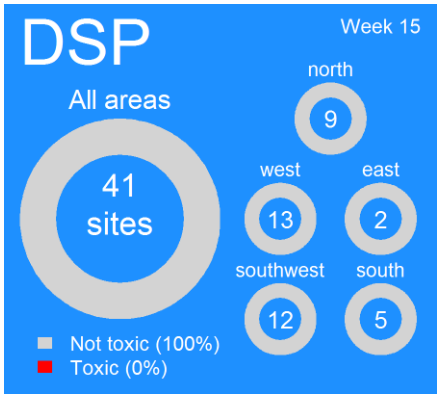
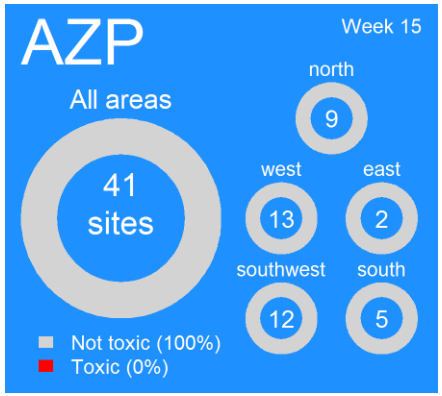
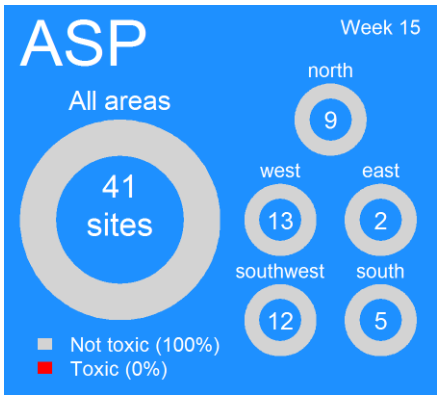
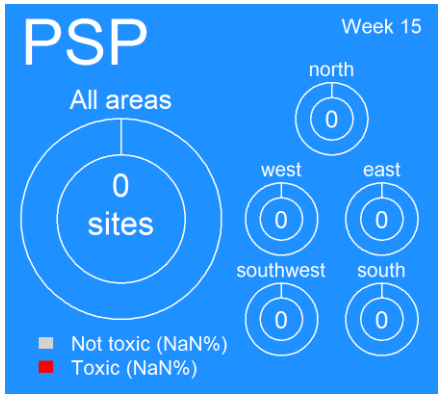
# Ireland: **Current Conditions**

## Shellfish biotoxin report (last week)



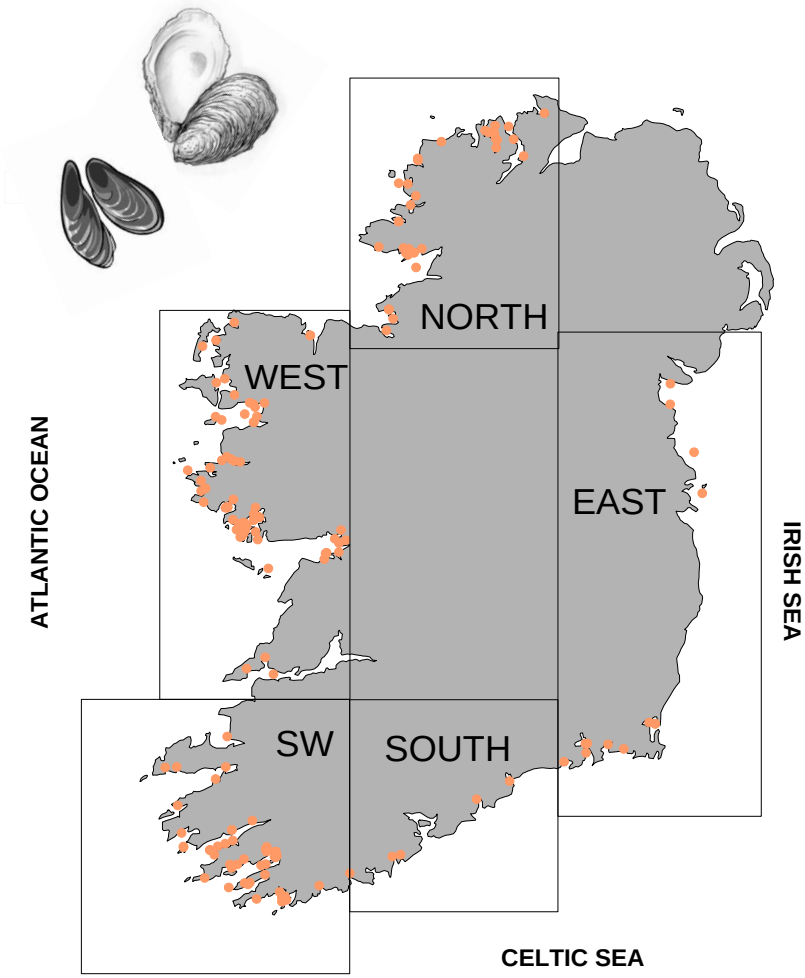




**EU Regulatory Limit**:
ASP 20 µg/g; AZP 0.16 µg/g; DSP 0.16 µg/g; PSP 800 µg/kg

**Toxin groups**
ASP = **A**mnesic **S**hellfish **P**oisoning; AZP = **AZ**aspiracid **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: 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.

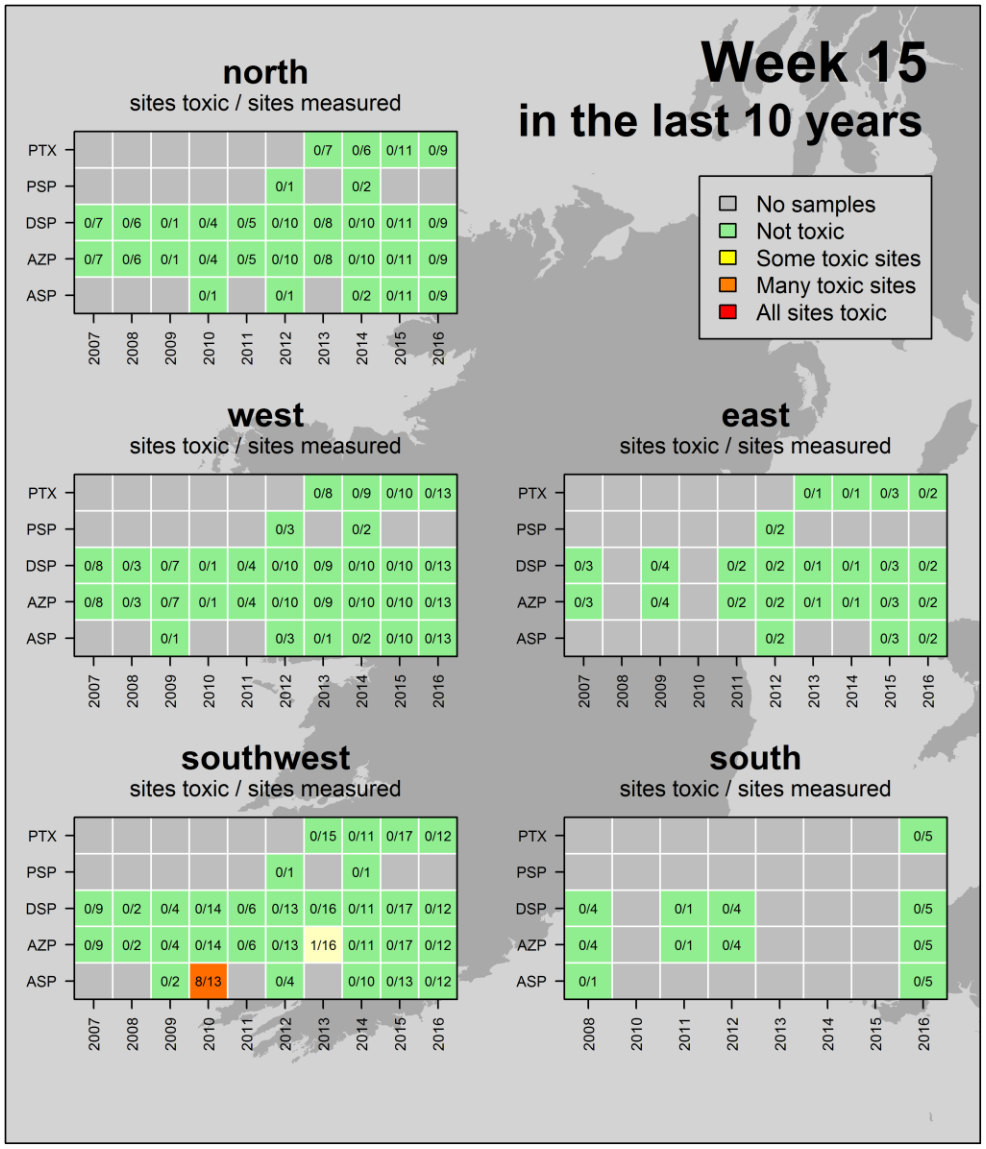
AZP: Historically low levels of caution should apply at this time of the year however due to the geographical spread and persistent presence of Azadinium like cells, combined with a potential trend of low increases in biotoxin levels (still below reg limit) additional caution is currently advised.

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

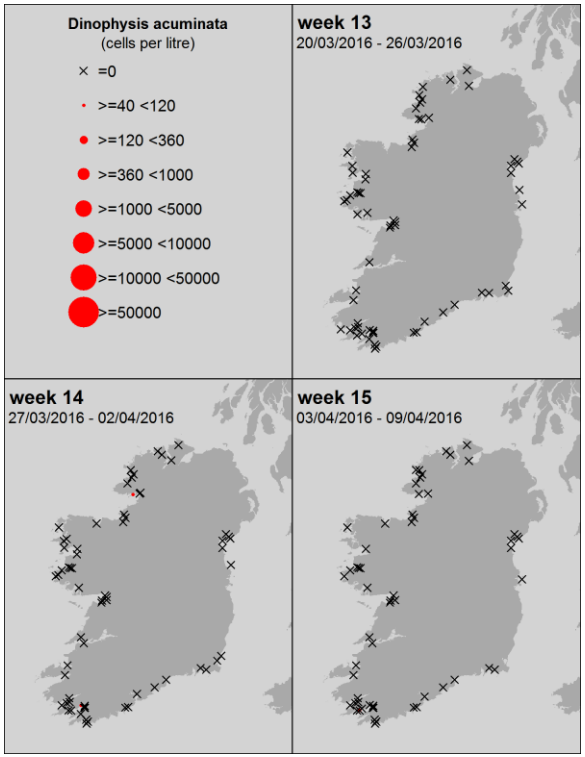
ASP events: mid-March to early May
AZP events: April to December
DSP events: May to December
PSP events: June to mid-July and end September; only in Cork Harbour

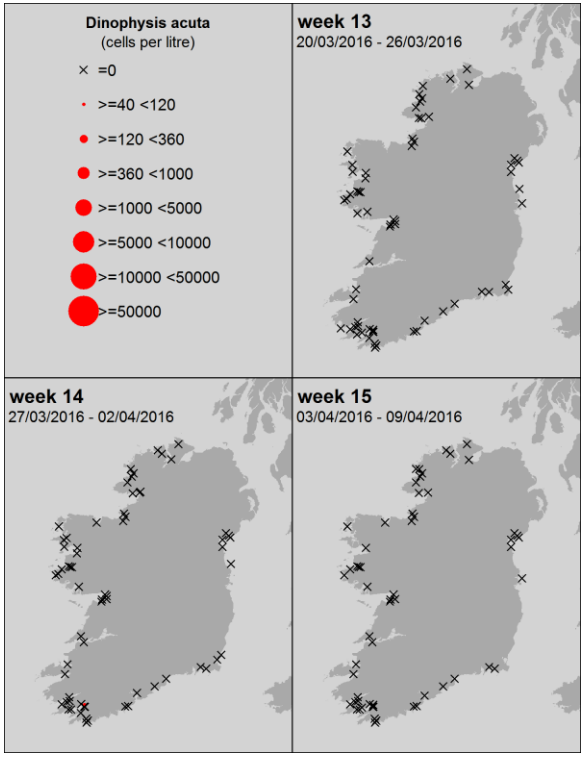
# Ireland: **Last 3 weeks of available National Monitoring Programme data**

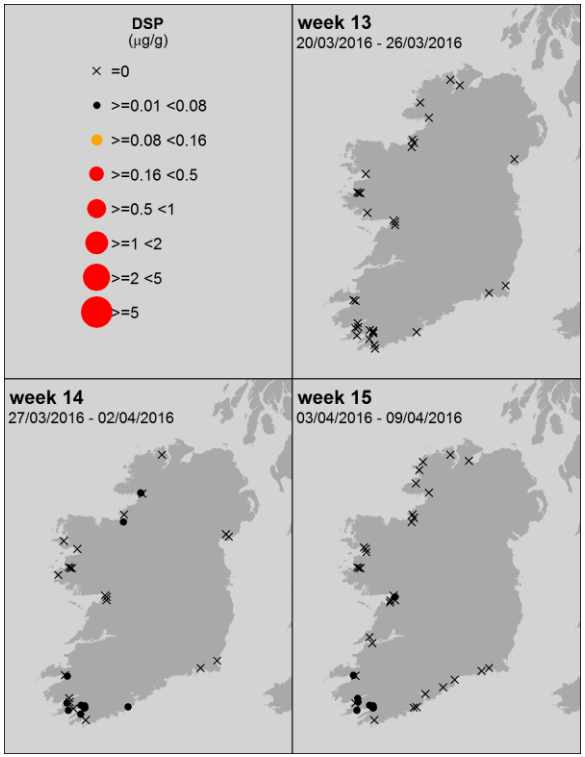
*Dinophysis acuminata*

*Dinophysis acuta*

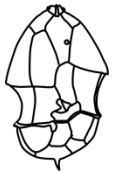
DSP



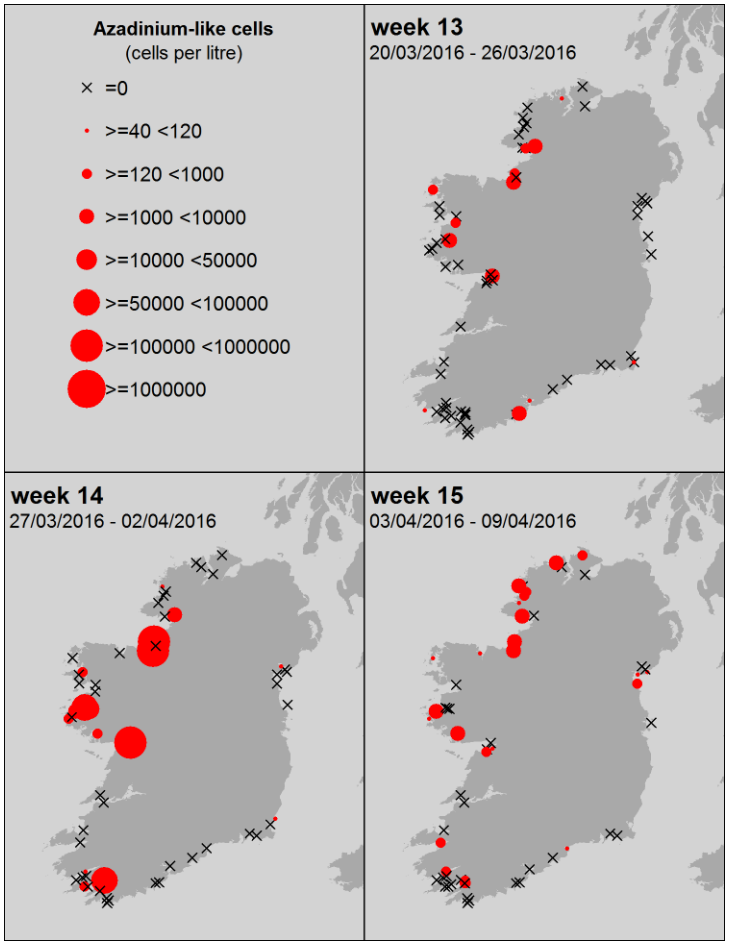



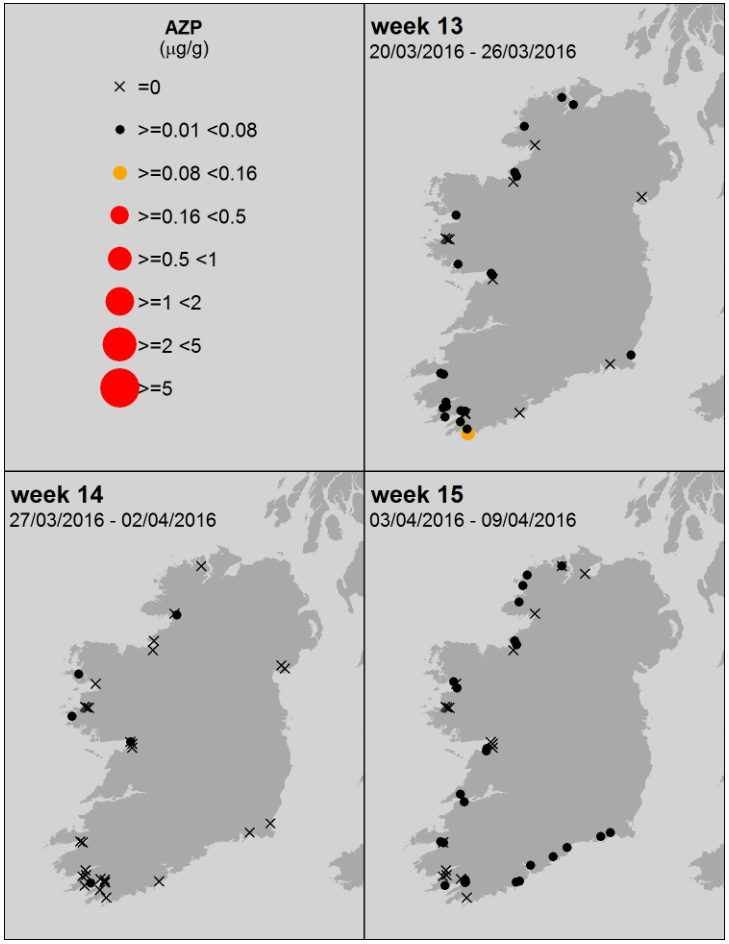
# Ireland: **Last 3 weeks of available National Monitoring Programme data**



*Azadinium* – like spp.

AZP



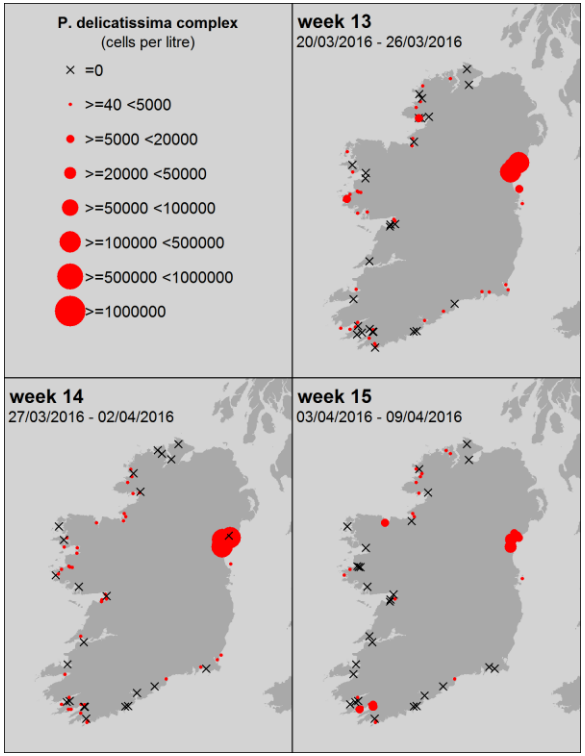
# Ireland: **Last 3 weeks of available National Monitoring Programme data**

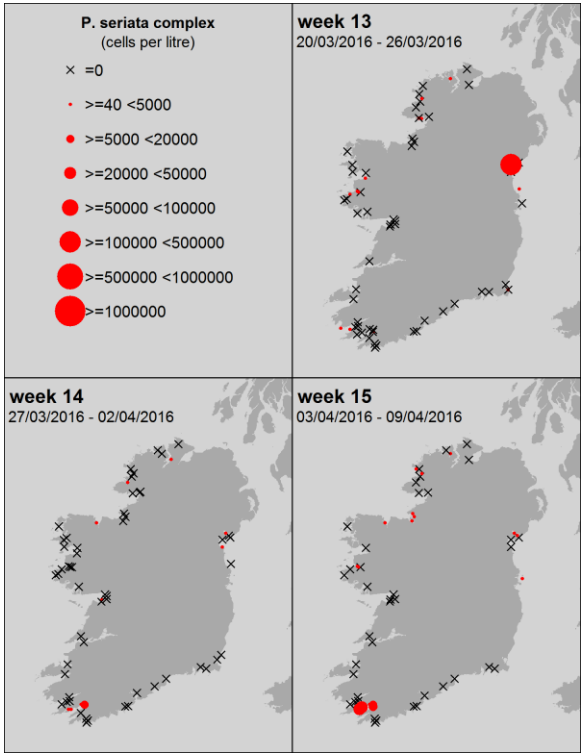
## *Pseudo-nitzschia* spp.

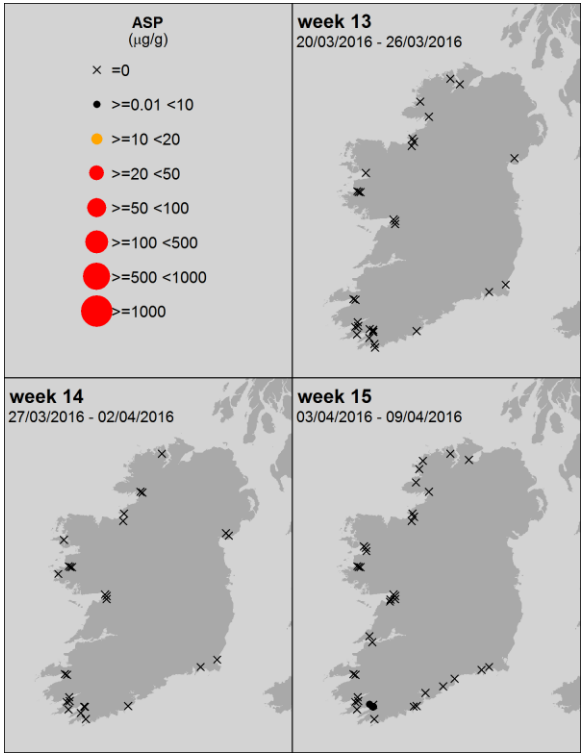
## ASP

"*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

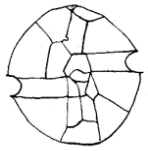


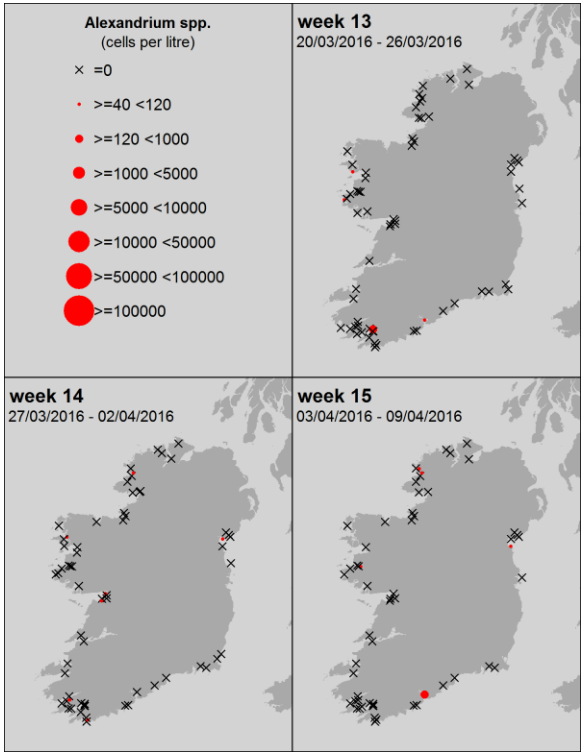

**Taken from the literature:** Of the 4 species (*P. fraudulenta*, *P. australis*, *P. pungens* and *P. delicatissima*) from Irish waters, tested for ASP toxins in culture work, only one, *P. australis* (from the "*P. seriata*" group) was toxic.

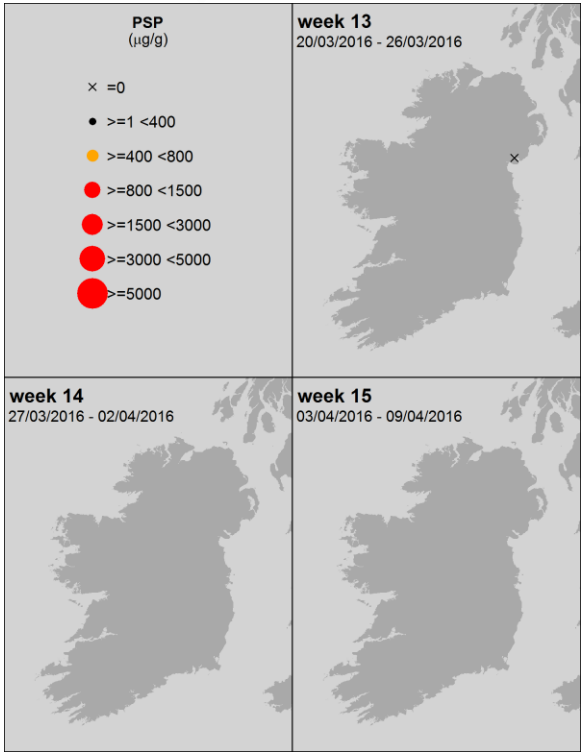
# Ireland: **Last 3 weeks of available National Monitoring Programme data**



*Alexandrium* spp.

PSP

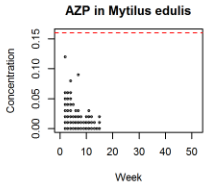
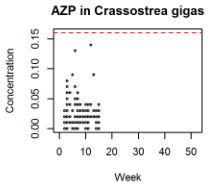
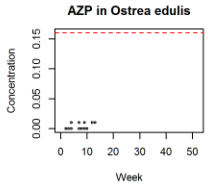
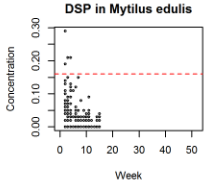
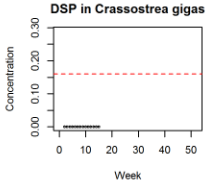
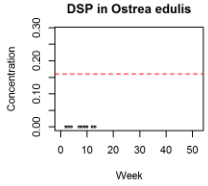
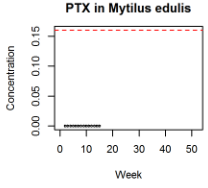
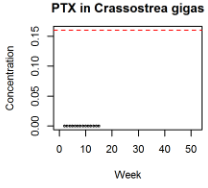
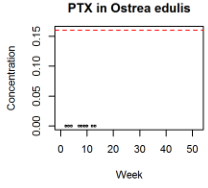
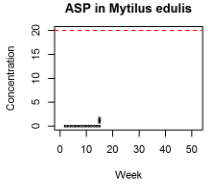
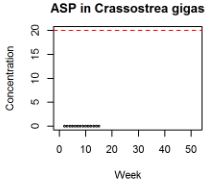
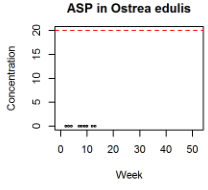
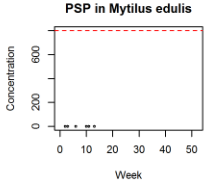
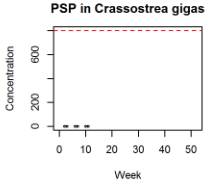
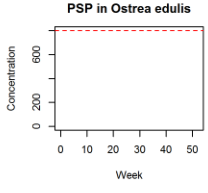


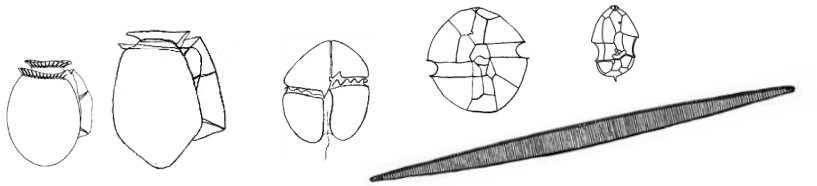
# Ireland HAB & Biotoxin temporal trends

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

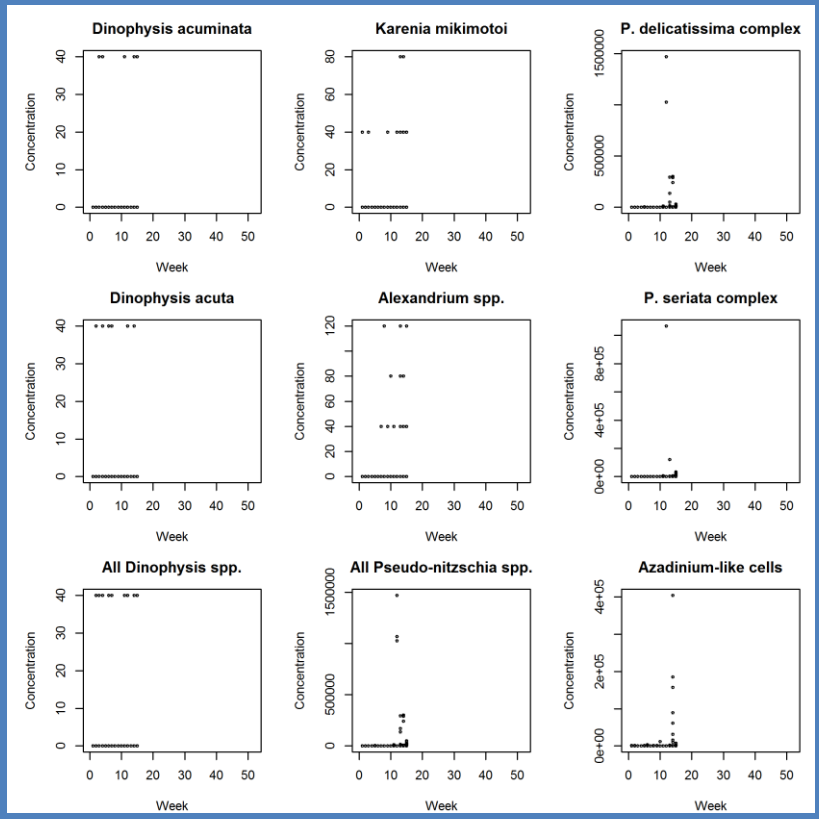
## Ireland: **Biotoxins**

| **Toxin groups** | mussels | oysters | oysters |
|---|---|---|---|
| **AZP** AZaspiracid Poisoning |  |  |  |
| **DSP** Diarrhetic Shellfish Poisoning |  |  |  |
| **PTX** Pectenotoxin |  |  |  |
| **ASP** Amnesic Shellfish Poisoning |  |  |  |
| **PSP** Paralytic Shellfish Poisoning |  |  |  |





## Ireland: **HABs**

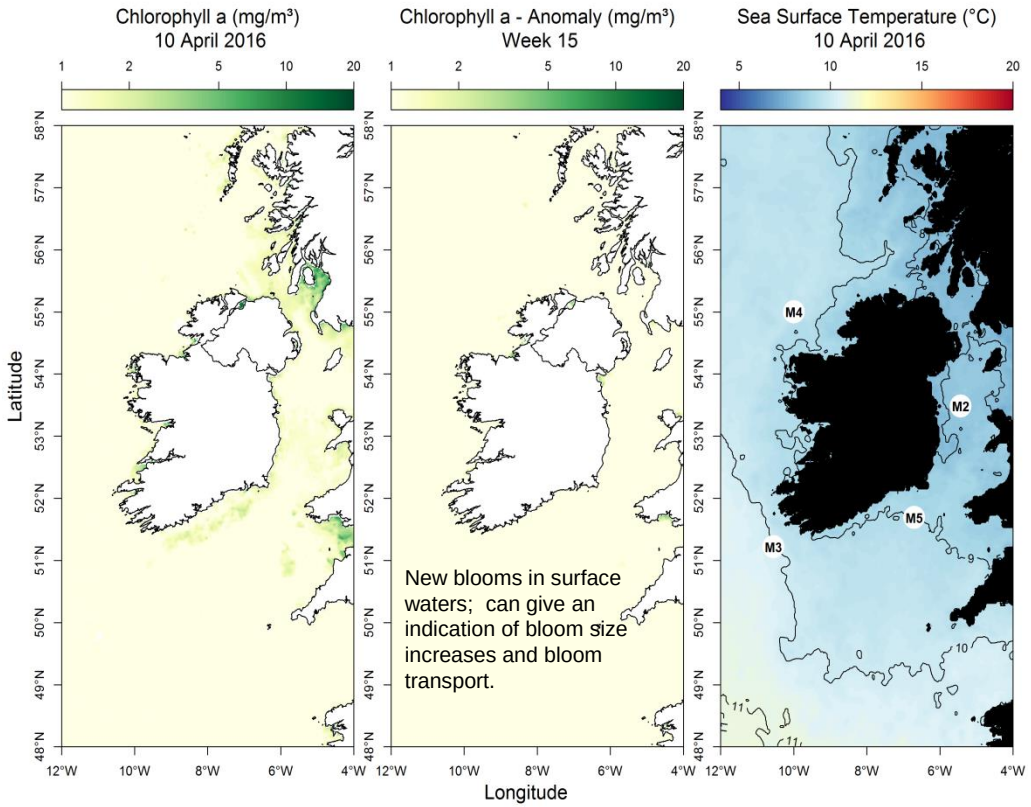



**EU Regulatory Limit**: ASP 20 µg/g; AZP 0.16 µg/g; DSP 0.16 µg/g; PSP 800 µg/kg

**Regulatory limit =**

# Ireland Satellite data: surface chlorophyll and temperature maps

## Most up to date available satellite data

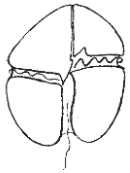



**SST (ºC) anomaly for last week:**
Data taken from the Irish data buoy network where the anomaly is the weekly difference in SST compared to the long term mean (~ 10 yrs)

**NW coast (M4)** Offline
**SW coast (M3)** Offline
**SE coast (M5)** Offline

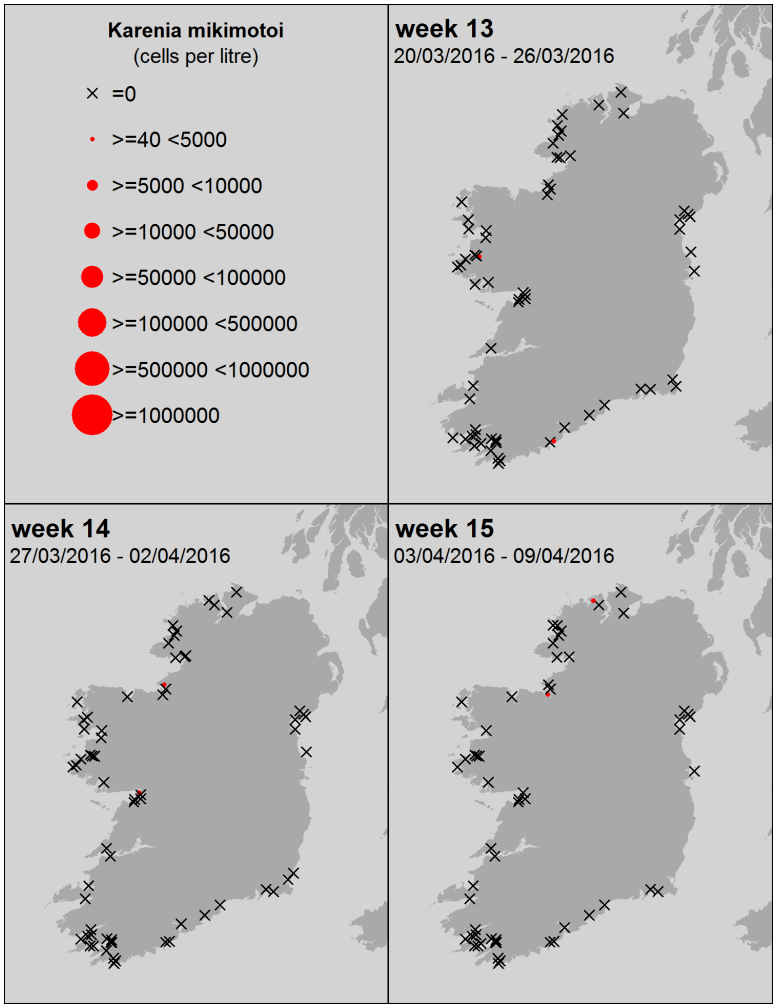
### What phytoplankton were blooming at inshore coastal sites last week?

| Region | Predominant Phytoplankton (most abundant taxa) | Cells/L (rounded) |
|---|---|---|
| **north:** | **Diatoms:** | |
| | *Cylindrotheca closterium/ Nitzschia longissima* | 165,500 |
| | *Chaetoceros (Hyalochaete) spp.* | 149,100 |
| | *Asterionellopsis spp.* | 97,300 |
| | *Thalassiosira spp.* | 81,300 |
| | Pennate diatom | 65,000 |
| | **Dinoflagellates:** | |
| | *Azadinium/heterocapsa spp.* | 3,700 |
| | **Others:** | |
| | Microflagellate sp. | 10,300 |
| | *Euglena/Eutreptiella spp.* | 8,200 |
| **west:** | **Diatoms:** | |
| | *Chaetoceros (Hyalochaete) spp.* | 34,800 |
| | *Skeletonema spp.* | 33,600 |
| | *Cylindrotheca closterium/ Nitzschia longissima* | 20,000 |
| | *Thalassiosira 20-50um* | 19,800 |
| | Pennate diatom | 11,900 |
| | *Pseudo-nitzschia delicatissima complex* | 9,600 |
| | **Dinoflagellates:** | |
| | *Azadinium/heterocapsa spp.* | 7,400 |
| **SW:** | **Diatoms:** | |
| | *Skeletonema spp.* | 428,500 |
| | *Thalassiosira <20um* | 411,800 |
| | *Chaetoceros (Hyalochaete) spp.* | 51,100 |
| | *Pseudo-nitzschia seriata complex* | 35,200 |
| | **Others:** | |
| | Prymnesiophytes | 15,300 |
| | Haptophytes | 11,500 |
| **south:** | **Diatoms:** | |
| | *Cylindrotheca closterium/ Nitzschia longissima* | 2,000 |
| | *Paralia sulcata* | 1,300 |
| | *Skeletonema spp.* | 700 |
| **east:** | **Diatoms:** | |
| | *Thalassiosira >50um* | 248,800 |
| | *Chaetoceros (Hyalochaete) spp.* | 161,400 |
| | *Detonula sp.* | 90,200 |
| | *Skeletonema spp.* | 72,500 |
| | *Pseudo-nitzschia delicatissima complex* | 21,200 |
| | **Dinoflagellates:** | |
| | *Scrippsiella spp.* | 1,200 |



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

A *Karenia mikimotoi* bloom is NOT expected this week

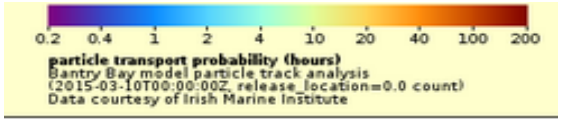


# SOUTHWEST: Bantry Bay

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

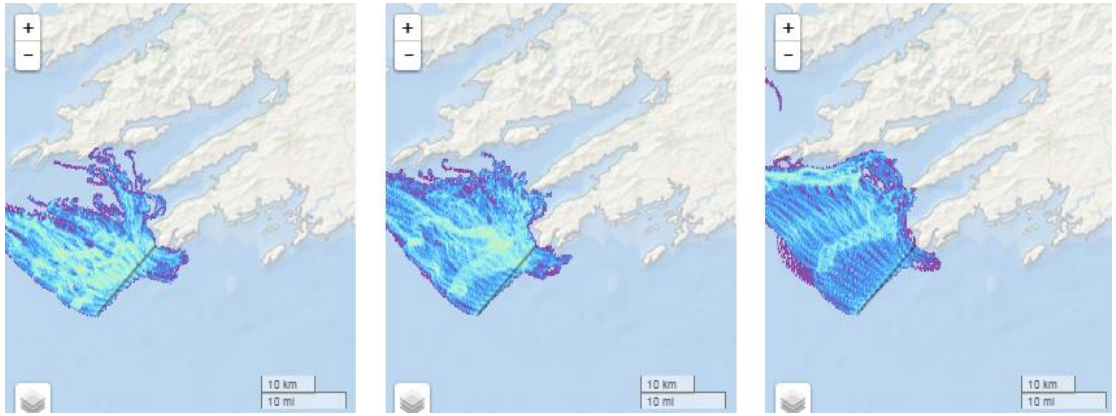
Cooler colours represent areas where phytoplankton remain for shorter periods



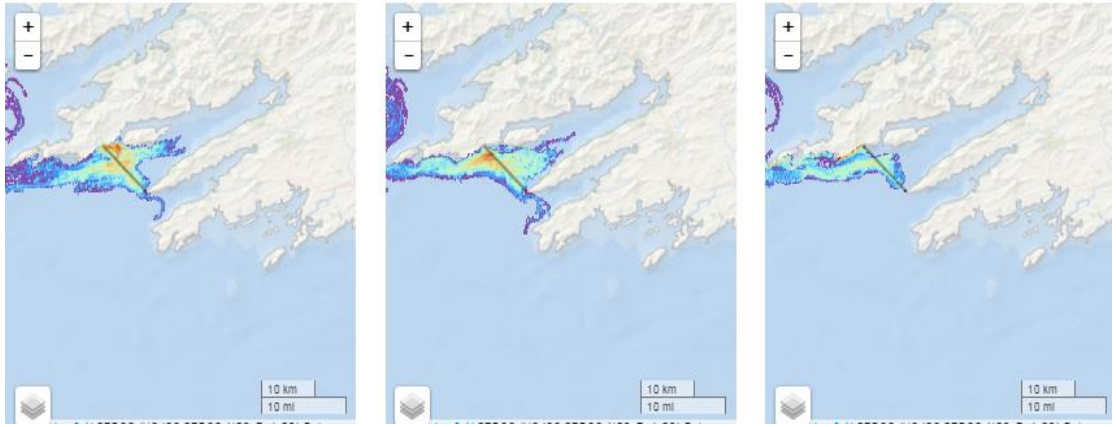

Go to http://vis.marine.ie/particles/ to view daily forecasts

## Forecast for the next 3 days

| Bottom water | Water @ 20 metres | Surface water |
|---|---|---|



Mixed Northerly water movement, allowing inner bay intrusions of Celtic sea waters at all depths.

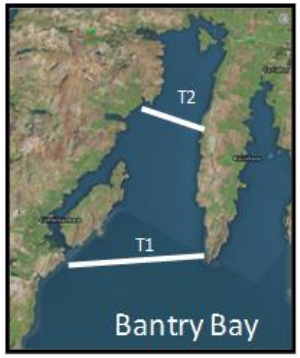


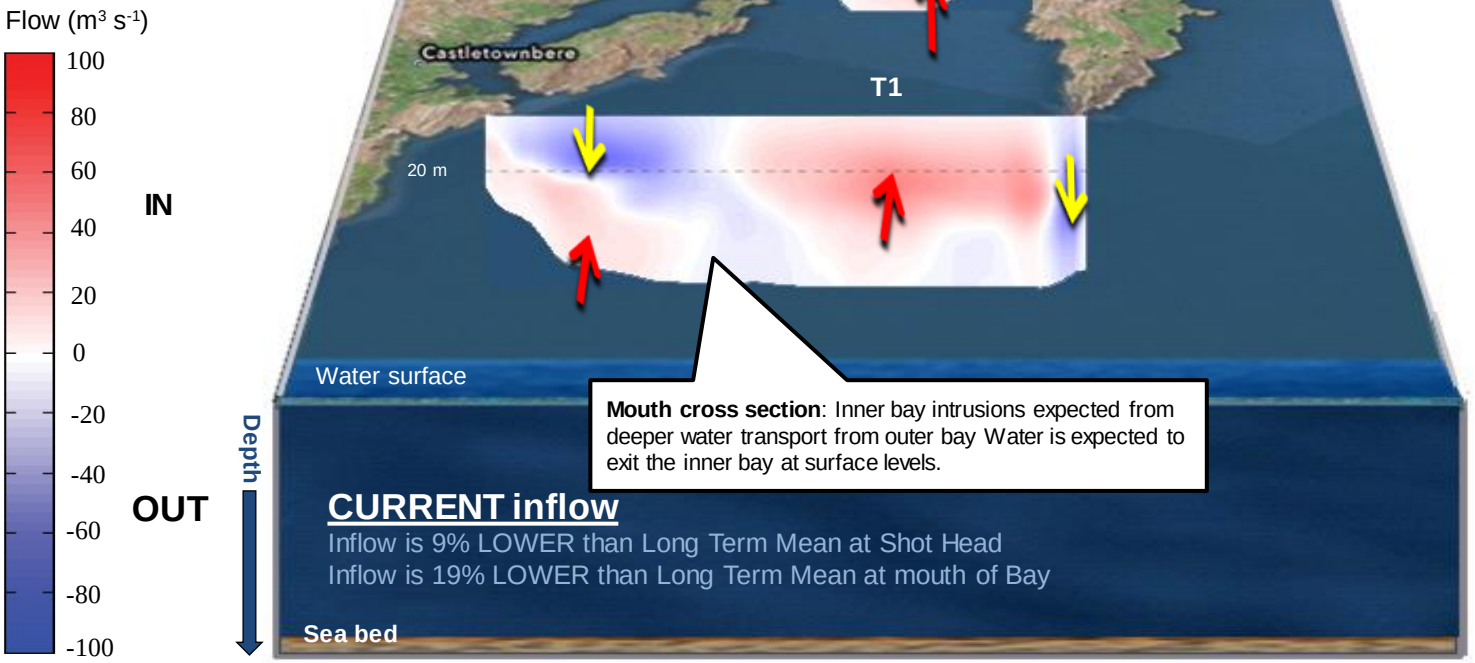
Inner Bay intrusions from offshore waters particularly at bottom and deeper waters. Slight transport of waters out of bay area at surface levels.

# Bantry Bay

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

**Forecast for next 3 days**



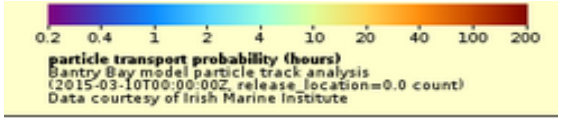
# WEST: Killary Harbour

Forecast for the next 3 days

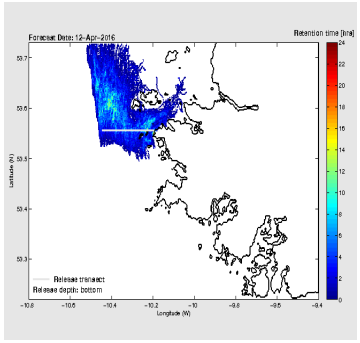
The maps show the **most likely transport pathways for the next 3 days of phytoplankton** found along the **presented transects** i.e. white lines off Aughrus Point and the Mouth of Killary Harbour, and **water depths** (bottom, 20 metres and surface)

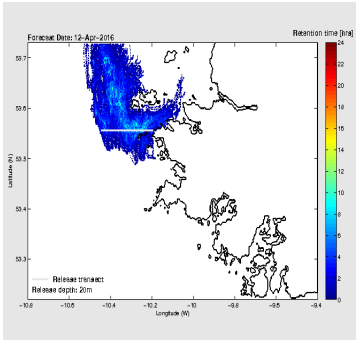
Reddish colours represent areas where phytoplankton remain longest

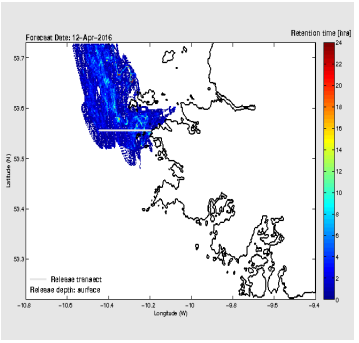
Cooler colours represent areas where phytoplankton remain for shorter periods



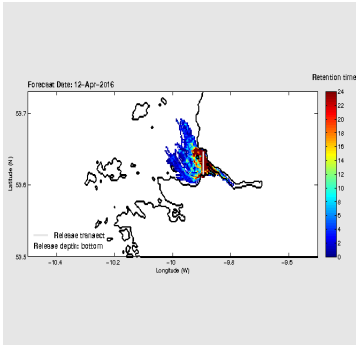

| Bottom water | Water @ 20 metres | Surface water |
|---|---|---|

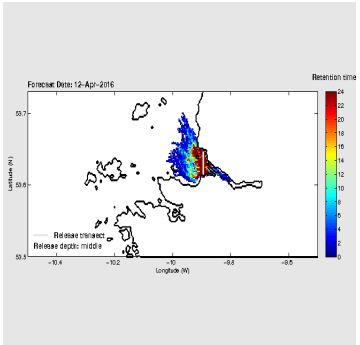


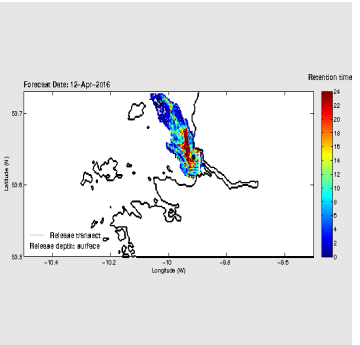




Mixed Northerly movement of water at all depths dominating outer bay.



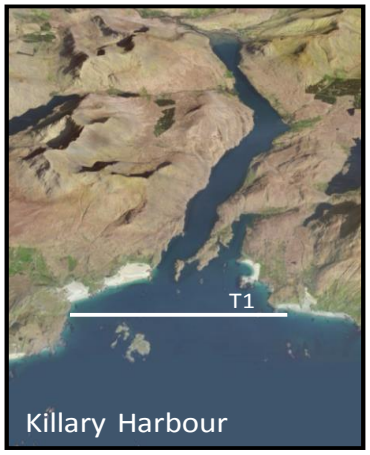



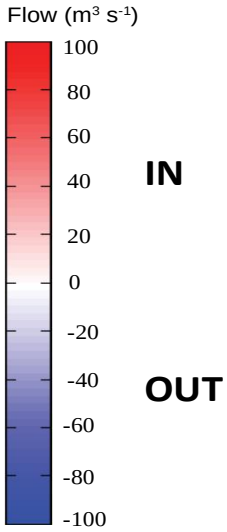



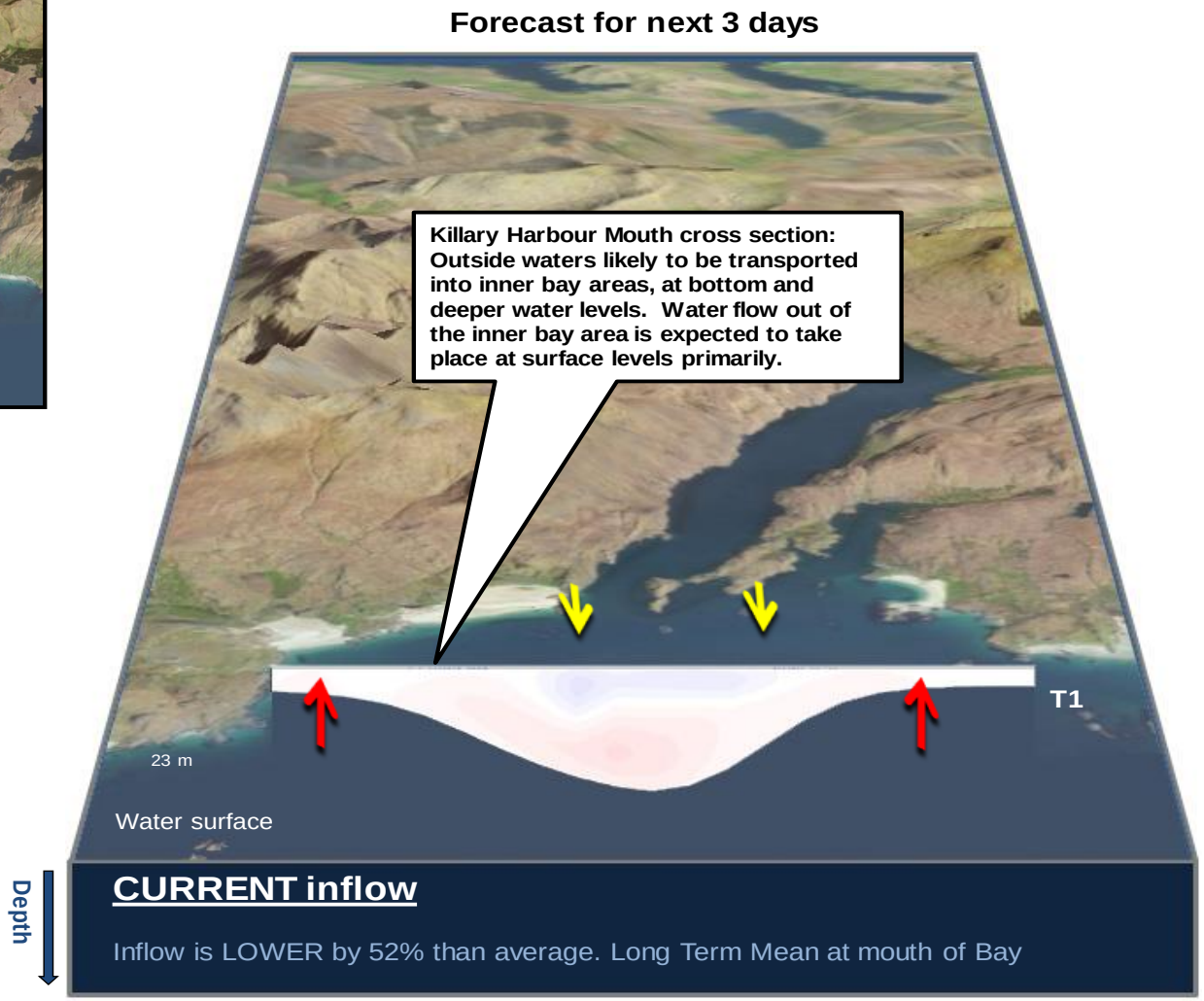

Intrusions into inner bay waters likely at bottom and deeper waters in particular.

# Killary Harbour

3 day estimated water flows at the mouth of Killary Harbour

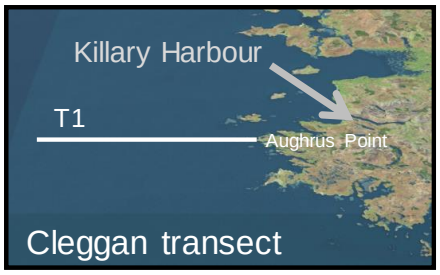


# West Coast - 3 day estimated water flows along a transect off Aughrus Point

**Forecast for next 3 days**




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

100
80
60
40
20
0
-20
-40
-60
-80
-100

**northward flow**

**southward flow**

Depth

**Cleggan section:** Strong northerly flows will dominate the majority of water movement in offshore areas.

T1

20 m

110 m

Water surface