


Coastal Monitoring of pH in Oban, Scotland

 ANB Sensors

 University of East Anglia

OVERVIEW

Coastal areas are vital ecosystems that support diverse marine life and provide essential resources for human communities. However, these regions face increasing threats from pollution and human activities, making the monitoring of water quality, particularly pH levels, crucial.

Changes in pH can indicate the presence of pollutants, such as agricultural runoff, industrial discharges, and sewage, which can significantly alter water chemistry and harm aquatic life. By tracking pH levels in coastal waters, scientists can quickly identify pollution sources and assess the overall health of the marine environment. This information is vital for protecting sensitive species that are particularly vulnerable to changes in acidity.

USE CASE

The sensor was deployed from a stationary research vessel along the west coast of Scotland, positioned at a depth of 2 meters. It was connected to a surface-mounted battery and compared to data from a glass-based oceanographic pH sensor that was deployed alongside. After 26 hours of operation, with measurements taken every 15 minutes, the data revealed bi-daily pH fluctuations ranging from 7.7 to 7.9, reflecting the natural ebb and flow of the tidal waterways. Unfortunately, the glass electrode probe did not yield reliable data, as it performed poorly under these conditions, resulting in scattered readings.

AT A GLANCE

- **Innovative Sensor Technology:** Our calibration-free pH sensor offers reliable and continuous monitoring of water quality in coastal areas compared to a glass probe.
- **Real-Time Data Insights:** The sensor provided timely data on bi-daily pH variations, helping to monitor the impacts of tidal flows.
- **Enhanced Pollution Detection:** By providing consistent pH measurements, our technology aids in identifying changes associated with pollutant influx, allowing for swift response measures to protect marine life and ensure the safety of coastal waters for recreational and commercial activities.

As coastal monitoring becomes increasingly important in the face of environmental challenges, ANB Sensors' technology provides a crucial, sustainable solution for continuous water quality assessment, empowering researchers and authorities to make informed decisions that protect and preserve coastal ecosystems.