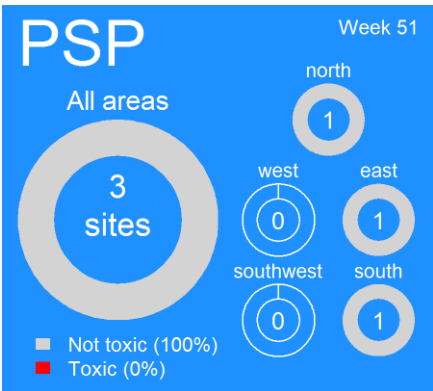
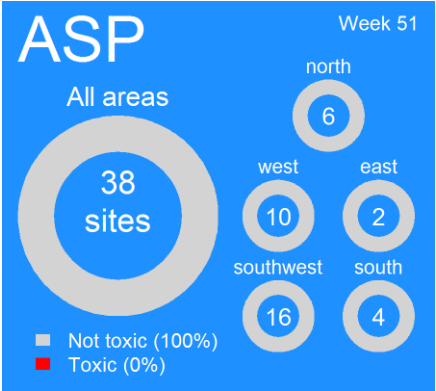
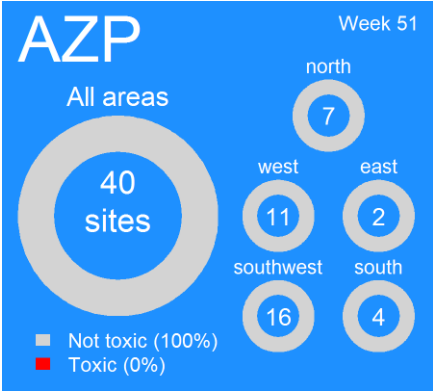
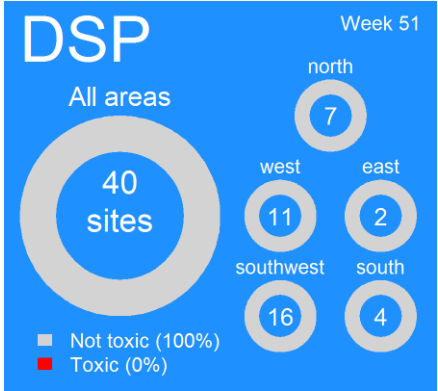


# Ireland: Current Conditions

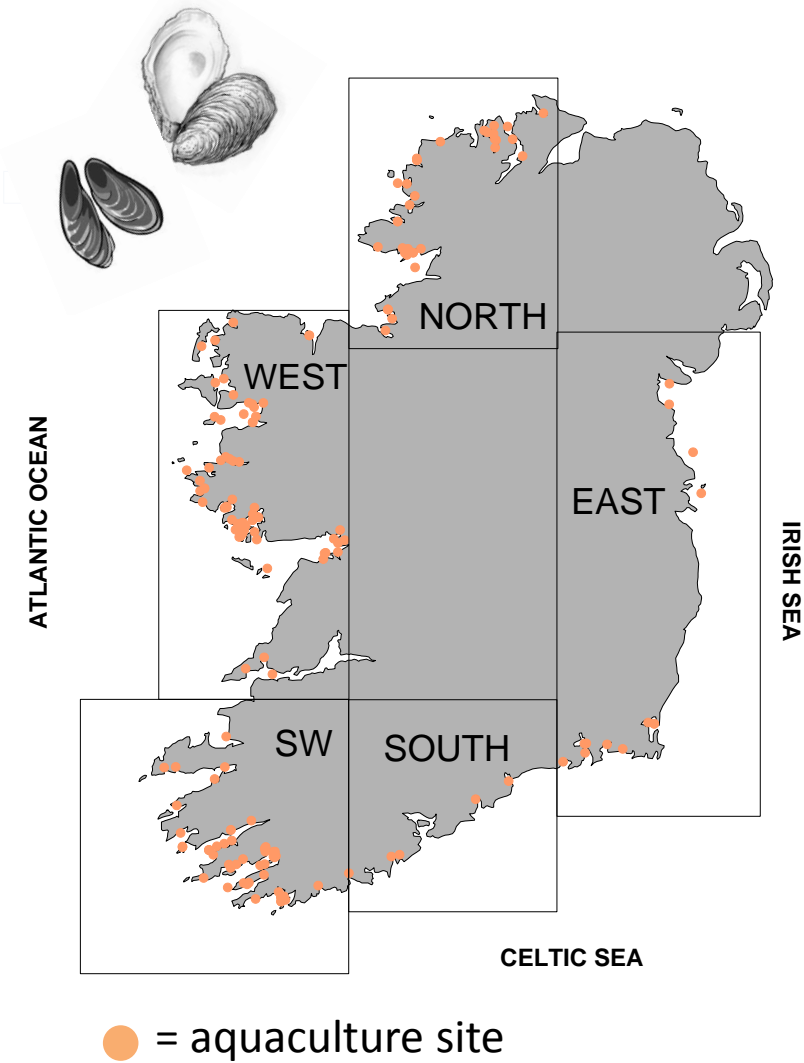
## Shellfish biotoxin report (last week)



**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

### National Monitoring Programme Designated Sampling Sites



# Ireland: Predictions

ASP event: Low

AZP event: Low-Medium

DSP event: Low

PSP event: Low

## Why do we think this?

ASP: Similar situation in to week 50 bulletin. Toxin issues from this species are not expected at this time of year. Cell levels of *Pseudo-nitzschia* groups are negligible currently around the coast. ASP biotoxins were not detected at any site countrywide.

AZP: Levels of *Azadinium* spp. continue to fluctuate around the coast with a slight increase in the last week. This is still considered potentially a moderate to high risk period for AZP. Biotoxin levels are currently below regulatory limits.

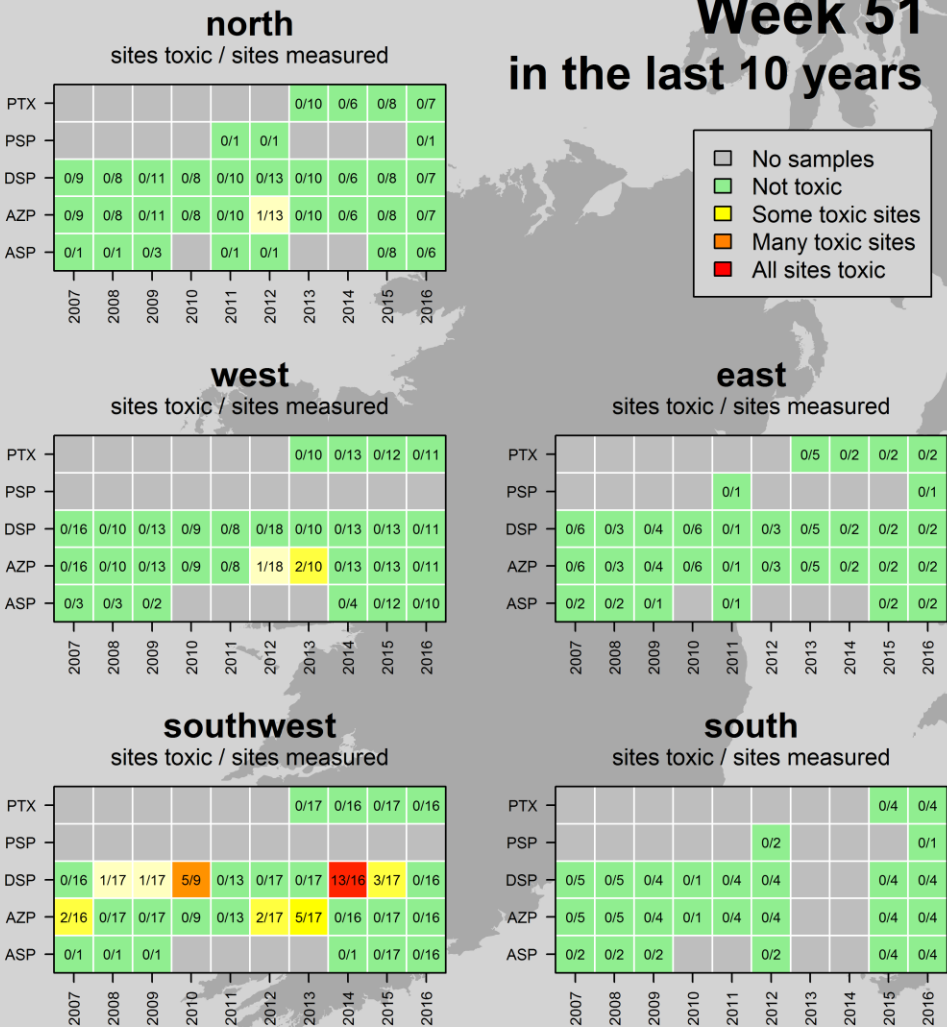
DSP: This is historically near the end of the potential risk period . A new intoxication event would not be expected under normal environmental conditions.

PSP: A toxic event is not expected at this time of year.

# Ireland: Historic Conditions

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

## Week 51 in the last 10 years



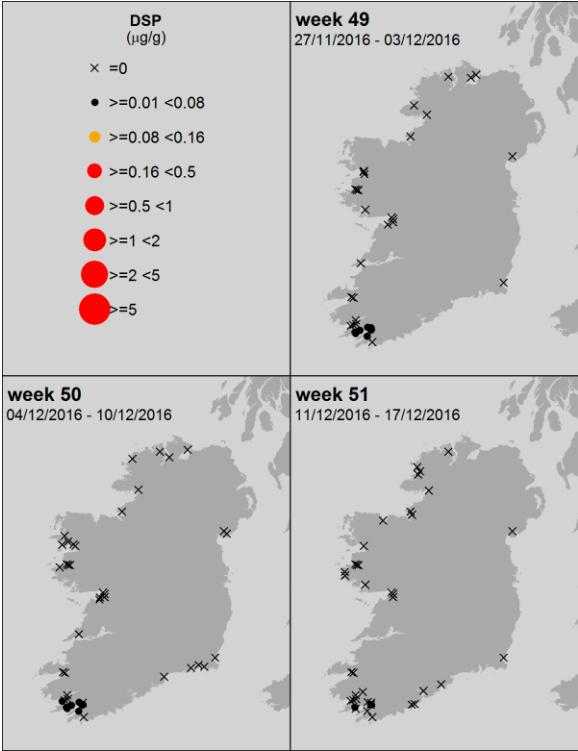
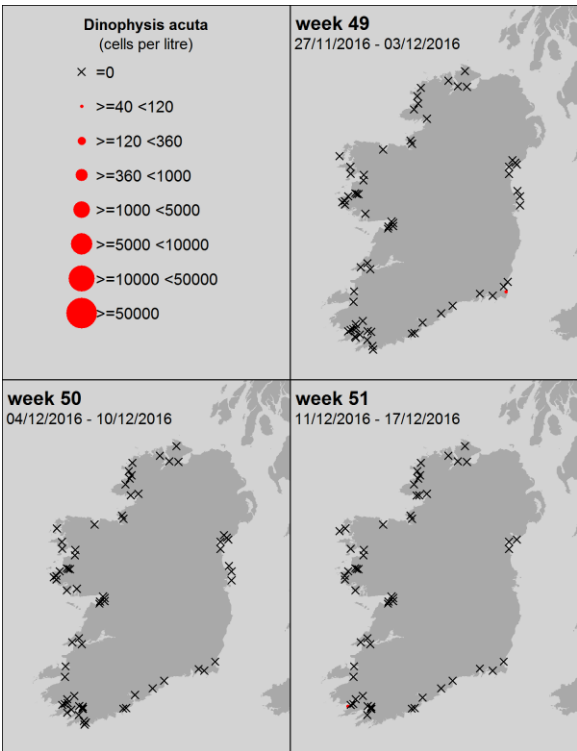
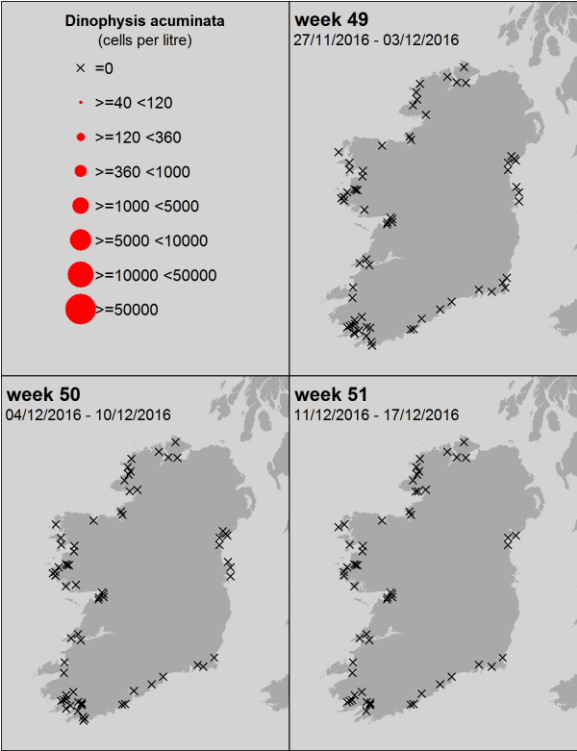
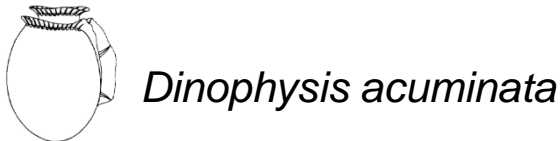
## Ireland HISTORIC TRENDS

**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



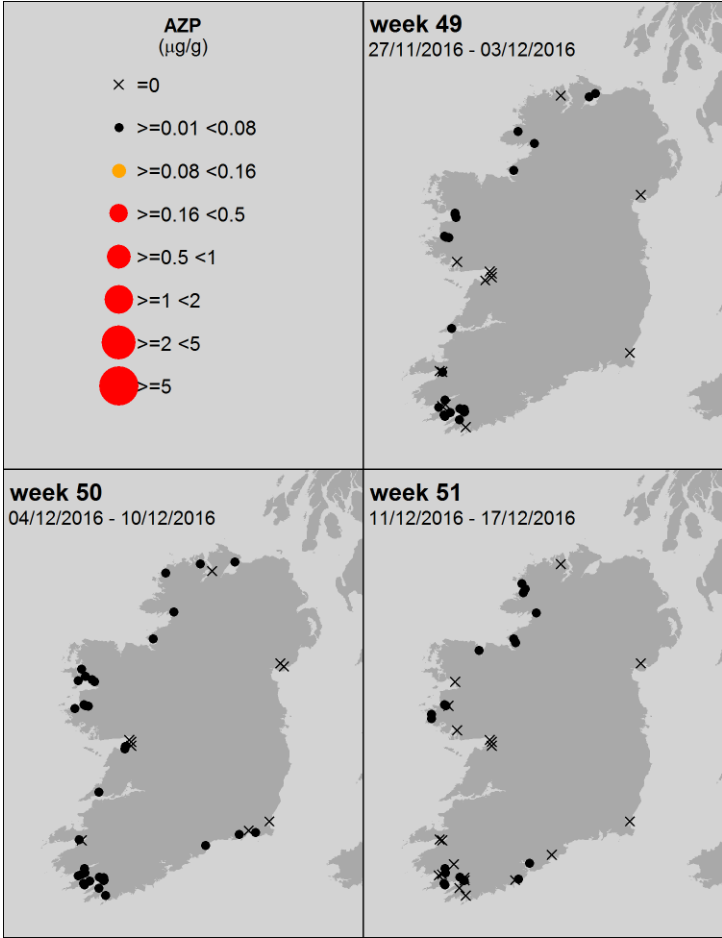
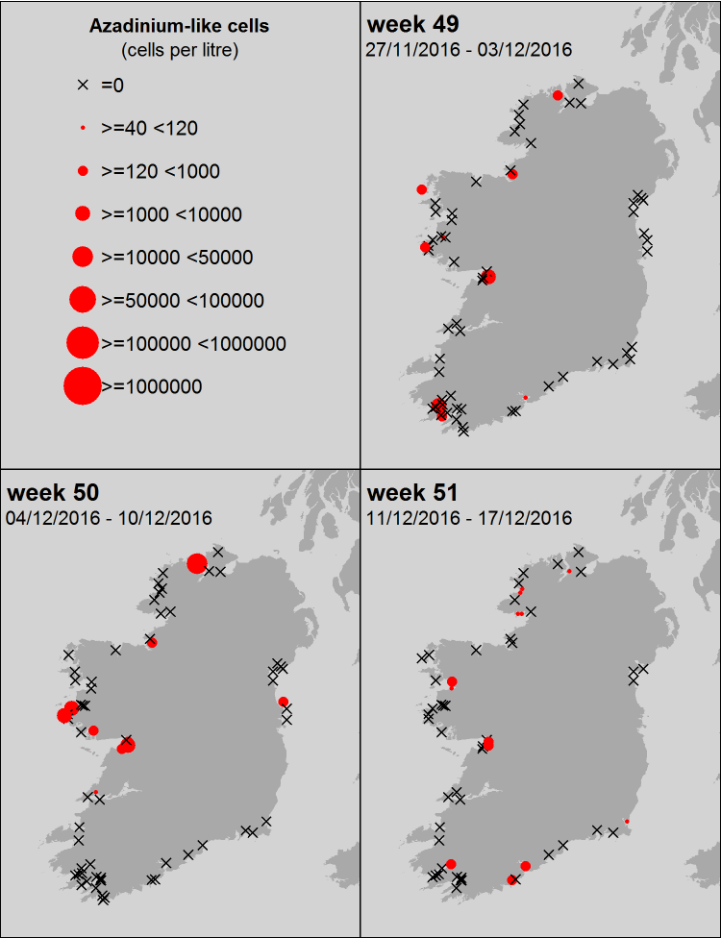
Ireland: Last 3 weeks of available National Monitoring Programme data



*Azadinium* – like spp.



AZP



Ireland: Last 3 weeks of available National Monitoring Programme data

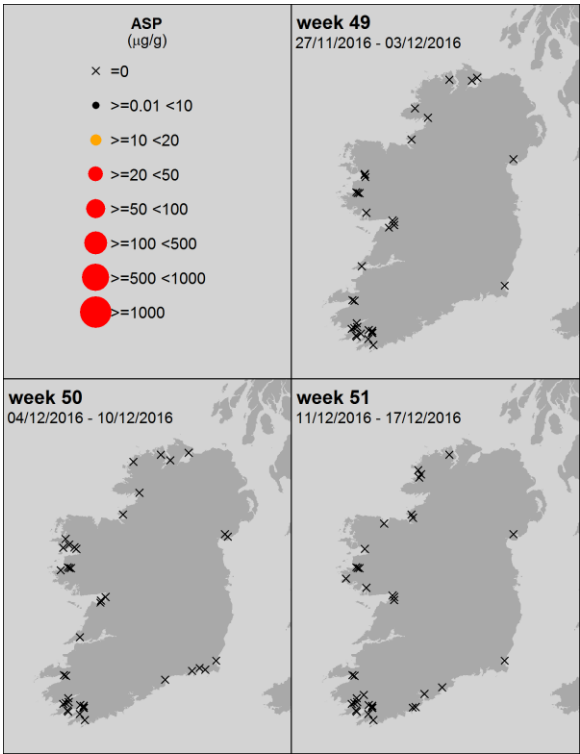
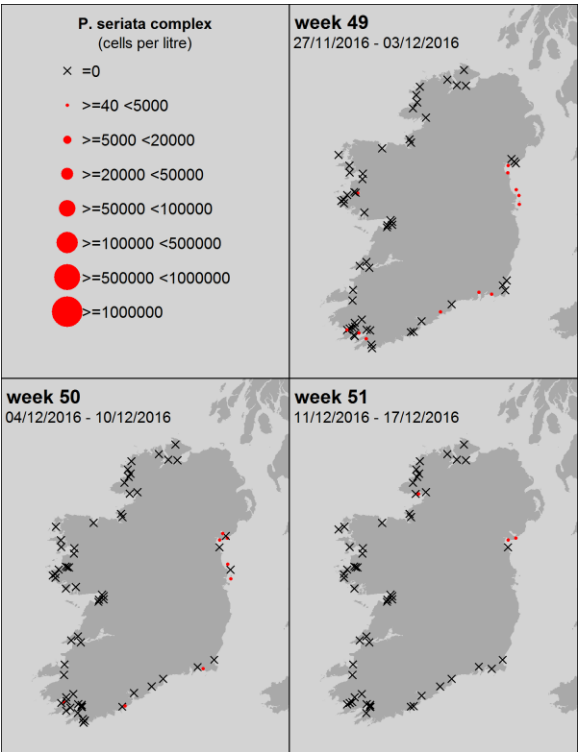
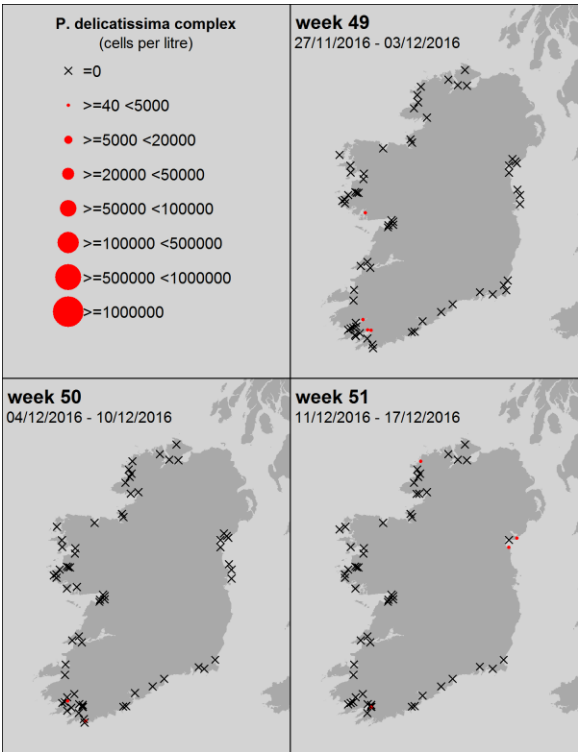
*Pseudo-nitzschia* spp.



ASP

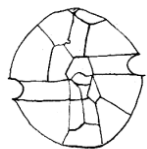
“*P. delicatissima*” complex = small cells  
Taken from the literature:  
3 species confirmed in Irish waters

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

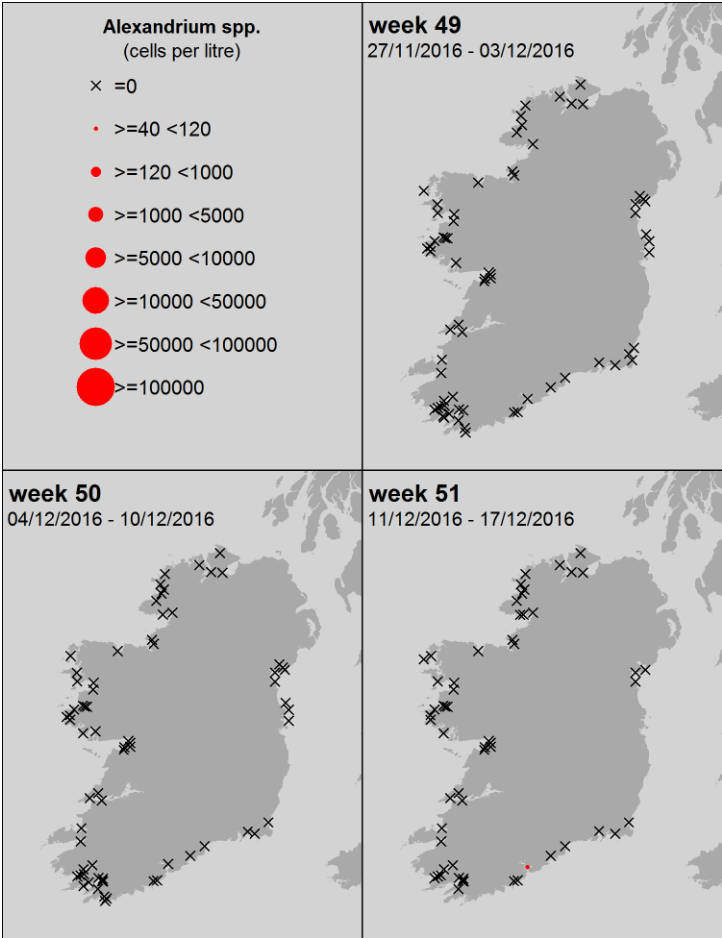


**Taken from the literature:** Of the 4 species (*P. fraudulenta*, *P. australis*, *P. pungens* and *P. delicatissima*) from Irish waters, tested for ASP toxins in culture work, only one, *P. australis* (from the “*P. seriata*” group) was toxic.

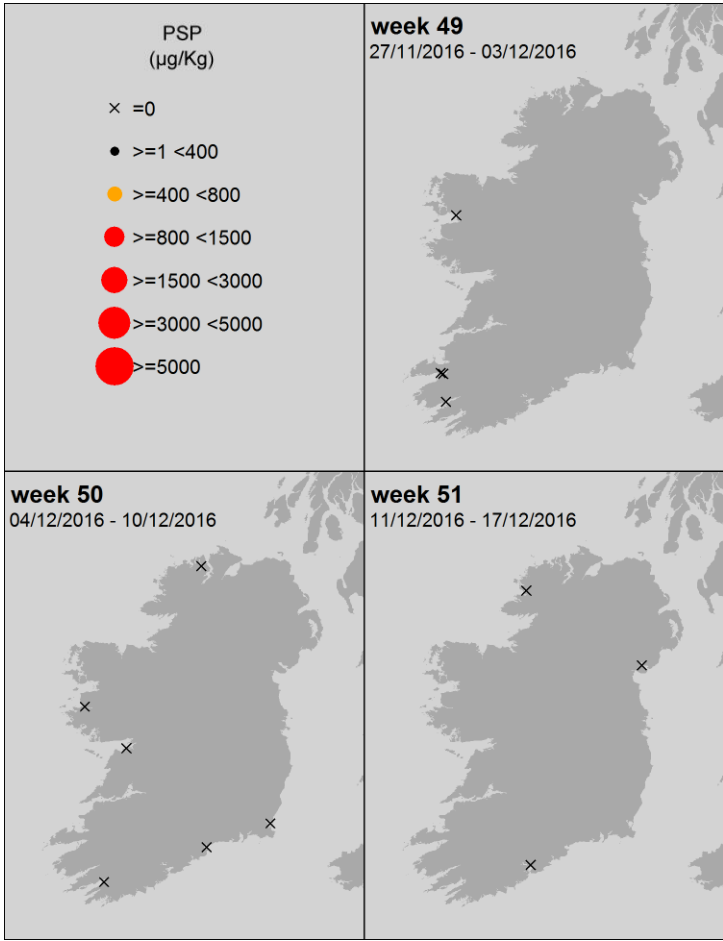
Ireland: Last 3 weeks of available National Monitoring Programme data



Alexandrium spp.



PSP



# Ireland HAB & Biotoxin temporal trends

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

## Ireland: Biotoxins



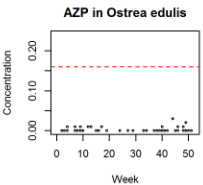
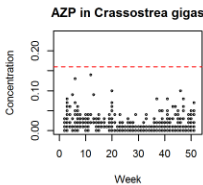
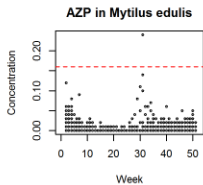
Toxin groups

mussels

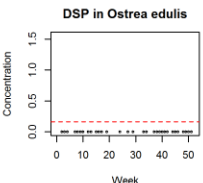
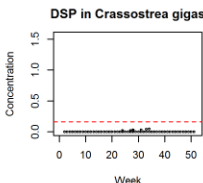
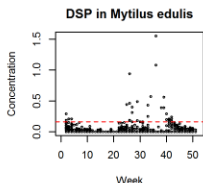
oysters

oysters

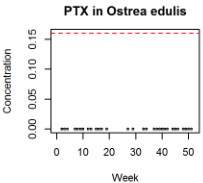
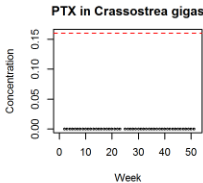
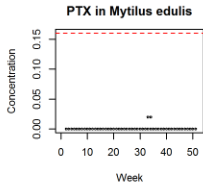
**AZP**  
AZaspiracid  
Poisoning



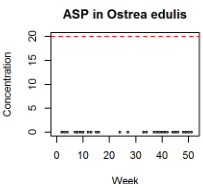
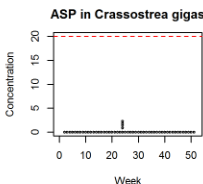
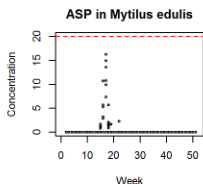
**DSP**  
Diarrhetic  
Shellfish  
Poisoning



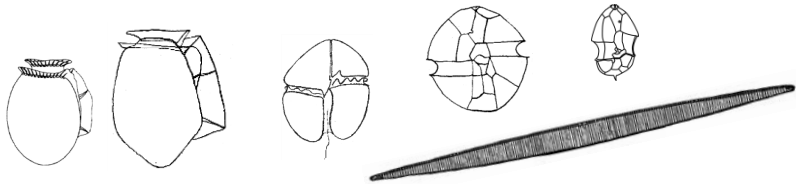
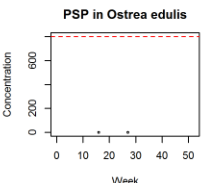
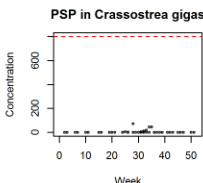
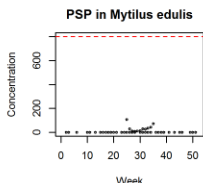
**PTX**  
Pectenotoxin



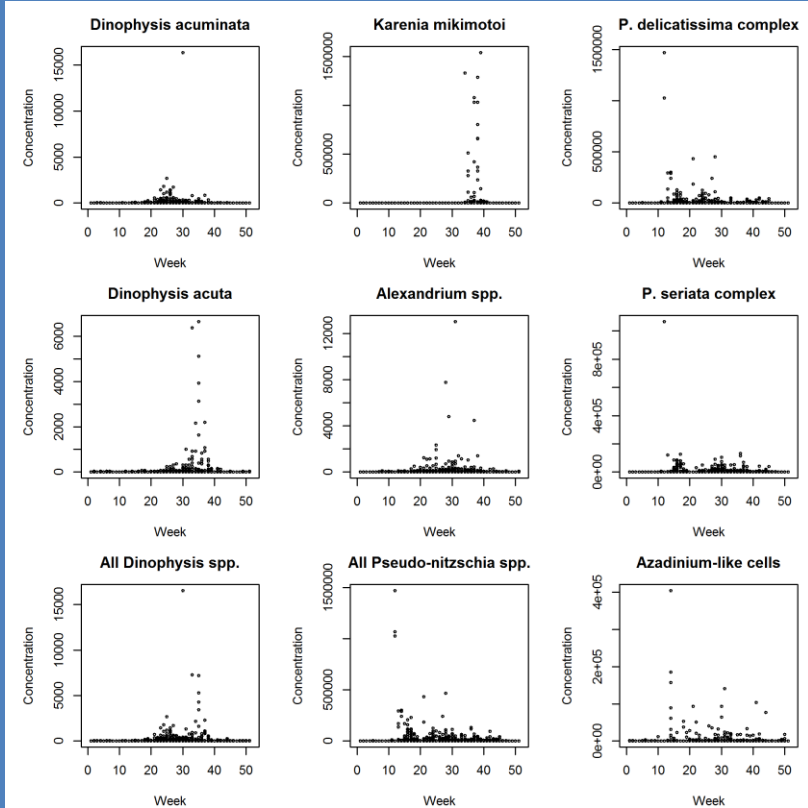
**ASP**  
Amnesic  
Shellfish  
Poisoning



**PSP**  
Paralytic  
Shellfish  
Poisoning



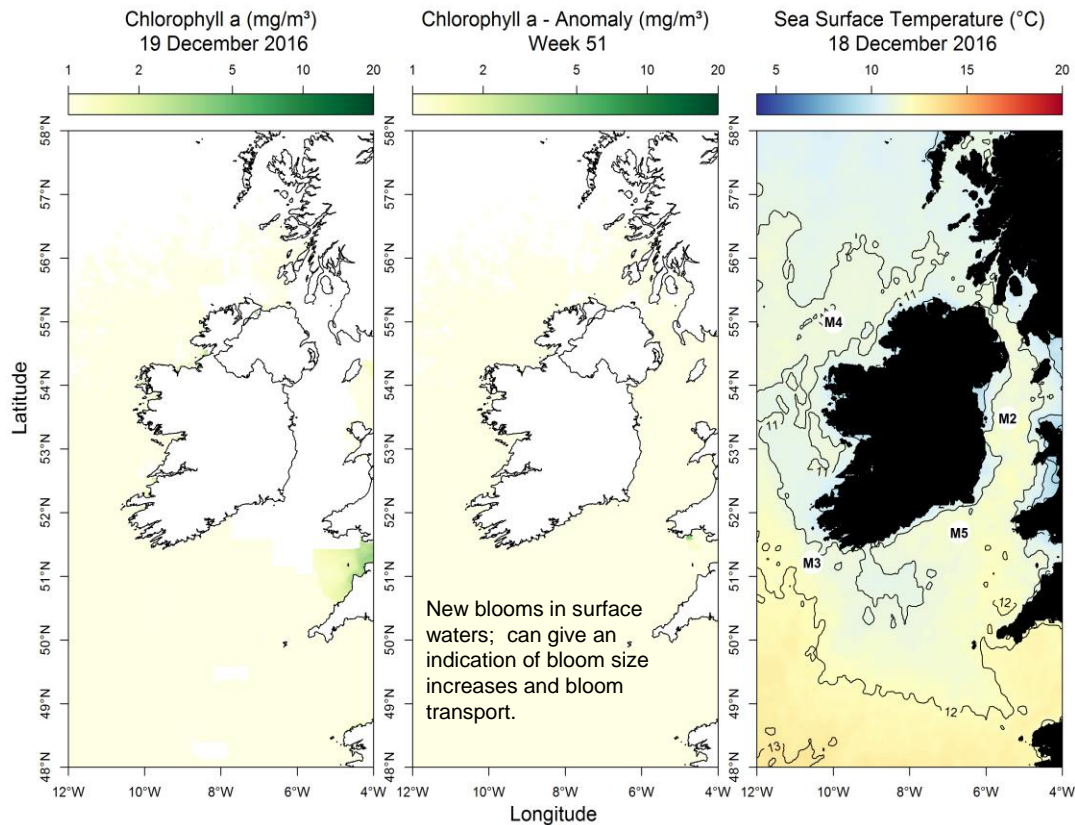
## Ireland: HABs



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

Regulatory limit = ■■■■■

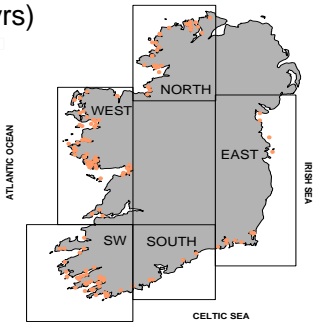
Most up to date available satellite data



SST (°C) anomaly for last week:

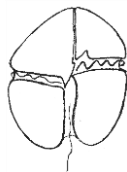
Data taken from the Irish data buoy network where the anomaly is the weekly difference in SST compared to the long term mean (~ 10 yrs)

- NW coast (M4) Data unavailable
- SW coast (M3) Data unavailable
- SE coast (M5) above average by 0.99 °C



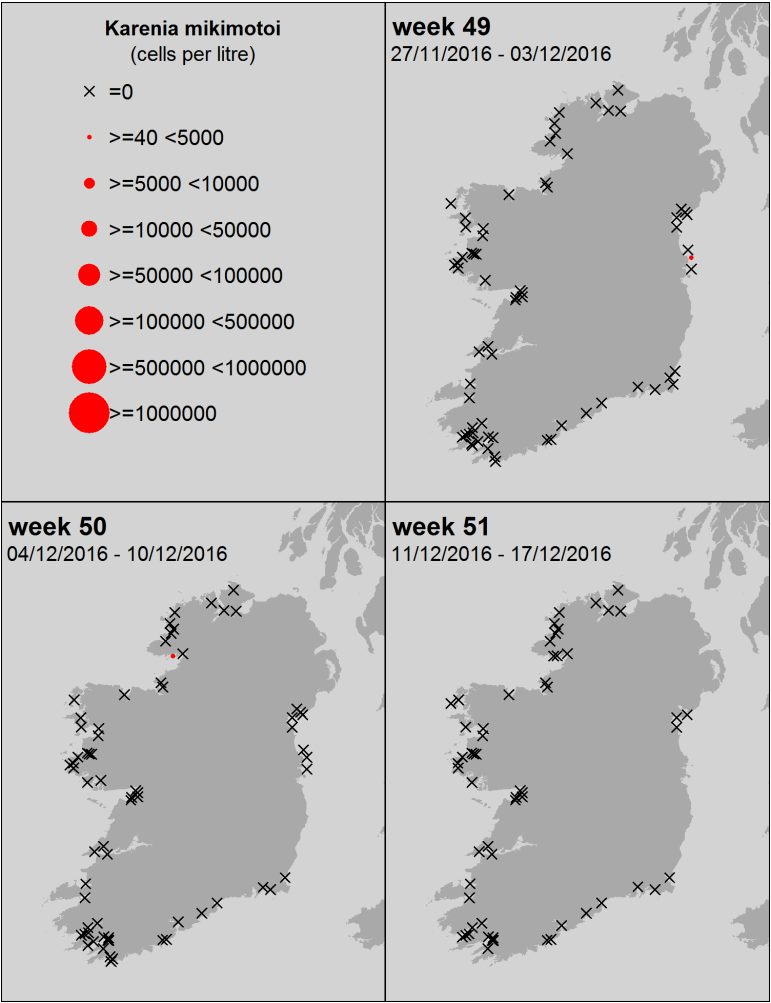
What phytoplankton were blooming at inshore coastal sites last week?

Rank	Region	Species	Rounded Count
1	east	Pennate diatom	5000
2	east	Leptocylindrus danicus	3000
3	east	Chaetoceros (Hyalochaete) spp.	2000
4	east	Centric Diatom	1000
5	east	Pseudo-nitzschia delicatissima complex	1000
1	north	Ceratium spp.	199000
2	north	Pennate diatom	100000
3	north	Chaetoceros (Phaeoceros) spp.	31000
4	north	Microflagellate sp.	26000
5	north	Cylindrotheca closterium/ Nitzschia longissima	13000
1	south	Skeletonema costatum	367000
2	south	Tintinnid	43000
3	south	Odontella spp.	31000
4	south	Prymnesiophytes	13000
5	south	Ciliates	7000
1	southwest	Prymnesiophytes	101000
2	southwest	Skeletonema spp.	10000
3	southwest	Asterionellopsis glacialis	7000
4	southwest	Ciliates	3000
5	southwest	Prorocentrum micans	3000
1	west	Pennate diatom	12000
2	west	Skeletonema costatum	7000
3	west	Skeletonema spp.	6000
4	west	Prymnesiophytes	4000
5	west	Navicula spp. <25um	3000



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

A *Karenia mikimotoi* bloom  
is NOT expected this week



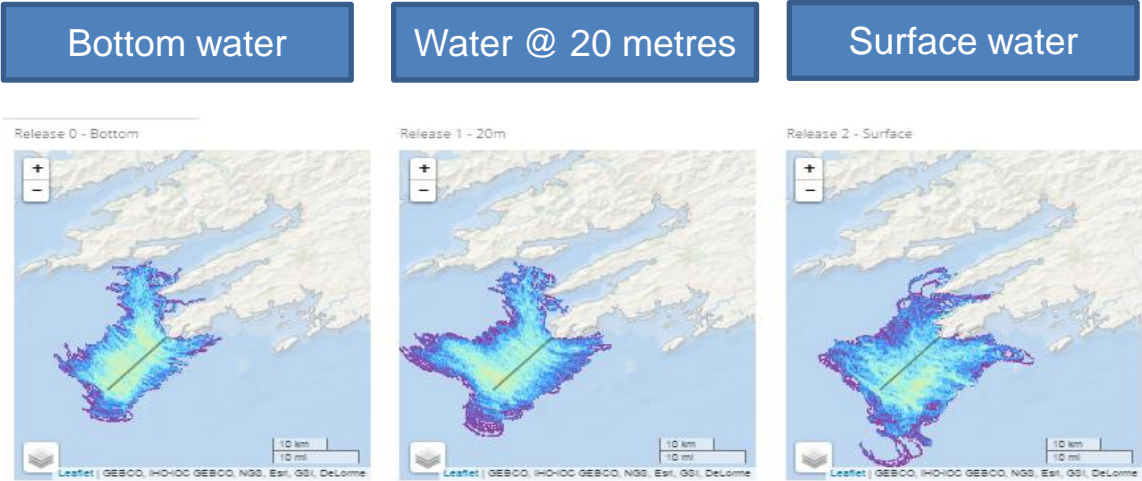
## SOUTHWEST: Bantry Bay

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)

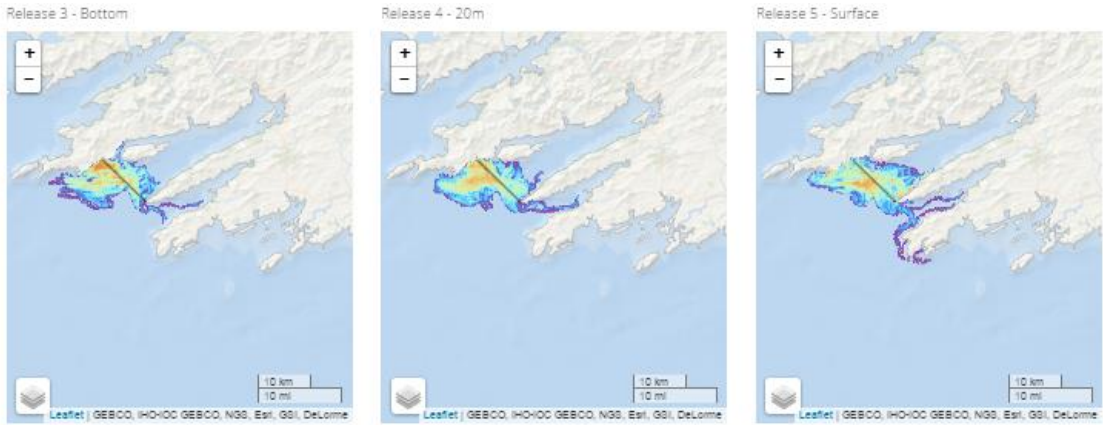
Reddish colours represent areas where phytoplankton remain longest  
Cooler colours represent areas where phytoplankton remain for shorter periods

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



Well mixed waters at all depths, in equal an opposite directions and strengths, with inner bay incursions possible.



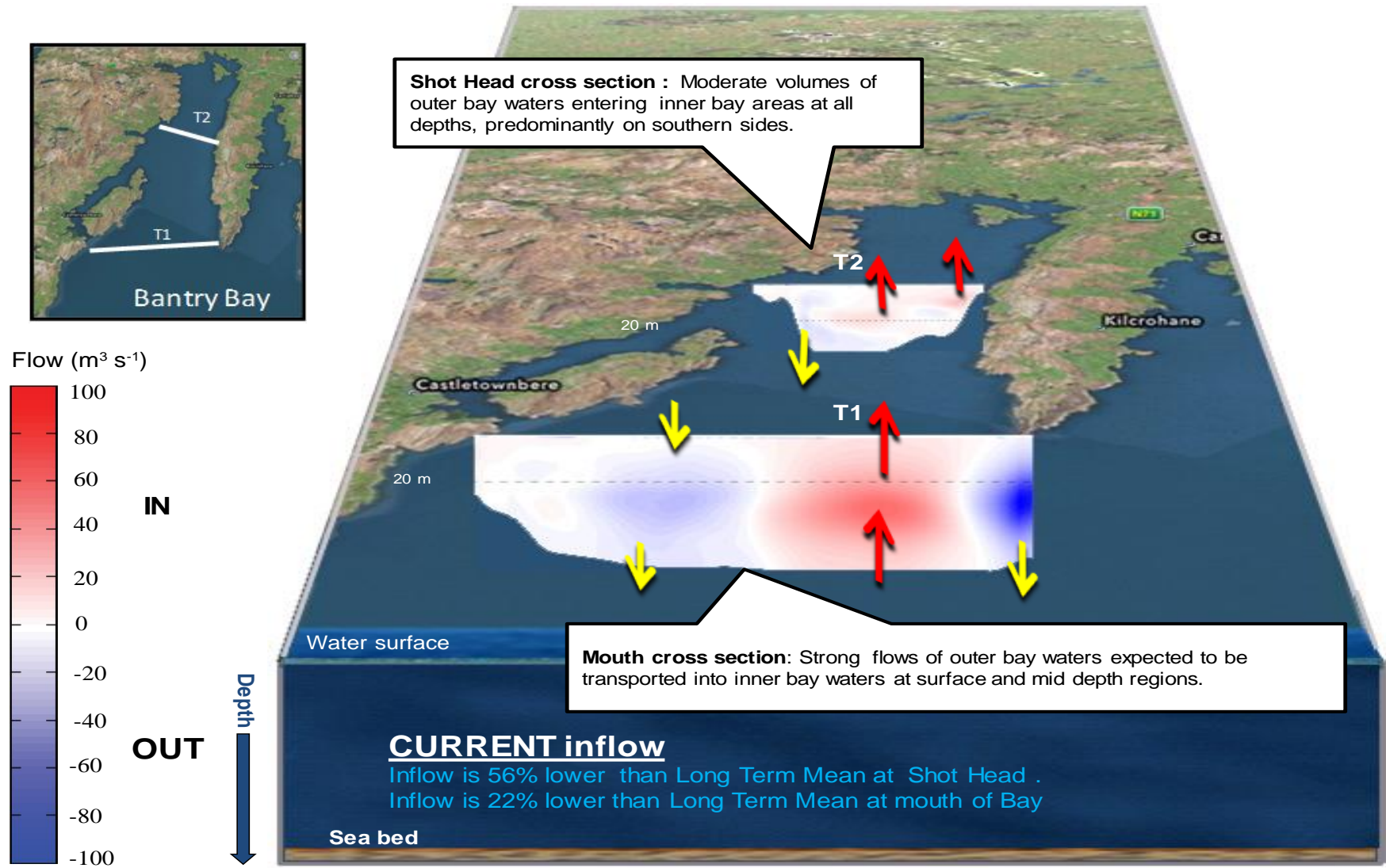
Slight indication of stronger south south-westerly movements at mouth of bay areas with possibility of inner bay transport of outer bay waters on southern shorelines in particular.

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

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)

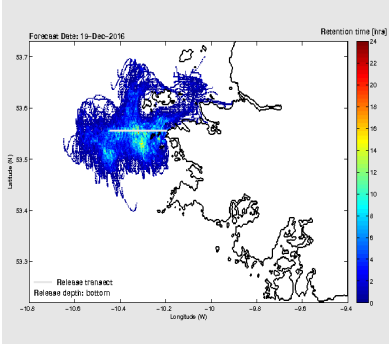
Reddish colours represent areas where phytoplankton remain longest  
Cooler colours represent areas where phytoplankton remain for shorter periods



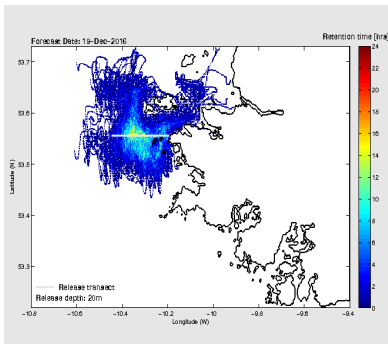
0.2 0.4 1 2 4 10 20 40 100 200

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

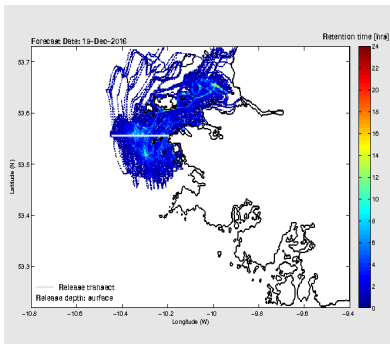
Bottom water



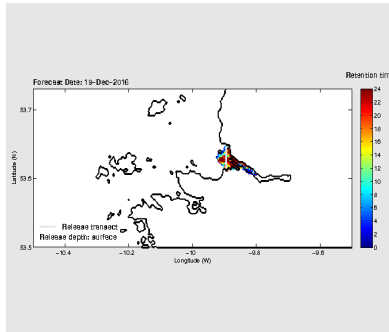
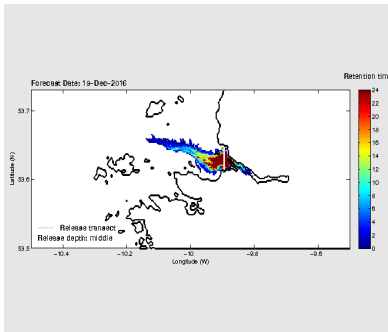
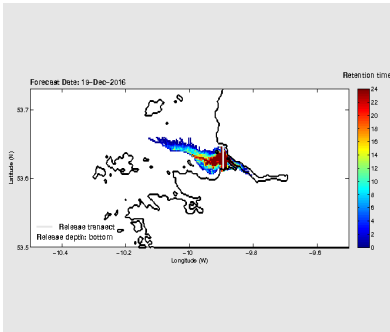
Water @ 20 metres



Surface water



Strong movement and mixing in offshore waters ,in mixed opposing directions at all depths, allowing for offshore waters to move inshore.



Potential of well mixed offshore waters, at all depths, reaching mid bay regions and possibly inner bay areas .

# Killary Harbour

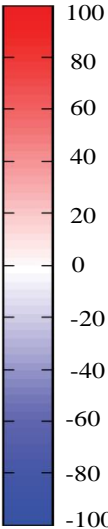
3 day estimated water flows at the mouth of Killary Harbour

Forecast for next 3 days



**Killary Harbour Mouth cross section:**  
Moderate movements of water , at all depths, into the bay area from well mixed waters offshore.

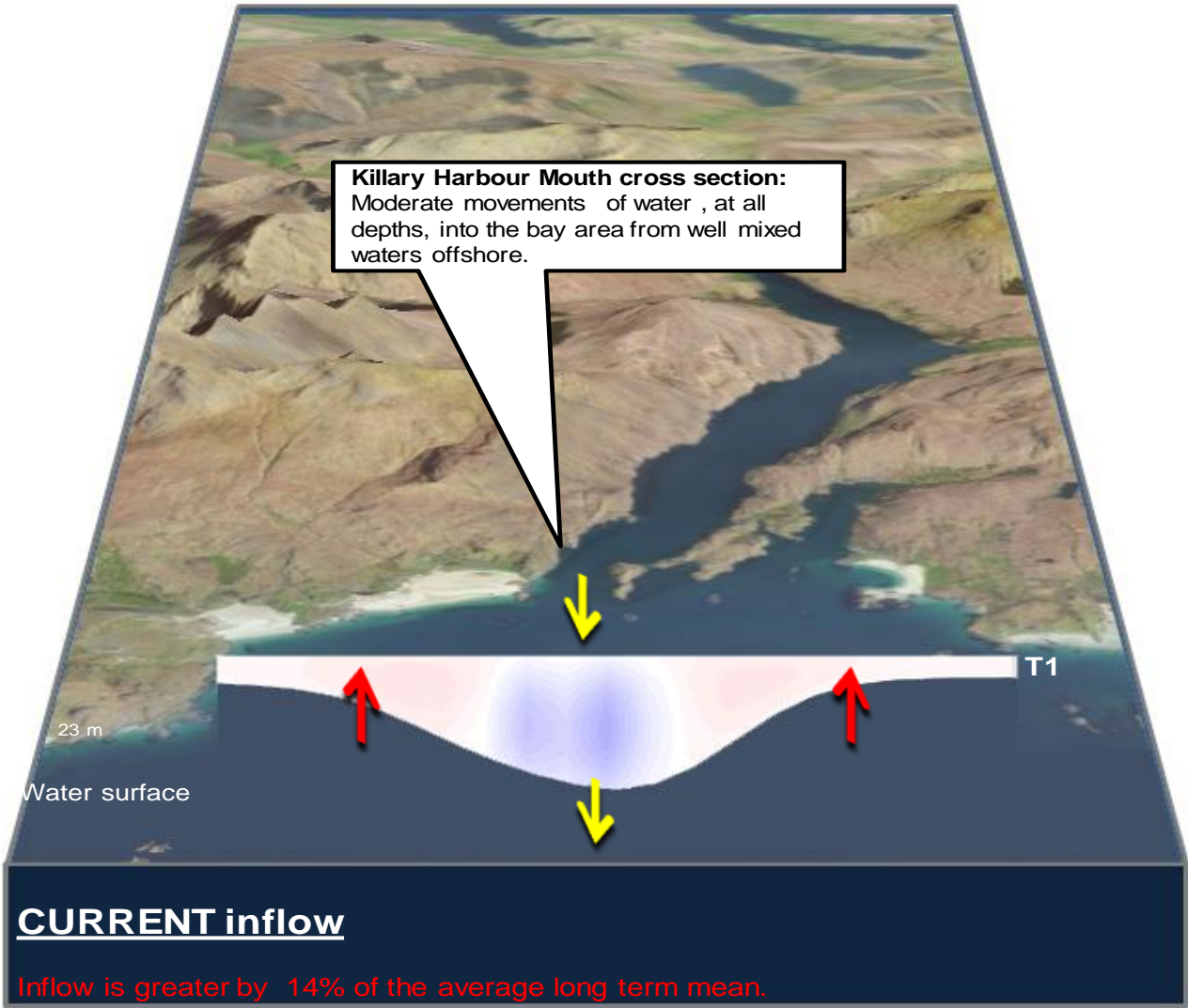
Flow ( $\text{m}^3 \text{s}^{-1}$ )



IN

OUT

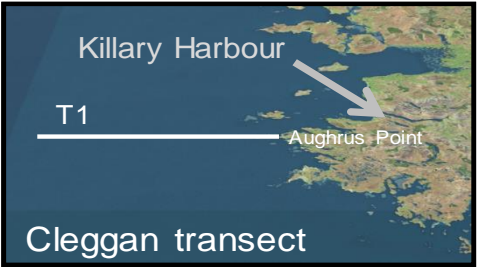
Depth



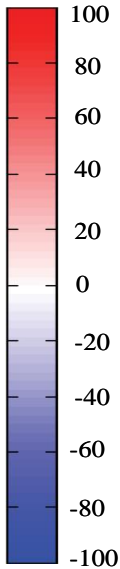
Inflow is greater by 14% of the average long term mean.

# 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

