Fish Farm Impacts

Predicting the drift of materials from aquaculture sites to reduce environmental impacts and enable recovery of lost gear

Fish Farm Impacts is a service from NextOcean which uses drift modelling to follow the spread of fish farm materials, including pieces of equipment and fish feed oils.

Floating material lost from aquaculture sites can harm the local environment and difficult to locate. Fish Farm Impacts supports easy and cost-effective mitigation measures and is particularly beneficial for sites in open seas and those frequently exposed to strong currents or bad weather.

The Fish Farm Impacts service can benefit the following users:

Aquaculture Companies

- ⊘ Take a proactive approach in managing marine litter and oils emitted from fish farms.
- ⊘ Demonstrate corporate social responsibility and exceed the standards set by the Aquaculture Stewardship Council.
- ⊘ Retrieve lost materials that have value (e.g. equipment that is still useable).

Marine Regulatory Authorities

- ⊘ Monitor and control the impact of fish farms on the marine and coastal environment, by understanding how lost gear and fish feed oils disperse across the sea and coastline.

Fish Farm Impacts predicts the trajectory of lost materials to facilitate recovery.

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Service specifications

Key specifications	Fish Farm Impacts
Temporal coverage	Data available for up to three months in the past and forecasts for several days
Temporal resolution	Daily updates with hourly steps Mobidrift gives an estimate of positions of particles every hour. For example if the current speed is 1 knot then particle will have moved 1 nautical mile.
Spatial coverage	Global coverage
Data format from NextOcean store	GIS data files (including JSON, CPG, DBF, GEOJSON, SHP, and SHX formats)
Visualisation in NextOcean portal	Available
Activation via API	Available
Data used	Meteorological and oceanographic forecast models from CMEMS, NOAA and CLS
Model used	Mobidrift model

Earth observation datasets of wind and currents are used in a computer model to predict the trajectory of lost materials or fish feed oils as they drift across the ocean.

The user accesses the Fish Farm Impacts service through the NextOcean store to launch a drift modelling scenario. Interactive GIS access is then available through the NextOcean geoportal which enables the user to visualise the results.

The Fish Farm Impacts service can be used to analyse an ongoing situation and predict the path of objects from the site of emission over the next days, or analyse a past event within a three month time period.

The Fish Farm Impacts service can predict the trajectory of lost material over the next days or after a past emission date.

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