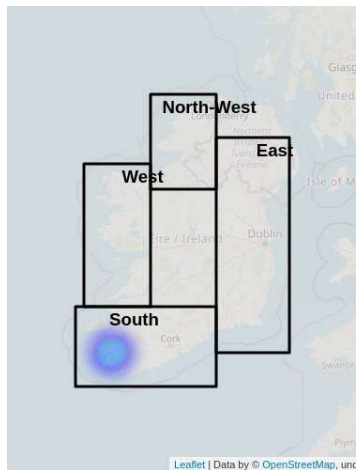
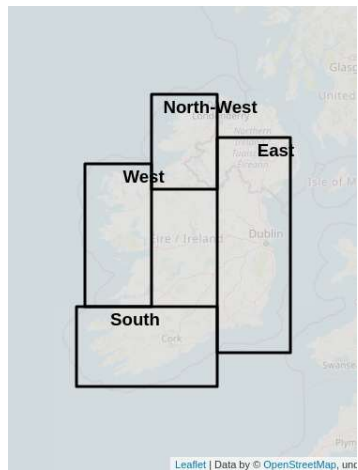


Diarrhetic Shellfish Toxins



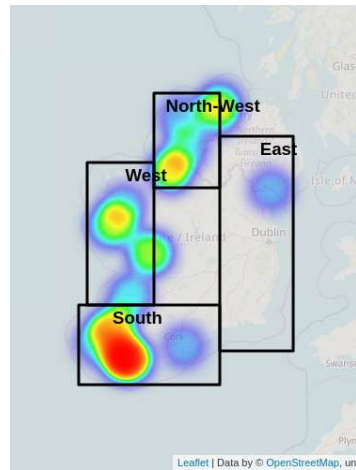
Toxic Sites	0
Analysed Sites	37

Azspiracid Shellfish Toxins



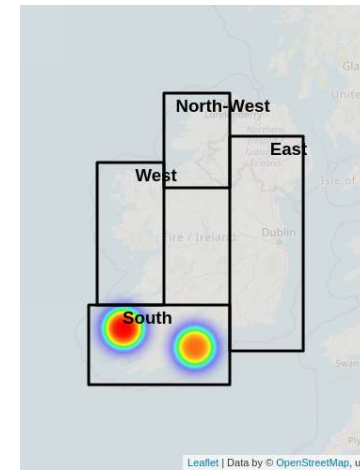
Toxic Sites	0
Analysed Sites	37

Amnesic Shellfish Toxins



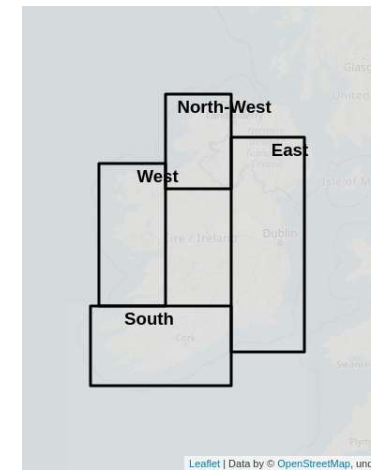
Toxic Sites	0
Analysed Sites	37

Paralytic Shellfish Toxins



Toxic Sites	0
Analysed Sites	6

Yessotoxins



Toxic Sites	0
Analysed Sites	37

AST: (Amnesic shellfish toxin) Low/Moderate risk still remains in SW & W areas. Presence and spread of potential cells throughout all coastline. Caution advised.

AZA: (Azaspiracid toxin) Low risk on all shorelines, but there is a constant low fluctuating phytoplankton presence, caution advised as we are in a historical risk period also. This species has caused sudden acute issues in the past, rarely presents any reliable trends.

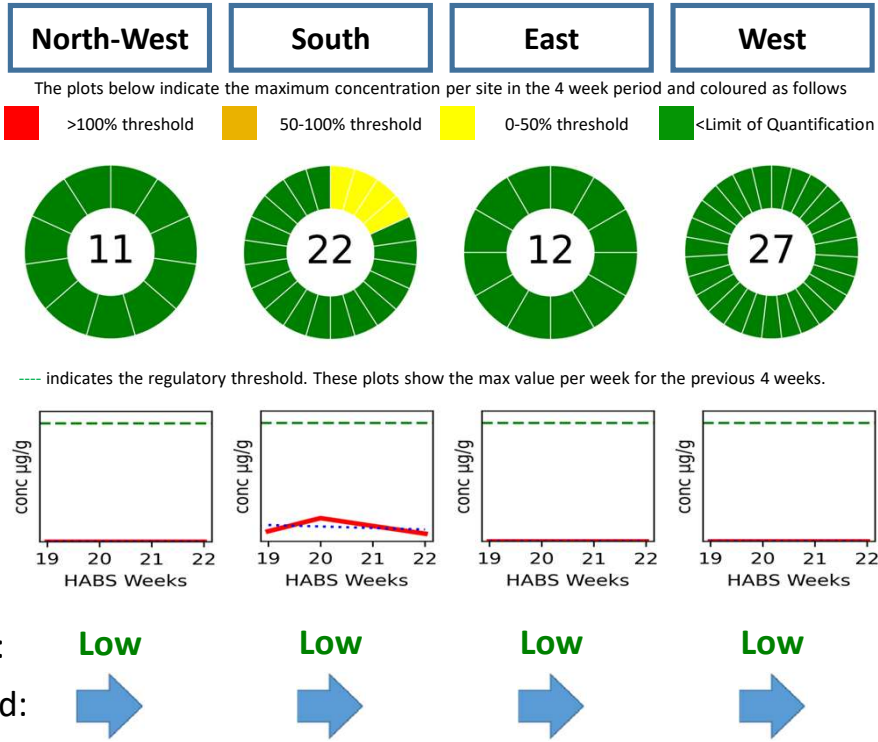
DST: (Dinophysis shellfish toxin) Increasing risk as quantifiable levels of DSP observed in Kenmare Bay & Dinophysis spp. counts indicate increased presence and spread of potential cells, on all Western coasts. Caution advised.

PST: (Paralytic shellfish toxins) Low/Medium Risk levels are present in Castlemaine Harbour & Cork Harbour where *Alexandrium spp.* cells have been observed at quantifiable levels of PST below regulatory limits detected. Caution advised especially on these coasts. Low risk in all other sites.

Diarhetic Shellfish Toxins & *Dinophysis* species

Regional 4-Week Trends 04/05/25 - 31/05/25

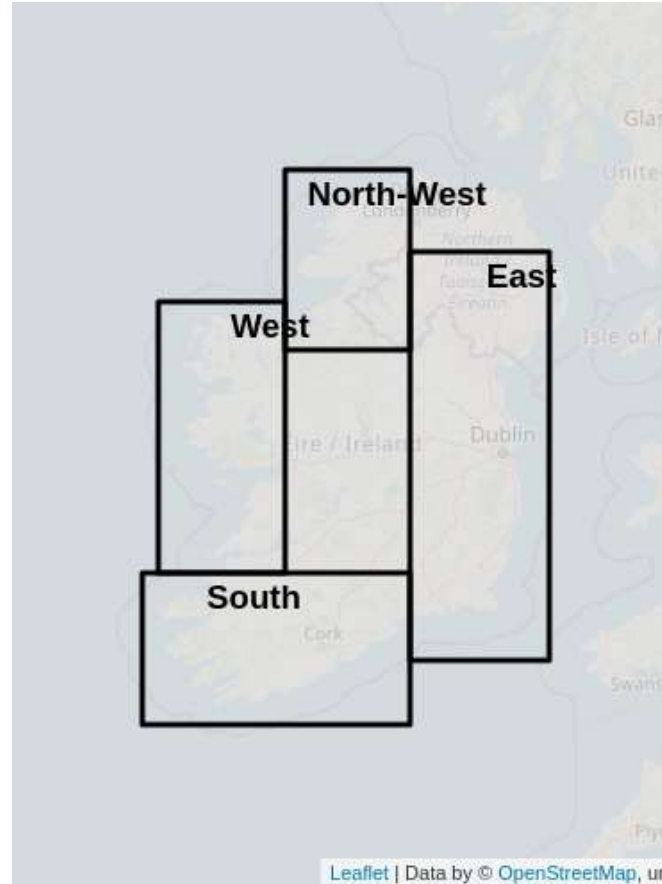
In this 4 week period there were 176 Samples tested for DST. These samples were collected at 72 Sites around the country. Resulting in 0 Site(s) with values above the regulatory limit of 0.16 µg/g



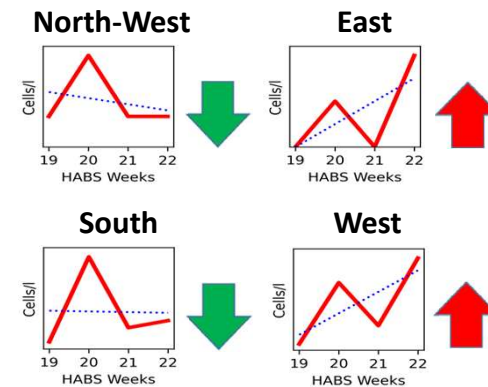
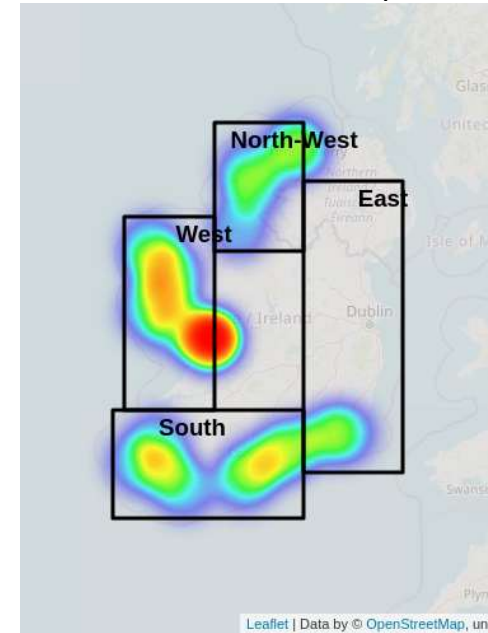
Risk:

Increasing risk as *Dinophysis* spp. counts indicate increased presence and spread of potential cells, particularly on all SW, W & NW coasts. Caution advised.

Diarhetic Shellfish Toxins National 4-Week Heatmap



Phytoplankton *Dinophysis* spp. 4 Week Heatmap

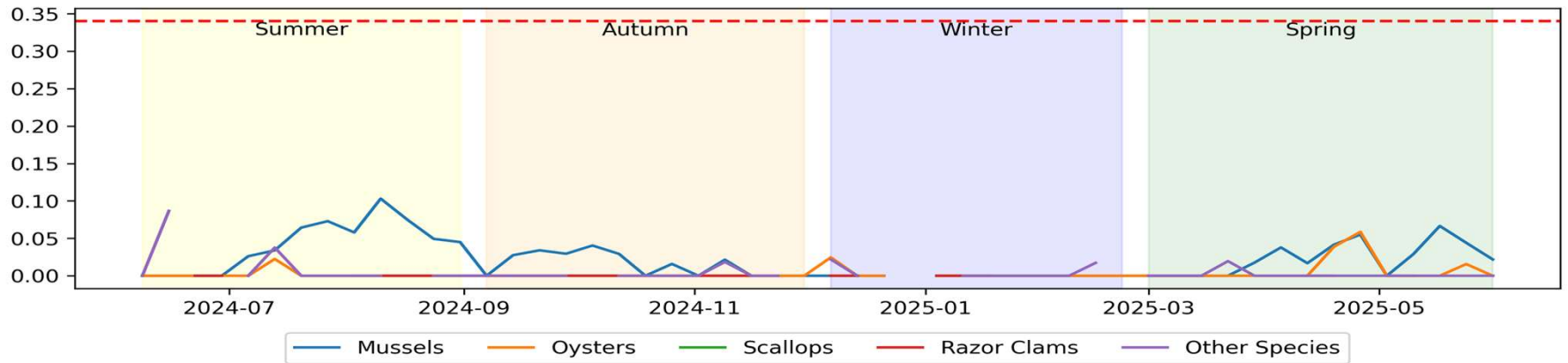


Diarhetic Shellfish Toxins & *Dinophysis* species

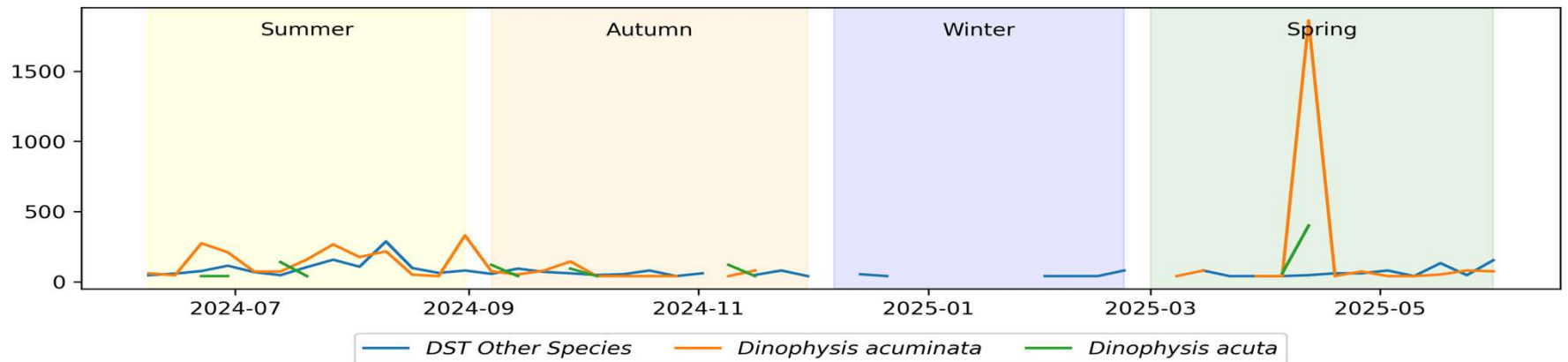
National Yearly Trend 01/06/24 - 31/05/25



Trend of Maximum Toxin concentrations in Shellfish Species (measured in $\mu\text{g/g}$)



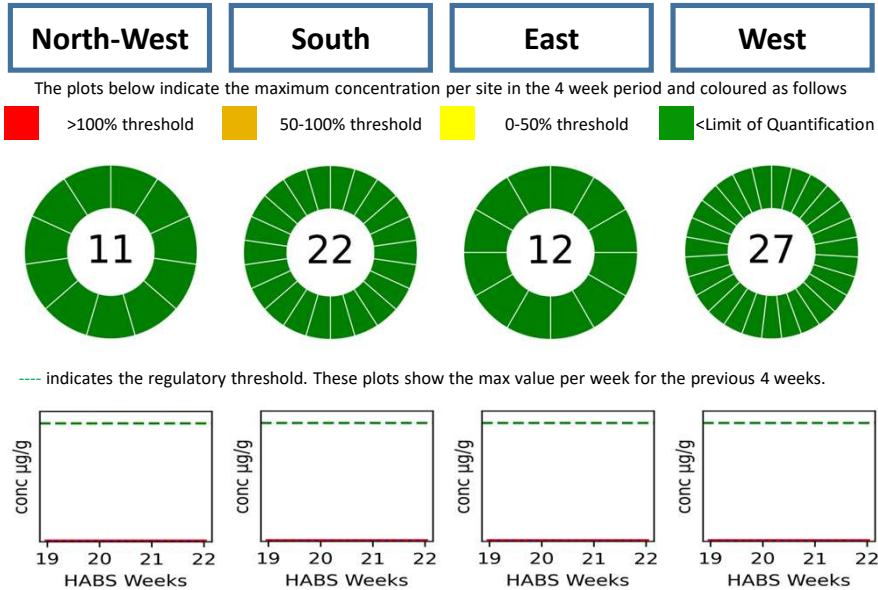
Trend of Average Counts of Toxin Causing PhytoPlankton Species Per Week (measured in Cells per Litre)



Azspiracid Shellfish Toxins & Azadinium species

Regional 4-Week Trends 04/05/25 - 31/05/25

In this 4 week period there were 175 Samples tested for AZT. These samples were collected at 72 Sites around the country. Resulting in 0 Site(s) with values above the regulatory limit of 0.16 µg/g



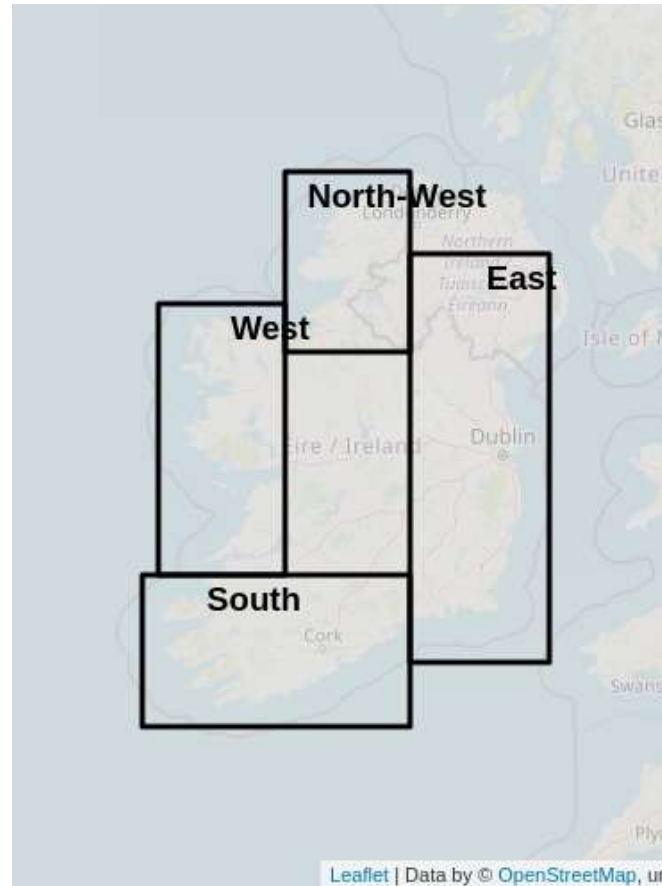
Risk: **Low** **Low** **Low** **Low**

Trend:

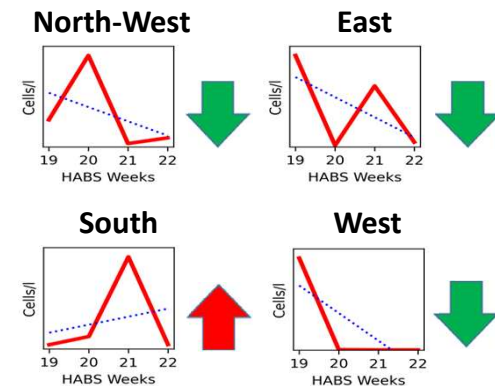
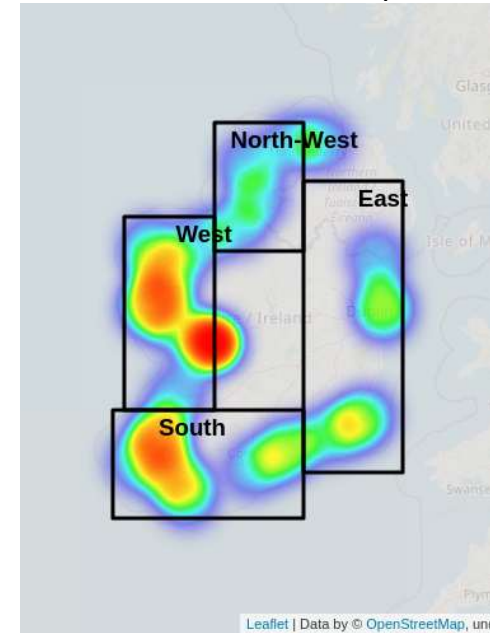
Risk:

Low levels of cells present and quantifiable levels of toxins detected in the Southeast. Unlikely to increase dramatically at this time.

Azspiracid Shellfish Toxins National 4-Week Heatmap



Phytoplankton Azadinium spp. 4 Week Heatmap

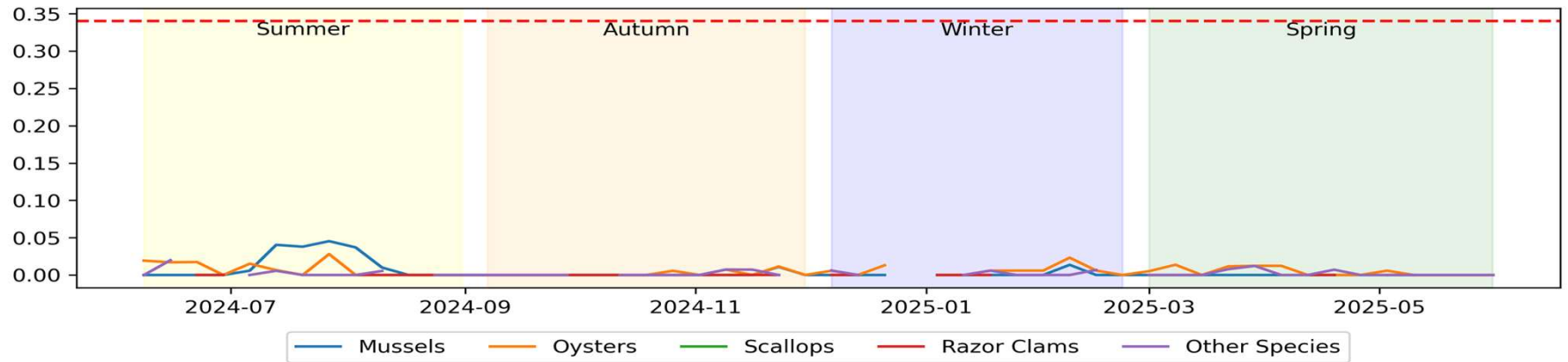


Azaspiracid Shellfish Toxins & Azadinium species

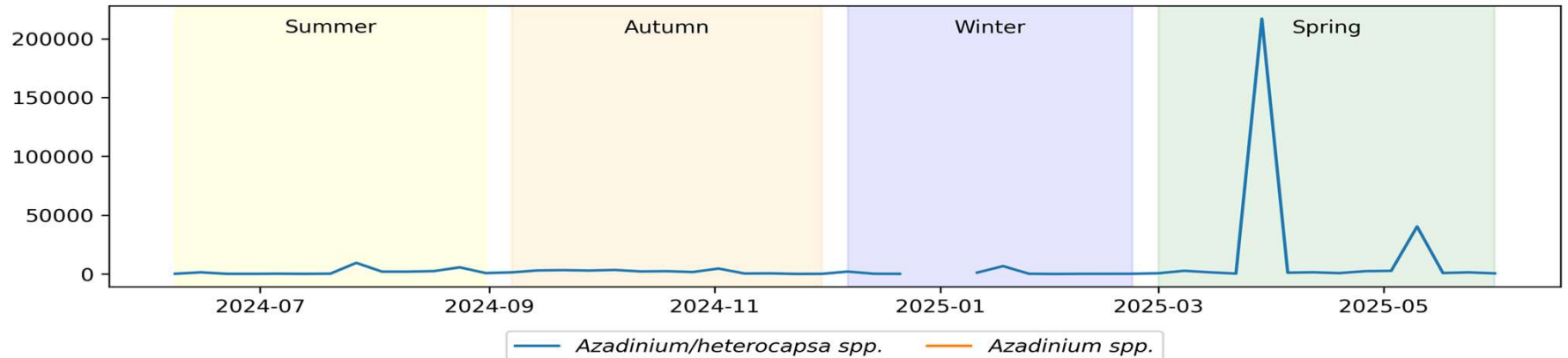
National Yearly Trend 01/06/24 - 31/05/25



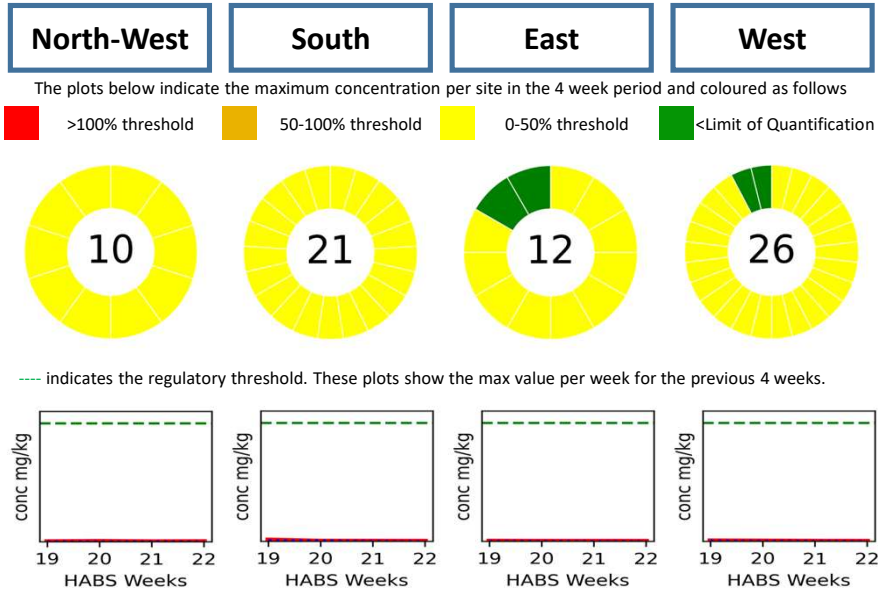
Trend of Maximum Toxin concentrations in Shellfish Species (measured in $\mu\text{g/g}$)



Trend of Average Counts of Toxin Causing PhytoPlankton Species Per Week (measured in Cells per Litre)



In this 4 week period there were 158 Samples tested for AST. These samples were collected at 69 Sites around the country. Resulting in 0 Site(s) with values above the regulatory limit of 20.0 mg/kg



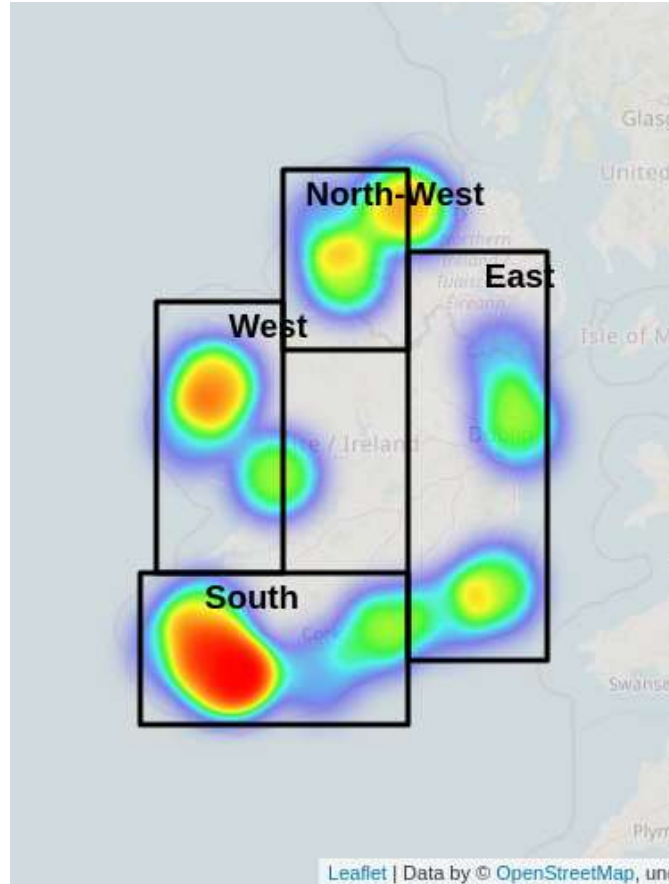
Risk: **Low** **Low** **Low** **Low**

Trend:

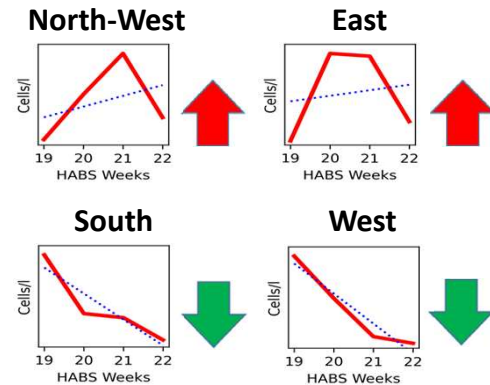
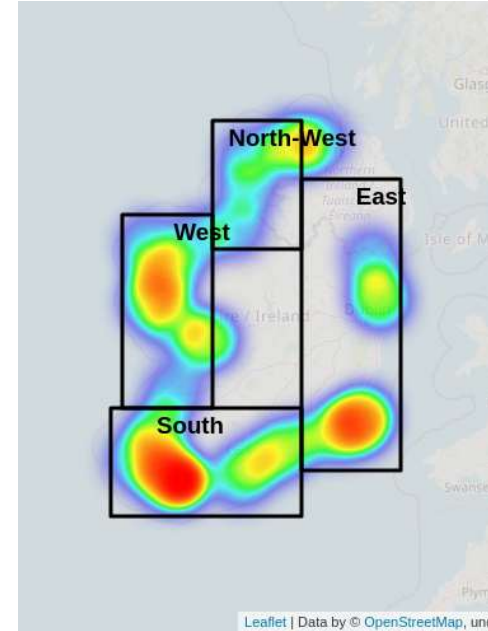
Medium/Low Risk:

Continued presence of potential cells level, in all coasts. Suitable growing conditions still & caution advised.

Amnesic Shellfish Toxins National 4-Week Heatmap



Phytoplankton *Pseudo-nitzschia* spp. 4 Week Heatmap

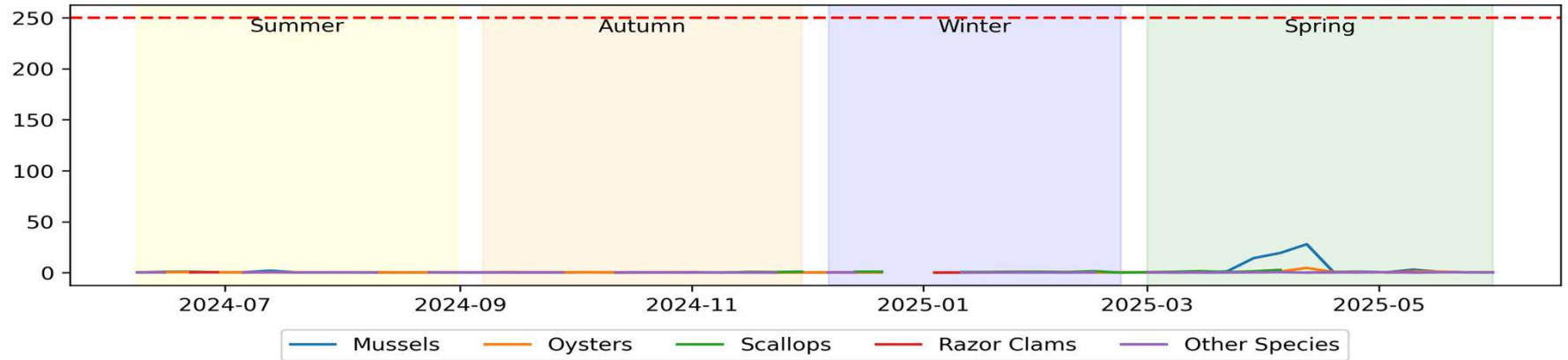


Amnesic Shellfish Toxins & *Pseudo-nitzschia* species

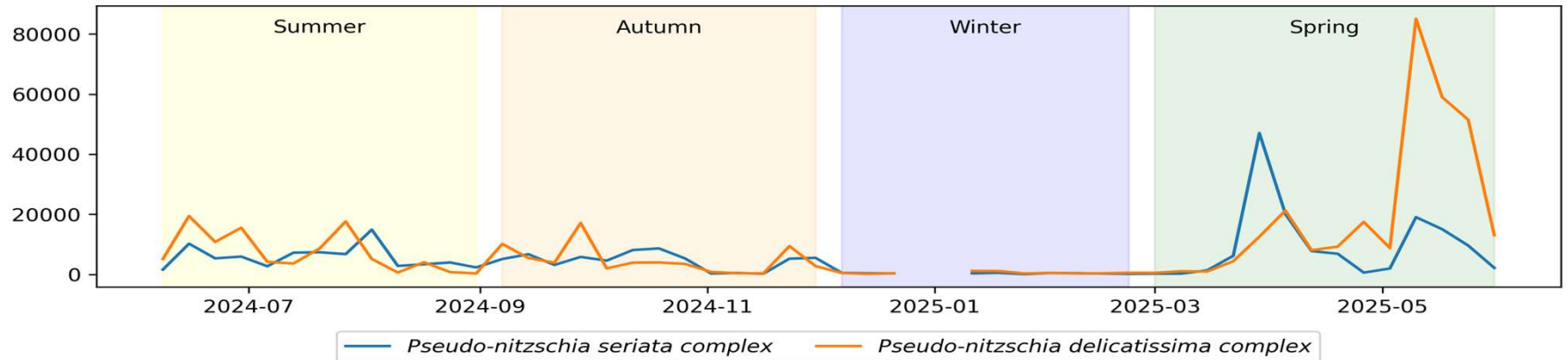
National Yearly Trend 01/06/24 - 31/05/25



Trend of Maximum Toxin concentrations in Shellfish Species (measured in mg/kg)



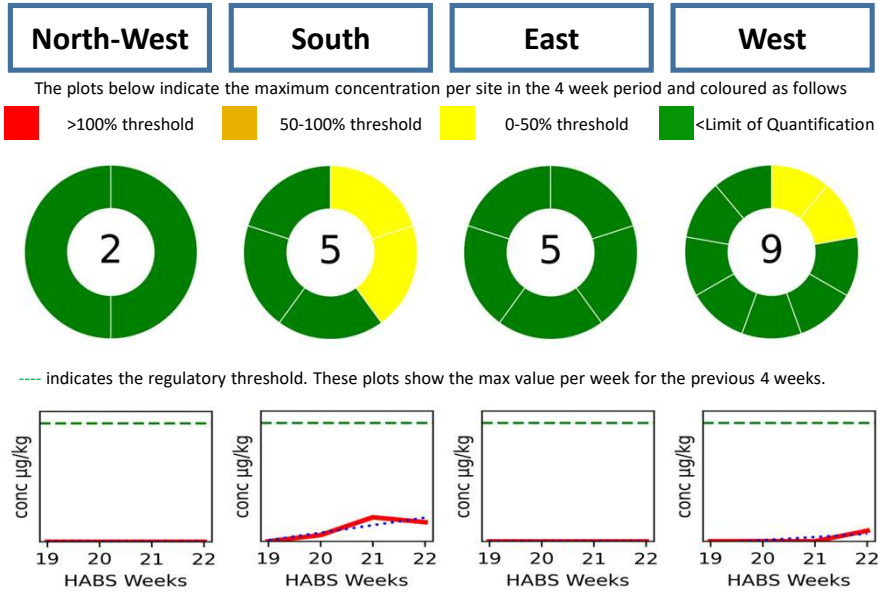
Trend of Average Counts of Toxin Causing PhytoPlankton Species Per Week (measured in Cells per Litre)



Paralytic Shellfish Toxins & *Alexandrium* species

Regional 4-Week Trends 04/05/25 - 31/05/25

In this 4 week period there were 43 Samples tested for PST. These samples were collected at 21 Sites around the country. Resulting in 0 Site(s) with values above the regulatory limit of 800.0 µg/kg



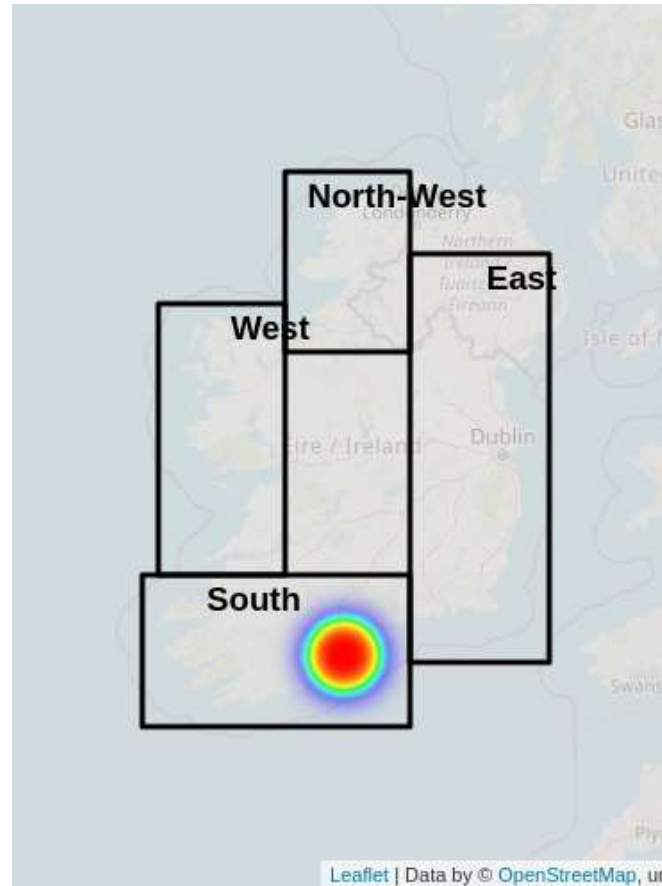
Risk: **Low** **Medium** **Low** **Low**

Trend:

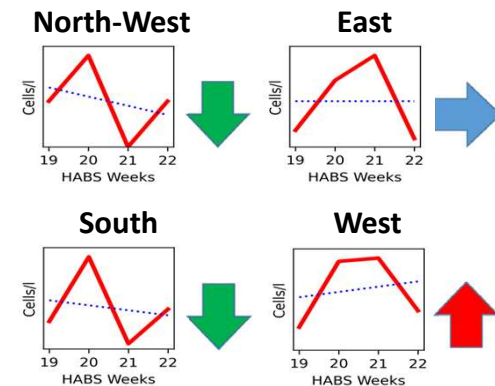
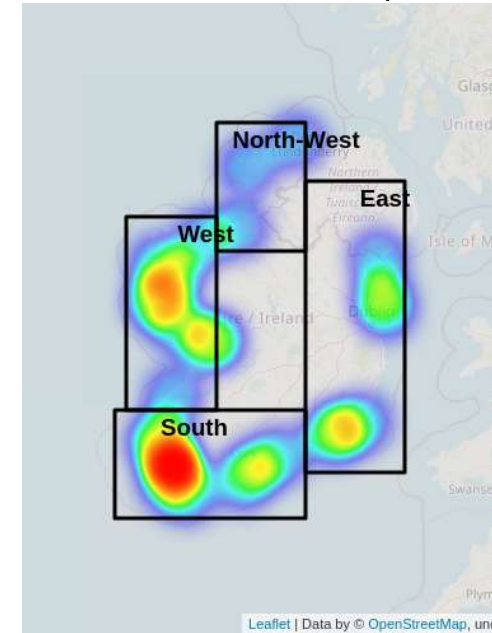
Low/Medium Risk.

Risk levels are present in Castlemaine Harbour & Cork Harbour where *Alexandrium spp.* cells have been observed at quantifiable levels of PST below regulatory limits detected. Caution advised especially on these coasts.

Paralytic Shellfish Toxins National 4-Week Heatmap



Phytoplankton *Alexandrium spp.* 4 Week Heatmap

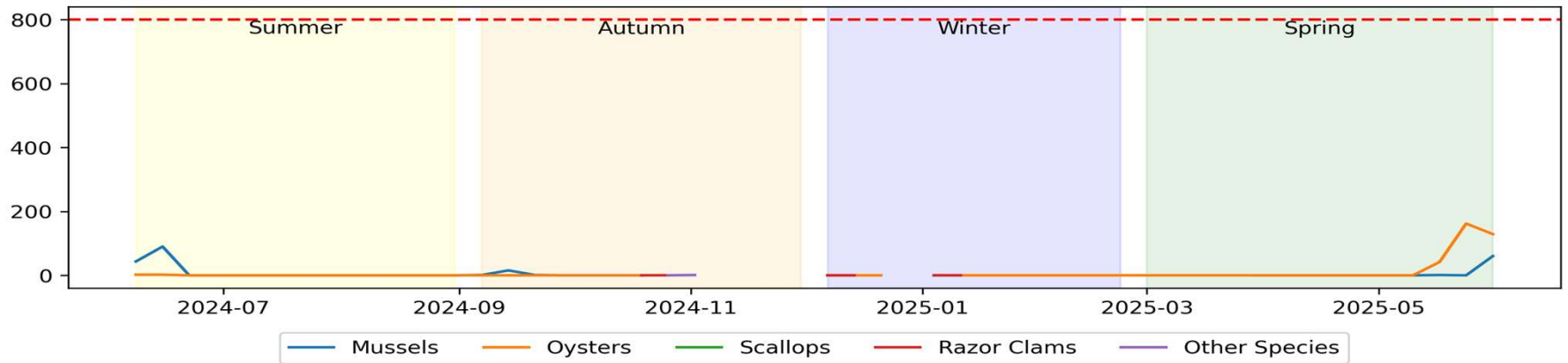


Paralytic Shellfish Toxins & *Alexandrium* species

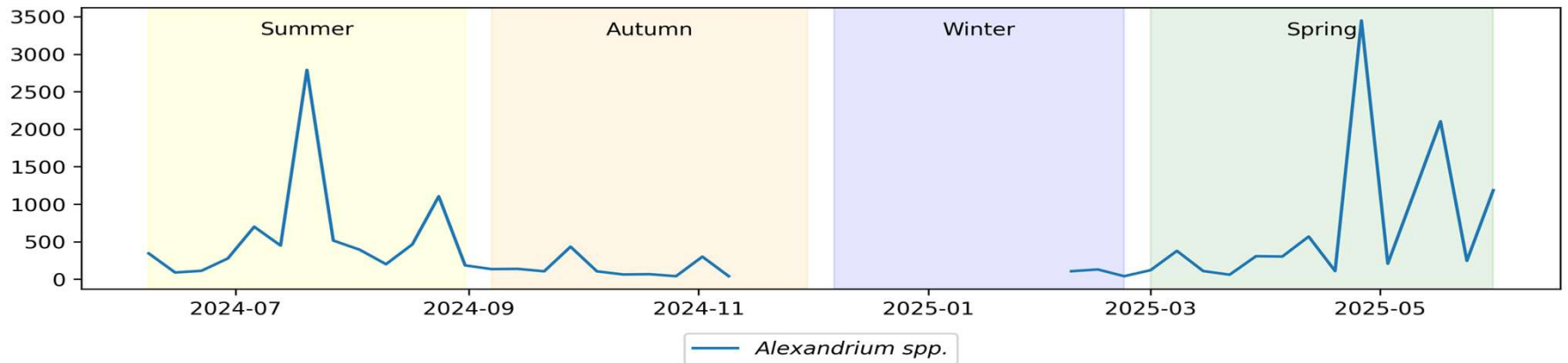
National Yearly Trend 01/06/24 - 31/05/25



Trend of Maximum Toxin concentrations in Shellfish Species (measured in $\mu\text{g}/\text{kg}$)



Trend of Average Counts of Toxin Causing PhytoPlankton Species Per Week (measured in Cells per Litre)



Fish Harming Phytoplankton

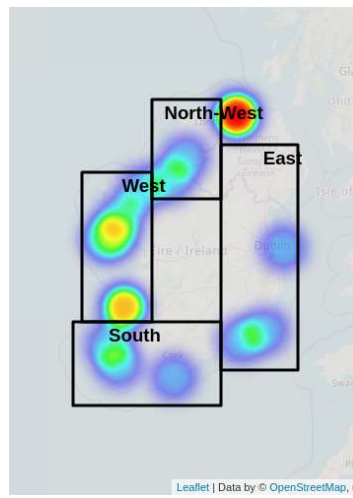
National 4-Week Analysis: 04/05/25 to 31/05/25



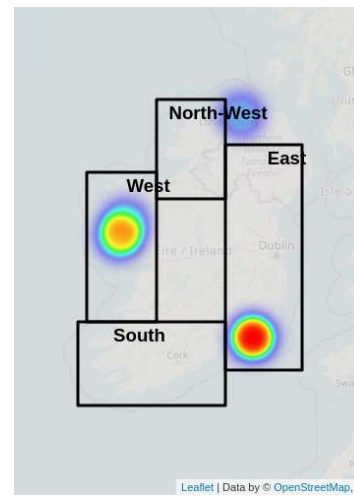
Heterocapsa sp.



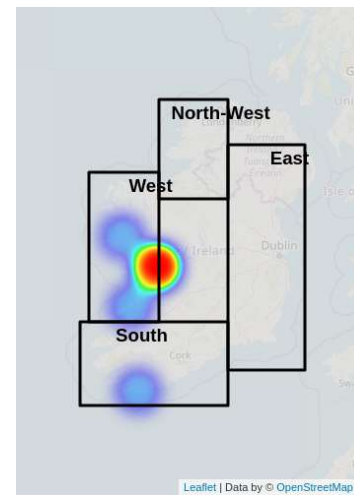
Alexandrium sp.



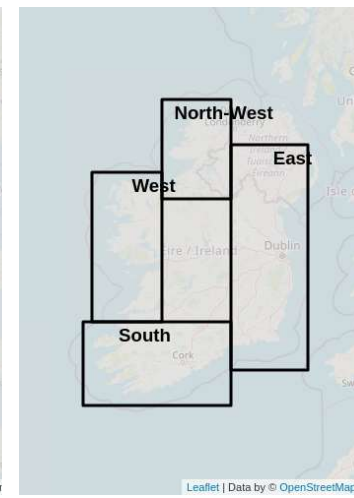
Coscinodiscus sp.



Phaeocystis sp.

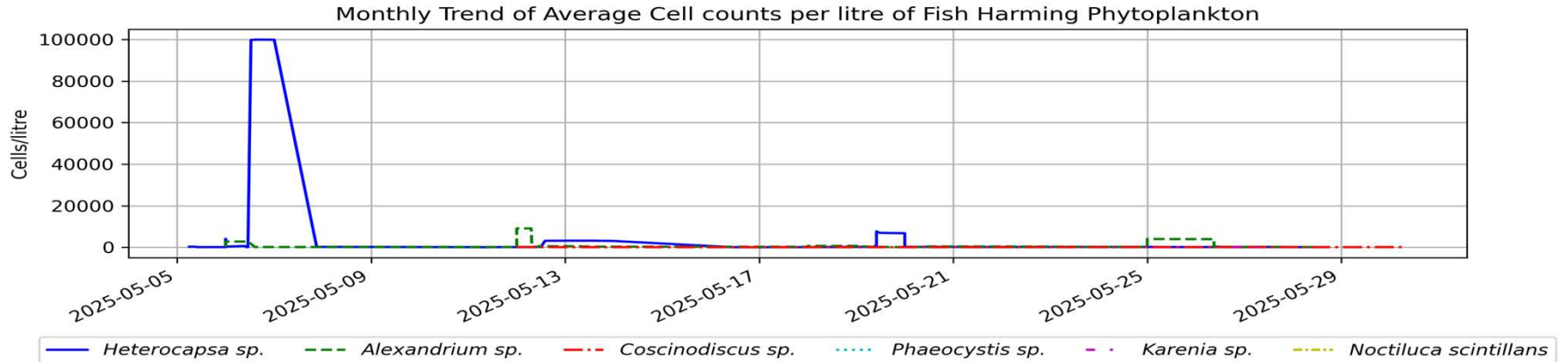


Karenia sp.

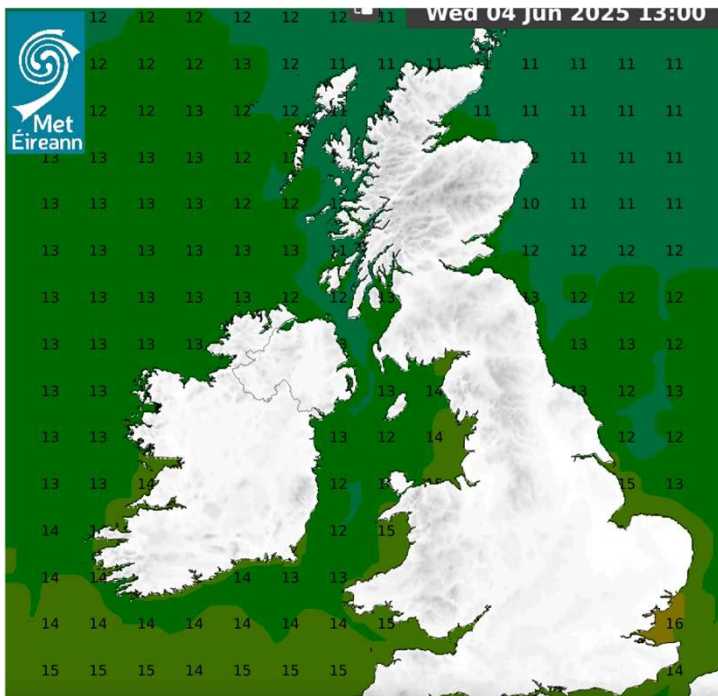


Noctiluca Scintillans

Phytoplankton cell levels are increasing into the Spring bloom cycle. Sea water temperatures have cooled slightly & light levels are still increasing as cloud cover has returned. Offshore transportation potential higher likelihood of occurrence as insitu risk levels of HABs growth increasing significantly. Any Phytoplankton species at sufficient numbers may cause temporary issues in water quality which could impact specific areas over the course of a tidal cycle or for a period of days while specific suitable conditions prevail. Please note some blooms can occur rapidly and acutely. If concerned about a problematic or toxic species level please check specific site information updates at www.marine.ie.



Sea Surface Temperature (°C)



Chlorophyll Concentrations (mg/m3)



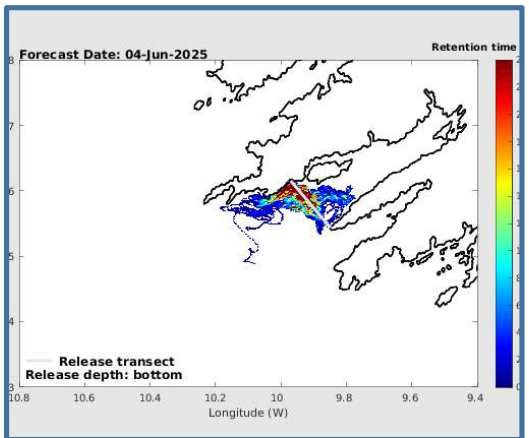
Sea water temperatures cooling slightly and light levels seasonally increasing. The seasonal blooms of both beneficial and detrimental species possible in areas with suitable environmental conditions. *Pseudo-nitzschia spp.* counts are high & *Dinophysis spp.* have been observed on all western shores. Please check specific area information for local activity. Localised temporary blooms becoming less likely.

Marine Institute Data Buoy – Temperature Data

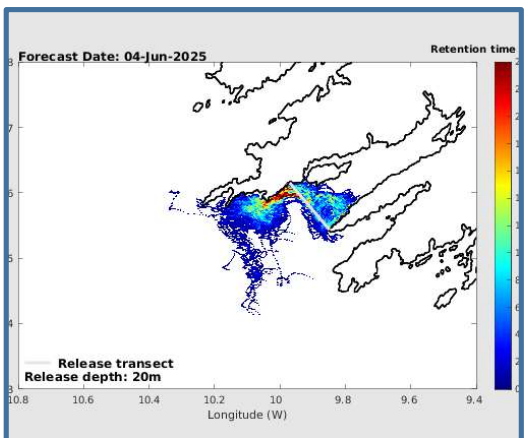


- NW Coast (M4) Average SST of 13.11 Celcius: Increase of 0.65 Celcius over the historic Weekly Average
- SW Coast (M3) Average SST of 14.63 Celcius: Increase of 1.19 Celcius over the historic Weekly Average
- SE Coast (M5) Average SST of 13.68 Celcius: Increase of 0.53 Celcius over the historic Weekly Average

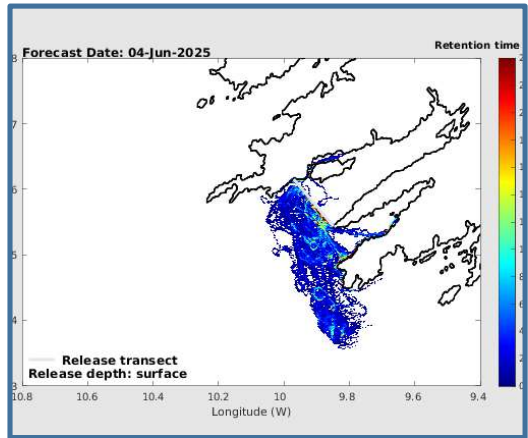
The maps show the **most likely transport pathways for the next 3 days of phytoplankton** found along the **presented transects** (black lines off Mizen Head and the Mouth of Bantry Bay) and **water depths** (bottom, 20 metres and surface).
Reddish colours represent areas where phytoplankton remain longest. **Cooler colours represent areas where phytoplankton remain for shorter periods**



Bottom water

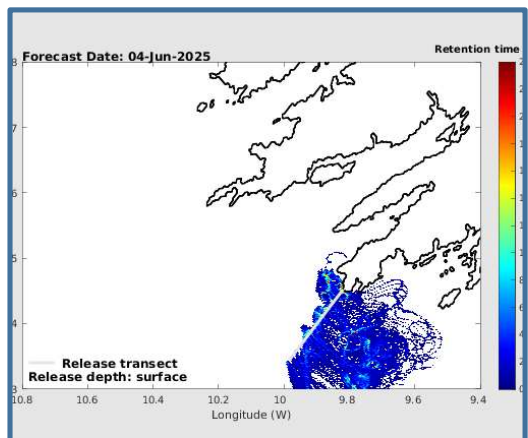
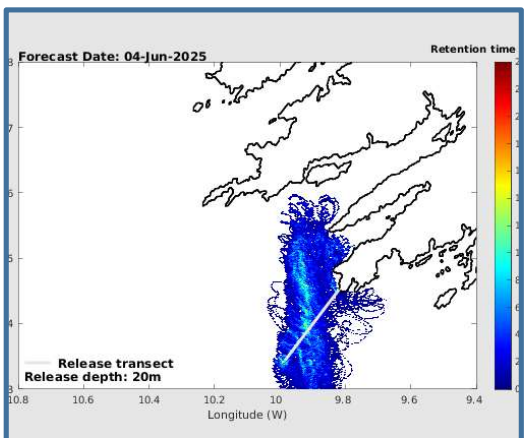
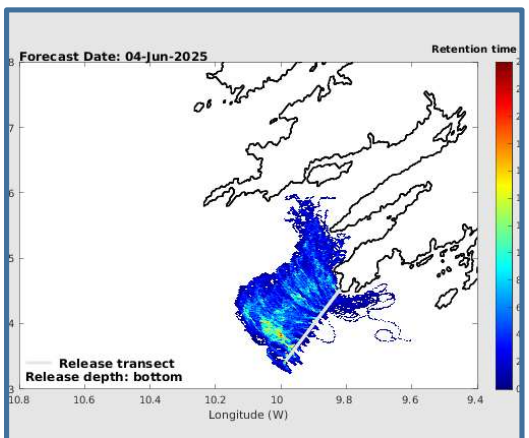


Water @ 20 metres

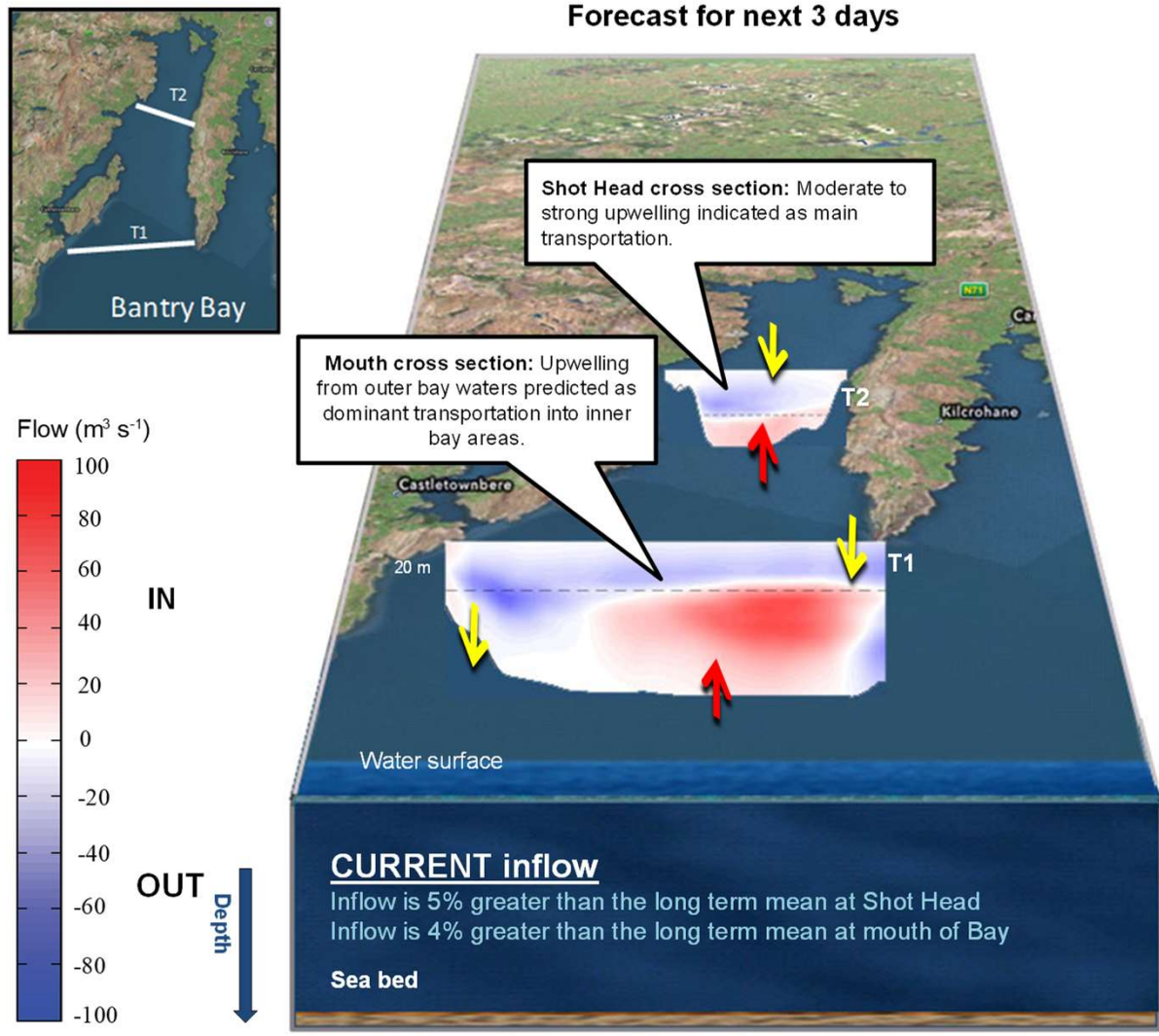


Surface water

Mouth of Bantry Bay:
Mixed water movements continue into inner bay areas at depths, while there is more southerly movements of surface waters.

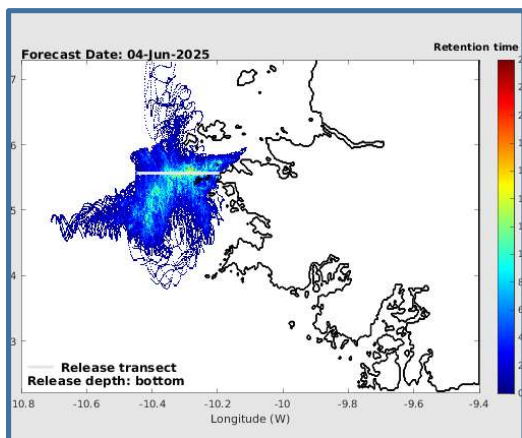


Mizen Head:
Change to Northern directional in bottom & deep waters and remains to be Southern directional dominance in surface zones.

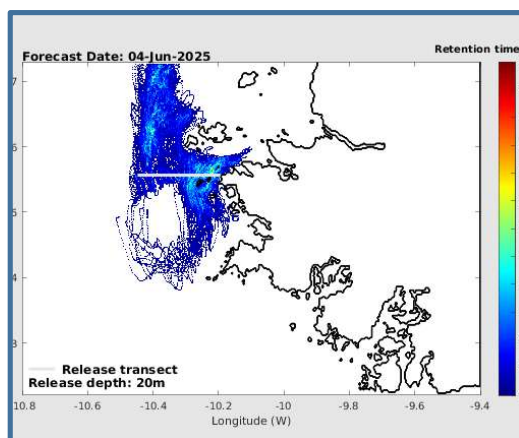


The maps show the **most likely transport pathways for the next 3 days of phytoplankton** found along the **presented transects** i.e. white lines off Aughrus Point and the Mouth of Killary Harbour, and **water depths** (bottom, 20 metres and surface).

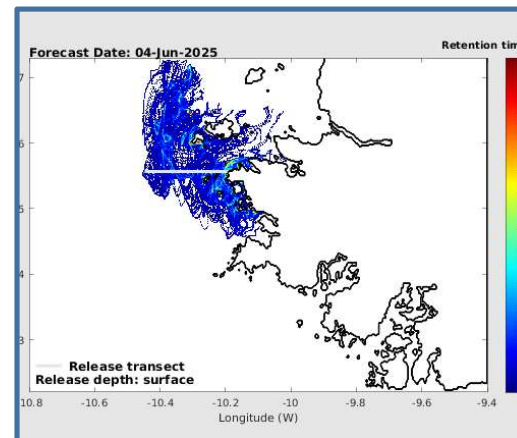
Reddish colours represent areas where phytoplankton remain longest. **Cooler colours represent areas where phytoplankton remain for shorter periods**



Bottom water



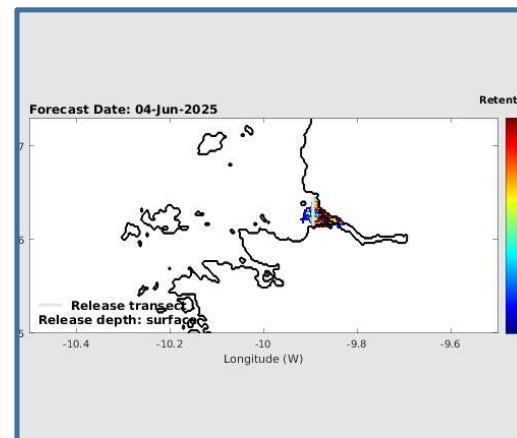
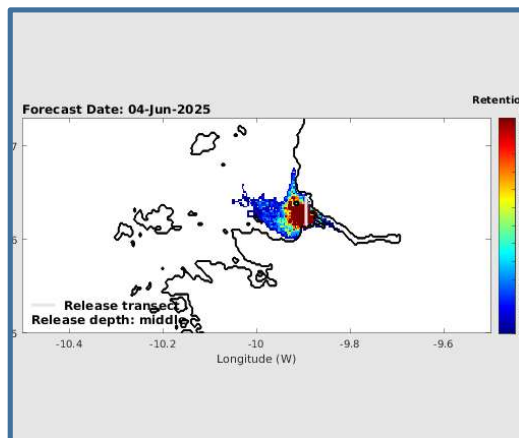
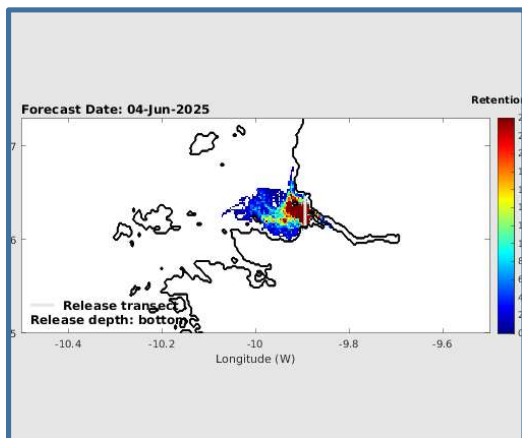
Water @ 20 metres



Surface water

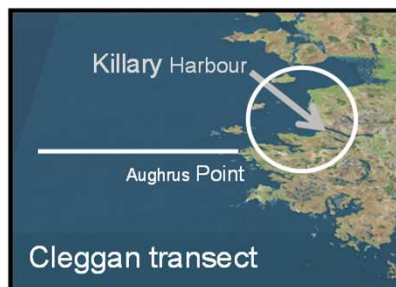
Cleggan

- Mixed movements in all depths continues, with increased strength indicated at surface waters.

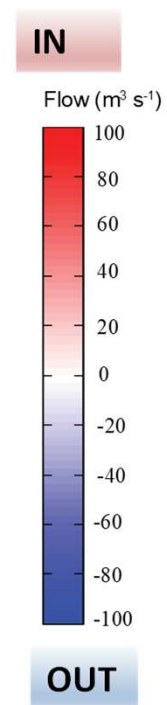
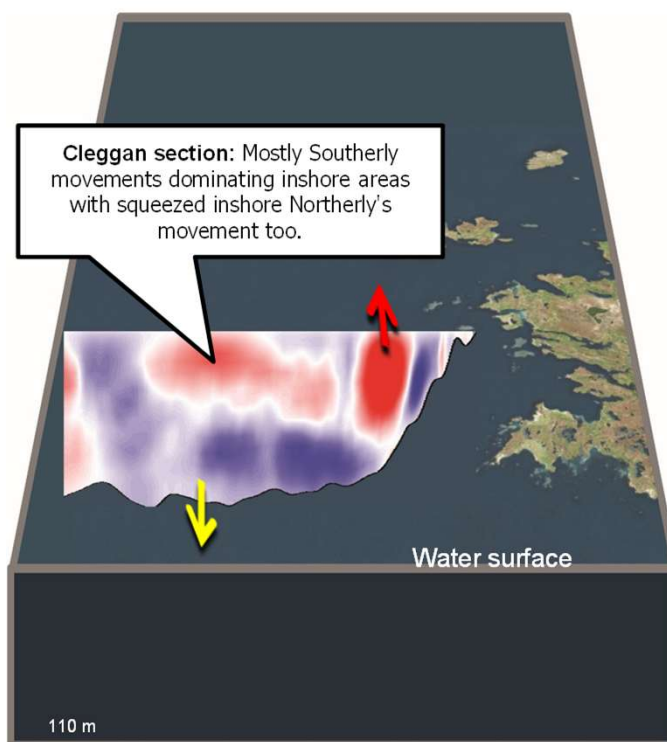


Killary

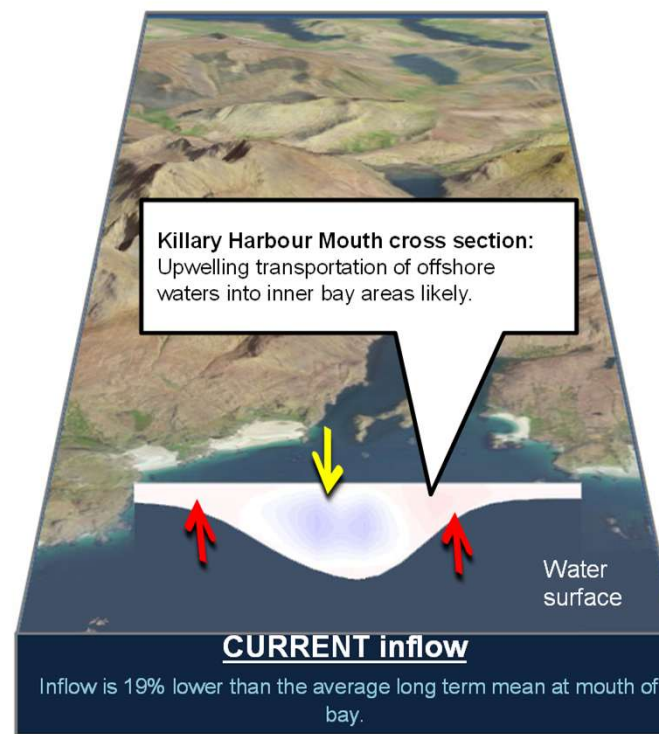
- Upwelling of offshore water movement predicted as main inshore transportation.



Forecast for next 3 days



Depth ↓



This Harmful Algal Blooms (HAB) Bulletin aims to provide a short (3-5 day) predictive forecast on the likelihood of the onset of a HAB event occurring/continuing in a region. The data provided for the compilation of this report is derived from a number of sources comprising of in-situ, remote sensing and hydrodynamic modelling datasets. For the latest and historical biotoxin and phytoplankton results for aquaculture production areas please visit <https://webapps.marine.ie/habs>

In-situ Data

- Biotoxin and Phytoplankton data is provided by National Monitoring Programmes from the HABs database (Marine Institute)
- Heat map images – Leaflet.

Remote Sensing Data

- Sea Surface Temperature Data Product: SST_NWS_SST_L4_NRT_OBSERVATIONS_010_003 (ODYESSA L4 SST from Copernicus CMEMS MCS).
- Chlorophyll image data is provided by:EUR-L4-CHL-ATL-v01 (IFREMER/ DYNECO and CERSAT).
- Sea Surface Temperature observations: Irish weather buoy network (Marine Institute).

Hydrodynamic modelled data

- Particle Tracking Simulation data: The downscale models of areas of particular interest (Bantry Bay, Killary Harbour and Cleggan Bay) incorporate online particle tracking with virtual particles released at pre-defined transects at the start of each model. The operational model produces an estimate of the ocean state once a week and a daily 3-day forecast of the dominant regional physical processes that result in water exchange events between the bay and its adjacent shelf (Marine Institute).
- Hydrodynamic model data: Hydrodynamic nowcast/forecast models show the latest 3-day volumetric flux forecast for vertical transects at the mouth and mid-bay. The results are plotted graphically on a map of the area.

Definitions

- A toxic site is defined as a site that had at least 1 result in the time period indicated greater than the regulatory limit.
- Heat maps represent relative distribution and patterns, and should not be interpreted as indicative of the maximum or absolute concentrations of a toxin in a region.
- Risk levels are calculated based on internal logic applied to measurements captured over the period, along with any additional information available to the evaluator. These risk levels are to be regarded as advisory only.
- Trends are calculated based on average or maximum values per week over the period of time and the slope of the line connecting these points.

Disclaimers

The predictions and comments produced within this bulletin are based on our expert opinion on the datasets and sources as outlined above. The Marine Institute cannot accept any responsibility for business and risk management decisions on harvesting and husbandry based on this report.

Acknowledgements

Funding for the development of this bulletin version has been provided by Interreg Atlantic Area Project: PRIMROSE (Predicting the Impact of Regional Scale events on the Aquaculture Sector) EPA 182/2106