

# Supporting Information for Marine Heatwaves and their Depth Structures on the Northeast U.S. Continental Shelf

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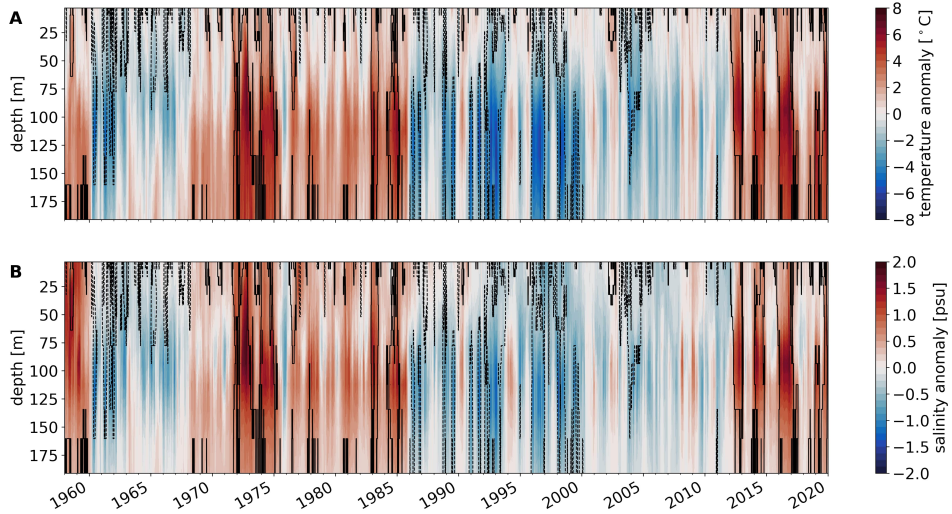
## Contents

1. Figures S1-S5

## Introduction

This supporting information contains five additional figures which are not included in the manuscript. All figures show data from the VIKING20X simulations, which are introduced in the main text.

## Supplementary Figures

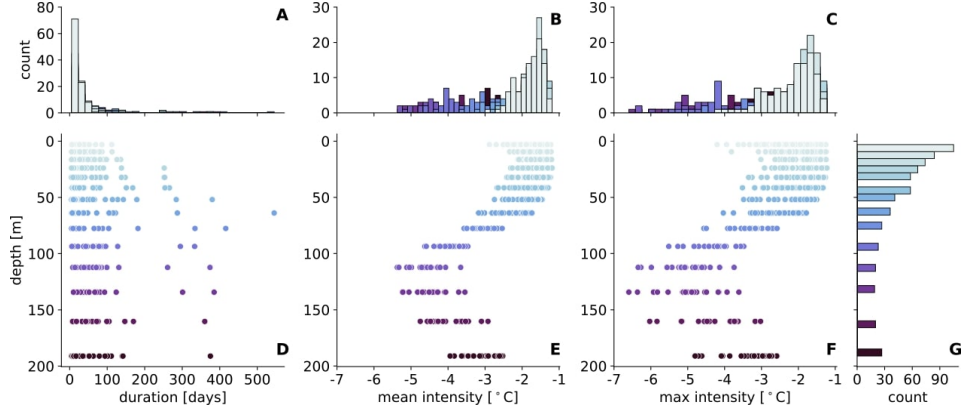


**Figure S1. MHW and MCS Detection with depth;** spatial mean temperature (A) and salinity anomalies (B) over depth and time for the whole shelf region; solid black contour lines indicate MHW state, dashed lines MCS.

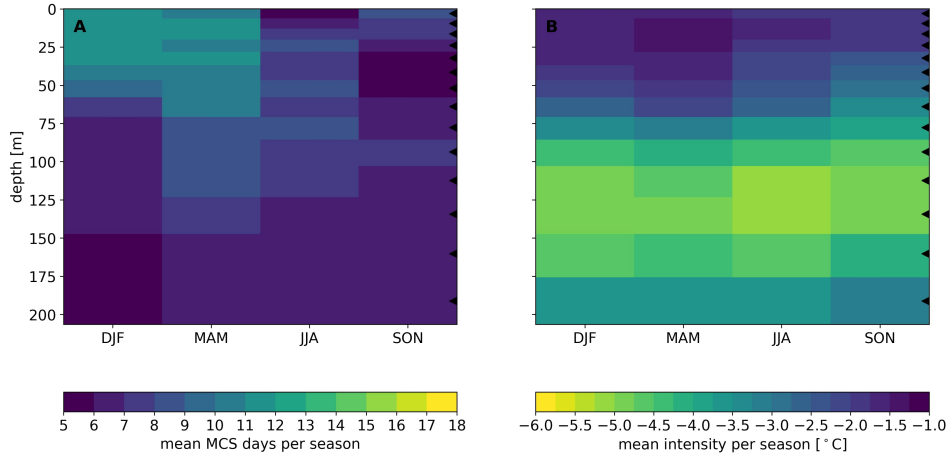
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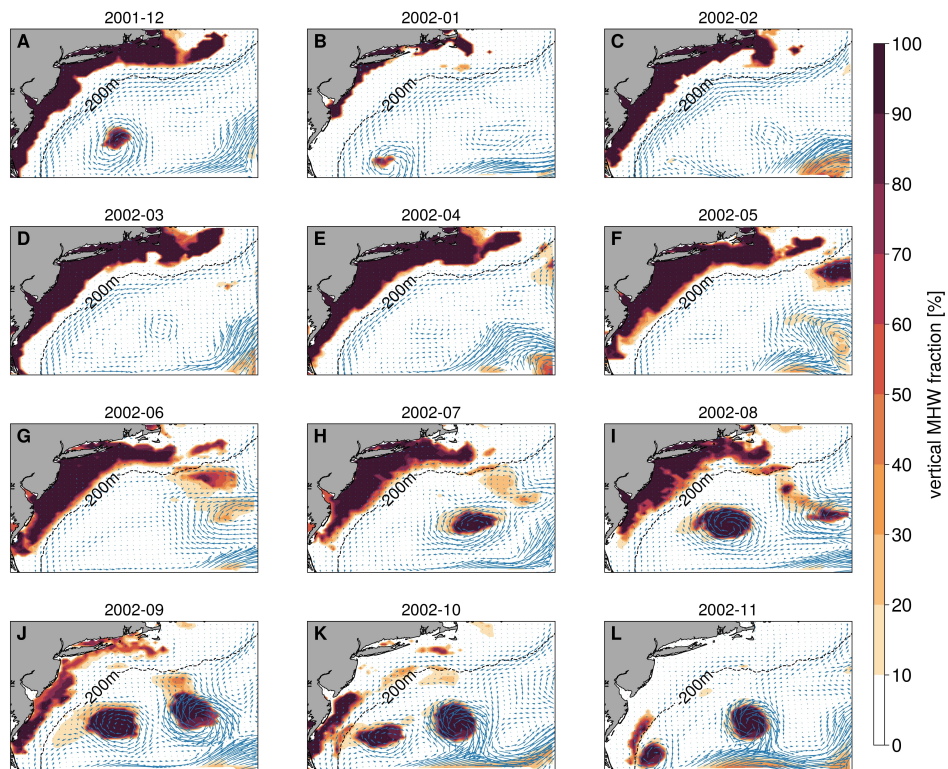
Corresponding author: Svenja Ryan, [sryan@whoi.edu](mailto:sryan@whoi.edu)



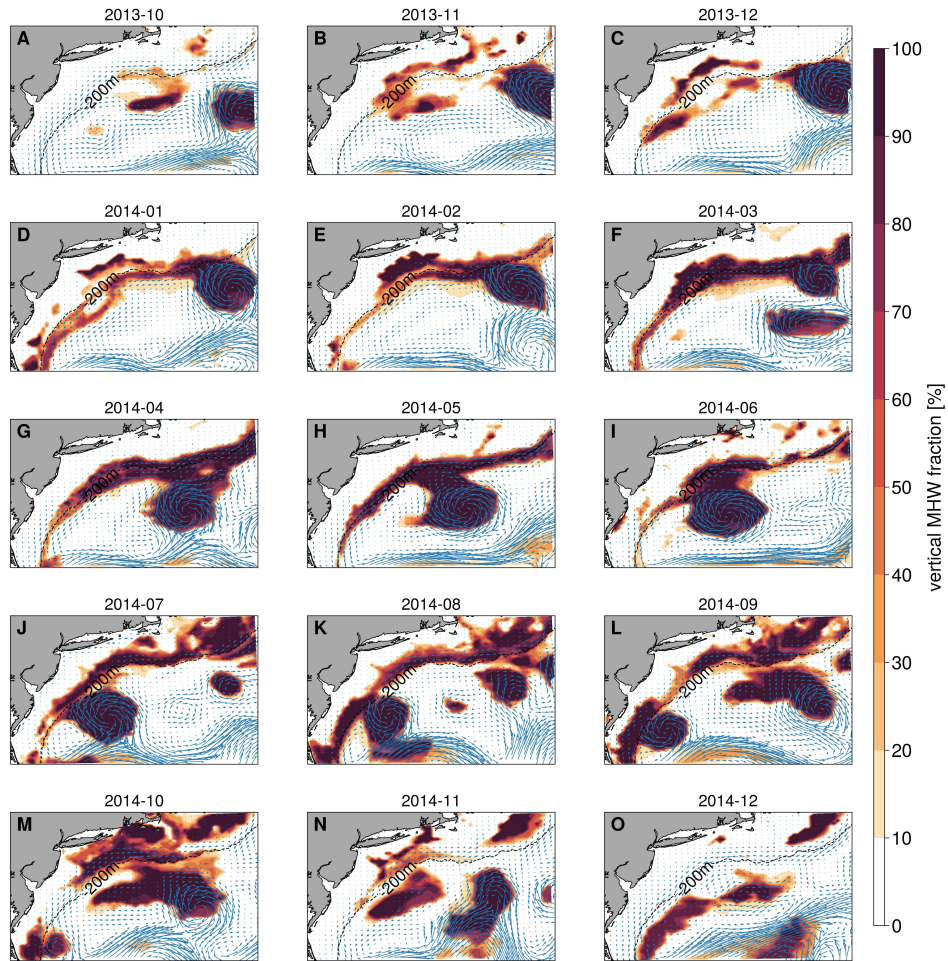
**Figure S2.** MCS metrics with depth; distribution of MCS duration (D), mean intensity (E) and maximum intensity (F) with depth for each detected MCS during 1960-2019; A-C show the distribution for each metric in the color for each depth as in D-F; G shows the total count of MCSs for each depth.



**Figure S3.** Seasonal distribution of mean MCS days (A) and mean intensity per season (B) with depth; markers on the right indicate depth levels of the model. Acronyms for seasons are: December/January/February (DJF), March/April/May (MAM), June/July/August (JJA), September/October/November (SON).



**Figure S4.** Monthly mean modeled surface velocities and vertical MHW fraction for the upper 500m for each month during the MHW in 2002, the black line indicates the 200m isobath.



**Figure S5.** Monthly mean modeled surface velocities and vertical MHW fraction for the upper 500m for each month during the MHW in 2014, the black line indicates the 200m isobath.