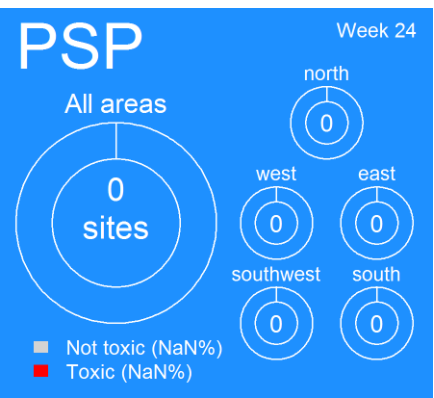
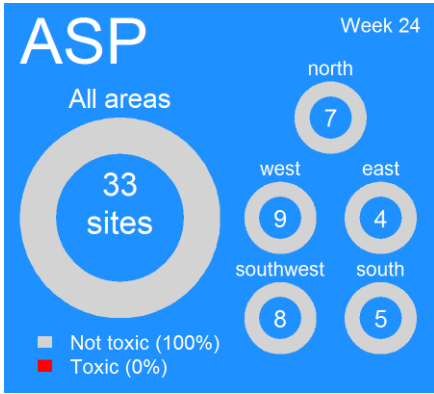
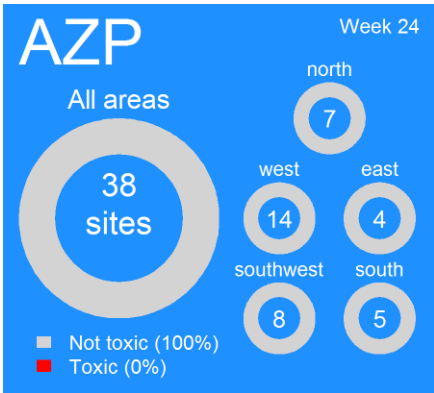
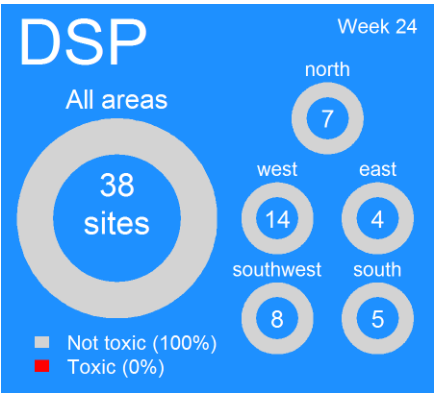


# Ireland: Current Conditions

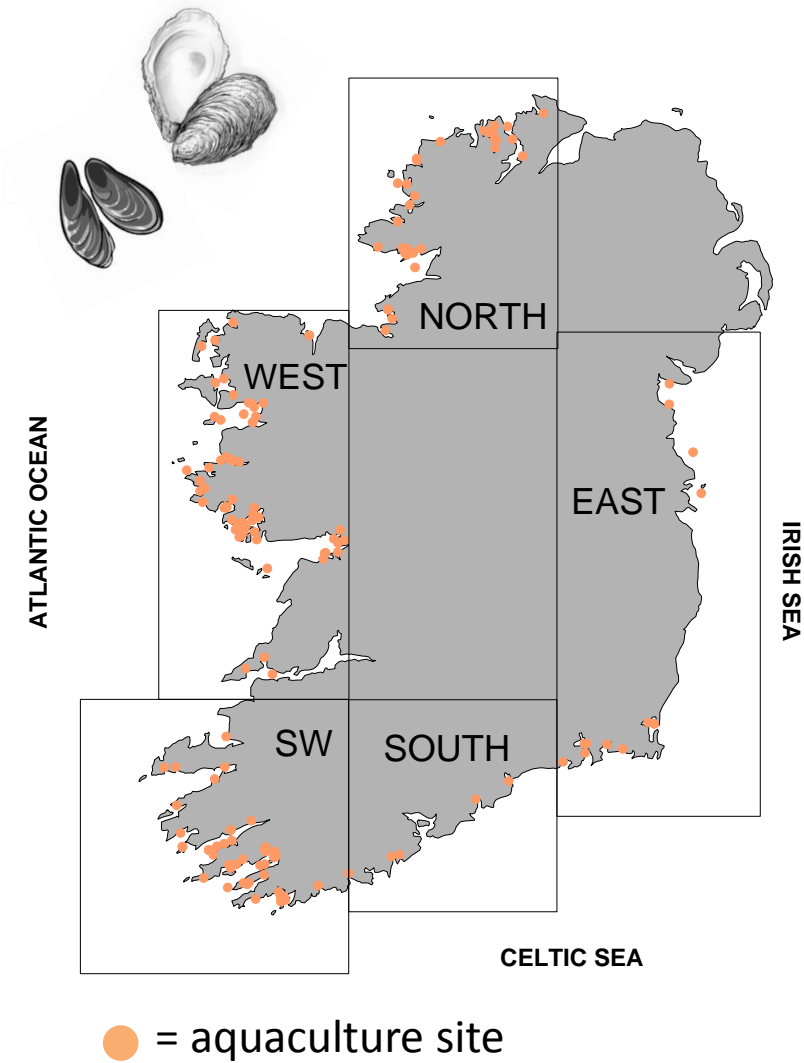
## Shellfish biotoxin report (last week)



**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: Low

DSP event: Low to medium (west to southwest)

PSP event: Low at all sites with exception of south coast, HIGH risk in Cork harbour.

## Why do we think this?

ASP: Currently the associated toxin and associated phytoplankton species appear to be decreasing in all related sites. This is historically near the end of the toxic event season. However, since potentially toxic species are still present CAUTION is advised.

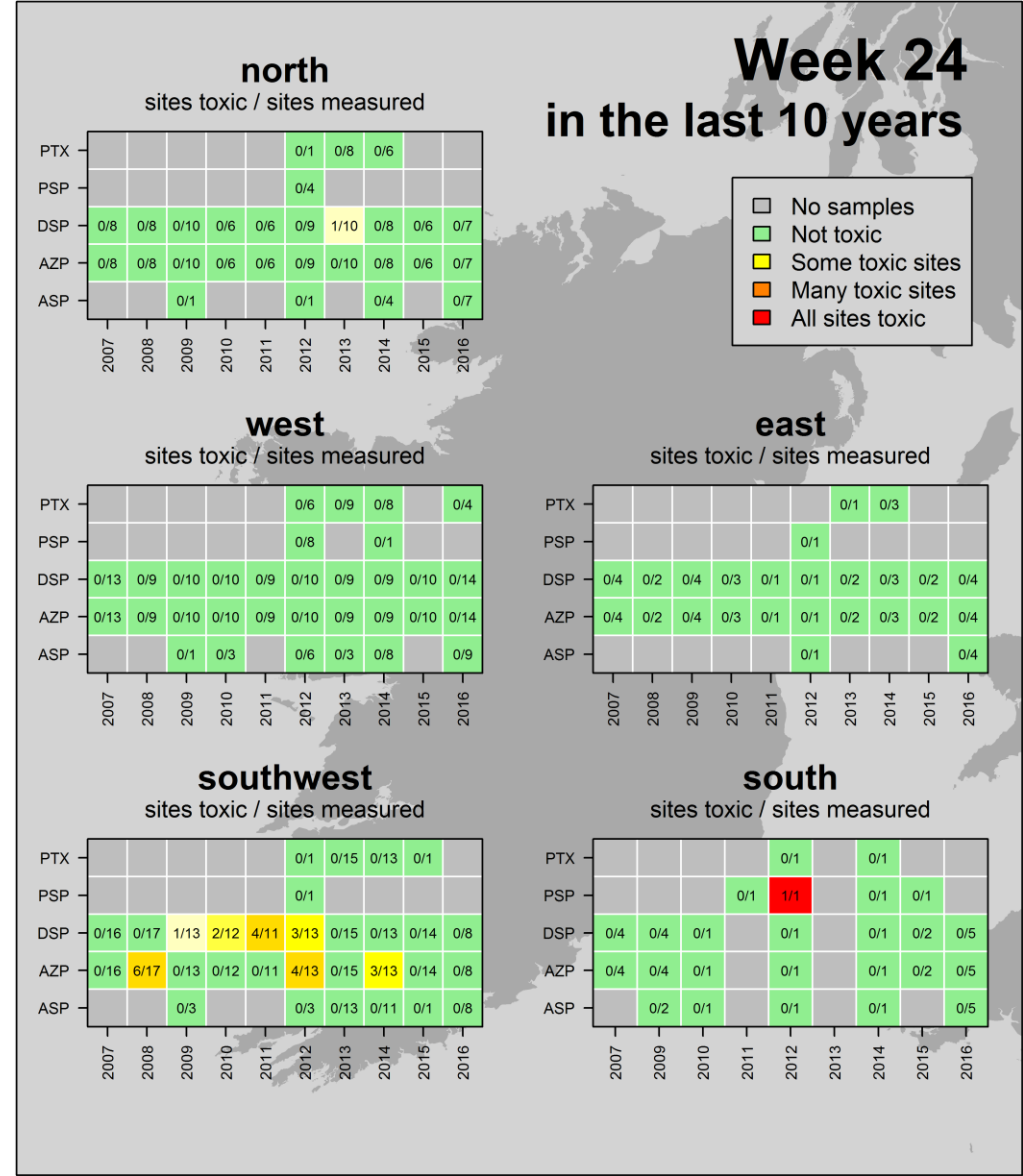
AZP: Historically low levels of caution should apply at this time of the year however due to the geographical spread and persistent presence of Azadinium like cells, combined with a potential trend of low increases in biotoxin levels (still below reg. limit) caution is currently advised.

DSP: The 'Toxic season' has begun with *Dinophysis* spp. appearing in low numbers in the SW last week and numbers are likely to remain the same in the next few days. Increases in toxins are usually associated with down welling events in the SW. It is strongly advised that you keep an eye on the daily model forecasts for such events.

PSP: Historical trends indicate that a toxic event may occur in Cork Harbour only.

# Ireland: Historic Conditions

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



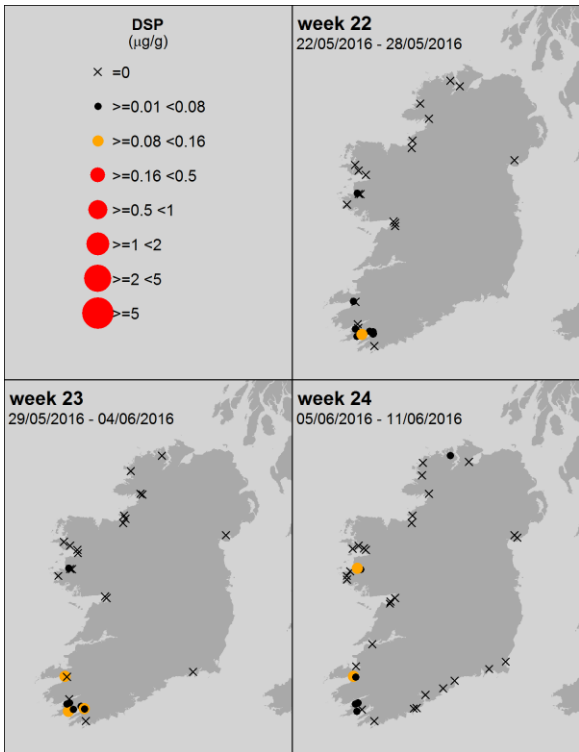
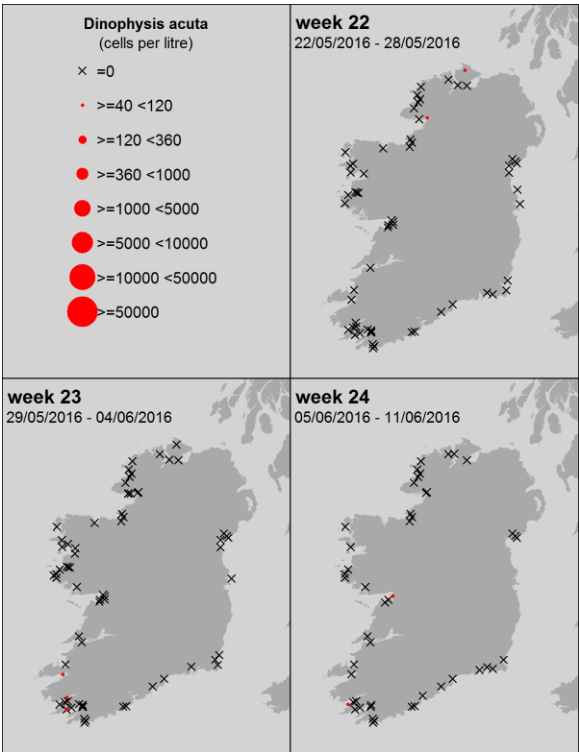
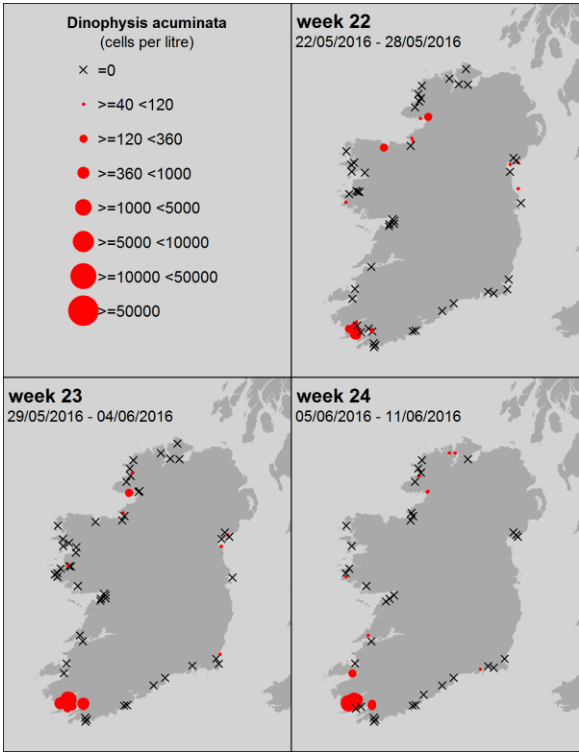
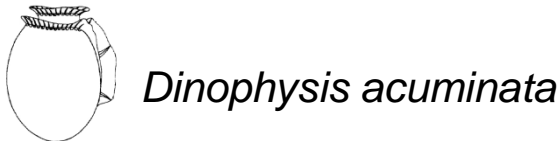
## Ireland HISTORIC TRENDS

**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



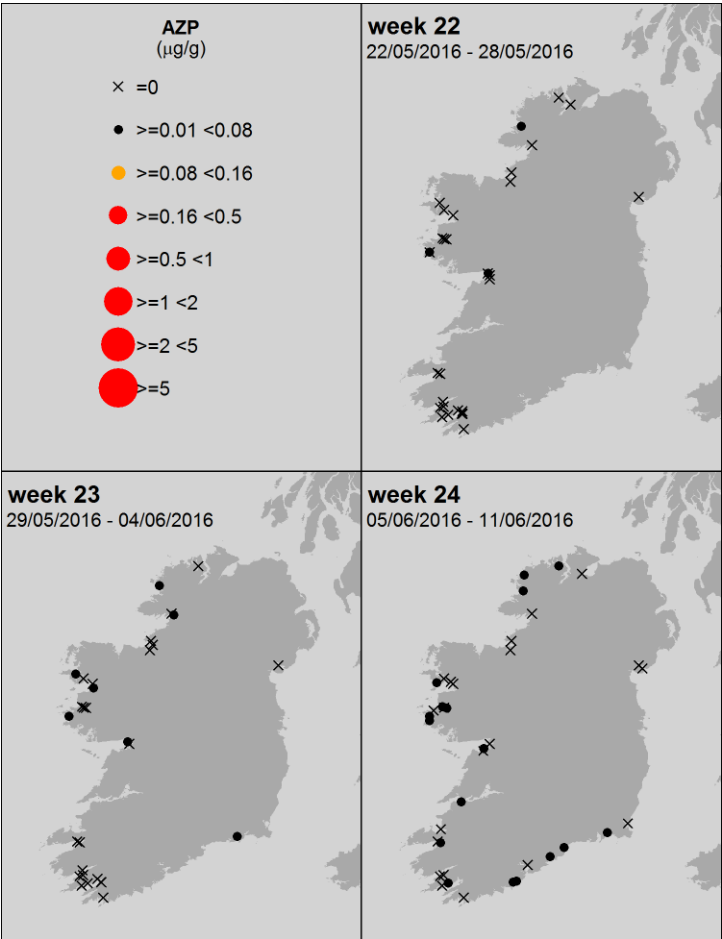
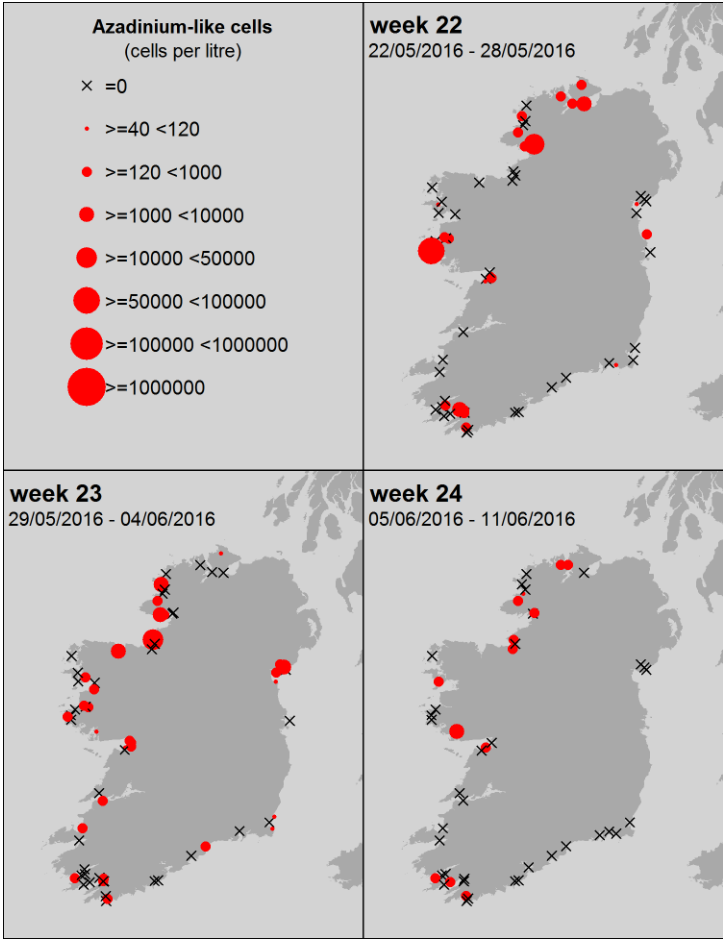
Ireland: Last 3 weeks of available National Monitoring Programme data



*Azadinium* – like spp.



AZP



Ireland: Last 3 weeks of available National Monitoring Programme data

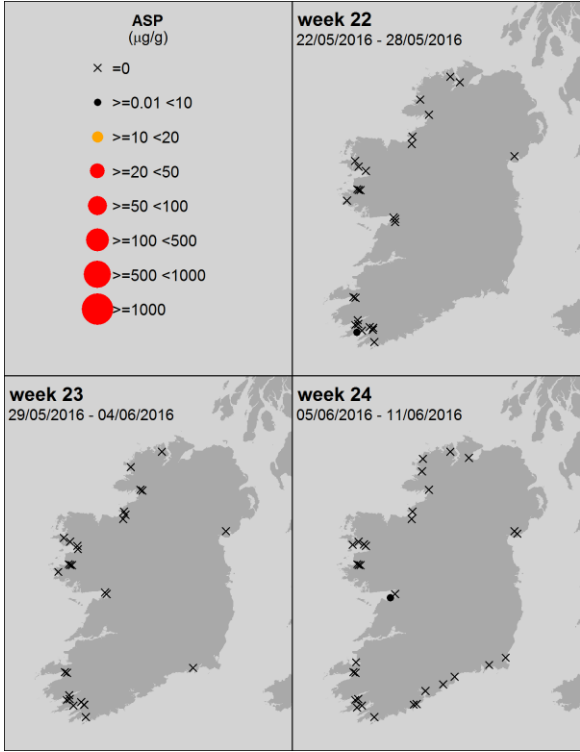
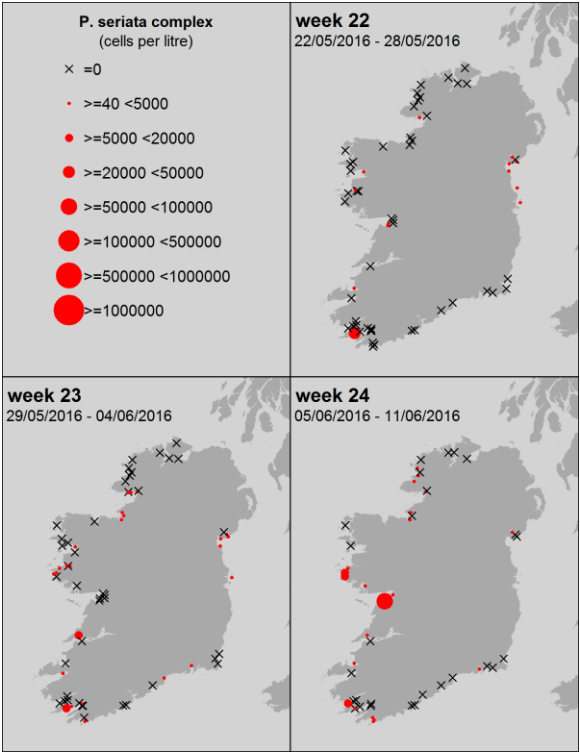
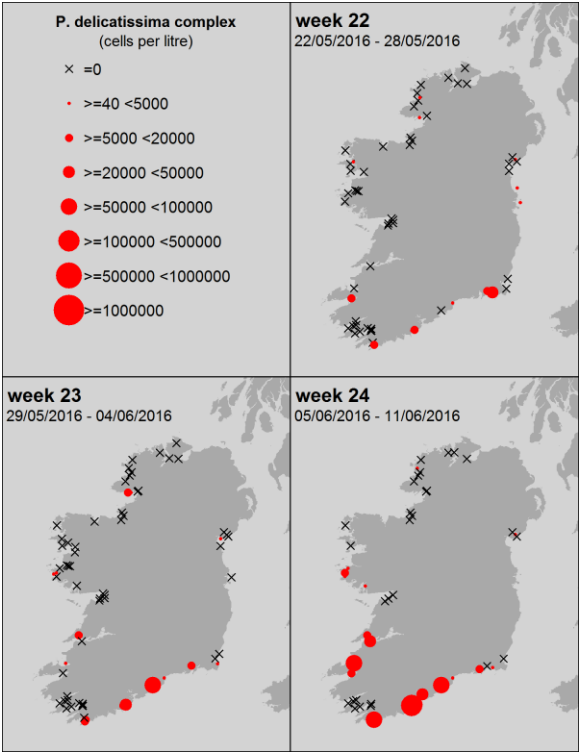
*Pseudo-nitzschia* spp.



ASP

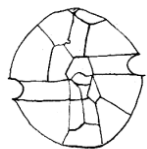
“*P. delicatissima*” complex = small cells  
Taken from the literature:  
3 species confirmed in Irish waters

“*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.

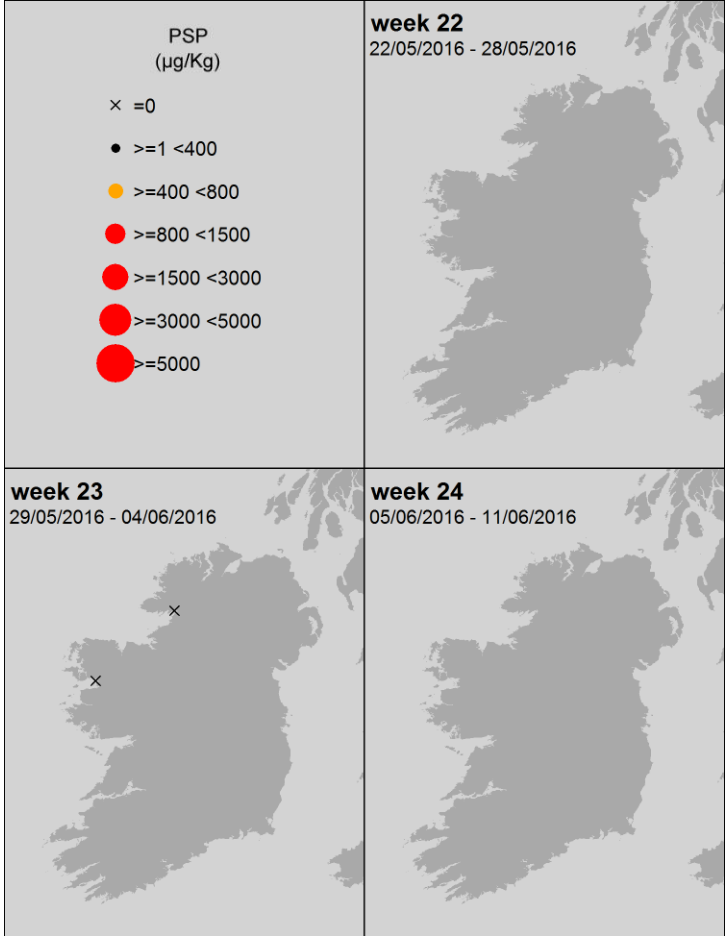
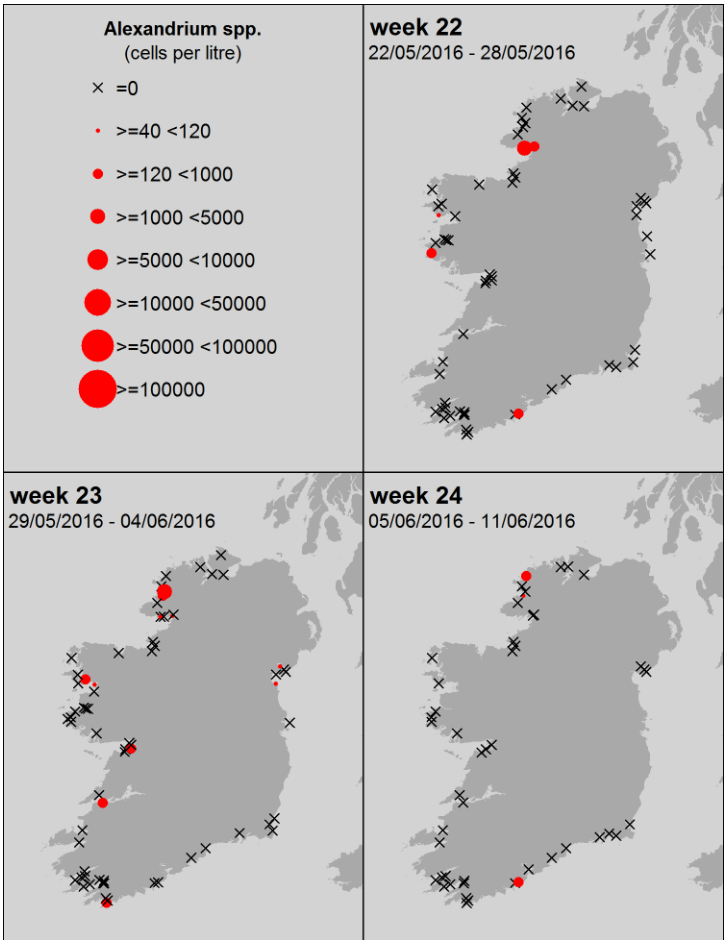
Ireland: Last 3 weeks of available National Monitoring Programme data



*Alexandrium* spp.



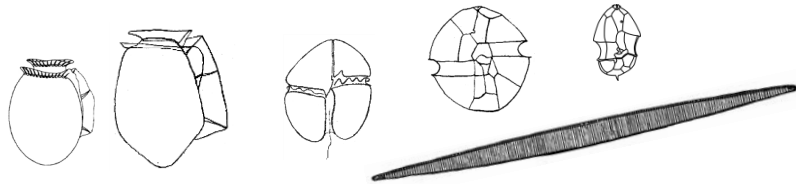
PSP



# Ireland HAB & Biotoxin temporal trends

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

## Ireland: Biotoxins



Toxin groups

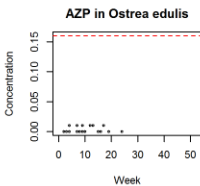
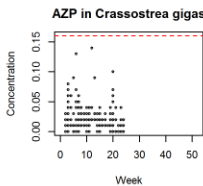
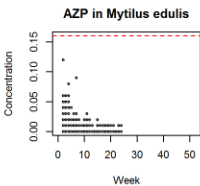
mussels

oysters

oysters

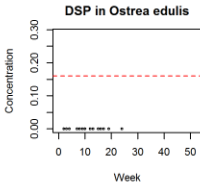
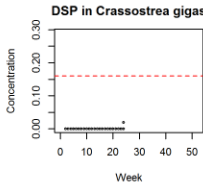
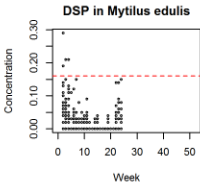
**AZP**

AZaspiracid  
Poisoning



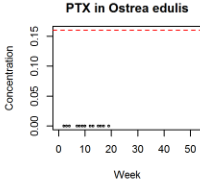
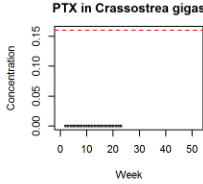
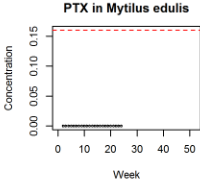
**DSP**

Diarrhetic  
Shellfish  
Poisoning



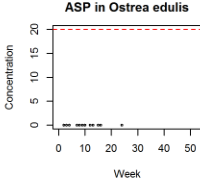
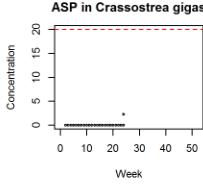
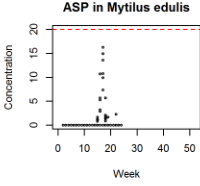
**PTX**

Pectenotoxin



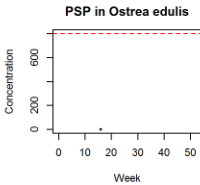
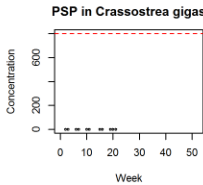
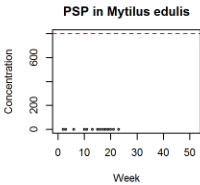
**ASP**

Amnesic  
Shellfish  
Poisoning



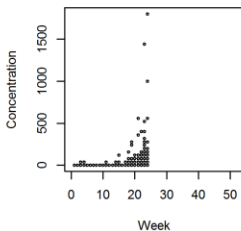
**PSP**

Paralytic  
Shellfish  
Poisoning

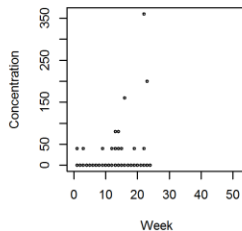


## Ireland: HABs

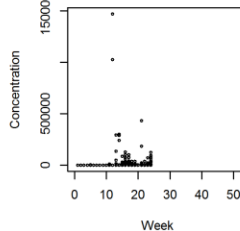
*Dinophysis acuminata*



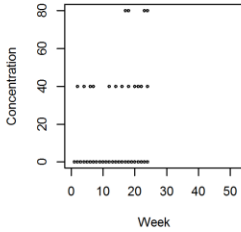
*Karenia mikimotoi*



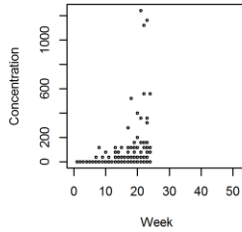
*P. delicatissima* complex



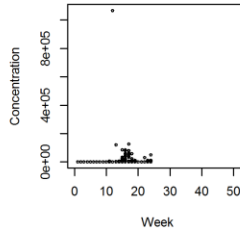
*Dinophysis acuta*



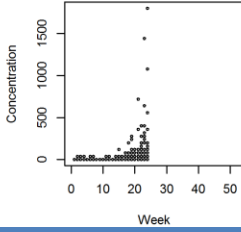
*Alexandrium* spp.



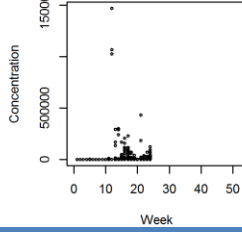
*P. seriata* complex



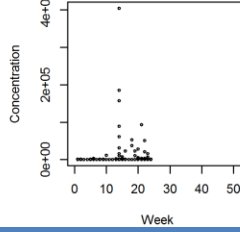
All *Dinophysis* spp.



All *Pseudo-nitzschia* spp.



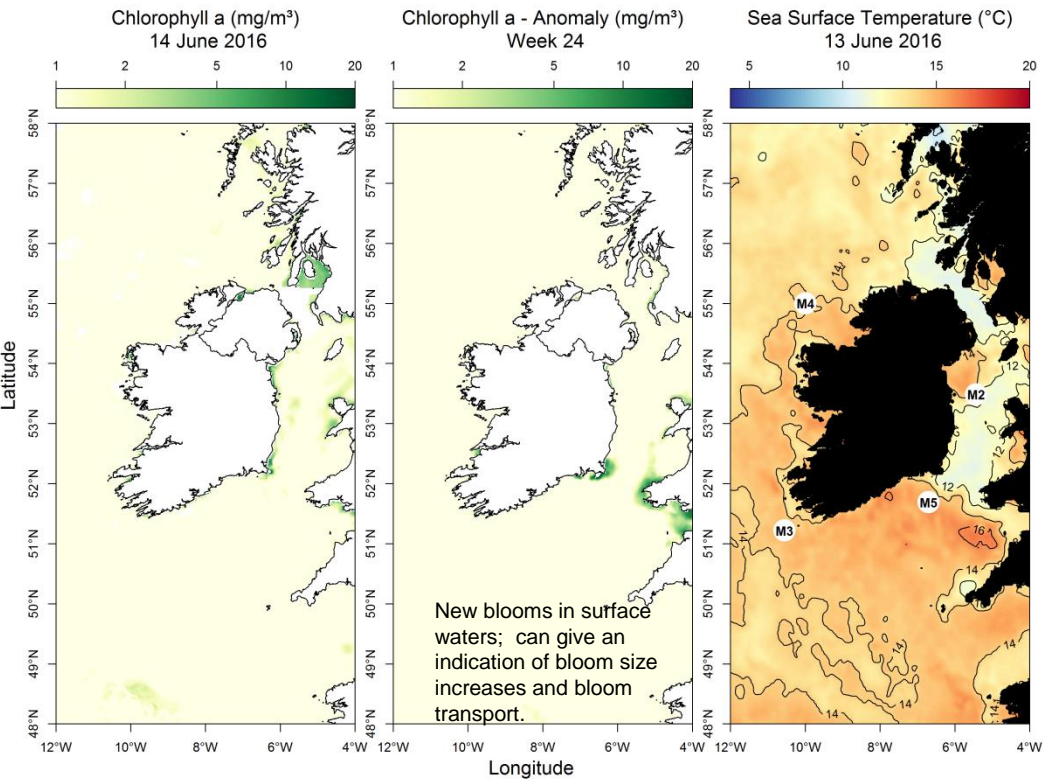
Azadinium-like cells



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

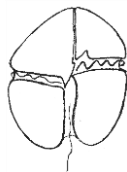


**SST (°C) anomaly for last week:**  
Data taken from the Irish data buoy network where the anomaly is the weekly difference in SST compared to the long term mean (~ 10 yrs)

- NW coast (M4) Offline
- SW coast (M3) Offline
- SE coast (M5) above average by 2.21. °C

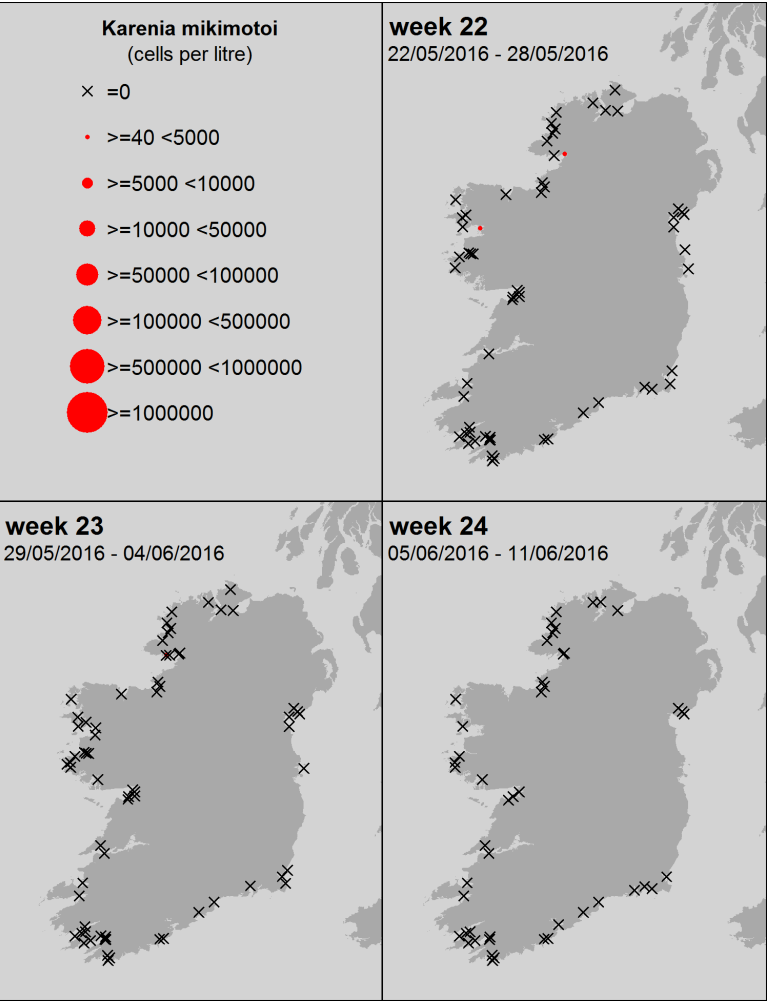
What phytoplankton were blooming at inshore coastal sites last week?

Region	Predominant Phytoplankton (most abundant taxa)	Cells/L (rounded)
north:	<b>Diatoms:</b> <i>Skeletonema</i> spp. <i>Cylindrotheca closterium</i> / <i>Nitzschia longissima</i> <i>Chaetoceros</i> ( <i>Hyalochaete</i> ) spp. <i>Thalassionema</i> spp. <b>Dinoflagellates:</b> <i>Scrippsiella</i> spp. <b>Others:</b> <i>Euglena/Eutreptiella</i> spp.	1,004,000 157,000 155,000 5,000 4,000 7,000
west:	<b>Diatoms:</b> <i>Pseudo-nitzschia seriata</i> complex <i>Chaetoceros</i> ( <i>Hyalochaete</i> ) spp. <i>Pseudo-nitzschia delicatissima</i> complex <i>Leptocylindrus danicus</i> <b>Others:</b> Microflagellate sp.	51,000 36,000 34,000 30,000 133,000
SW:	<b>Diatoms:</b> <i>Pseudo-nitzschia delicatissima</i> complex <i>Asterionellopsis glacialis</i> <i>Leptocylindrus minimus</i> <i>Lauderia / Detonula</i> sp <b>Others:</b> <i>Prymnesiophytes</i>	77,000 35,000 9,000 8,000 82,000
south:	<b>Diatoms:</b> <i>Pseudo-nitzschia delicatissima</i> complex <i>Lauderia / Detonula</i> sp <i>Asterionellopsis glacialis</i> <b>Others:</b> <i>Prasinophytes</i>	96,000 87,000 45,000 3,354,000
east:	<b>Diatoms:</b> <i>Asterionellopsis glacialis</i> <i>Cylindrotheca closterium</i> / <i>Nitzschia longissima</i> Pennate diatom <i>Odontella</i> spp. <i>Chaetoceros</i> ( <i>Hyalochaete</i> ) spp. <i>Pseudo-nitzschia delicatissima</i> complex	193,000 40,000 22,000 16,000 11,000 9,000



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

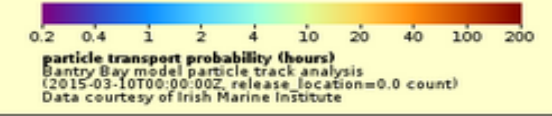
A *Karenia mikimotoi* bloom  
is NOT expected this week



## SOUTHWEST: Bantry Bay

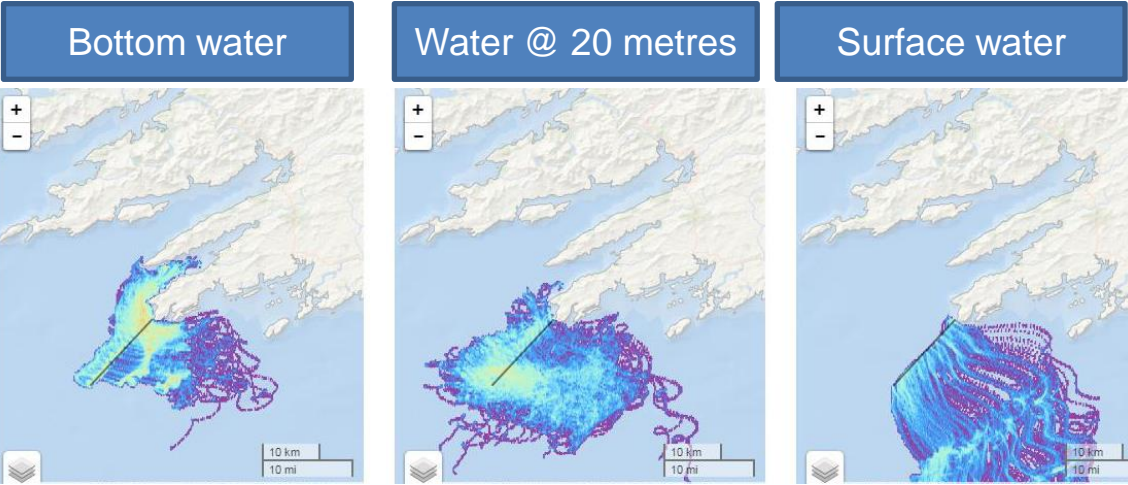
The maps show the **most likely transport pathways for the next 3 days of phytoplankton** found along the **presented transects** (black lines off Mizen Head and the Mouth of Bantry Bay) and **water depths** (bottom, 20 metres and surface)

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

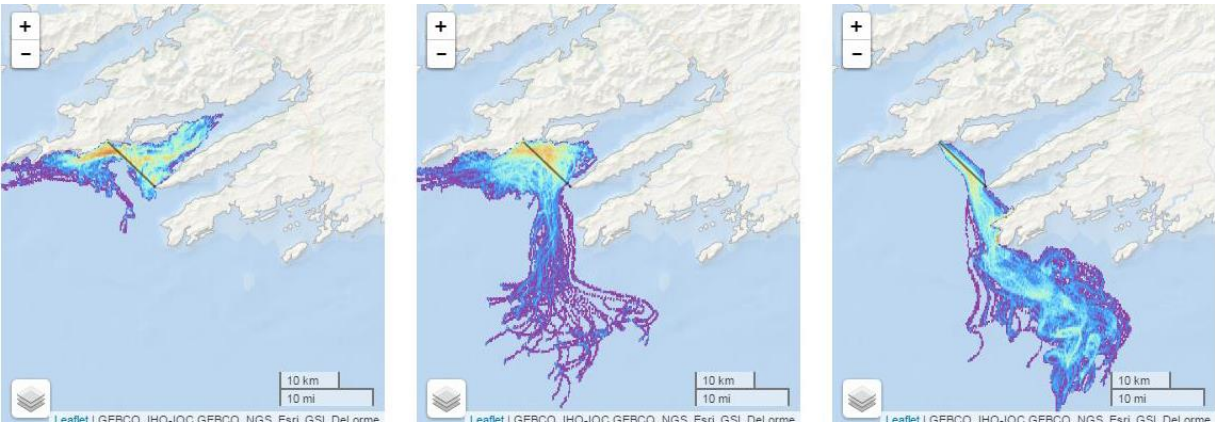


particle transport probability (hours)  
Bantry Bay model particle track analysis  
(2015-03-10T00:00:00Z, release\_location=0.0 count)  
Data courtesy of Irish Marine Institute

### Forecast for the next 3 days



Estimated water circulation patterns at Mizen Head will be mixed water will generally flow south with bottom waters expected to enter Dunmanus Bay.

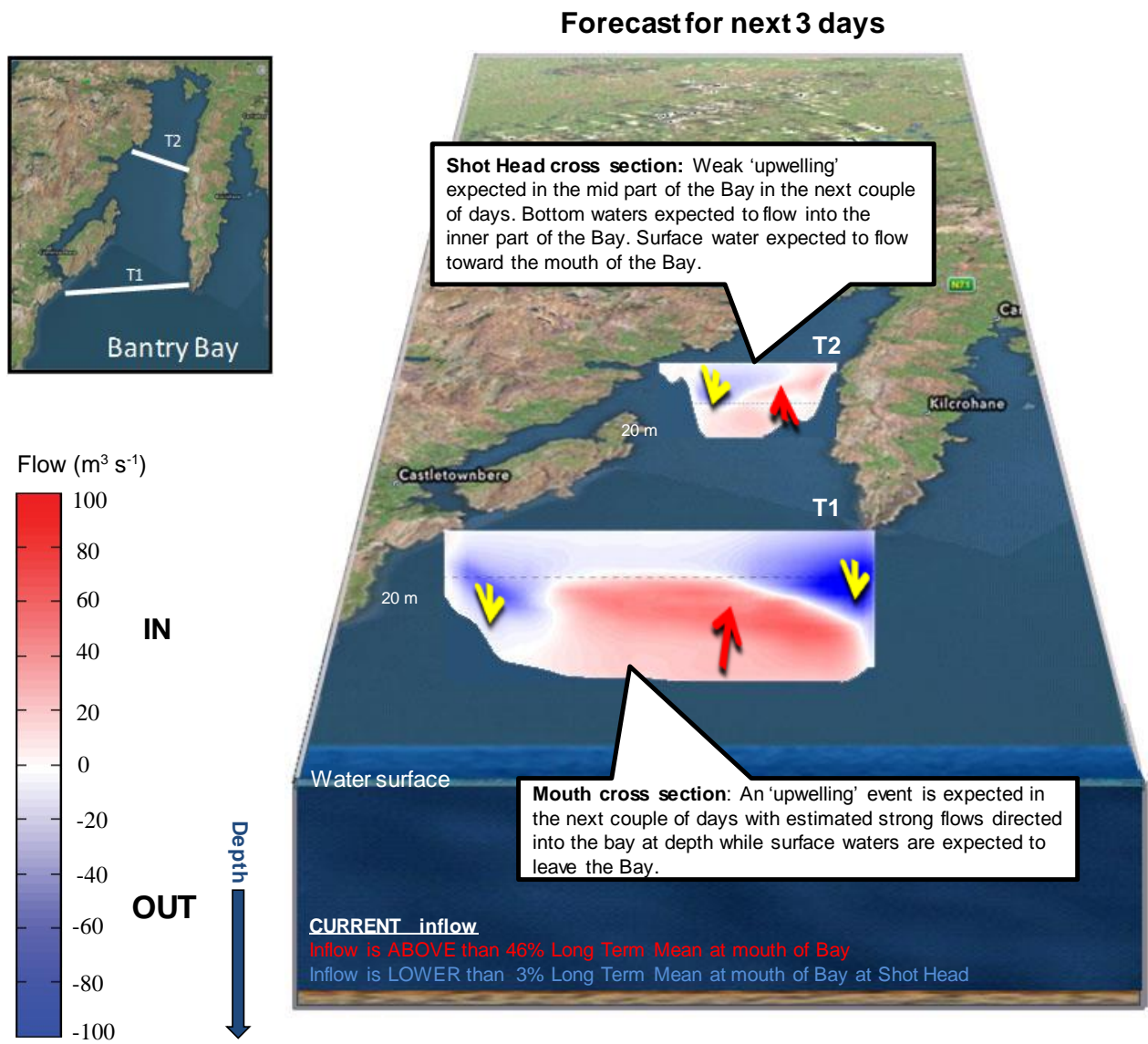


Bottom waters are expected to enter Bantry Bay, with water at depth and surface water expected to flow south west.

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

# Bantry Bay

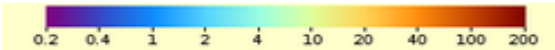
3 day estimated water flows at the mouth and mid-bay sections of Bantry Bay



WEST: Killary Harbour

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)

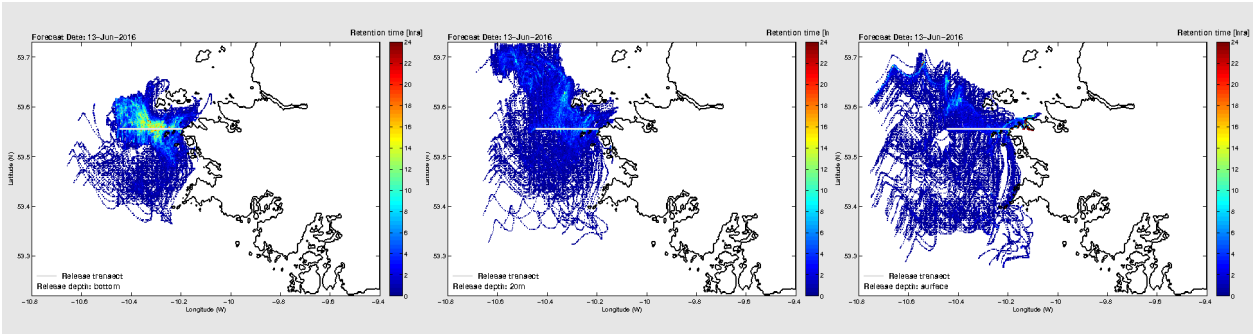
Reddish colours represent areas where phytoplankton remain longest  
Cooler colours represent areas where phytoplankton remain for shorter periods



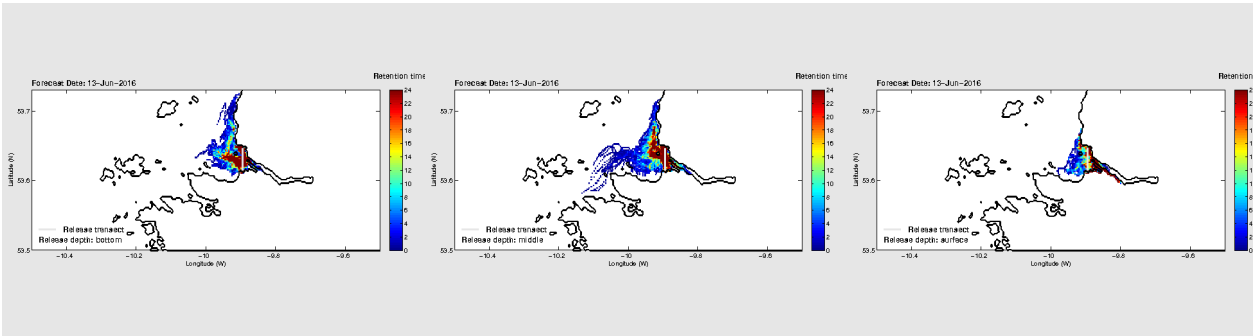
0.2 0.4 1 2 4 10 20 40 100 200  
particle transport probability (hours)  
Bantry Bay model particle track analysis  
(2015-03-10T00:00:00Z, release\_location=0.0 count)  
Data courtesy of Irish Marine Institute

Forecast for the next 3 days

- Bottom water
- Water @ 20 metres
- Surface water



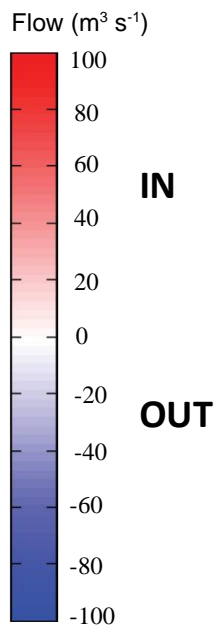
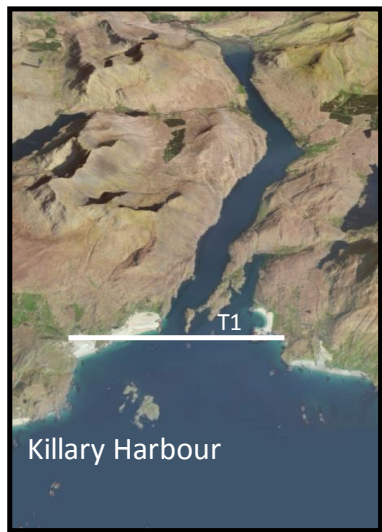
Water flows off the west coast will be variable with prevalent southwest directed flows. Offshore water masses are unlikely to reach the mouth of Killary Harbour in the next couple of days.



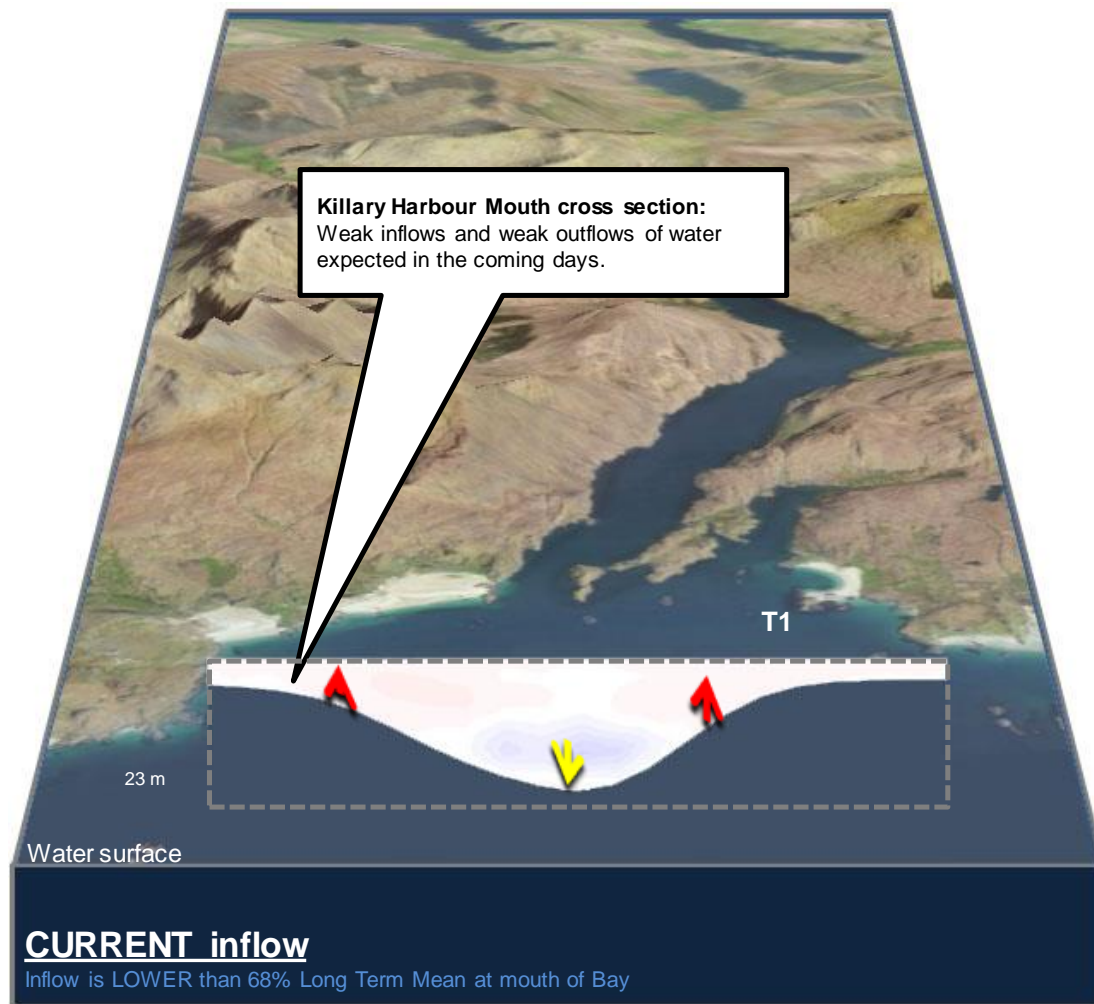
Estimated water circulation at the mouth of Killary Harbour shows that in general, waters will be retained at the mouth with bottom water flowing north and water at depth flowing north and south.

# Killary Harbour

3 day estimated water flows at the mouth of Killary Harbour

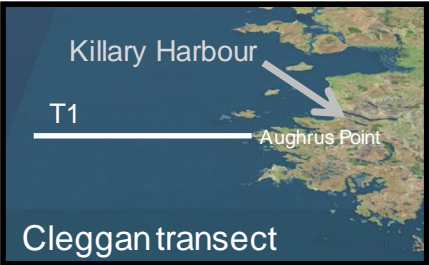


Forecast for next 3 days

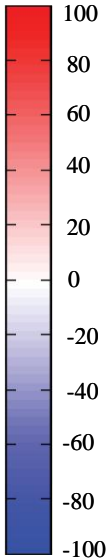


# West Coast - 3 day estimated water flows along a transect off Aughrus Point

Forecast for next 3 days



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



northward  
flow

southward  
flow

Depth

