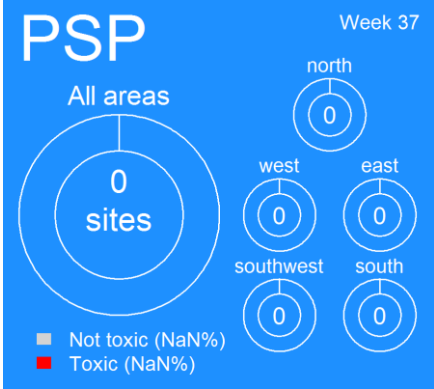
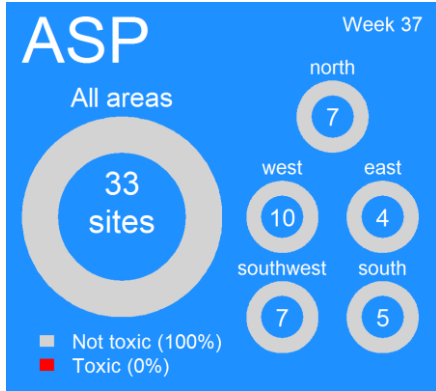
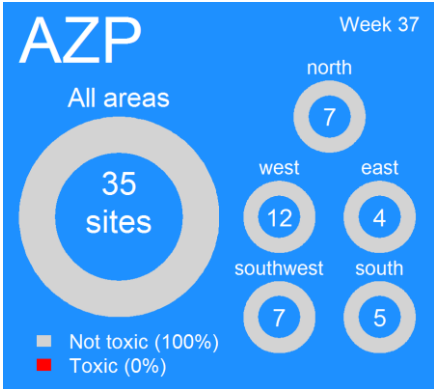
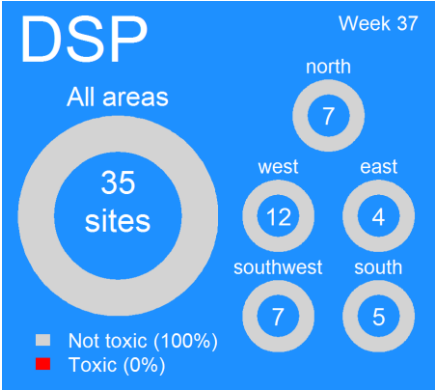


# Ireland: Current Conditions

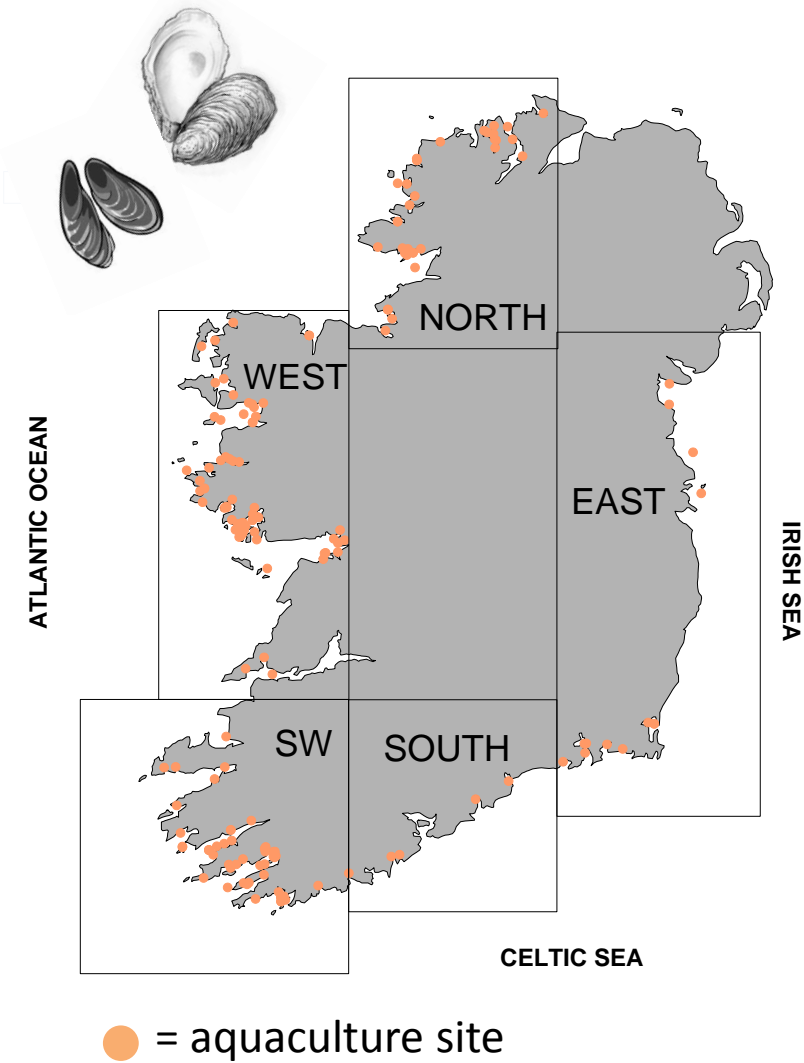
## Shellfish biotoxin report (last week)



**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

## National Monitoring Programme Designated Sampling Sites



# Ireland: Predictions

## Prediction for this week:

ASP event: Low

AZP event: High

DSP event: High

PSP event: Low

## Why do we think this?

ASP: Declining 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. Biotoxin levels in localised areas SW are currently below regulatory limits there is a jump in levels in the W caution is advised. Historically this is within the period of occurrence.

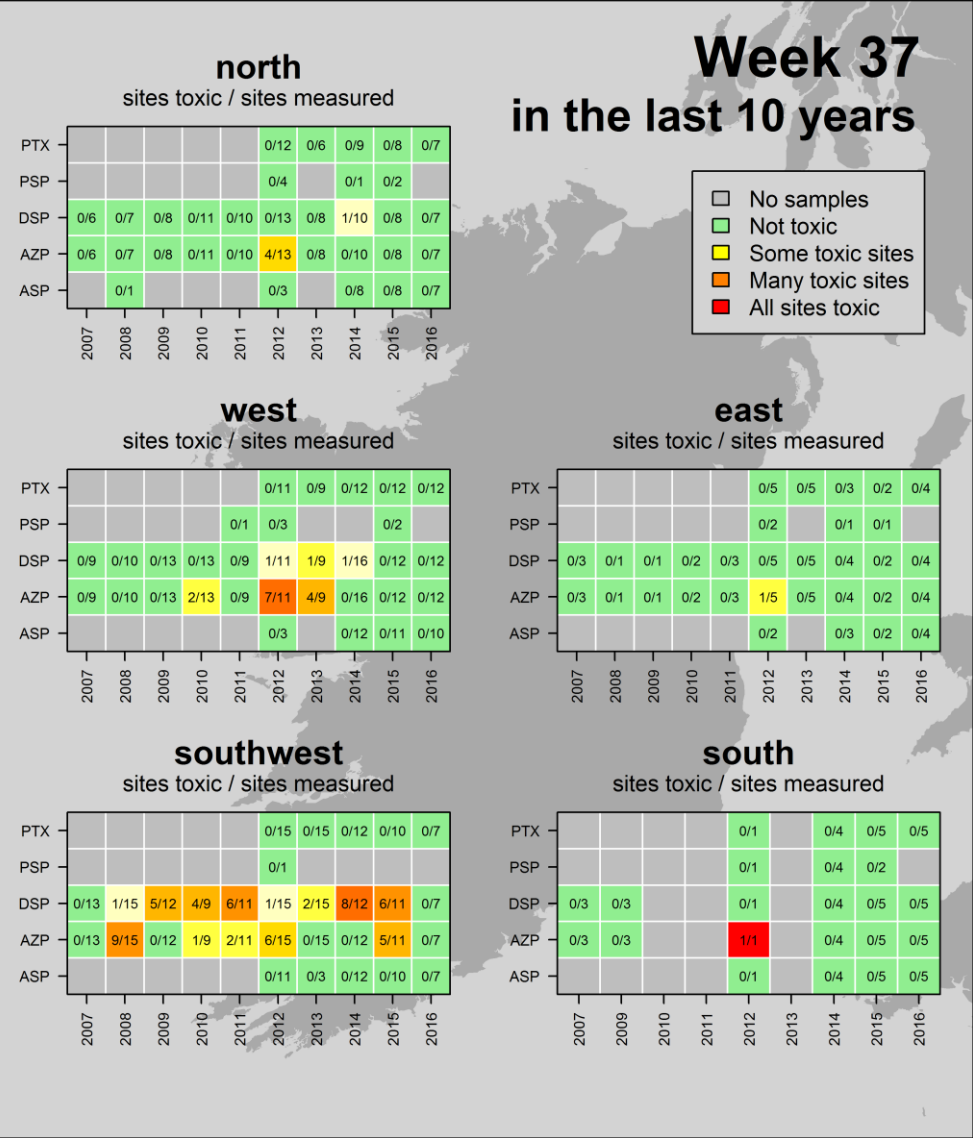
DSP: This is historically the main risk period . The presence of *Dinophysis* spp. in the SW and W is still high with related toxins observed with a little jump in the SW, caution is advised.

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

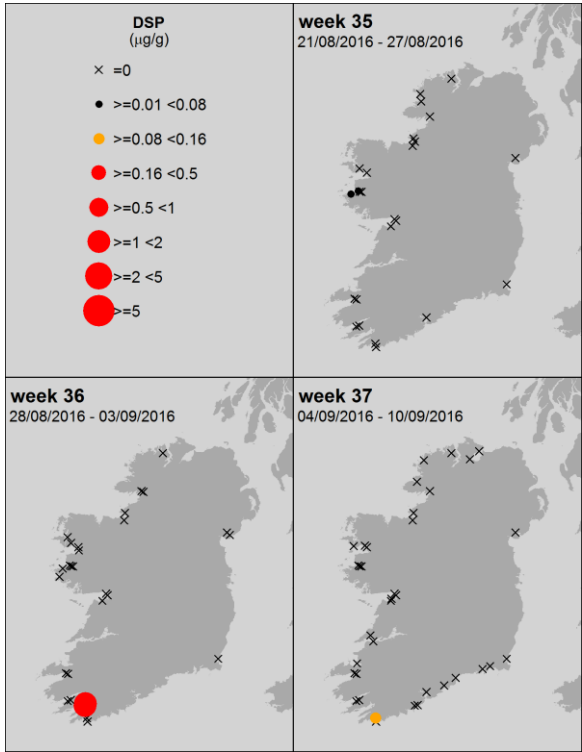
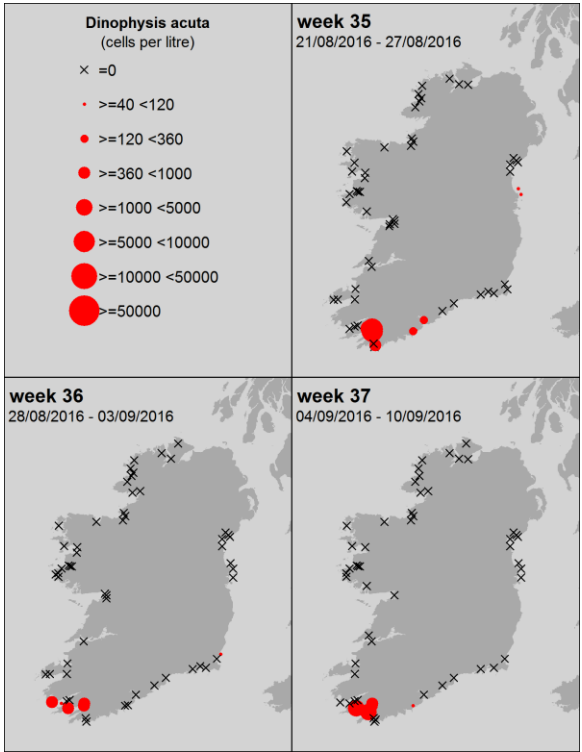
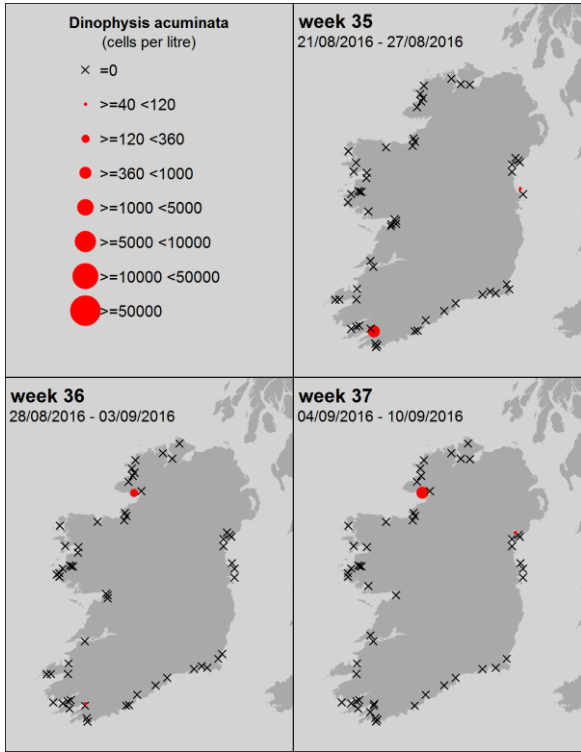
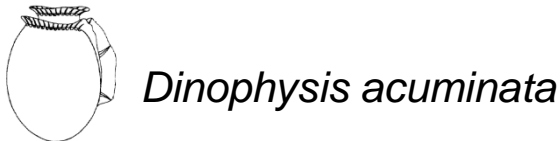
**Blooms**: A bloom of *Karenia mikimotoi* has been observed in the SW. This species can cause stress and mortalities in farmed and wild fisheries if suitable growth conditions prevail due to the negative effects on water quality.

# Ireland: Historic Conditions

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



Ireland: Last 3 weeks of available National Monitoring Programme data



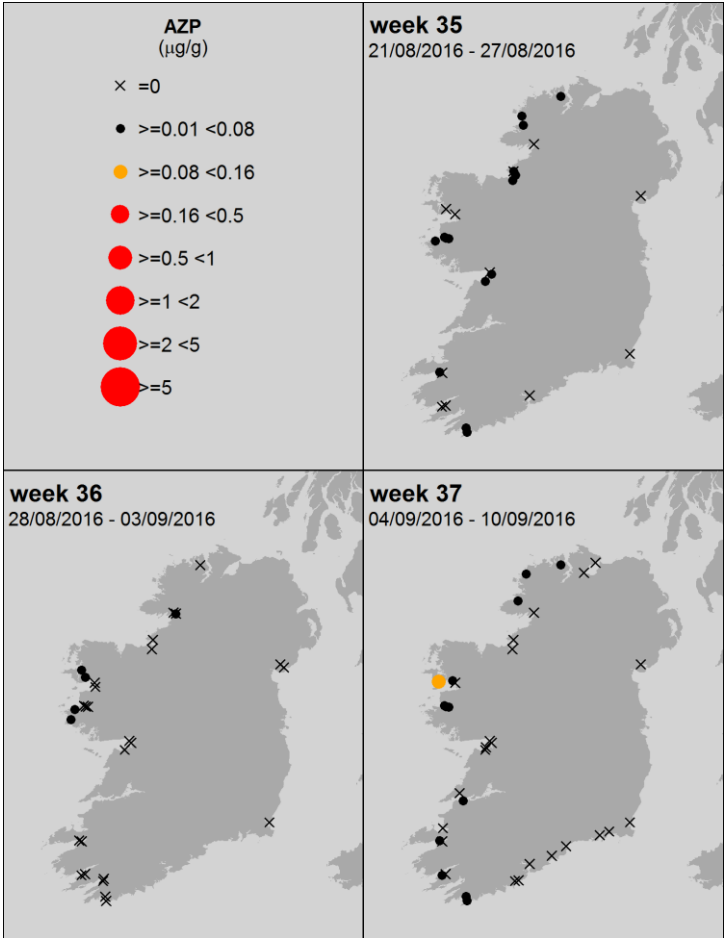
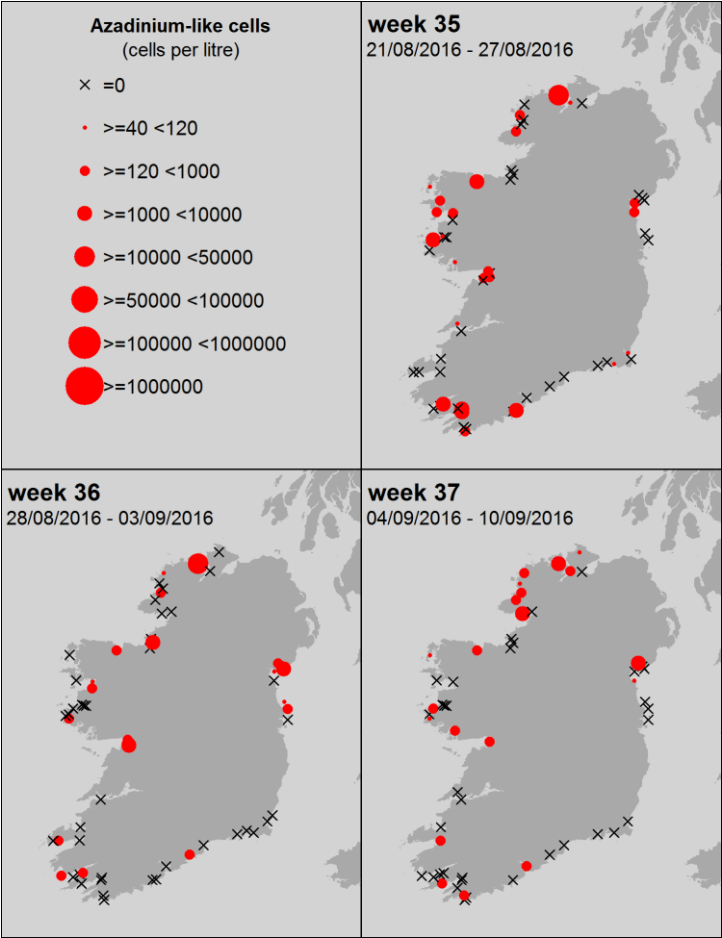
Ireland: Last 3 weeks of available National Monitoring Programme data



*Azadinium* – like spp.



AZP



Ireland: Last 3 weeks of available National Monitoring Programme data

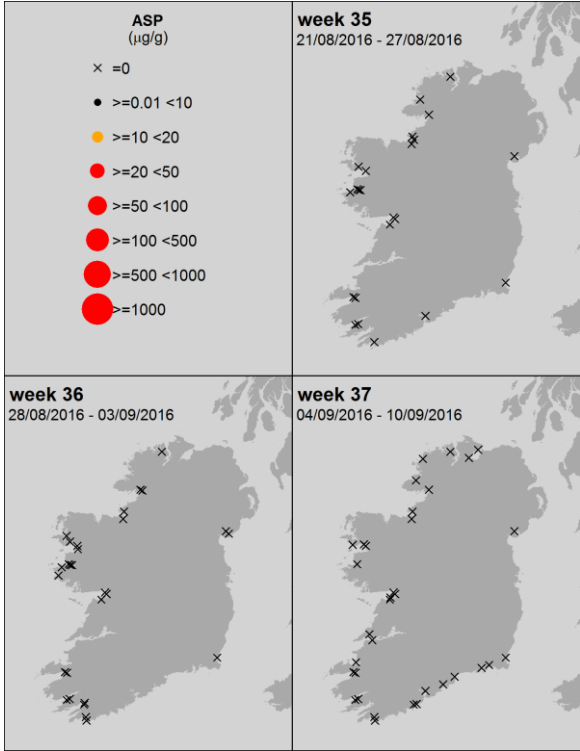
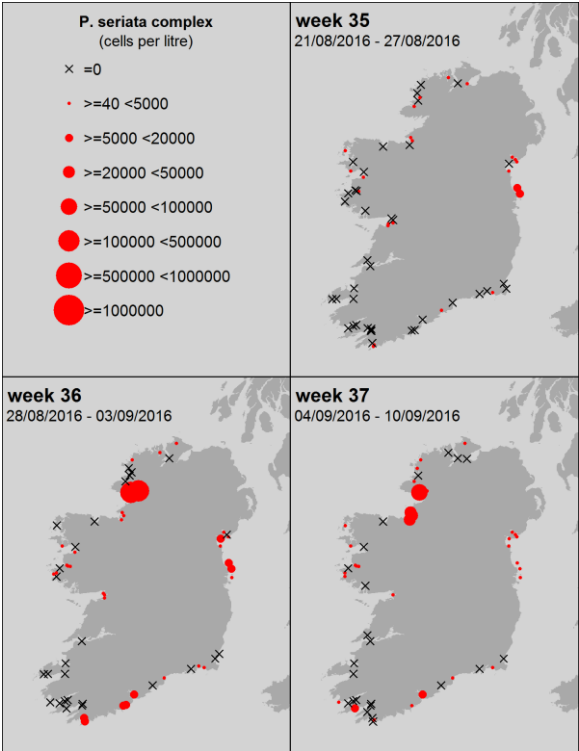
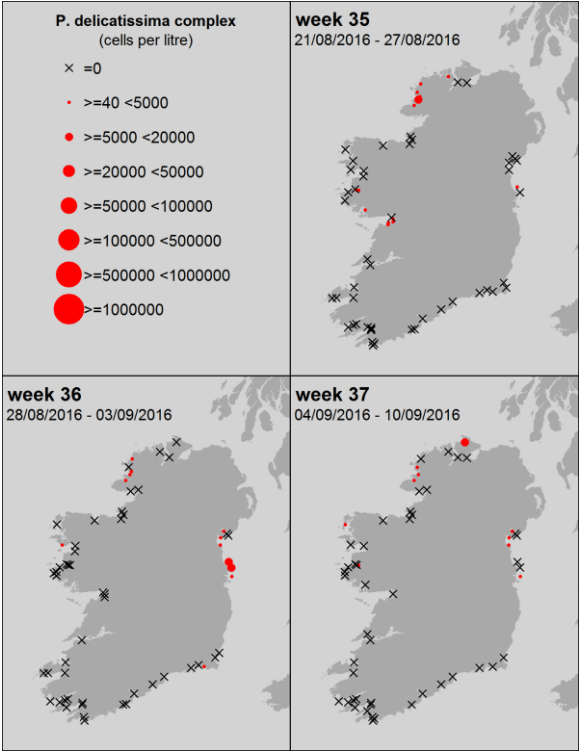
*Pseudo-nitzschia* spp.



ASP

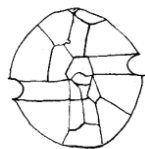
“*P. delicatissima*” complex = small cells  
Taken from the literature:  
3 species confirmed in Irish waters

“*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.

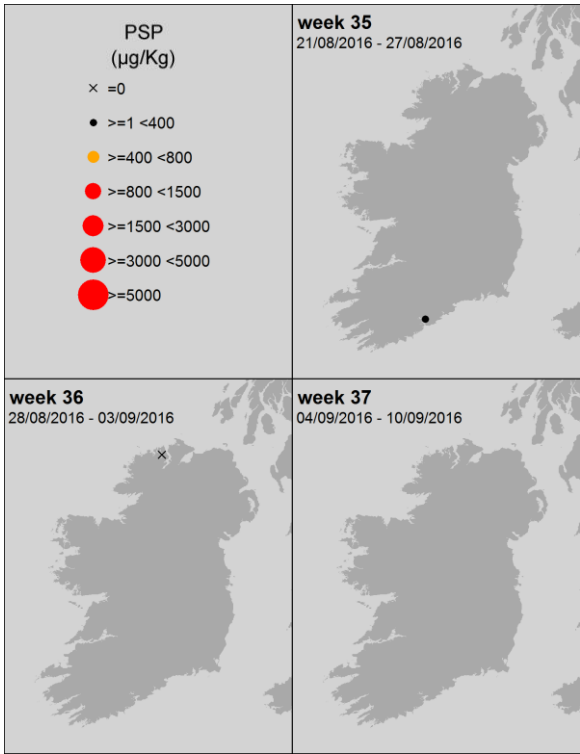
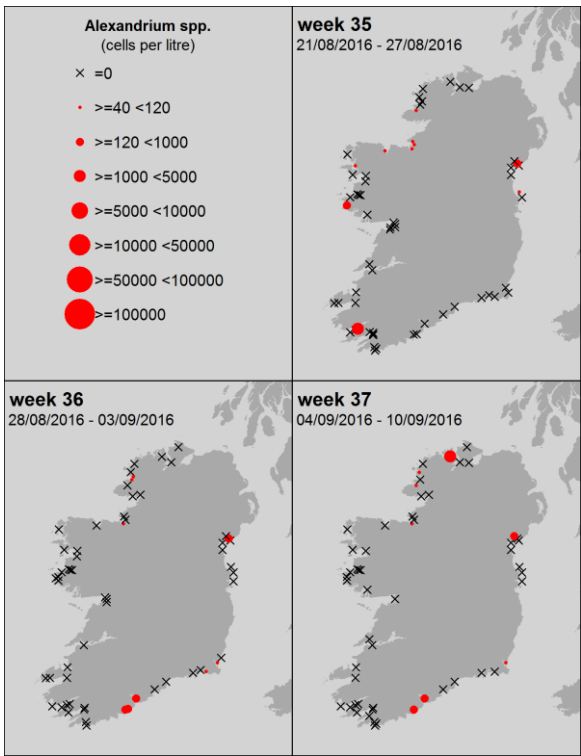
Ireland: Last 3 weeks of available National Monitoring Programme data



*Alexandrium* spp.



PSP



# Ireland HAB & Biotoxin temporal trends

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

## Ireland: Biotoxins



Toxin groups

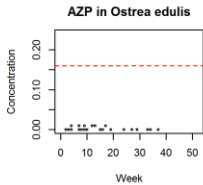
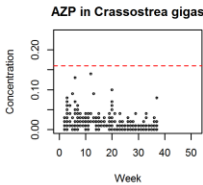
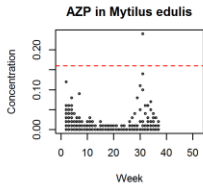
mussels

oysters

oysters

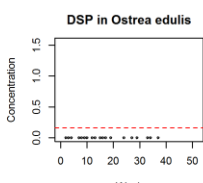
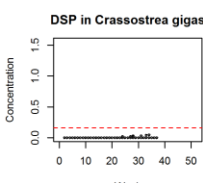
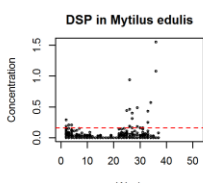
**AZP**

AZaspiracid  
Poisoning



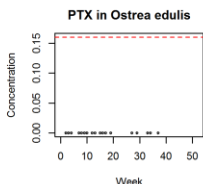
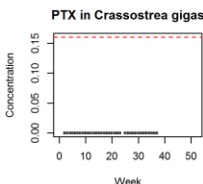
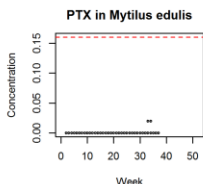
**DSP**

Diarrhetic  
Shellfish  
Poisoning



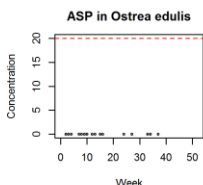
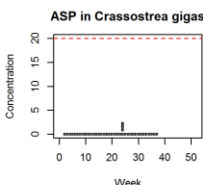
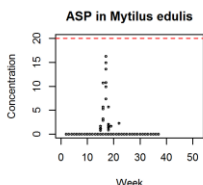
**PTX**

Pectenotoxin



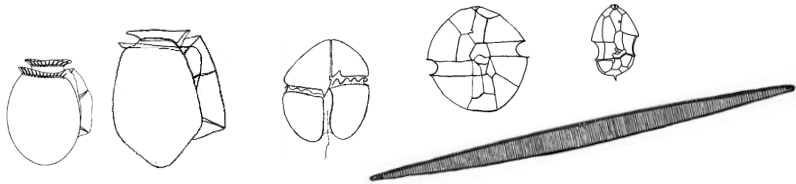
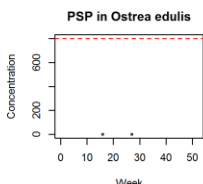
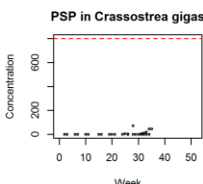
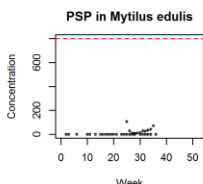
**ASP**

Amnesic  
Shellfish  
Poisoning



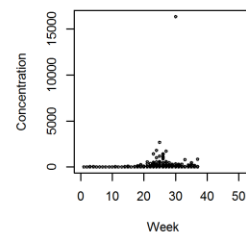
**PSP**

Paralytic  
Shellfish  
Poisoning

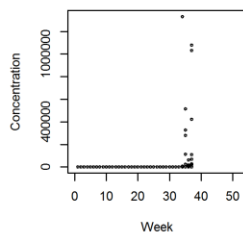


## Ireland: HABs

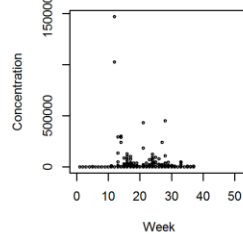
**Dinophysis acuminata**



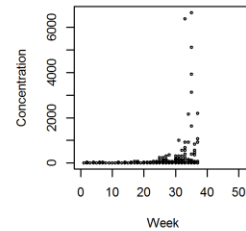
**Karenia mikimotoi**



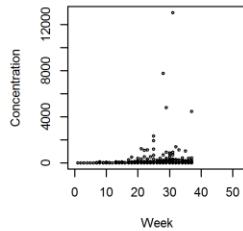
**P. delicatissima complex**



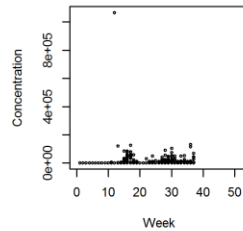
**Dinophysis acuta**



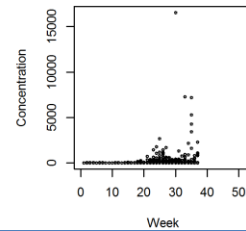
**Alexandrium spp.**



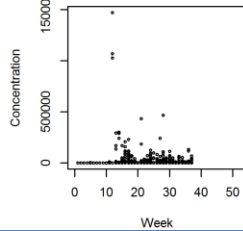
**P. seriata complex**



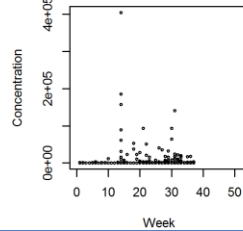
**All Dinophysis spp.**



**All Pseudo-nitzschia spp.**



**Azadinium-like cells**

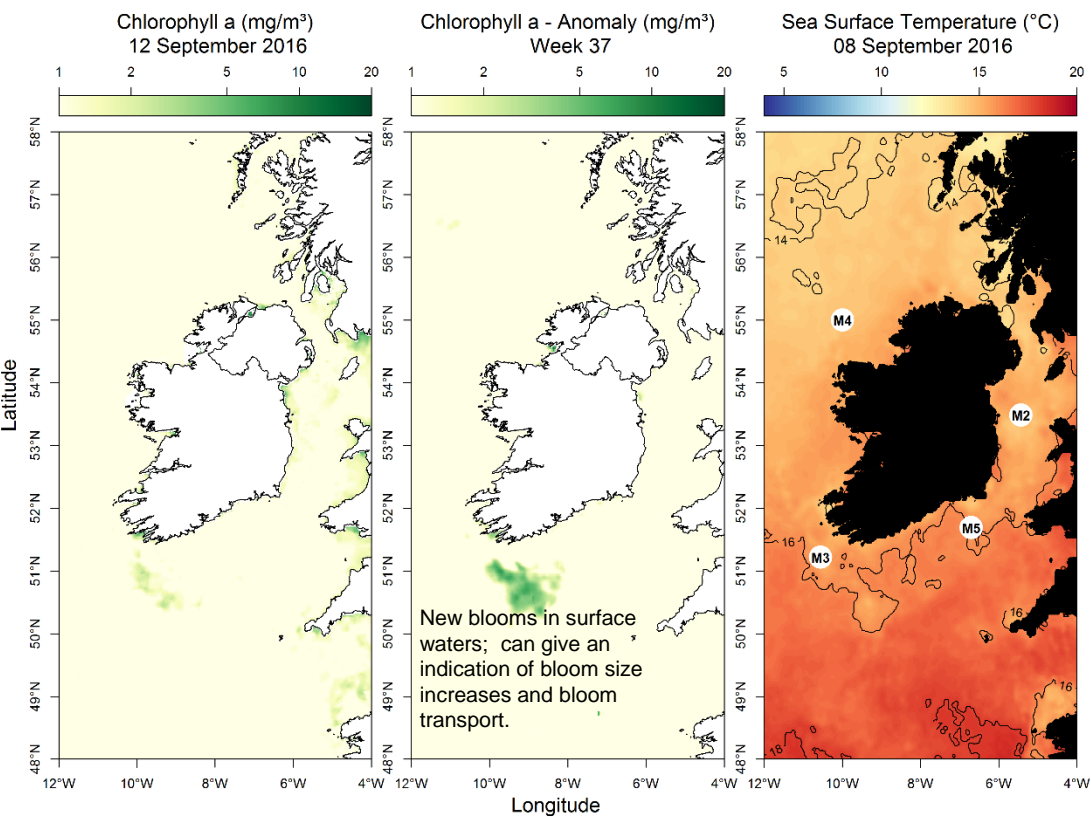


EU Regulatory Limit: ASP 20 µg/g; AZP 0.16 µg/g; DSP 0.16 µg/g; PSP 800 µg/kg

Regulatory limit = ■■■■■

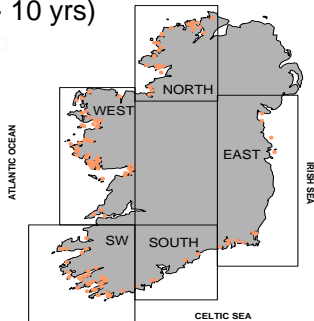


Most up to date available satellite data



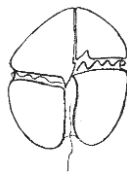
**SST (°C) anomaly for last week:**  
Data taken from the Irish data buoy network where the anomaly is the weekly difference in SST compared to the long term mean (~ 10 yrs)

- NW coast (M4) above average by 0.43 °C
- SW coast (M3) Offline
- SE coast (M5) above average by 0.78 °C



What phytoplankton were blooming at inshore coastal sites last week?

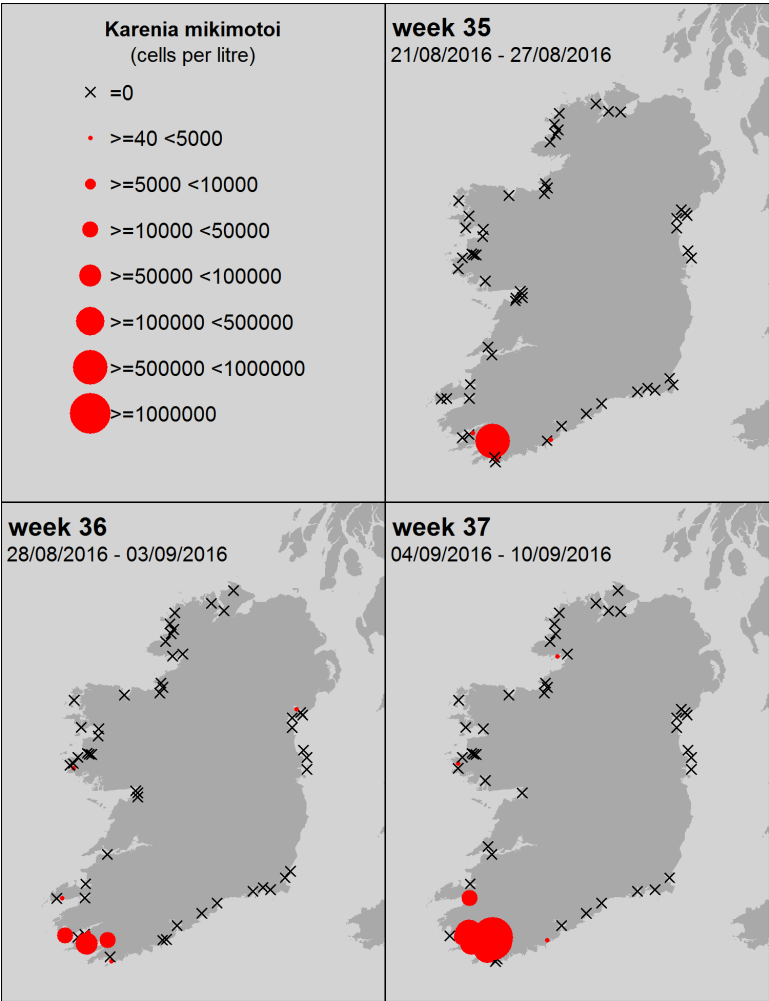
Region	Predominant Phytoplankton (most abundant taxa)	Cells/L (rounded)
north:	<b>Diatoms:</b>	
	<i>Leptocylindrus danicus</i>	7,473,000
	<i>Chaetoceros</i> (Hyalochaete) spp.	439,000
	<i>Rhizosolenia</i> sp	96,000
	<i>Pseudo-nitzschia seriata</i> complex	70,000
	<i>Dactyliosolen fragilissimus</i>	35,000
	<b>Others</b>	
	<i>Microflagellate</i> sp.	887,000
west:	<b>Diatoms:</b>	
	<i>Asterionellopsis</i> spp.	162,000
	<i>Chaetoceros</i> (Hyalochaete) spp.	135,000
	Pennate diatom <20µm	78,000
	<i>Navicula</i> spp. <25µm	54,000
	<i>Skeletonema</i> spp.	29,000
SW:	<b>Diatoms:</b>	
	<i>Asterionellopsis glacialis</i>	178,000
	<i>Chaetoceros</i> (Hyalochaete) spp.	67,000
	<b>Dinoflagellates:</b>	
	<i>Karenia mikimotoi</i>	1,079,000
	Armoured dinoflagellate 20-50µm	76,000
south:	<b>Diatoms:</b>	
	<i>Chaetoceros</i> (Hyalochaete) spp.	115,000
	<i>Thalassiosira</i> <20µm	34,000
	<i>Detonula confervacea</i>	30,000
	<i>Rhizosolenia</i> sp	26,000
	<i>Chaetoceros curvisetus/debilis</i>	22,000
	<i>Chaetoceros socialis</i>	20,000
	<b>Others</b>	
	<i>Prymnesiophytes</i>	77,000
east:	<b>Diatoms:</b>	
	<i>Chaetoceros</i> (Hyalochaete) spp.	216,000
	<i>Thalassionema nitzschioides</i>	18,000
	<i>Leptocylindrus danicus</i>	6,000
	<i>Asterionellopsis glacialis</i>	4,000
	<i>Proboscia alata</i>	4,000
	<i>Guinardia delicatula</i>	4,000



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

There is a *Karenia mikimotoi* bloom this week (currently localised sites in SW only). You can see from the chlorophyll level map although this had reduced that there is a bloom offshore possibly *Karenia mikimotoi*.

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

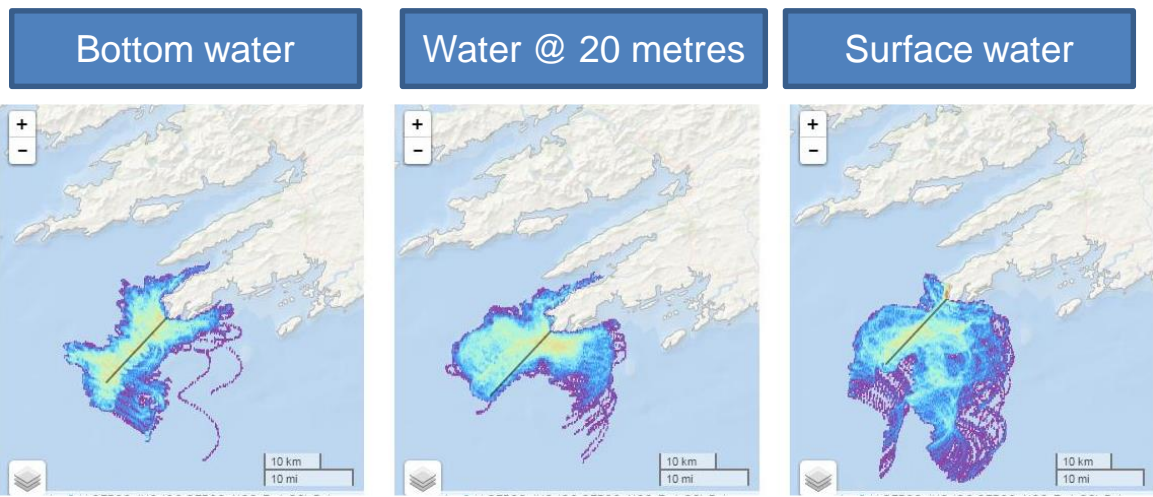
The maps show the **most likely transport pathways for the next 3 days of phytoplankton** found along the **presented transects** (black lines off Mizen Head and the Mouth of Bantry Bay) and **water depths** (bottom, 20 metres and surface)

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

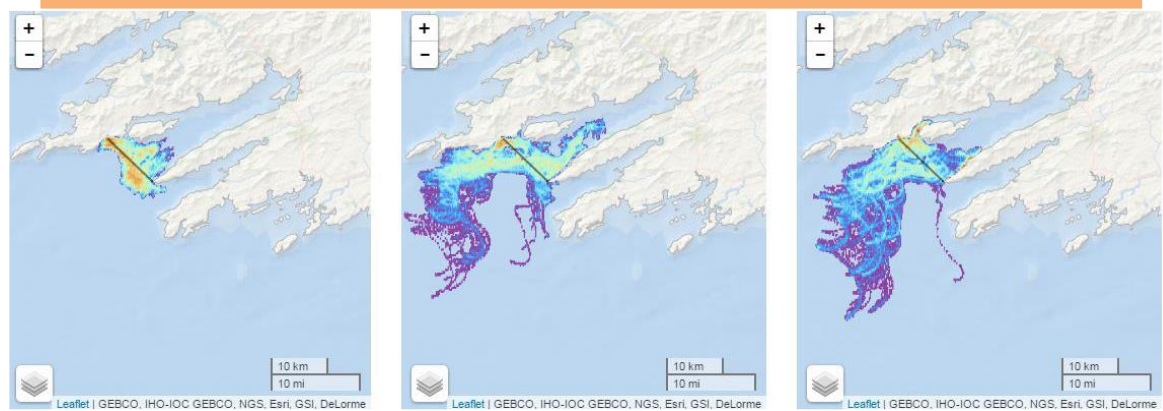
particle transport probability (hours)  
Bantry Bay model particle track analysis  
(2015-03-10T00:00:00Z, release\_location=0.0 count)  
Data courtesy of Irish Marine Institute

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

## Forecast for the next 3 days



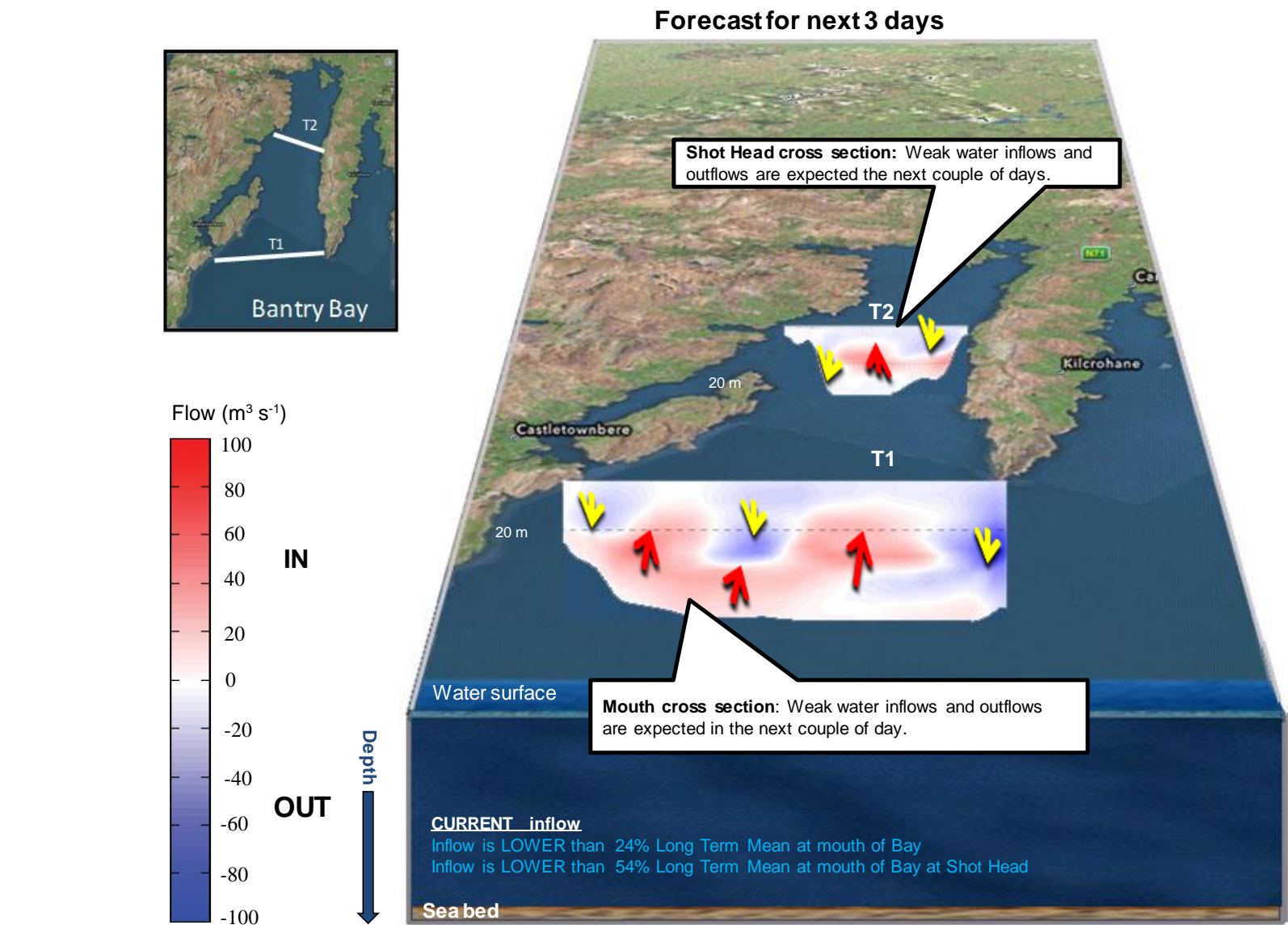
Estimated water circulation patterns at Mizen will flow southwest direction, with water at depth entering Dunmanus Bay.



Bottom waters and surface waters are expected to enter Bantry Bay, while bottom waters are expected to be retained at the mouth.

# Bantry Bay

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






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

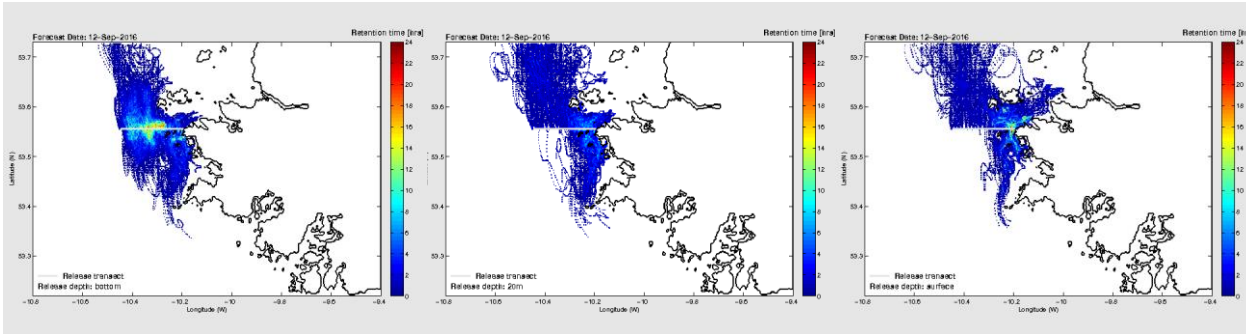
particle transport probability (hours)  
Bantry Bay model particle track analysis  
(2015-03-10T00:00:00Z, release\_location=0.0 count)  
Data courtesy of Irish Marine Institute

Forecast for the next 3 days

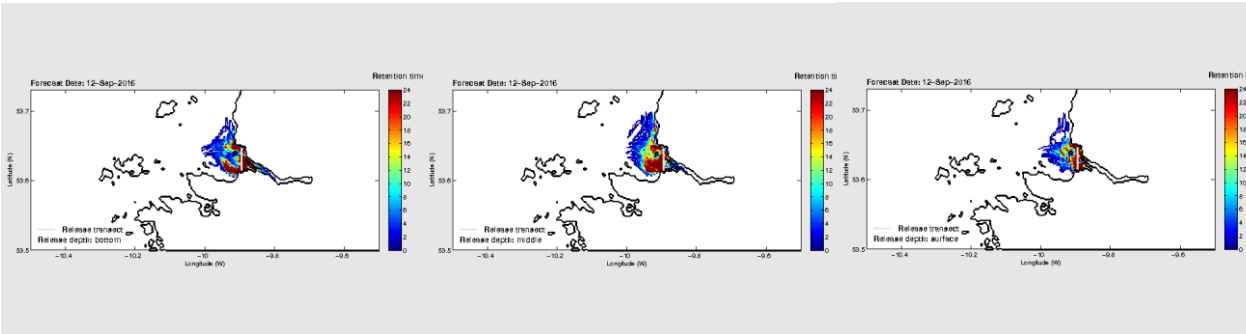
Bottom water

Water @ 20 metres

Surface water



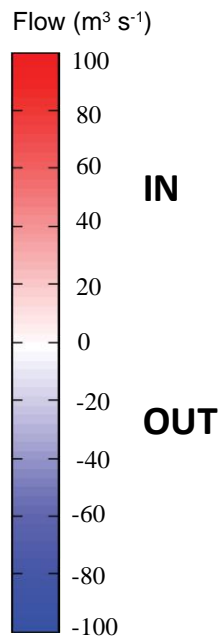
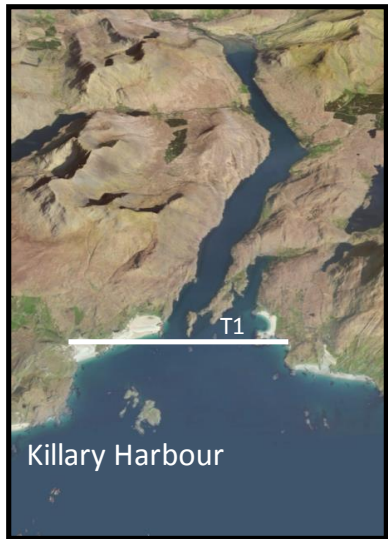
Water flows off the west coast are predominately northward with some flows south at all depths.



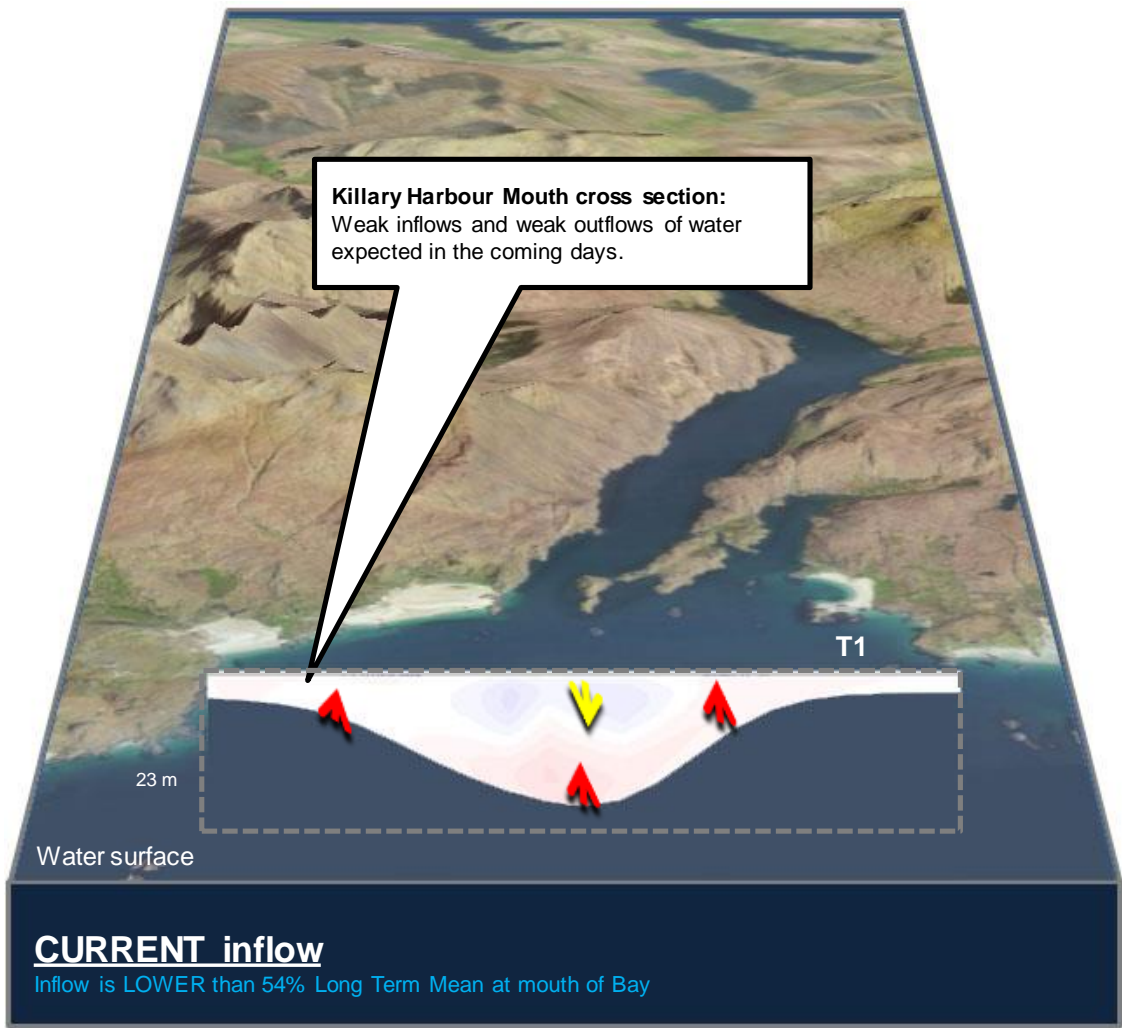
Water is expected to flow from outside the mouth of Killary Harbour and expected to reach Killary Middle if there are toxic phytoplankton outside, these will more than likely flow into Killary Middle.

# Killary Harbour

3 day estimated water flows at the mouth of Killary Harbour

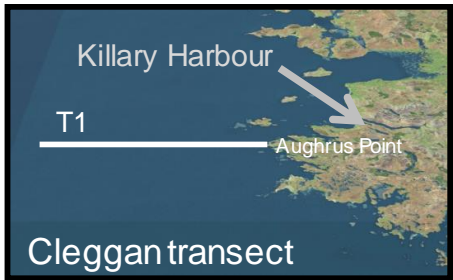


Forecast for next 3 days

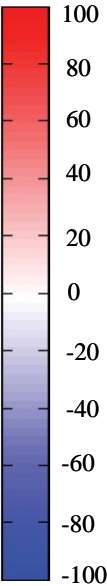


# West Coast - 3 day estimated water flows along a transect off Aughrus Point

Forecast for next 3 days



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



northward  
flow

southward  
flow

Depth

