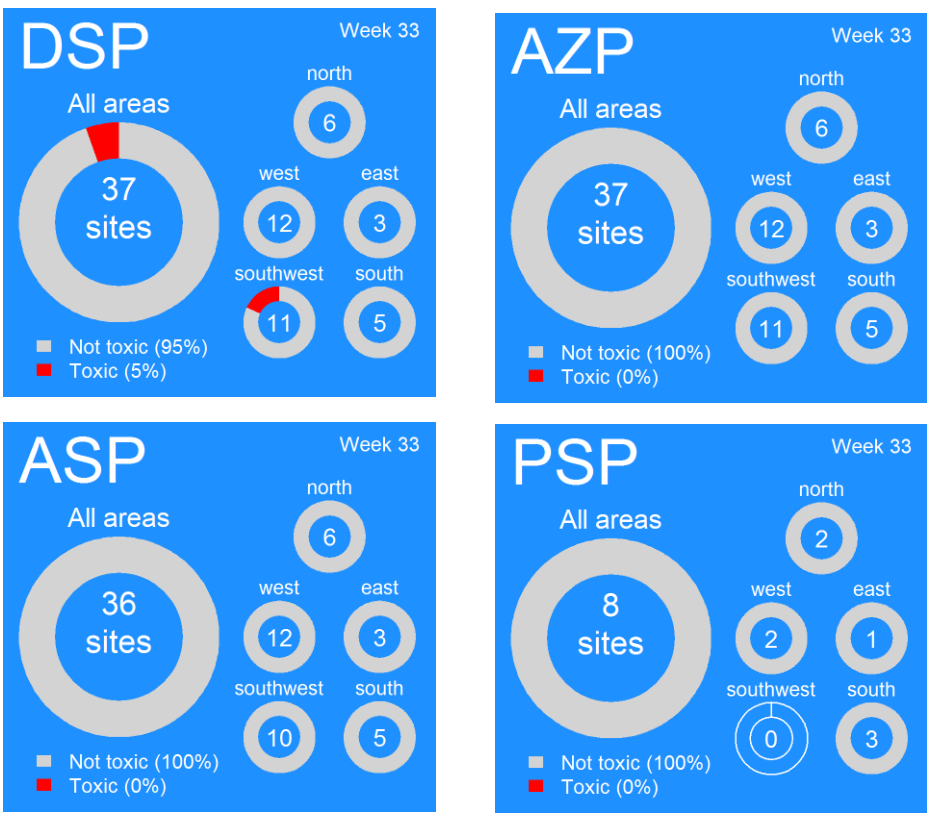


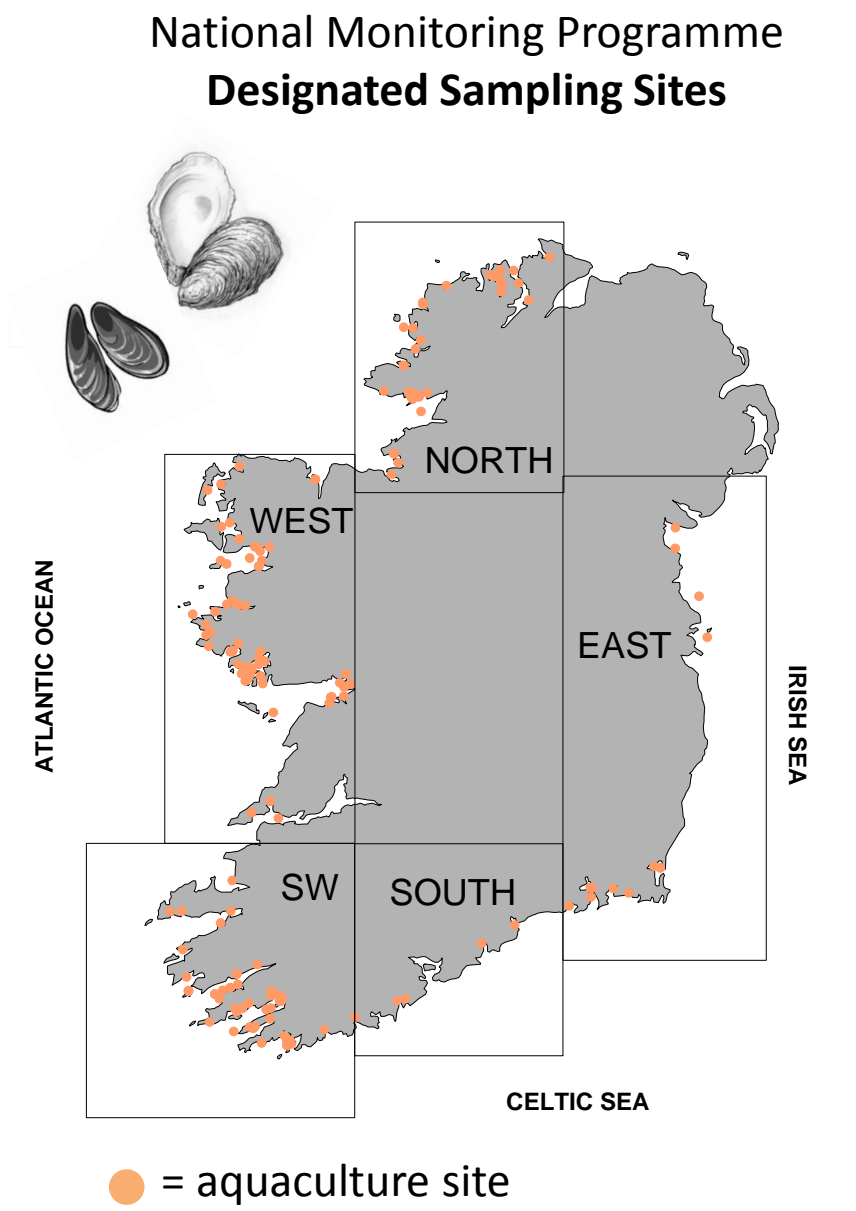
# Ireland: Current Conditions

## 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



# Ireland: Predictions

## Prediction for this week:

ASP event: Low

AZP event: Moderate - High

DSP event: High (SW)

PSP event: Low - Moderate (one site)

## Why do we think this?

ASP: Levels of *Pseudo nitzschia* species continue to be observed in many sites around the coast which seem to be increasing in some sites (increasing in east and decreasing in the south and SW). Corresponding biotoxin levels continue to remain well below regulatory limits. Toxin issues from this species are not historically expected at this time.

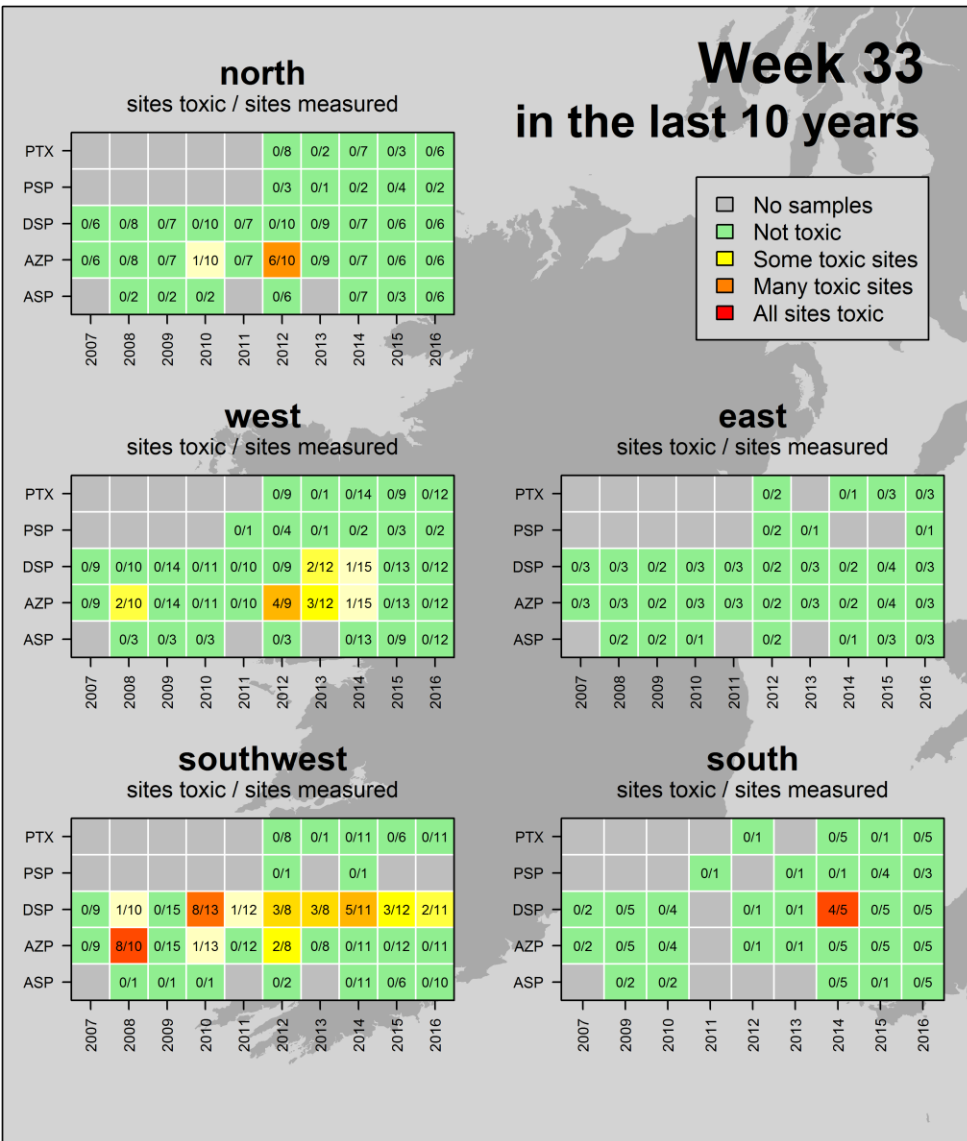
AZP: *Azadinium* spp. continue to be observed in all areas around the coastline. Biotoxin levels currently remain well below the regulatory limit in all sites. This is historically within the period of occurrence so caution is encouraged .

DSP: This is historically still the main risk period, *Dinophysis* spp. have appeared in the SW and numbers of *D. acuta* have increased with toxin levels also increased, *D. acuminata* have appeared to decrease. All areas should exercise caution and adjacent regions to closed areas should take all precautions necessary.

PSP: We have passed the high risk time of year, historical trends and current conditions indicate an event is unlikely to occur but be cautious. While *Alexandrium* sp cells have been observed in low levels throughout the coastline.

## 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

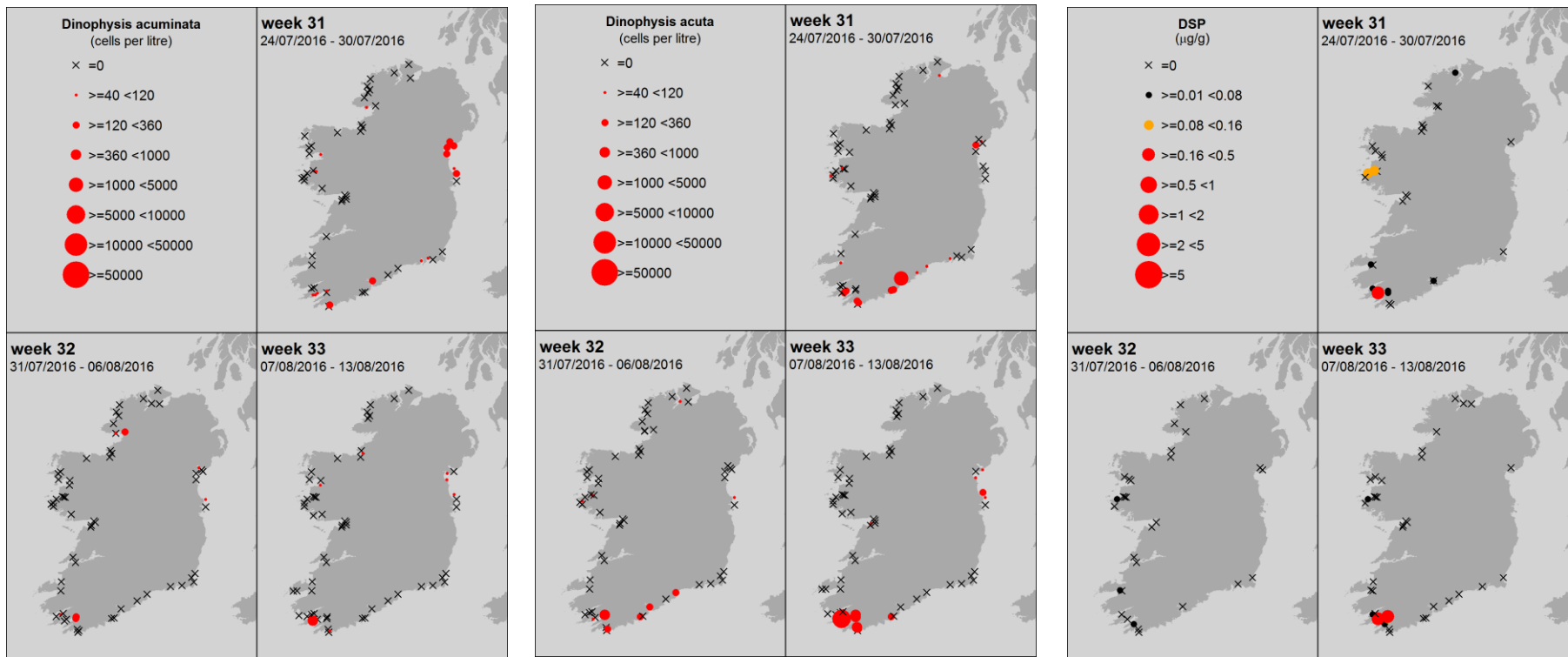
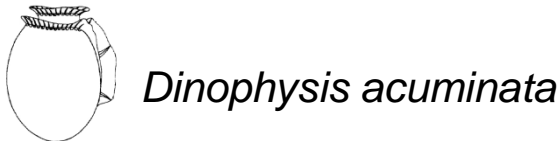
PSP events: June to mid-July and end September; only in Cork Harbour



# Ireland HAB & Biotoxin Distribution maps

[current status of harmful and toxic algae]

## Ireland: Last 3 weeks of available National Monitoring Programme data



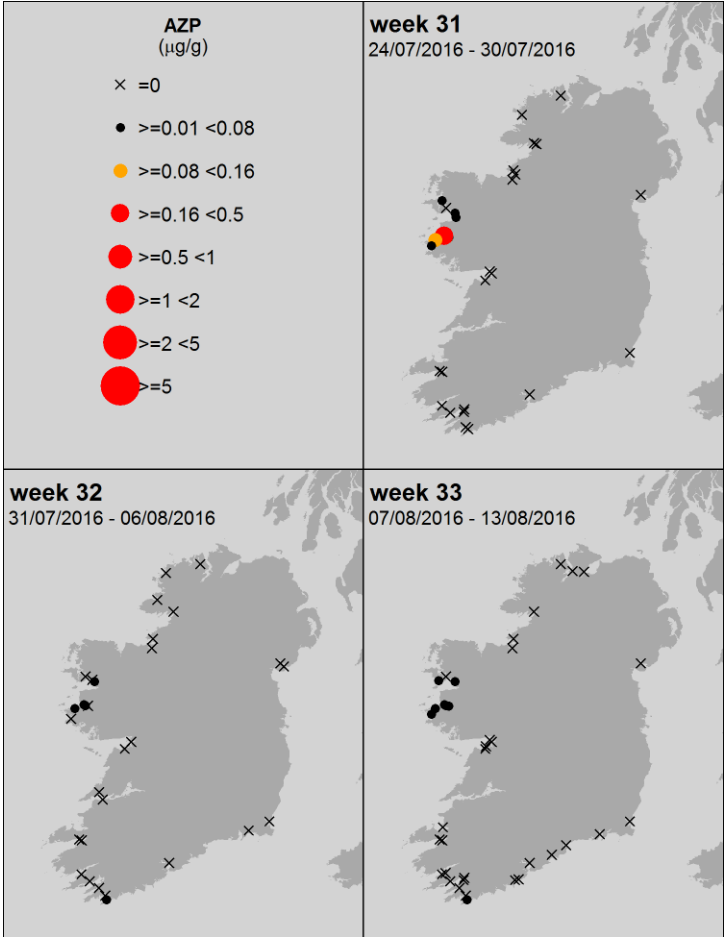
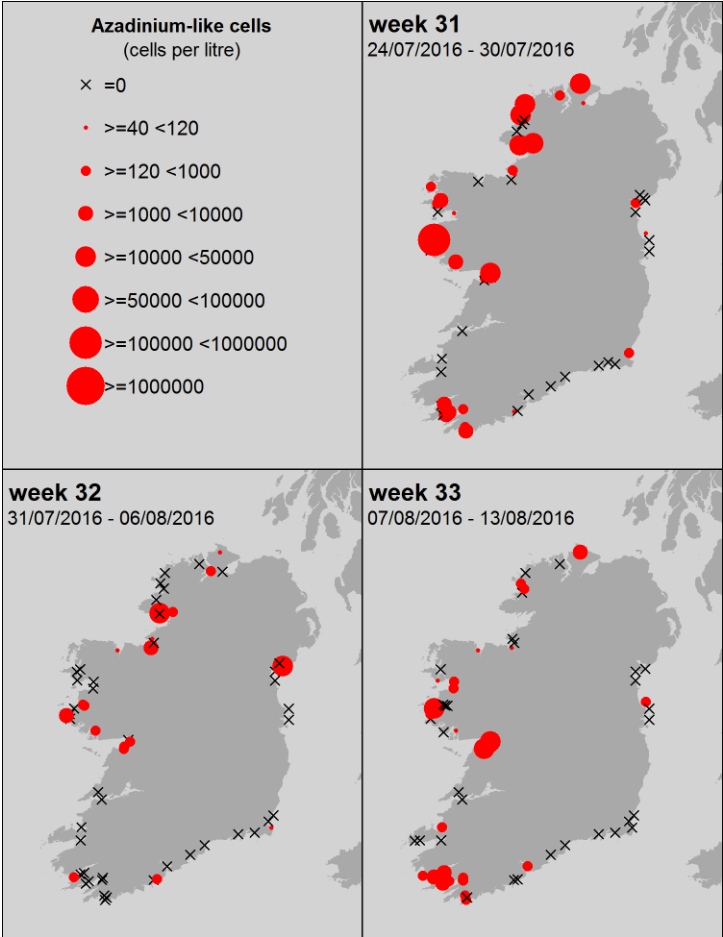
Ireland: Last 3 weeks of available National Monitoring Programme data



*Azadinium* – like spp.



AZP



Ireland: Last 3 weeks of available National Monitoring Programme data

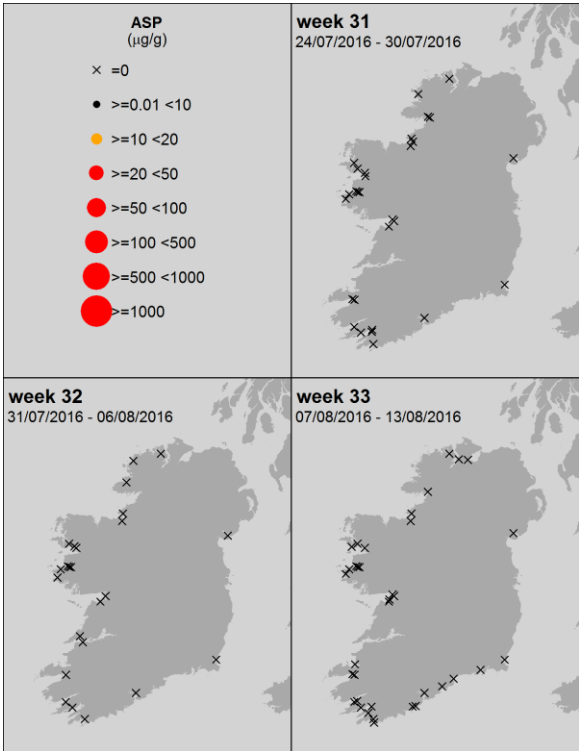
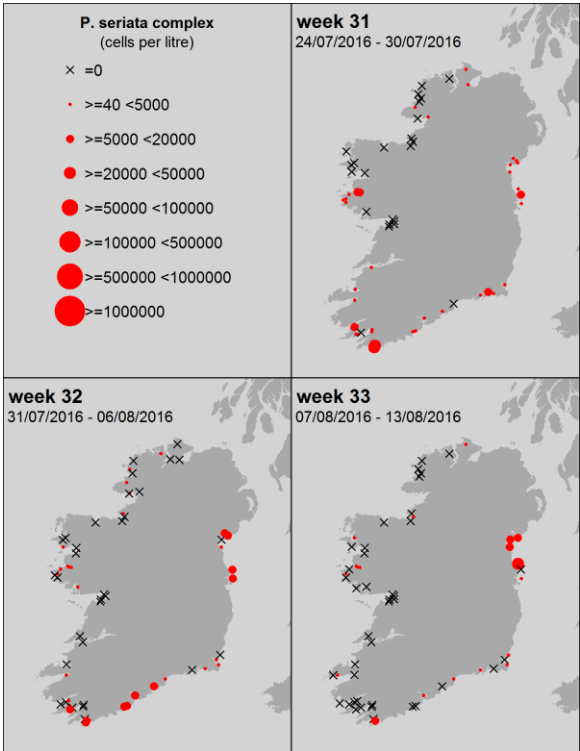
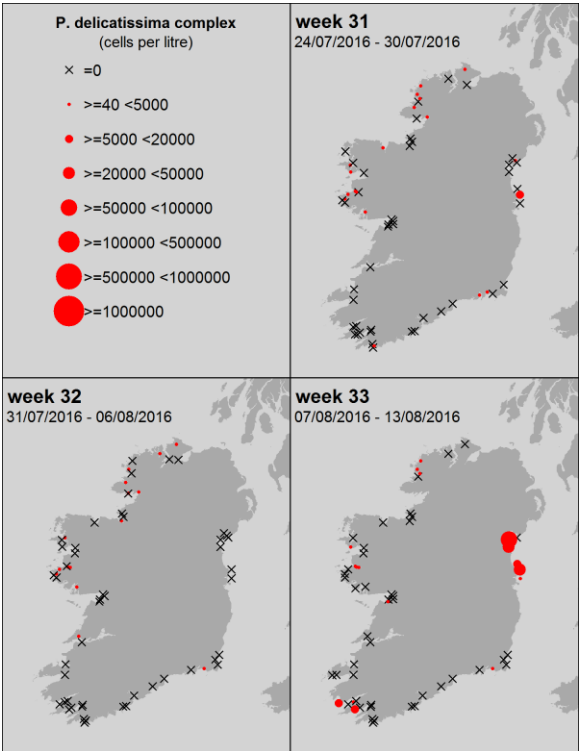
*Pseudo-nitzschia* spp.



ASP

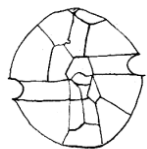
“*P. delicatissima*” complex = small cells  
Taken from the literature:  
3 species confirmed in Irish waters

“*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.

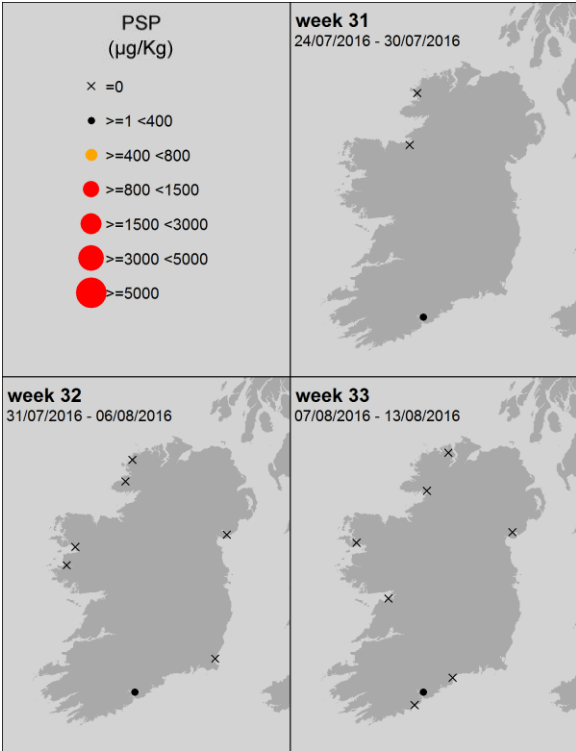
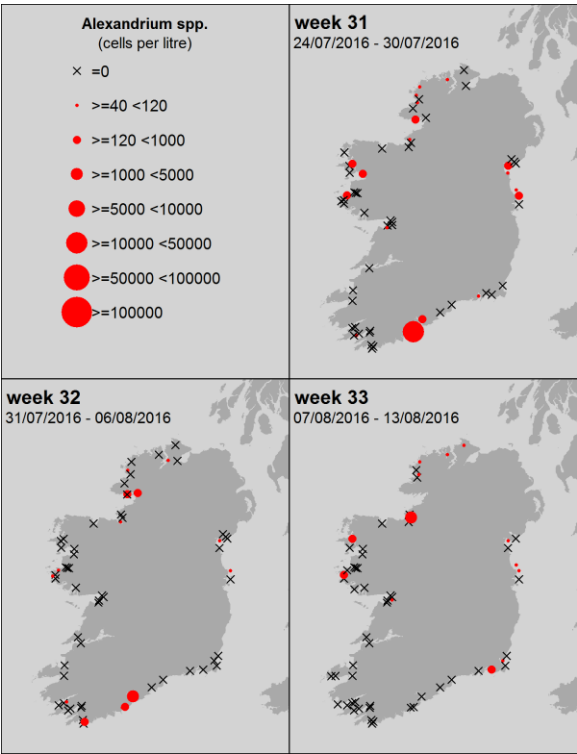
Ireland: Last 3 weeks of available National Monitoring Programme data



*Alexandrium* spp.



PSP



# Ireland HAB & Biotoxin temporal trends

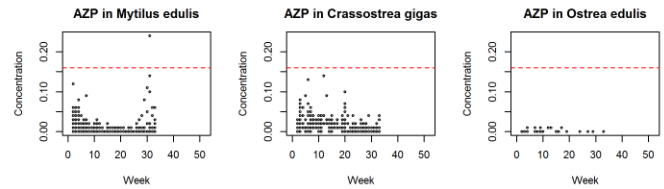
Ireland: **HABs and biotoxins** Levels from week 1 to present

## Ireland: Biotoxins

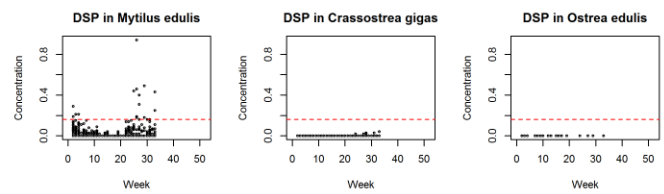


Toxin groups      mussels      oysters      oysters

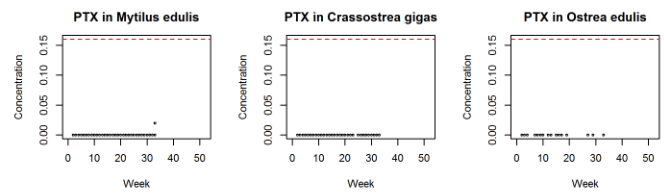
**AZP**  
AZaspiracid  
Poisoning



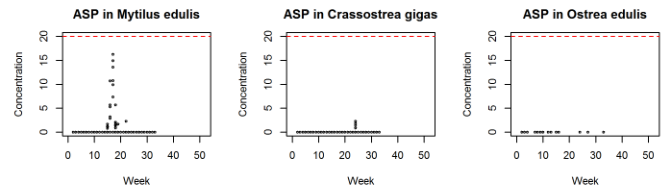
**DSP**  
Diarrhetic  
Shellfish  
Poisoning



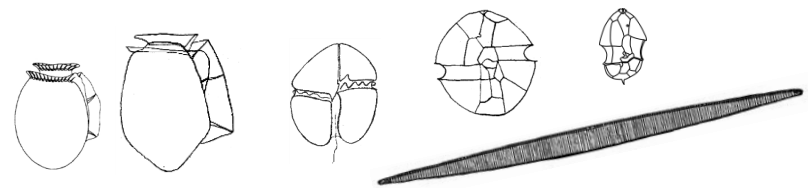
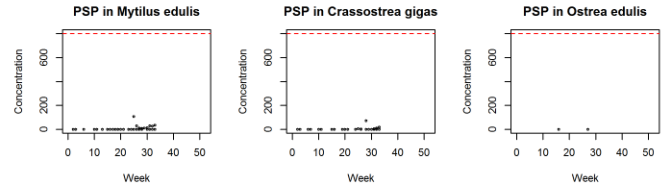
**PTX**  
Pectenotoxin



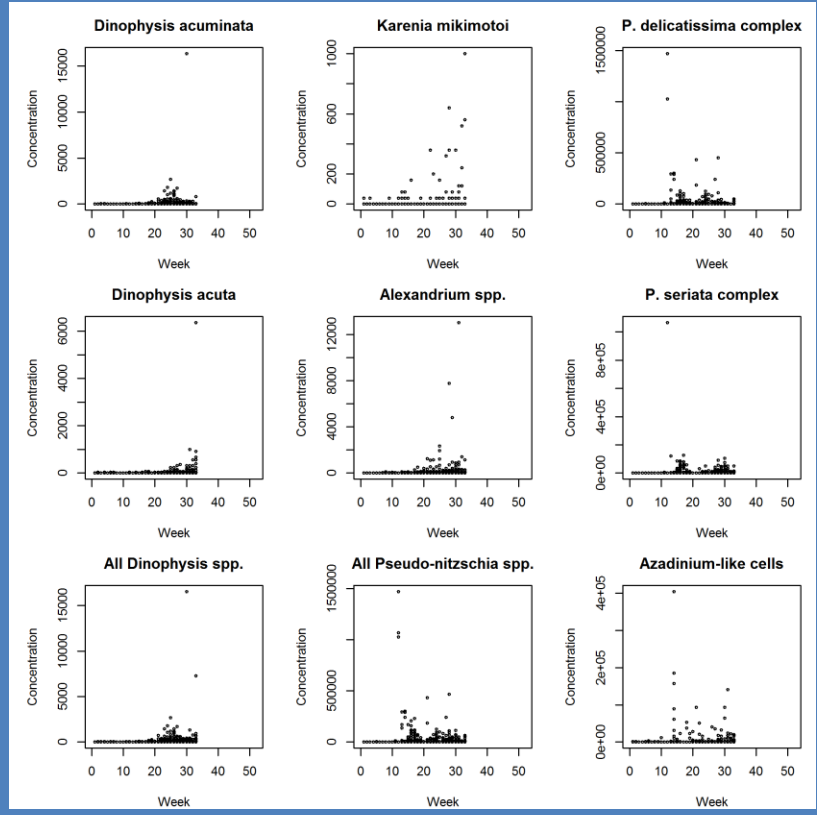
**ASP**  
Amnesic  
Shellfish  
Poisoning



**PSP**  
Paralytic  
Shellfish  
Poisoning



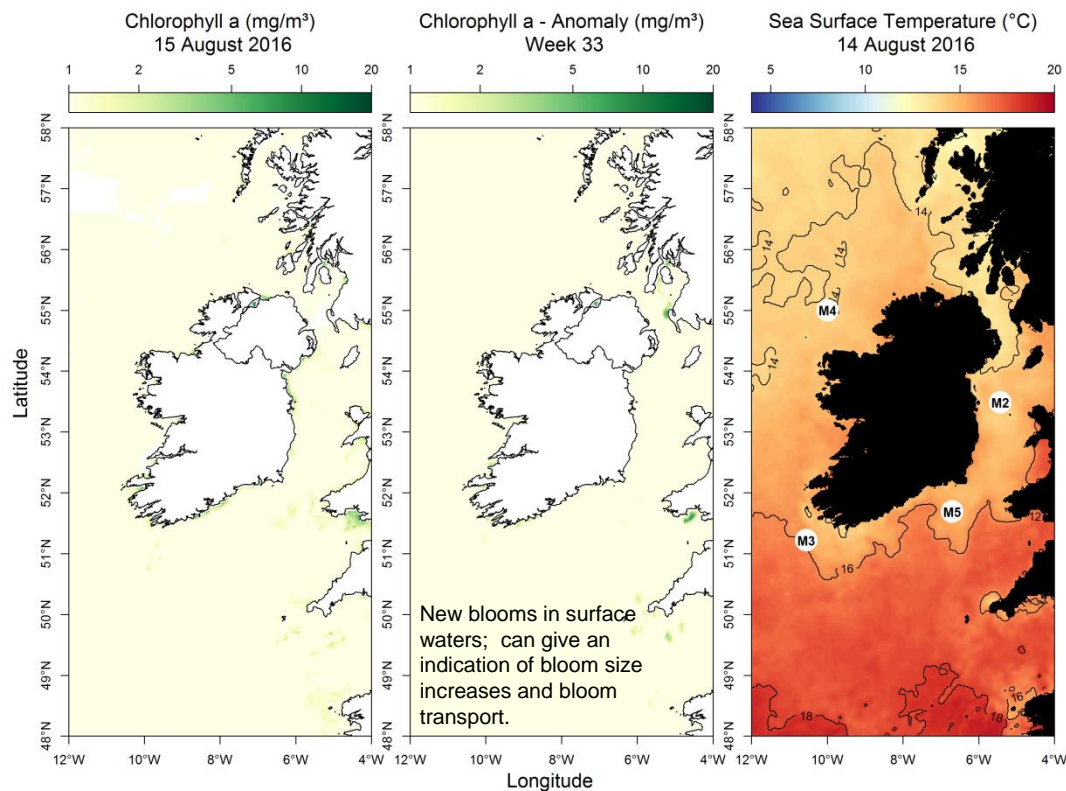
## Ireland: HABs



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

Regulatory limit = ■■■■■

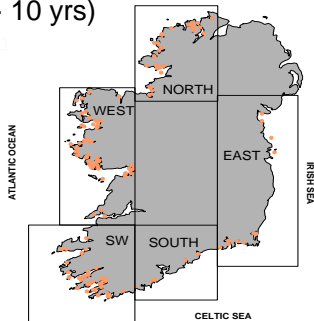
Most up to date available satellite data



SST (°C) anomaly for last week:

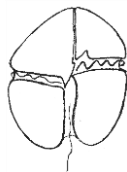
Data taken from the Irish data buoy network where the anomaly is the weekly difference in SST compared to the long term mean (~ 10 yrs)

- NW coast (M4) Offline
- SW coast (M3) Below average by -0.72 °C
- SE coast (M5) Below average by -1.26 °C



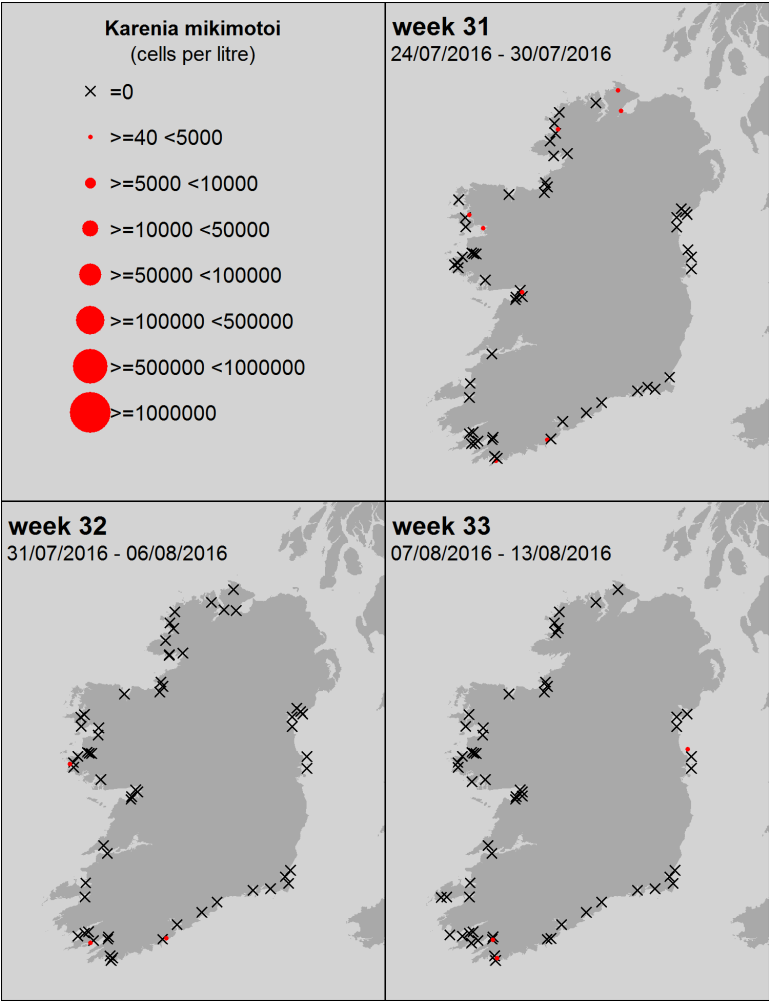
What phytoplankton were blooming at inshore coastal sites last week?

Region	Predominant Phytoplankton (most abundant taxa)	Cells/L (rounded)
north:	<b>Diatoms:</b>	
	<i>Chaetoceros</i> (Hyalochaete) spp.	111,000
	<i>Skeletonema</i> spp.	102,000
	<i>Cylindrotheca closterium</i> / <i>Nitzschia longissima</i>	35,000
	<b>Dinoflagellates:</b>	
west:	<i>Prorocentrum micans</i>	138,000
	<b>Diatoms:</b>	
	Pennate diatom <20µm-50µm	6,667,000
	<i>Chaetoceros</i> (Hyalochaete) spp.	447,000
	<i>Skeletonema</i> spp.	308,000
SW:	<i>Cylindrotheca closterium</i> / <i>Nitzschia longissima</i>	111,000
	<b>Others</b>	
	Cyanophyte	64,000
	<b>Diatoms:</b>	
	<i>Skeletonema costatum</i>	110,000
south:	<i>Leptocylindrus minimus</i>	85,000
	<b>Dinoflagellates:</b>	
	<i>Karenia</i> spp.	78,000
	Armoured dinoflagellate 20-50µm	
	<b>Others</b>	
east:	<i>Cilliates</i>	100,000
	<b>Diatoms:</b>	
	<i>Thalassiosira</i> <20µm	78,000
	<i>Lauderia</i> / <i>Detonula</i> sp	78,000
	<i>Navicula</i> spp. <25µm	69,000
	<i>Cylindrotheca closterium</i> / <i>Nitzschia longissima</i>	66,000
	<i>Thalassiosira nordenskiöldii</i>	60,000
	<b>Diatoms:</b>	
	<i>Chaetoceros</i> (Hyalochaete) spp.	420,000
	<i>Proboscia alata</i>	90,000
	<i>Pseudo-nitzschia delicatissima</i> complex	52,000
	<i>Pseudo-nitzschia seriata</i> complex	49,000
	<i>Asterionellopsis</i> spp.	38,000



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

A *Karenia mikimotoi* bloom  
is NOT expected this week

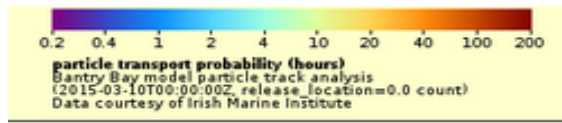


# SOUTHWEST: Bantry Bay

Forecast for the next 3 days

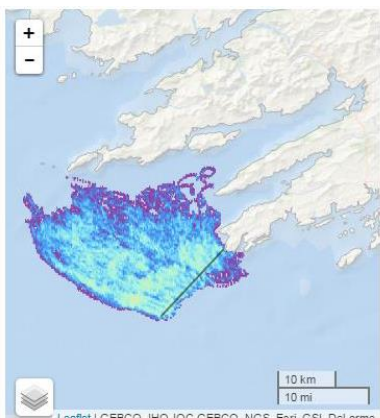
The maps show the **most likely transport pathways for the next 3 days of phytoplankton** found along the **presented transects** (black lines off Mizen Head and the Mouth of Bantry Bay) and **water depths** (bottom, 20 metres and surface)

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

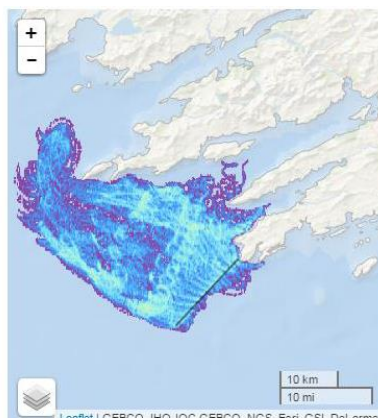


Go to <http://vis.marine.ie/particles/> to view daily forecasts

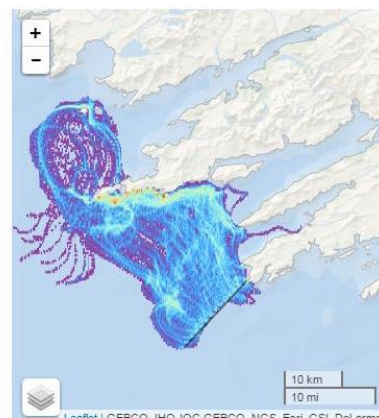
Bottom water



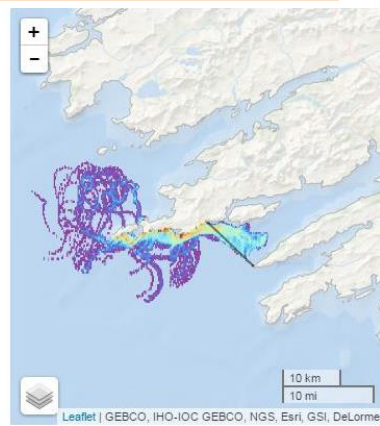
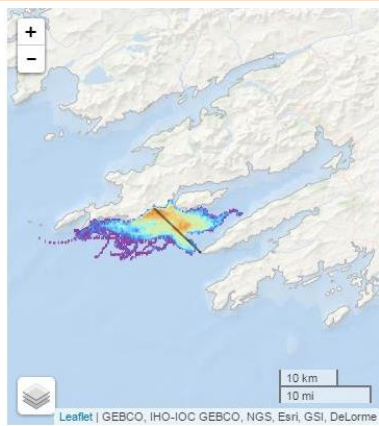
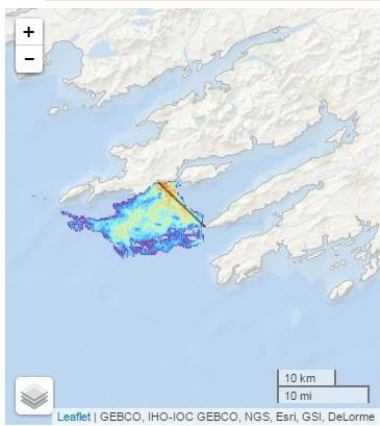
Water @ 20 metres



Surface water



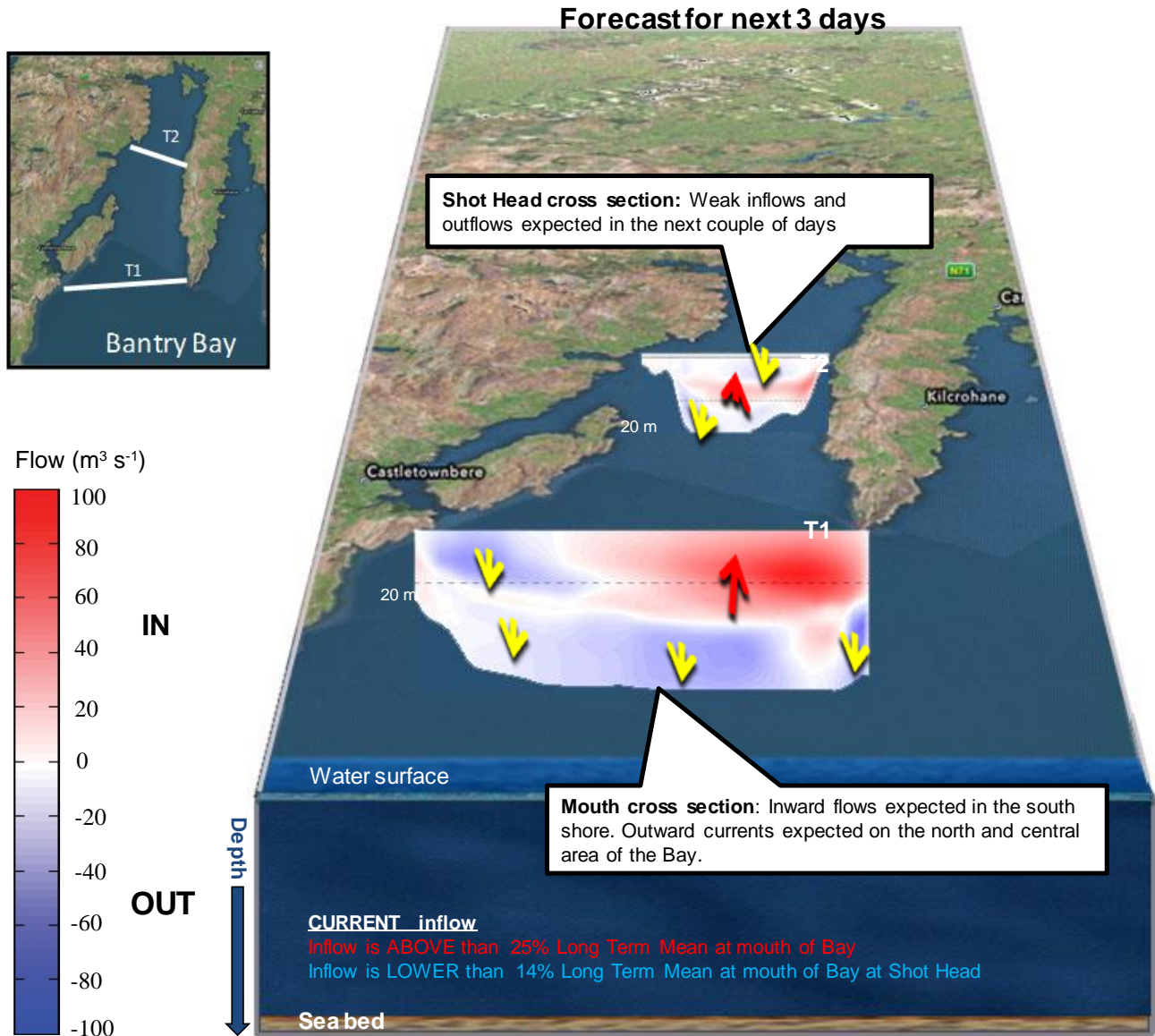
Estimated water circulation patterns at Mizen head will flow in a northerly direction with some water at depth to enter Bantry and Dunmanus Bay.



Bottom waters are expected to flow out and go north with some water at depth likely to enter Bantry Bay surface waters is likely to flow out and north.

# Bantry Bay

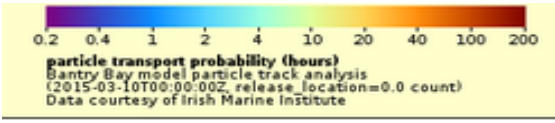
3 day estimated water flows at the mouth and mid-bay sections of Bantry Bay



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)

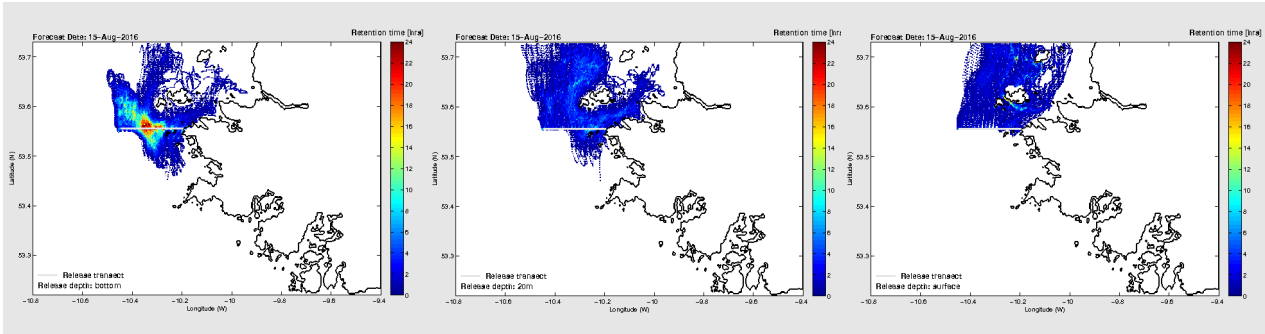
Reddish colours represent areas where phytoplankton remain longest  
Cooler colours represent areas where phytoplankton remain for shorter periods



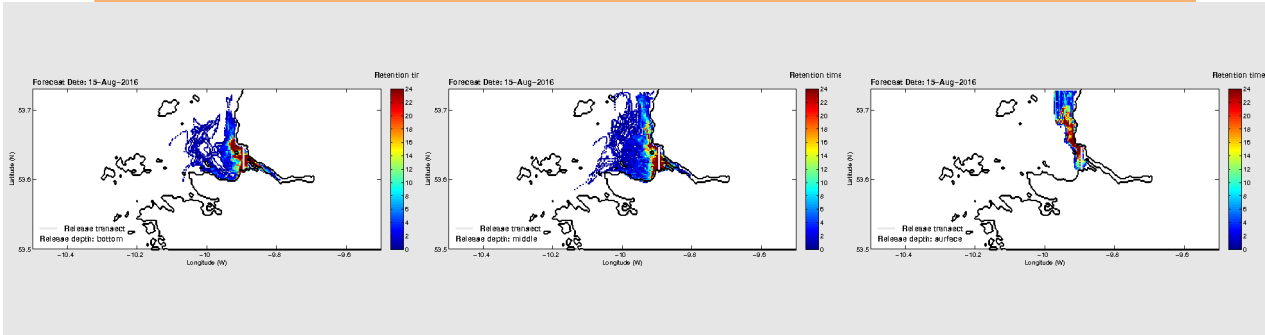
particle transport probability (hours)  
Bantry Bay model particle track analysis  
(2015-03-10T00:00:00Z, release\_location=0.0 count)  
Data courtesy of Irish Marine Institute

Forecast for the next 3 days

Bottom water      Water @ 20 metres      Surface water



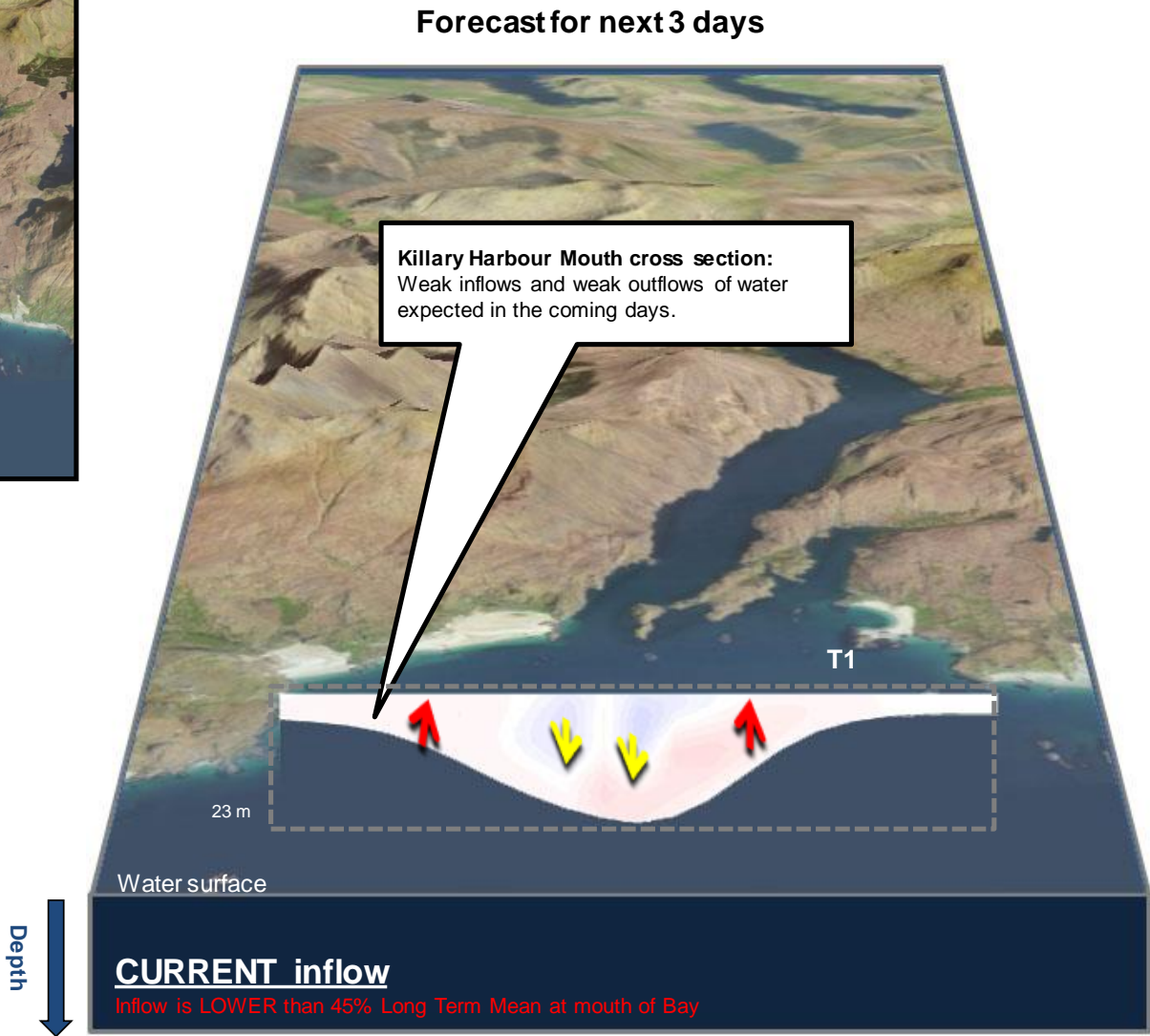
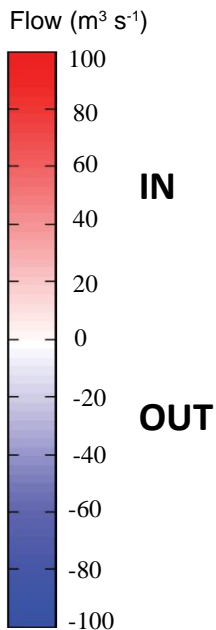
Water flows off the west coast will be northerly directed, offshore water masses are unlikely to reach the mouth of Killary Harbour.



Estimated water circulation at the mouth of Killary Harbour shows that in general, waters will be retained at the mouth water at depths will reach Killary Middle with water at all depths flowing north.

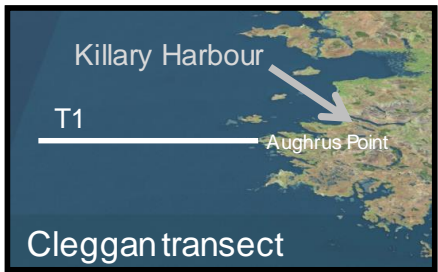
# Killary Harbour

3 day estimated water flows at the mouth of Killary Harbour

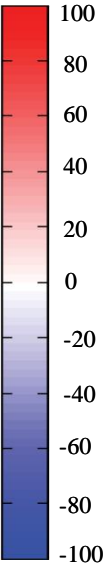


# West Coast - 3 day estimated water flows along a transect off Aughrus Point

Forecast for next 3 days



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



northward  
flow

southward  
flow

