**Spring Bloom Dynamics and Zooplankton Biomass Response on the US Northeast Continental Shelf**

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Supplementary Material

We extracted CDOM estimates for the ecoregions (production units) used in the study and the 8-day periods (8Day) from the NASA Ocean Color website. We looked at: 1) time series trend over years for the 115 ecoregion-8Day cells; 2) the variability of CDOM in each cell; and, 3) the correlation between CDOM and chlorophyll concentration also by cell. The table below shows the results of Mann-Kendall trend tests of time series of CDOM in each ecoregion-8Day cell (bold p values denote significance at p=0.05). Only nine significant trends were found (7.8% of 115) over all areas; in GBK there was one negative and positive trend, a negative trend in GOME, and a negative in MABN. The five significant trends in MABS were all positive and mostly occurring late May and June periods. We interpret these data to suggest that CDOM was not trending in a systematic way to influence our spring bloom detection.



The table below contains coefficients of variation (standard deviation/mean) of CDOM time series by ecoregion-8Day period cells. The variability of CDOM was similar between ecoregions as supported by an ANOVA that showed that AREA differences were non-significant. CDOM would appear to be lower during spring versus late winter or early summer. There does not appear to be a significant trend in CDOM variability between study ecoregions.

> fit <- aov(CV ~ AREA, data=cva)

> summary(fit) # display Type I ANOVA table

 Df Sum Sq Mean Sq F value Pr(>F)

AREA 1 0.0123 0.012316 3.083 0.0818 .

Residuals 113 0.4514 0.003995



The table below shows the results of Pearson product-moment correlations between annual CDOM and chlorophyll concentrations by ecoregion-8Day period cells (bold p values denote significance at p=0.05). Only six significant correlations were found (5.2% of 115) over all areas; five of the correlations were negative and one was positive. It would appear that chlorophyll and CDOM concentrations were independent in these areas.

