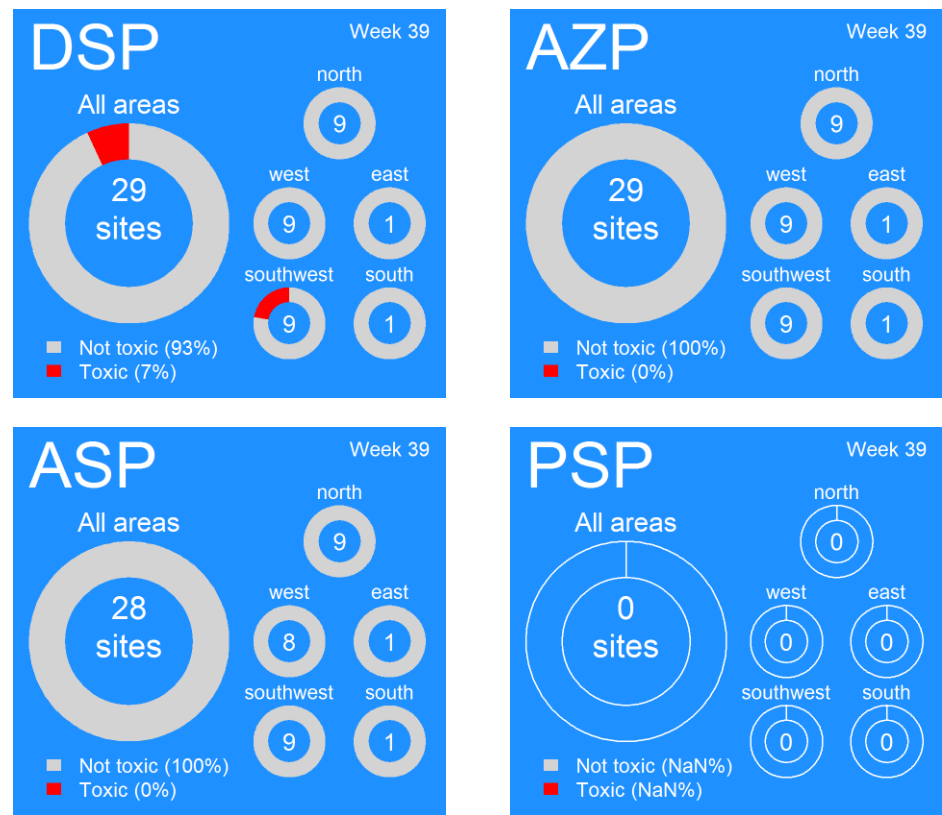


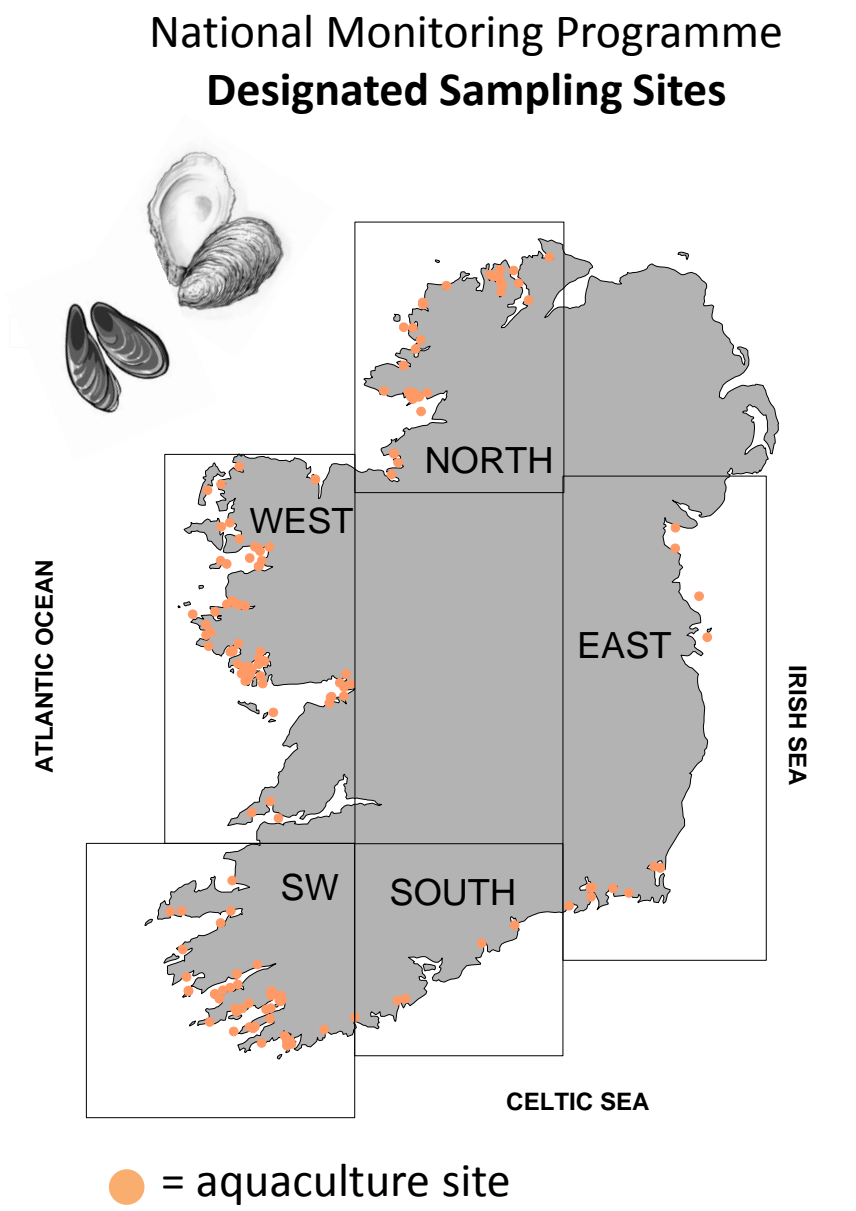
# Ireland: Current Conditions

## Shellfish biotoxin report (last week)



**EU Regulatory Limit:**  
ASP 20 µg/g; AZP 0.16 µg/g; DSP 0.16 µg/g; PSP 800 µg/kg

**Toxin groups**  
ASP = **A**mnestic **S**hellfish **P**oisoning; AZP = **AZ**spiracid **P**oisoning;  
DSP = **D**iarrhetic **S**hellfish **P**oisoning; PSP = **P**aralytic **S**hellfish **P**oisoning



# Ireland: Predictions

## Prediction for this week:

ASP event: Low

AZP event: High

DSP event: High -medium – region specific.

PSP event: Low

## Why do we think this?

ASP: Low cell levels of *Pseudo-nitzschia seriata* group continue to be observed around the coast. Corresponding biotoxin levels continue to remain well below regulatory limits. Toxin issues from this species are not expected at this time of year.

AZP: Fluctuating levels of *Azadinium* spp. continue to be observed around the coast , currently potentially increasing slightly. Biotoxin levels have been recorded in localised areas throughout the coastline but are currently below regulatory limits . Biotoxin levels associated with this species have been know to ‘jump’ so caution is advised.

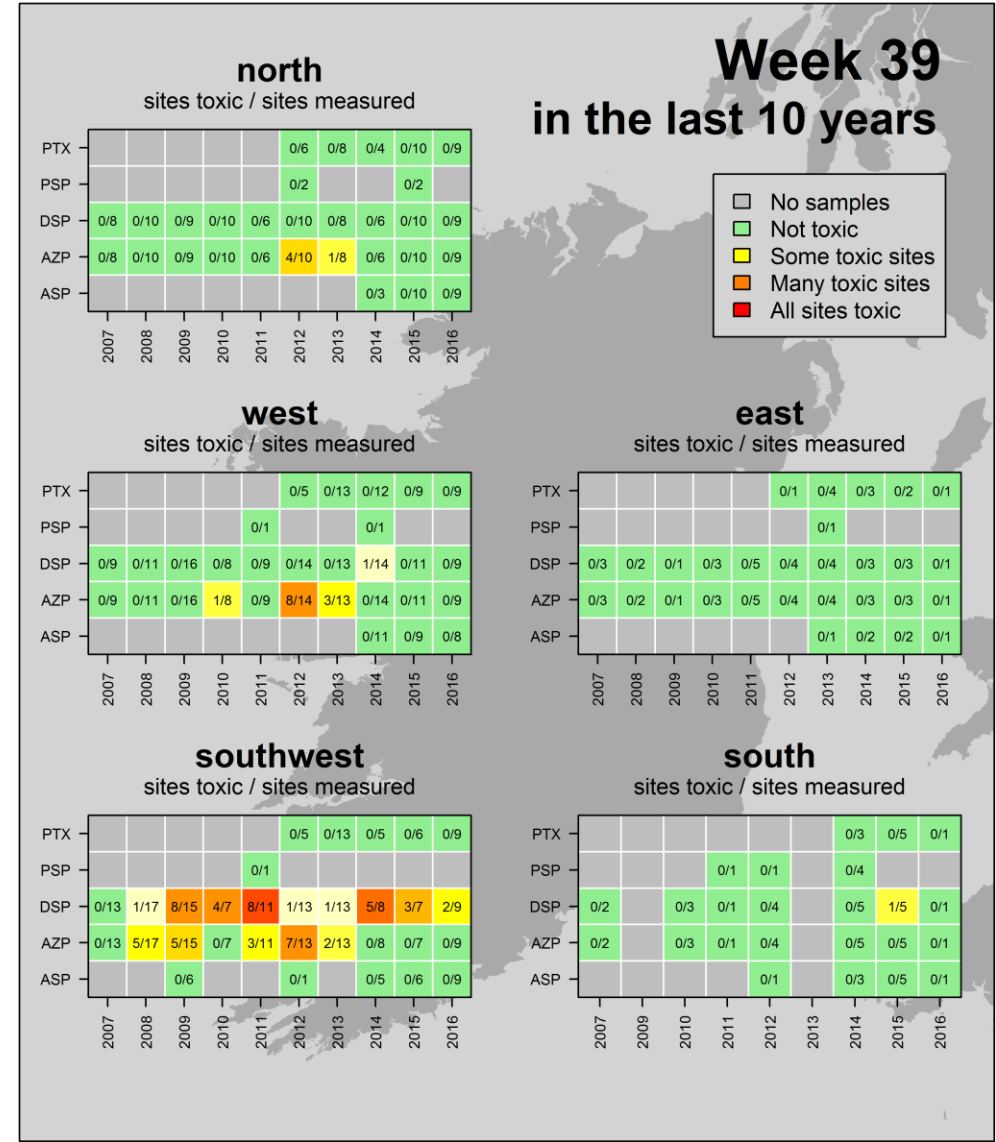
DSP: This is historically still within the risk period. Currently *Dinophysis* cell levels, and related toxins, appear to be on the decline in affected areas. Caution is still advised .

PSP: A toxic event is not expected at this time of year.

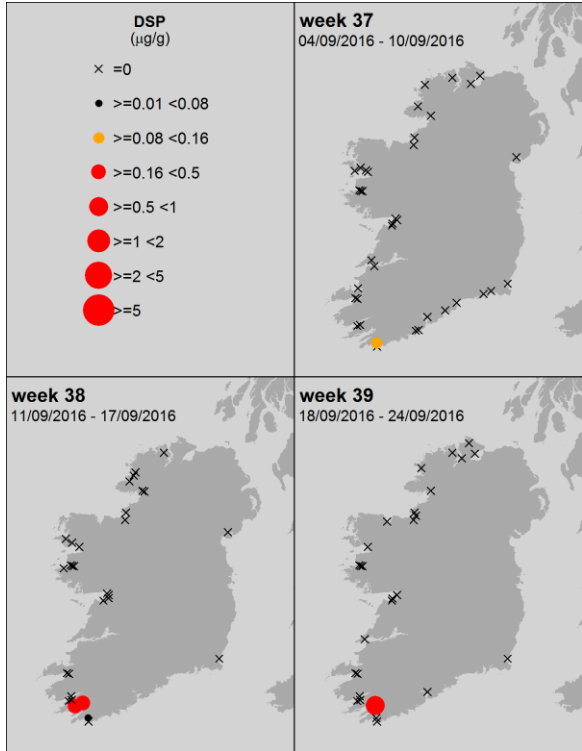
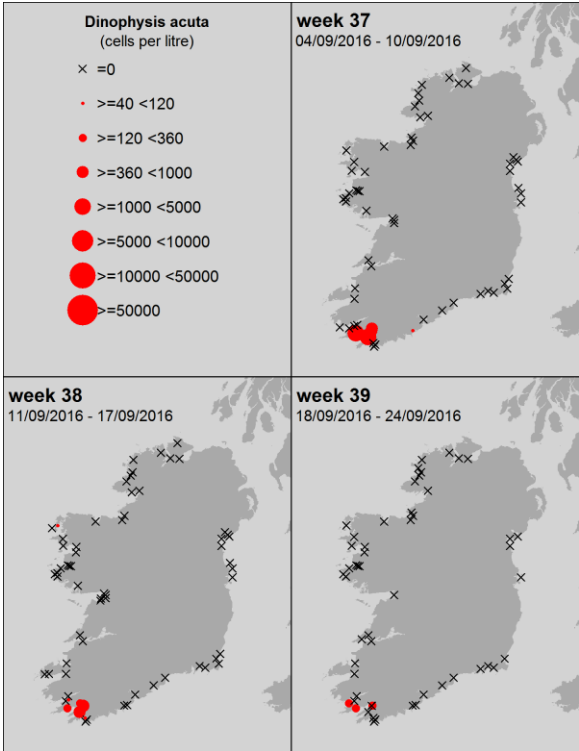
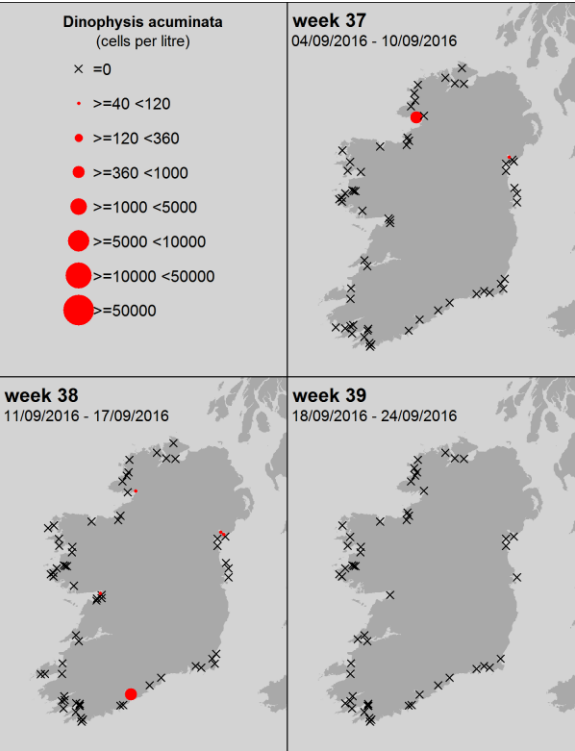
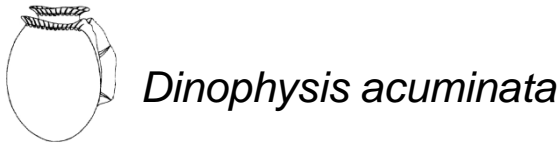
Blooms: A bloom of *Karenia mikimotoi* which had been observed in the SW appears to be declining in concentration. Weather conditions may dilute or break it up, but caution is advised and close monitoring of all farmed stock for signs of potential stress.

# Ireland: Historic Conditions

A look back at how last weeks biotoxin results compares to other years



Ireland: Last 3 weeks of available National Monitoring Programme data



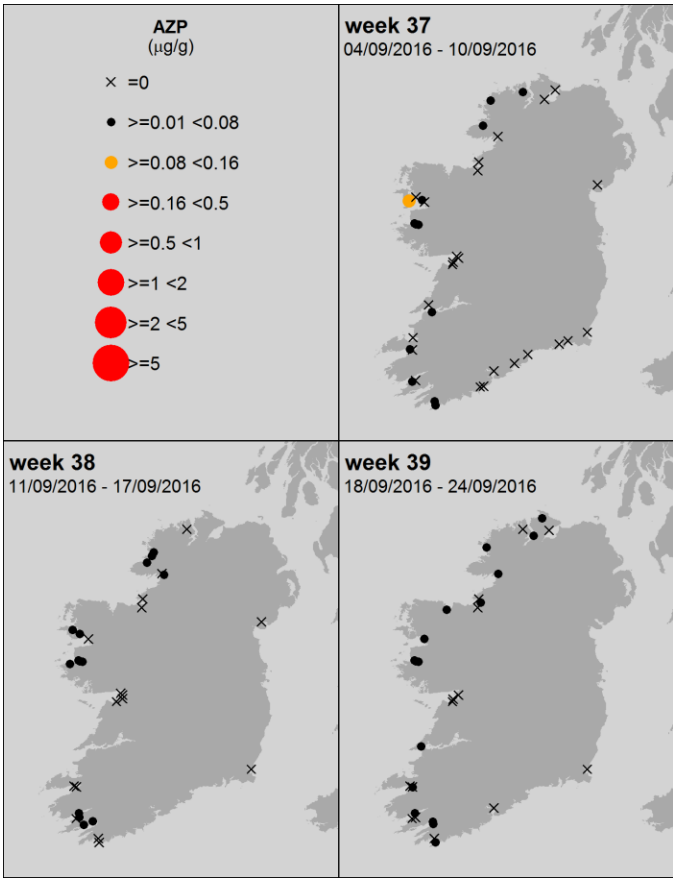
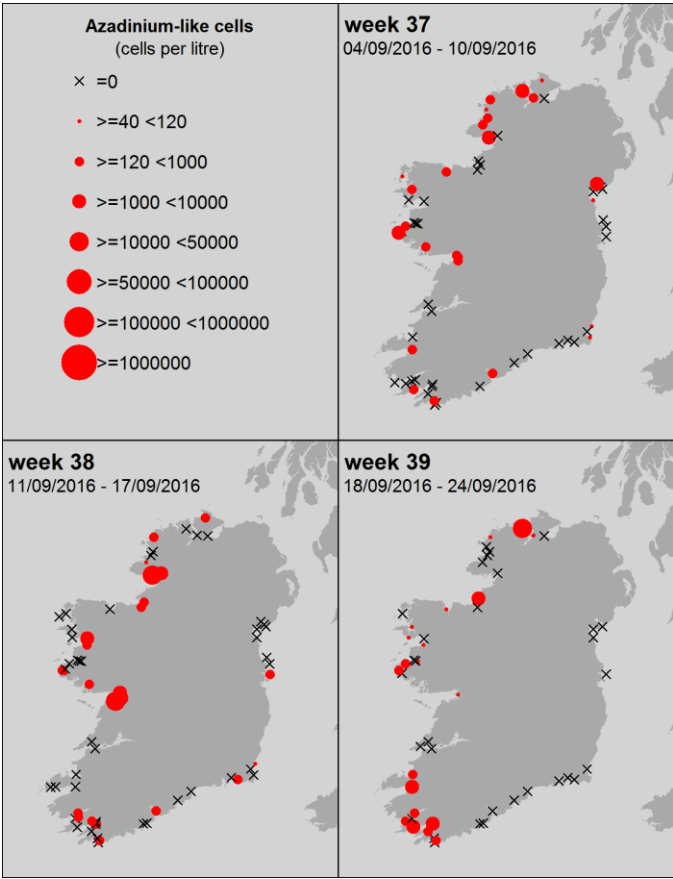
Ireland: Last 3 weeks of available National Monitoring Programme data



*Azadinium* – like spp.



AZP



Ireland: Last 3 weeks of available National Monitoring Programme data

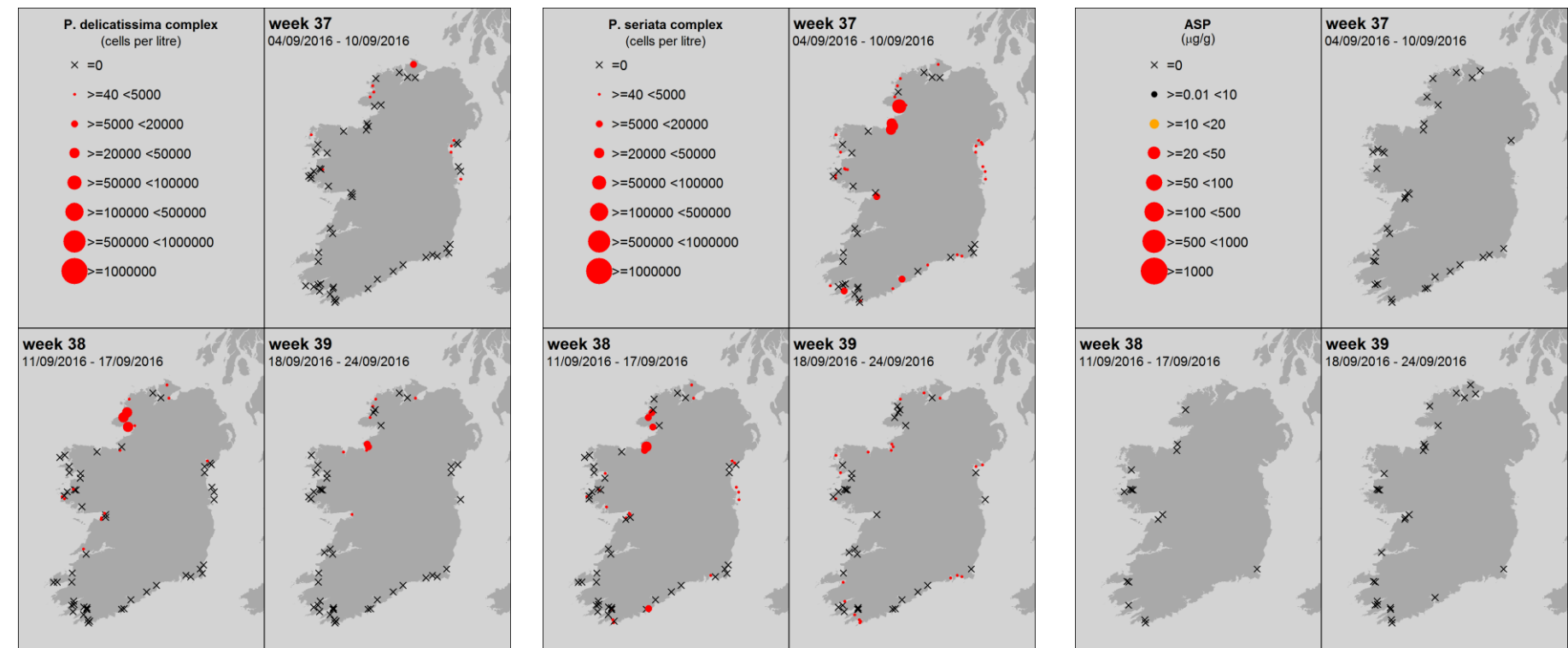
*Pseudo-nitzschia* spp.



ASP

“*P. delicatissima*” complex = small cells  
Taken from the literature:  
3 species confirmed in Irish waters

“*P. seriata*” complex = large cells  
Taken from the literature:  
7 species confirmed in Irish waters

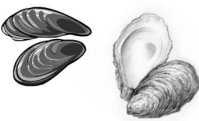


**Taken from the literature:** Of the 4 species (*P. fraudulenta*, *P. australis*, *P. pungens* and *P. delicatissima*) from Irish waters, tested for ASP toxins in culture work, only one, *P. australis* (from the “*P. seriata*” group) was toxic.

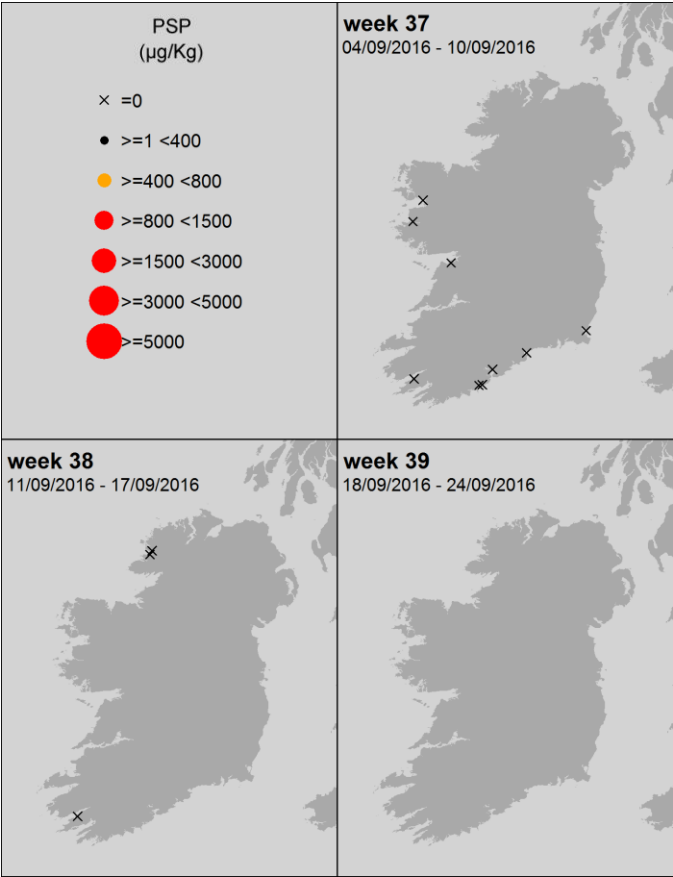
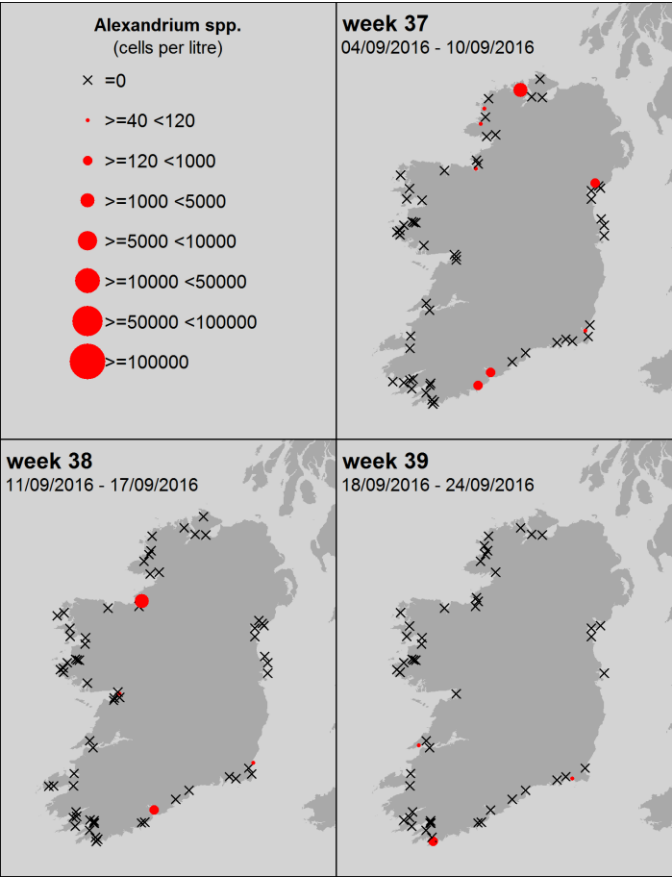
Ireland: Last 3 weeks of available National Monitoring Programme data



*Alexandrium* spp.



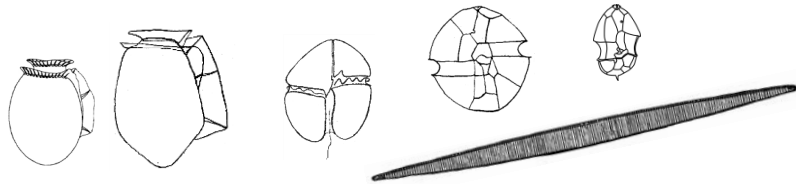
PSP



# Ireland HAB & Biotoxin temporal trends

Ireland: **HABs and biotoxins** Levels from week 1 to present

## Ireland: Biotoxins



Toxin groups

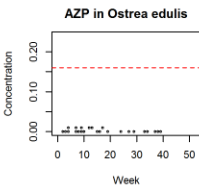
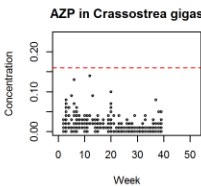
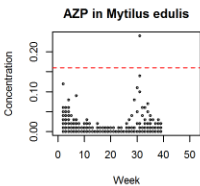
mussels

oysters

oysters

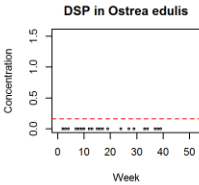
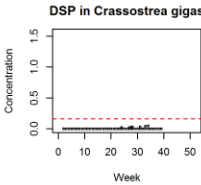
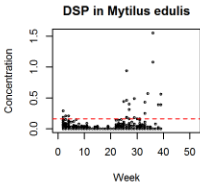
**AZP**

AZaspiracid  
Poisoning



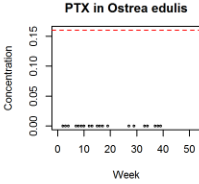
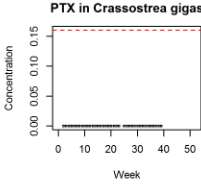
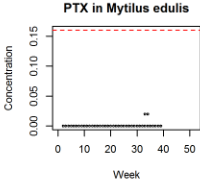
**DSP**

Diarrhetic  
Shellfish  
Poisoning



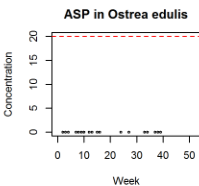
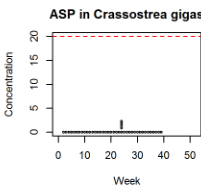
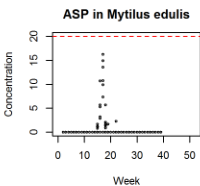
**PTX**

Pectenotoxin



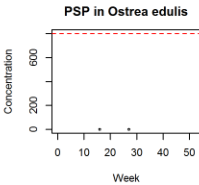
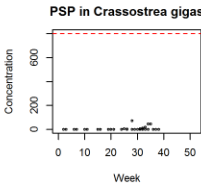
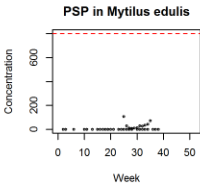
**ASP**

Amnesic  
Shellfish  
Poisoning

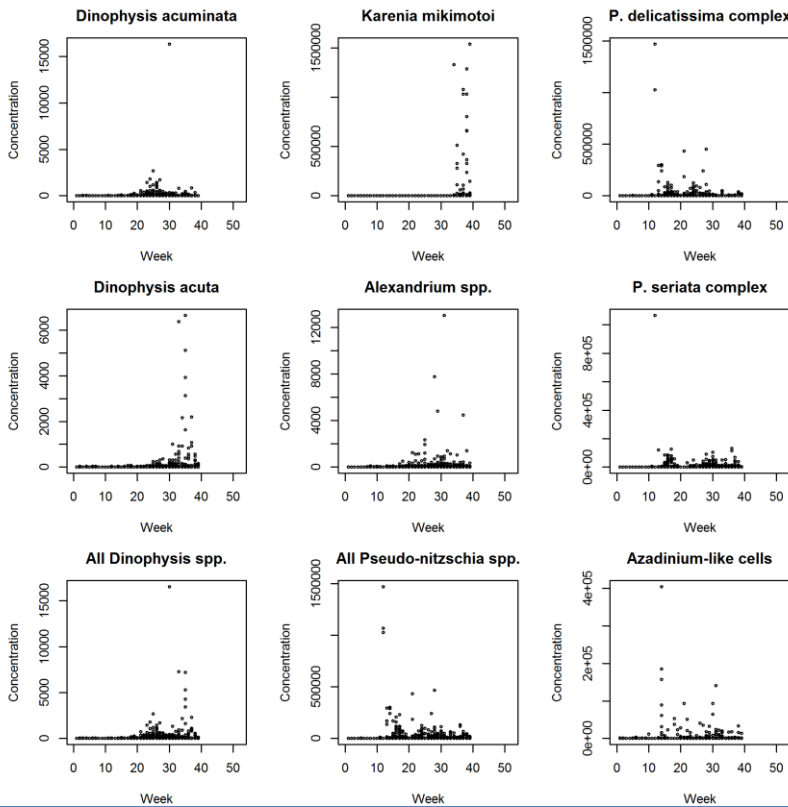


**PSP**

Paralytic  
Shellfish  
Poisoning



## Ireland: HABs

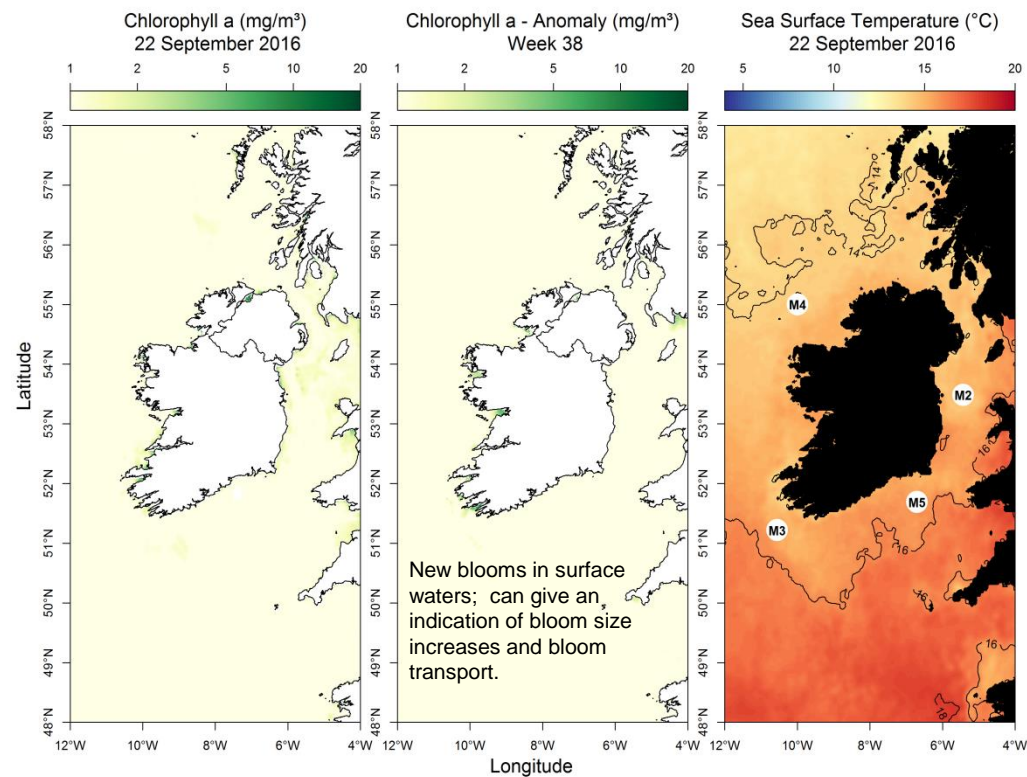


EU Regulatory Limit: ASP 20 µg/g; AZP 0.16 µg/g; DSP 0.16 µg/g; PSP 800 µg/kg

Regulatory limit = ■■■■■■

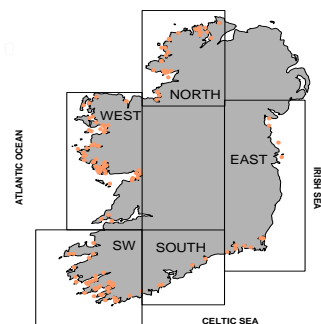


Most up to date available satellite data



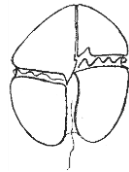
**SST (°C) anomaly for last week:**  
Data taken from the Irish data buoy network where the anomaly is the weekly difference in SST compared to the long term mean (~ 10 yrs)

- NW coast (M4) Below average by 0.10 °C
- SW coast (M3) Below average by 0.09 °C
- SE coast (M5) above average by 0.75 °C



What phytoplankton were blooming at inshore coastal sites last week?

| Week 39 |   |                   |
|---------|---|-------------------|
| Region  | Predominant Phytoplankton (most abundant taxa)                | Cells/L (rounded) |
| north:  | <b>Diatoms:</b>   |                   |
|         | <i>Asterionellopsis</i> spp.                                  | 2,435,800         |
|         | <i>Chaetoceros</i> ( <i>Hyalochaete</i> ) spp.                | 58,800            |
|         | <i>Cylindrotheca closterium</i> / <i>Nitzschia longissima</i> | 56,000            |
|         | <b>Dinoflagellates:</b>                                       |                   |
|         | <i>Prorocentrum triestinum</i>                                | 27,000            |
| west:   | <i>Scrippsiella</i> spp.                                      | 19,300            |
|         | <b>Diatoms:</b>   |                   |
|         | <i>Asterionellopsis glacialis</i>                             | 710,300           |
|         | <i>Skeletonema</i> spp.                                       | 182,100           |
|         | <i>Chaetoceros</i> ( <i>Hyalochaete</i> ) spp.                | 38,600            |
|         | <i>Skeletonema</i> spp.                                       | 23,900            |
| SW:     | <b>Others:</b>  |                   |
|         | Microflagellate sp.   | 14,900            |
|         | <b>Diatoms:</b>   |                   |
|         | <i>Lauderia</i> / <i>Detonula</i> sp                          | 134,000           |
|         | <i>Asterionellopsis glacialis</i>                             | 131,800           |
|         | <i>Skeletonema costatum</i>                                   | 104,700           |
| south:  | <i>Detonula confervacea</i>                                   | 79,800            |
|         | <b>Dinoflagellates:</b>                                       |                   |
|         | <i>Karenia mikimotoi</i>                                      | 1,538,300         |
|         | <b>Diatoms:</b>   |                   |
|         | <i>Skeletonema</i> spp.                                       | 173,900           |
|         | <i>Chaetoceros</i> ( <i>Hyalochaete</i> ) spp.                | 123,500           |
| east:   | <i>Navicula</i> spp. <25um                                    | 104,700           |
|         | <i>Chaetoceros curvisetus/debilis</i>                         | 101,700           |
|         | <b>Diatoms:</b>   |                   |
|         | <i>Asterionellopsis glacialis</i>                             | 781,800           |
|         | <i>Leptocylindrus minimus</i>                                 | 248,400           |
|         | <i>Chaetoceros</i> ( <i>Hyalochaete</i> ) spp.                | 177,500           |
|         | <i>Skeletonema</i> spp.                                       | 87,300            |

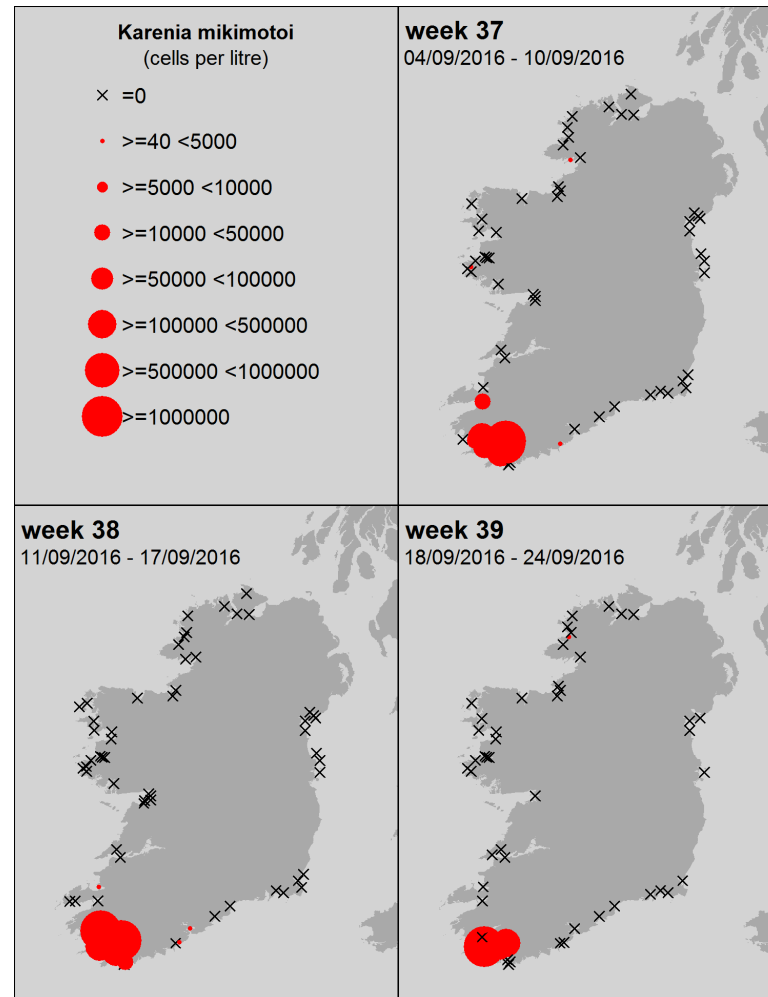


## *Karenia mikimotoi* (old name: *Gyrodinium aureolum*)

### High cell levels in some areas

*Karenia* spp continue to remain at low bloom levels in some southern bays .The direction and cell concentration, and potential impact, will be directly related to weather conditions.

This species can cause stress and mortalities due to its affect on water quality in both farmed shellfish and finfish as well as many wild marine shore species i.e. lugworms, cockles etc. Low impact husbandry for farmed fish is traditionally recommended to reduce any additional stress in affected sites. Increased frequency in checking fishing and keeper pots is traditionally advised for wild fisheries to remove live catch before potential losses in affected sites.

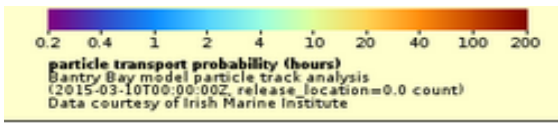


## SOUTHWEST: Bantry Bay

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)

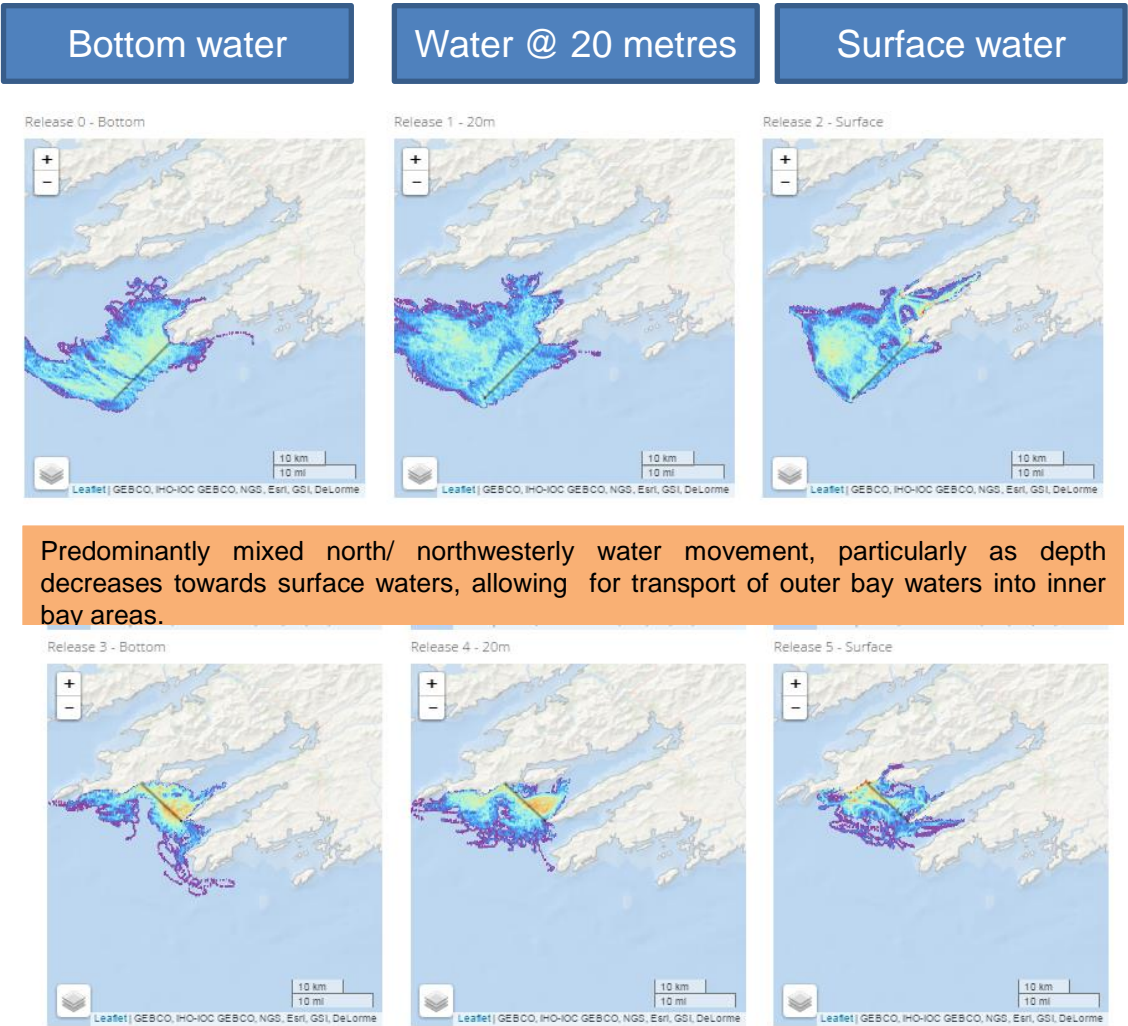
Reddish colours represent areas where phytoplankton remain longest

Cooler colours represent areas where phytoplankton remain for shorter periods



Go to <http://vis.marine.ie/particles/> to view daily forecasts

## Forecast for the next 3 days



Bottom and deeper waters moving out of the bay areas with some movement into inner bay areas as depth decreases.

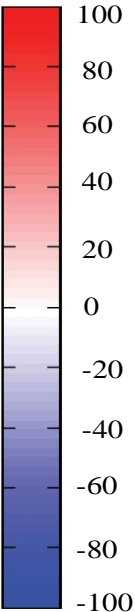
# Bantry Bay

3 day estimated water flows at the mouth and mid-bay sections of Bantry Bay

Forecast for next 3 days



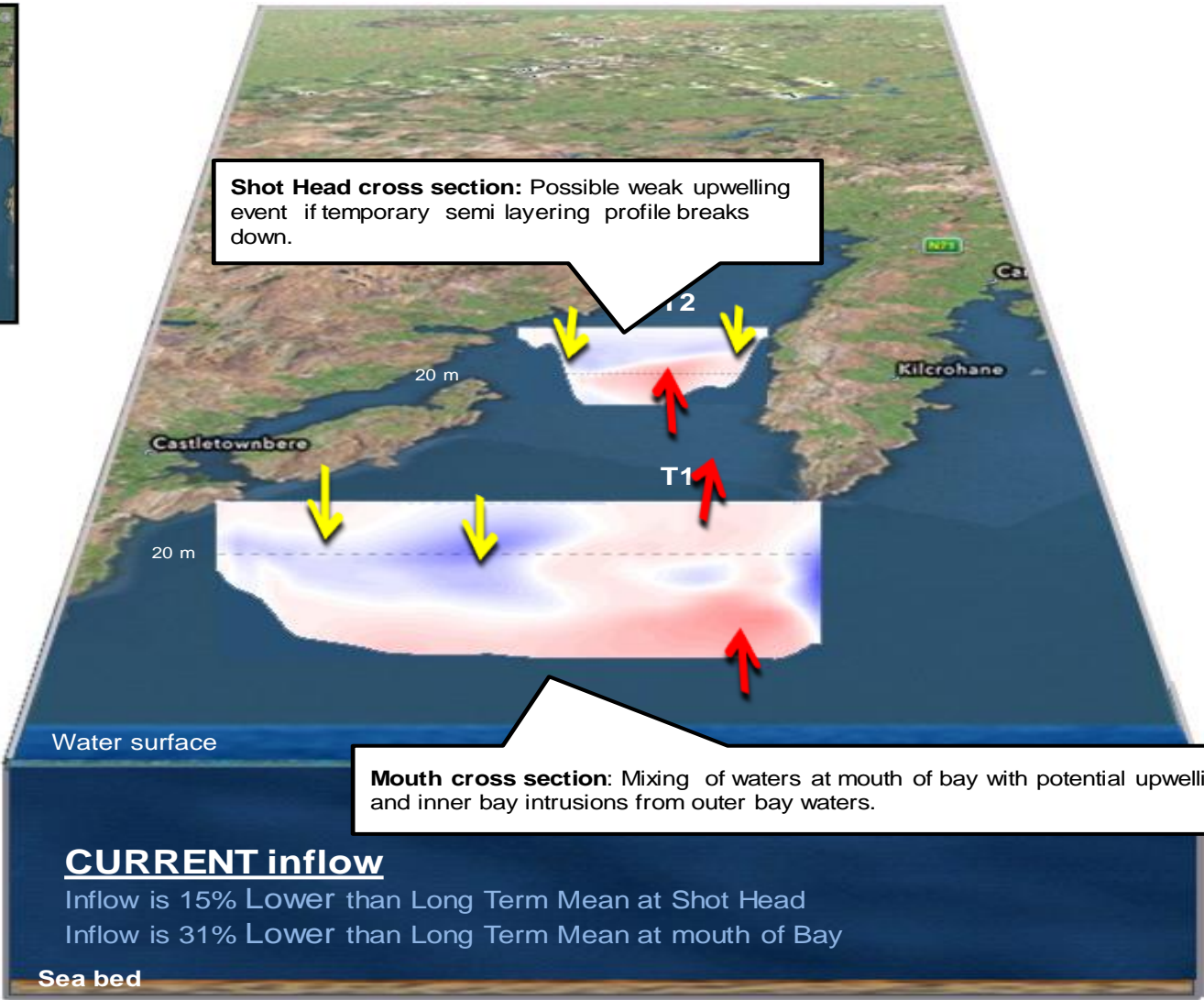
Flow ( $\text{m}^3 \text{s}^{-1}$ )



IN

OUT

Depth






WEST: Killary Harbour

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)

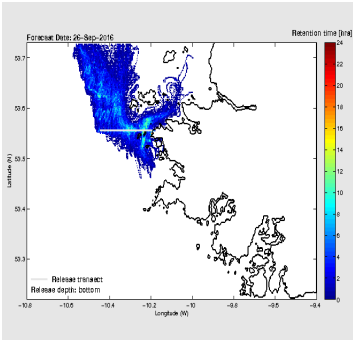
Reddish colours represent areas where phytoplankton remain longest  
Cooler colours represent areas where phytoplankton remain for shorter periods



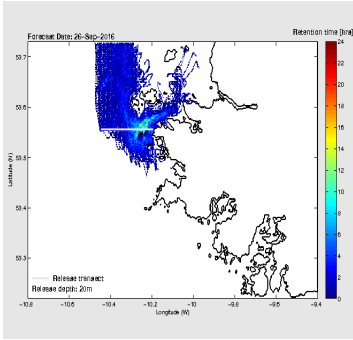
0.2 0.4 1 2 4 10 20 40 100 200  
particle transport probability (hours)  
Bantry Bay model particle track analysis  
(2015-03-10T00:00:00Z, release\_location=0.0 count)  
Data courtesy of Irish Marine Institute

Forecast for the next 3 days

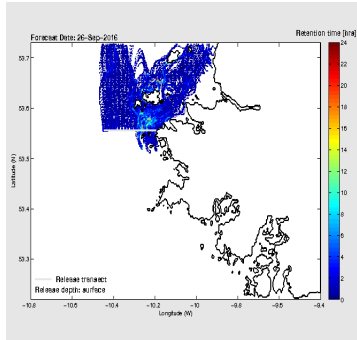
Bottom water



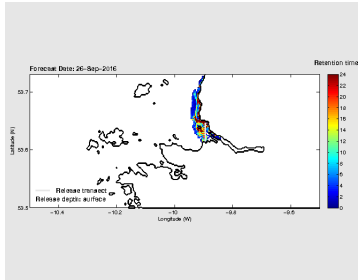
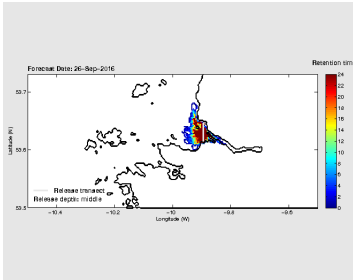
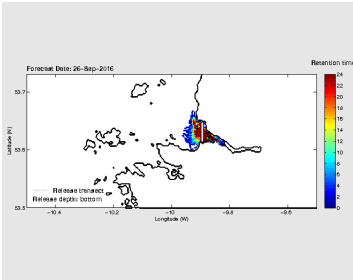
Water @ 20 metres



Surface water



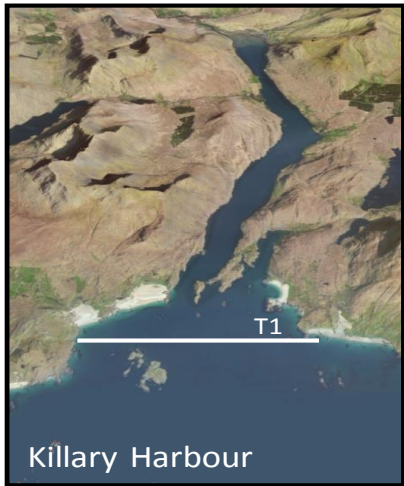
Predominantly strong broadly northerly flows dominating at all depths, possibly allowing for some intrusion of outer bay waters to inner bay mouth area.



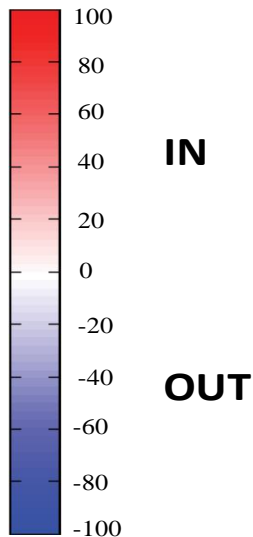
Bottom and deeper water flows indicating potential for outer bay water intrusions into inner bay area .Surface water flows indicating outward northerly flow pattern possibly assisting upwelling in middle bay combined with deeper water opposing directional flows.

# Killary Harbour

3 day estimated water flows at the mouth of Killary Harbour

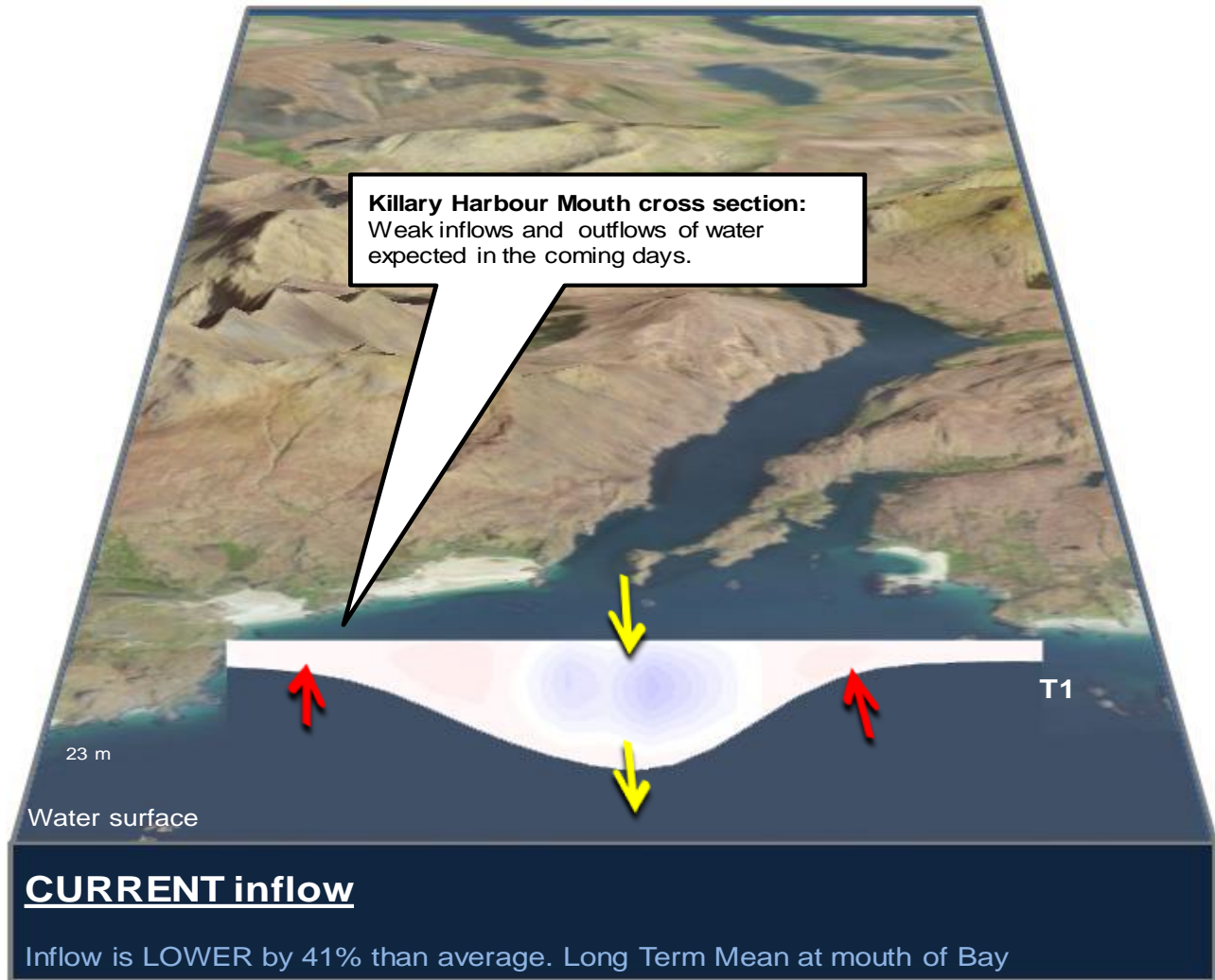


Flow ( $\text{m}^3 \text{s}^{-1}$ )



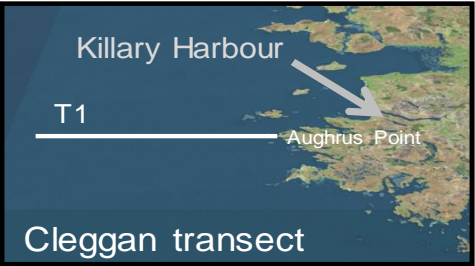
Depth  
↓

Forecast for next 3 days

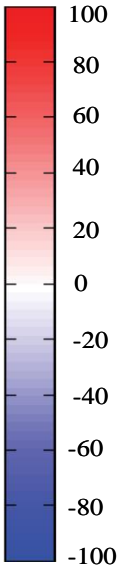


# West Coast - 3 day estimated water flows along a transect off Aughrus Point

Forecast for next 3 days



Flow ( $\text{m}^3 \text{s}^{-1}$ )



**northward  
flow**

**southward  
flow**

Depth

