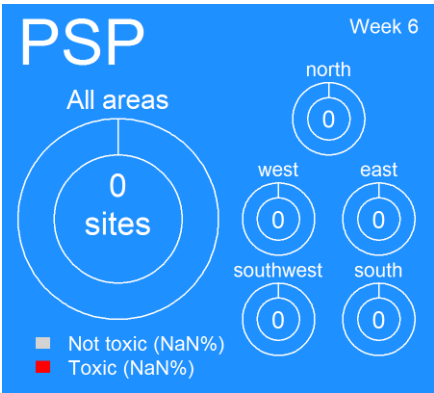
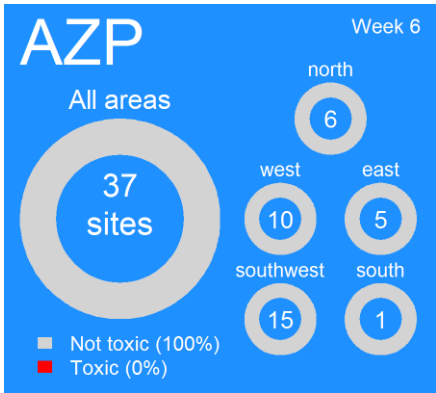
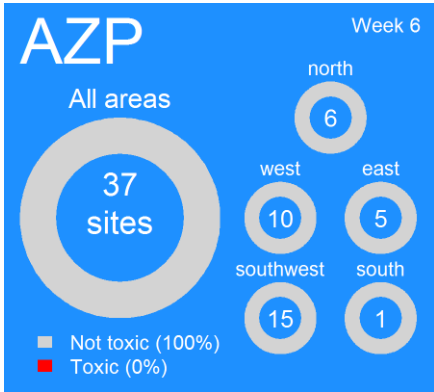
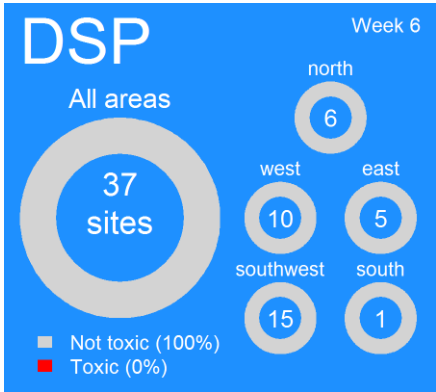


# Ireland: Current Conditions

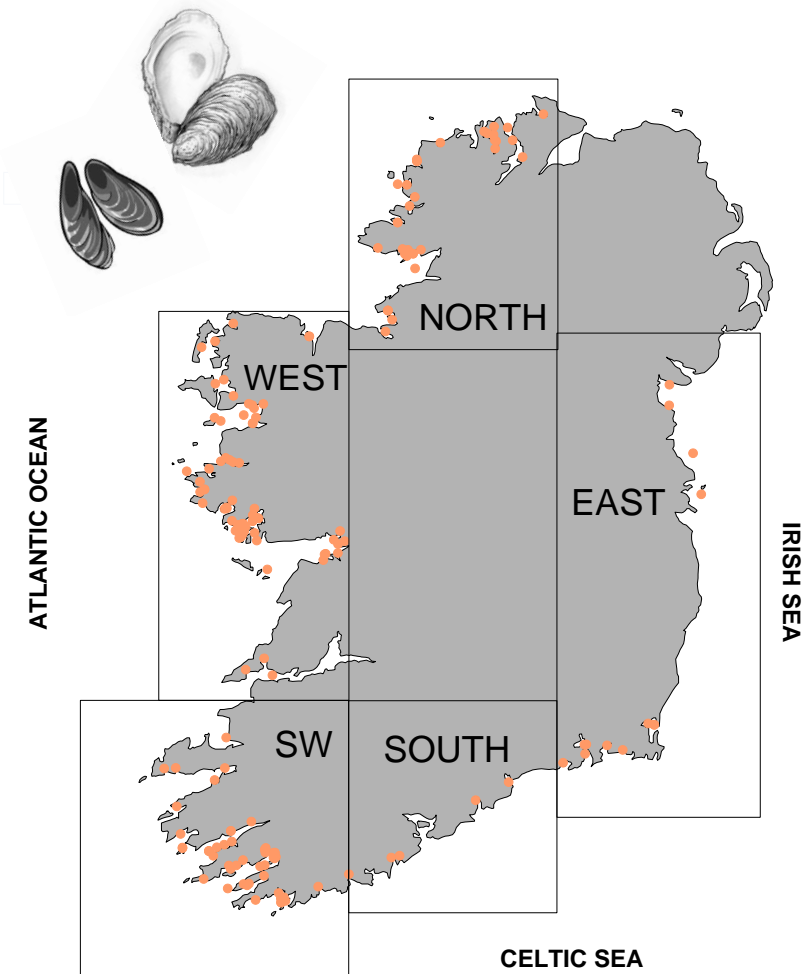
## Shellfish biotoxin report (last week)



**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



● = aquaculture site

# Ireland: Predictions

## Prediction for this week:

ASP event: Low risk.

AZP event: Moderate to low

DSP event: Low

PSP event: Low risk

## Why do we think this?

ASP: This is a low risk period with no biotoxins detected in recent weeks. *Pseudo-nitzschia* cell densities are low.

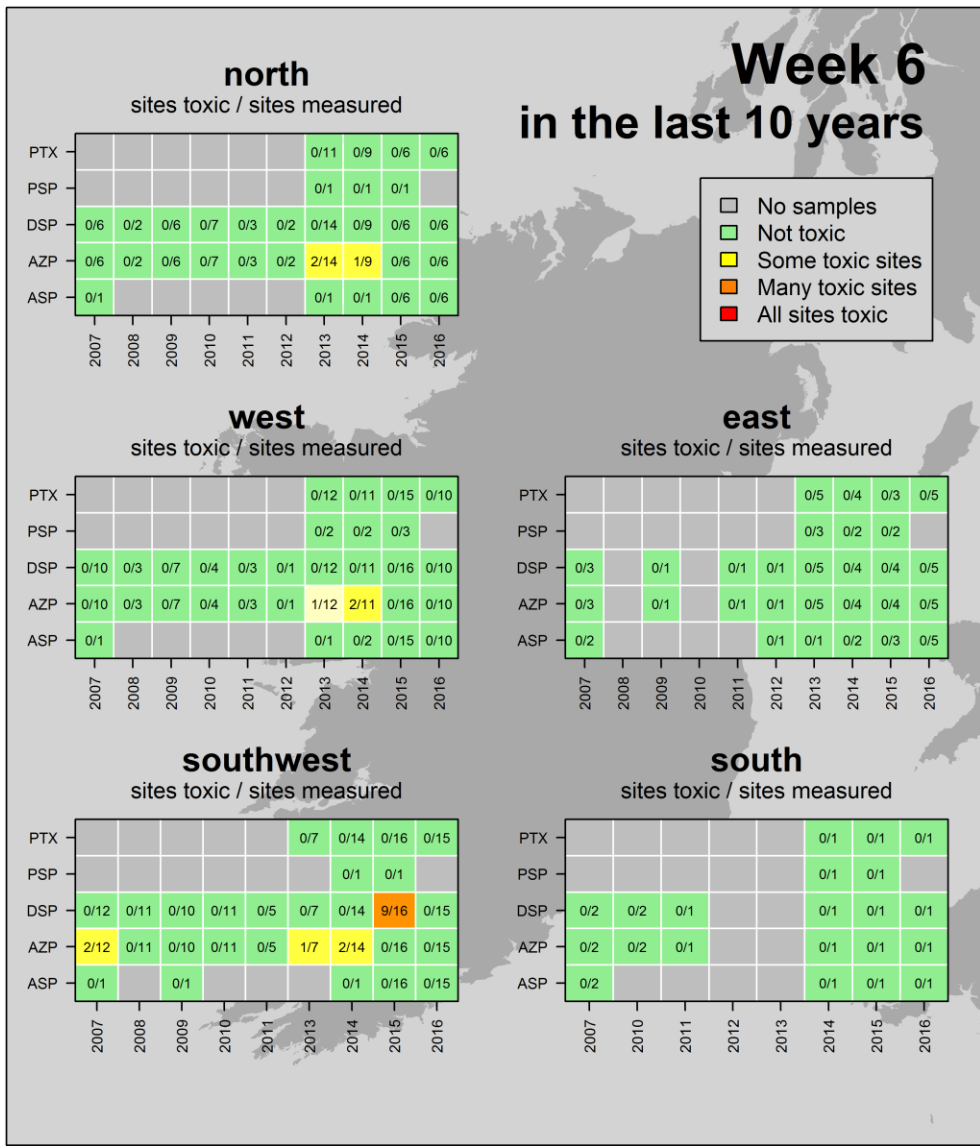
AZP: Bio toxins have remained below EU regulatory levels. However, *Azadinium* - like cells are present at low levels at some sites. Historical data demonstrates that this bio toxin can be present in shellfish at this time of year.

DSP: Low to negligible levels of *Dinophysis* spp. and biotoxins in most sites except “residual” sites in SW. Very low levels of *Dinophysis* spp. cell levels with associated residual fluctuating toxin levels still remain in SW as the shellfish continue to attempt to depurate in unfavourable conditions.

PSP: Toxicity issues are not expected at this time in the year. Associated toxic phytoplankton are not blooming.

# Ireland: Historic Conditions

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



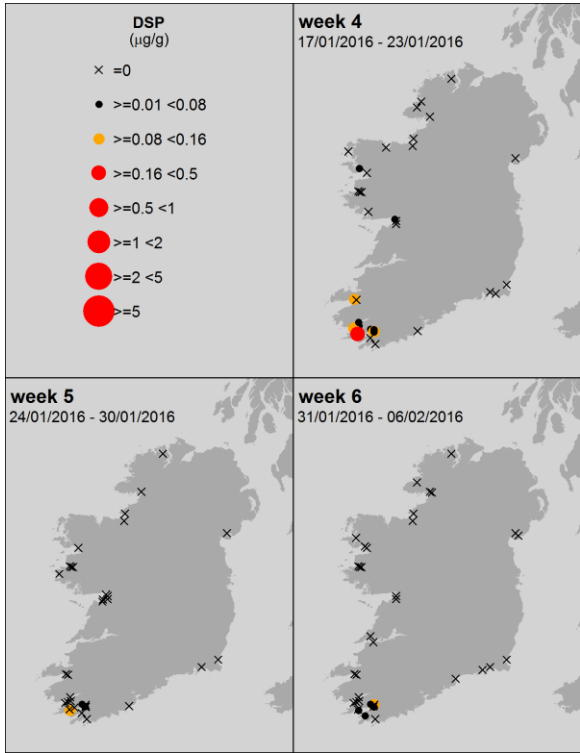
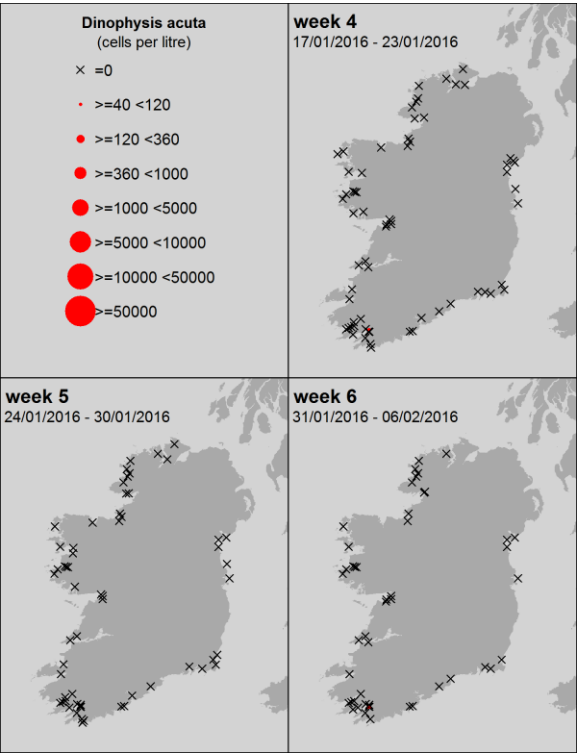
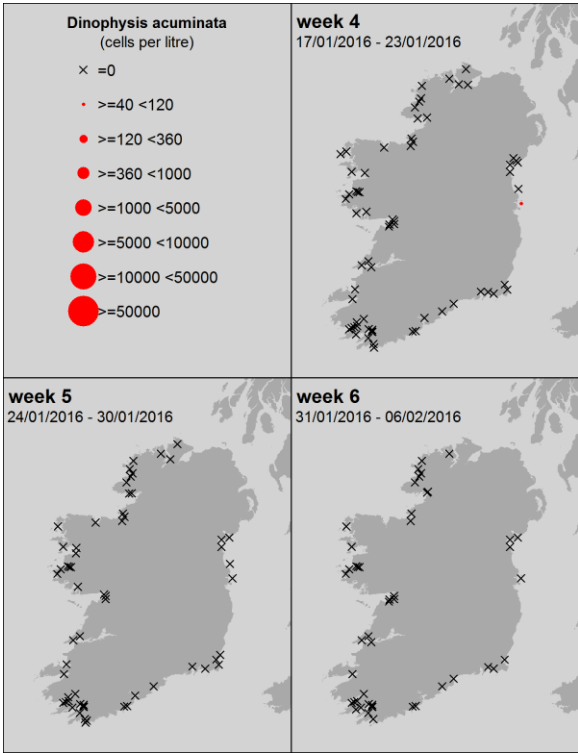
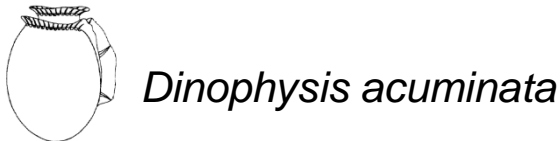
## Ireland HISTORIC TRENDS

**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



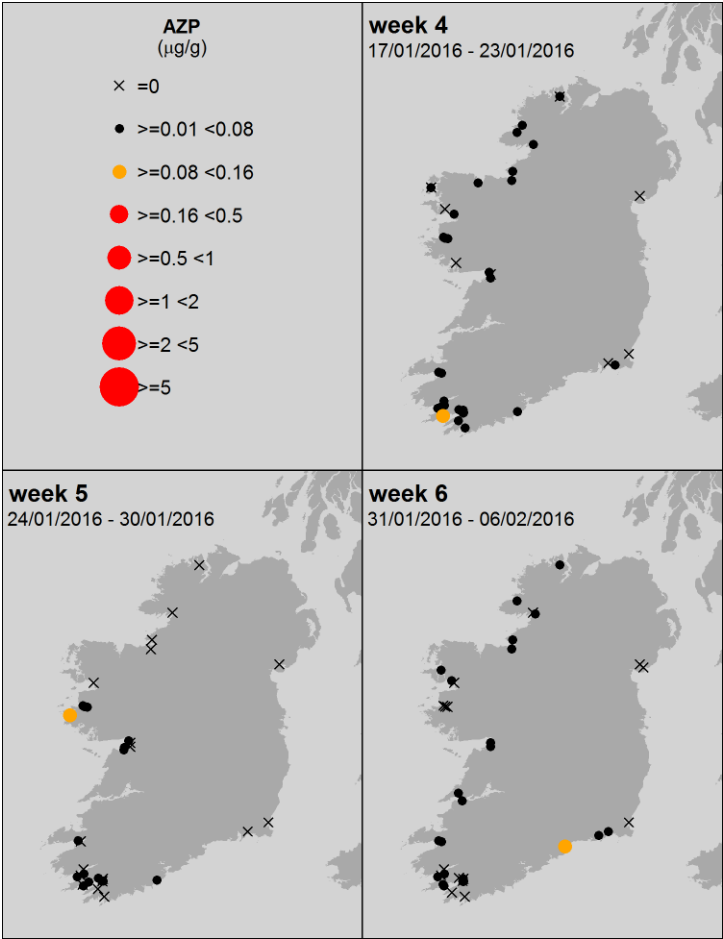
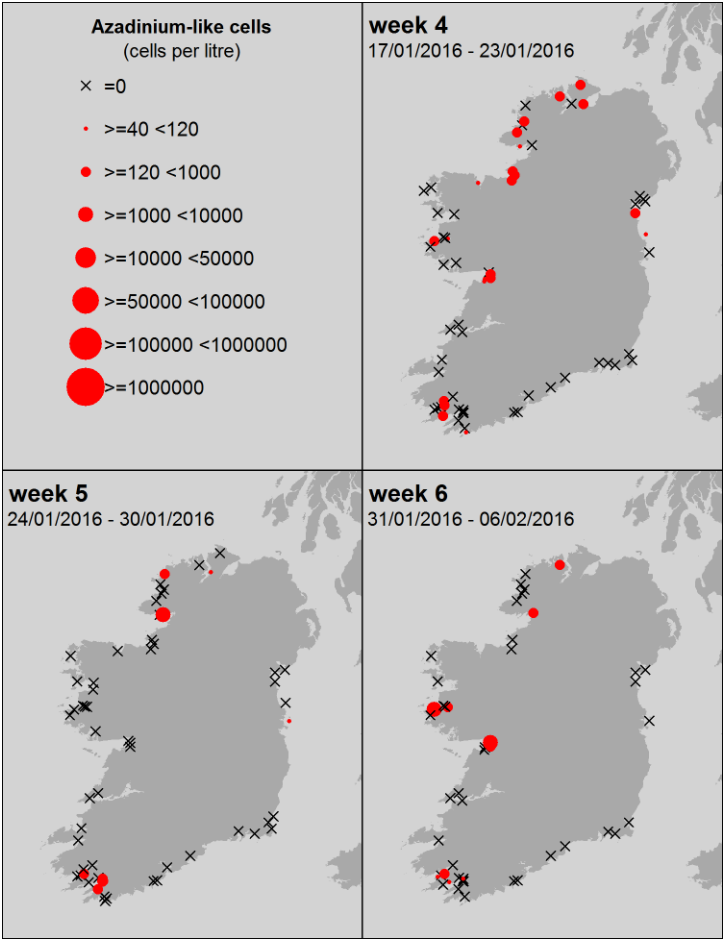
Ireland: Last 3 weeks of available National Monitoring Programme data



*Azadinium* – like spp.



AZP



Ireland: Last 3 weeks of available National Monitoring Programme data

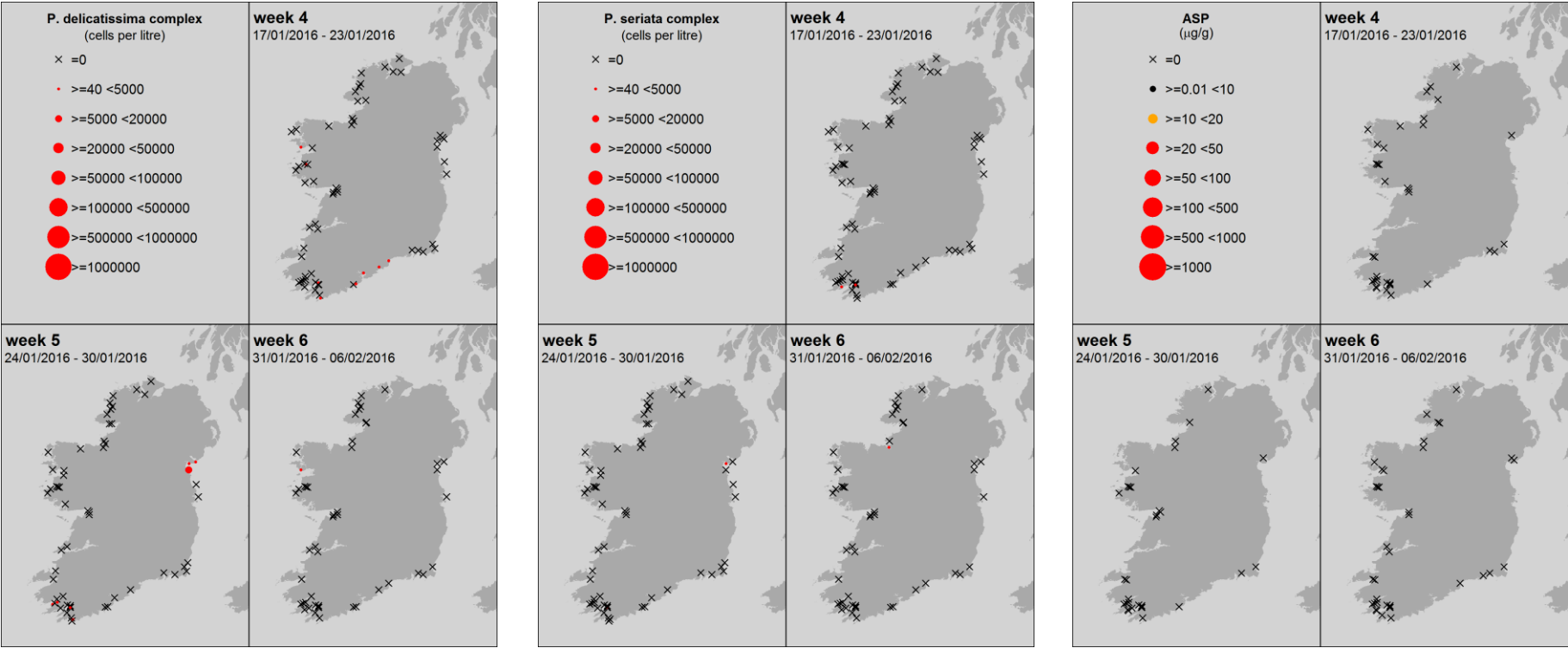
*Pseudo-nitzschia* spp.



ASP

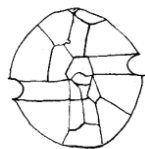
“*P. delicatissima*” complex = small cells  
Taken from the literature:  
3 species confirmed in Irish waters

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

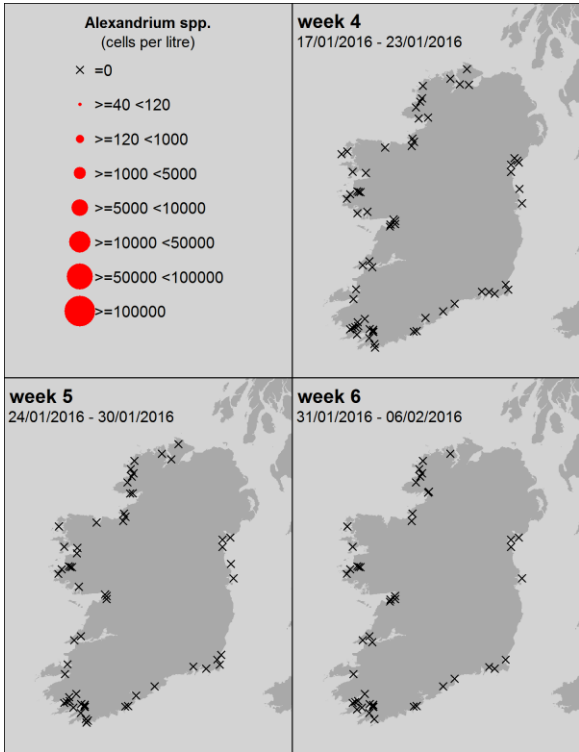


**Taken from the literature:** Of the 4 species (*P. fraudulenta*, *P. australis*, *P. pungens* and *P. delicatissima*) from Irish waters, tested for ASP toxins in culture work, only one, *P. australis* (from the “*P. seriata*” group) was toxic.

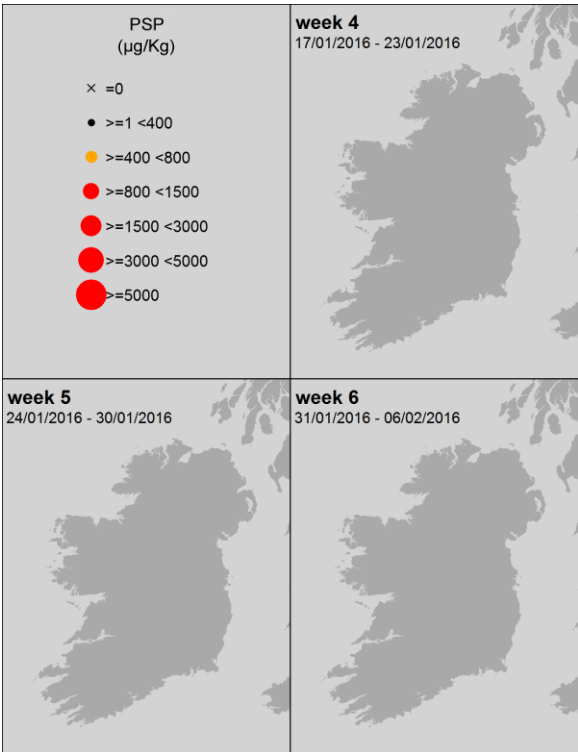
Ireland: Last 3 weeks of available National Monitoring Programme data



*Alexandrium* spp.



PSP



# Ireland HAB & Biotoxin temporal trends

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

## Ireland: Biotoxins



Toxin groups

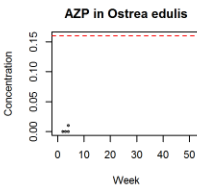
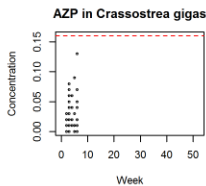
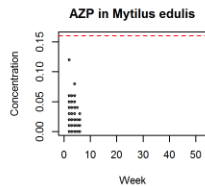
mussels

oysters

oysters

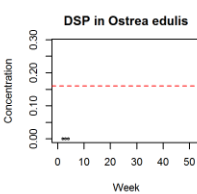
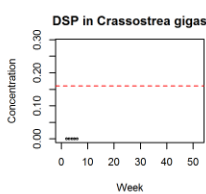
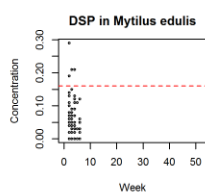
**AZP**

AZaspiracid  
Poisoning



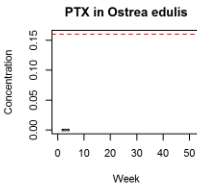
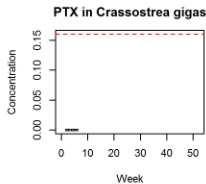
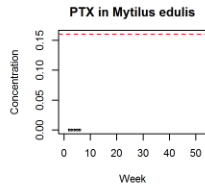
**DSP**

Diarrhetic  
Shellfish  
Poisoning



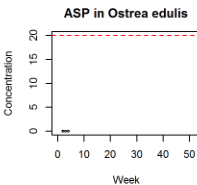
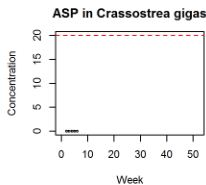
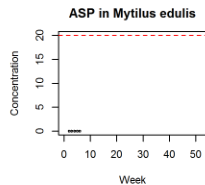
**PTX**

Pectenotoxin



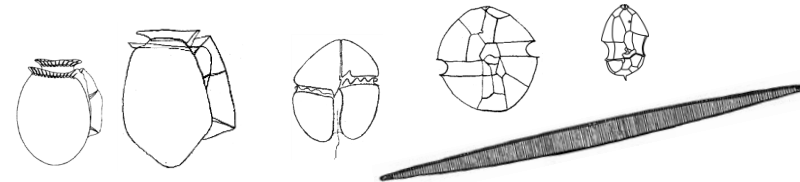
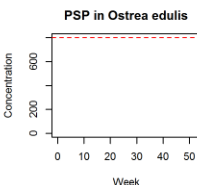
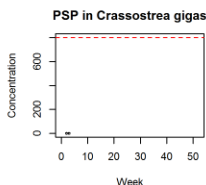
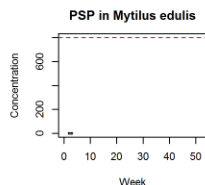
**ASP**

Amnesic  
Shellfish  
Poisoning

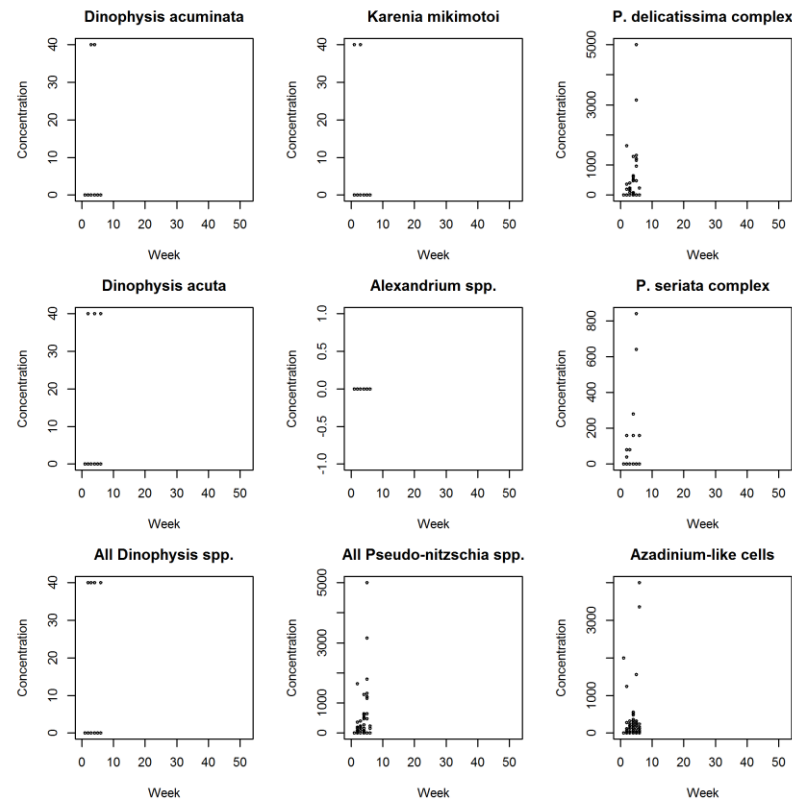


**PSP**

Paralytic  
Shellfish  
Poisoning



## Ireland: HABs

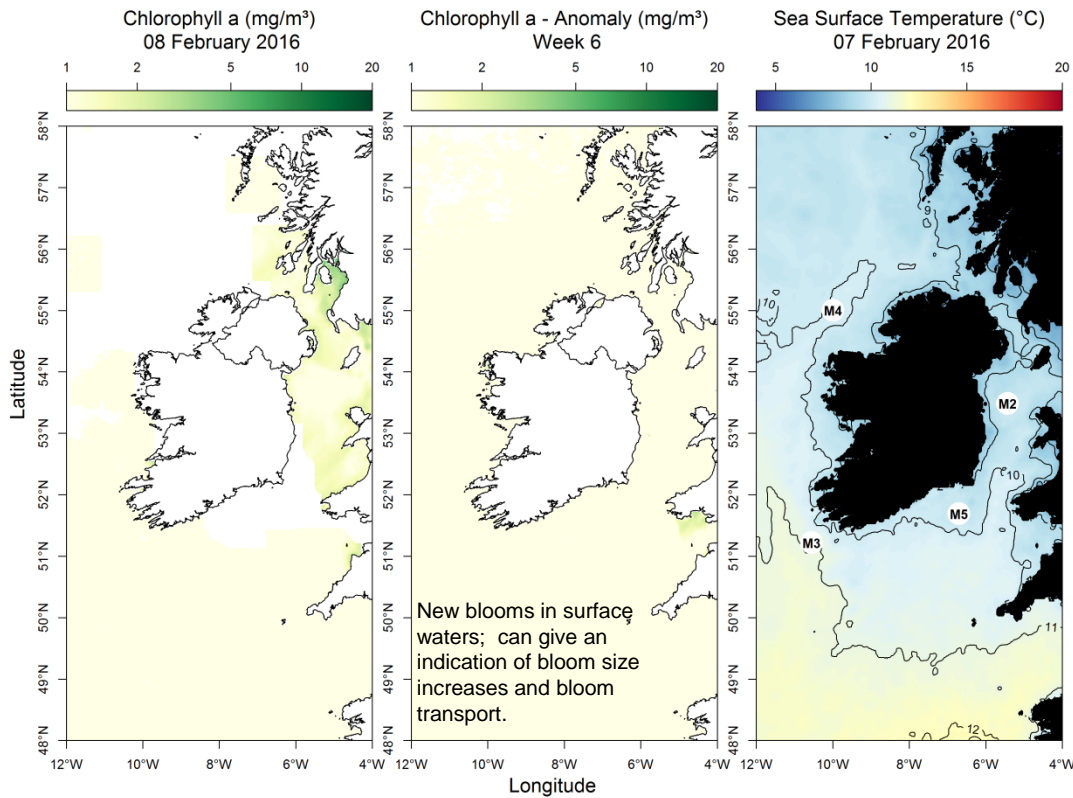


EU Regulatory Limit: ASP 20  $\mu\text{g/g}$ ; AZP 0.16  $\mu\text{g/g}$ ; DSP 0.16  $\mu\text{g/g}$ ; PSP 800  $\mu\text{g/kg}$

Regulatory limit = ■■■■■



Most up to date available satellite data

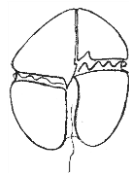


**SST (°C) anomaly for last week:**  
Data taken from the Irish data buoy network where the anomaly is the weekly difference in SST compared to the long term mean (~ 10 yrs)

- NW coast (M4) above average by 0.49 °C
- SW coast (M3) Offline
- SE coast (M5) Offline

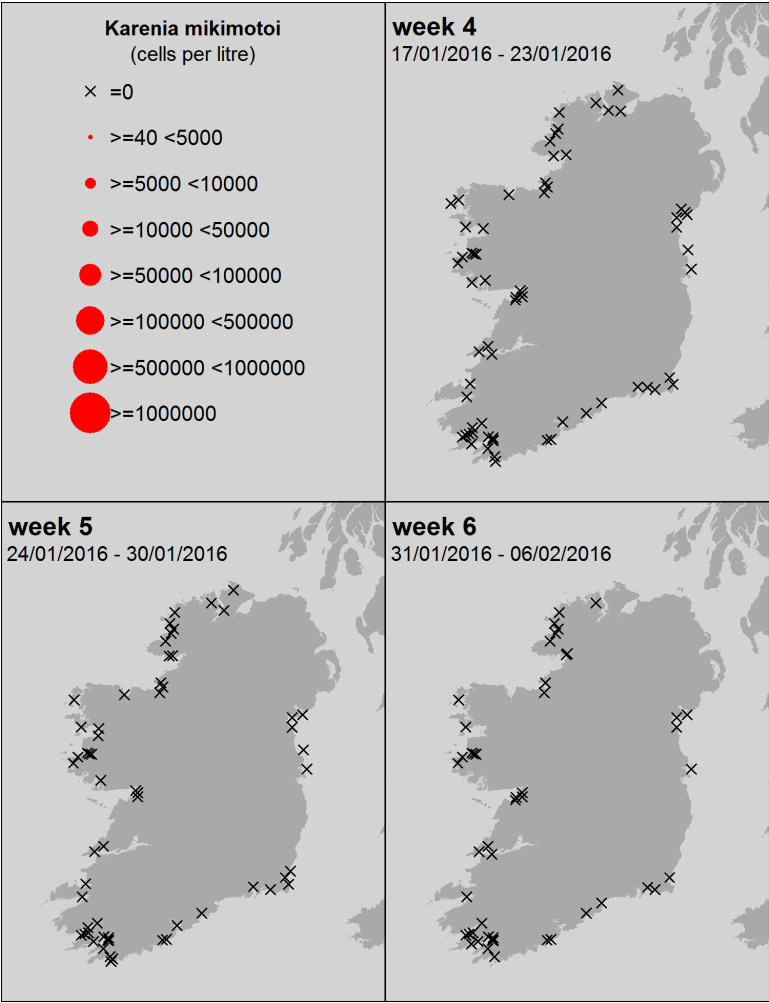
What phytoplankton were blooming at inshore coastal sites last week?

Region	Predominant Phytoplankton (most abundant taxa)	Cells/L (rounded)
north:	<b>Diatoms:</b>	
	<i>Skeletonema</i> spp.	19,000
	Pennate diatom	3,000
	<i>Asterionellopsis glacialis</i>	2,000
	<b>Others:</b>	
	Ciliates	12,000
west:	<b>Diatoms:</b>	
	<i>Paralia</i> sp.	5,000
	<i>Detonula pumila</i>	4,000
	<i>Detonula confervacea</i>	3,000
	<i>Cylindrotheca closterium/ Nitzschia longissima</i>	2,000
	<b>Dinoflagellates:</b>	
	<i>Azadinium/heterocapsa</i> spp.	3,000
	<b>Others:</b>	
	Ciliates	4,000
	Microflagellate	2,000
	<i>Euglena/Eutreptiella</i> spp.	2,000
SW:	<b>Diatoms:</b>	
	<i>Skeletonema</i> spp.	13,000
	<b>Others:</b>	
	Microflagellate	43,000
	Prymnesiophytes	41,000
	Prasinophytes	16,000
south:	<b>Diatoms:</b>	
	<i>Paralia sulcata</i>	9,000
	<i>Navicula</i> spp. 20-50 µm	5,000
	<i>Meuniera membranacea</i>	2,000
	<i>Melosira</i> spp.	2,000
east:	<b>Diatoms:</b>	
	<i>Paralia</i> sp.	5,000
	Pennate diatom	1,000



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

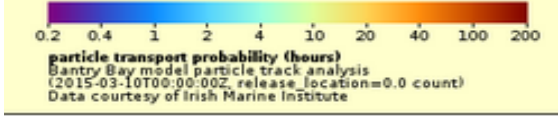
A *Karenia mikimotoi* bloom  
is NOT expected this week



## SOUTHWEST: Bantry Bay

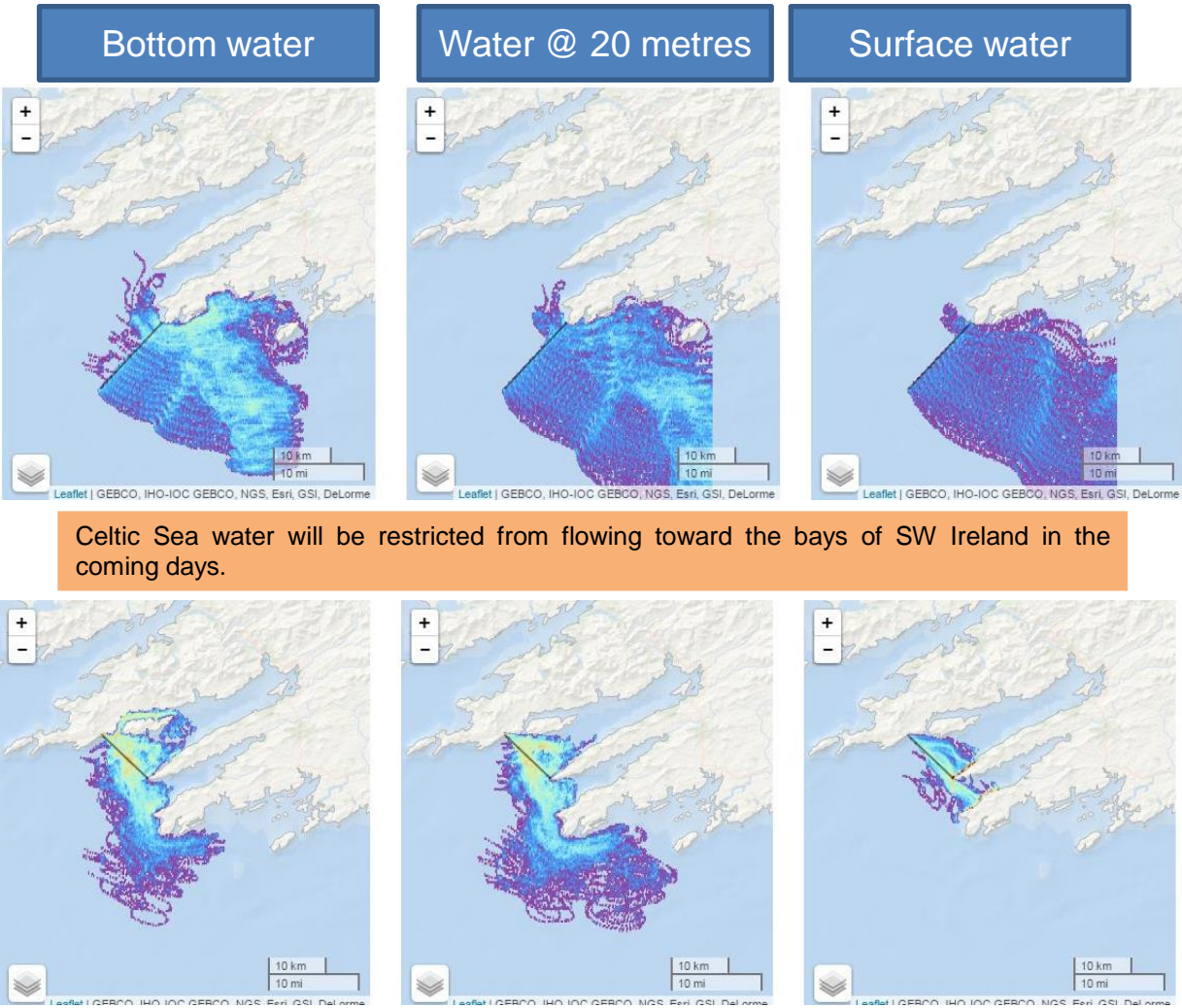
The maps show the **most likely transport pathways for the next 3 days of phytoplankton** found along the **presented transects** (black lines off Mizen Head and the Mouth of Bantry Bay) and **water depths** (bottom, 20 metres and surface)

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

### Forecast for the next 3 days



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

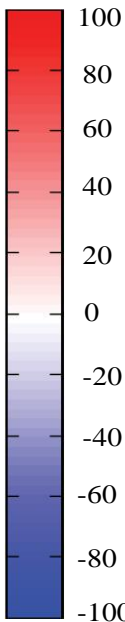
# Bantry Bay

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

Forecast for next 3 days



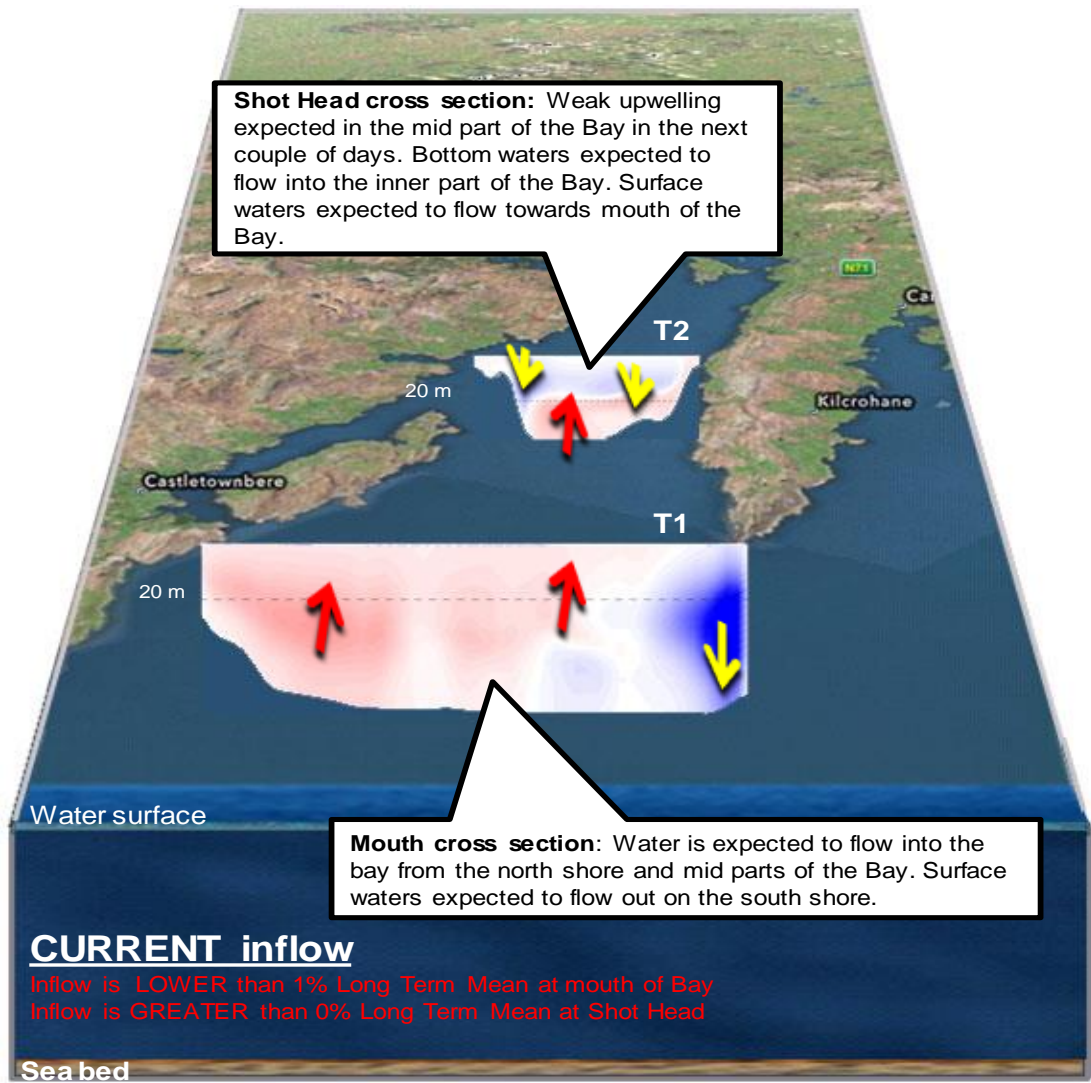
Flow ( $\text{m}^3 \text{s}^{-1}$ )



IN

OUT

Depth ↓






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



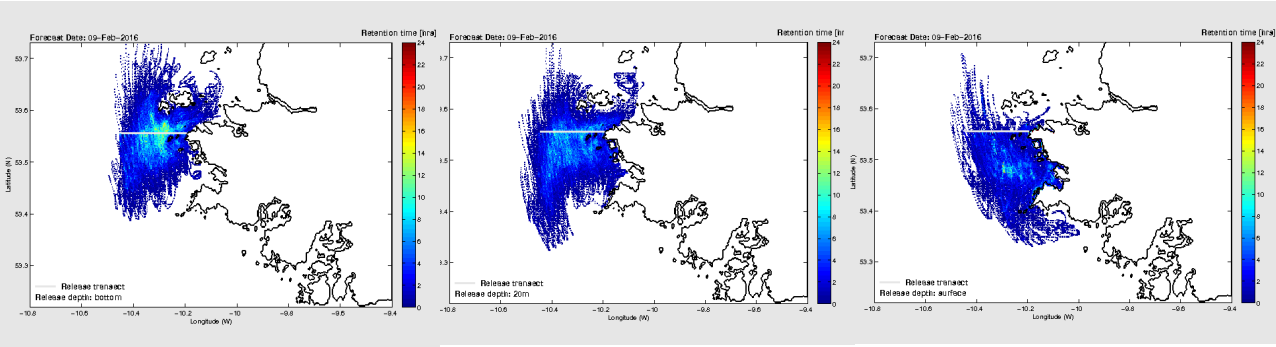
0.2 0.4 1 2 4 10 20 40 100 200

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

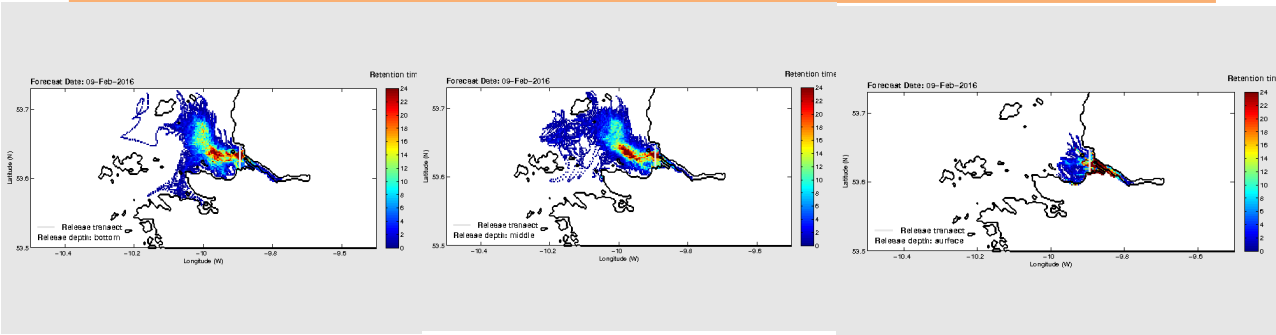
Bottom water

Water @ 20 metres

Surface water



The main trend in the days ahead show that offshore water masses at all depths are likely to flow southwards. Offshore waters are unlikely to reach the mouth of Killary Harbour in the next couple of days.



While large volumes of subsurface water are expected to exit Killary Harbour, model projections show that water at all depths have the potential to reach Killary Middle in the next couple of days.

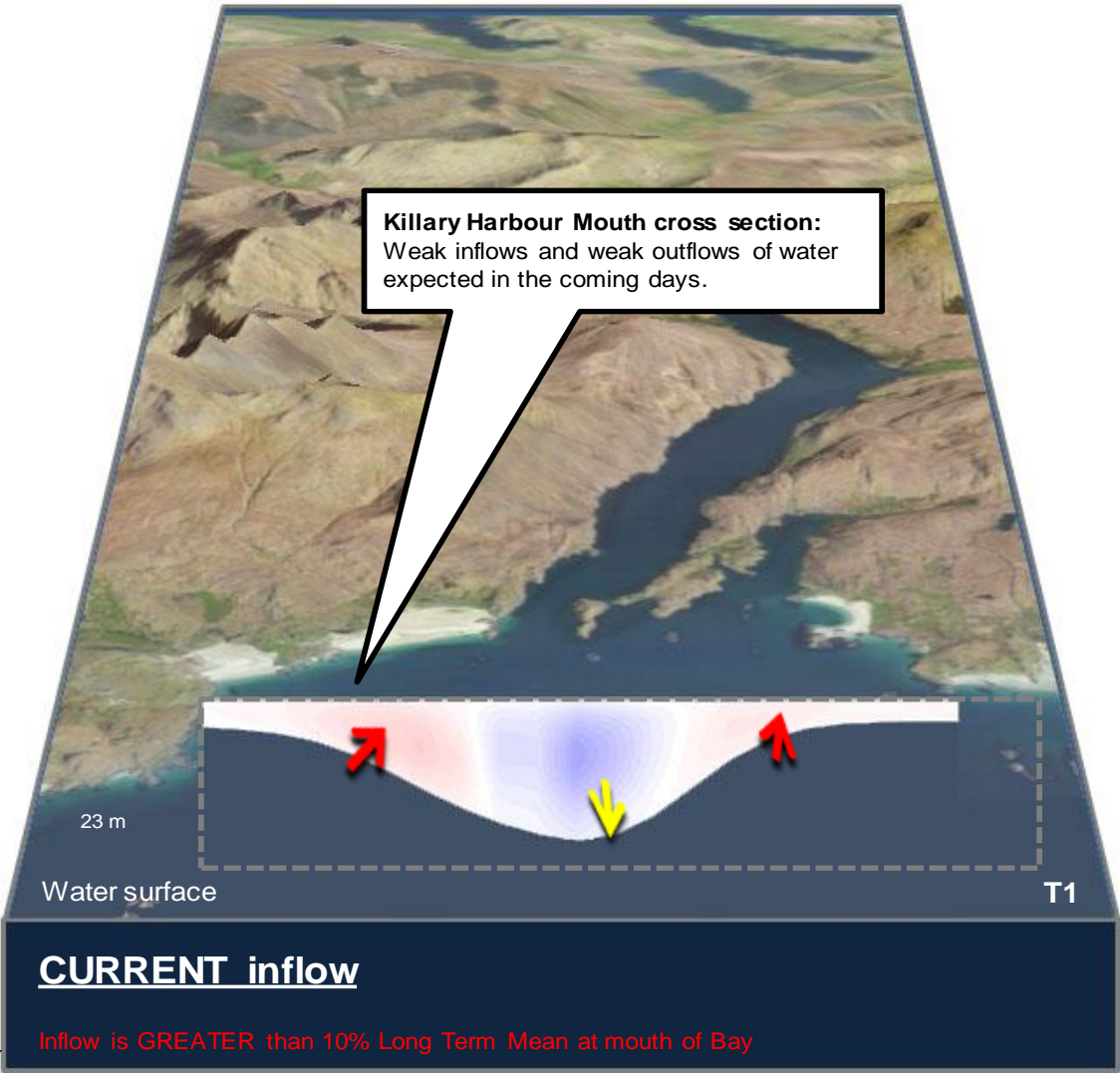
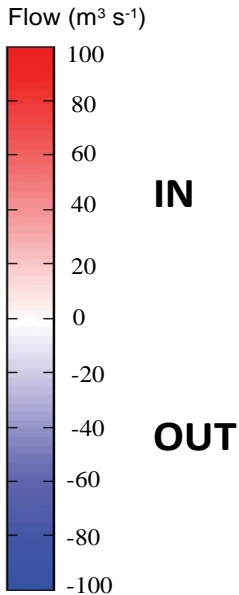
# Killary Harbour

3 day estimated water flows at the mouth of Killary Harbour



Forecast for next 3 days

**Killary Harbour Mouth cross section:**  
Weak inflows and weak outflows of water expected in the coming days.



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

Forecast for next 3 days

