

GEO Blue Planet is the coastal and ocean arm of the Group on Earth Observations (GEO), connecting ocean and coastal information with society. This initiative delivers usable data and information services to support informed decision-making toward reaching Sustainable Development Goal (SDG) 14, which in part is aimed at reducing the impacts of ocean pollution, particularly from land-based activities such as agricultural runoff. This over-enriches coastal waters with nitrogen or phosphorus (a process called eutrophication), which in turn leads to increased growth and biomass of algae, which in turn adversely affects ecosystem balance and water quality. Not all countries have the capacity to map and monitor this kind of “nutrient pollution” in their coastal waters. To address this gap, GEO Blue Planet partnered with a team from Esri, and the United Nations Environment Programme in 2019 to develop a new statistical approach and GIS workflow using what data developing nations have, coupled with satellite observations to report on eutrophication in their waters and identify potential eutrophication hot spots. The 2020 GEO Sustainable Development Goals (SDGs) Awards Program, led by the Earth Observation for SDG (EO4SDG) initiative, recognized this collaboration with a 2020 Special Category award for its productivity and novelty of results in support of SDG indicator 14.1.1 on coastal eutrophication. Initial results, workflows, dashboards, and other products are at chlorophyll-esri oceans.hub.arcgis.com.

Next steps include hosting sub-indicator one and two results and the subsequent information products in the ArcGIS Living Atlas of the World and developing a web application enabling users to query and understand the data and support decision making

Again, see this remarkable hub at <https://chlorophyll-esri oceans.hub.arcgis.com>



Chlorophyll

Global analysis and metrics

Methodology, processing and application development in support of Sustainable Development Goal 14.1

Collaborative project with



MONITORING FOR SDG INDICATOR 14.1.1: Coastal Eutrophication



Click the boxes below to learn more:



What is eutrophication?

Learn how pollution from land can cause problems on the coast



How do satellites measure eutrophication?

Learn how we can see microscopic algae from space

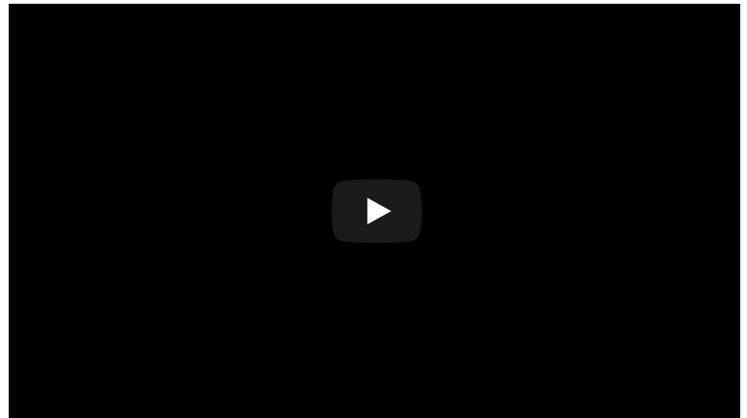
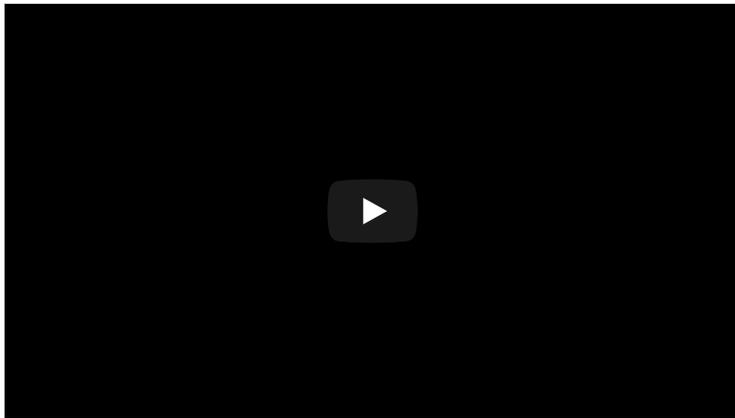


Why do we need to measure eutrophication?

Learn about SDG 14.1 and the goal to reduce marine pollution from land-based sources

Preliminary sub-indicator 1 and 2 results

Additional data coming soon



Animations of chlorophyll-a monthly deviations (left) and daily anomalies (right) by K. VanGraafeiland