Time Series of Surface Water Dissolved Inorganic Carbon Isotopes from the Southern California Bight-Supplementary Information

Chemical tracers in the waters near the sampling site.

In this section we show ventilation age and DIC isotope values from the waters of the Southern California Bight (SCB) close to our sampling site. This is done to provide the reader with further background and context for the source waters described in the main text.

CFC age data was obtained from the National Oceanic and Atmospheric Administration NCEI Accession 0226793 data set (https://www.ncei.noaa.gov/data/oceans/ncei/ocads/metadata/0226793.html). CFC ages were calculated based on samples from the Global Ocean Data Analysis Project (GLODAP) V2.

Dissolved inorganic carbon (DIC) $\Delta^{14}C$ and $\delta^{13}C$ data were obtained from the GLODAP V2 data set (https://www.glodap.info/index.php/merged-and-adjusted-data-product-v2-2022/). The data is obtained from two cruises: 318M20040615 that occurred during August 2004, and 318M20130321 that occurred during August 2013.

Figures S1 and S2 show depth profiles from stations between latitudes 32°N to 32.63°N and longitudes 117.38°W to 119.77°W. This encompasses stations on the continental shelf and slope within the SCB. Figure S3 shows zonal transects from the two cruises and the transects are located between 29.977°N and 32.63°N.

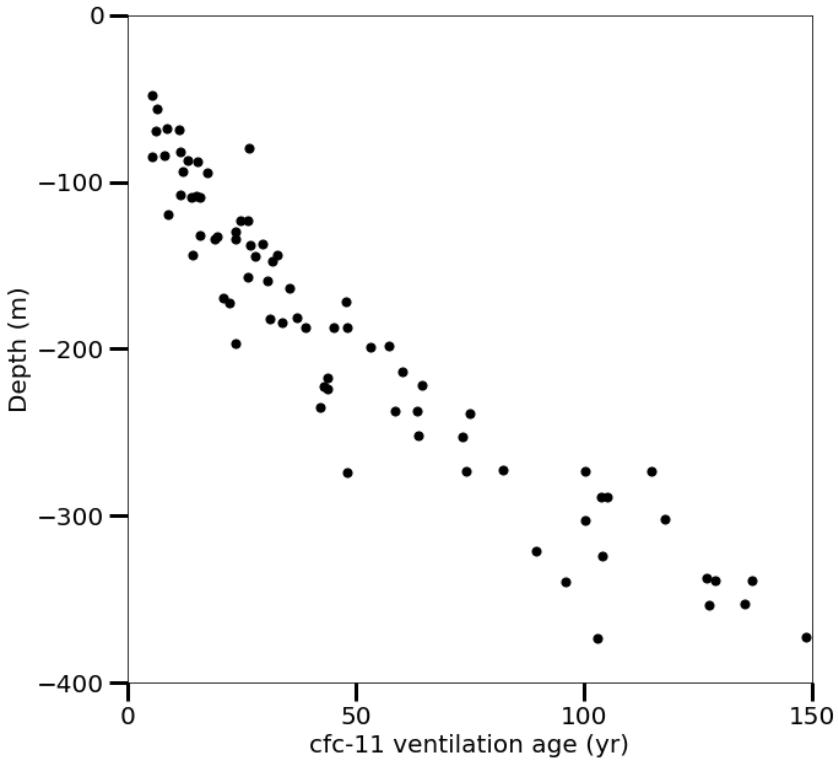

Figure S1. CFC-11 ventilation age calculated using the transit time distribution method as described in (Jeansson et al., 2021) vs depth within the Southern California Bight.

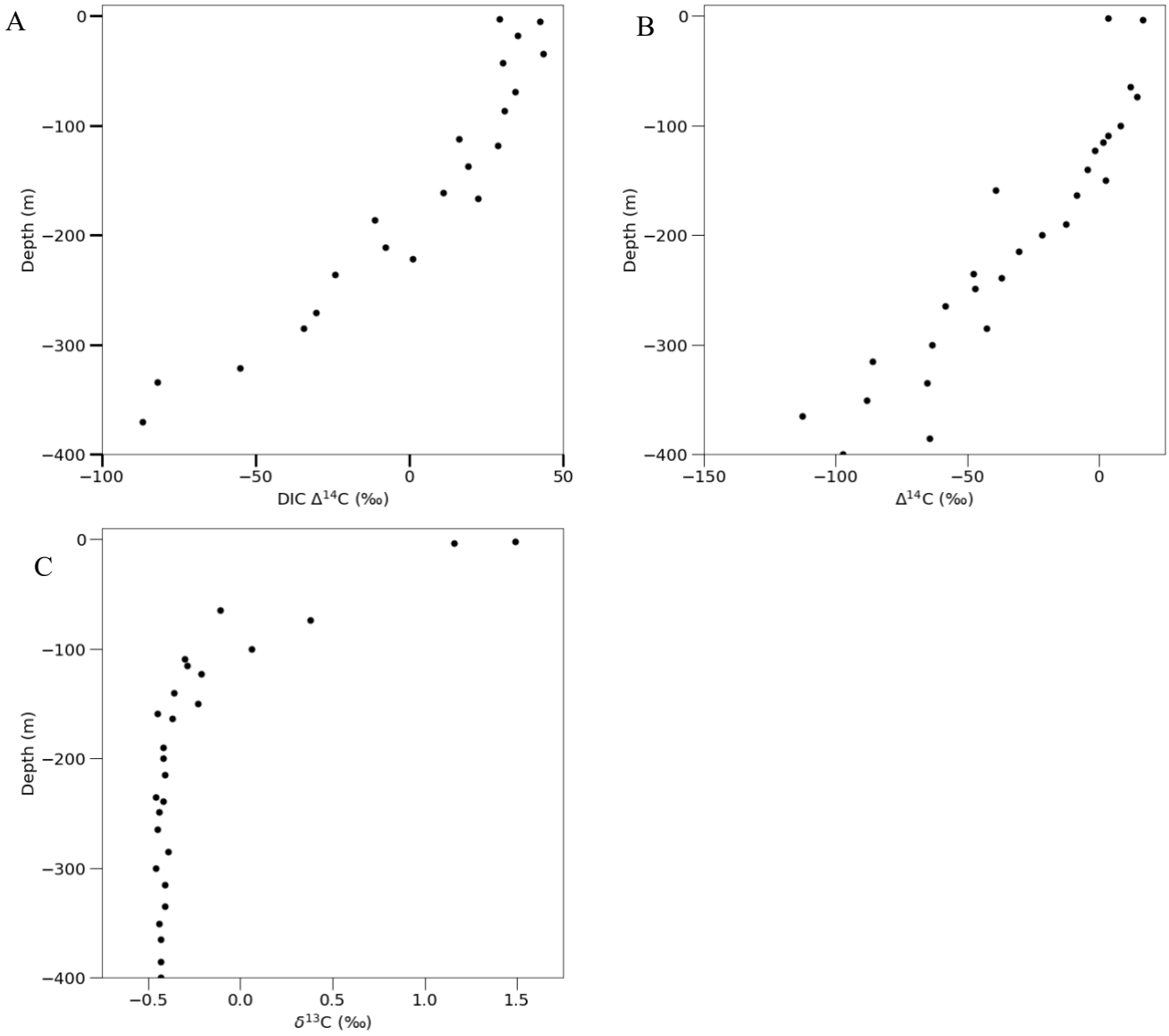

Figure S2: Depth profiles DIC $\Delta^{14}C$ values from 2004 (a) and 2013 (b) and DIC $\delta^{13}C$ values from 2013 (c).

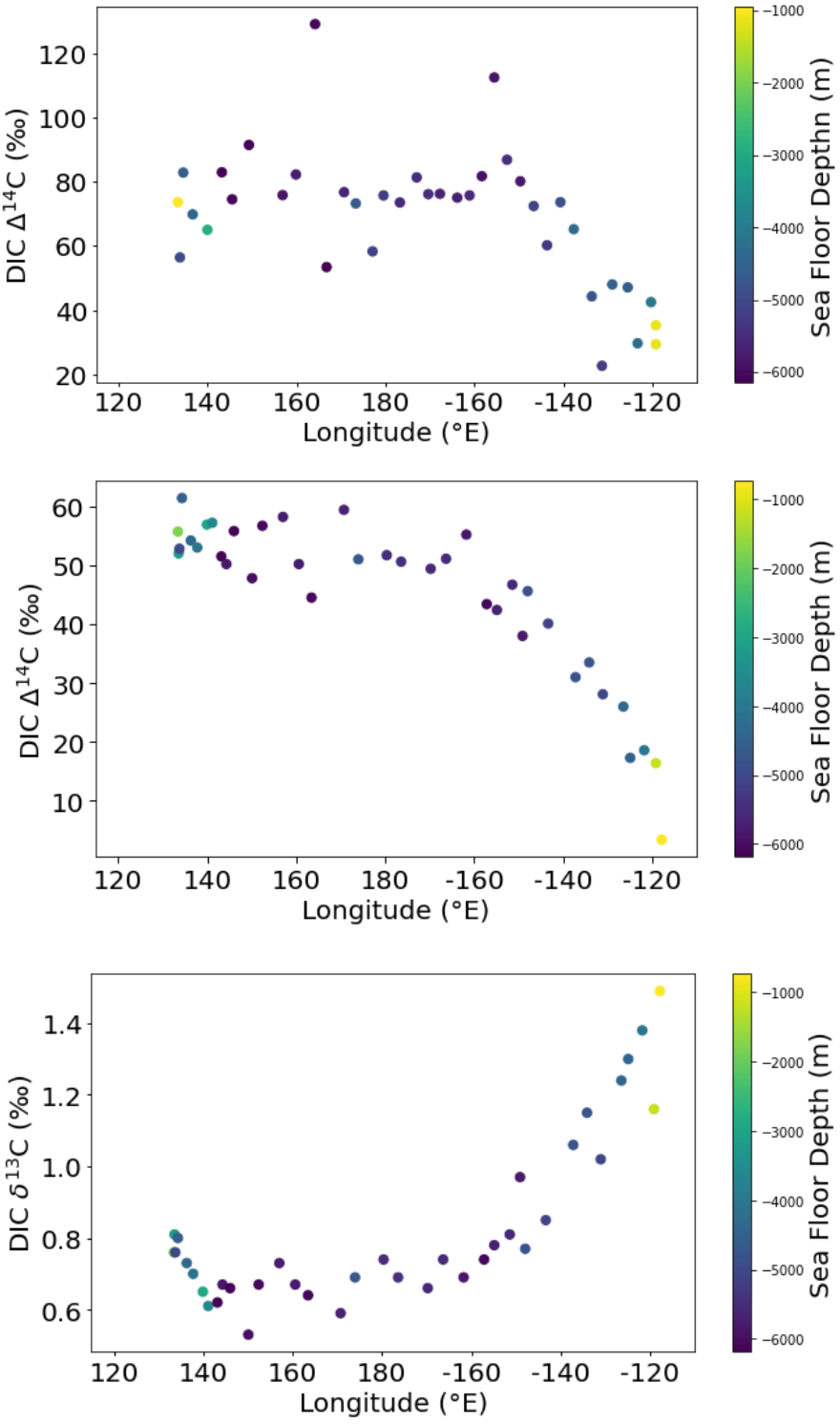

Figure S3: Zonal transects showing surface (>20m) DIC $\Delta^{14}C$ values from 2004 (a) and 2013 (b) and DIC $\delta^{13}C$ values from 2013 (c).