NEXT OCEAN

CLEAR INSIGHTS INTO FISHERIES AND AQUACULTURE

Monitoring of Aquaculture Structures

Mapping aquaculture structures for efficient monitoring and regulation

By assessing satellite imagery over time, NextOcean offers detection of aquaculture structures for a specified area, isolating these from land features and temporary objects such as boats. Locations and density of structures can be monitored for periodic changes over time.

The Monitoring of Aquaculture Structures service can benefit the following users:

Maritime Regulatory Authorities

- Density of fish farms can contribute to permit policy and issuing of new licences, allowing control of the proliferation of aquaculture activity.
- Ensure there is no encroachment into restricted areas (e.g. Marine Protected Areas).
- Help to ensure safe navigation of vessels away from fish farms.

Aquaculture Service Providers / Consultants

- Assess the likelihood of clients being granted permission for new fish farms, according to the presence and density of other fish farms in that area.
- Contributes to analysis and advice on aquaculture permit policy on behalf of regulatory authorities.
- Verify on behalf of regulatory authorities whether there has been any encroachment on MPAs or other restricted areas in their jurisdiction.

Aquaculture structures detected using the Monitoring of Aquaculture Structures service visualised on Google Earth.

Scan or click to access NextOcean services

NextOcean v1 release. January 2024.

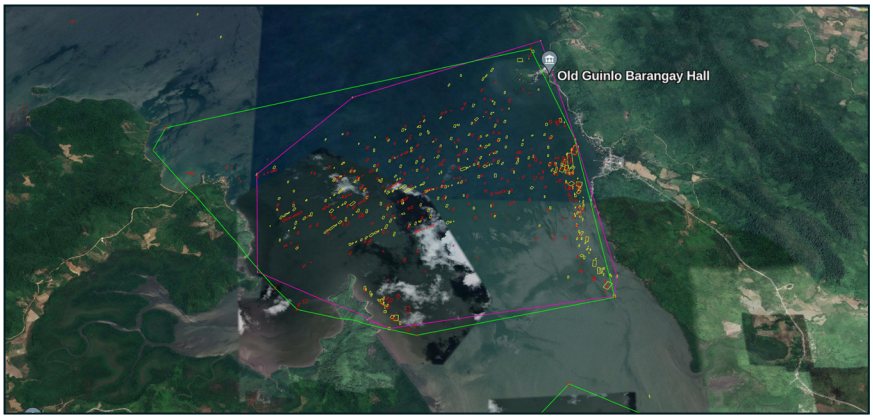
Service specifications

Key specifications	Monitoring of Aquaculture Structures
Temporal coverage	2014-present
Temporal resolution	Each order analyses at least 4 months of satellite data to ensure accurate detection over that period.
Spatial coverage	Data instantly available for areas in Greece, Palawan and Java, with other areas globally available on request
Spatial resolution	5x20m
Downloadable data files from NextOcean store	Yes - KML format
Visualisation in NextOcean portal	Currently available
Data feed via API	Currently available
Satellites used	Sentinel-1 synthetic aperture radar (SAR) Sentinel-2 Multispectral Instrument (MSI), Shuttle Radar Topography Mission (SRTM) global digital terrain elevation data archive

Monitoring of Aquaculture Structures (MAS) uses Sentinel-1 satellite data to identify fish cages, floating houses, longline buoys and other structural features relating to various types of aquaculture. These are represented as polygons within a KML file that can be viewed in Google Earth or online via the NextOcean portal.

By generating maps on a periodic basis, the user can compare current maps with historical data to estimate any changes that may have taken place.

The MAS service can be accessed directly from our online store.



Example of Monitoring of Aquaculture Structures output - a map showing the position of aquaculture structures in 2016 (yellow) and 2019 (red).

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...explanatory videos

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