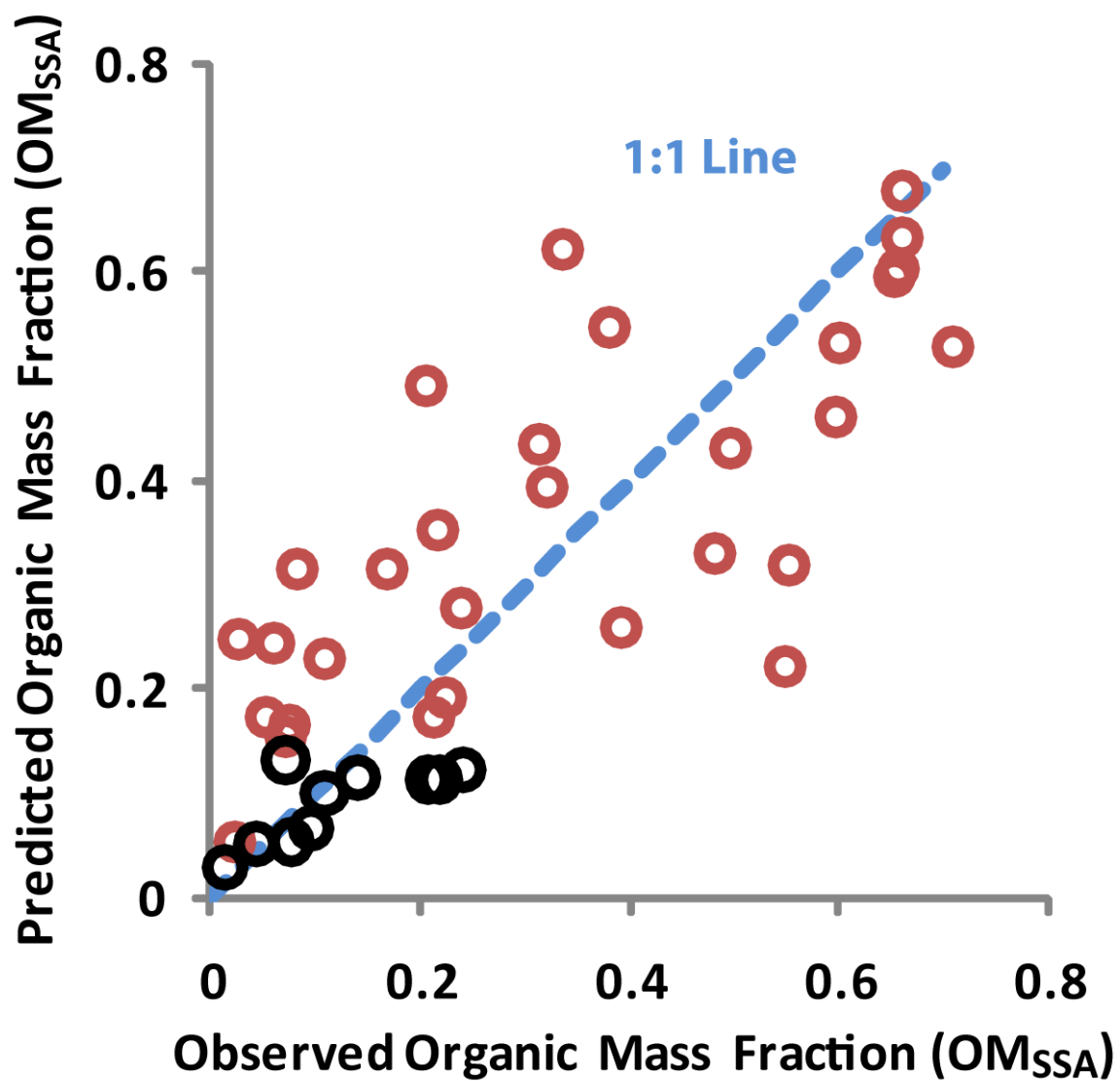


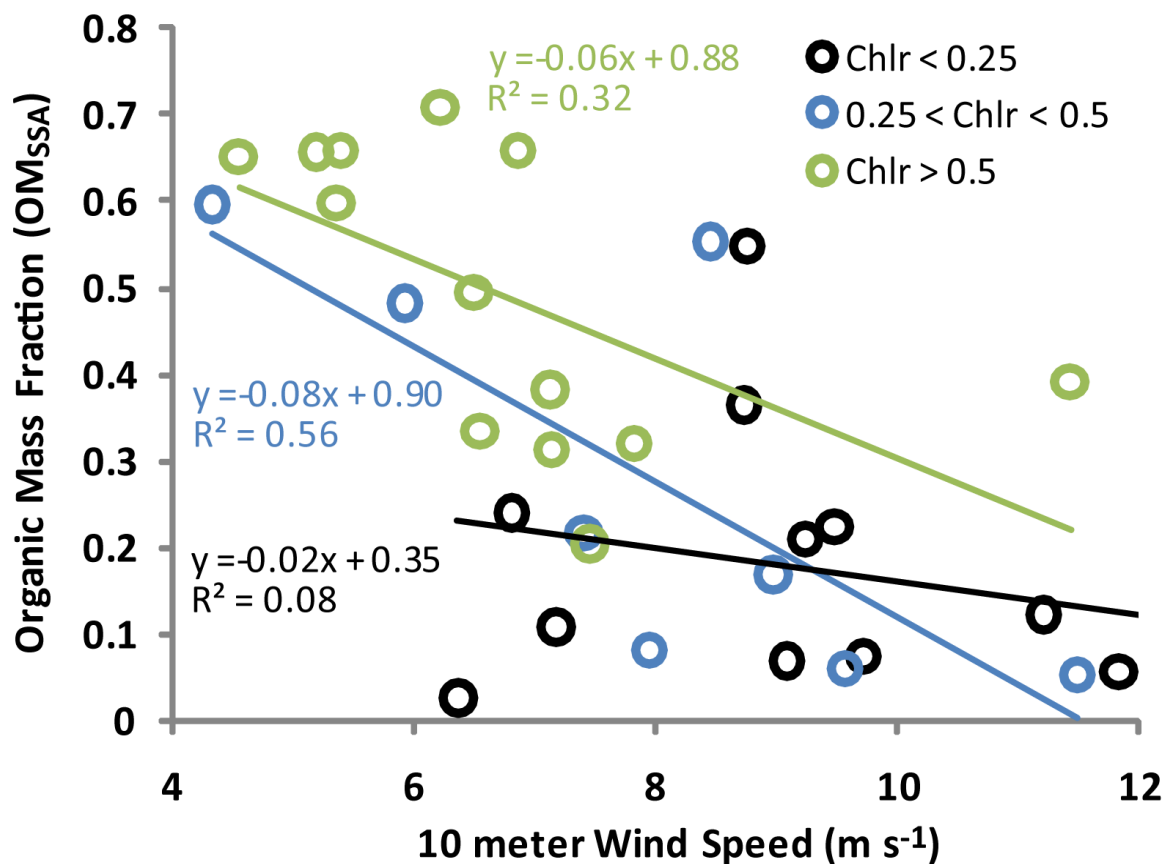
888 Fig. S1.



889

890 Fig S1. Scatterplot of predicted vs. observed organic mass fraction of sea spray aerosol for the
891 Mace Head (red) and Point Reyes (black) sites with the 1:1 line in blue.

892

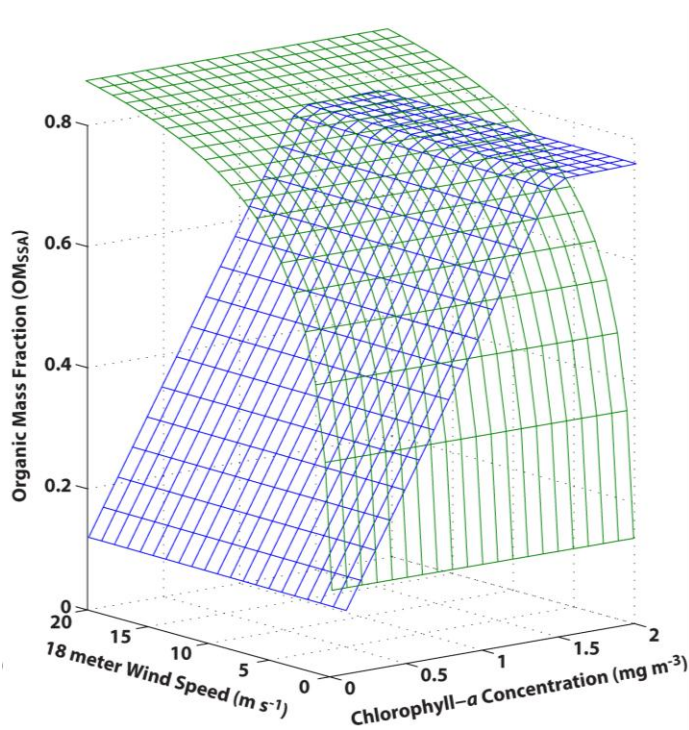


894

895 Fig. S2. Organic mass fraction of sea spray aerosol as a function of observed 10 meter wind
 896 speed (U_{10}) for Mace Head as shown in Fig. 2a but with the colors representing the
 897 corresponding chlorophyll-*a* concentrations binned into “low” ($[Chl-a] < 0.25 \text{ mg m}^{-3}$, in black),
 898 “moderate” ($0.25 < [Chl-a] < 0.5 \text{ mg m}^{-3}$, in blue), and “high” ($[Chl-a] > 0.5 \text{ mg m}^{-3}$, in green)
 899 concentrations. The color of the linear trendlines correspond to the $[Chl-a]$ bin.

900

901 Fig S3.



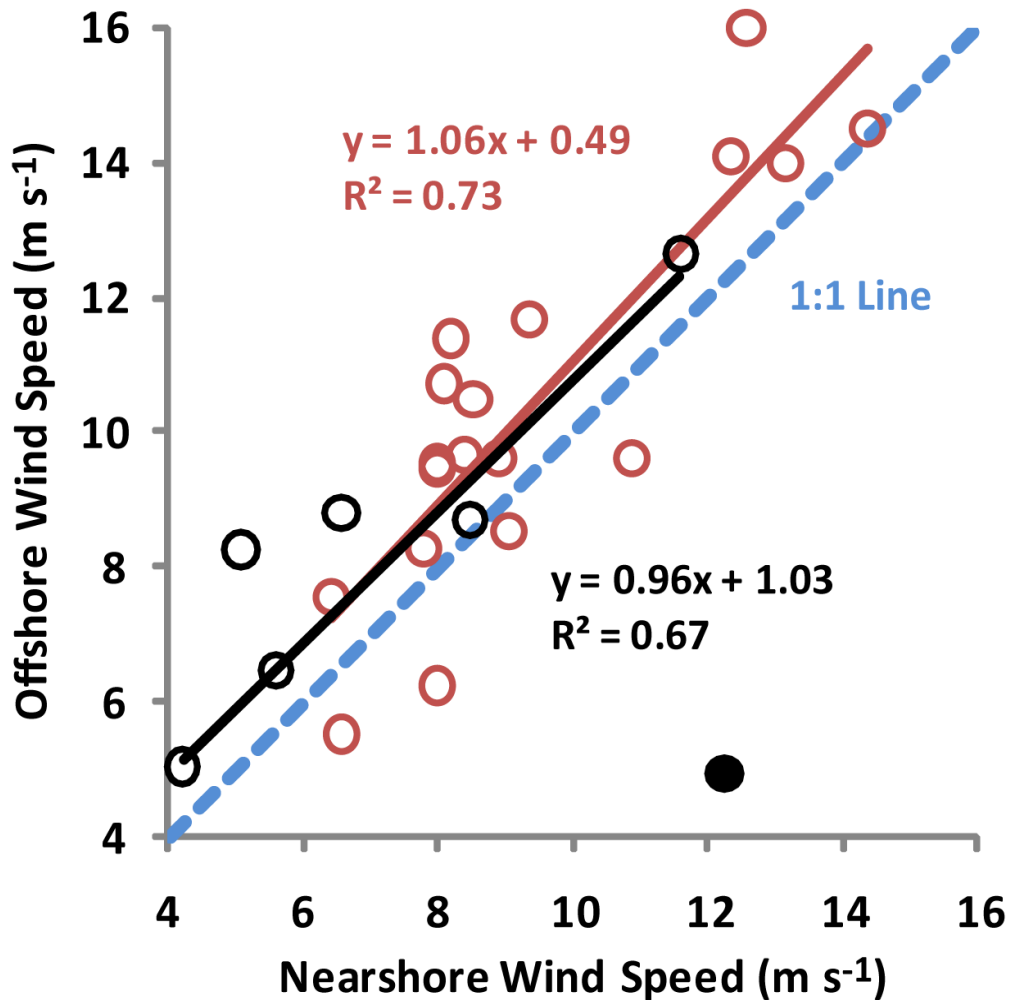
902

903 Fig. S3. Organic mass fraction of sea spray aerosol as a function of 18 meter wind speed and
904 [Chl-*a*] for Eq. (3) from Vignati et al. (2010) based on Mace Head data (blue) and Russell et al.
905 (2010) for the Northern Atlantic Ocean (green).

906

907 Fig S4.

908



909

910

911 Fig. S4. Scatterplot of average nearshore (nearest 1° × 1° grid) and offshore (1° × 1° grid 24
912 hours upwind) wind speeds for Mace Head (red) and Point Reyes (black) derived by NASA's
913 Quick Scatterometer (QuikSCAT) during the Mace Head aerosol sampling periods with linear
914 trendline in black and 1:1 line in blue. The filled black data point was not included in the
915 regression relationship for Point Reyes.