 3)

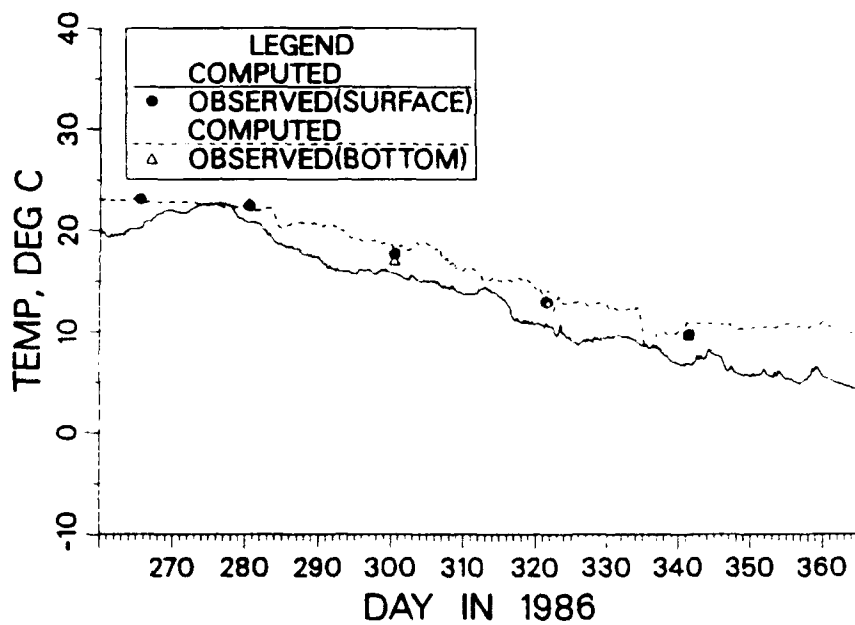


Figure C49. (Sheet 3 of 3)

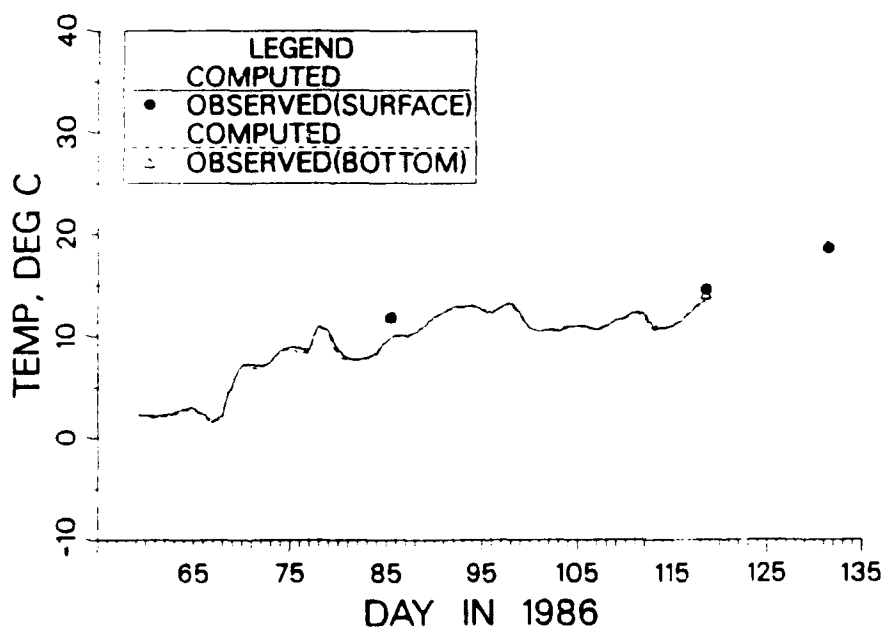
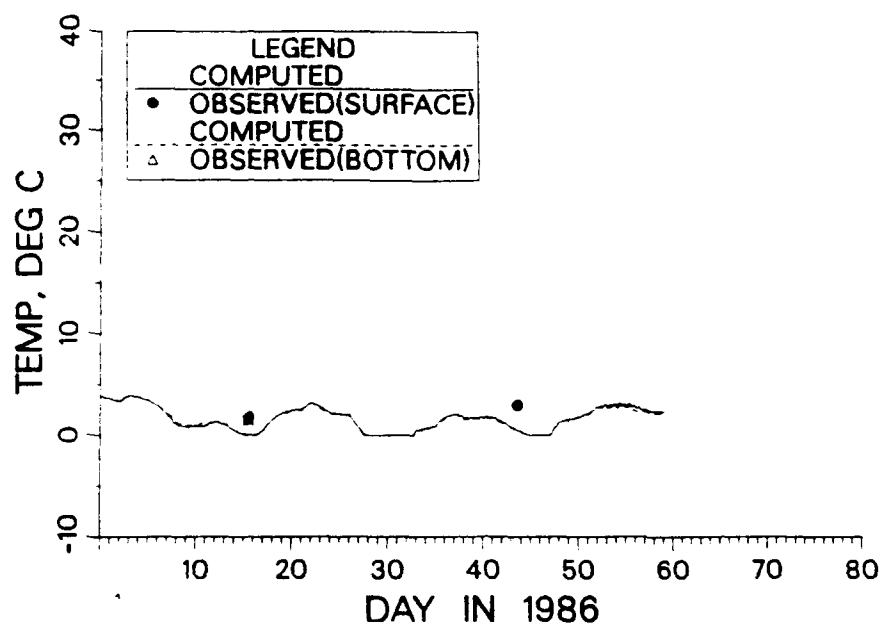


Figure C50. Comparison of computed and recorded temperature at sta RET 4.3 during 1986 (Sheet 1 of 3)

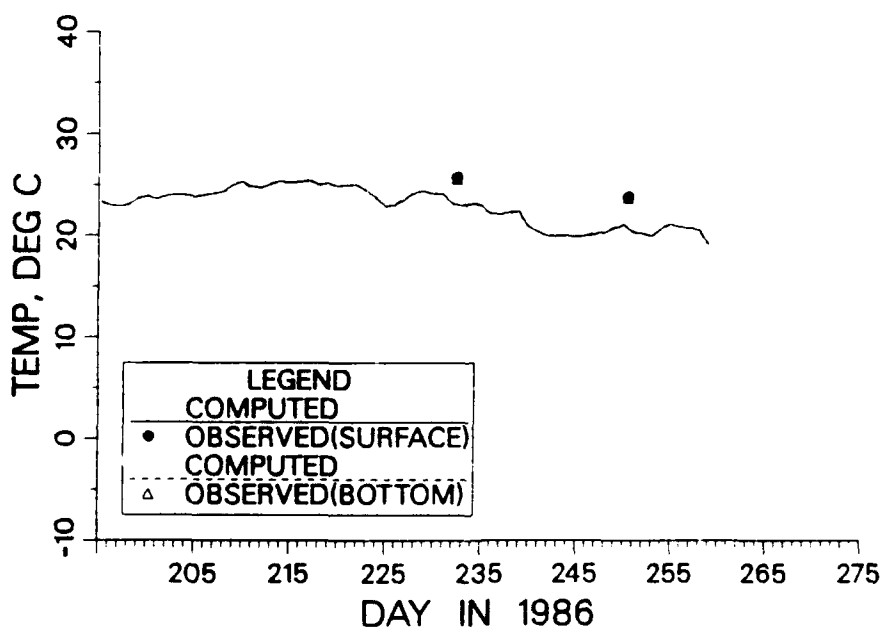
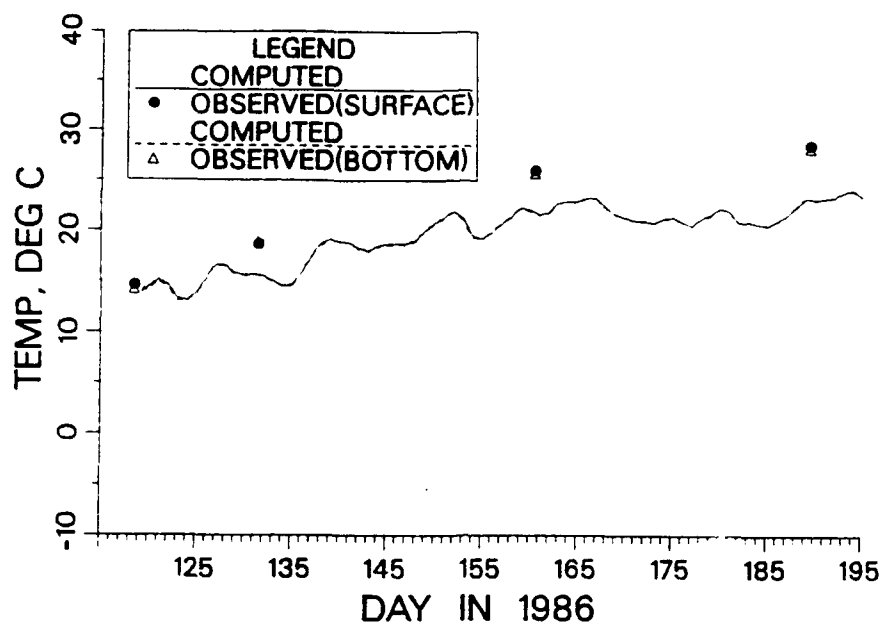


Figure C50. (Sheet 2 of 3)

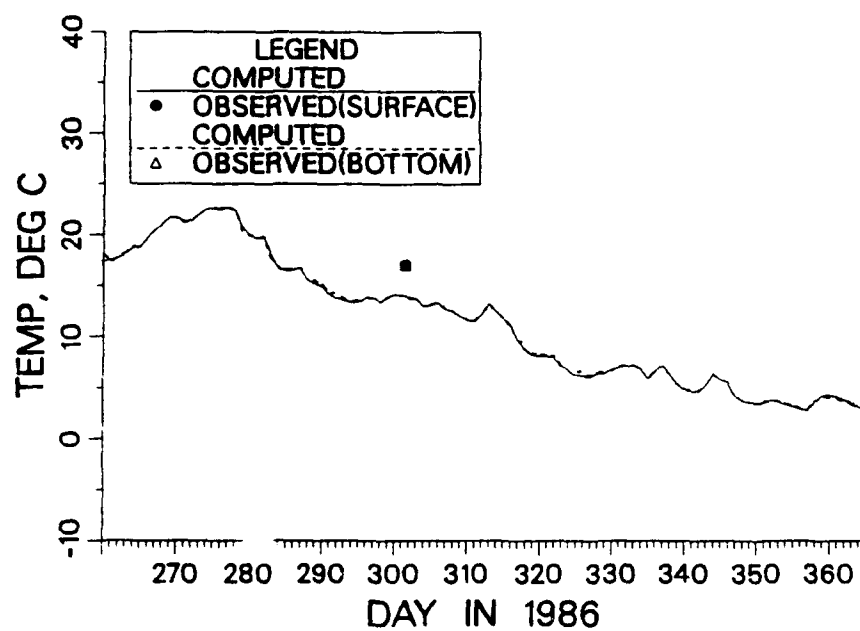


Figure C50. (Sheet 3 of 3)

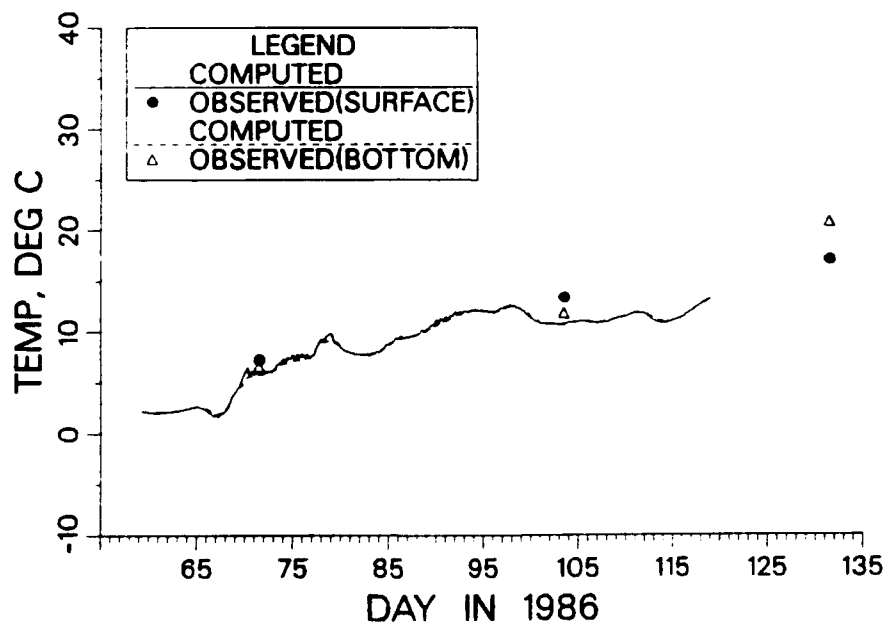
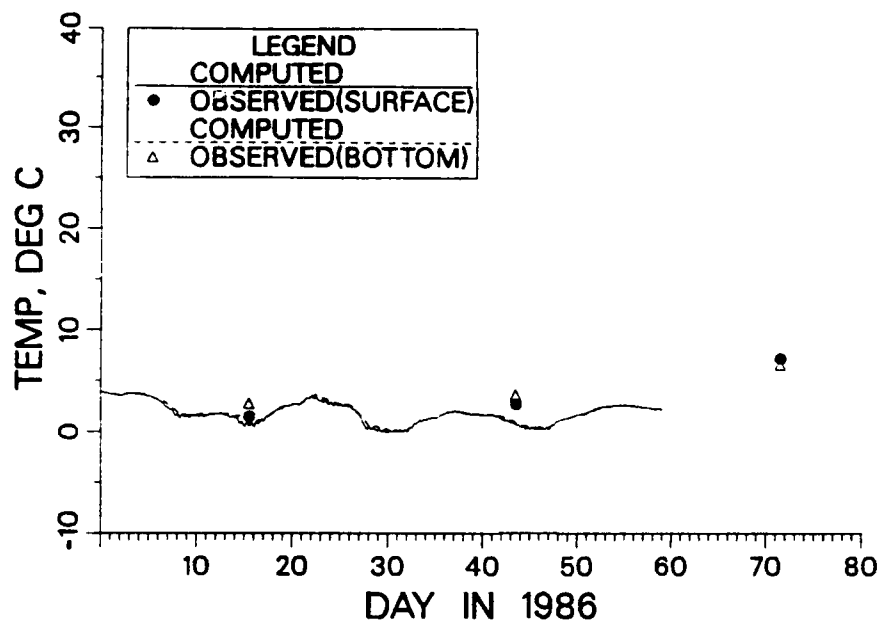


Figure C51. Comparison of computed and recorded temperature at sta LE 4.2 during 1986 (Sheet 1 of 3)

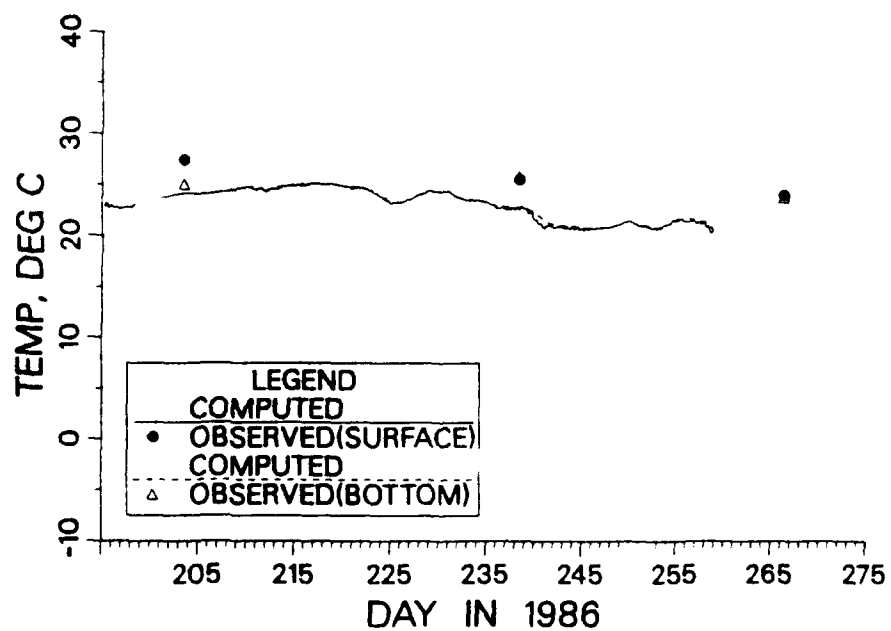
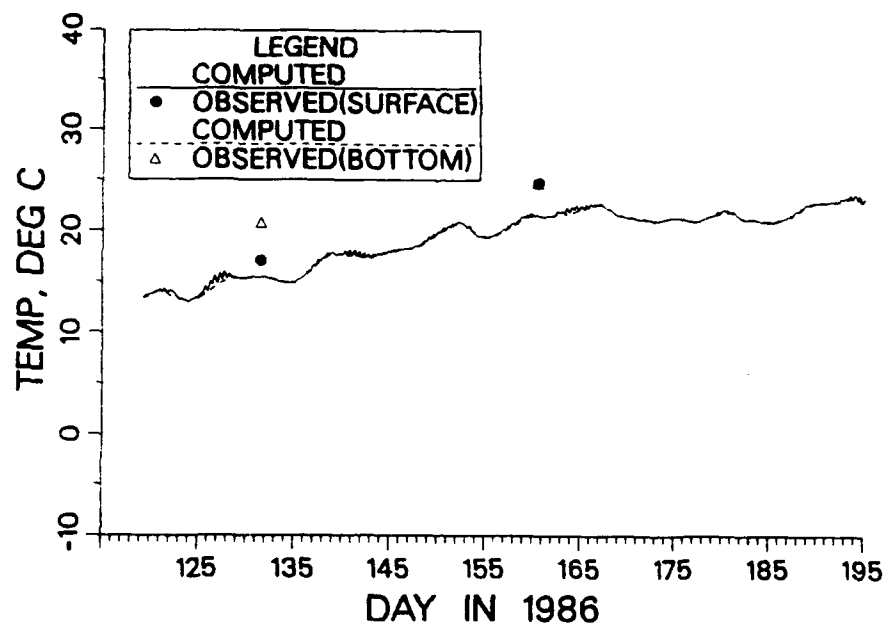


Figure C51. (Sheet 2 of 3)

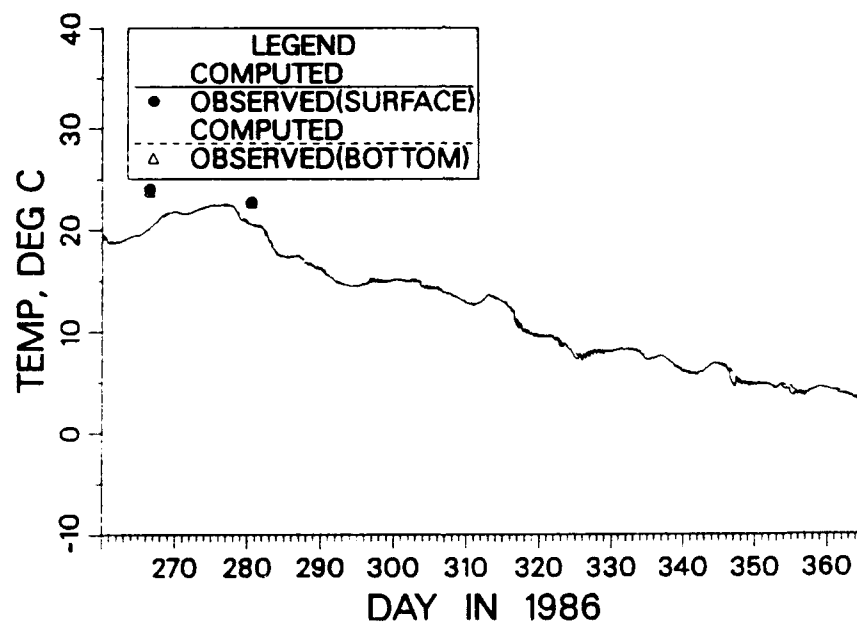


Figure C51. (Sheet 3 of 3)

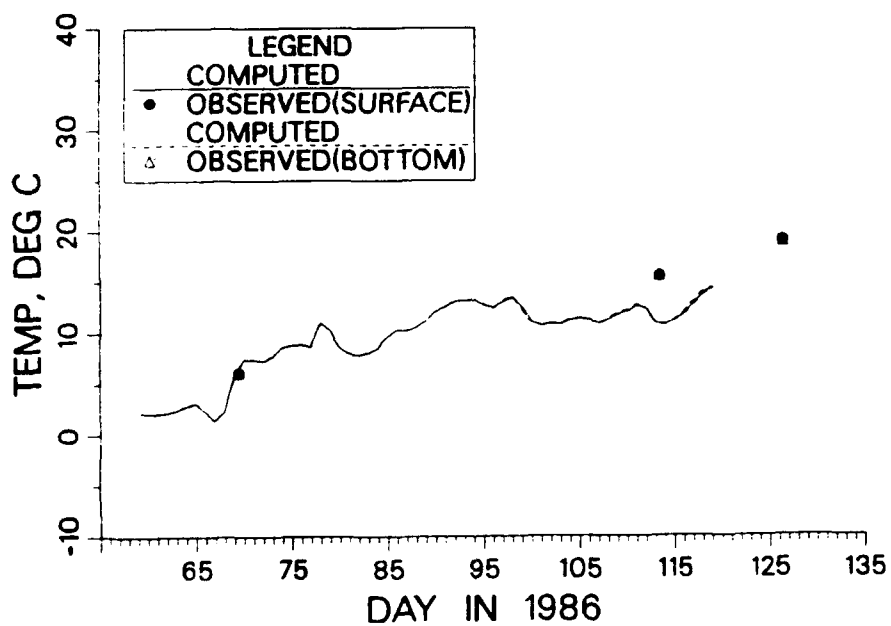
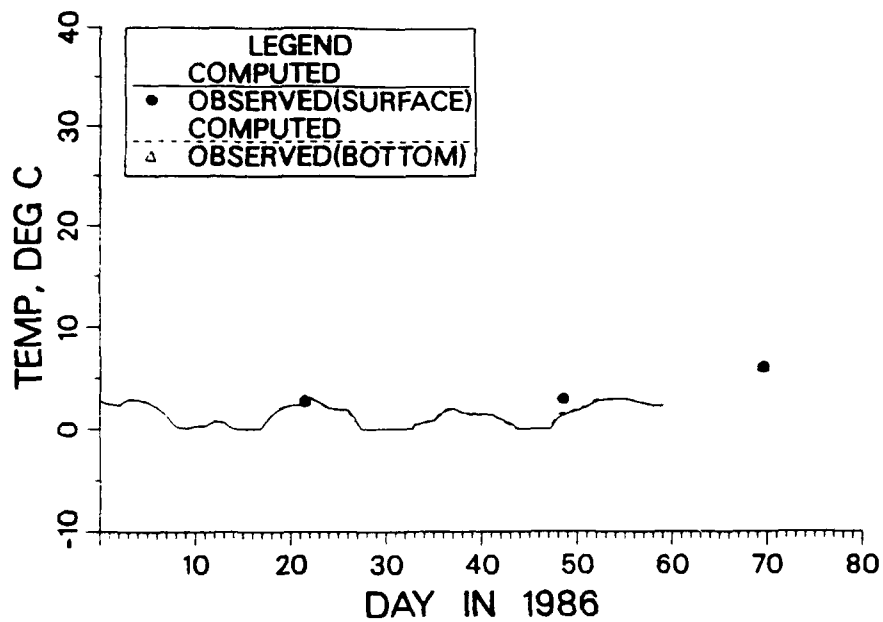


Figure C52. Comparison of computed and recorded temperature at sta TF 3.3 during 1986 (Sheet 1 of 3)

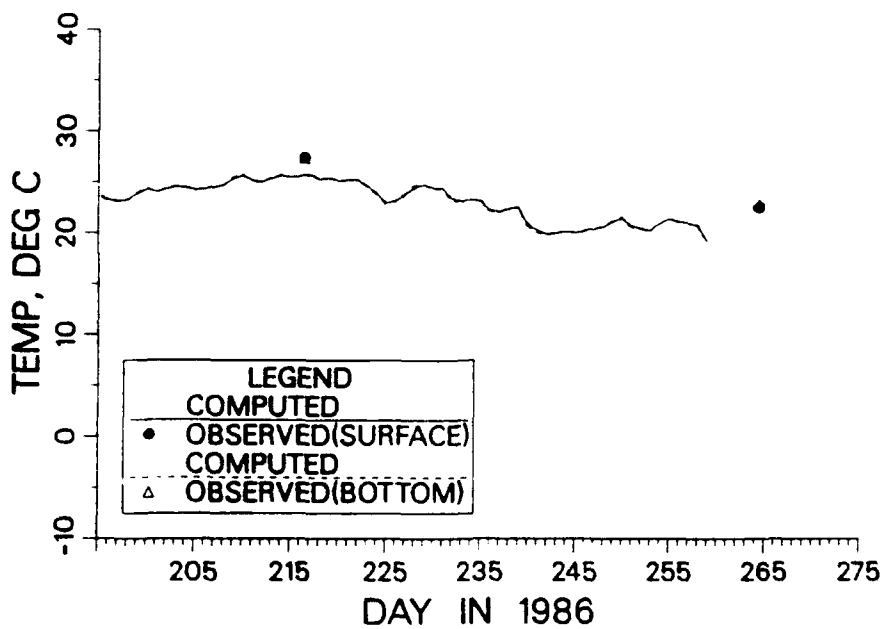
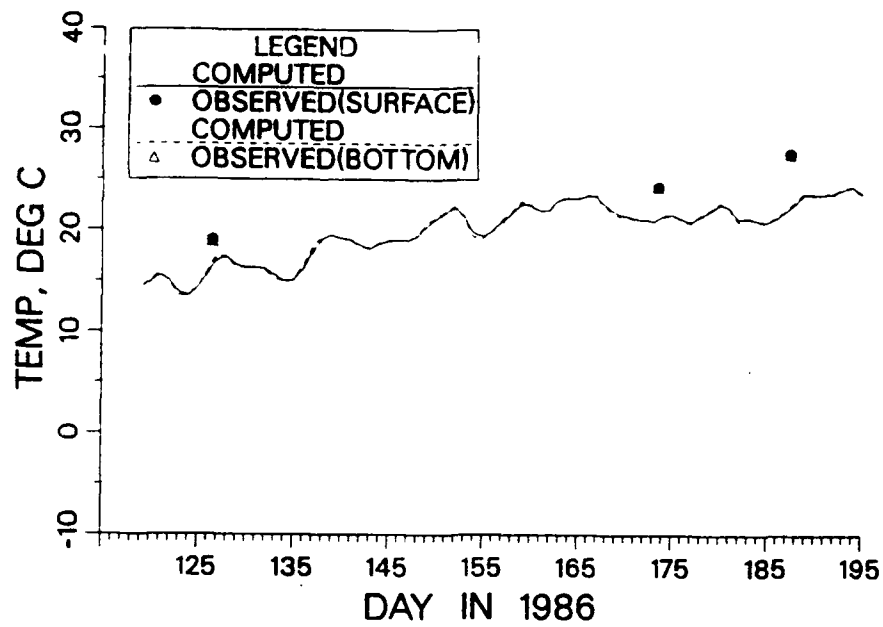


Figure C52. (Sheet 2 of 3)

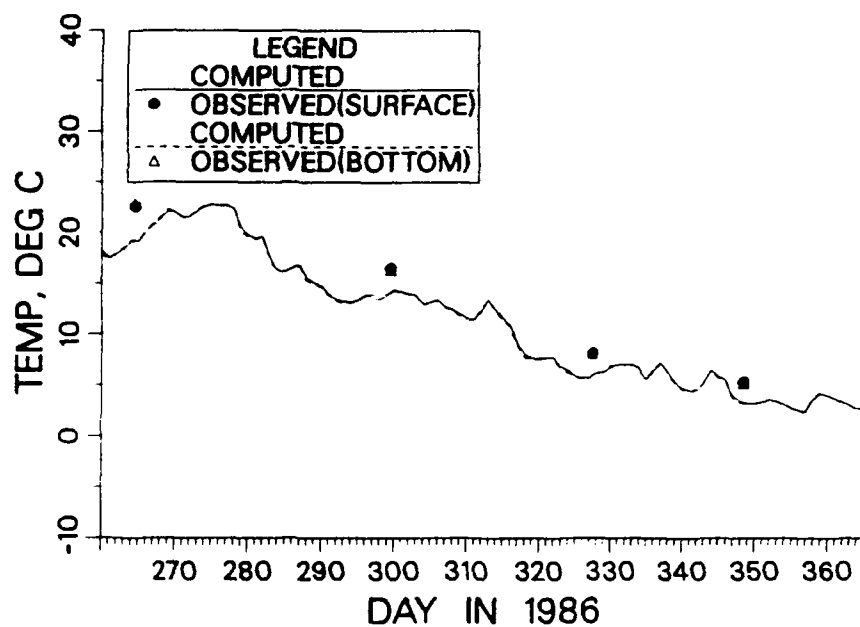


Figure C52. (Sheet 3 of 3)

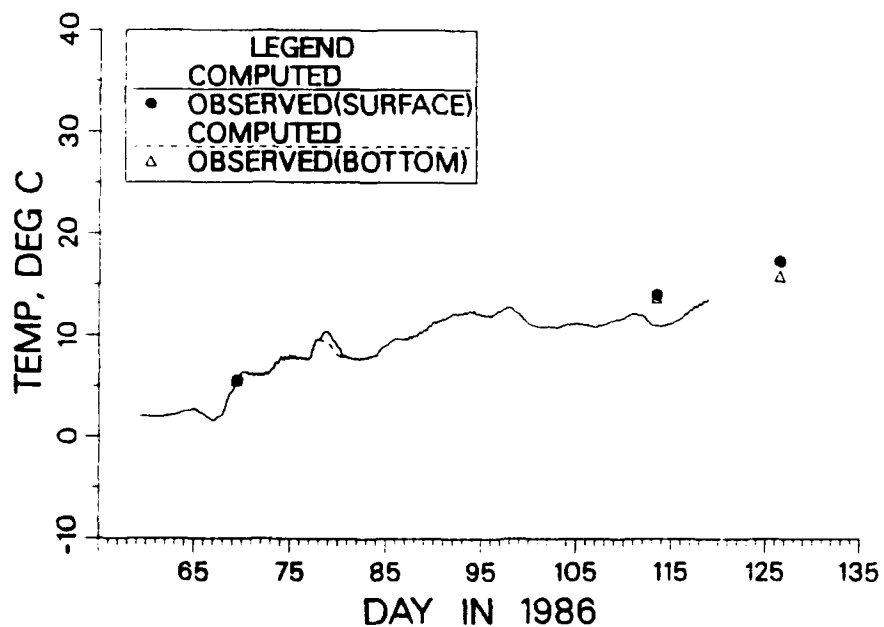
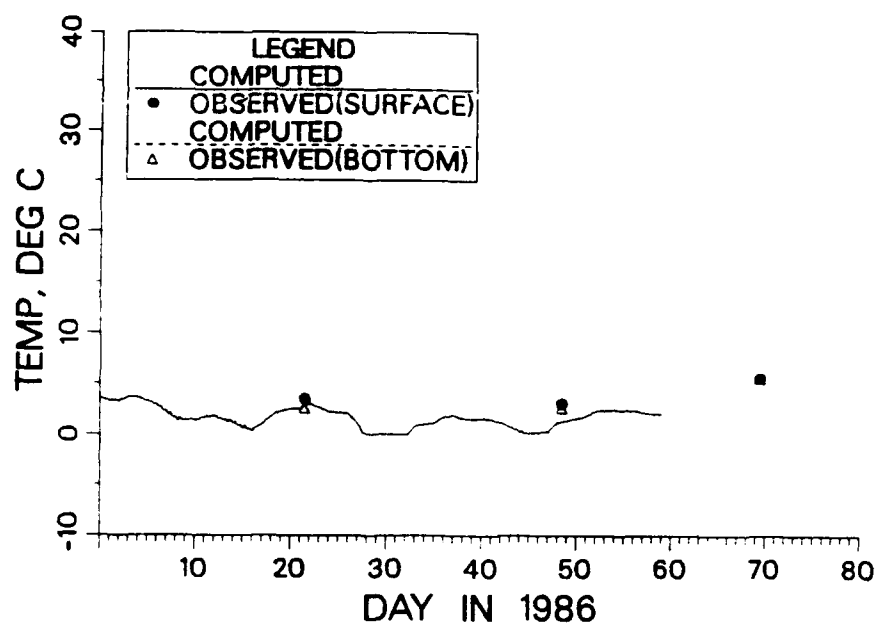


Figure C53. Comparison of computed and recorded temperature at sta LE 3.1 during 1986 (Sheet 1 of 3)

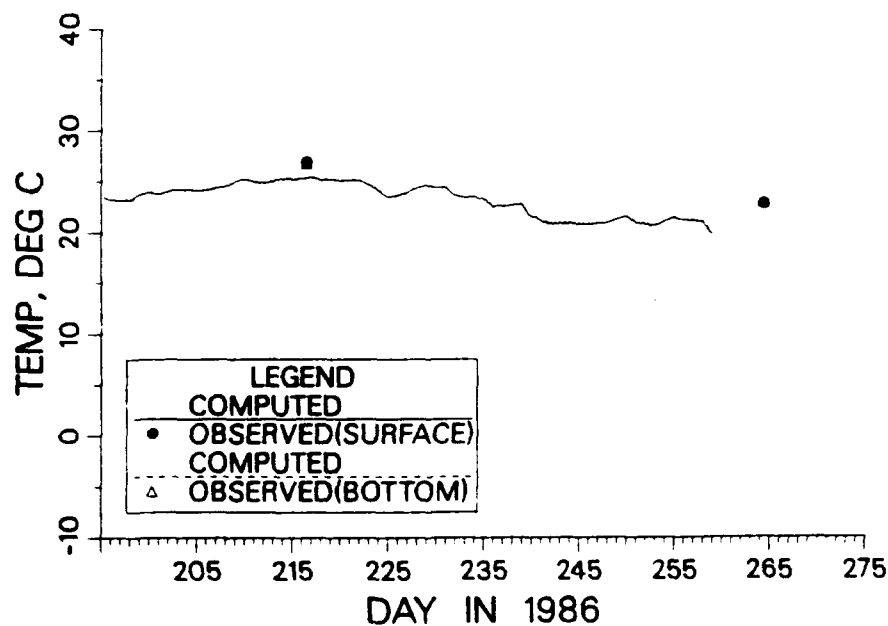
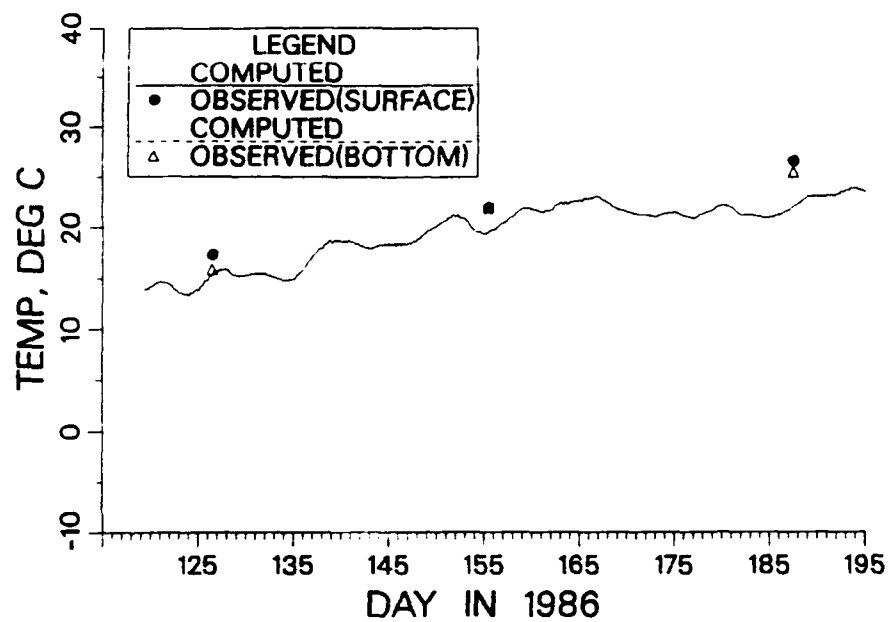


Figure C53. (Sheet 2 of 3)

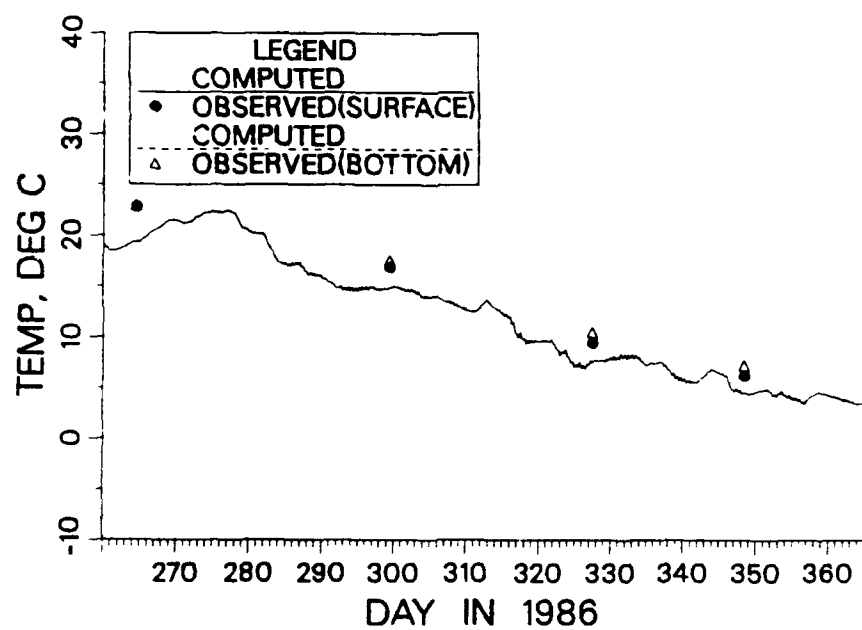


Figure C53. (Sheet 3 of 3)

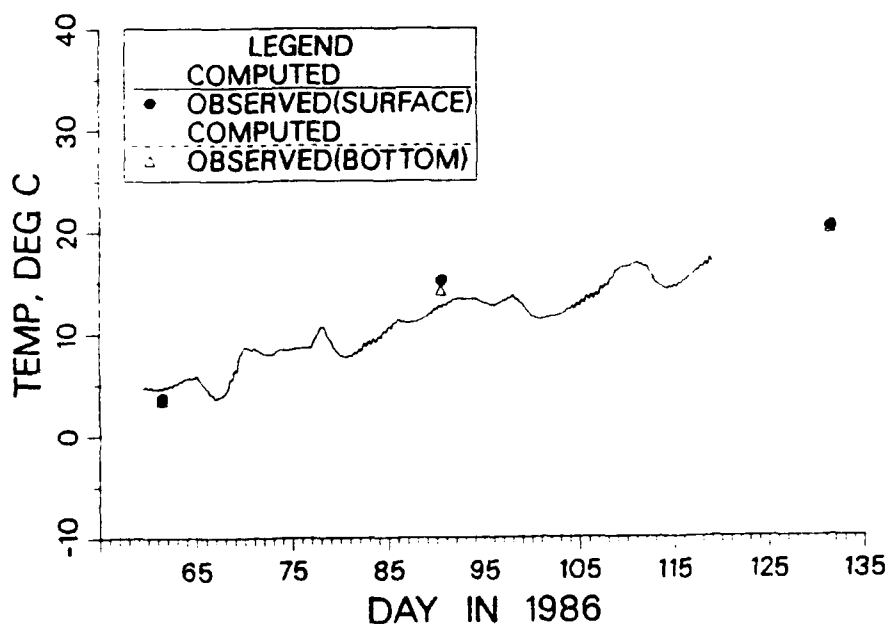
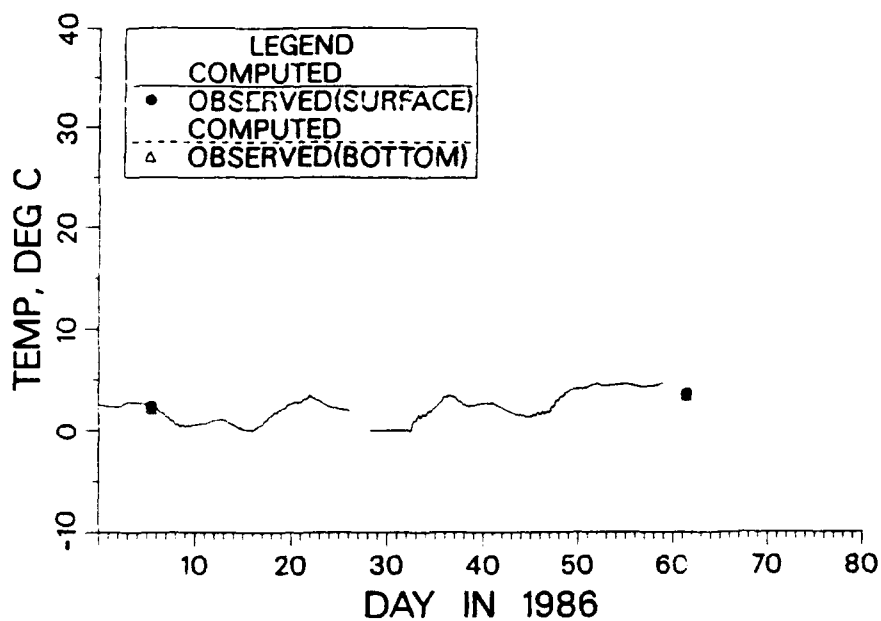


Figure C54. Comparison of computed and recorded temperature at sta XFB 247 during 1986 (Sheet 1 of 3)

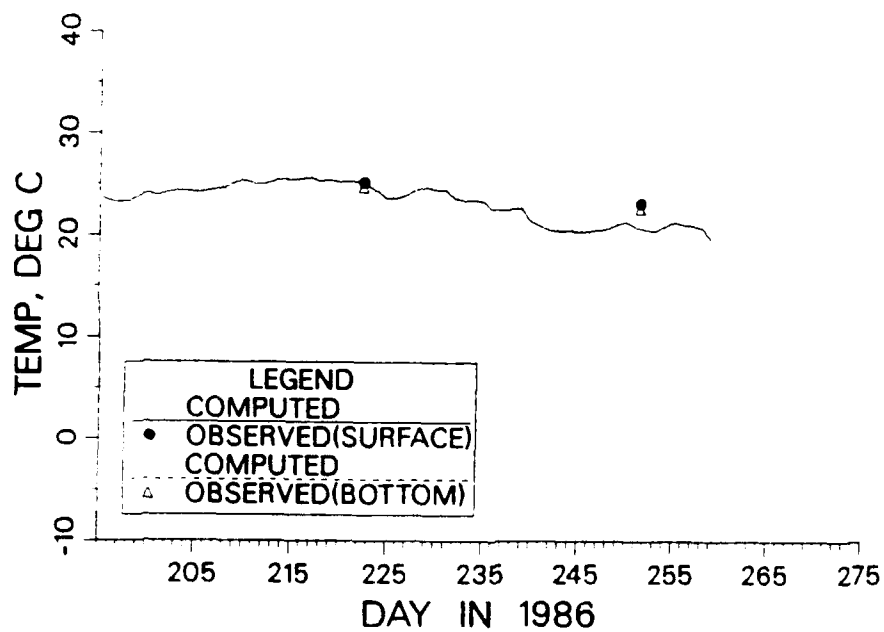
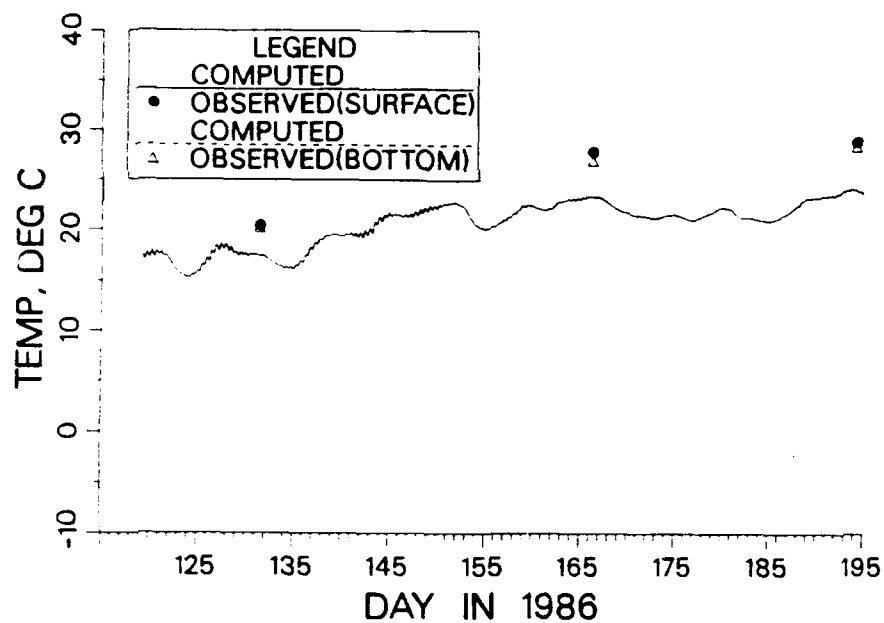


Figure C54. (Sheet 2 of 3)

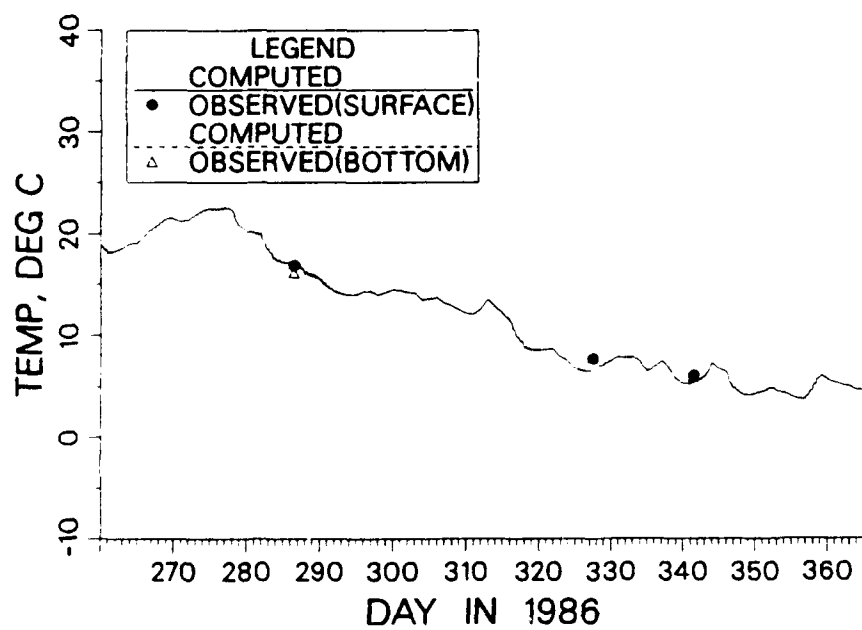


Figure C54. (Sheet 3 of 3)

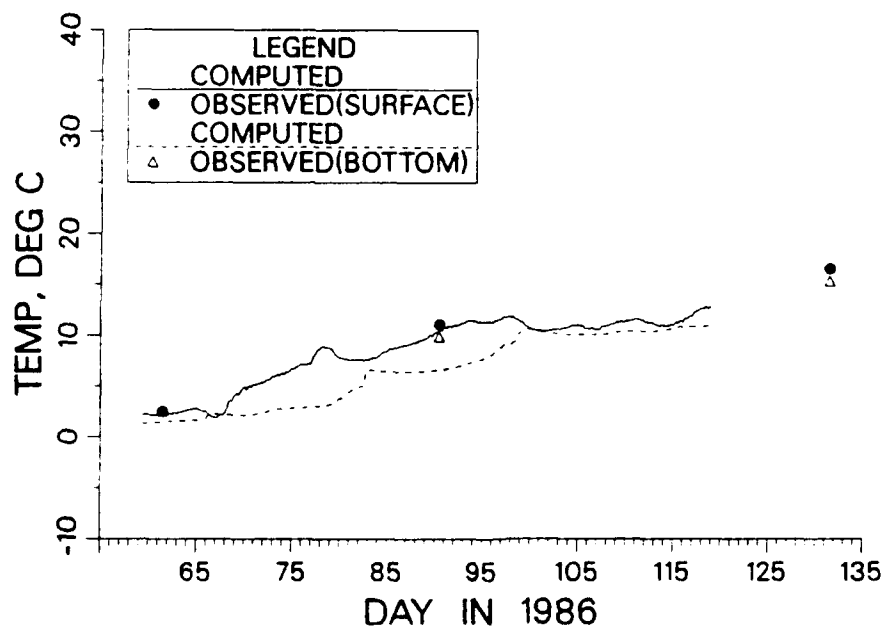
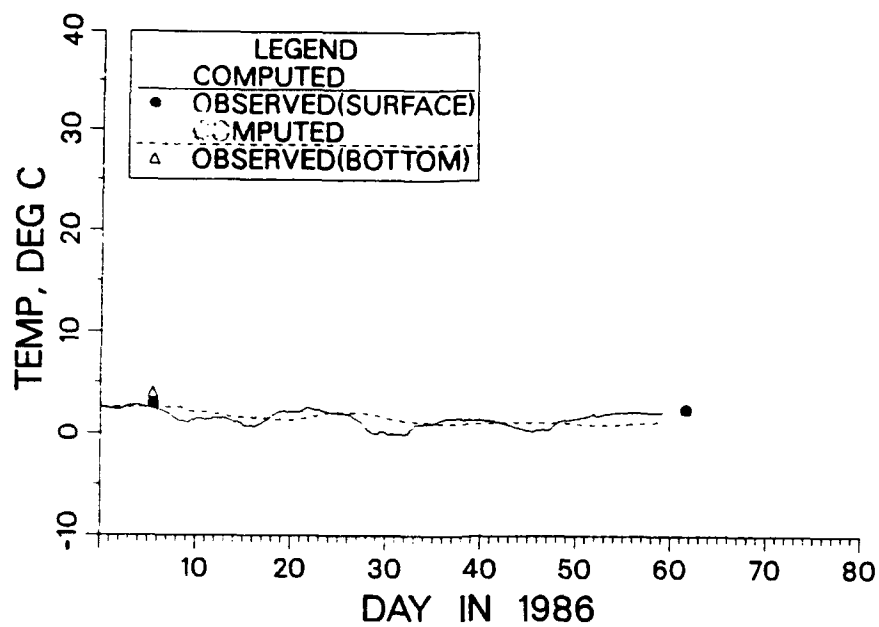


Figure C55. Comparison of computed and recorded temperature at sta RET 2.4 during 1986 (Sheet 1 of 3)

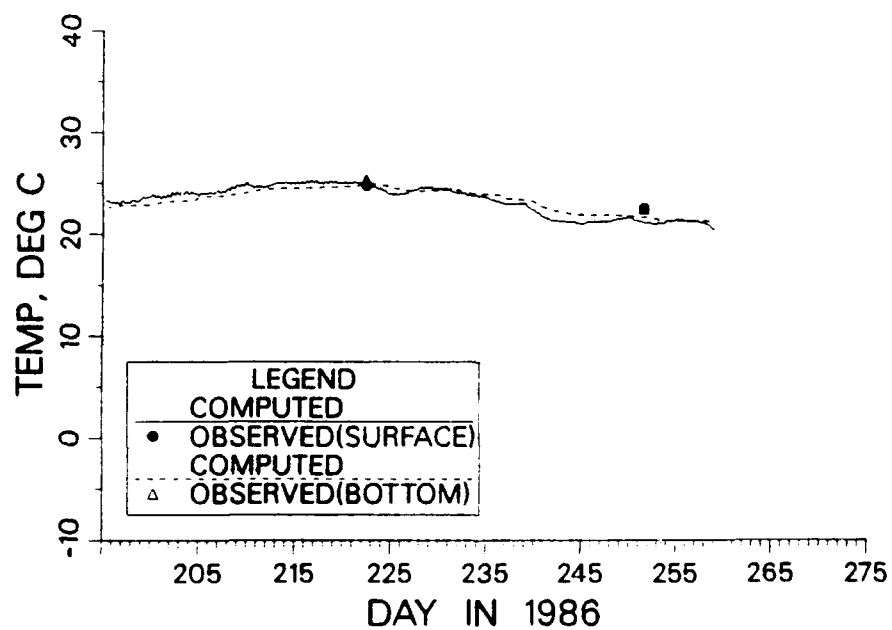
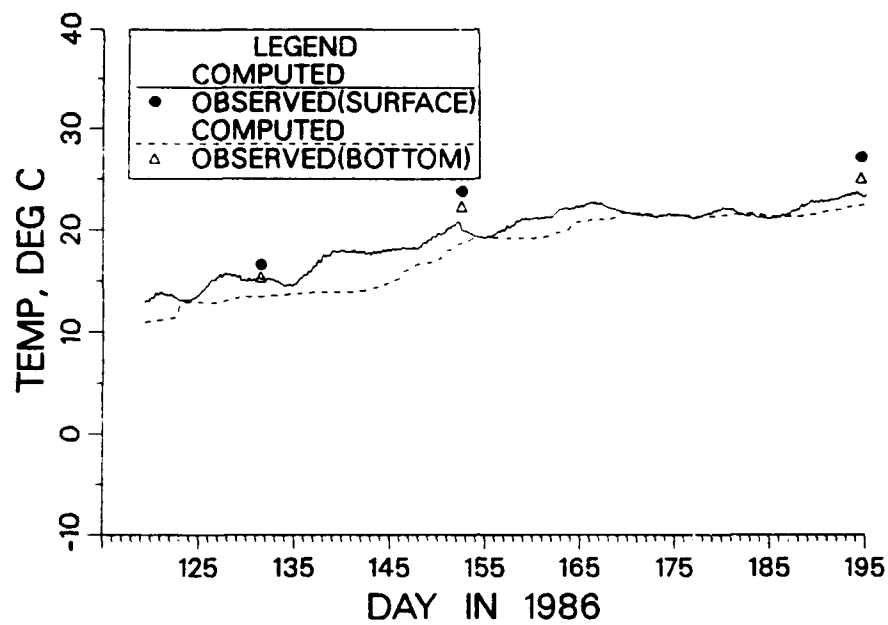


Figure C55. (Sheet 2 of 3)

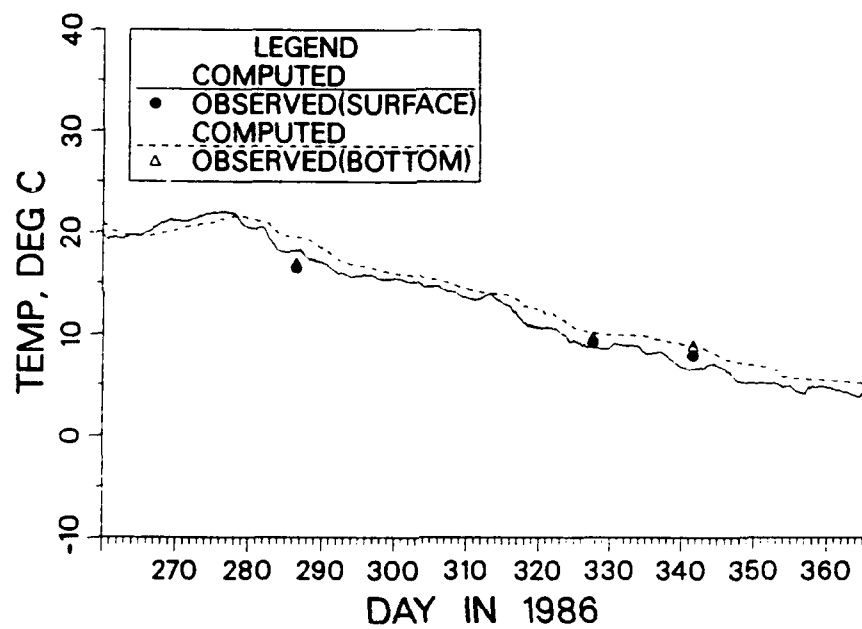


Figure C55. (Sheet 3 of 3)

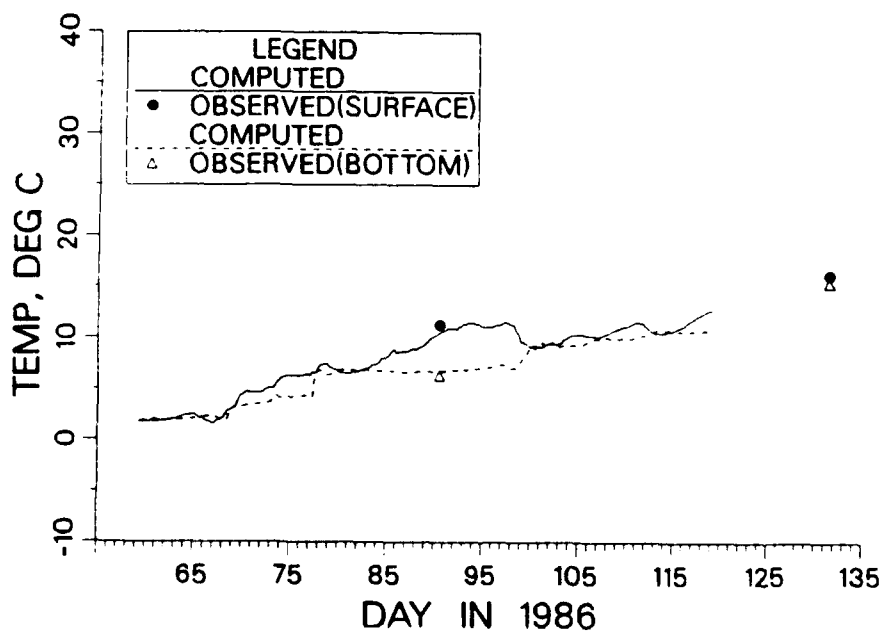
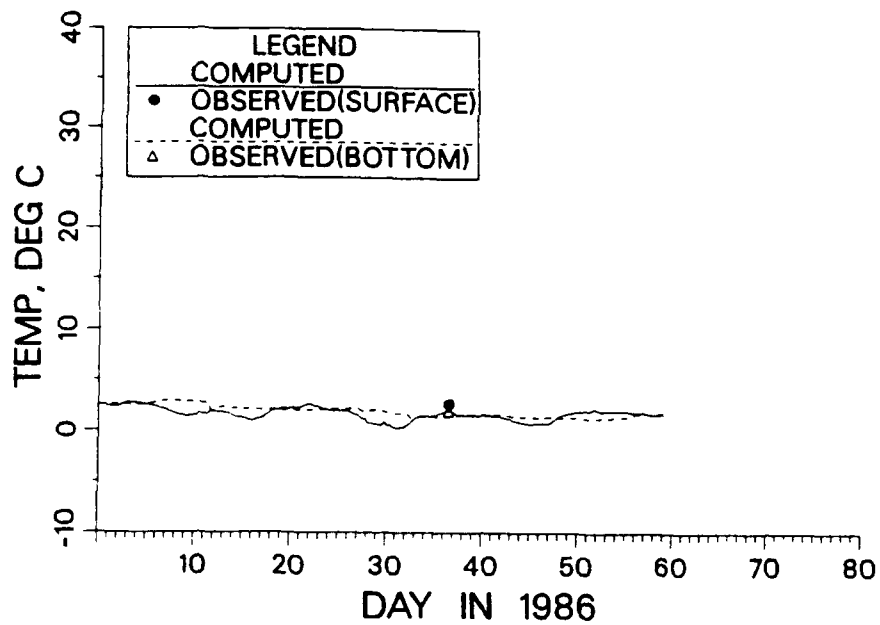


Figure C56. Comparison of computed and recorded temperature at sta LE 2.2 during 1986 (Sheet 1 of 3)

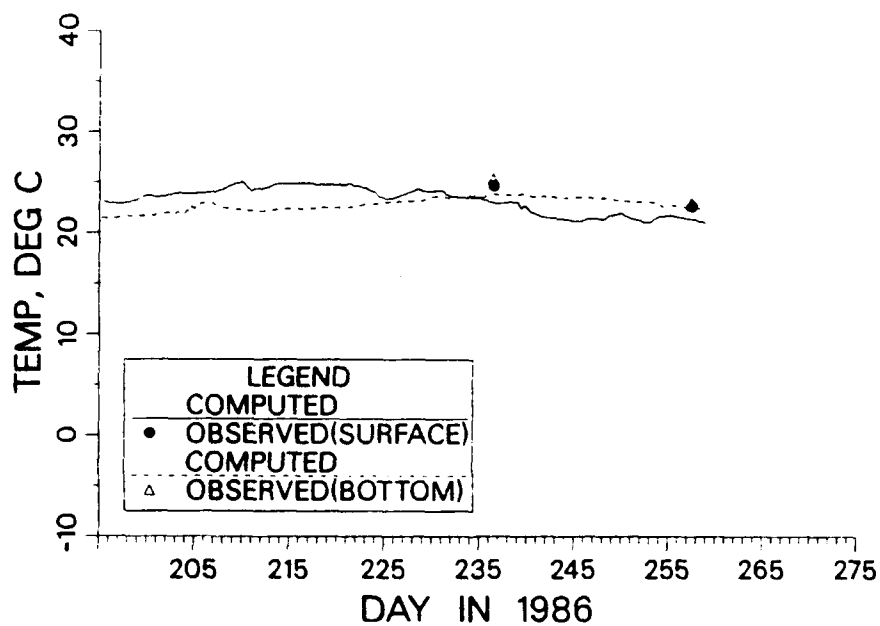
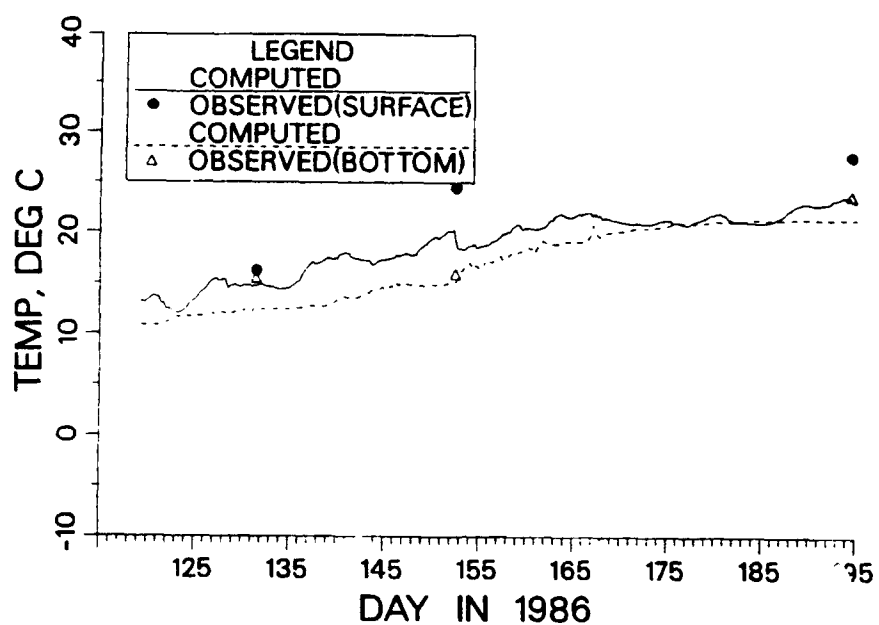


Figure C56. (Sheet 2 of 3)

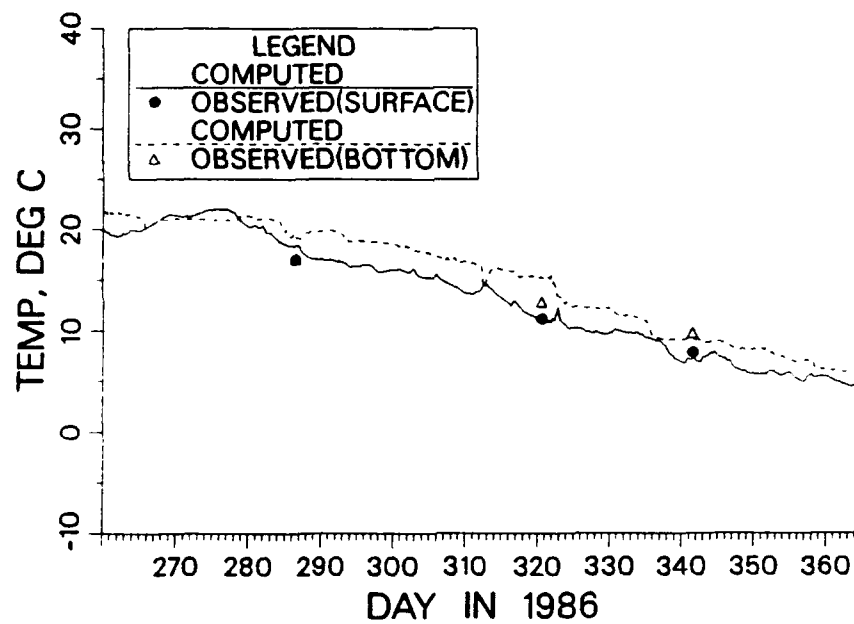


Figure C56. (Sheet 3 of 3)

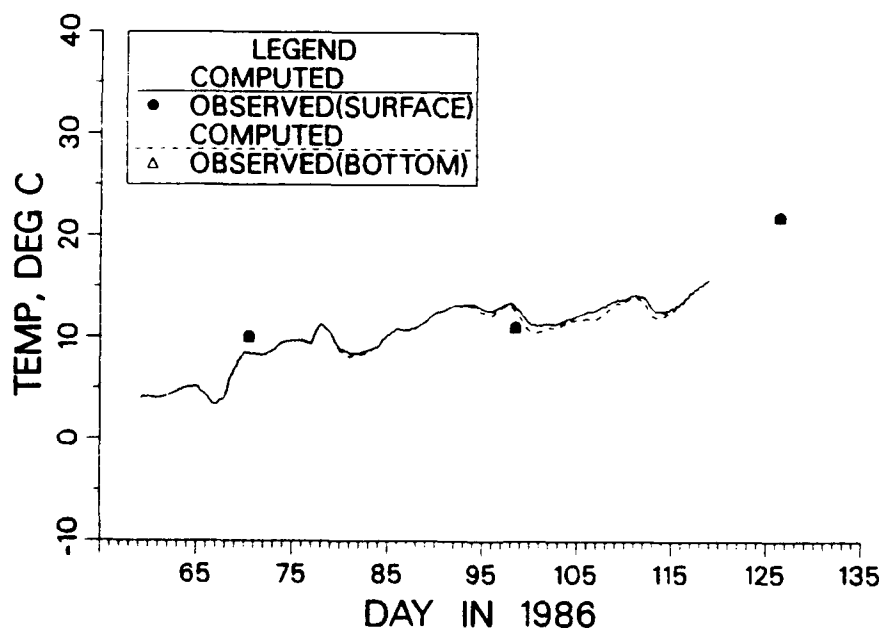
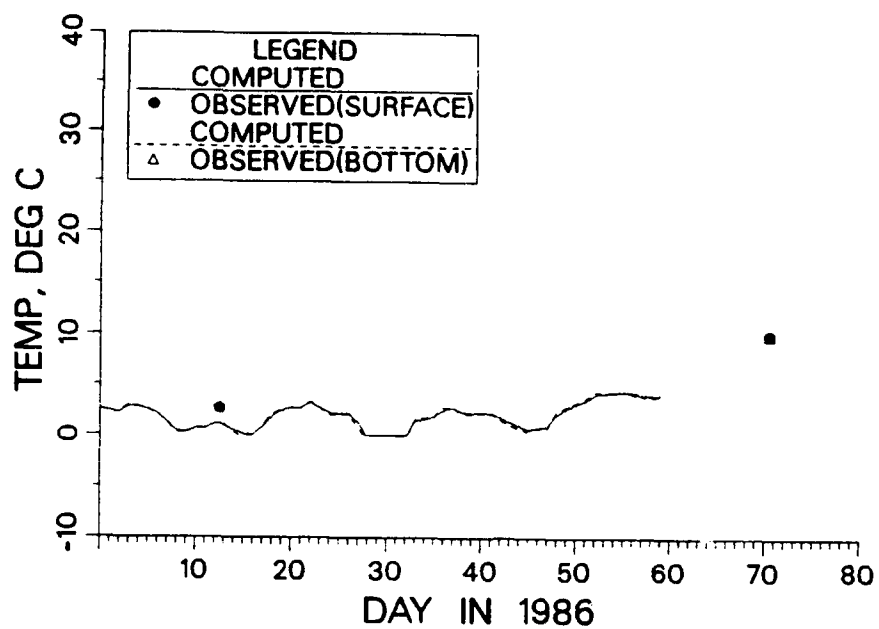


Figure C57. Comparison of computed and recorded temperature at sta TF 1.4 during 1986 (Sheet 1 of 3)

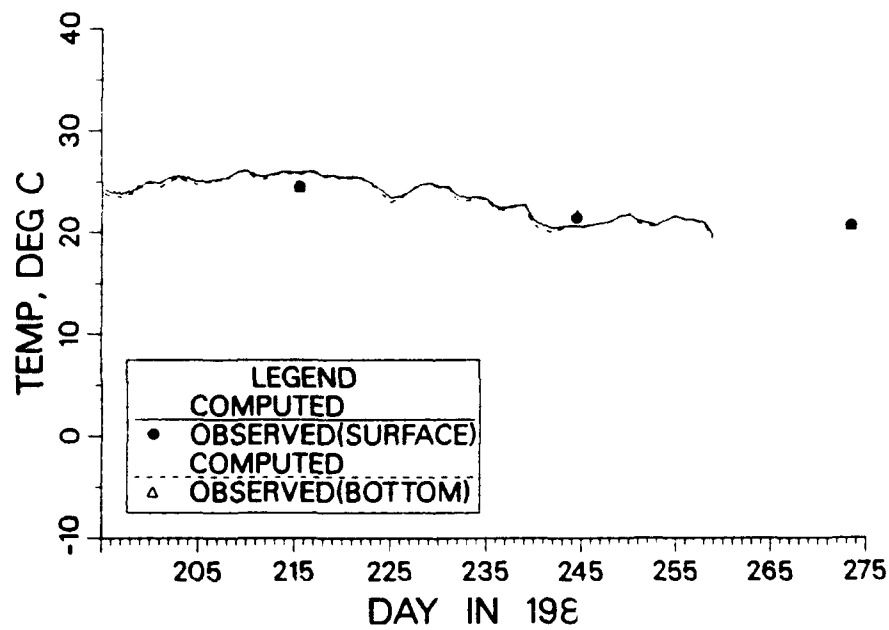
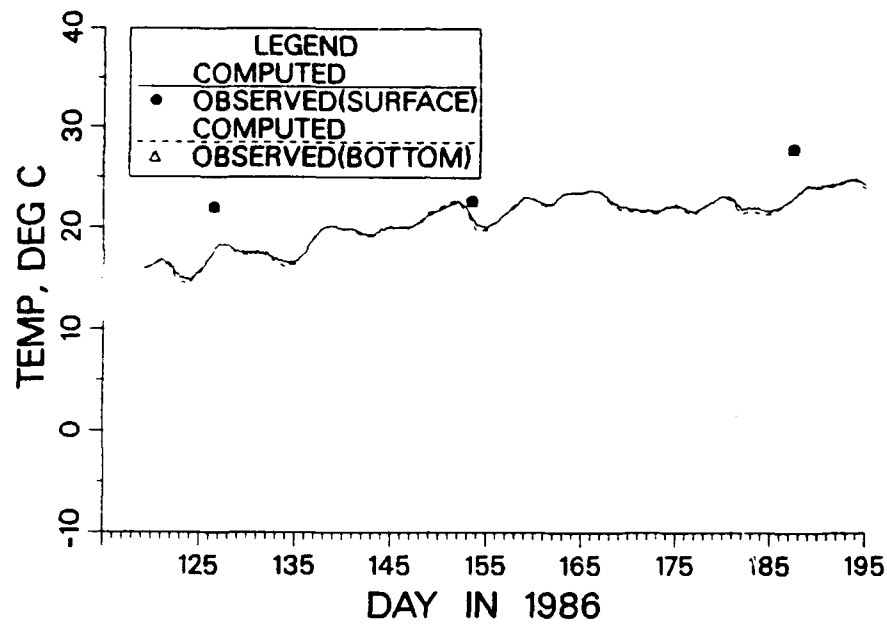


Figure C57. (Sheet 2 of 3)

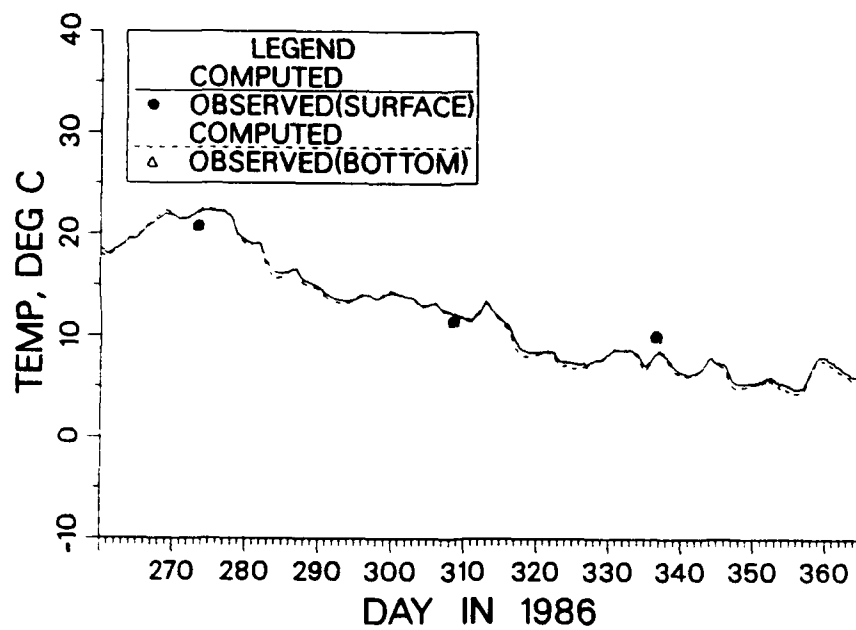


Figure C57. (Sheet 3 of 3)

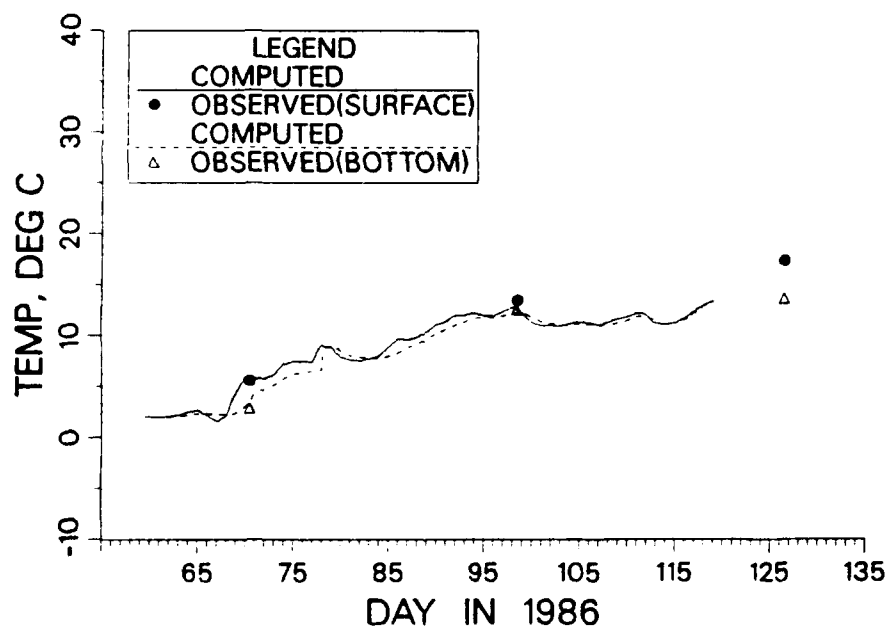
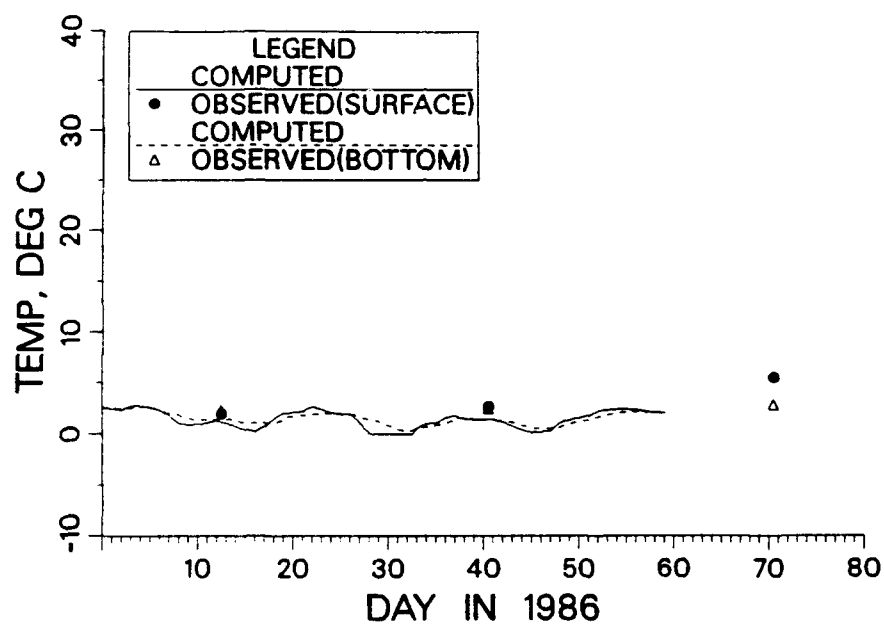


Figure C58. Comparison of computed and recorded temperature at sta LE 1.1 during 1986 (Sheet 1 of 3)

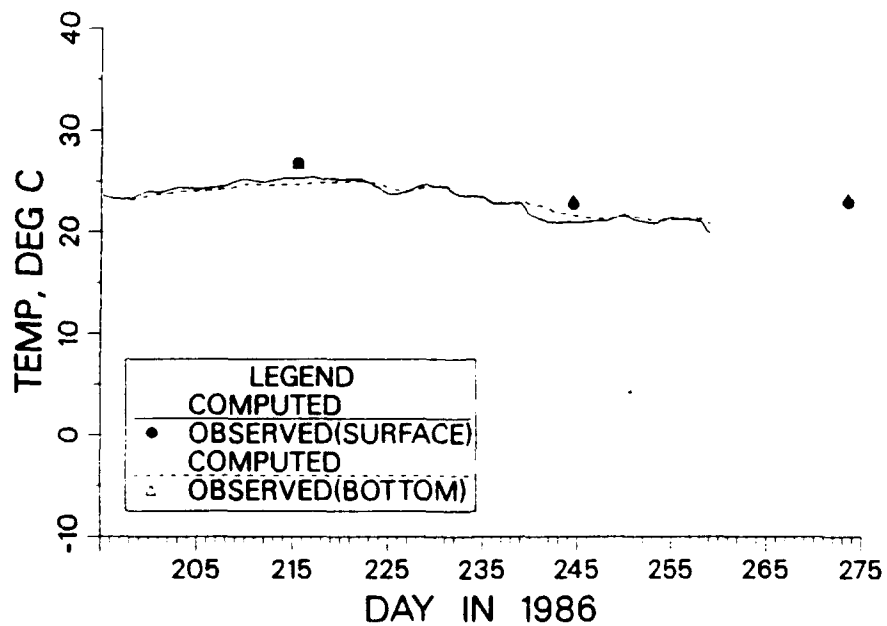
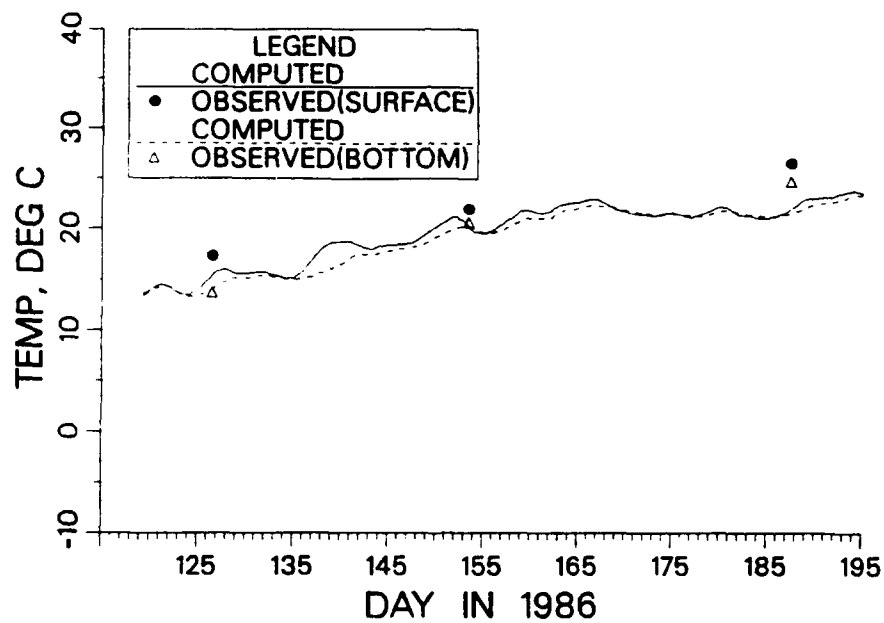


Figure C58. (Sheet 2 of 3)

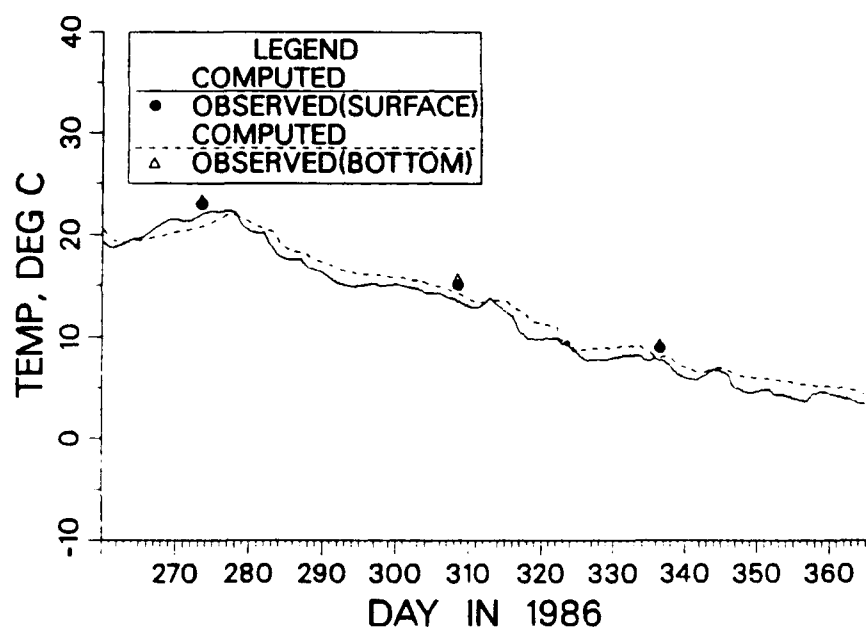


Figure C58. (Sheet 3 of 3)

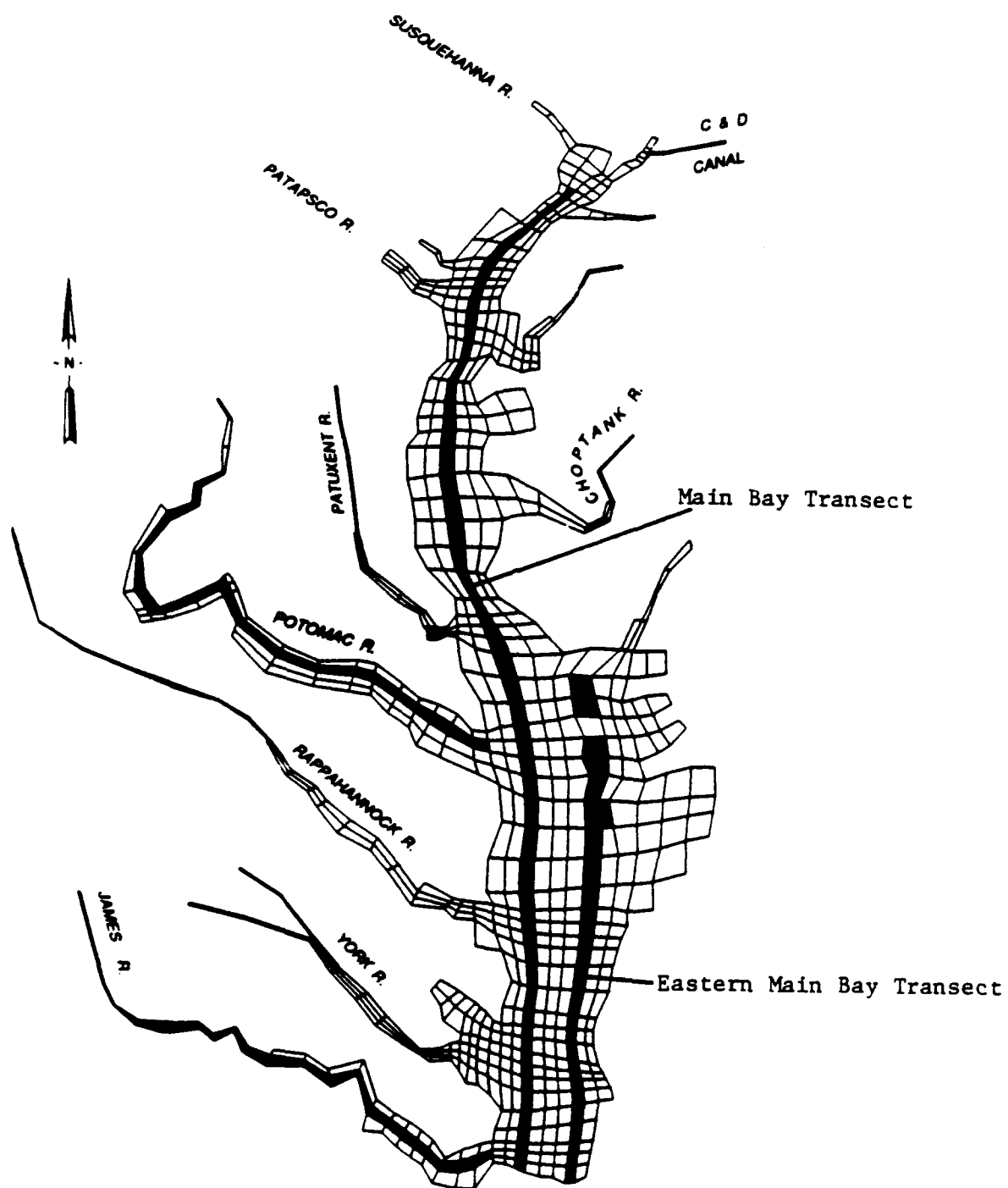


Figure C59. Location of seasonally averaged transects

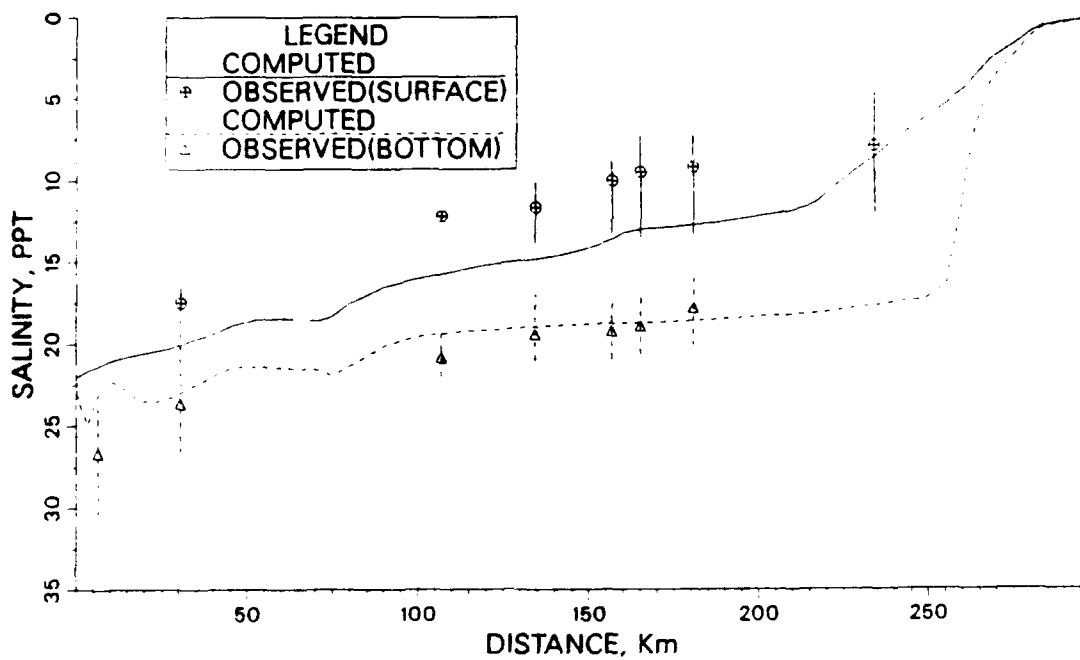
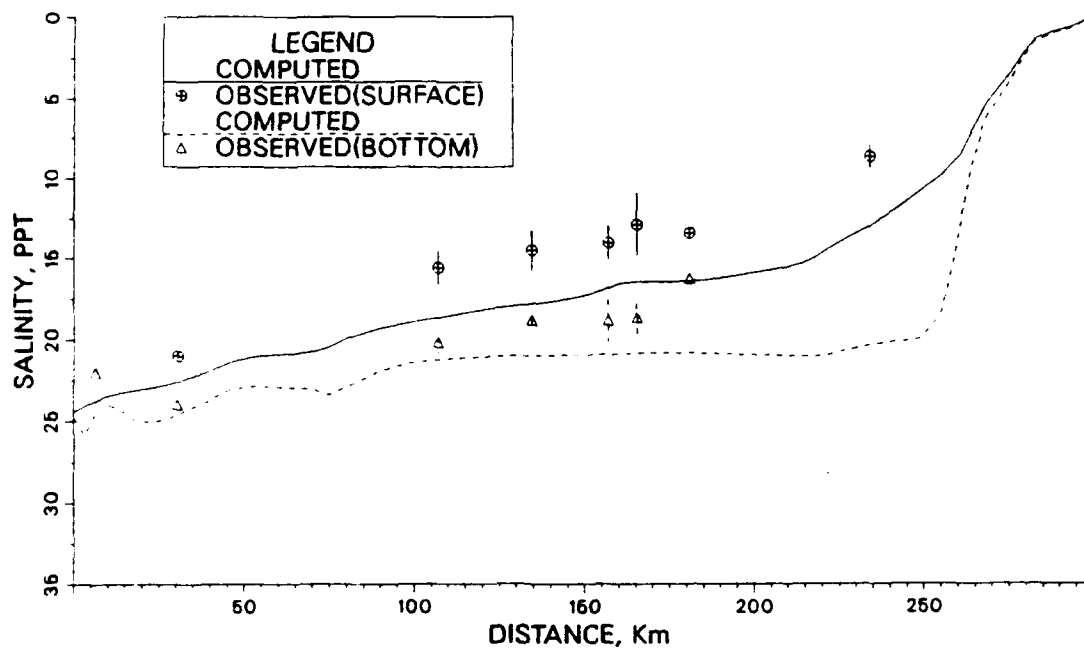
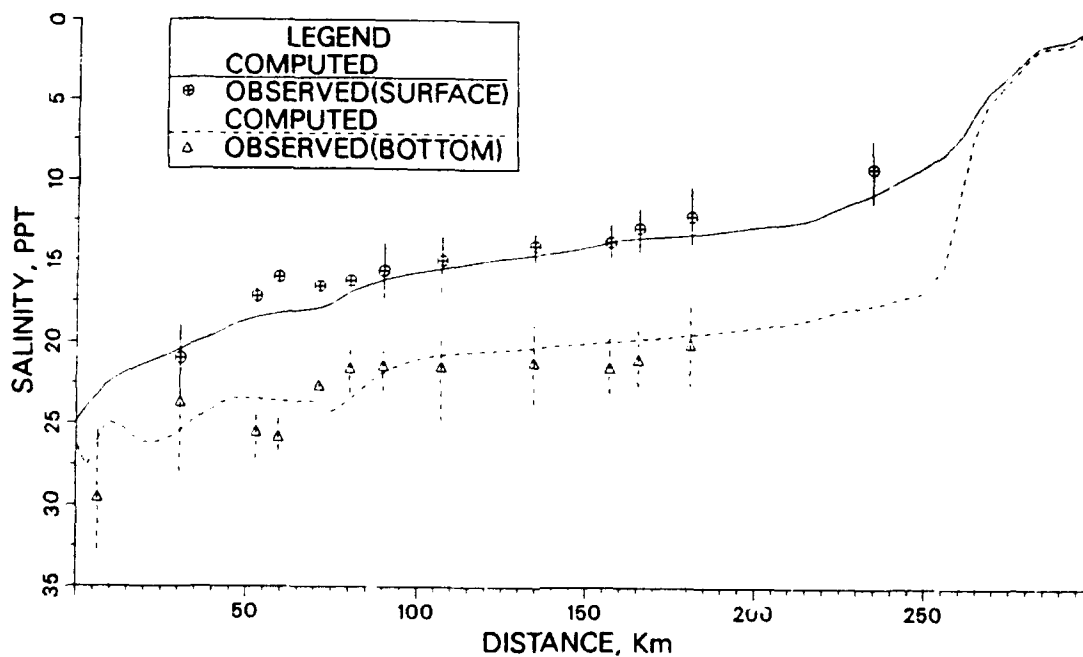
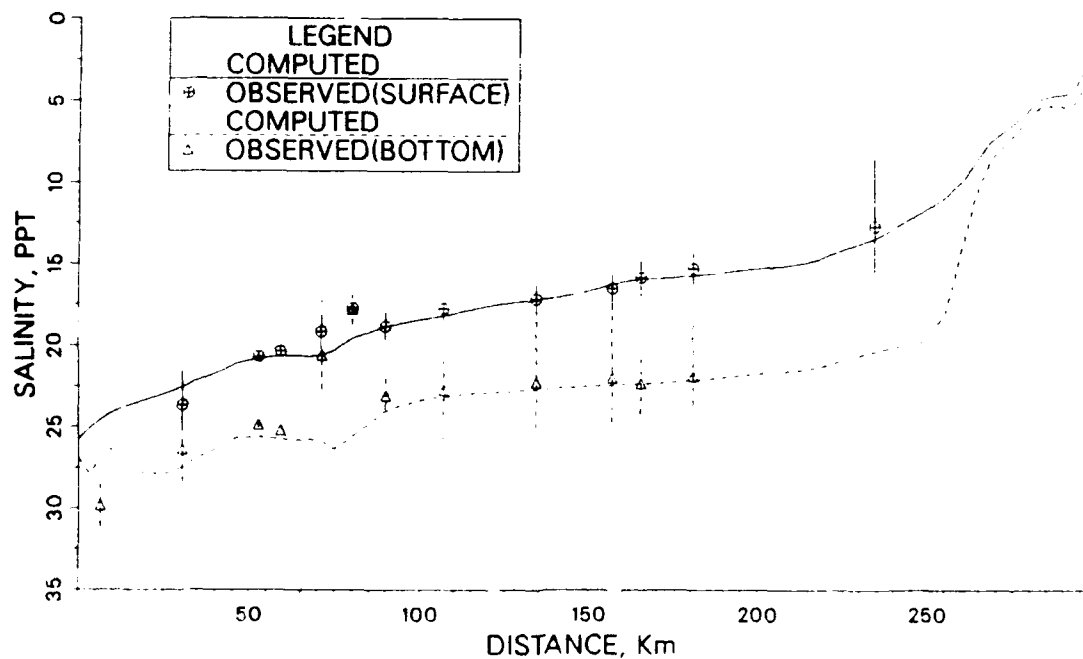


Figure C60. Comparison of seasonally averaged salinities along main bay transect during 1986 (Sheet 1 of 3)

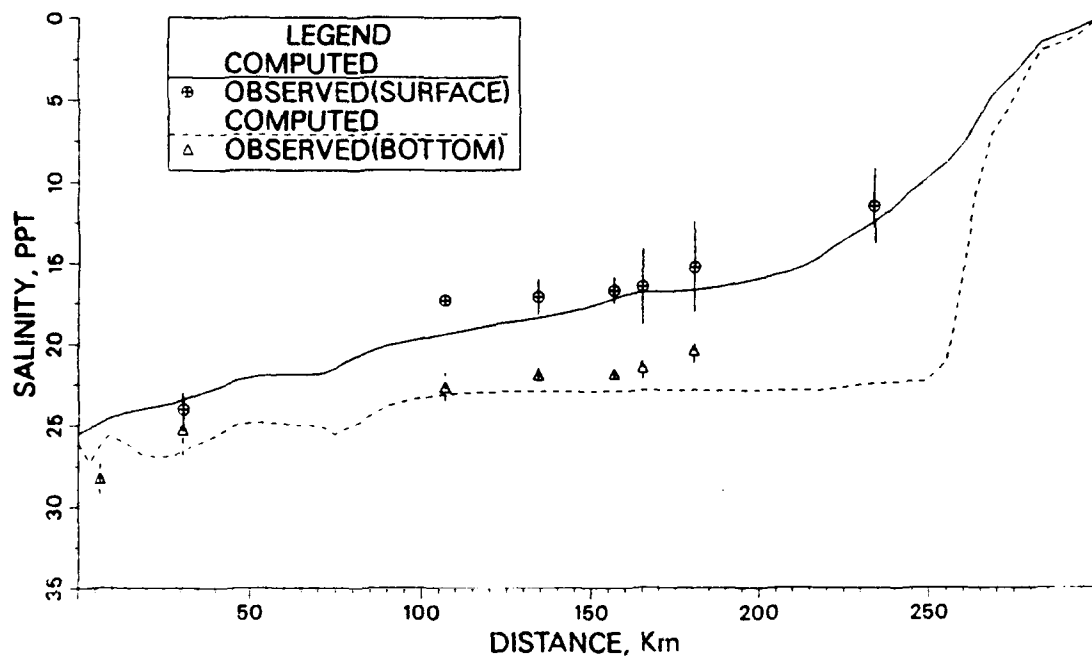


c. Season 3



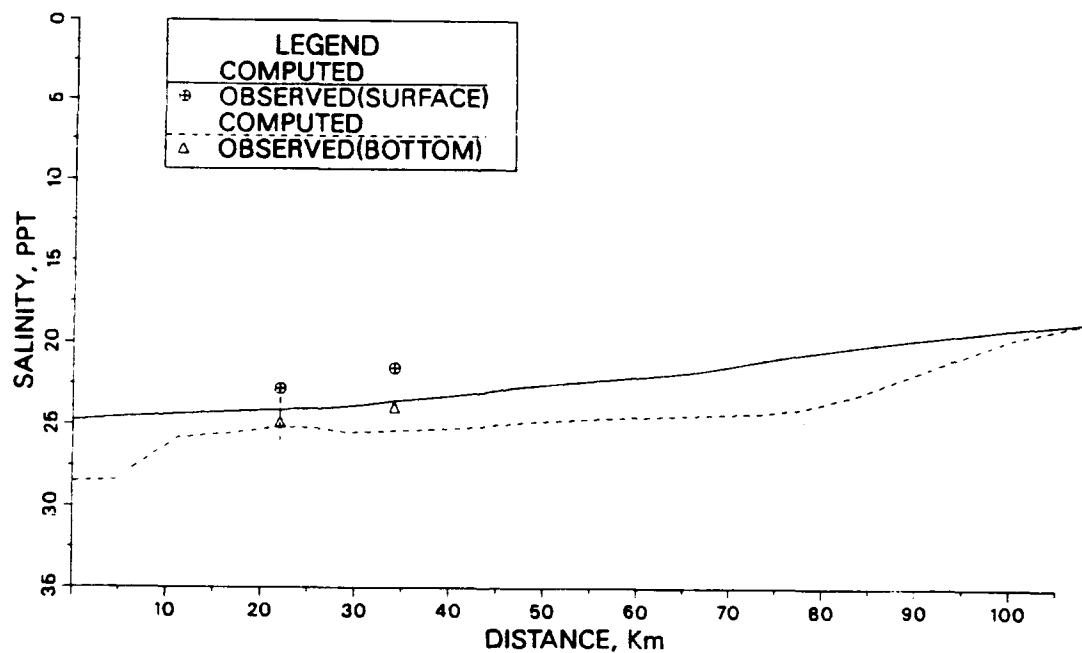
d. Season 4

Figure C60. (Sheet 2 of 3)

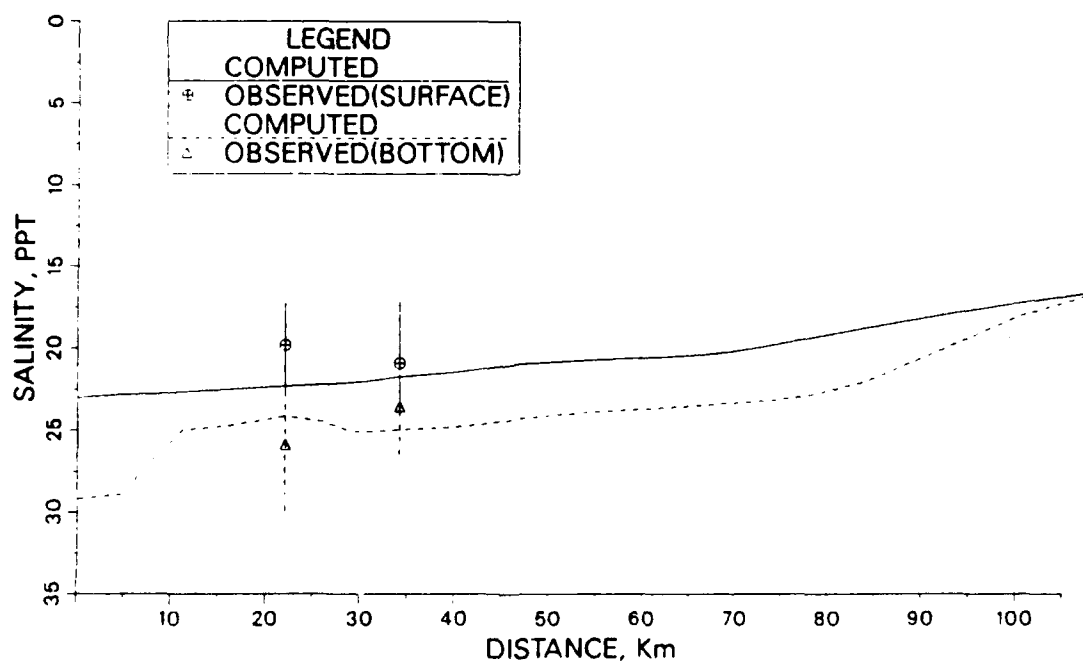


e. Season 5

Figure C60. (Sheet 3 of 3)

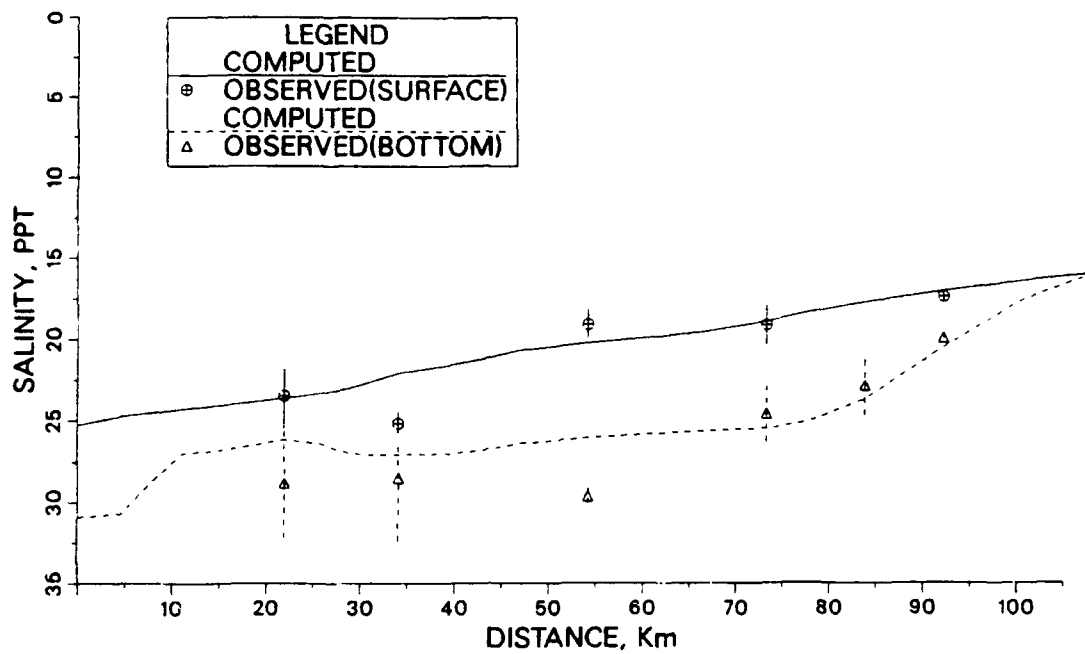


a. Season 1

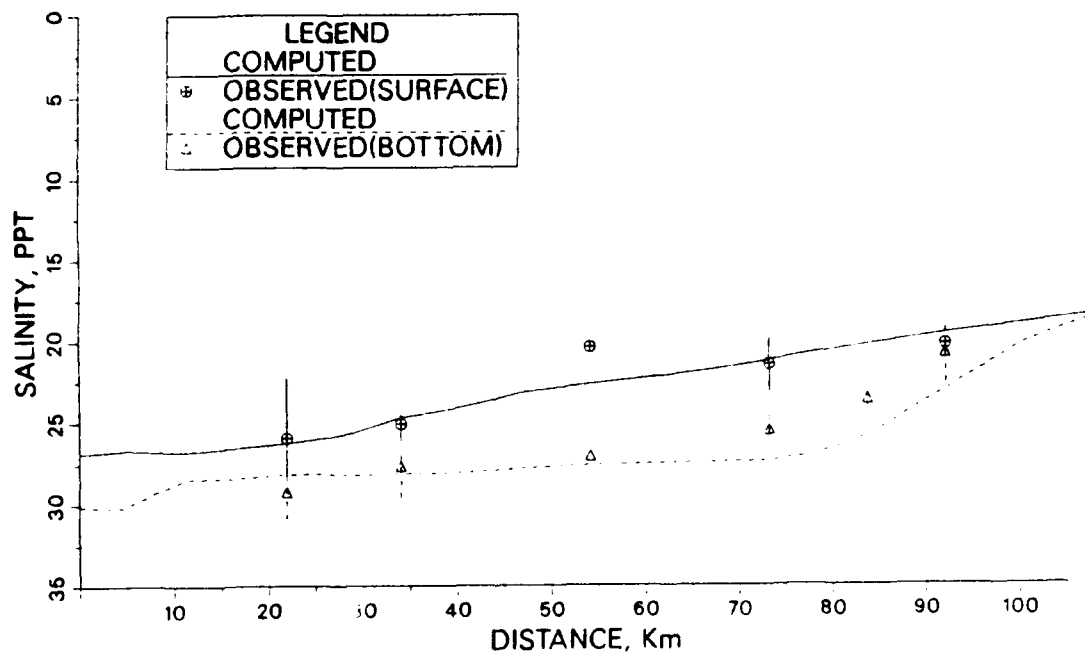


b. Season 2

Figure C61. Comparison of seasonally averaged salinities along eastern main bay transect during 1986 (Sheet 1 of 3)

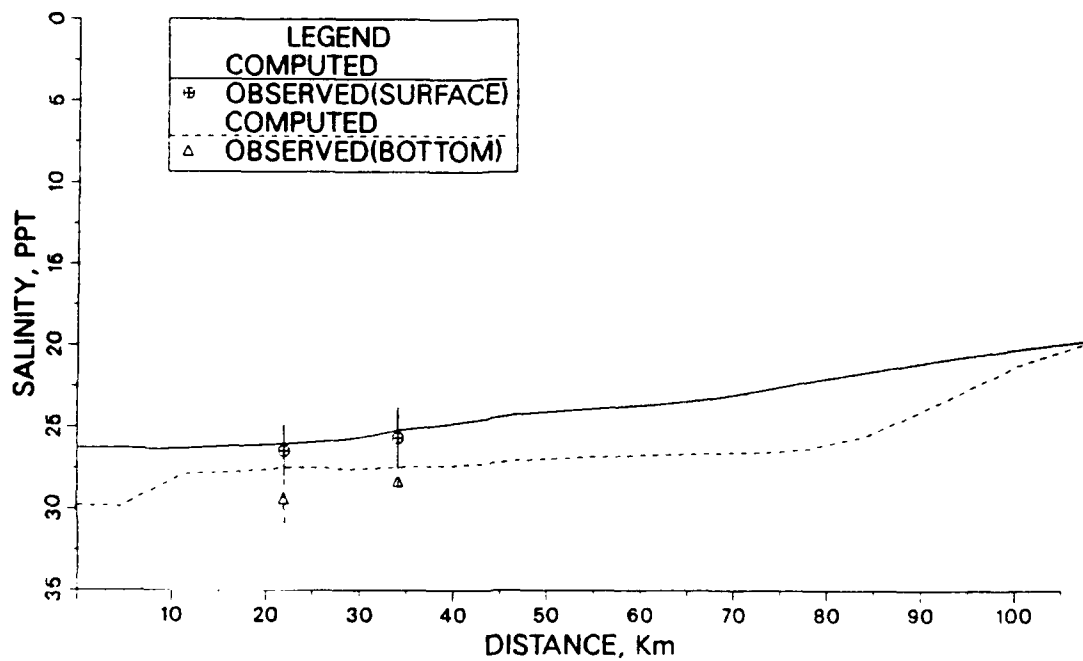


c. Season 3



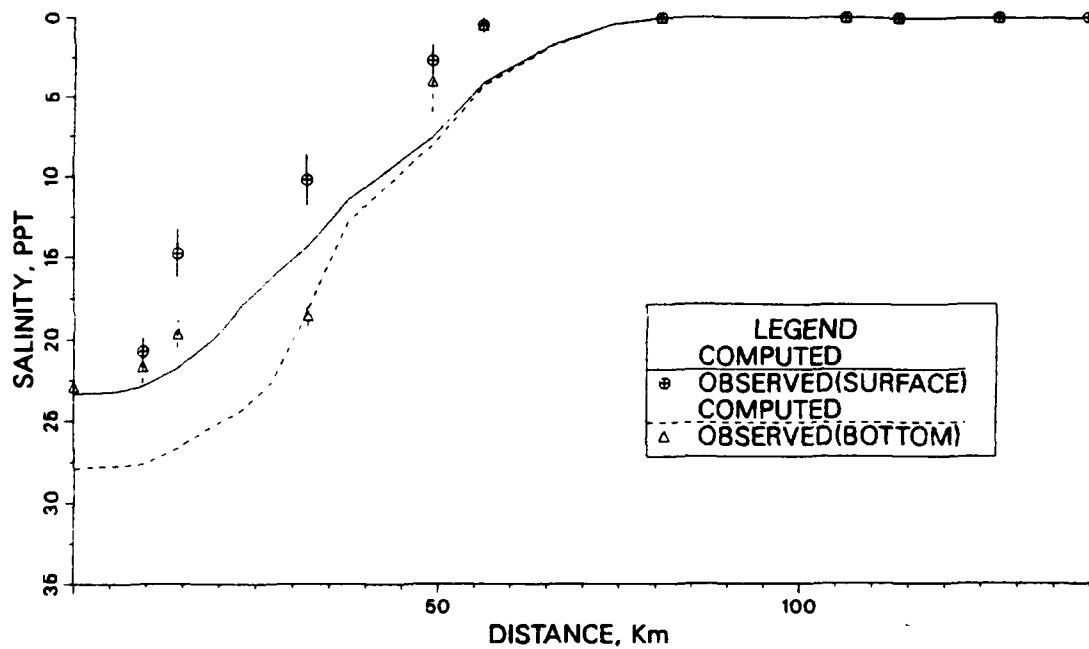
d. Season 4

Figure C61. (Sheet 2 of 3)

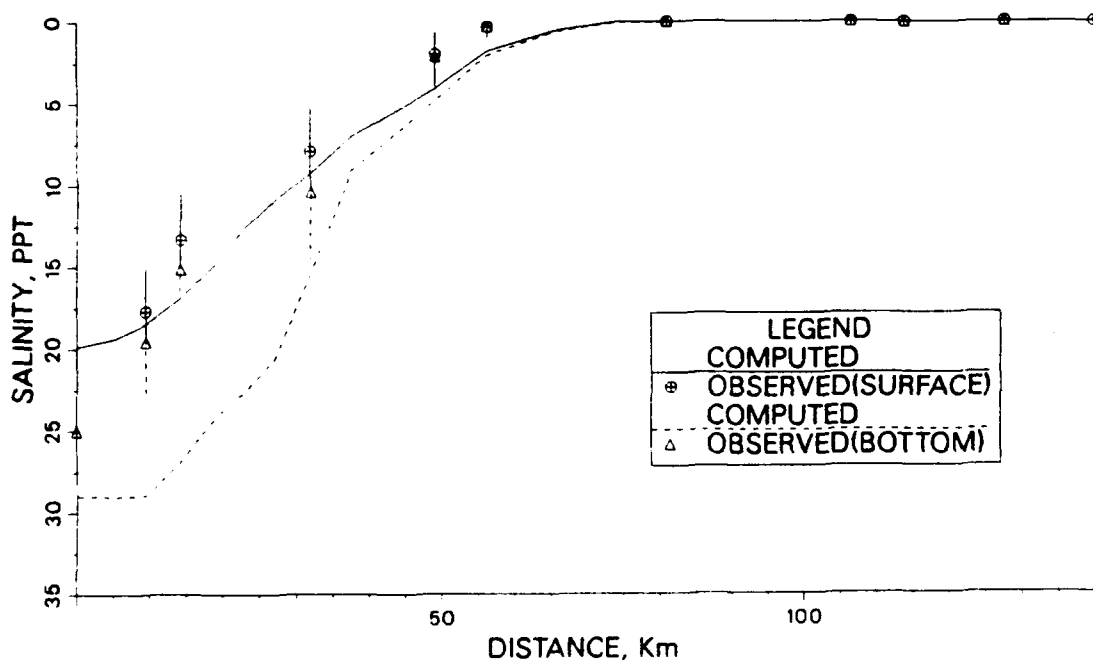


e. Season 5

Figure C61. (Sheet 3 of 3)

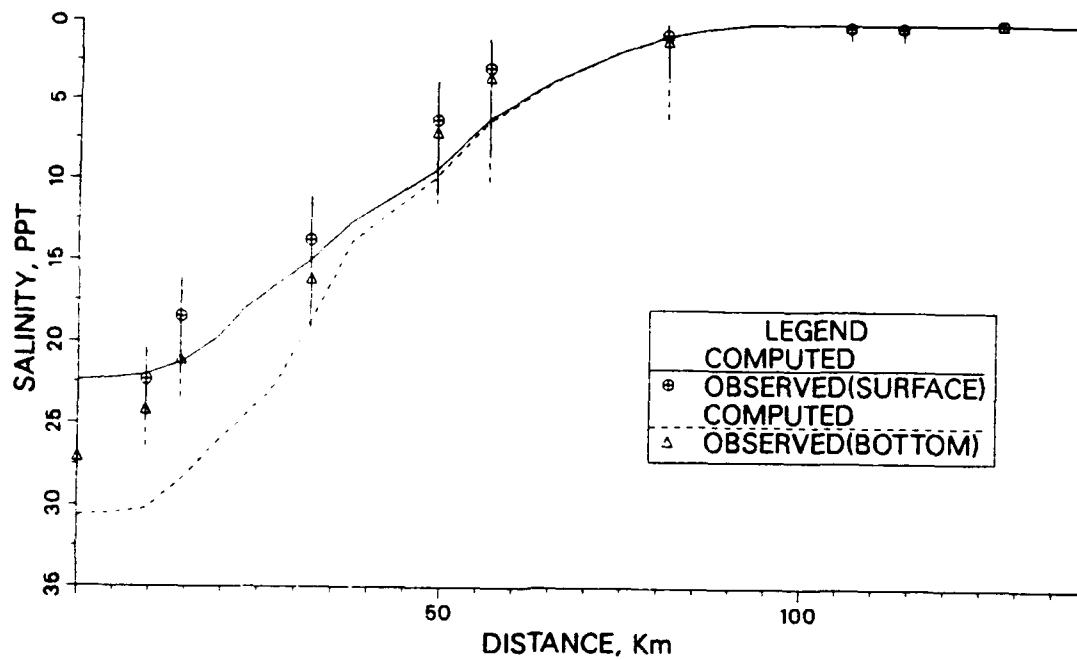


a. Season 1

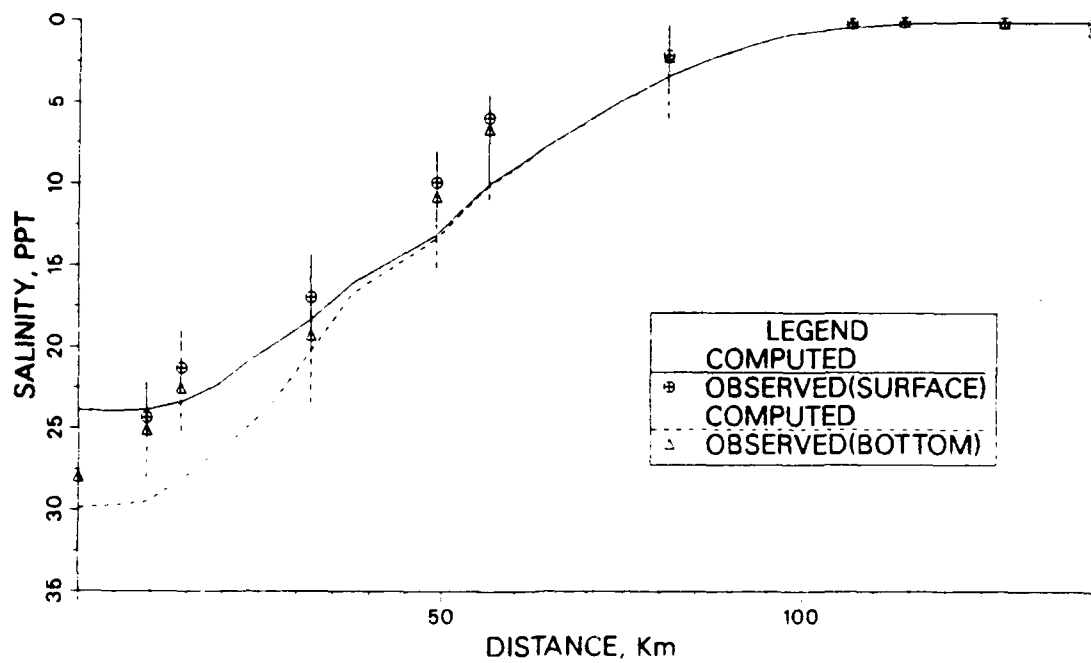


b. Season 2

Figure C62. Comparison of seasonally averaged salinities along James River during 1986 (Sheet 1 of 3)

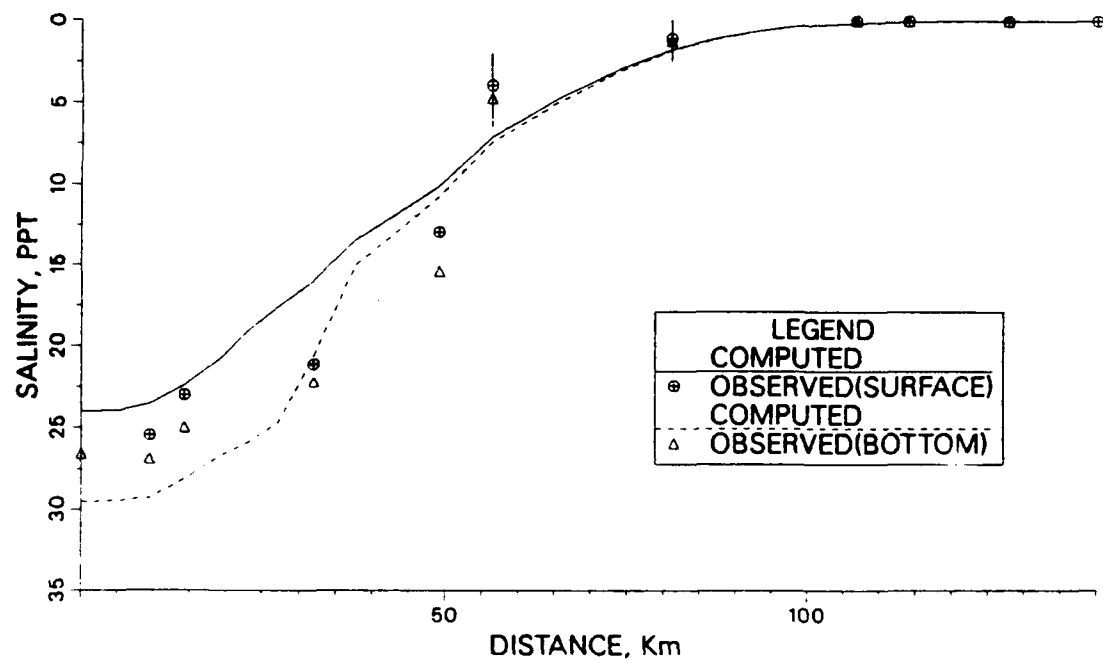


c. Season 3



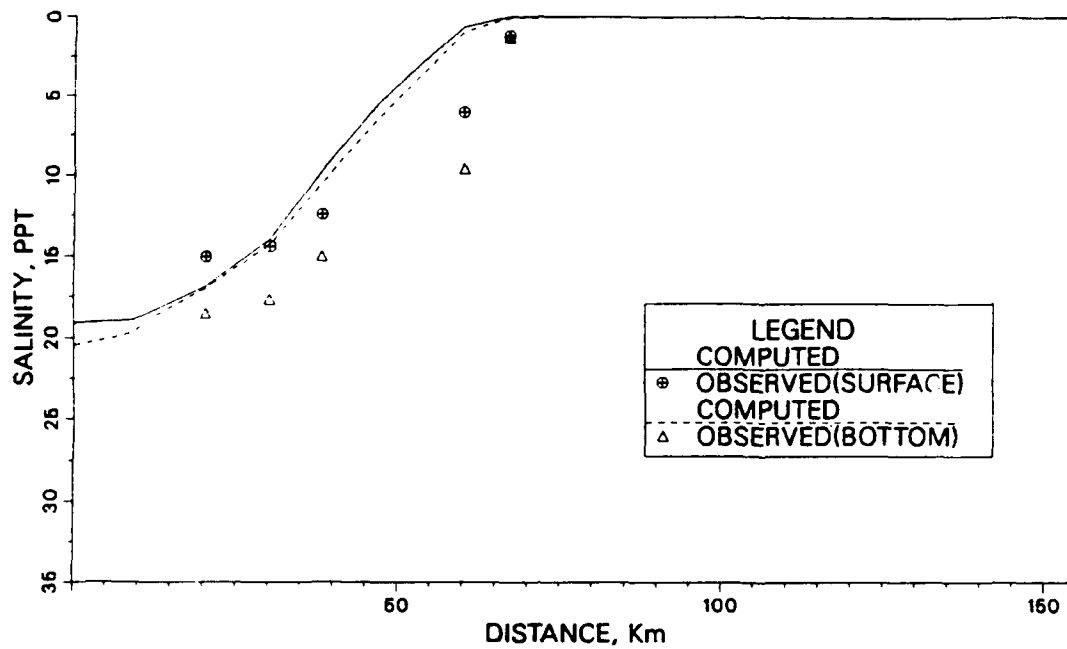
d. Season 4

Figure C62. (Sheet 2 of 3)

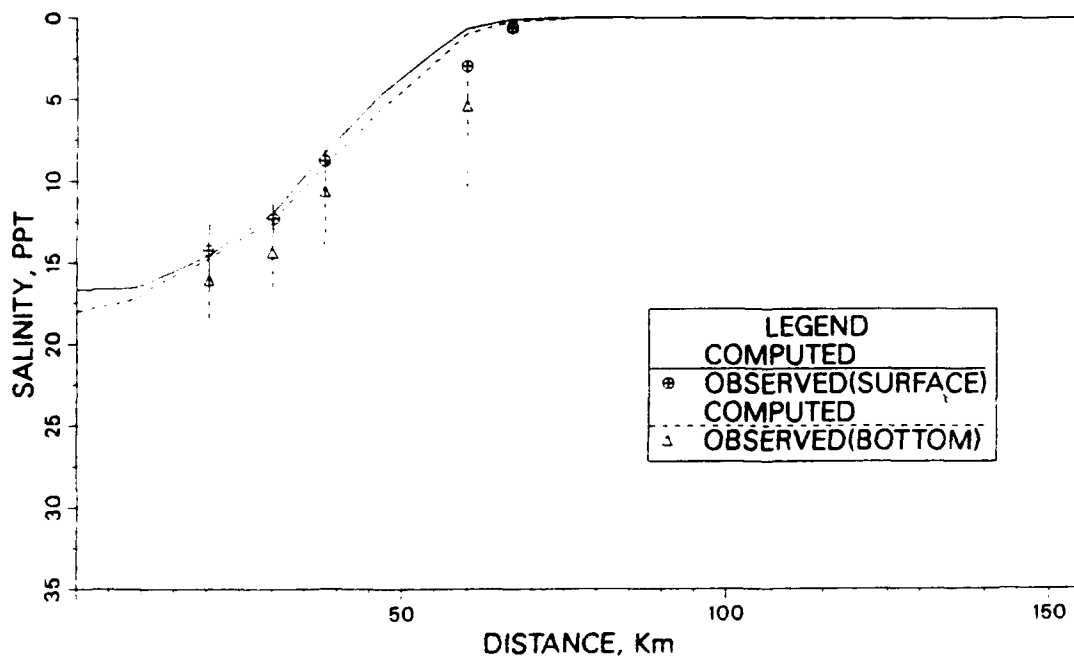


e. Season 5

Figure C62. (Sheet 3 of 3)

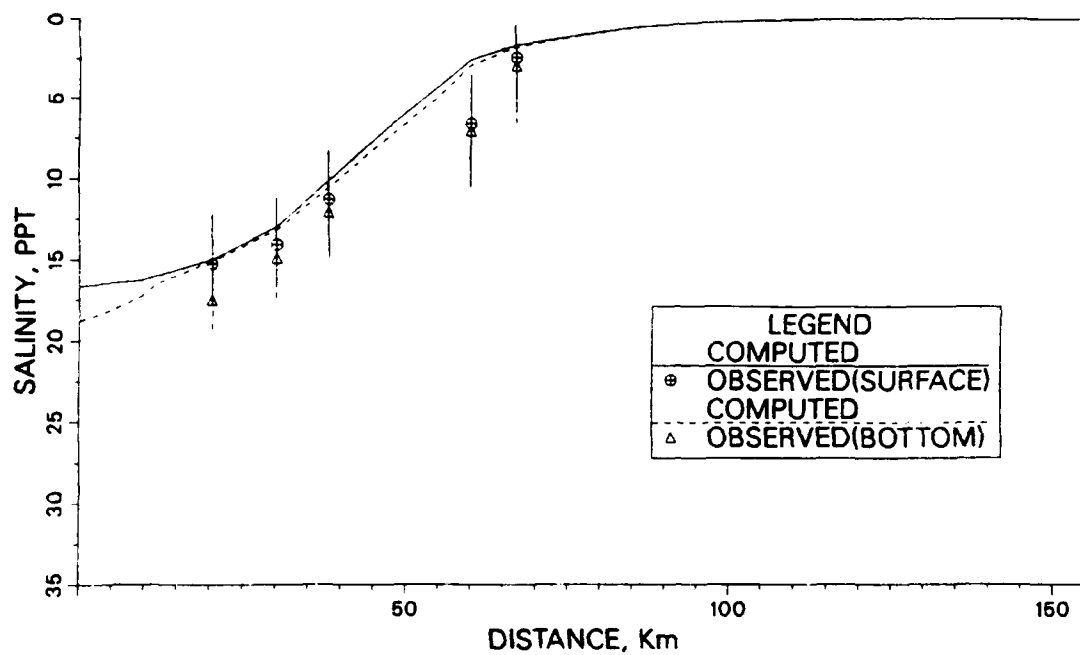


a. Season 1

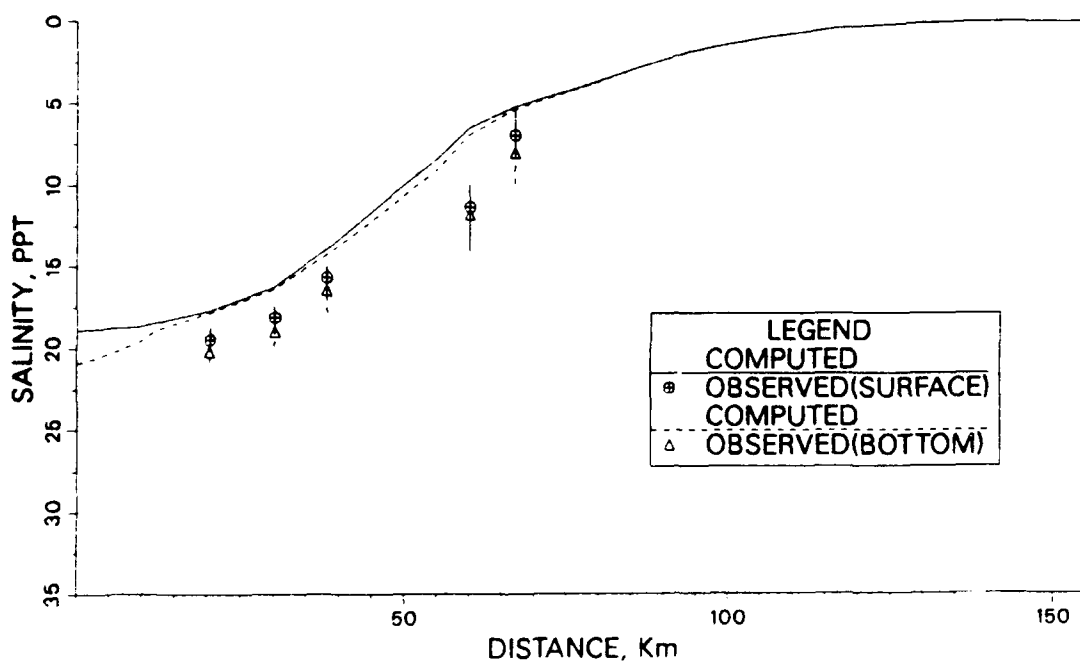


b. Season 2

Figure C63. Comparison of seasonally averaged salinities along Rappahannock River during 1986 (Sheet 1 of 3)

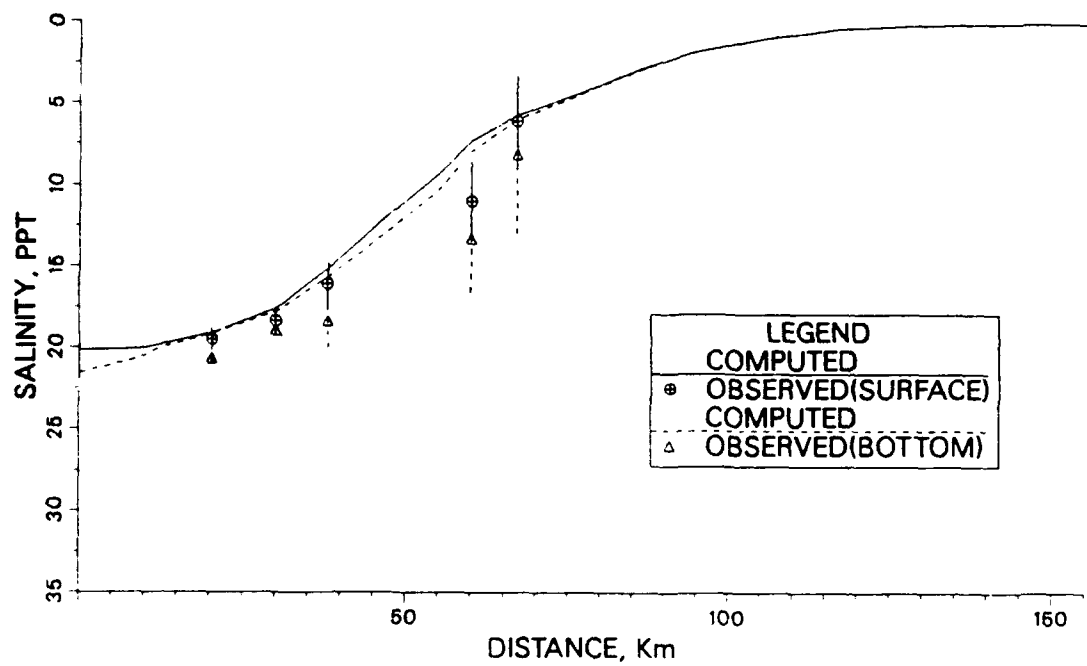


c. Season 3



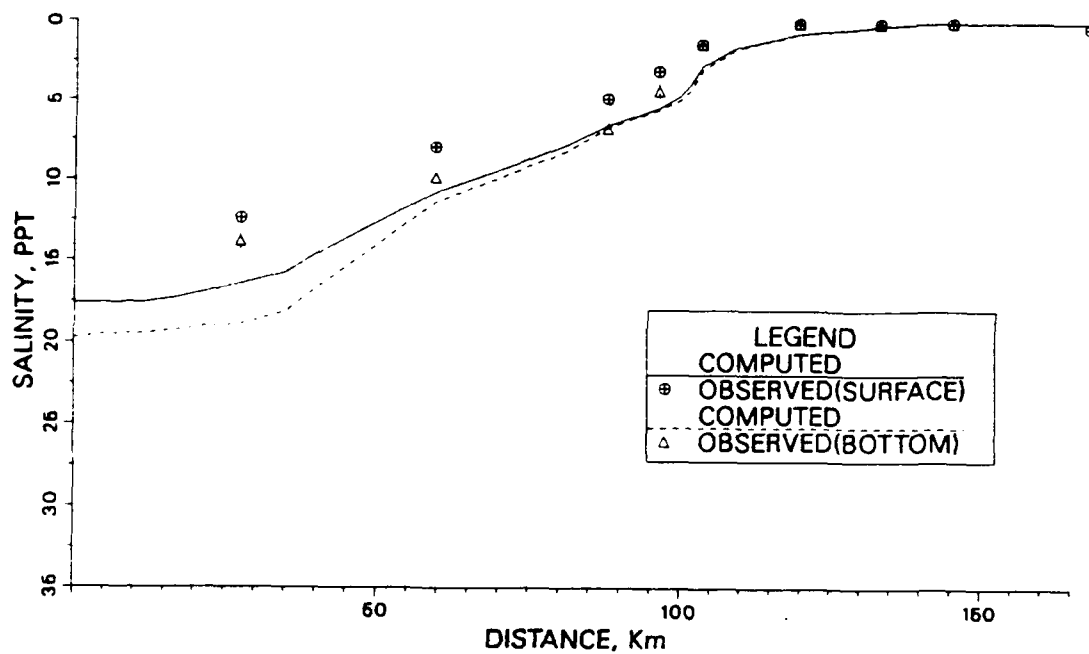
d. Season 4

Figure C63. (Sheet 2 of 3)

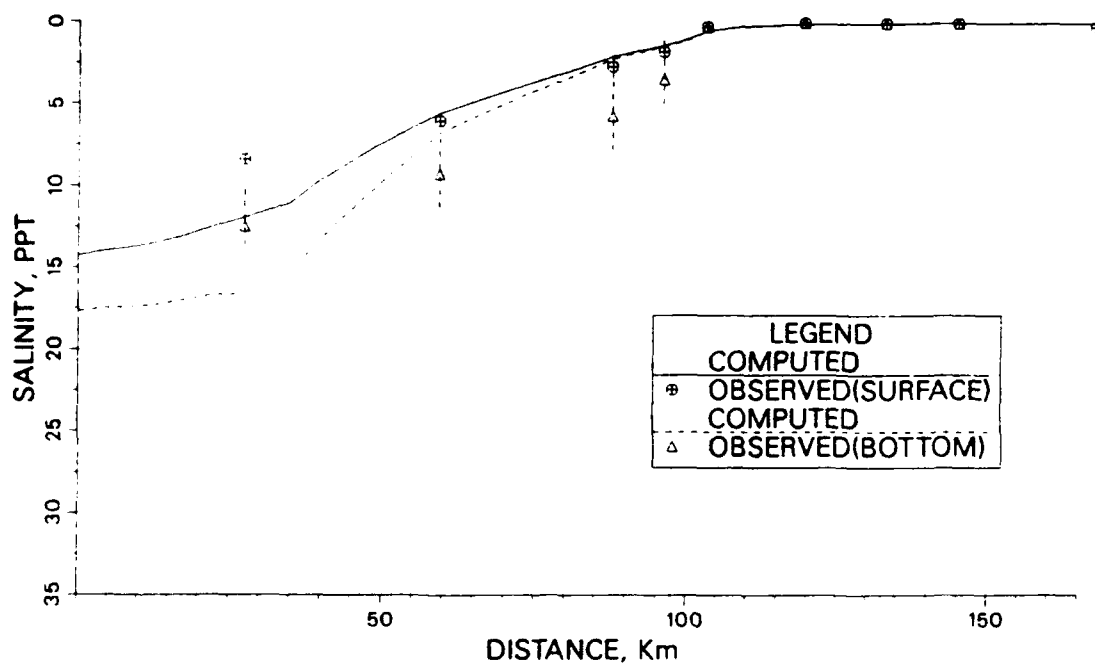


Season 5

Figure C63. (Sheet 3 of 3)

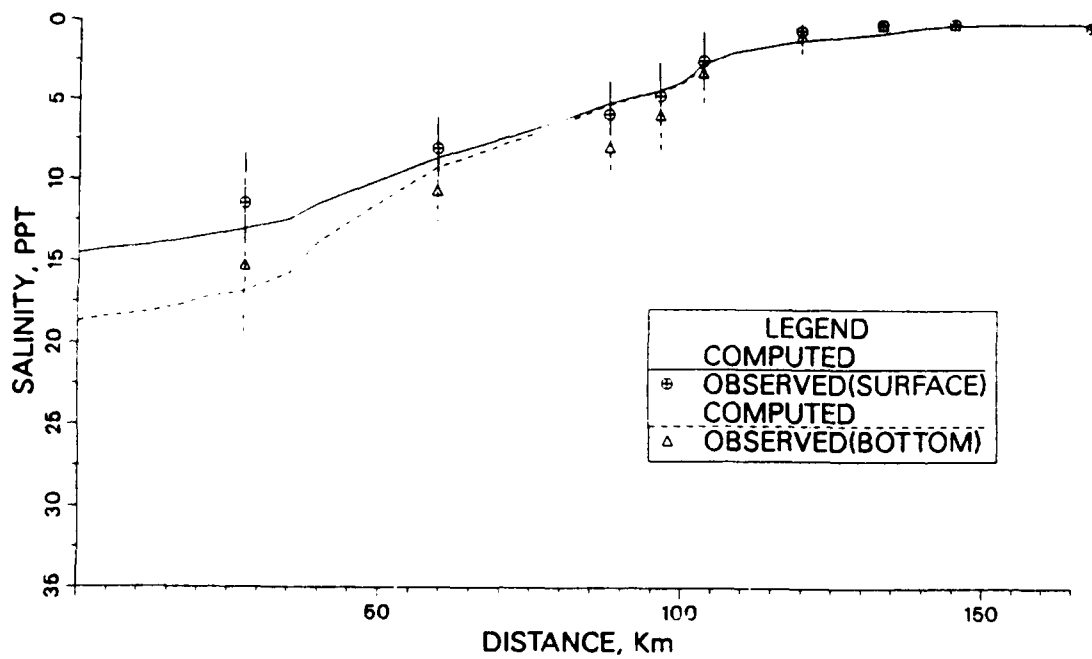


a. Season 1

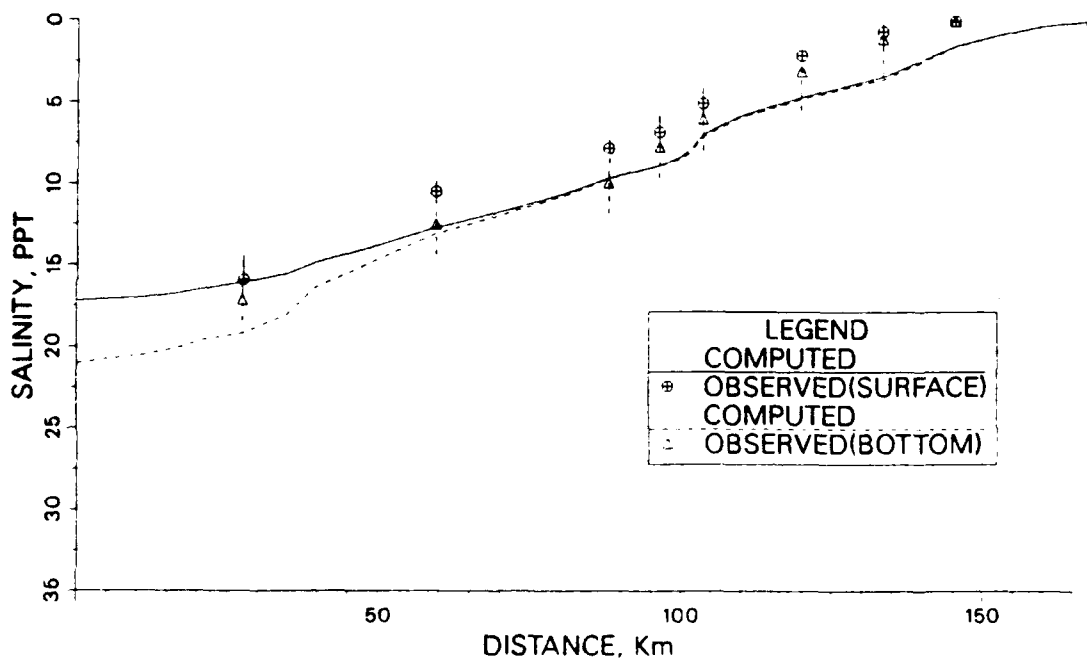


b. Season 2

Figure C64. Comparison of seasonally averaged salinities along Potomac River during 1986 (Sheet 1 of 3)

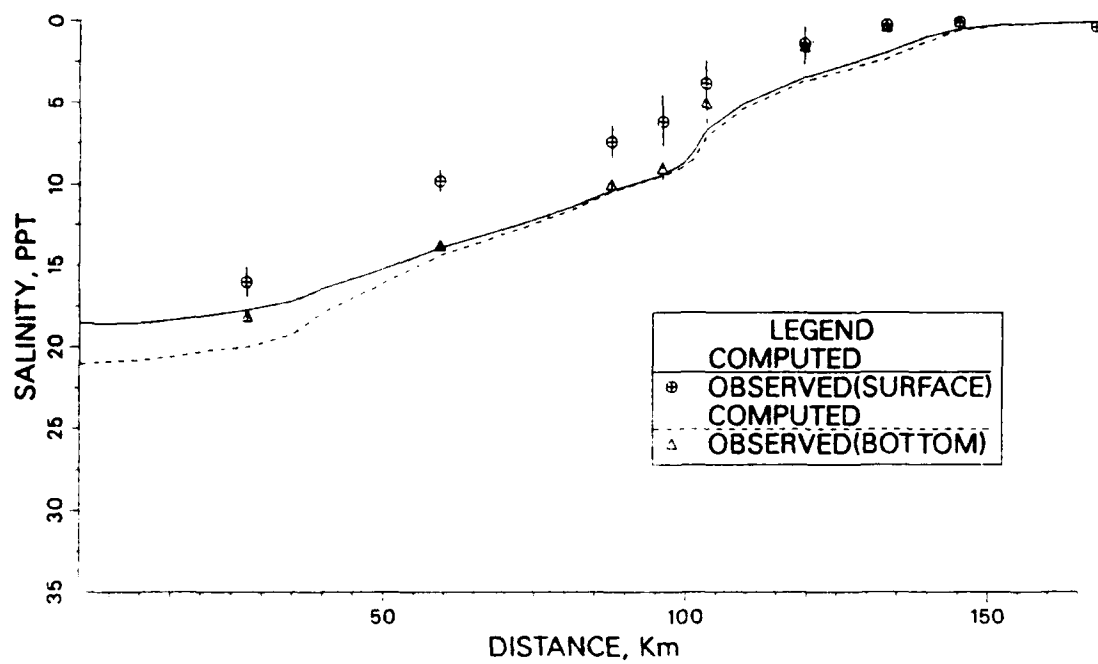


c. Season 3



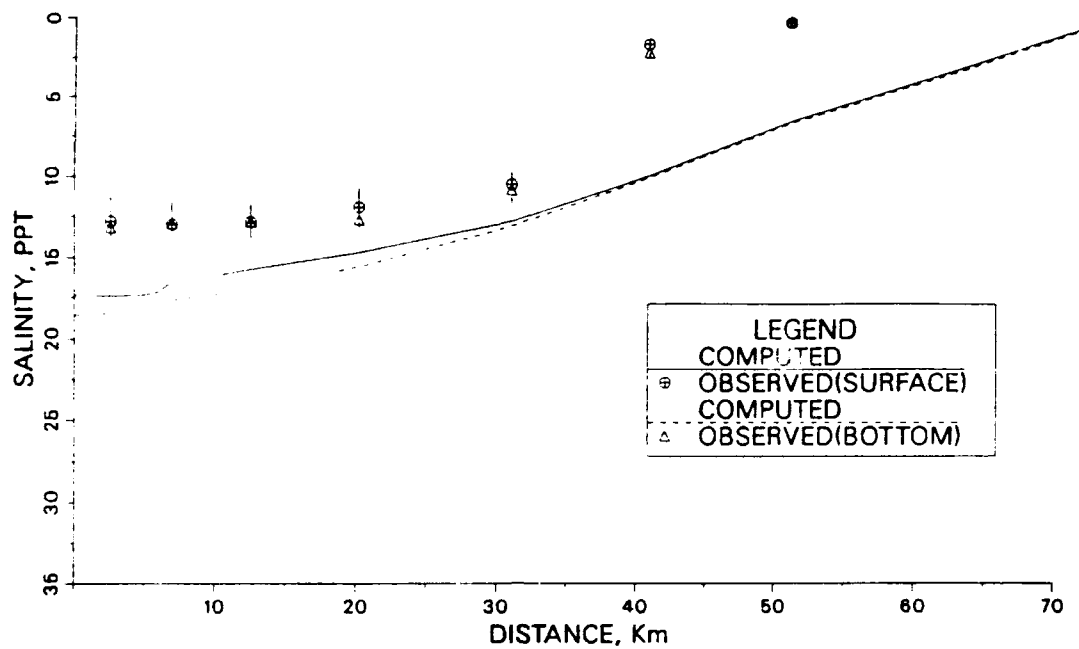
d. Season 4

Figure C64. (Sheet 2 of 3)

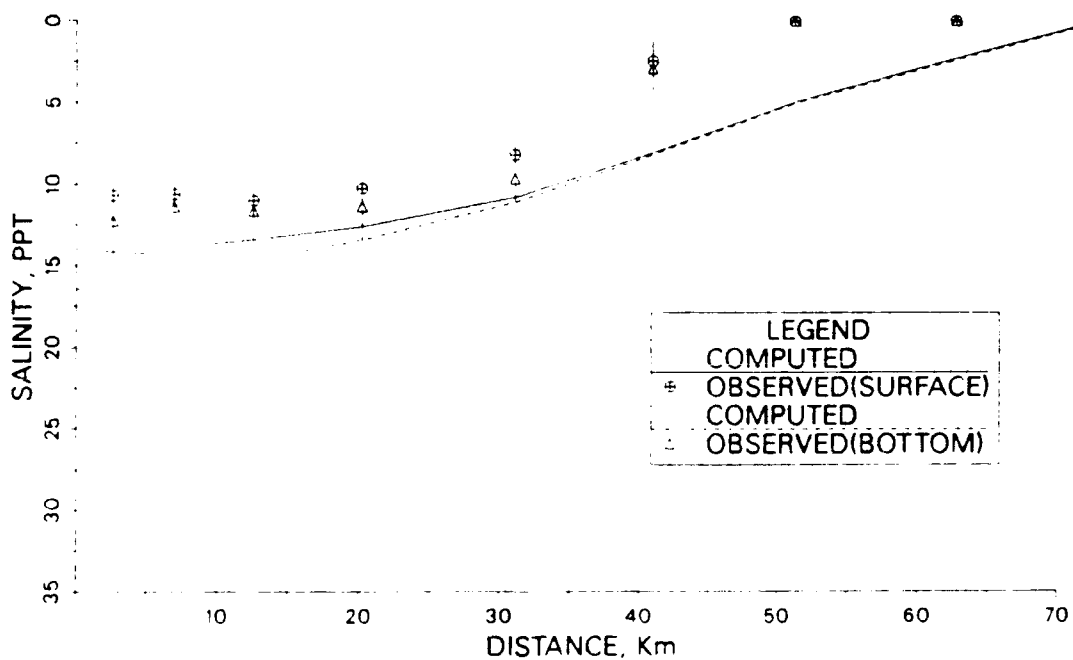


e. Season 5

Figure C64. (Sheet 3 of 3)

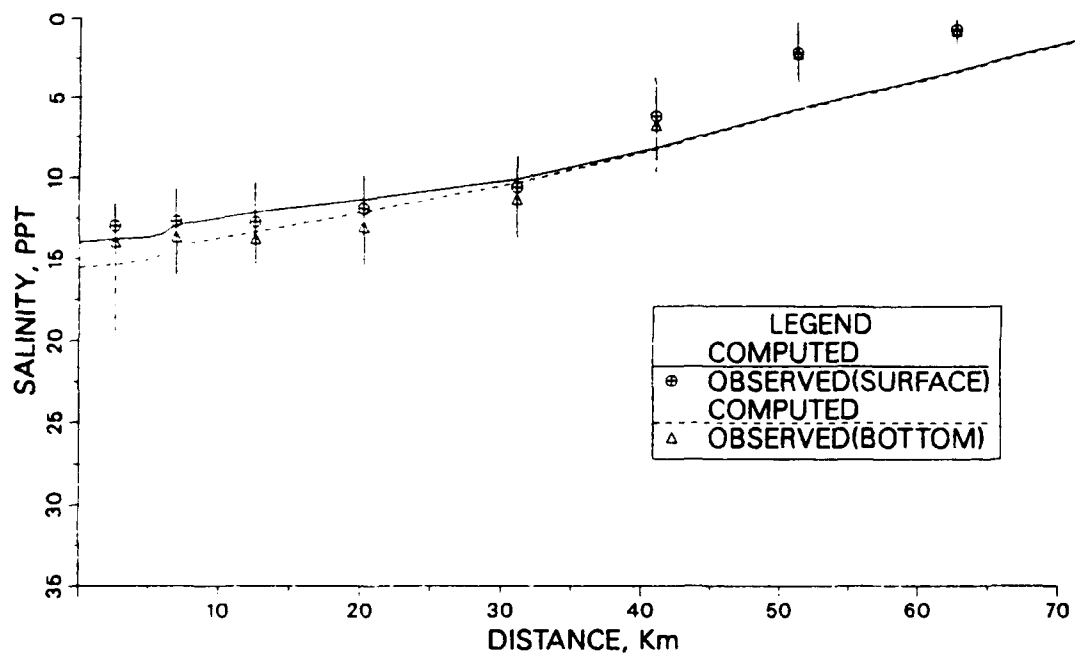


a. Season 1

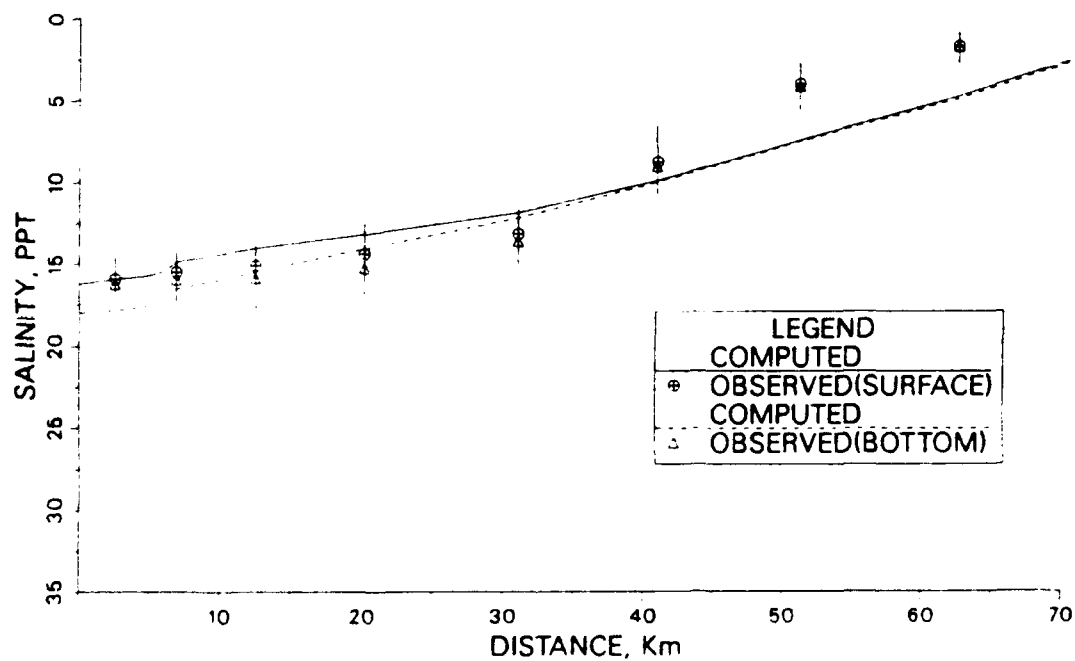


b. Season 2

Figure C65. Comparison of seasonally averaged salinities along Patuxent River during 1986 (Sheet 1 of 3)

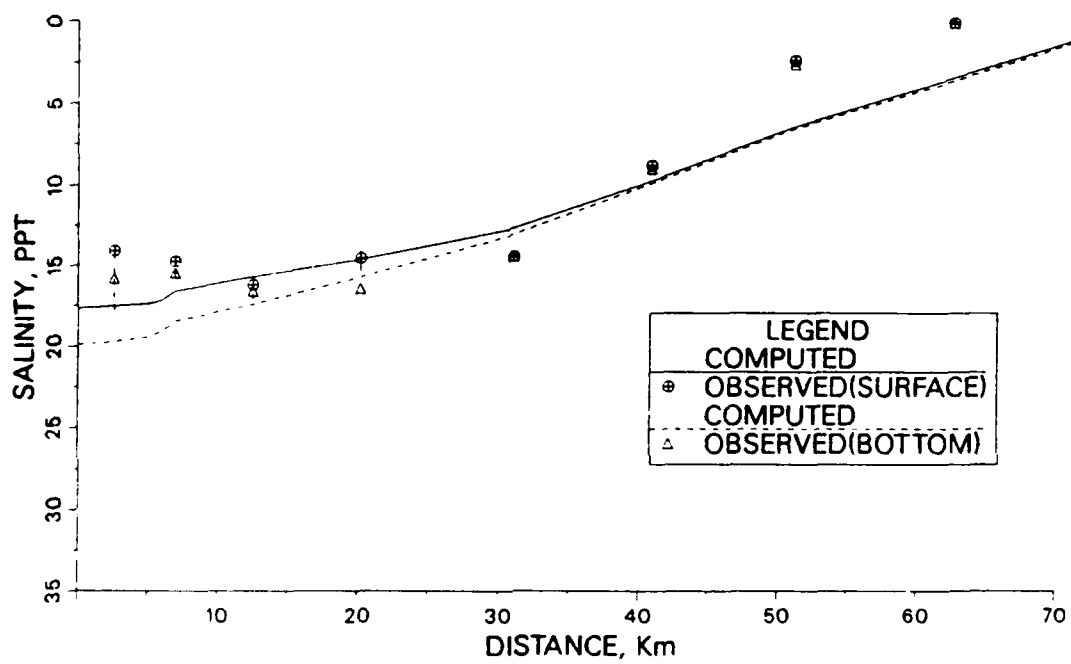


c. Season 3



d. Season 4

Figure C65. (Sheet 2 of 3)



e. Season 5

Figure C65. (Sheet 3 of 3)

Table C1
1986 Surface Heat Exchange Data

<u>Day</u>	<u>Equilibrium Temperature</u> °C	<u>Surface Transfer Coefficient</u> cm/sec
0	0.80000	0.58077E-03
1	1.10000	0.48517E-03
2	6.30000	0.82694E-03
3	2.30000	0.61423E-03
4	1.20000	0.69310E-03
5	0.10000	0.76480E-03
6	-4.10000	0.54970E-03
7	-5.80000	0.64291E-03
8	-1.90000	0.36806E-03
9	2.90000	0.40869E-03
10	0.20000	0.34894E-03
11	3.20000	0.77914E-03
12	-0.20000	0.66920E-03
13	-5.90000	0.43259E-03
14	-5.40000	0.43020E-03
15	-1.30000	0.55926E-03
16	5.90000	0.56643E-03
17	8.90000	0.58555E-03
18	7.00000	0.58077E-03
19	3.50000	0.94883E-03
20	2.70000	0.88669E-03
21	5.70000	0.99424E-03
22	0.50000	0.85801E-03
23	-1.00000	0.74807E-03
24	1.10000	0.49712E-03
25	1.50000	0.70505E-03
26	-3.50000	0.11520E-02
27	-8.00000	0.86757E-03
28	-5.60000	0.44454E-03
29	-3.90000	0.74329E-03
30	-0.40000	0.29397E-03
31	1.60000	0.42542E-03
32	9.40000	0.81738E-03
33	3.50000	0.30831E-03
34	2.50000	0.43020E-03
35	7.80000	0.59511E-03
36	3.60000	0.66920E-03
37	-1.50000	0.62379E-03
38	-0.10000	0.22705E-03
39	2.10000	0.23422E-03
40	1.10000	0.37523E-03
41	-1.90000	0.65486E-03
42	-2.30000	0.72656E-03

(Continued)

(Sheet 1 of 9)

Table C1 (Continued)

Day	Equilibrium Temperature °C	Surface Transfer Coefficient cm/sec
43	-3.70000	0.56643E-03
44	-3.30000	0.44454E-03
45	0.50000	0.54492E-03
46	0.40000	0.57599E-03
47	7.20000	0.92493E-03
48	5.20000	0.34177E-03
49	4.70000	0.40391E-03
50	5.50000	0.43259E-03
51	8.40000	0.51146E-03
52	3.60000	0.35611E-03
53	3.70000	0.46366E-03
54	3.10000	0.27485E-03
55	1.20000	0.58555E-03
56	0.50000	0.47800E-03
57	0.60000	0.50190E-03
58	2.00000	0.45171E-03
59	1.50000	0.53058E-03
60	1.40000	0.65964E-03
61	3.80000	0.40630E-03
62	5.80000	0.24617E-03
63	7.20000	0.40152E-03
64	4.40000	0.82933E-03
65	-0.30000	0.10922E-02
66	-3.10000	0.71461E-03
67	5.50000	0.96317E-03
68	13.40000	0.14746E-02
69	12.00000	0.14412E-02
70	7.10000	0.47322E-03
71	6.30000	0.53297E-03
72	9.90000	0.87474E-03
73	11.20000	0.12380E-02
74	10.20000	0.70744E-03
75	9.10000	0.48039E-03
76	7.40000	0.78392E-03
77	14.70000	0.23398E-02
78	7.00000	0.86757E-03
79	0.10000	0.72656E-03
80	3.70000	0.58794E-03
81	6.90000	0.62379E-03
82	9.10000	0.76958E-03
83	10.30000	0.90342E-03
84	13.30000	0.12452E-02
85	12.50000	0.11137E-02
86	9.70000	0.76480E-03
87	11.90000	0.98946E-03

(Continued)

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Table C1 (Continued)

Day	Equilibrium Temperature	Surface Transfer Coefficient
	°C	cm/sec
88	13.50000	0.10181E-02
89	16.10000	0.92015E-03
90	14.90000	0.75046E-03
91	15.80000	0.84128E-03
92	13.30000	0.93210E-03
93	13.60000	0.78153E-03
94	10.70000	0.91537E-03
95	11.00000	0.73851E-03
96	16.50000	0.77197E-03
97	14.90000	0.11018E-02
98	8.50000	0.10874E-02
99	6.10000	0.10970E-02
100	8.60000	0.58316E-03
101	11.90000	0.85562E-03
102	10.30000	0.83889E-03
103	13.60000	0.75285E-03
104	11.80000	0.94405E-03
105	10.50000	0.74568E-03
106	9.00000	0.65247E-03
107	13.40000	0.73851E-03
108	17.90000	0.43259E-03
109	13.50000	0.81499E-03
110	15.90000	0.76480E-03
111	9.70000	0.57838E-03
112	4.70000	0.86040E-03
113	10.70000	0.11687E-02
114	12.50000	0.11209E-02
115	14.50000	0.10181E-02
116	16.40000	0.11496E-02
117	17.60000	0.97990E-03
118	17.40000	0.77197E-03
119	17.10000	0.89625E-03
120	17.90000	0.12571E-02
121	13.40000	0.13575E-02
122	9.70000	0.11520E-02
123	12.50000	0.91537E-03
124	16.80000	0.12380E-02
125	20.20000	0.11329E-02
126	22.70000	0.10134E-02
127	17.50000	0.11114E-02
128	13.10000	0.95361E-03
129	15.30000	0.74329E-03
130	16.40000	0.94883E-03
131	15.20000	0.85084E-03
132	13.50000	0.13312E-02

(Continued)

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Table C1 (Continued)

Day	Equilibrium Temperature	Surface Transfer Coefficient
	°C	cm/sec
133	12.70000	0.91059E-03
134	15.40000	0.11830E-02
135	18.90000	0.15631E-02
136	22.20000	0.14029E-02
137	21.80000	0.17256E-02
138	20.10000	0.21892E-02
139	18.50000	0.16921E-02
140	18.40000	0.96078E-03
141	16.80000	0.12213E-02
142	17.30000	0.11185E-02
143	21.80000	0.67637E-03
144	20.30000	0.63335E-03
145	19.20000	0.11090E-02
146	19.10000	0.73612E-03
147	21.40000	0.74568E-03
148	23.80000	0.11114E-02
149	22.70000	0.15678E-02
150	23.10000	0.14698E-02
151	23.30000	0.18499E-02
152	19.70000	0.17734E-02
153	14.80000	0.13551E-02
154	18.70000	0.13599E-02
155	21.30000	0.17136E-02
156	22.80000	0.16658E-02
157	24.40000	0.10707E-02
158	25.60000	0.12643E-02
159	21.80000	0.10970E-02
160	20.40000	0.12404E-02
161	22.20000	0.20076E-02
162	24.70000	0.20267E-02
163	24.00000	0.10062E-02
164	23.10000	0.11639E-02
165	24.20000	0.16180E-02
166	23.30000	0.22370E-02
167	20.40000	0.15631E-02
168	19.10000	0.99424E-03
169	20.70000	0.13312E-02
170	20.50000	0.13241E-02
171	21.20000	0.10970E-02
172	20.40000	0.13719E-02
173	22.70000	0.16228E-02
174	22.10000	0.14005E-02
175	19.60000	0.10062E-02
176	19.50000	0.10707E-02
177	22.80000	0.20339E-02

(Continued)

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Table C1 (Continued)

Day	Equilibrium Temperature	Surface Transfer Coefficient
	°C	cm/sec
178	23.40000	0.12261E-02
179	24.20000	0.15870E-02
180	21.30000	0.10994E-02
181	18.00000	0.14005E-02
182	21.60000	0.18809E-02
183	20.30000	0.14746E-02
184	20.60000	0.13217E-02
185	22.20000	0.19861E-02
186	23.50000	0.14436E-02
187	25.00000	0.15033E-02
188	25.70000	0.15774E-02
189	23.40000	0.16300E-02
190	24.10000	0.11496E-02
191	24.20000	0.12022E-02
192	25.30000	0.16969E-02
193	24.90000	0.19383E-02
194	22.70000	0.20697E-02
195	21.70000	0.13503E-02
196	23.00000	0.17877E-02
197	23.80000	0.11090E-02
198	25.40000	0.16037E-02
199	25.80000	0.10922E-02
200	23.20000	0.15894E-02
201	26.00000	0.91537E-03
202	25.70000	0.76958E-03
203	24.20000	0.12141E-02
204	23.70000	0.16634E-02
205	24.70000	0.12309E-02
206	25.20000	0.11161E-02
207	25.30000	0.10946E-02
208	28.40000	0.87952E-03
209	26.70000	0.11185E-02
210	23.50000	0.12428E-02
211	24.80000	0.10134E-02
212	27.30000	0.81977E-03
213	26.40000	0.12643E-02
214	24.70000	0.78870E-03
215	26.30000	0.72178E-03
216	26.50000	0.81499E-03
217	23.90000	0.12834E-02
218	26.00000	0.88191E-03
219	24.30000	0.12141E-02
220	25.80000	0.93927E-03
221	25.20000	0.13432E-02
222	22.90000	0.12524E-02

(Continued)

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Table C1 (Continued)

Day	Equilibrium Temperature	Surface Transfer Coefficient
	°C	cm/sec
223	20.50000	0.81977E-03
224	20.20000	0.12046E-02
225	24.20000	0.10157E-02
226	26.20000	0.10157E-02
227	26.60000	0.13288E-02
228	25.50000	0.14507E-02
229	23.70000	0.17423E-02
230	24.50000	0.78153E-03
231	21.40000	0.20076E-02
232	22.70000	0.13408E-02
233	23.80000	0.76480E-03
234	22.60000	0.12619E-02
235	20.10000	0.14890E-02
236	21.70000	0.62857E-03
237	23.30000	0.12070E-02
238	22.90000	0.20745E-02
239	16.30000	0.13384E-02
240	16.90000	0.72895E-03
241	18.20000	0.74568E-03
242	20.90000	0.55209E-03
243	20.90000	0.64769E-03
244	19.70000	0.93449E-03
245	20.90000	0.11257E-02
246	21.30000	0.96795E-03
247	21.40000	0.12141E-02
248	24.30000	0.68354E-03
249	24.50000	0.49951E-03
250	17.30000	0.94405E-03
251	19.20000	0.62379E-03
252	19.50000	0.10803E-02
253	22.00000	0.25214E-02
254	22.20000	0.23255E-02
255	19.50000	0.77436E-03
256	20.50000	0.70744E-03
257	20.10000	0.10707E-02
258	15.80000	0.14722E-02
259	13.20000	0.95122E-03
260	15.10000	0.12141E-02
261	19.50000	0.12858E-02
262	19.90000	0.11615E-02
263	21.60000	0.11305E-02
264	19.30000	0.11663E-02
265	21.80000	0.19694E-02
266	22.90000	0.13360E-02
267	24.80000	0.77675E-03

(Continued)

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Table C1 (Continued)

Day	Equilibrium Temperature °C	Surface Transfer Coefficient cm/sec
268	25.60000	0.80065E-03
269	21.60000	0.11615E-02
270	19.20000	0.81738E-03
271	22.40000	0.86279E-03
272	23.60000	0.15392E-02
273	23.90000	0.12428E-02
274	23.70000	0.80304E-03
275	22.20000	0.13719E-02
276	23.00000	0.17543E-02
277	20.60000	0.83172E-03
278	12.70000	0.95361E-03
279	14.00000	0.48039E-03
280	17.70000	0.71222E-03
281	21.00000	0.55209E-03
282	10.10000	0.11352E-02
283	12.20000	0.12070E-02
284	15.40000	0.75285E-03
285	17.90000	0.71222E-03
286	18.40000	0.94883E-03
287	8.80000	0.81738E-03
288	12.10000	0.46127E-03
289	11.40000	0.42781E-03
290	10.40000	0.83889E-03
291	10.30000	0.71700E-03
292	11.70000	0.51863E-03
293	12.50000	0.56165E-03
294	15.10000	0.53058E-03
295	16.70000	0.63574E-03
296	14.30000	0.65008E-03
297	11.70000	0.96078E-03
298	16.10000	0.94644E-03
299	16.80000	0.60706E-03
300	13.70000	0.83411E-03
301	12.90000	0.79348E-03
302	13.50000	0.80543E-03
303	9.30000	0.89864E-03
304	14.60000	0.52341E-03
305	14.70000	0.68354E-03
306	8.10000	0.62379E-03
307	10.90000	0.61901E-03
308	9.30000	0.75763E-03
309	9.40000	0.72656E-03
310	10.80000	0.52102E-03
311	16.20000	0.77914E-03
312	16.70000	0.15654E-02

(Continued)

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Table C1 (Continued)

Day	Equilibrium Temperature	Surface Transfer Coefficient
	°C	cm/sec
313	6.40000	0.70027E-03
314	7.00000	0.66920E-03
315	6.00000	0.60228E-03
316	2.20000	0.96556E-03
317	-1.10000	0.50429E-03
318	3.30000	0.23661E-03
319	6.40000	0.35372E-03
320	8.50000	0.43020E-03
321	8.10000	0.68593E-03
322	3.50000	0.10970E-02
323	4.20000	0.74568E-03
324	4.50000	0.13360E-02
325	4.20000	0.48756E-03
326	5.80000	0.38001E-03
327	9.40000	0.70266E-03
328	5.80000	0.34894E-03
329	10.40000	0.66203E-03
330	9.10000	0.54731E-03
331	6.20000	0.25334E-03
332	8.00000	0.38718E-03
333	4.80000	0.70027E-03
334	0.90000	0.95361E-03
335	8.80000	0.14794E-02
336	9.60000	0.12093E-02
337	3.00000	0.89386E-03
338	0.50000	0.81738E-03
339	0.60000	0.52102E-03
340	2.60000	0.45649E-03
341	5.30000	0.52341E-03
342	8.50000	0.79348E-03
343	11.70000	0.93927E-03
344	2.60000	0.72417E-03
345	2.60000	0.48039E-03
346	-2.00000	0.99185E-03
347	-1.40000	0.42542E-03
348	2.20000	0.41825E-03
349	3.30000	0.31548E-03
350	4.70000	0.30831E-03
351	5.20000	0.52341E-03
352	2.90000	0.11854E-02
353	1.30000	0.59033E-03
354	0.80000	0.61901E-03
355	0.10000	0.50190E-03
356	1.50000	0.46605E-03
357	7.10000	0.12213E-02

(Continued)

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Table C1 (Concluded)

Day	Equilibrium Temperature	Surface Transfer Coefficient
	°C	cm/sec
358	7.00000	0.92971E-03
359	3.10000	0.74807E-03
360	2.00000	0.54970E-03
361	1.20000	0.63335E-03
362	0.30000	0.43020E-03
363	1.20000	0.82455E-03
364	2.60000	0.72178E-03
365	2.60000	0.72178E-03
366	2.60000	0.72178E-03

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