

SUPPLEMENTAL

A Survey of Coastal Conditions around the Continental US Using a High-Resolution Ocean Reanalysis

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GLORYS Climate

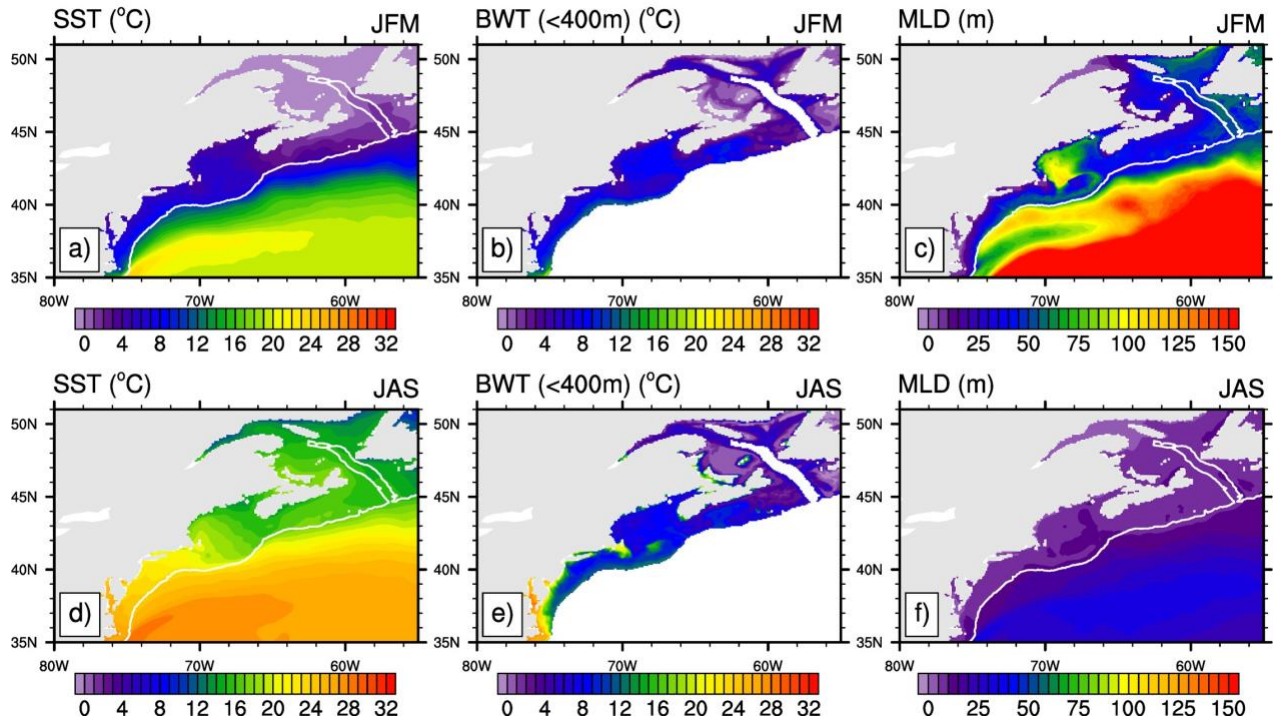


Fig. S1. GLORYS seasonal mean climate SST (a,d), BWT $< 400\text{m}$ (b,e), MLD (c,f) for JFM (top) and JAS (bottom). 400m depth contour (gray) shown in (a,c,d,f).

GLORYS Climate

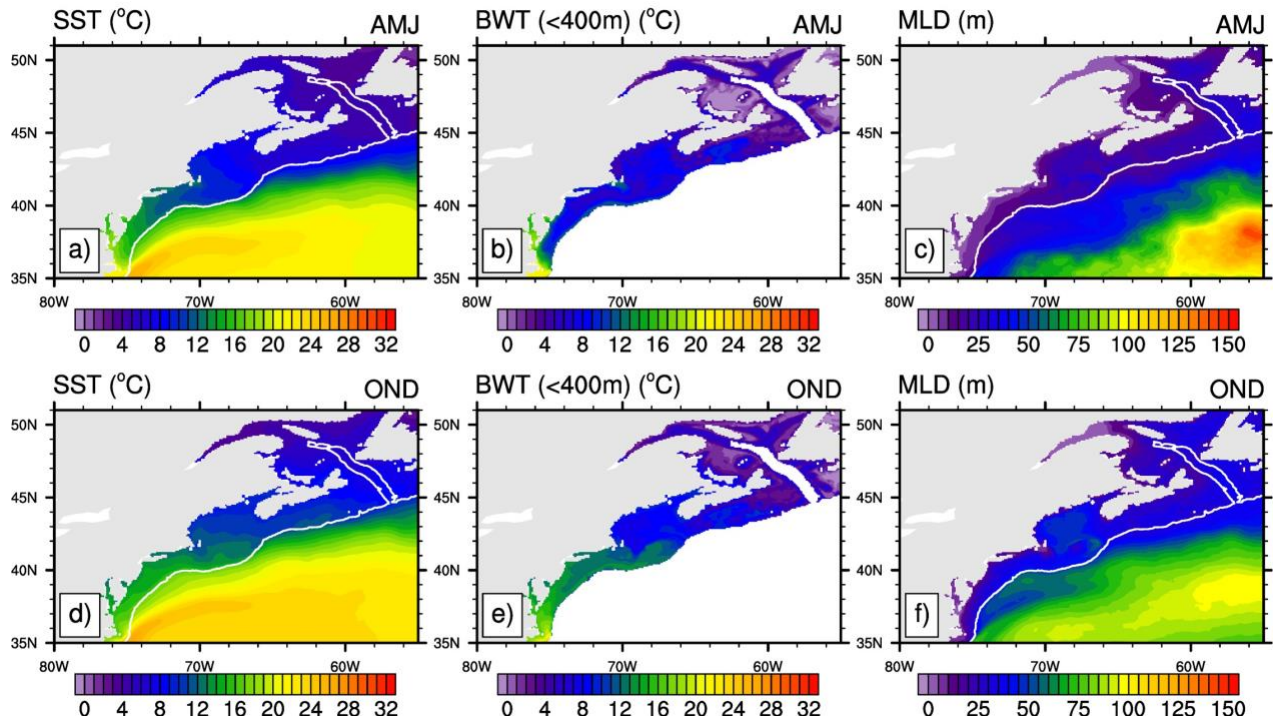


Fig. S2. GLORYS seasonal mean climate SST (a,d), BWT $< 400\text{m}$ (b,e), MLD (c,f) for AMJ (top) and OND (bottom). 400m depth contour (gray) shown in (a,c,d,f).

GLORYS Climate

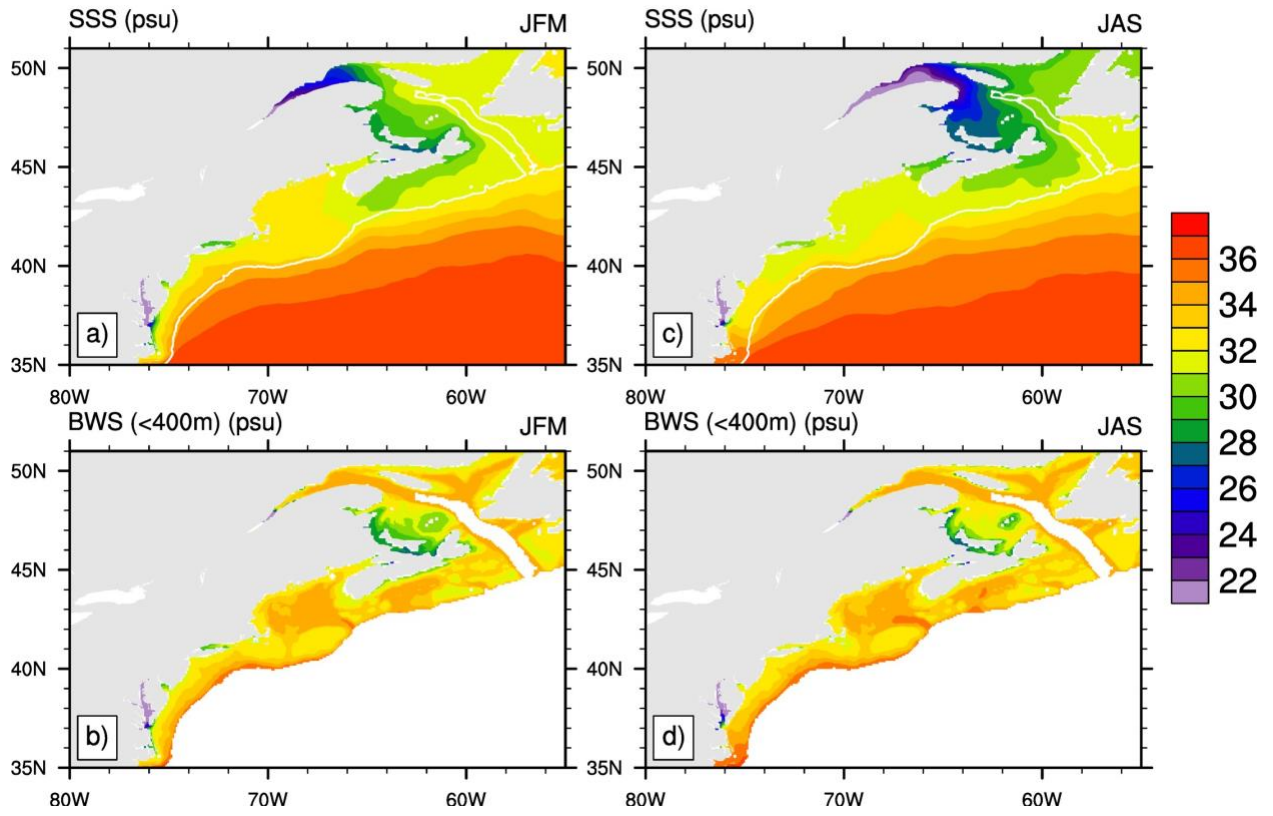


Fig. S3. GLORYS seasonal mean climate SSS (a,c), BWS < 400m (b,d) for JFM (left) and JAS (right). 400m depth contour (gray) shown in (a,c).

GLORYS Climate

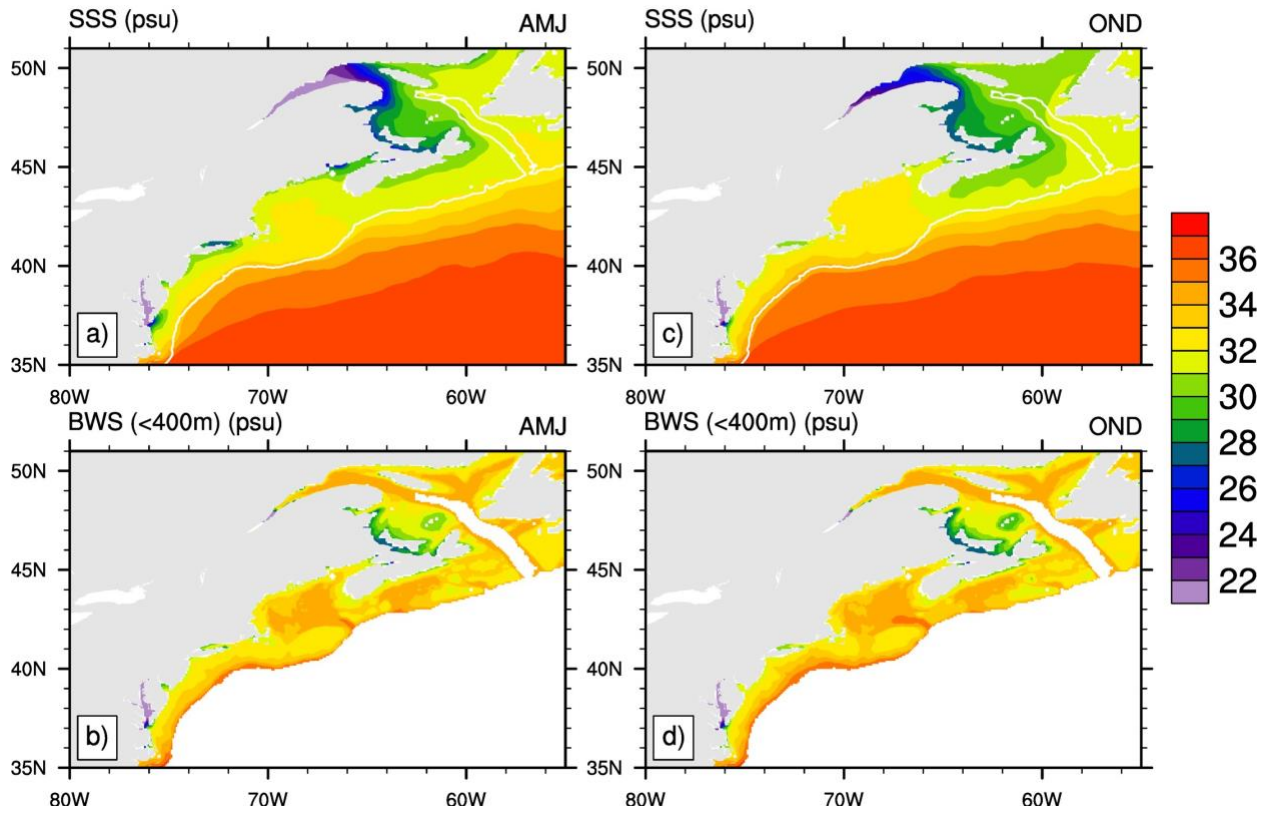


Fig. S4. GLORYS seasonal mean climate SSS (a,c), BWS < 400m (b,d) for AMJ (left) and OND (right). 400m depth contour (gray) shown in (a,c).

GLORYS Climate

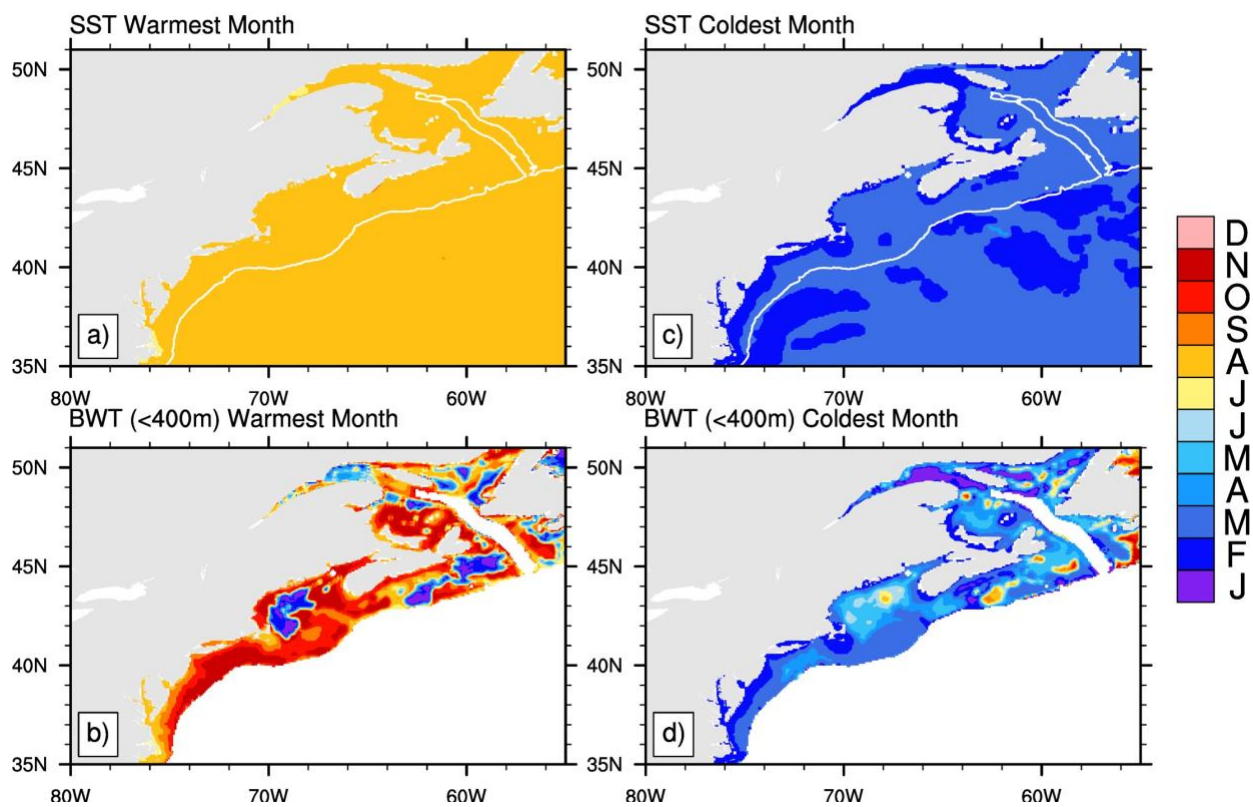


Fig. S5. GLORYS climatological warmest (left) and coldest (right) months in the seasonal cycle for SST (a,c), BWT <400m (b,d). 400m depth contour (gray) shown in (a,d).

GLORYS Climate

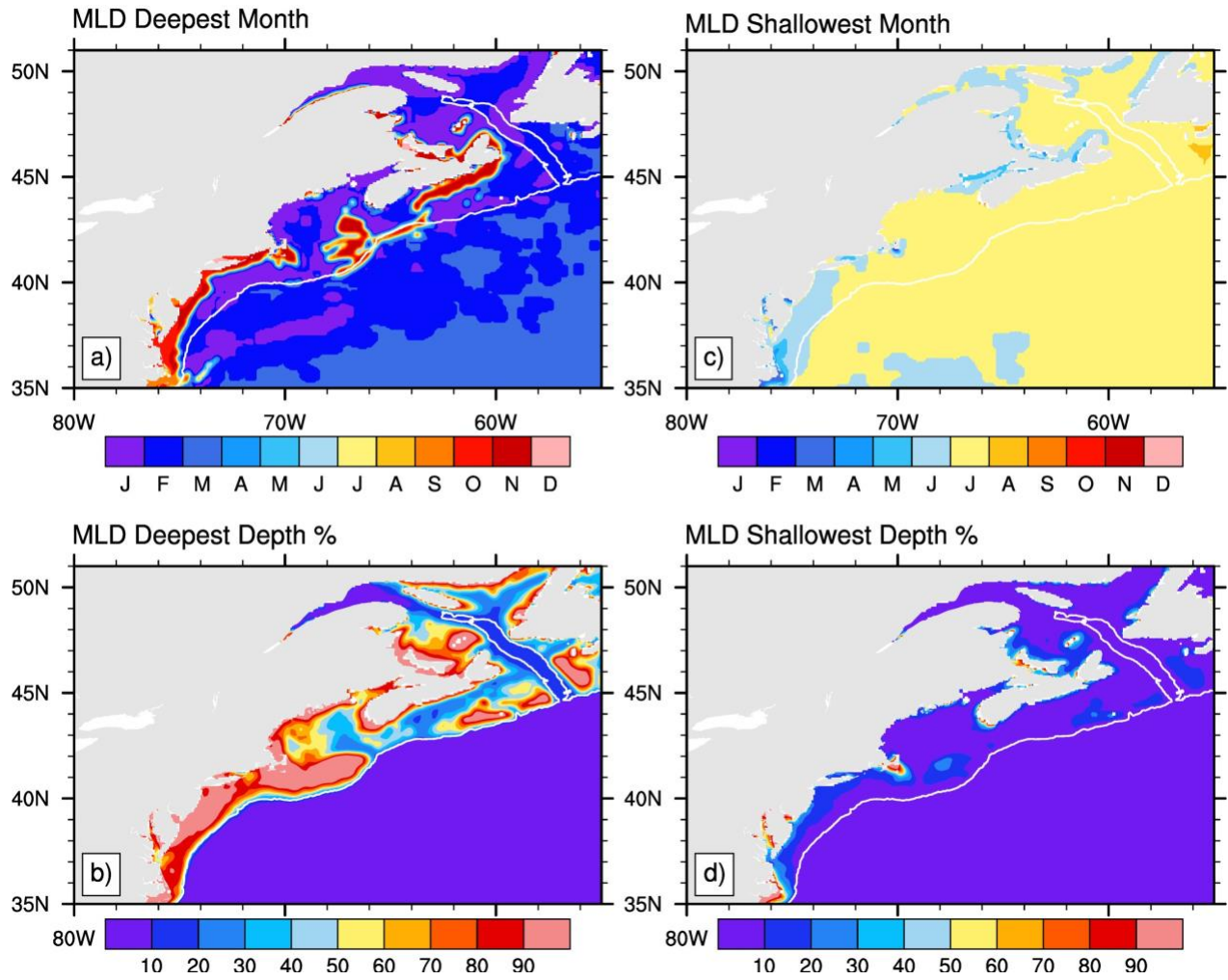


Fig. S6. GLORYS climatological deepest (left) and shallowest (right) months in the seasonal cycle for MLD (a,c) and MLD as a percentage of total column depth (b,d). 400m depth contour (gray) shown in (a,b,c,d).

Surface-Bottom Correlation

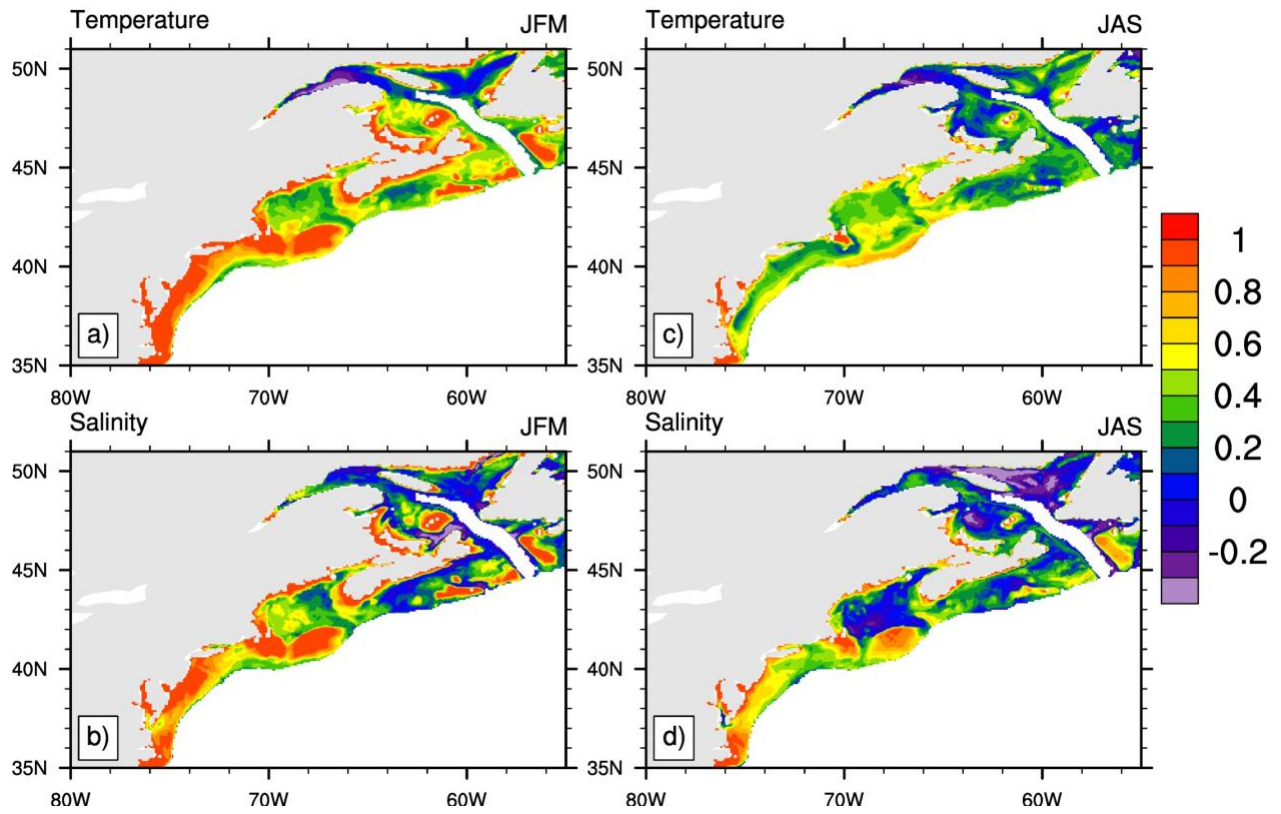


Fig. S7. Correlation of SST and BWT for JFM (a) and JAS (b). Correlation of SSS and BWS (<400m) for JFM (c) and JAS (d).

Surface-Bottom Correlation

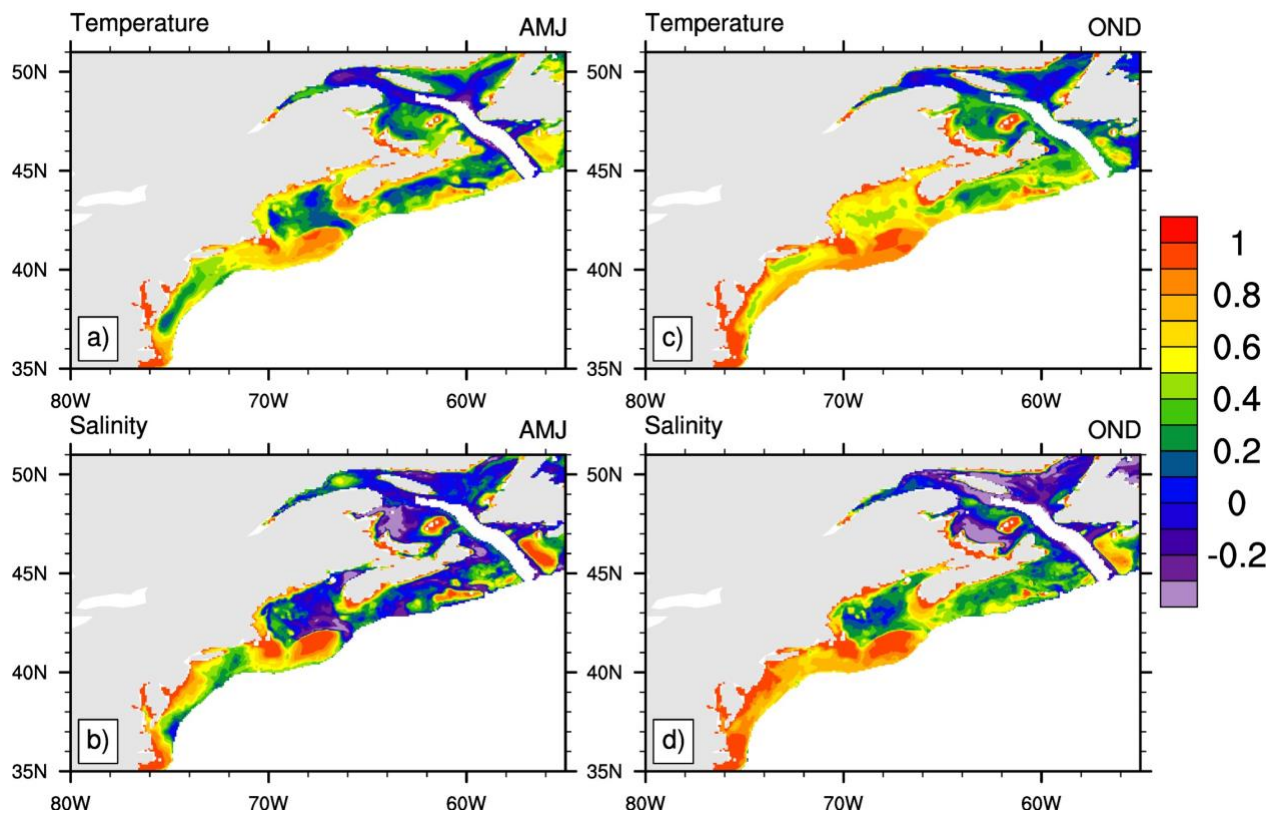


Fig. S8. Correlation of SST and BWT for AMJ (a) and OND (b). Correlation of SSS and BWS (<400m) for AMJ (c) and OND (d).

E-folding Decay Rate (months)

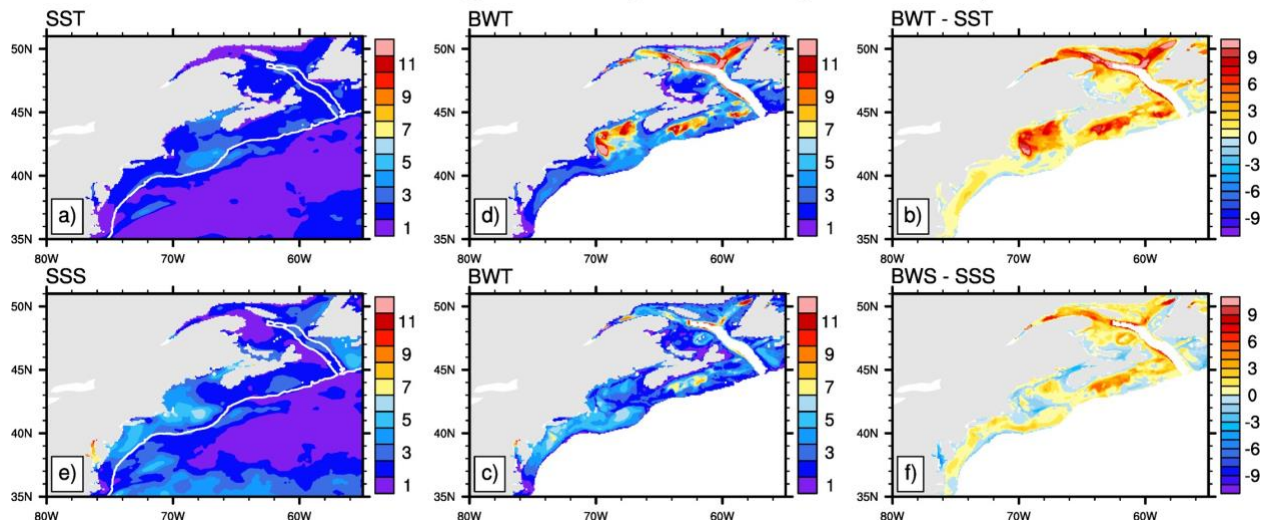


Fig. S9. E-folding decay rate computed from autocorrelation at lags from 1 to 12 months (using the method in Buckley et al (2019), DelSol (2001)) for SST (a) , BWT (b), BWT - SST (c), SSS (d) , BWS (e), BWS - SSS (f).

GLORYS Standard Deviation

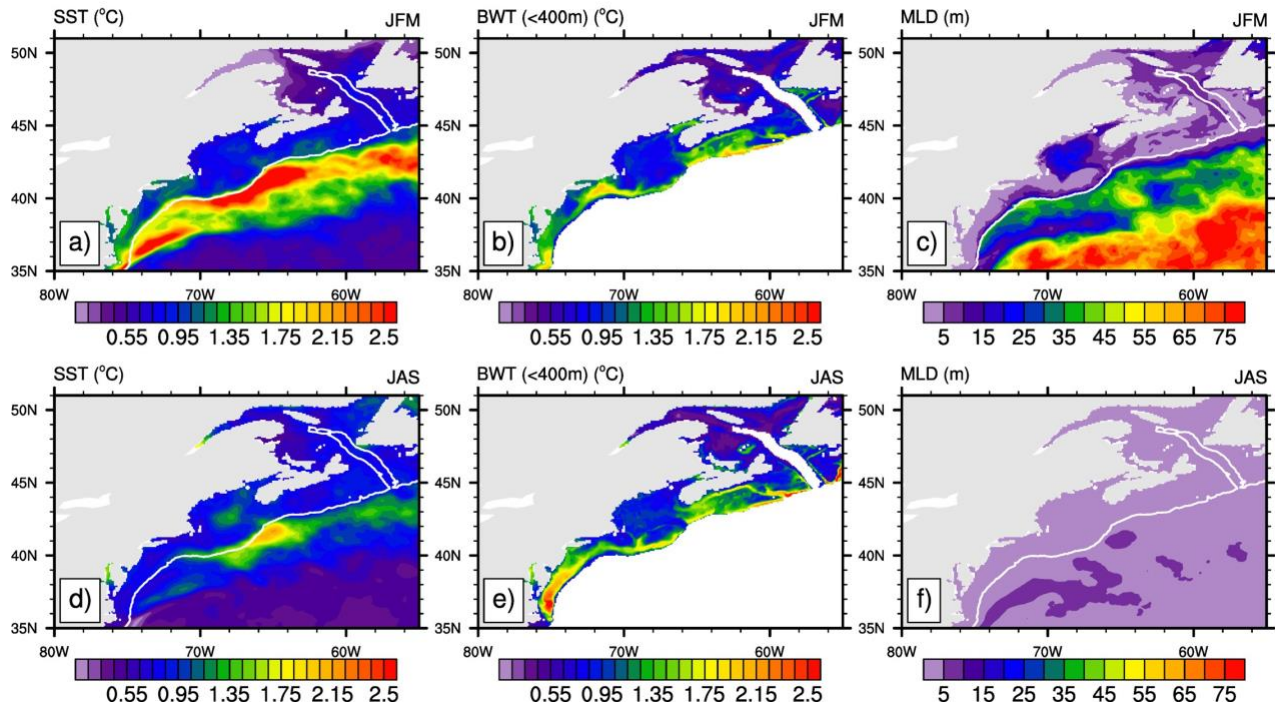


Fig. S10. GLORYS Inter-annual Standard Deviation of SST (a,d), BWT < 400m (b,e), MLD (c,f) for JFM (top) and JAS (bottom). 400m depth contour (gray) shown in (a,c,d,f).

GLORYS Standard Deviation

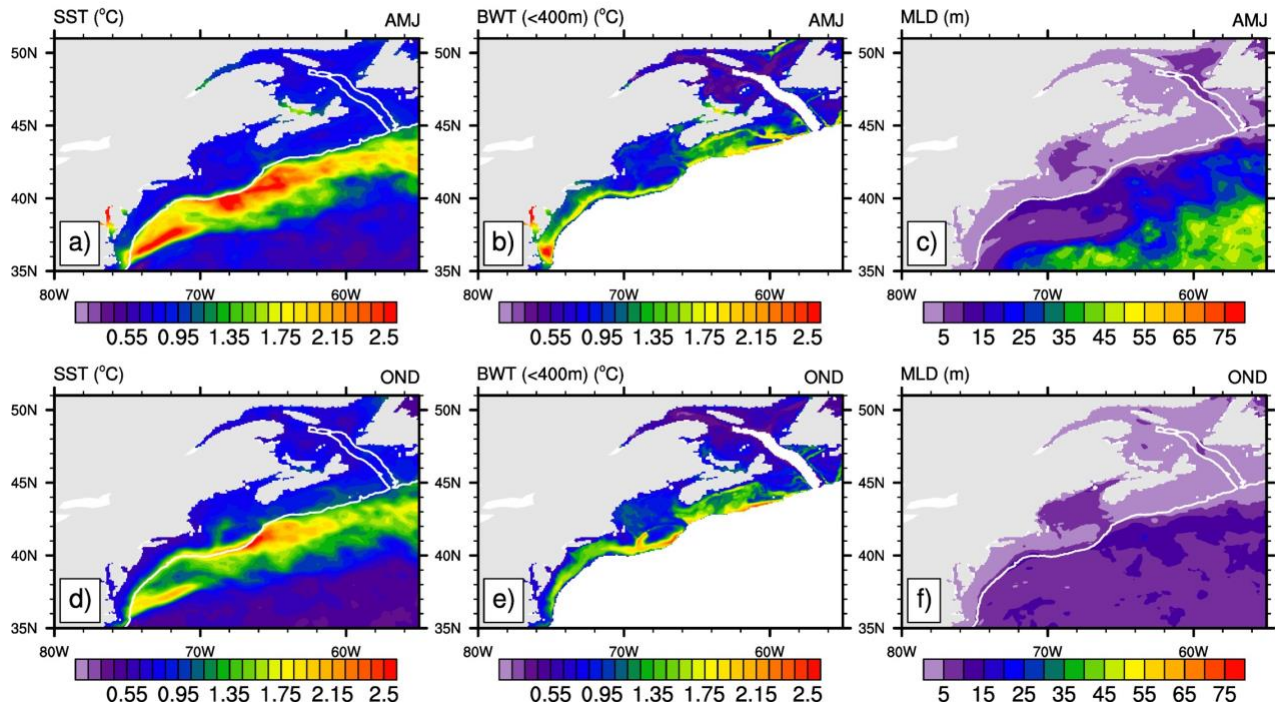


Fig. S11. GLORYS Inter-annual Standard Deviation of SST (a,d), BWT < 400m (b,e), MLD (c,f) for AMJ (top) and OND (bottom). 400m depth contour (gray) shown in (a,c,d,f).

GLORYS Standard Deviation

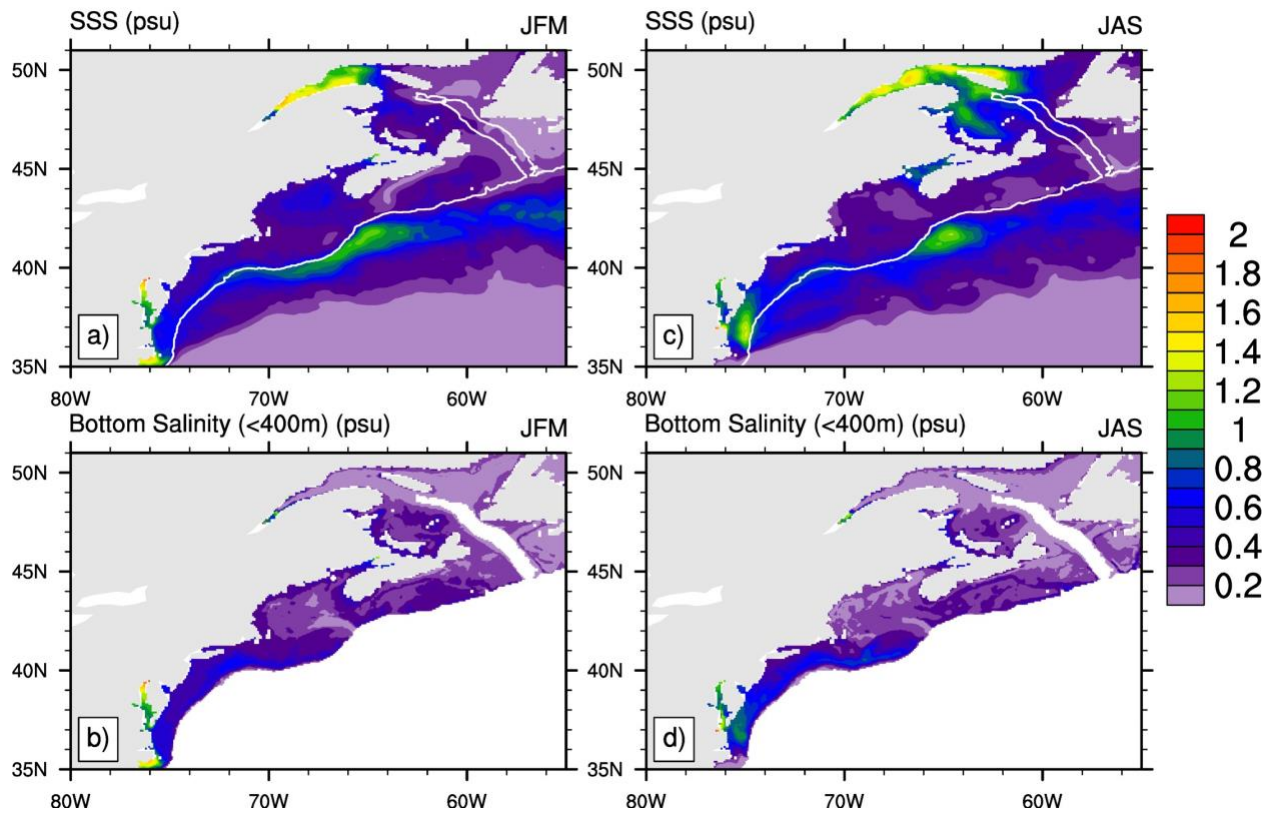


Fig. S12. GLORYS Inter-annual Standard Deviation of SSS (a,c), BWS < 400m (b,d) for JFM (left) and JAS (right). 400m depth contour (gray) shown in (a,c).

GLORYS Standard Deviation

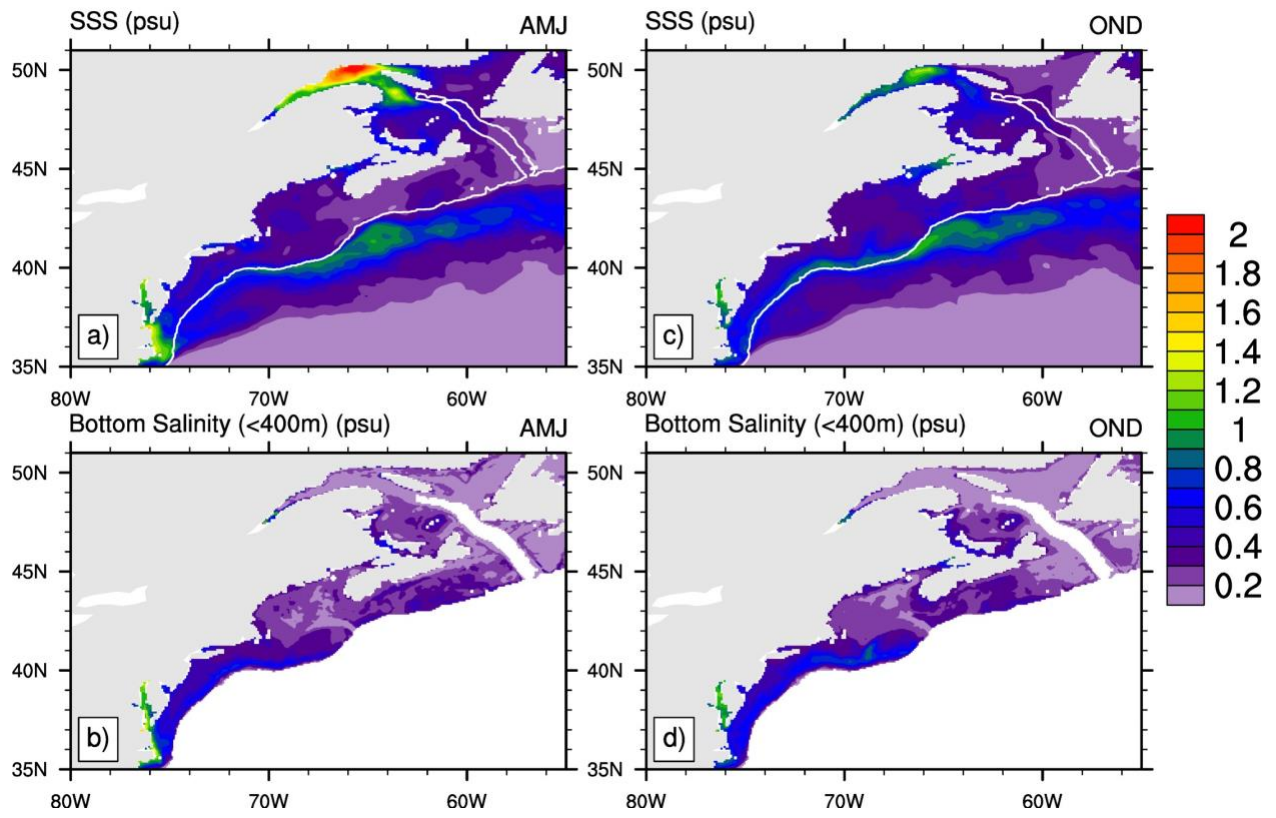


Fig. S13. GLORYS Inter-annual Standard Deviation of SSS (a,c), BWS < 400m (b,d) for AMJ (left) and OND (right). 400m depth contour (gray) shown in (a,c).

Temperature Trends ($^{\circ}\text{C decade}^{-1}$)

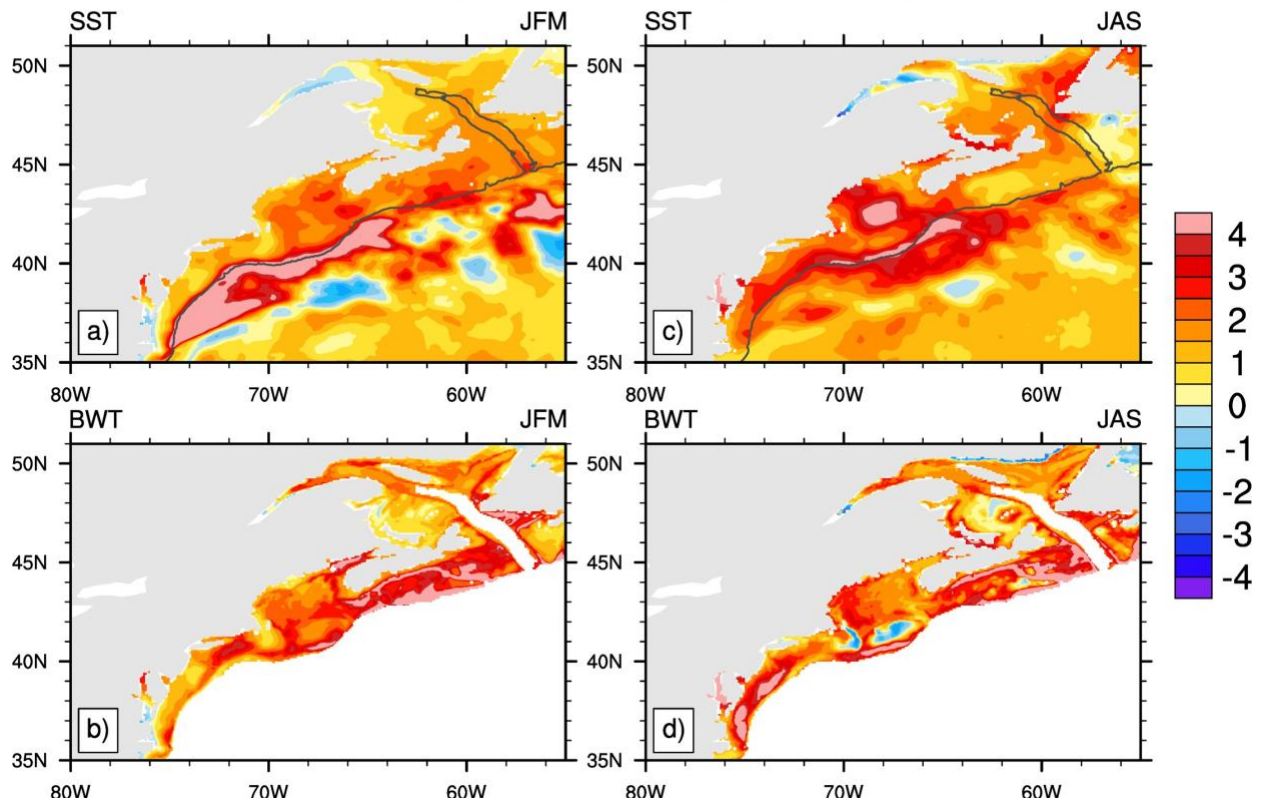


Fig. S14. Linear Trends (1993-2019) in SST (a,c), and BWT <400m (b,d) for JFM (left) and JAS (right). 400m depth contour (gray) shown in (a,c).

Temperature Trends ($^{\circ}\text{C decade}^{-1}$)

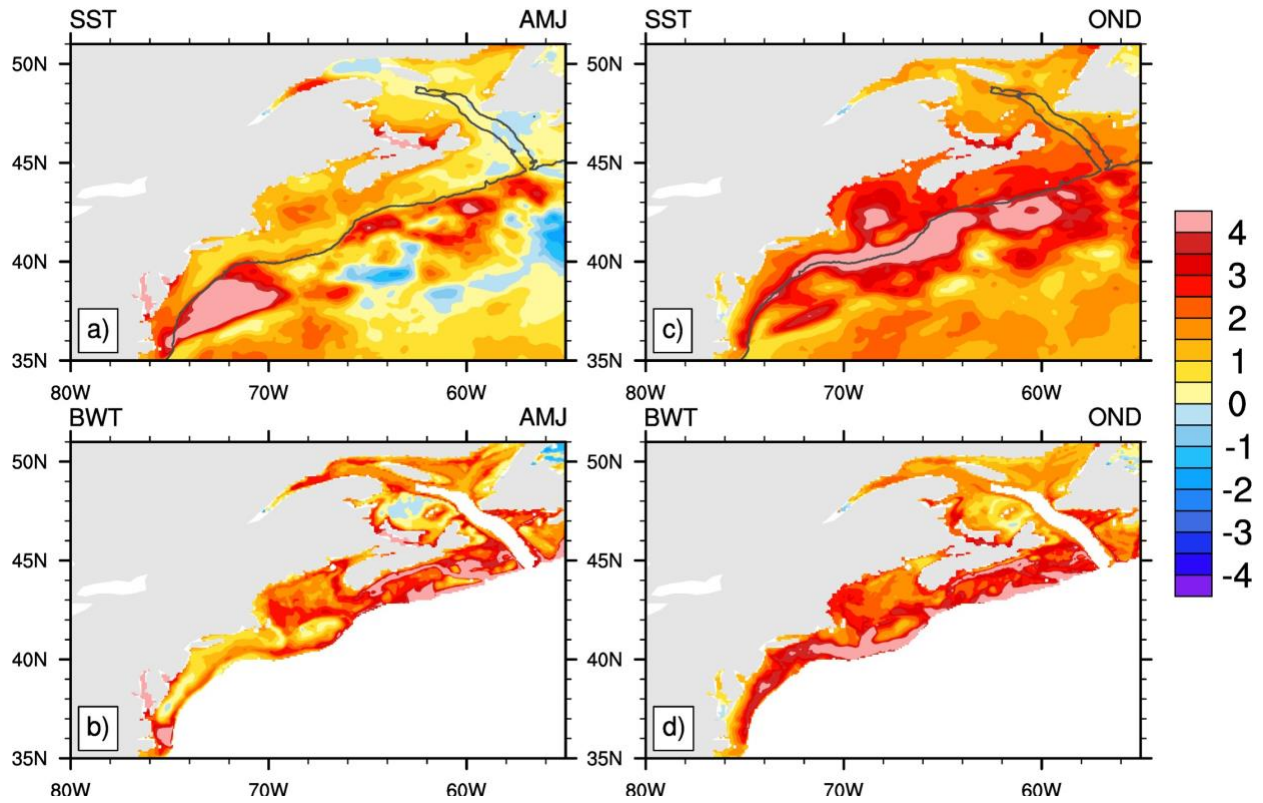


Fig. S15. Linear Trends (1993-2019) in SST (a,c), and BWT <400m (b,d) for AMJ (left) and OND (right). 400m depth contour (gray) shown in (a,c).

Salinity Trends (PSU decade⁻¹)

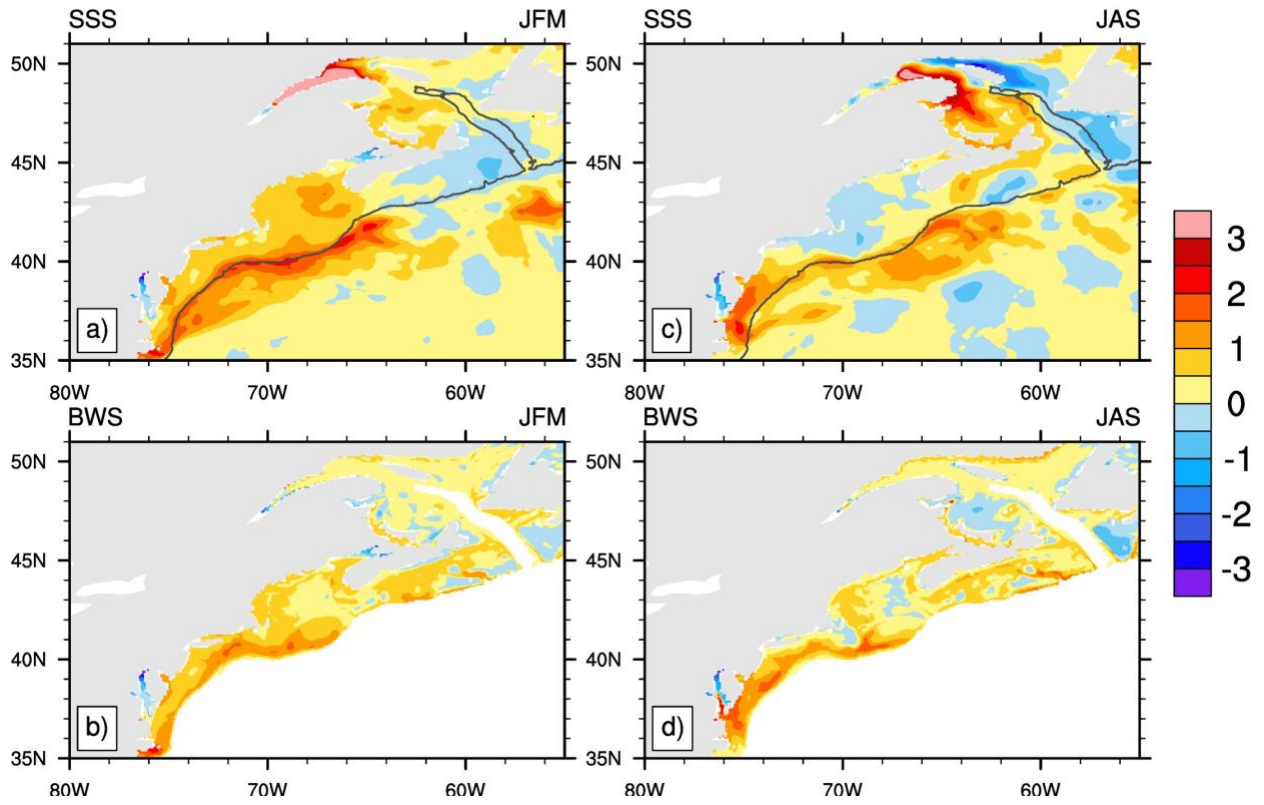


Fig. S16. Linear Trends (1993-2019) in SSS (a,c), and BWS<400m (b,d) for JFM (left) and JAS (right). 400m depth contour (gray) shown in (a,c).

Salinity Trends (PSU decade⁻¹)

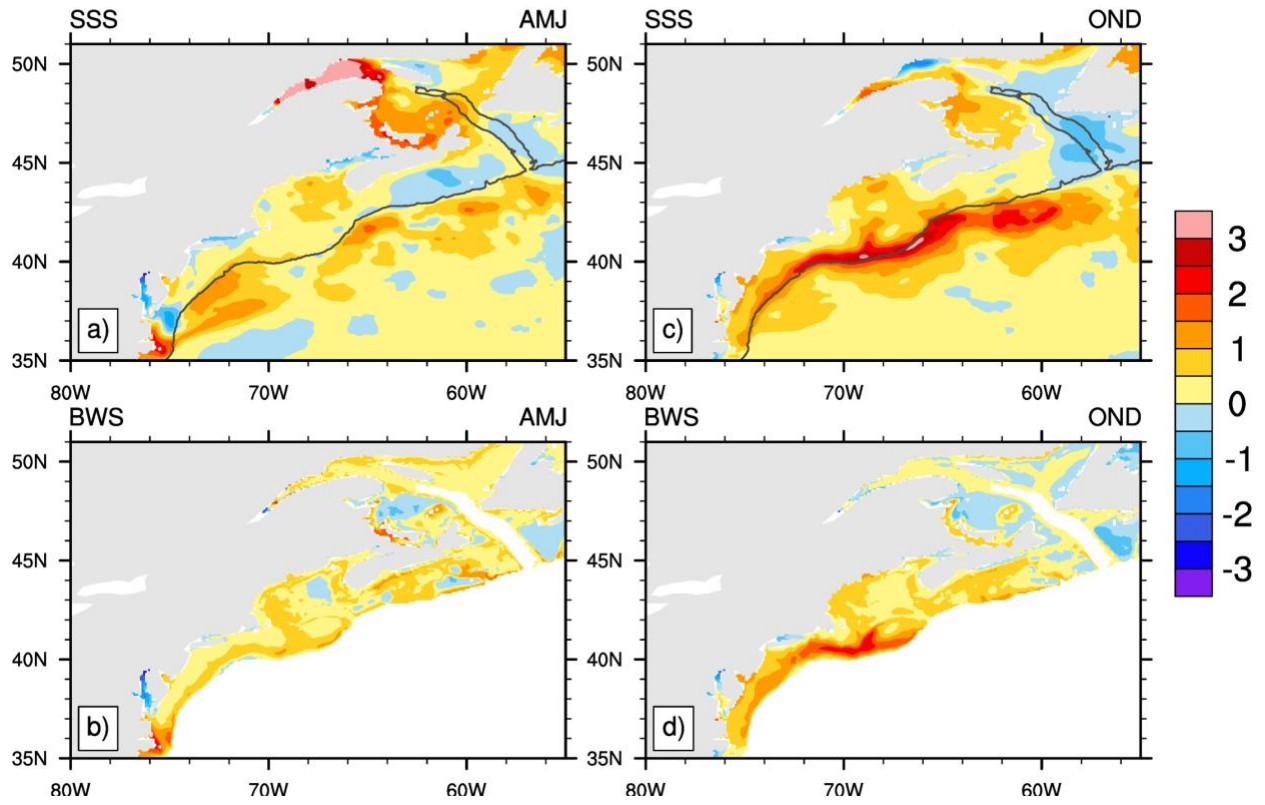


Fig. S17. Linear Trends (1993-2019) in SSS (a,c), and BWS<400m (b,d) for AMJ (left) and OND (right). 400m depth contour (gray) shown in (a,c).

GLORYS Climate

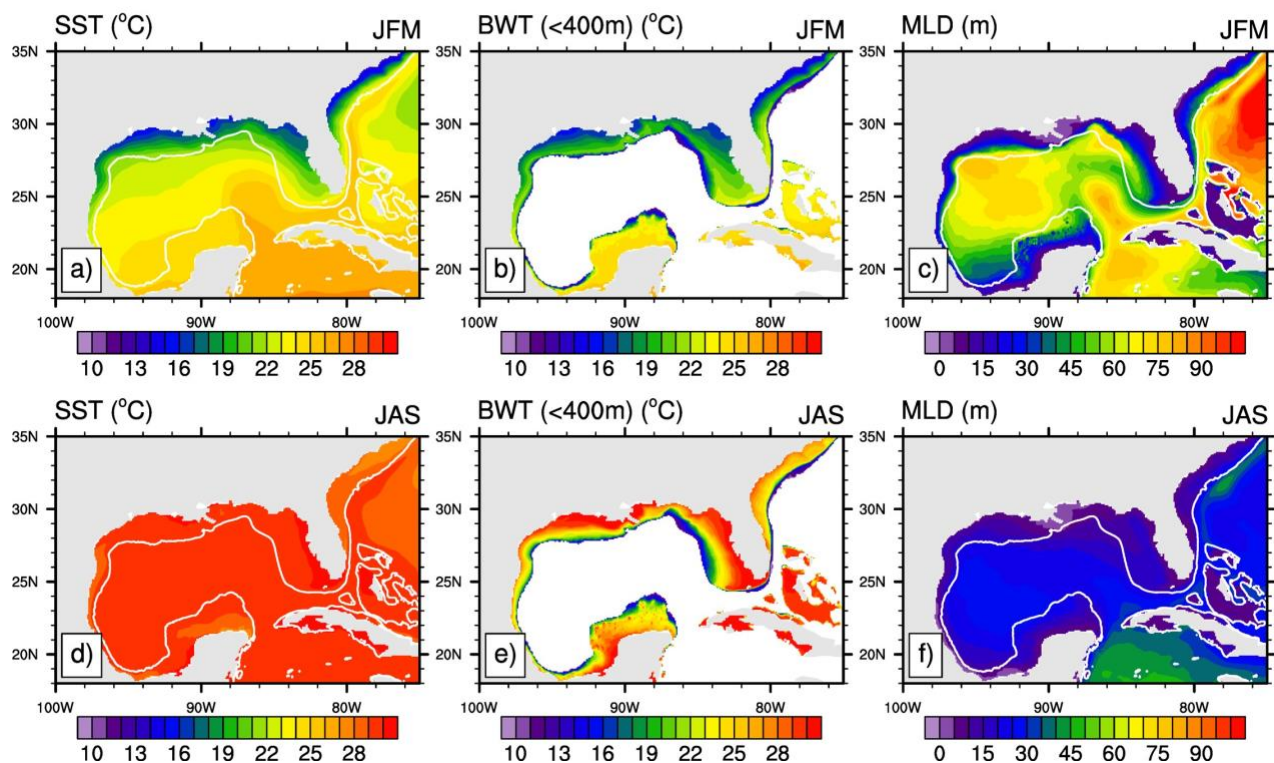


Fig. S18. GLORYS seasonal mean climate SST (a,d), BWT $< 400\text{m}$ (b,e), MLD (c,f) for JFM (top) and JAS (bottom). 400m depth contour (gray) shown in (a,c,d,f).

GLORYS Climate

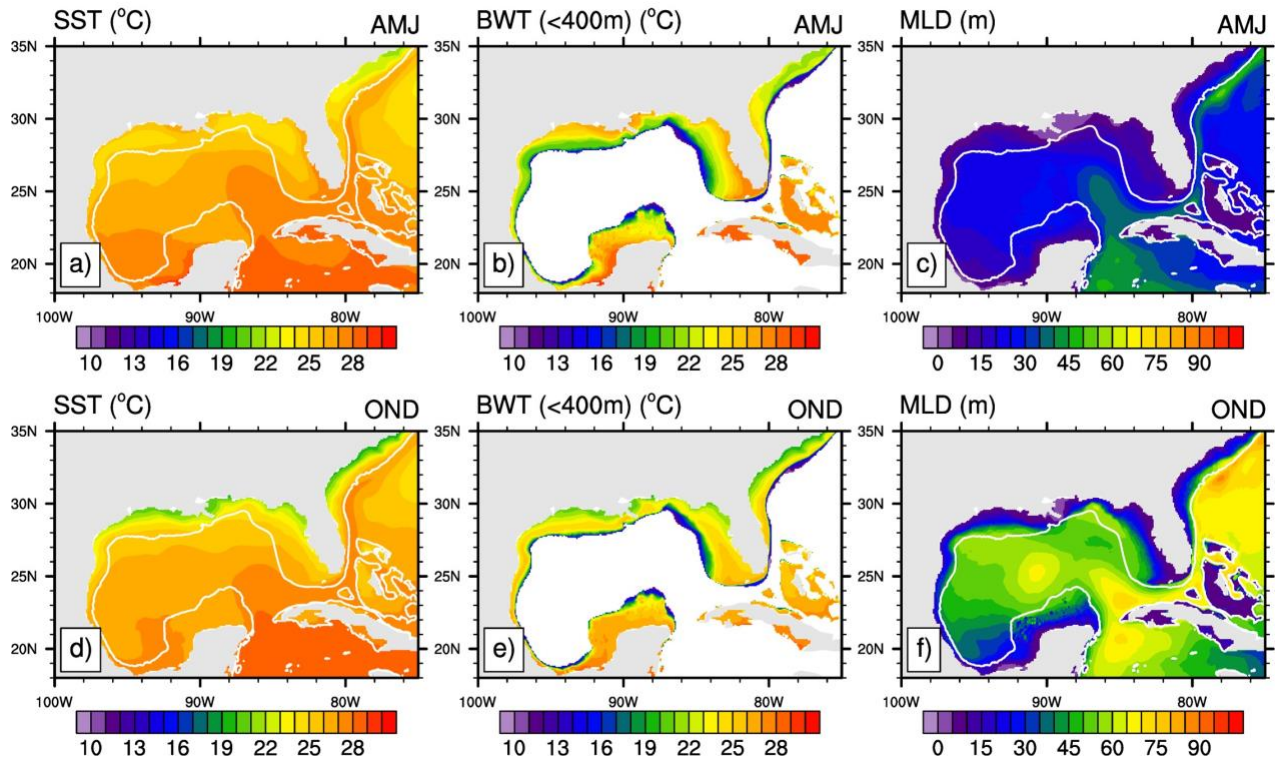


Fig. S19. GLORYS seasonal mean climate SST (a,d), BWT < 400m (b,e), MLD (c,f) for AMJ (top) and OND (bottom). 400m depth contour (gray) shown in (a,c,d,f).

GLORYS Climate

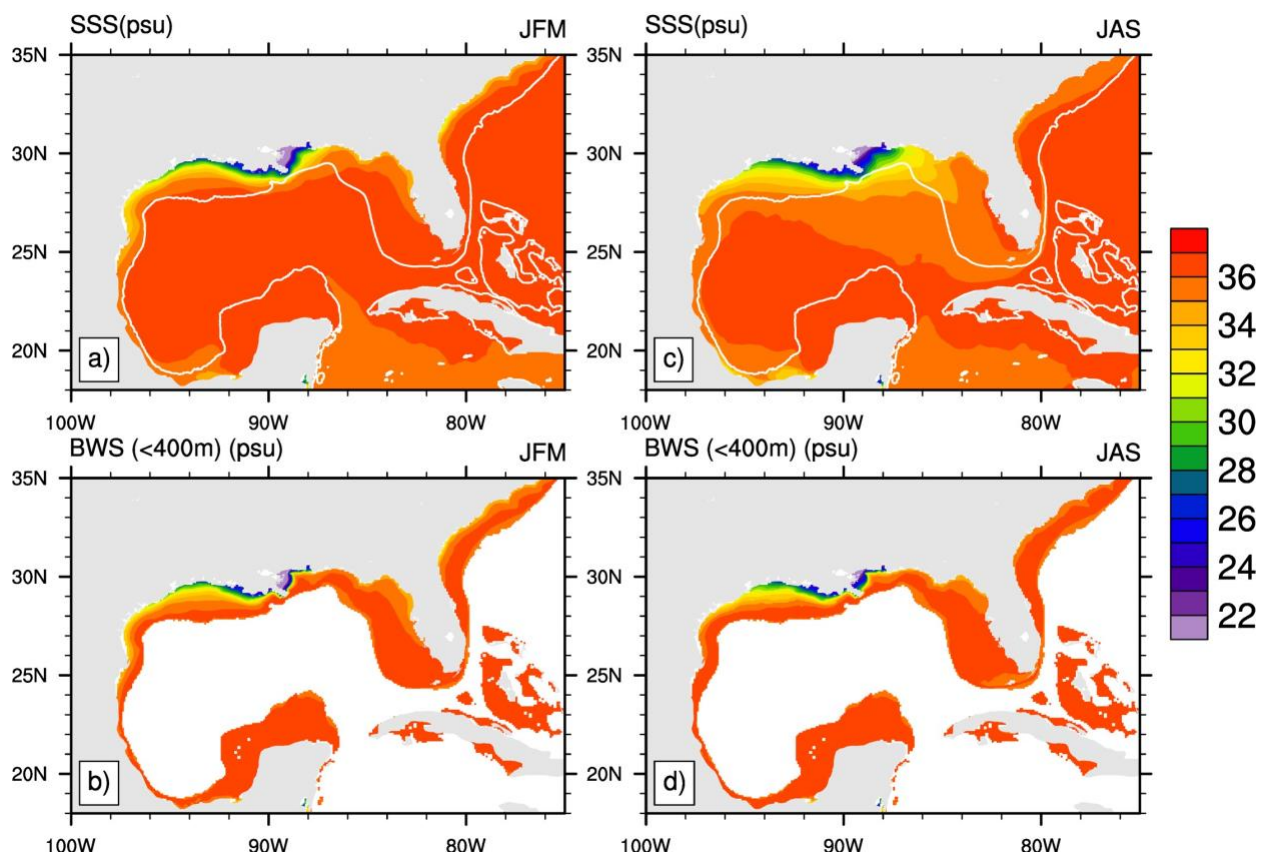


Fig. S20. GLORYS seasonal mean climate SSS (a,c), BWS < 400m (b,d) for JFM (left) and JAS (right). 400m depth contour (gray) shown in (a,c).

GLORYS Climate

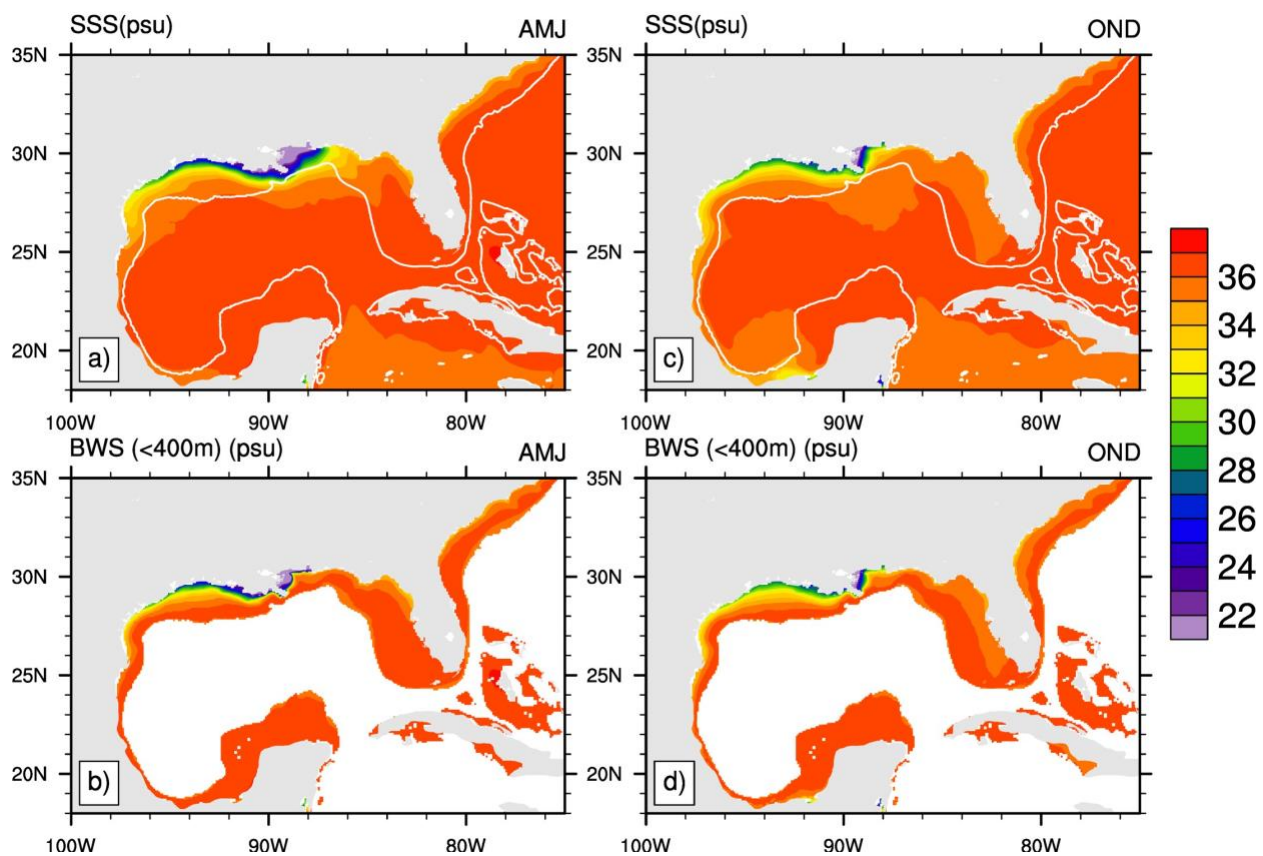


Fig. S21. GLORYS seasonal mean climate SSS (a,c), BWS < 400m (b,d) for AMJ (left) and OND (right). 400m depth contour (gray) shown in (a,c).

GLORYS Climate

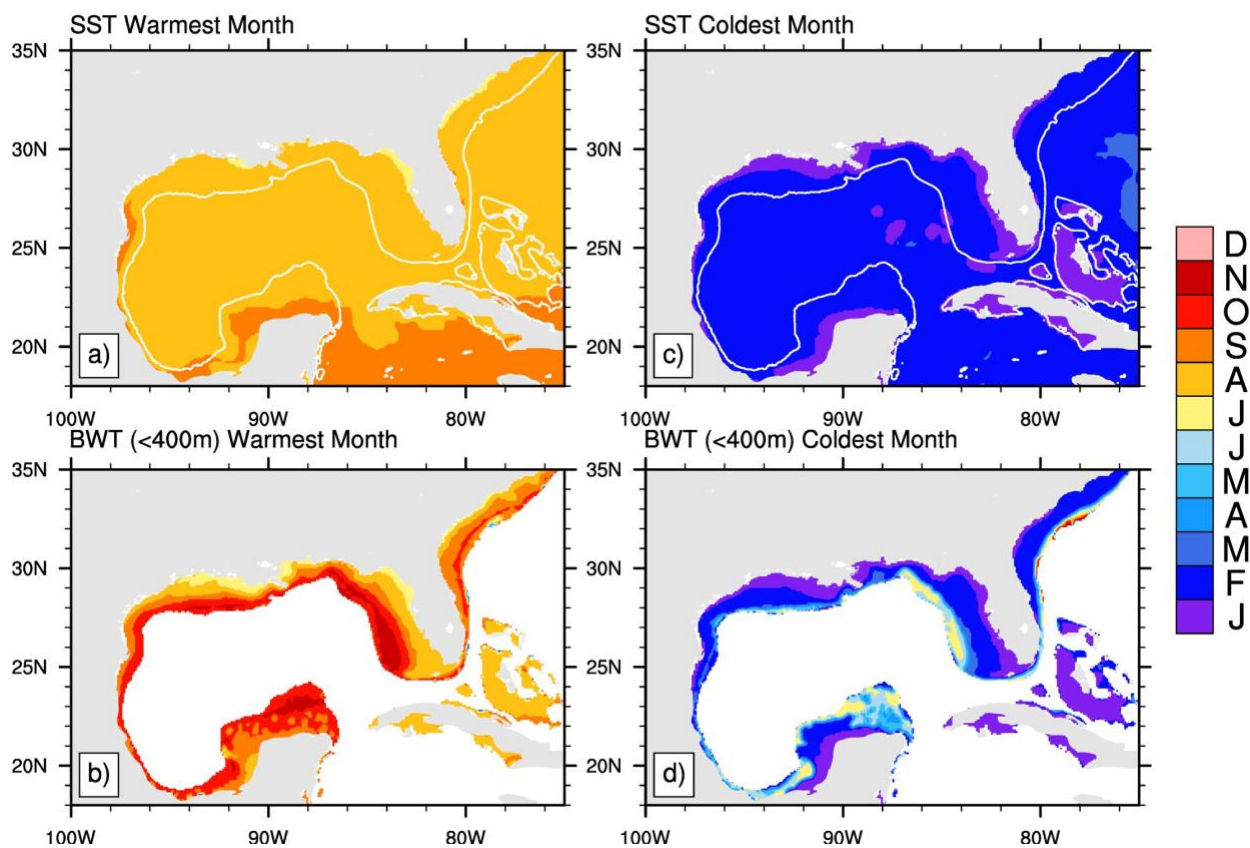


Fig. S22. GLORYS climatological warmest (left) and coldest (right) months in the seasonal cycle for SST (a,c), BWT <400m (b,d). 400m depth contour (gray) shown in (a,d).

GLORYS Climate

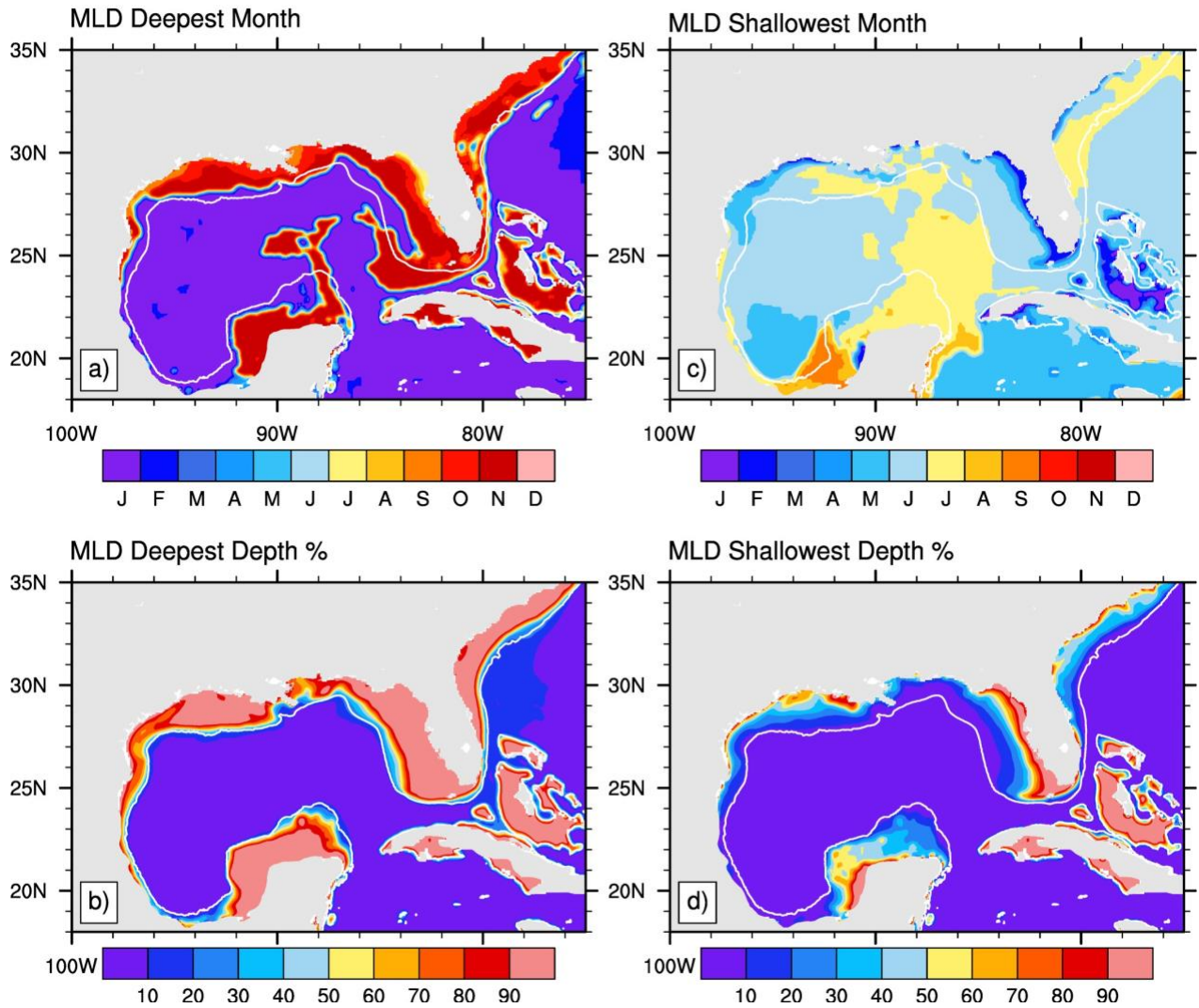


Fig. S23. GLORYS climatological deepest (left) and shallowest (right) months in the seasonal cycle for MLD (a,c) and MLD as a percentage of total column depth (b,d). 400m depth contour (gray) shown in (a,b,c,d).

Surface-Bottom Correlation

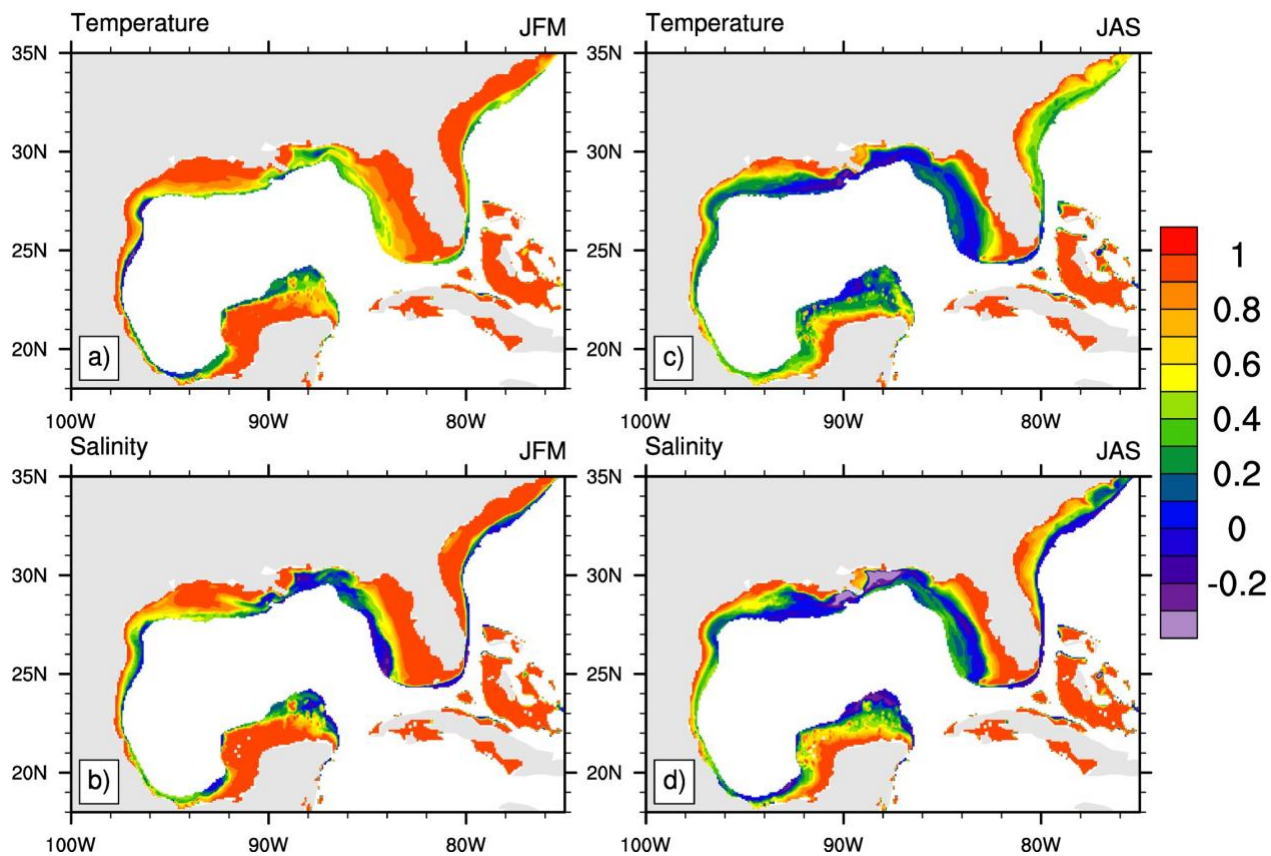


Fig. S24. Correlation of SST and BWT for JFM (a) and JAS (b). Correlation of SSS and BWS (<400m) for JFM (c) and JAS (d).

Surface-Bottom Correlation

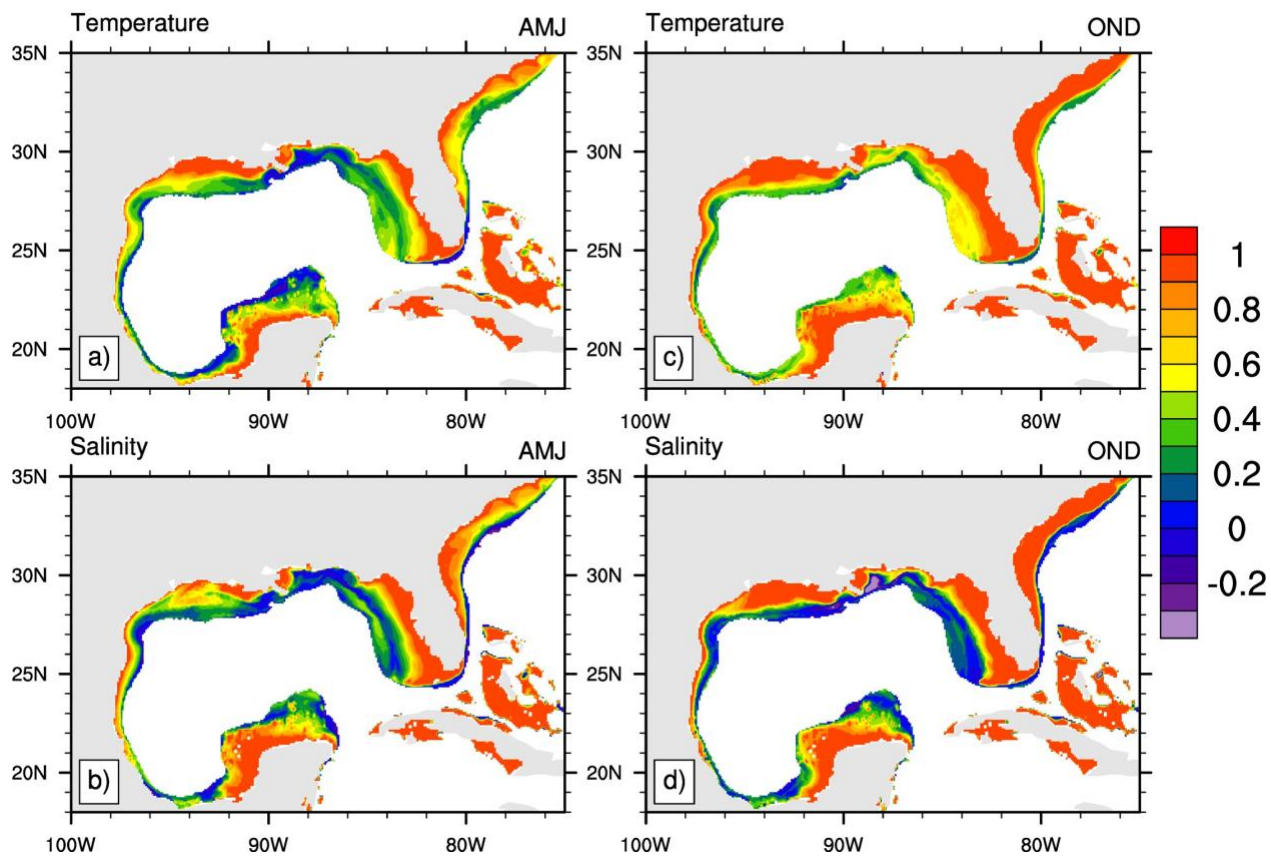


Fig. S25. Correlation of SST and BWT for AMJ (a) and OND (b). Correlation of SSS and BWS (<400m) for AMJ (c) and OND (d).

E-folding Decay Rate (months)

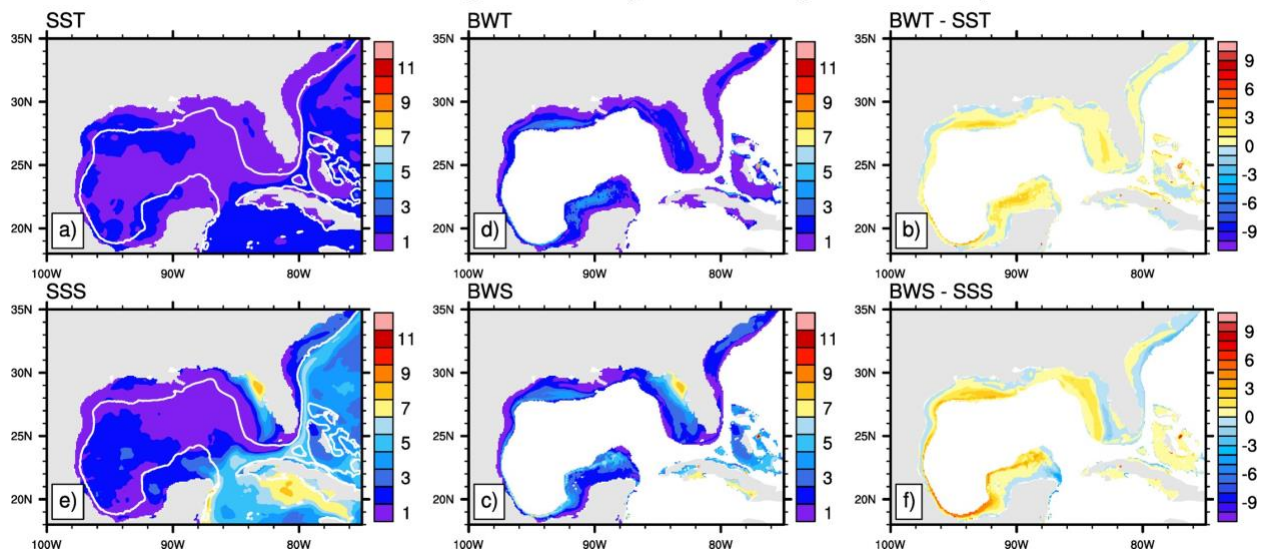


Fig. S26. E-folding decay rate computed from autocorrelation at lags from 1 to 12 months (using the method in Buckley et al (2019), DeSol (2001)) for SST (a) , BWT (b), BWT - SST (c), SSS (d) , BWS (e), BWS - SSS (f).

GLORYS Standard Deviation

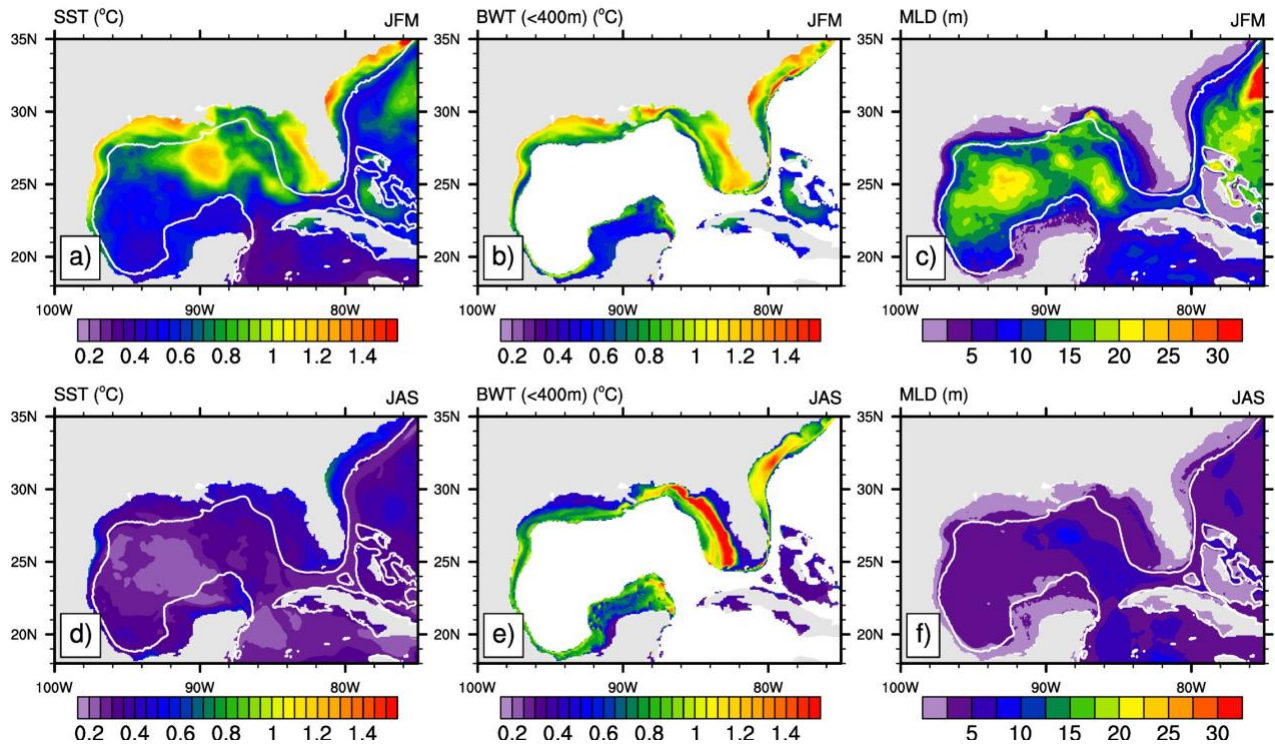


Fig. S27. GLORYS Inter-annual Standard Deviation of SST (a,d), BWT < 400m (b,e), MLD (c,f) for JFM (top) and JAS (bottom). 400m depth contour (gray) shown in (a,c,d,f).

GLORYS Standard Deviation

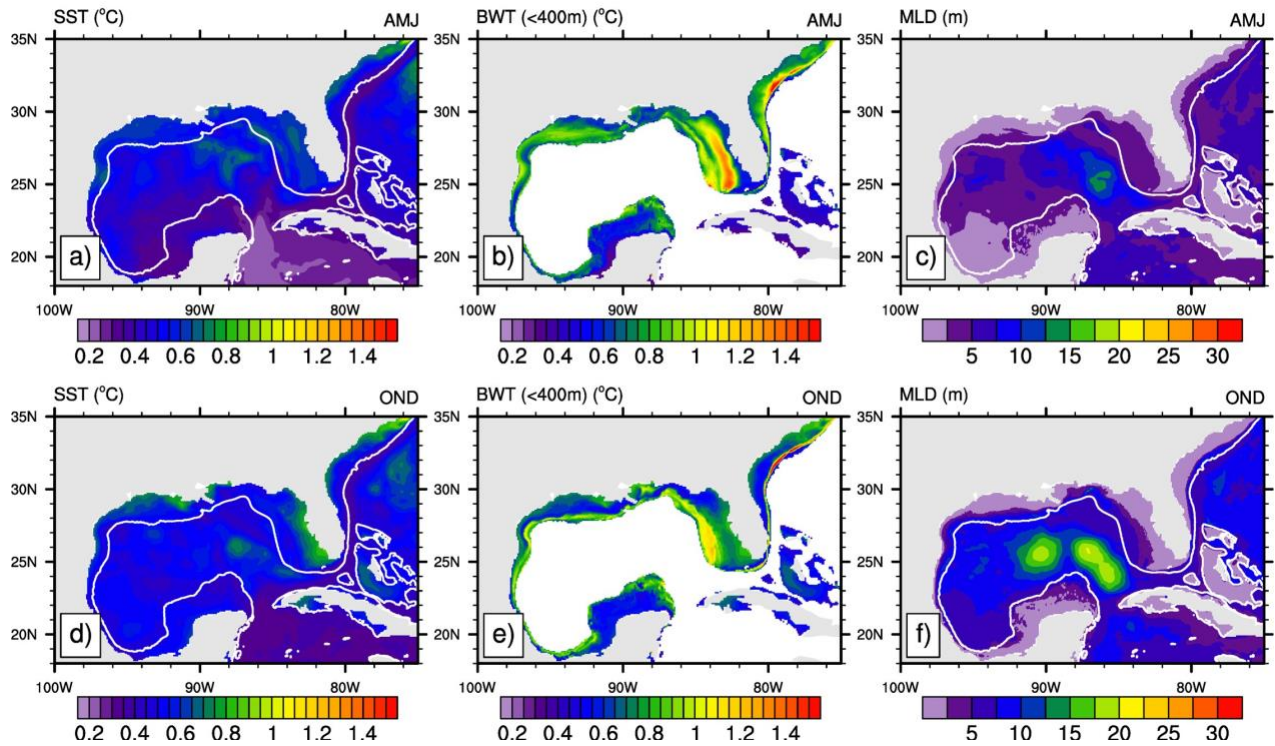


Fig. S28. GLORYS Inter-annual Standard Deviation of SST (a,d), BWT < 400m (b,e), MLD (c,f) for AMJ (top) and OND (bottom). 400m depth contour (gray) shown in (a,c,d,f).

GLORYS Standard Deviation

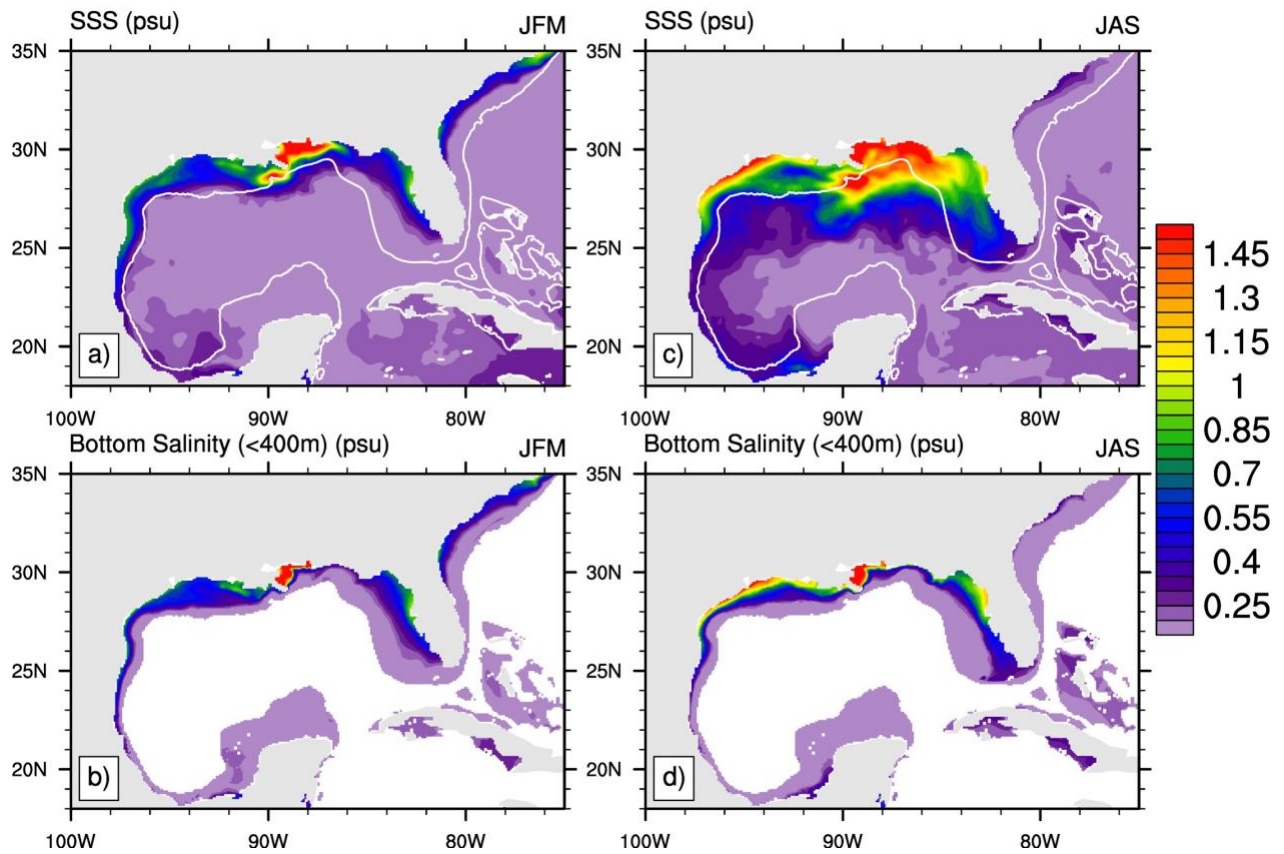


Fig. S29. GLORYS Inter-annual Standard Deviation of SSS (a,c), BWS < 400m (b,d) for JFM (left) and JAS (right). 400m depth contour (gray) shown in (a,c).

GLORYS Standard Deviation

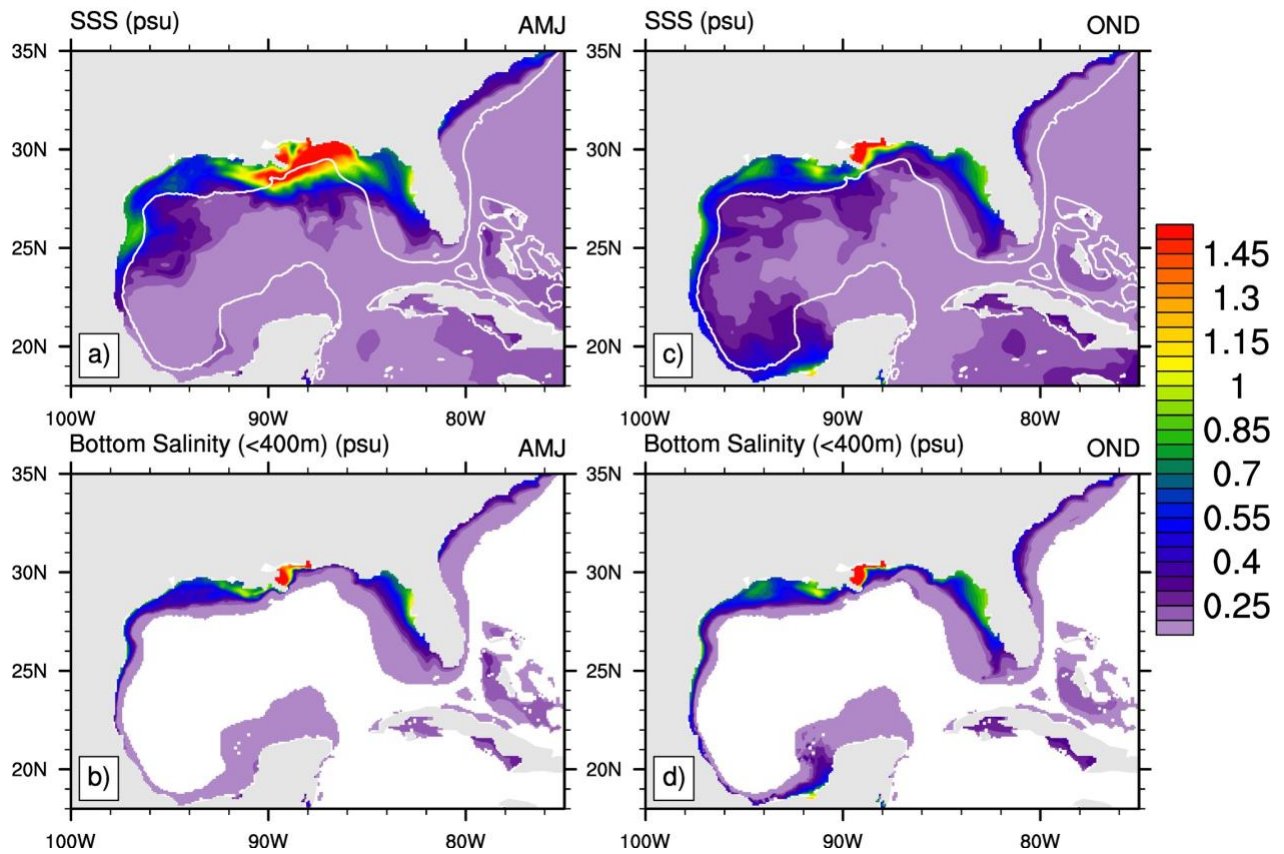


Fig. S30. GLORYS Inter-annual Standard Deviation of SSS (a,c), BWS < 400m (b,d) for AMJ (left) and OND (right). 400m depth contour (gray) shown in (a,c).

Temperature Trends ($^{\circ}\text{C decade}^{-1}$)

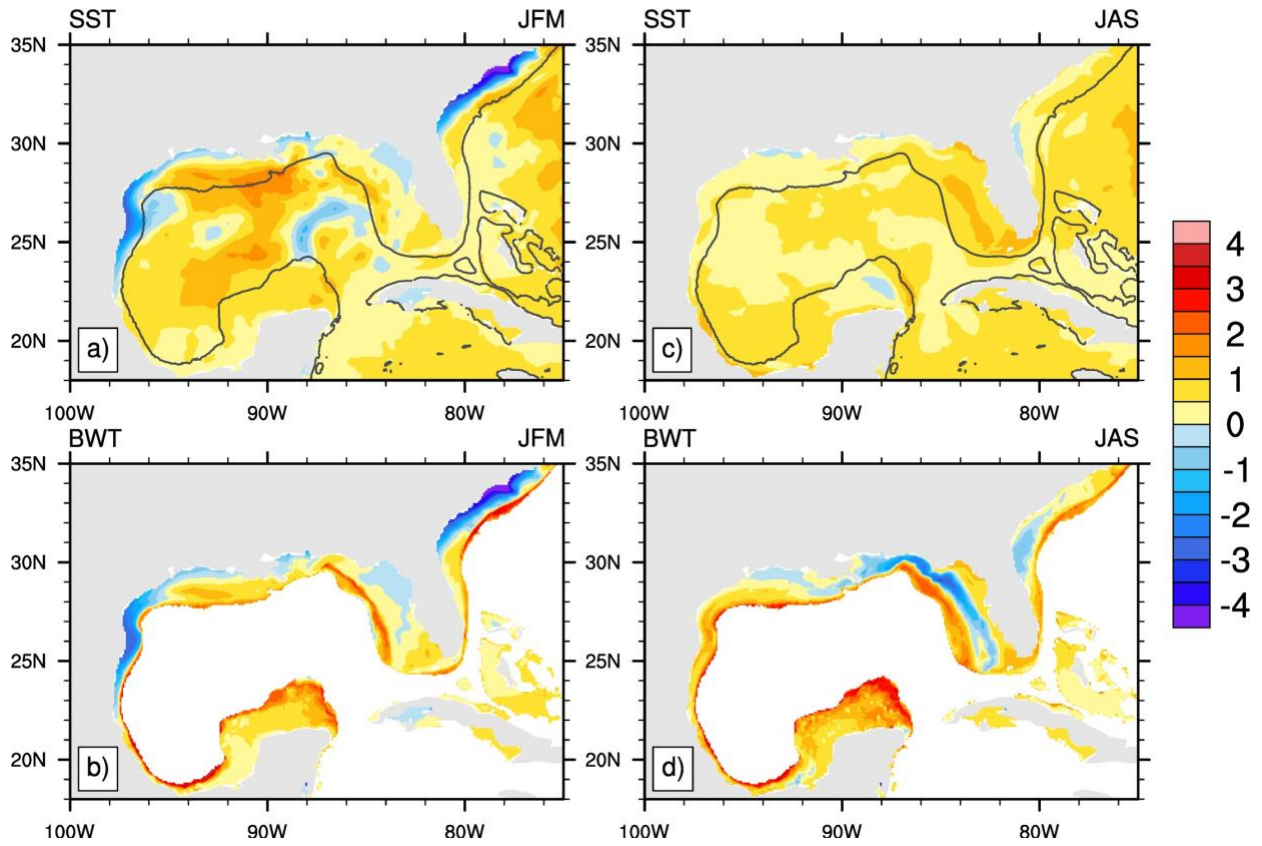


Fig. S31. Linear Trends (1993-2019) in SST (a,c), and BWT <400m (b,d) for JFM (left) and JAS (right). 400m depth contour (gray) shown in (a,c).

Temperature Trends ($^{\circ}\text{C decade}^{-1}$)

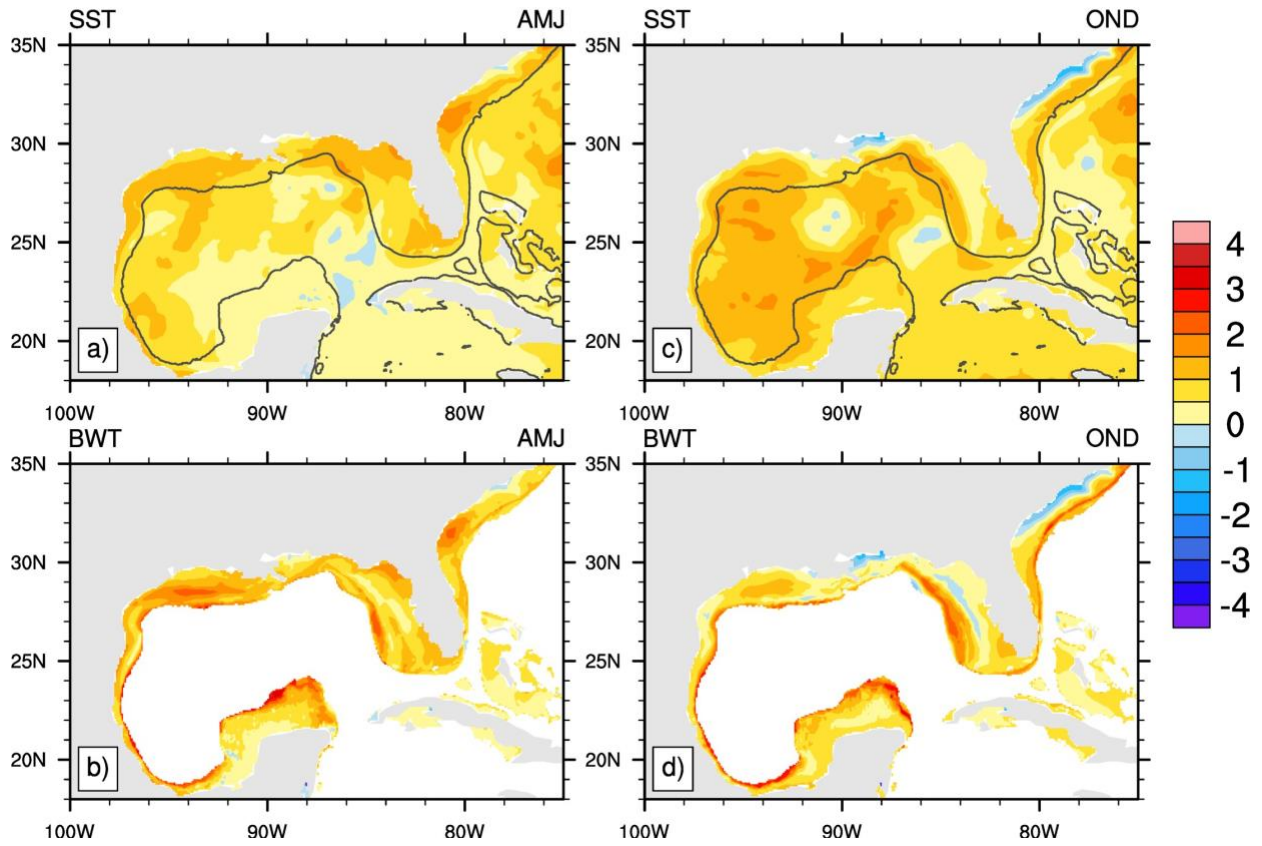


Fig. S32. Linear Trends (1993-2019) in SST (a,c), and BWT <400m (b,d) for AMJ (left) and OND (right). 400m depth contour (gray) shown in (a,c).

Salinity Trends (PSU decade⁻¹)

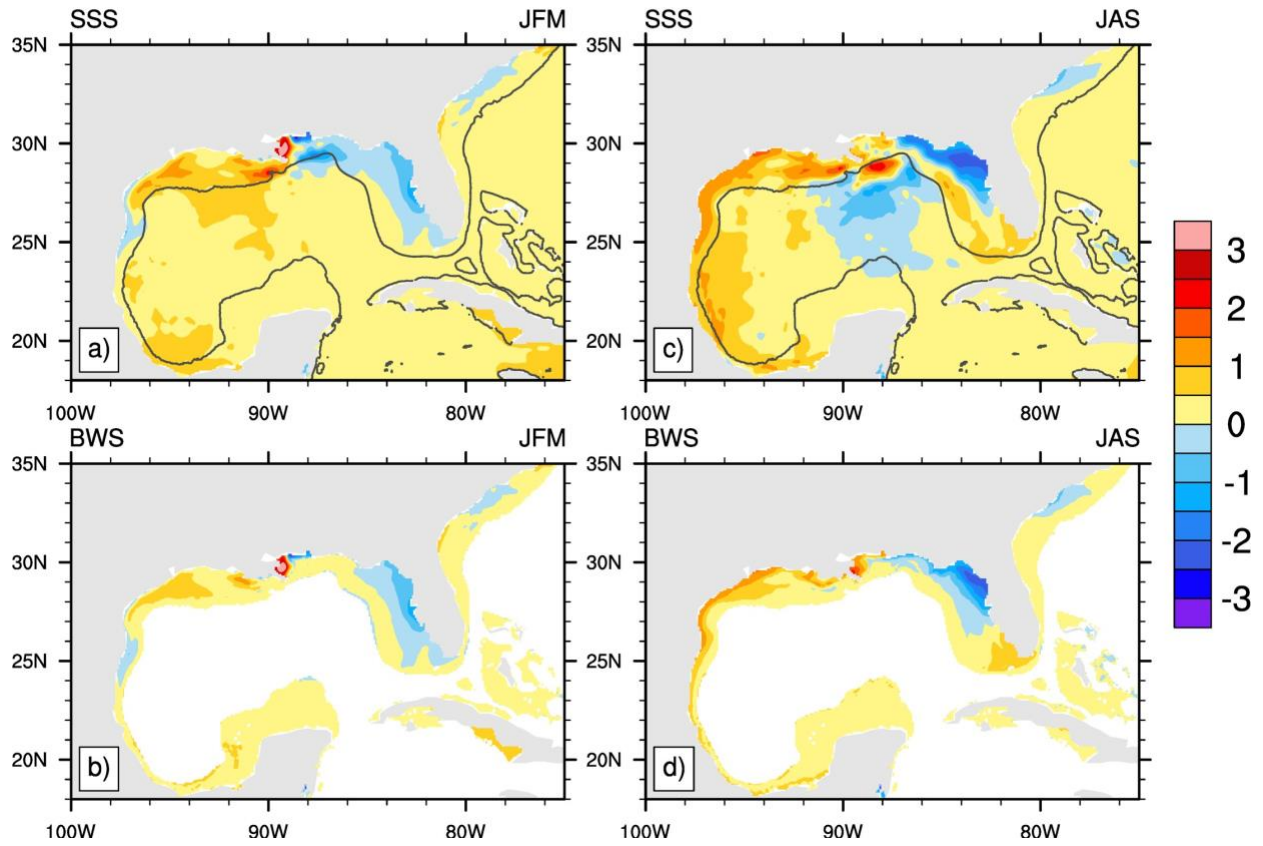


Fig. S33. Linear Trends (1993-2019) in SSS (a,c), and BWS<400m (b,d) for JFM (left) and JAS (right). 400m depth contour (gray) shown in (a,c).

Salinity Trends (PSU decade⁻¹)

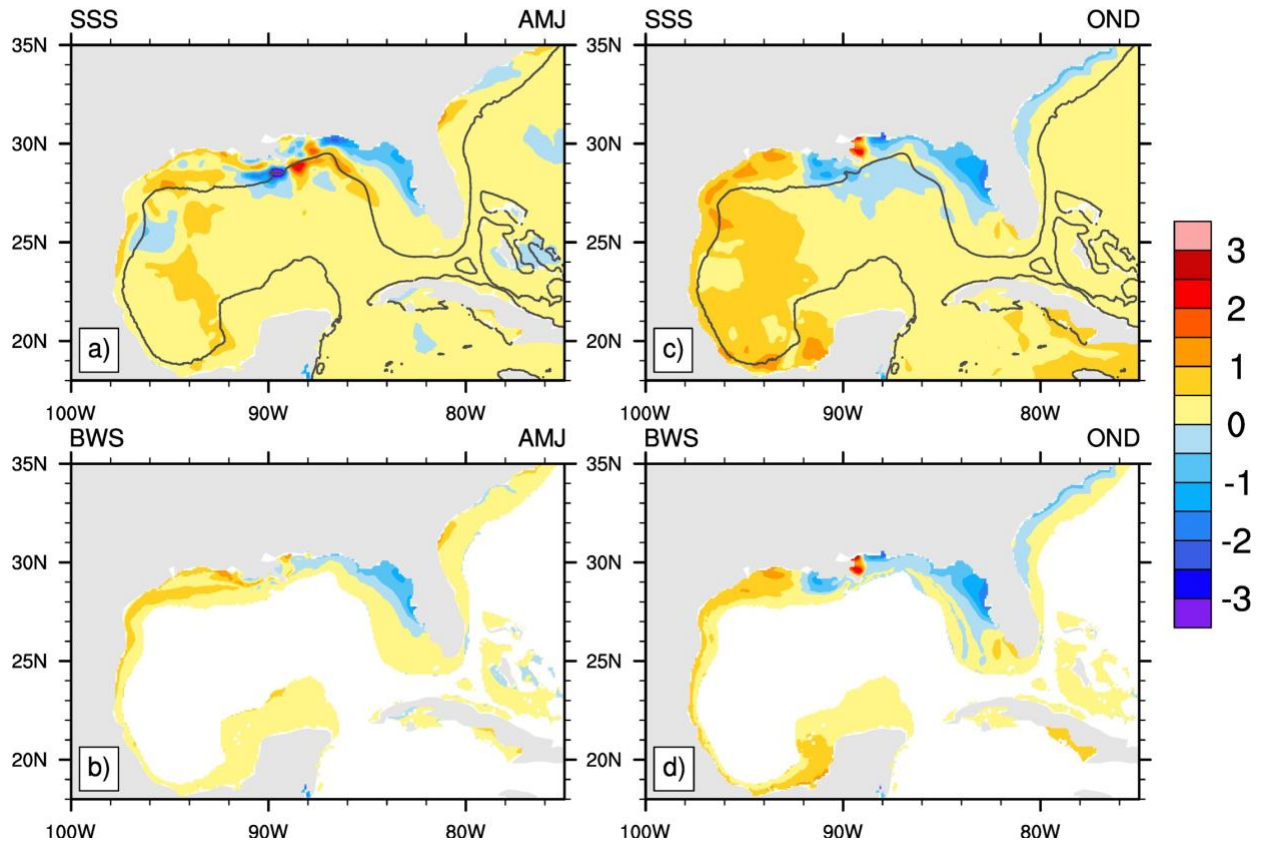


Fig. S34. Linear Trends (1993-2019) in SSS (a,c), and BWS<400m (b,d) for AMJ (left) and OND (right). 400m depth contour (gray) shown in (a,c).

GLORYS Climate

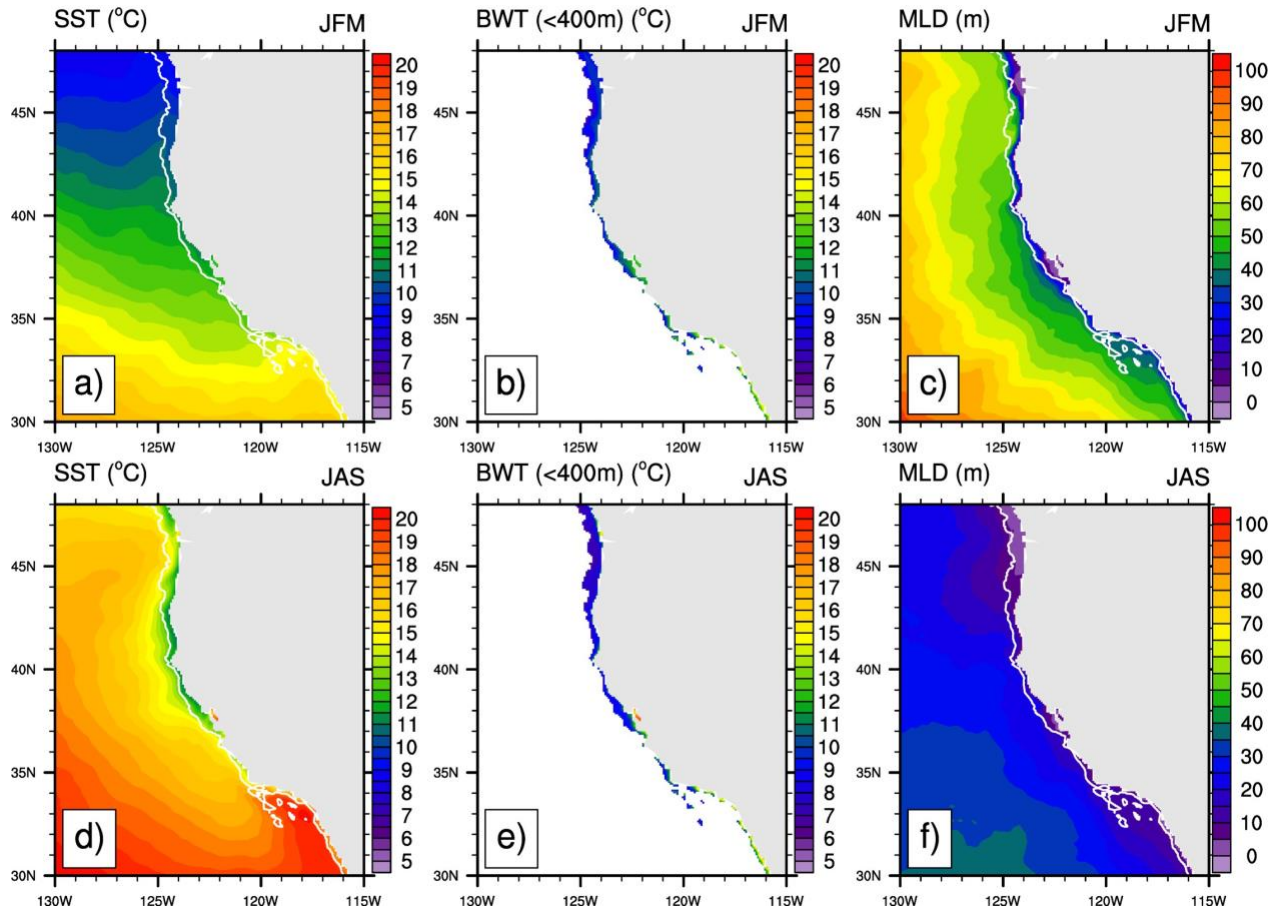


Fig. S35. GLORYS seasonal mean climate SST (a,d), BWT < 400m (b,e), MLD (c,f) for JFM (top) and JAS (bottom). 400m depth contour (gray) shown in (a,c,d,f).

GLORYS Climate

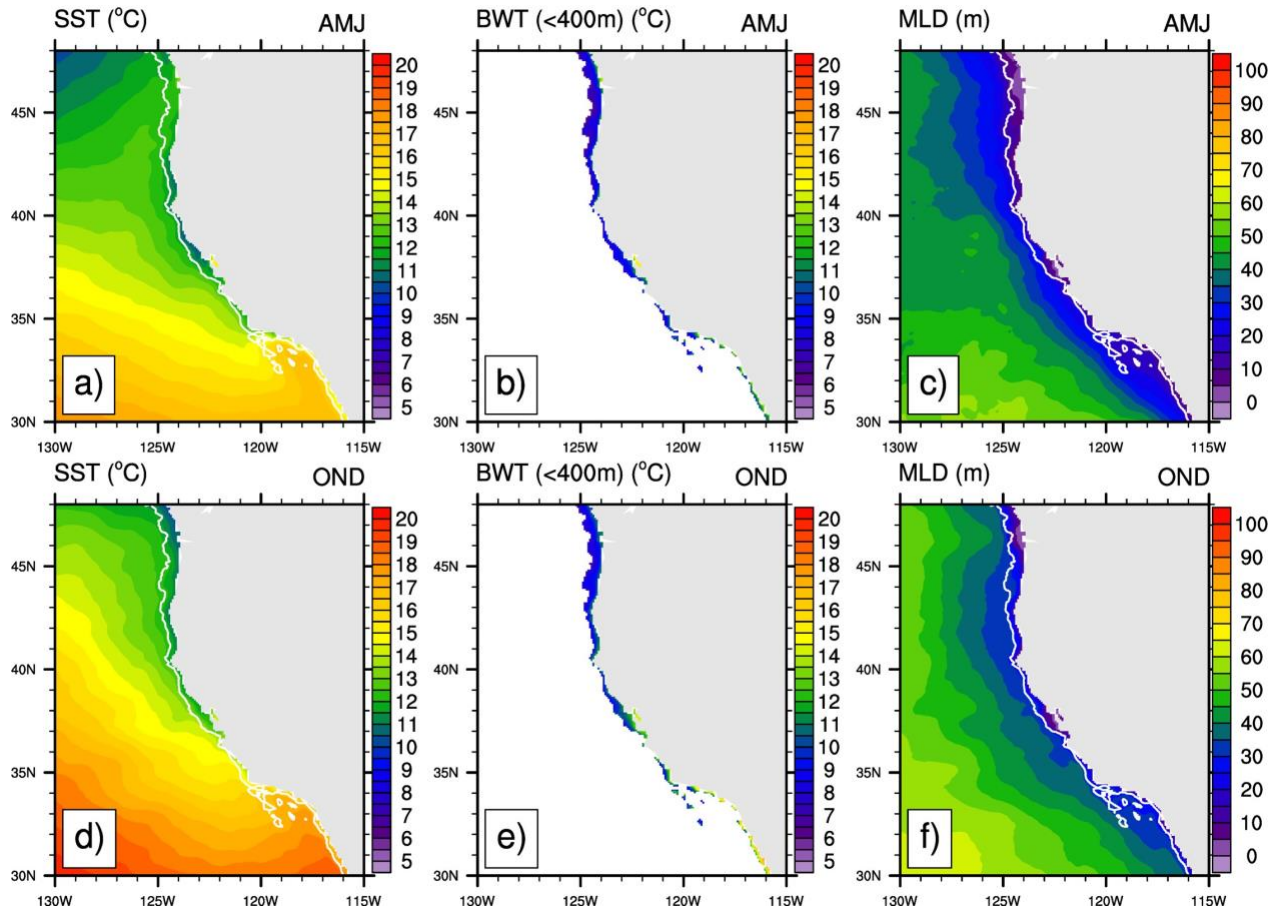


Fig. S36. GLORYS seasonal mean climate SST (a,d), BWT < 400m (b,e), MLD (c,f) for AMJ (top) and OND (bottom). 400m depth contour (gray) shown in (a,c,d,f).

GLORYS Climate

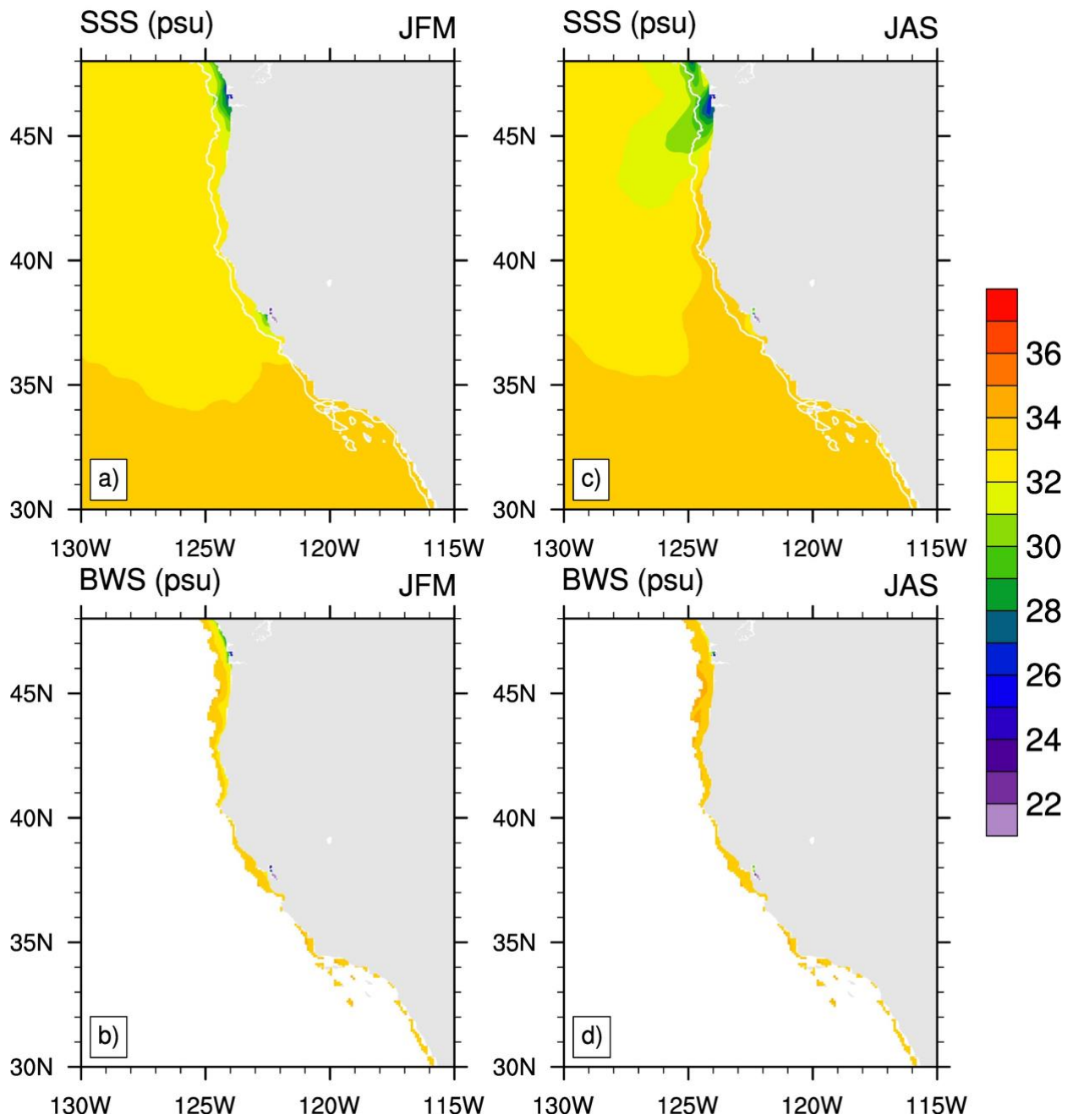


Fig. S37. GLORYS seasonal mean climate SSS (a,c), BWS < 400m (b,d) for JFM (left) and JAS (right). 400m depth contour (gray) shown in (a,c).

GLORYS Climate

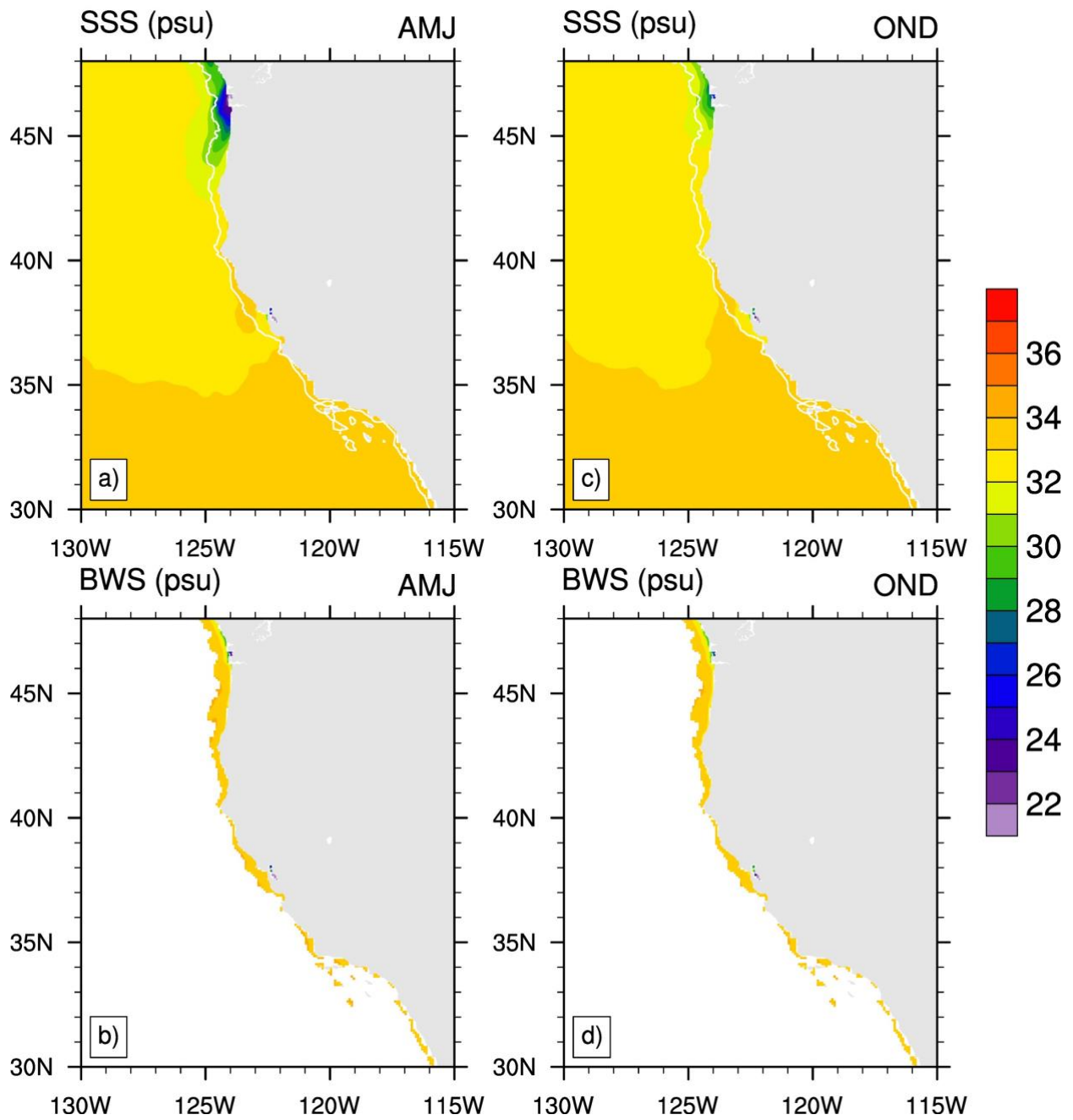


Fig. S38. GLORYS seasonal mean climate SSS (a,c), BWS < 400m (b,d) for AMJ (left) and OND (right). 400m depth contour (gray) shown in (a,c).

GLORYS Climate

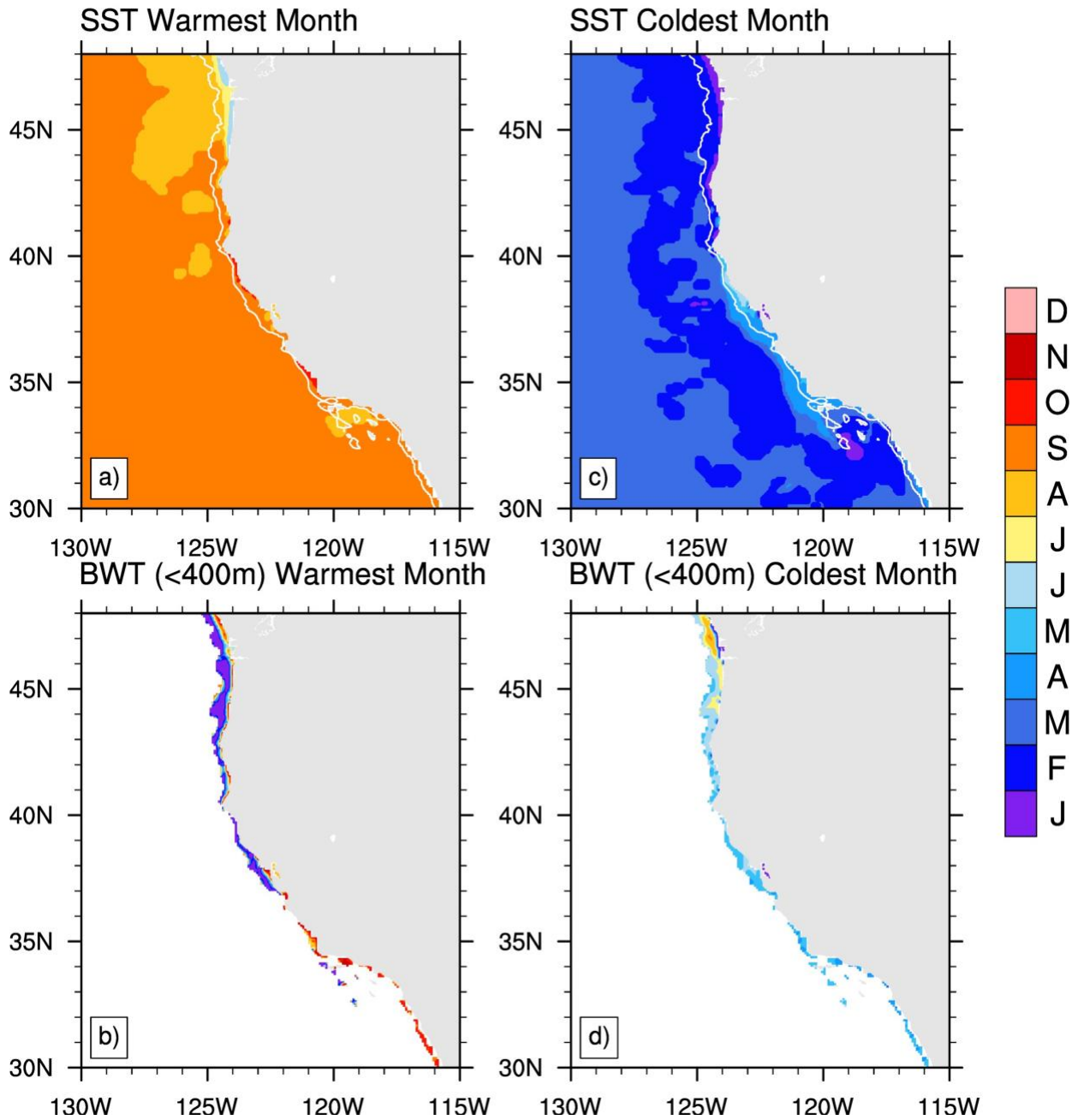


Fig. S39. GLORYS climatological warmest (left) and coldest (right) months in the seasonal cycle for SST (a,c), BWT <400m (b,d). 400m depth contour (gray) shown in (a,d).

GLORYS Climate

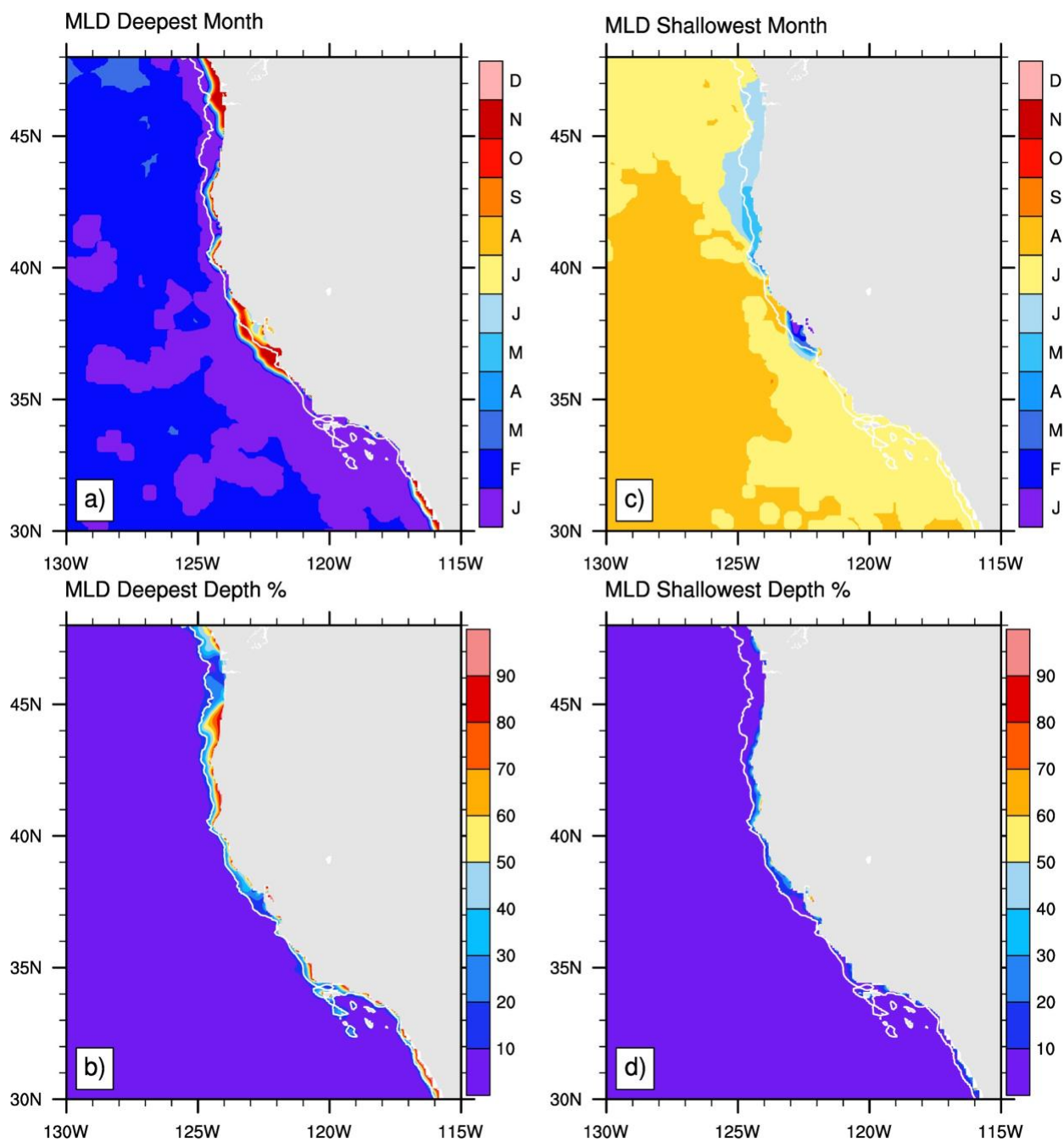


Fig. S40. GLORYS climatological deepest (left) and shallowest (right) months in the seasonal cycle for MLD (a,c) and MLD as a percentage of total column depth (b,d). 400m depth contour (gray) shown in (a,b,c,d).

Surface-Bottom Correlation

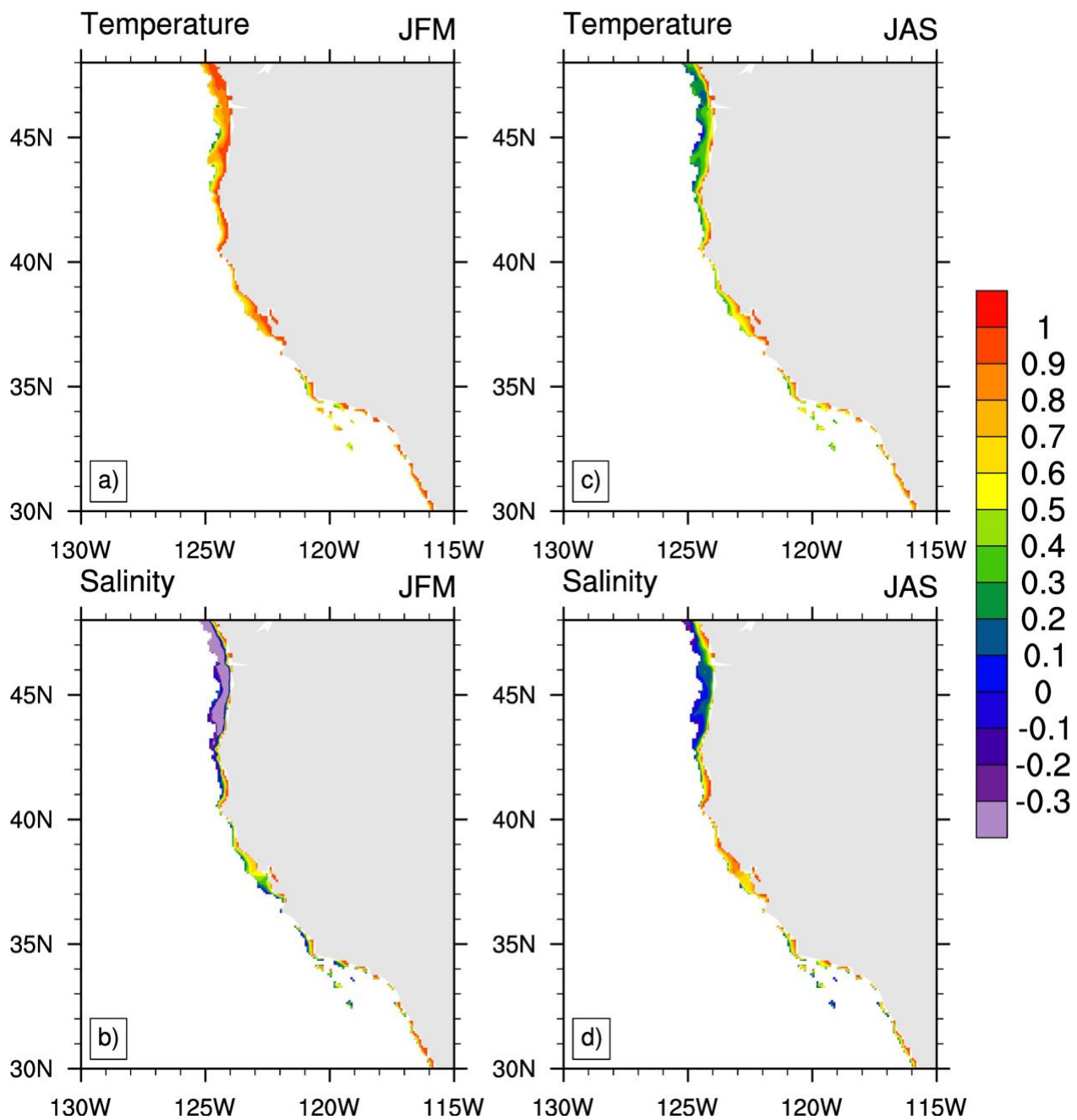


Fig. S41. Correlation of SST and BWT for JFM (a) and JAS (b). Correlation of SSS and BWS (<400m) for JFM (c) and JAS (d).

Surface-Bottom Correlation

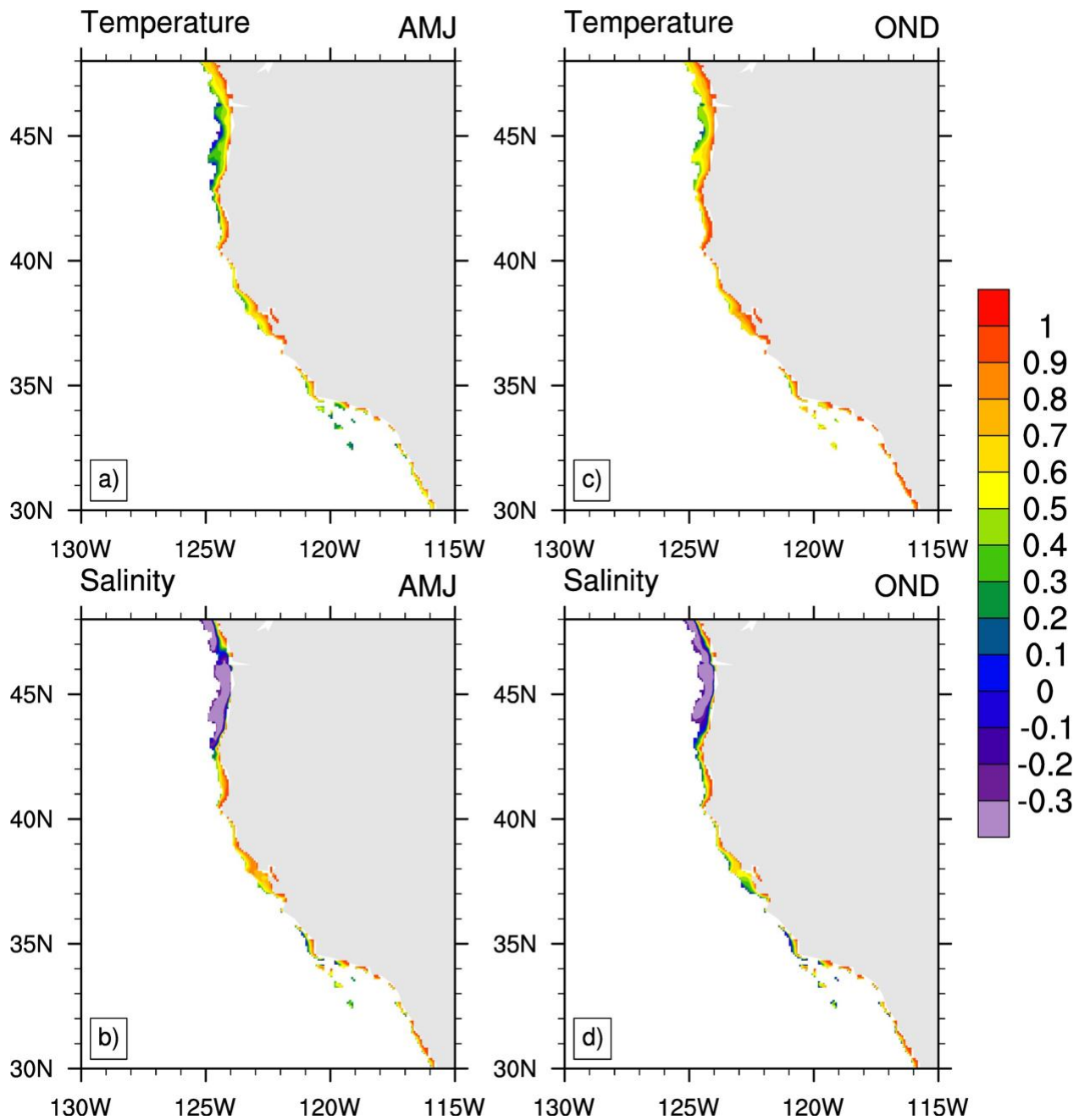


Fig. S42. Correlation of SST and BWT for AMJ (a) and ONBD (b). Correlation of SSS and BWS (<400m) for AMJ (c) and OND (d).

E-folding Decay Rate (months)

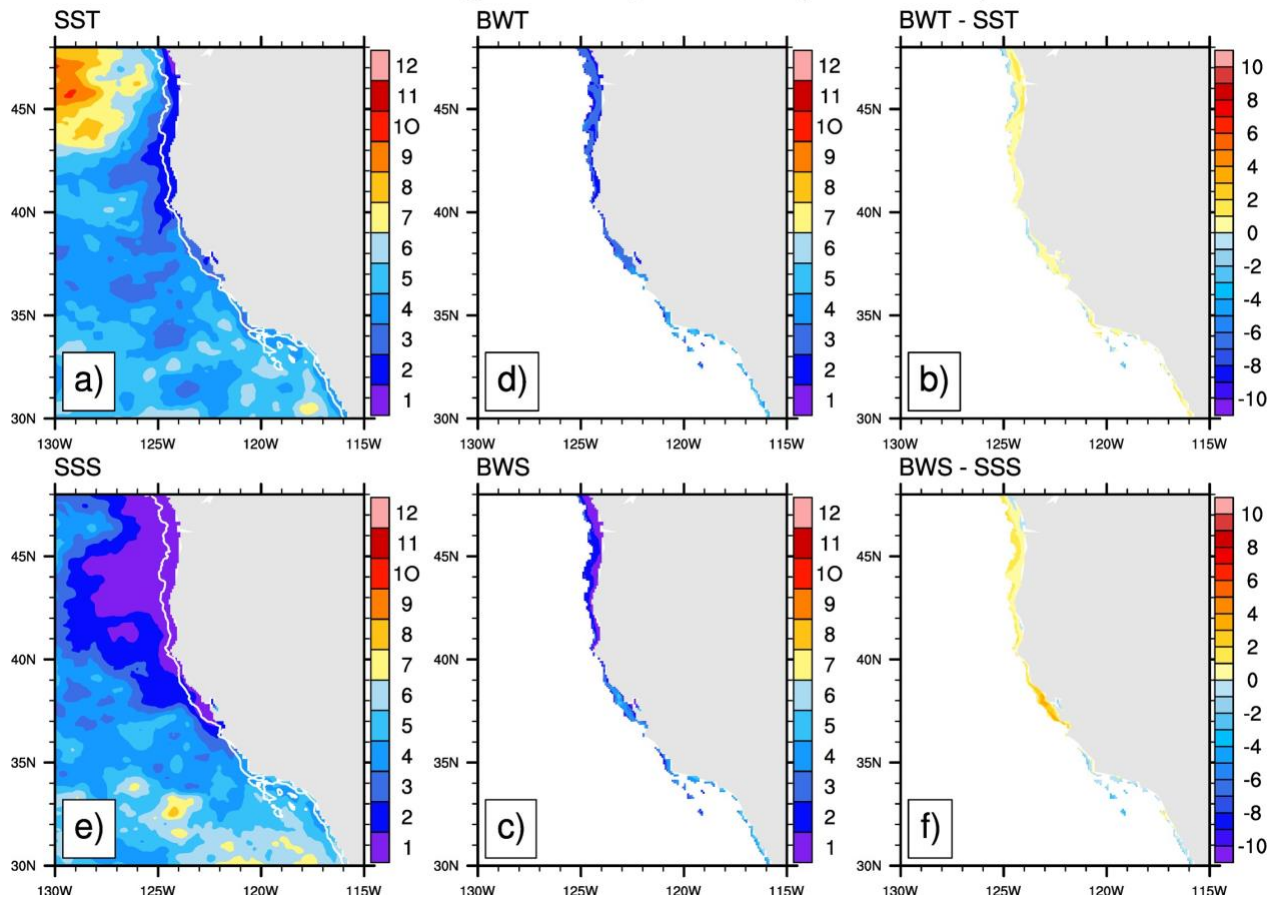


Fig. S43. E-folding decay rate computed from autocorrelation at lags from 1 to 12 months (using the method in Buckley et al (2019), DeI Sol (2001)) for SST (a) , BWT (b), BWT - SST (c), SSS (d) , BWS (e), BWS - SSS (f).

GLORYS Standard Deviation

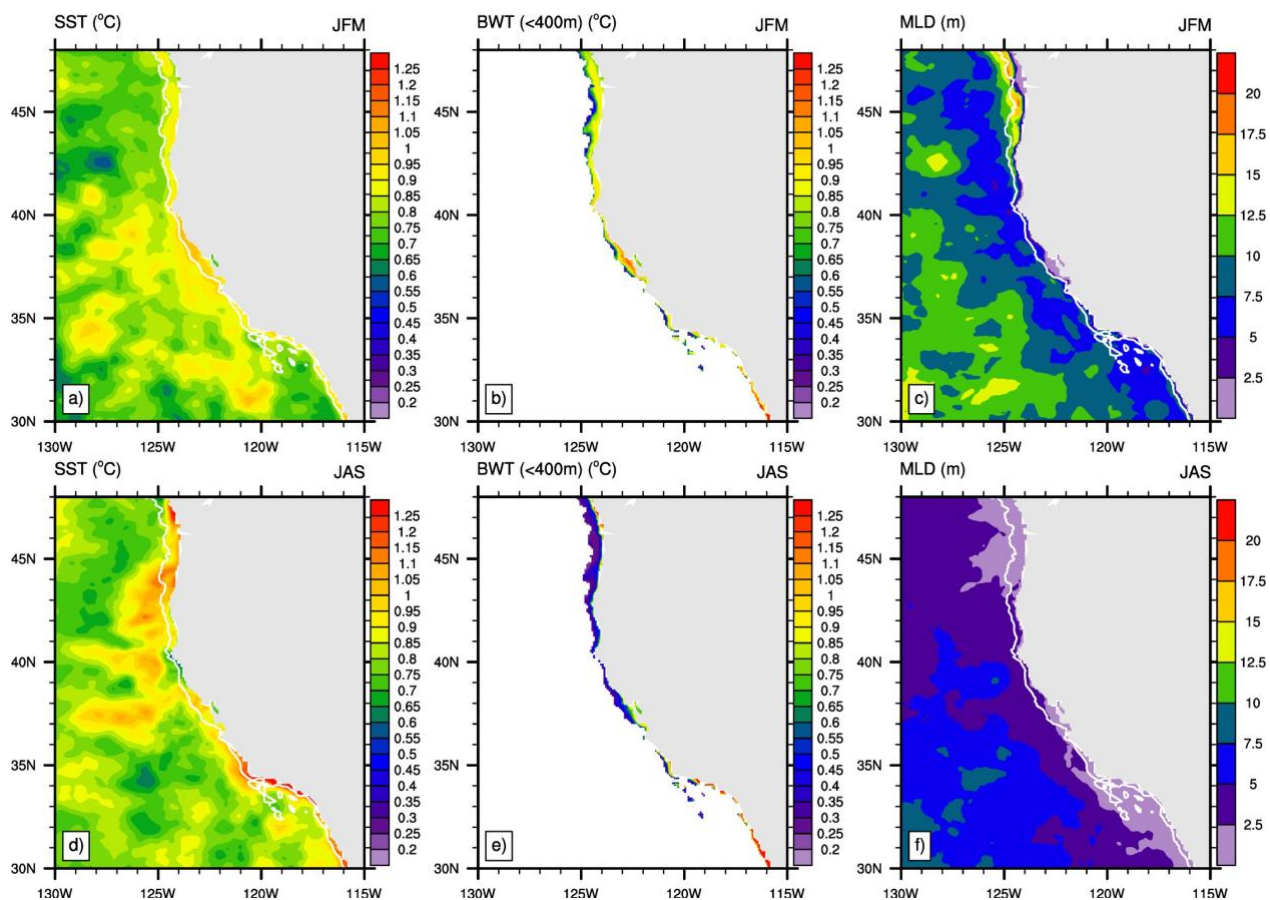


Fig. S44. GLORYS Inter-annual Standard Deviation of SST (a,d), BWT < 400m (b,e), MLD (c,f) for JFM (top) and JAS (bottom). 400m depth contour (gray) shown in (a,c,d,f).

GLORYS Standard Deviation

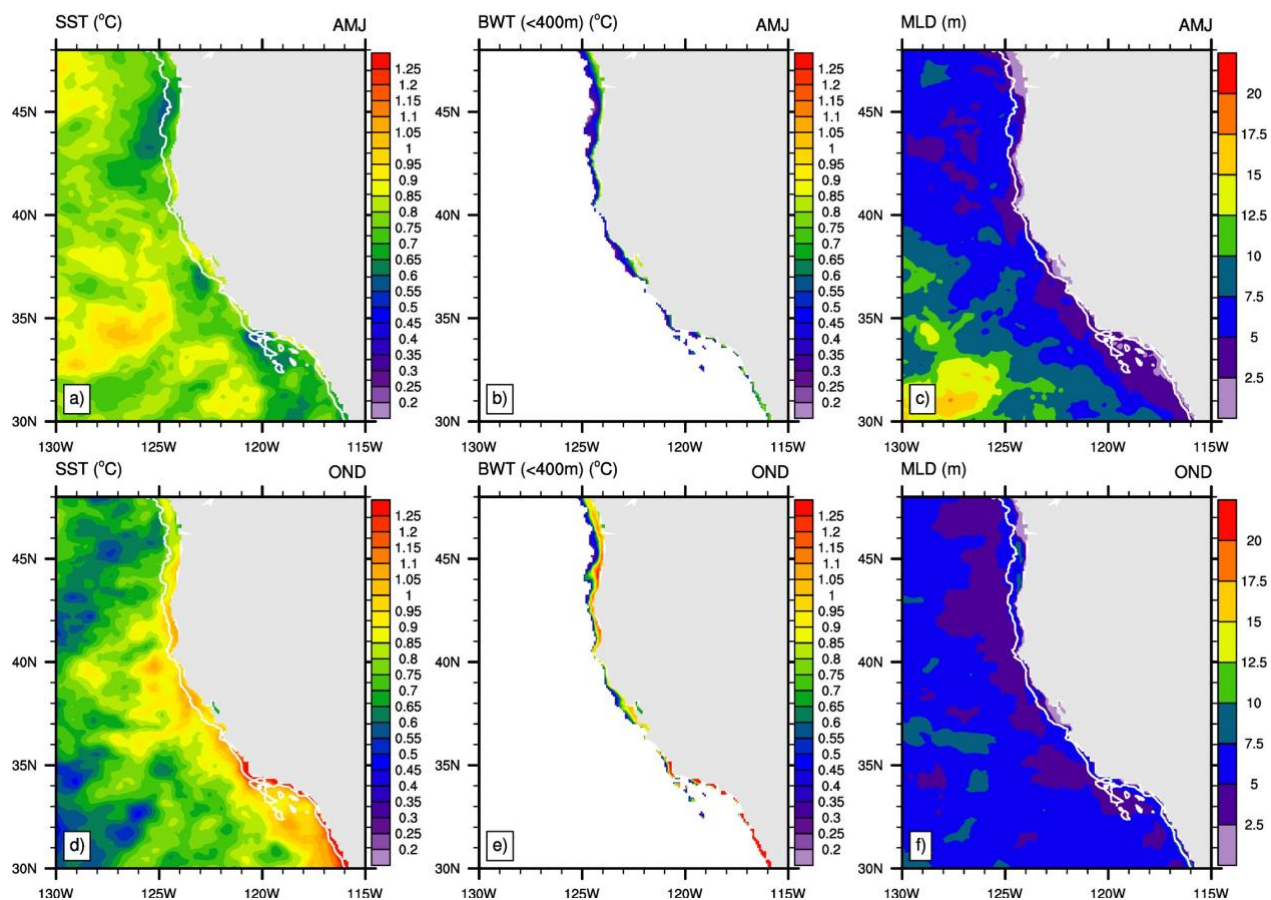


Fig. S45. GLORYS Inter-annual Standard Deviation of SST (a,d), BWT < 400m (b,e), MLD (c,f) for AMJ (top) and OND (bottom). 400m depth contour (gray) shown in (a,c,d,f).

GLORYS Standard Deviation

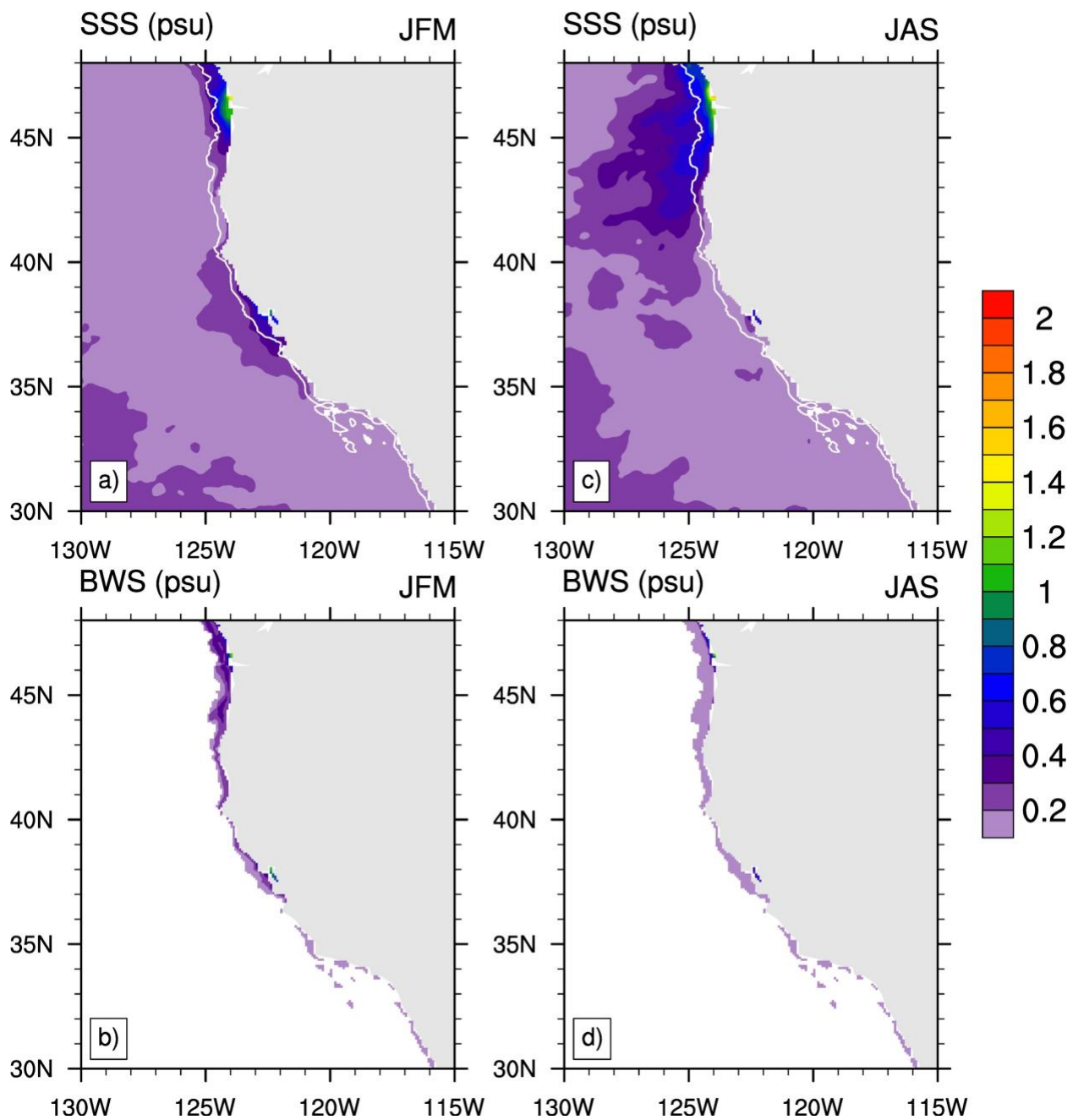


Fig. S46. GLORYS Inter-annual Standard Deviation of SSS (a,c), BWS < 400m (b,d) for JFM (left) and JAS (right). 400m depth contour (gray) shown in (a,c).

GLORYS Standard Deviation

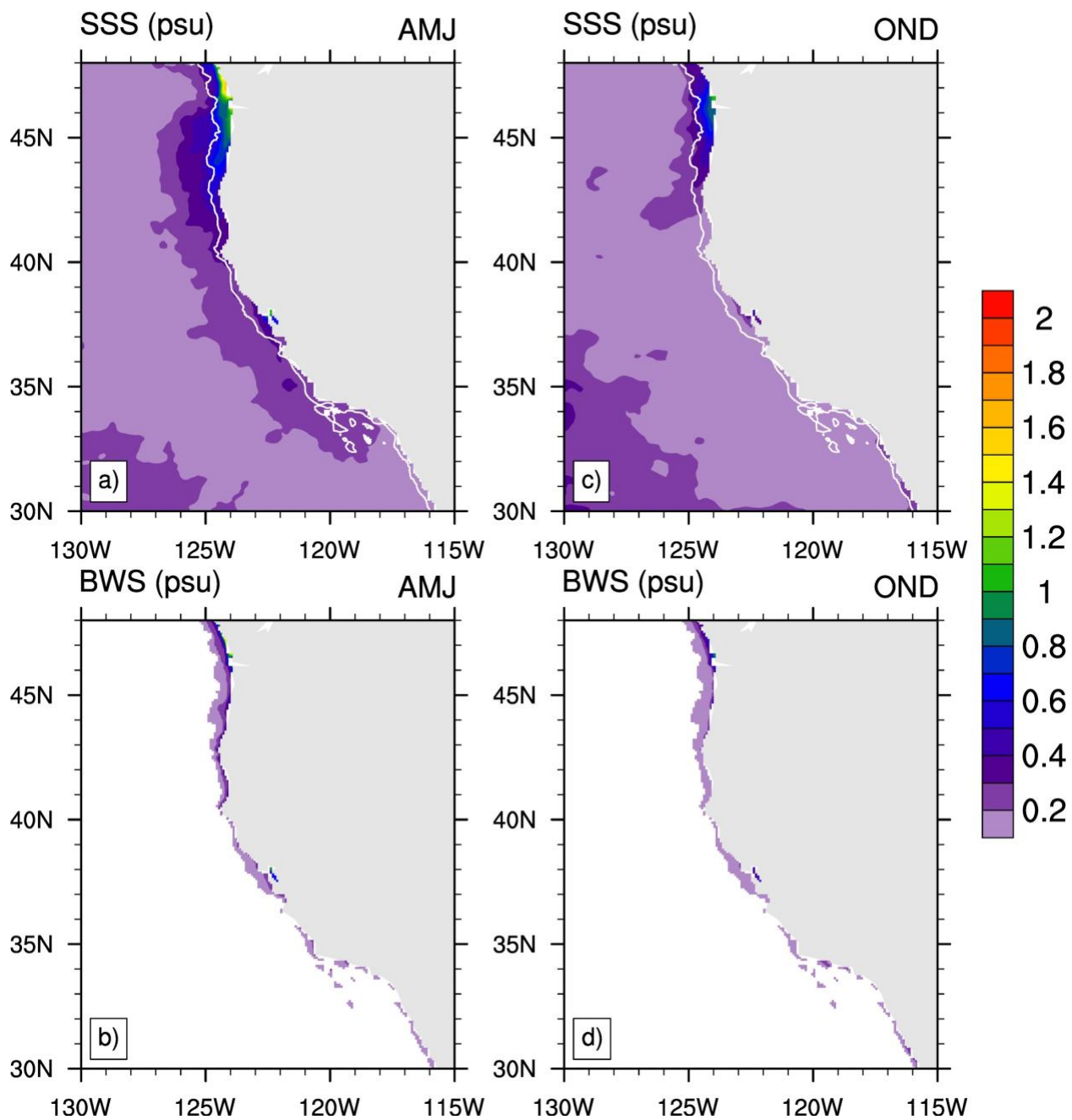


Fig. S47. GLORYS Inter-annual Standard Deviation of SSS (a,c), BWS < 400m (b,d) for AMJ (left) and OND (right). 400m depth contour (gray) shown in (a,c).

Temperature Trends ($^{\circ}\text{C decade}^{-1}$)

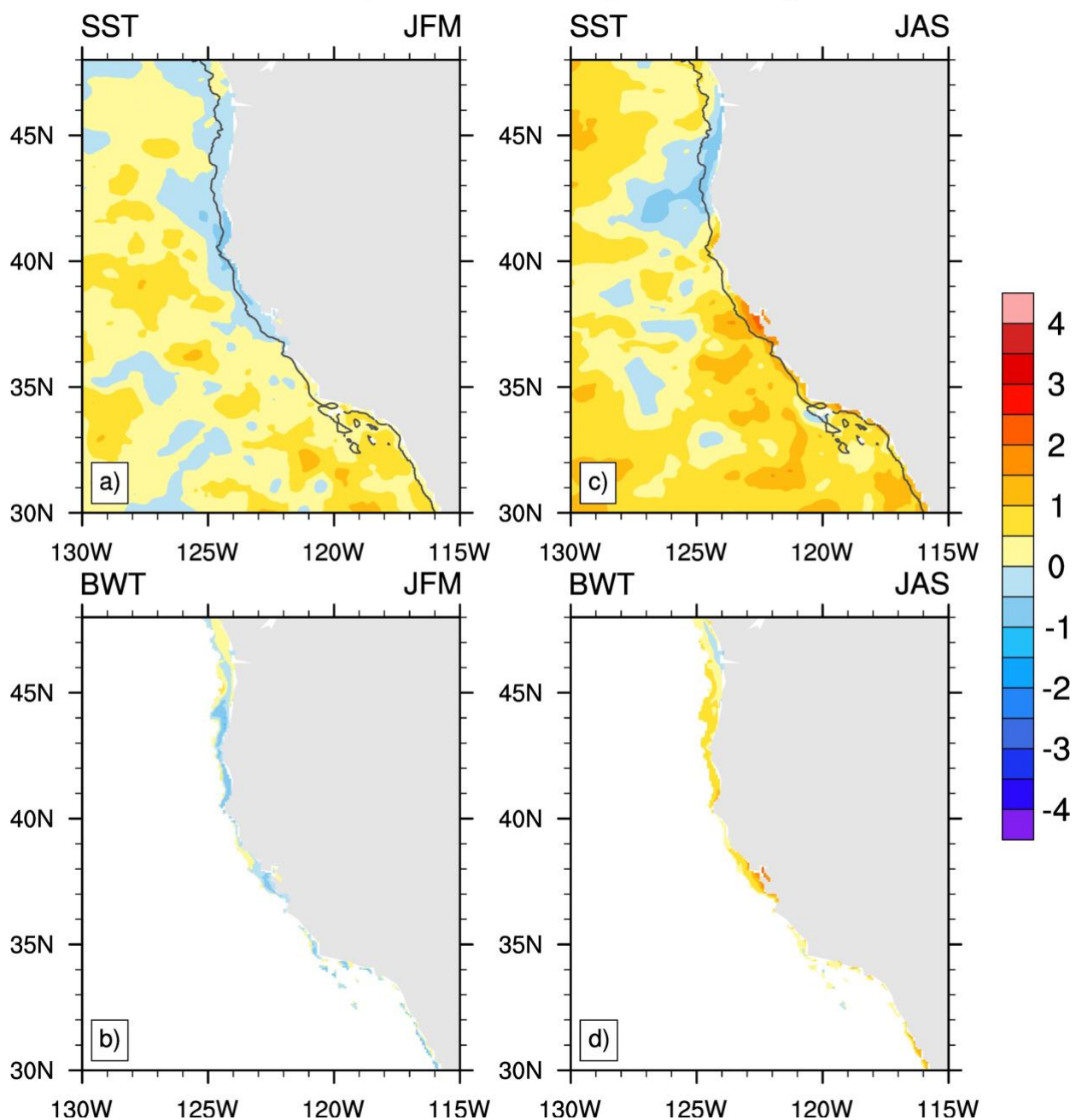


Fig. S48. Linear Trends (1993-2019) in SST (a,c), and BWT <400m (b,d) for JFM (left) and JAS (right). 400m depth contour (gray) shown in (a,c).

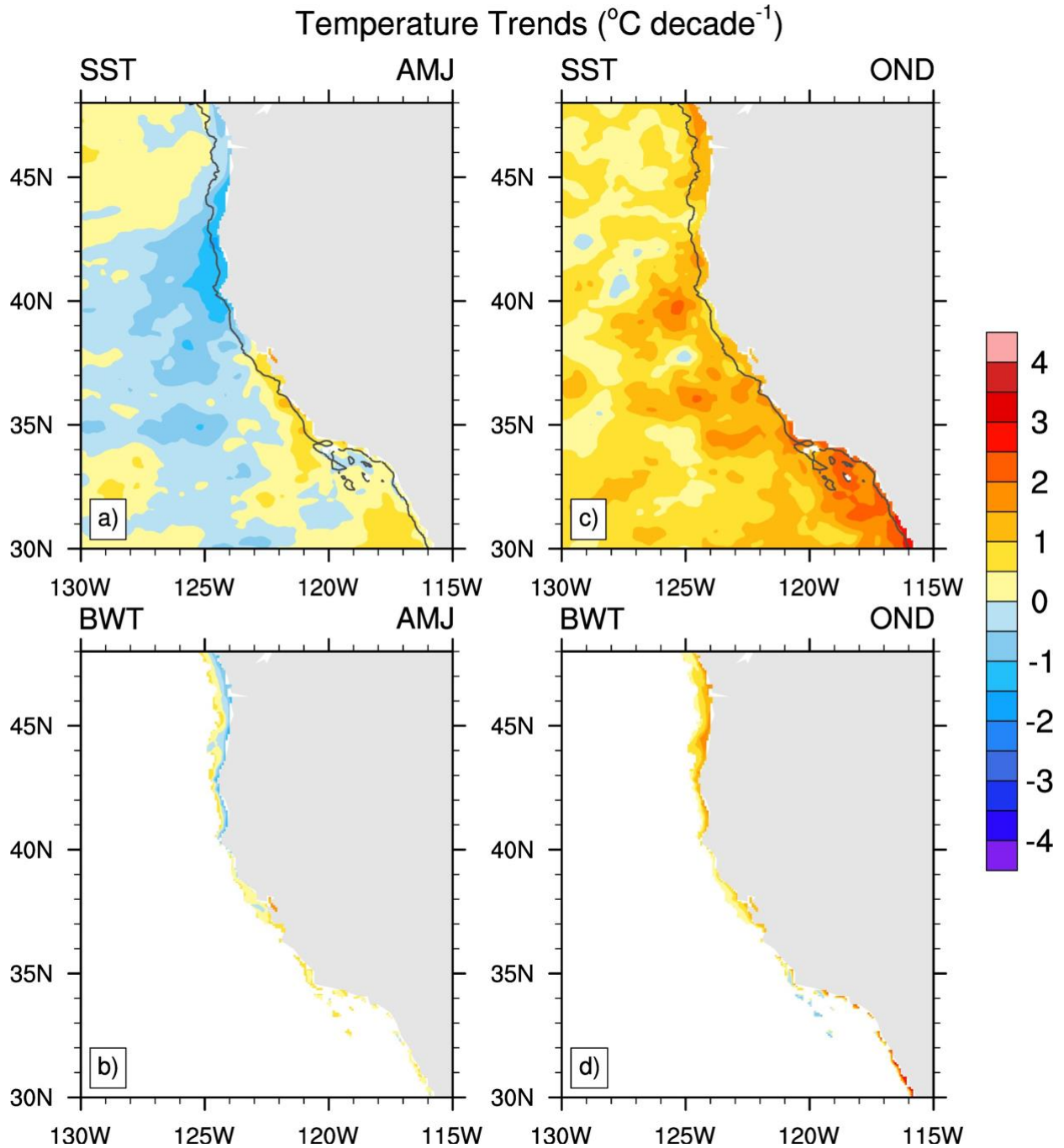


Fig. S49. Linear Trends (1993-2019) in SST (a,c), and BWT <400m (b,d) for AMJ (left) and OND (right). 400m depth contour (gray) shown in (a,c).

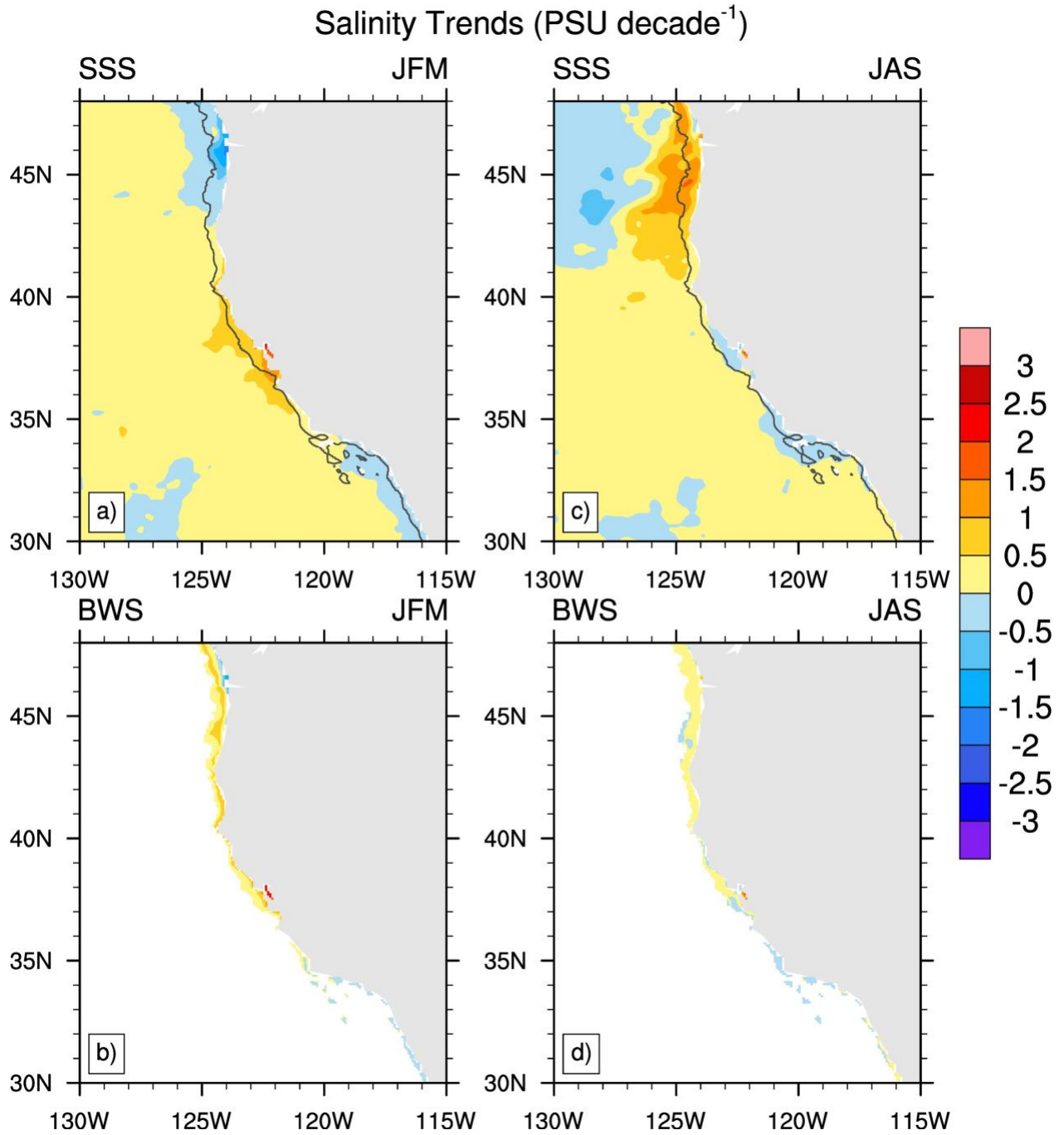


Fig. S50. Linear Trends (1993-2019) in SSS (a,c), and BWS<400m (b,d) for JFM (left) and JAS (right). 400m depth contour (gray) shown in (a,c).

Salinity Trends (PSU decade⁻¹)

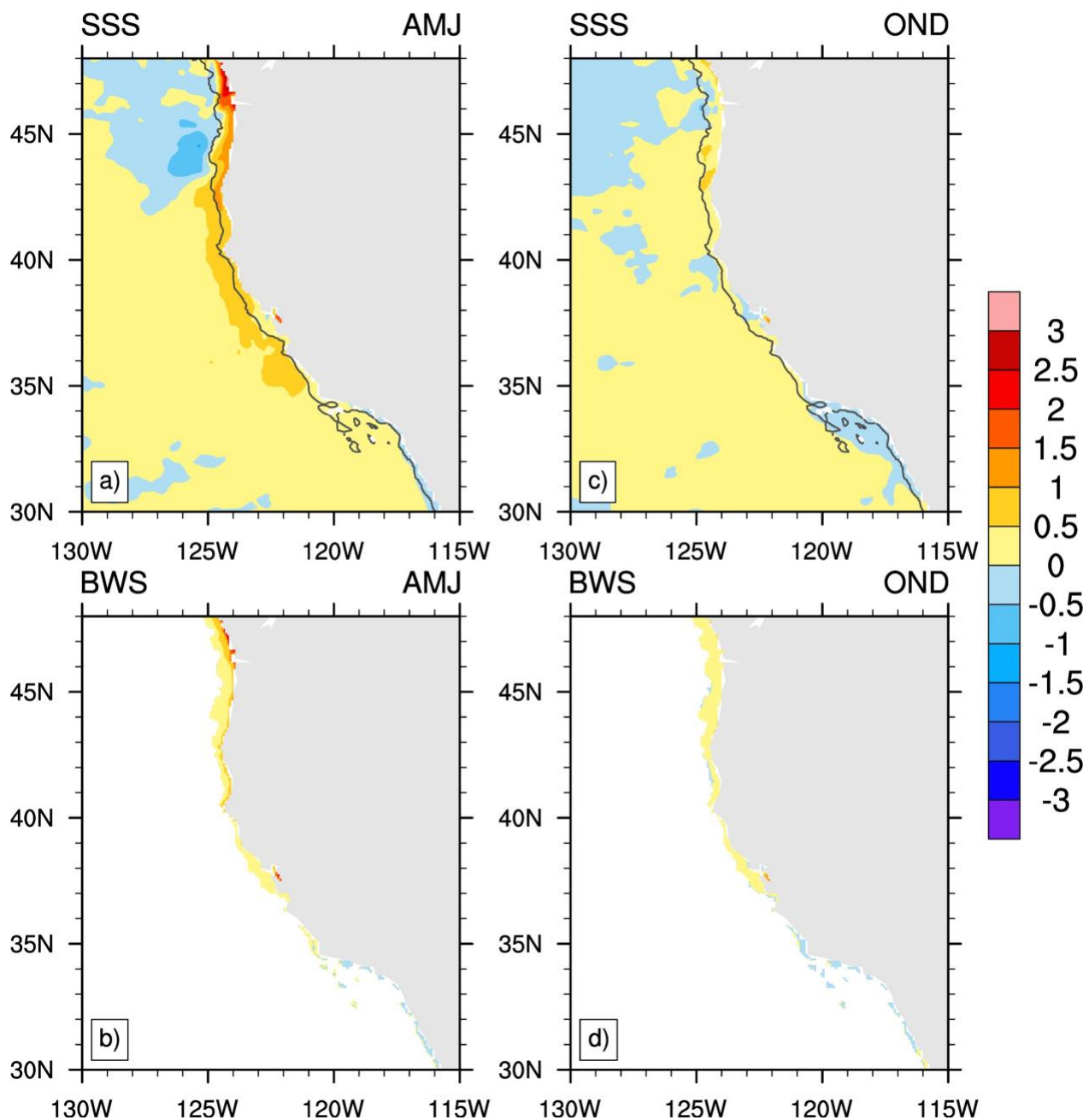


Fig. S51. Linear Trends (1993-2019) in SSS (a,c), and BWS<400m (b,d) for AMJ (left) and OND (right). 400m depth contour (gray) shown in (a,c).