Ocean Color Reveals Increased Blooms in Various Parts of the World

The magnitude of phytoplankton blooms has increased significantly in many areas of the world during the past 11 years, as shown in data from ocean color sensors on board satellites. These areas with increased phytoplankton bloom magnitude are likely to be environmentally stressed and undergoing undesirable environmental changes. Significantly higher phytoplankton bloom concentrations are shown in nearshore waters in the Washington-Oregon-California coast, where the increase in bloom magnitude is attributable to the strong El Niño of 1997–1998 in the eastern part. In East Asia, blooms have also increased off Shanghai and along the coast of Korea. In the Yellow Sea and the adjoining Bohai Sea, blooms have also increased in the outflow area of the Po River in the Adriatic Sea, likely as a result of efforts to control pollution. Blooms have also decreased in the outflow area of the Amazon River and have increased off the southwestern coast of Australia, off South America, off the southeastern coast of India, off the northeastern coast of Australia, and off the Near East coast. The increase in bloom magnitude is significant for each year and each year. We then compared time series of these annual magnitudes from 1998 to 2007. We interpret the increase in bloom magnitude as the result of increased bloom magnitude that has been caused by increased upwelling, but we also have broader economic implications associated with a potential increase in the dive tourism industry. Findings and results need to be considered when patently good redox reactions have significant implications for the productivity of marine ecosystems.