

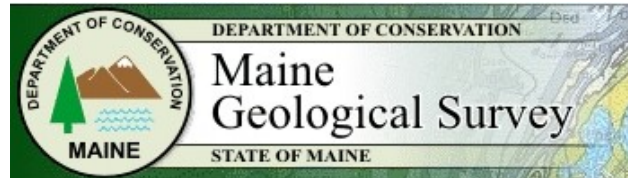


**Maine Healthy Beaches Program
Oceanographic and Meteorological Study**

**Microbial Pollution Levels and Transport Pathways
at the Kennebunk River and Goochs Beach**

APPENDIX - FIGURES

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in cooperation with





Figure 1. Locations of sample sites KBK-1, KBK-2, and COL-1 at Goochs Beach as part of the Maine Healthy Beaches Program. . Base image from MEGIS (2003).

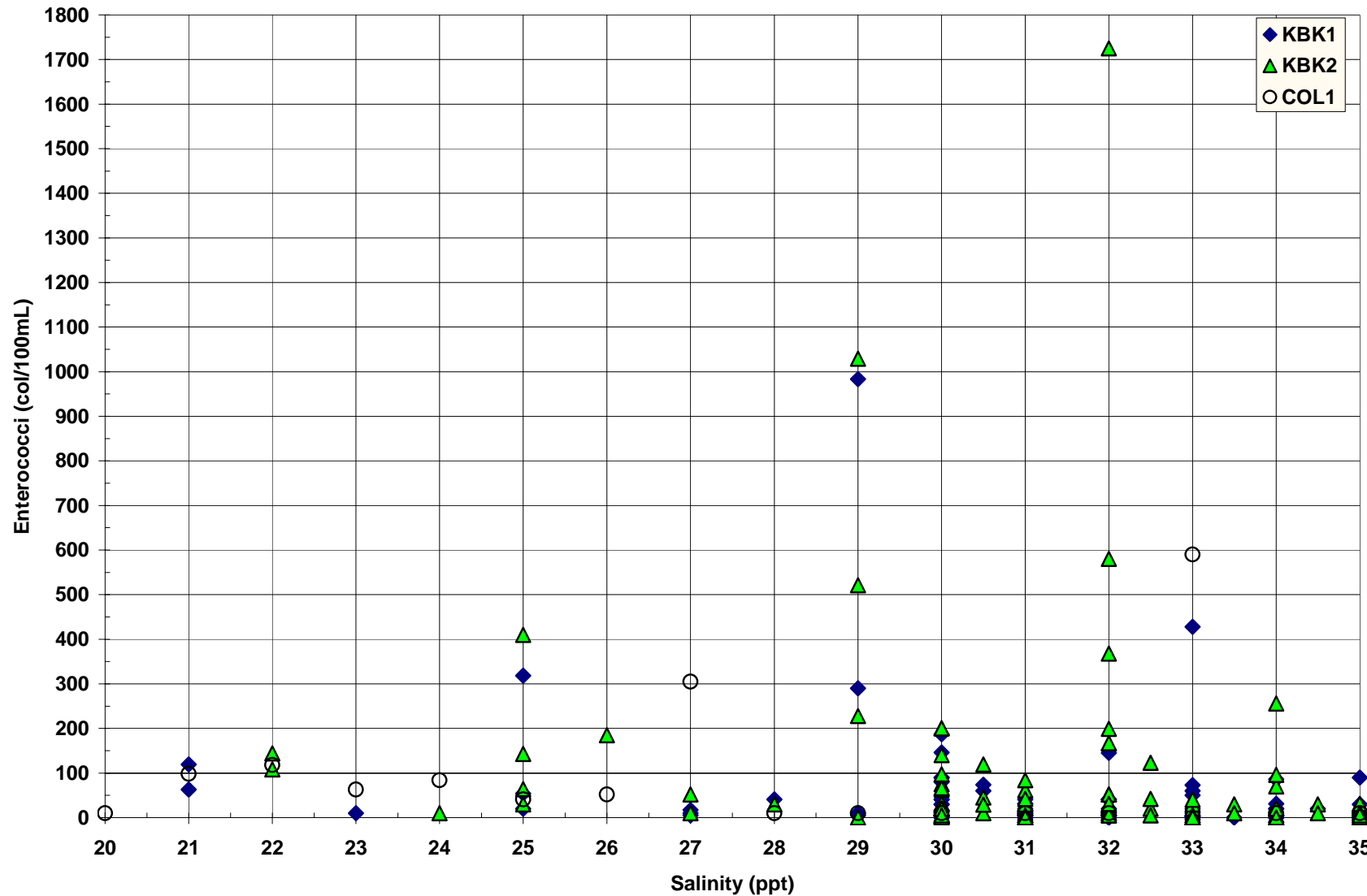


Figure 2. Salinity values for days that samples were recorded. It appears that the highest bacteria levels correspond with lower salinities. Enterococci levels are in colonies (col) per 100 mL. Salinity data from Maine Healthy Beaches Program.

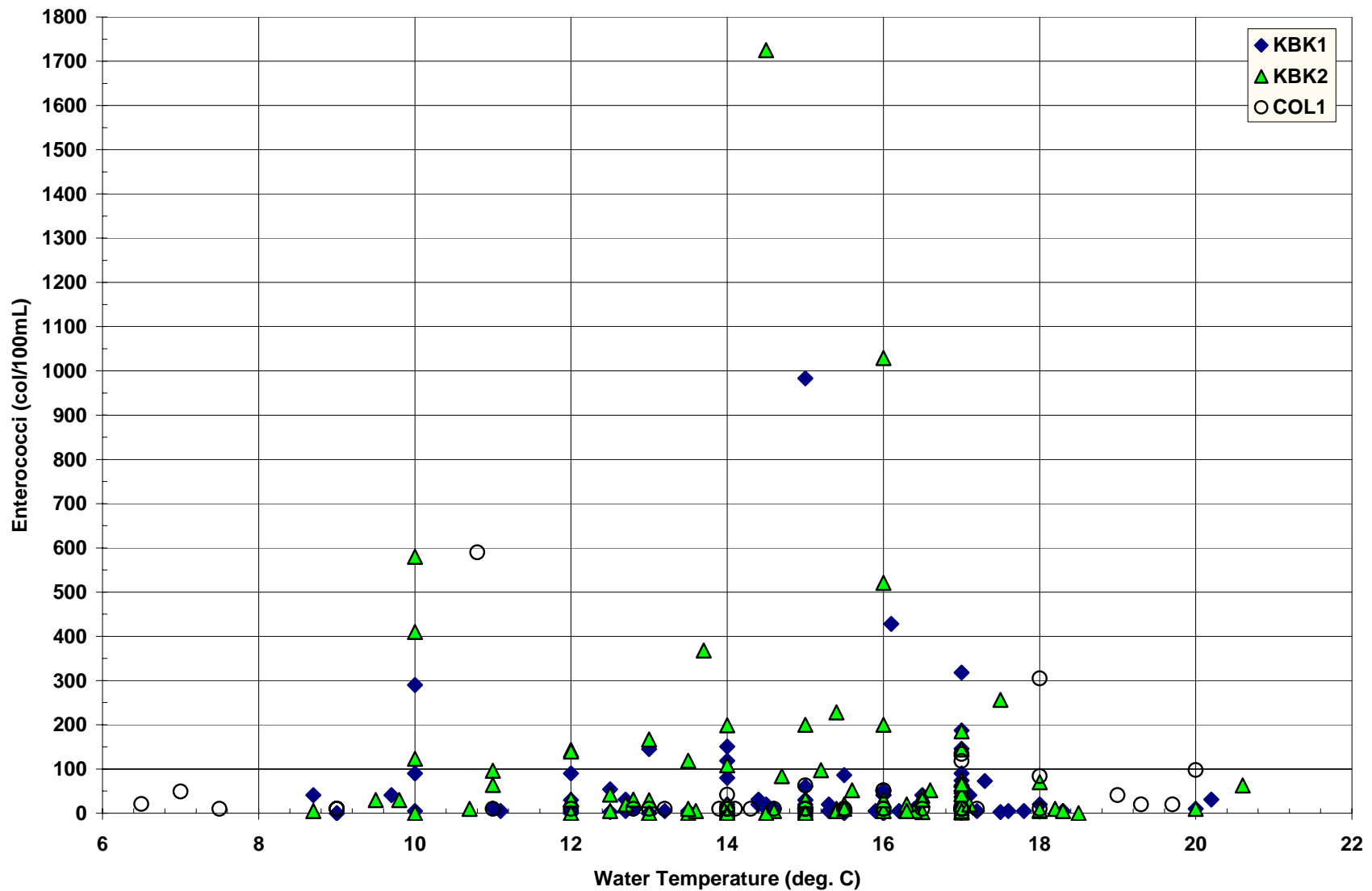


Figure 3. Water temperature values for days that water quality samples were collected. It appears that the highest bacteria levels correspond with temperatures around 15-16°C. Temperature data from Maine Healthy Beaches Program.

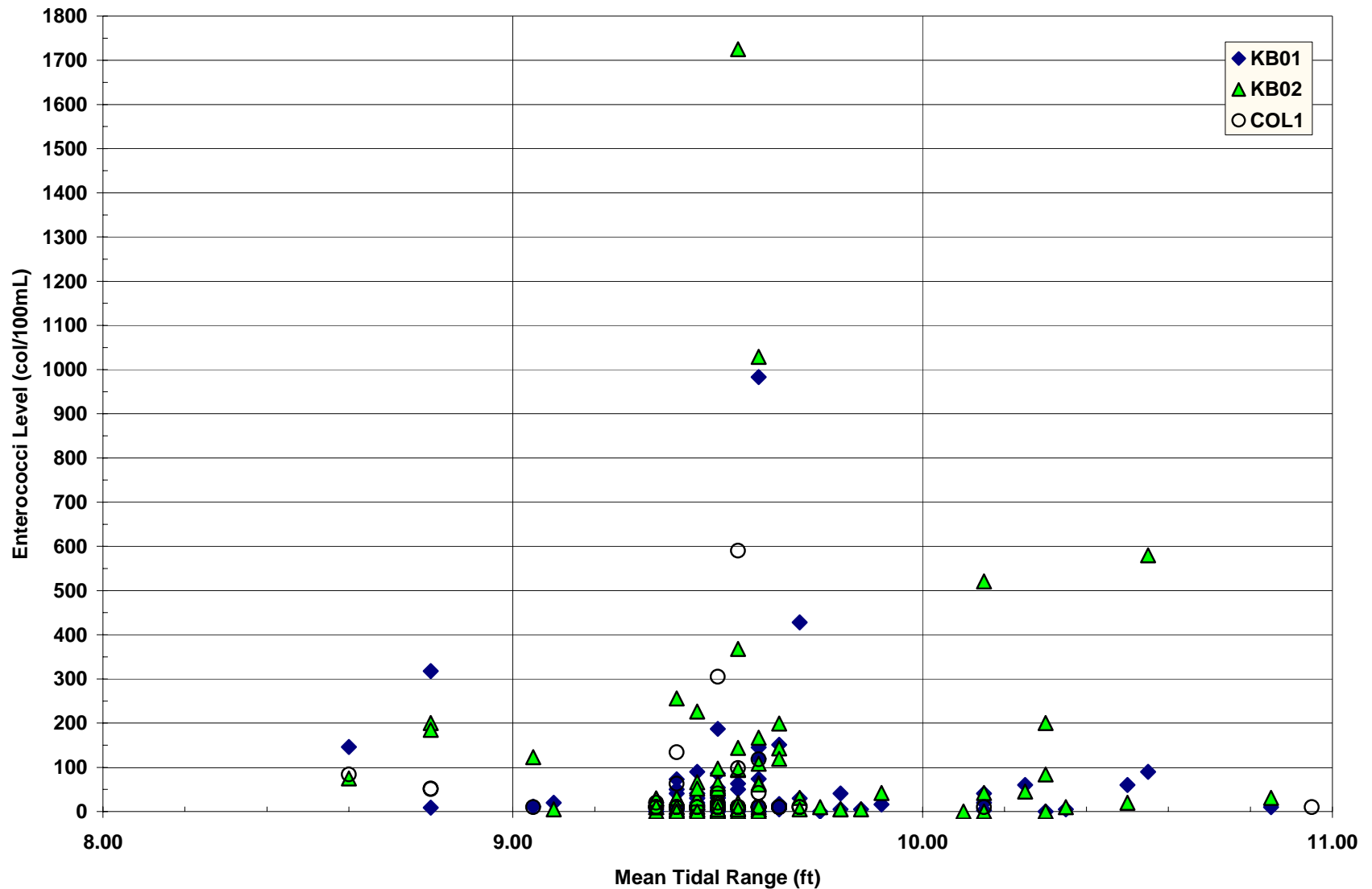


Figure 4. Total tidal range averaged for daily conditions that samples were recorded. There is a bimodal distribution at around 9.6 feet, and near 10.5 feet. Tidal data source: Portland Tide Gauge, NOAA CO-OPS, <http://tidesandcurrents.noaa.gov/>.

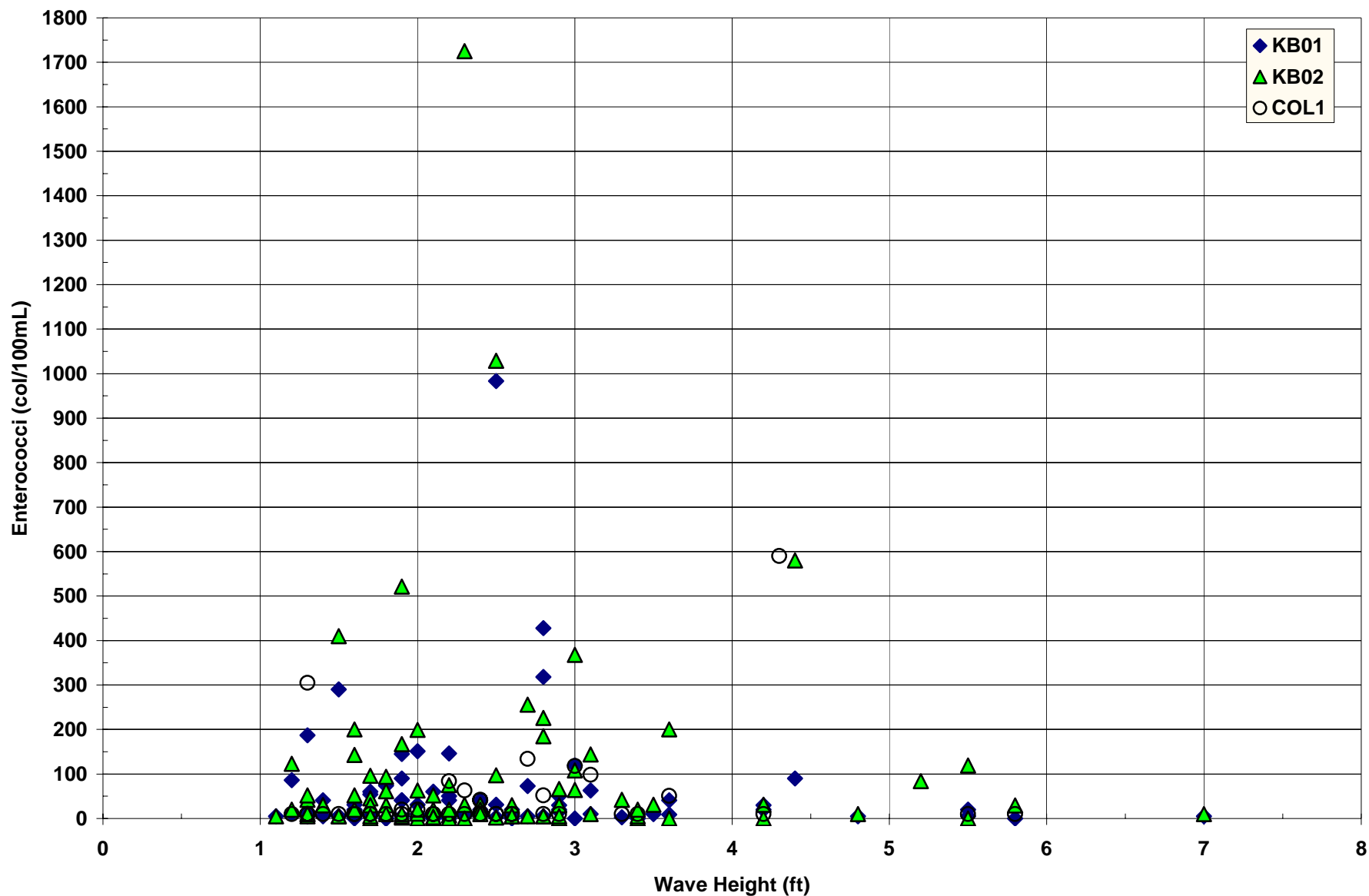


Figure 5. Averaged daily wave heights for days that samples were recorded. It appears that if waves are 4.5 feet or greater, bacteria levels tend to be lower. Wave data source: GoMOOS Buoy B, <http://www.gomoos.org/>.

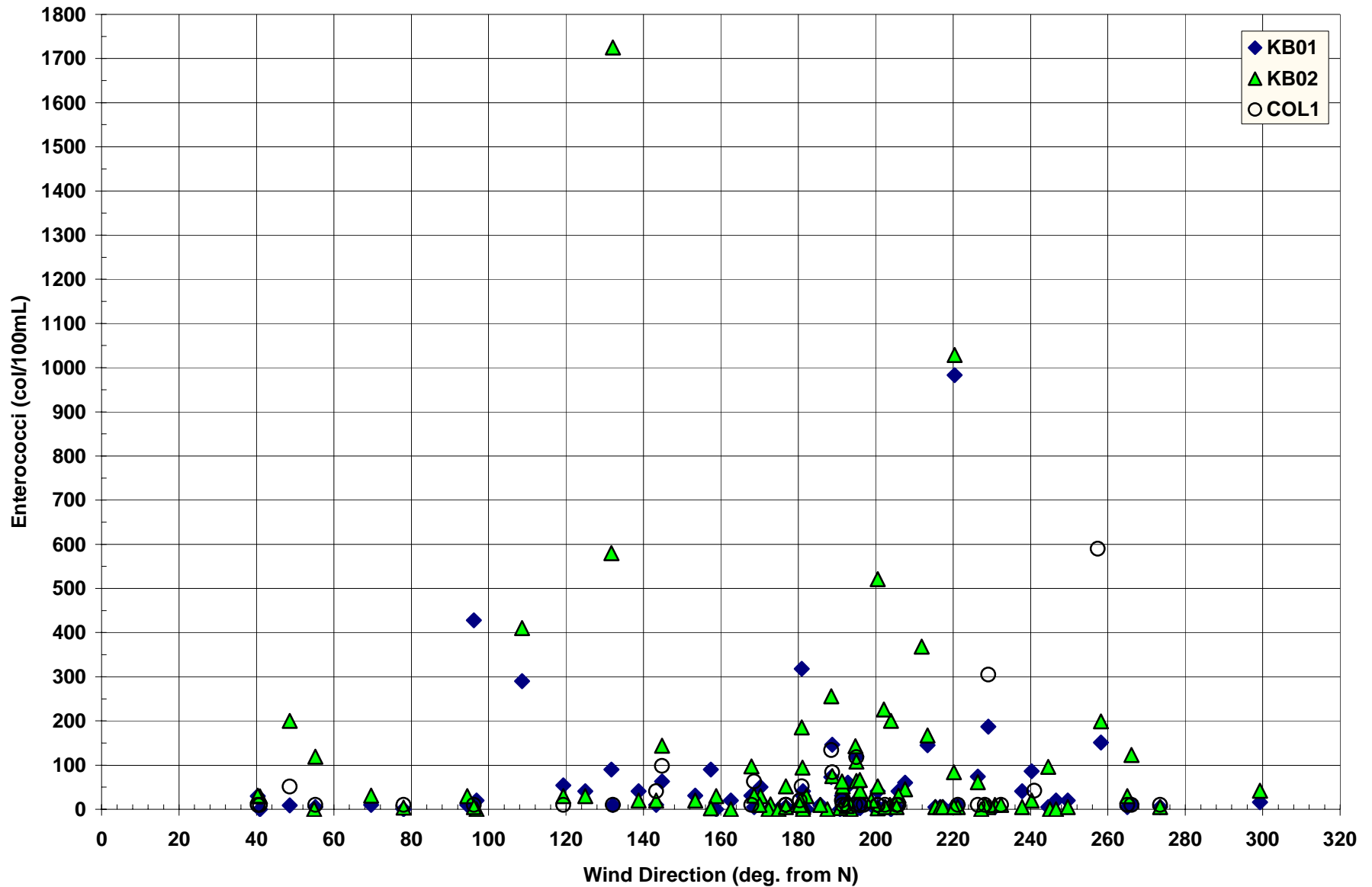


Figure 6. Averaged daily wind directions for days that samples were recorded. The highest bacteria levels were recorded during southerly directed winds (southeast to southwest). Wind data source: GoMOOS Buoy B, <http://www.gomoos.org/>.

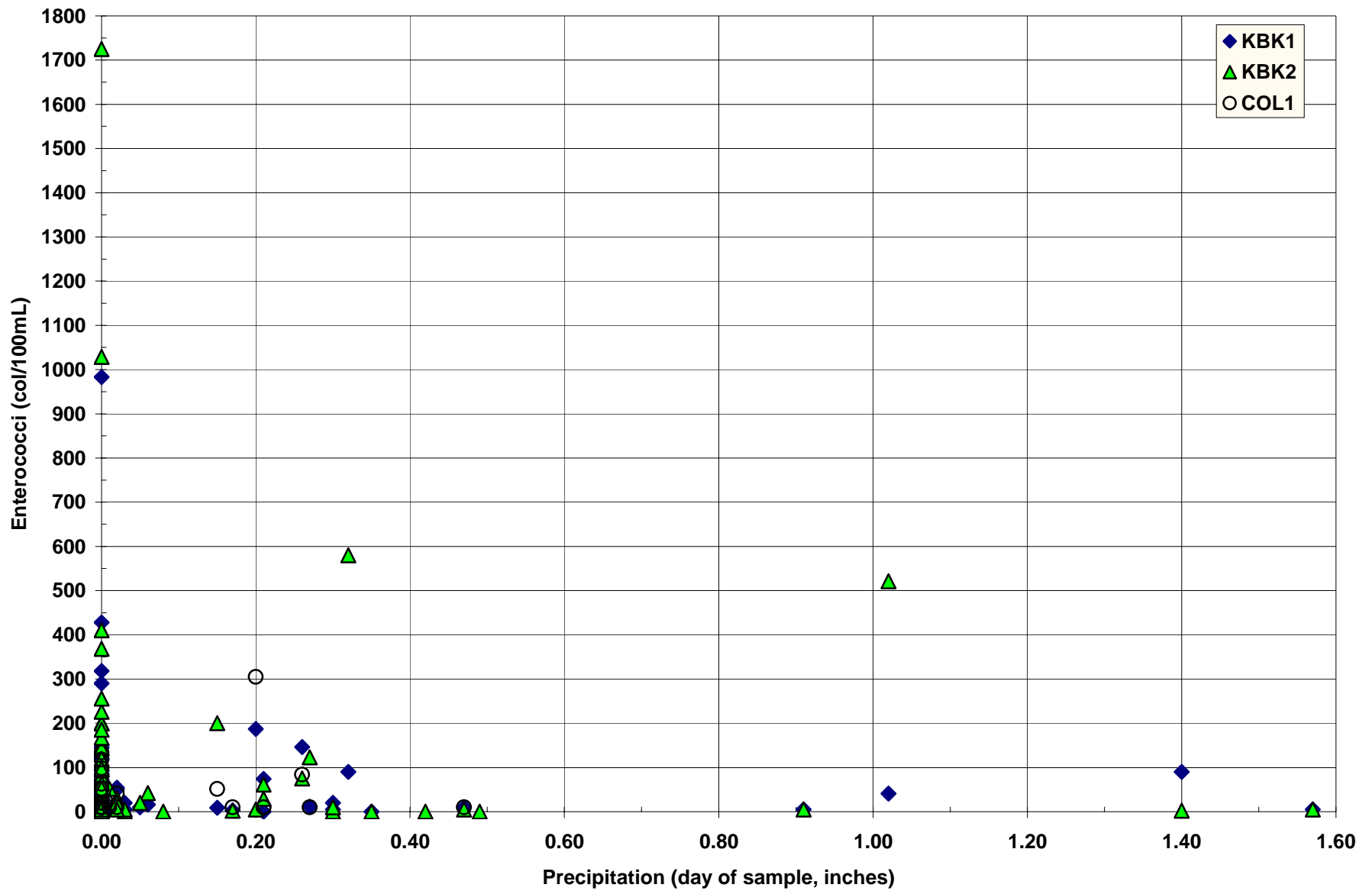


Figure 7. Cumulative daily precipitation for days that samples were recorded. There is no clear pattern. Precipitation data source: National Climate Data Center, <http://cdo.ncdc.noaa.gov/CDO/cdo>.

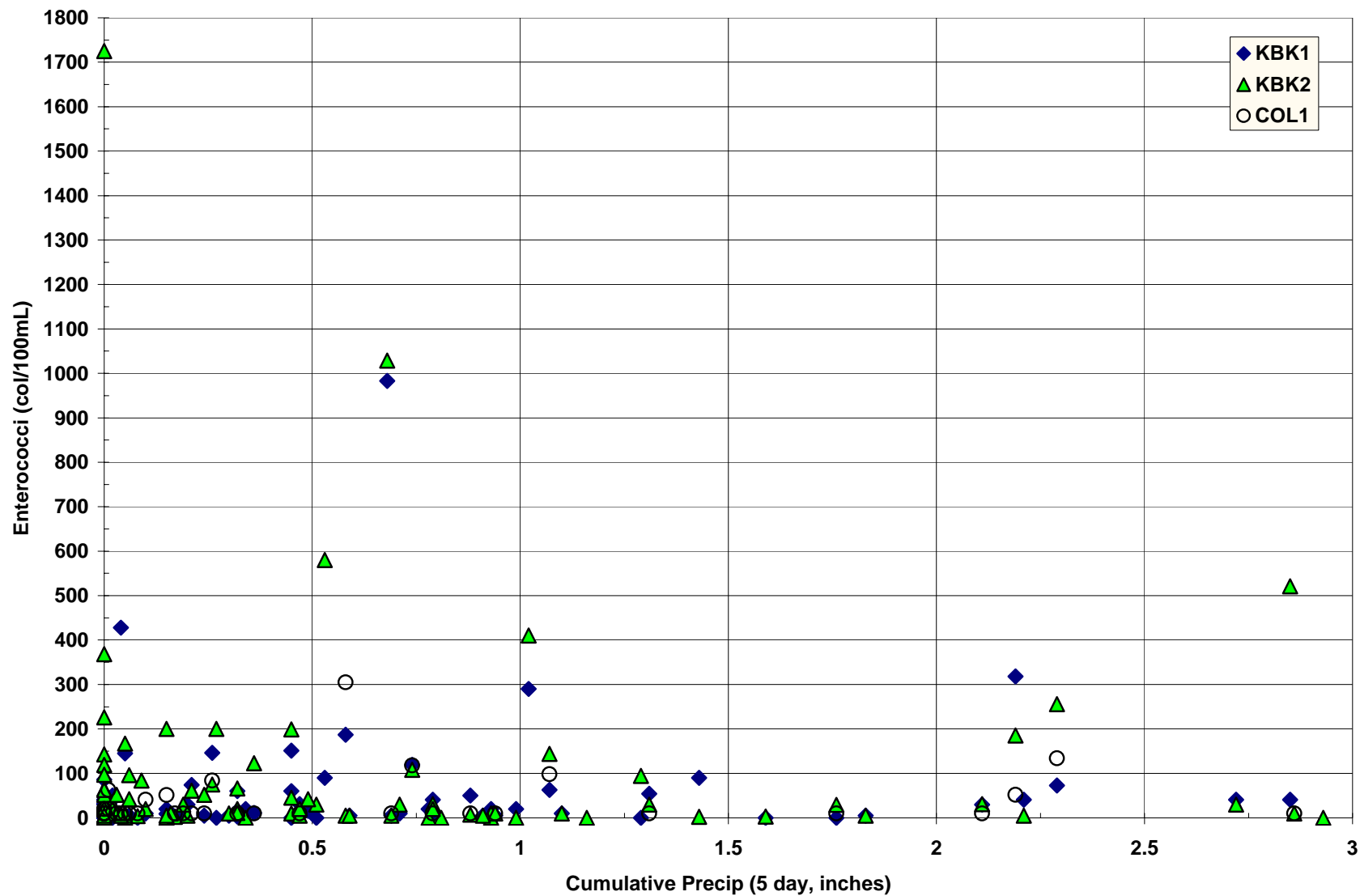


Figure 8. Cumulative precipitation data within 5 days preceding the day that samples were recorded. There are many high bacteria values with 1 or less of precipitation. At KBK-2, many high values are associated with zero to trace amounts (0.01" or less) of precipitation. Precipitation data source: National Climate Data Center, <http://cdo.ncdc.noaa.gov/CDO/cdo>.

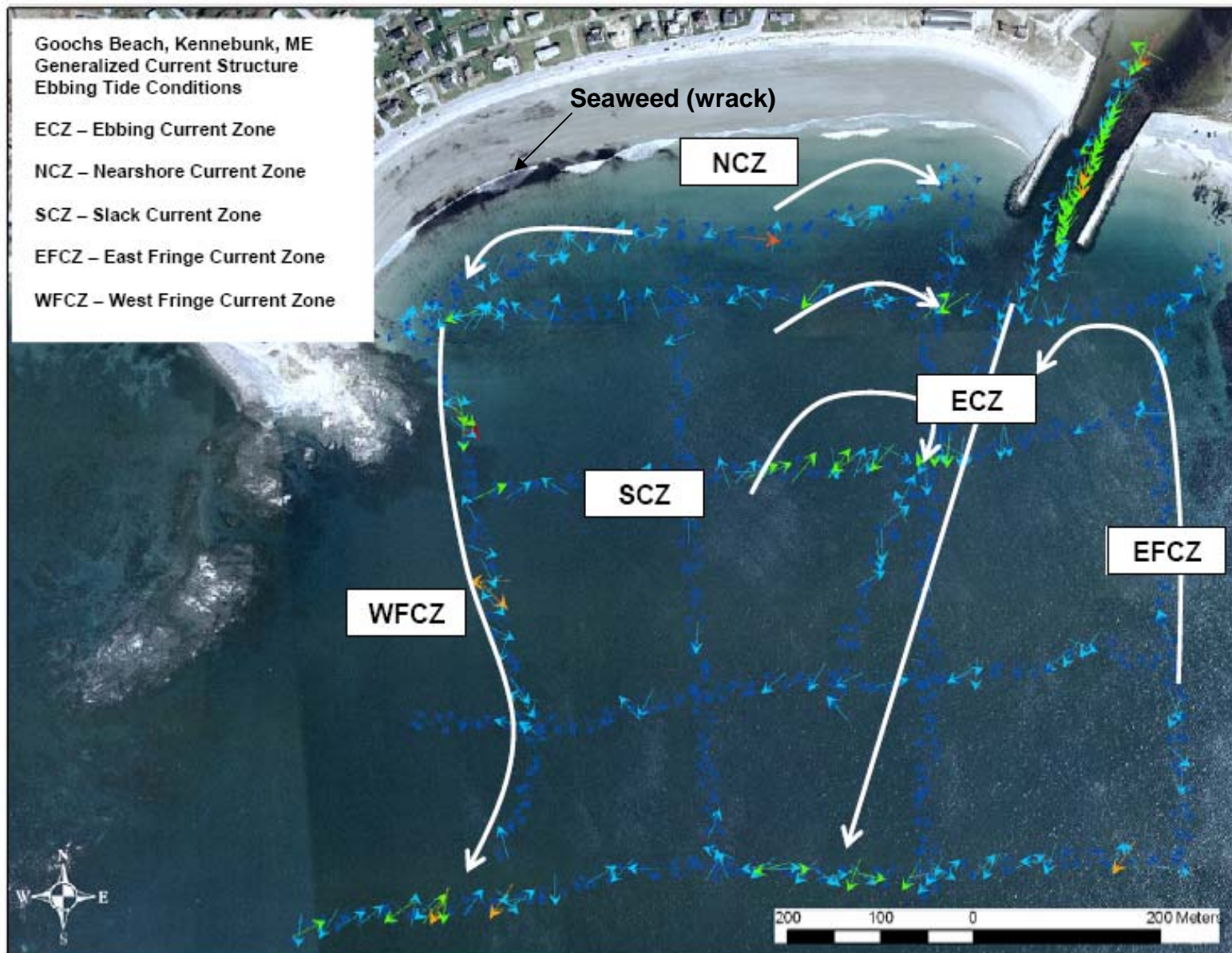


Figure 9. Current zones defined by the current study completed by MGS in August, 2007 (Slovinsky and Dickson, 2008a). Note the large amounts of seaweed that have been deposited at the western edge of Goochs Beach. Base image courtesy of the Maine Office of GIS (2003).



Figure 10. Photograph of outfall at base of the seawall along Goochs Beach showing liquid discharge. No rain events had occurred in the several days preceding this site visit. Image taken by P.A. Slovinsky, MGS, July 6, 2006.