Supporting Information for
**Sensitivity of the California Current nutrient supply to wind, heat, and remote ocean forcing**

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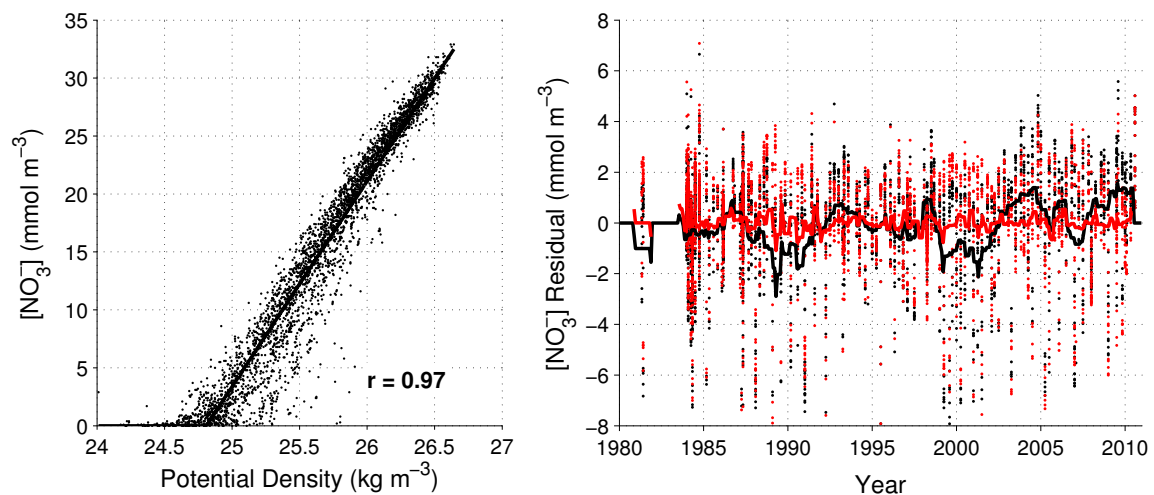**Contents of this file:** Figures S1 to S3



Figure S1: Nitrate model. (left) Density-nitrate relationship used to estimate nitrate concentration in the model domain. Data points are extracted from the World Ocean Database and the black line indicates the linear fit used to estimate nitrate from model output. (right) Model residuals (dots) and 12-month running mean (lines) are shown for the standard fit used in our analysis (black) and for the *ad hoc* removal of low frequency variability used in Table 2 (red).
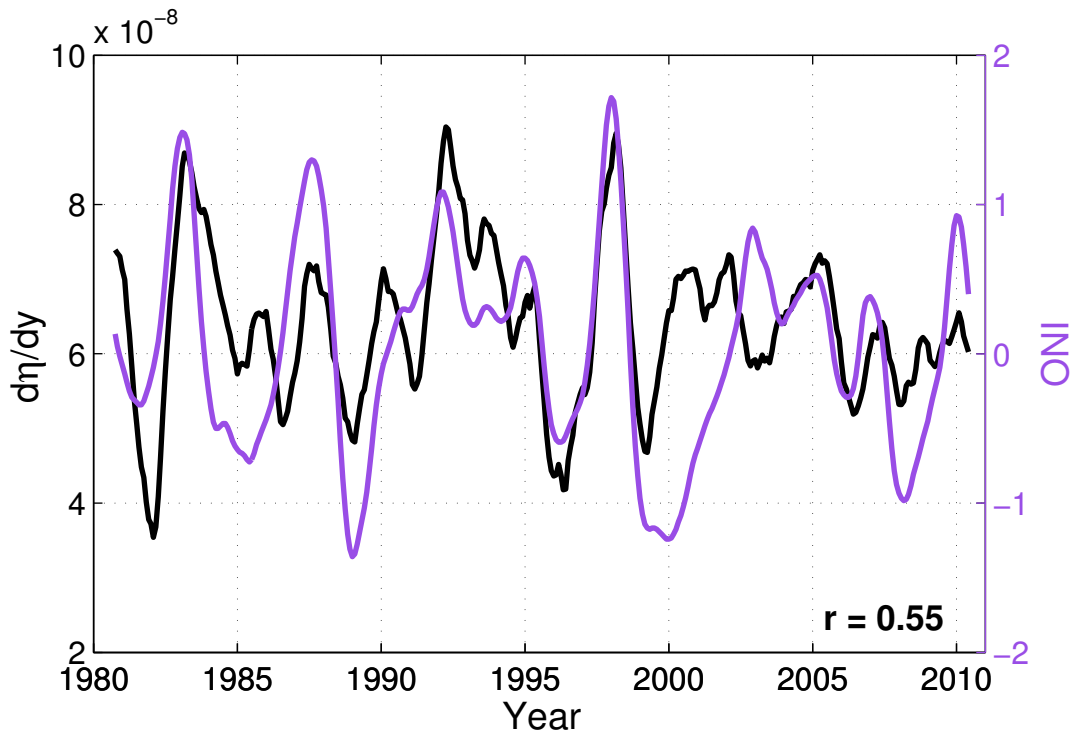
Figure S2: The model alongshore sea surface height gradient, measured at the coast and averaged over 35-40˚N, is plotted in black, with the Oceanic Niño Index (ONI) in purple. Both time series have been smoothed with a 12-month running mean.
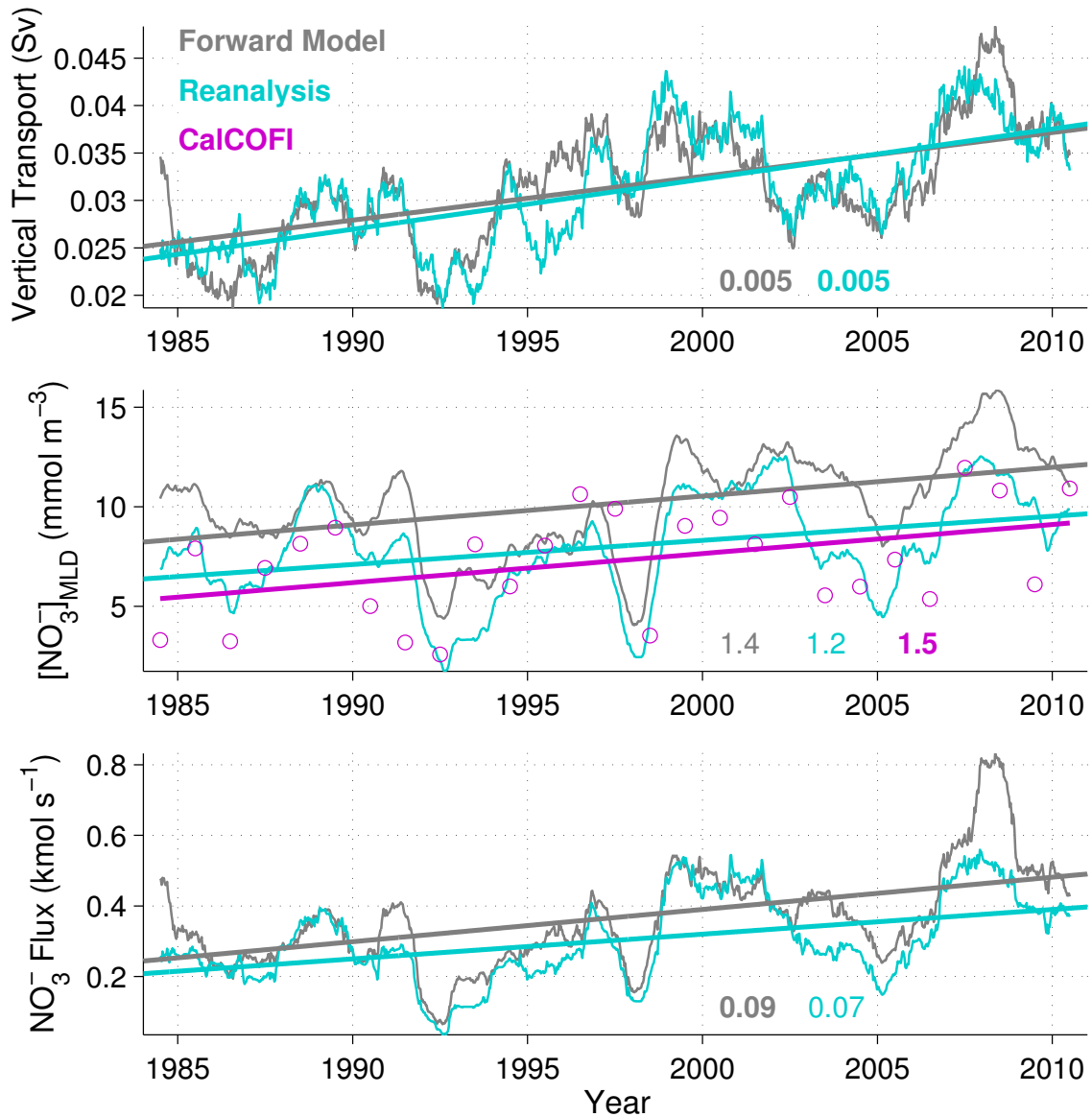
Figure S3: Evalution of modeled trends. The forward model is the "Realistic" configuration used throughout the study. The reanalysis assimilates available satellite and *in situ* hydrographic data. CalCOFI nitrate data are annually averaged from the nearshore (<50 km from shore) stations of line 76.7, at the southern edge of our study region (~34.8-35.1˚N). The model time series are averaged over the same region (34.8-35.1˚N, 0-50 km from shore). Note that for this comparison, line 76.7 data were omitted from the density-nitrate fit used to estimate nitrate from model output; the CalCOFI and Forward Model time series are thus fully independent. Linear trends (decade[-1]) are indicated in the lower right corner and bold trends are significant above the 95% confidence level.