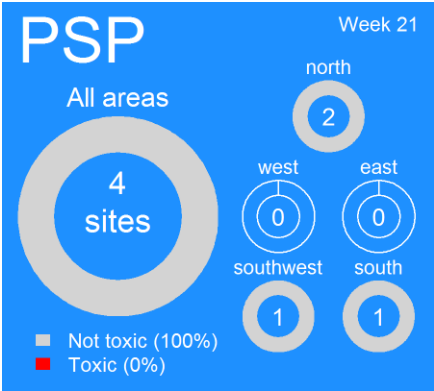
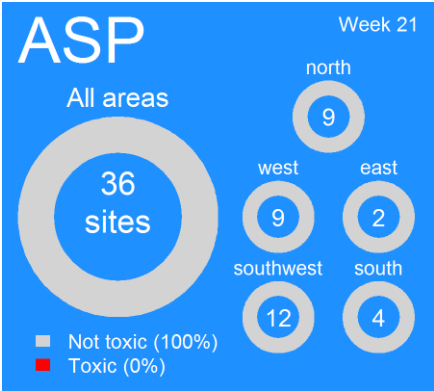
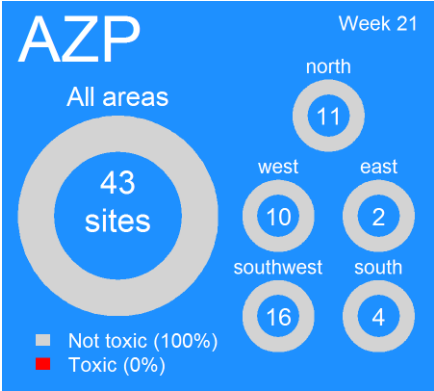
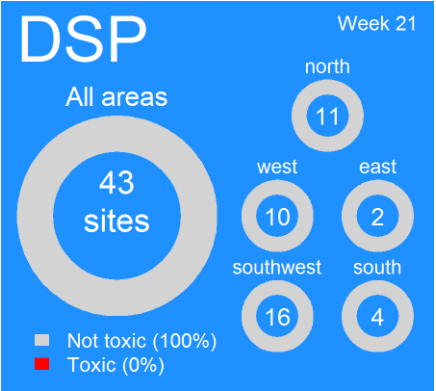


# Ireland: Current Conditions

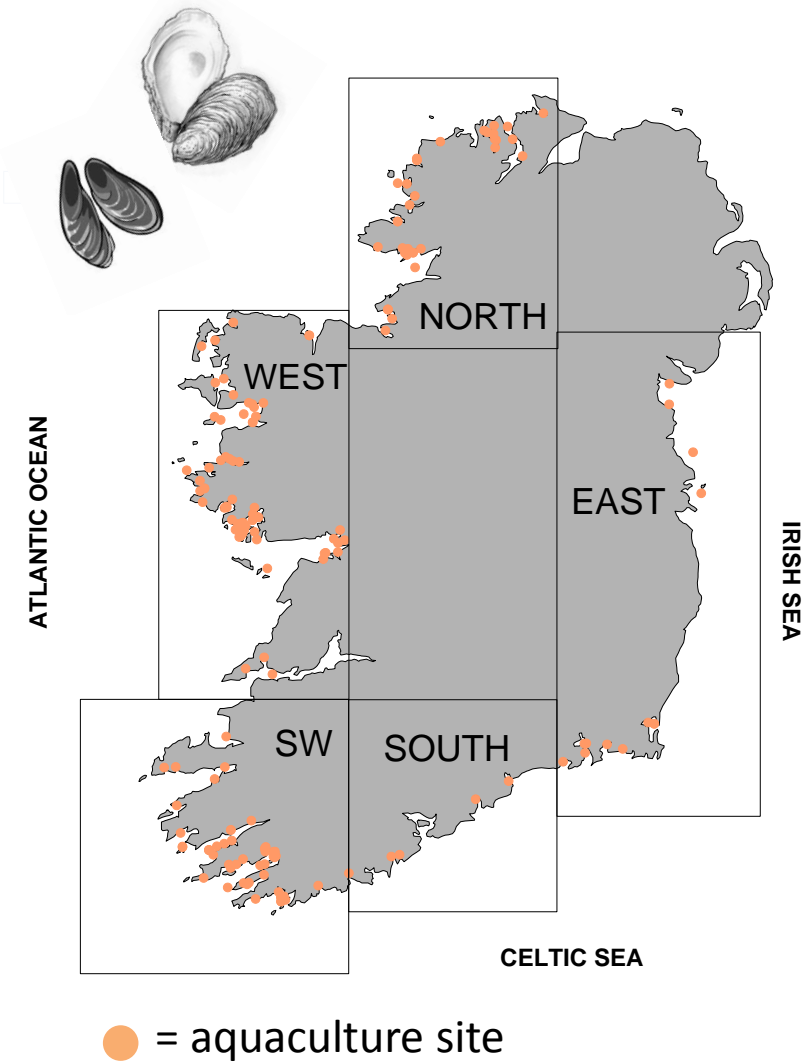
## Shellfish biotoxin report (last week)



**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

PSP event: Low

## Why do we think this?

ASP: Very Low levels of ASP toxins in shellfish have been detected in past week. Currently this 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, while some toxic species are still present caution is advised.

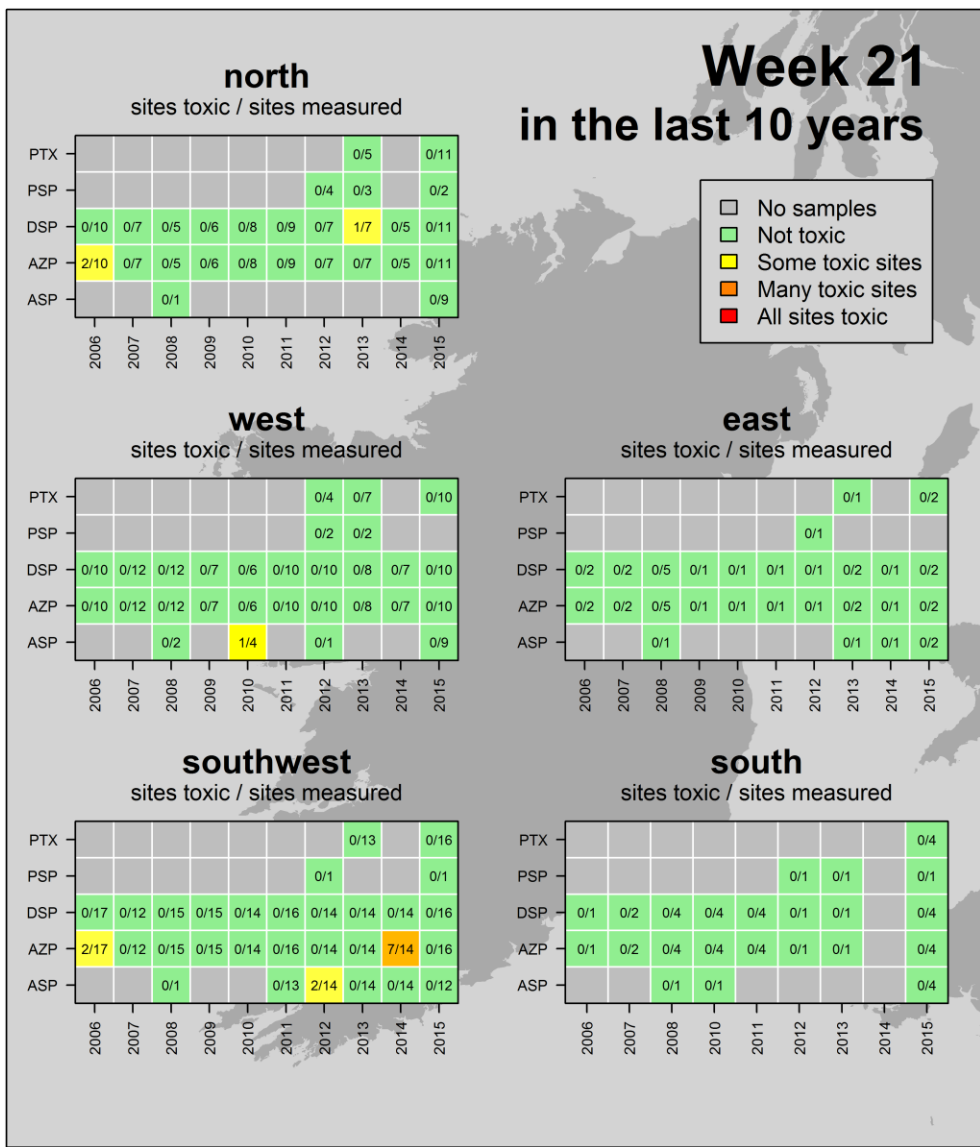
AZP: Historically low levels of caution should apply at this time of the year however due to the geographical spread and persistent presence of Azadinium like cells, combined with a potential trend of low increases in biotoxin levels (still below reg. limit) caution is currently advised.

DSP: The 'Toxic season' has begun with *Dinophysis* sp. 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. Keep an eye on the daily model forecasts for such events.

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

# Ireland: Historic Conditions

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



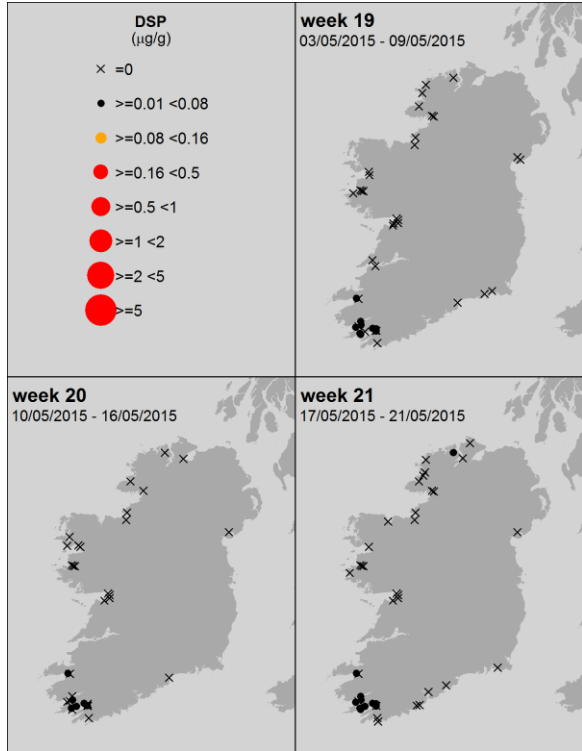
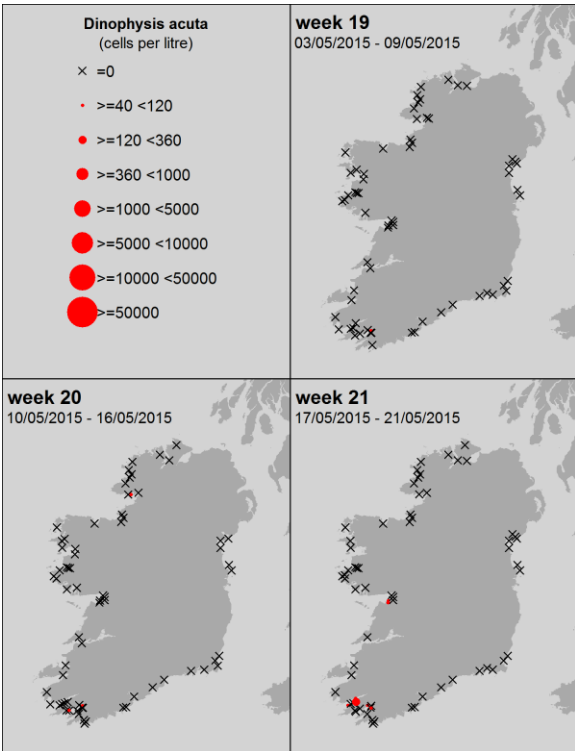
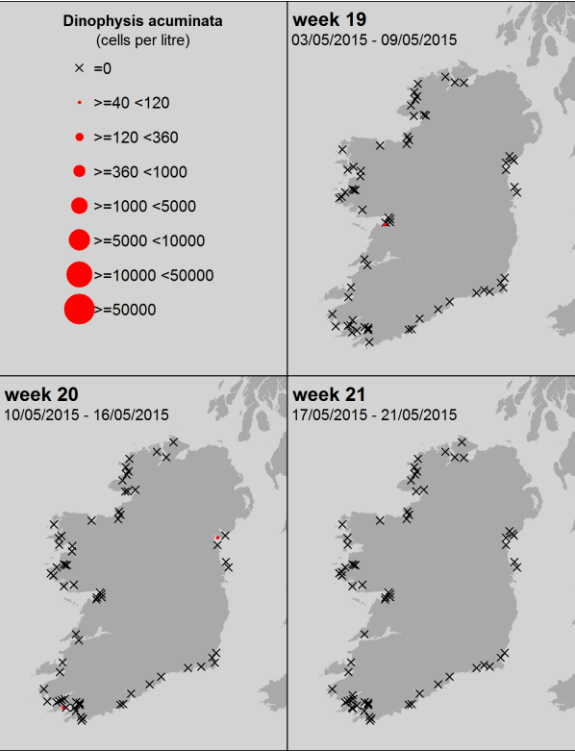
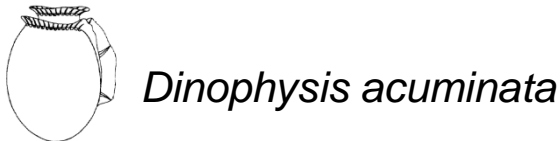
## Ireland HISTORIC TRENDS

**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



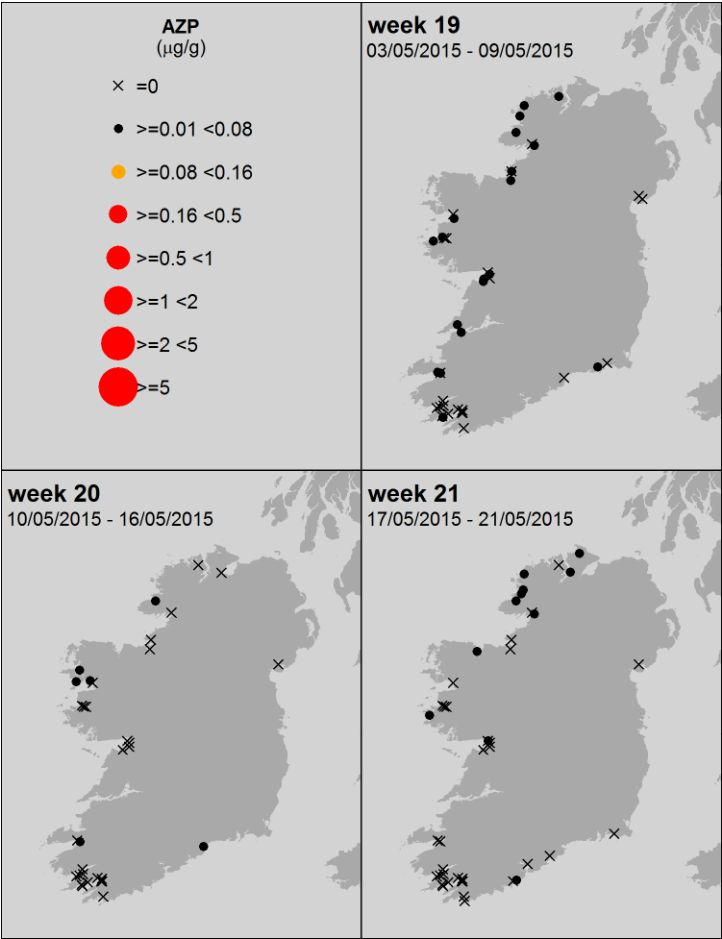
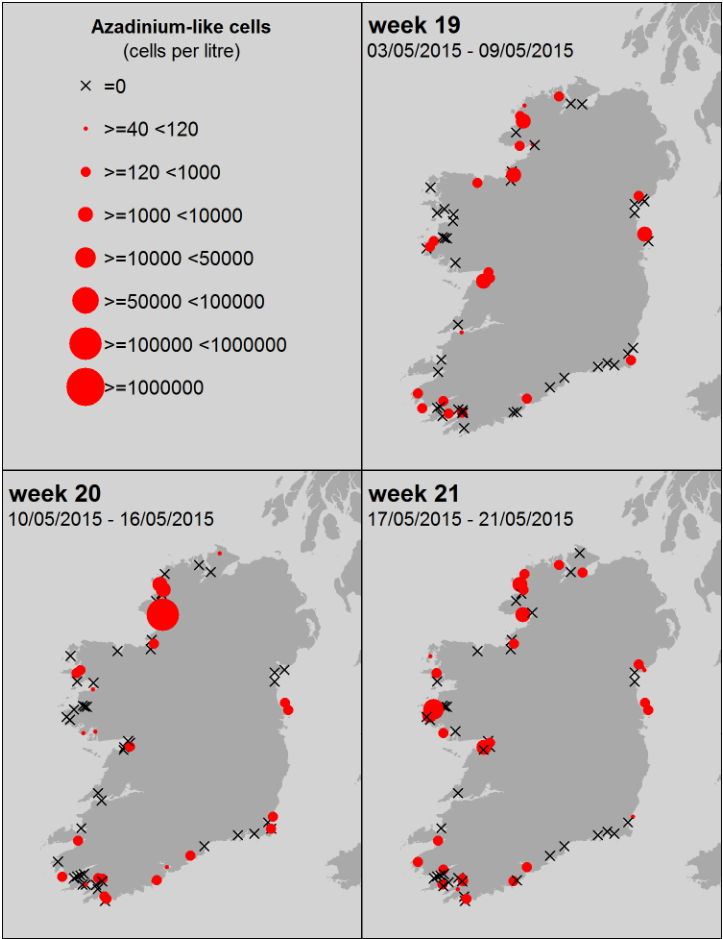
Ireland: Last 3 weeks of available National Monitoring Programme data



*Azadinium* – like spp.



AZP



Ireland: Last 3 weeks of available National Monitoring Programme data

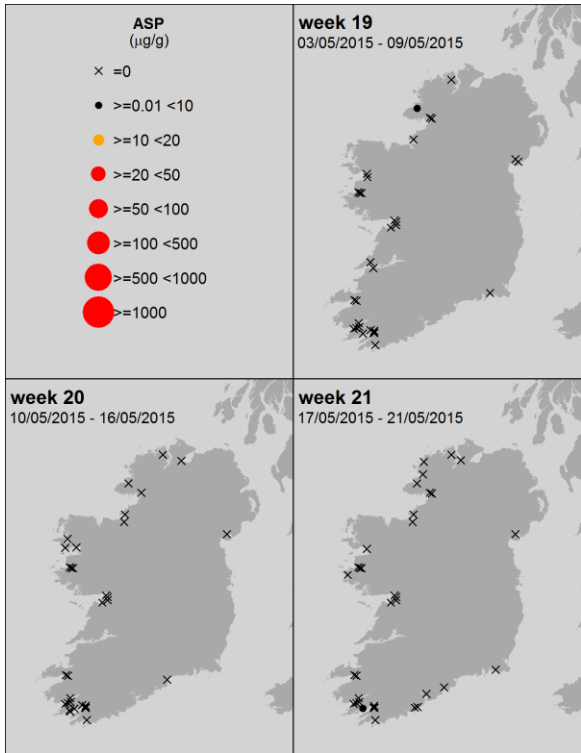
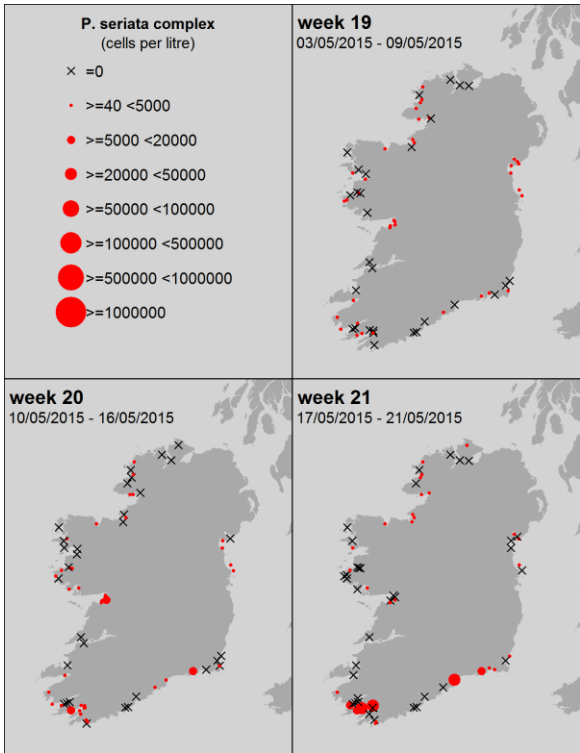
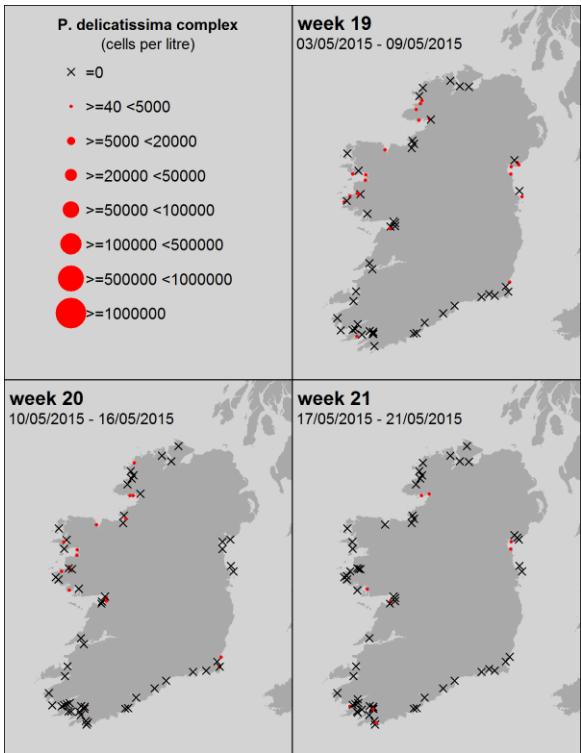
*Pseudo-nitzschia* spp.



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.

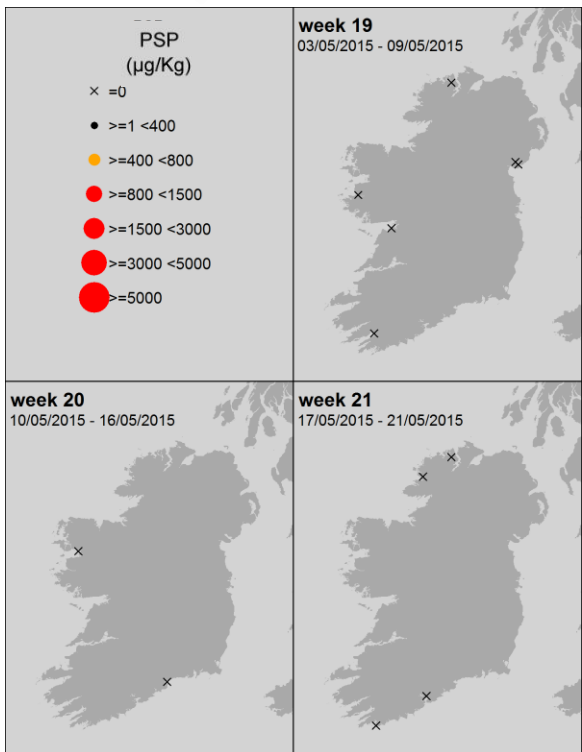
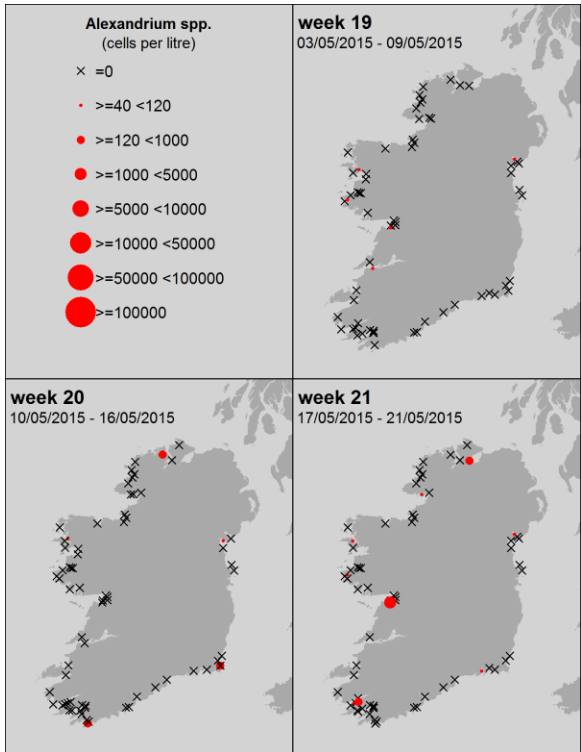
Ireland: Last 3 weeks of available National Monitoring Programme data



*Alexandrium* spp.



PSP



# Ireland HAB & Biotoxin temporal trends

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

## Ireland: Biotoxins



Toxin groups

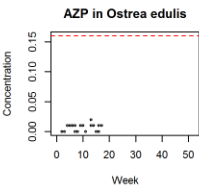
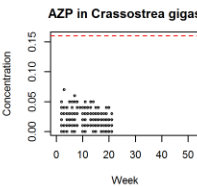
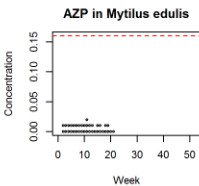
mussels

oysters

oysters

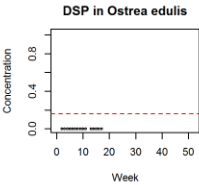
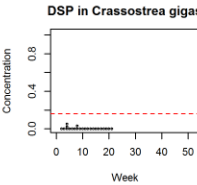
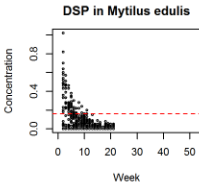
**AZP**

AZaspiracid  
Poisoning



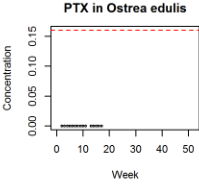
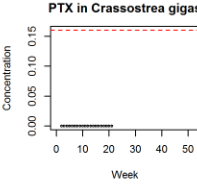
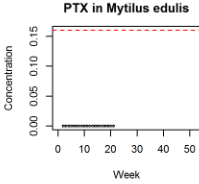
**DSP**

Diarrhetic  
Shellfish  
Poisoning



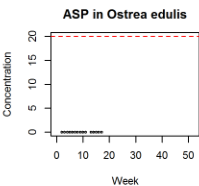
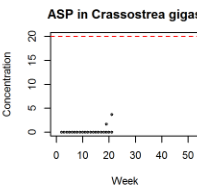
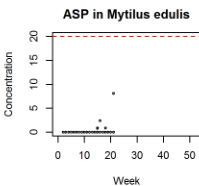
**PTX**

Pectenotoxin



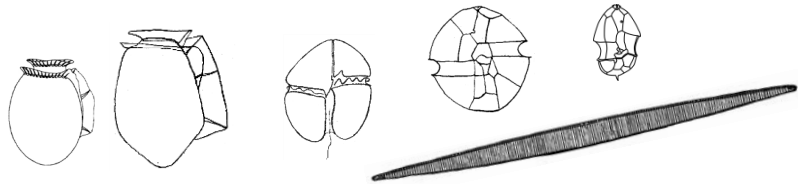
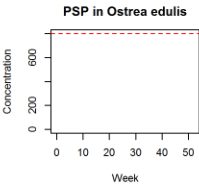
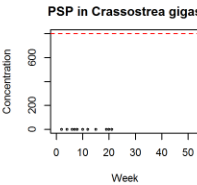
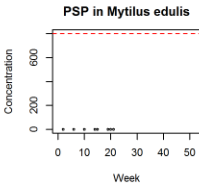
**ASP**

Amnesic  
Shellfish  
Poisoning

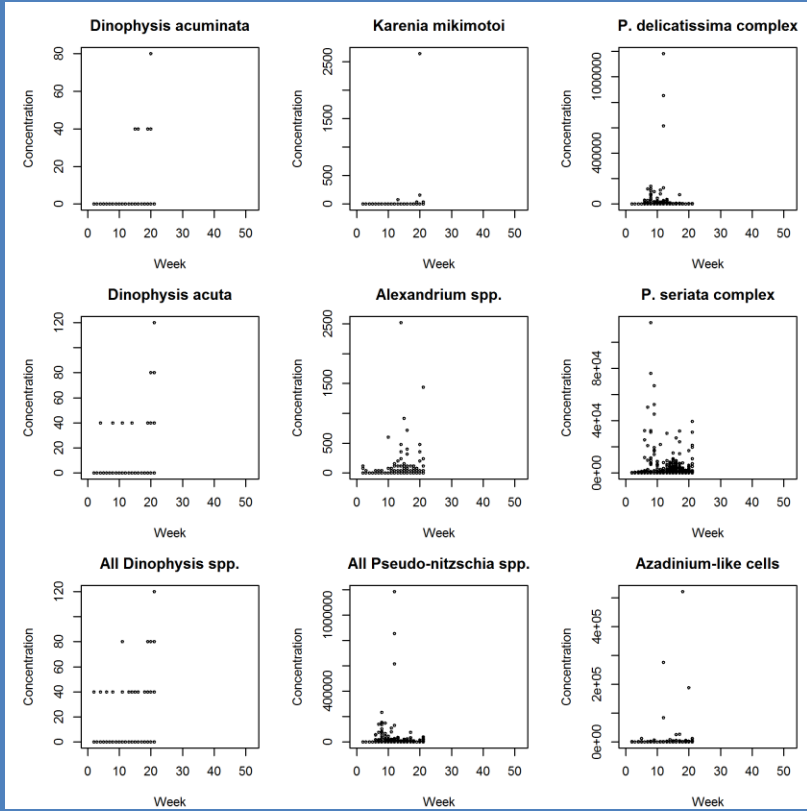


**PSP**

Paralytic  
Shellfish  
Poisoning



## Ireland: HABs

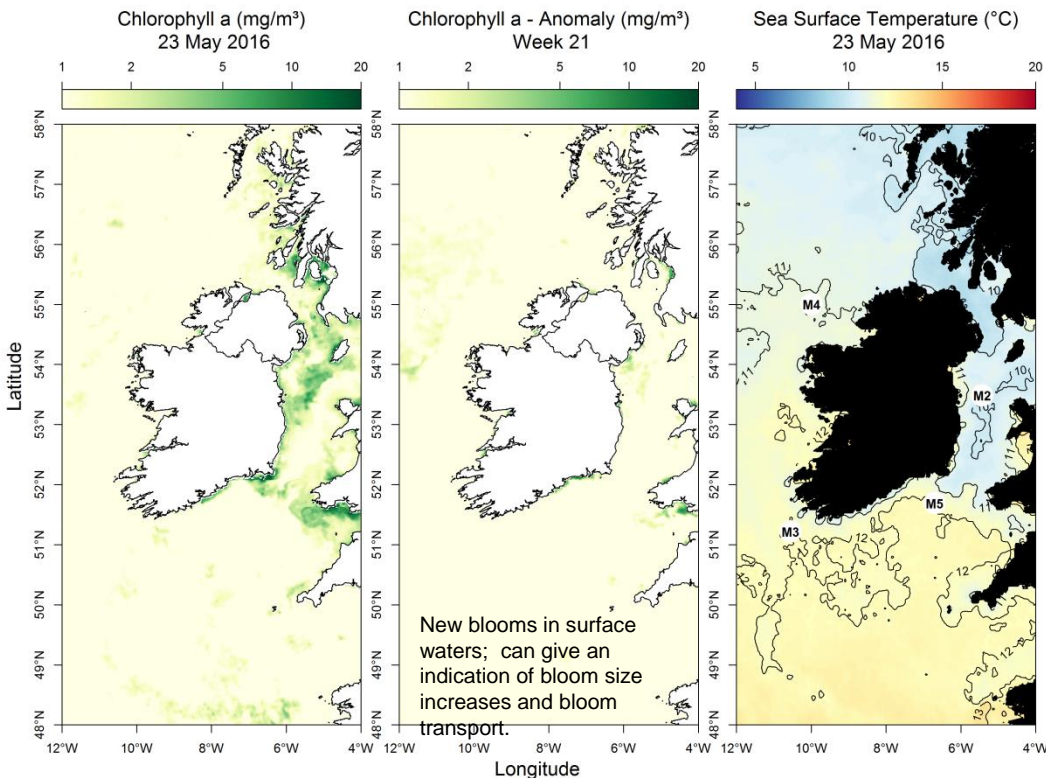


EU Regulatory Limit: ASP 20 µg/g; AZP 0.16 µg/g; DSP 0.16 µg/g; PSP 800 µg/kg

Regulatory limit = ■■■■■

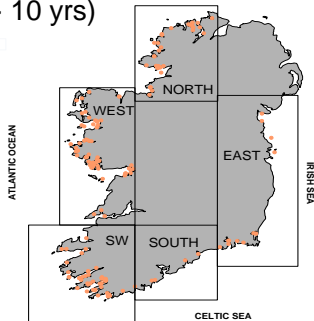


Most up to date available satellite data



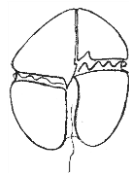
**SST (°C) anomaly for last week:**  
Data taken from the Irish data buoy network where the anomaly is the weekly difference in SST compared to the long term mean (~ 10 yrs)

- NW coast (M4) Offline
- SW coast (M3) Offline
- SE coast (M5) below average by 0.07 °C



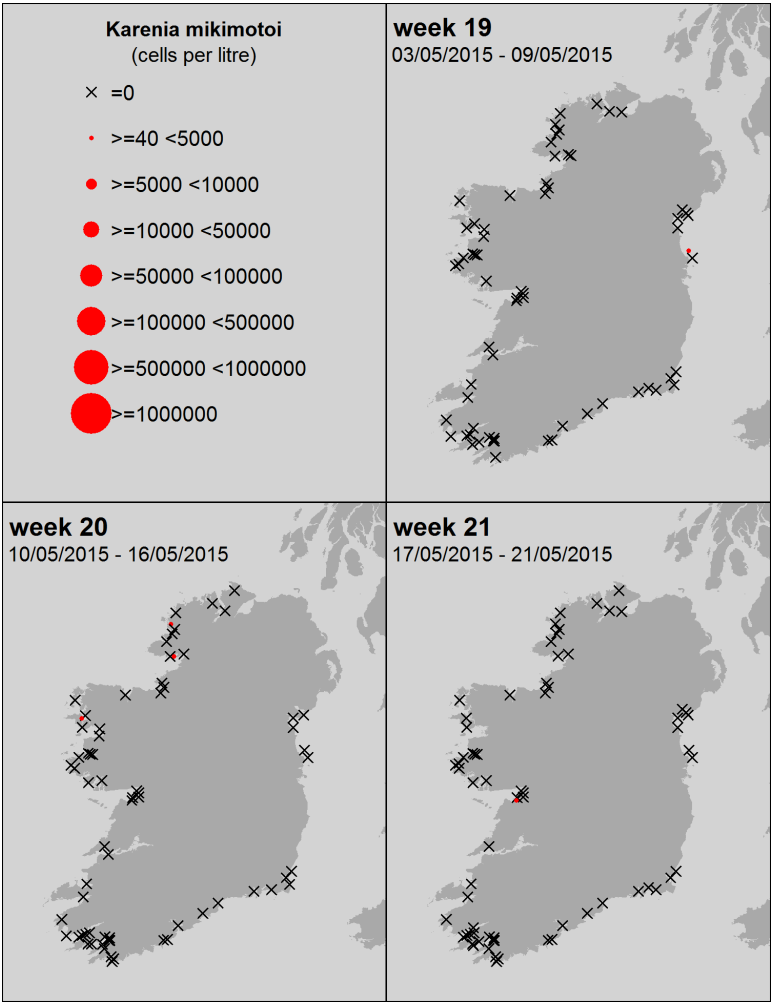
What phytoplankton were blooming at inshore coastal sites last week?

Region	Predominant Phytoplankton (most abundant taxa)	Cells/L (rounded)
north:	<b>Diatoms:</b>	
	<i>Guinardia delicatula</i>	750,000
	<i>Cerataulina</i> spp.	482,000
	<b>Dinoflagellates:</b>	
	<i>Heterocapsa triquetra</i>	117,000
west:	<b>Others:</b>	
	<i>Microflagellate</i> sp.	4,872,000
	<b>Diatoms:</b>	
	<i>Cerataulina pelagica</i>	466,000
	<i>Cylindrotheca closterium/ Nitzschia longissima</i>	463,000
SW:	<i>Pennate diatom</i>	204,000
	<b>Diatoms:</b>	
	<i>Leptocylindrus minimus</i>	61,000
	<i>Cerataulina pelagica</i>	49,000
	<i>Chaetoceros socialis</i>	32,000
south:	<i>Pseudo-nitzschia delicatissima complex</i>	25,000
	<b>Diatoms:</b>	
	<i>Thalassionema</i> spp.	7,000
	<i>Skeletonema</i> spp.	2,000
	<i>Chaetoceros (Hyalochaete)</i> spp.	2,000
east:	<i>Leptocylindrus danicus</i>	1,000
	<i>Chaetoceros</i> spp. (H) (small)	1,000
	<b>Diatoms:</b>	
	<i>Cylindrotheca closterium/ Nitzschia longissima</i>	348,000
	<i>Pseudo-nitzschia delicatissima complex</i>	184,000
	<i>Pennate diatom</i>	127,000
	<i>Skeletonema</i> spp.	63,000
	<i>Chaetoceros (Hyalochaete)</i> spp.	27,000
	<b>Others:</b>	
	<i>Phaeocystis</i> spp. (cells)	23,026,000



*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



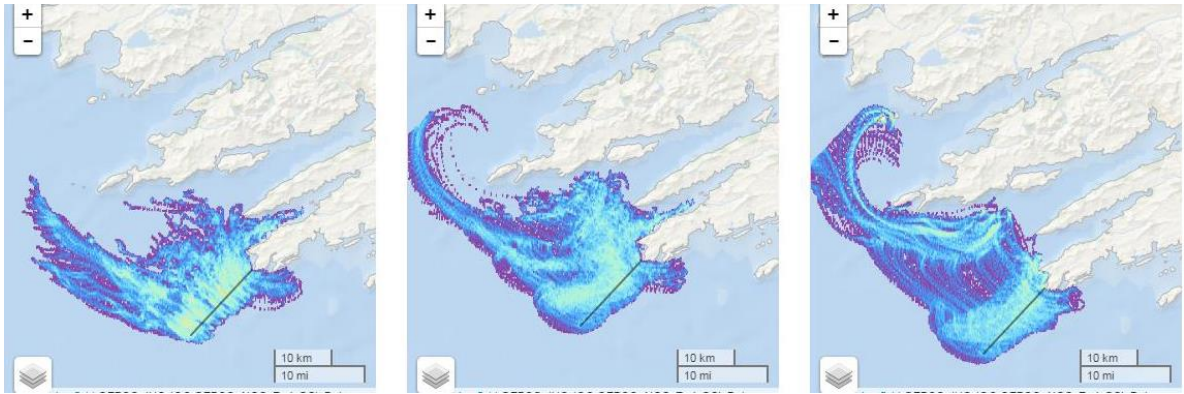
particle transport probability (hours)  
Bantry Bay model particle track analysis  
(2015-03-10T00:00:00Z, release\_location=0.0 count)  
Data courtesy of Irish Marine Institute

## Forecast for the next 3 days

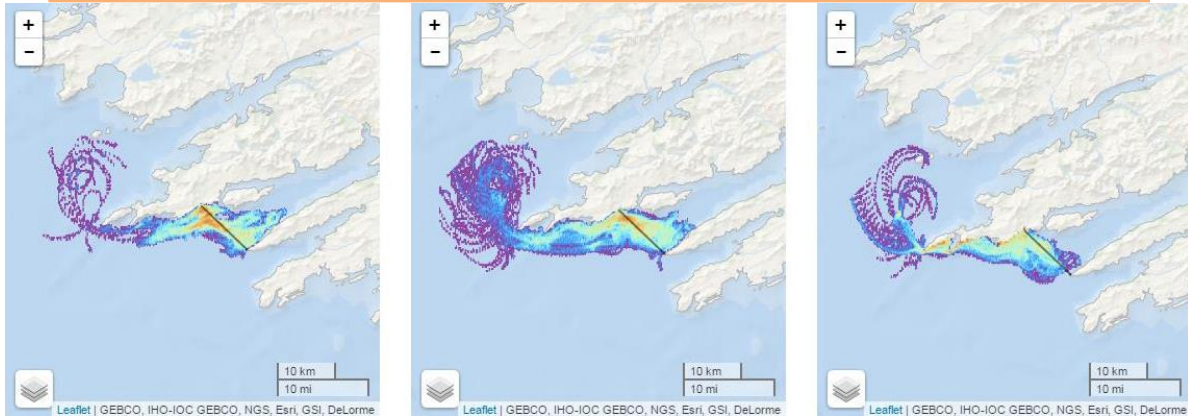
Bottom water

Water @ 20 metres

Surface water



Estimated water circulation patterns at Mizen head will flow in a north west direction. Small amounts of water at depth will reach Dunmanus Bay.



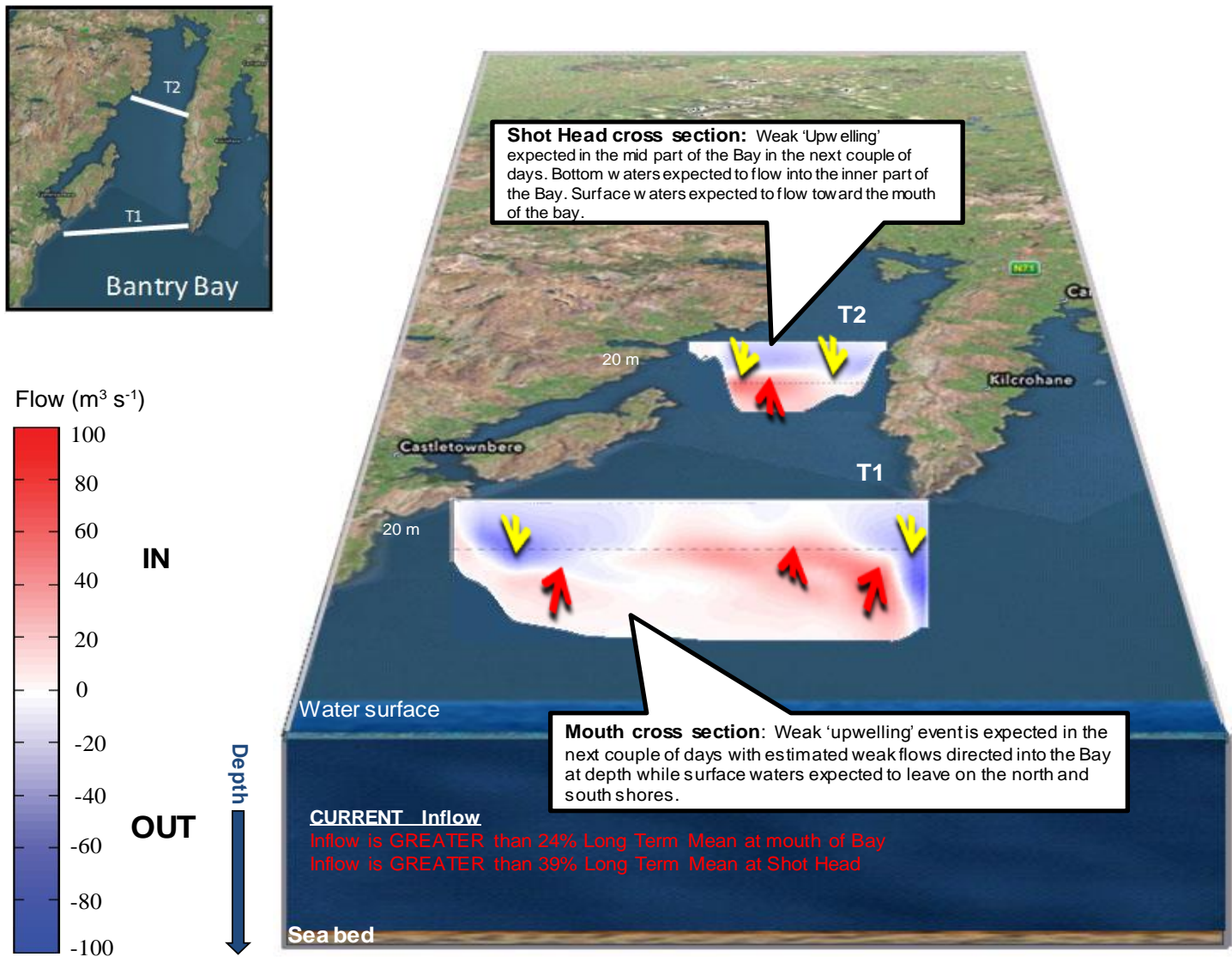
Bottom waters are expected to reach Bantry Bay while surface waters are expected to flow north west direction along with some water at depth.

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

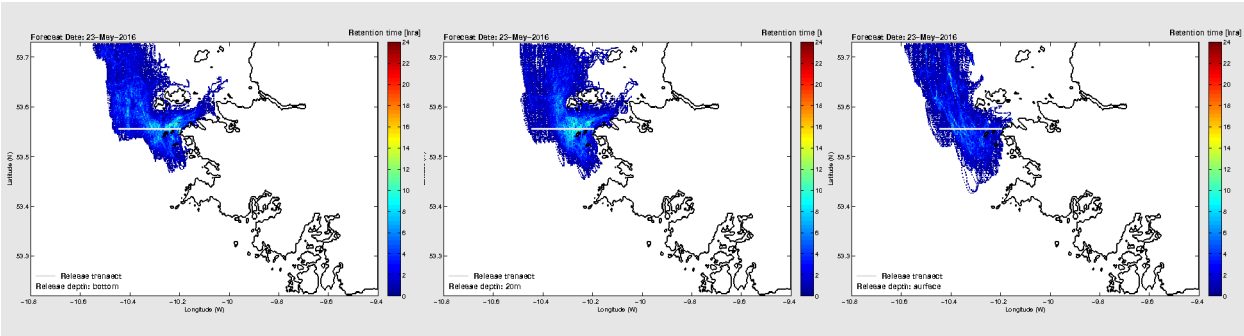
Cooler colours represent areas where phytoplankton remain for shorter periods



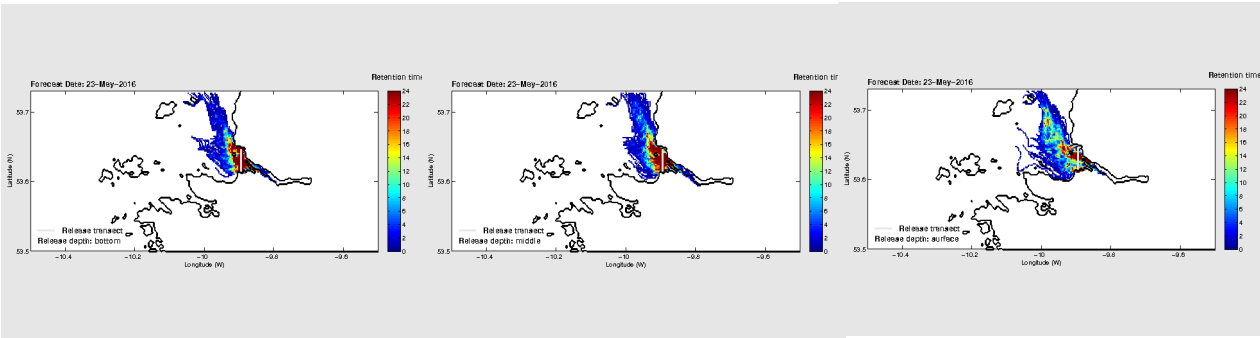
particle transport probability (hours)  
Bantry Bay model particle track analysis  
(2015-03-10T00:00:00Z, release\_location=0.0 count)  
Data courtesy of Irish Marine Institute

Forecast for the next 3 days

- Bottom water
- Water @ 20 metres
- Surface water



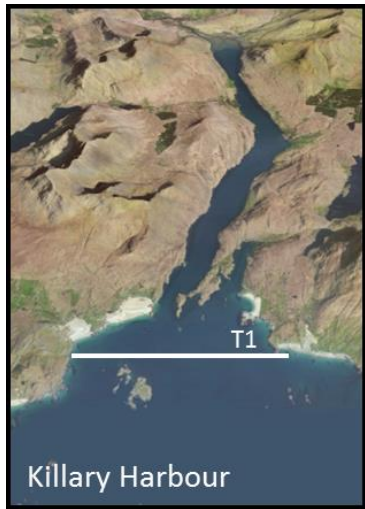
Water flows of the west coast will be predominately northerly. Offshore water masses are unlikely to reach Killary harbour in the next couple of days.



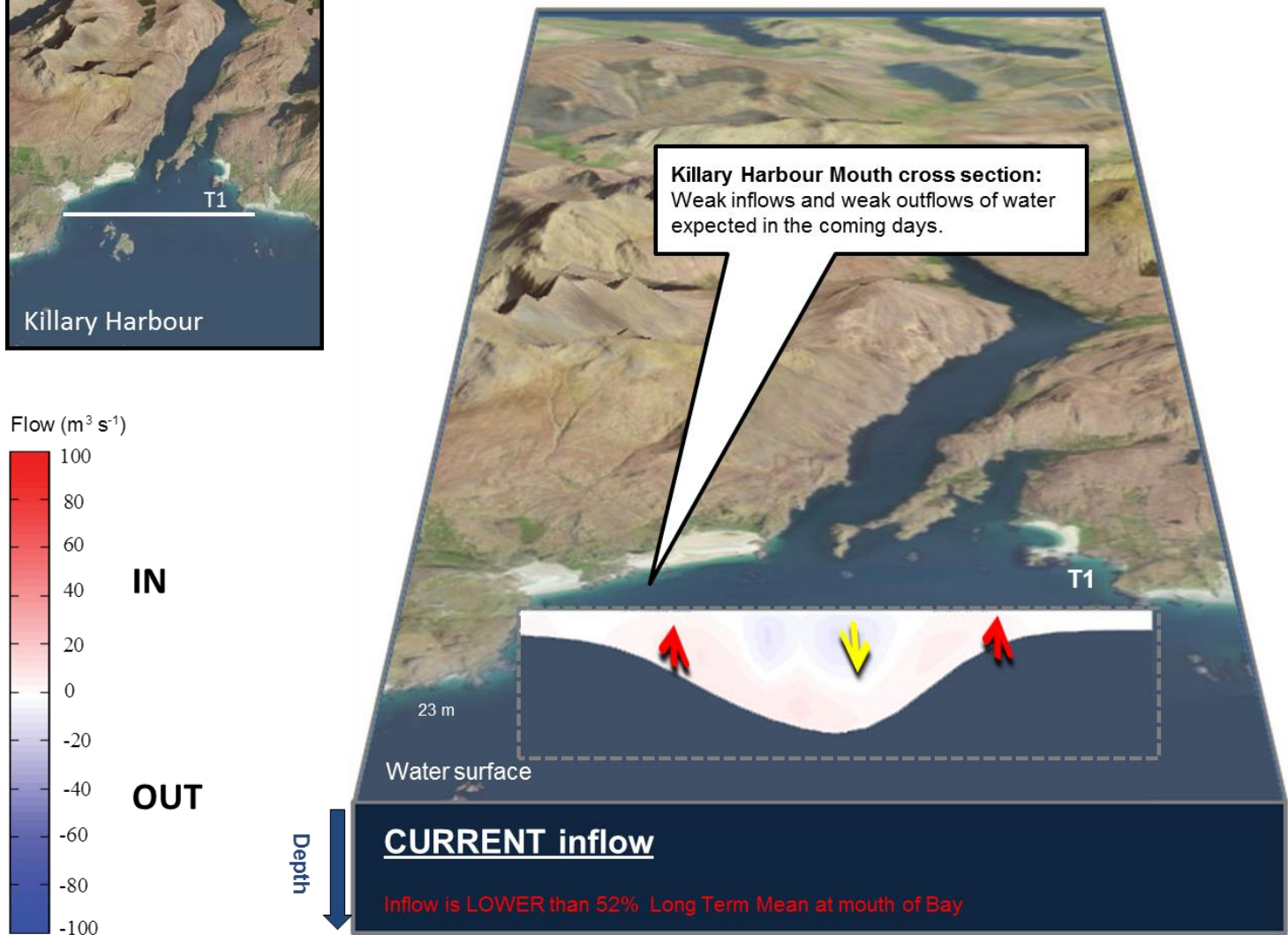
Estimated water circulation patterns at the mouth of Killary harbour shows that in general, waters will be retained at the mouth with some northerly flows. However, waters at all depths will be able to reach the mid-bay region.

# Killary Harbour

3 day estimated water flows at the mouth of Killary Harbour

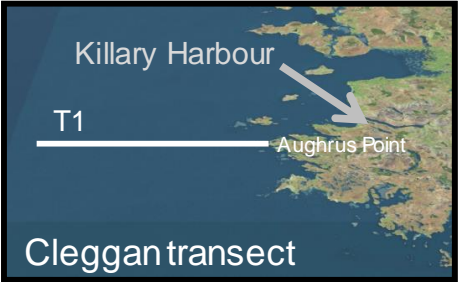


Forecast for next 3 days

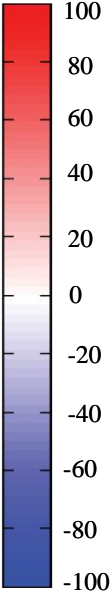


# West Coast - 3 day estimated water flows along a transect off Aughrus Point

Forecast for next 3 days



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



**northward  
flow**

**southward  
flow**

Depth

