Supporting Information for "Consistent Predictability of the Ocean State Ocean Model (OSOM) using Information Theory and Flushing Timescales"

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Introduction

Text S1. The supplementary information contains figures S1 to S25. All the figures have been quoted in the main text. Also, table S1 shows root mean square error between model run and observations for surface temperature and salinity as well as bottom temperature and salinity.

References

Table S1. Root mean square error between observation and a single unperturbed model run

	Temperature ^{o}C		Salinity	
	Surface	Bottom	Surface	Bottom
CP	1.55	1.43	2.69	0.91
BR	2.42	1.26	3.4	1.24
NP	1.13	0.75	2.38	0.74
MtV	1.01	1.07	1.88	0.86
MtHB	1.87	0.77	2.02	0.94
QP	1.03	2.34	2.34	0.43
PP	0.91	0.82	2.91	0.59
GB	0.89	1.21	3.28	1.7

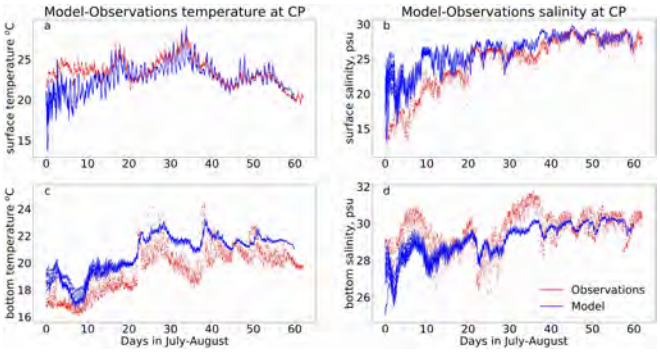


Figure S1. Comparison of model with observations collected at Conimicut Point (CP).

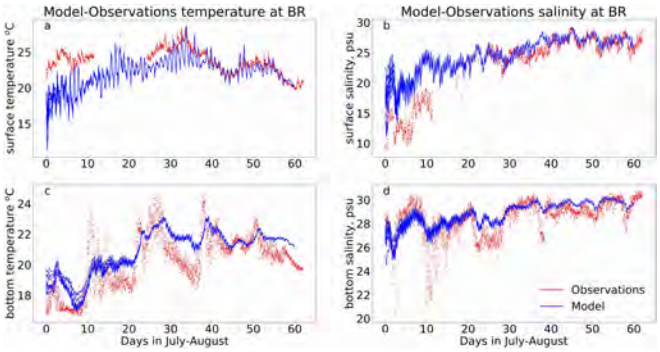


Figure S2. Comparison of model with observations collected at Bullock's Reach (BR).

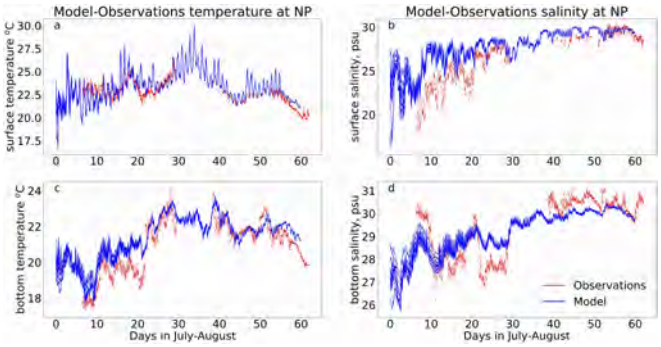


Figure S3. Comparison of model with observations collected at North Passage (NP).

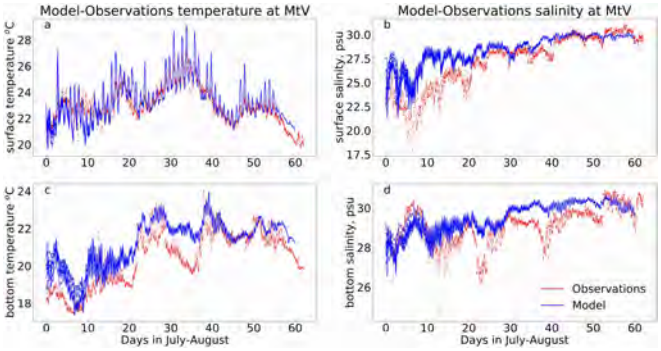


Figure S4. Comparison of model with observations collected at Mount View (MtV).

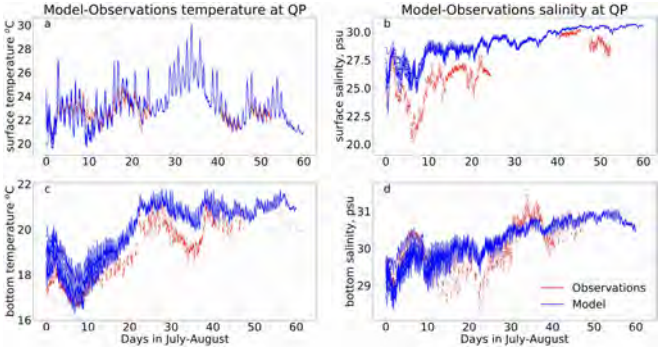


Figure S5. Comparison of model with observations collected at Quonset Point (QP).

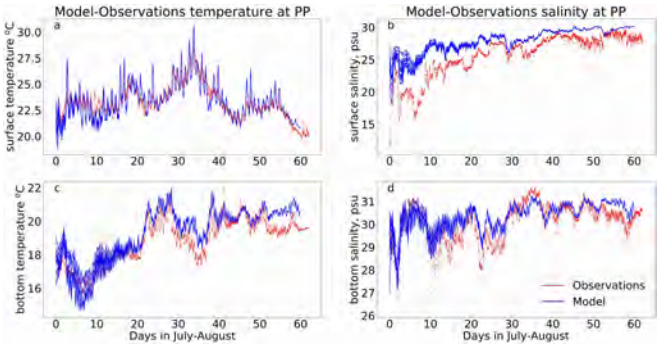


Figure S6. Comparison of model with observations collected at Poppasquash Point (PP).

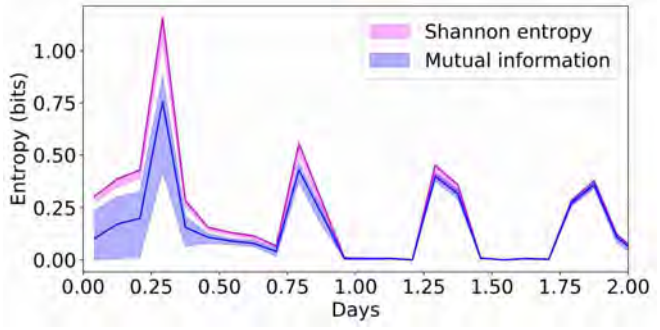
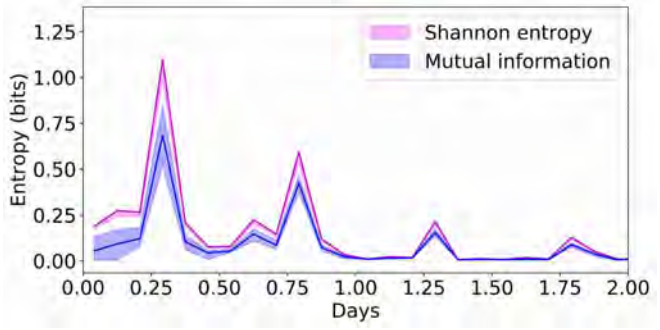


Figure S7. Mutual information between members of climatology ensemble compared with Shannon entropy of the mean of ensemble of zone 1 for the months of July-August.



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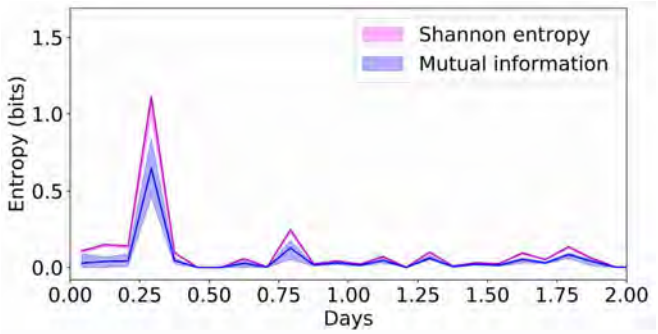

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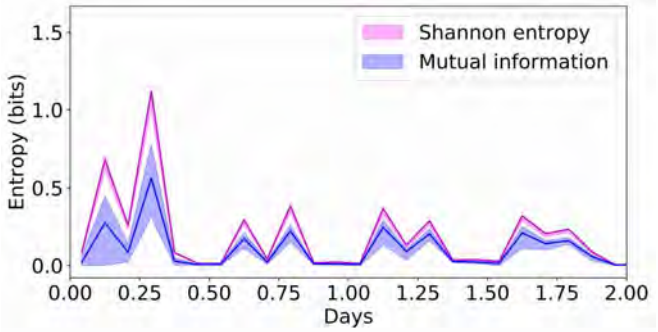

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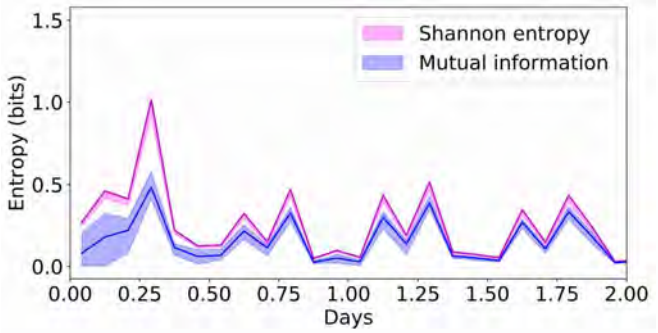

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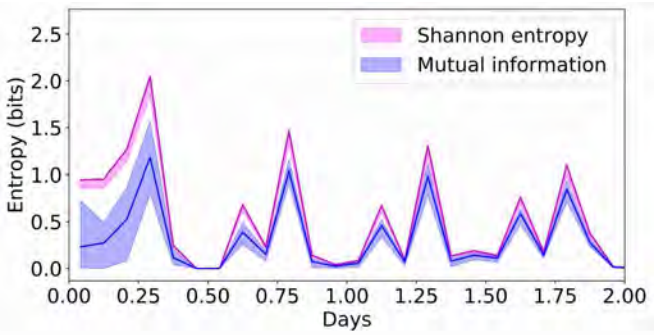


Figure S12. Figure shows predictability of kinetic energy. Mutual information between members of climatology ensemble compared with Shannon entropy of the mean of ensemble of zone 7 for the months of July-August.

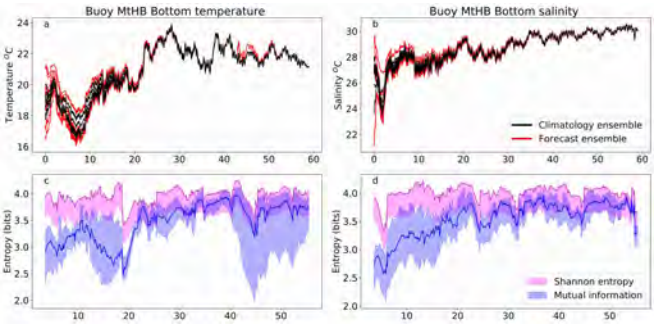
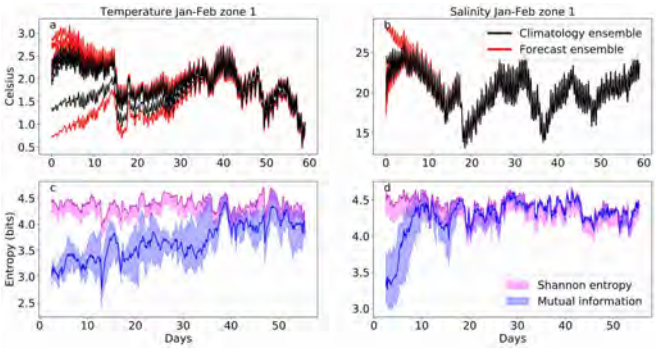


Figure S13. Bottom temperature predictability at grid point closest to MtHB buoy



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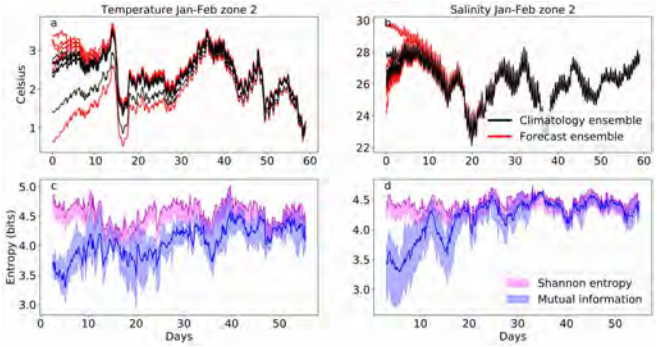

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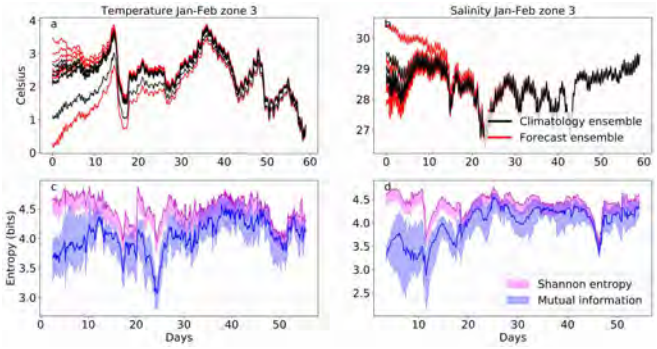

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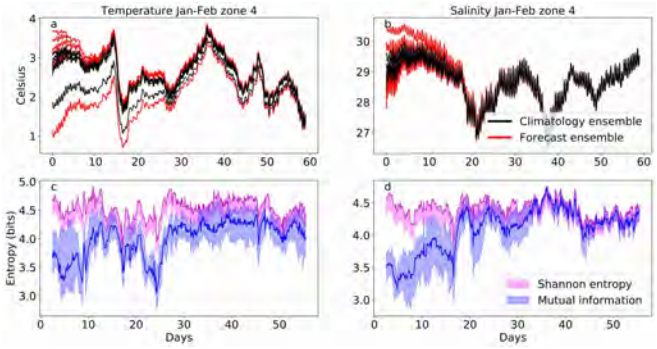

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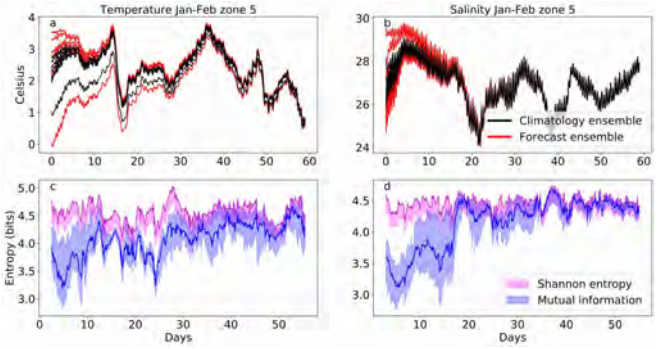


Figure S18. Results of zone 5 for January-February. Top figures shows temperature and salinity ensembles. Bottom figures show information entropy metrics applied between forecast and climatology ensembles.

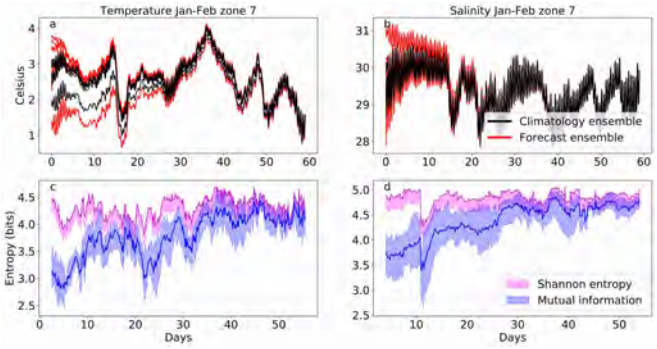


Figure S19. Results of zone 7 for January-February. Top figures shows temperature and salinity ensembles. Bottom figures show information entropy metrics applied between forecast and climatology ensembles.

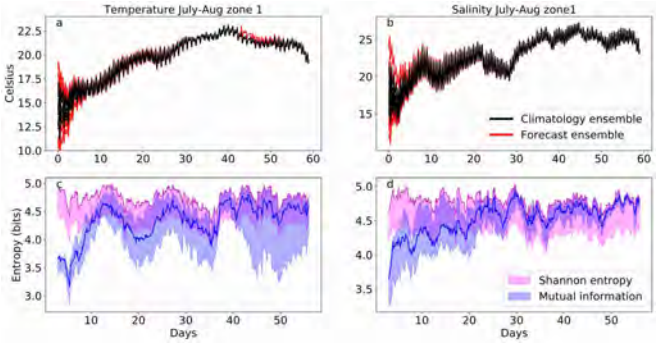


Figure S20. Results of zone 1 for July - August. Top figures shows temperature and salinity ensembles. Bottom figures show information entropy metrics applied between forecast and climatology ensembles.

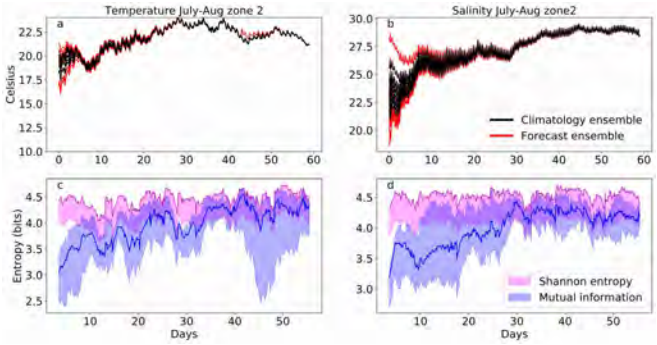


Figure S21. Results of zone 2 for July - August. Top figures shows temperature and salinity ensembles. Bottom figures show information entropy metrics applied between forecast and climatology ensembles.

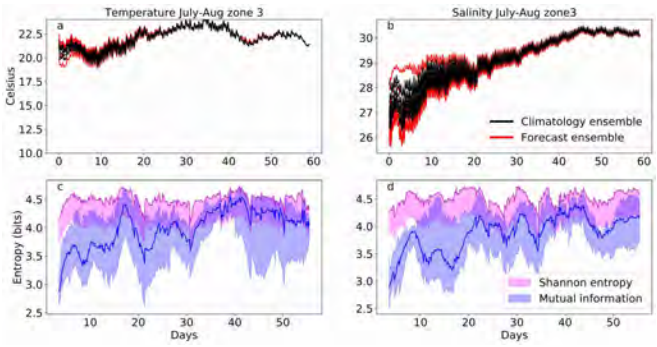
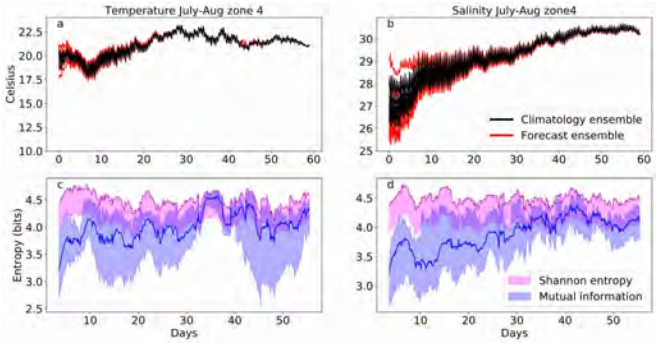


Figure S22. Results of zone 3 for July - August. Top figures shows temperature and salinity ensembles. Bottom figures show information entropy metrics applied between forecast and climatology ensembles.



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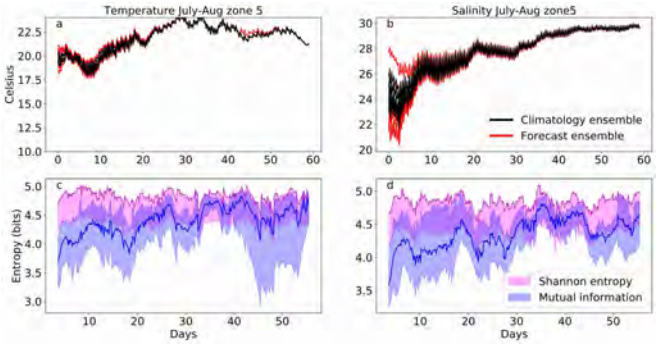

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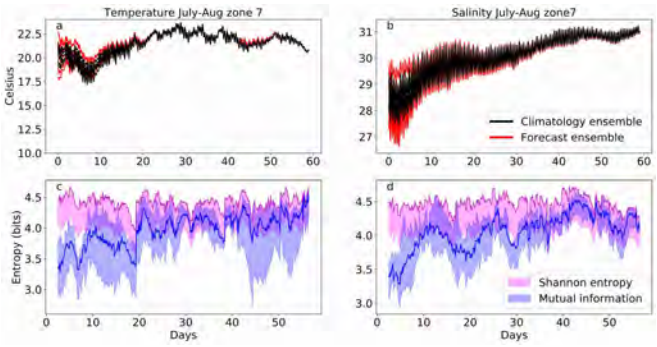

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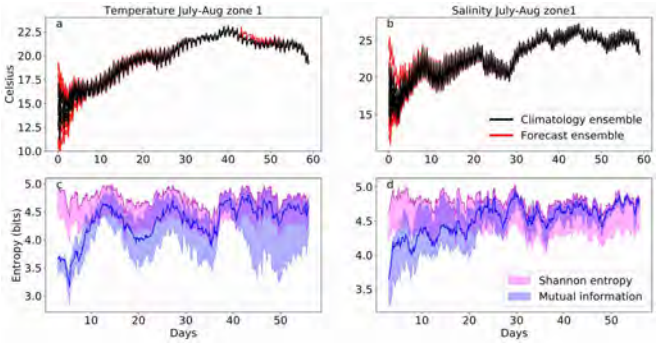
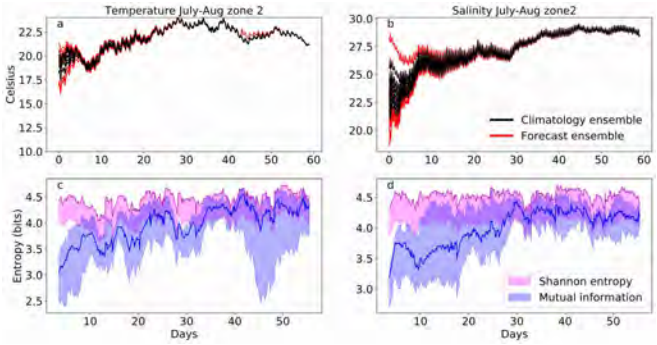


Figure S26. Results of zone 1 for July - August. Top figures shows temperature and salinity ensembles. Bottom figures show information entropy metrics applied between forecast and climatology ensembles.



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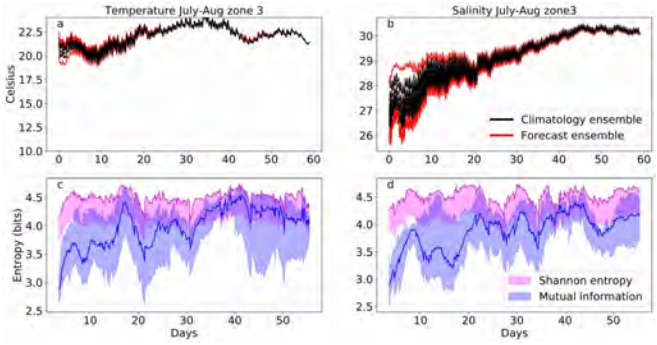
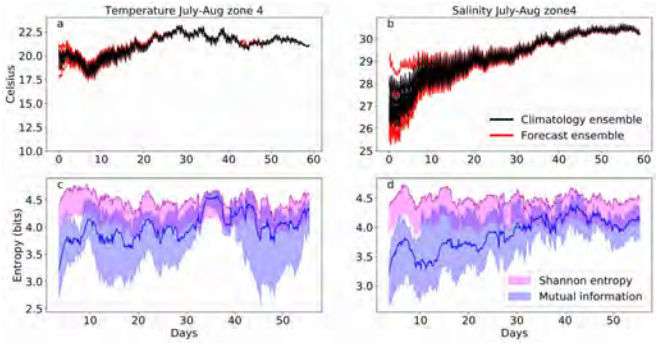


Figure S28. Results of zone 3 for July - August. Top figures shows temperature and salinity ensembles. Bottom figures show information entropy metrics applied between forecast and climatology ensembles.



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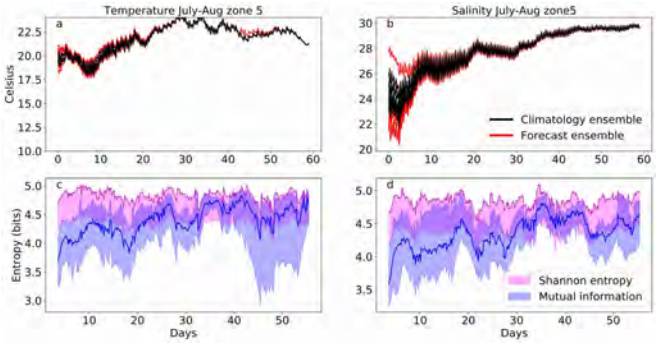


Figure S30. Results of zone 5 for July - August. Top figures shows temperature and salinity ensembles. Bottom figures show information entropy metrics applied between forecast and climatology ensembles.

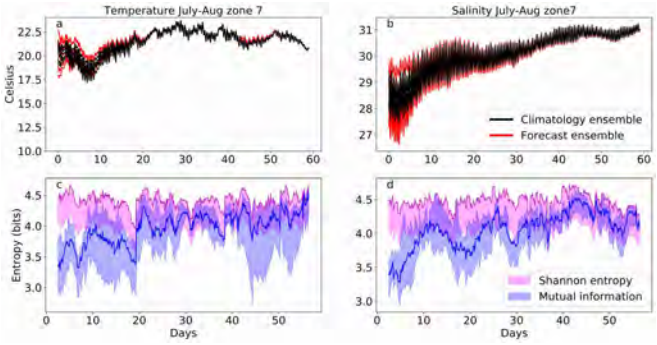
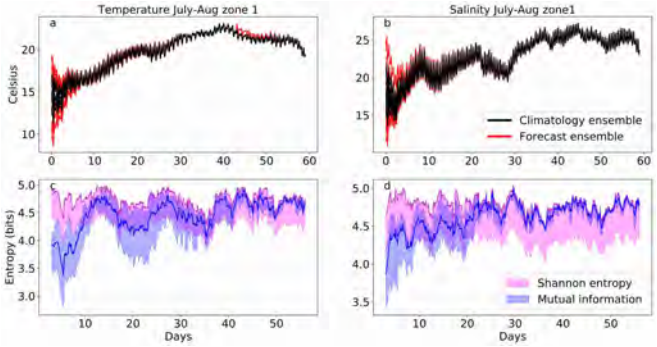


Figure S31. Results of zone 7 for July - August. Top figures shows temperature and salinity ensembles. Bottom figures show information entropy metrics applied between forecast and climatology ensembles.



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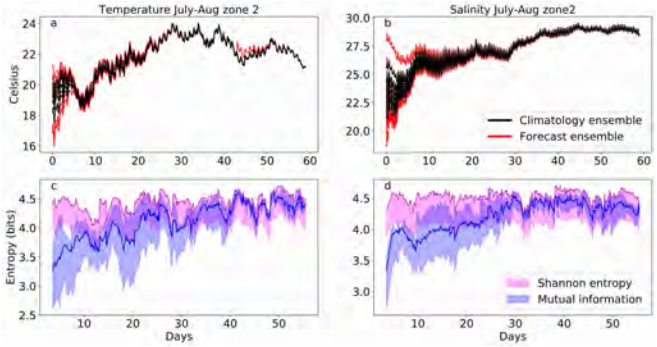


Figure S33. Results of zone 2 for July - August. Top figures shows temperature and salinity ensembles. Bottom figures show information entropy metrics applied between forecast and climatology ensembles.

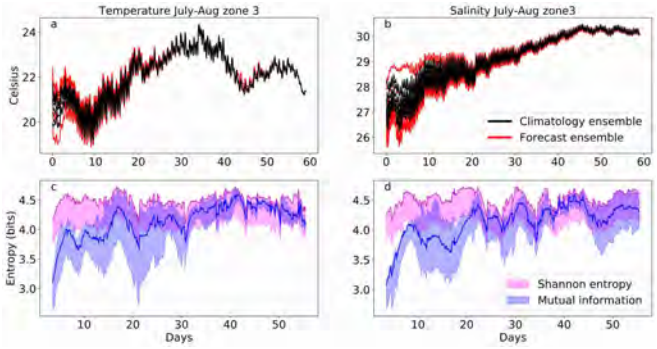


Figure S34. Results of zone 3 for July - August. Top figures shows temperature and salinity ensembles. Bottom figures show information entropy metrics applied between forecast and climatology ensembles.

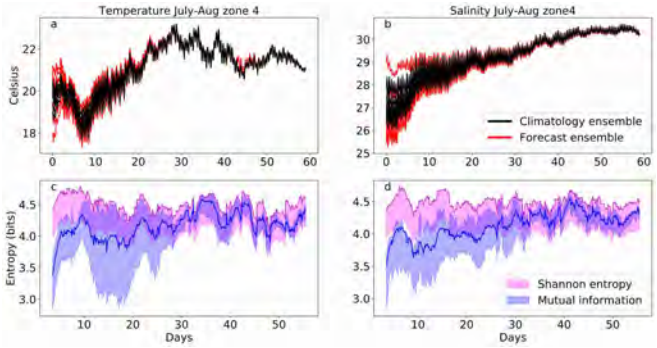
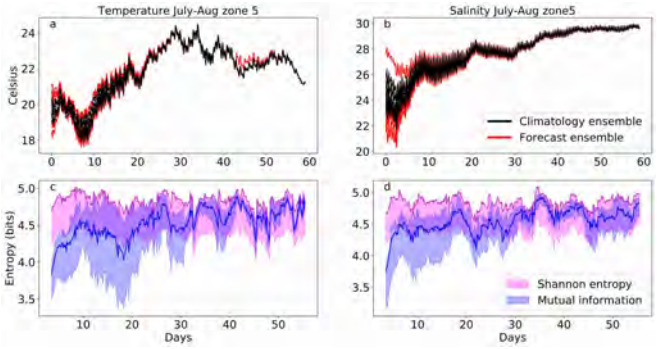


Figure S35. Results of zone 4 for July - August. Top figures shows temperature and salinity ensembles. Bottom figures show information entropy metrics applied between forecast and climatology ensembles.



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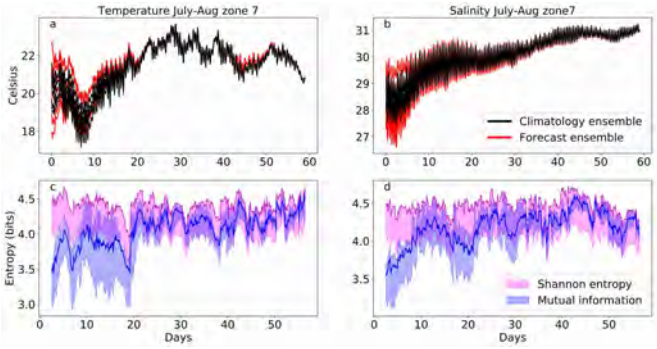

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