
APPENDIX D, ATTACHMENT D1
DLM-WQ Model Calibration – Figures

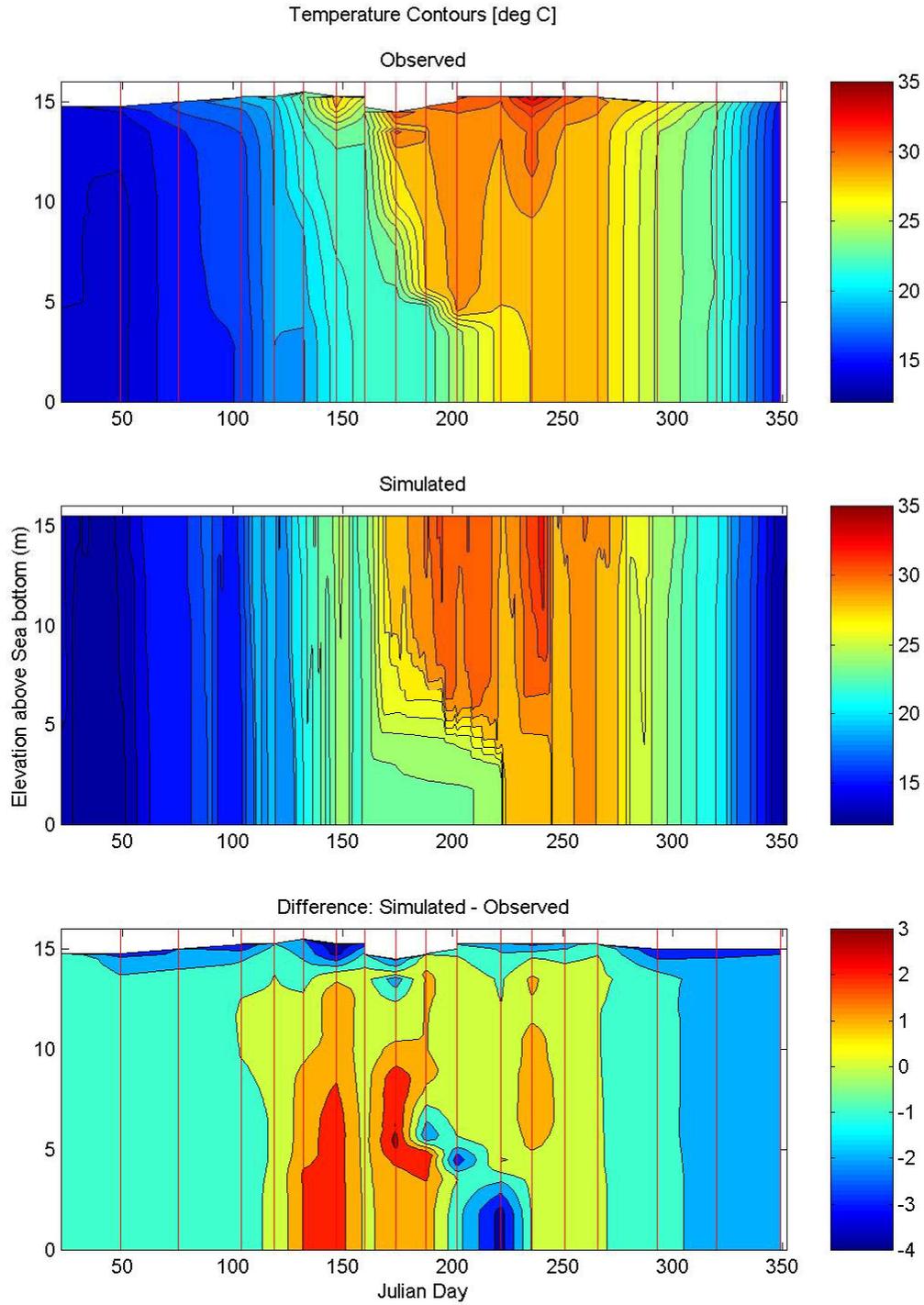


Figure D1-1. Observed and simulated temperature contours for 1999.

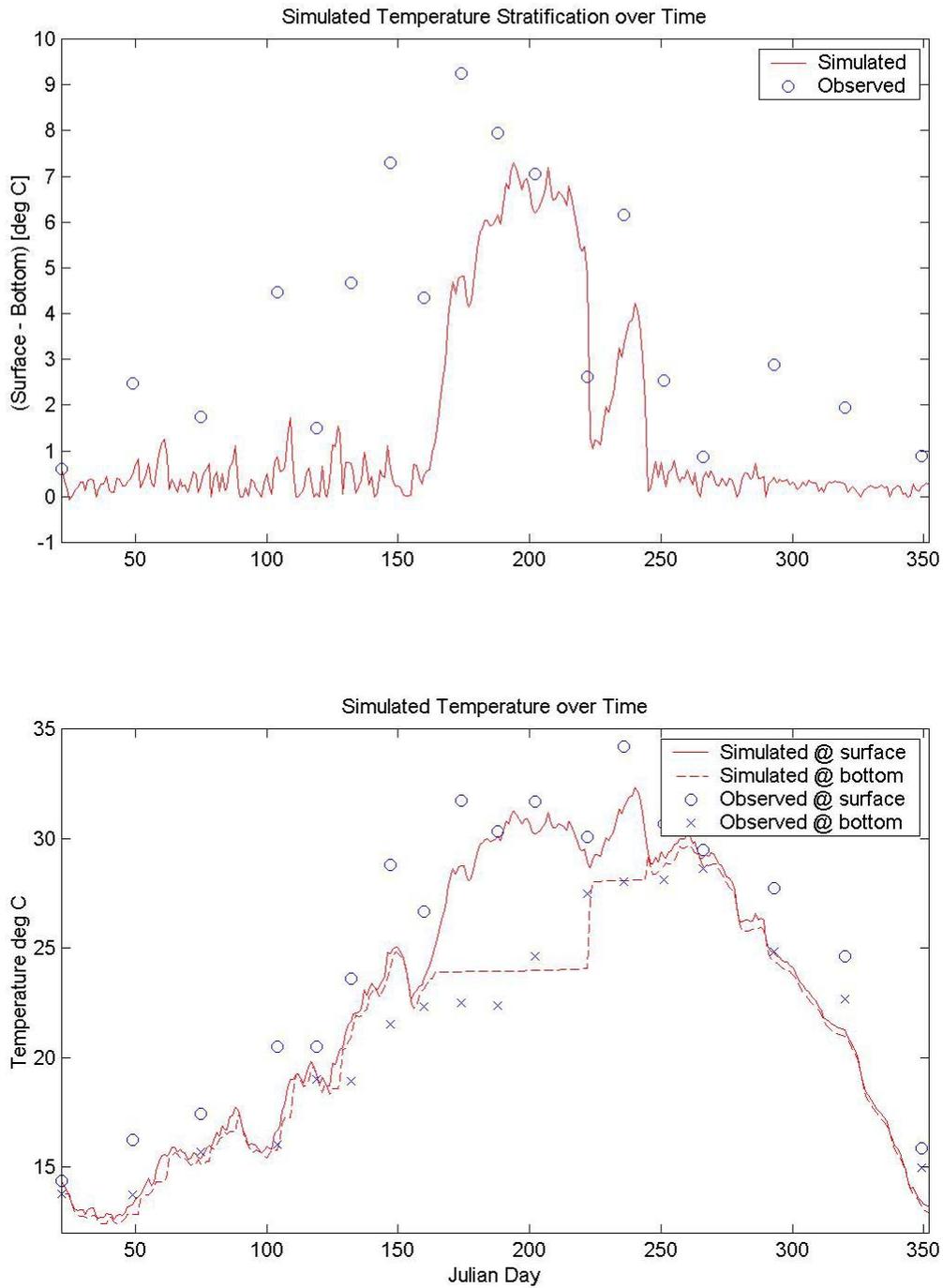


Figure D1-2. Observed and simulated temperature stratification for 1999.

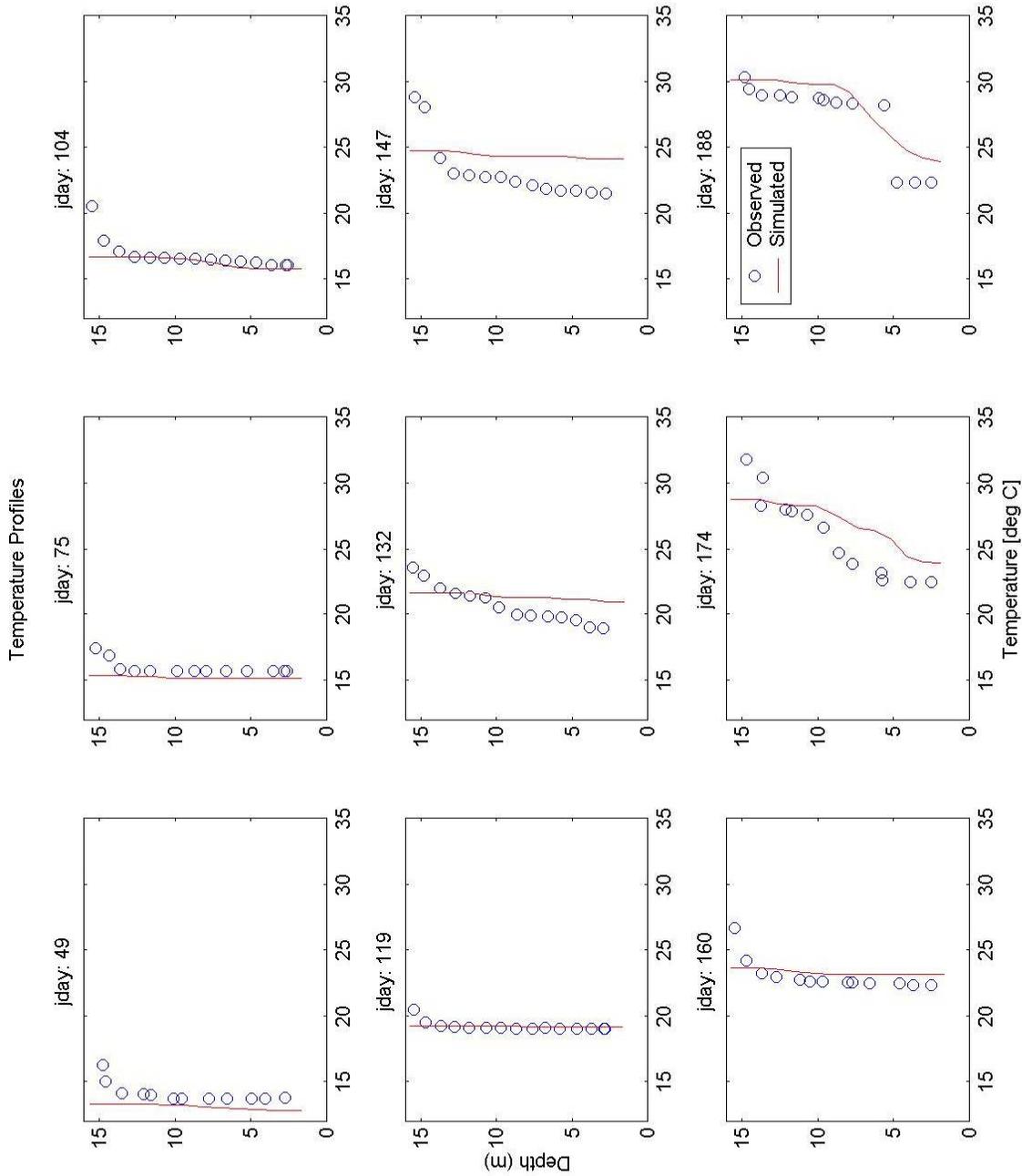


Figure D1-3A. Observed and simulated temperature profiles for 1999.

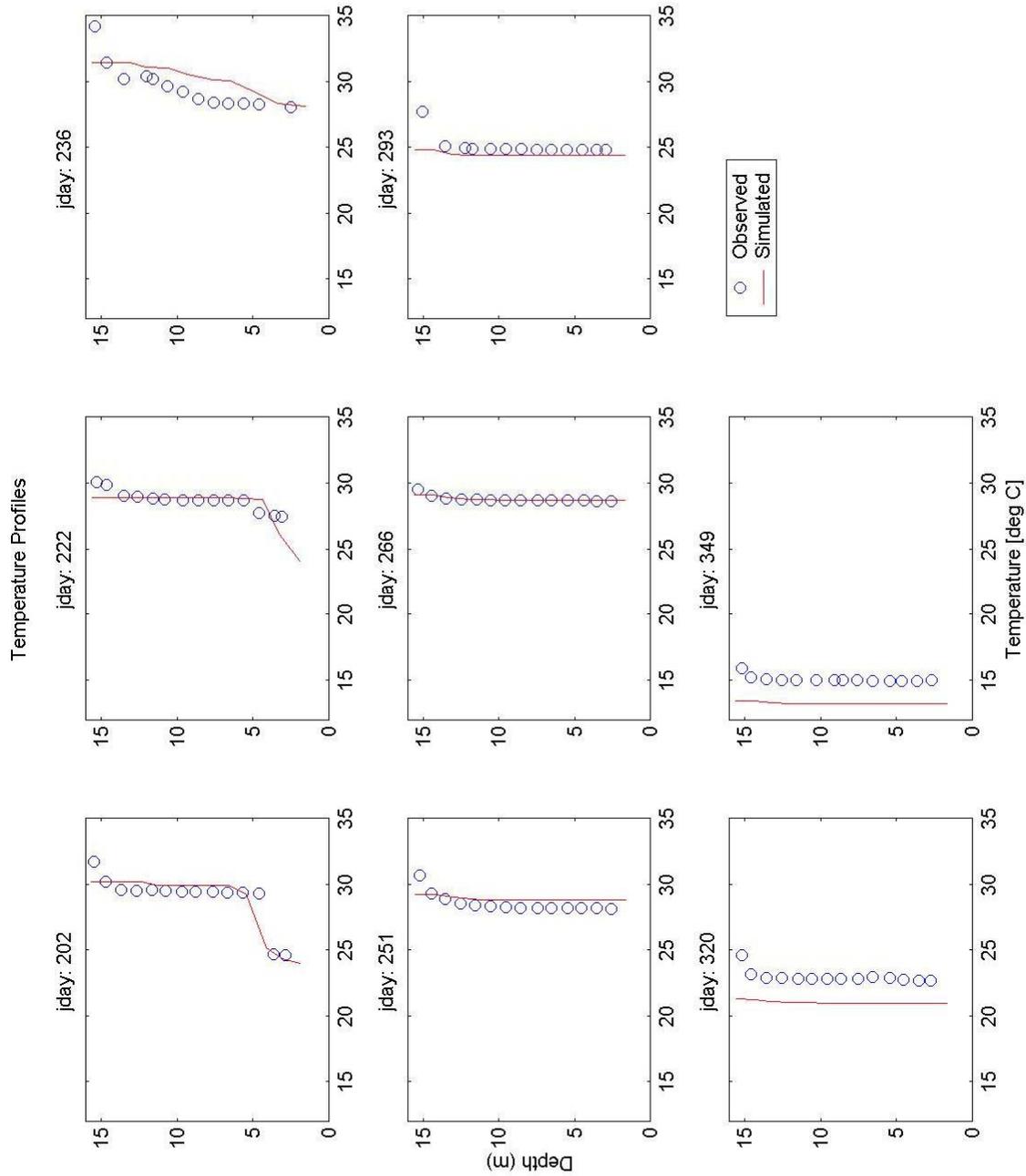


Figure D1-3B. Observed and simulated temperature profiles for 1999.

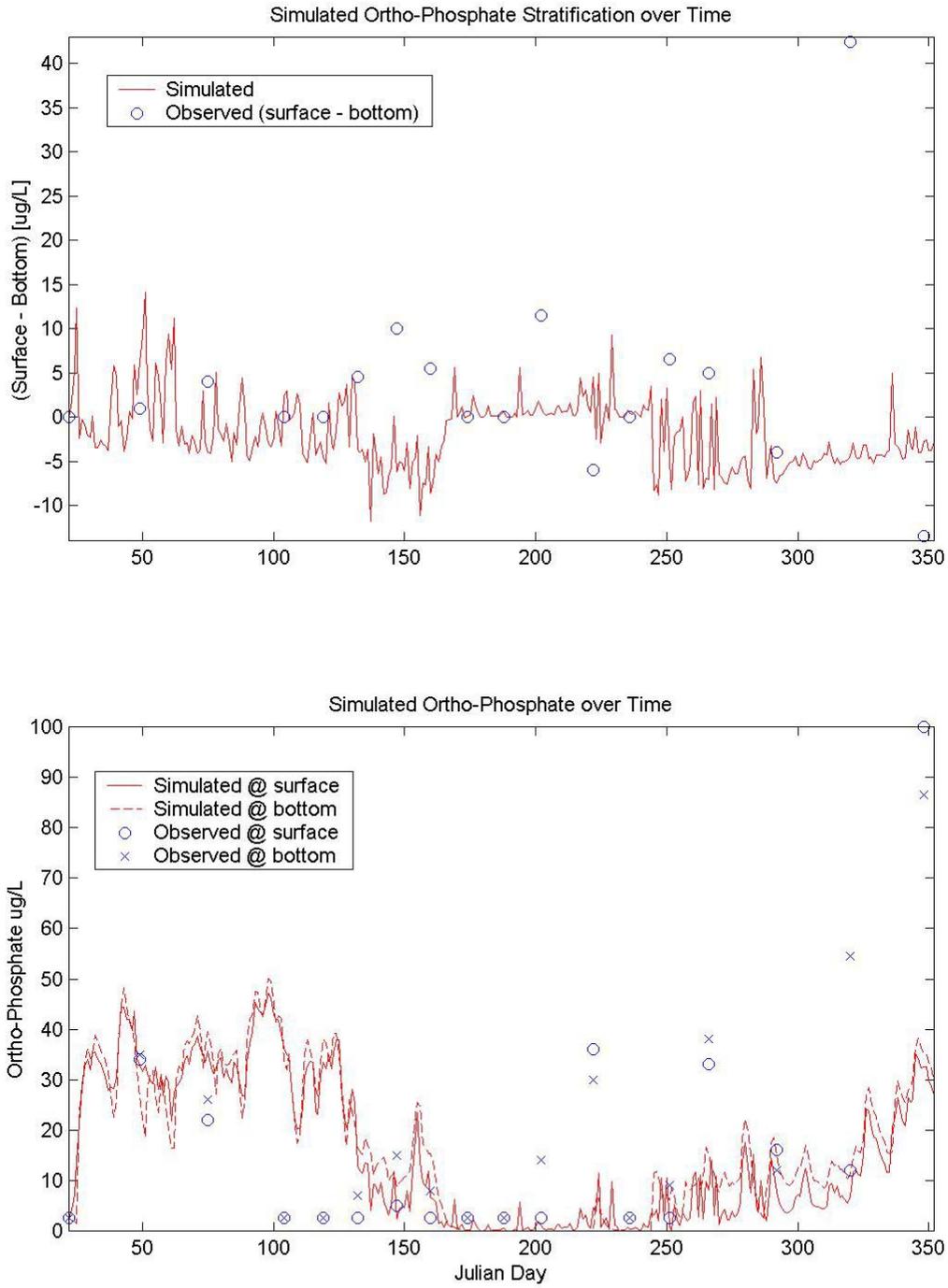


Figure D1-4. Observed and simulated orthophosphate concentrations for 1999.

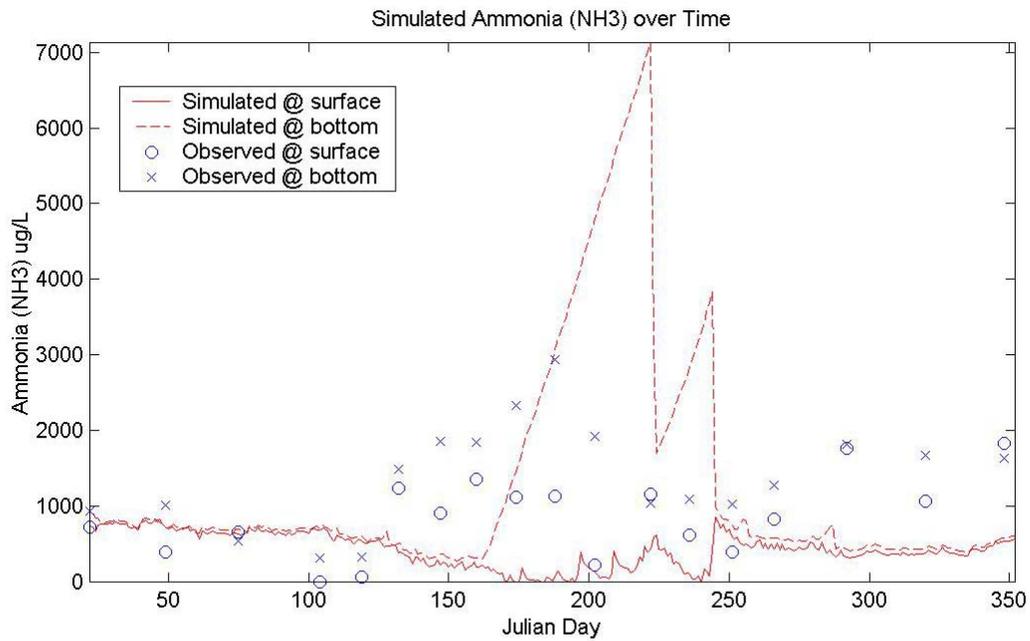
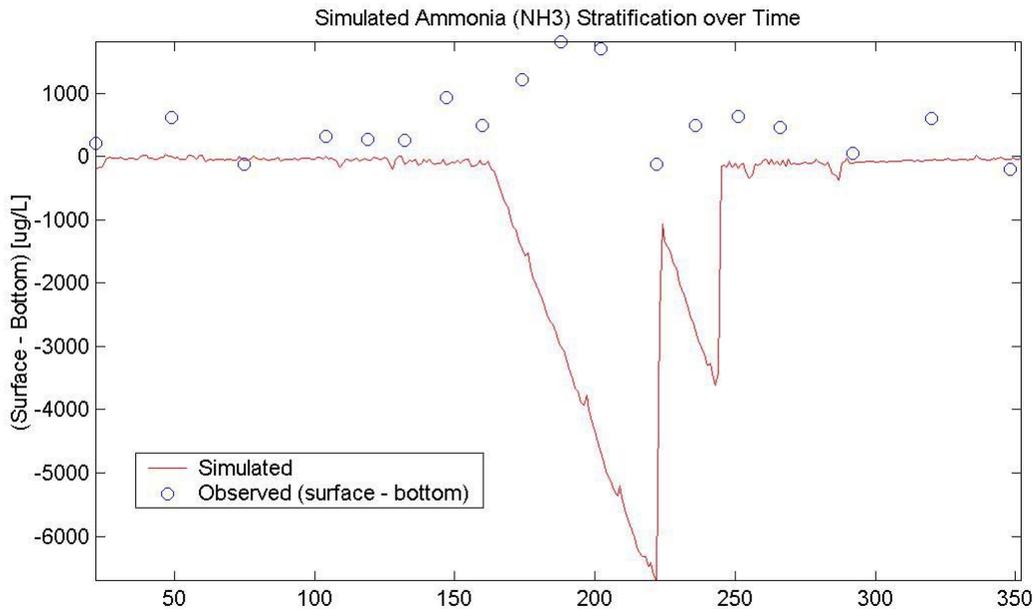


Figure D1-5. Observed and simulated ammonia concentrations for 1999.

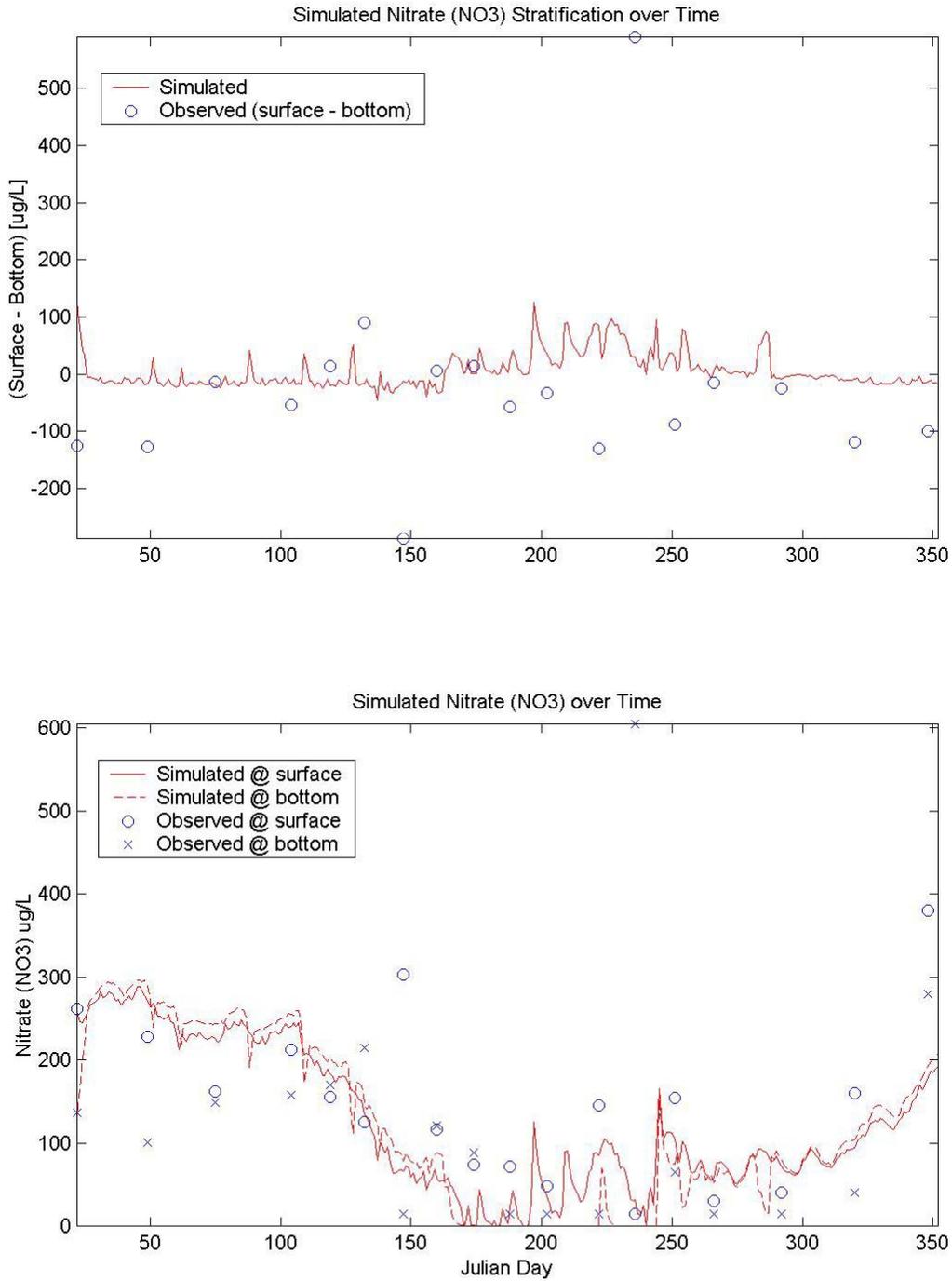


Figure D1-6. Observed and simulated nitrate concentrations for 1999.

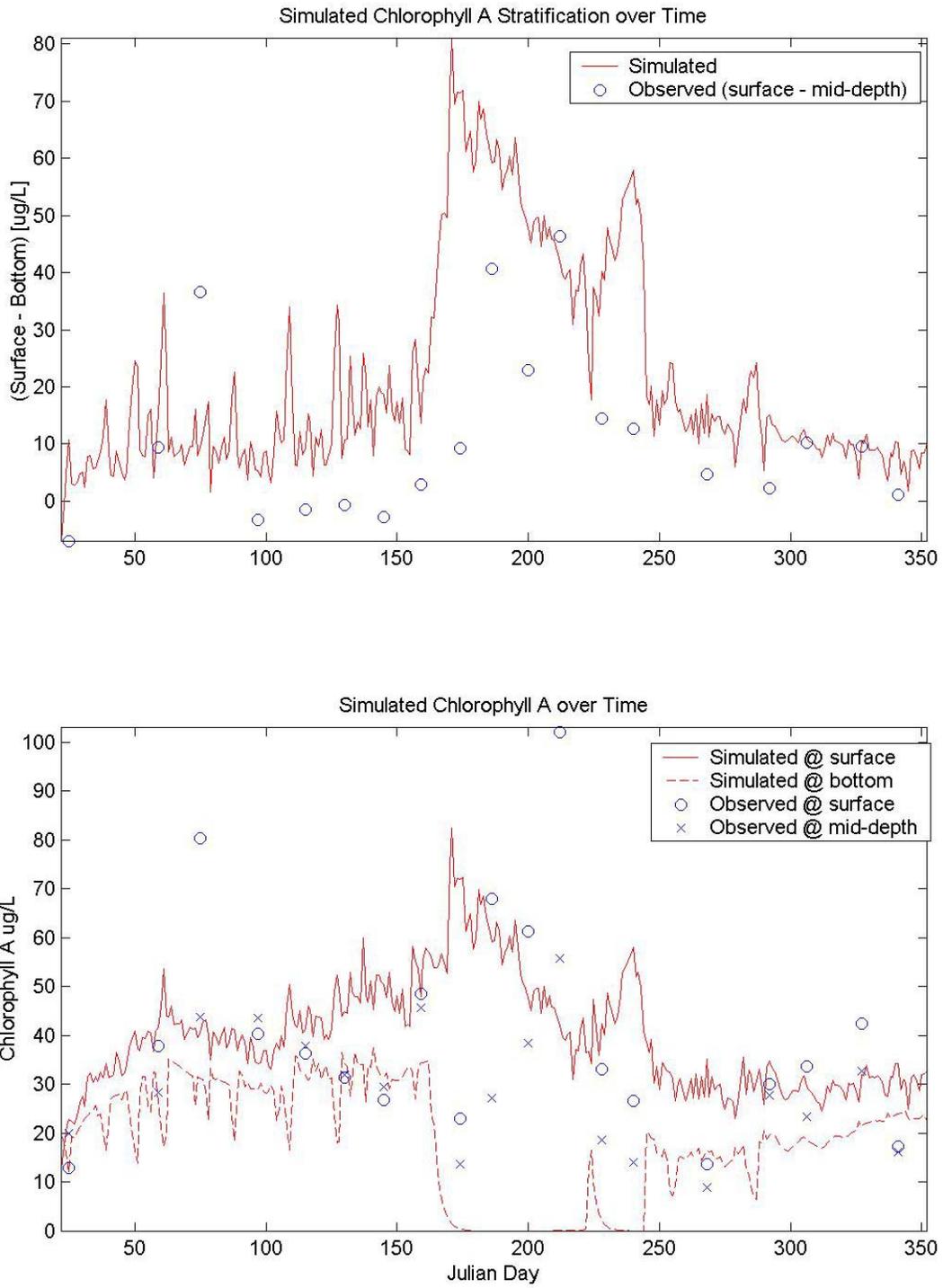


Figure D1-7. Observed and simulated chlorophyll a concentrations for 1999.

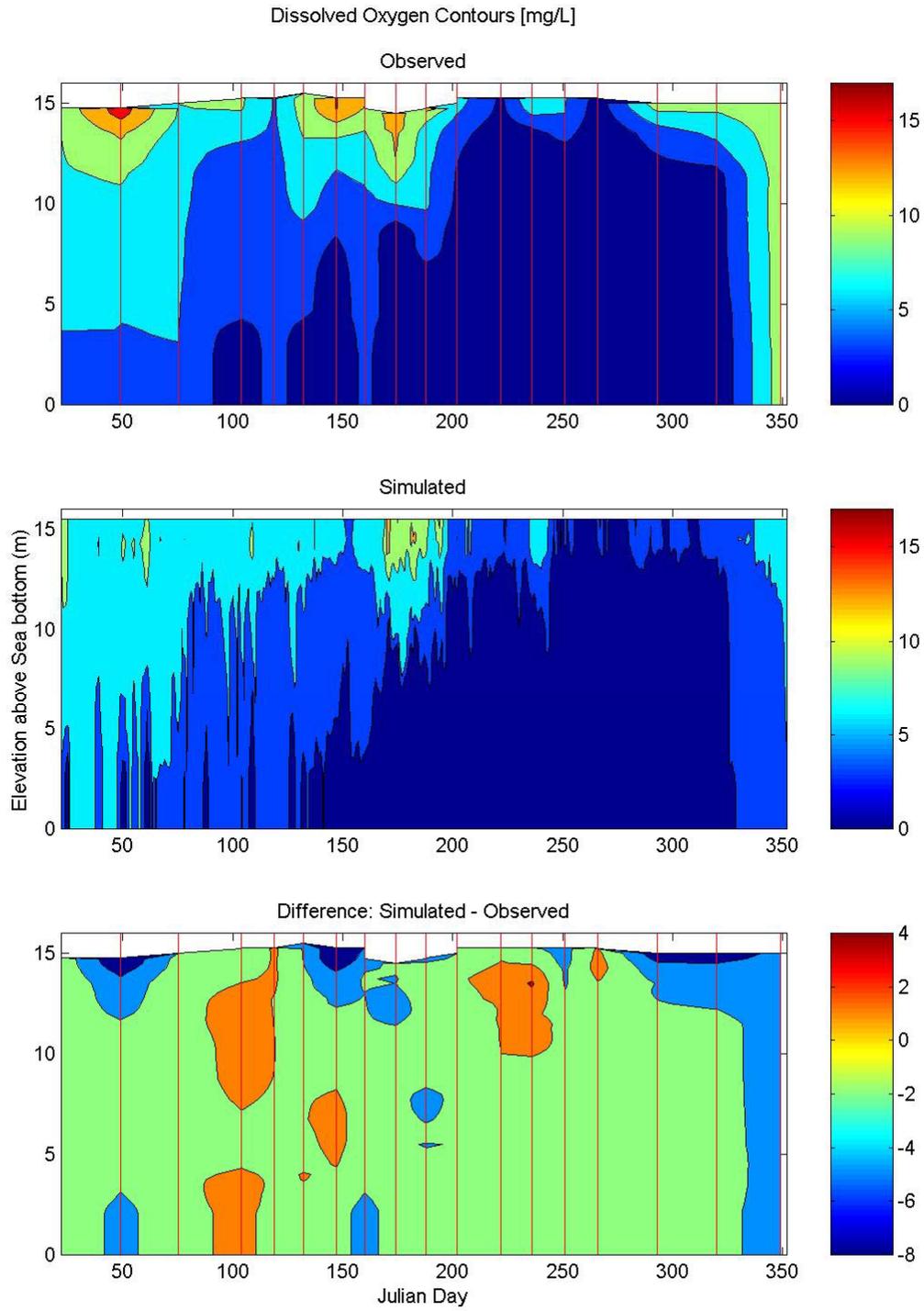


Figure D1-8. Observed and simulated dissolved oxygen (noon) contours for 1999.

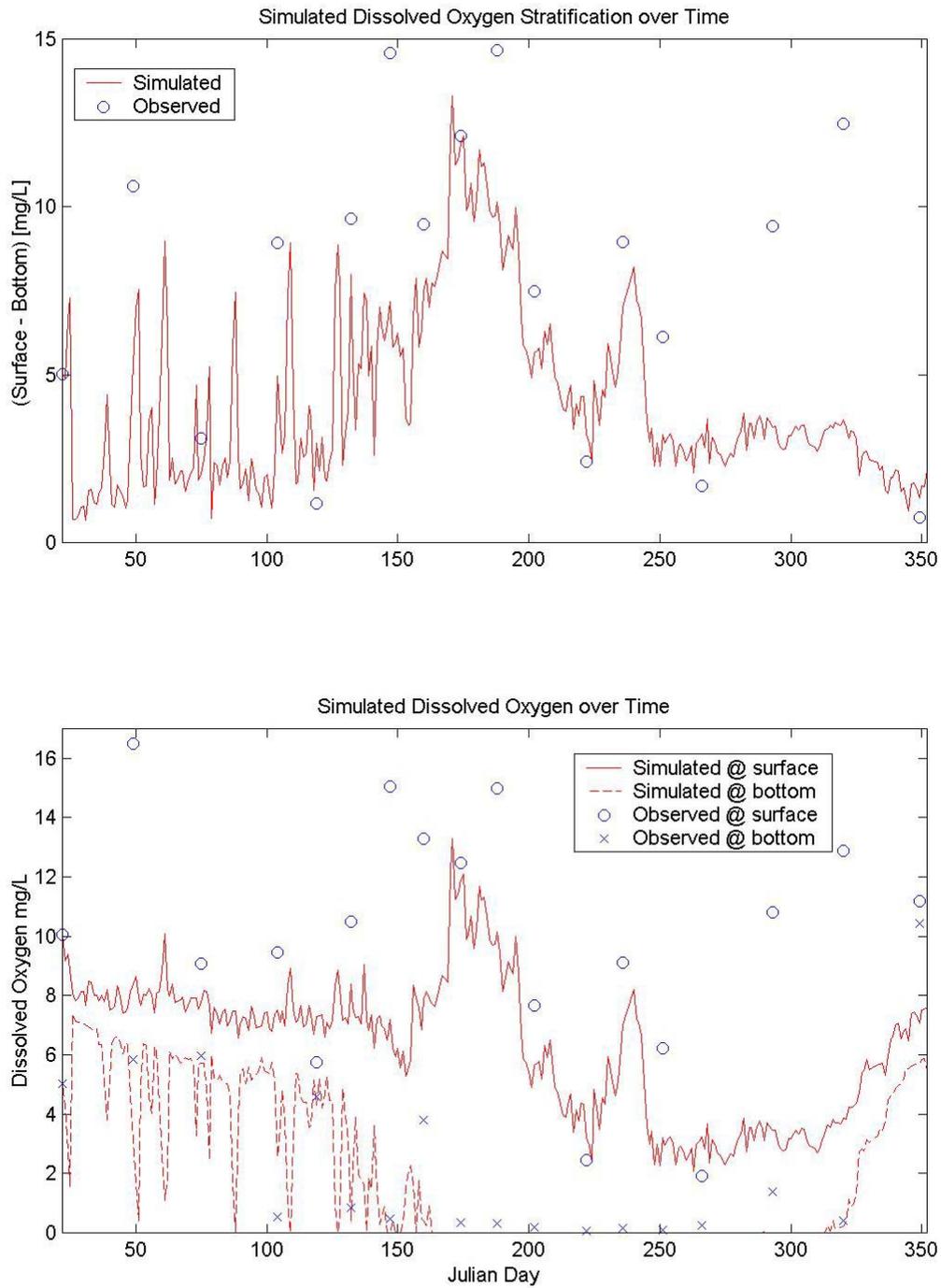


Figure D1-9. Observed and simulated dissolved oxygen (noon) concentrations for 1999.

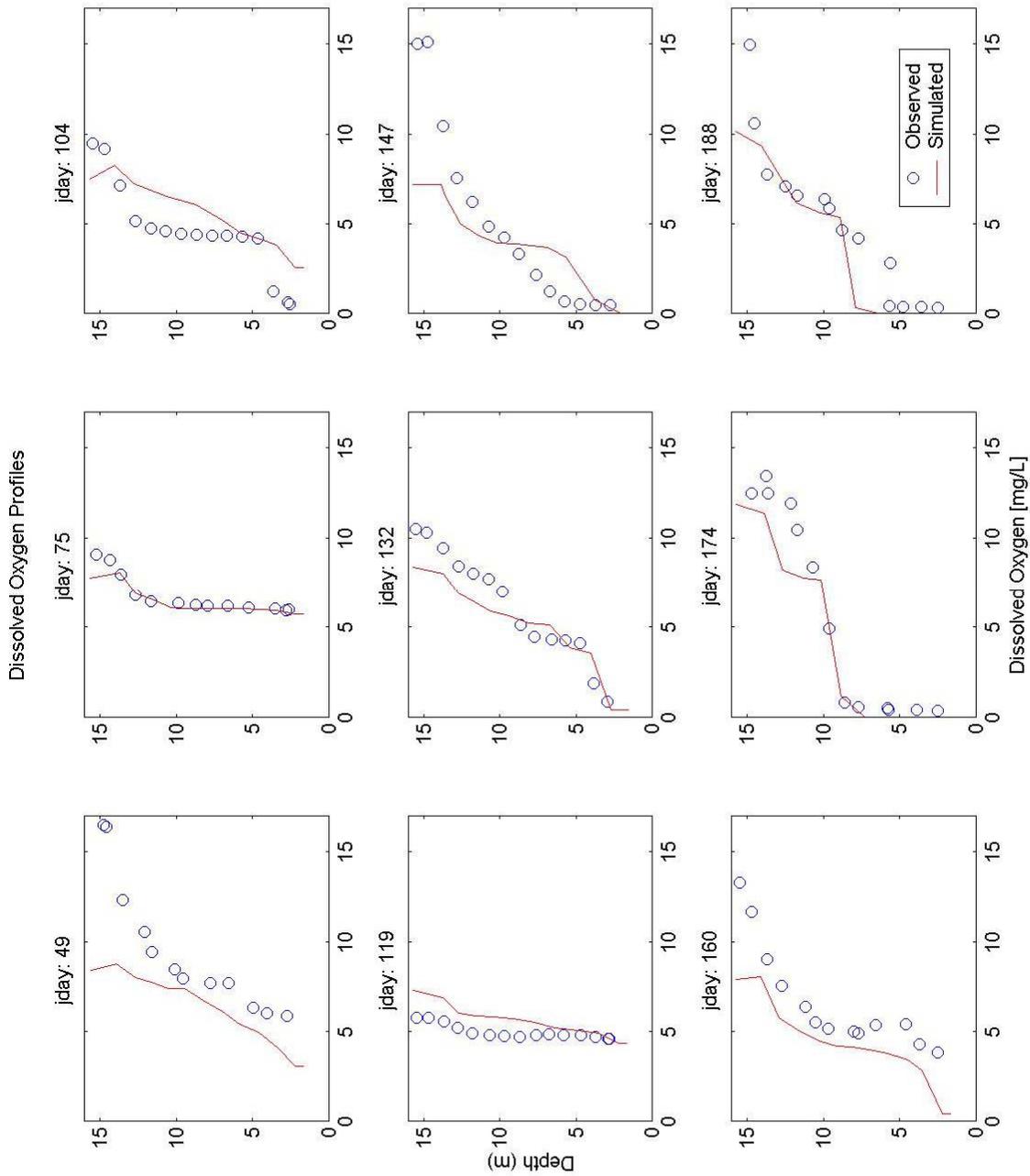


Figure D1-10A. Observed and simulated dissolved oxygen (noon) profiles for 1999.

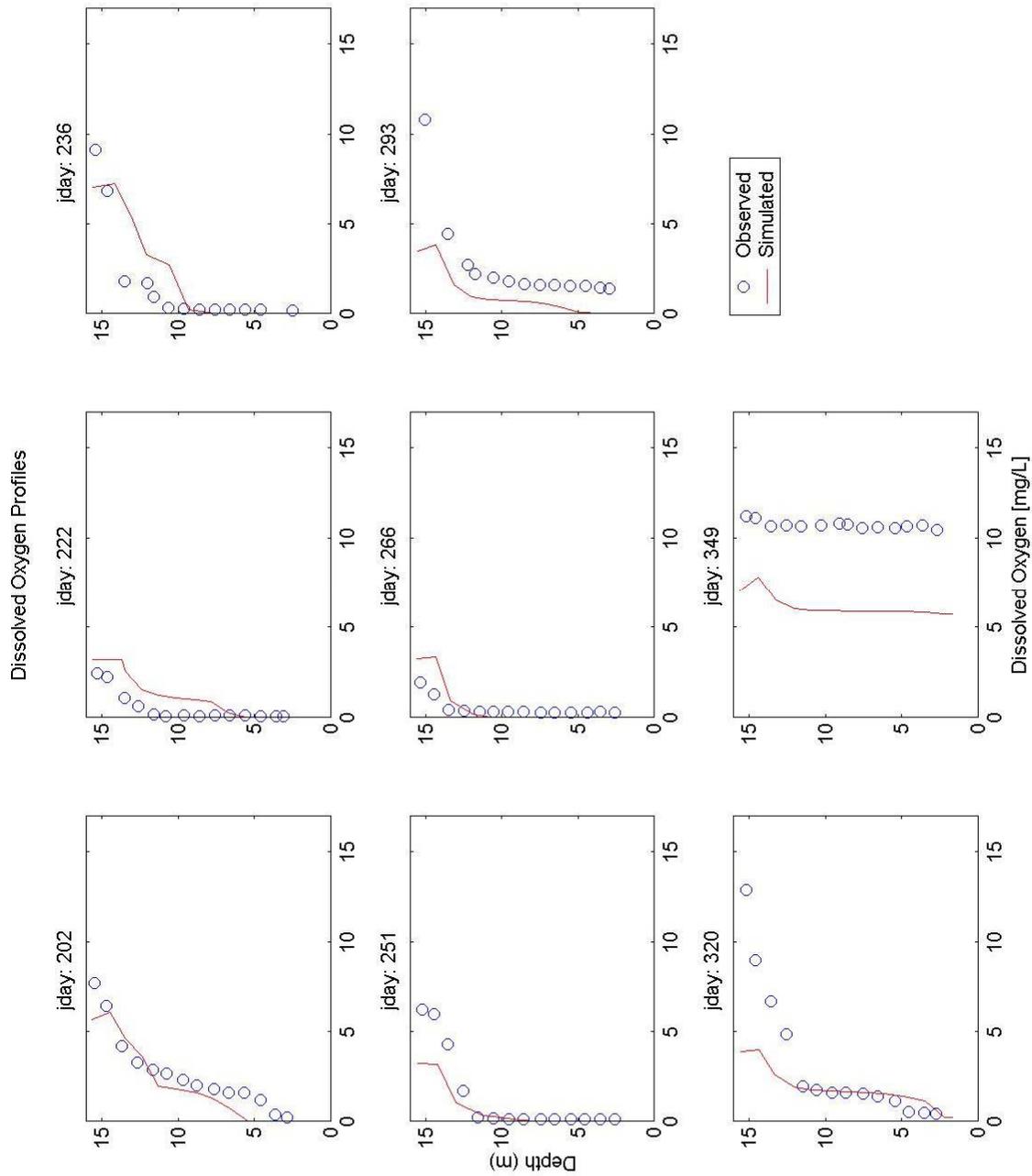


Figure D1-10B. Observed and simulated dissolved oxygen (noon) profiles for 1999.

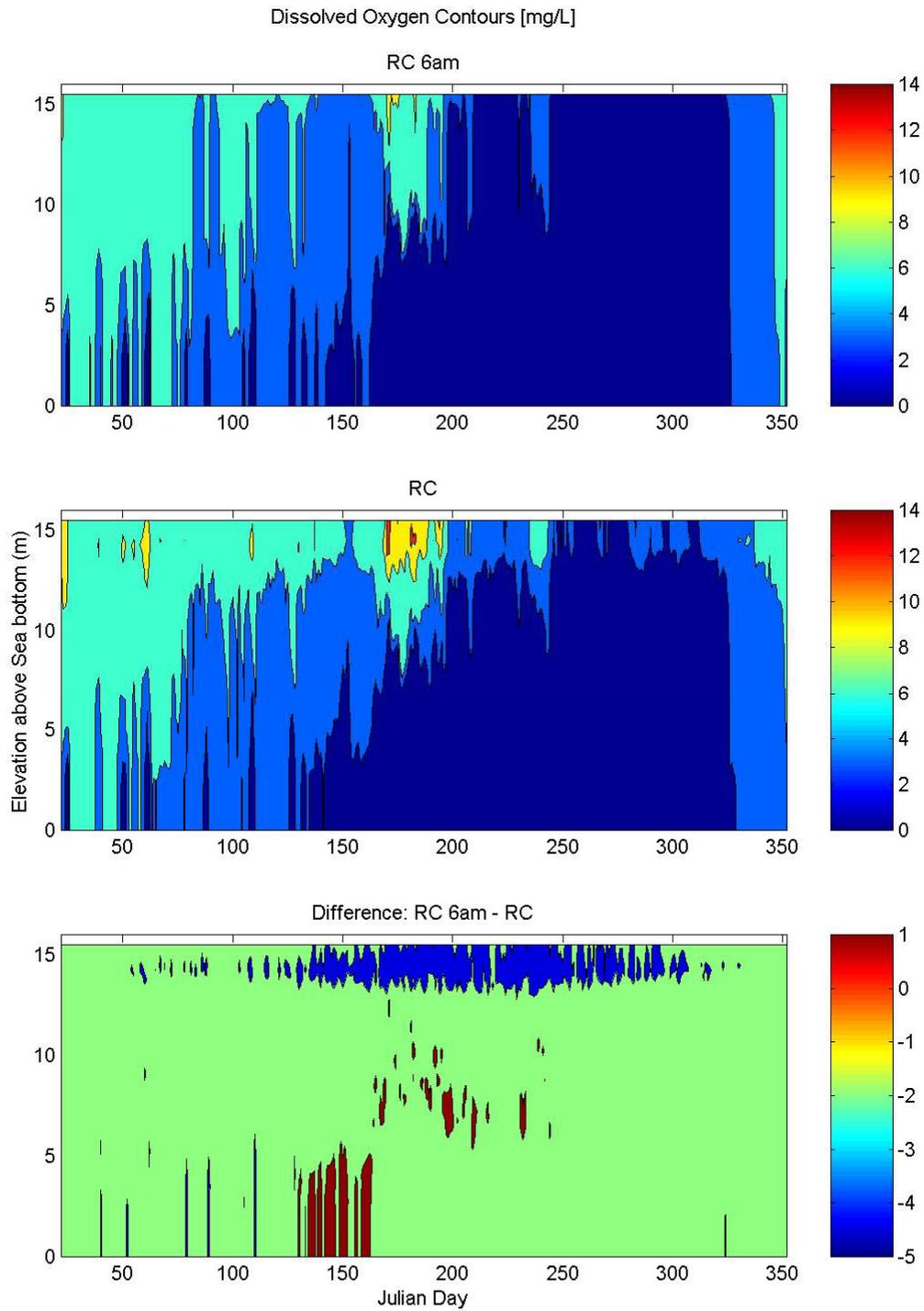


Figure D1-11. Simulated dissolved oxygen contours for noon and 6am for 1999.

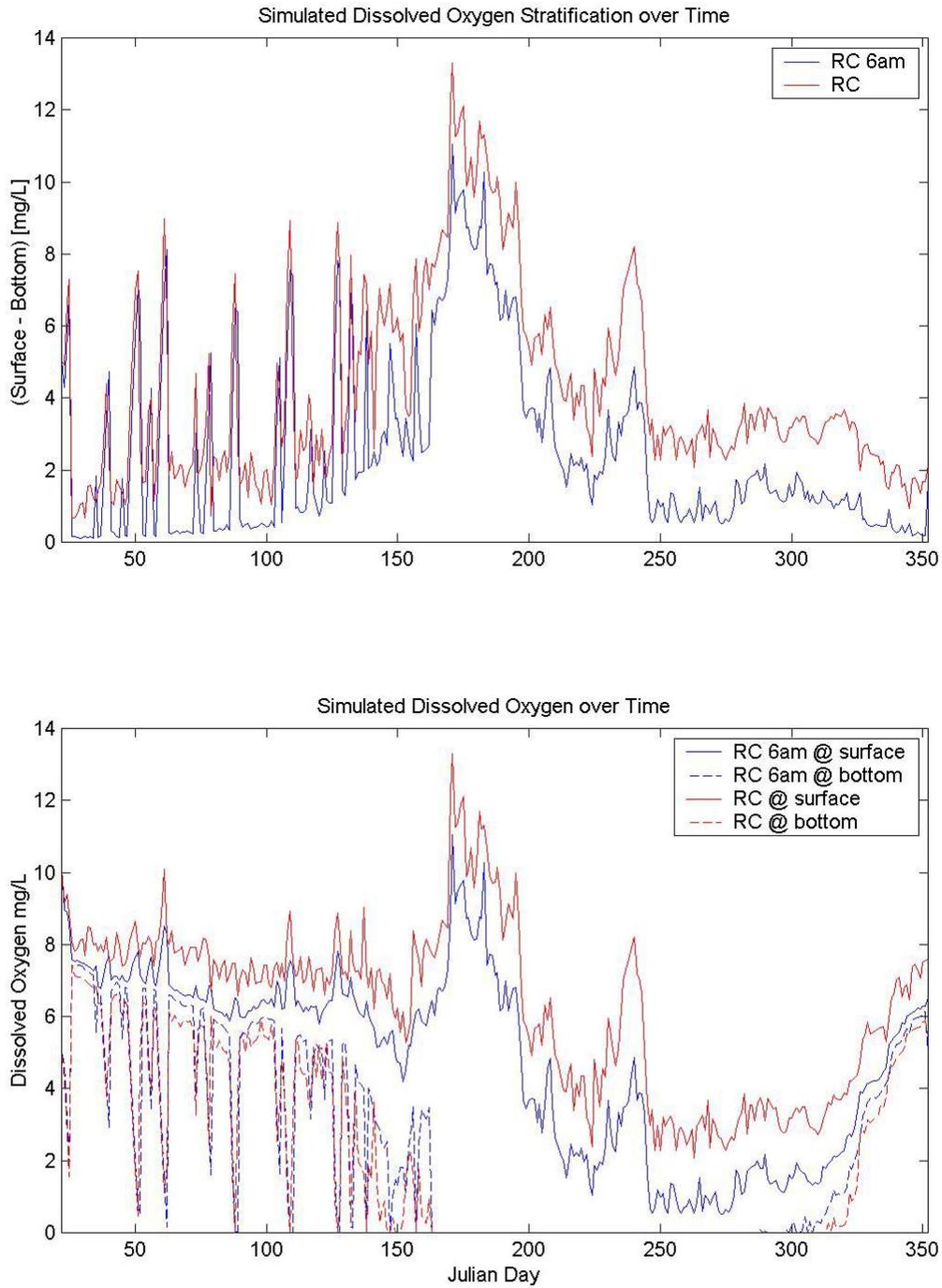


Figure D1-12. Simulated dissolved oxygen concentrations for noon and 6am for 1999.

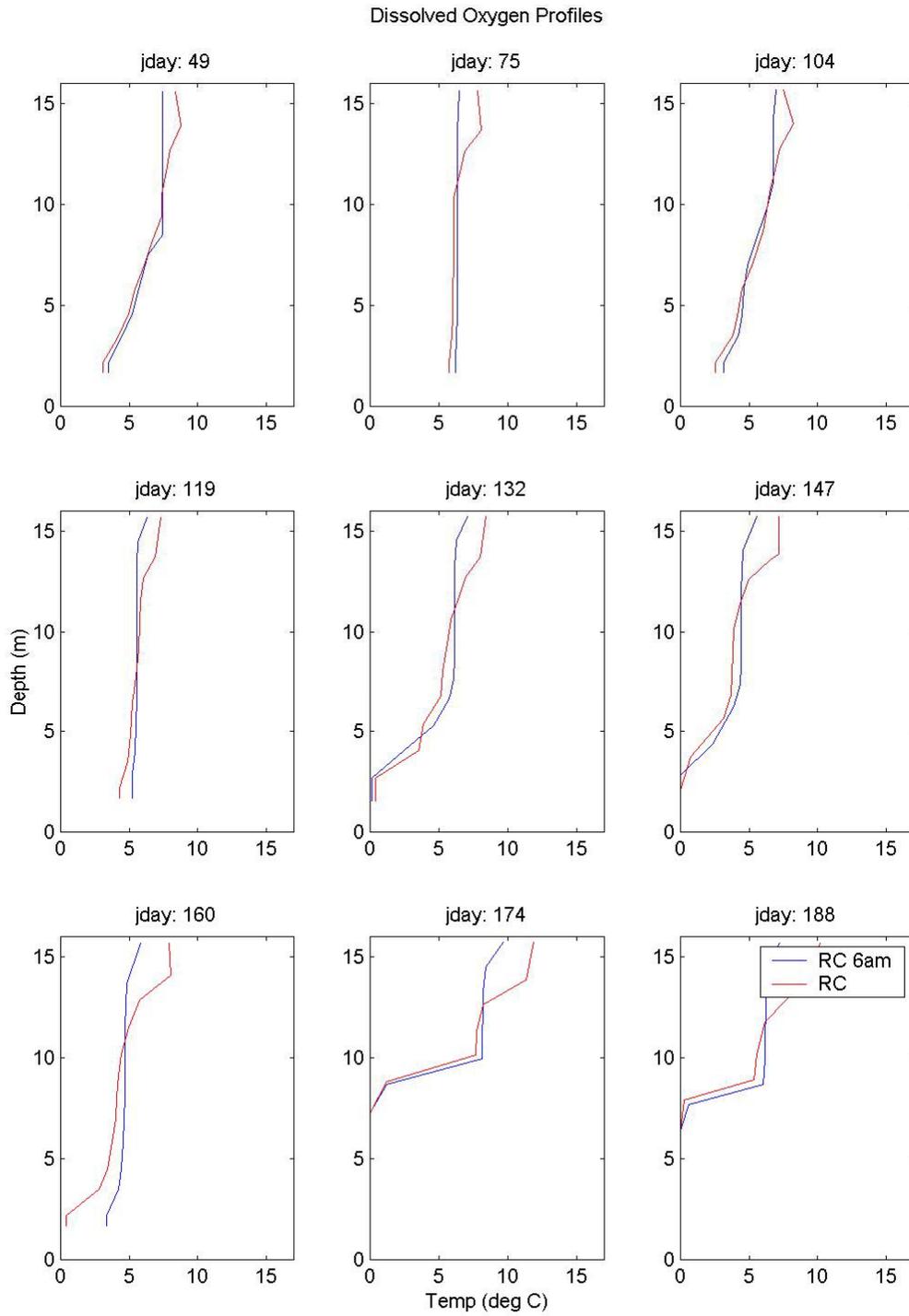


Figure D1-13A. Simulated dissolved oxygen profiles for noon and 6am for 1999.

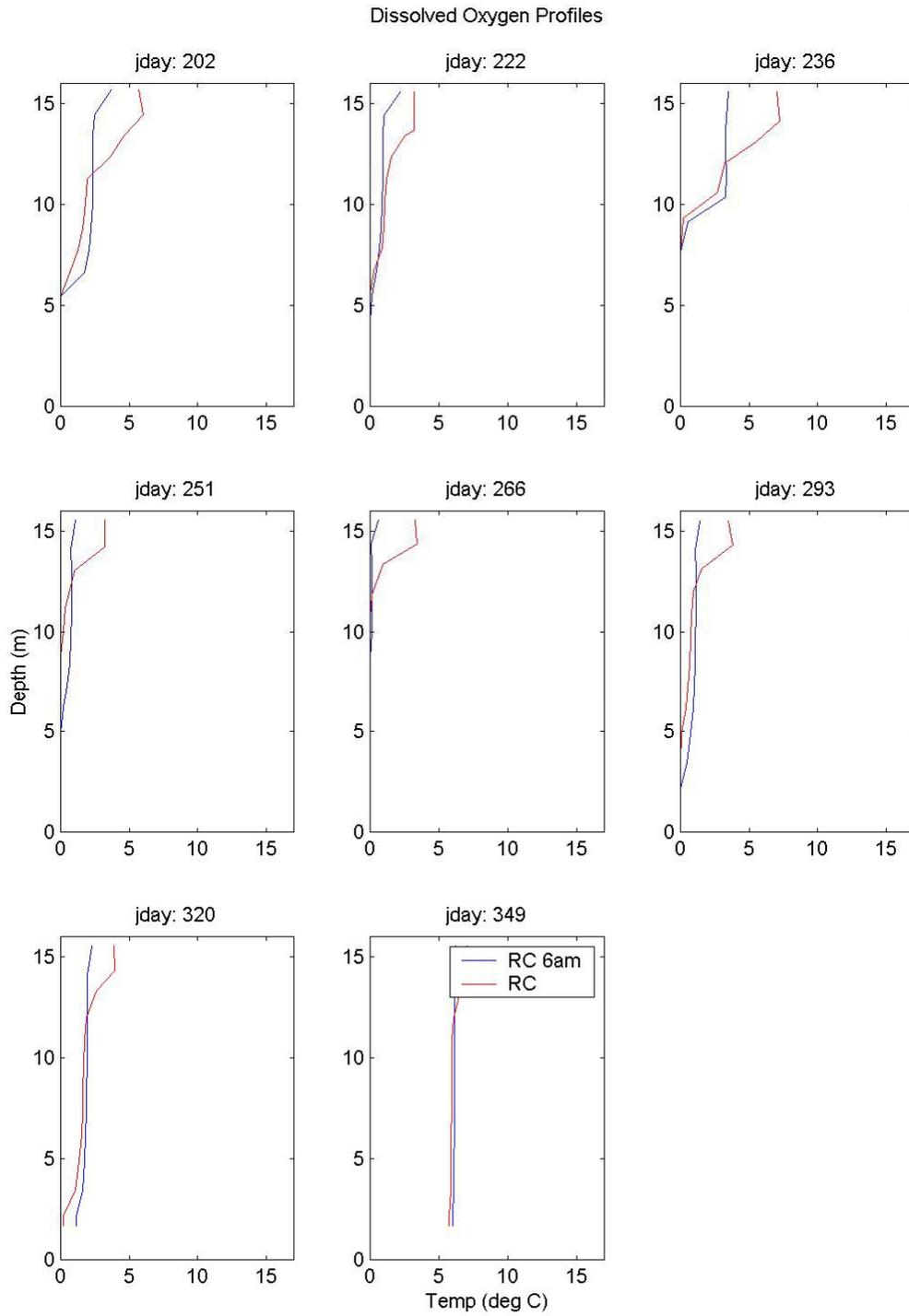


Figure D1-13B. Simulated dissolved oxygen profiles for noon and 6am for 1999.

APPENDIX D, ATTACHMENT D2
DLM-WQ Modeling of Alternatives – Figures

No Action – 2020

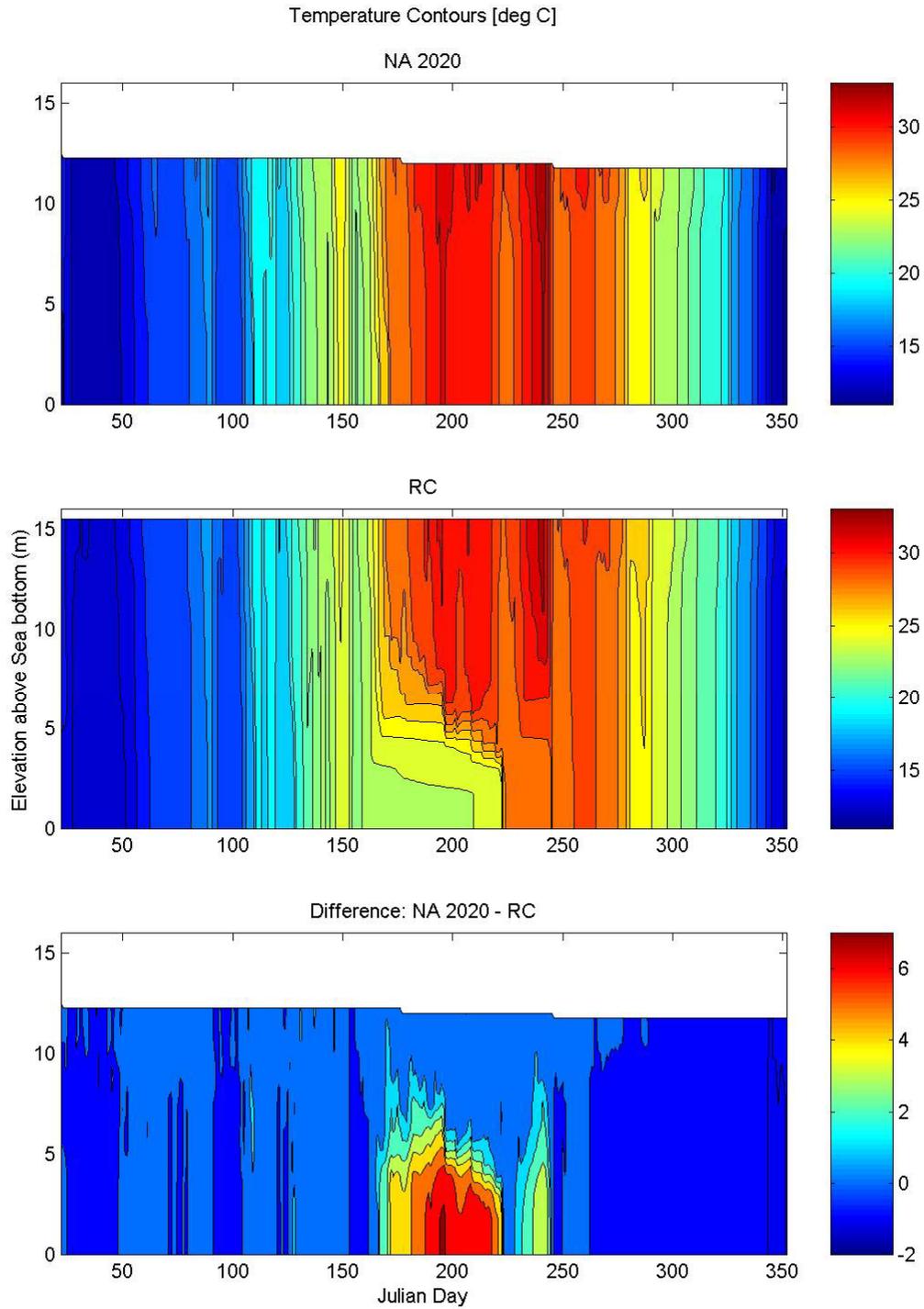


Figure D2-1. Simulated temperature contours for No Action Alternative at 2020 and Recent Conditions.

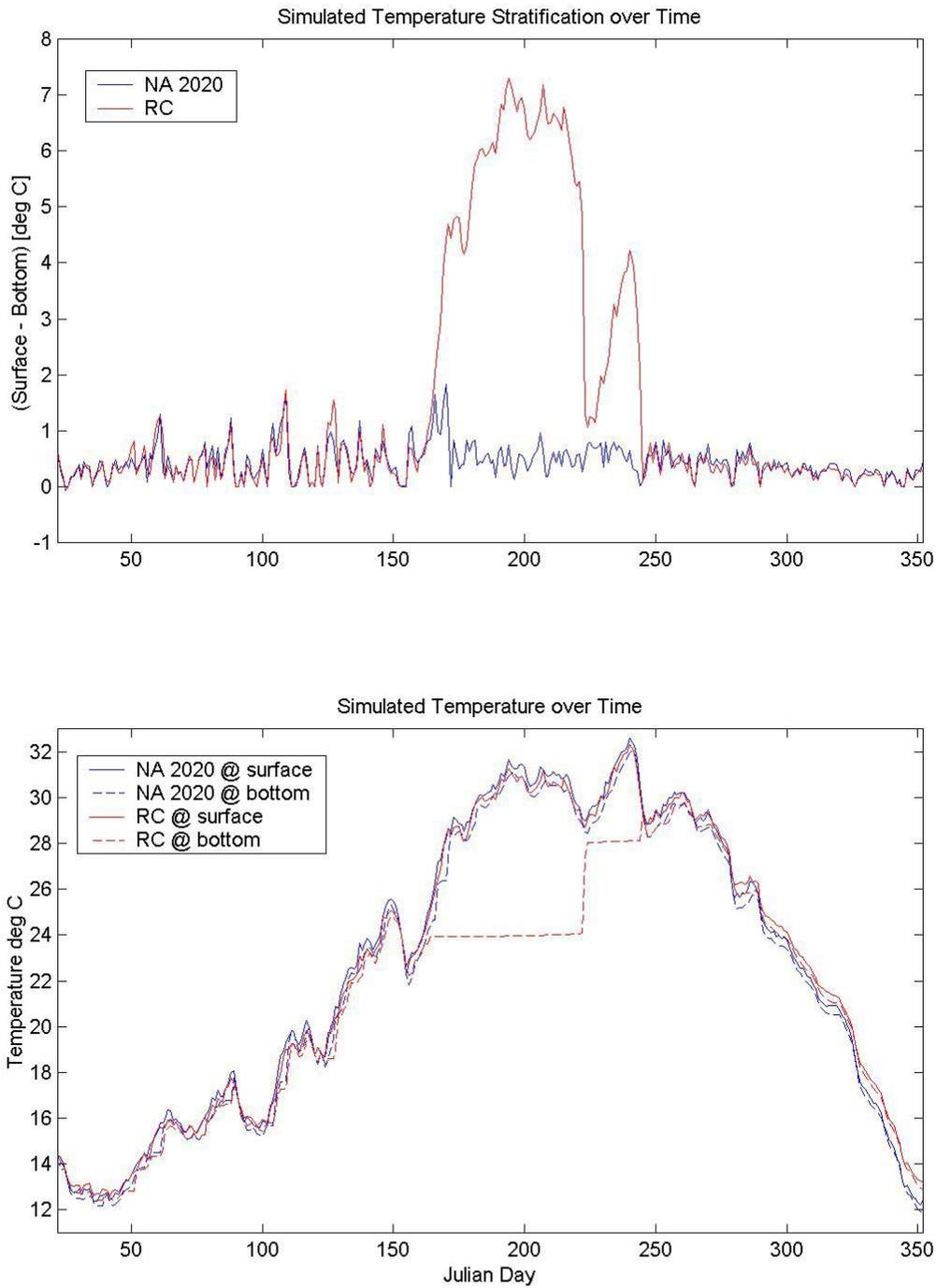


Figure D2-2. Simulated temperature for No Action Alternative at 2020 and Recent Conditions.

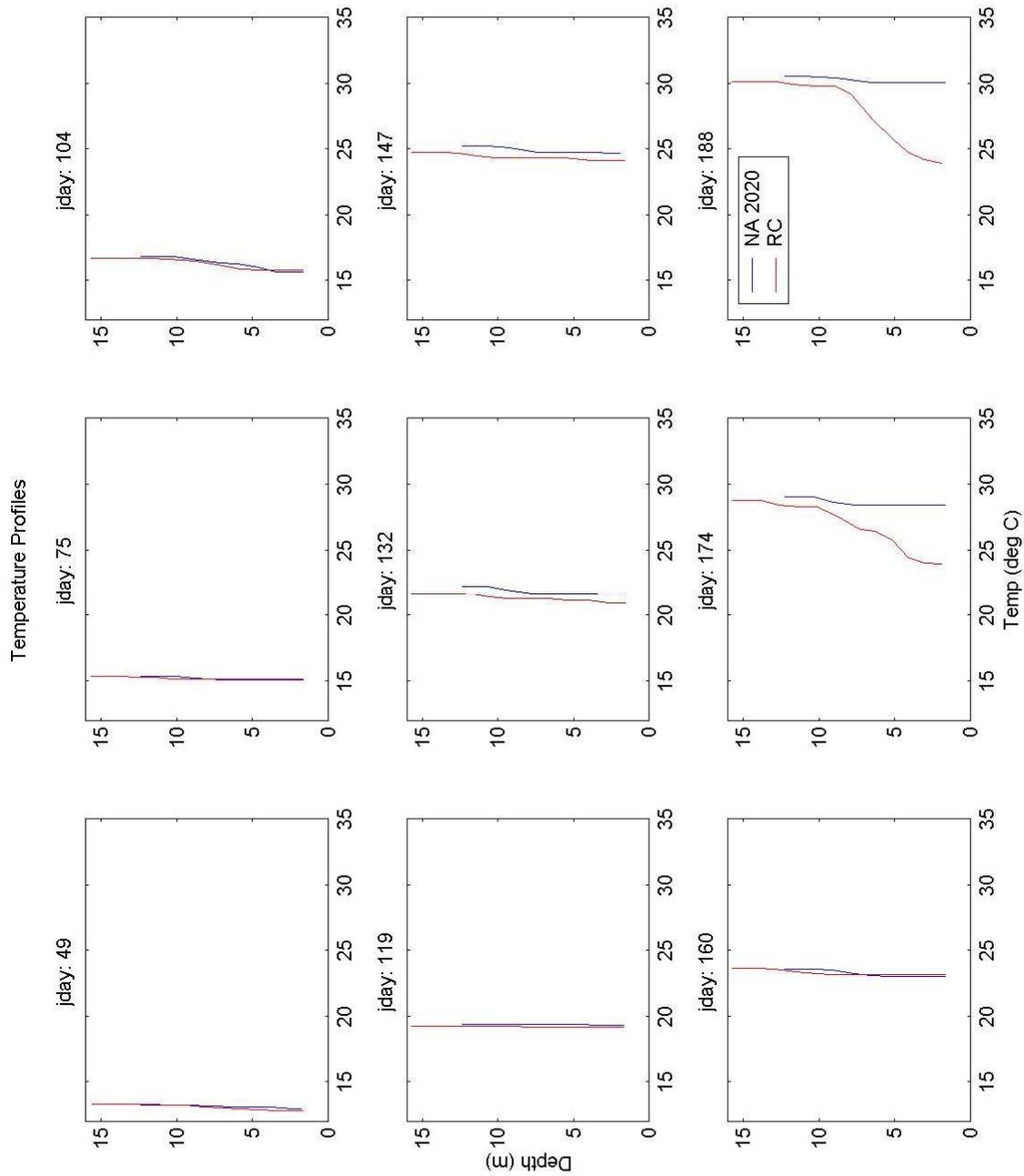


Figure D2-3A. Simulated temperature profiles for No Action Alternative at 2020 and Recent Conditions.

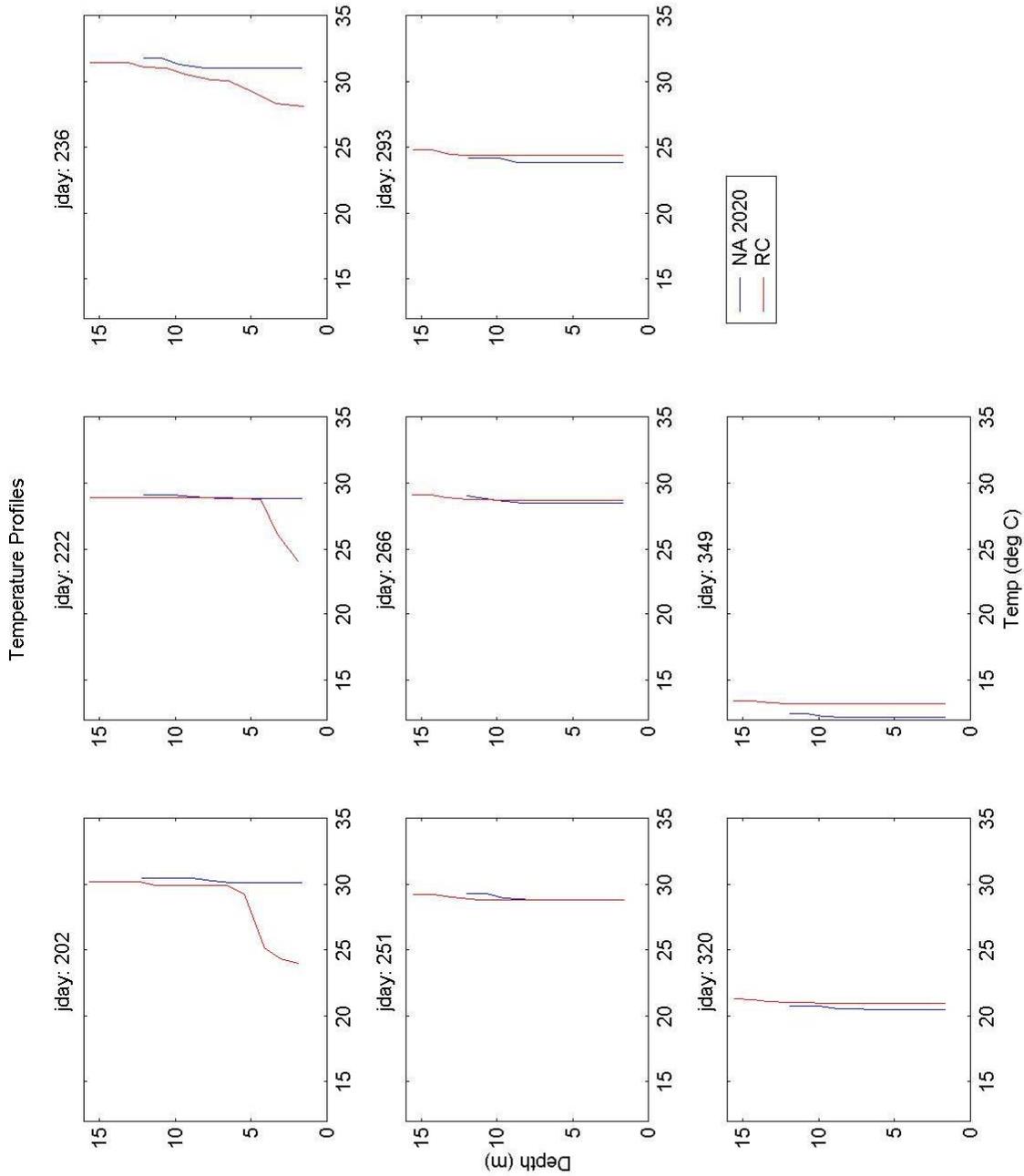


Figure D2-3B. Simulated temperature profiles for No Action Alternative at 2020 and Recent Conditions.

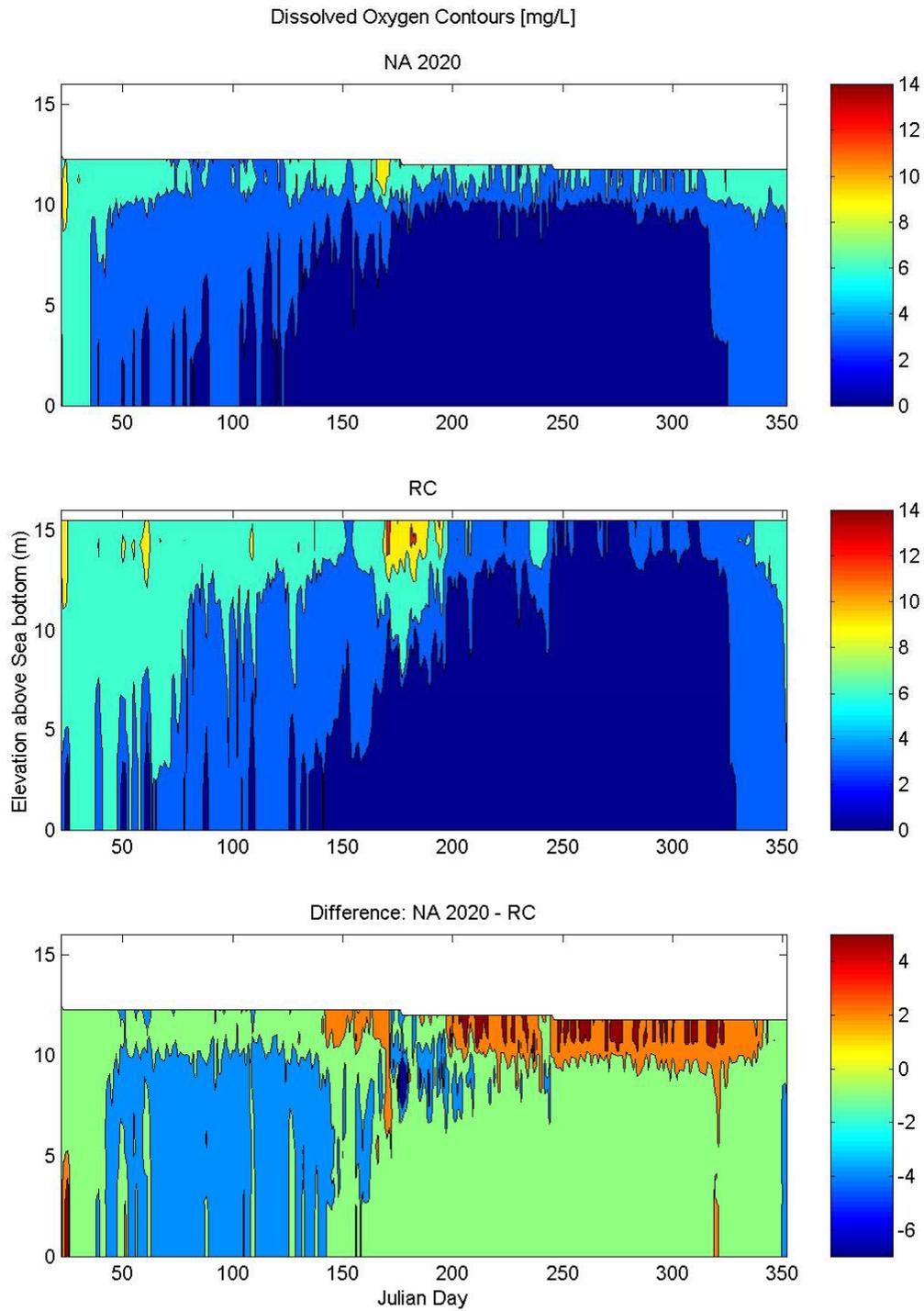


Figure D2-4. Simulated dissolved oxygen (noon) contours for No Action Alternative at 2020 and Recent Conditions.

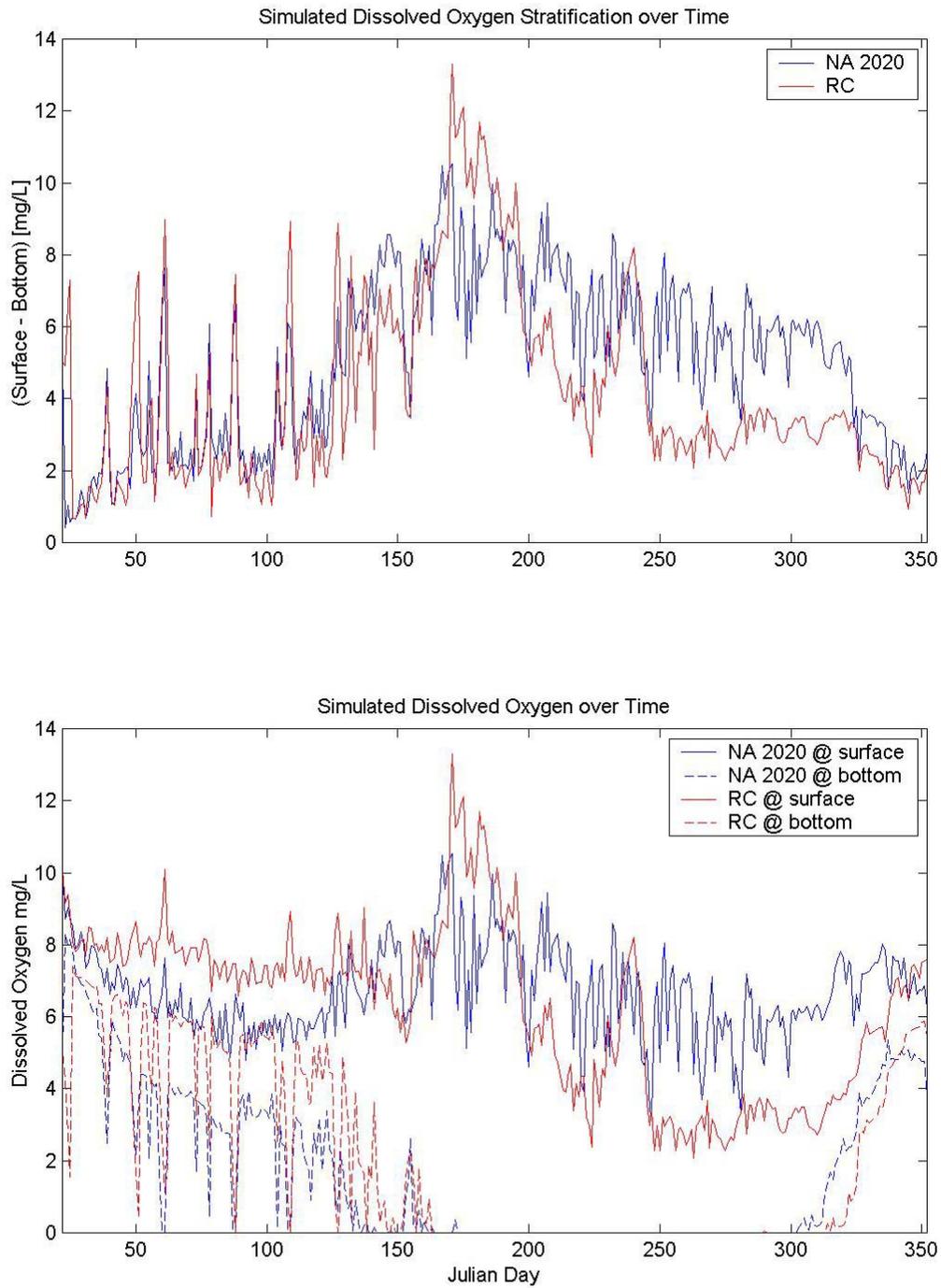


Figure D2-5. Simulated dissolved oxygen (noon) concentrations for No Action Alternative at 2020 and Recent Conditions.

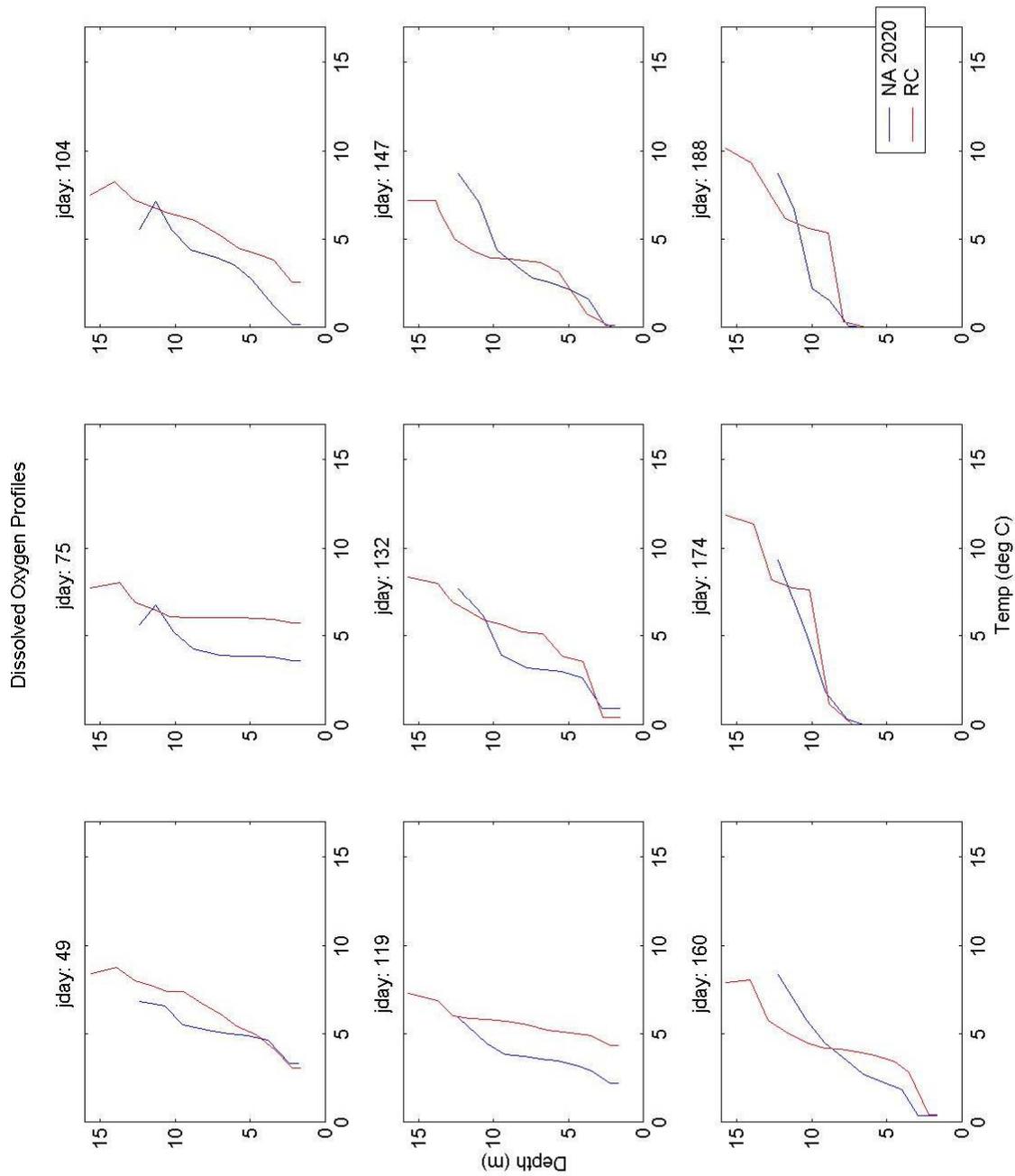


Figure D2-6A. Simulated dissolved oxygen (noon) profiles for No Action Alternative at 2020 and Recent Conditions.

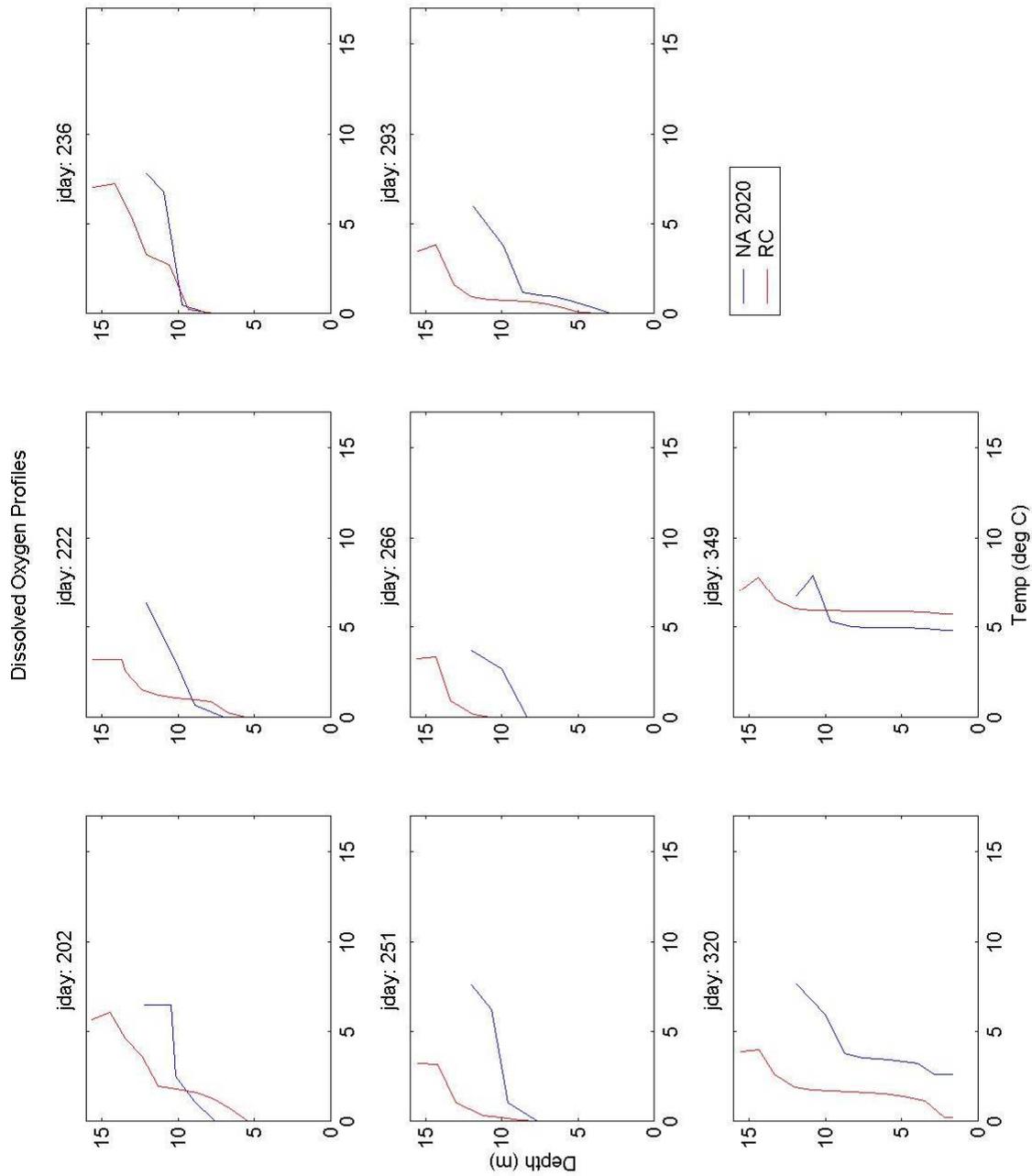


Figure D2-6B. Simulated dissolved oxygen (noon) profiles for No Action Alternative at 2020 and Recent Conditions.

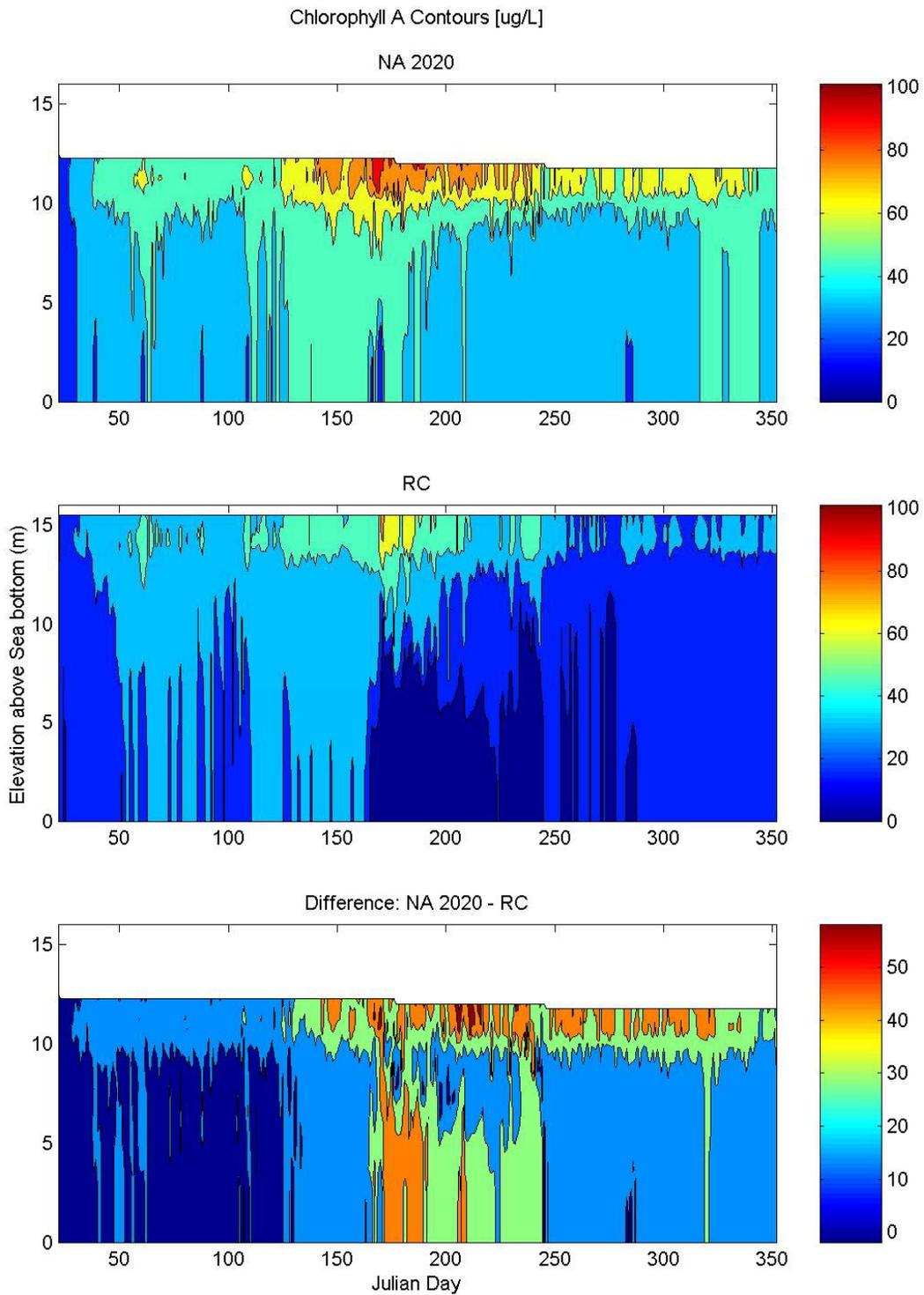


Figure D2-7. Simulated chlorophyll a contours for No Action Alternative at 2020 and Recent Conditions.

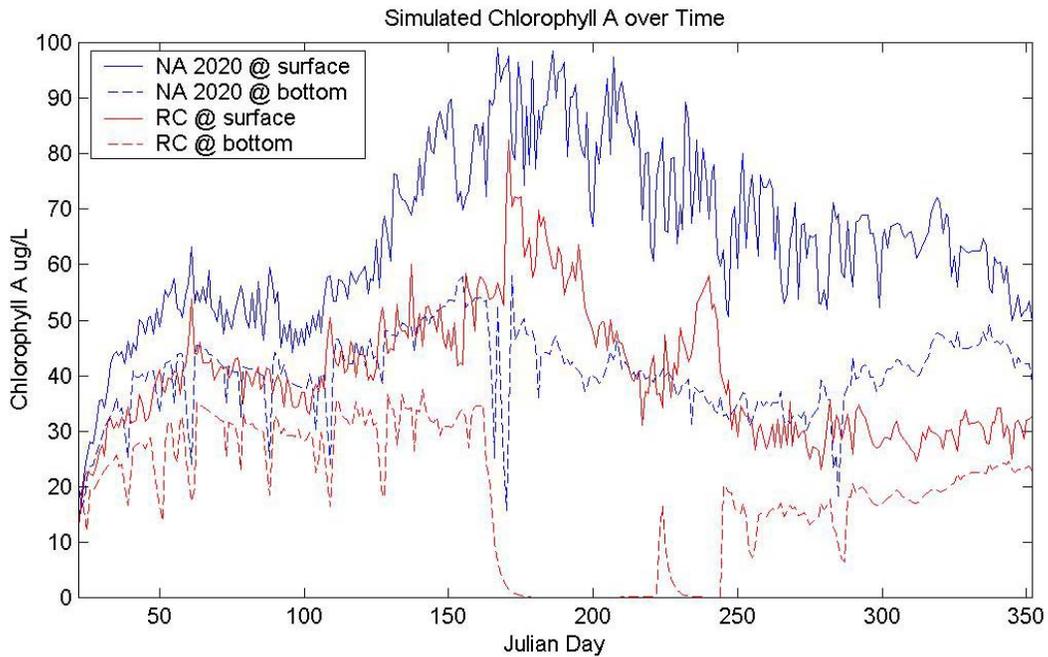
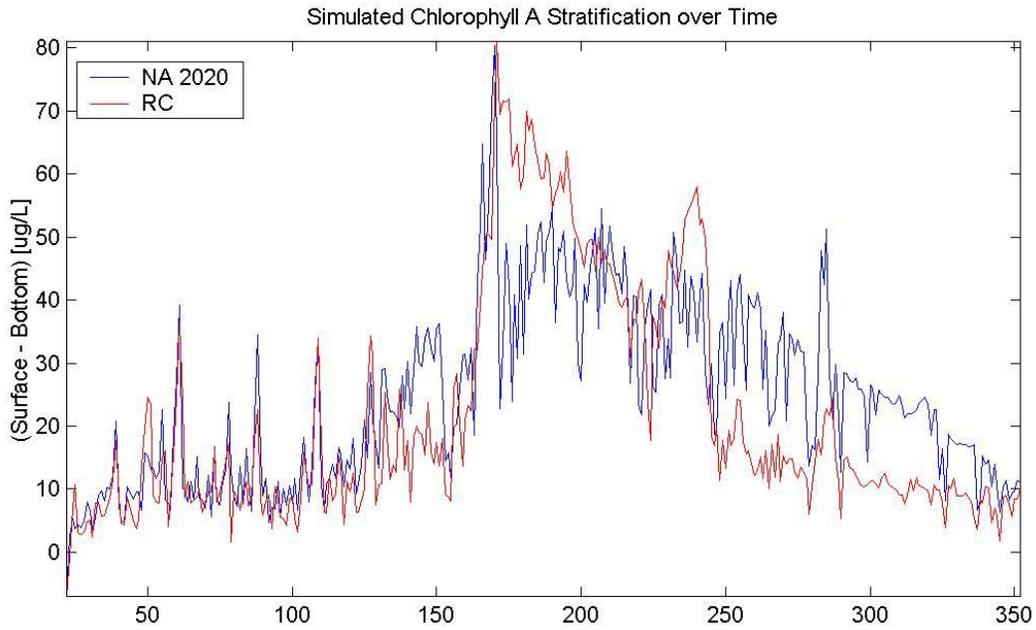


Figure D2-8. Simulated chlorophyll a concentrations for No Action Alternative at 2020 and Recent Conditions.

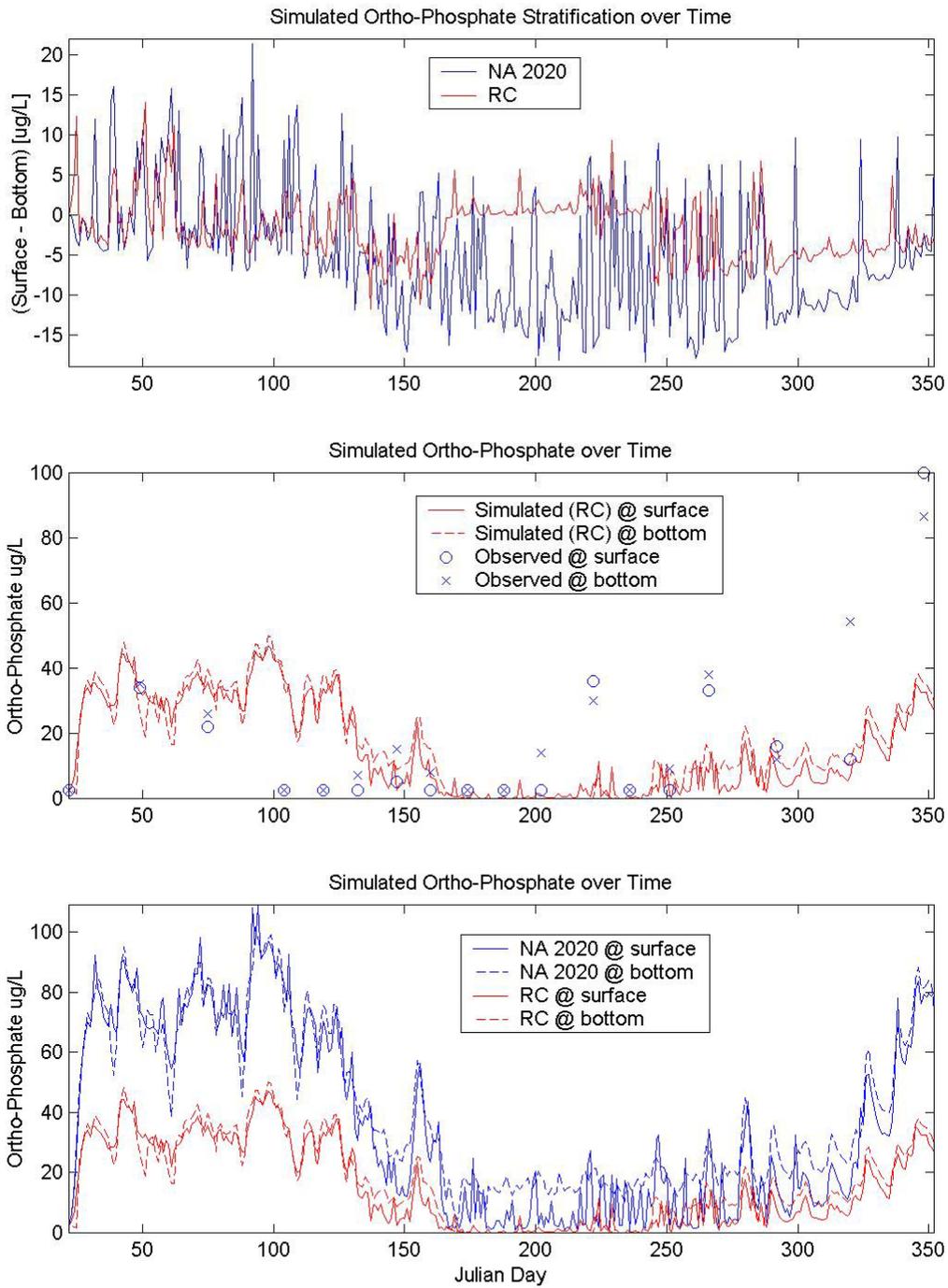


Figure D2-9. Simulated orthophosphate concentrations for No Action Alternative at 2020 and Recent Conditions.

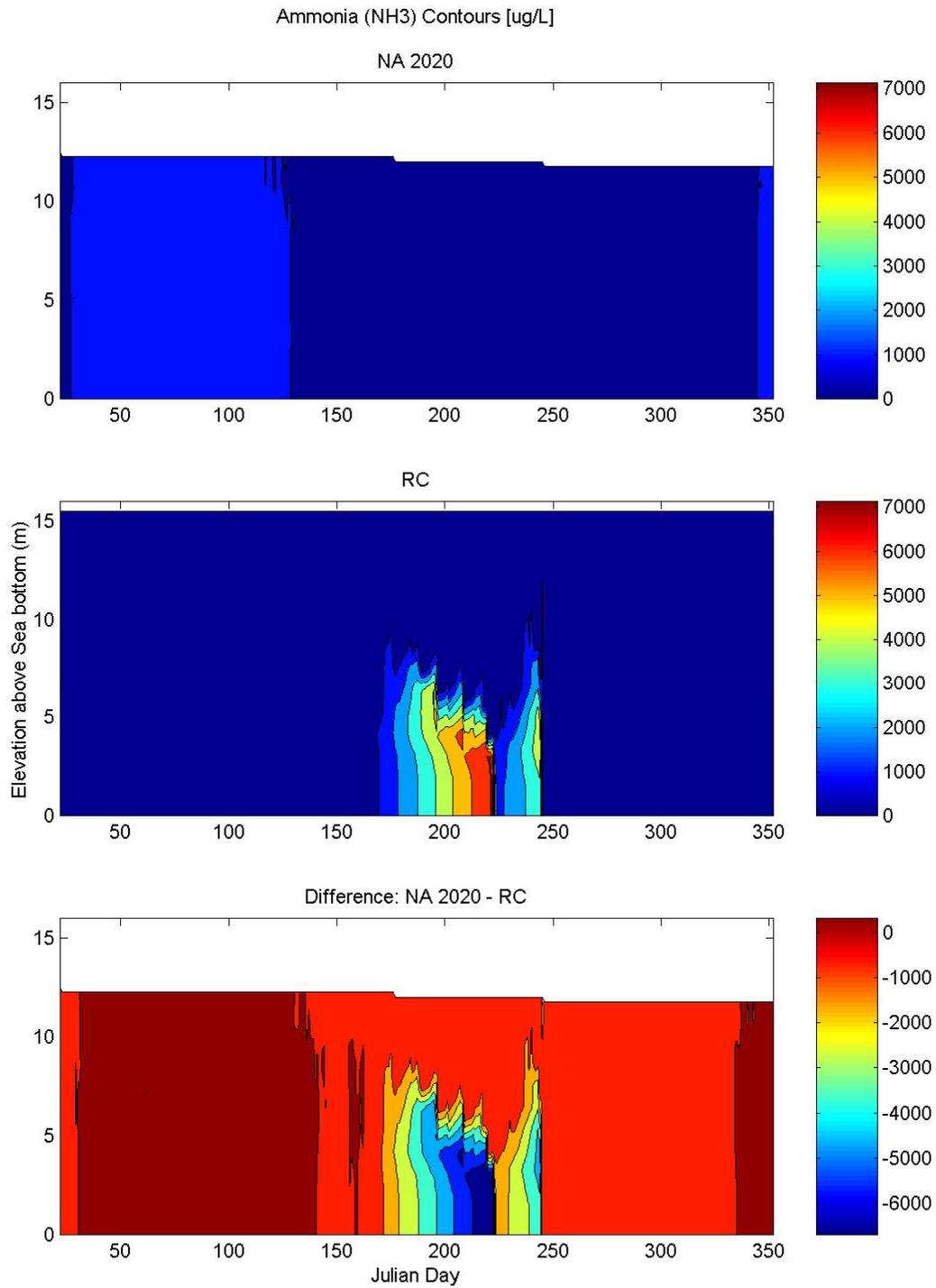


Figure D2-10. Simulated ammonia contours for No Action Alternative at 2020 and Recent Conditions.

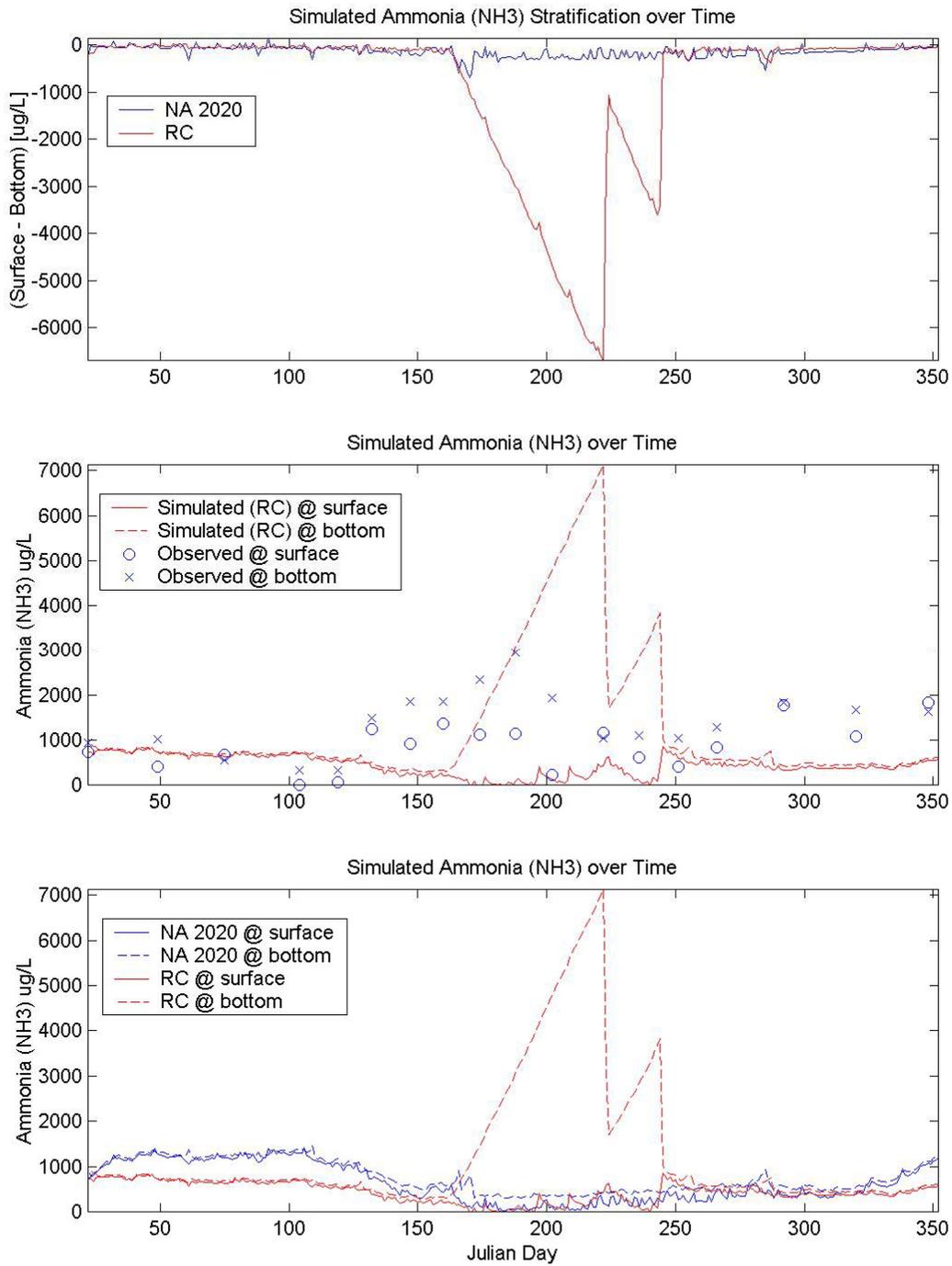


Figure D2-11. Simulated ammonia concentrations for No Action Alternative at 2020 and Recent Conditions.

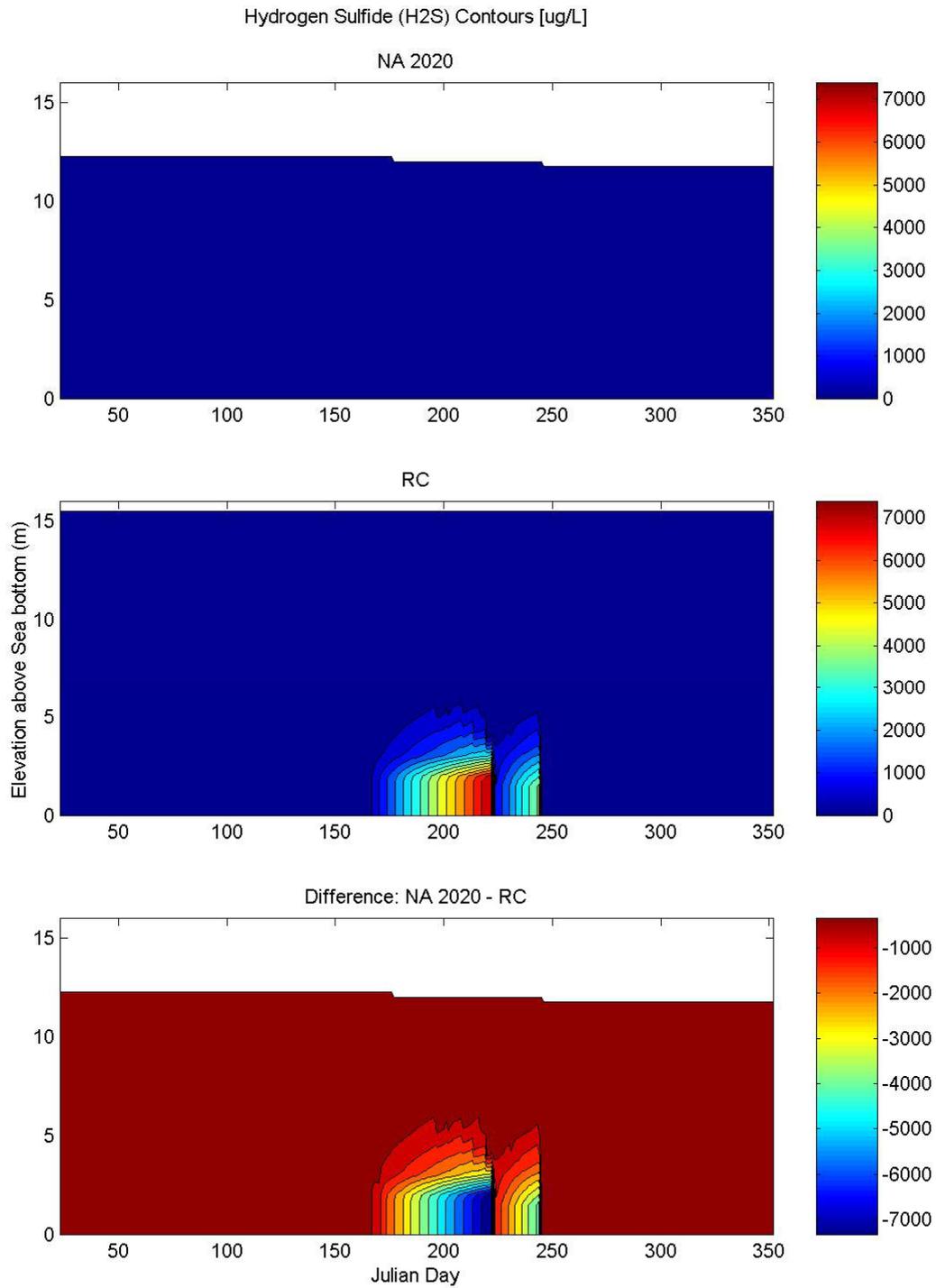


Figure D2-12. Simulated hydrogen sulfide contours for No Action Alternative at 2020 and Recent Conditions.

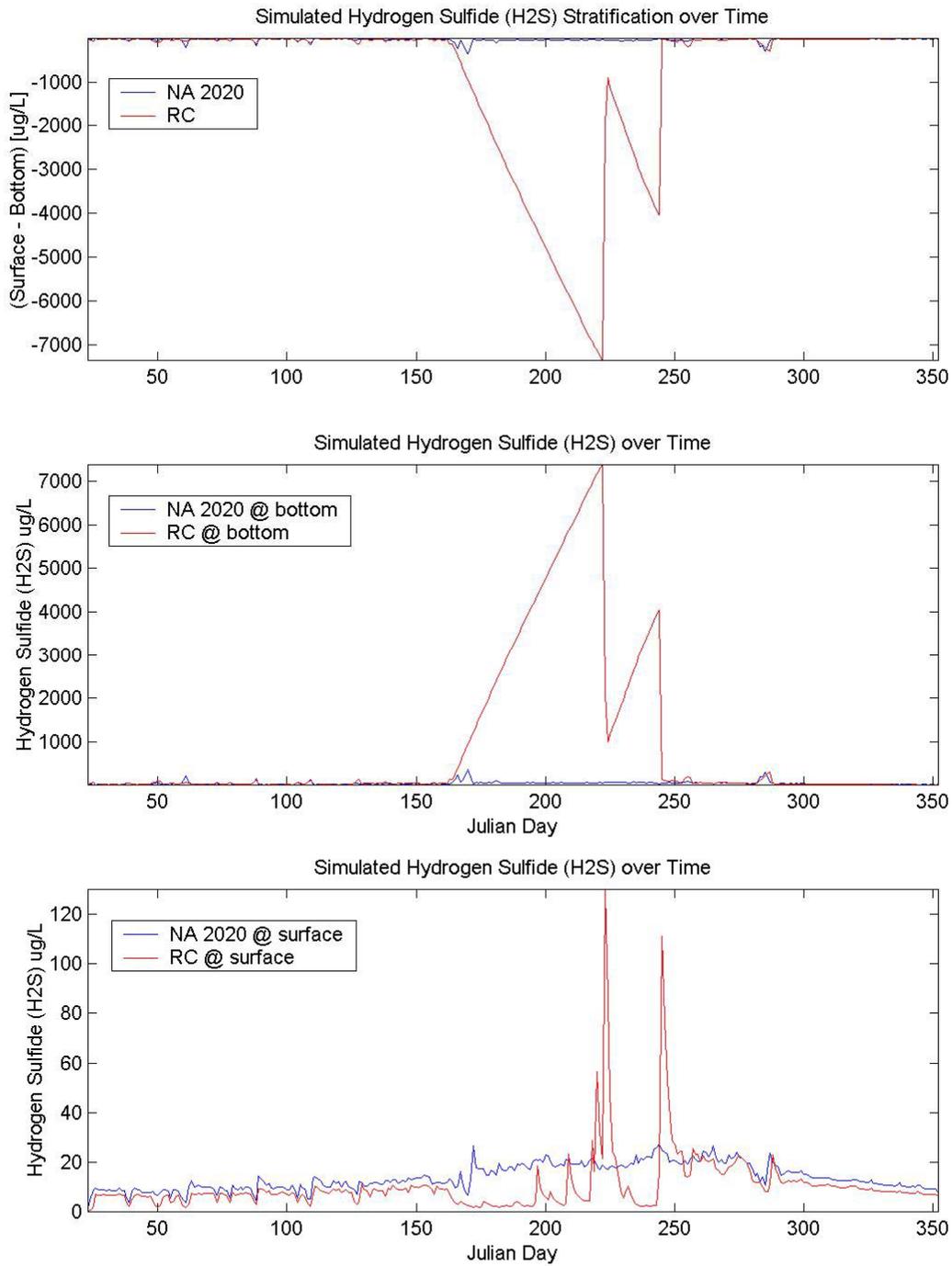


Figure D2-13. Simulated hydrogen sulfide concentrations for No Action Alternative at 2020 and Recent Conditions.

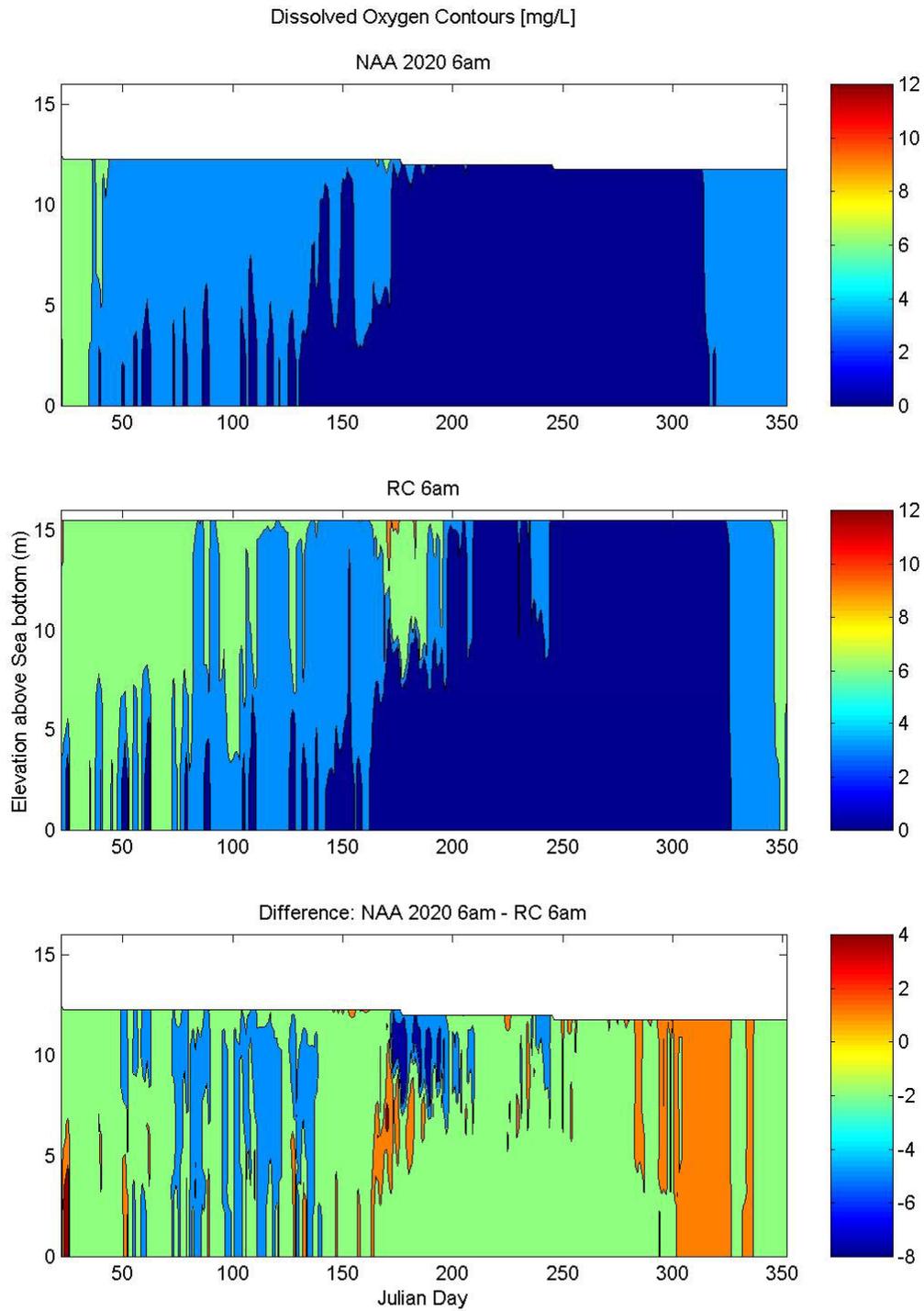


Figure D2-14. Simulated dissolved oxygen (6am) contours for No Action Alternative at 2020 and Recent Conditions.

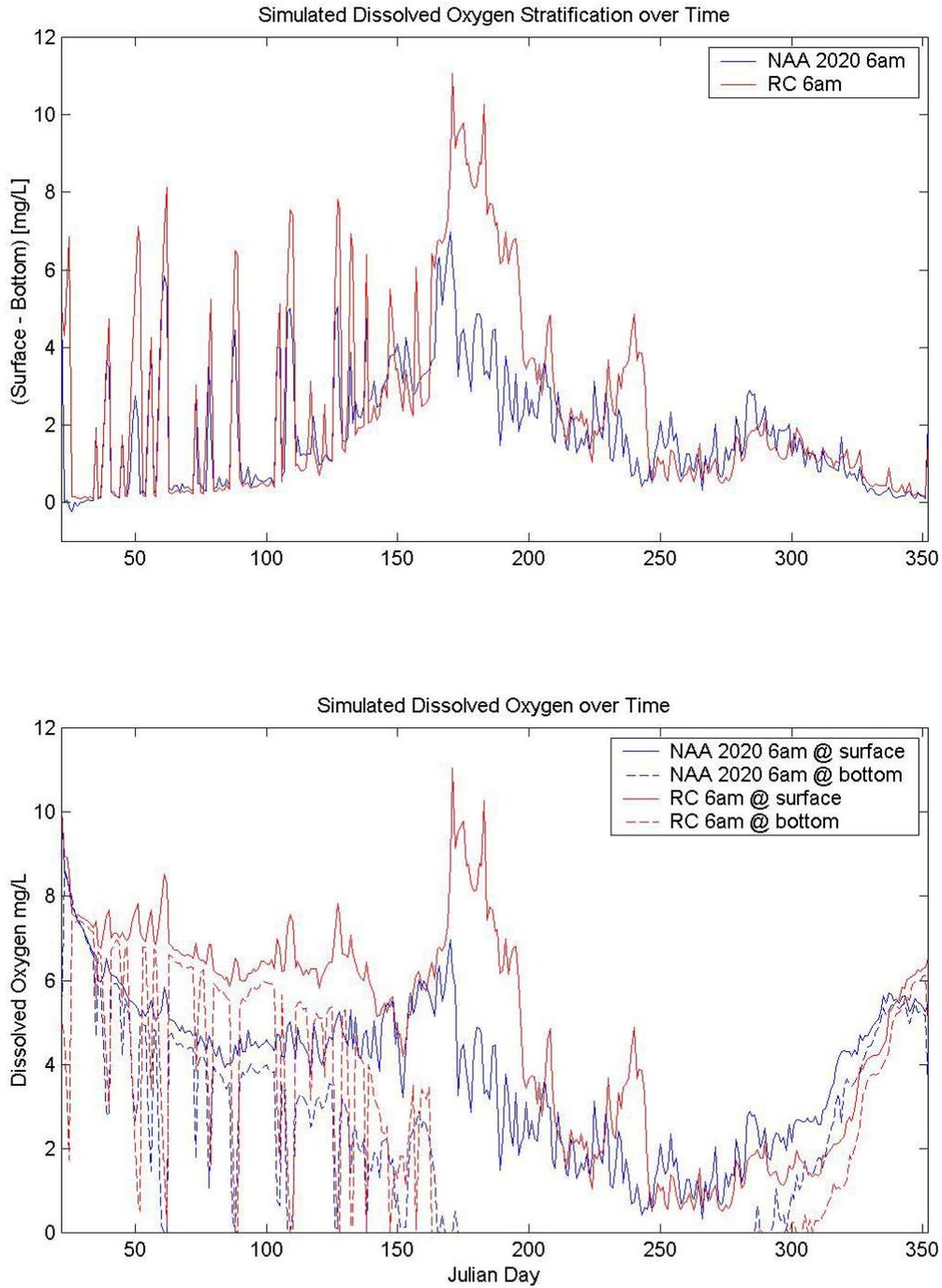


Figure D2-15. Simulated dissolved oxygen (6am) concentrations for No Action Alternative at 2020 and Recent Conditions.

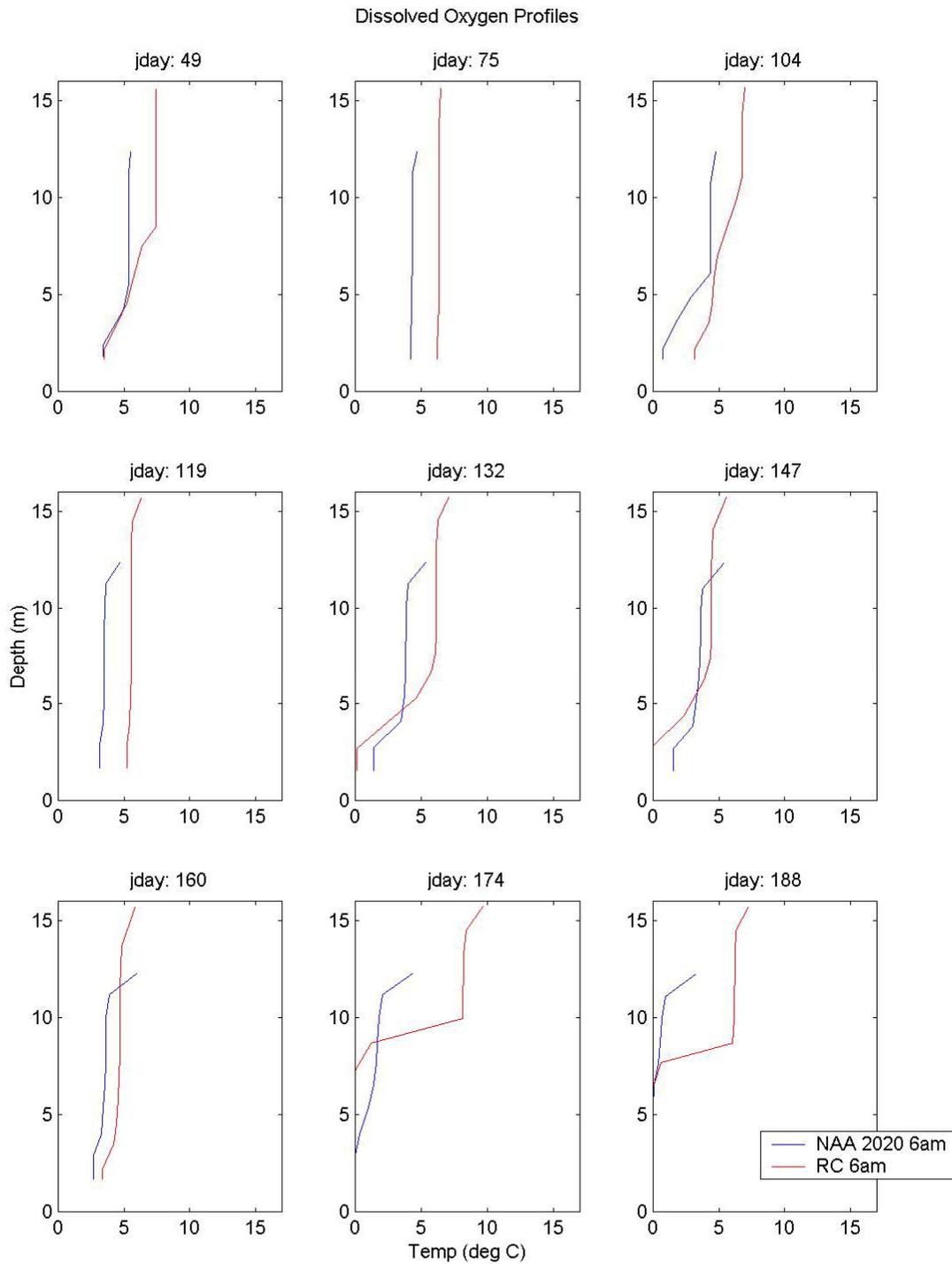


Figure D2-16A. Simulated dissolved oxygen (6am) profiles for No Action Alternative at 2020 and Recent Conditions.

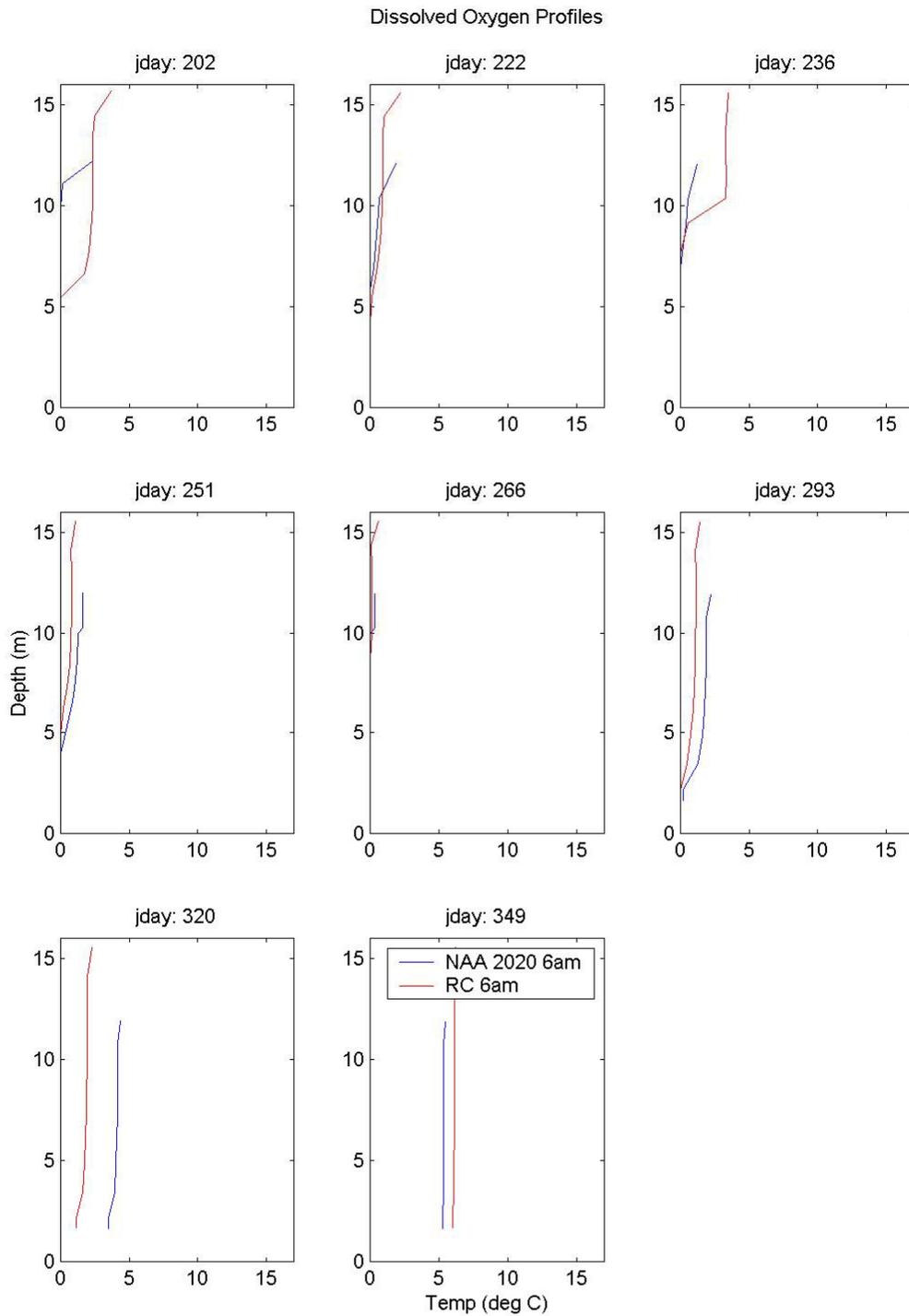


Figure D2-16B. Simulated dissolved oxygen (6am) profiles for No Action Alternative at 2020 and Recent Conditions.

No Action 2040

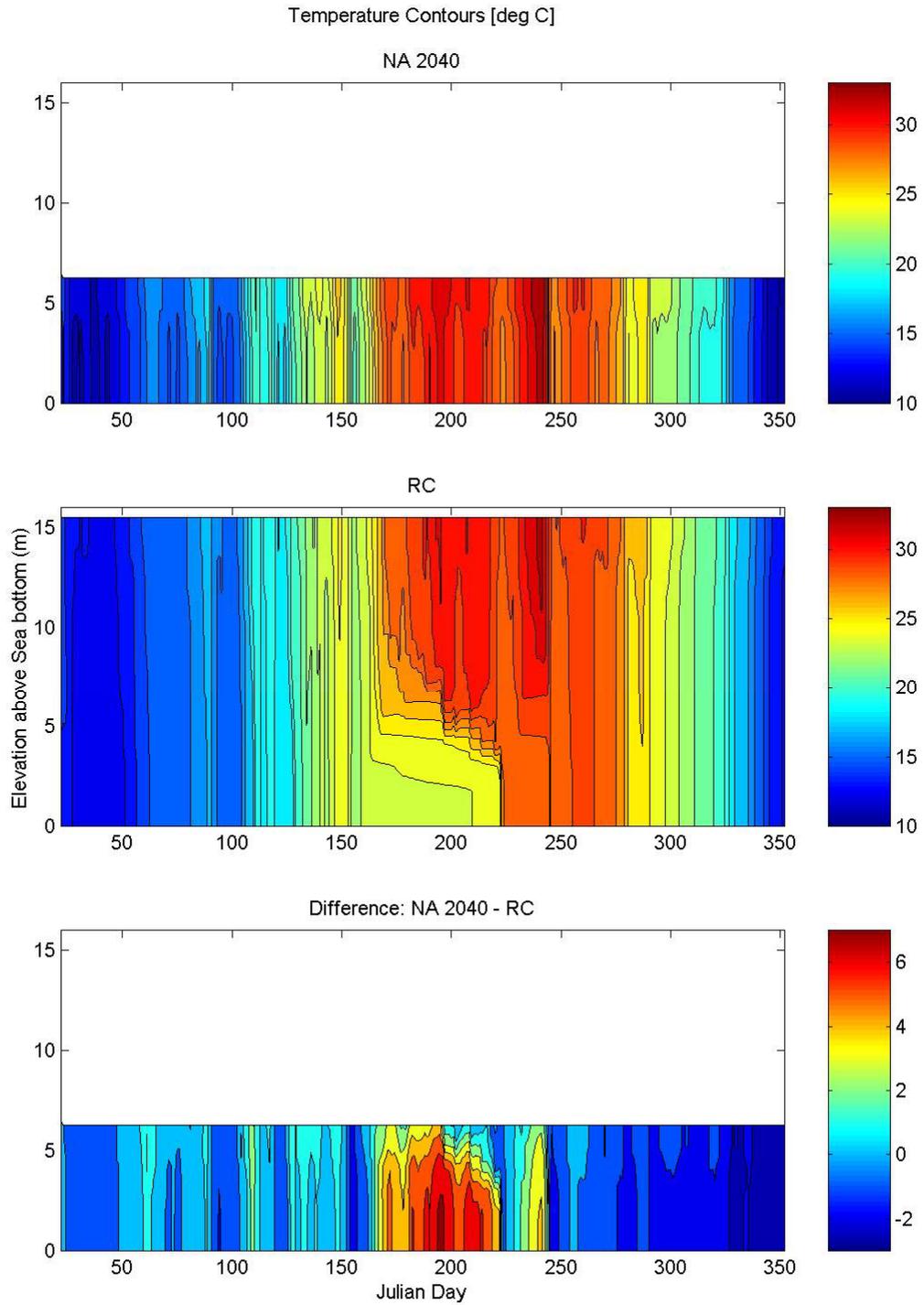


Figure D2-17. Simulated temperature contours for No Action Alternative at 2040 and Recent Conditions.

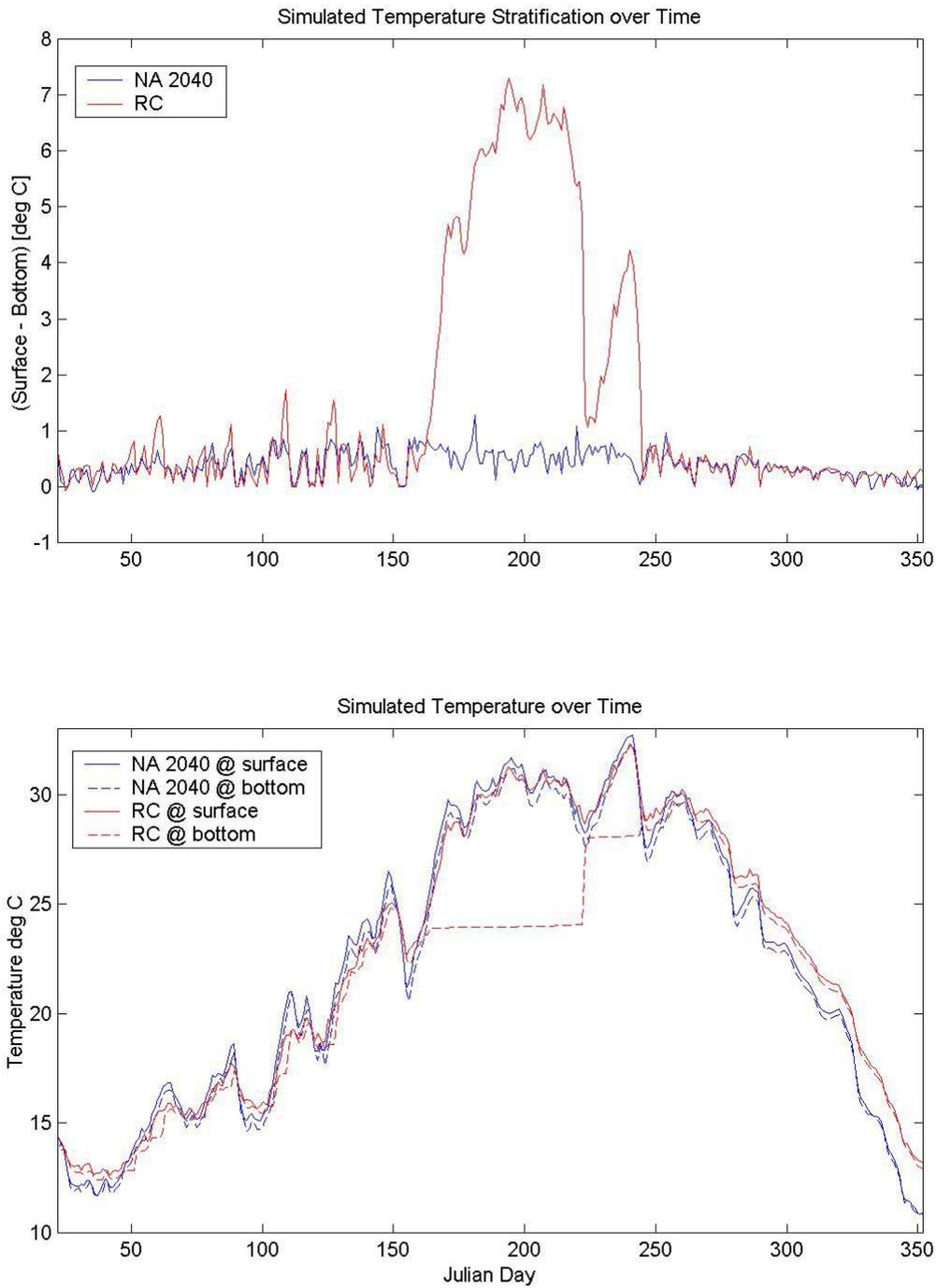


Figure D2-18. Simulated temperature for No Action Alternative at 2040 and Recent Conditions.

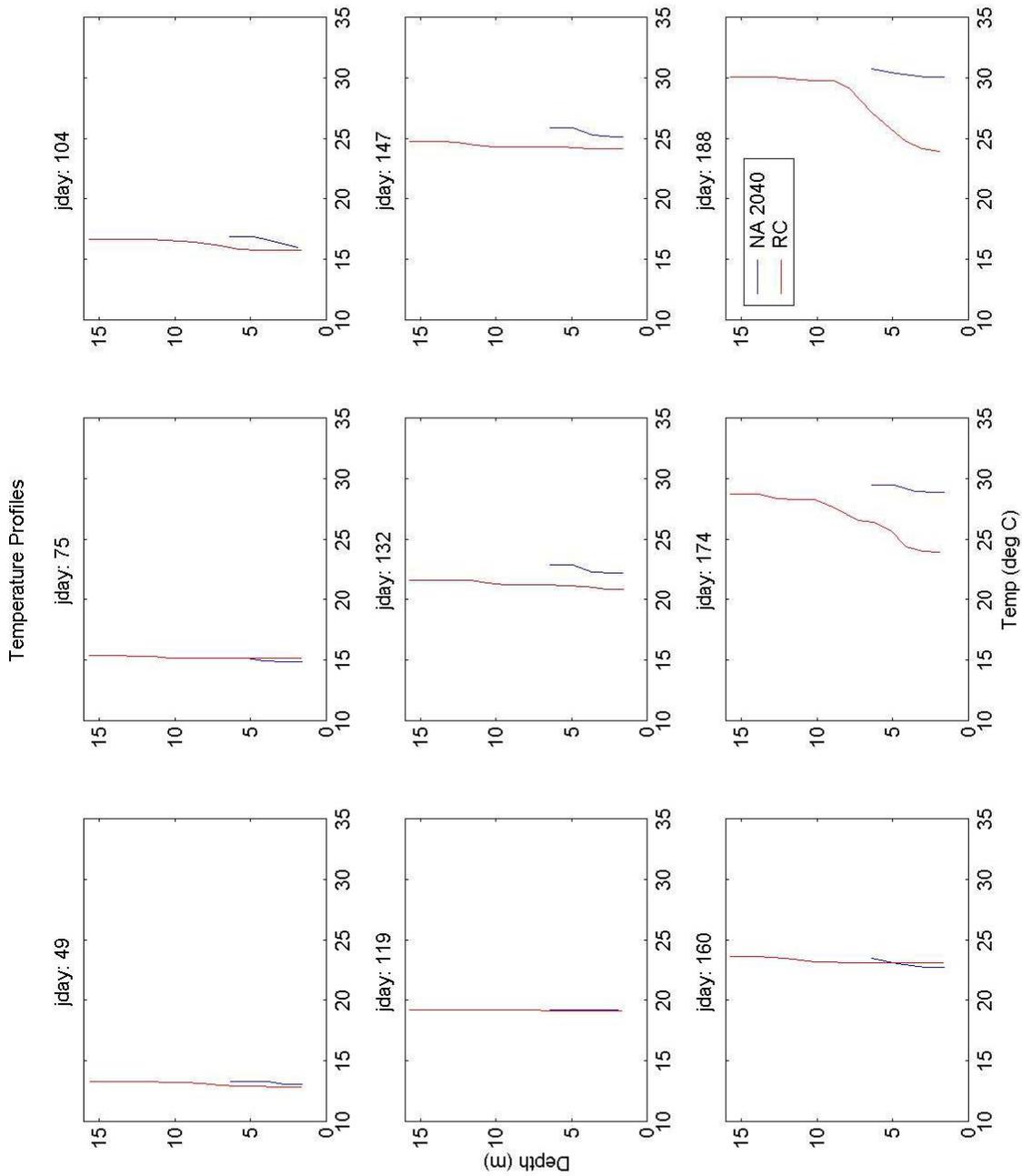


Figure D2-19A. Simulated temperature profiles for No Action Alternative at 2040 and Recent Conditions.

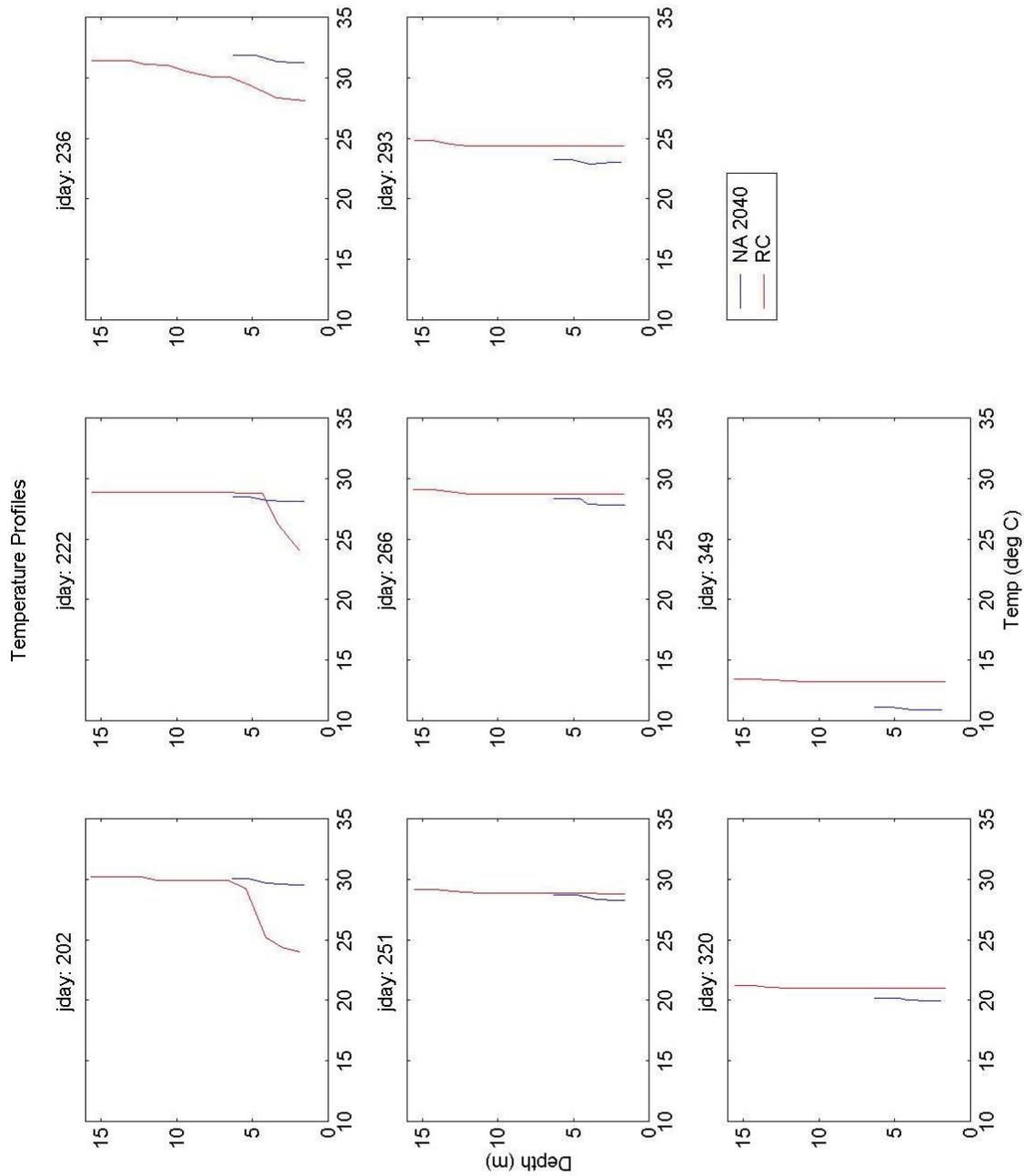


Figure D2-19B. Simulated temperature profiles for No Action Alternative at 2040 and Recent Conditions.

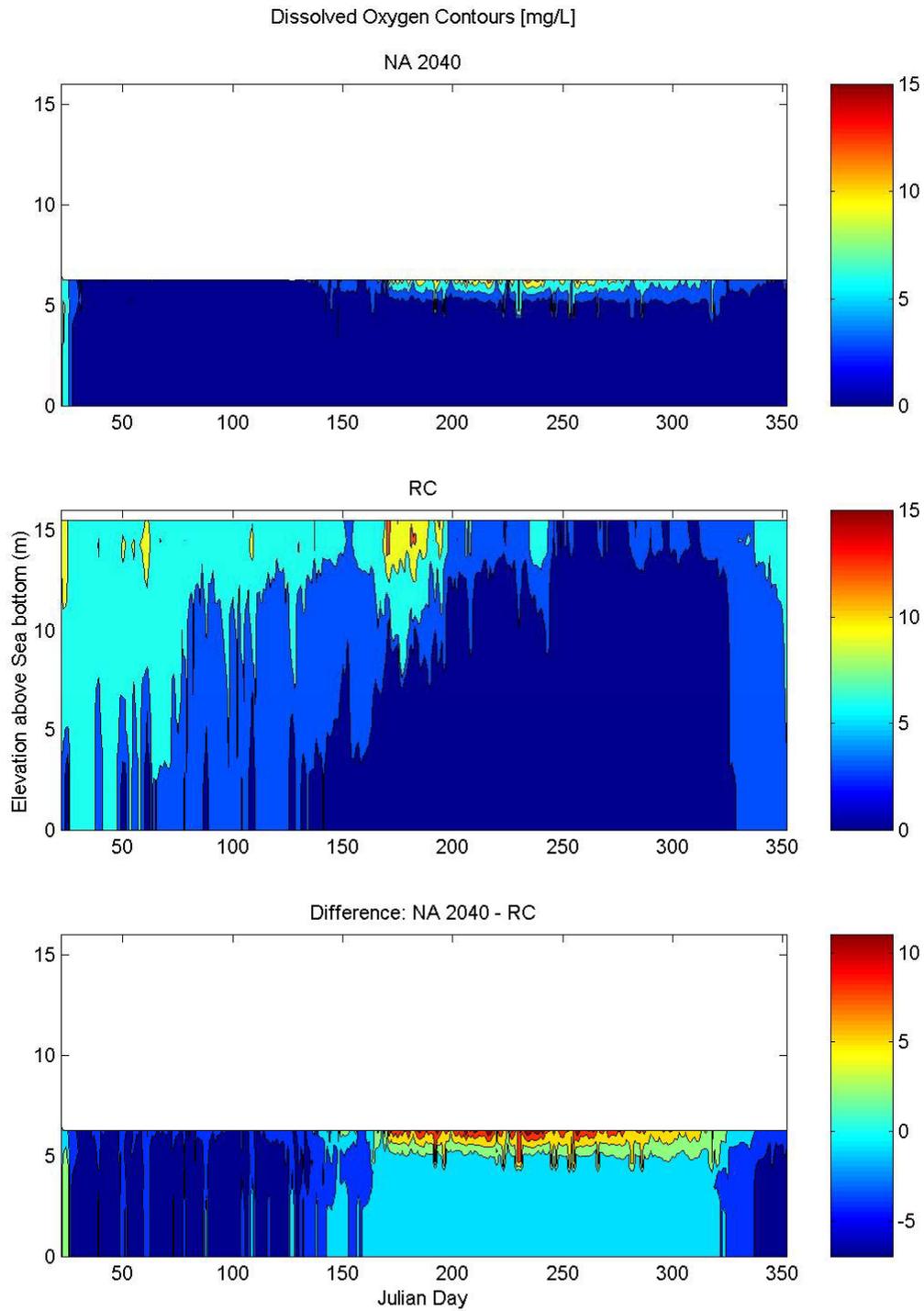


Figure D2-20. Simulated dissolved oxygen (noon) contours for No Action Alternative at 2040 and Recent Conditions.

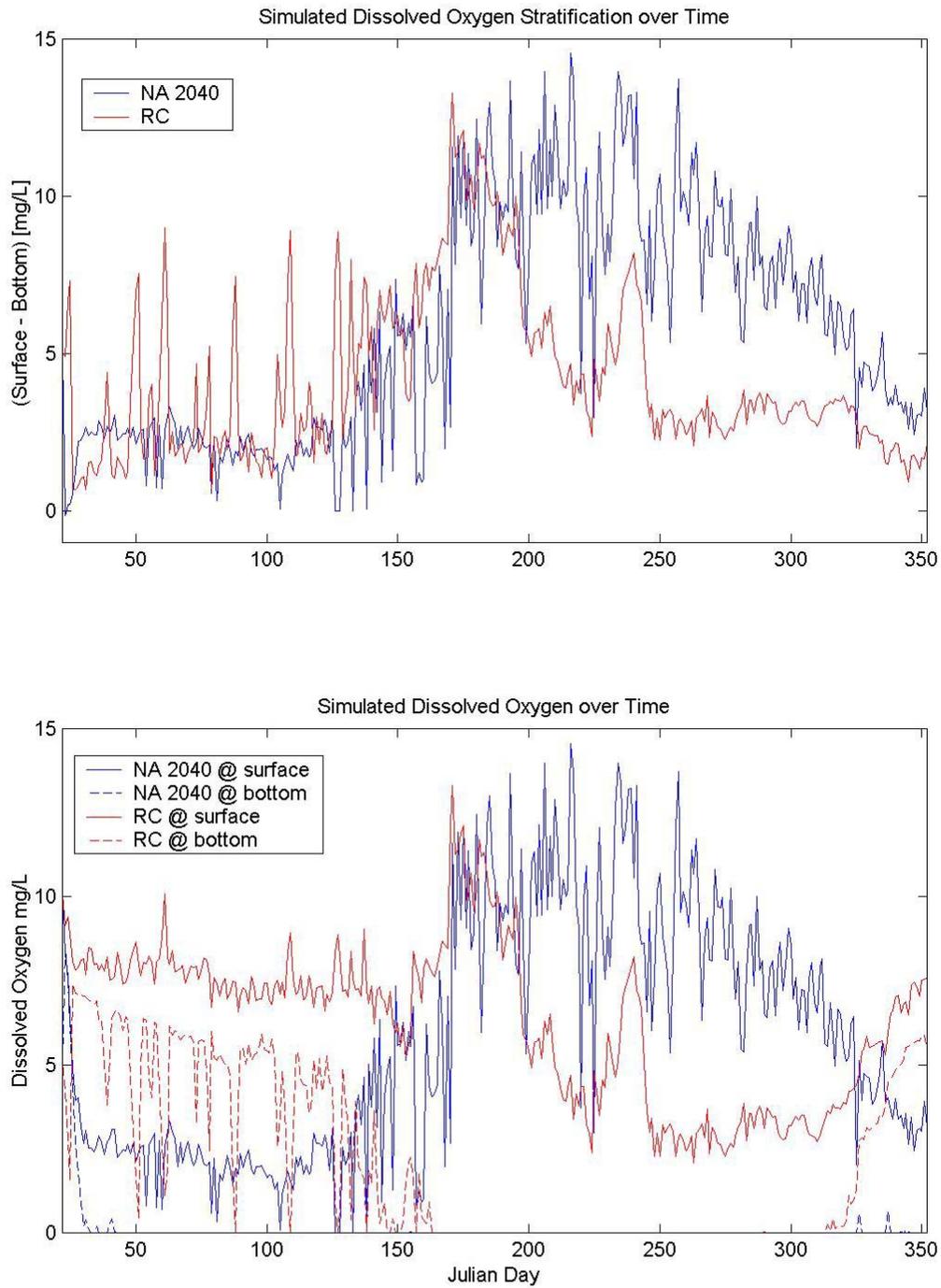


Figure D2-21. Simulated dissolved oxygen (noon) concentrations for No Action Alternative at 2040 and Recent Conditions.

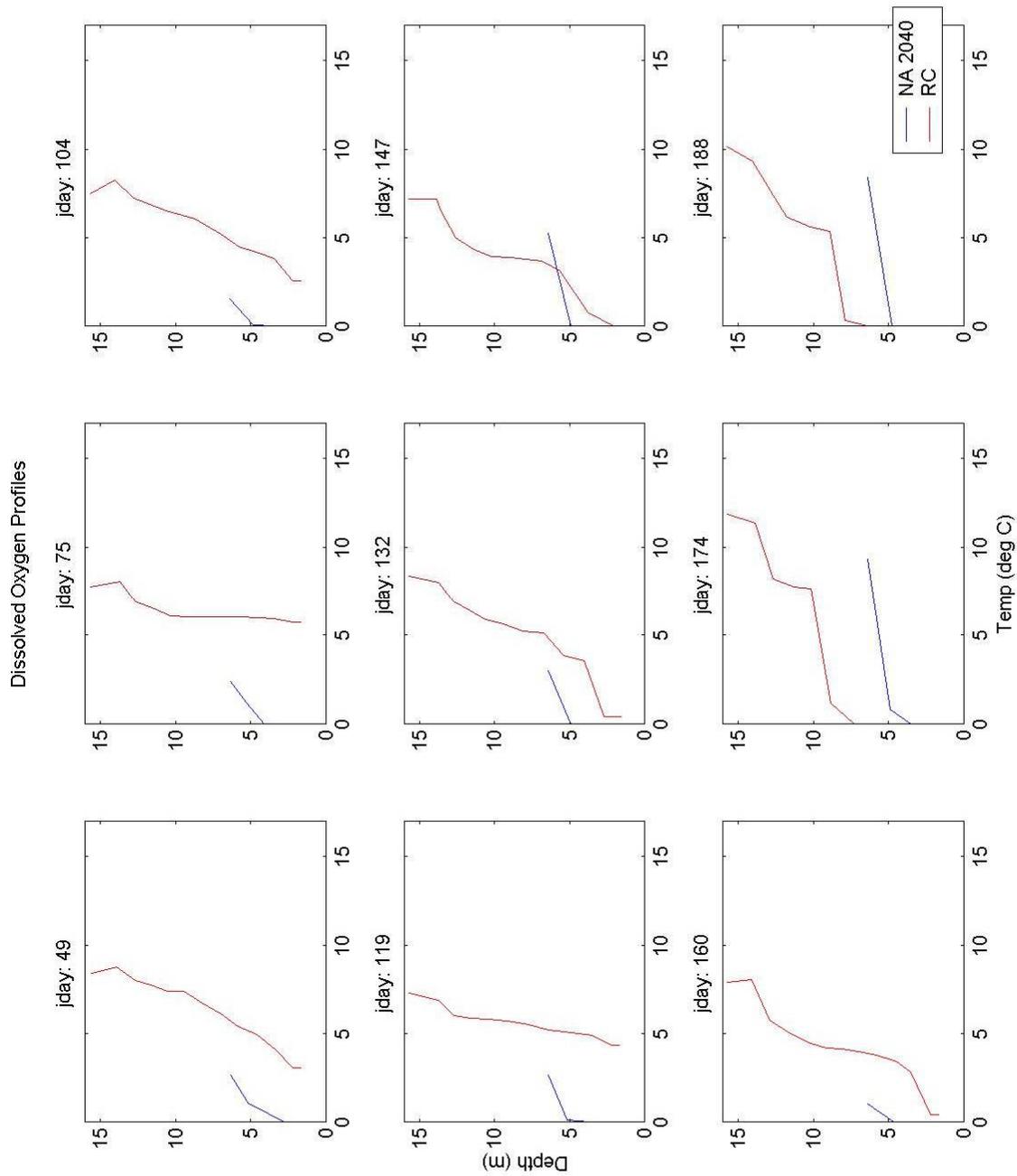


Figure D2-22A. Simulated dissolved oxygen (noon) profiles for No Action Alternative at 2040 and Recent Conditions.

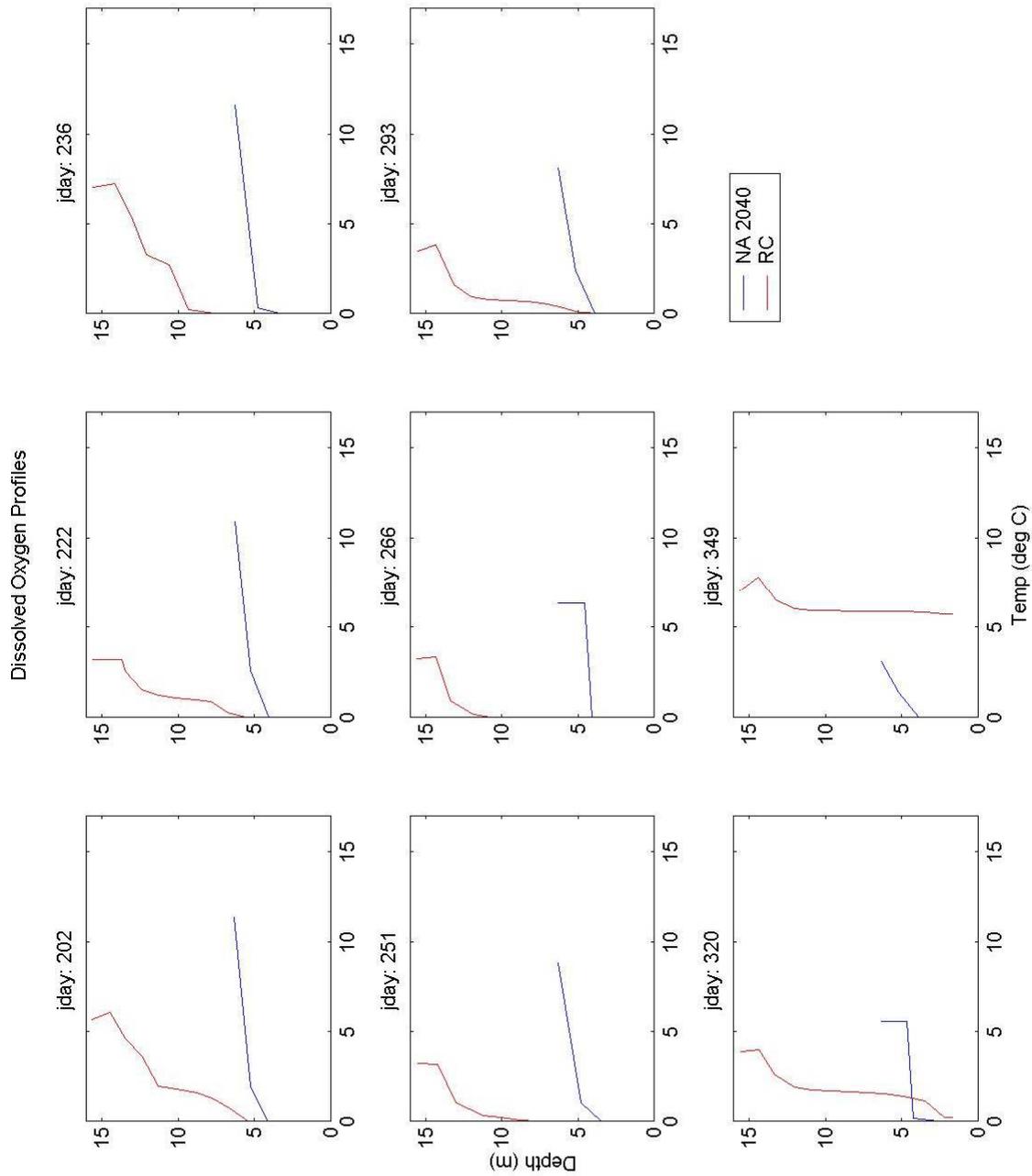


Figure D2-22B. Simulated dissolved oxygen (noon) profiles for No Action Alternative at 2040 and Recent Conditions.

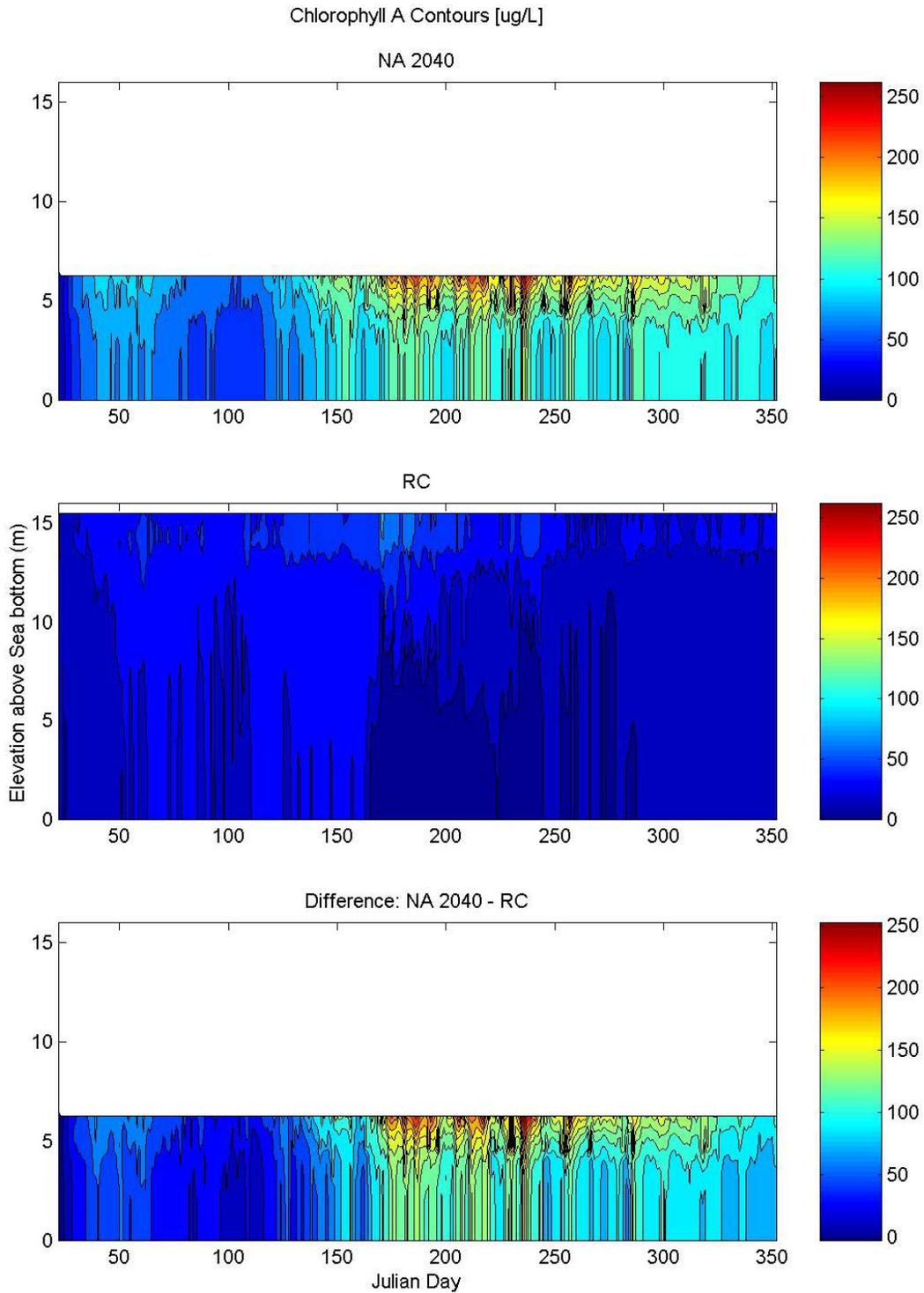


Figure D2-23. Simulated chlorophyll a contours for No Action Alternative at 2040 and Recent Conditions.

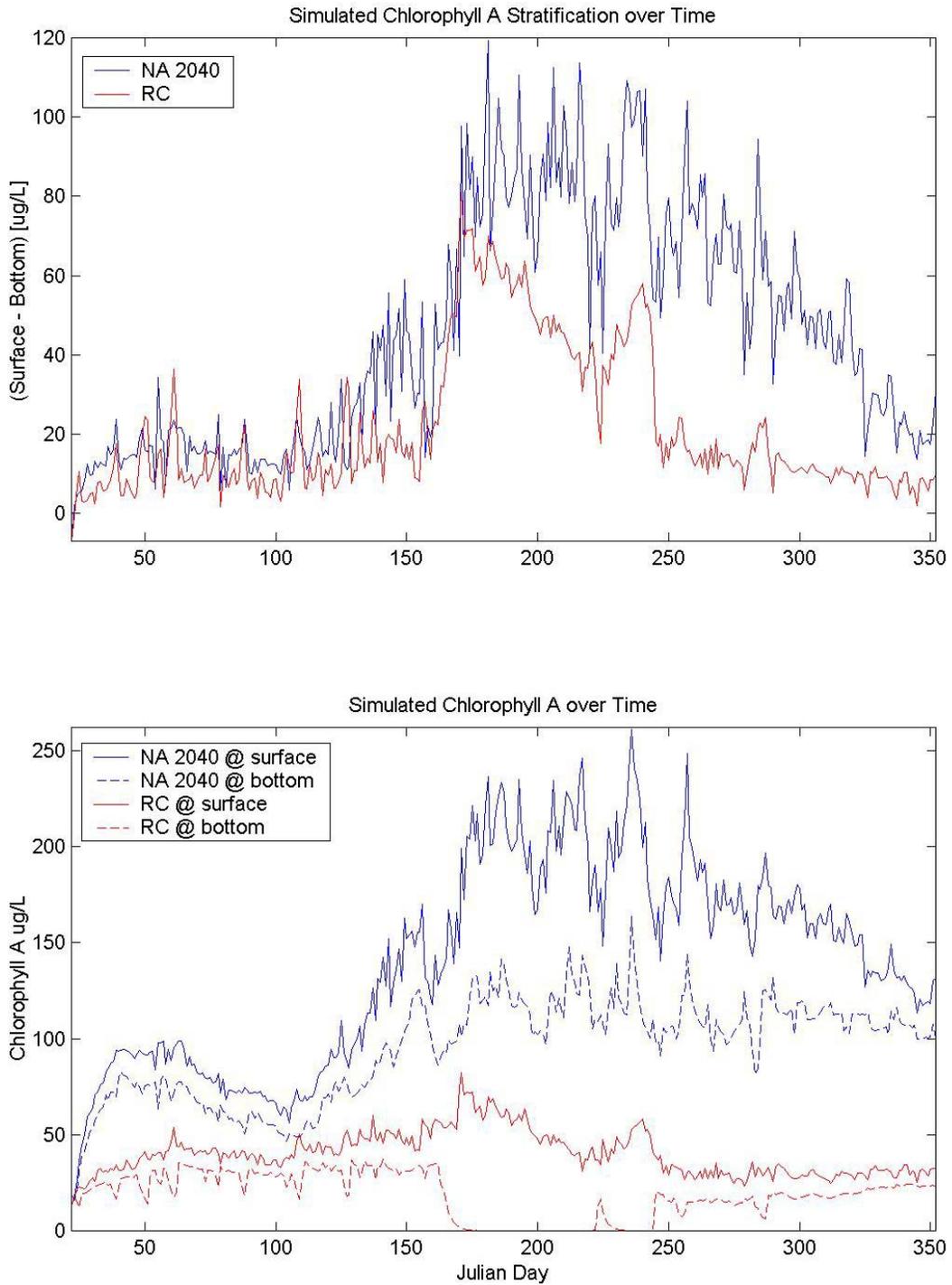


Figure D2-24. Simulated chlorophyll a concentrations for No Action Alternative at 2040 and Recent Conditions.

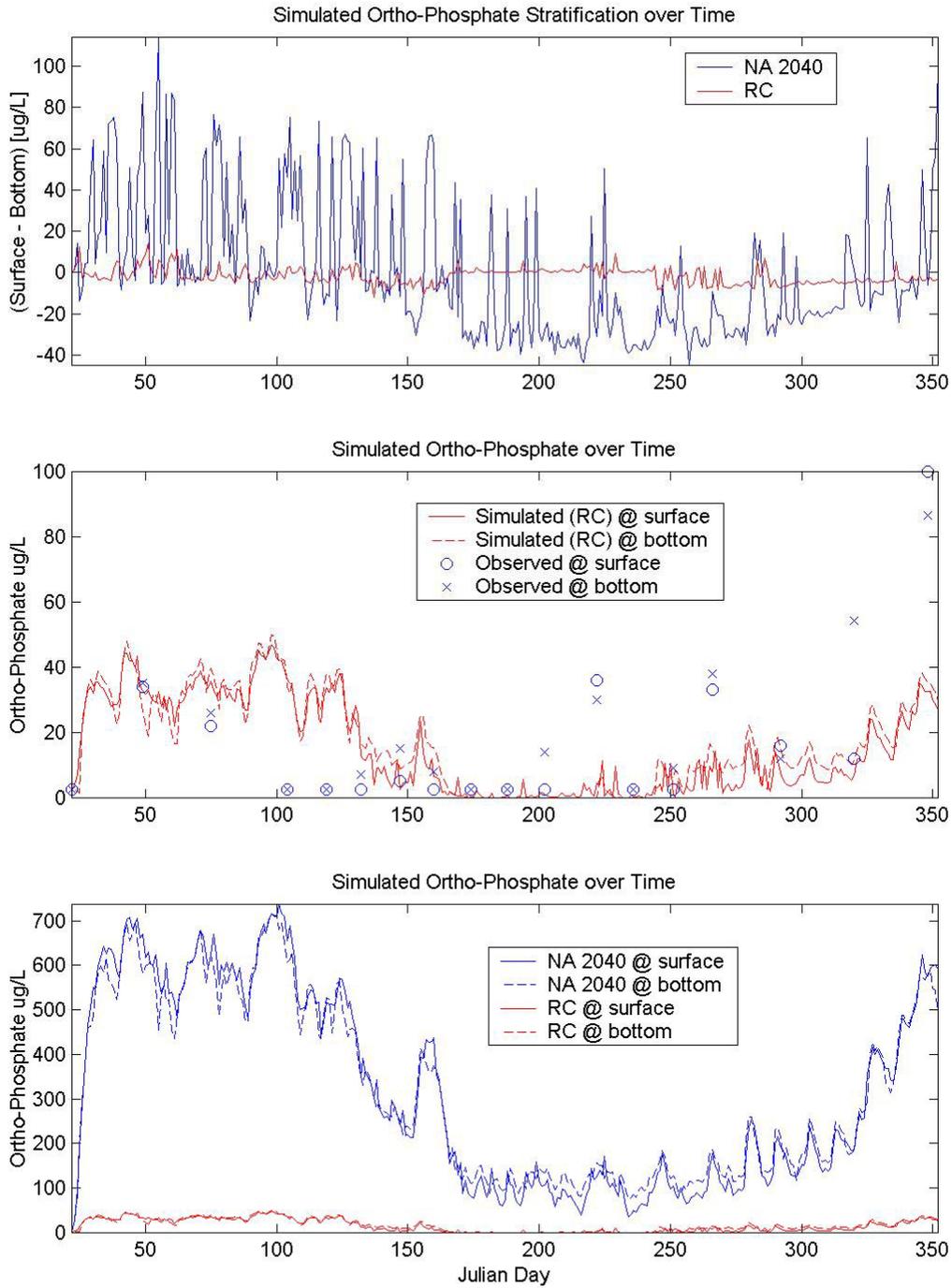


Figure D2-25. Simulated orthophosphate concentrations for No Action Alternative at 2040 and Recent Conditions.

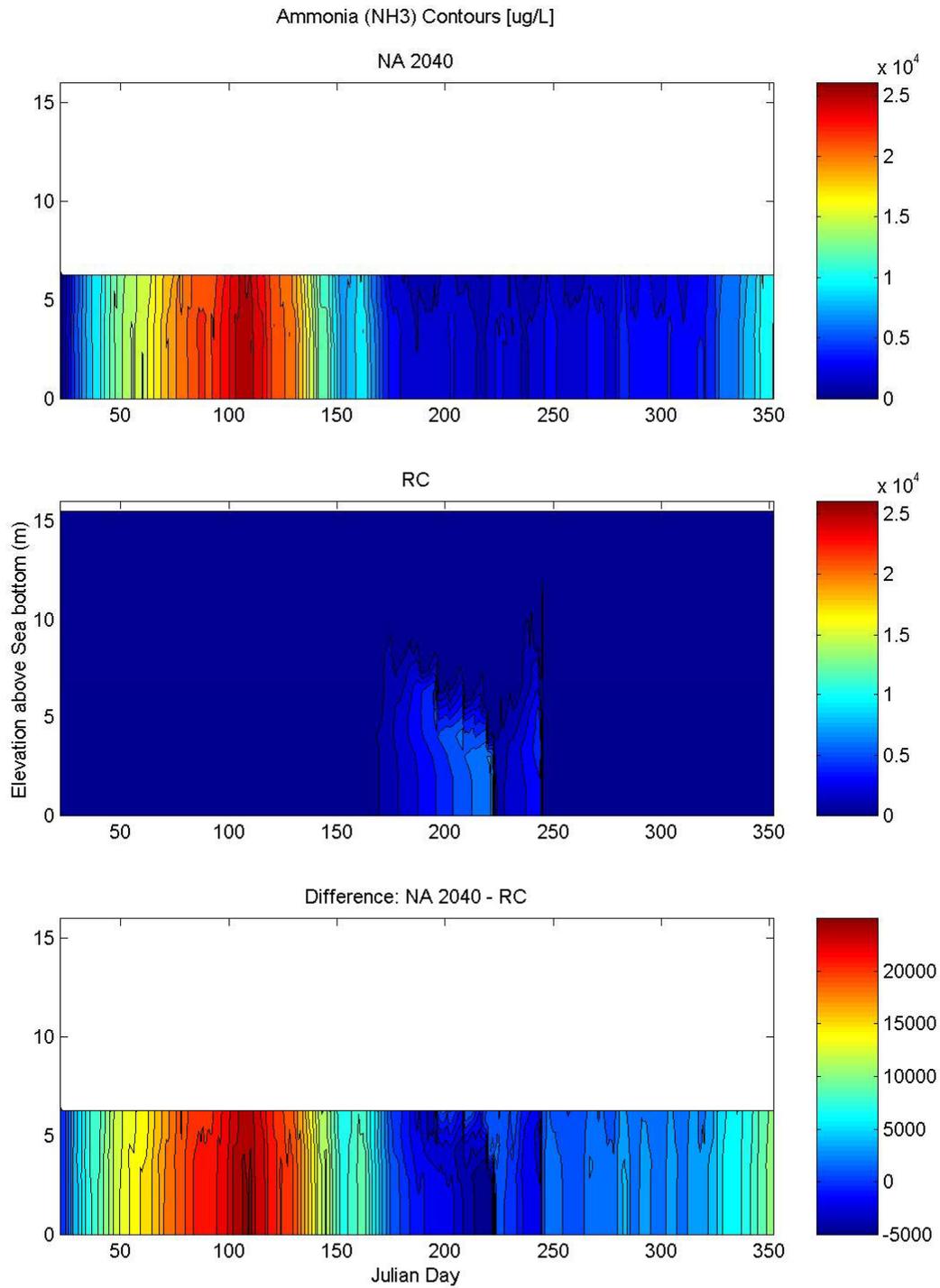


Figure D2-26. Simulated ammonia contours for No Action Alternative at 2040 and Recent Conditions.

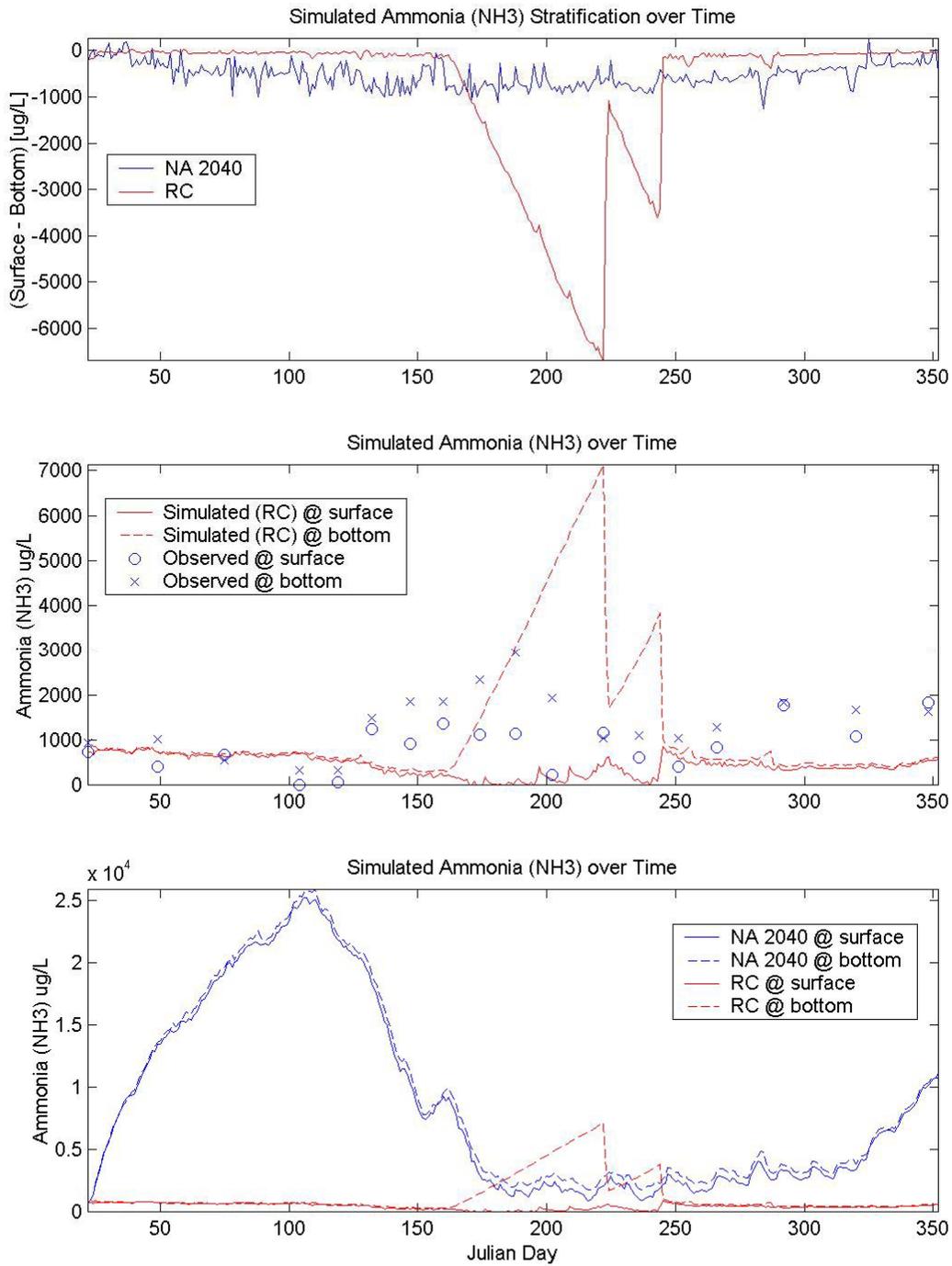


Figure D2-27. Simulated ammonia concentrations for No Action Alternative at 2040 and Recent Conditions.

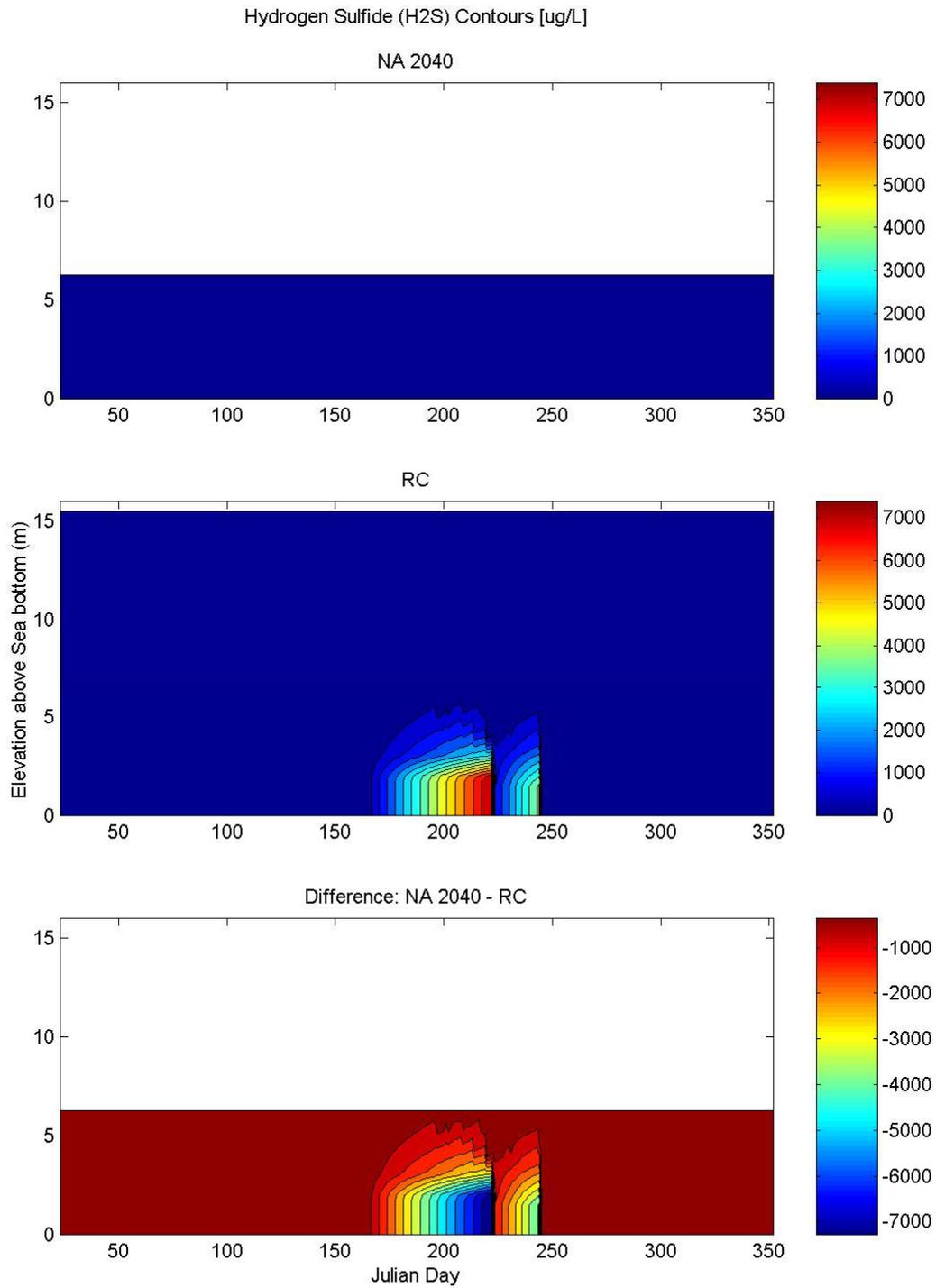


Figure D2-28. Simulated hydrogen sulfide contours for No Action Alternative at 2040 and Recent Conditions.

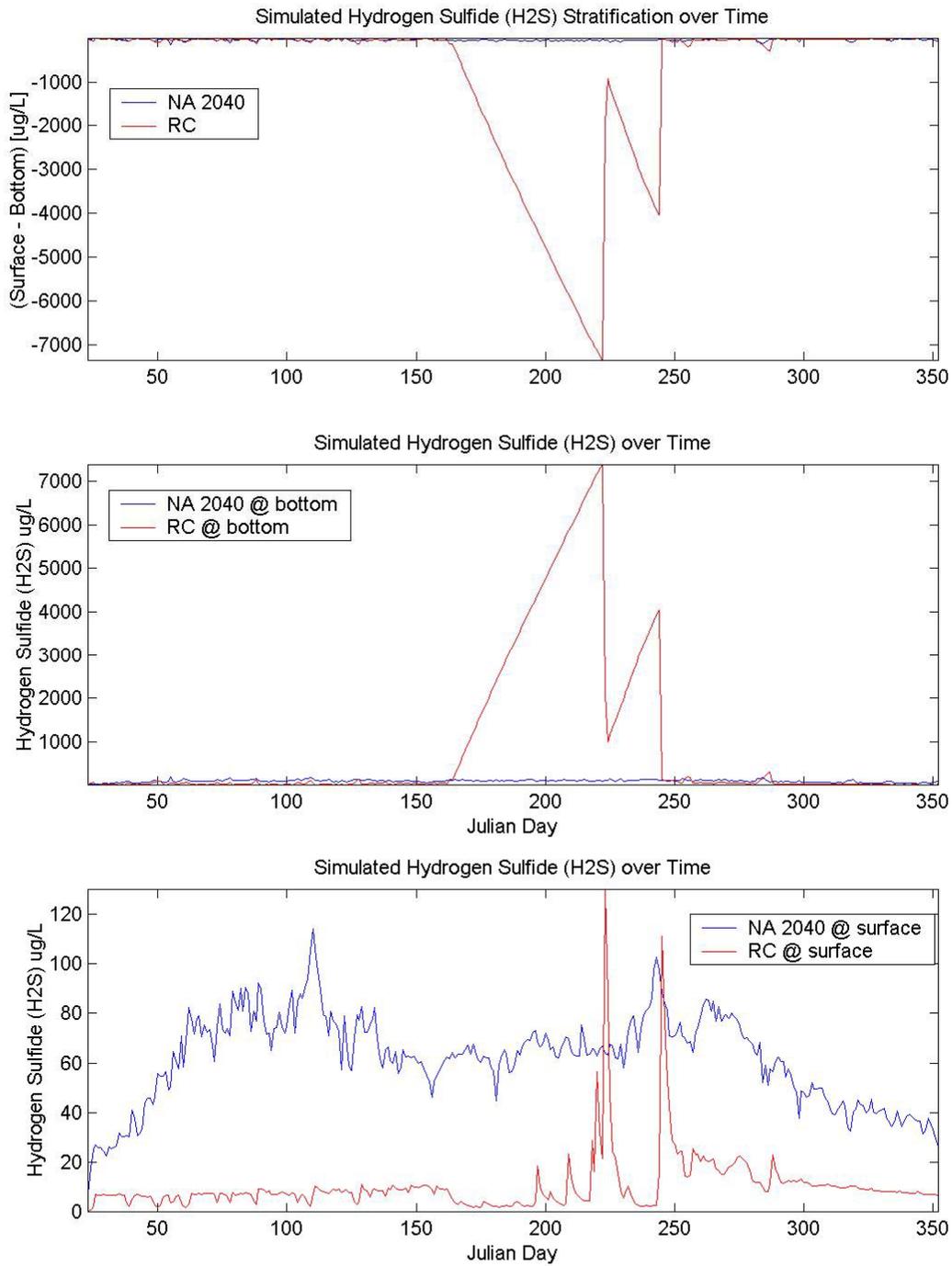


Figure D2-29. Simulated hydrogen sulfide concentrations for No Action Alternative at 2040 and Recent Conditions.

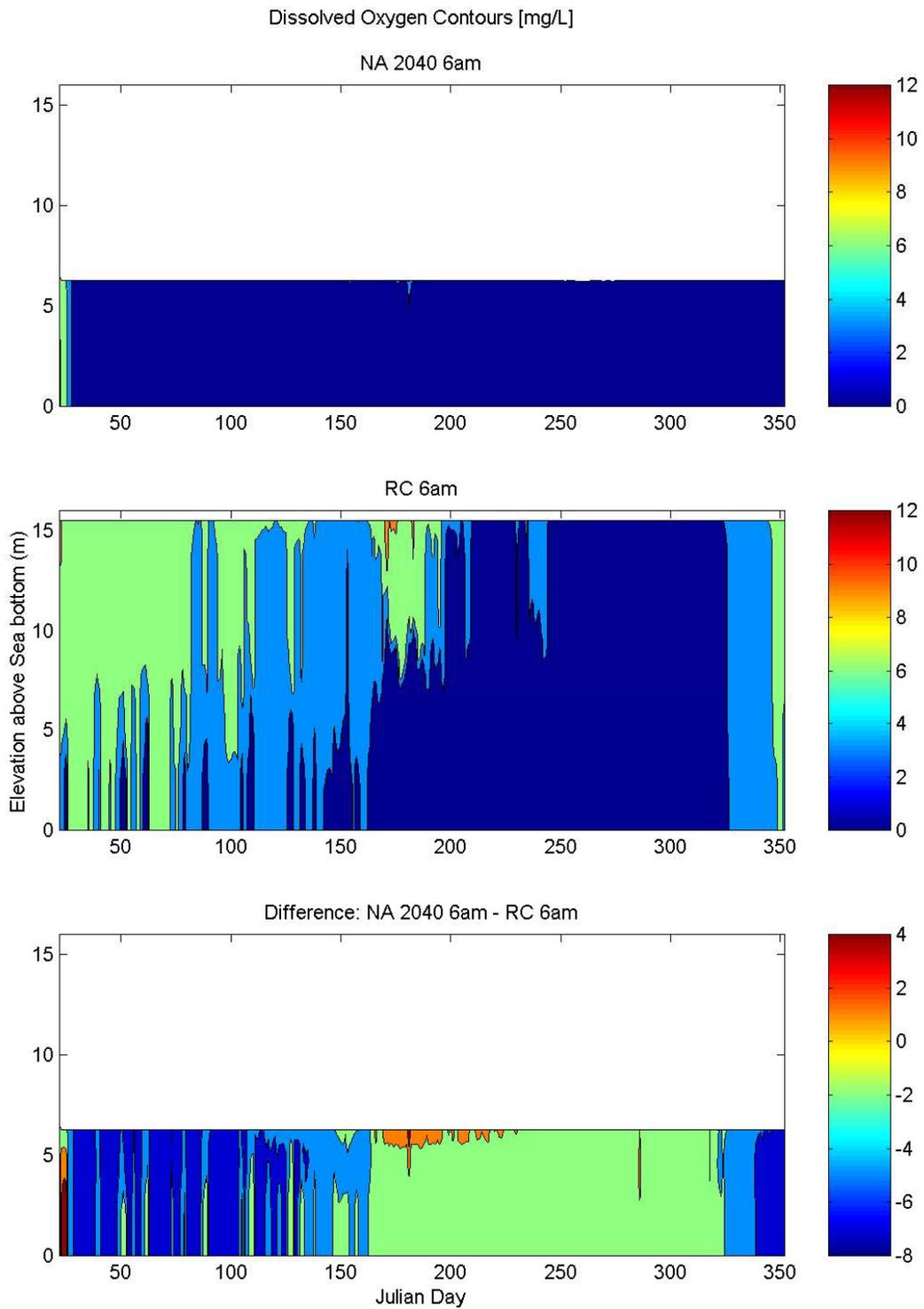


Figure D2-30. Simulated dissolved oxygen (6am) contours for No Action Alternative at 2040 and Recent Conditions.

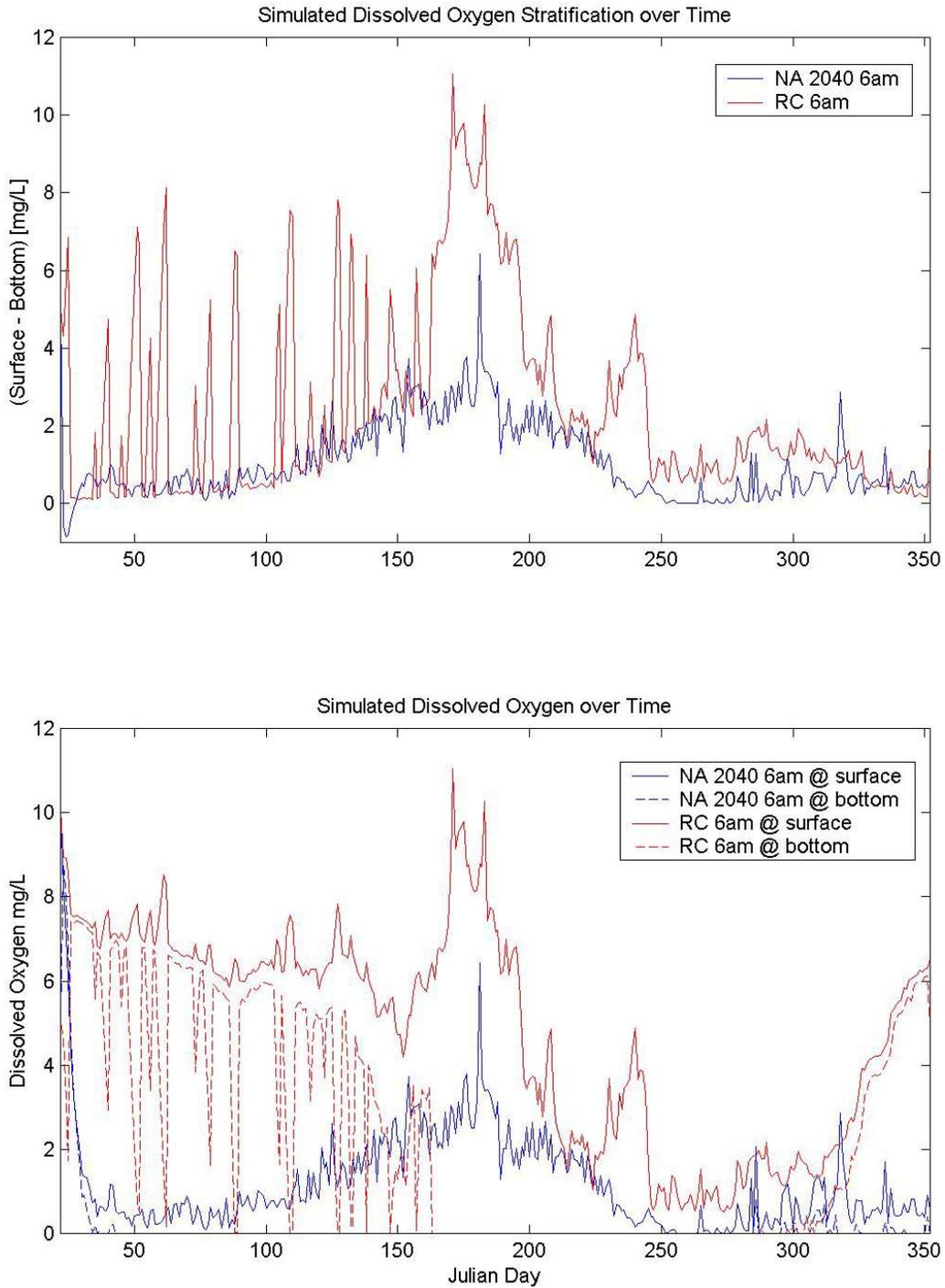


Figure D2-31. Simulated dissolved oxygen (6am) concentrations for No Action Alternative at 2040 and Recent Conditions.

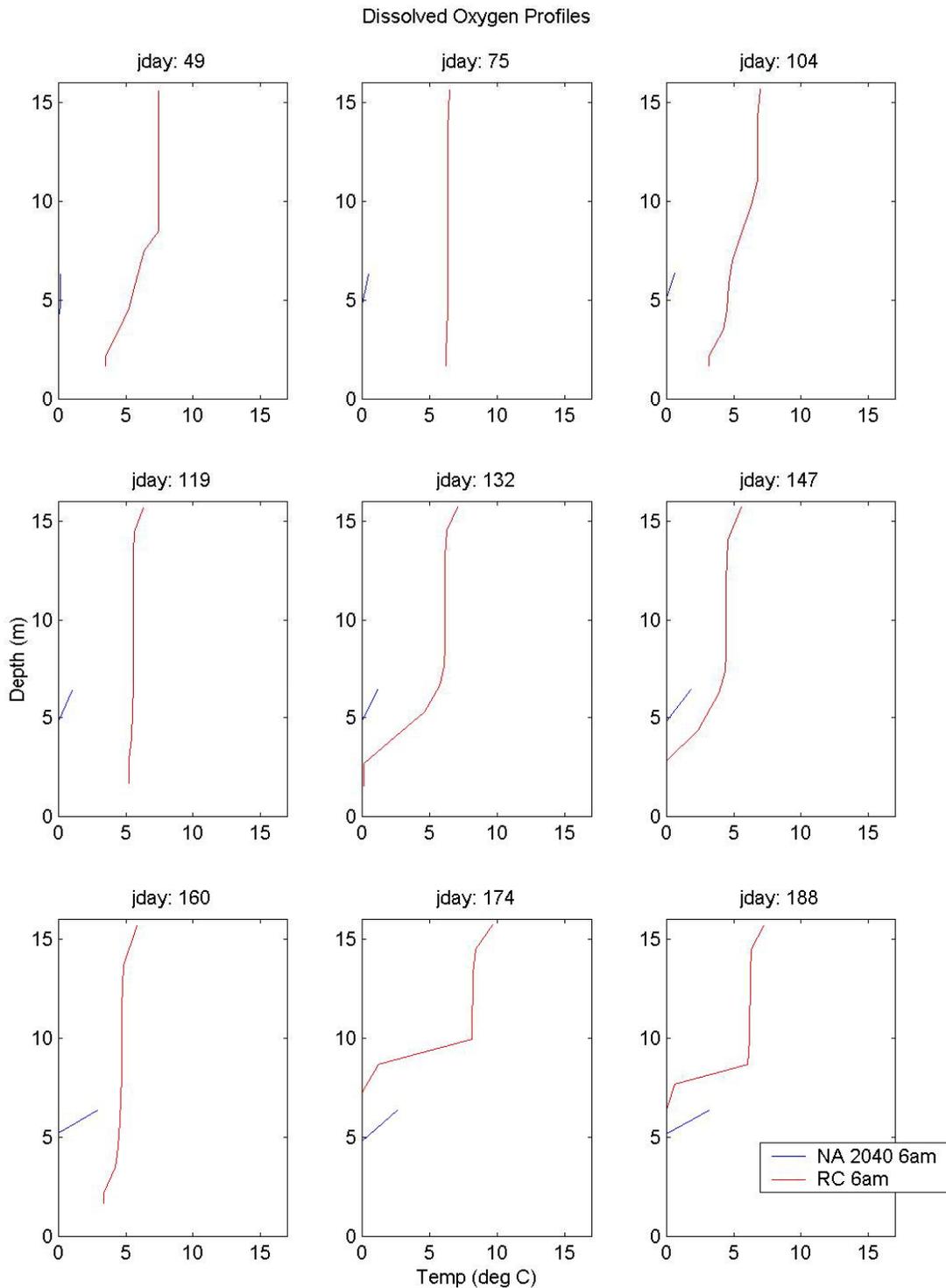


Figure D2-32A. Simulated dissolved oxygen (6am) profiles for No Action Alternative at 2040 and Recent Conditions.

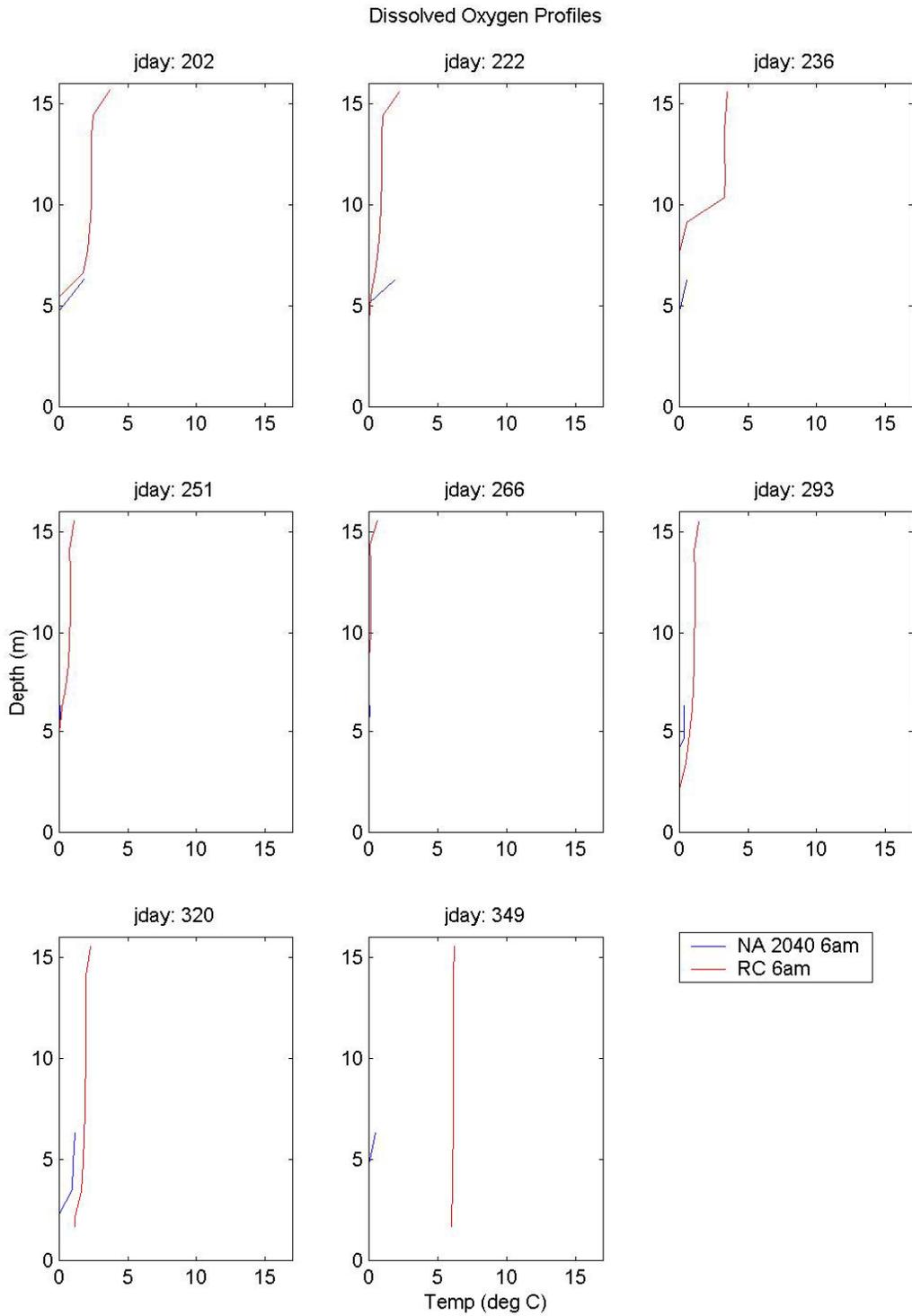


Figure D2-32B. Simulated dissolved oxygen (6am) profiles for No Action Alternative at 2040 and Recent Conditions.

No Action - 2077

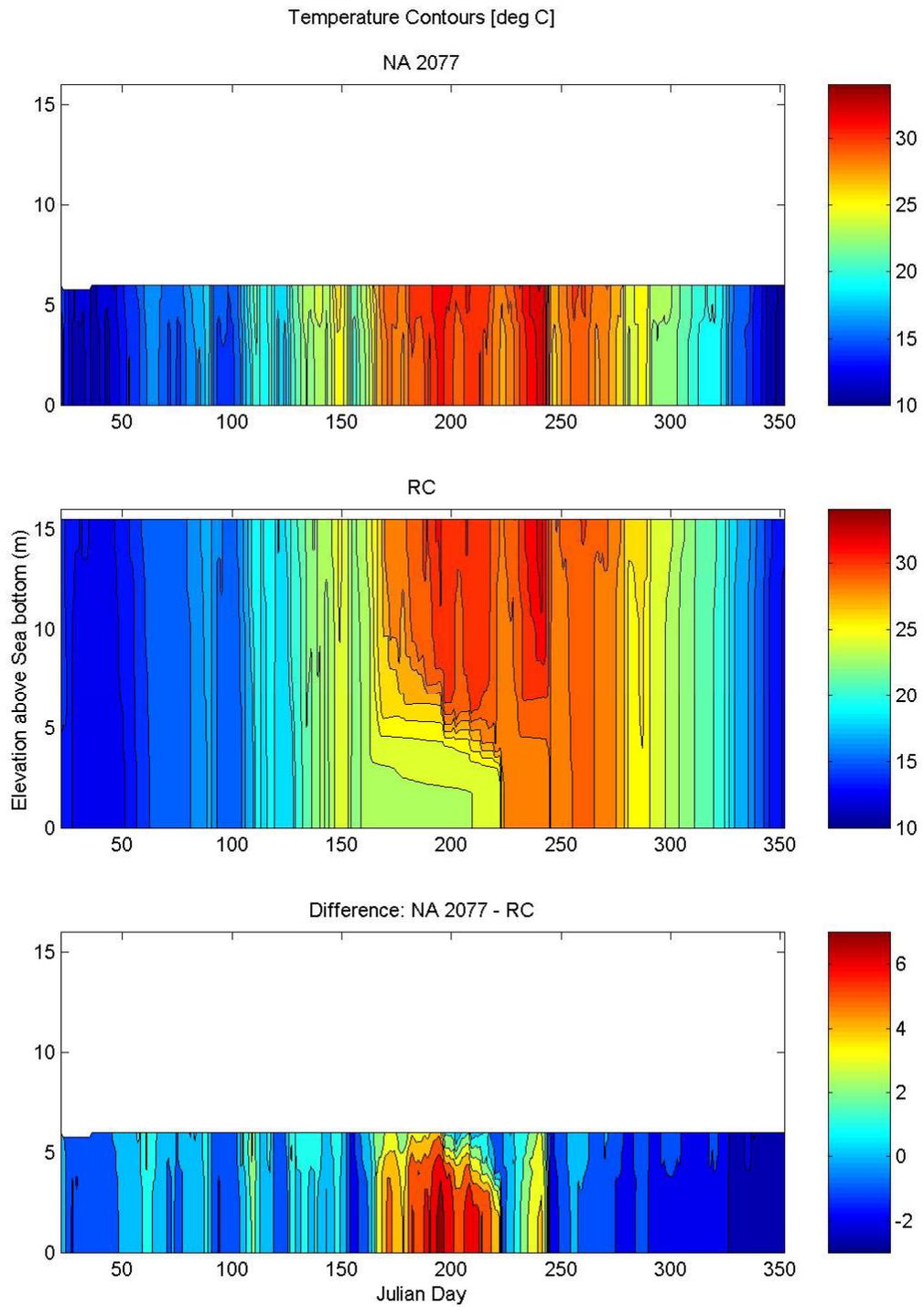


Figure D2-33. Simulated temperature contours for No Action Alternative at 2077 and Recent Conditions.

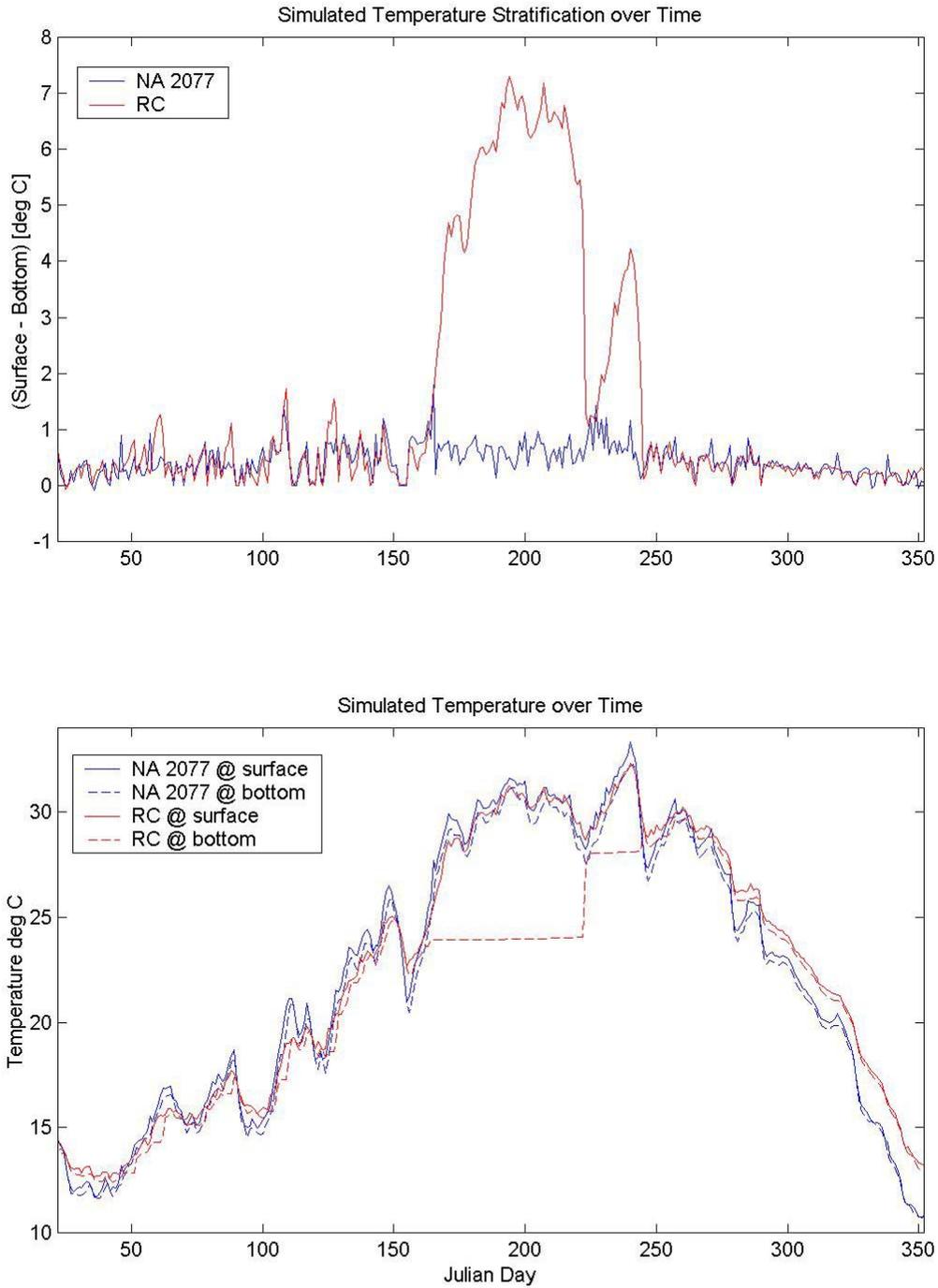


Figure D2-34. Simulated temperature for No Action Alternative at 2077 and Recent Conditions.

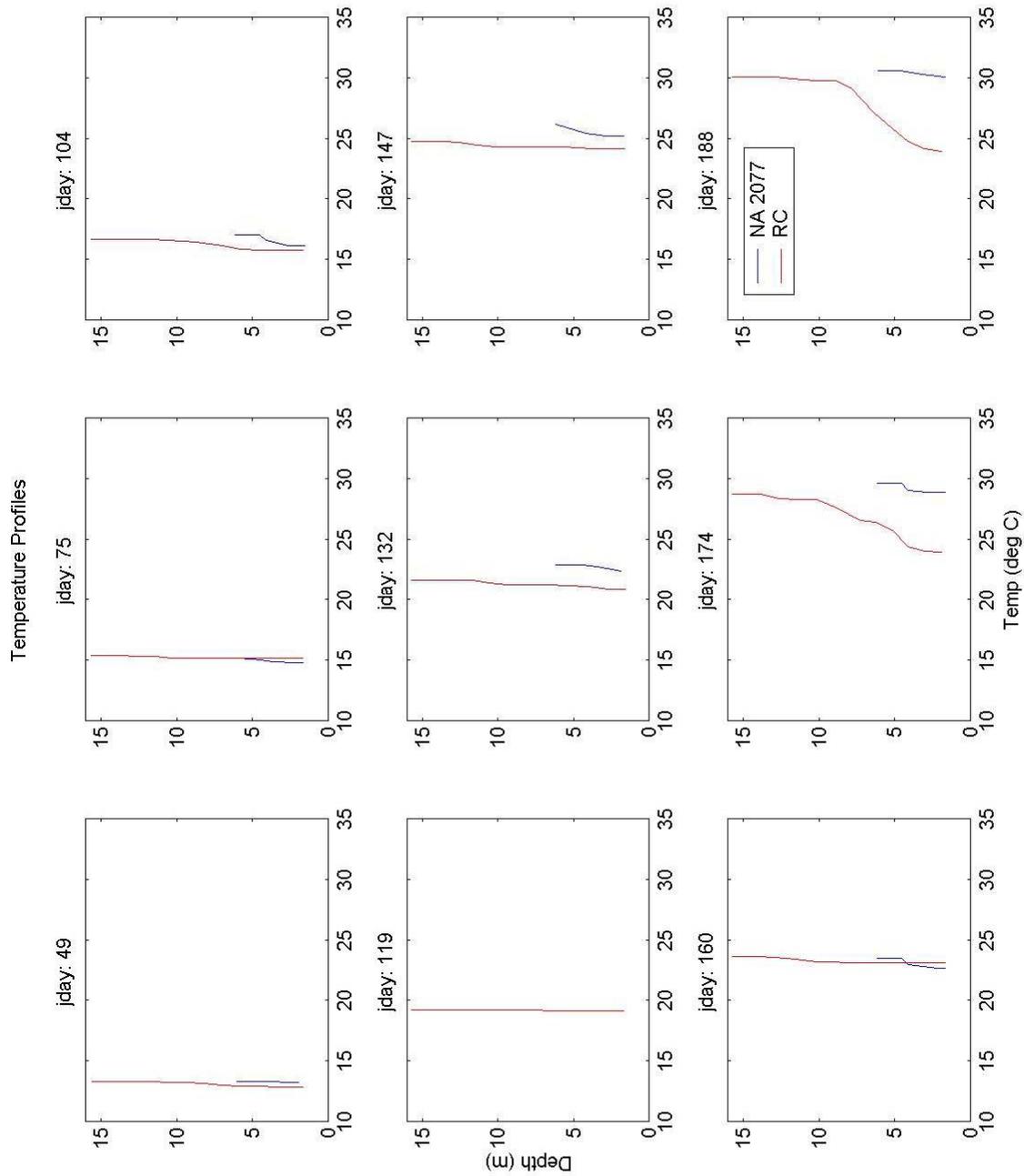


Figure D2-35A. Simulated temperature profiles for No Action Alternative at 2077 and Recent Conditions.

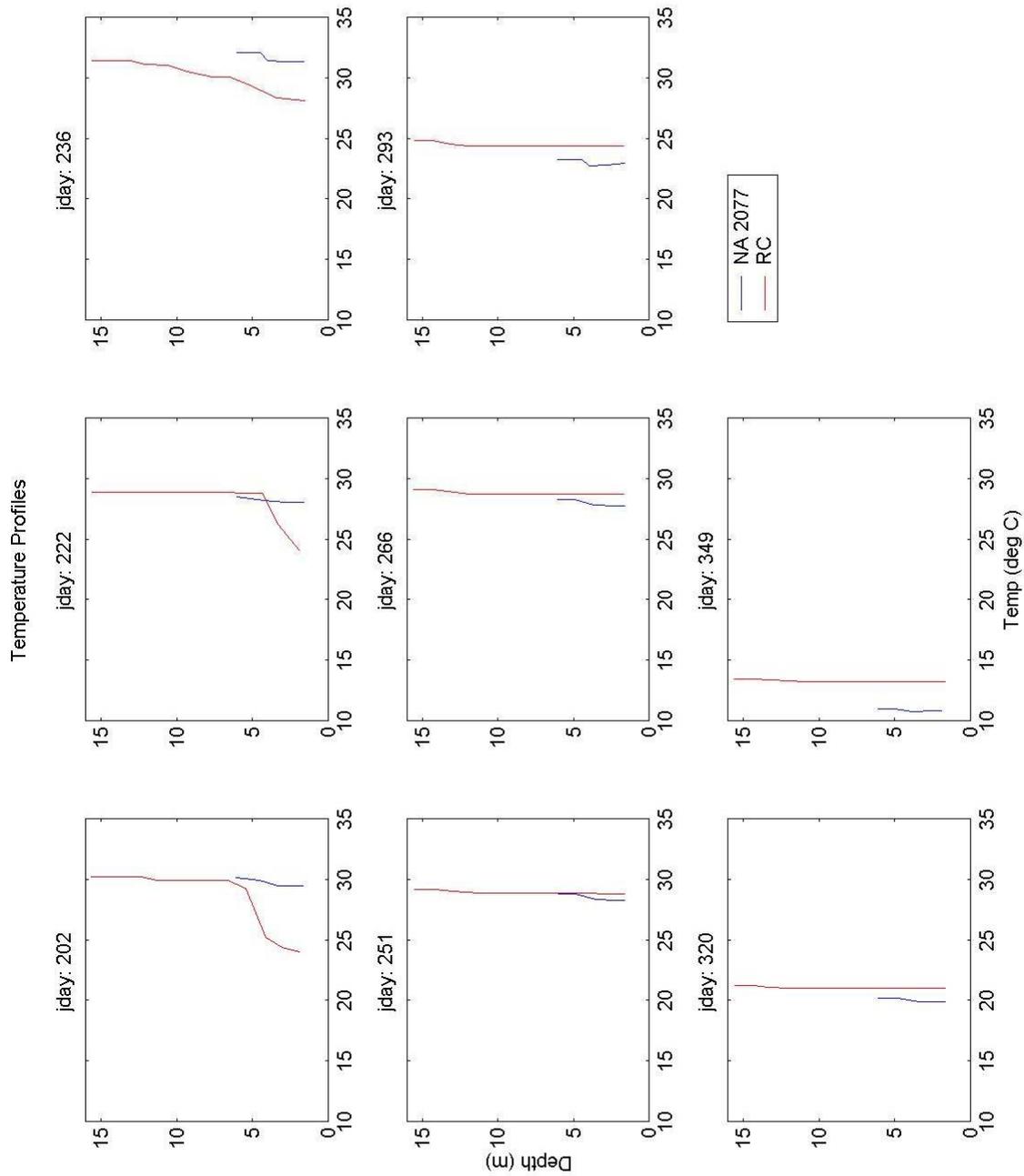


Figure D2-35B. Simulated temperature profiles for No Action Alternative at 2077 and Recent Conditions.

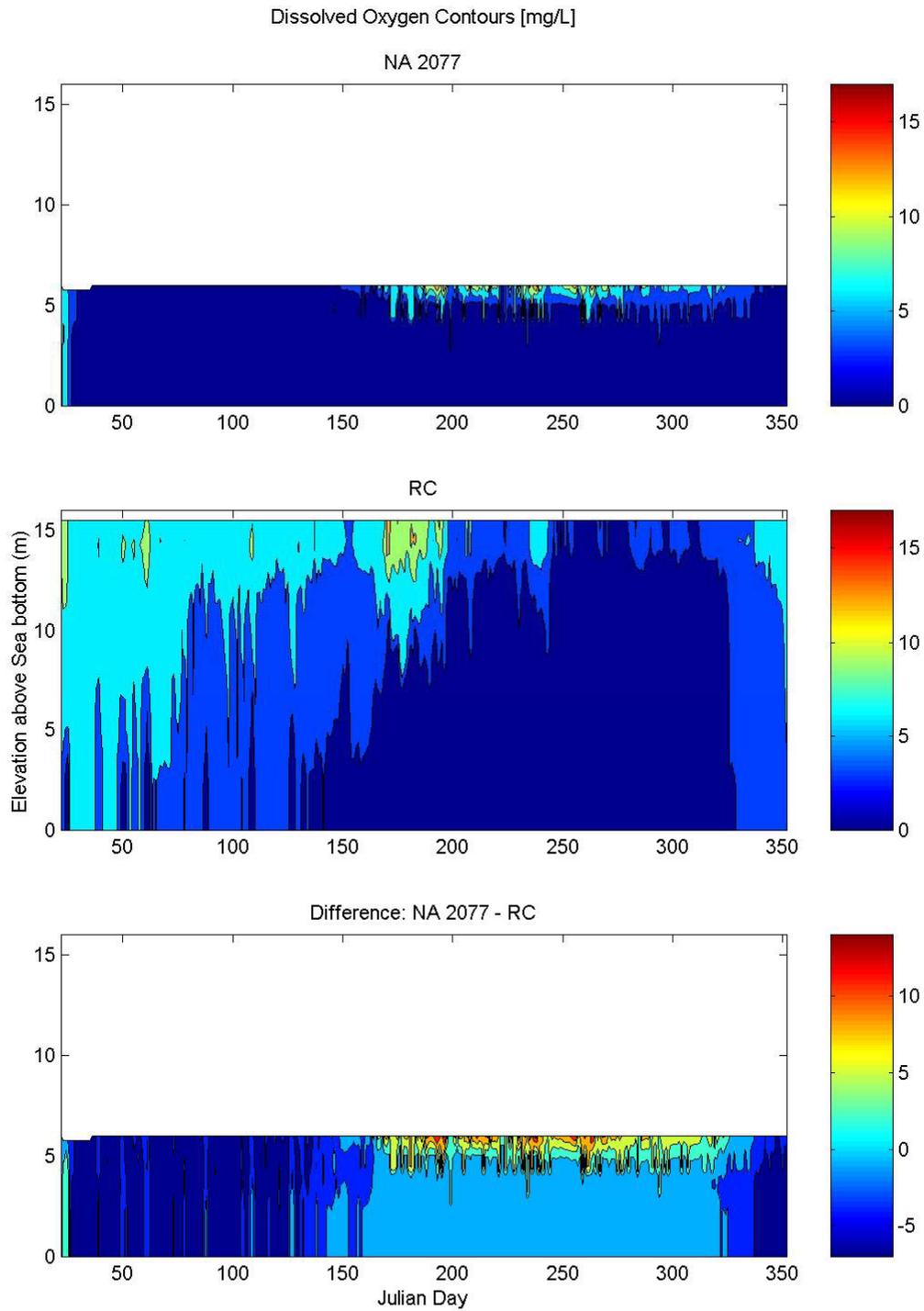


Figure D2-36. Simulated dissolved oxygen (noon) contours for No Action Alternative at 2077 and Recent Conditions.

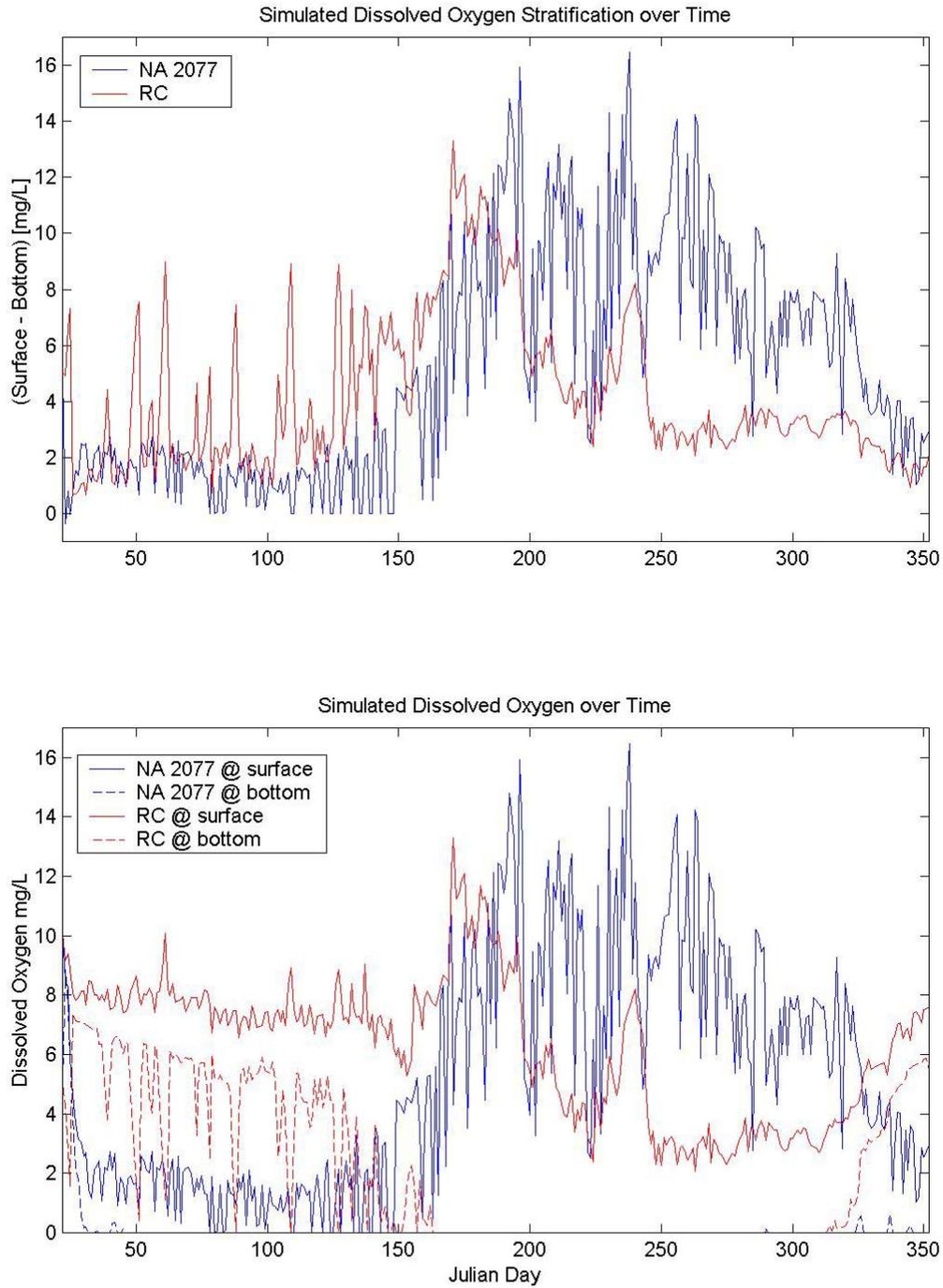


Figure D2-37. Simulated dissolved oxygen (noon) concentrations for No Action Alternative at 2077 and Recent Conditions.

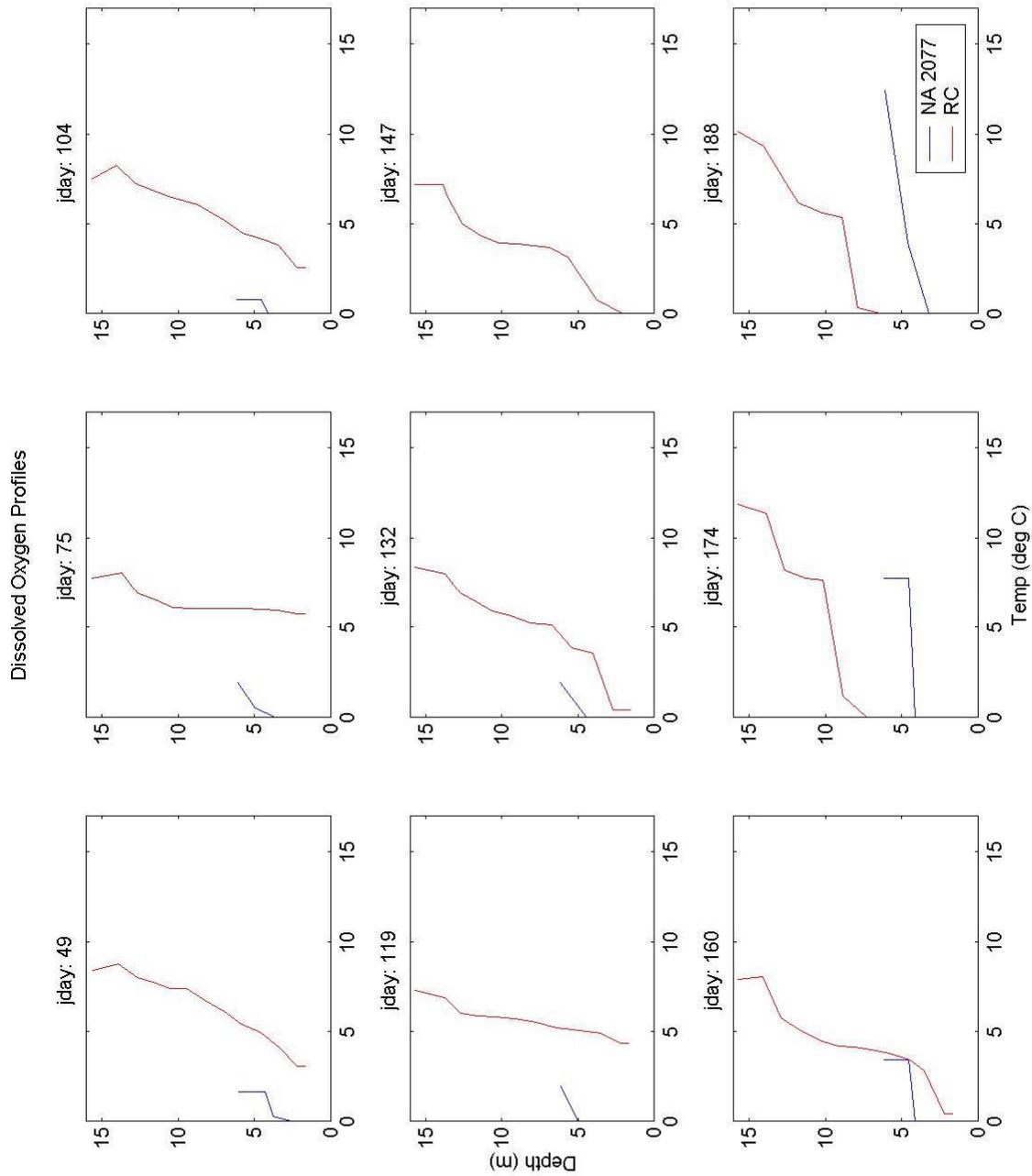


Figure D2-38A. Simulated dissolved oxygen (noon) profiles for No Action Alternative at 2077 and Recent Conditions.

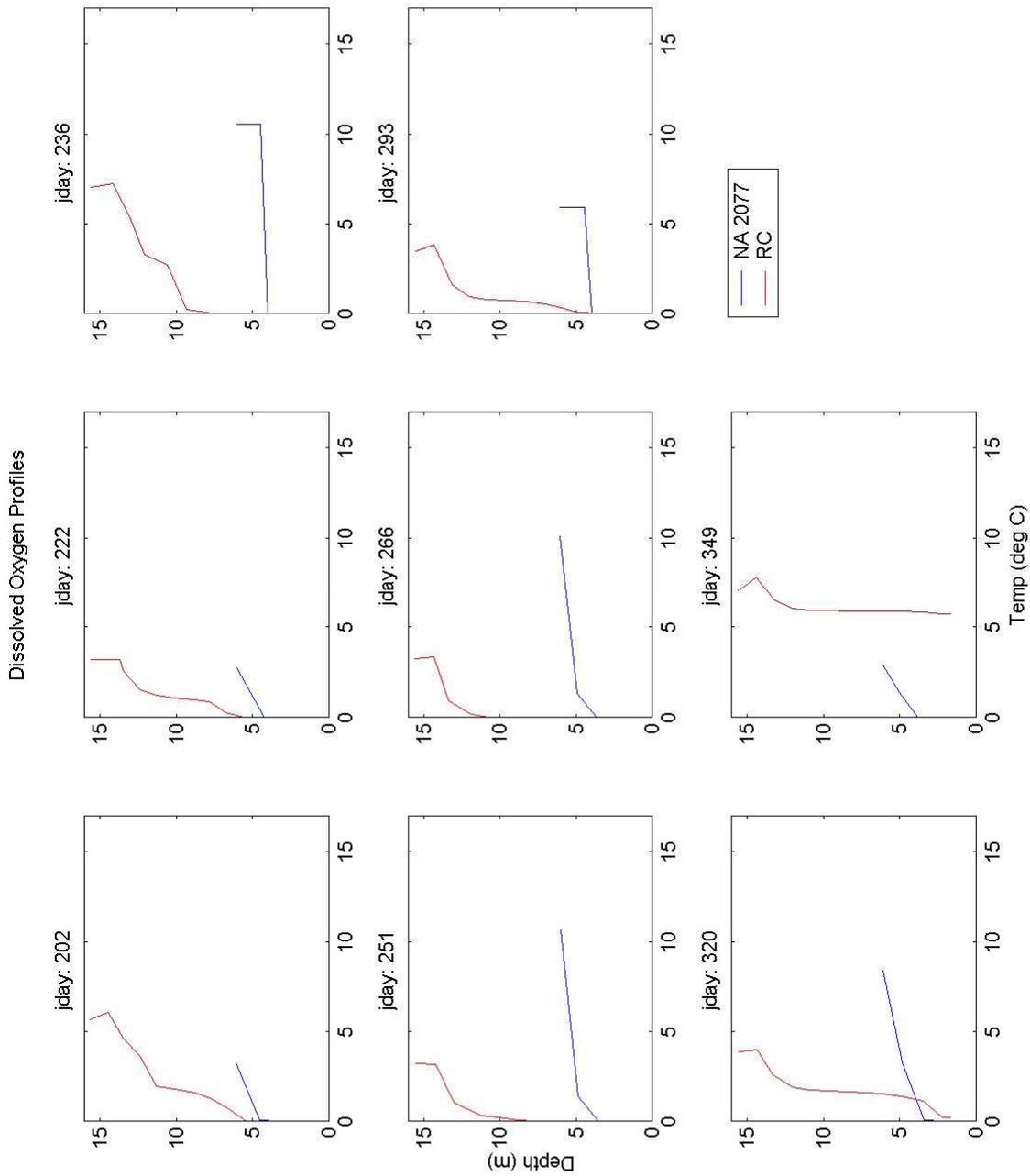


Figure D2-38B. Simulated dissolved oxygen (noon) profiles for No Action Alternative at 2077 and Recent Conditions.

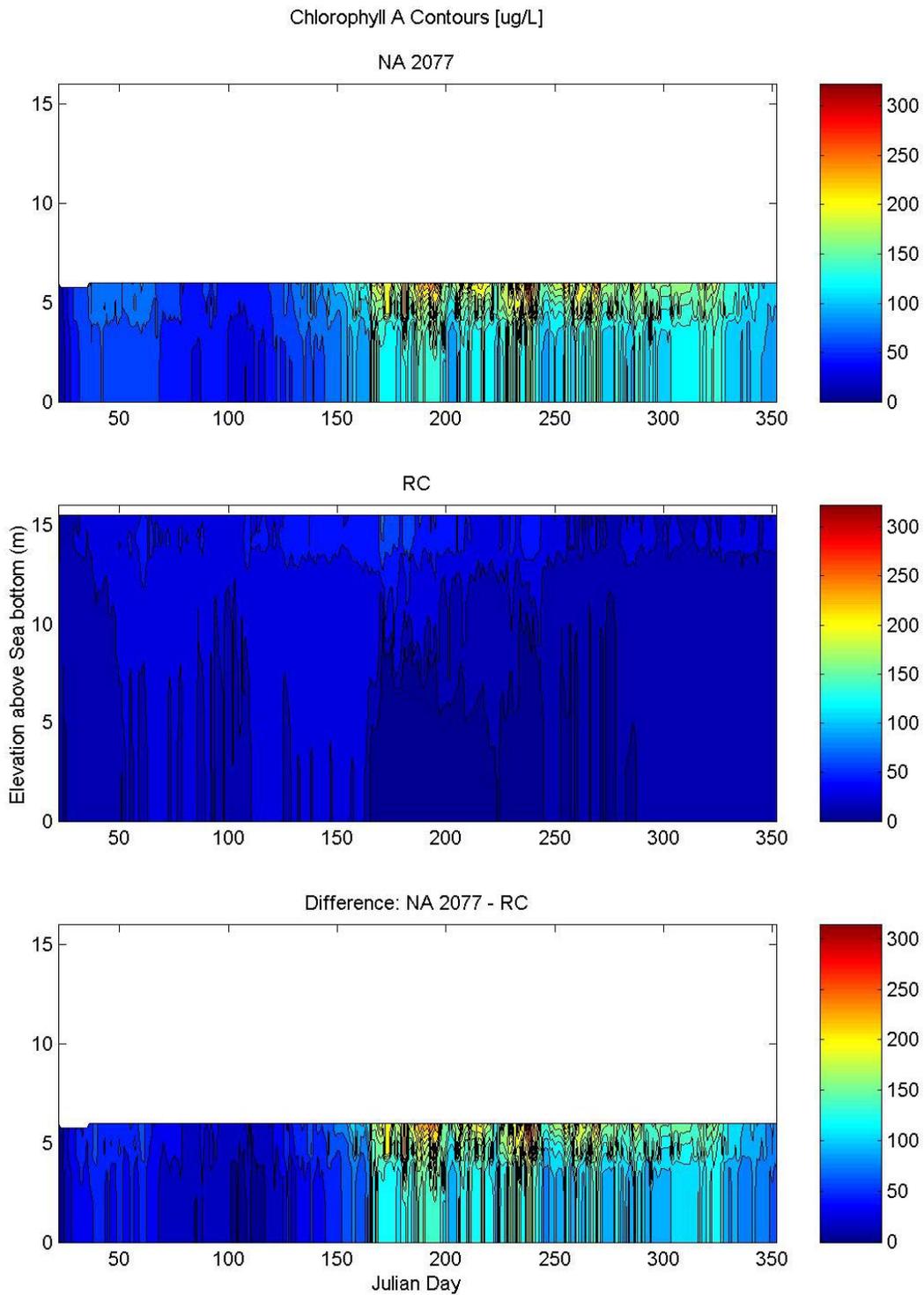


Figure D2-39. Simulated chlorophyll a contours for No Action Alternative at 2077 and Recent Conditions.

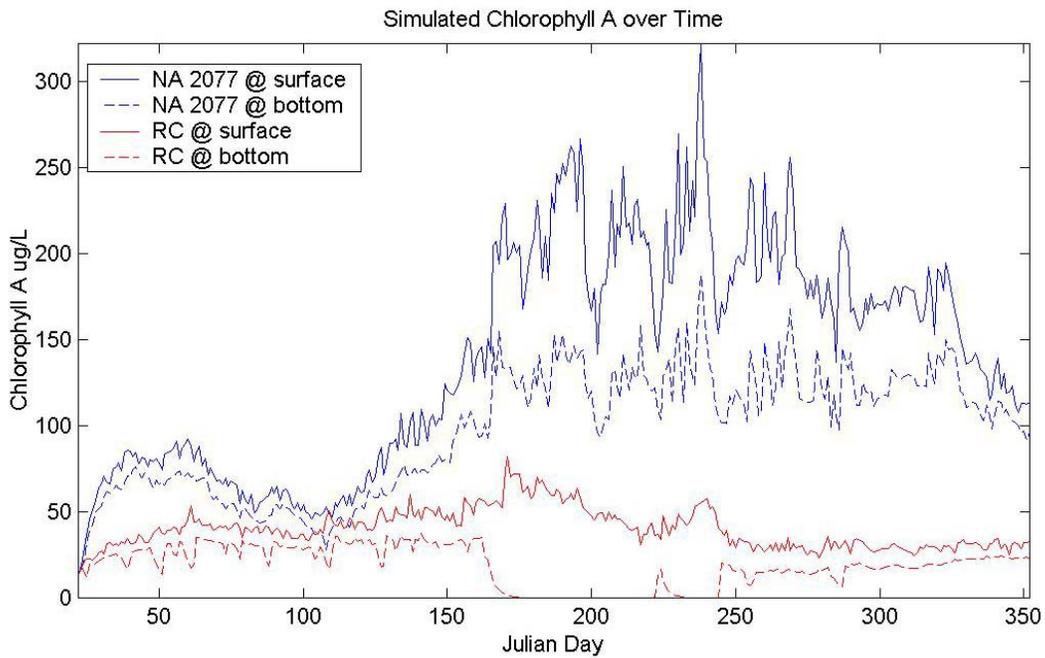
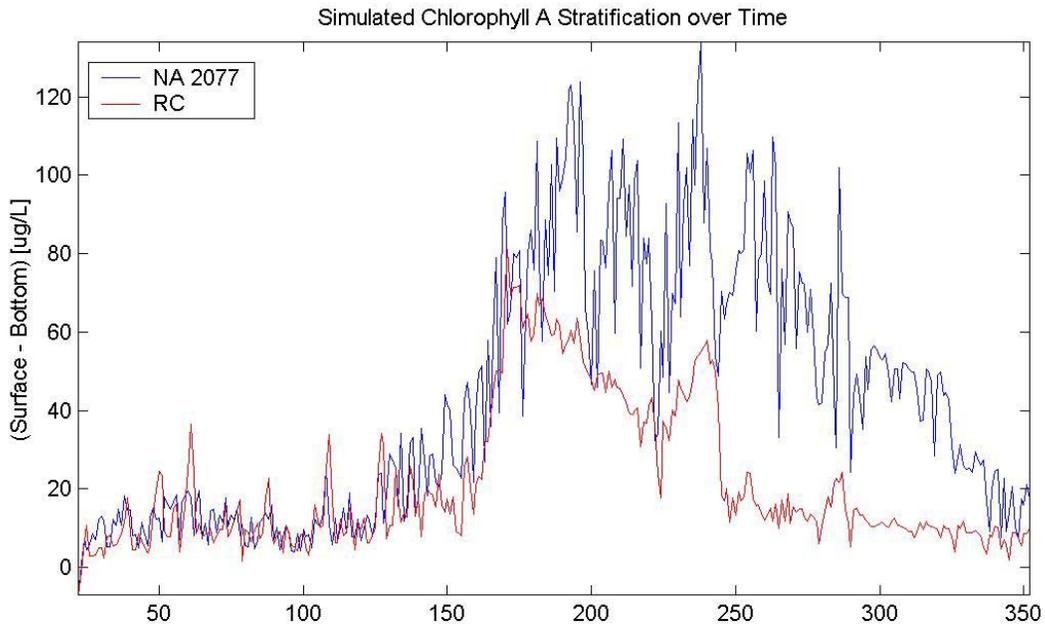


Figure D2-40. Simulated chlorophyll a concentrations for No Action Alternative at 2077 and Recent Conditions.

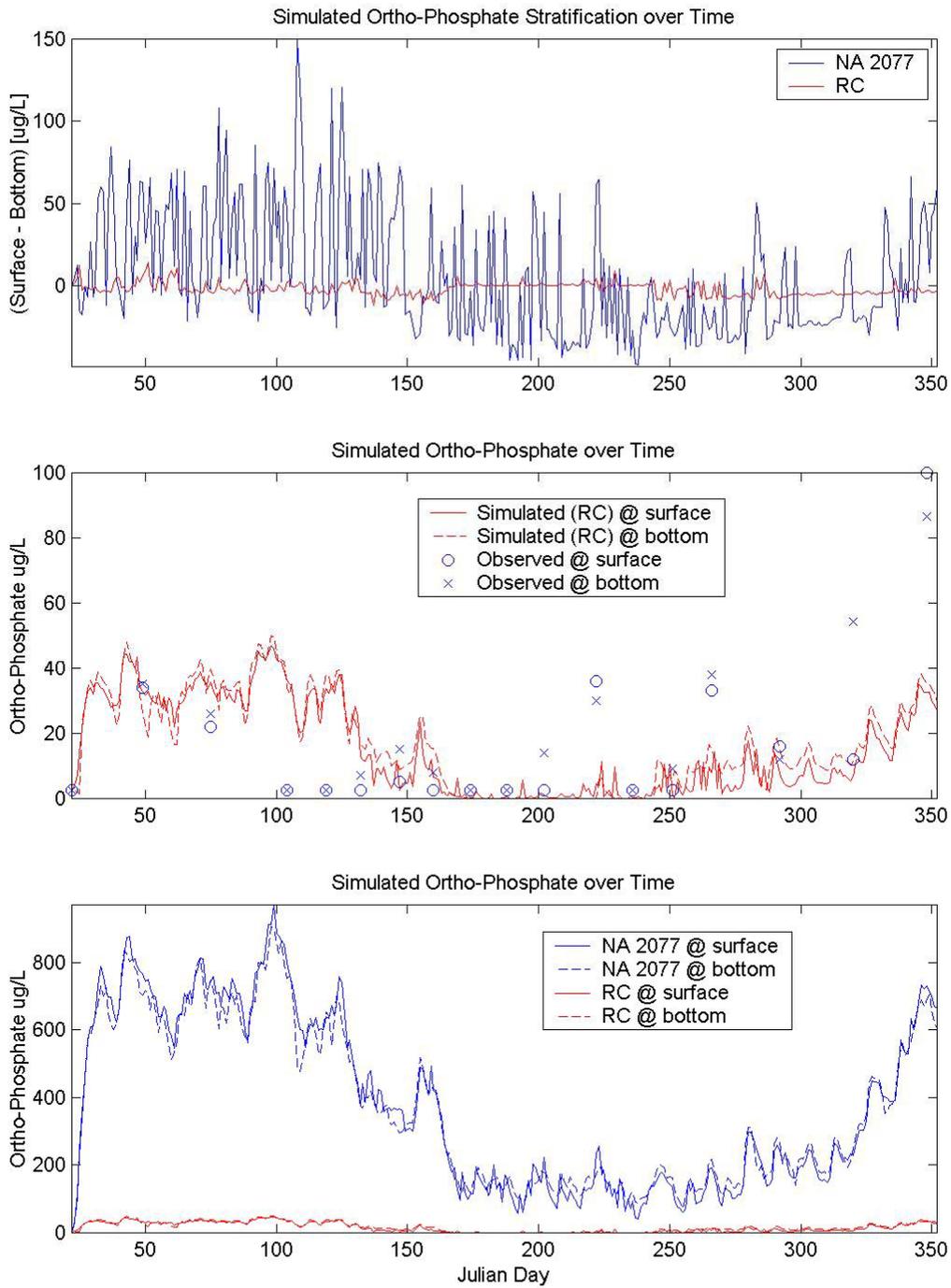


Figure D2-41. Simulated orthophosphate concentrations for No Action Alternative at 2077 and Recent Conditions.

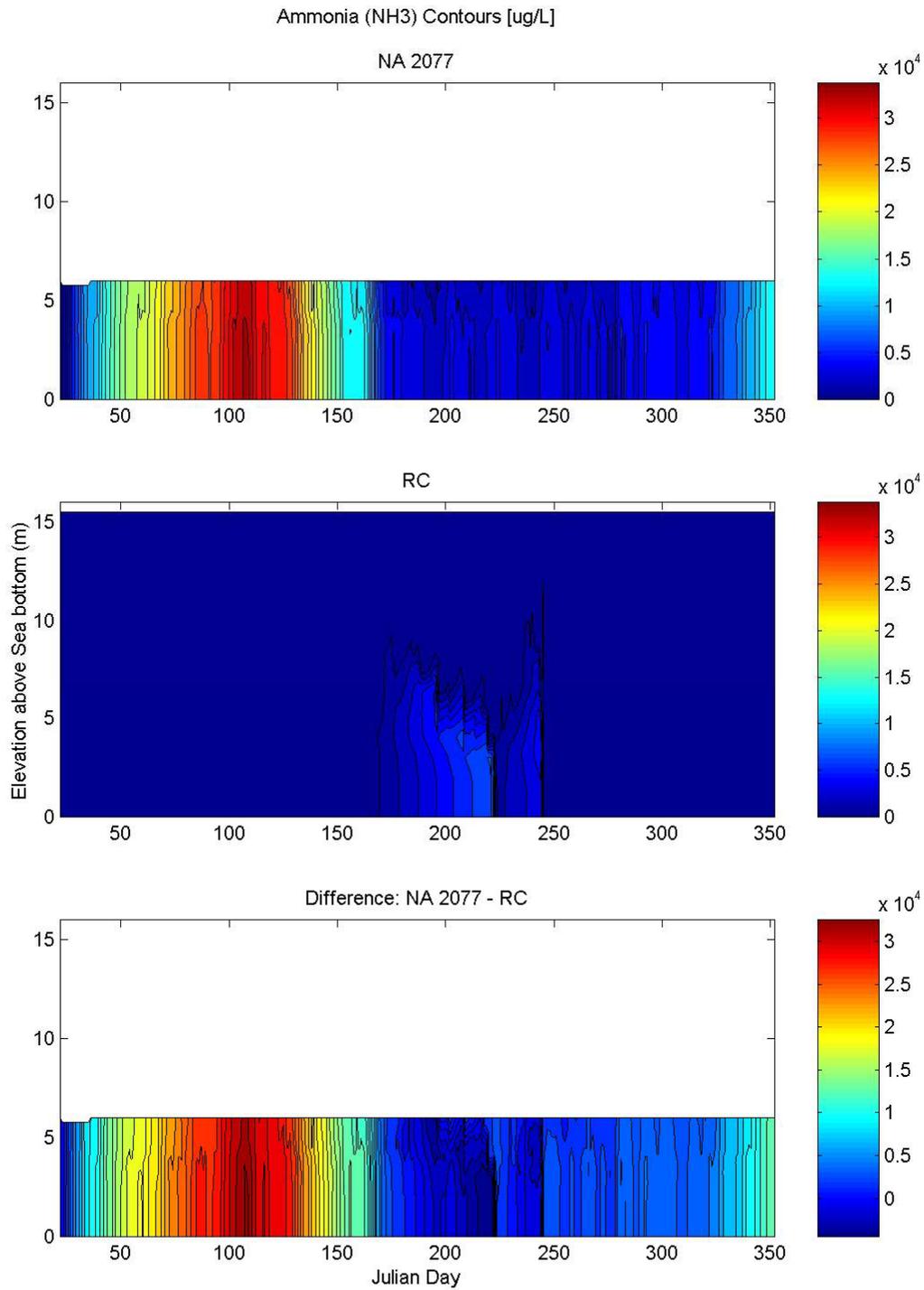


Figure D2-42. Simulated ammonia contours for No Action Alternative at 2077 and Recent Conditions.

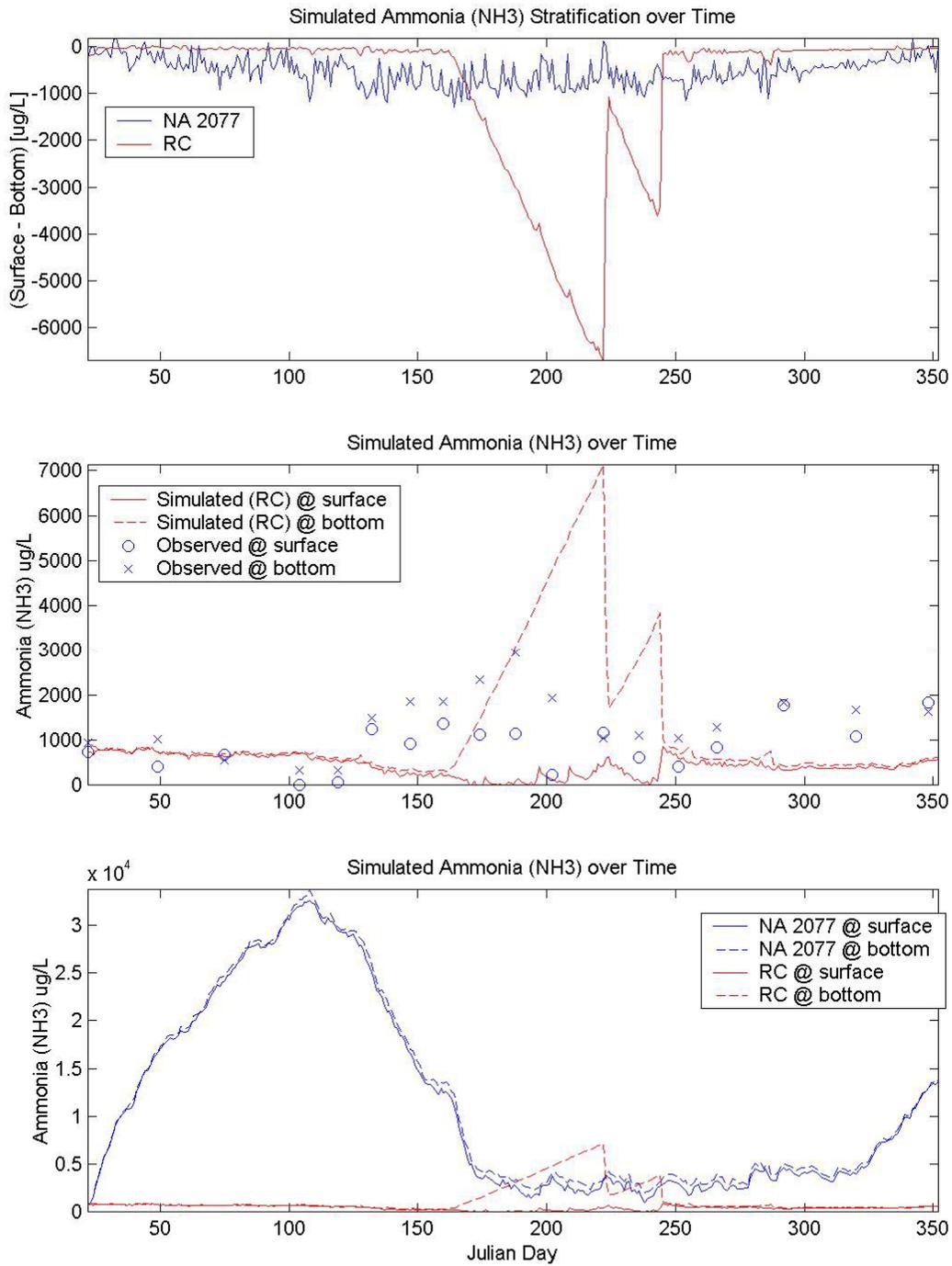


Figure D2-43. Simulated ammonia concentrations for No Action Alternative at 2077 and Recent Conditions.

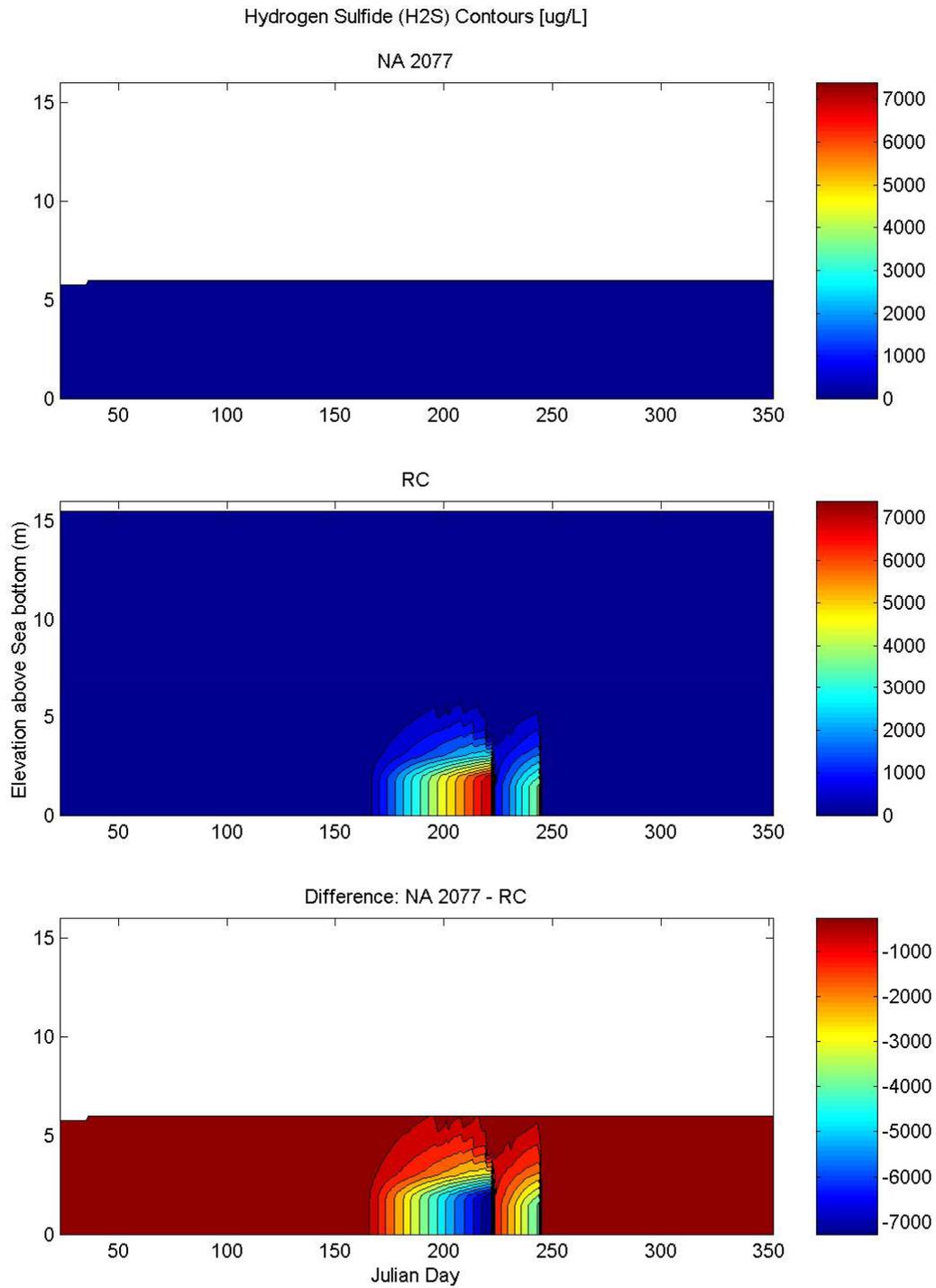


Figure D2-44. Simulated hydrogen sulfide contours for No Action Alternative at 2077 and Recent Conditions.

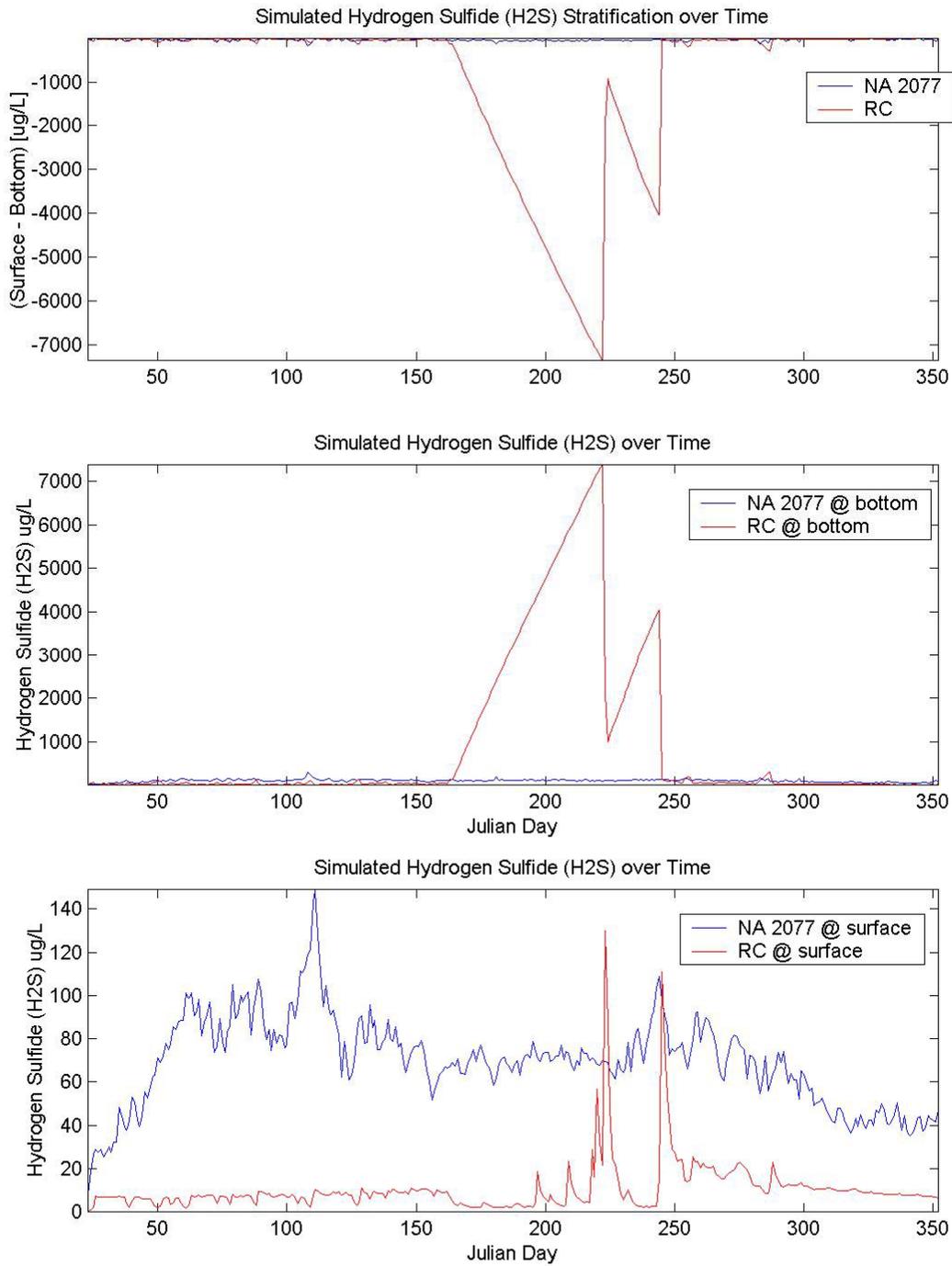


Figure D2-45. Simulated hydrogen sulfide concentrations for No Action Alternative at 2077 and Recent Conditions.

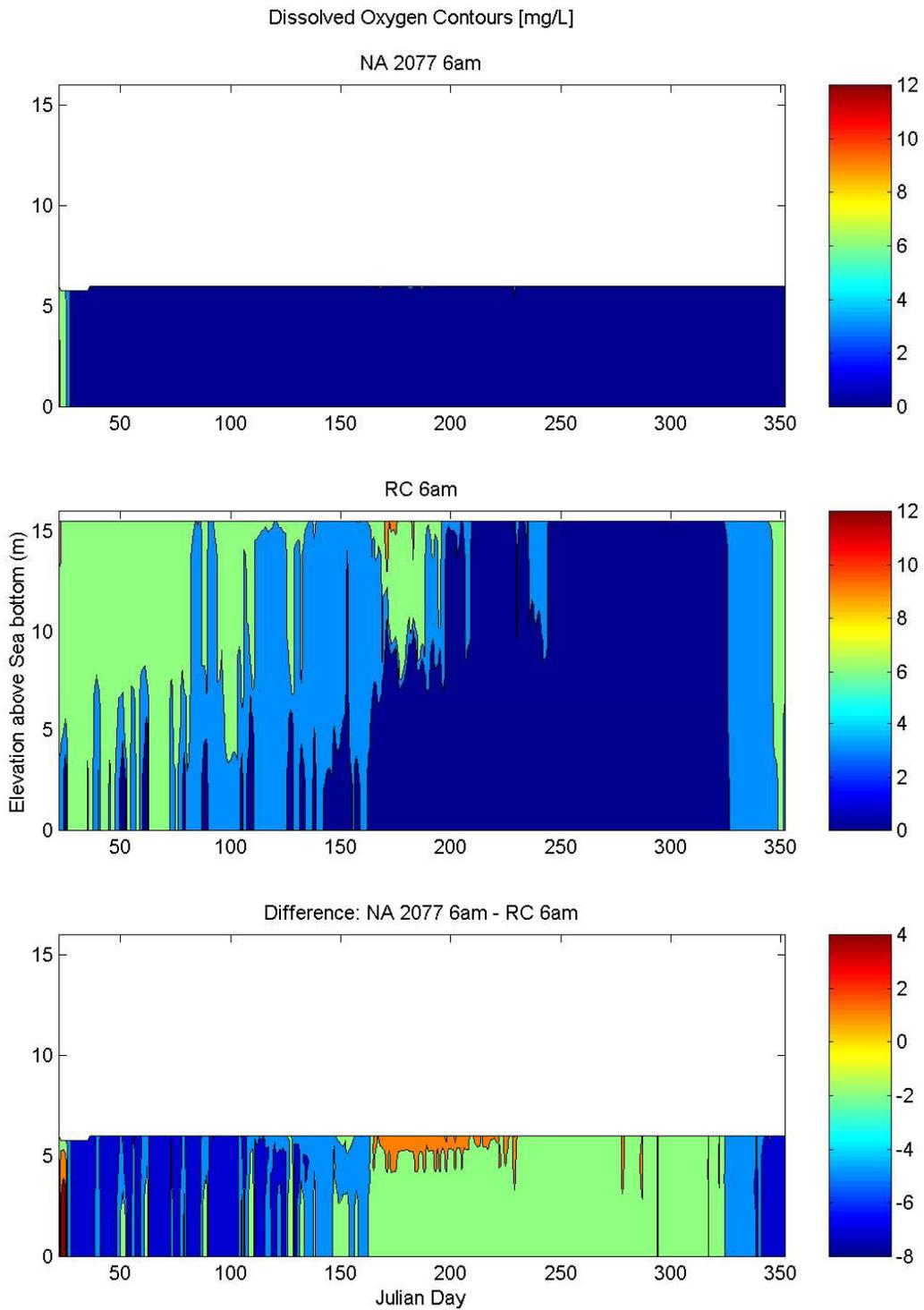


Figure D2-46. Simulated dissolved oxygen (6am) contours for No Action Alternative at 2077 and Recent Conditions.

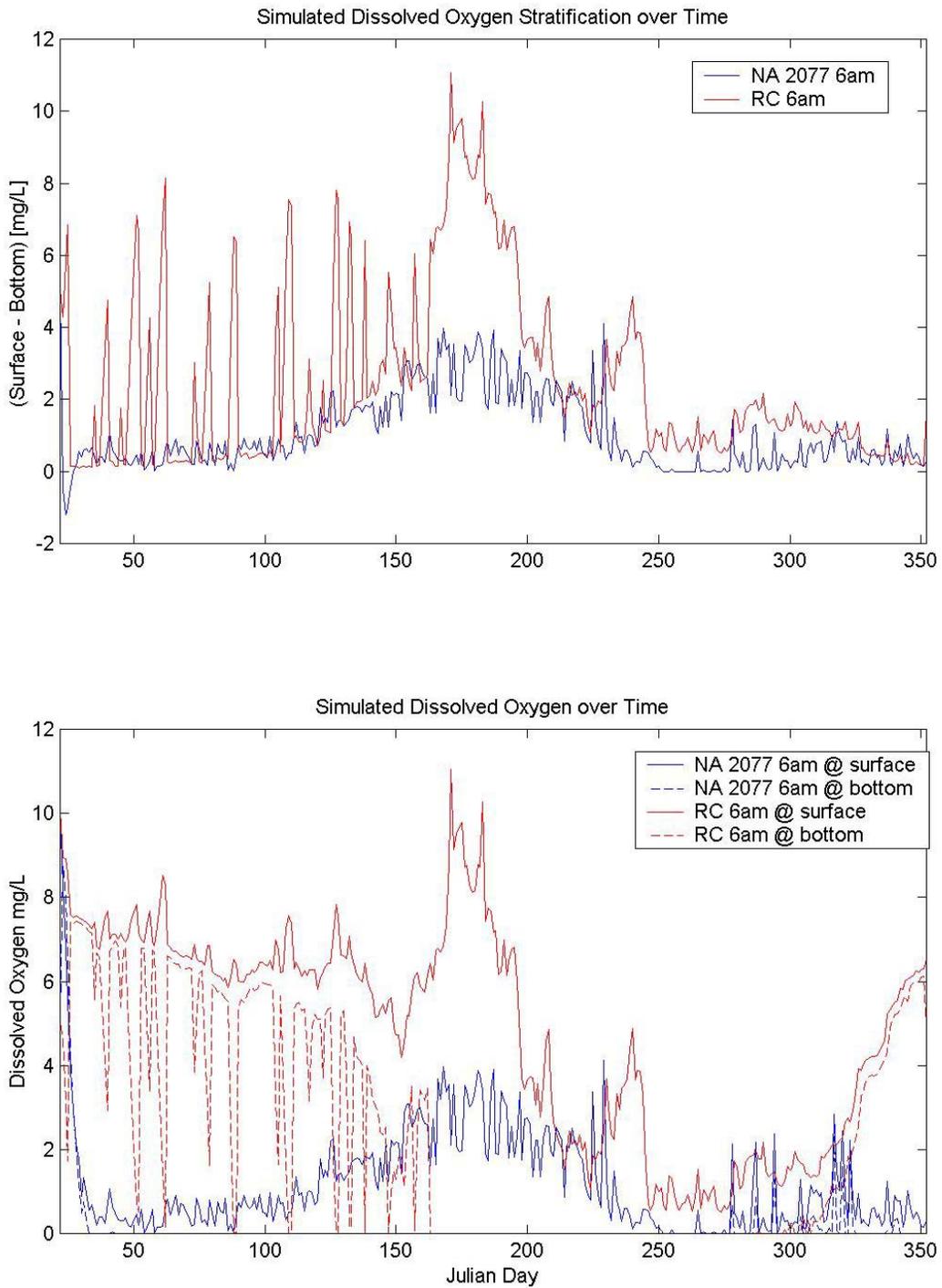


Figure D2-47. Simulated dissolved oxygen (6am) concentrations for No Action Alternative at 2077 and Recent Conditions.

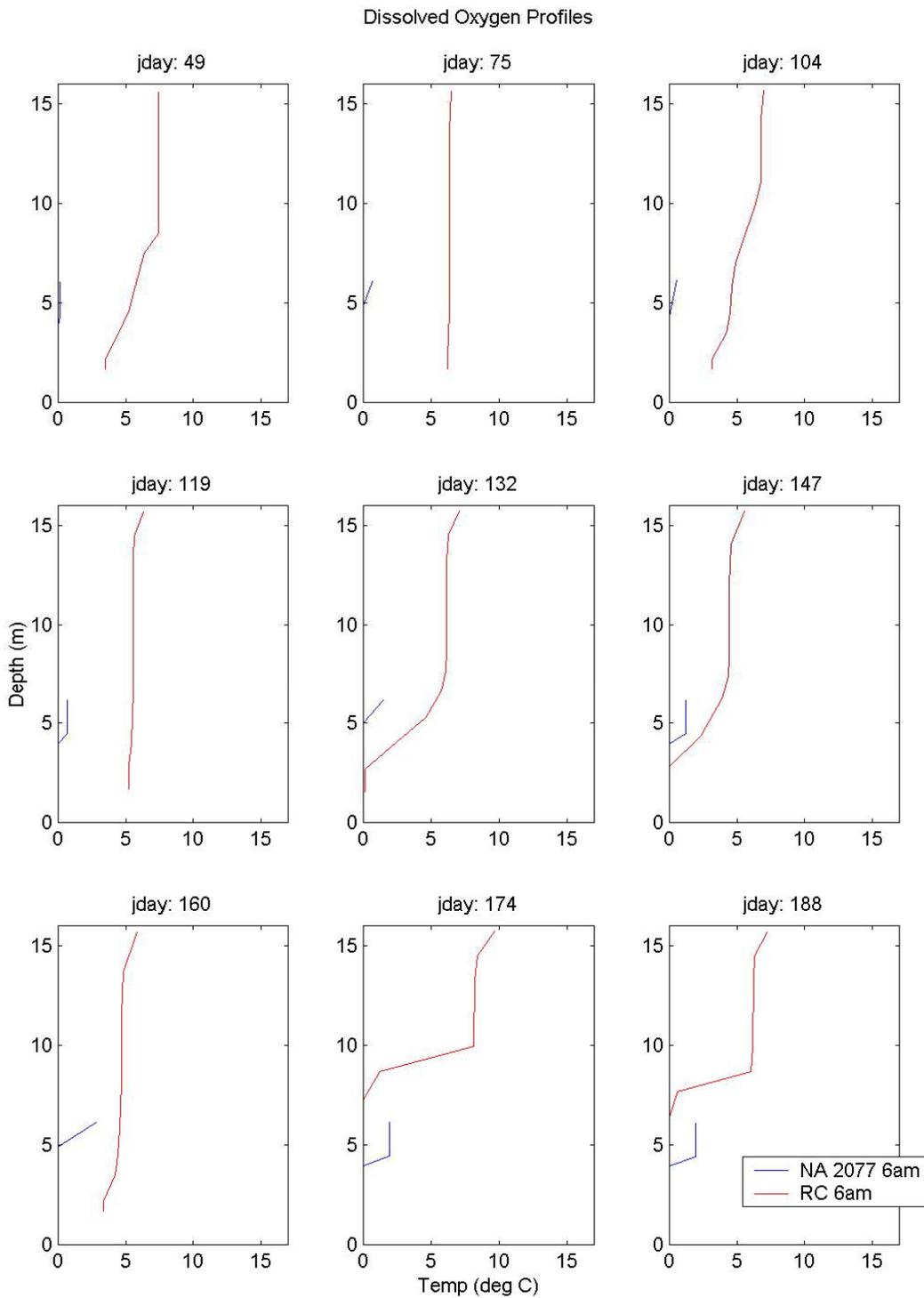


Figure D2-48A. Simulated dissolved oxygen (6am) profiles for No Action Alternative at 2077 and Recent Conditions.

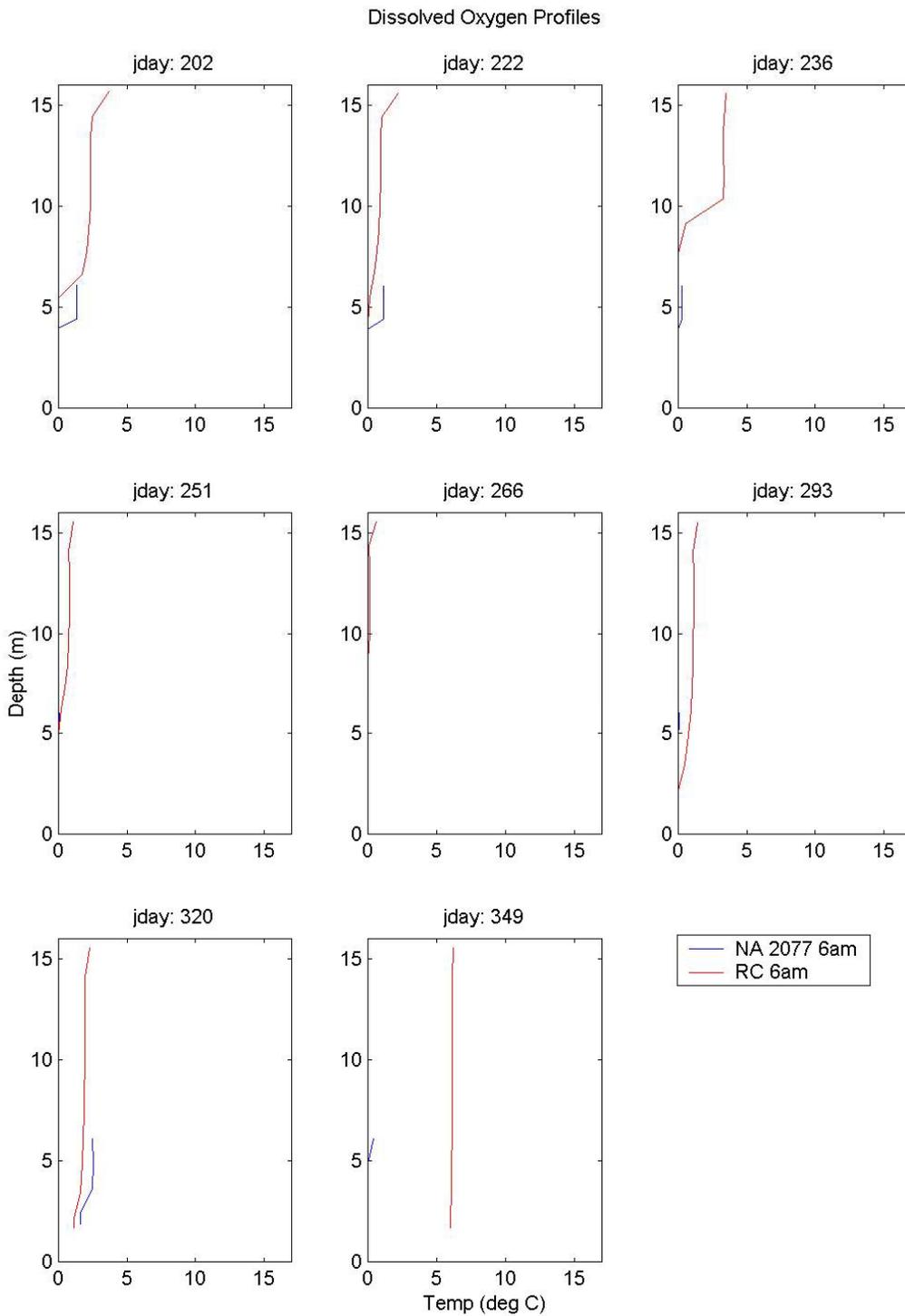


Figure D2-48B. Simulated dissolved oxygen (6am) profiles for No Action Alternative at 2077 and Recent Conditions.

NSC

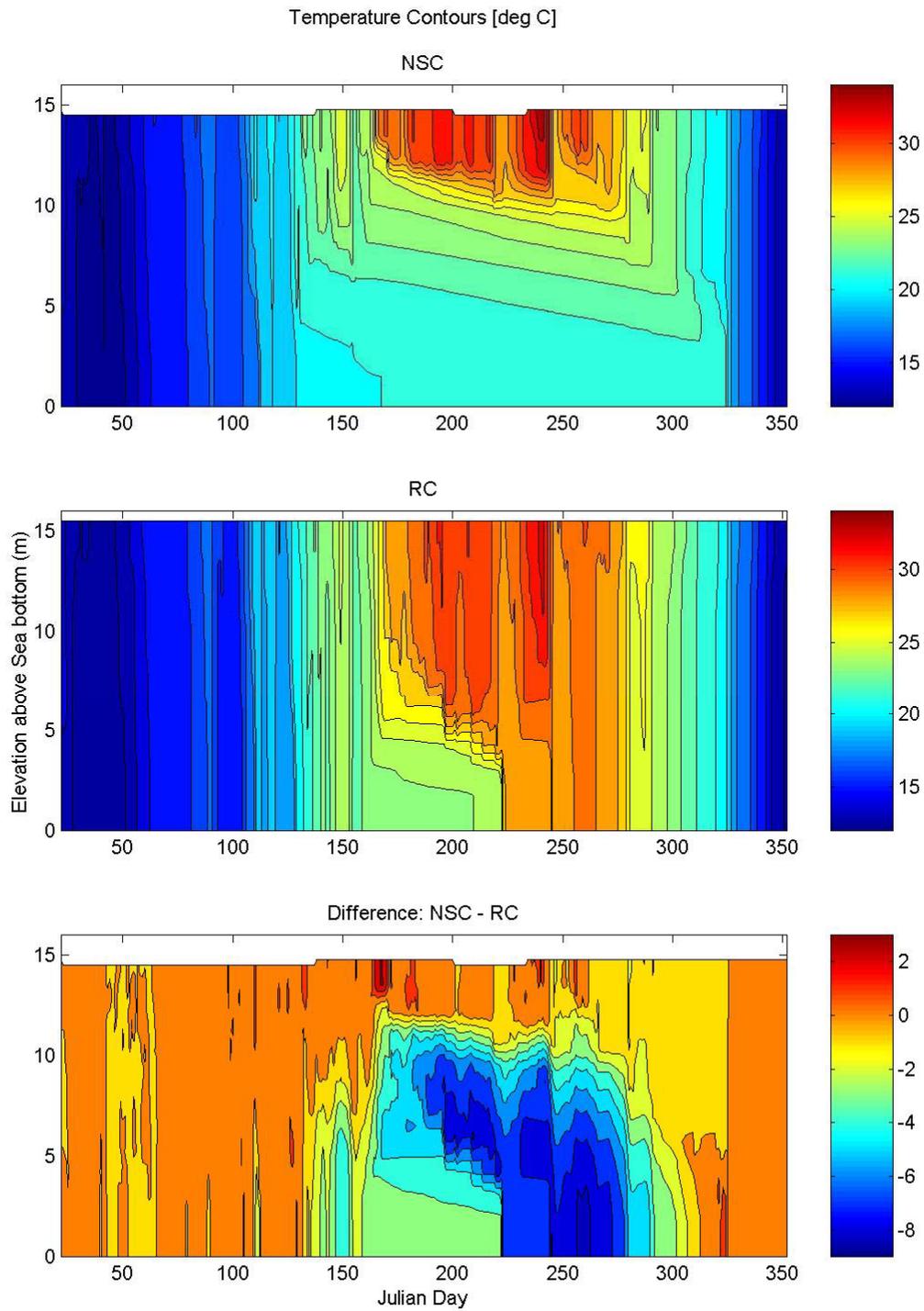


Figure D2-49. Simulated temperature contours for the Marine Sea in Alternatives 5 and 6 and Recent Conditions.

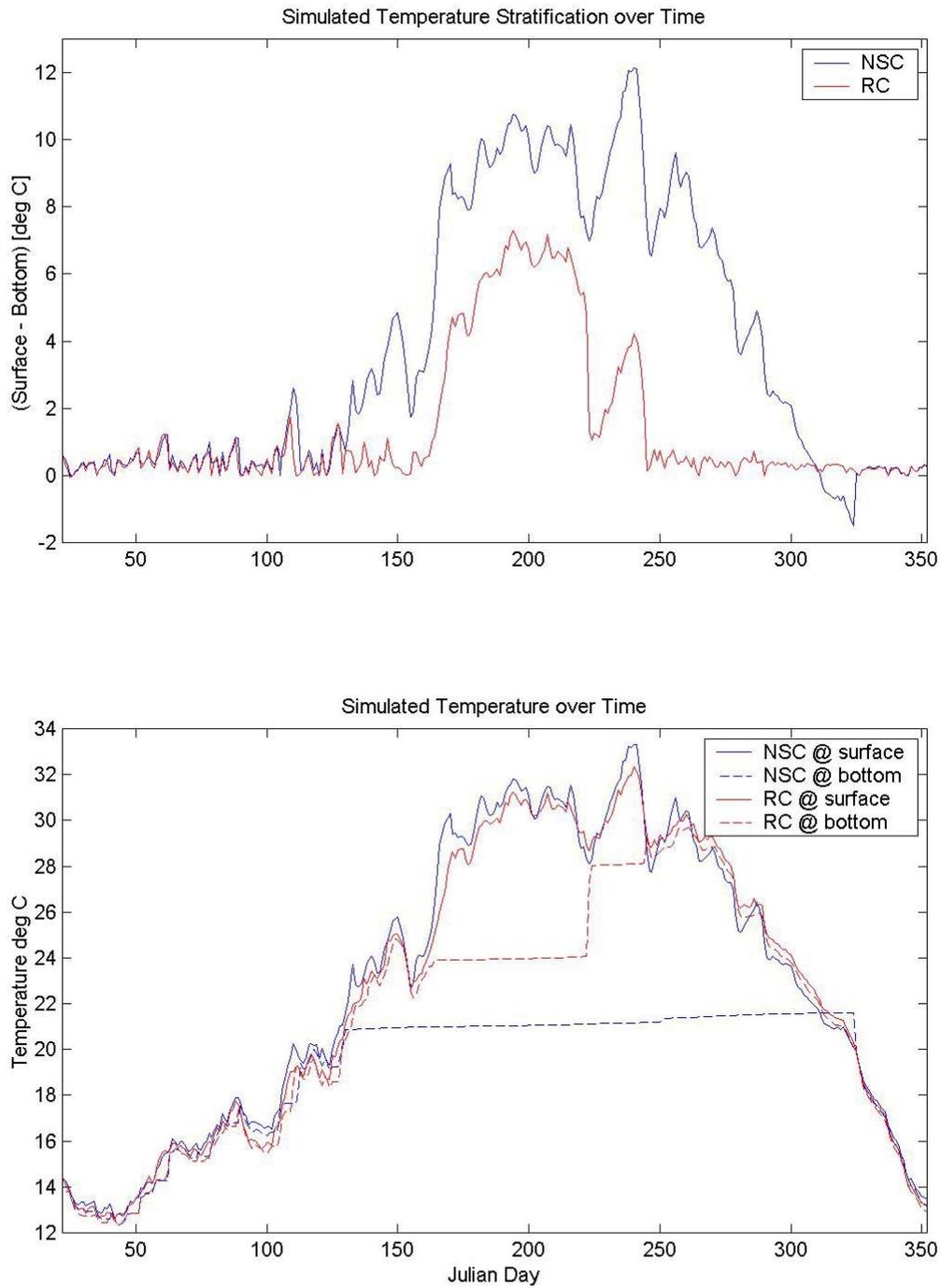


Figure D2-50. Simulated temperature for the Marine Sea in Alternatives 5 and 6 and Recent Conditions.

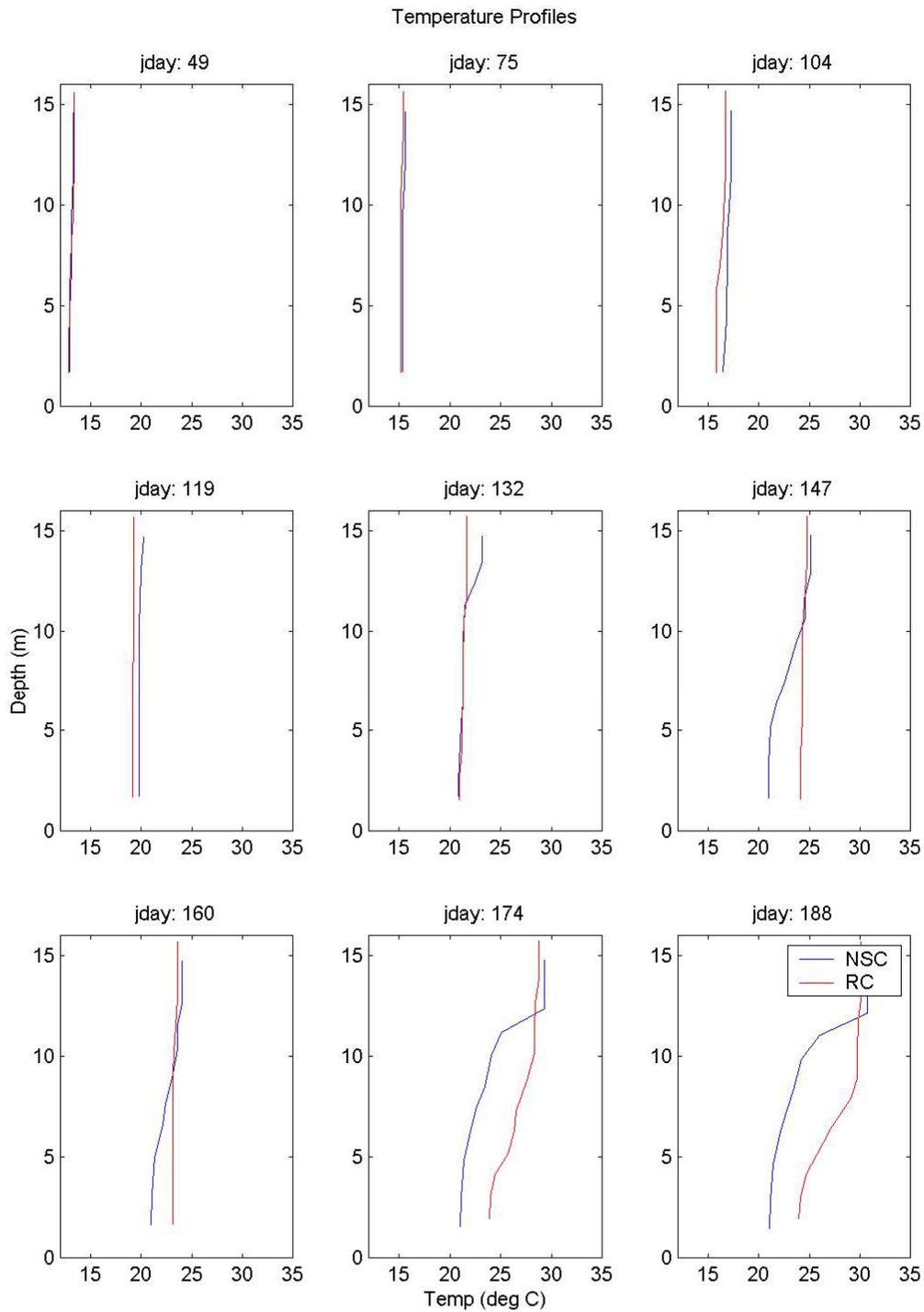


Figure D2-51A. Simulated temperature profiles for the Marine Sea in Alternatives 5 and 6 and Recent Conditions.

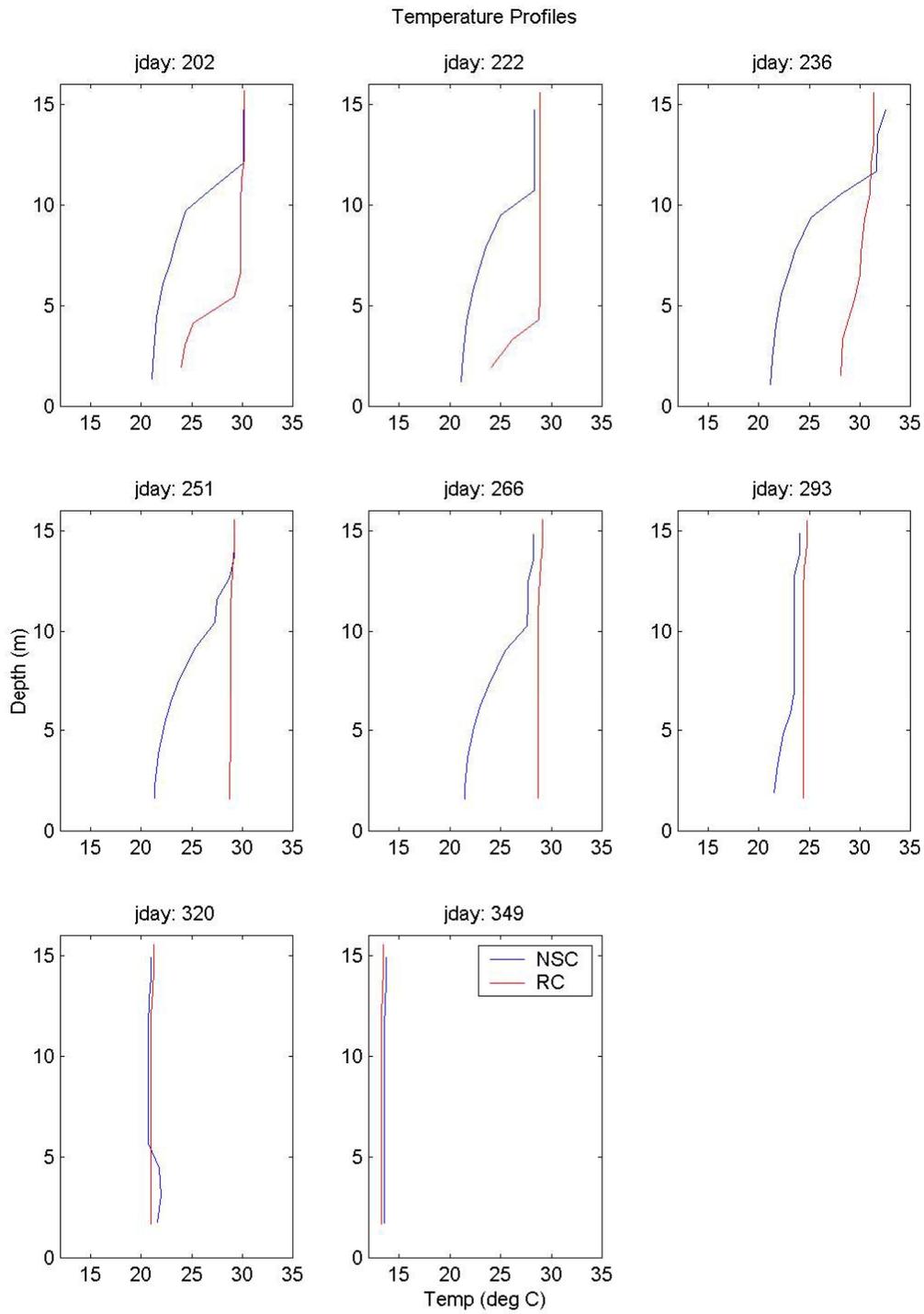


Figure D2-51B. Simulated temperature profiles for the Marine Sea in Alternatives 5 and 6 and Recent Conditions.

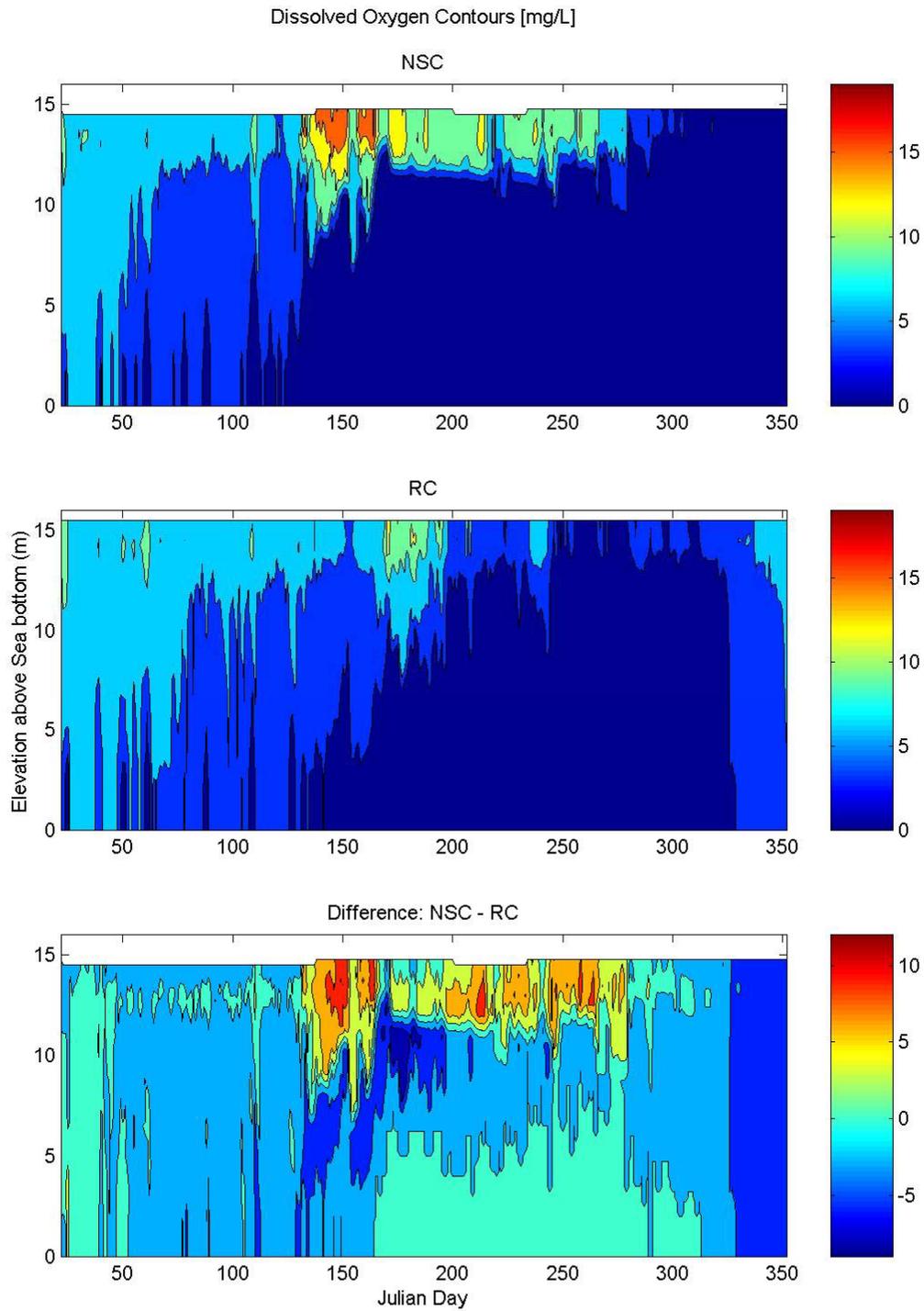


Figure D2-52. Simulated dissolved oxygen (noon) contours for the Marine Sea in Alternatives 5 and 6 and Recent Conditions.

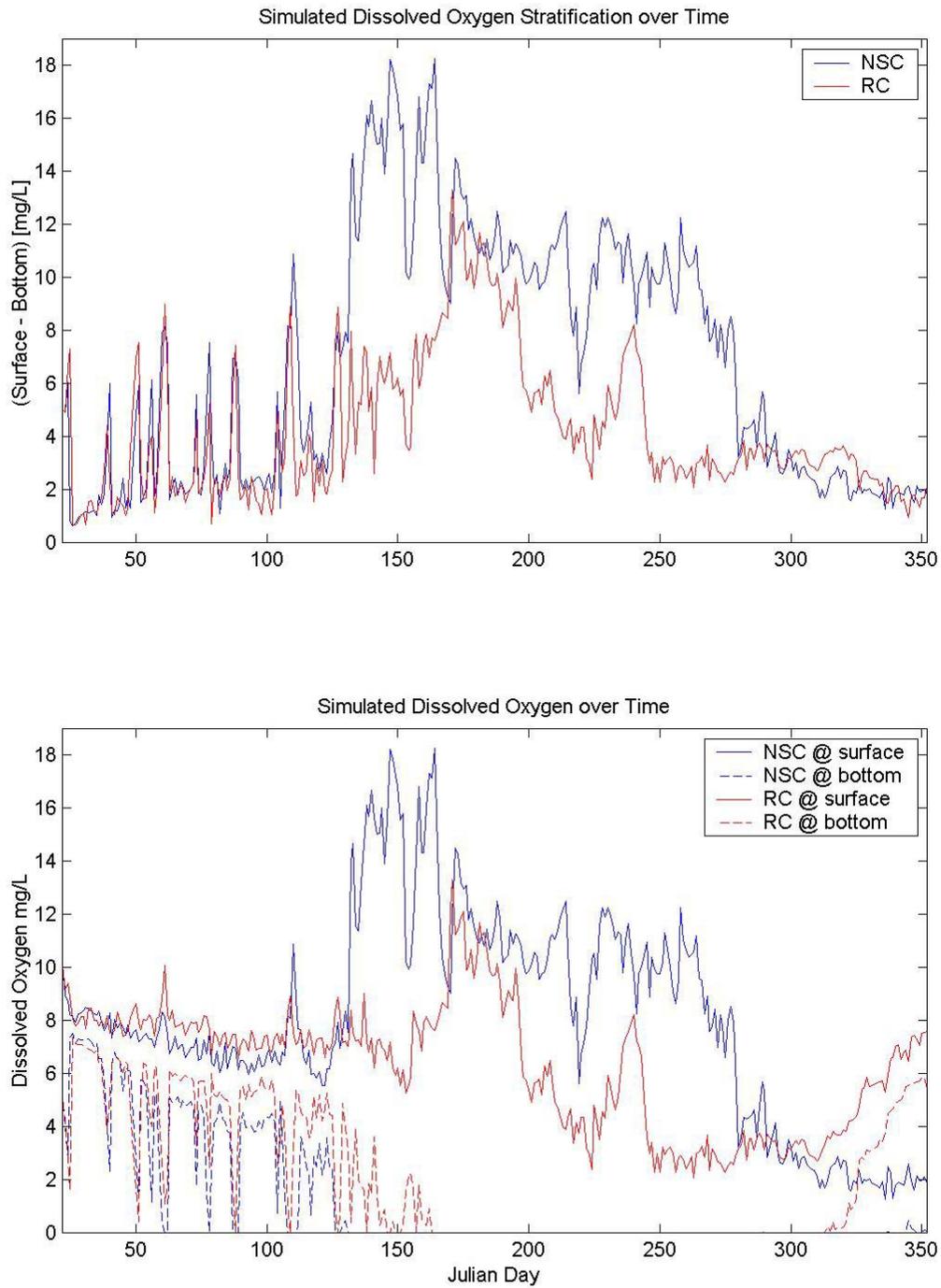


Figure D2-53. Simulated dissolved oxygen (noon) concentrations for the Marine Sea in Alternatives 5 and 6 and Recent Conditions.

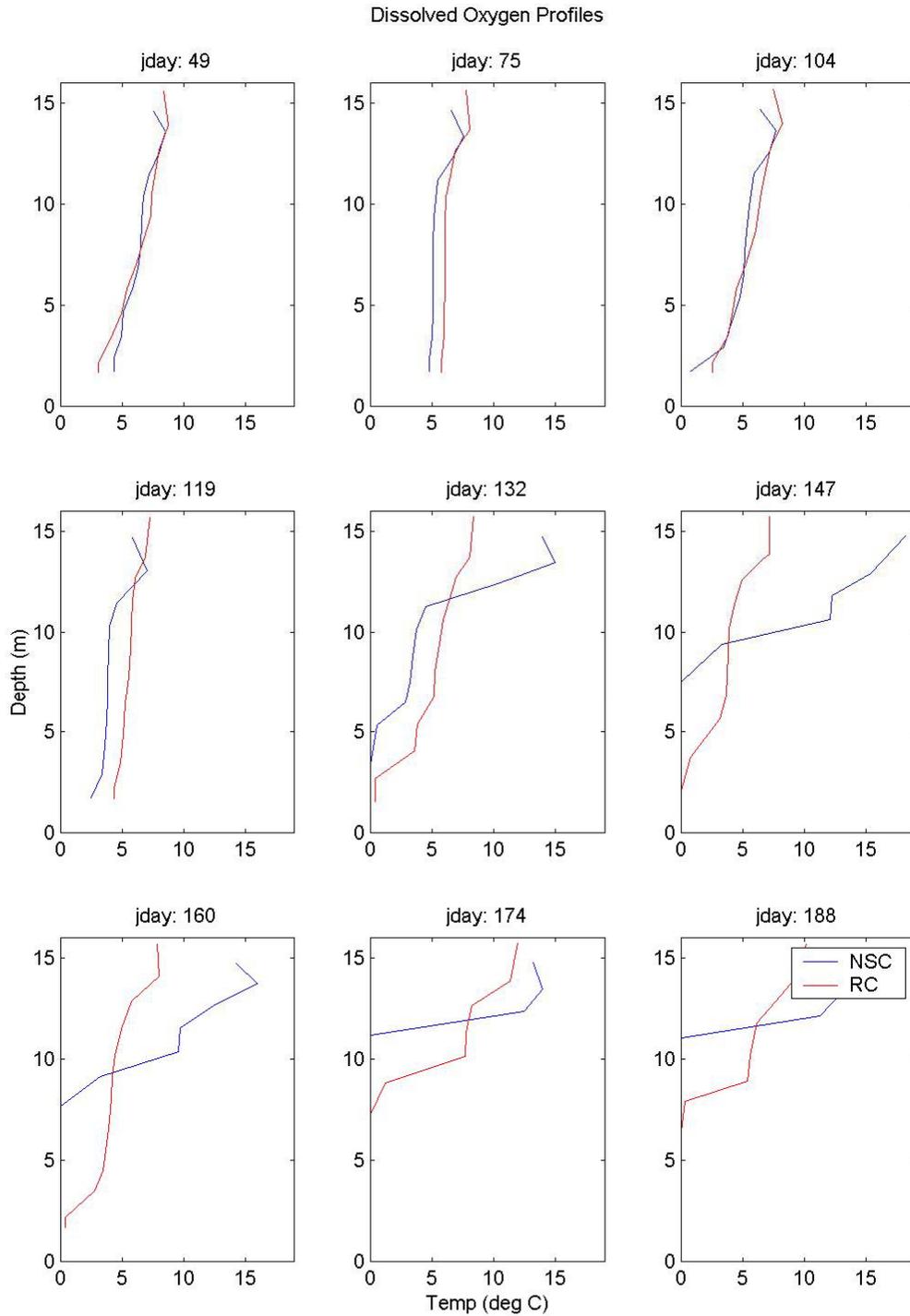


Figure D2-54A. Simulated dissolved oxygen (noon) profiles for the Marine Sea in Alternatives 5 and 6 and Recent Conditions.

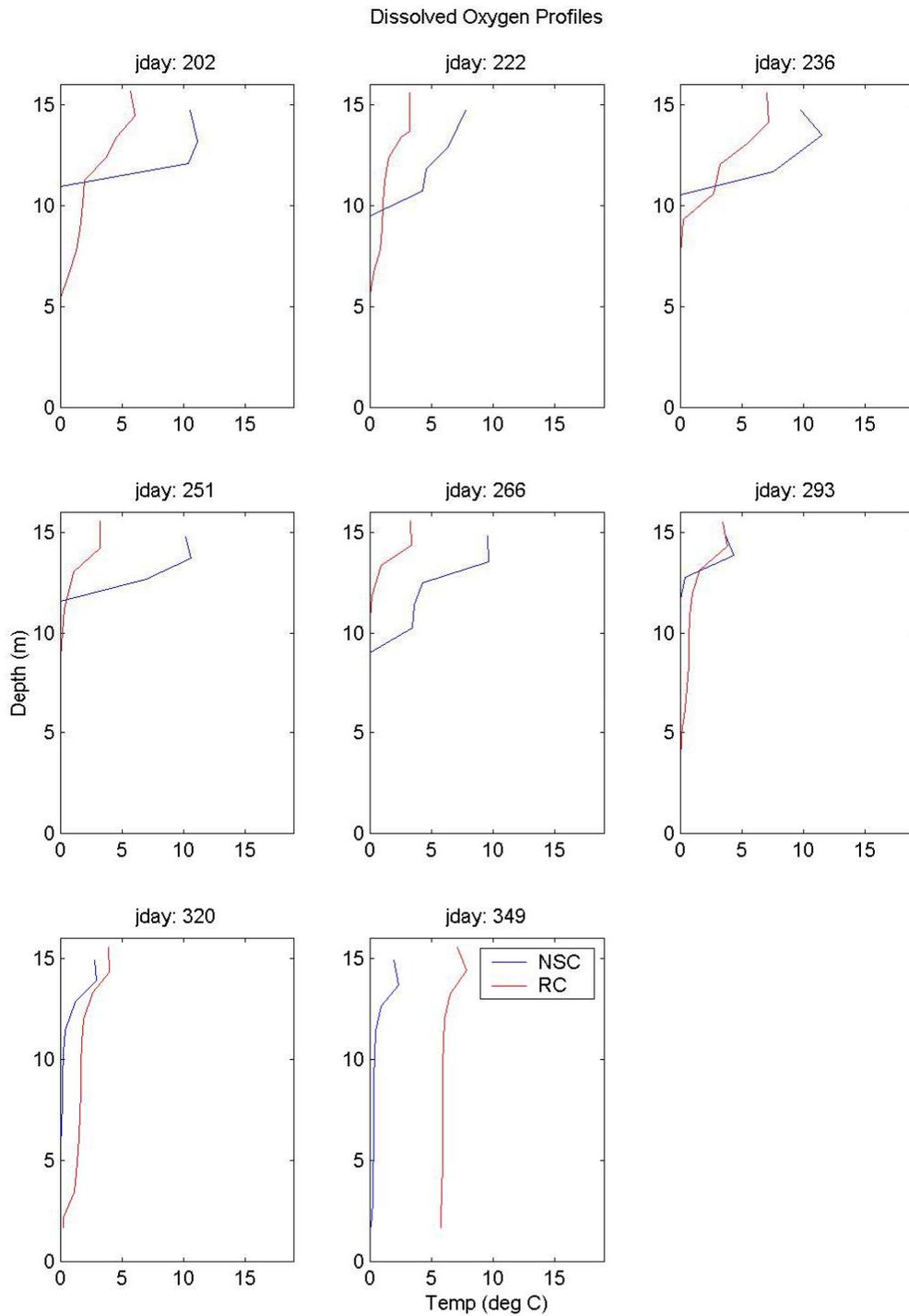


Figure D2-54B. Simulated dissolved oxygen (noon) profiles for the Marine Sea in Alternatives 5 and 6 and Recent Conditions.

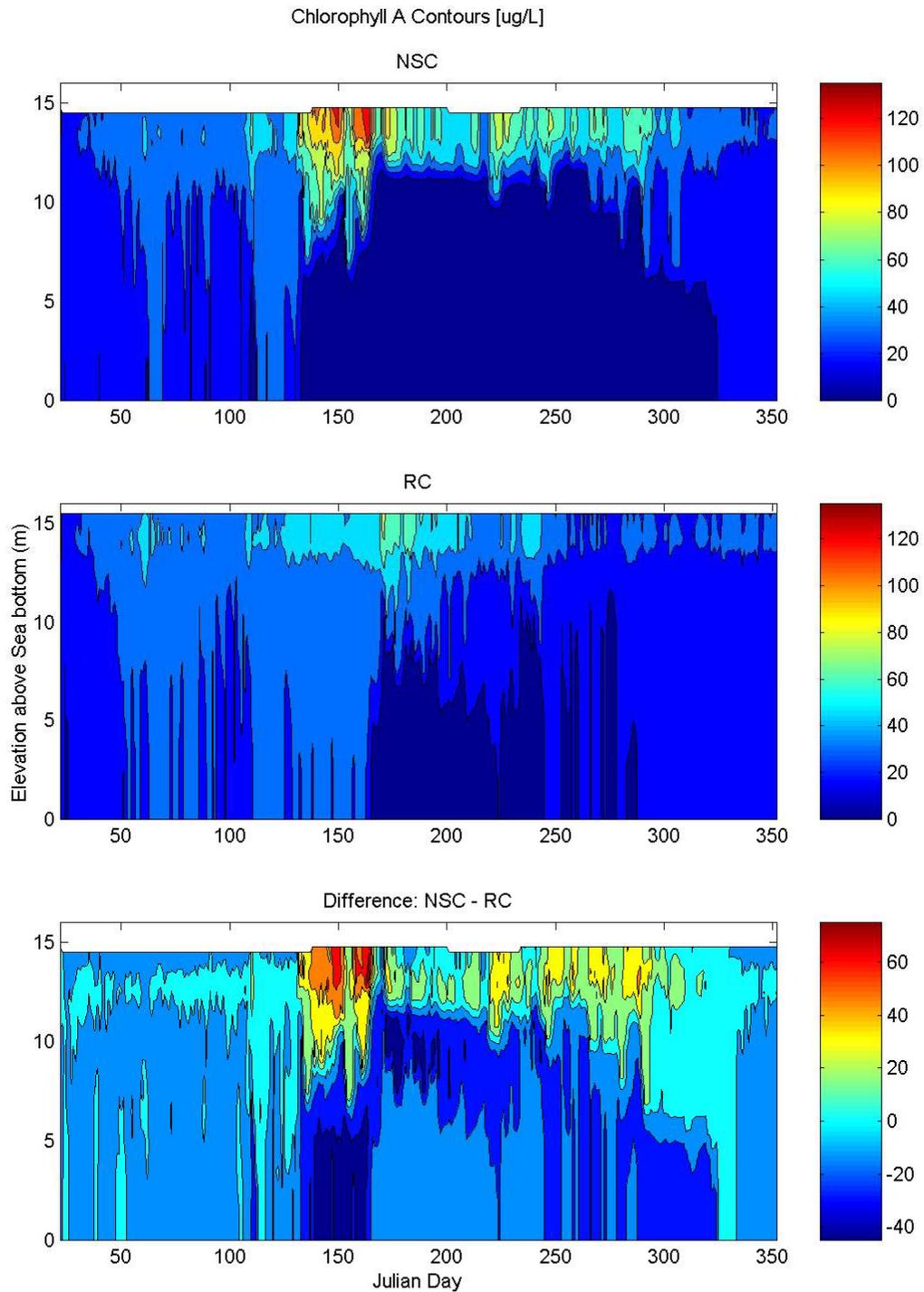


Figure D2-55. Simulated chlorophyll a contours for the Marine Sea in Alternatives 5 and 6 and Recent Conditions.

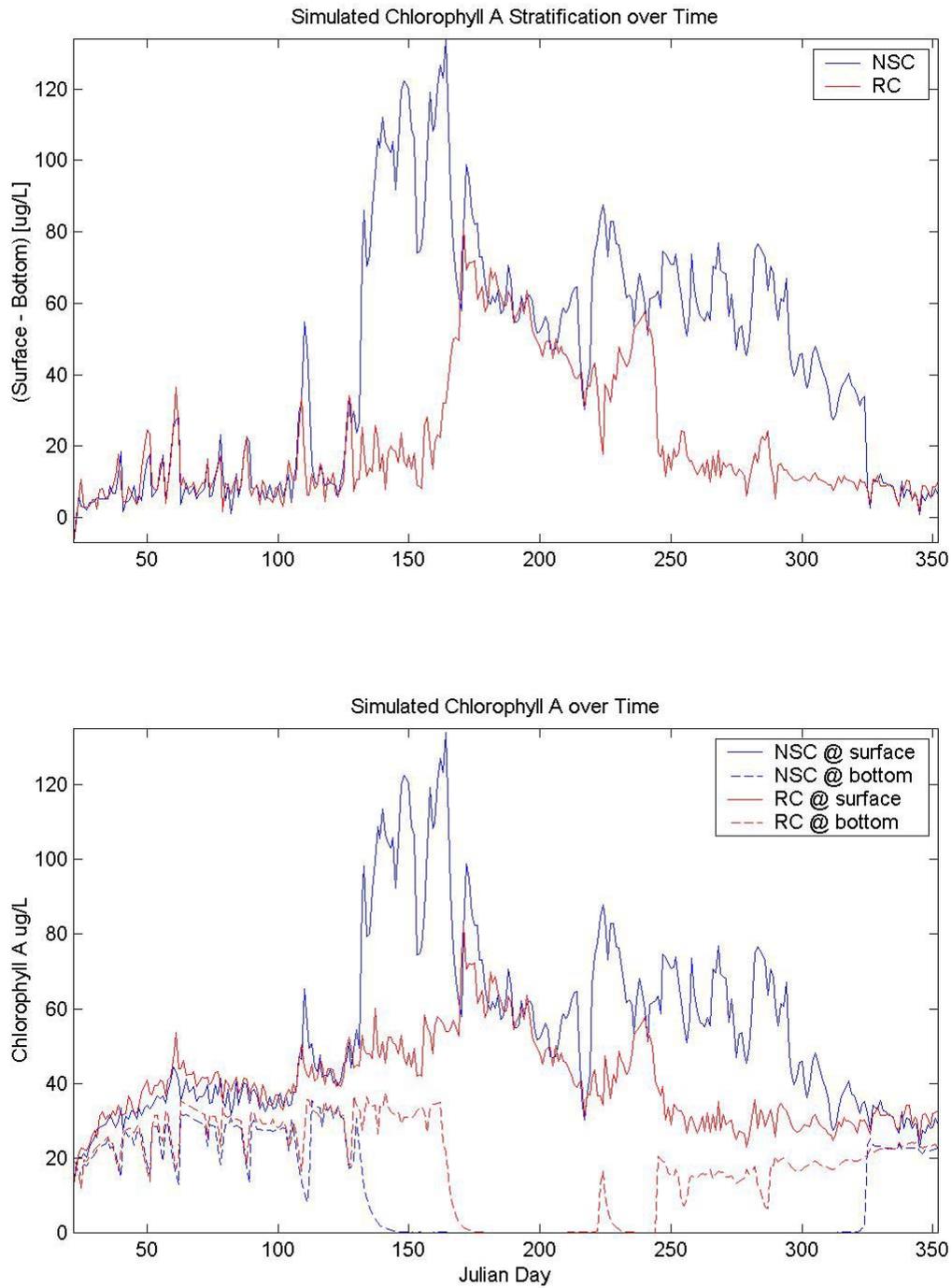


Figure D2-56. Simulated chlorophyll a concentrations for the Marine Sea in Alternatives 5 and 6 and Recent Conditions.

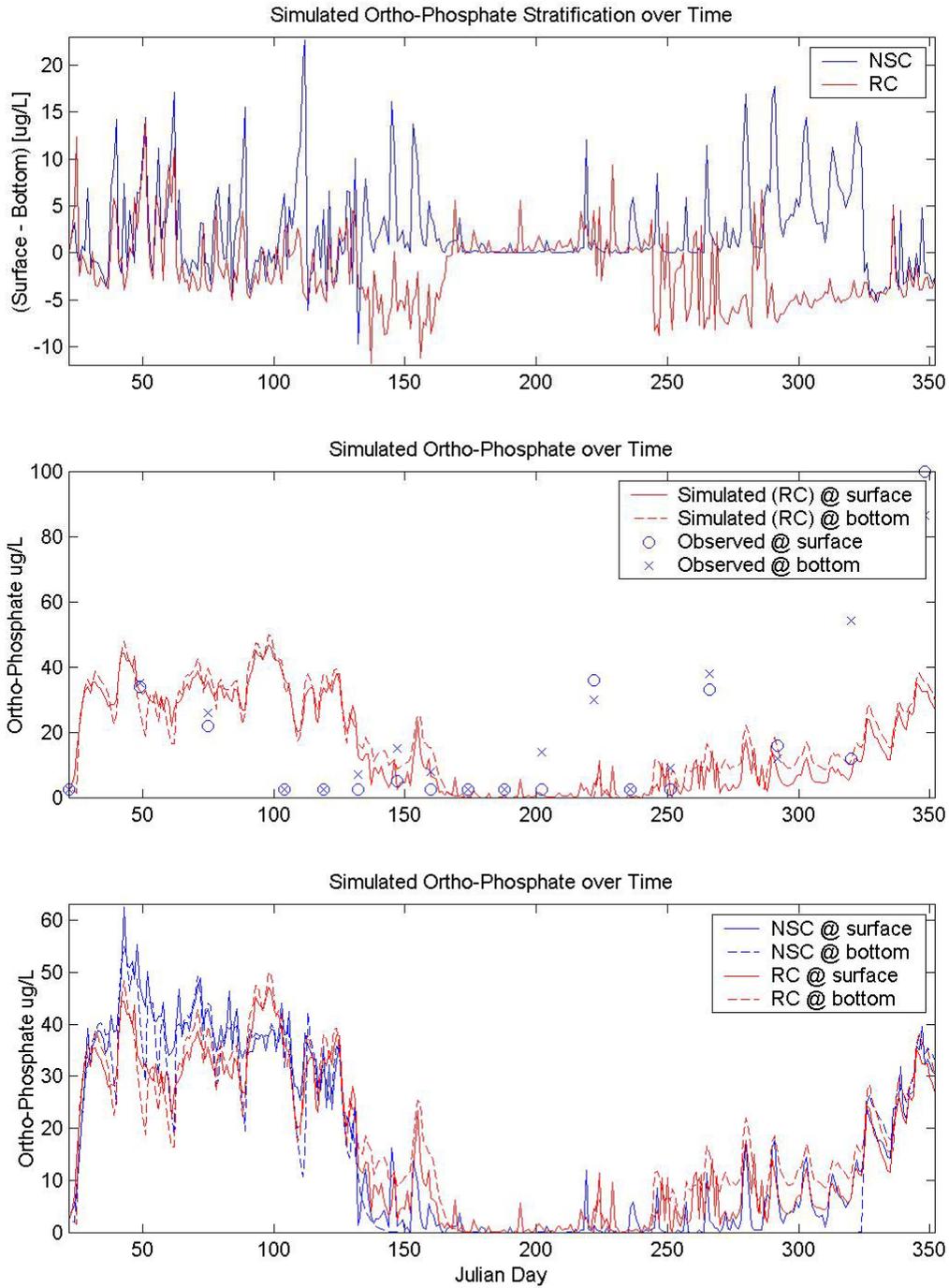


Figure D2-57. Simulated orthophosphate concentrations for the Marine Sea in Alternatives 5 and 6 and Recent Conditions.

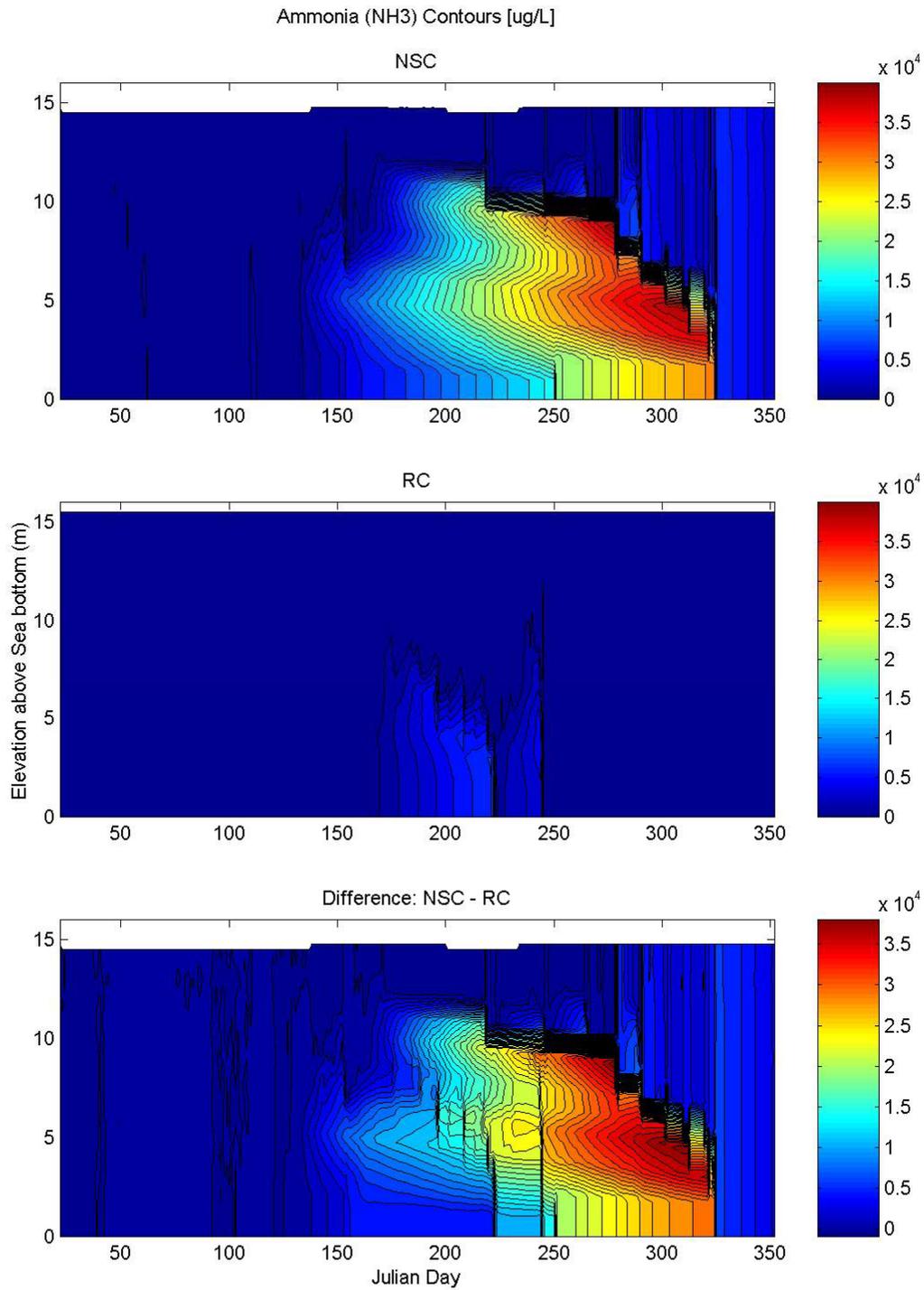


Figure D2-58. Simulated ammonia contours for the Marine Sea in Alternatives 5 and 6 and Recent Conditions.

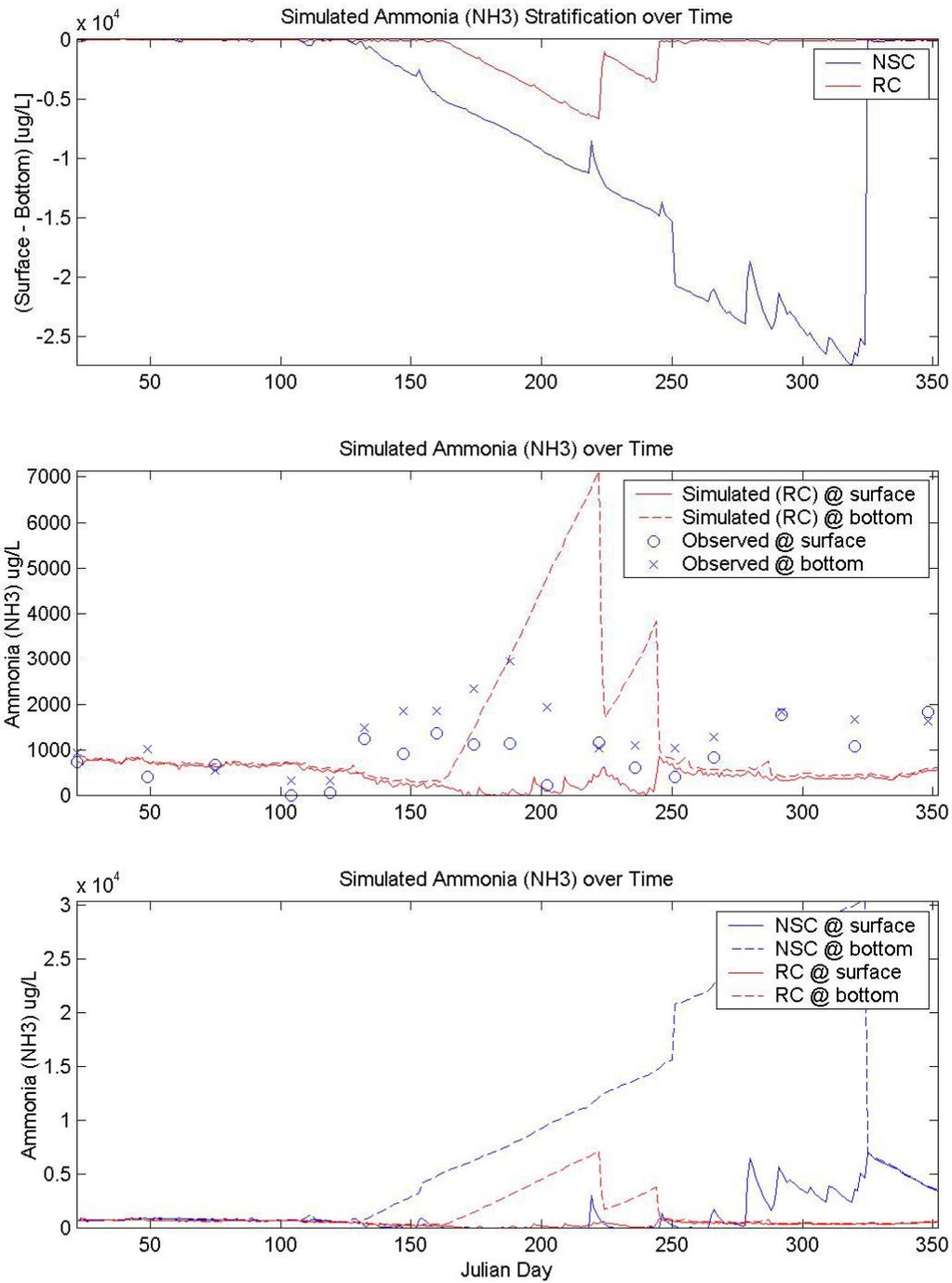


Figure D2-59. Simulated ammonia concentrations for the Marine Sea in Alternatives 5 and 6 and Recent Conditions.

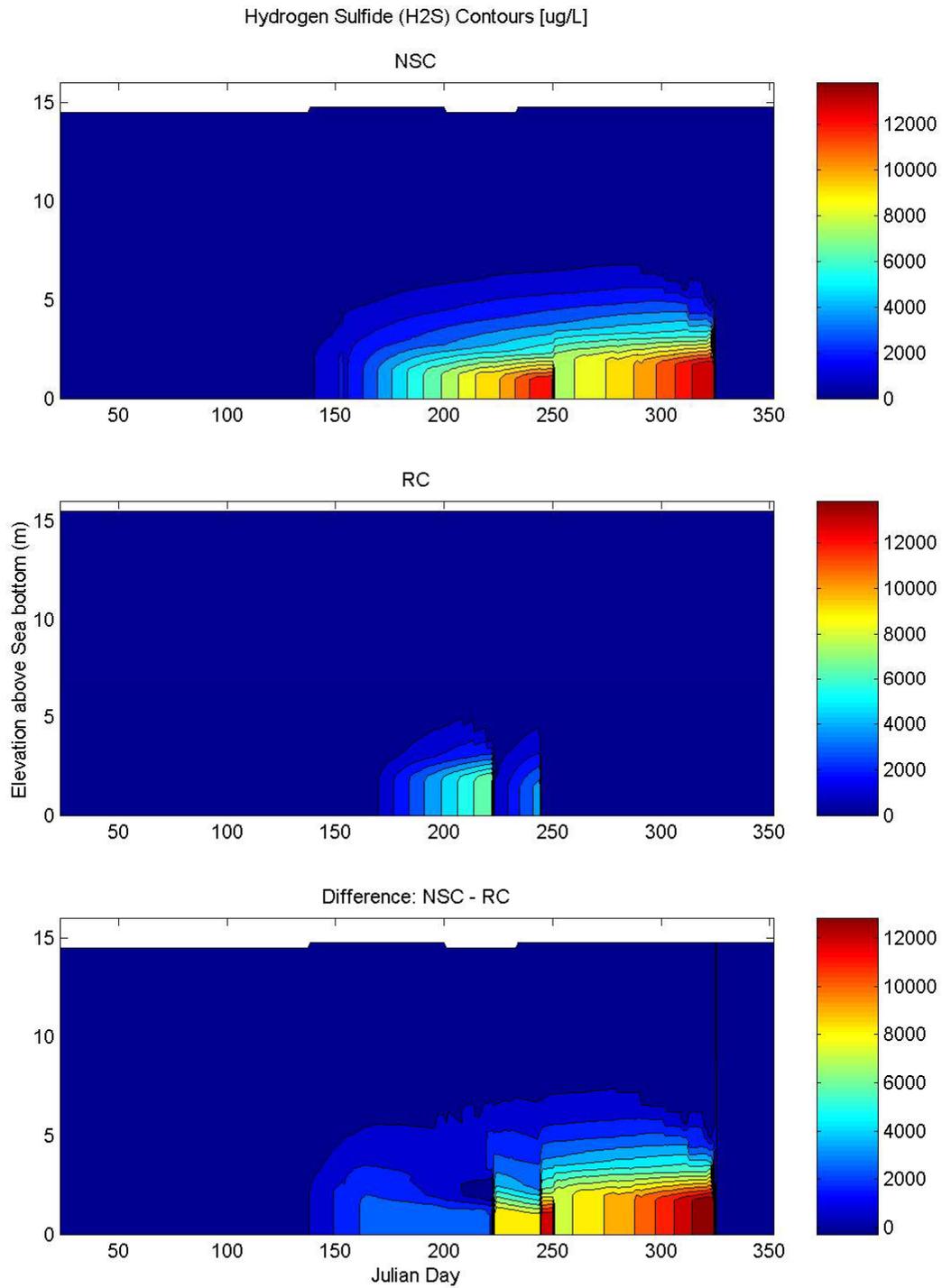


Figure D2-60. Simulated hydrogen sulfide contours for the Marine Sea in Alternatives 5 and 6 and Recent Conditions.

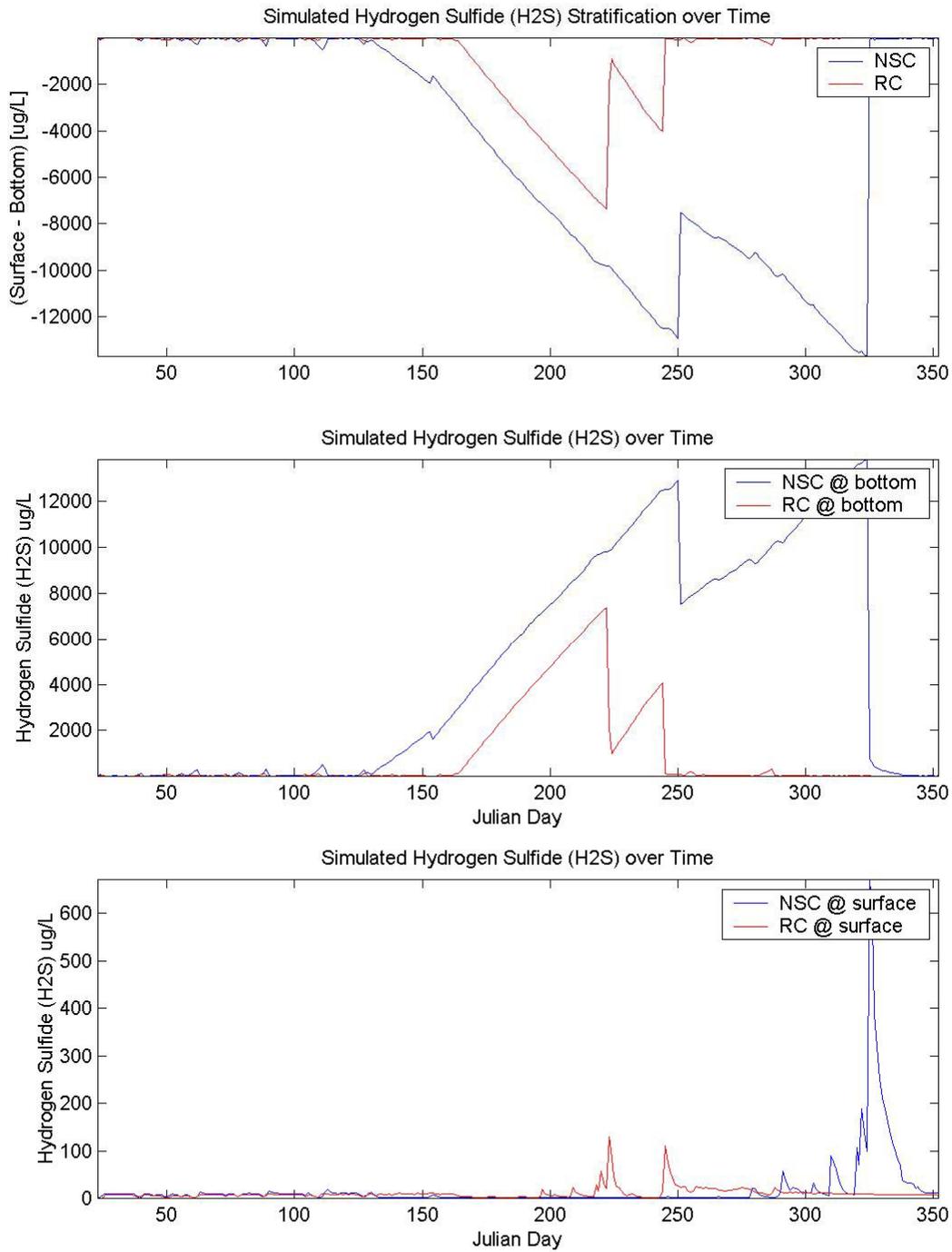


Figure D2-61. Simulated hydrogen sulfide concentrations for the Marine Sea in Alternatives 5 and 6 and Recent Conditions.

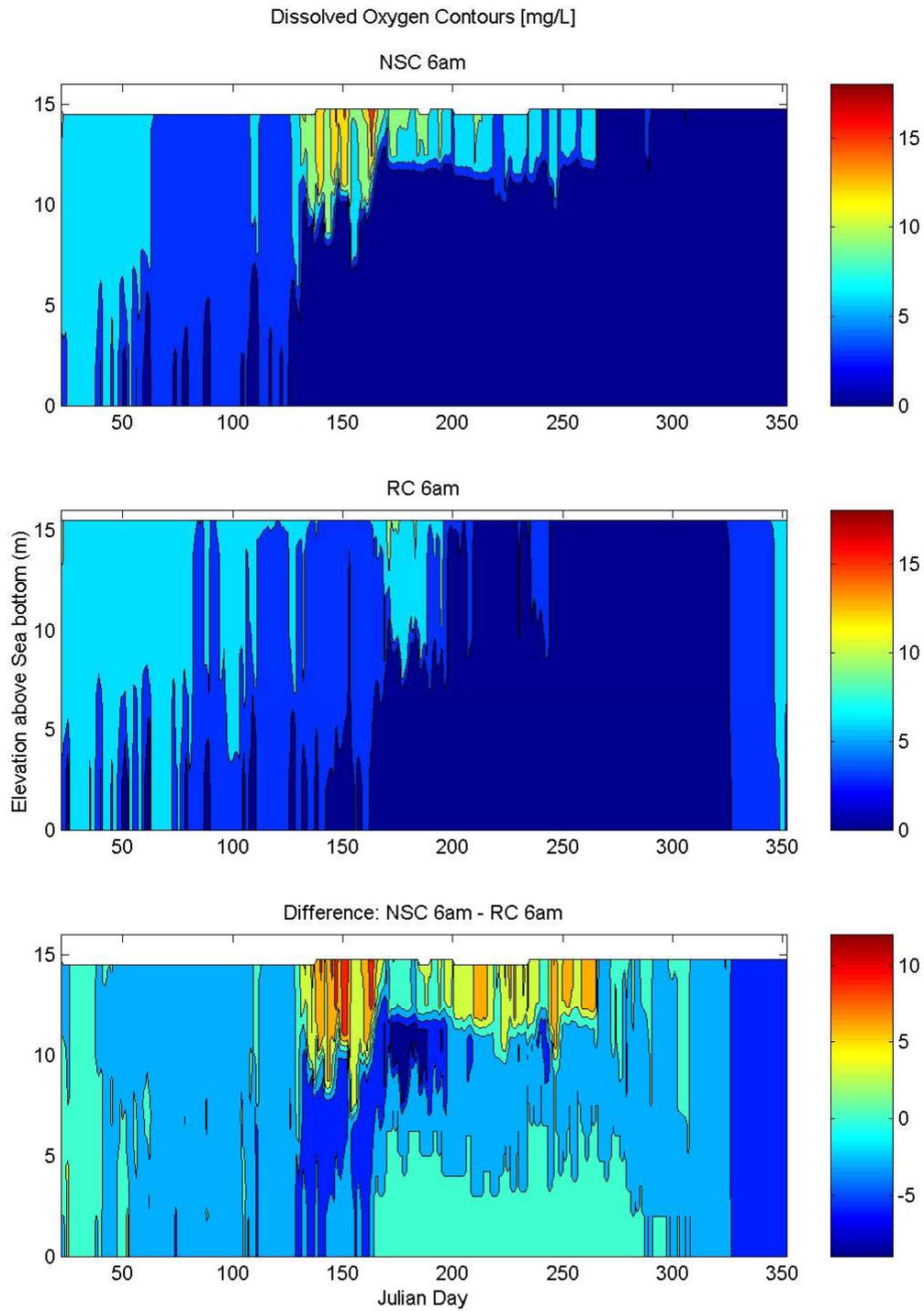


Figure D2-62. Simulated dissolved oxygen (6am) contours for the Marine Sea in Alternatives 5 and 6 and Recent Conditions.

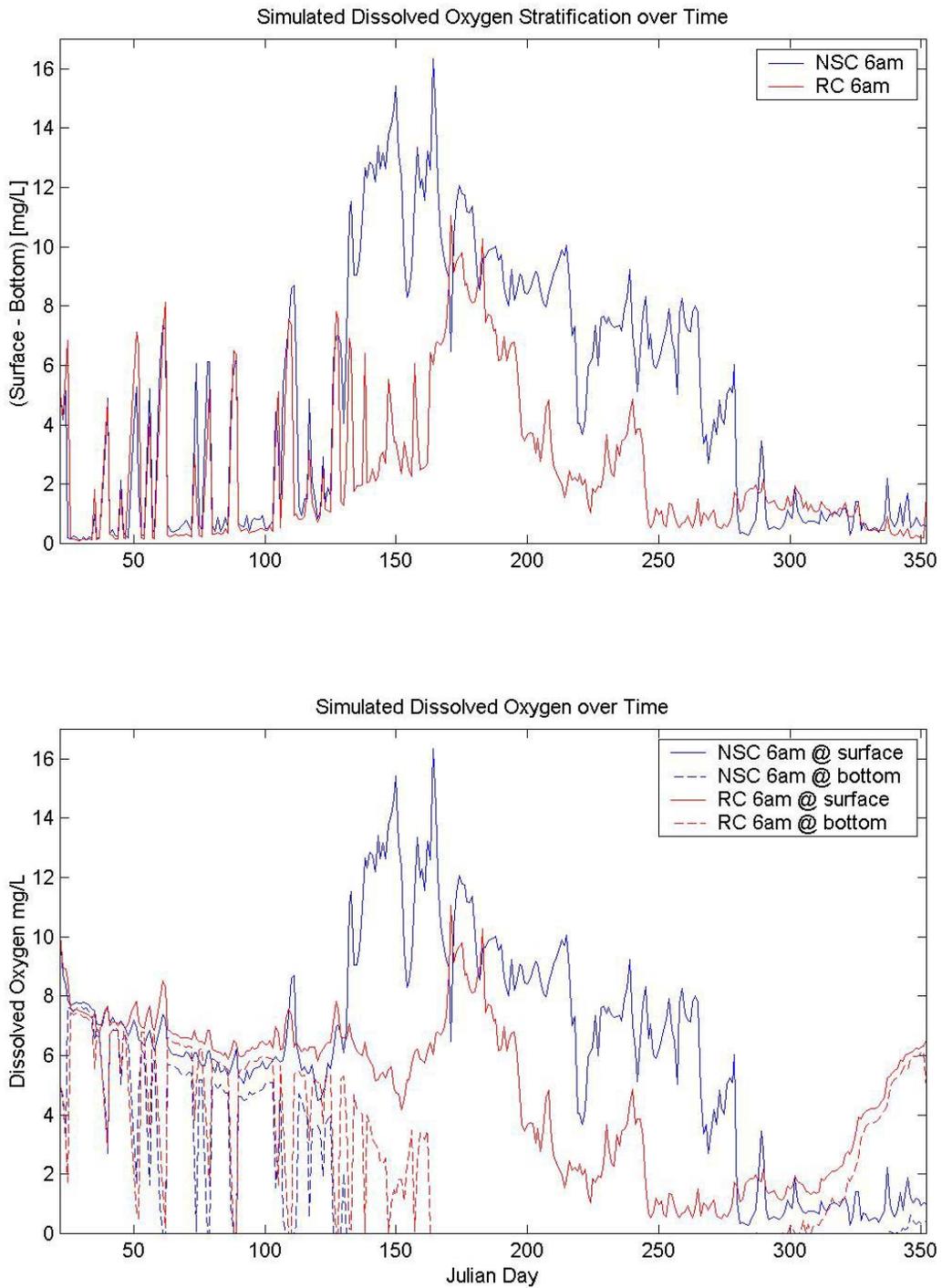


Figure D2-63. Simulated dissolved oxygen (6am) concentrations for the Marine Sea in Alternatives 5 and 6 and Recent Conditions.

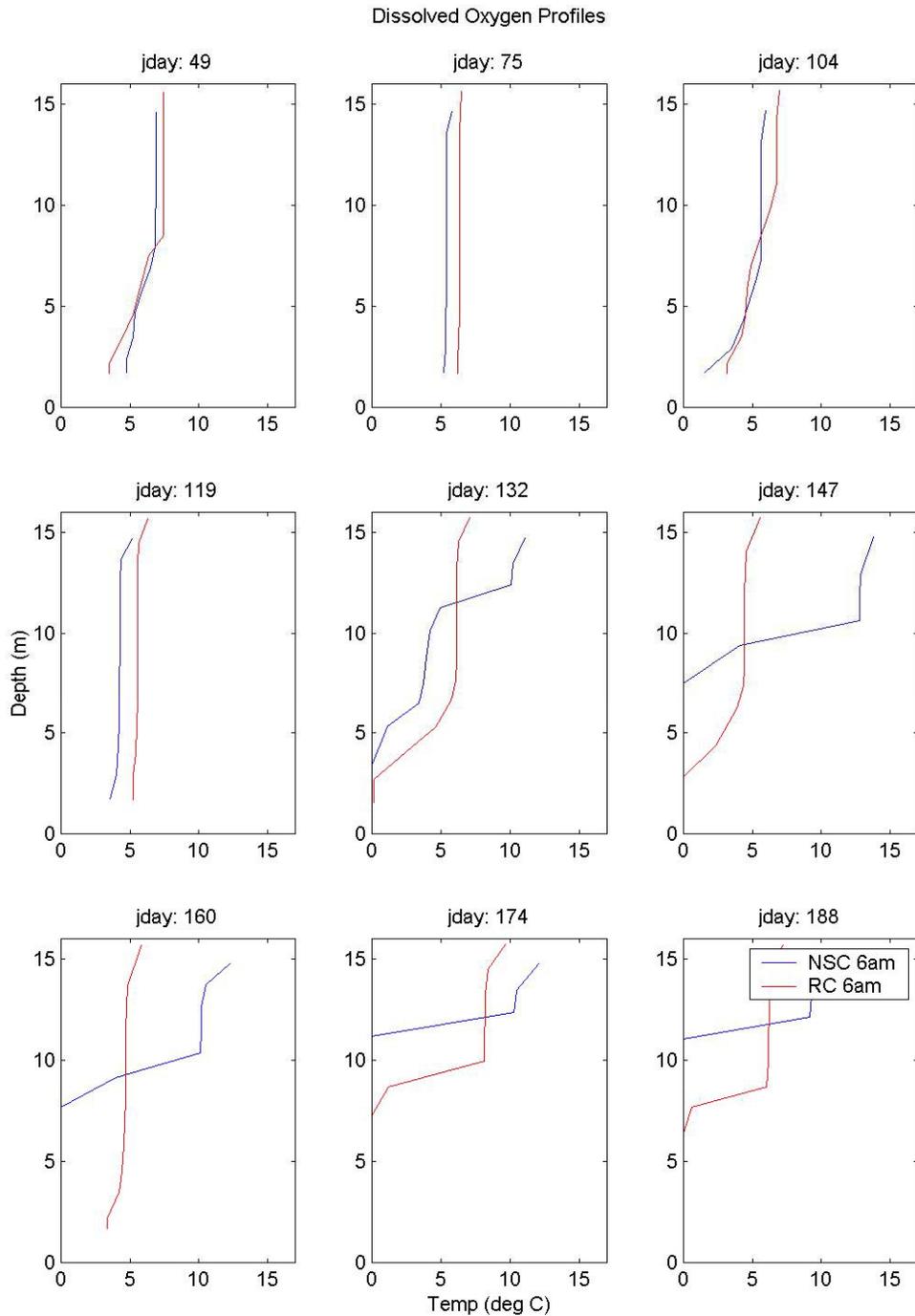


Figure D2-64A. Simulated dissolved oxygen (6am) profiles for the Marine Sea in Alternatives 5 and 6 and Recent Conditions.

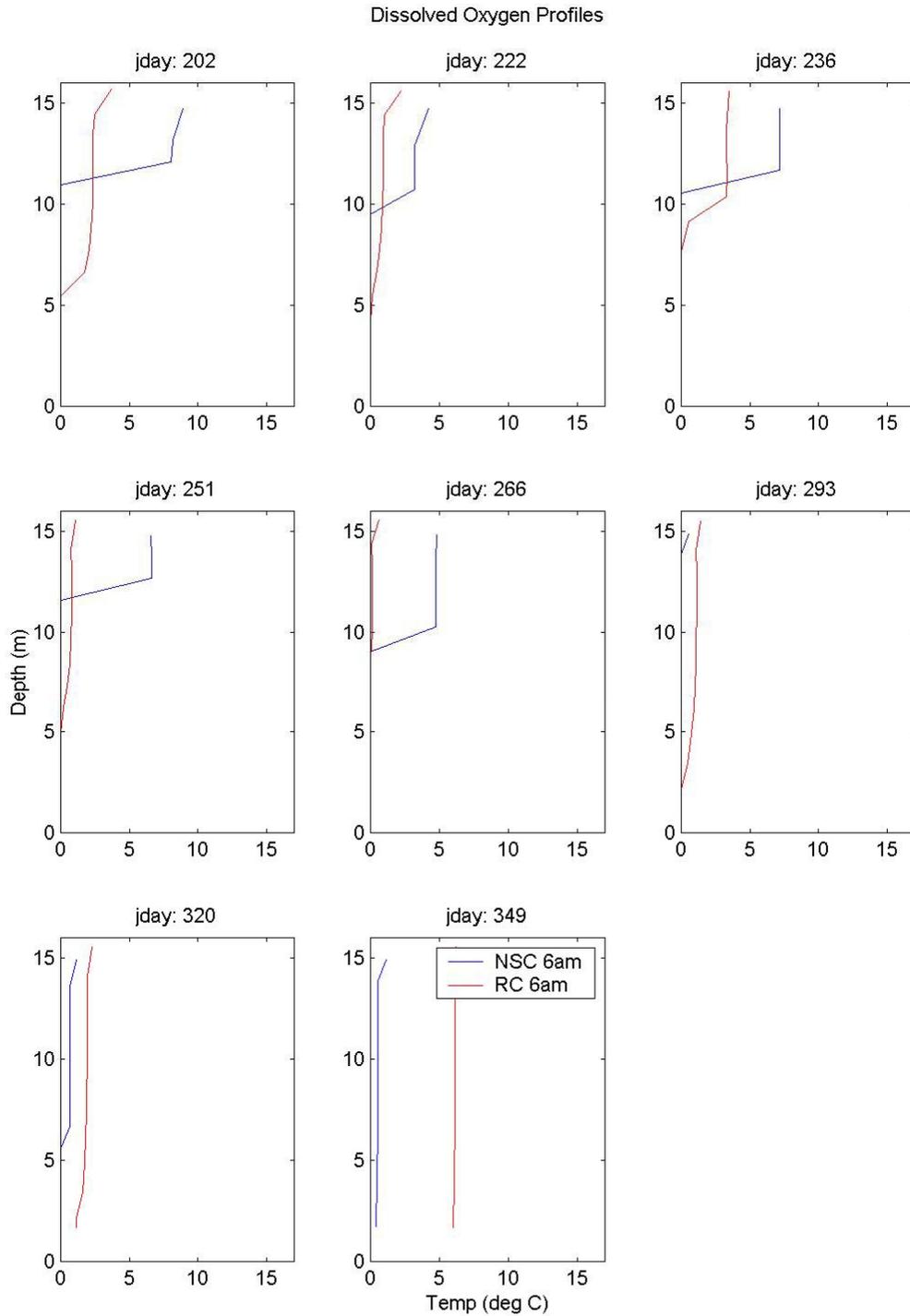


Figure D2-64B. Simulated dissolved oxygen (6am) profiles for the Marine Sea in Alternatives 5 and 6 and Recent Conditions.

SSA

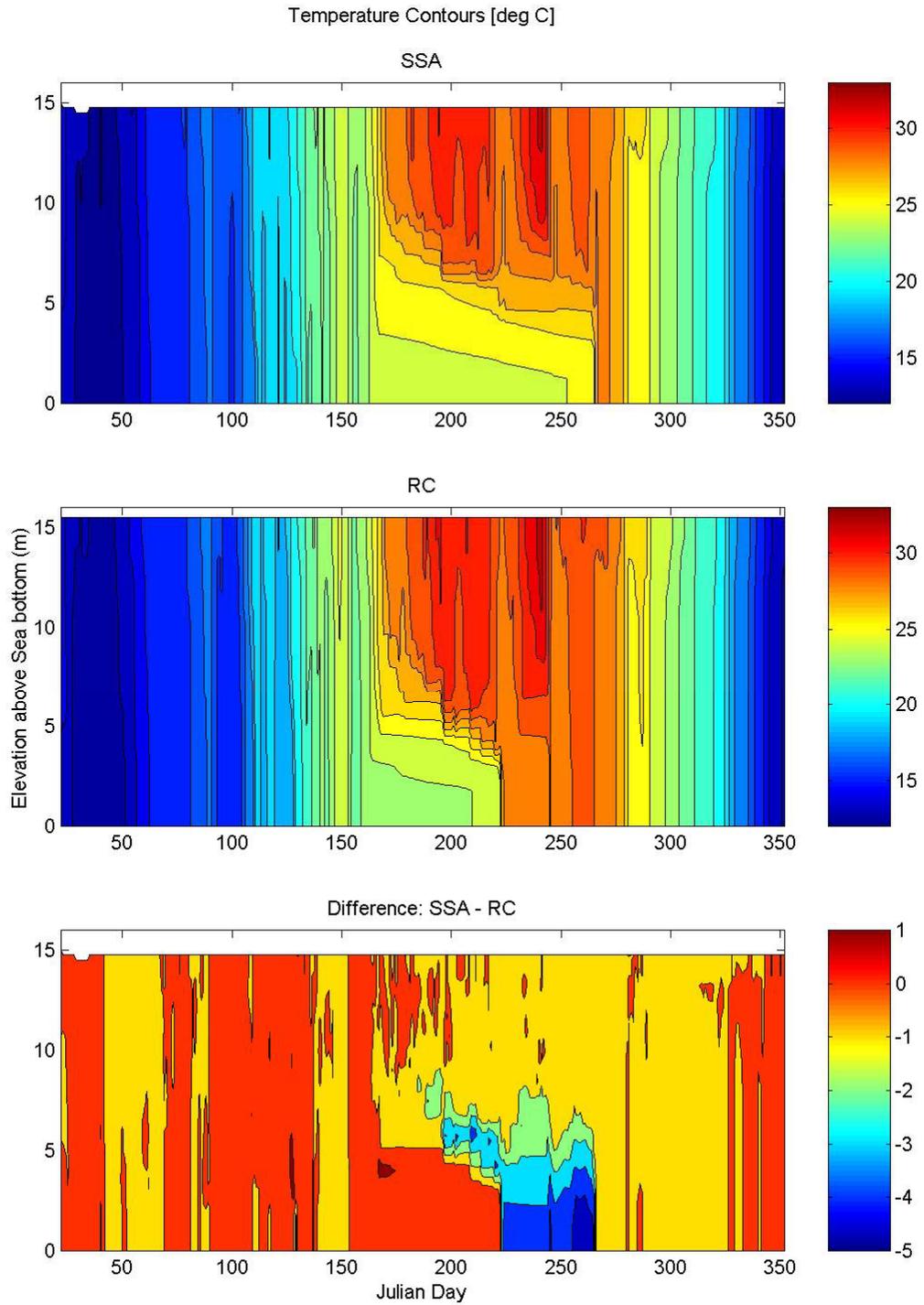


Figure D2-65. Simulated temperature contours for the Marine Sea in Alternative 7 and Recent Conditions.

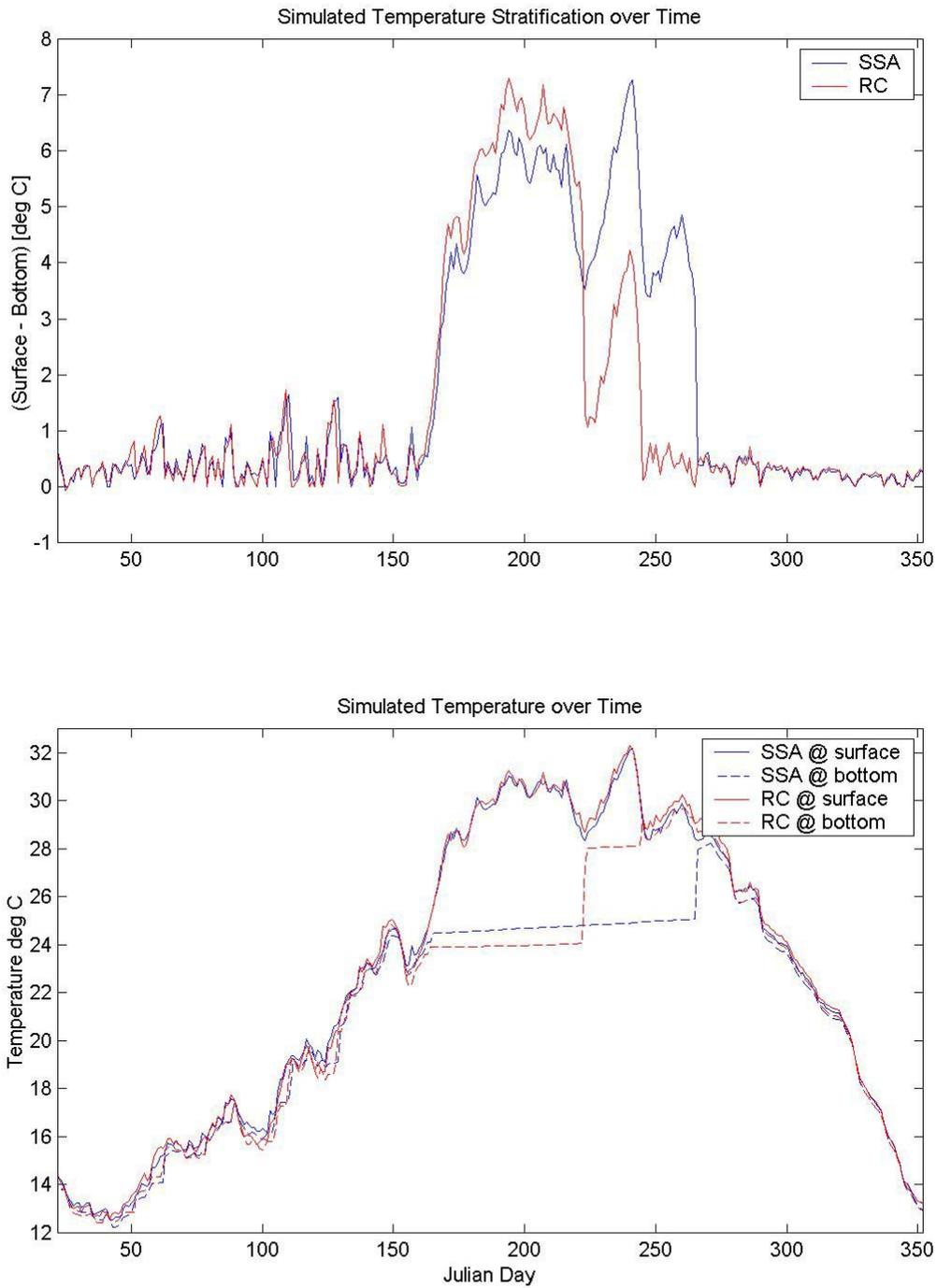


Figure D2-66. Simulated temperature for the Marine Sea in Alternative 7 and Recent Conditions.

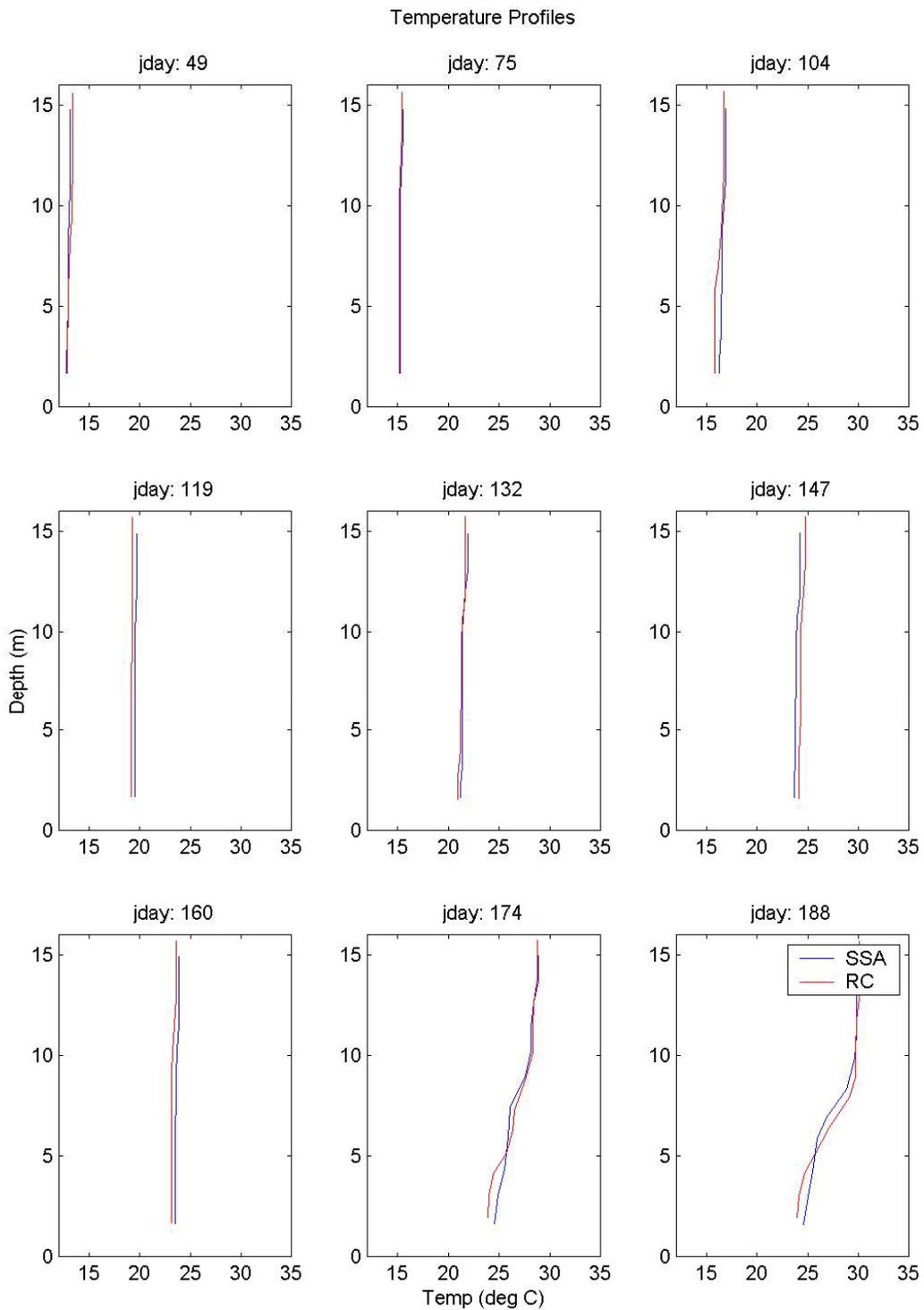


Figure D2-67A. Simulated temperature profiles for the Marine Sea in Alternative 7 and Recent Conditions.

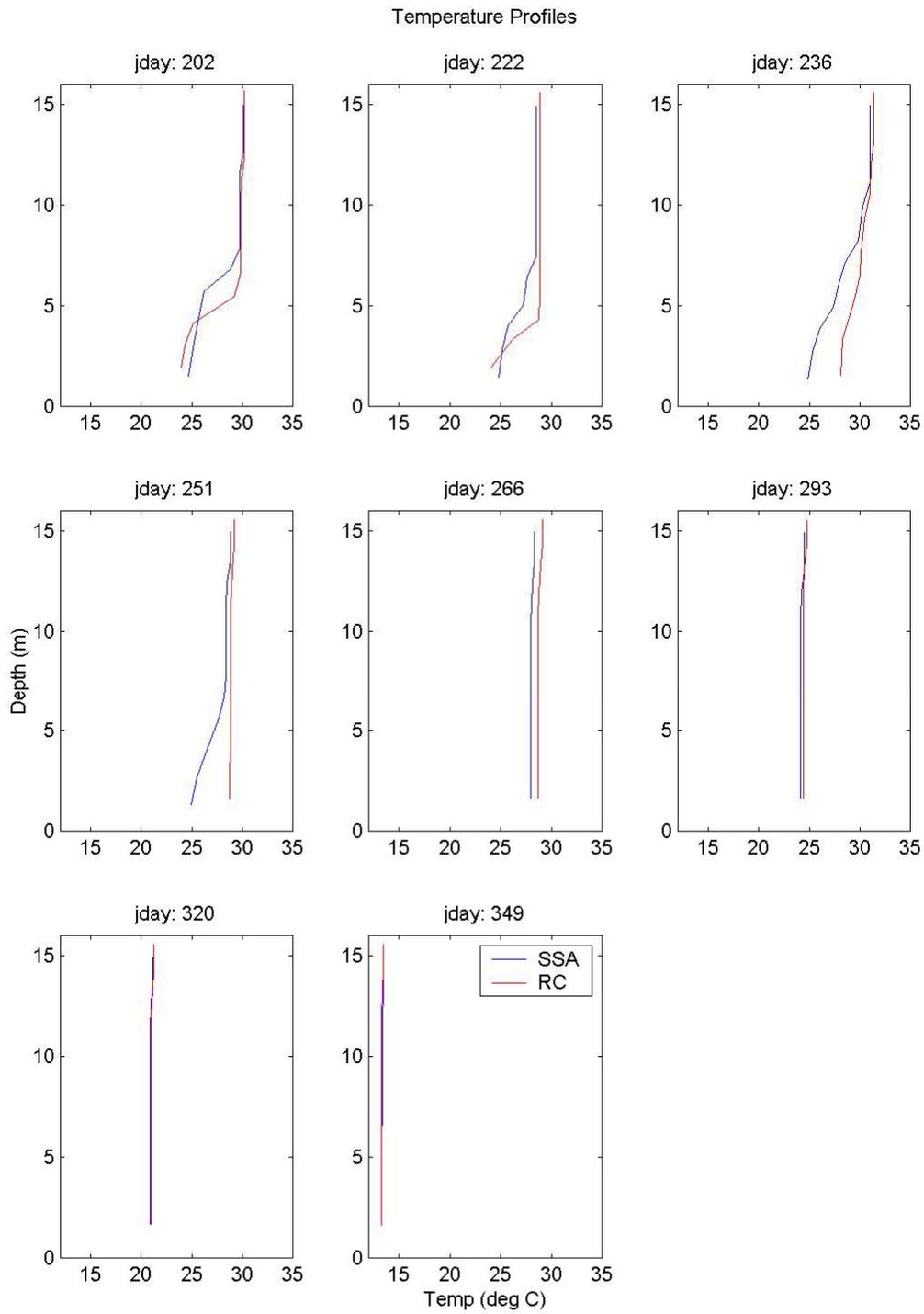


Figure D2-67B. Simulated temperature profiles for the Marine Sea in Alternative 7 and Recent Conditions.

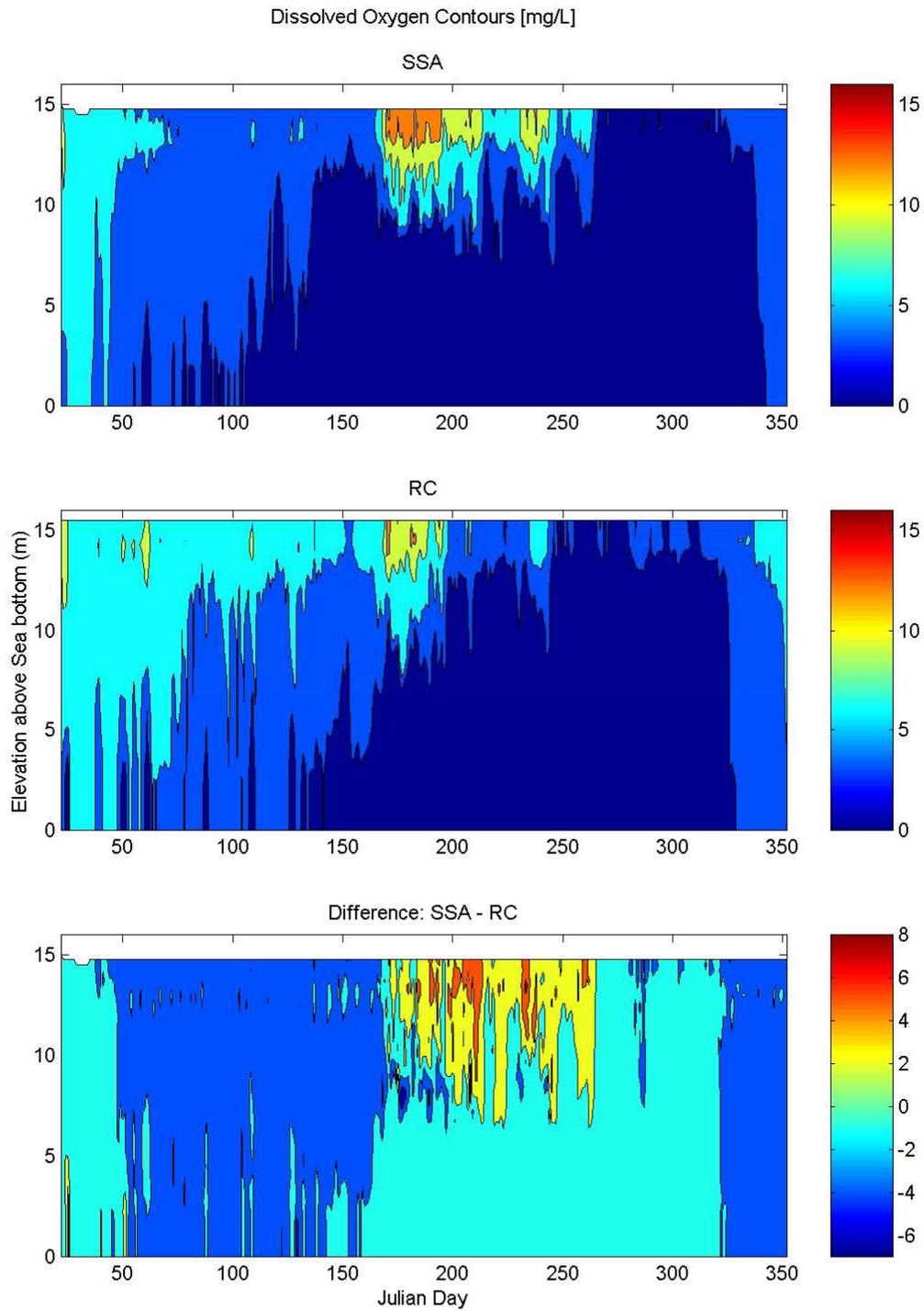


Figure D2-68. Simulated dissolved oxygen (noon) contours for the Marine Sea in Alternative 7 and Recent Conditions.

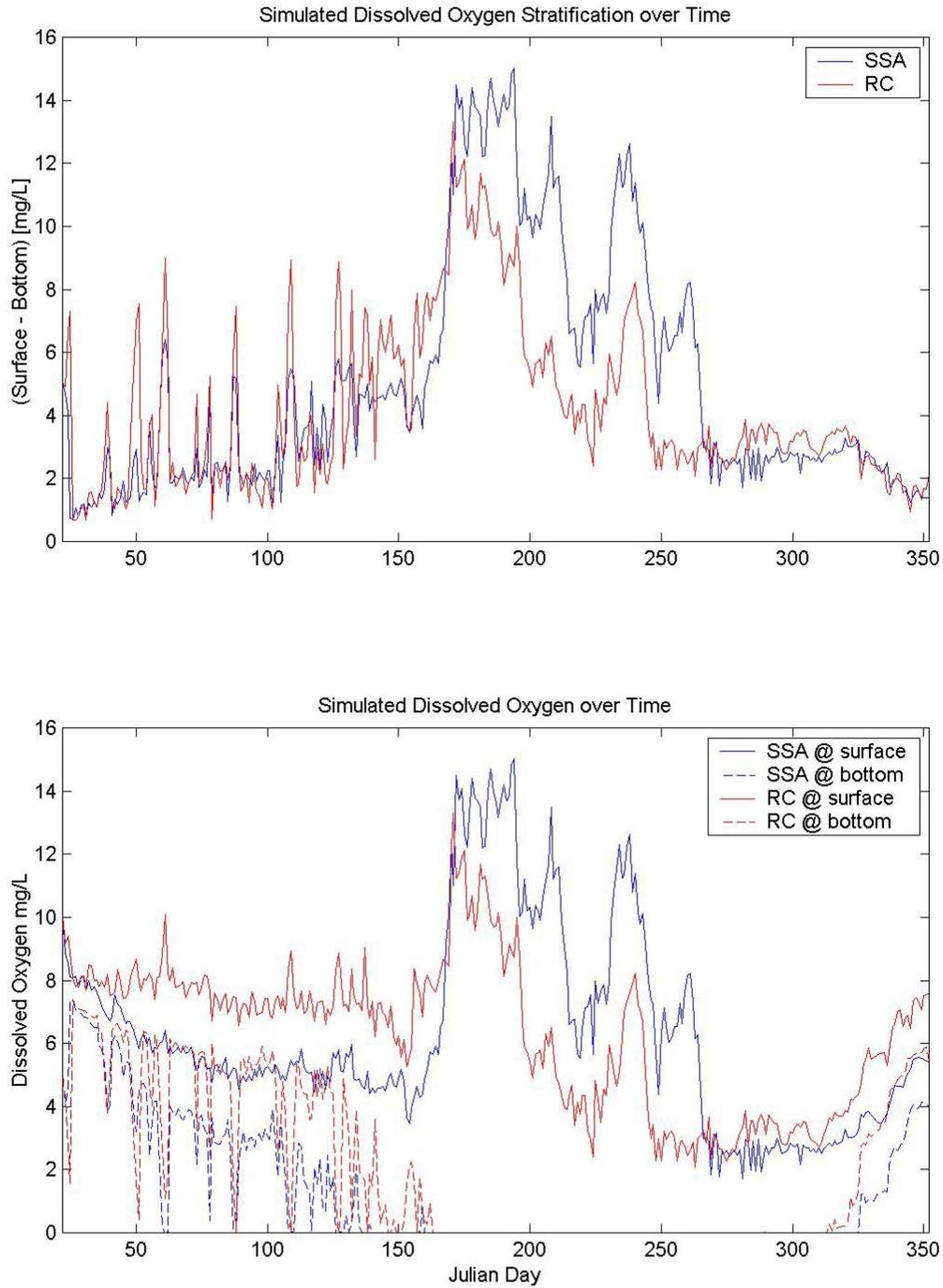


Figure D2-69. Simulated dissolved oxygen (noon) concentrations for the Marine Sea in Alternative 7 and Recent Conditions.

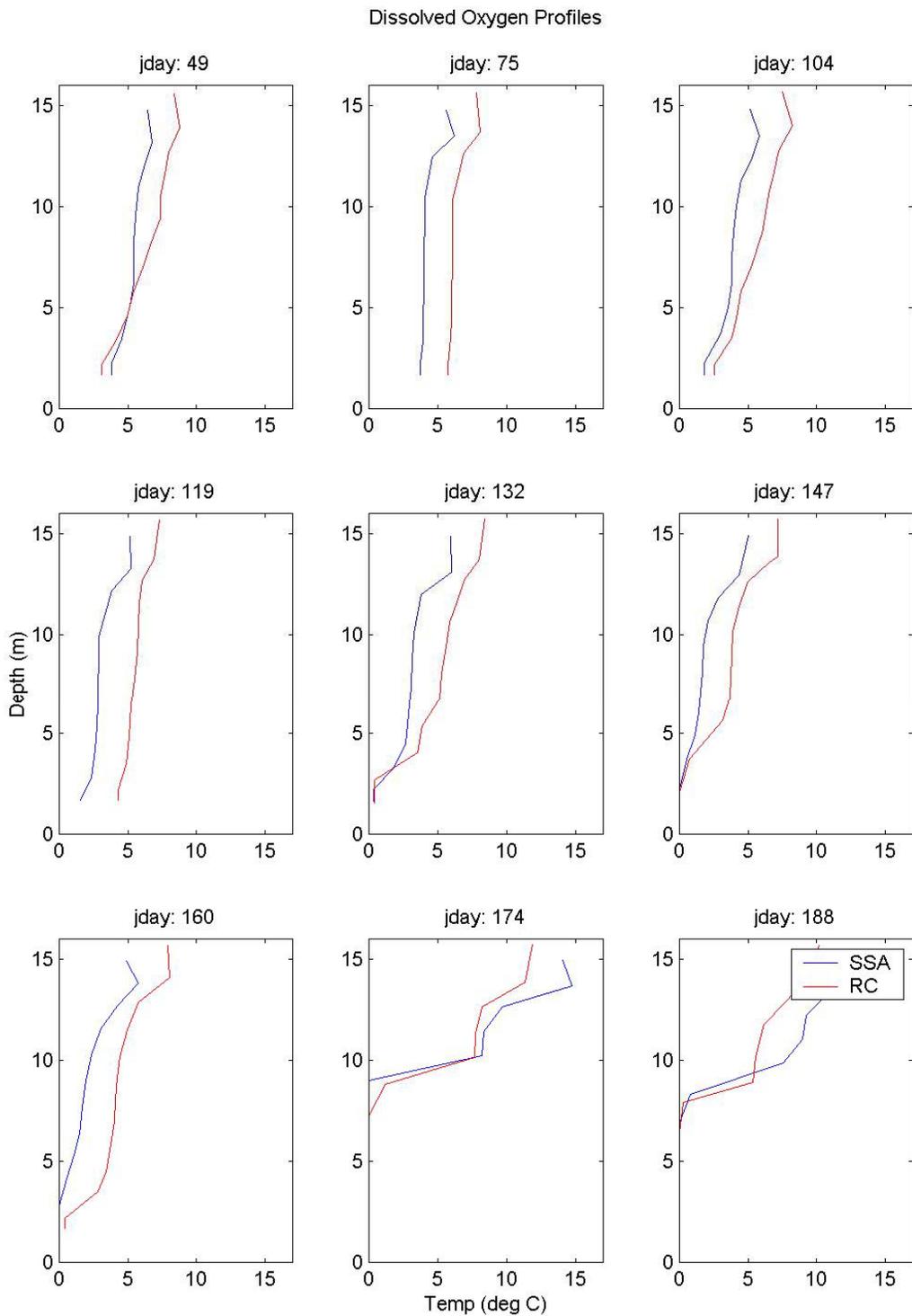


Figure D2-70A. Simulated dissolved oxygen (noon) profiles for the Marine Sea in Alternative 7 and Recent Conditions.

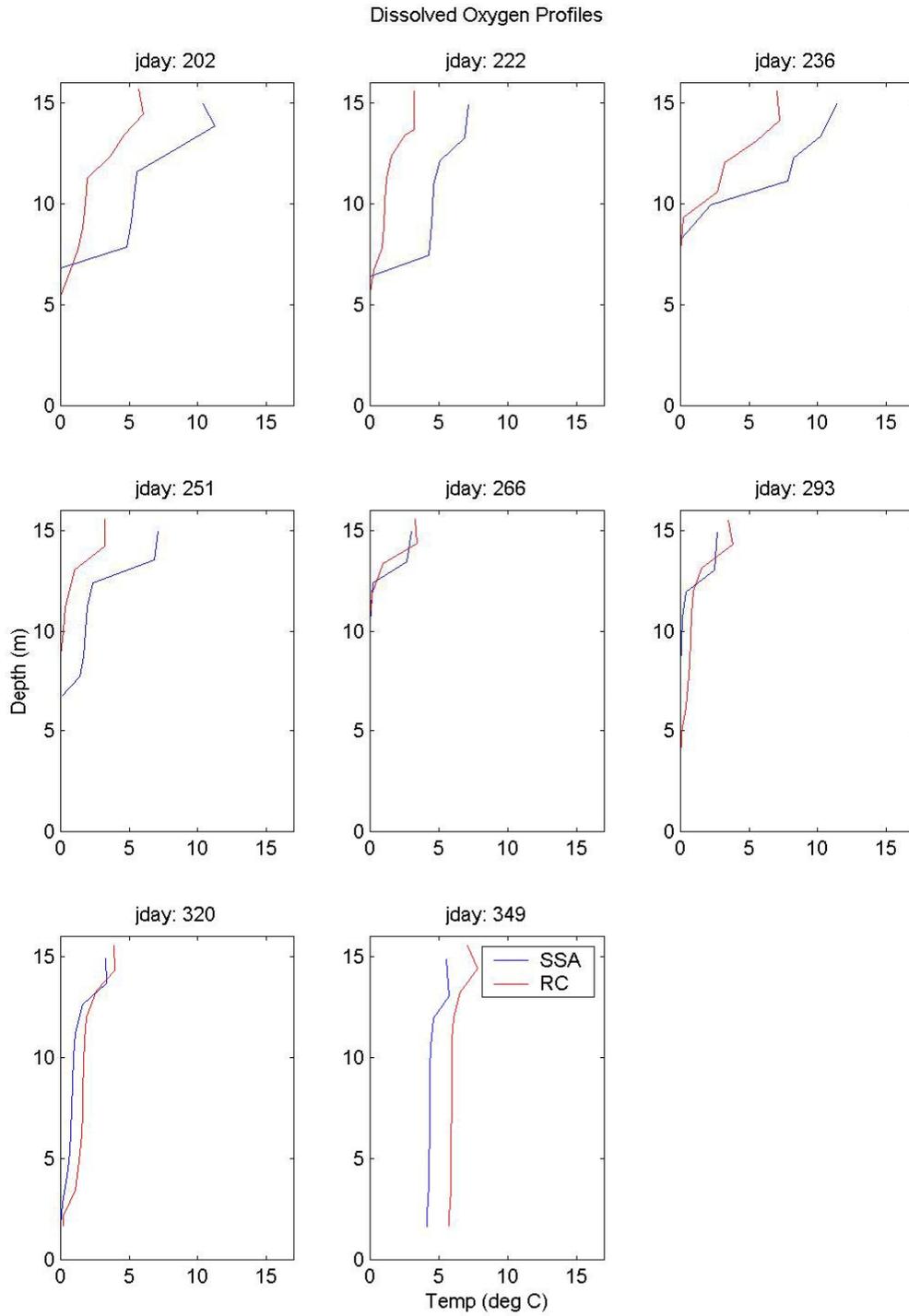


Figure D2-70B. Simulated dissolved oxygen (noon) profiles for the Marine Sea in Alternative 7 and Recent Conditions.

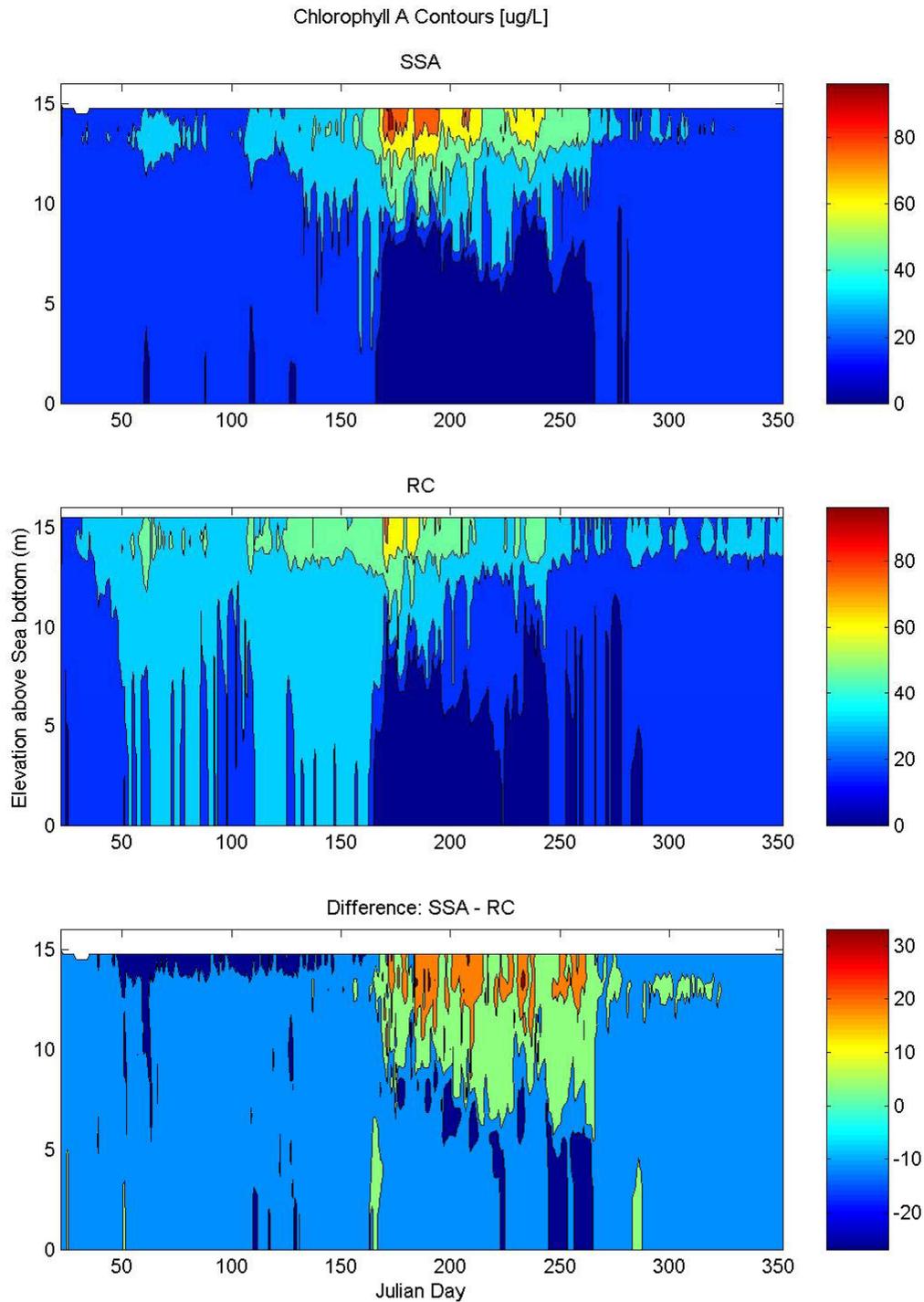


Figure D2-71. Simulated chlorophyll a contours for the Marine Sea in Alternative 7 and Recent Conditions.

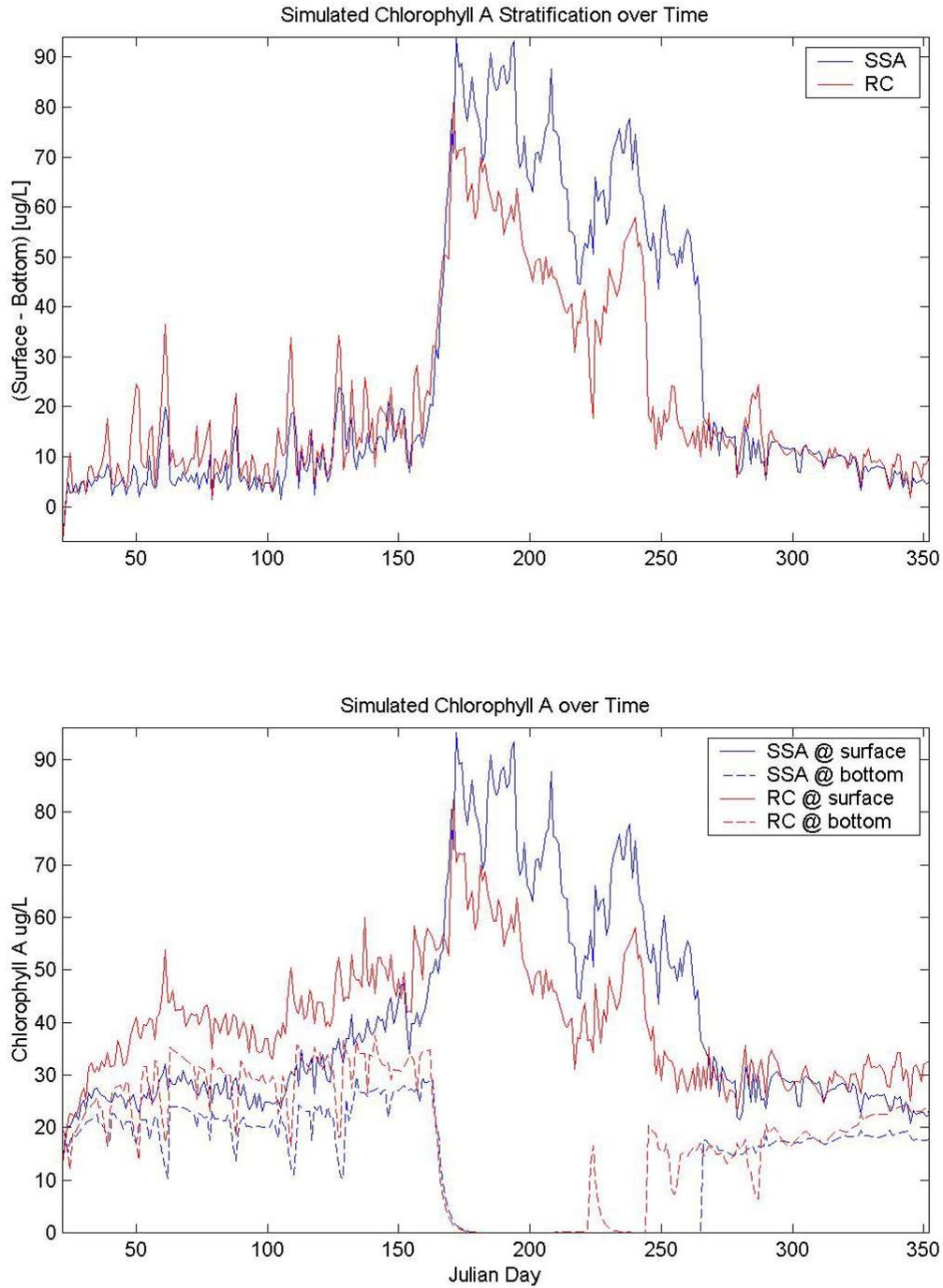


Figure D2-72. Simulated chlorophyll a concentrations for the Marine Sea in Alternative 7 and Recent Conditions.

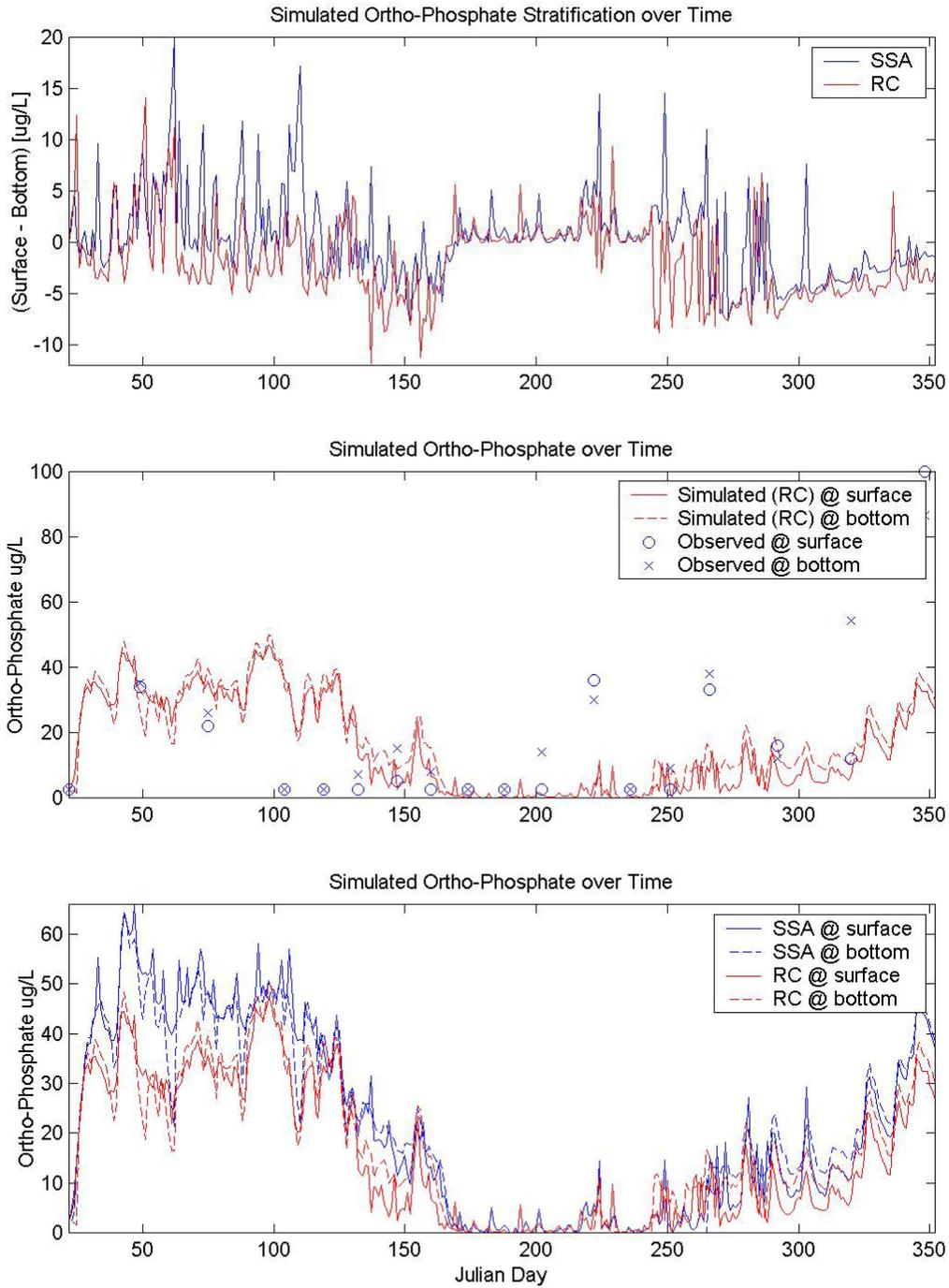


Figure D2-73. Simulated orthophosphate concentrations for the Marine Sea in Alternative 7 and Recent Conditions.

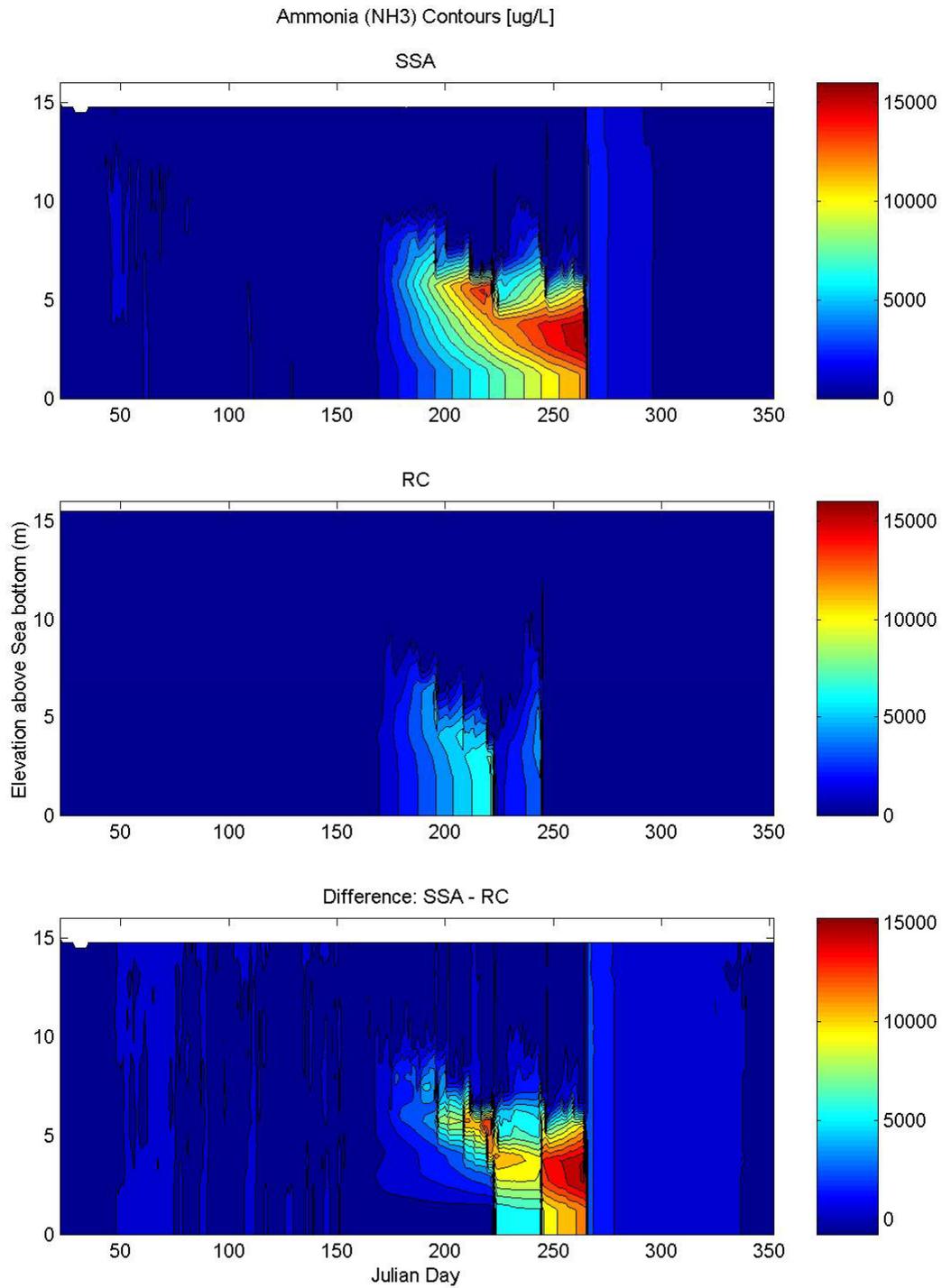


Figure D2-74. Simulated ammonia contours for the Marine Sea in Alternative 7 and Recent Conditions.

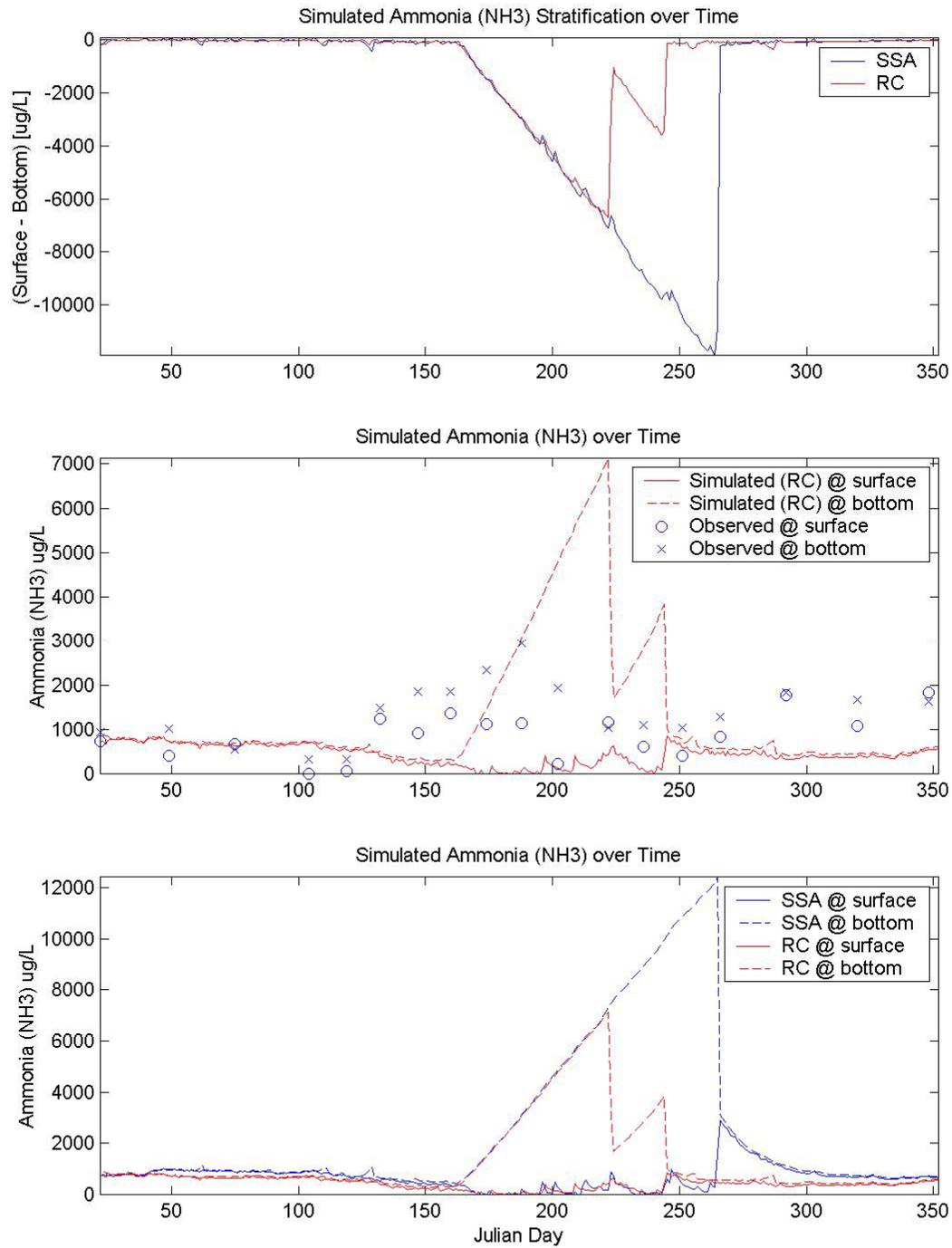


Figure D2-75. Simulated ammonia concentrations for the Marine Sea in Alternative 7 and Recent Conditions.

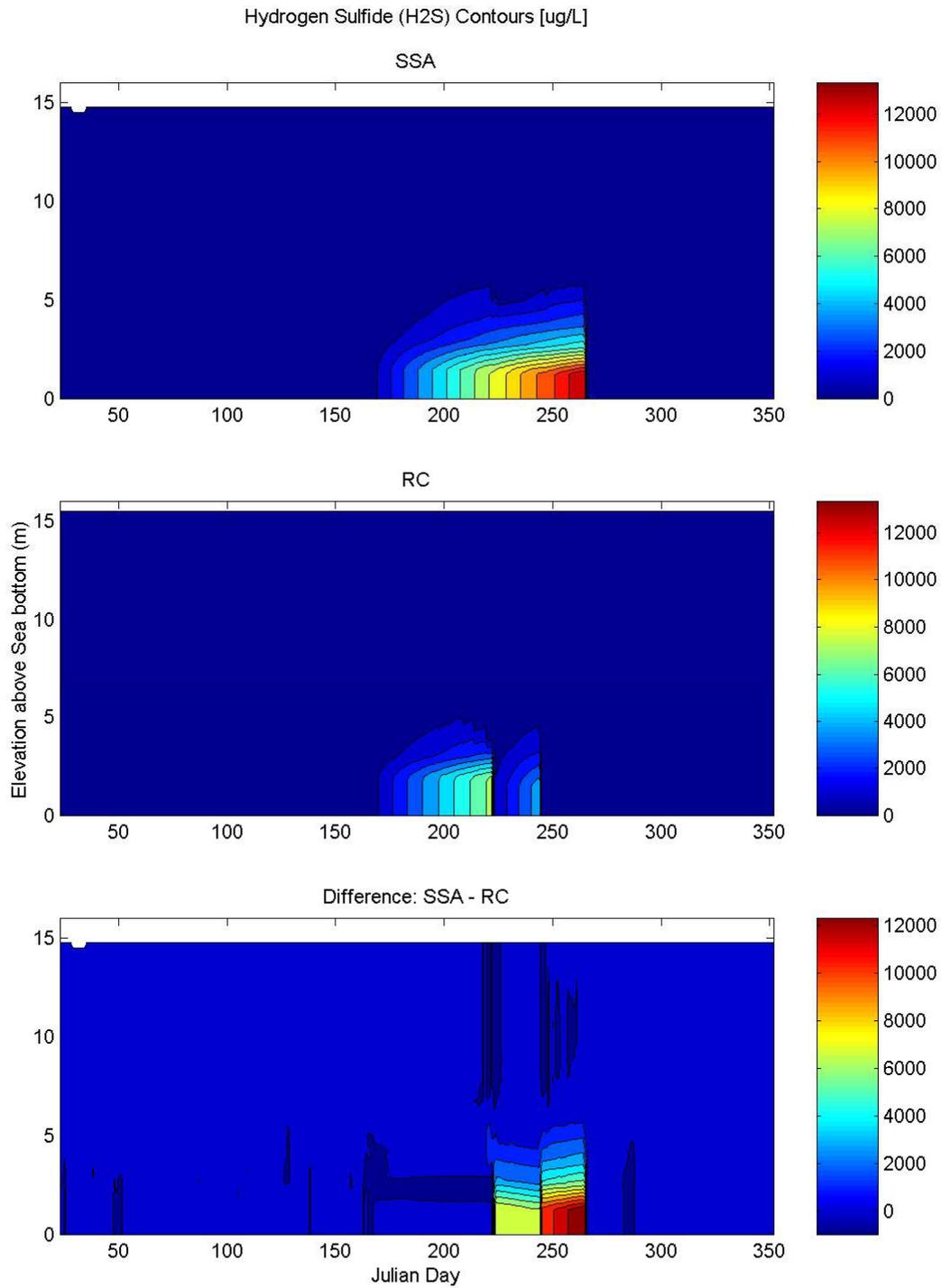


Figure D2-76. Simulated hydrogen sulfide contours for the Marine Sea in Alternative 7 and Recent Conditions.

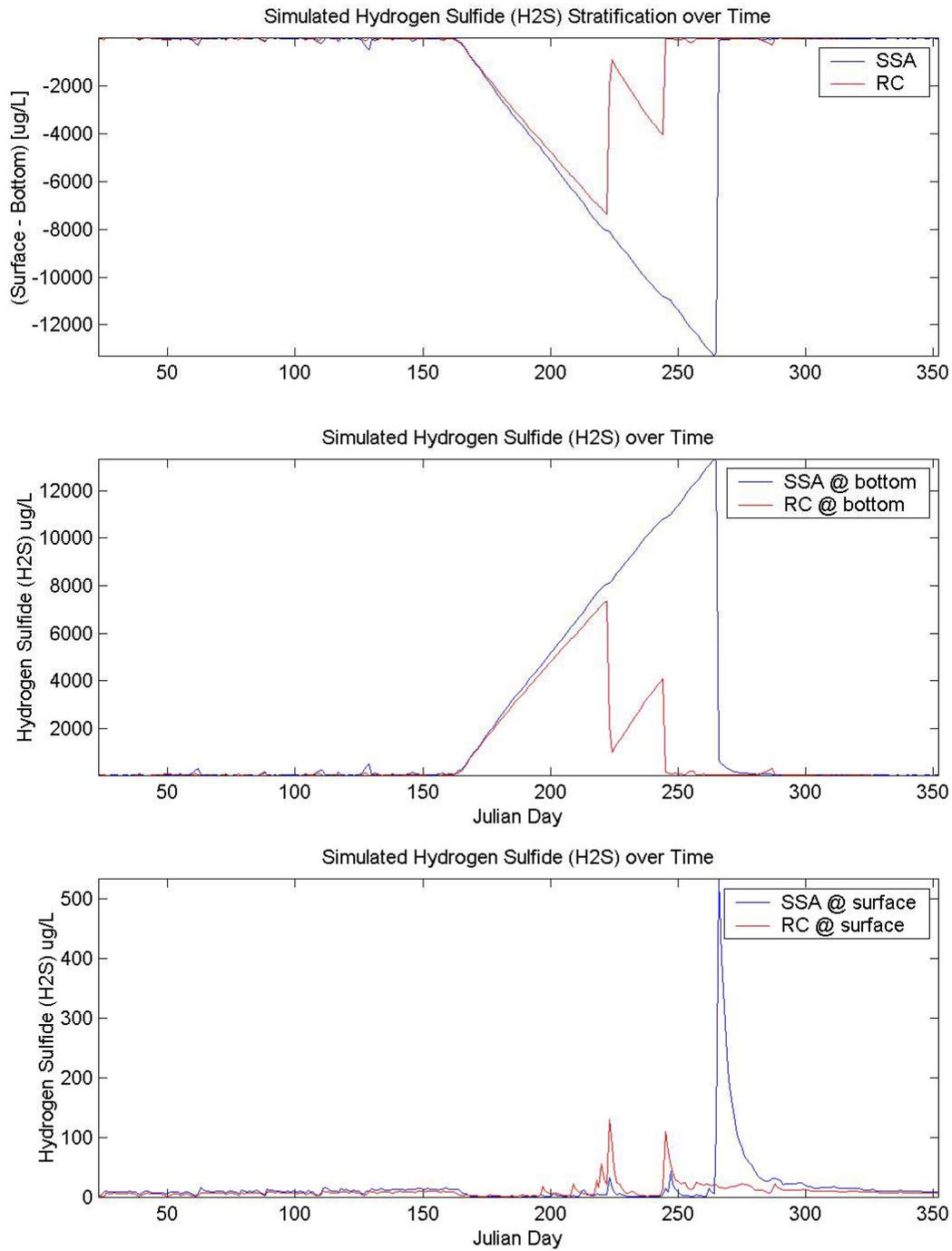


Figure D2-77. Simulated hydrogen sulfide concentrations for the Marine Sea in Alternative 7 and Recent Conditions.

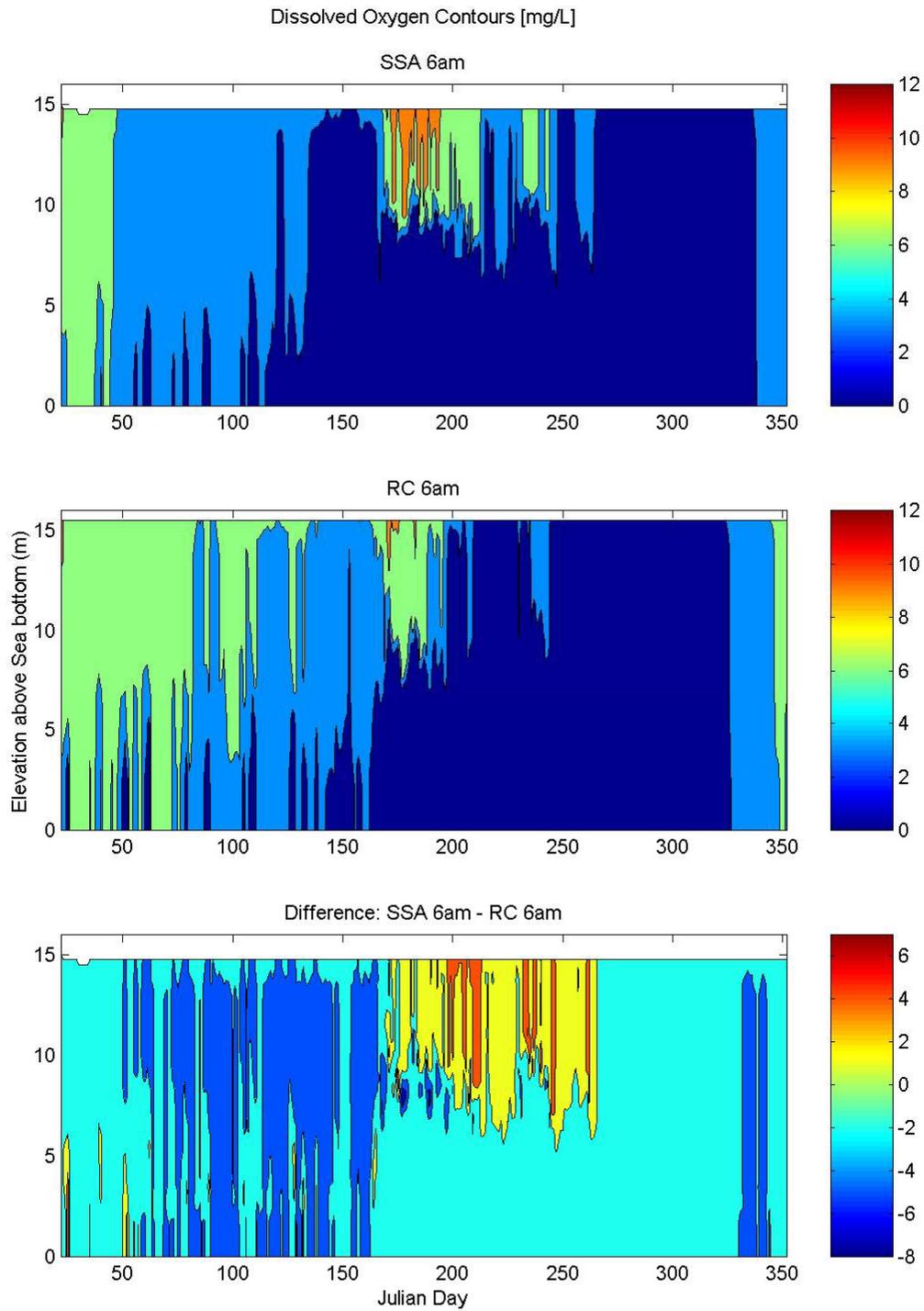


Figure D2-78. Simulated dissolved oxygen (6am) contours for the Marine Sea in Alternative 7 and Recent Conditions.

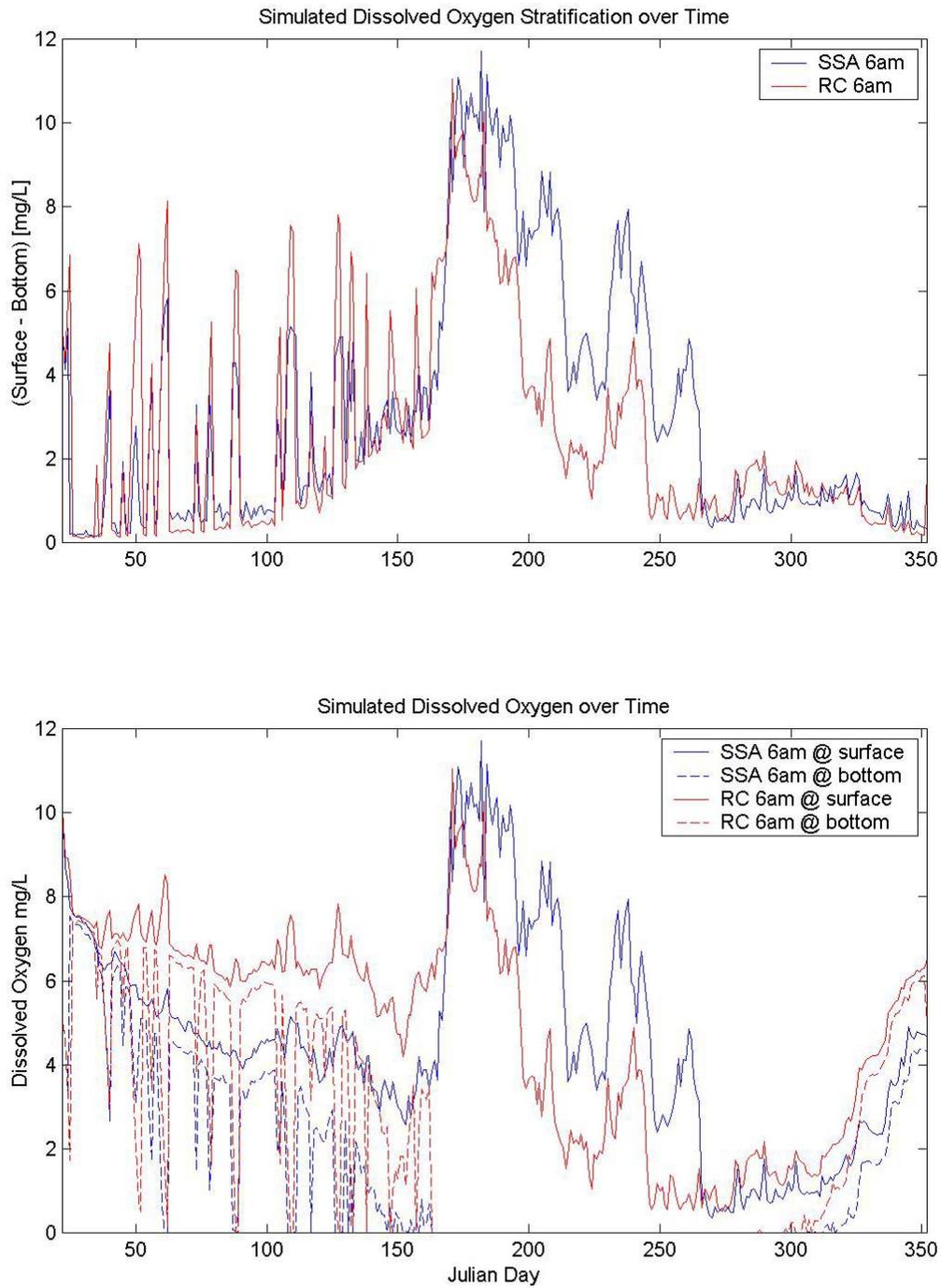


Figure D2-79. Simulated dissolved oxygen (6am) concentrations for the Marine Sea in Alternative 7 and Recent Conditions.

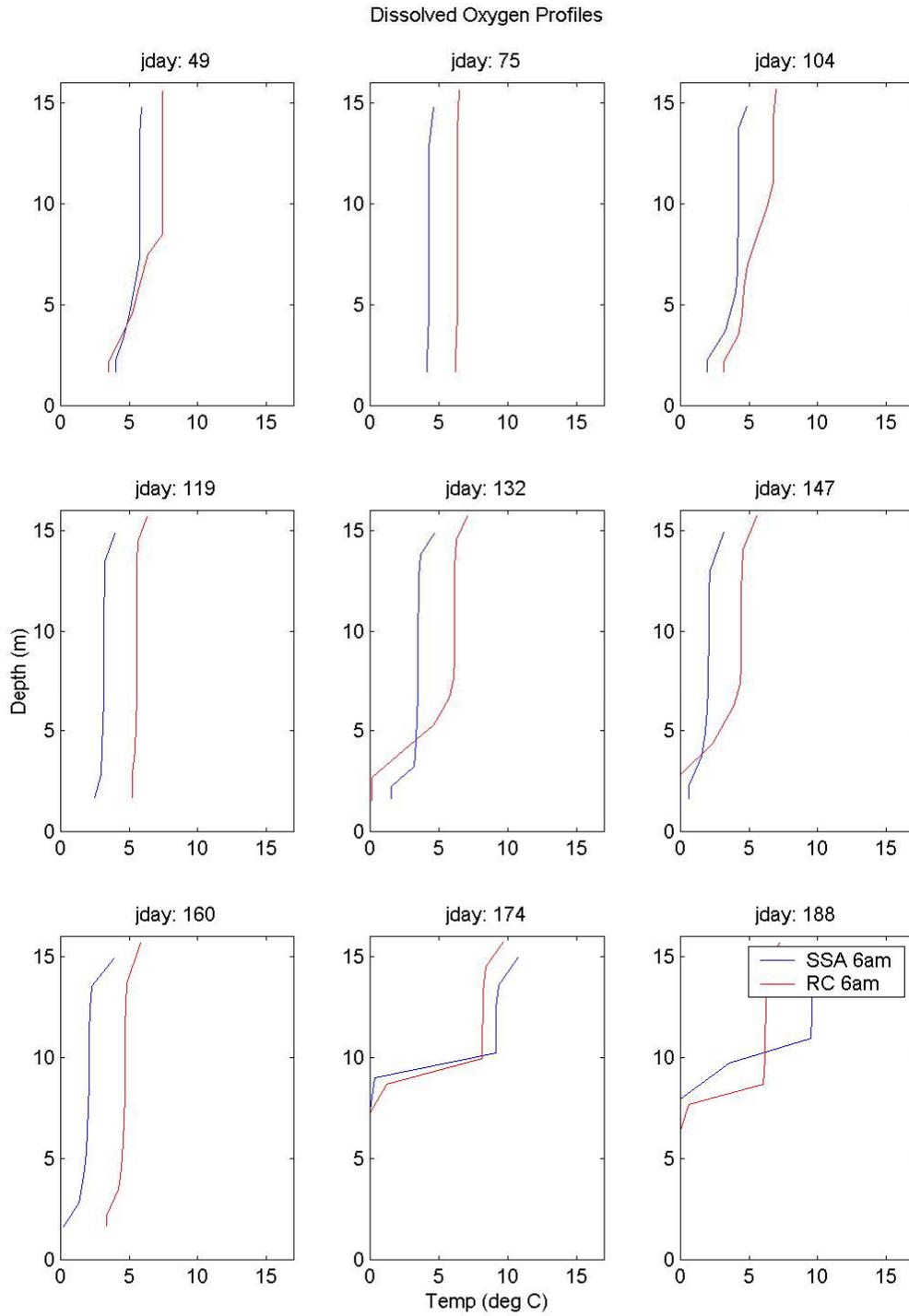


Figure D2-80A. Simulated dissolved oxygen (6am) profiles for the Marine Sea in Alternative 7 and Recent Conditions.

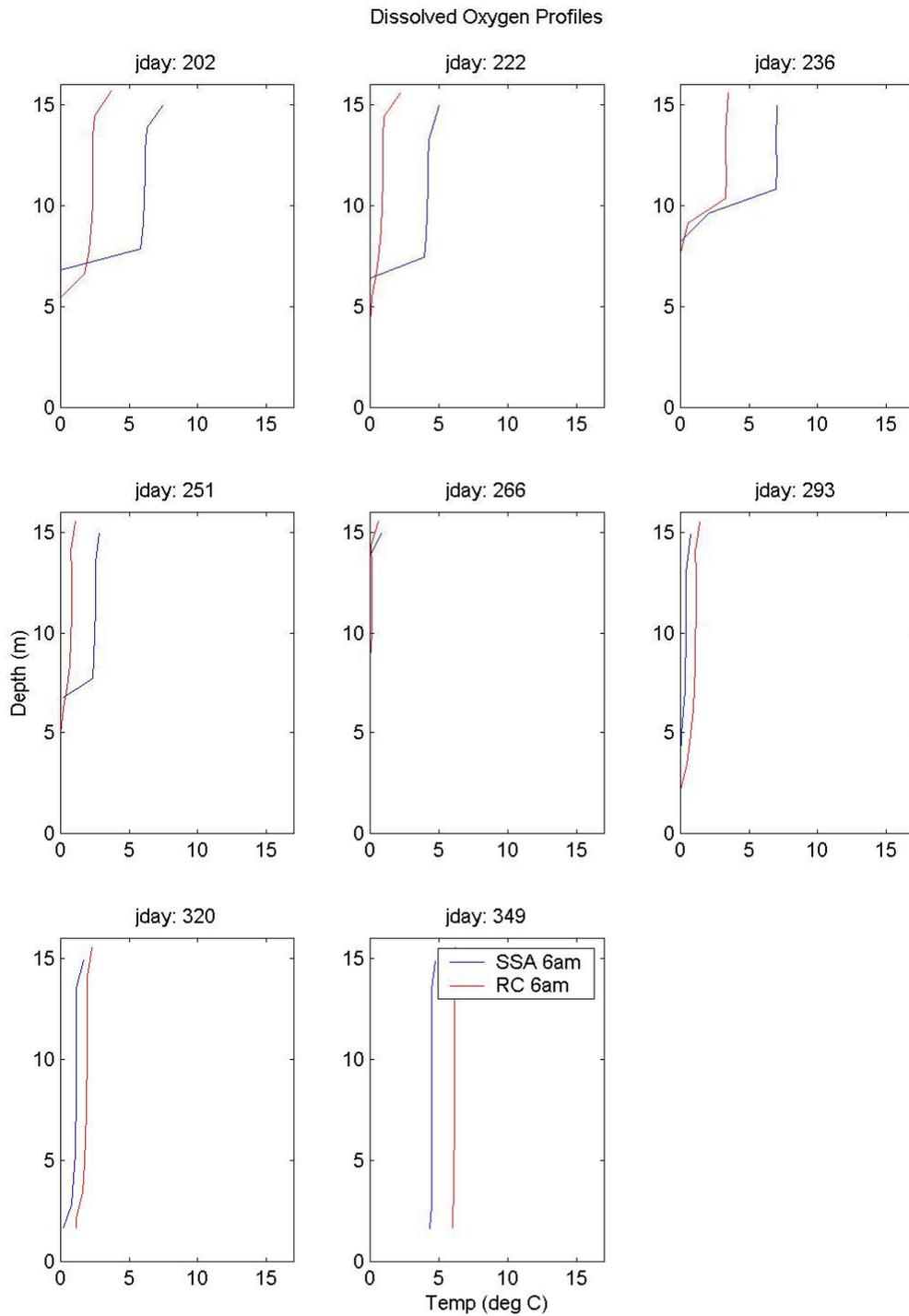


Figure D2-80B. Simulated dissolved oxygen (6am) profiles for the Marine Sea in Alternative 7 and Recent Conditions.

SSC

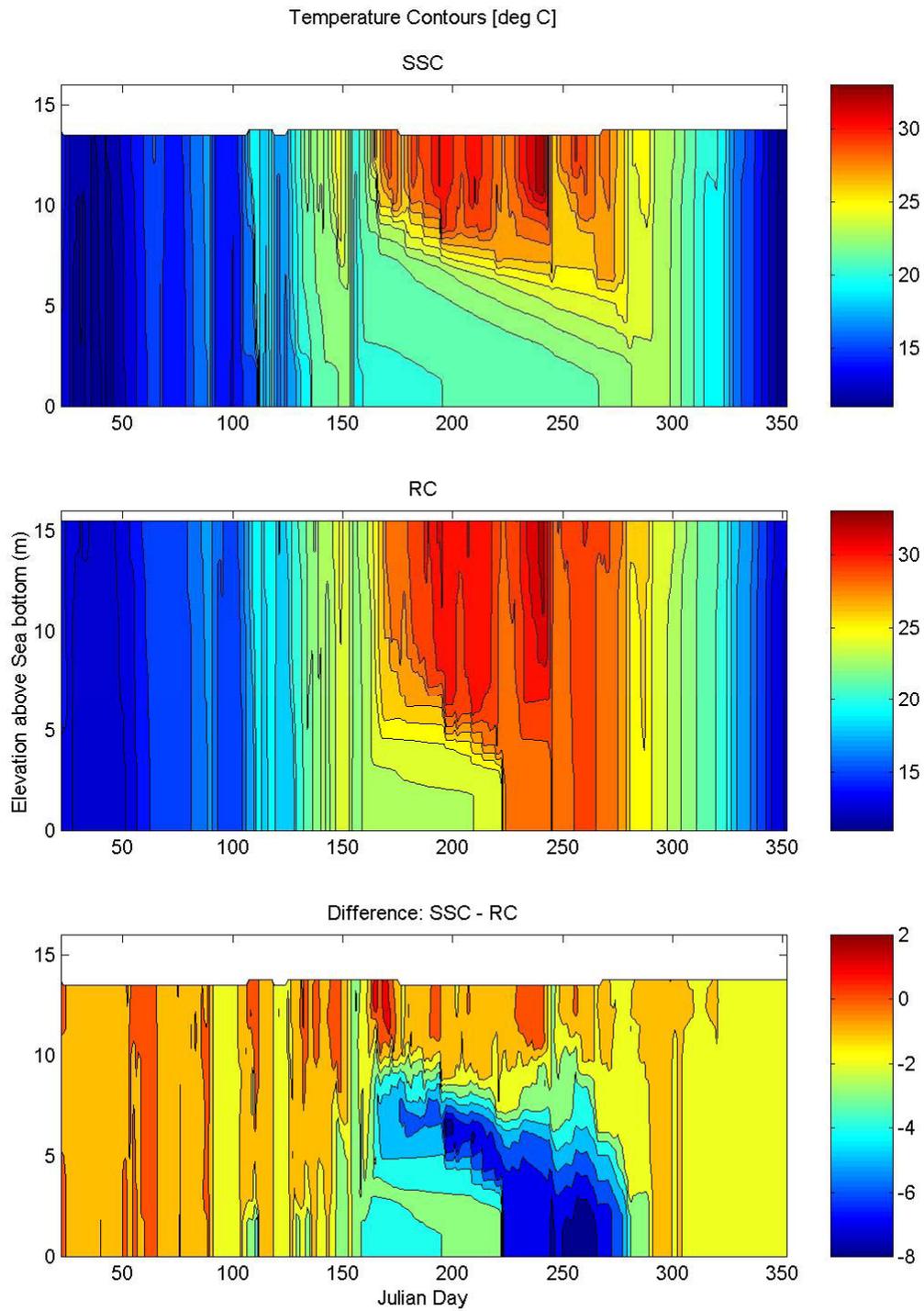


Figure D2-81. Simulated temperature contours for the Marine Sea in Alternatives 8 and Recent Conditions.

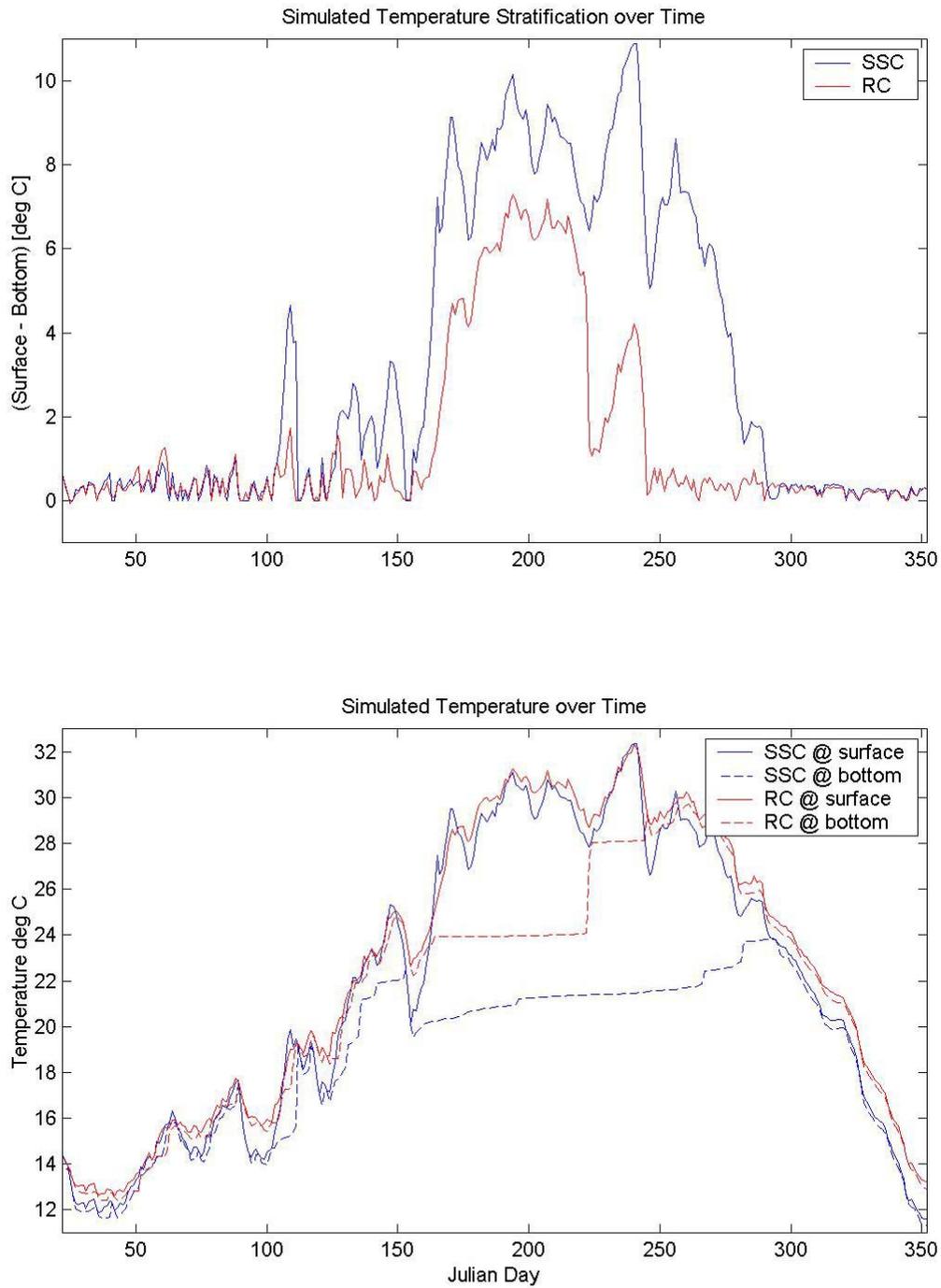


Figure D2-82. Simulated temperature for the Marine Sea in Alternative 8 and Recent Conditions.

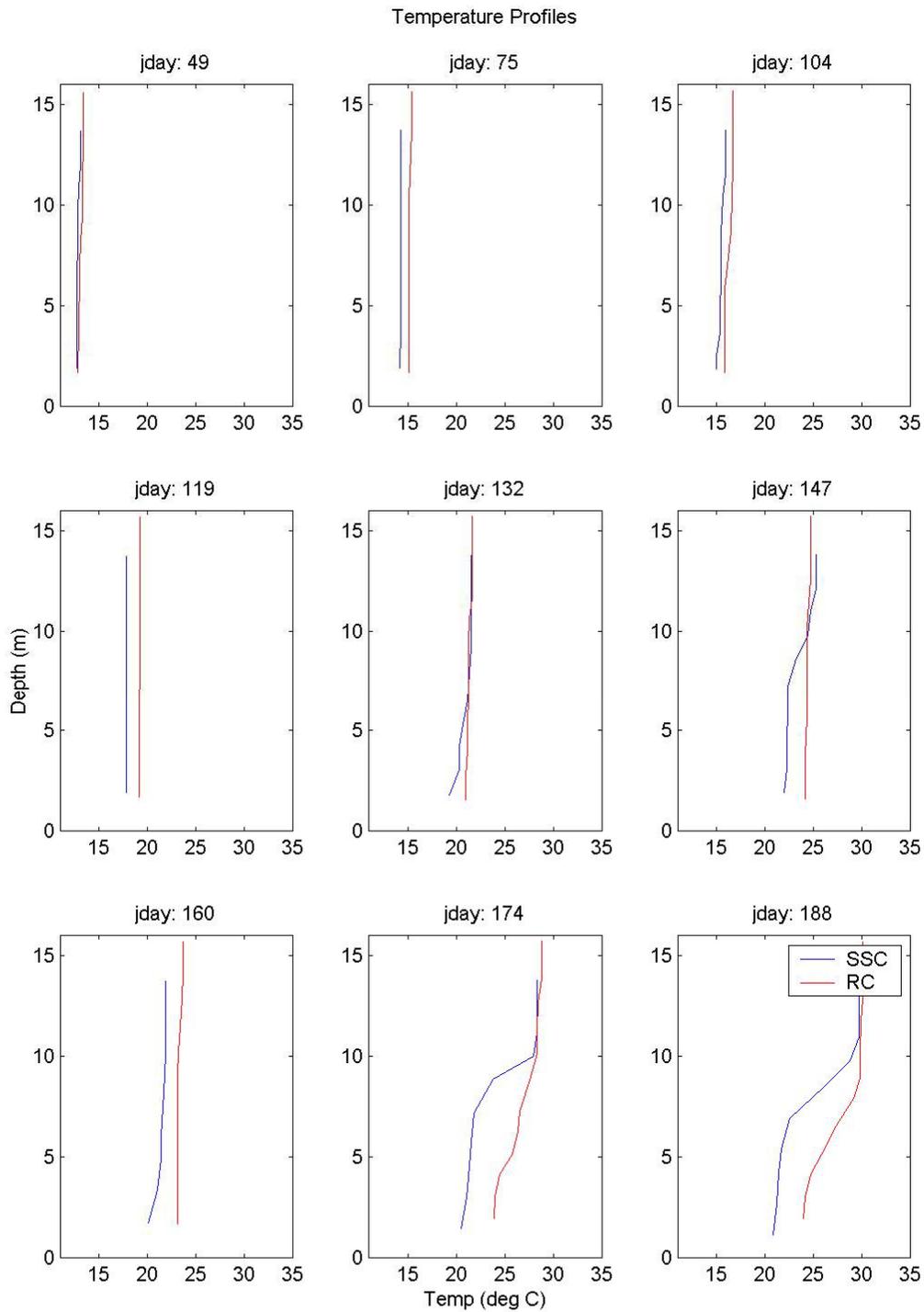


Figure D2-83A. Simulated temperature profiles for the Marine Sea in Alternative 8 and Recent Conditions.

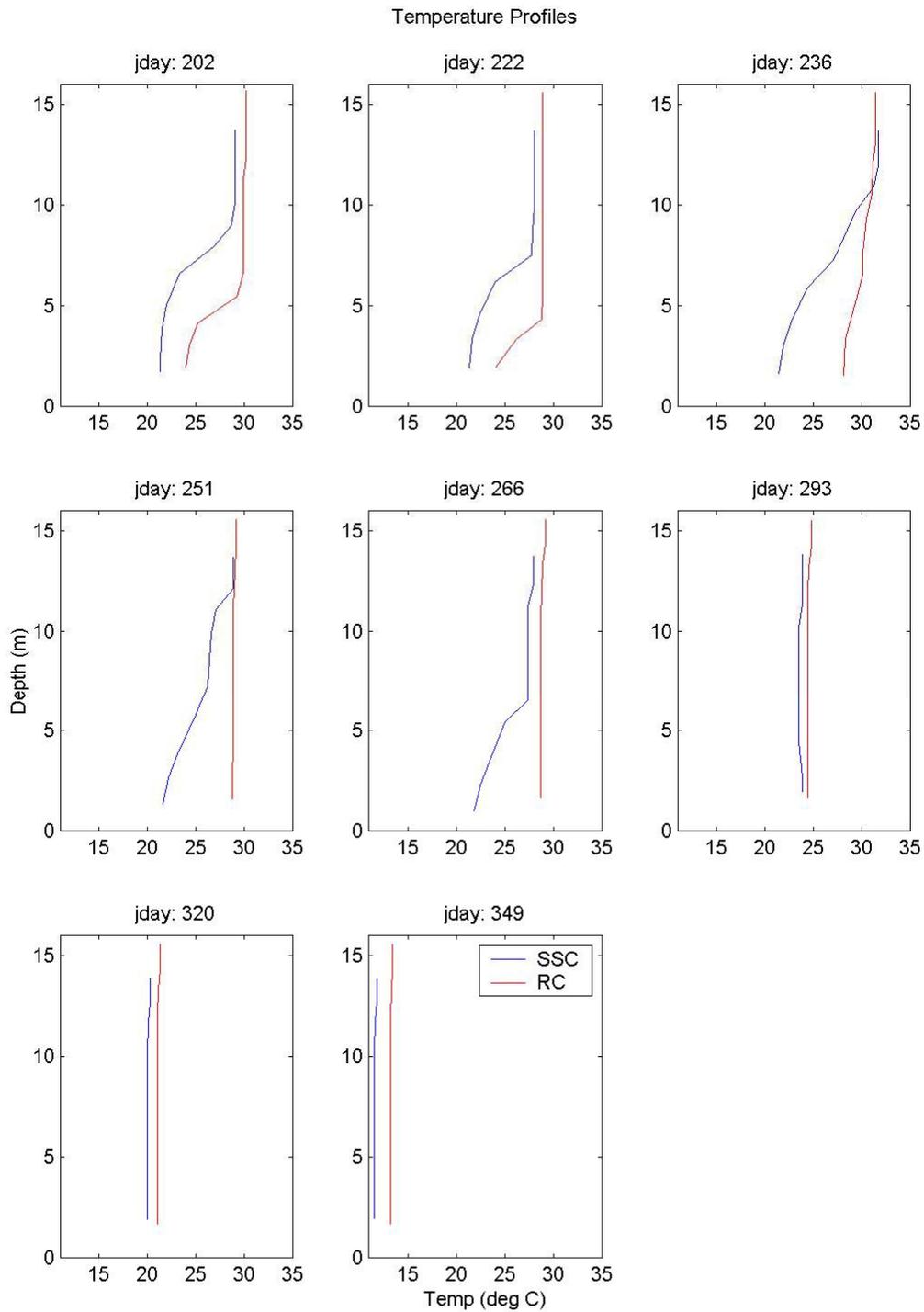


Figure D2-83B. Simulated temperature profiles for the Marine Sea in Alternative 8 and Recent Conditions.

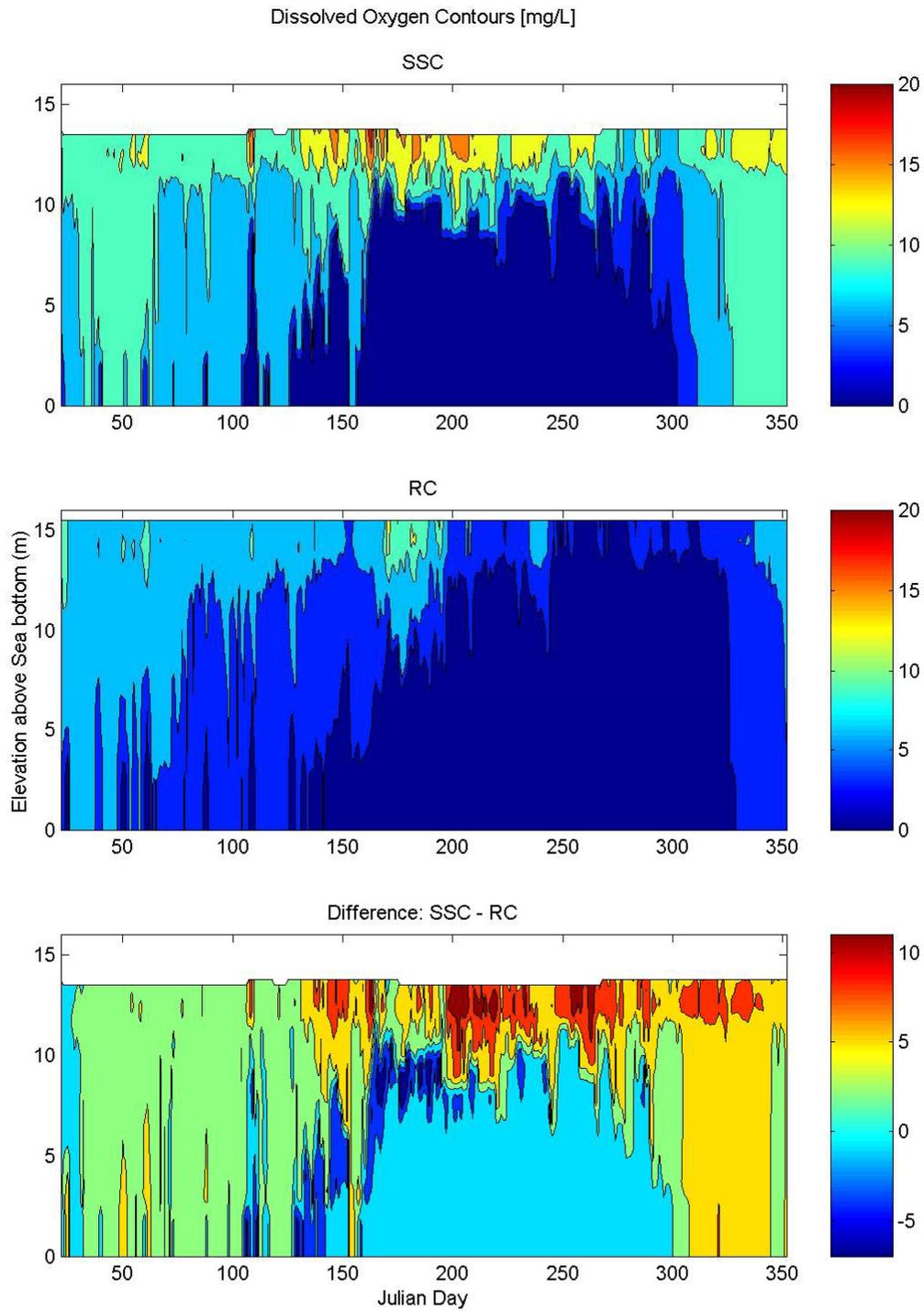


Figure D2-84. Simulated dissolved oxygen (noon) contours for the Marine Sea in Alternative 8 and Recent Conditions.

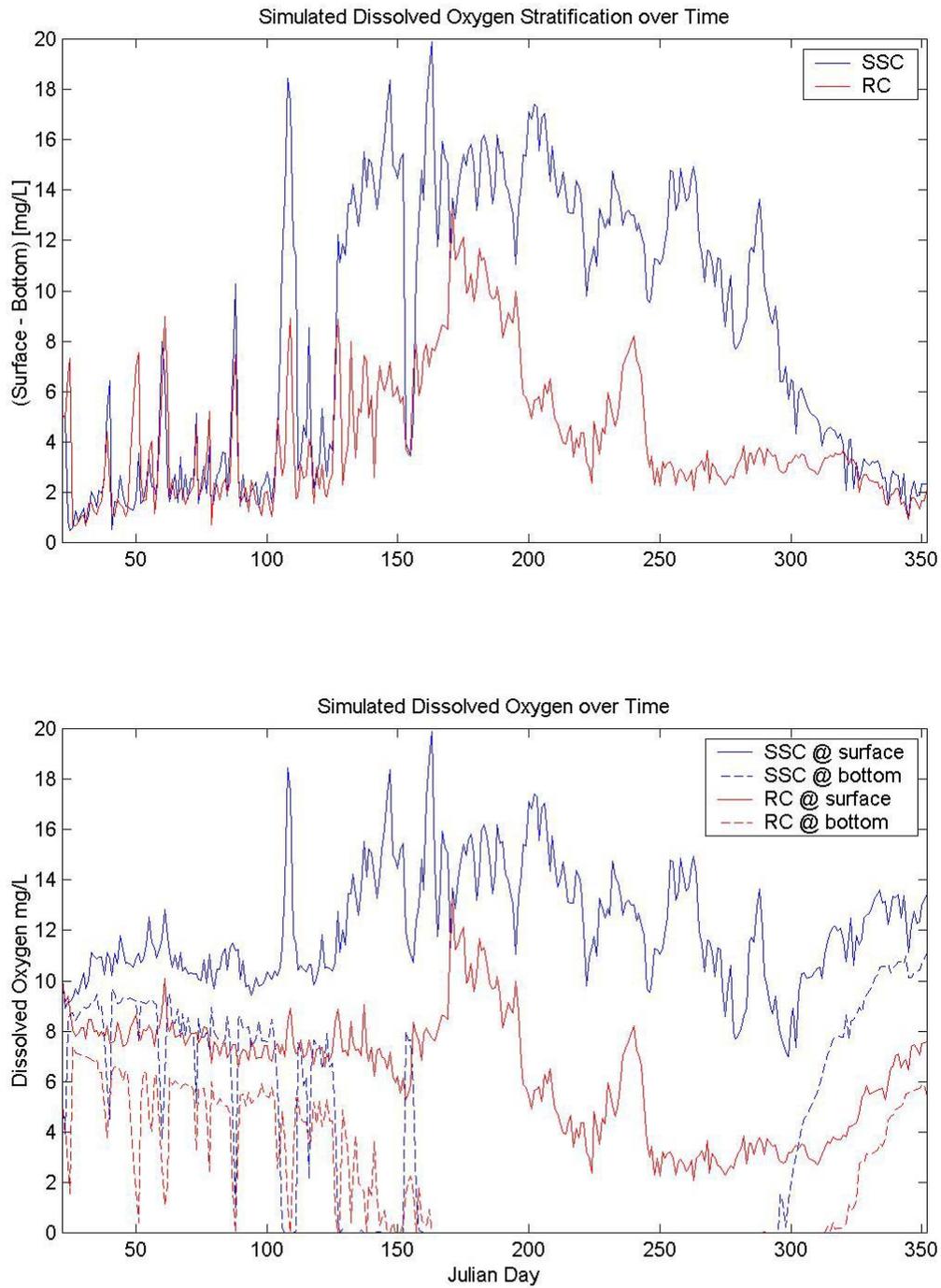


Figure D2-85. Simulated dissolved oxygen (noon) concentrations for the Marine Sea in Alternative 8 and Recent Conditions.

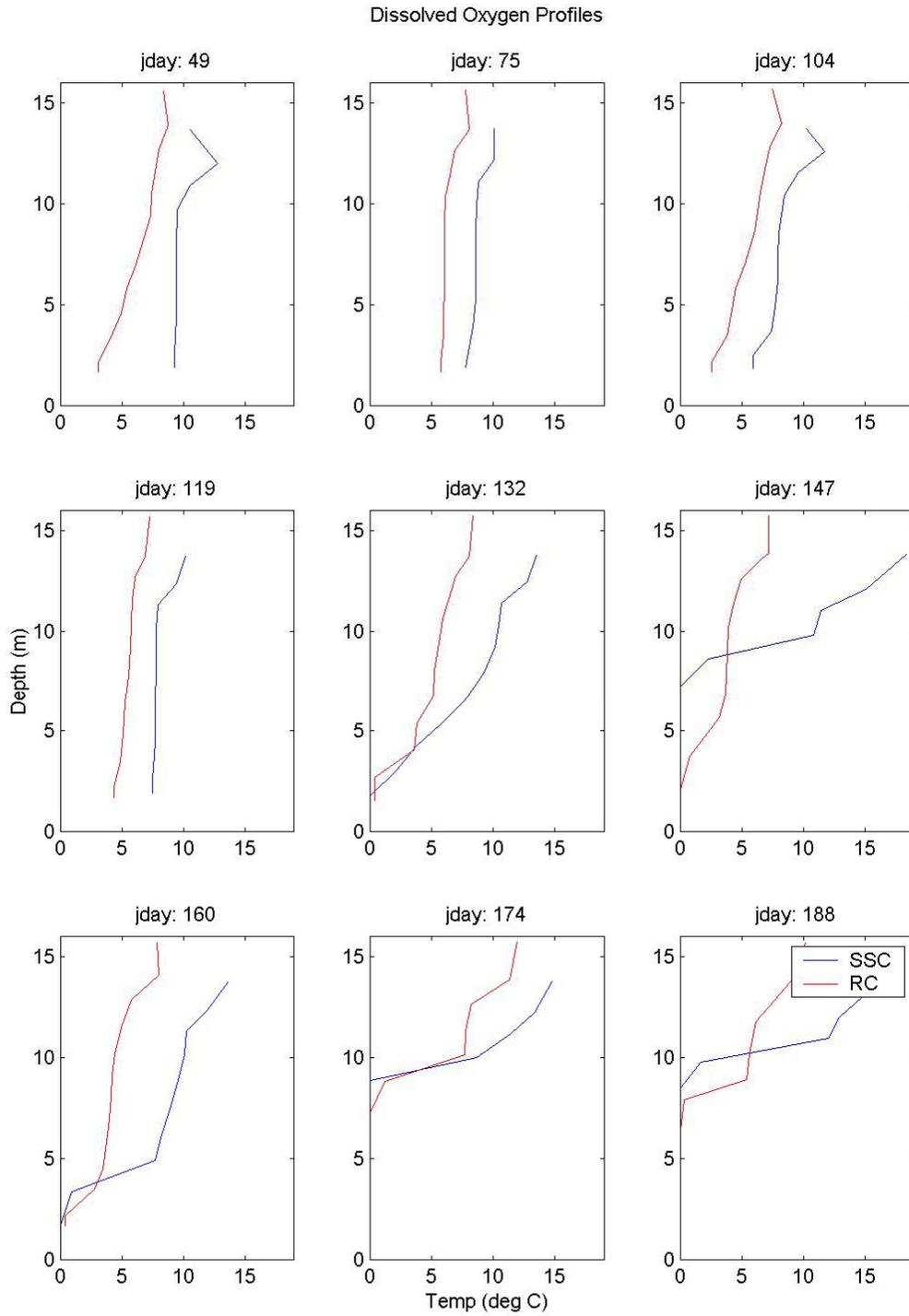


Figure D2-86A. Simulated dissolved oxygen (noon) profiles for the Marine Sea in Alternative 8 and Recent Conditions.

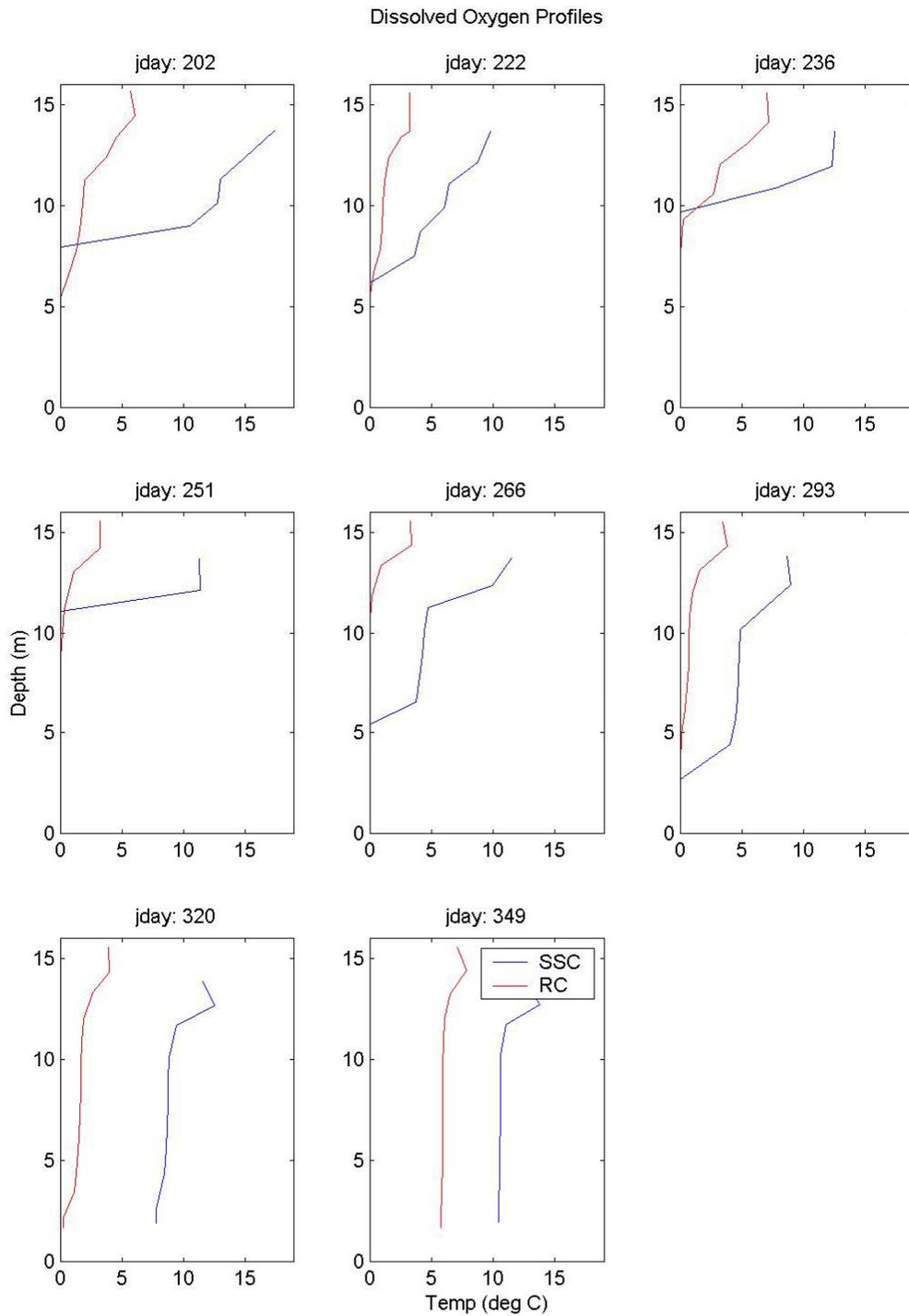


Figure D2-86B. Simulated dissolved oxygen (noon) profiles for the Marine Sea in Alternative 8 and Recent Conditions.

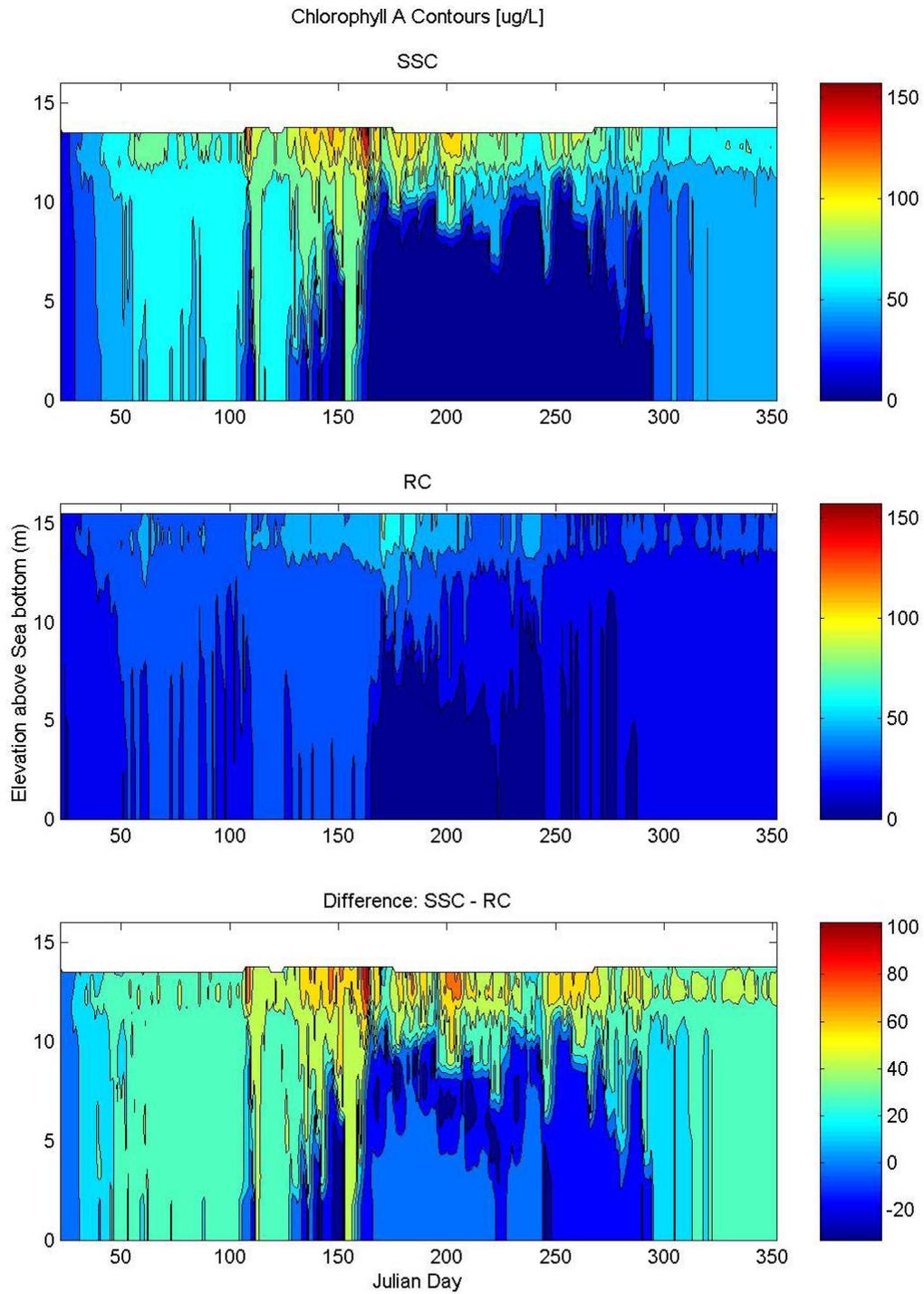


Figure D2-87. Simulated chlorophyll a contours for the Marine Sea in Alternative 8 and Recent Conditions.

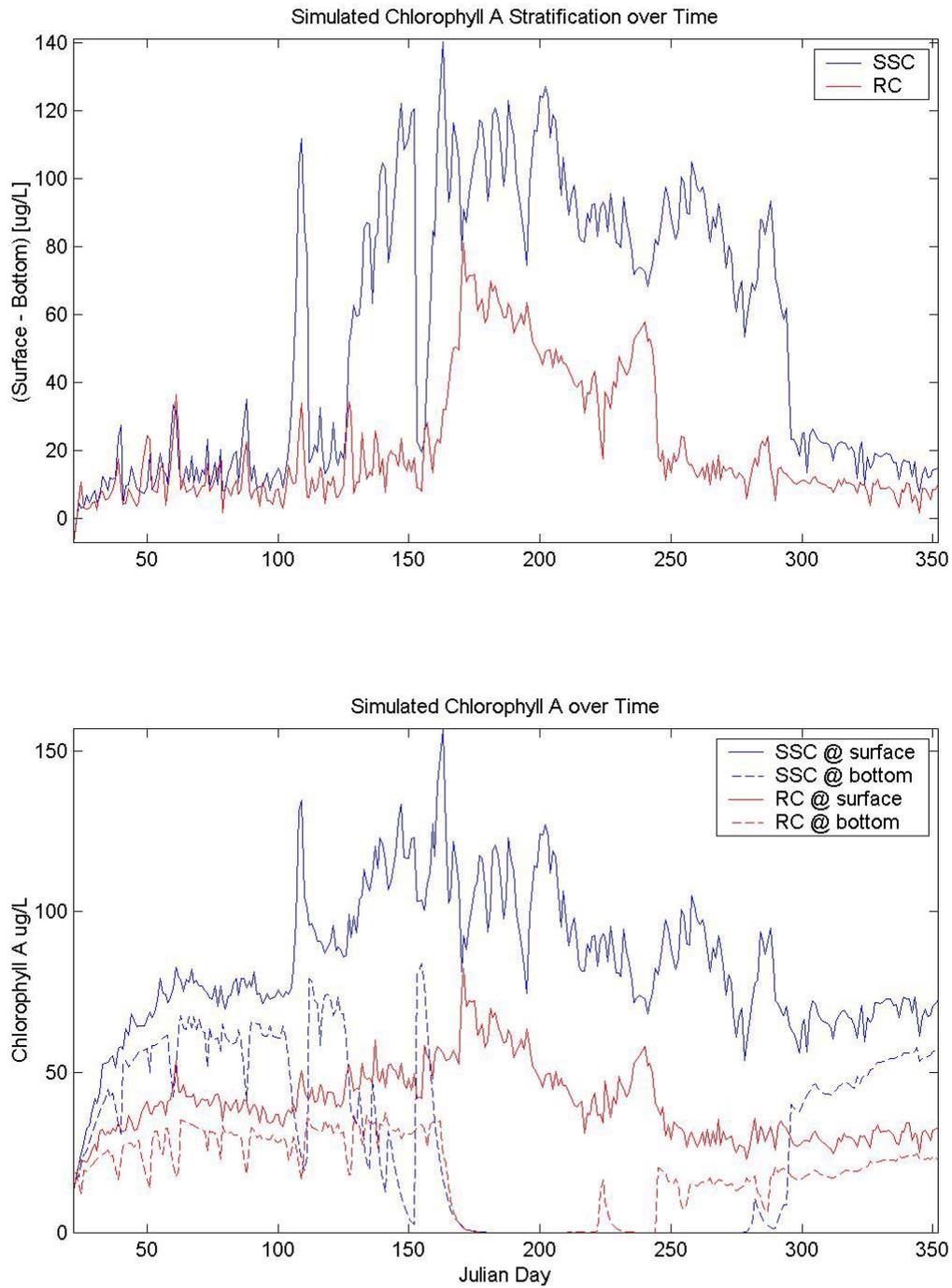


Figure D2-88. Simulated chlorophyll a concentrations for the Marine Sea in Alternative 8 and Recent Conditions.

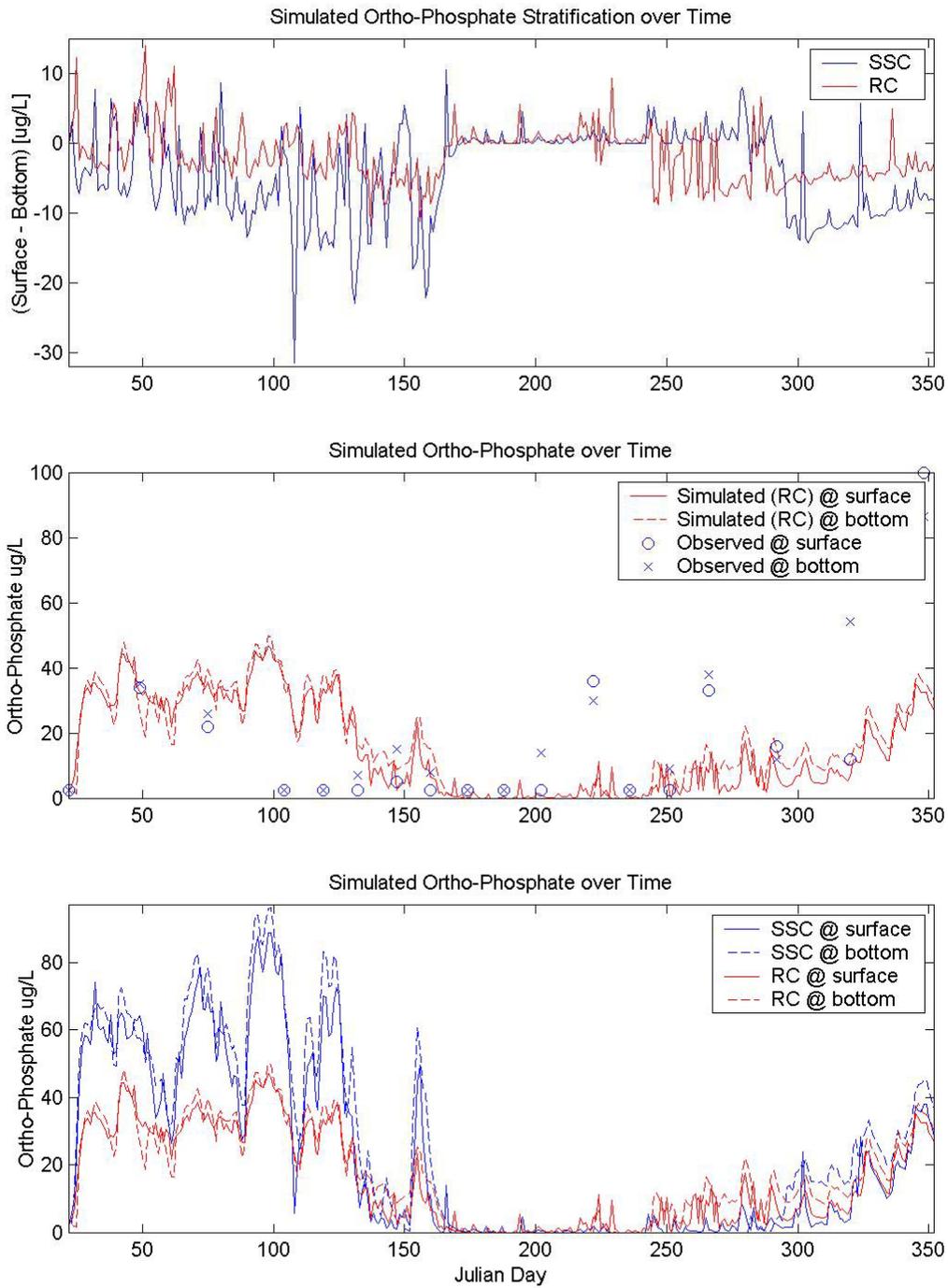


Figure D2-89. Simulated orthophosphate concentrations for the Marine Sea in Alternative 8 and Recent Conditions.

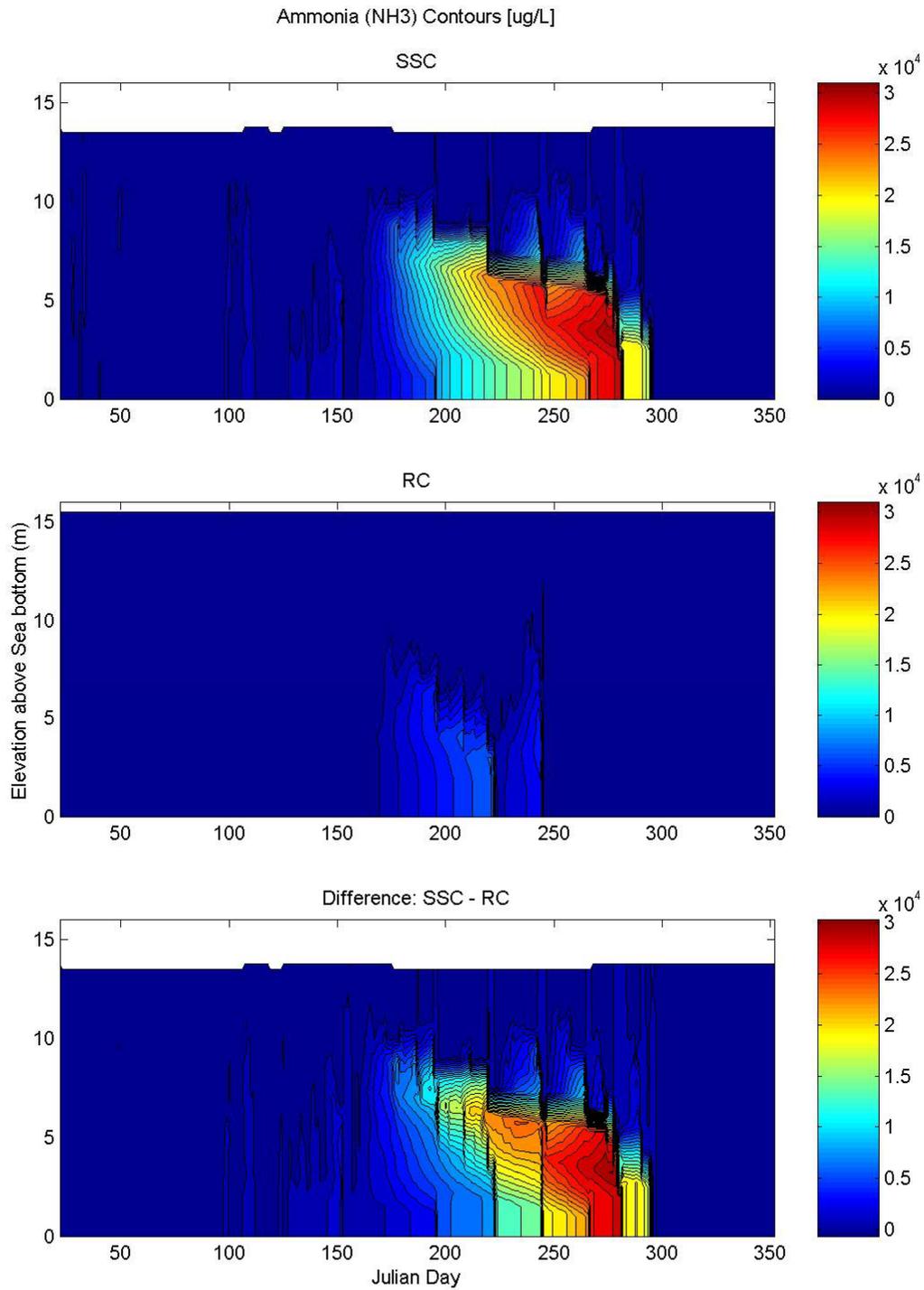


Figure D2-90. Simulated ammonia contours for the Marine Sea in Alternative 8 and Recent Conditions.

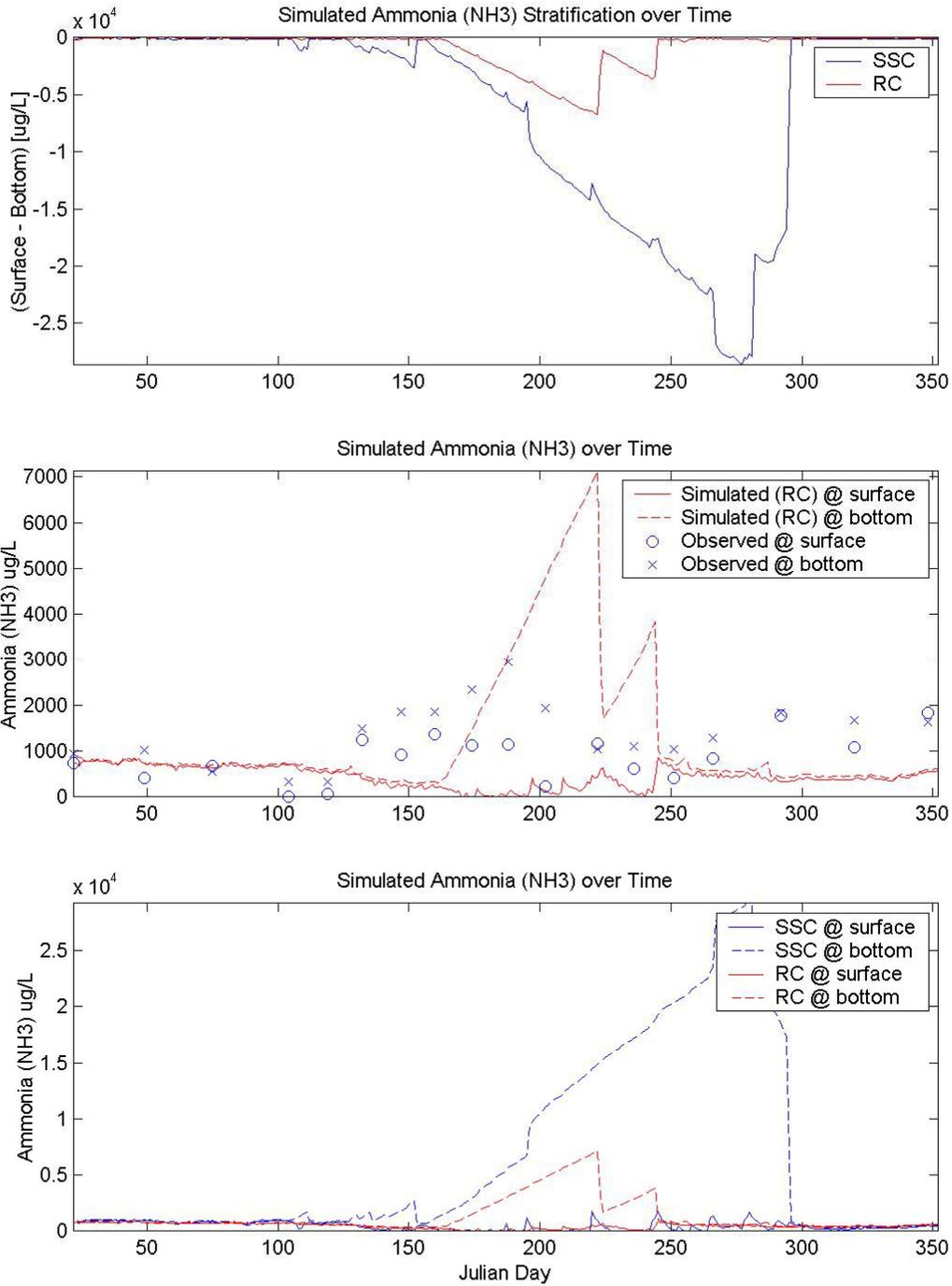


Figure D2-91. Simulated ammonia concentrations for the Marine Sea in Alternative 8 and Recent Conditions.

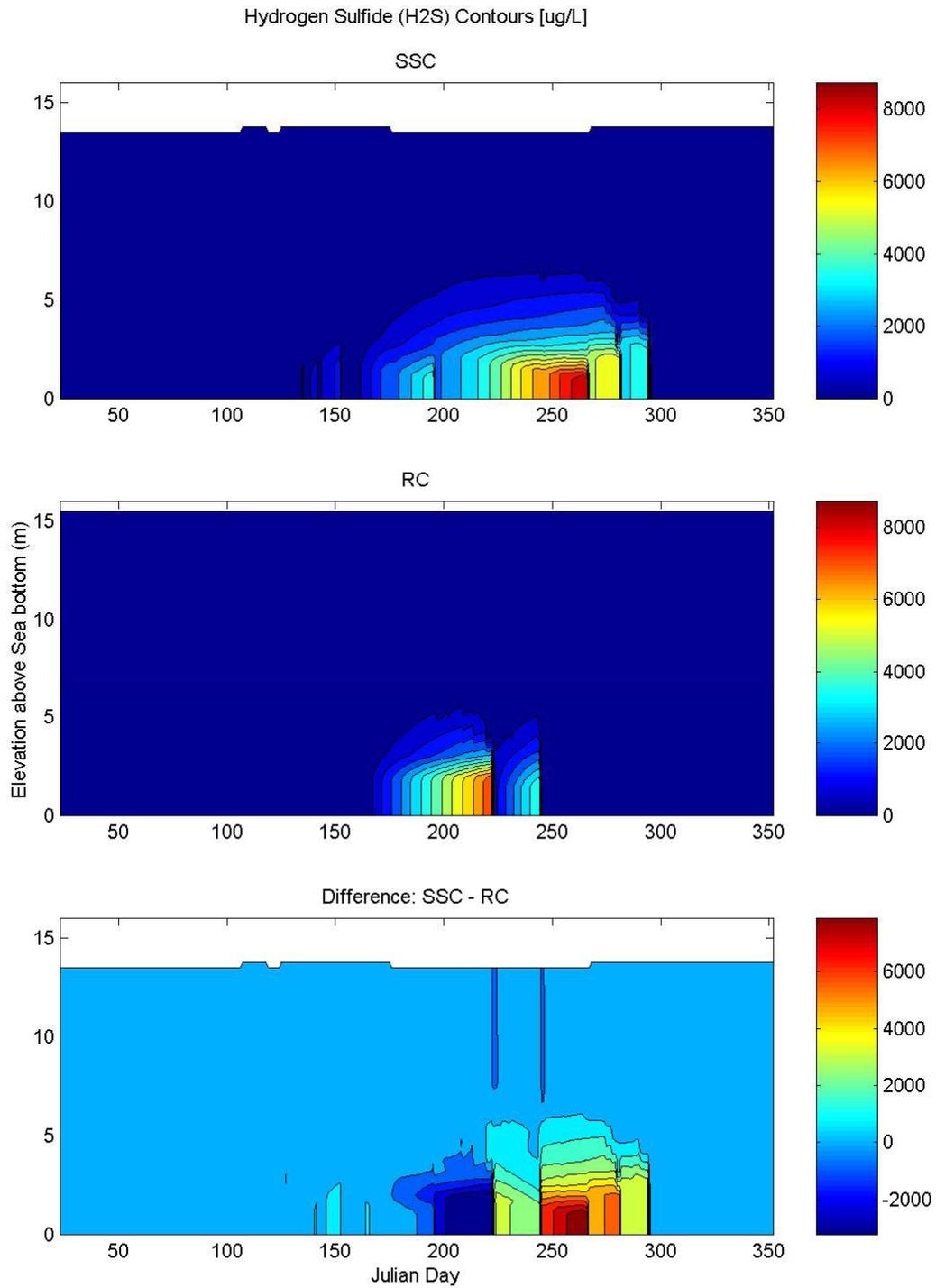


Figure D2-92. Simulated hydrogen sulfide contours for the Marine Sea in Alternative 8 and Recent Conditions.

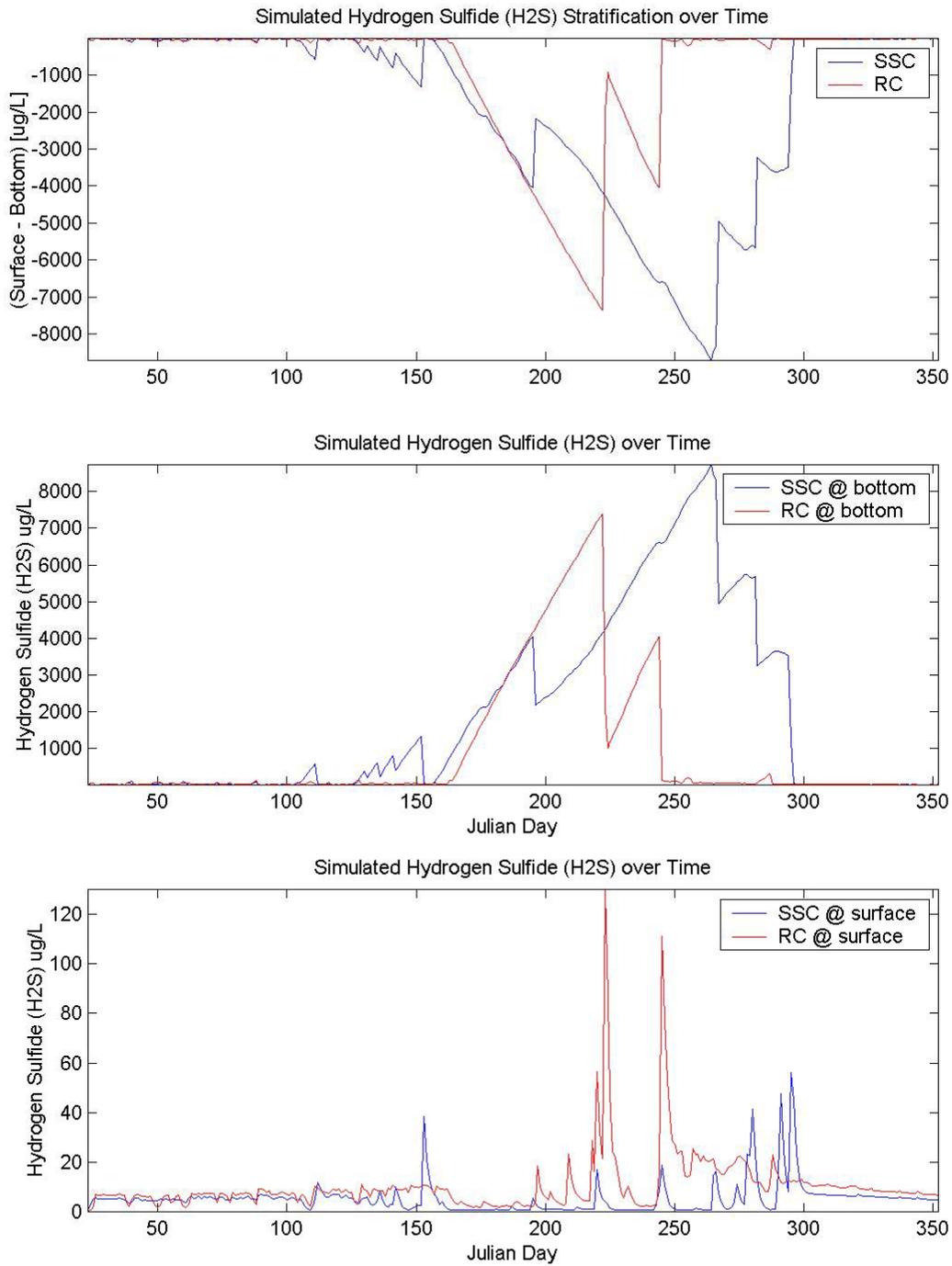


Figure D2-93. Simulated hydrogen sulfide concentrations for the Marine Sea in Alternative 8 and Recent Conditions.

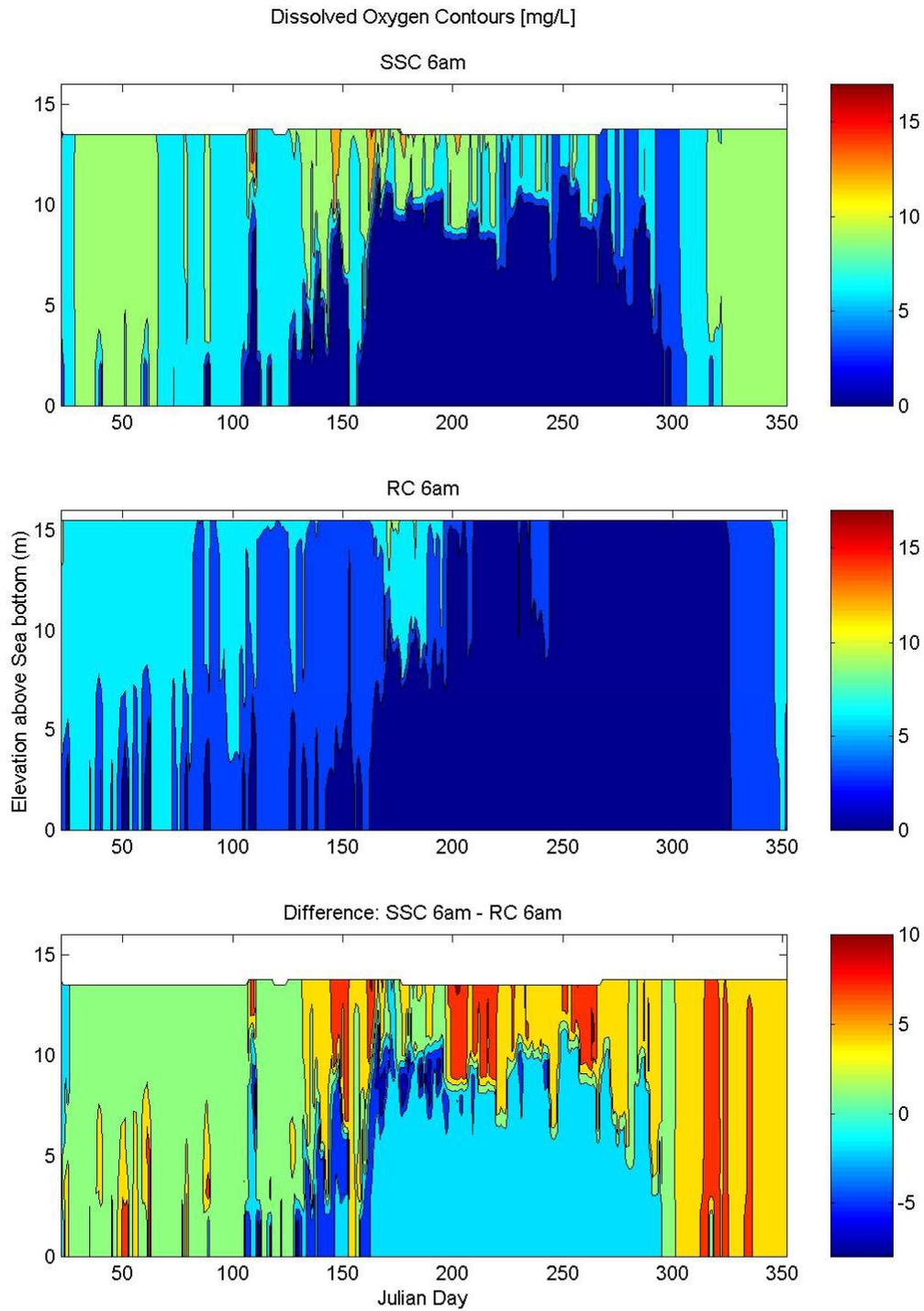


Figure D2-94. Simulated dissolved oxygen (6am) contours for the Marine Sea in Alternative 8 and Recent Conditions.

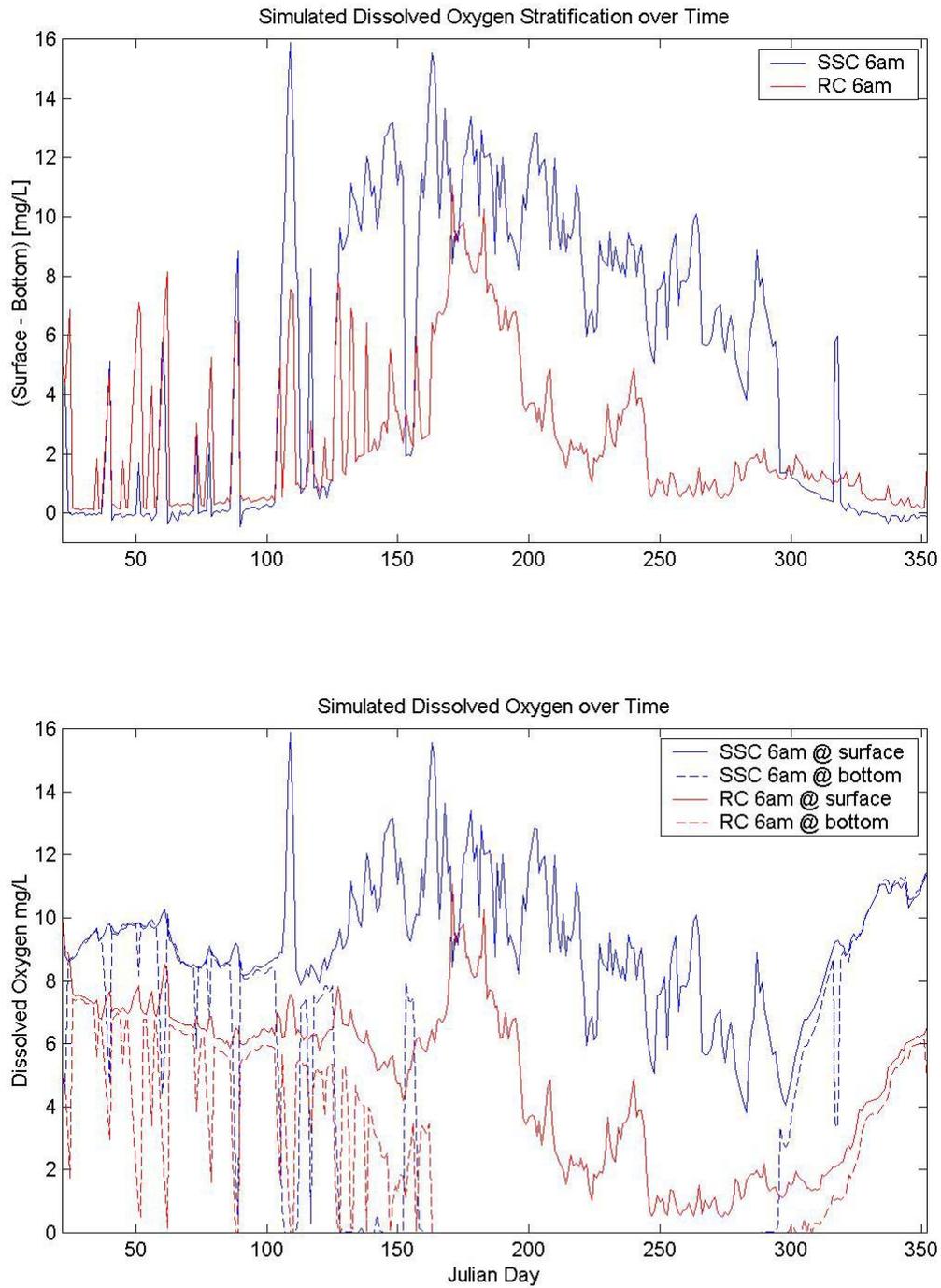


Figure D2-95. Simulated dissolved oxygen (6am) concentrations for the Marine Sea in Alternative 8 and Recent Conditions.

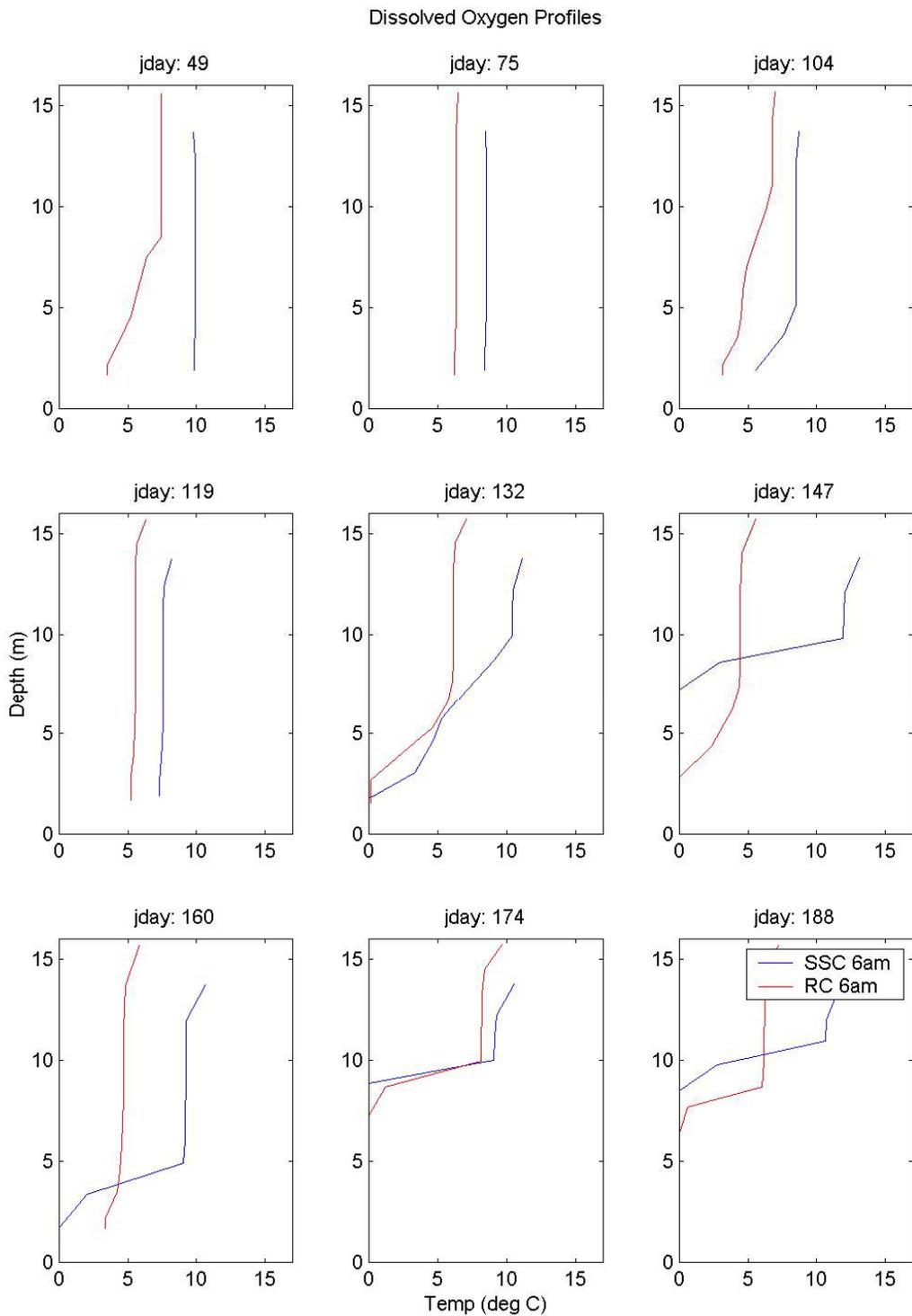


Figure D2-96A. Simulated dissolved oxygen (6am) profiles for the Marine Sea in Alternative 8 and Recent Conditions.

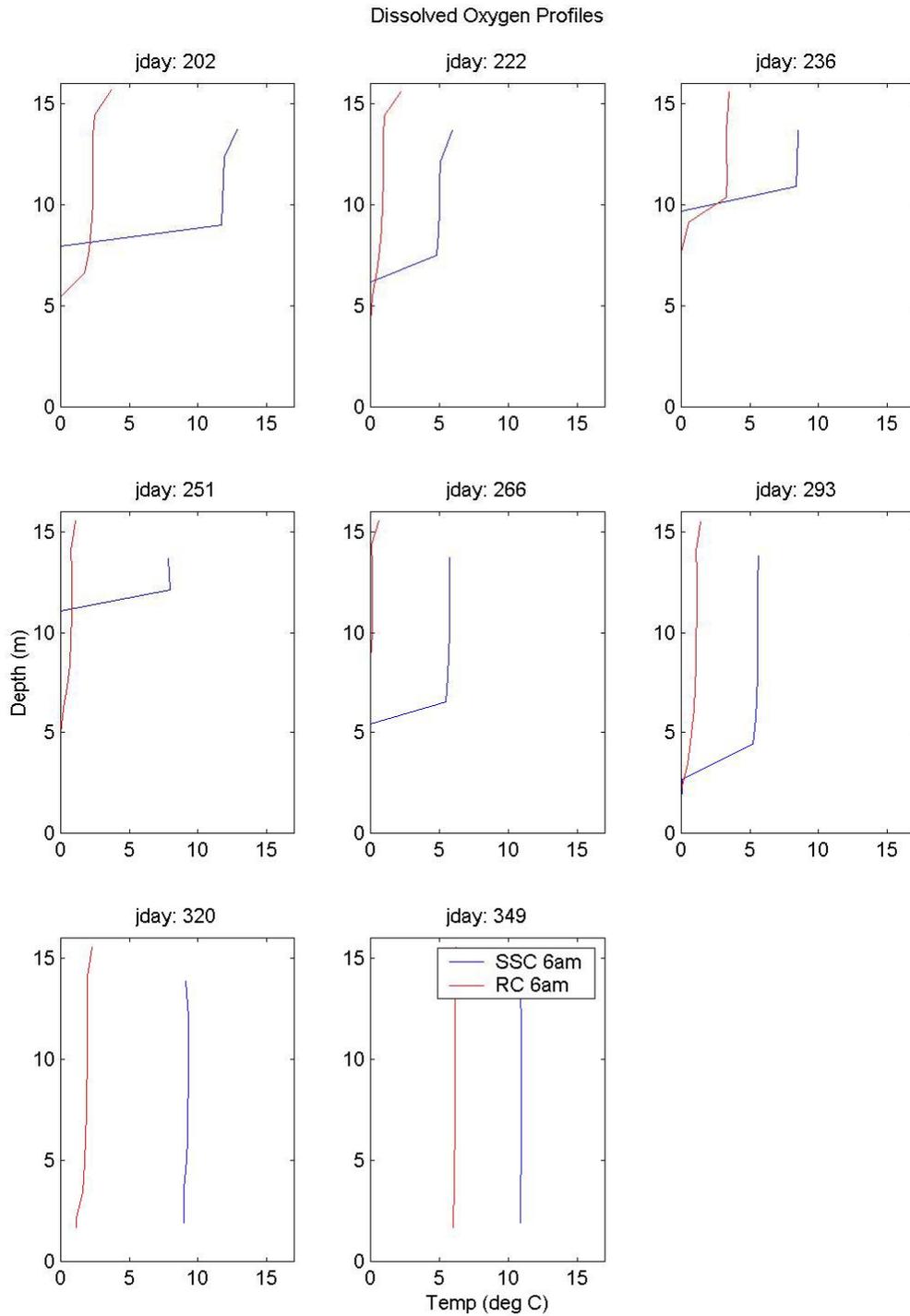


Figure D2-96B. Simulated dissolved oxygen (6am) profiles for the Marine Sea in Alternative 8 and Recent Conditions.

APPENDIX D, ATTACHMENT D3

**DLM-WQ Modeling of Alternatives with
Reduced Nutrient Loads – Figures**

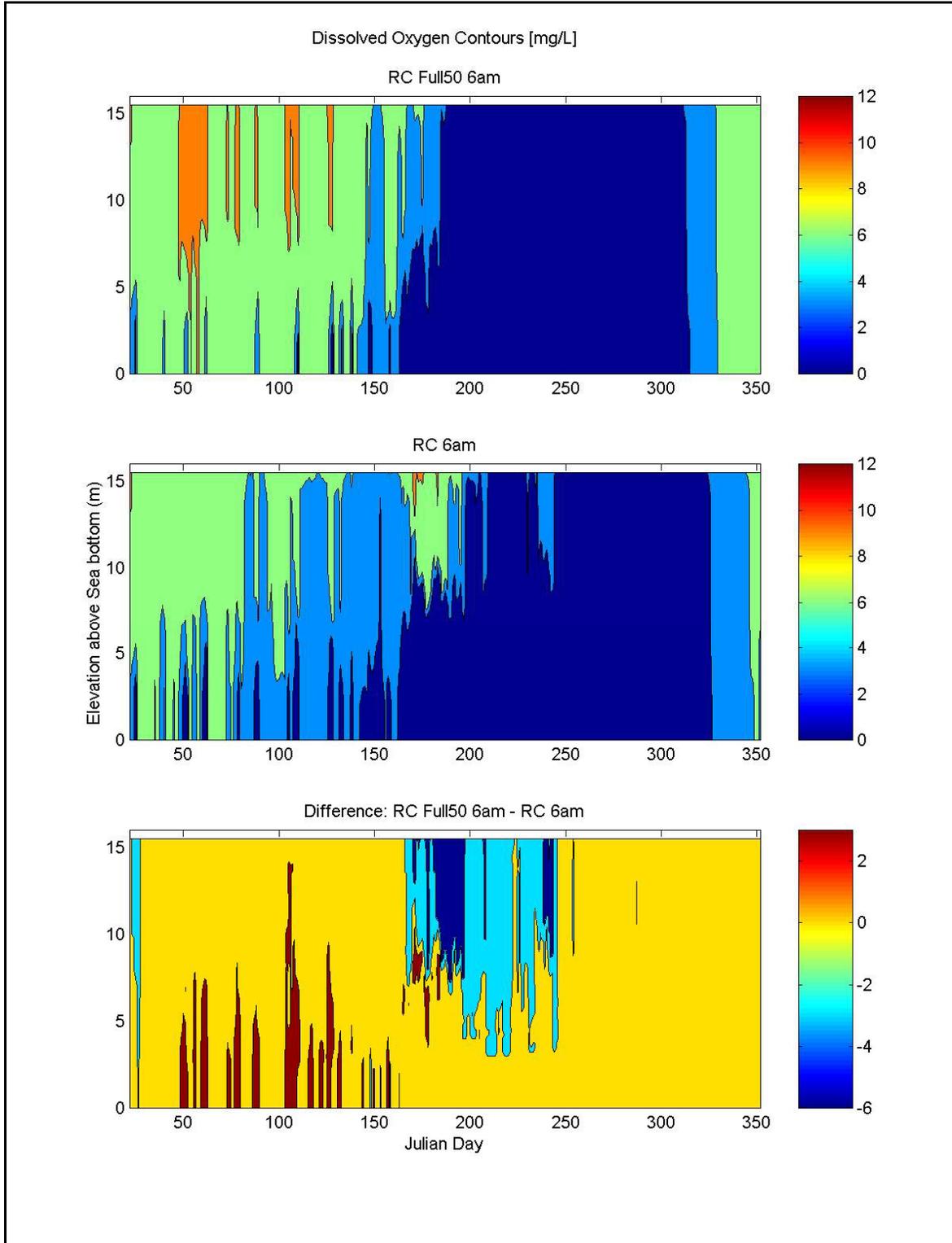


Figure D3-1. Simulated dissolved oxygen contours for Recent Conditions with (Scenario B) and without reduced nutrient loads.

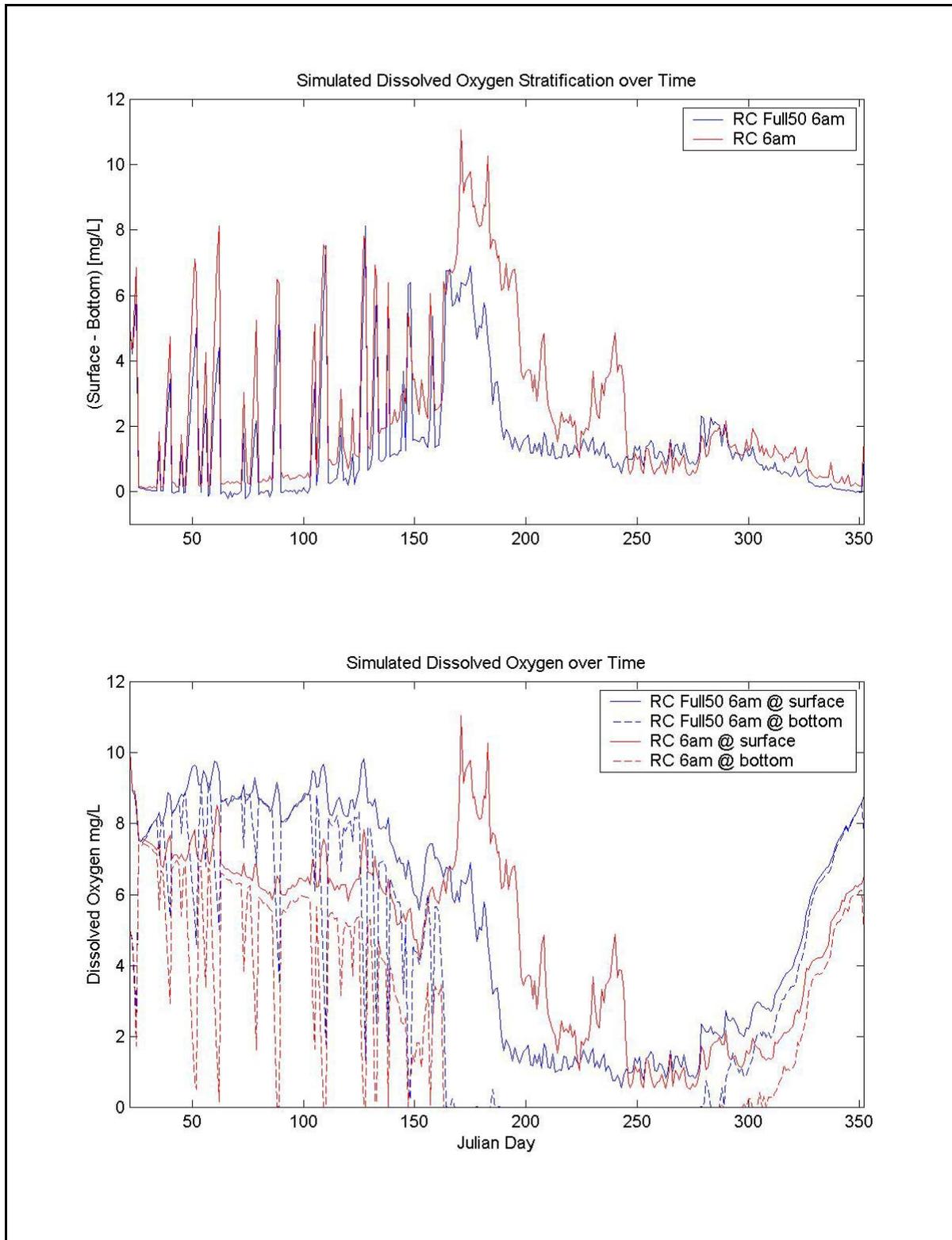


Figure D3-2. Simulated dissolved oxygen concentrations for Recent Conditions with (Scenario B) and without reduced nutrient loads.

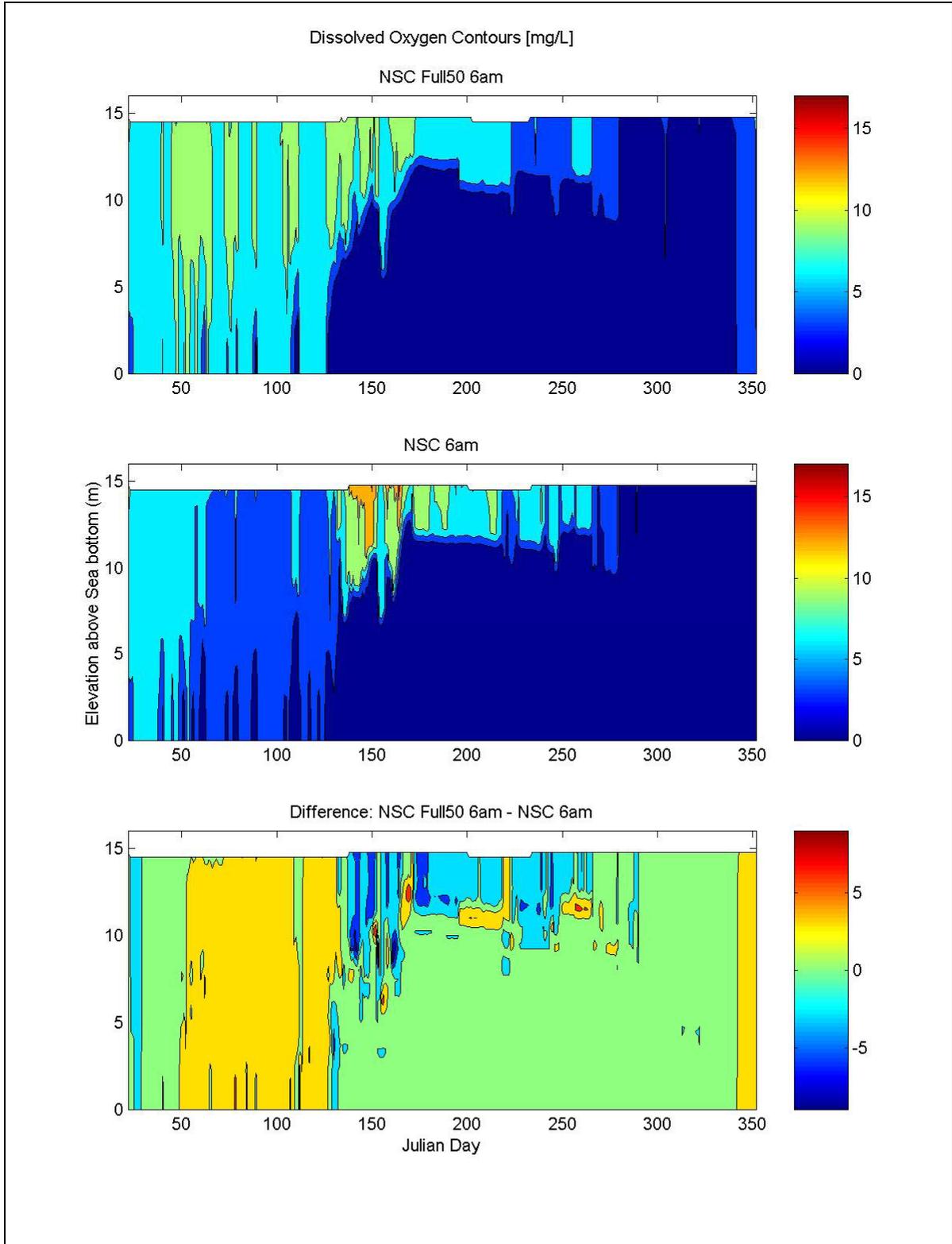


Figure D3-3. Simulated dissolved oxygen contours for the Marine Sea in Alternatives 5 and 6 with (Scenario B) and without reduced nutrient loads.

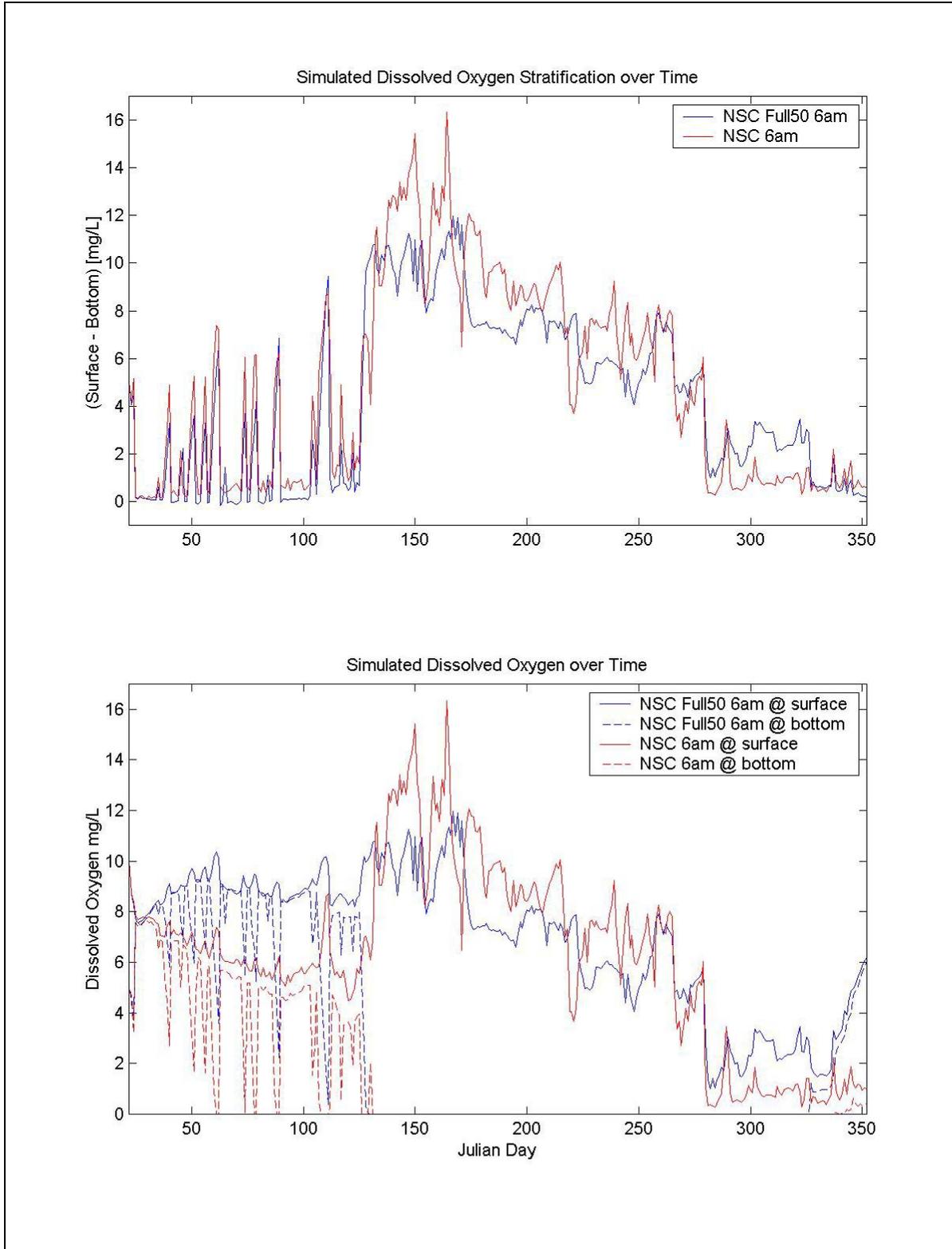


Figure D3-4. Simulated dissolved oxygen concentrations for the Marine Sea in Alternatives 5 and 6 with (Scenario B) and without reduced nutrient loads.

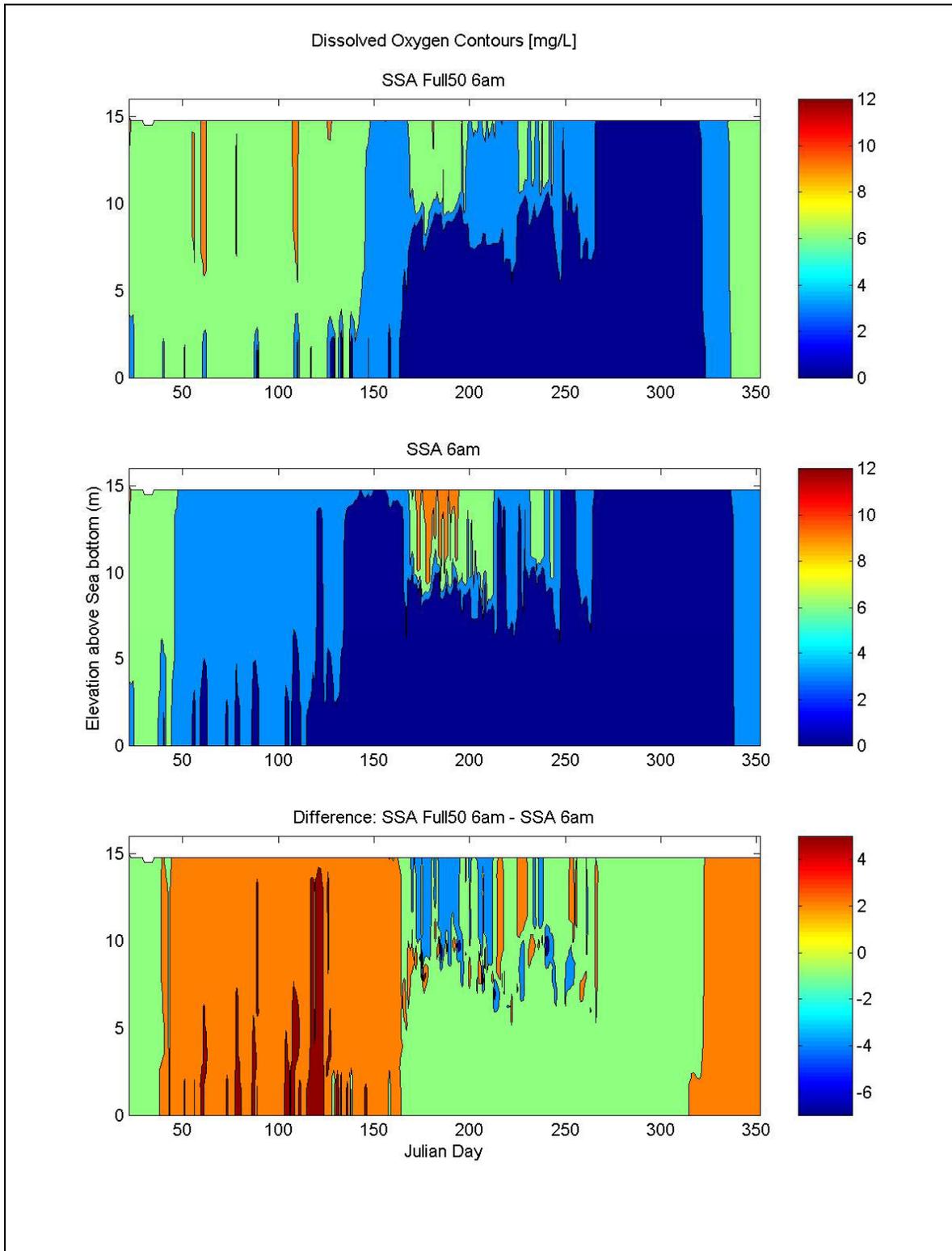


Figure D3-5. Simulated dissolved oxygen contours for the Marine Sea in Alternatives 7 with (Scenario B) and without reduced nutrient loads.

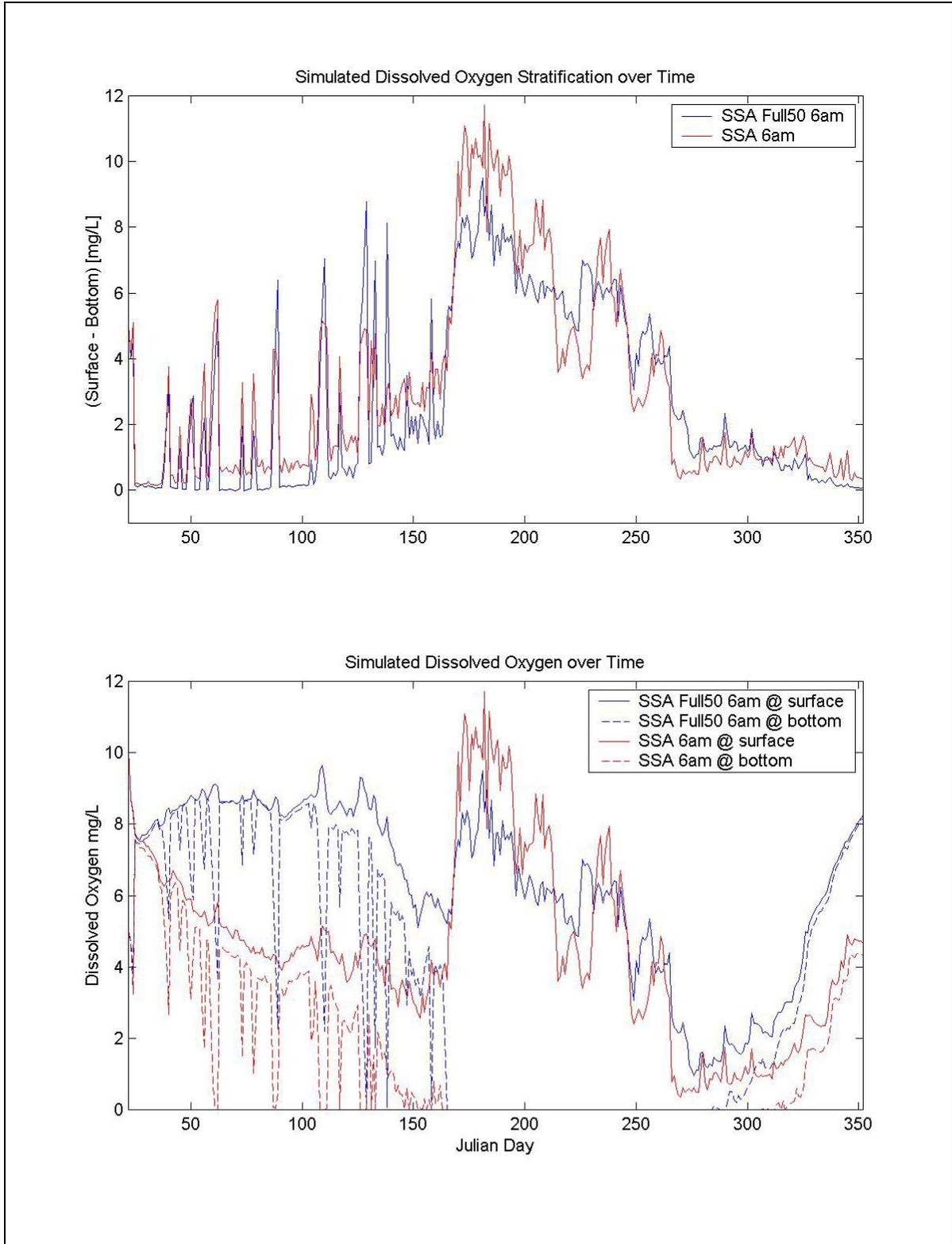


Figure D3-6. Simulated dissolved oxygen concentrations for the Marine Sea in Alternative 7 with (Scenario B) and without reduced nutrient loads.

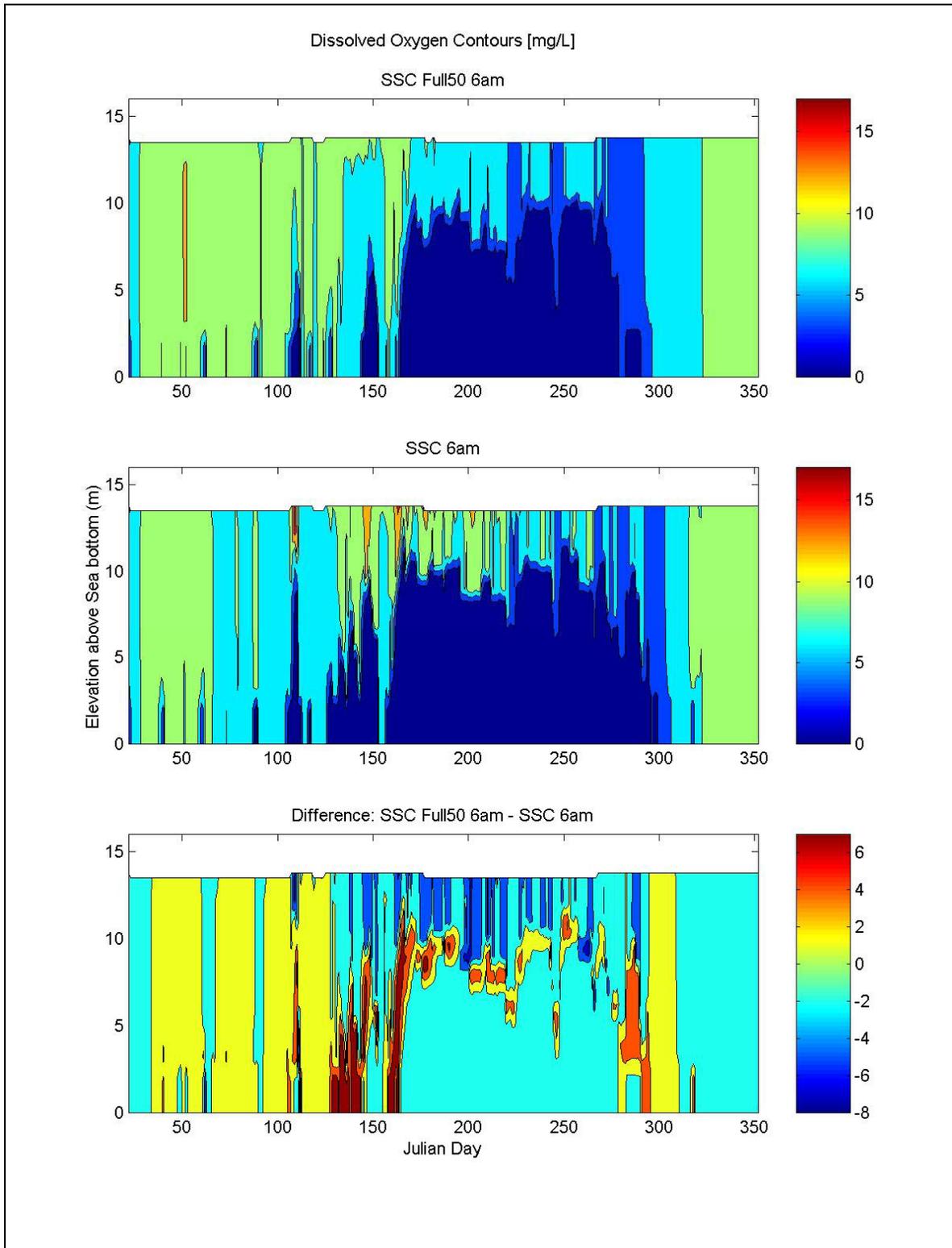


Figure D3-7. Simulated dissolved oxygen contours for the Marine Sea in Alternative 8 with (Scenario B) and without reduced nutrient loads.

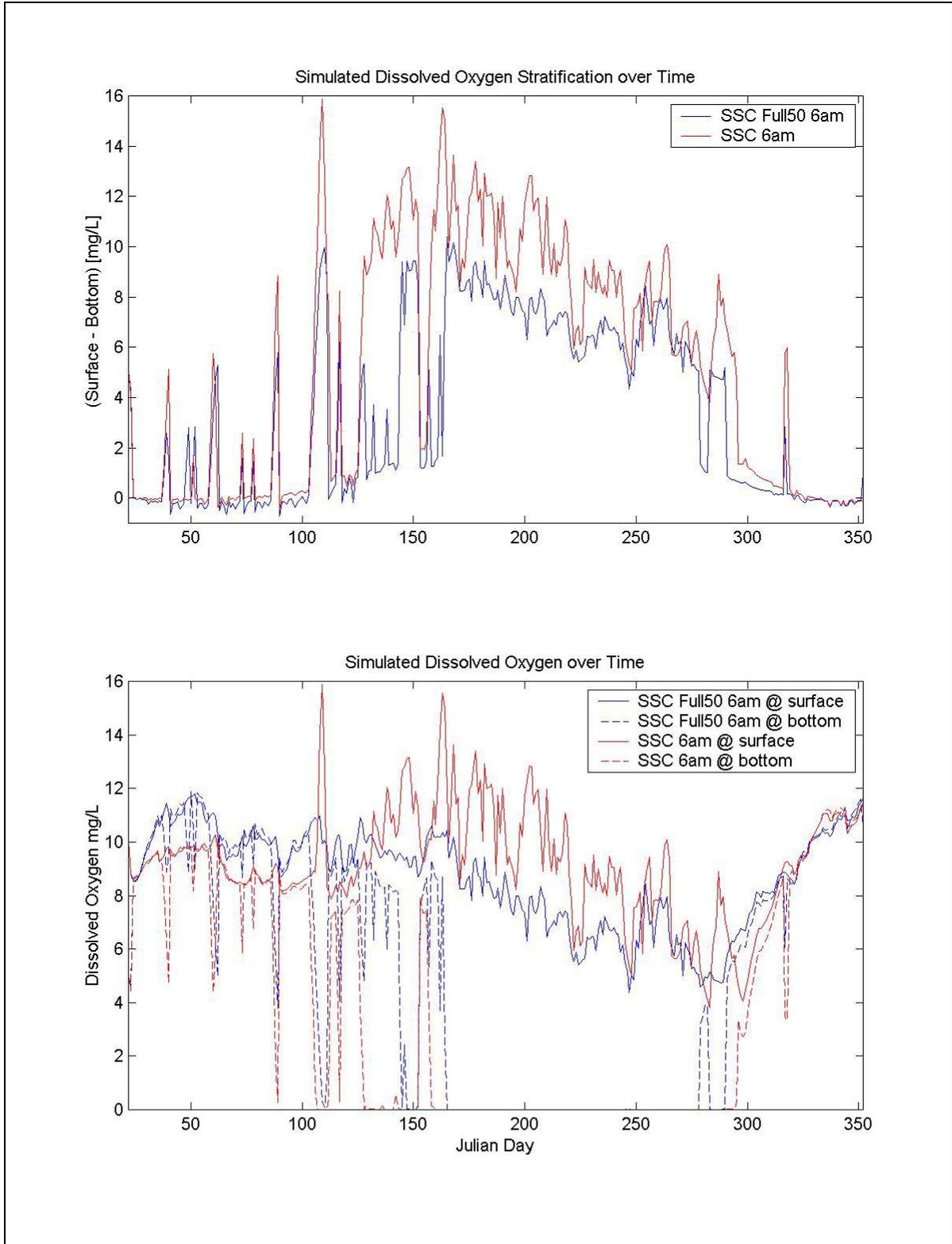


Figure D3-8. Simulated dissolved oxygen concentrations for the Marine Sea in Alternative 8 with (Scenario B) and without reduced nutrient loads.

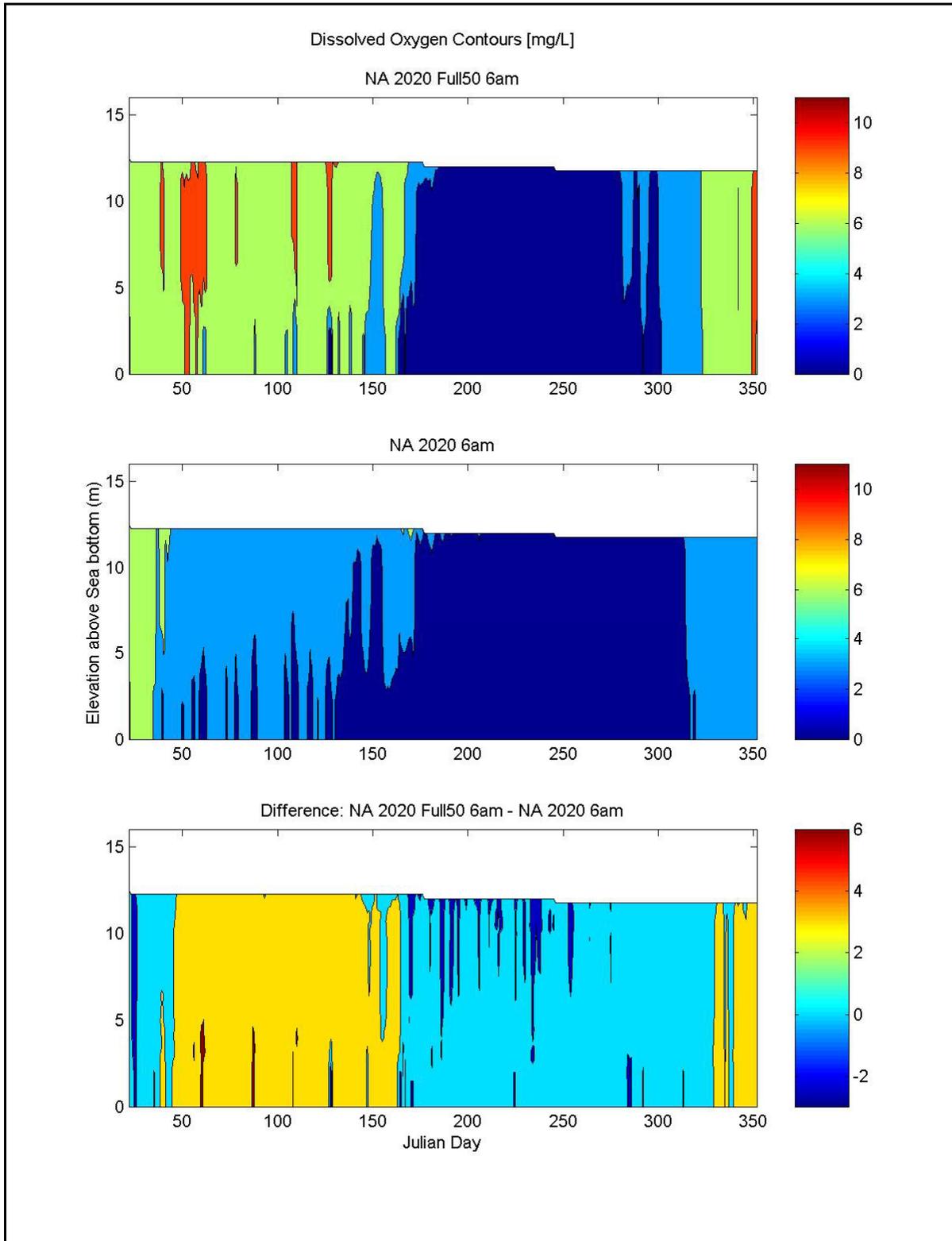


Figure D3-9. Simulated dissolved oxygen contours for No Action Alternative at 2020 with (Scenario B) and without reduced nutrient loads.

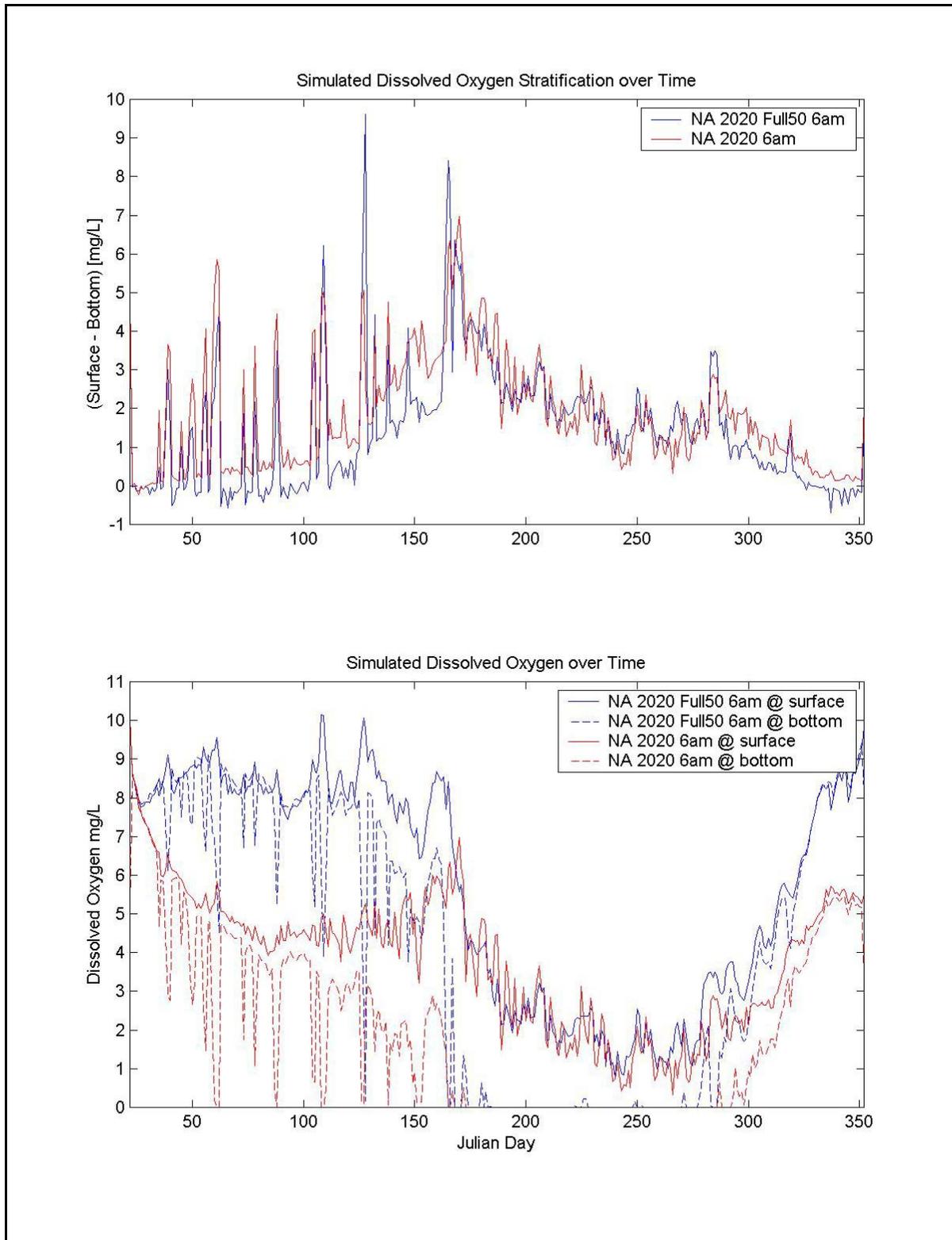


Figure D3-10. Simulated dissolved oxygen concentrations for the No Action Alternative at 2020 with (Scenario B) and without reduced nutrient loads.

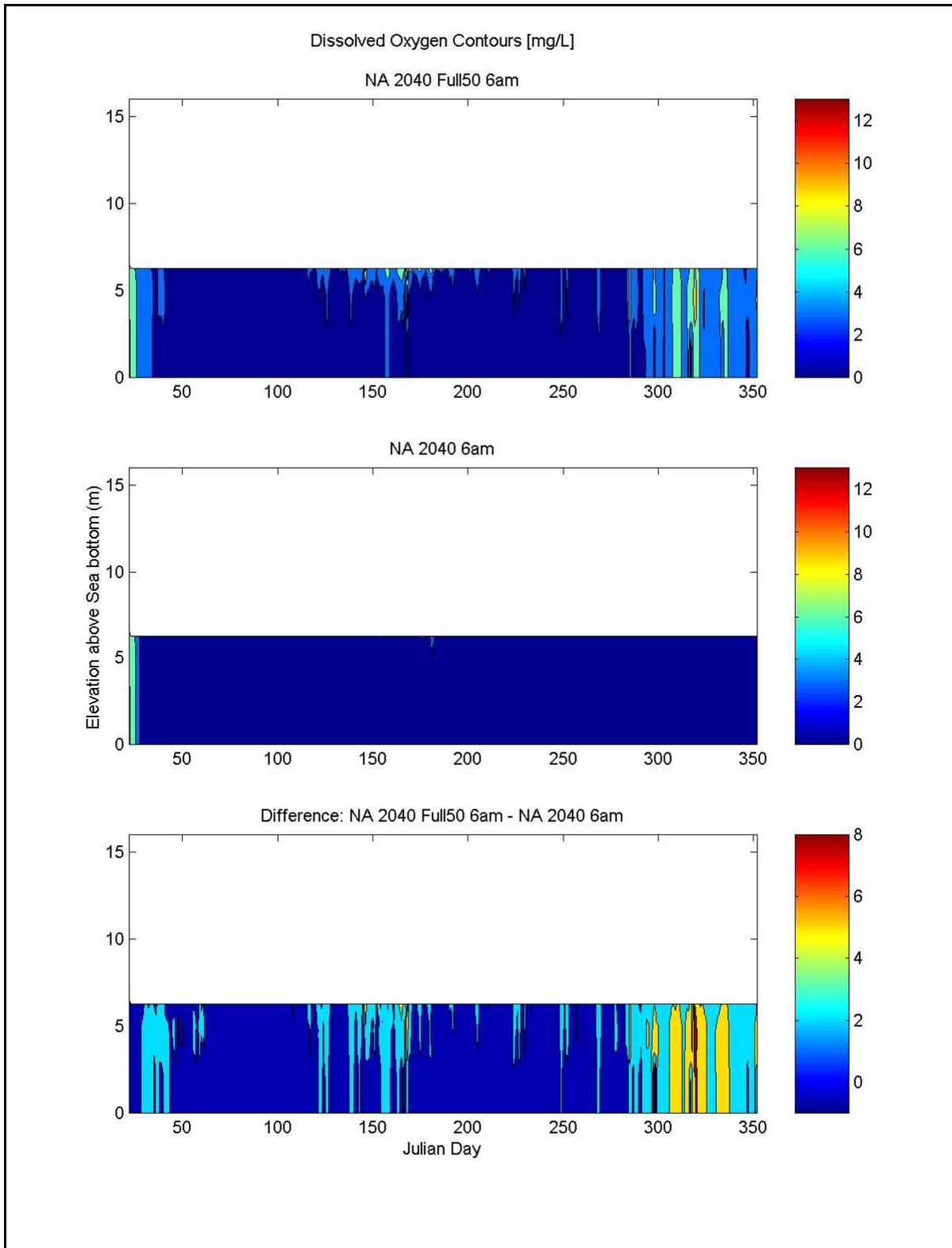


Figure D3-11. Simulated dissolved oxygen contours for No Action Alternative at 2040 with (Scenario B) and without reduced nutrient loads.

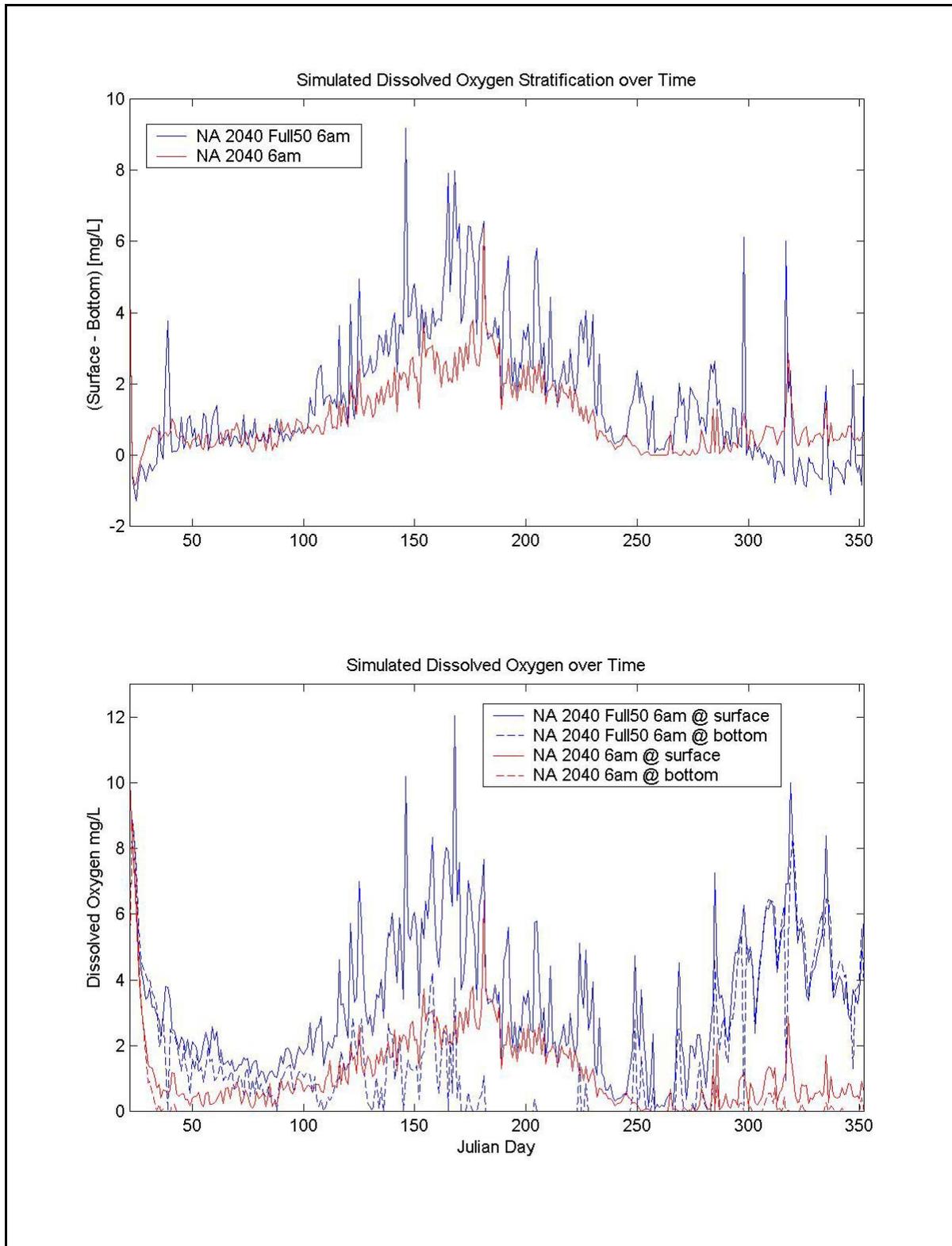


Figure D3-12. Simulated dissolved oxygen concentrations for the No Action Alternative at 2040 with (Scenario B) and without reduced nutrient loads.

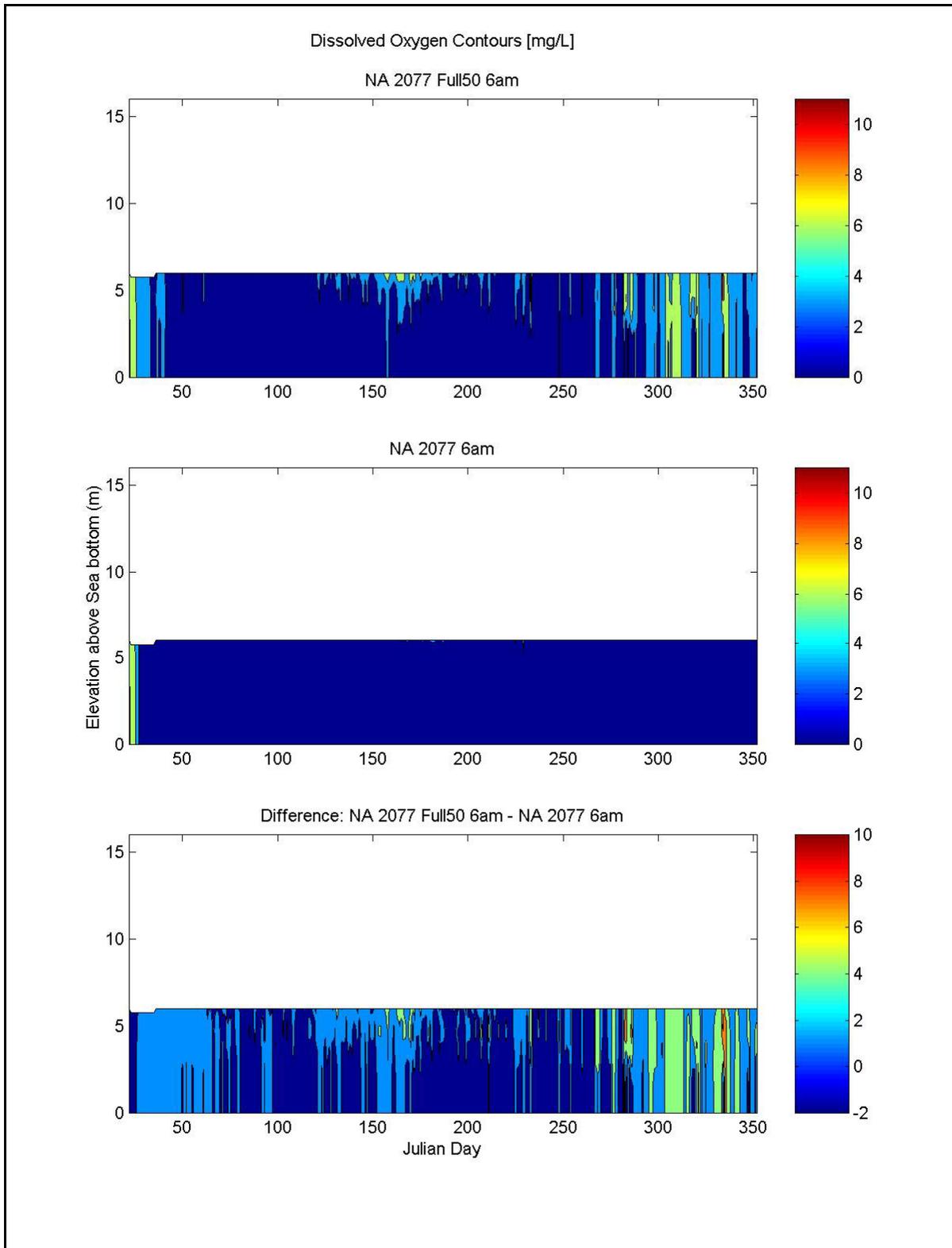


Figure D3-13. Simulated dissolved oxygen contours for No Action Alternative at 2077 with (Scenario B) and without reduced nutrient loads.

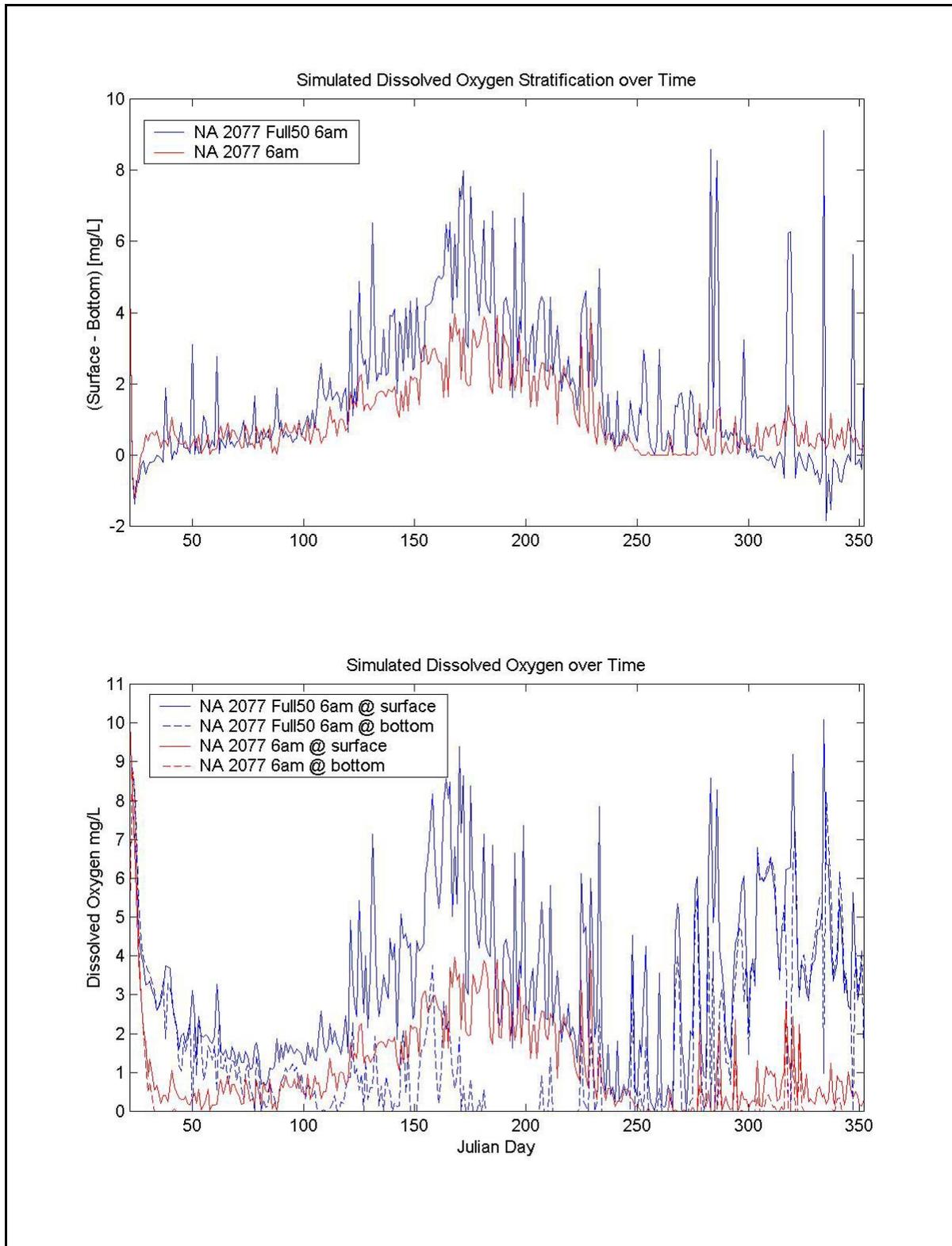


Figure D3-14. Simulated dissolved oxygen concentrations for the No Action Alternative at 2077 with (Scenario B) and without reduced nutrient loads.

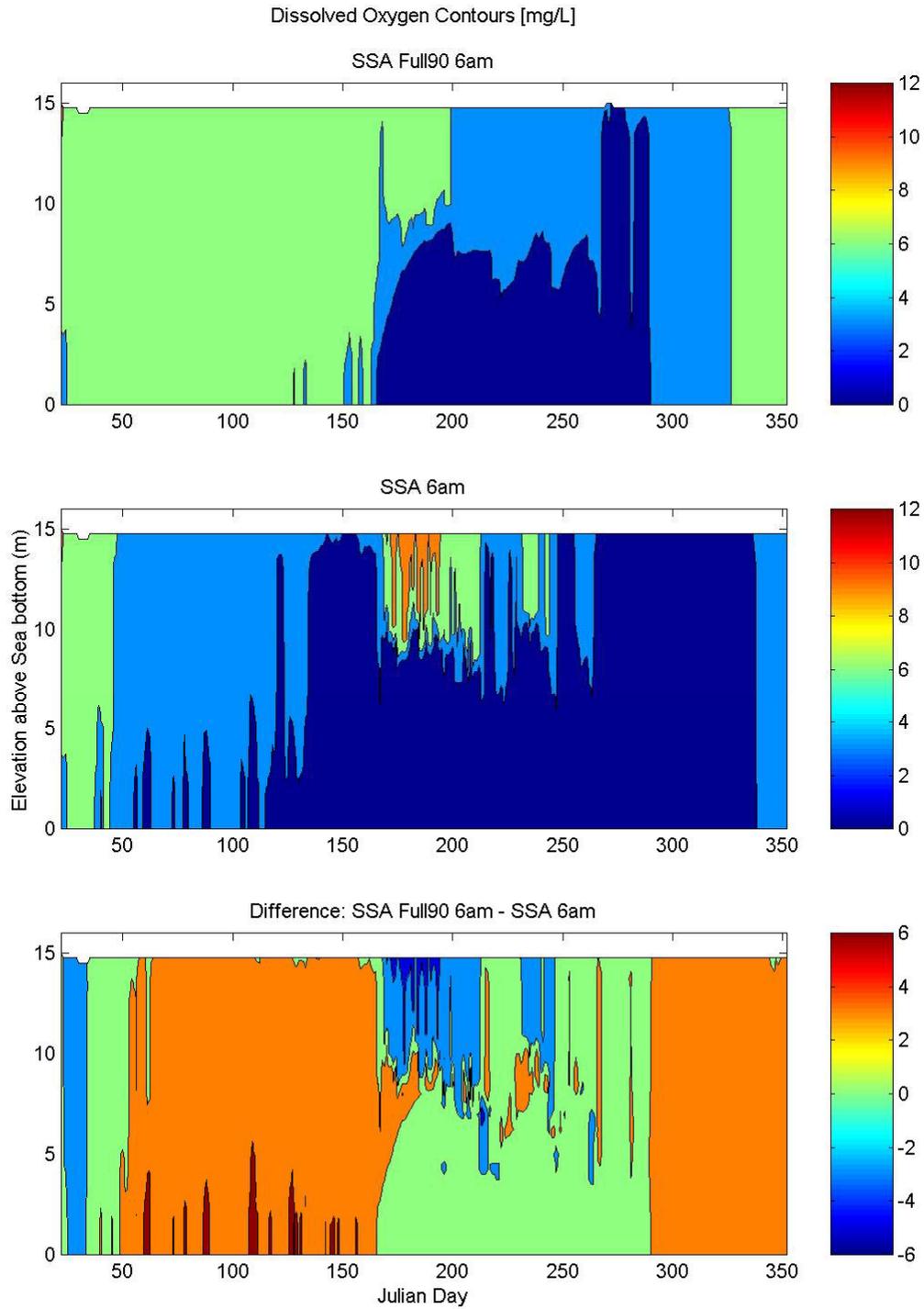


Figure D3-15. Simulated dissolved oxygen contours for the Marine Sea in Alternative 7 with (Scenario C) and without reduced nutrient loads.

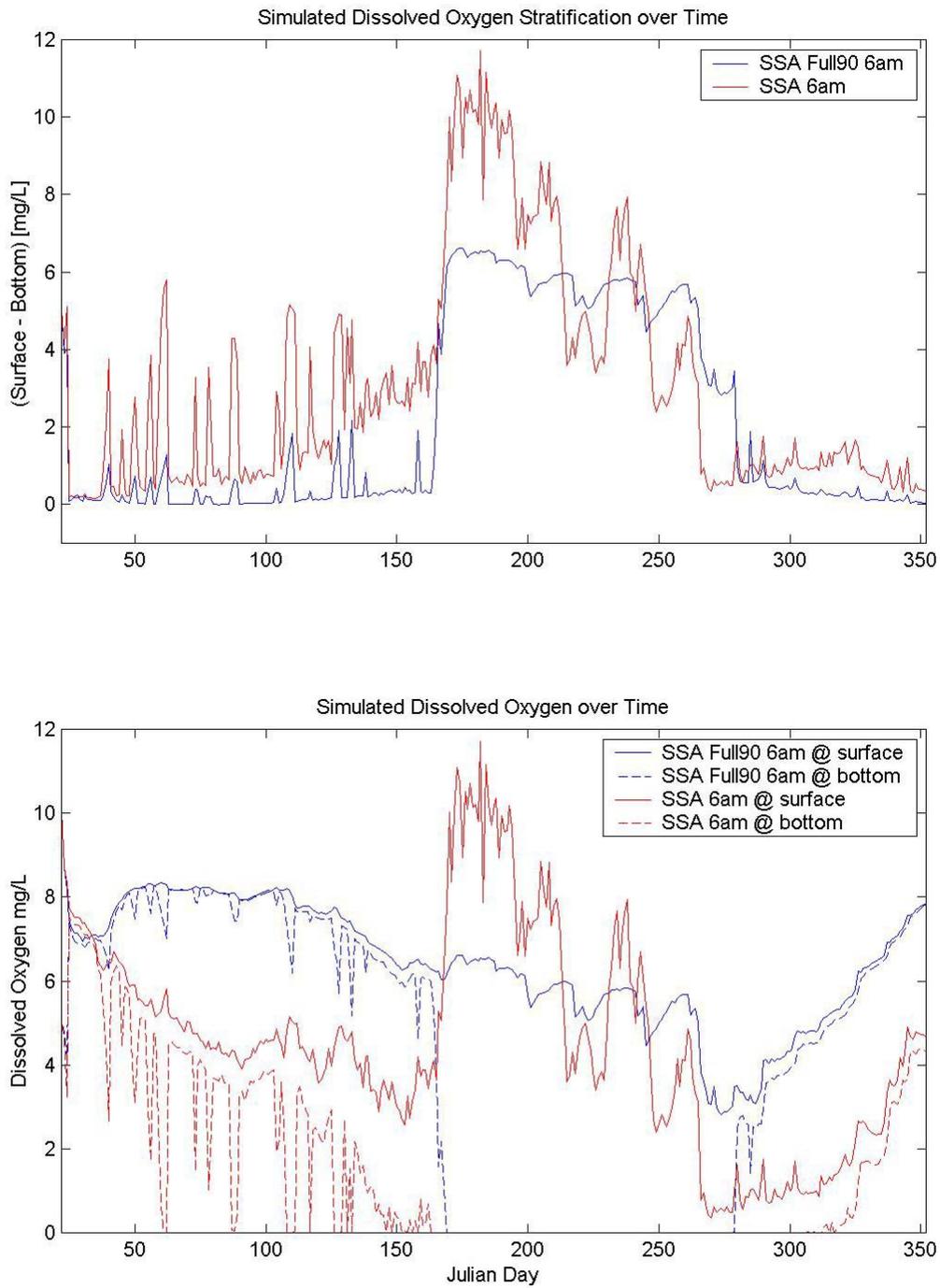


Figure D3-16. Simulated dissolved oxygen concentrations for the Marine Sea in Alternative 7 with (Scenario C) and without reduced nutrient loads.