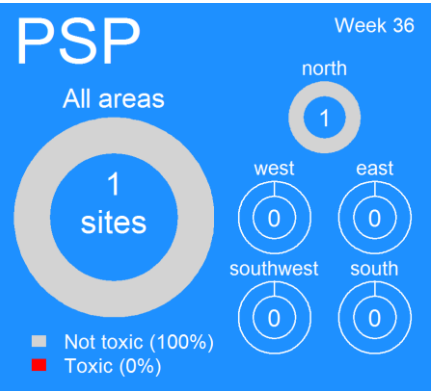
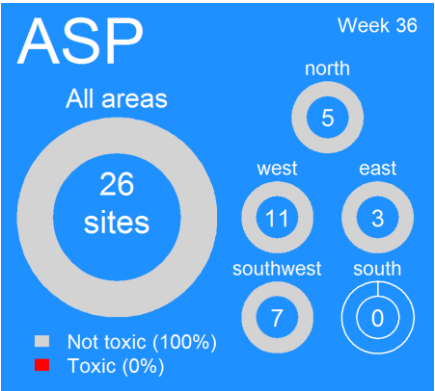
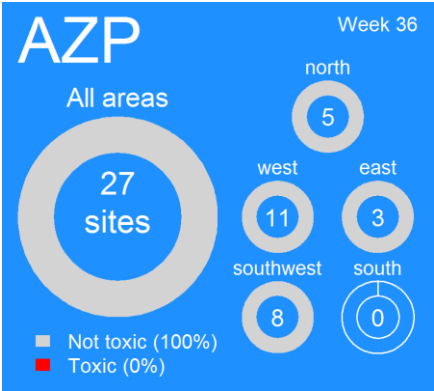
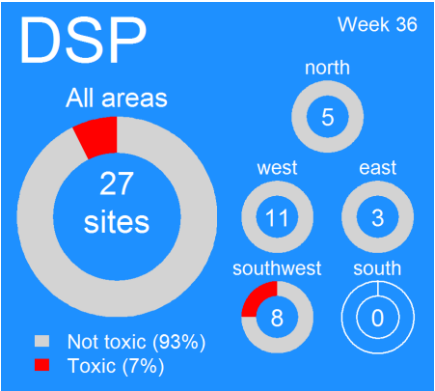


# Ireland: Current Conditions

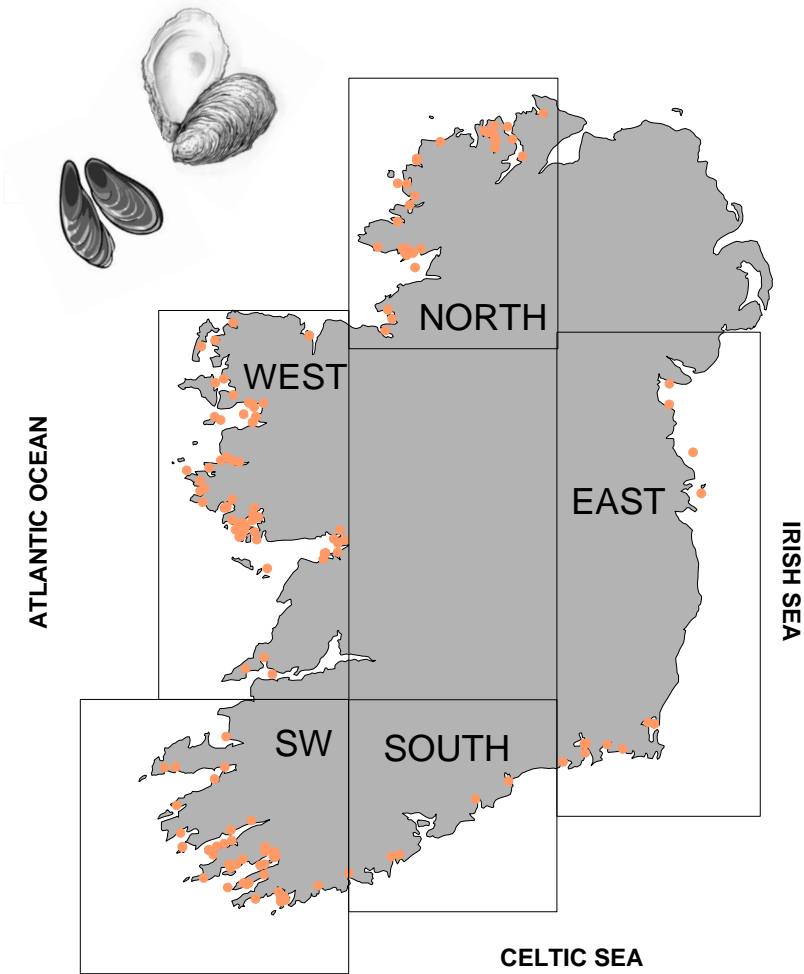
## Shellfish biotoxin report (last week)



**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**aspiracid **P**oisoning;  
DSP = **D**iarrhetic **S**hellfish **P**oisoning; PSP = **P**aralytic **S**hellfish **P**oisoning

## National Monitoring Programme Designated Sampling Sites



● = aquaculture site

# Ireland: Predictions

## Prediction for this week:

ASP event: Low

AZP event: High

DSP event: High

PSP event: Moderate

## Why do we think this?

ASP: Low cell levels of *Pseudo-nitzschia seriata* group continue to be observed in sites around the coast . Corresponding biotoxin levels continue to remain negligible or 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 in all coastal areas. Biotoxin levels in localised areas W and SW are currently below regulatory limits. Historically this is within the period of occurrence so vigilance is encouraged.

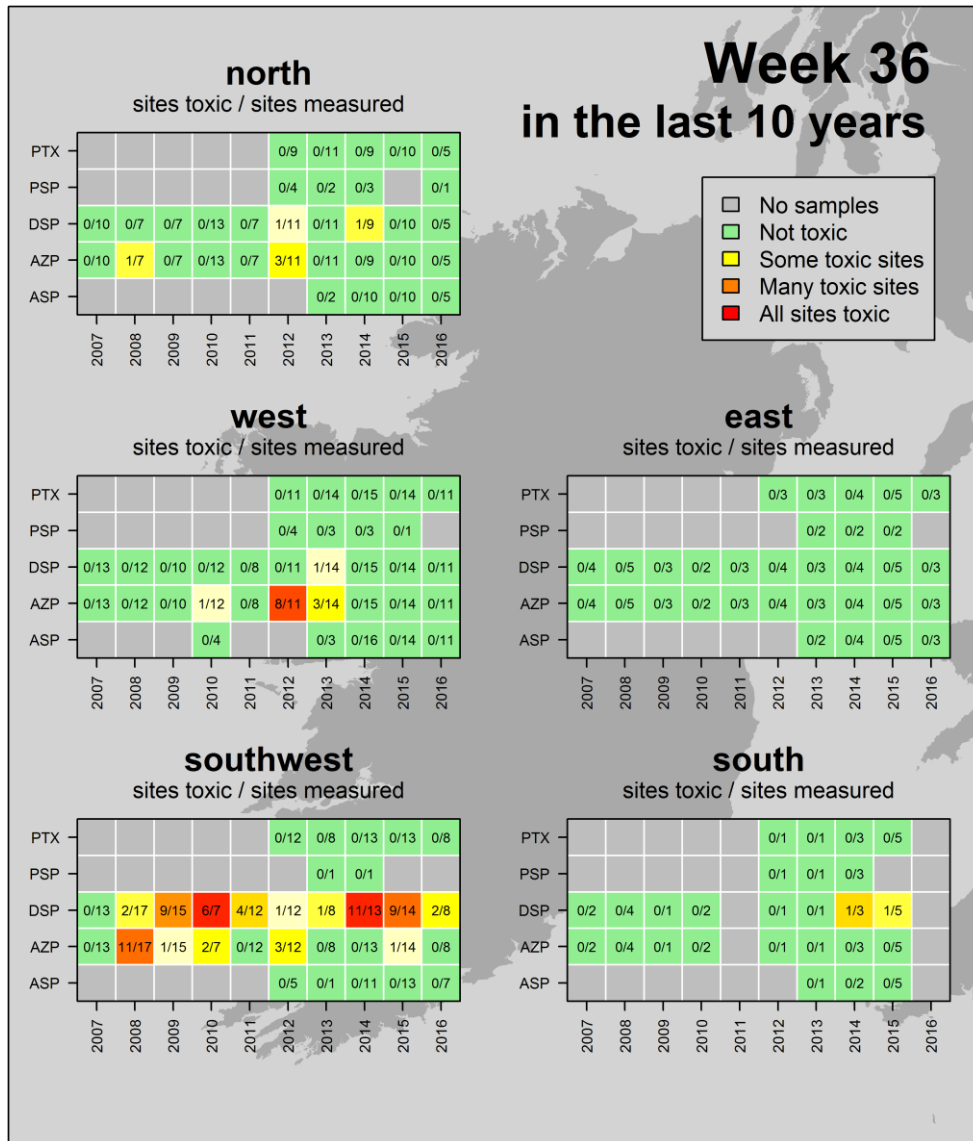
DSP: This is historically the main risk period . The presence of *Dinophysis* spp. in the SW and SE is still high with related toxins observed, caution is advised.

PSP: Biotoxin issues related to the presence and abundance of specific *Alexandrium* sp. have historically occurred in very localised areas in the south only. Cell levels can increase dramatically in suitable conditions. This is still within the main historical risk period.

**Blooms** A bloom of *Karenia mikimotoi* has been observed in a bay in the SW. This species can cause stress and mortalities in farmed and wild fisheries if suitable growth conditions prevail due to the negative effects on water quality.

## Ireland: Historic Conditions

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



## Ireland HISTORIC TRENDS

**Likely times for Shellfish Toxicity:** does not include winter carry over of biotoxins

ASP events: mid-March to early May

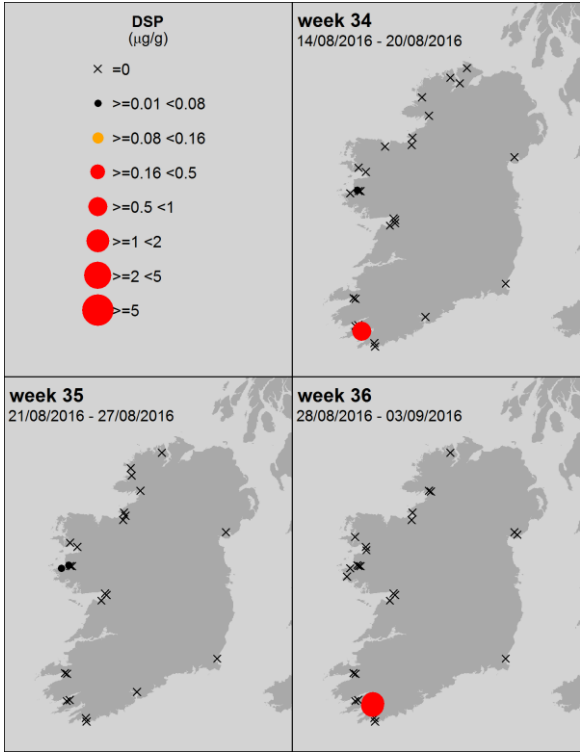
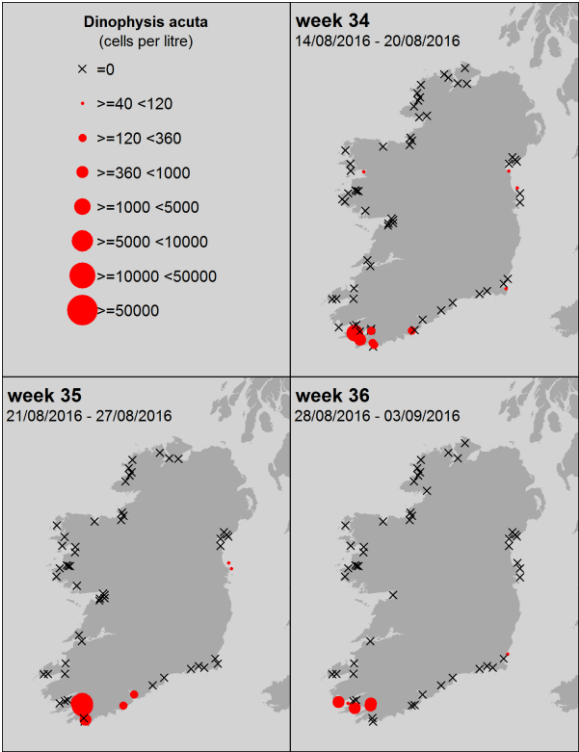
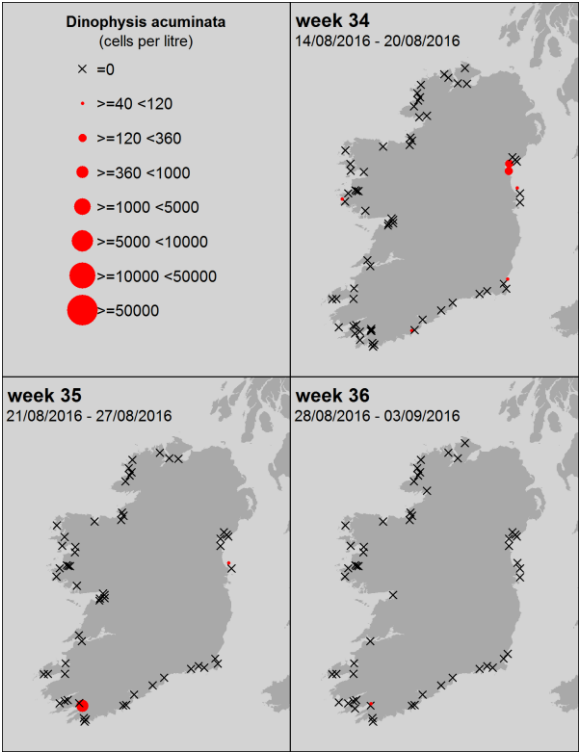
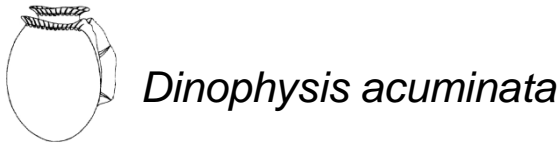
AZP events: April to December

DSP events: May to December

PSP events: June to mid-July and end September; only in Cork Harbour



Ireland: Last 3 weeks of available National Monitoring Programme data



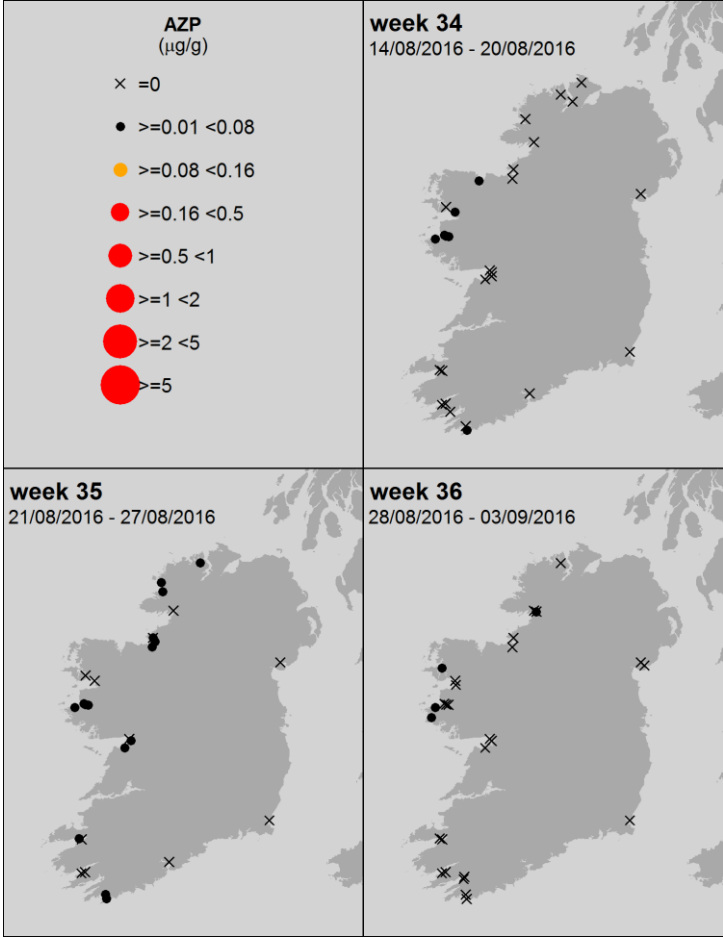
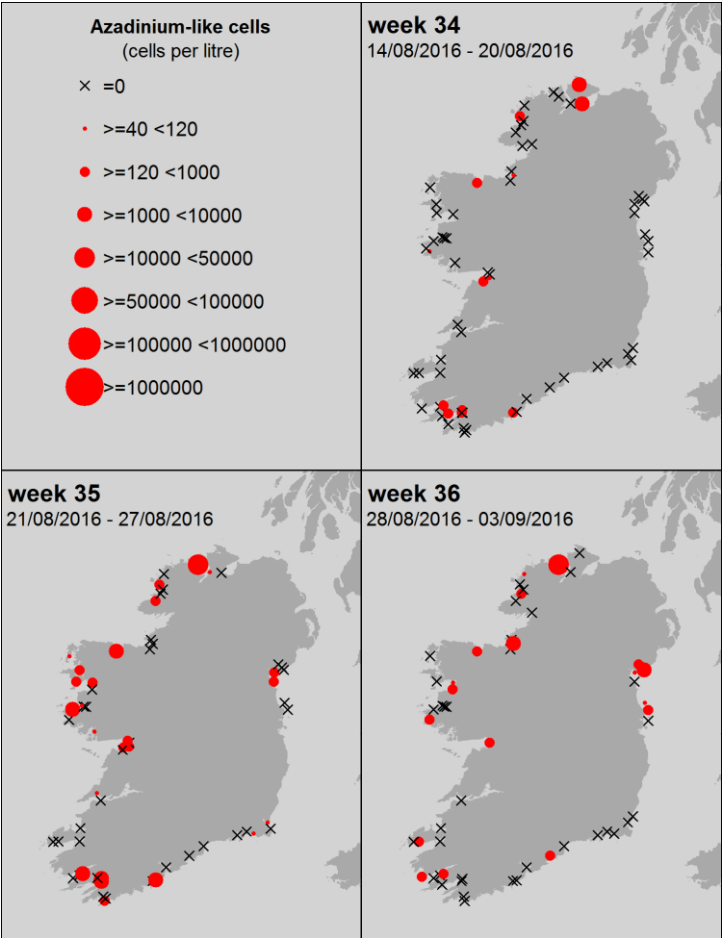
Ireland: Last 3 weeks of available National Monitoring Programme data



*Azadinium* – like spp.



AZP



Ireland: Last 3 weeks of available National Monitoring Programme data

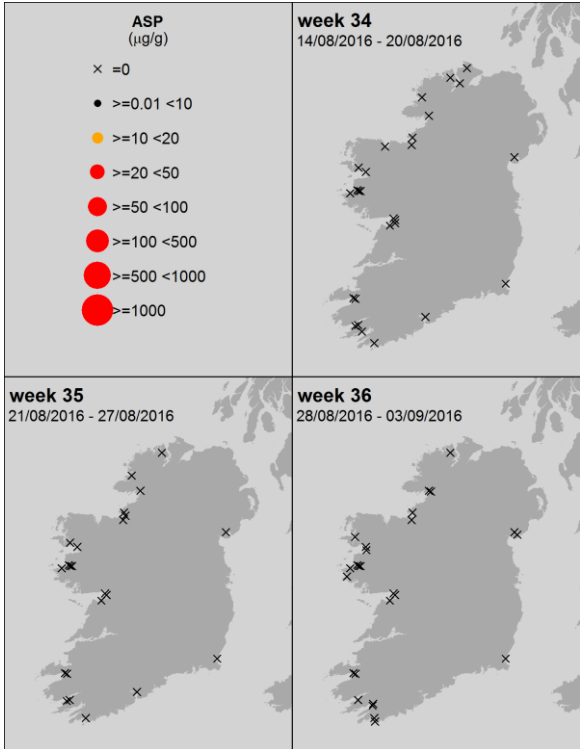
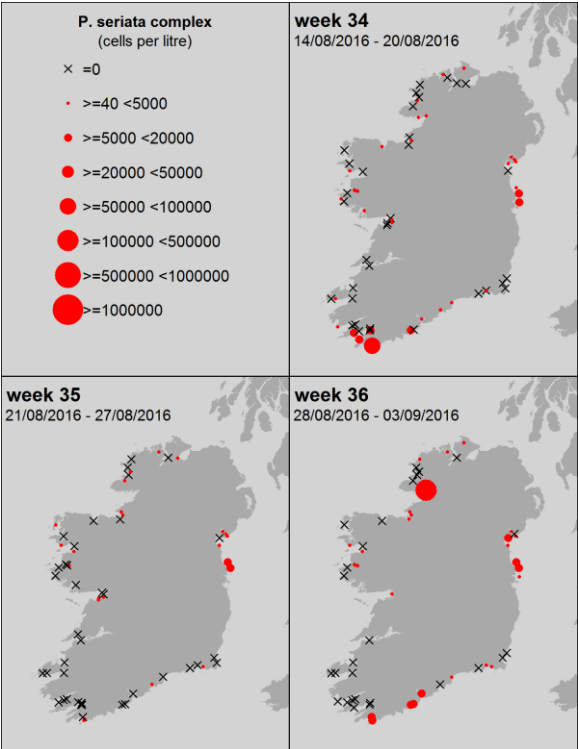
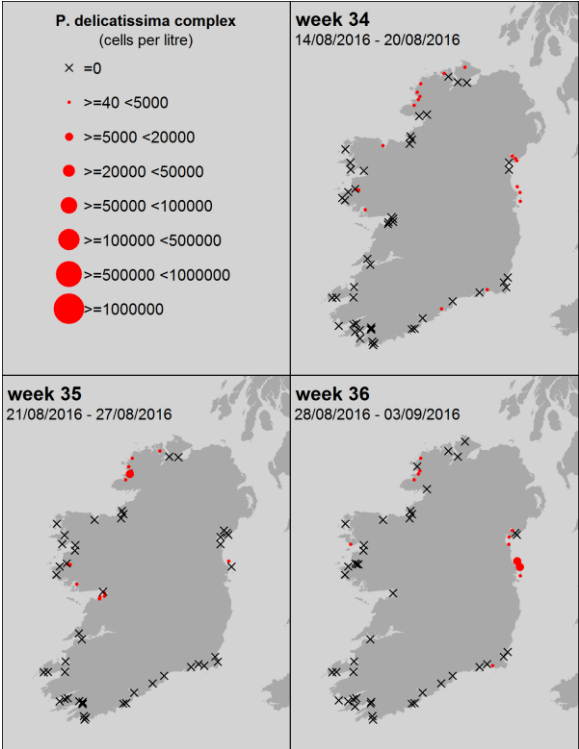
*Pseudo-nitzschia* spp.



ASP

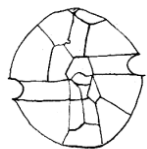
“*P. delicatissima*” complex = small cells  
Taken from the literature:  
3 species confirmed in Irish waters

“*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.

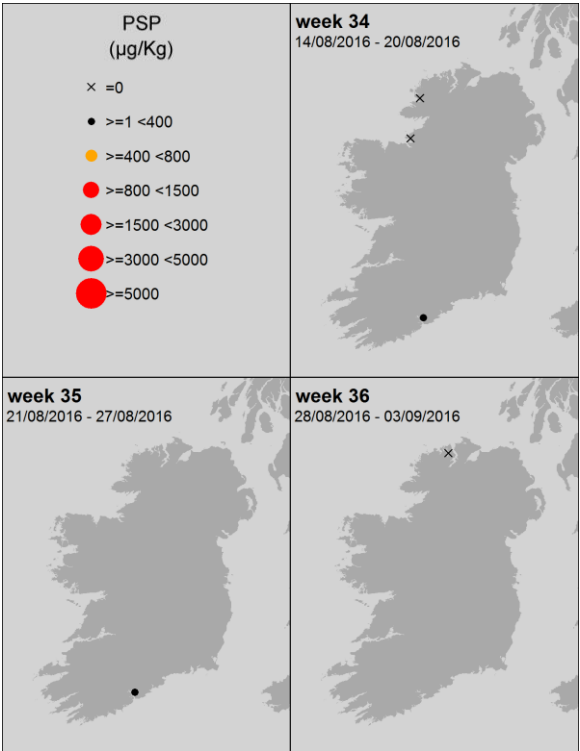
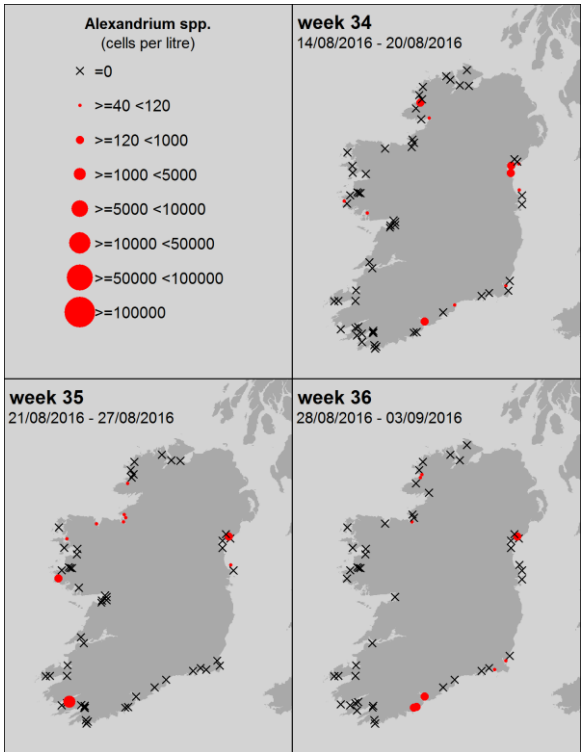
Ireland: Last 3 weeks of available National Monitoring Programme data



*Alexandrium* spp.



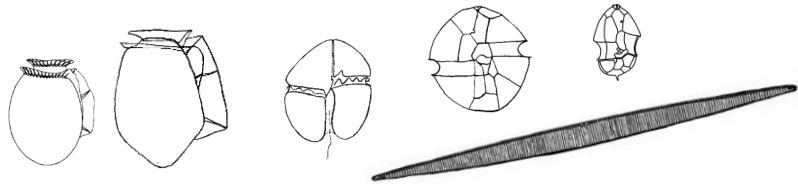
PSP



# Ireland HAB & Biotoxin temporal trends

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

## Ireland: Biotoxins



Toxin groups

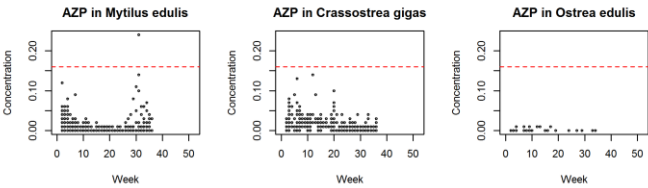
mussels

oysters

oysters

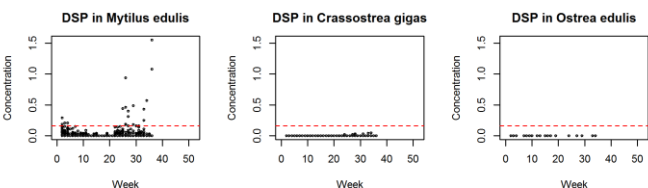
**AZP**

AZaspiracid  
Poisoning



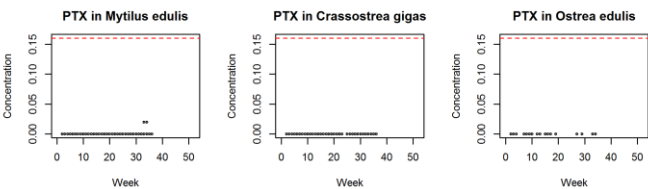
**DSP**

Diarrhetic  
Shellfish  
Poisoning



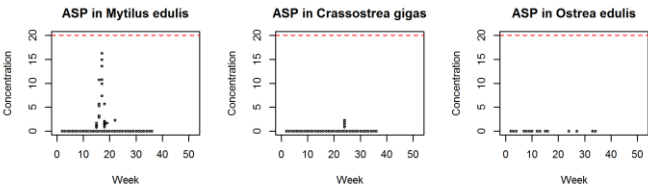
**PTX**

Pectenotoxin



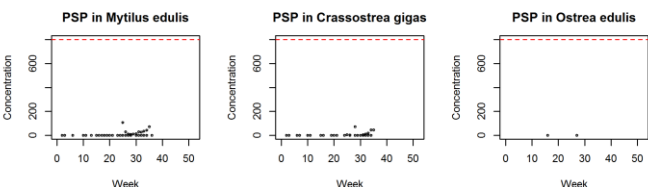
**ASP**

Amnesic  
Shellfish  
Poisoning

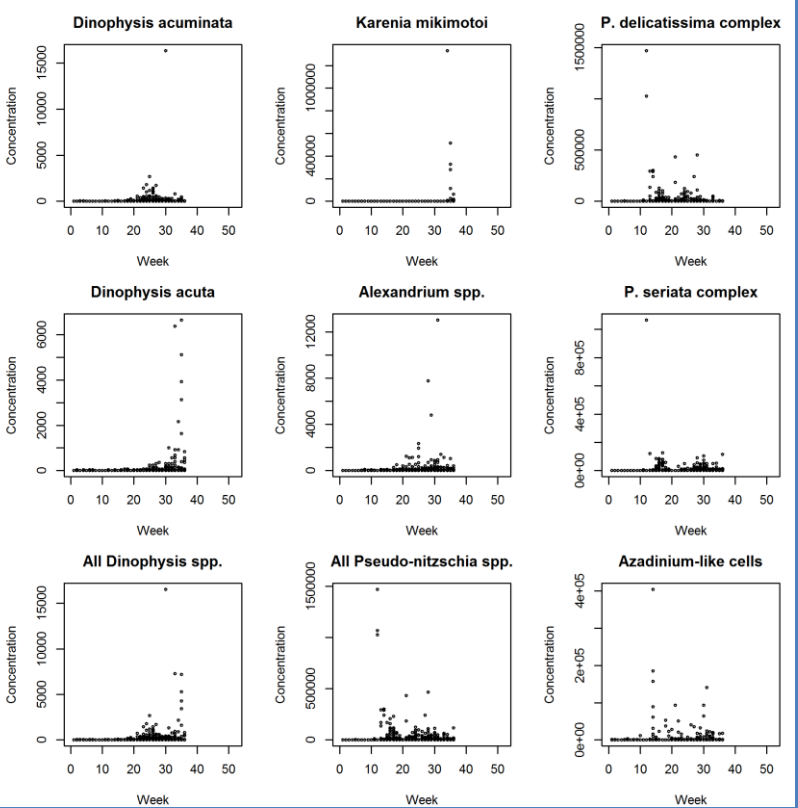


**PSP**

Paralytic  
Shellfish  
Poisoning



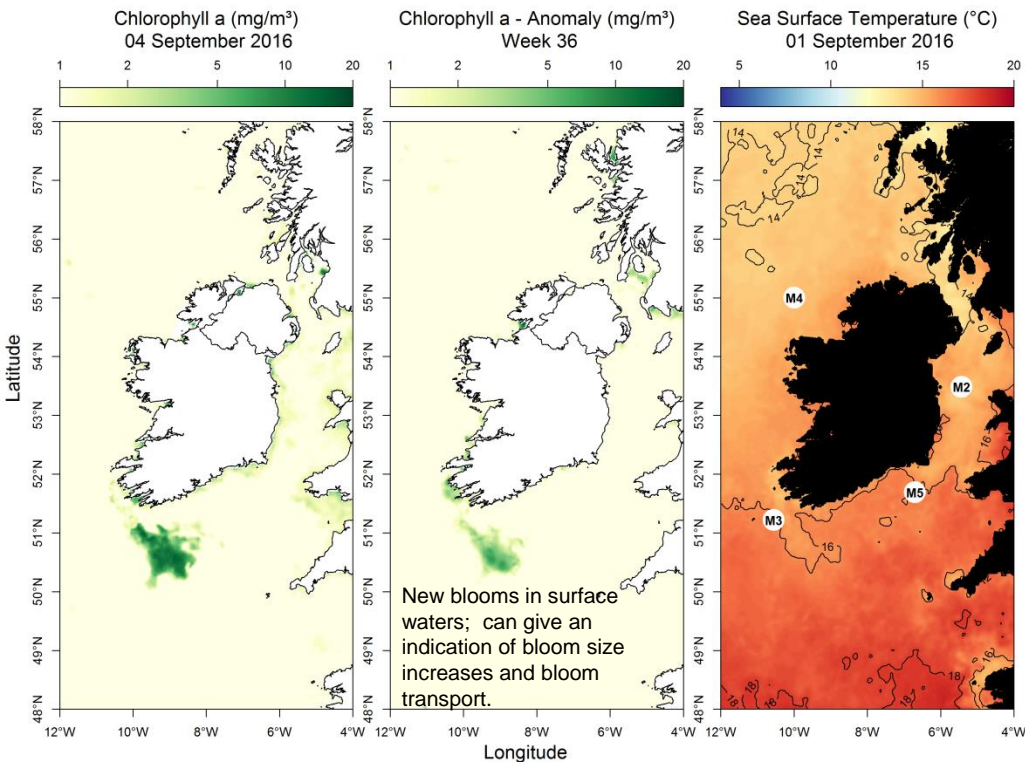
## Ireland: HABs



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

Regulatory limit = ■■■■■

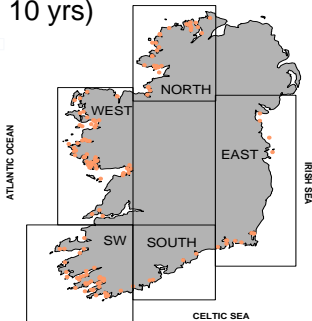
Most up to date available satellite data



SST (°C) anomaly for last week:

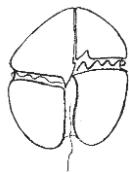
Data taken from the Irish data buoy network where the anomaly is the weekly difference in SST compared to the long term mean (~ 10 yrs)

- NW coast (M4) below average by -0.03 °C
- SW coast (M3) below average by -0.03 °C
- SE coast (M5) above average by 0.66 °C



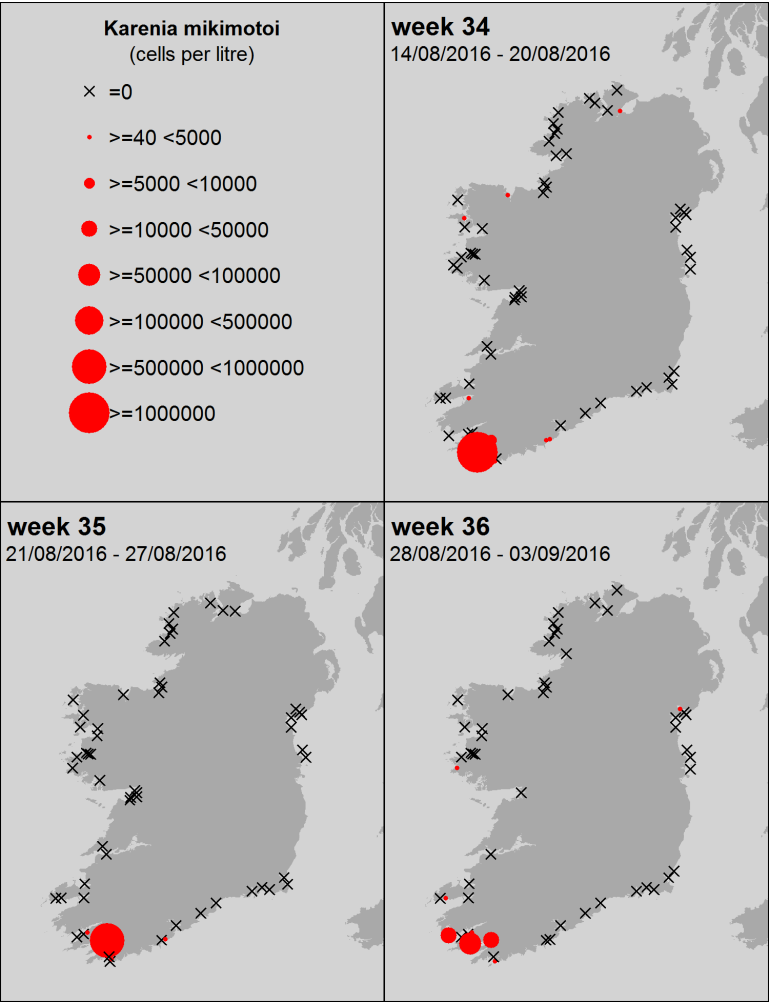
What phytoplankton were blooming at inshore coastal sites last week?

Region	Predominant Phytoplankton (most abundant taxa)	Cells/L (rounded)
north:	<b>Diatoms:</b> <i>Cylindrotheca closterium/ Nitzschia longissima</i> <i>Chaetoceros socialis</i> <i>Pseudo-nitzschia seriata complex</i> <b>Others:</b> Microflagellate sp.	1,286,000 535,000 133,000 1,685,000
west:	<b>Diatoms:</b> Pennate diatom <i>Chaetoceros (Hyalochaete) spp.</i> <i>Cylindrotheca closterium/ Nitzschia longissima</i> <i>Skeletonema spp.</i> <b>Others:</b> Microflagellate sp.	897,000 449,000 109,000 97,000 288,000
SW:	<b>Diatoms:</b> <i>Asterionellopsis glacialis</i> <i>Lauderia / Detonula sp</i> <i>Chaetoceros (Hyalochaete) spp.</i> <b>Dinoflagellates:</b> <i>Karenia mikimotoi</i> <b>Others:</b> Haptophytes	3,077,000 145,000 82,000 62,000 54,000
south:	<b>Diatoms:</b> <i>Chaetoceros spp. (H) (small)</i> <i>Detonula confervacea</i> <i>Thalassiosira &lt;20µm</i> <i>Lauderia / Detonula sp</i> <i>Thalassiosira nordenskiöldii</i> <i>Leptocylindrus minimus</i> <i>Chaetoceros (Hyalochaete) spp.</i>	388,000 162,000 100,000 78,000 59,000 45,000 26,000
east:	<b>Diatoms:</b> <i>Chaetoceros (Hyalochaete) spp.</i> <i>Skeletonema spp.</i> Centric Diatom <i>Cylindrotheca closterium/ Nitzschia longissima</i> <b>Others:</b> Microflagellate sp.	986,000 645,000 176,000 80,000 1,819,000



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

A *Karenia mikimotoi* bloom is still **possible** this week (currently localised sites in SW only). You can see from the chlorophyll level map that there is a bloom offshore possibly *Karenia mikimotoi*. Water movement patterns and current weather forecasts indicate the continued presence of this bloom and potential spreading to adjacent bays. 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.

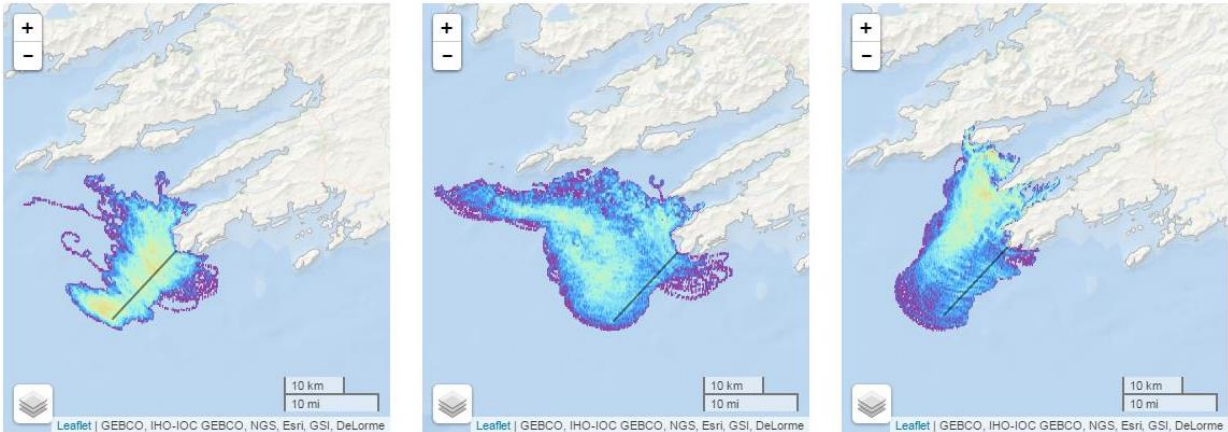


SOUTHWEST: Bantry Bay

Forecast for the next 3 days

Bottom water      Water @ 20 metres      Surface water

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)

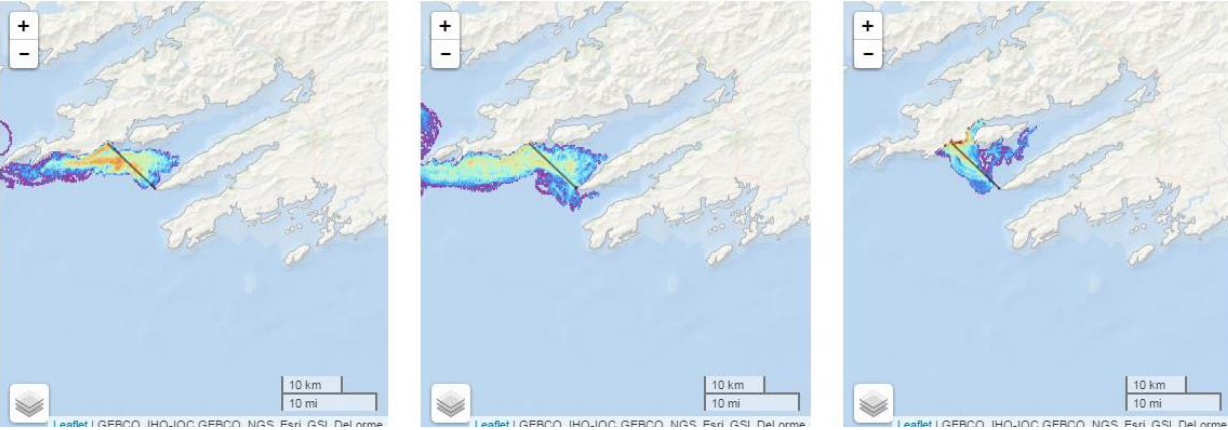


Some restricted flows in bottom waters, mid-to surface waters where phytoplankton reside are free to flow into SW bays.

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

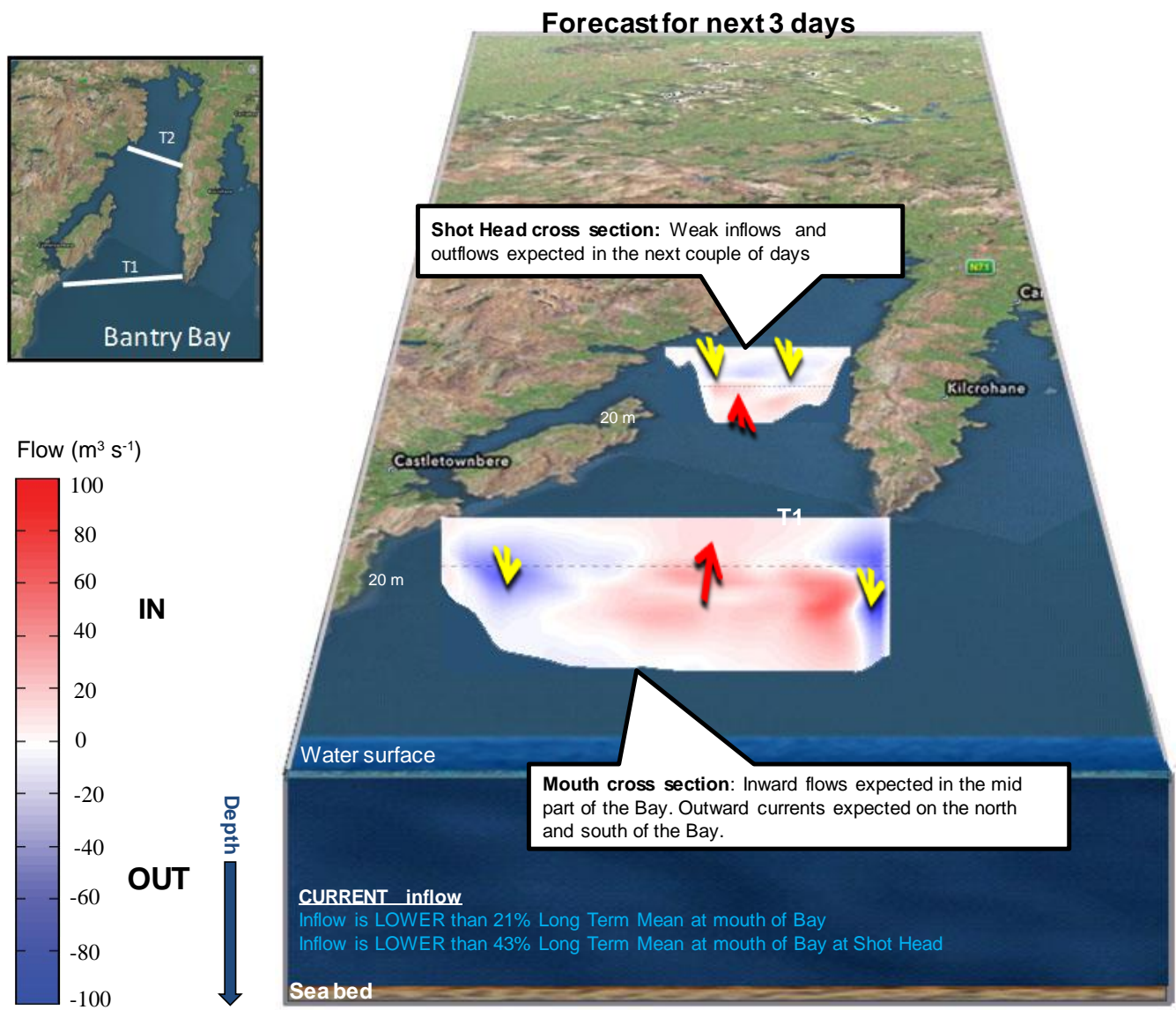


There is no big exchange event predicted in the days ahead.

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

# Bantry Bay

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




WEST: Killary Harbour

Forecast for the next 3 days

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

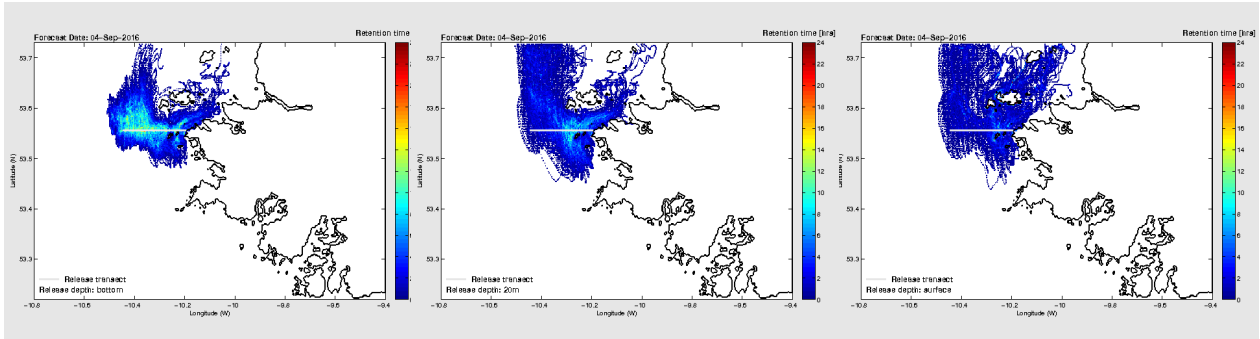
Cooler colours represent areas where phytoplankton remain for shorter periods



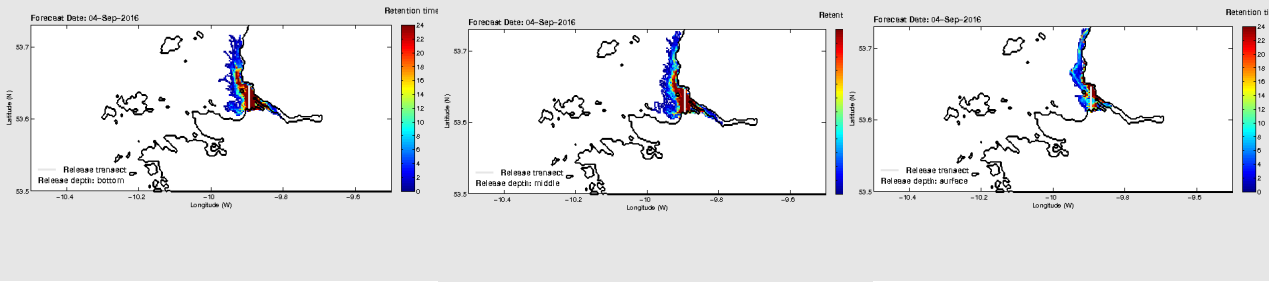
0.2 0.4 1 2 4 10 20 40 100 200

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

Bottom water      Water @ 20 metres      Surface water



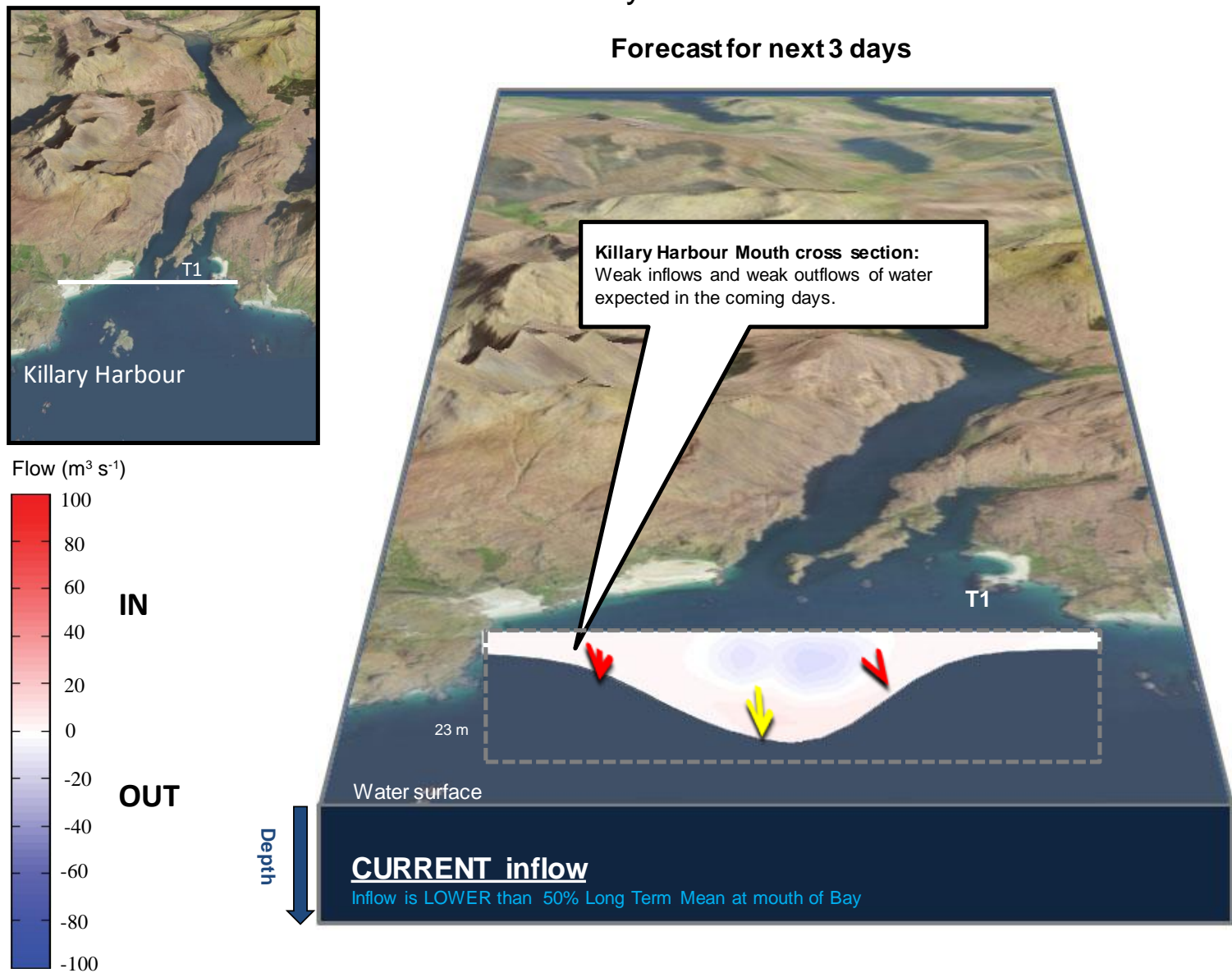
Estimated water circulation at the mouth of Killary Harbour shows that in general, waters will be retained at the mouth. However a small volume of water at depth will reach Killary Middle.



Estimated water circulation at the mouth of Killary Harbour shows that in general, waters will be retained at the mouth. However a small volume of water at depth will reach Killary Middle.

# Killary Harbour

3 day estimated water flows at the mouth of Killary Harbour



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

Forecast for next 3 days

