Total Nitrogen and Phosphorus Transports at the Chesapeake Bay Mouth

abstract

In this study, we report the long-term behavior of the long-term behavior of the total nitrogen (TN) and total phosphorus (TP) in the Chesapeake Bay, as well as their interactions with the physical environment. The study focuses on the relationship between TN and TP concentrations in the Bay, and how these concentrations vary with depth and salinity. We also examine the influence of tidal currents on the transport of TN and TP across the Bay Mouth.

methods

The study was conducted over four cruises, during which time TN and TP concentrations were measured at different sites in the Chesapeake Bay. The results were then used to calculate the transport of TN and TP across the Bay Mouth.

Results

The transport of TN and TP across the Bay Mouth was found to be strongly influenced by the physical environment, particularly by tidal currents. The transport of TN was found to be positively correlated with salinity, while the transport of TP was found to be negatively correlated with salinity.

discussion

Finally, we speculate that the results from this study can be extended to other areas with a similar physical environment.