Supplementary Information

Cross-bay winds controlling primary production in Antarctic glacial bay

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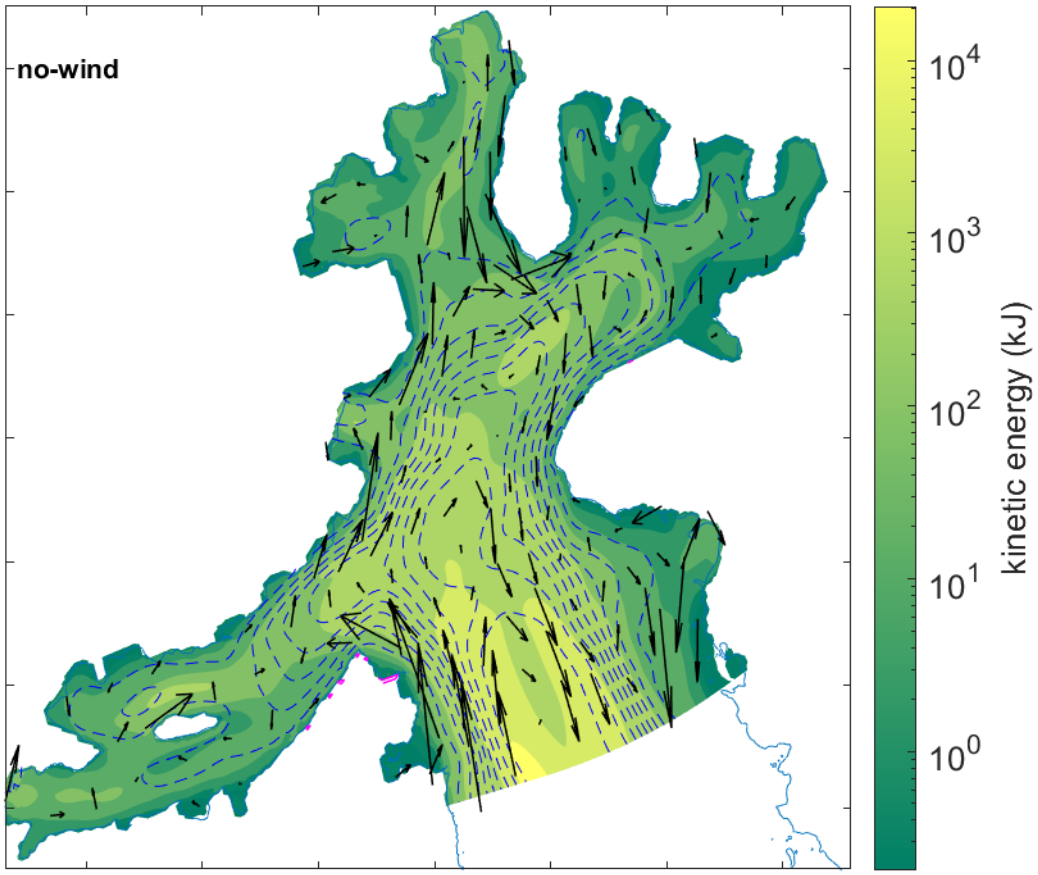

Figure S1. *No-wind scenario kinetic energy and depth averaged velocities; colors represent kinetic energy integrated across the water column; arrows indicate depth-averaged horizontal velocity vectors; blue spaced lines show isobaths, with a magenta line highlighting the isobath = D_E. {Note}: showing mean values from Dec 7, 2021, to Jan 9, 2022 (33 days).*

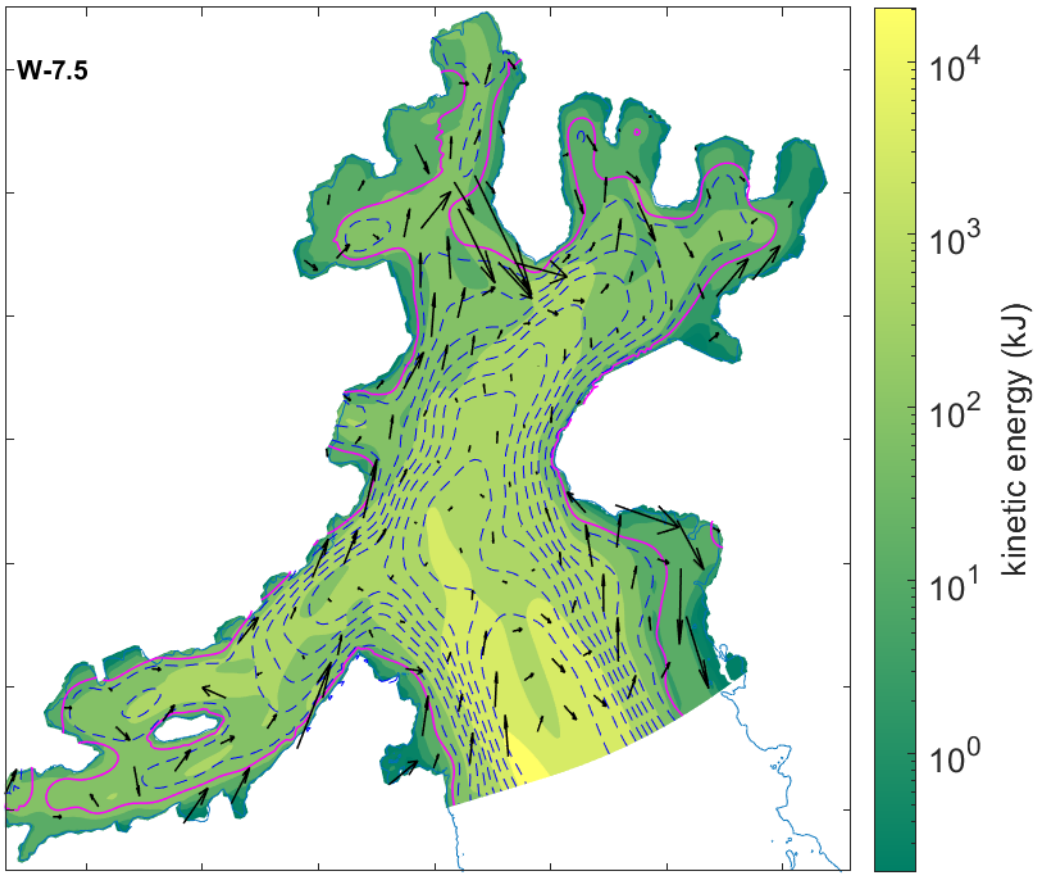

***Figure S2**. As in Fig. S1, but for W-7.5 scenario.*

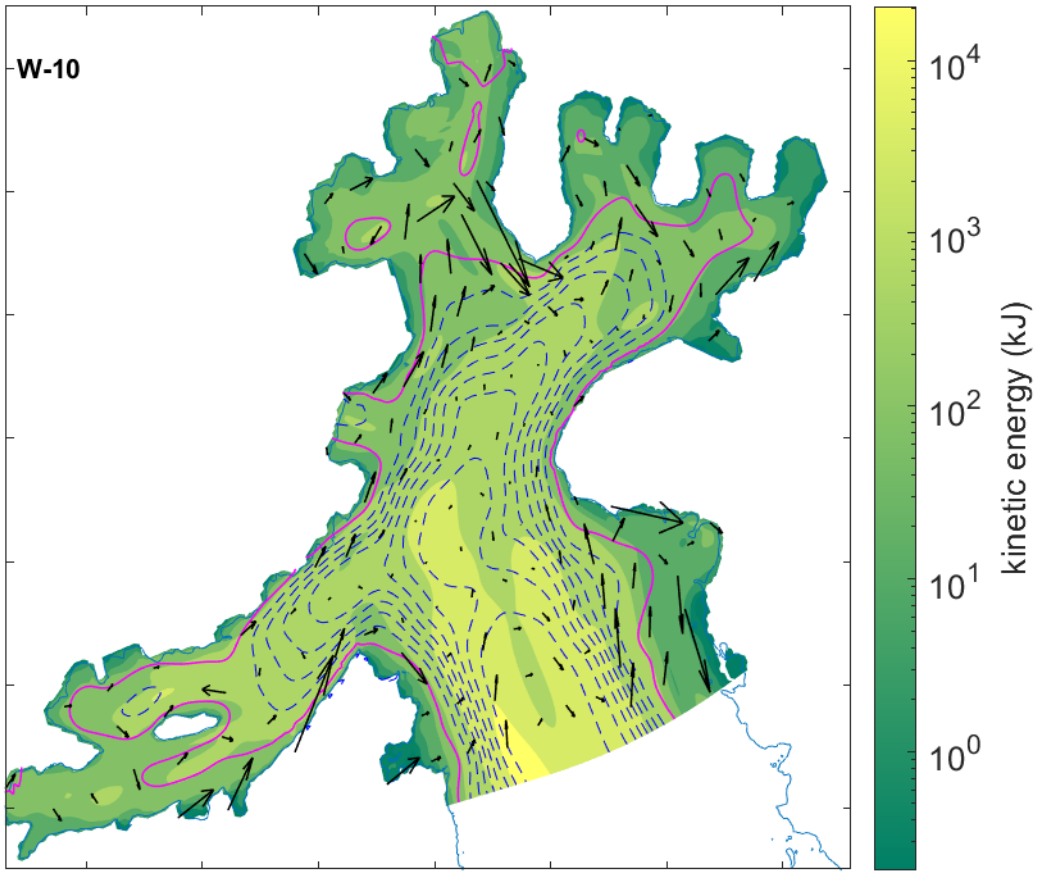

Figure S3. *As in Fig. S1, but for W-10 scenario.*

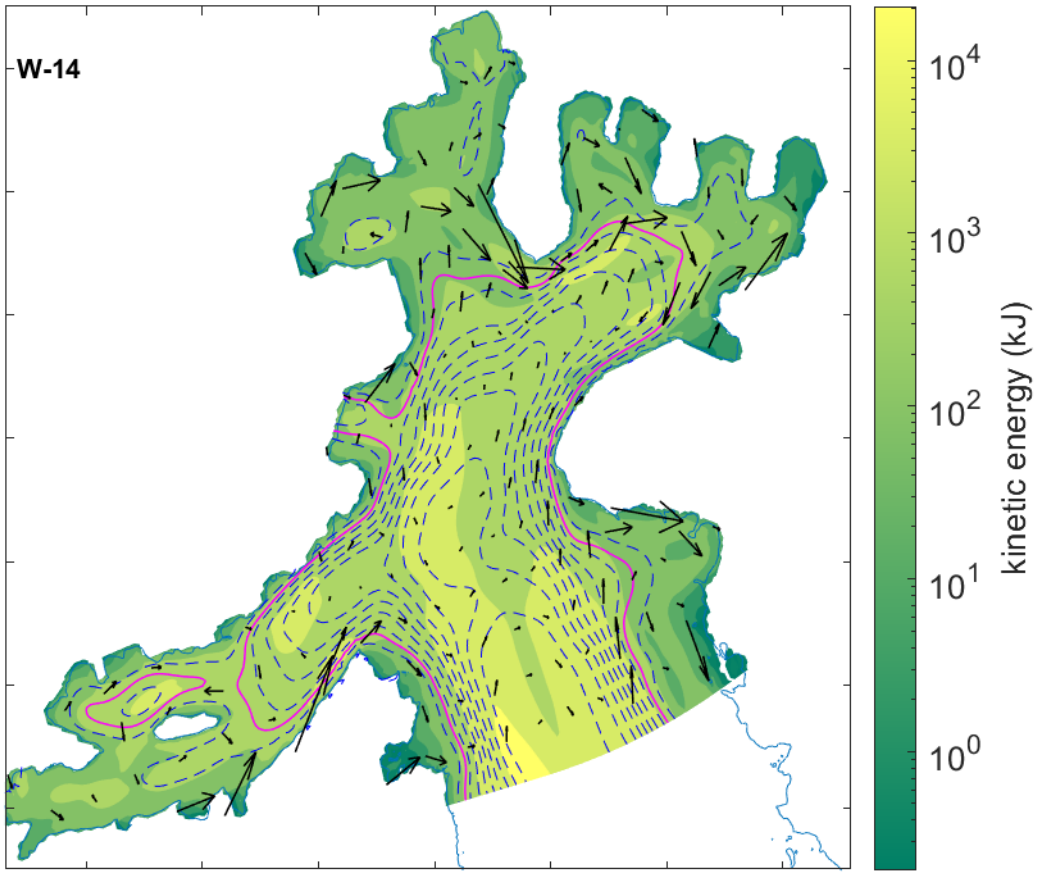

Figure S4. *As in Fig. S1, but for W-14 scenario.*

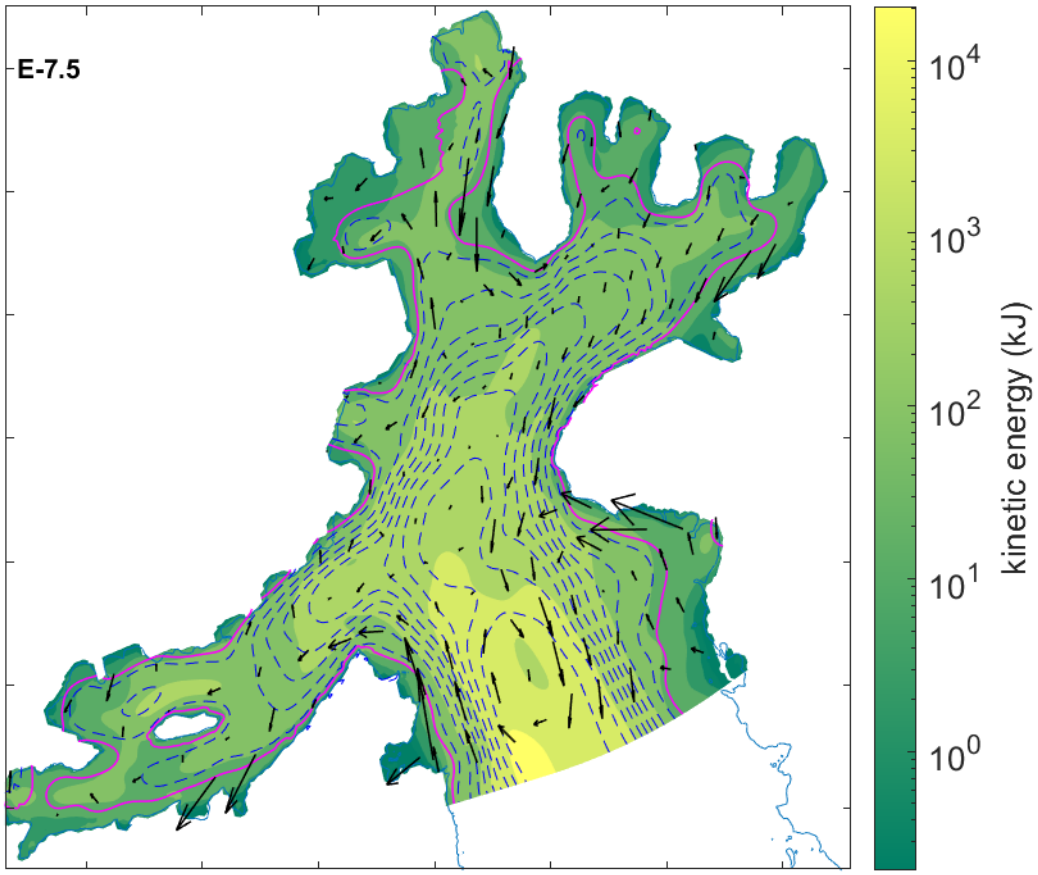

Figure S5. *As in Fig. S1, but for E-7.5 scenario.*

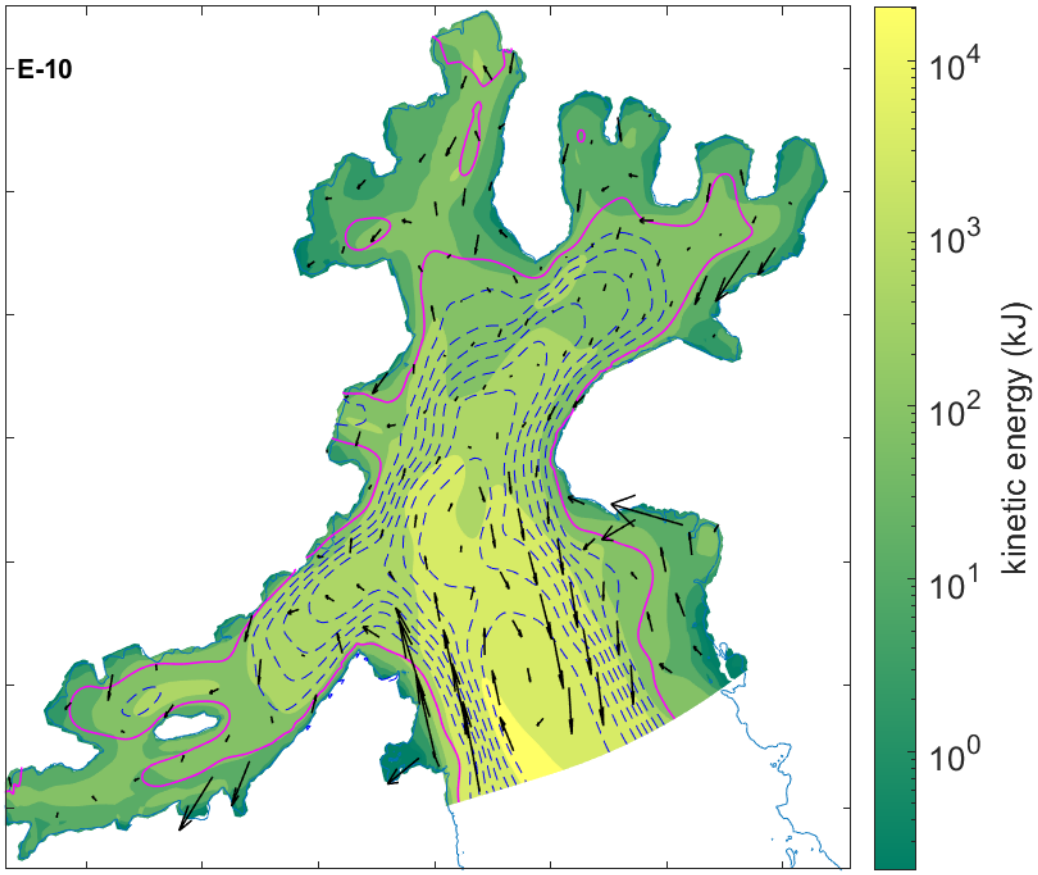

Figure S6. *As in Fig. S1, but for E-10 scenario.*

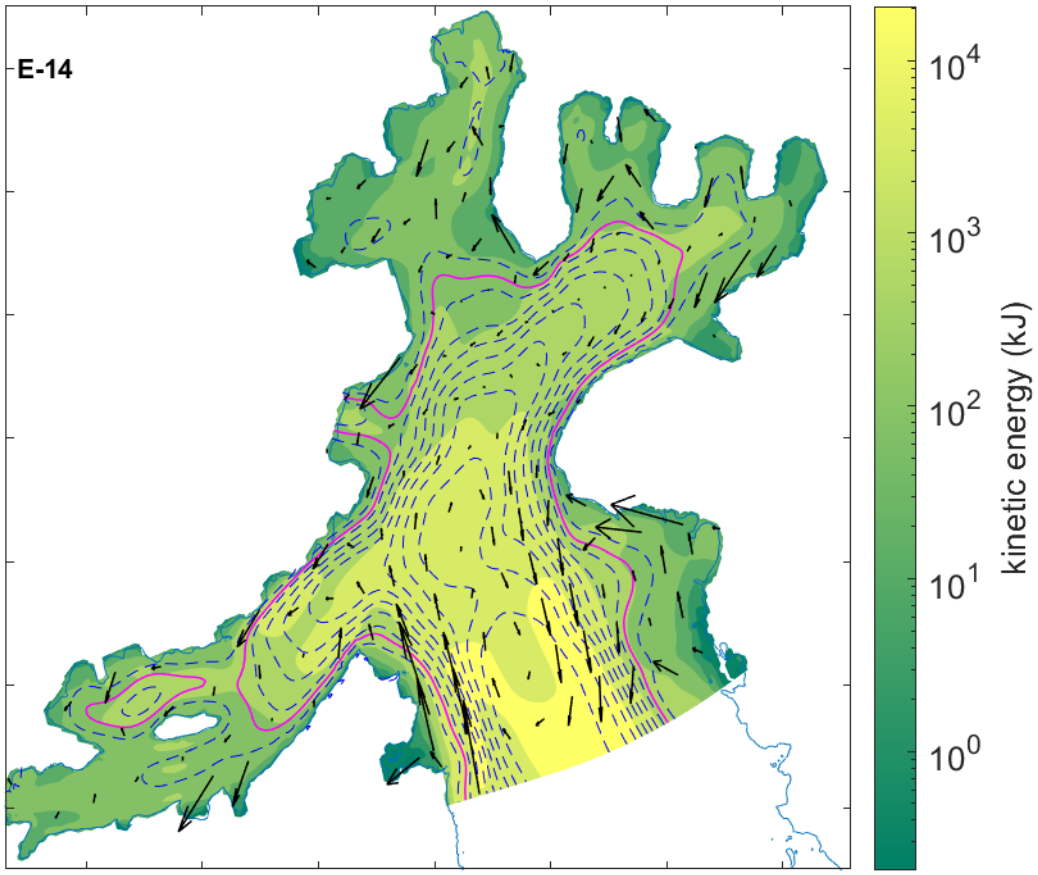

Figure S7. *As in Fig. S1, but for E-14 scenario.*

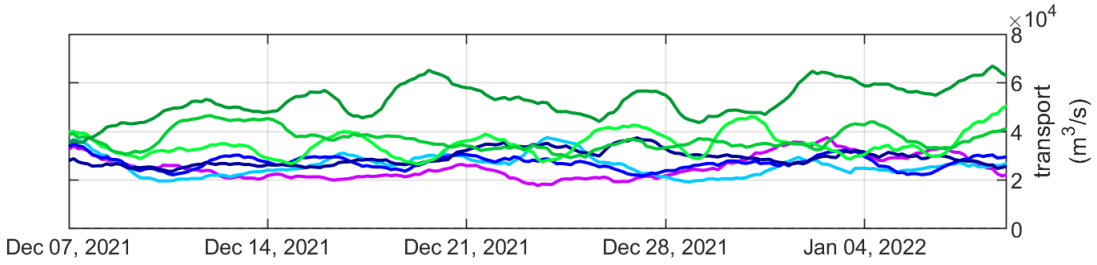

Figure S8*. Volume of transport through the cross-section in the main AB (pink line in Fig. 1 b) in seven model scenarios.*

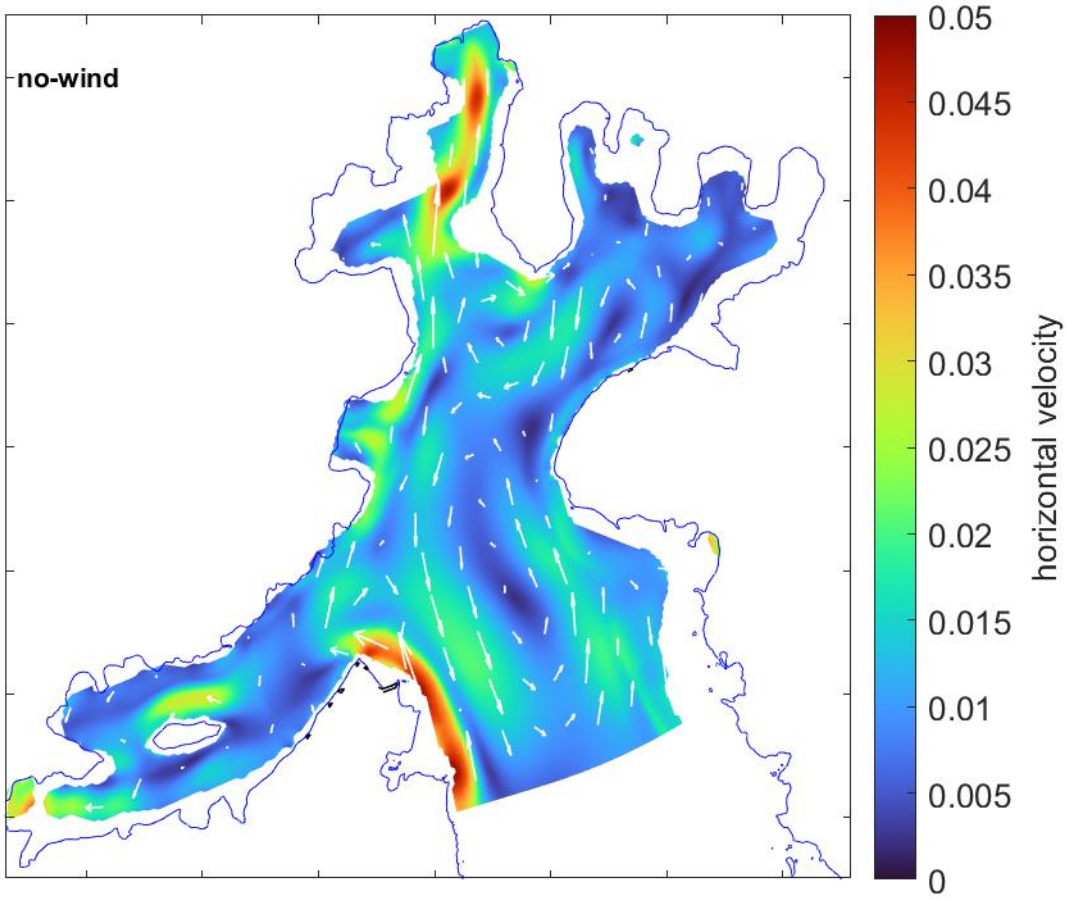

Figure S9. *No-wind scenario horizontal velocities averaged across 10-100 m depth, with a black line highlighting the isobath = D_E. {Note}: showing mean values from Dec 7, 2021, to Jan 9, 2022 (33 days).*

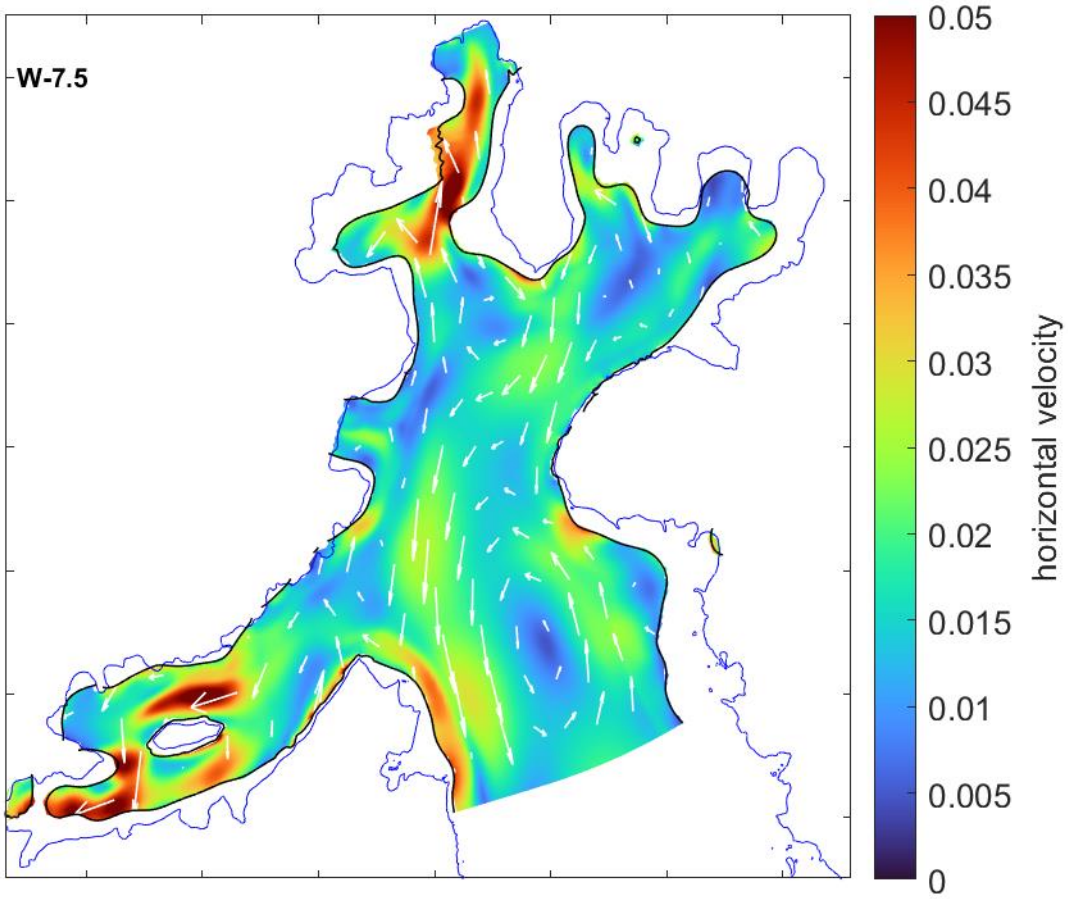

Figure S10. *As in Fig. S9, but for W-7.5 scenario.*

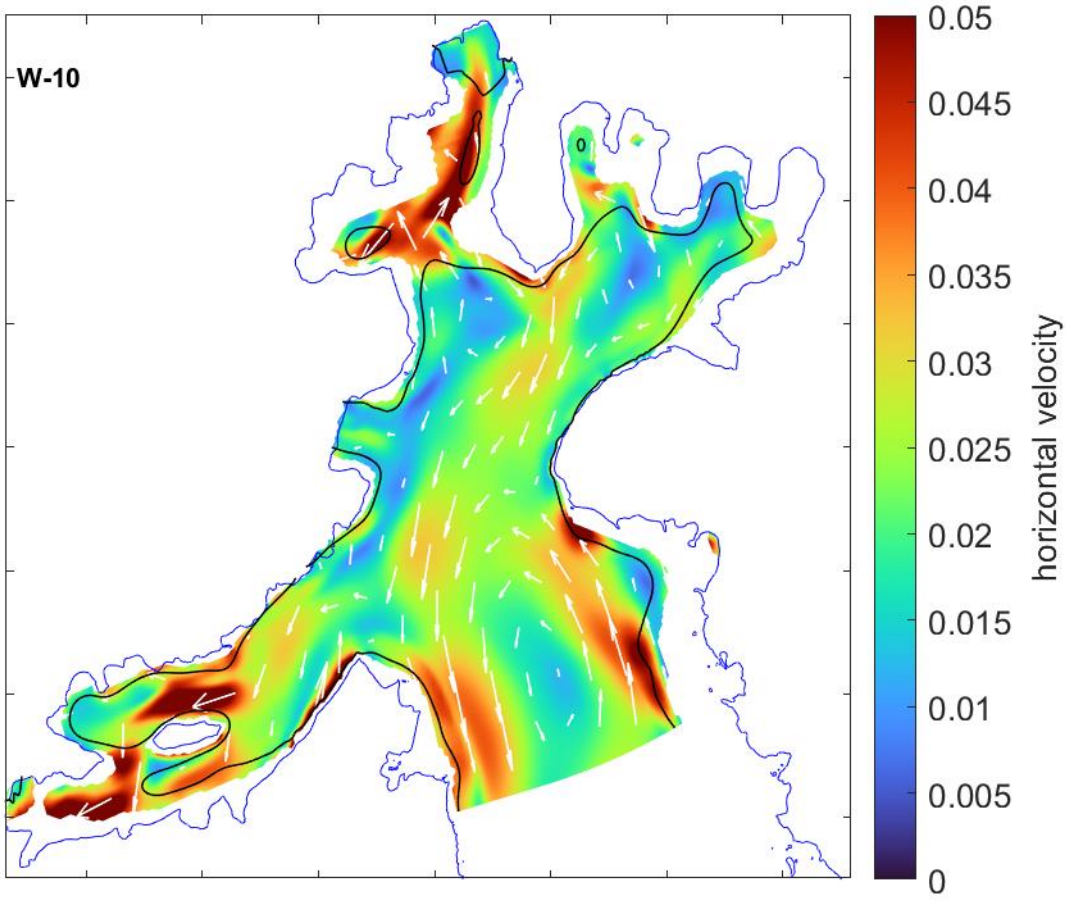

Figure S11. *As in Fig. S9, but for W-10 scenario.*

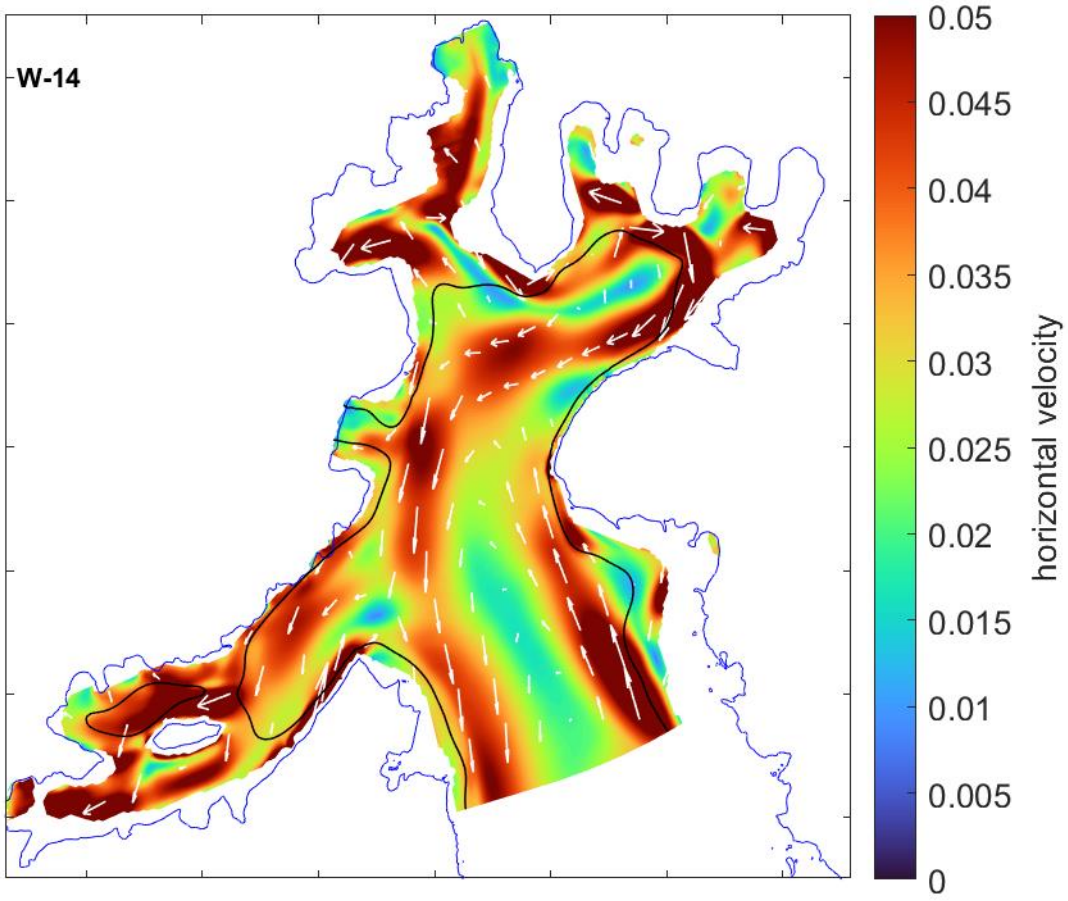

Figure S12. *As in Fig. S9, but for W-14 scenario.*

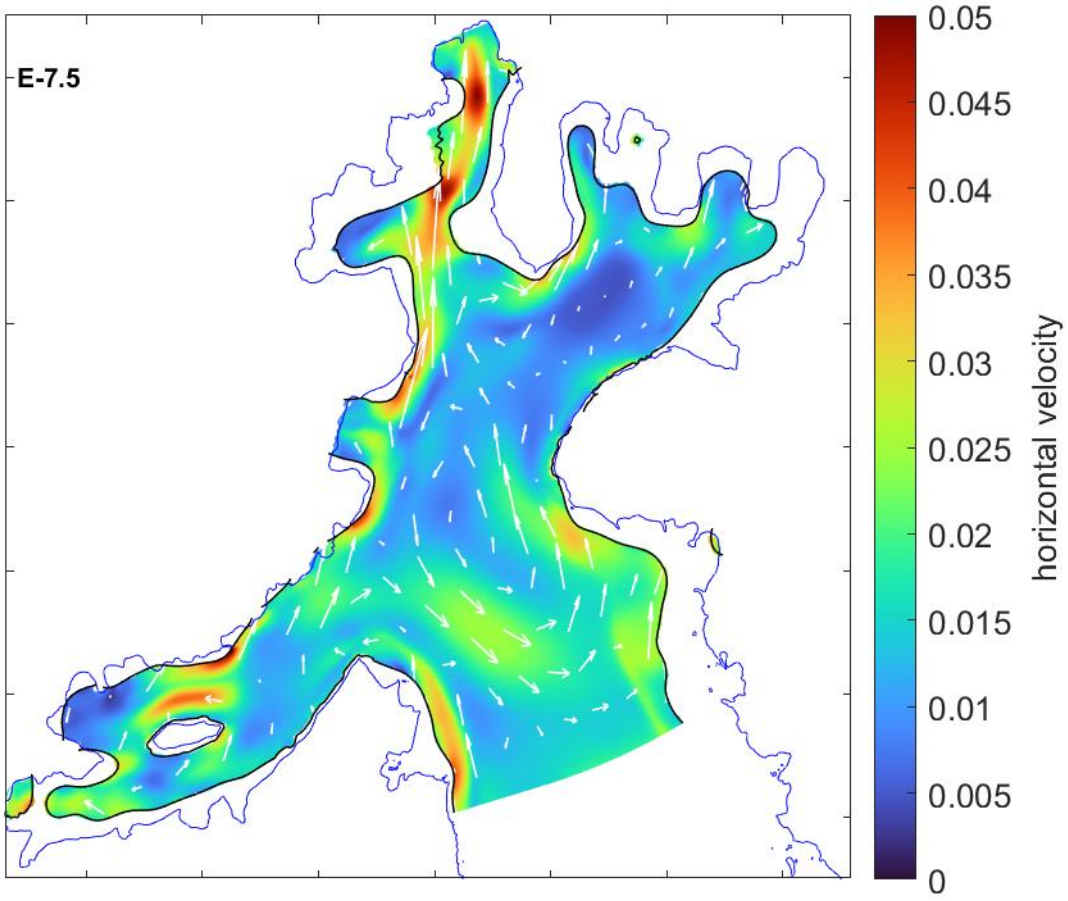

Figure S13. *As in Fig. S9, but for E-7.5 scenario.*

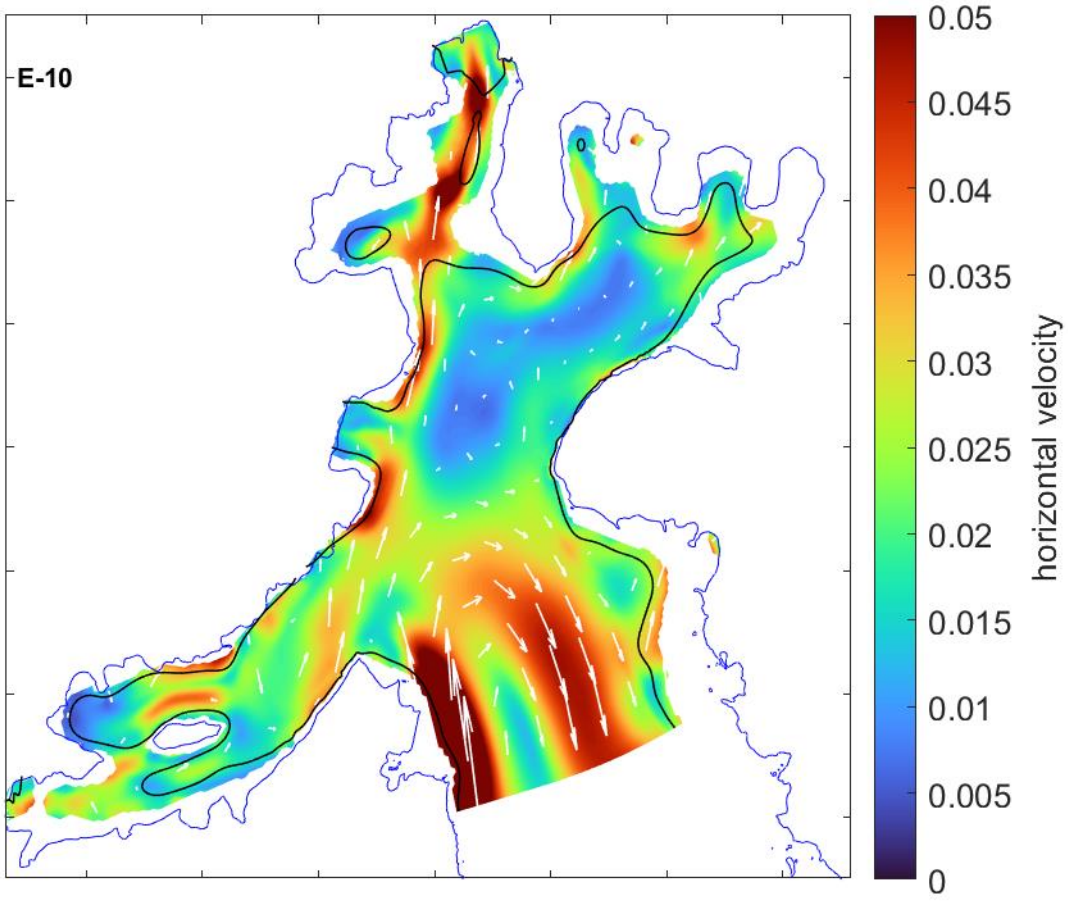

Figure S14. *As in Fig. S9, but for E-10 scenario.*

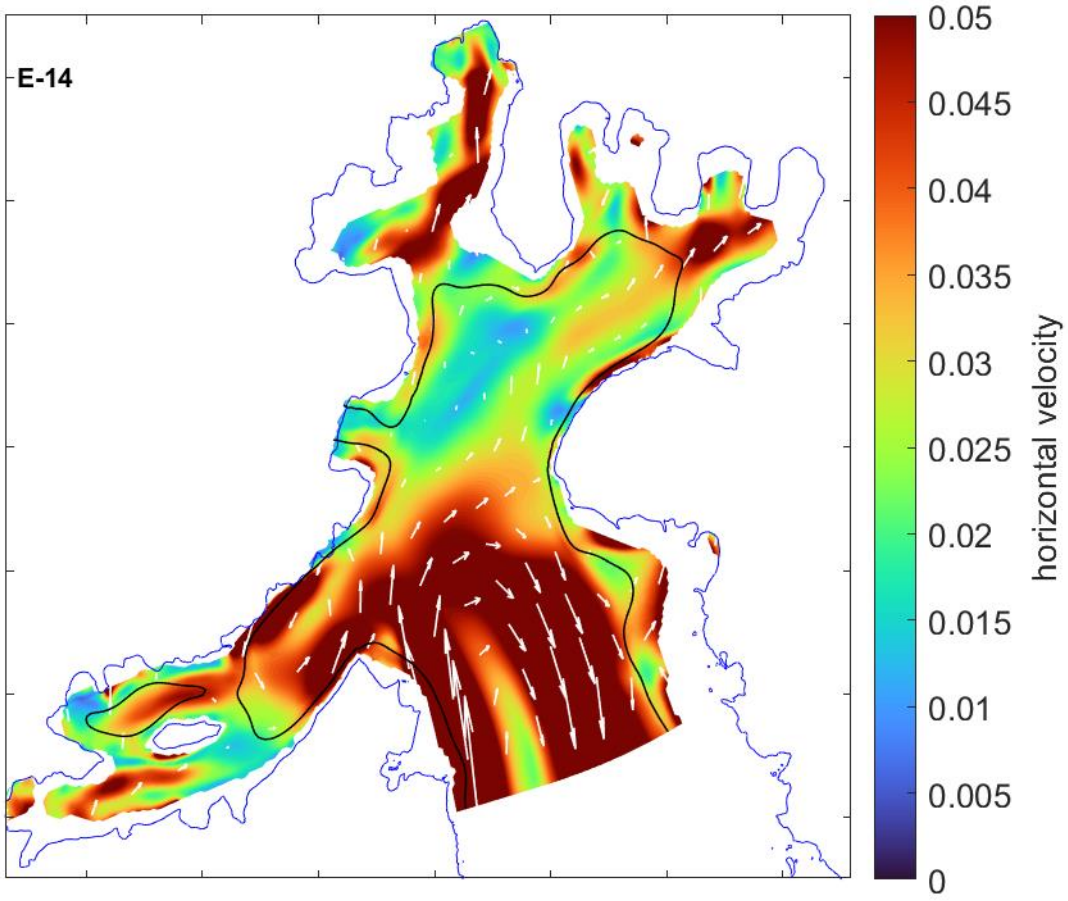

Figure S15. *As in Fig. S9, but for E-14 scenario.*

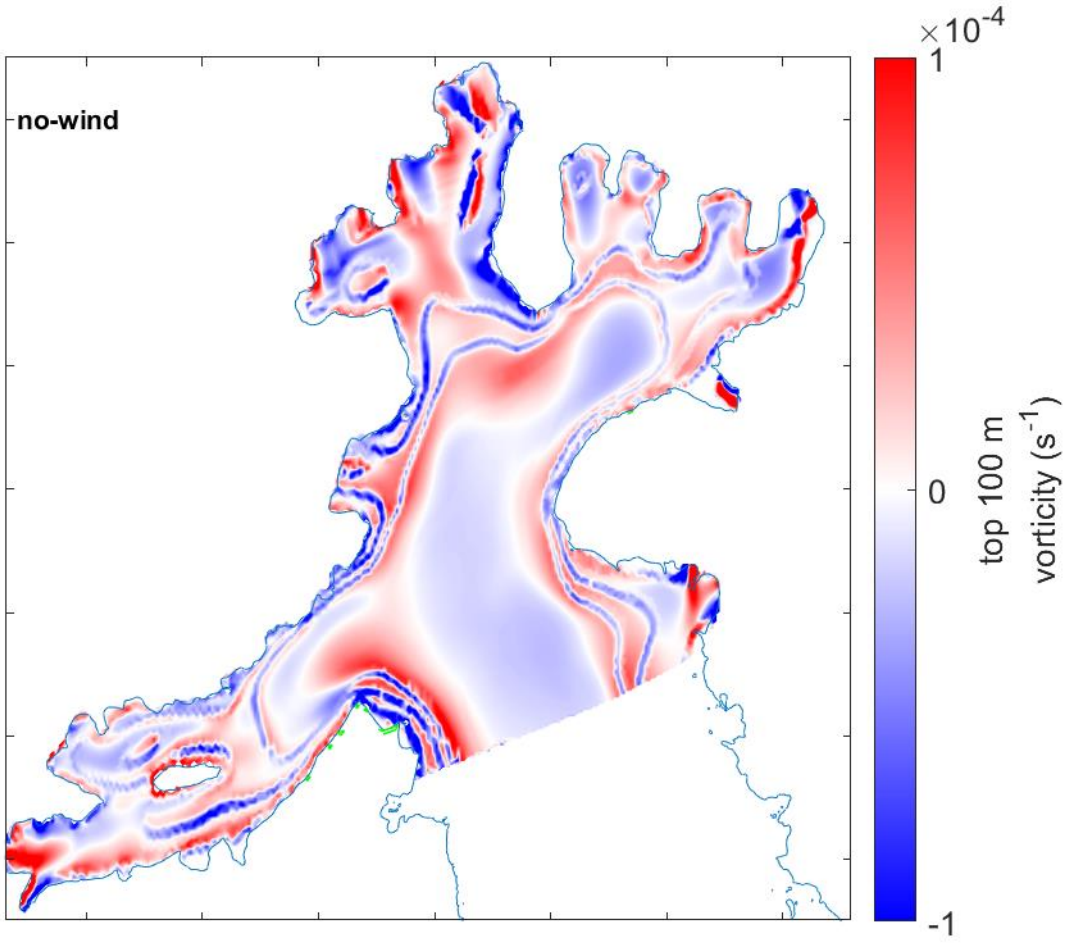

Figure S16. *No-wind vorticity across 10-100 m depth. {Note}: showing mean values from Dec 7, 2021, to Jan 9, 2022 (33 days).*

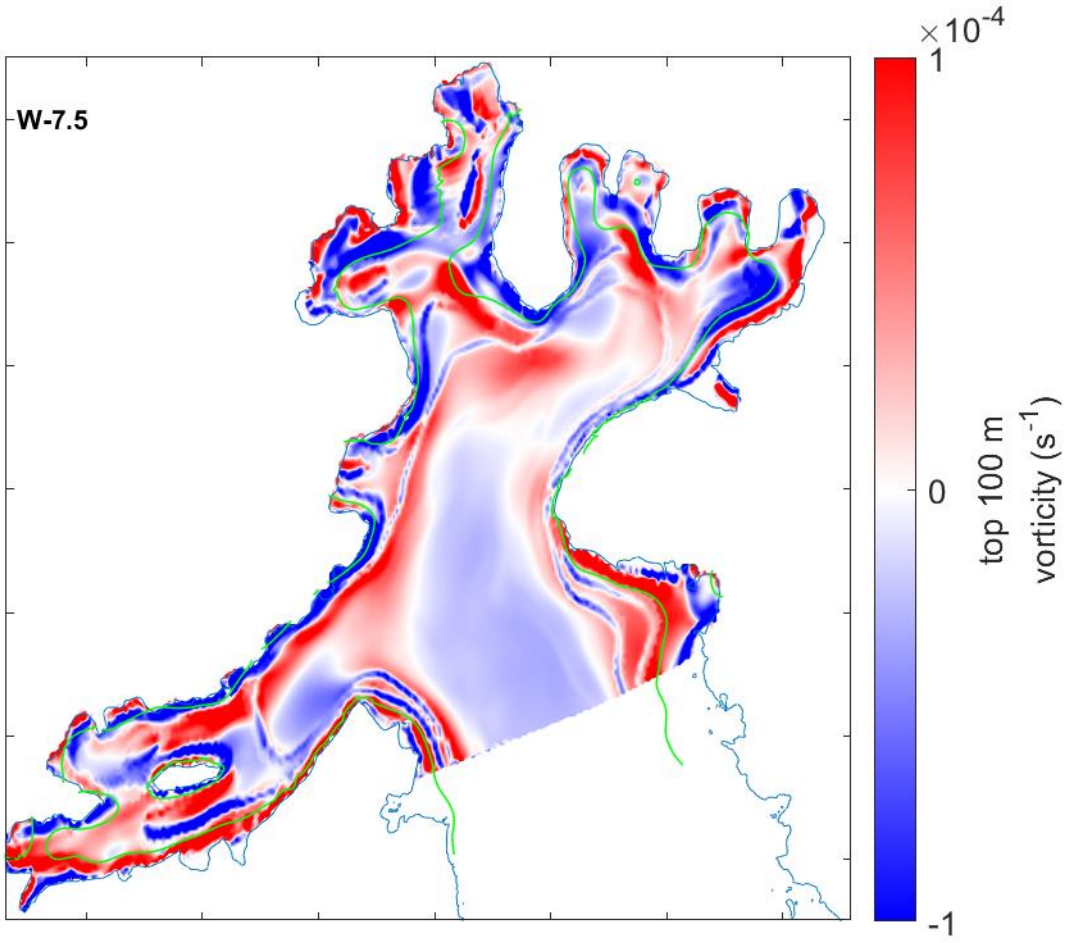

Figure S17. *As in Fig. S16, but for W-7.5 scenario.*

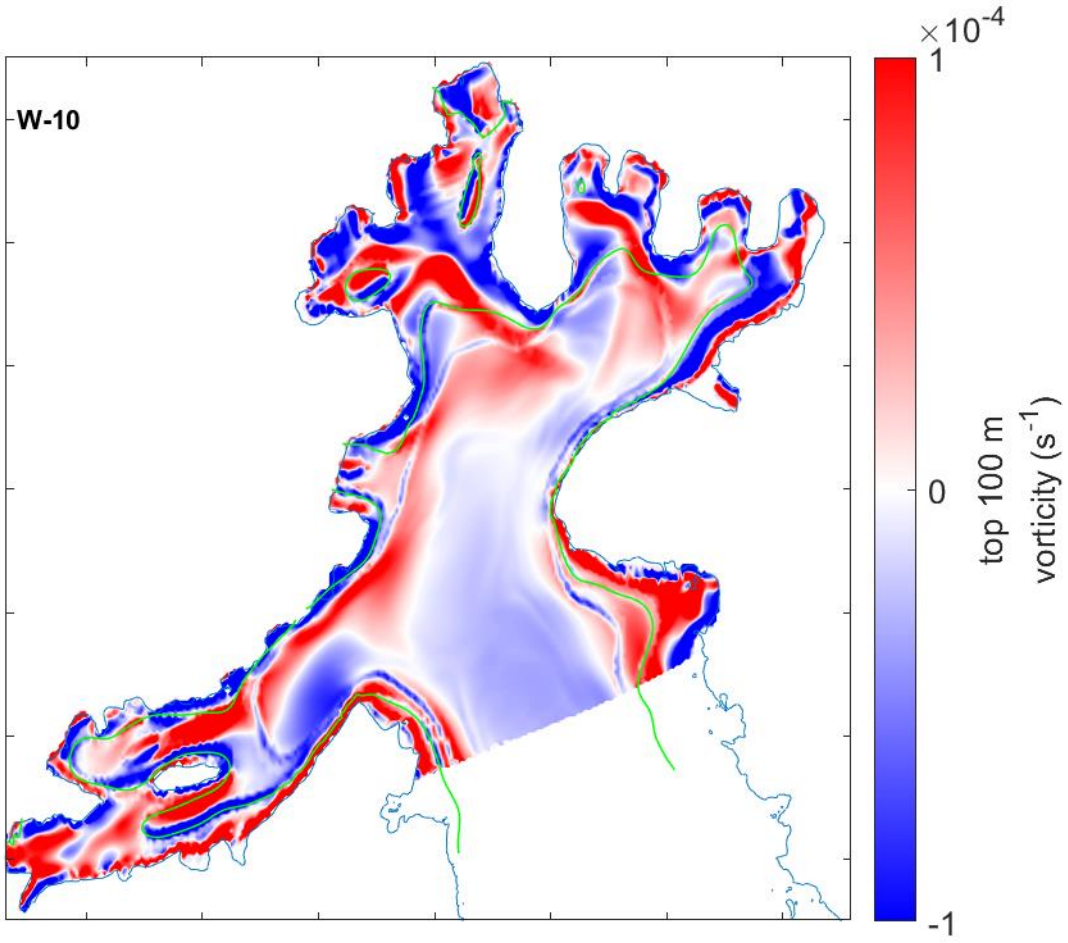

Figure S18. *As in Fig. S16, but for W-10 scenario.*

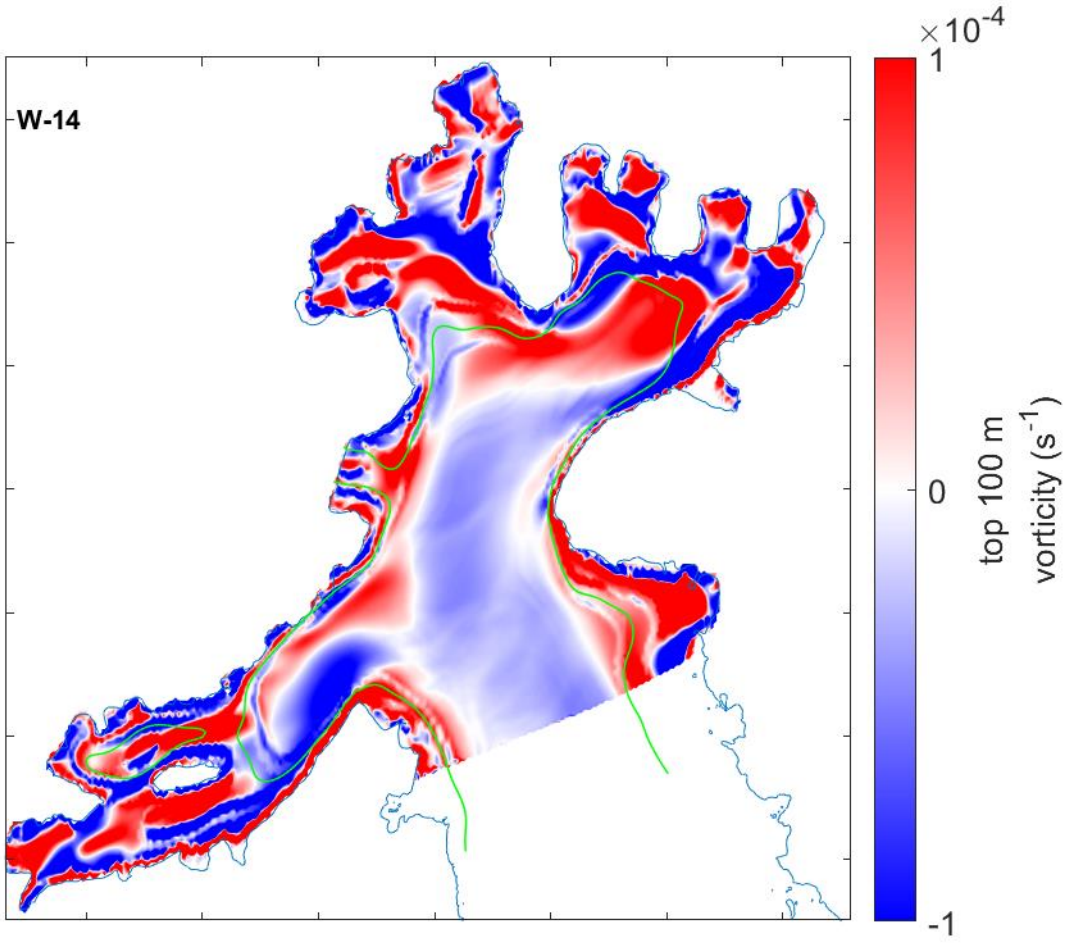

Figure S19. *As in Fig. S16, but for W-14 scenario.*

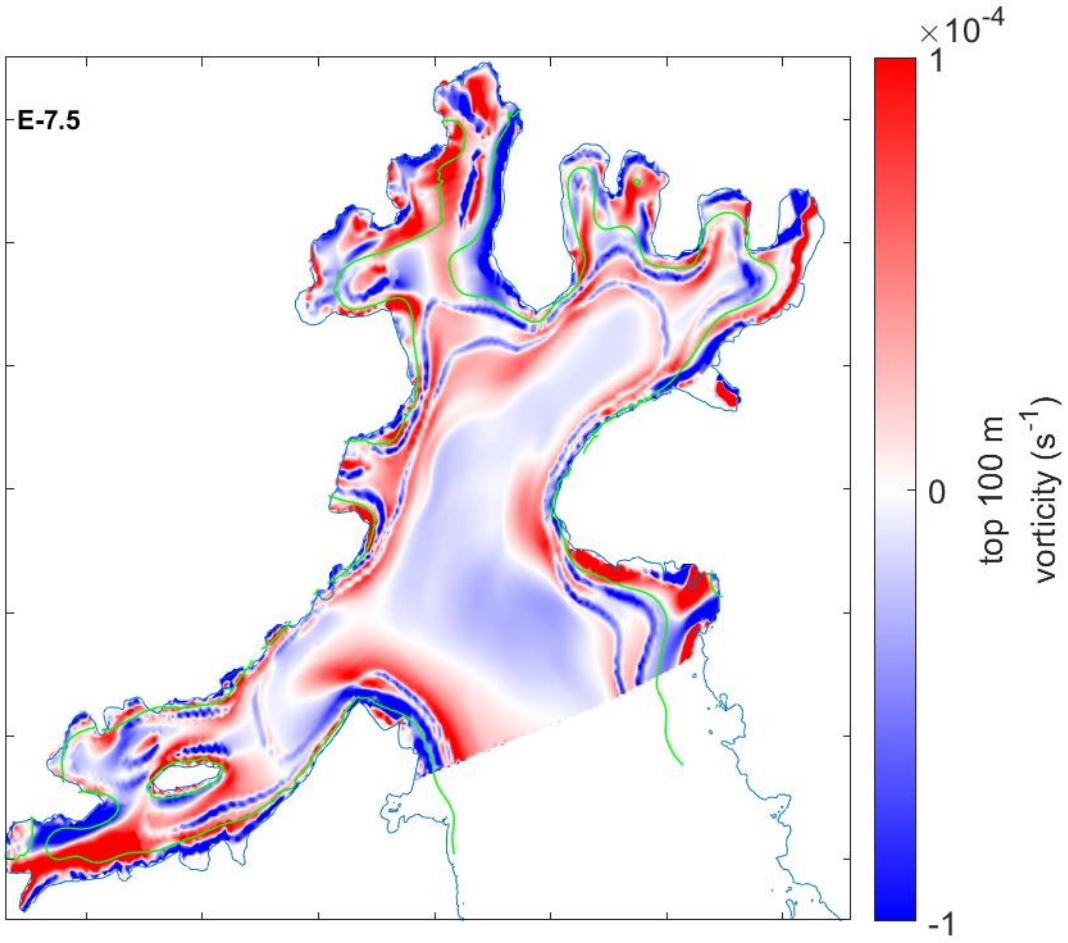

Figure S20. *As in Fig. S16, but for E-7.5 scenario.*

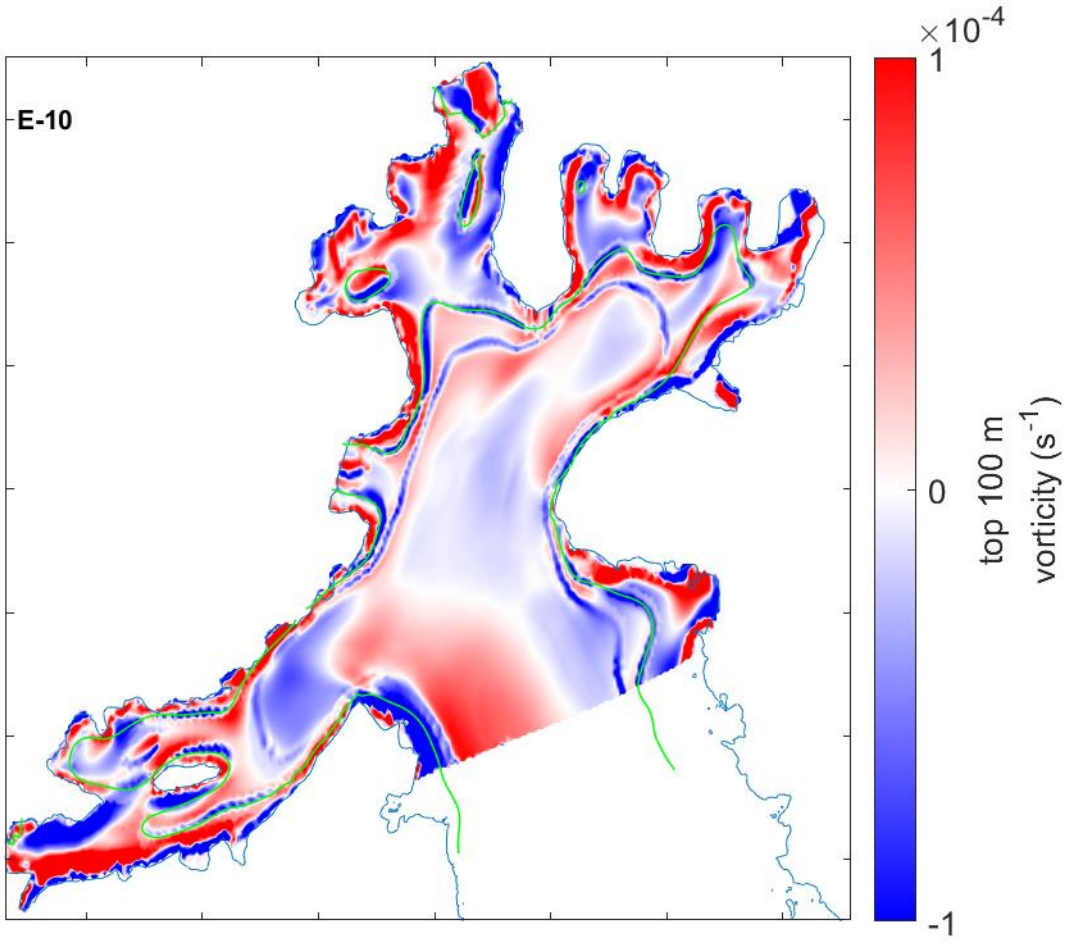

Figure S21. *As in Fig. S16, but for E-10 scenario.*

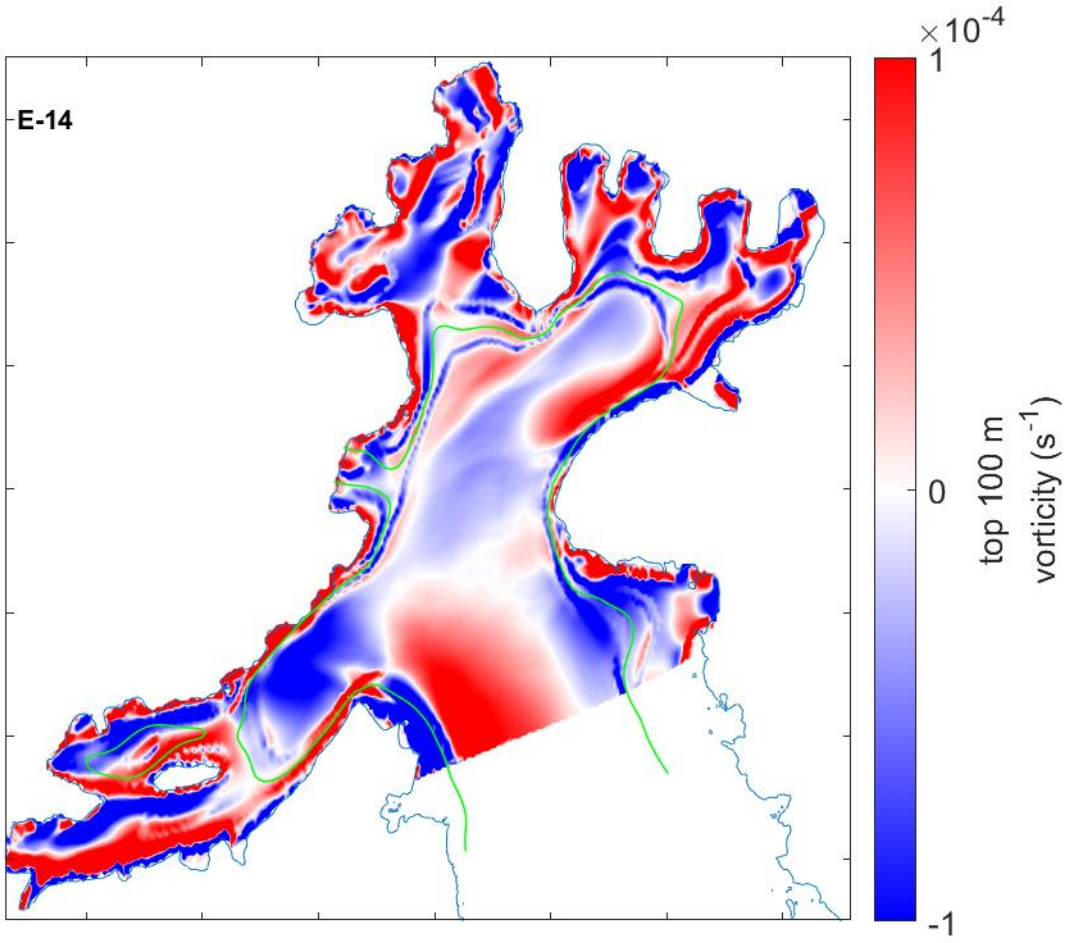

Figure S22. *As in Fig. S16, but for E-14 scenario.*