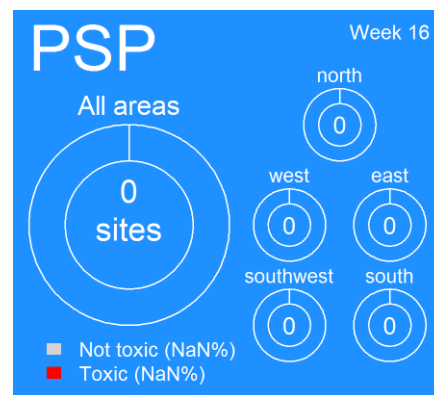
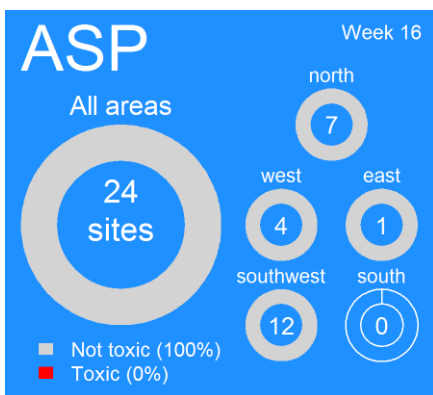
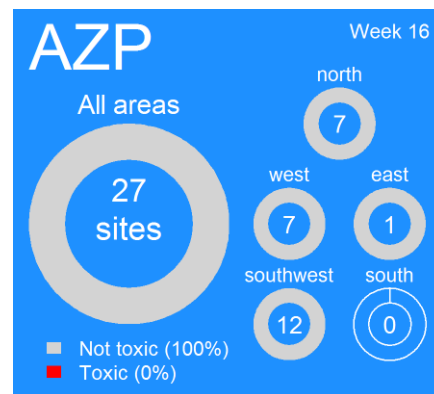
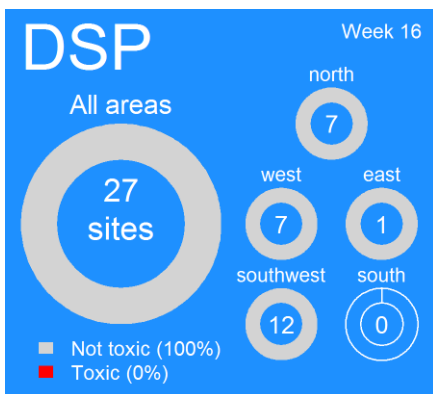


# Ireland: Current Conditions

## Shellfish biotoxin report (last week)



### EU Regulatory Limit:

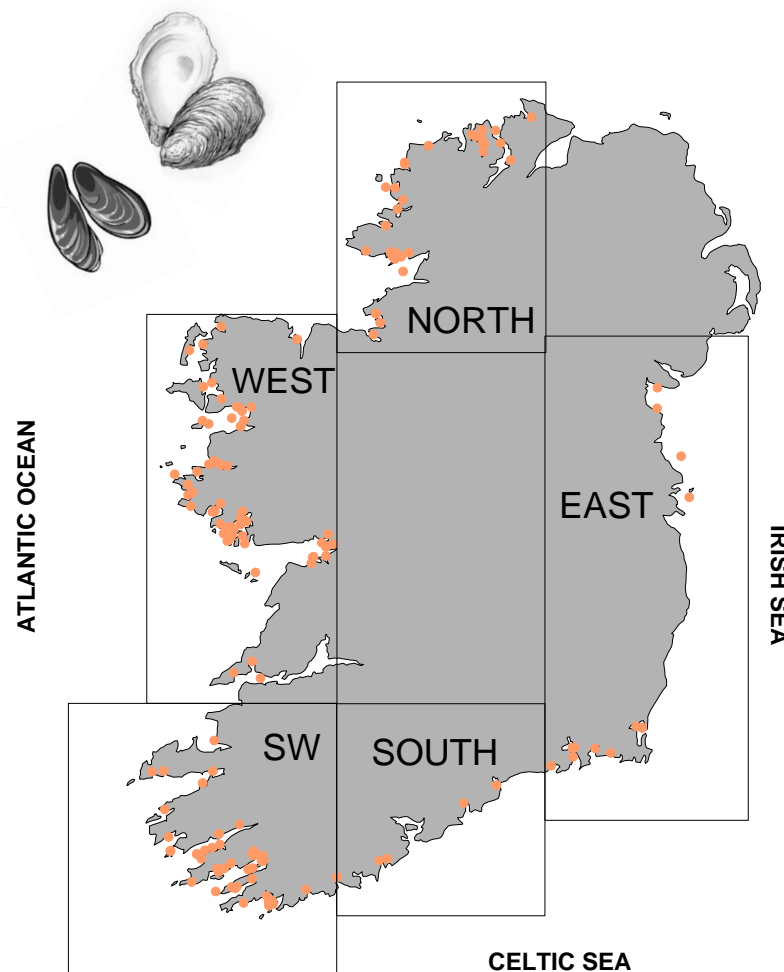
ASP 20 µg/g; AZP 0.16 µg/g; DSP 0.16 µg/g; PSP 800 µg/kg

### 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: High

AZP event: Low to medium

DSP event: low to medium

PSP event: Low

## Why do we think this?

ASP: Sites where Pseudo-nitzschia species are present are showing cell levels are continuing to establish and increase, while background non toxic species cell levels are diminishing. It is strongly advised to watch each sites unique conditions closely as toxic species may jump in levels. Additional molecular analysis of waters samples for last week revealed low levels of the toxic species *P.australis* present in SW bays.

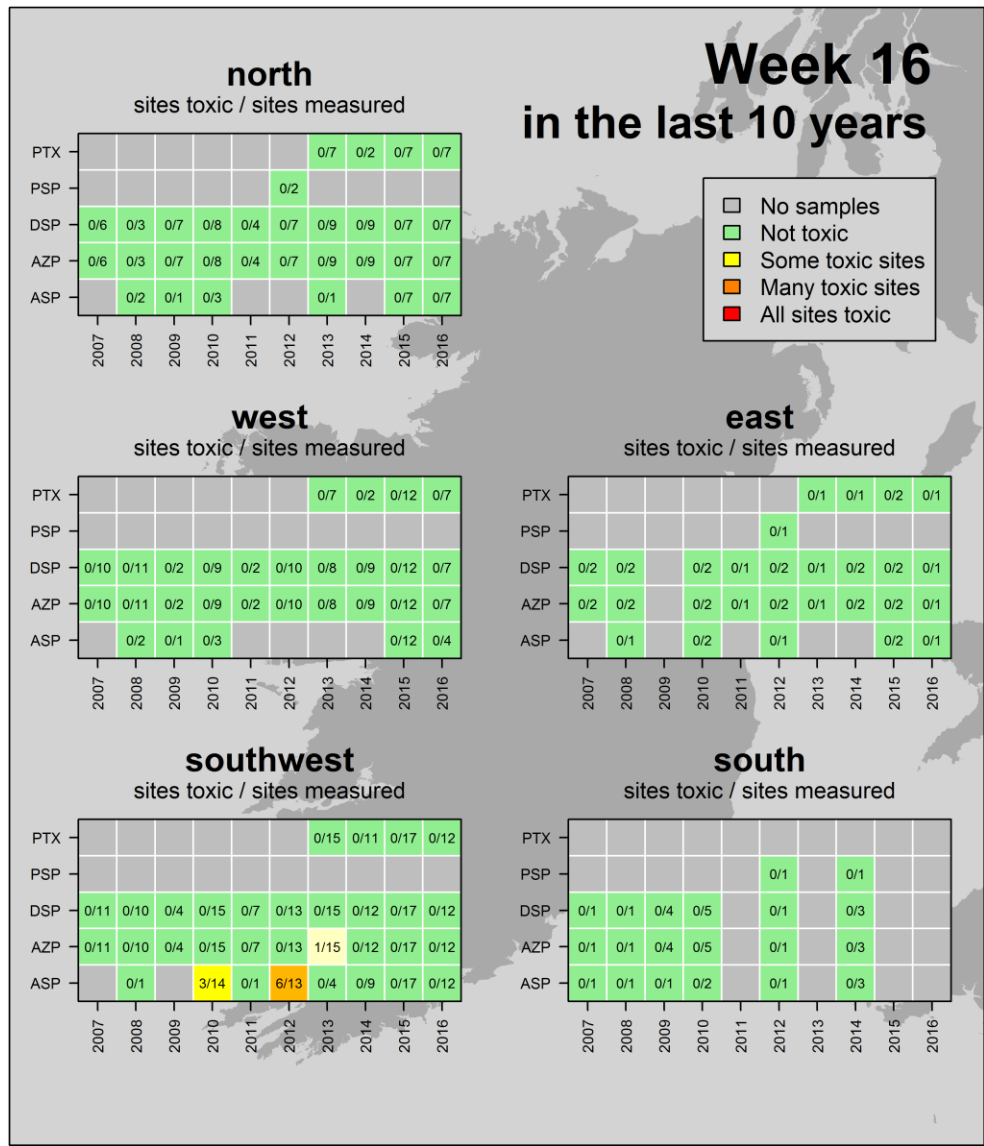
AZP: Historically low levels of caution should apply at this time of the year however due to the geographical spread and persistent presence of Azadinium like cells, combined with a potential trend of low increases in biotoxin levels (still below reg. limit) additional caution is currently advised.

DSP: This is still early in the historical trend period and cell levels and biotoxins are very low to negligible. However current potential water movement patterns may increase the opportunity for this species to be transported to coastal sites.

PSP: Historical trends and current conditions indicate and event is unlikely to occur.

# 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

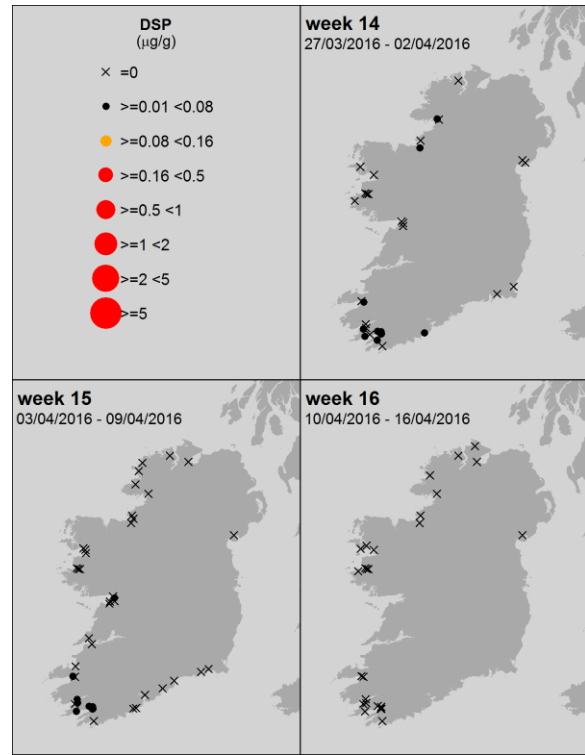
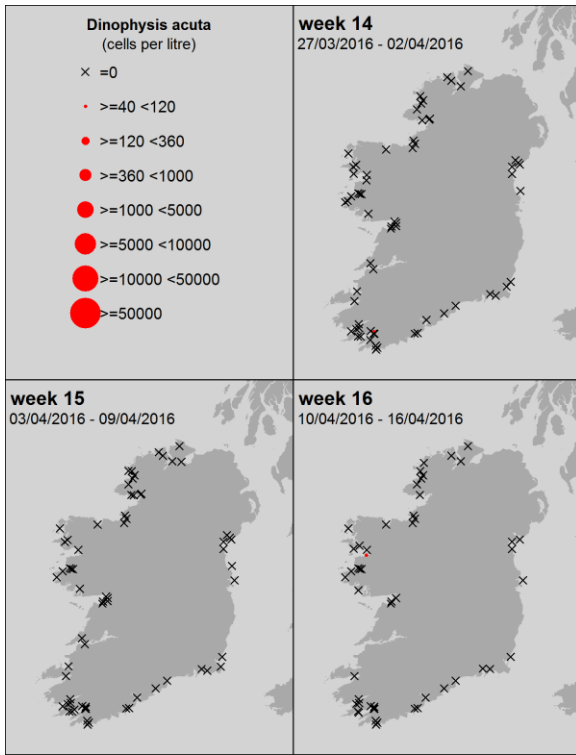
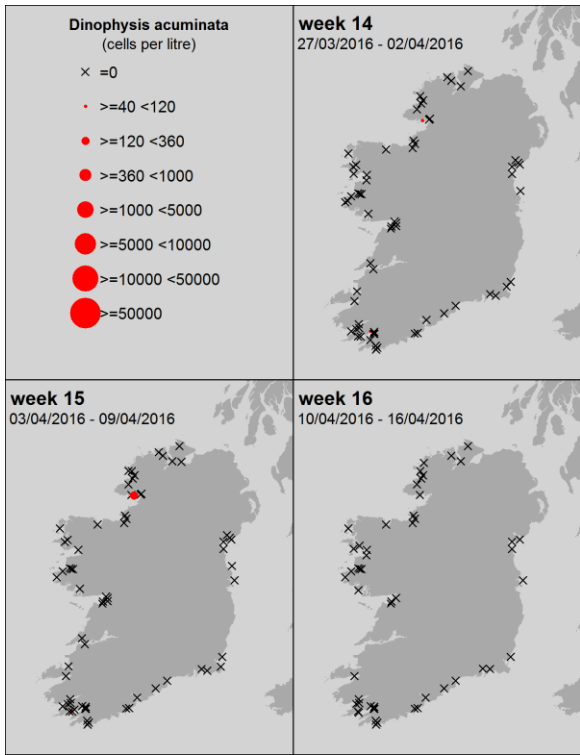
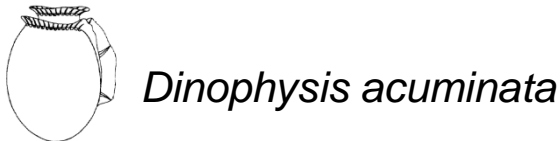
- ASP events: mid-March to early May
- AZP events: April to December
- DSP events: May to December
- PSP events: June to mid-July and end September; only in Cork Harbour



# Ireland HAB & Biotoxin Distribution maps

[current status of harmful and toxic algae]

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



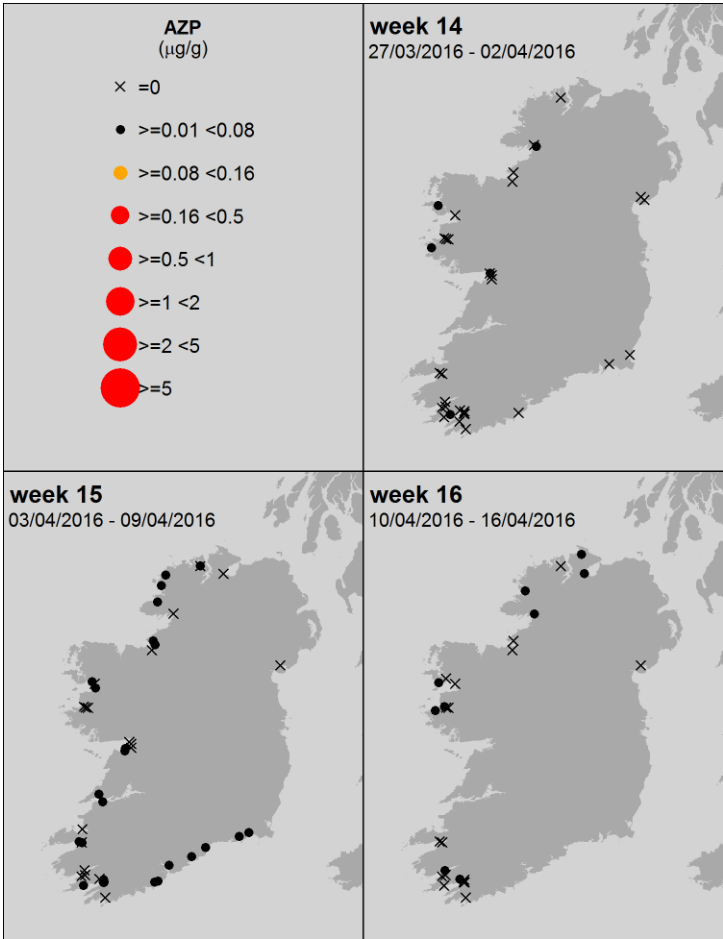
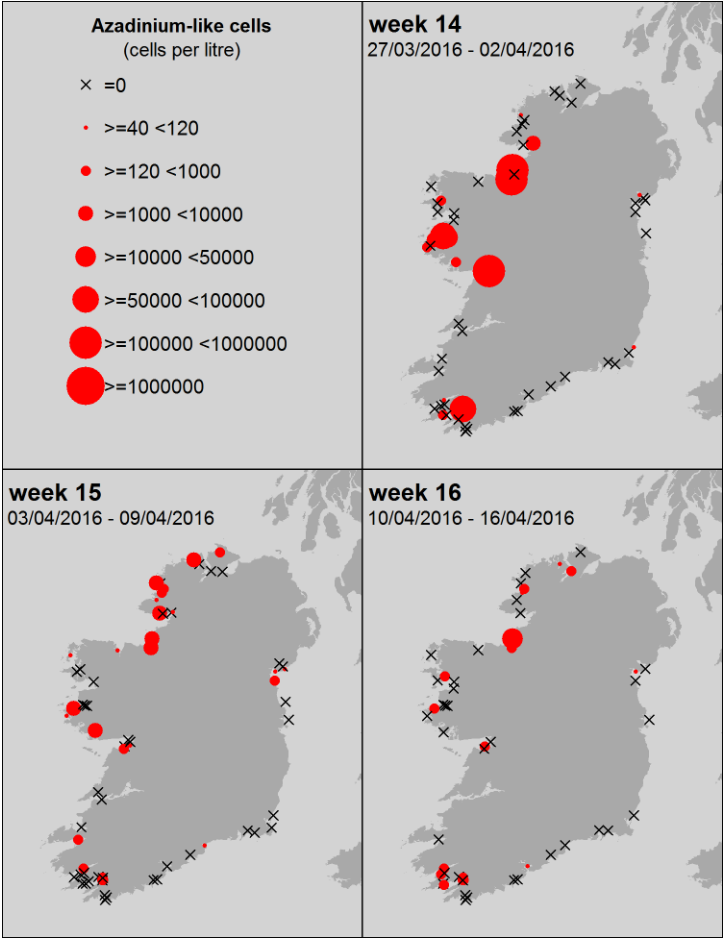
Ireland: Last 3 weeks of available National Monitoring Programme data



*Azadinium* – like spp.



AZP



Ireland: Last 3 weeks of available National Monitoring Programme data

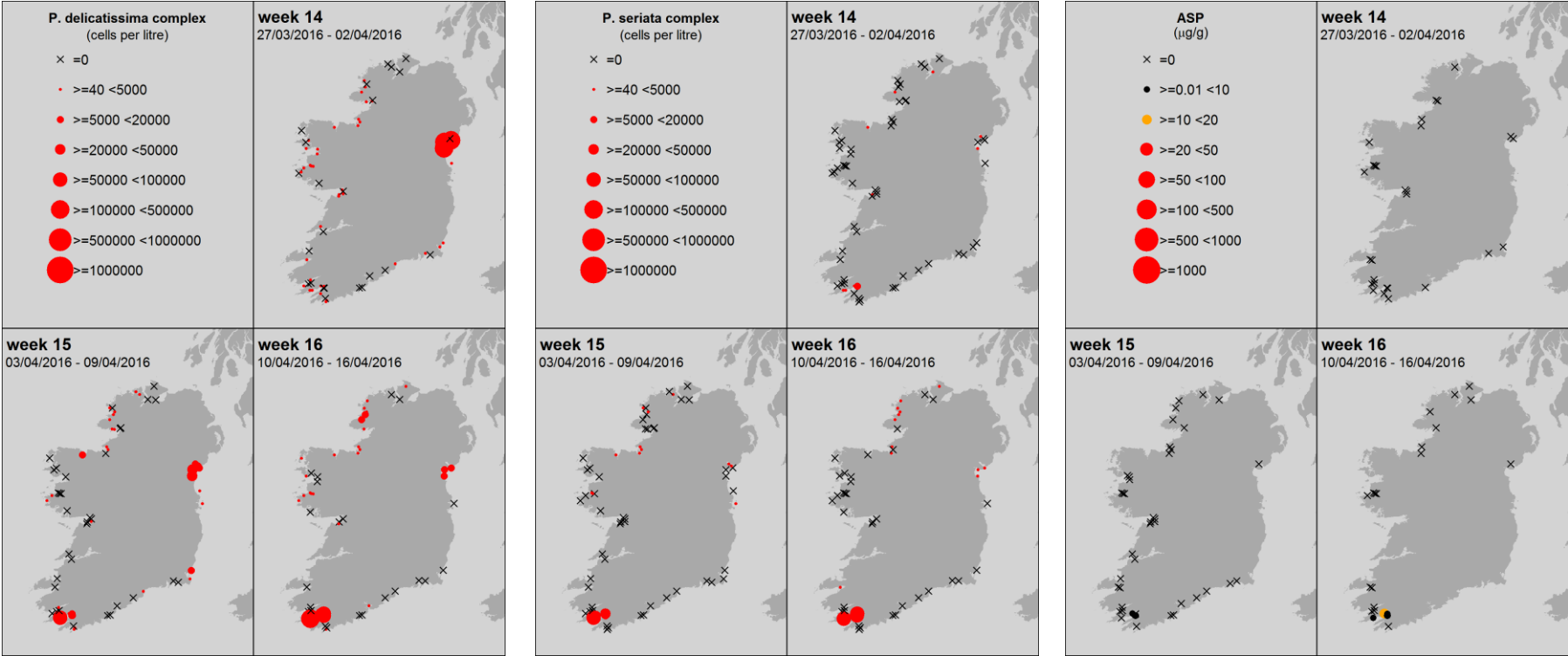
*Pseudo-nitzschia* spp.



ASP

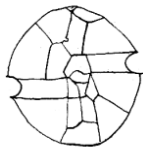
“*P. delicatissima*” complex = small cells  
Taken from the literature:  
3 species confirmed in Irish waters

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

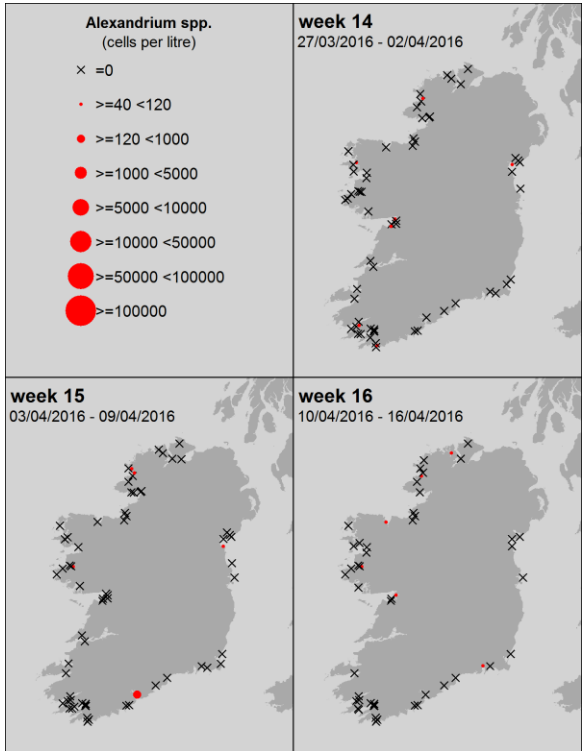


**Taken from the literature:** Of the 4 species (*P. fraudulenta*, *P. australis*, *P. pungens* and *P. delicatissima*) from Irish waters, tested for ASP toxins in culture work, only one, *P. australis* (from the “*P. seriata*” group) was toxic.

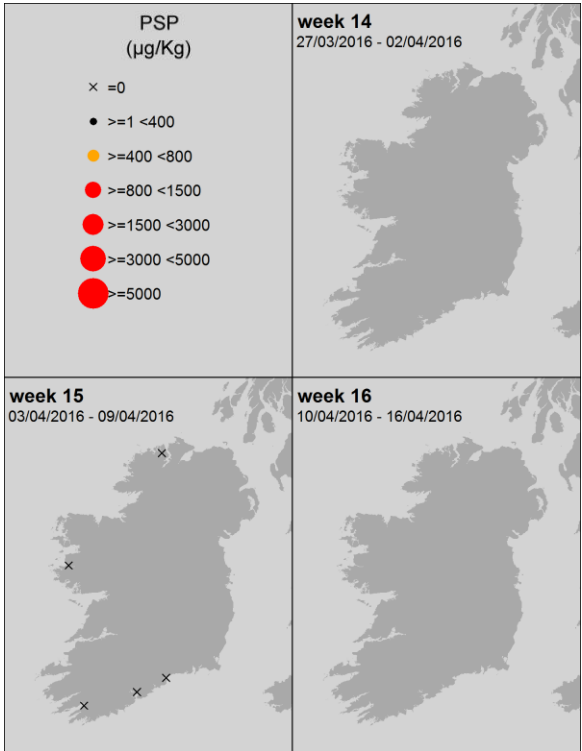
Ireland: Last 3 weeks of available National Monitoring Programme data



*Alexandrium* spp.



PSP



# Ireland HAB & Biotoxin temporal trends

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

## Ireland: Biotoxins



Toxin groups

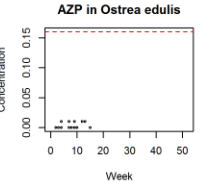
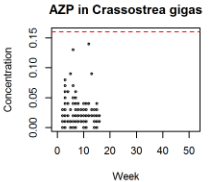
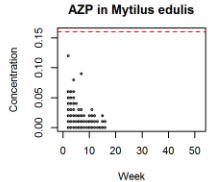
mussels

oysters

oysters

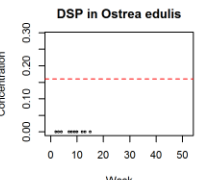
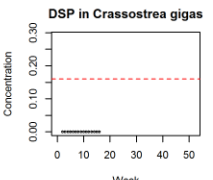
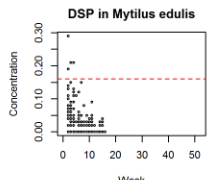
**AZP**

AZaspiracid  
Poisoning



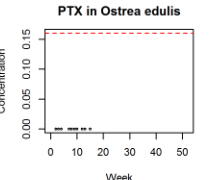
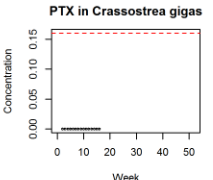
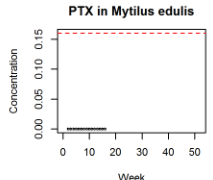
**DSP**

Diarrhetic  
Shellfish  
Poisoning



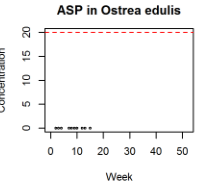
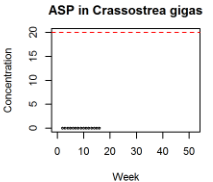
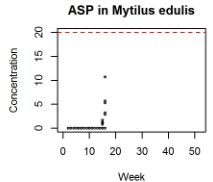
**PTX**

Pectenotoxin



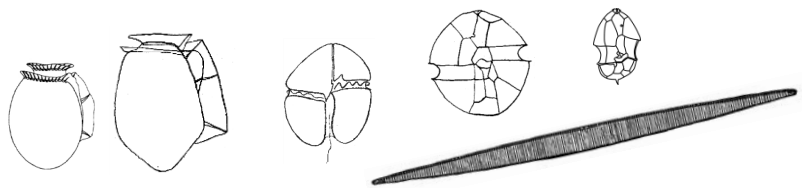
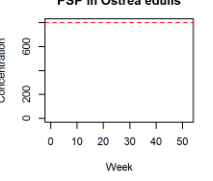
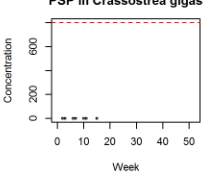
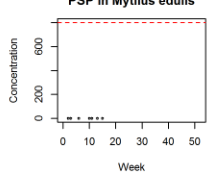
**ASP**

Amnesic  
Shellfish  
Poisoning

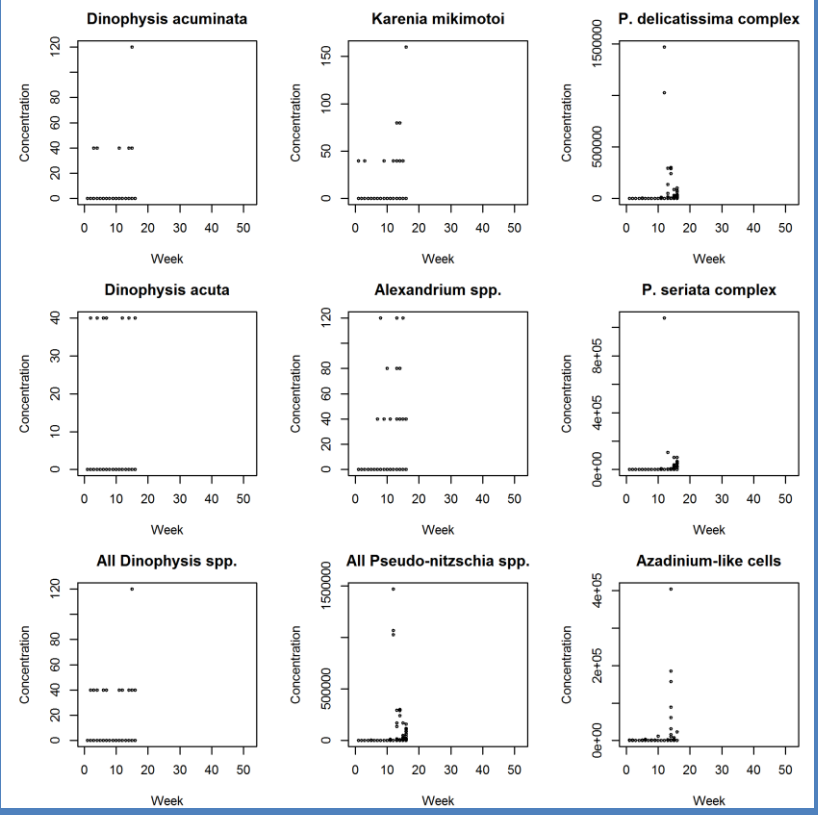


**PSP**

Paralytic  
Shellfish  
Poisoning



## Ireland: HABs

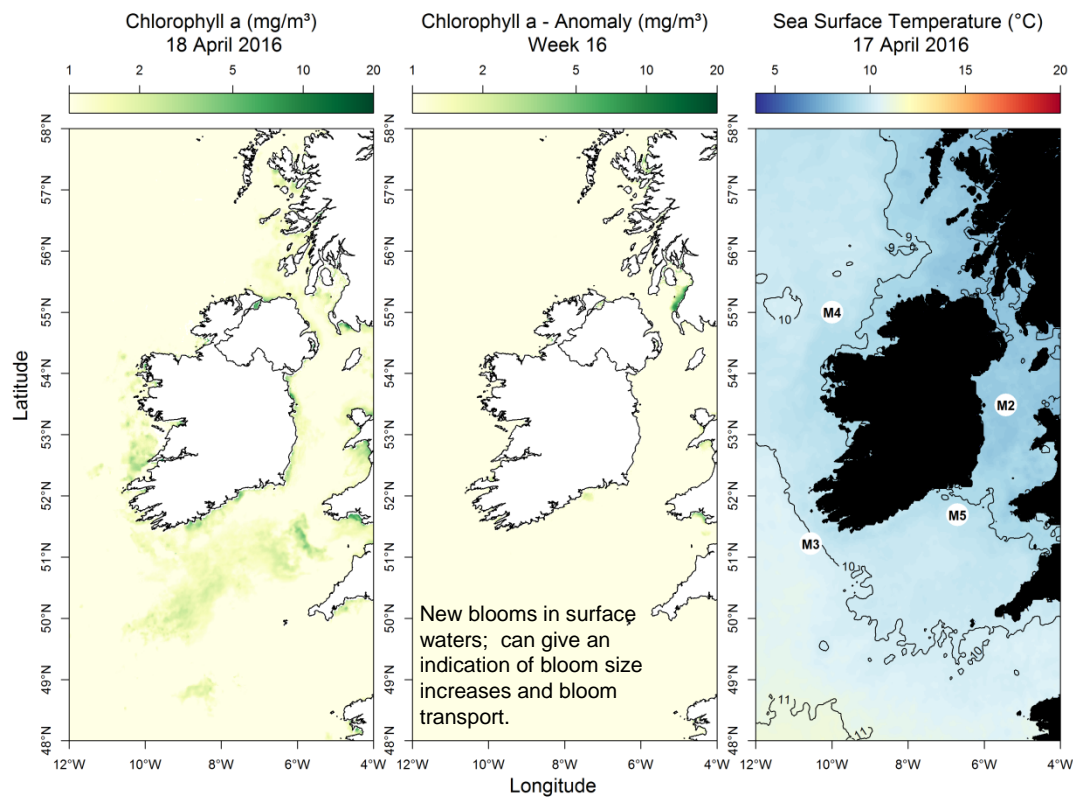


EU Regulatory Limit: ASP 20 µg/g; AZP 0.16 µg/g; DSP 0.16 µg/g; PSP 800 µg/g

Regulatory limit = ■■■■■



Most up to date available satellite data



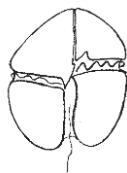
SST (°C) anomaly for last week:

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) Offline

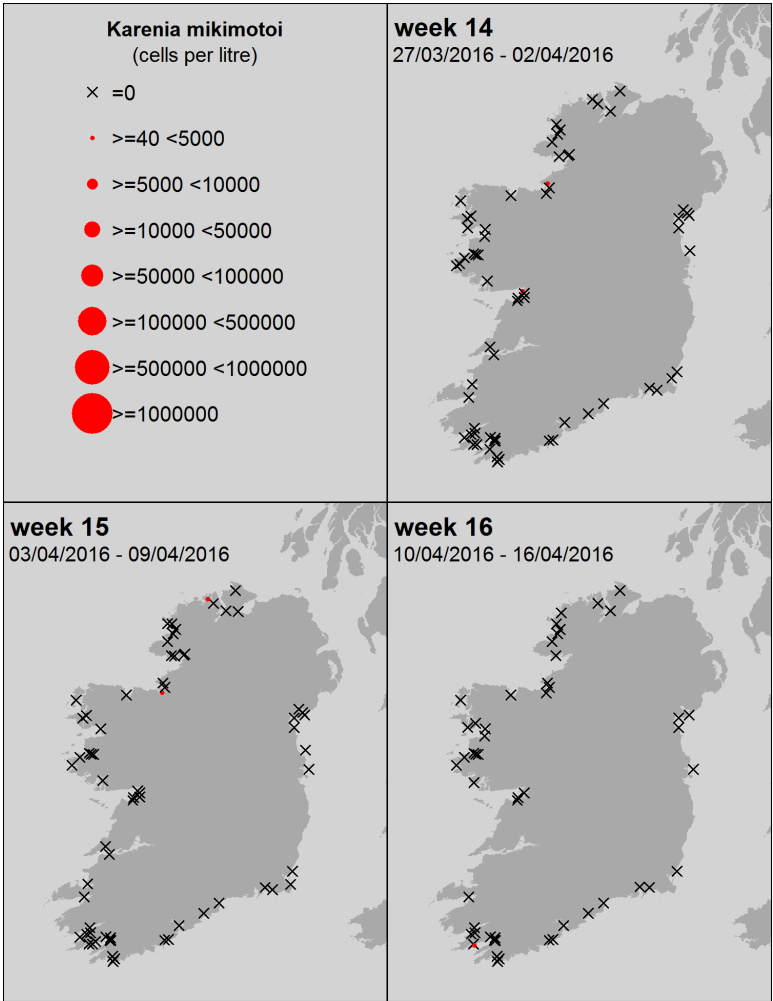
What phytoplankton were blooming at inshore coastal sites last week?

| Region | Predominant Phytoplankton (most abundant taxa)        | Cells/L (rounded) |
|--------|-------------------------------------------------------|-------------------|
| north: | <b>Diatoms:</b>                                       |                   |
|        | <i>Cylindrotheca closterium/ Nitzschia longissima</i> | 177,000           |
|        | <i>Chaetoceros (Hyalochaete) spp.</i>                 | 122,000           |
|        | <i>Thalassiosira</i> 20µm-50µm                        | 67,000            |
|        | Pennate diatom                                        | 60,000            |
|        | <i>Chaetoceros socialis</i>                           | 60,000            |
| west:  | <b>Diatoms:</b>                                       |                   |
|        | <i>Chaetoceros socialis</i>                           | 103,000           |
|        | <i>Cylindrotheca closterium/ Nitzschia longissima</i> | 31,000            |
|        | <i>Thalassionema</i> spp.                             | 23,000            |
|        | Pennate diatom                                        | 22,000            |
|        | <i>Thalassiosira</i> spp.                             | 17,000            |
| SW:    | <b>Diatoms:</b>                                       |                   |
|        | <i>Thalassiosira</i> <20µm                            | 248,000           |
|        | <i>Pseudo-nitzschia delicatissima</i> complex         | 131,000           |
|        | <i>Thalassiosira polycorda</i>                        | 120,000           |
|        | <i>Thalassiosira nordenskiöldii</i>                   | 108,000           |
|        | <i>Navicula</i> spp. <25µm                            | 7,000             |
|        | <i>Pseudo-nitzschia seriata</i> complex               | 85,000            |
|        | <i>Chaetoceros (Hyalochaete) spp.</i>                 | 81,000            |
| south: | <b>Diatoms:</b>                                       |                   |
|        | <i>Thalassiosira</i> <20µm                            | 18,000            |
|        | <i>Skeletonema</i> spp.                               | 11,000            |
|        | <i>Cylindrotheca closterium/ Nitzschia longissima</i> | 8,000             |
|        | <i>Thalassiosira nordenskiöldii</i>                   | 8,000             |
|        | <i>Navicula</i> spp. <25µm                            | 7,000             |
| east:  | <b>Diatoms:</b>                                       |                   |
|        | <i>Cylindrotheca closterium/ Nitzschia longissima</i> | 89,000            |
|        | <i>Thalassiosira</i> <20µm                            | 37,000            |
|        | <i>Skeletonema</i> spp.                               | 6,000             |
|        | Centric Diatom                                        | 19,000            |
|        | <i>Pseudo-nitzschia delicatissima</i> complex         | 14,000            |



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

A *Karenia mikimotoi* bloom  
is NOT expected this week



## SOUTHWEST: Bantry Bay

Forecast for the next 3 days

Bottom water

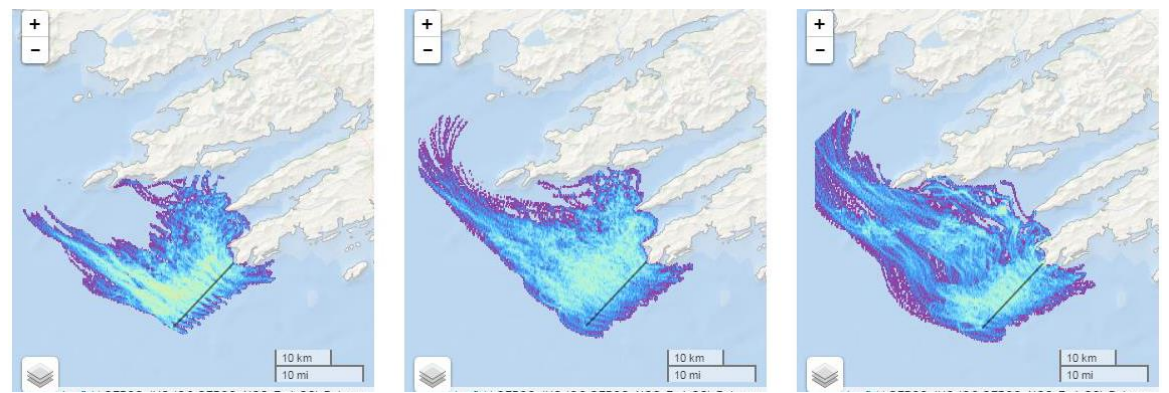
Water @ 20 metres

Surface water

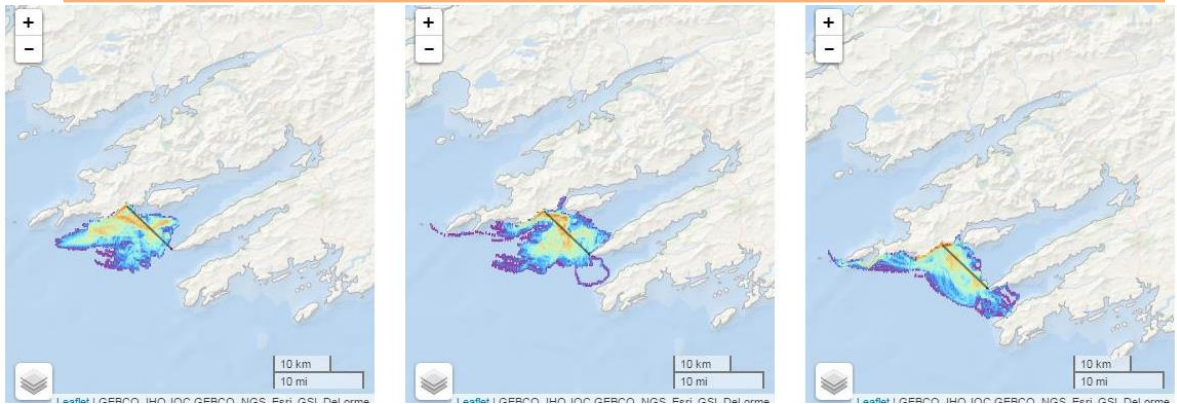
The maps show the **most likely transport pathways for the next 3 days of phytoplankton** found along the **presented transects** (black lines off Mizen Head and the Mouth of Bantry Bay) and **water depths** (bottom, 20 metres and surface)

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



Estimated water circulation patterns at Mizen head will be flowing in a north west direction. Small amounts of subsurface waters are expected to reach the mouth of the Bay.

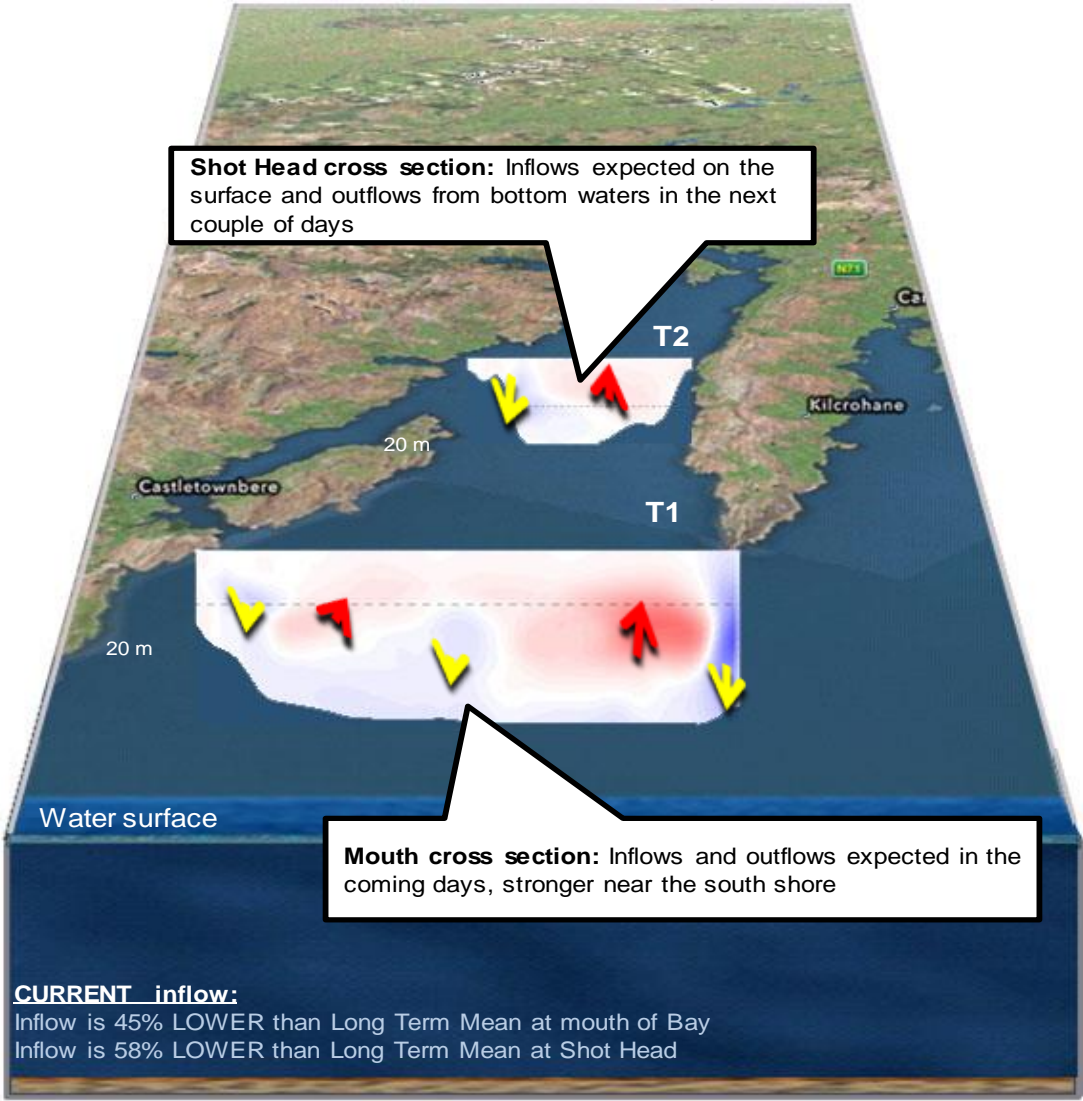
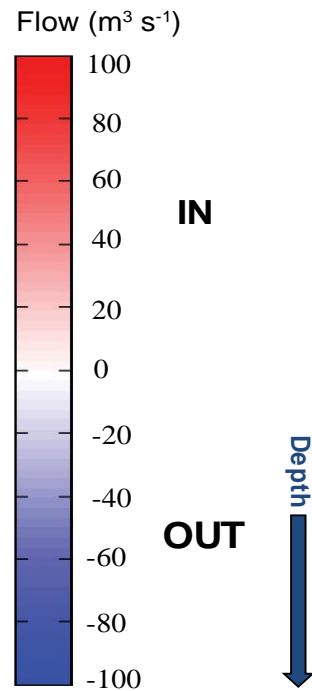


No big water exchange events expected in Bantry Bay in the days ahead.

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  
Forecast for next 3 days






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)

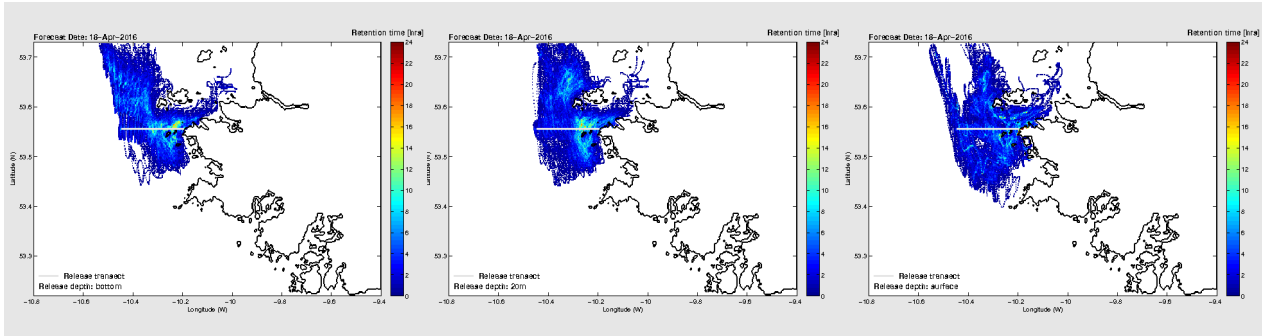
Reddish colours represent areas where phytoplankton remain longest  
Cooler colours represent areas where phytoplankton remain for shorter periods



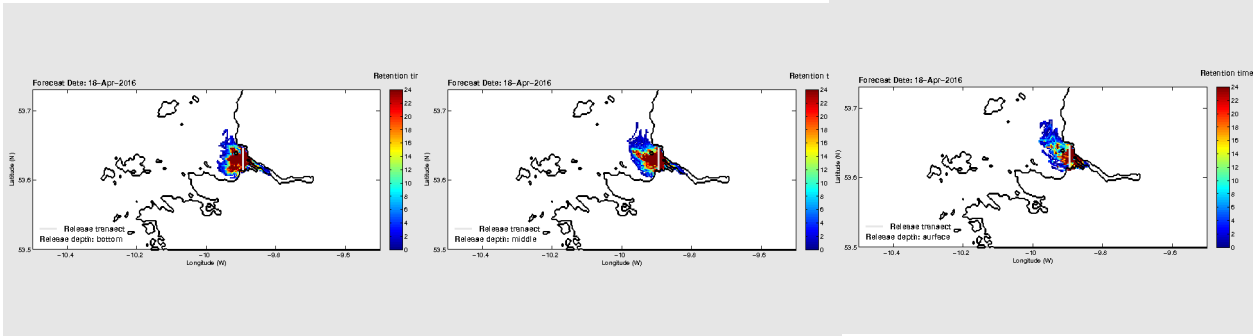
0.2 0.4 1 2 4 10 20 40 100 200  
particle transport probability (hours)  
Bantry Bay model particle track analysis  
(2015-03-10T00:00:00Z, release\_location=0.0 count)  
Data courtesy of Irish Marine Institute

Forecast for the next 3 days

- Bottom water
- Water @ 20 metres
- Surface water



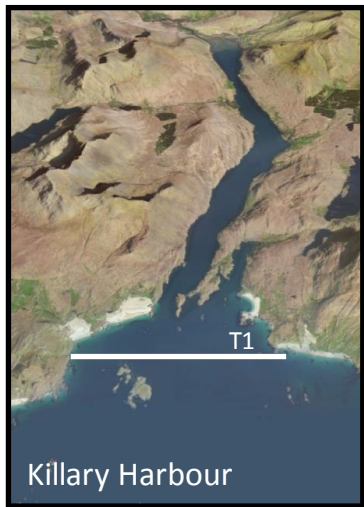
Water flows off the west coast will flow north. Low volumes of shelf waters are expected to reach Killary Harbour in the next few days.



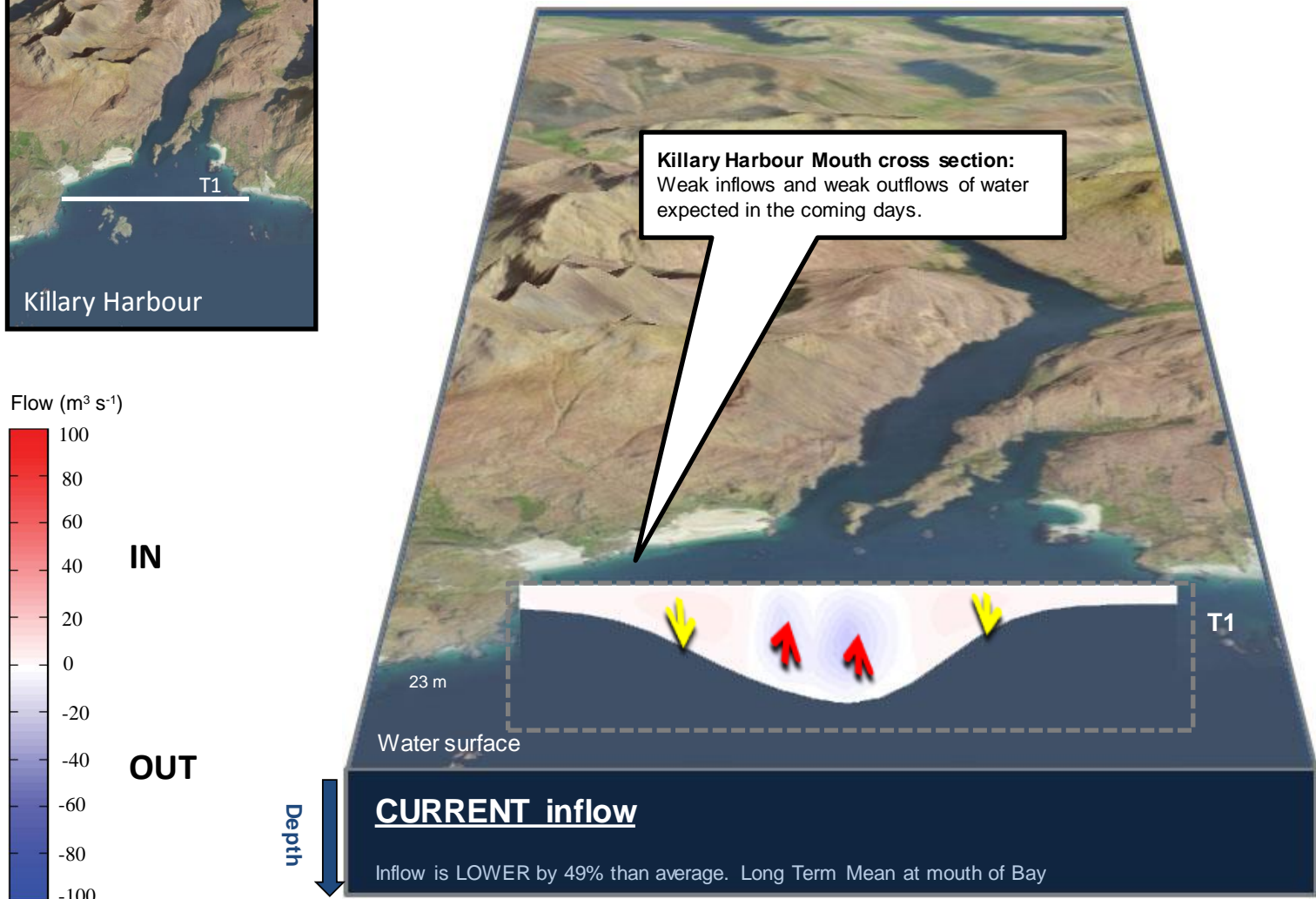
Water masses at the mouth of Killary Harbour will be retained at the mouth with some movement of bottom waters into the fjord.

# 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

