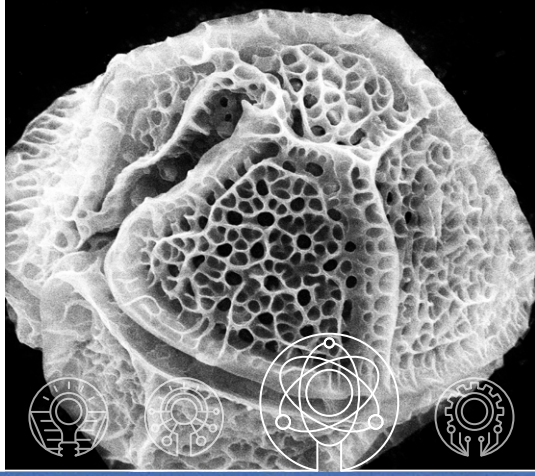
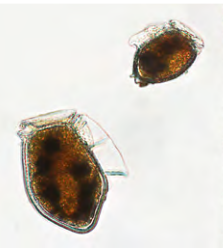
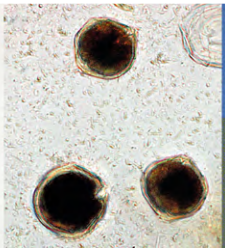
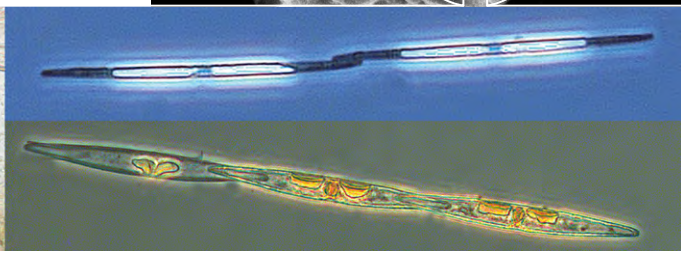
University of the Highlands and Islands
Oilthigh na Gàidhealtachd agus nan Eilean



HAB Reports







Harmful algal bloom early warning to safeguard aquaculture (www.HABreports.org)

SAMS-UHI has developed an on-line early warning system (www.HABreports.org) that is operational in Scottish coastal waters to minimize the risk to humans and aquaculture businesses in terms of the human health and economic impacts of harmful algal blooms (HABs) and their associated biotoxins.

The www.HABreports.org system includes both map and time-series based visualization tools. A "traffic light" index approach is used to highlight locations at elevated HAB/biotoxin risk. High resolution mathematical modelling of cell advection, in combination with satellite remote sensing, provides early warning of HABs that are transported by oceanographic current from offshore waters to the coast. Expert interpretation of HAB, biotoxin and environmental data in light of recent and historical trends is used to provide, on a weekly basis, a forecast of the risk from HABs and their biotoxins to allow mitigation measures to be put in place by aquaculture businesses, should a HAB event be imminent.

The system was initially developed for the shellfish aquaculture sector, but is now being expanded to include harmful phytoplankton of relevance to finfish aquaculture.

AQUACULTURE HUB
Navigating solutions through Knowledge Exchange

To enhance the www.HABreports.org alert system SAMS and Shetland-UHI have undertaken the deployment of the UK's first two Imaging CytoBots. These are flow cytometer based instrument that allow the rapid identification and enumeration of phytoplankton including harmful species. These instruments have been deployed in two locations in Shetland waters on a trial basis to evaluate their potential to support decision making by aquaculture practitioners.

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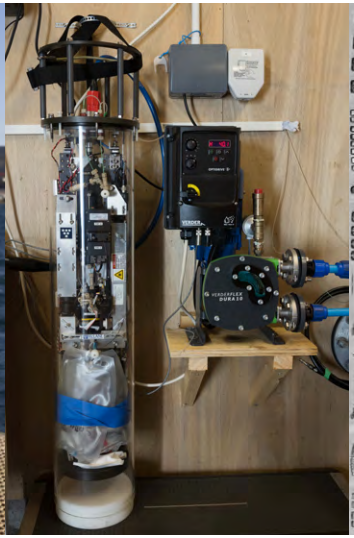

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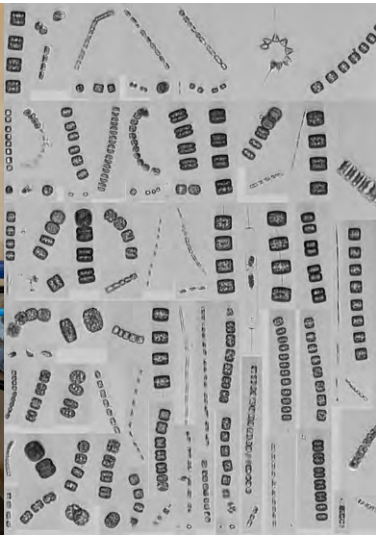

The IFCB based system allows for multiple phytoplankton samples to be analysed per hour with the data being streamed in real time on the web.

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www.HABreports.org