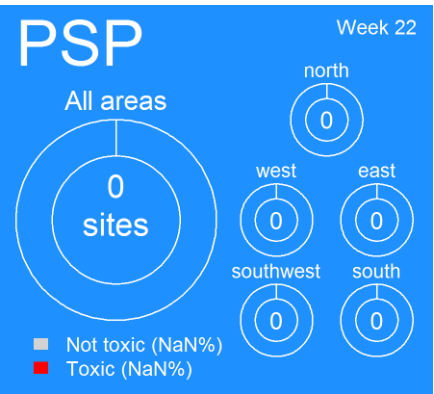
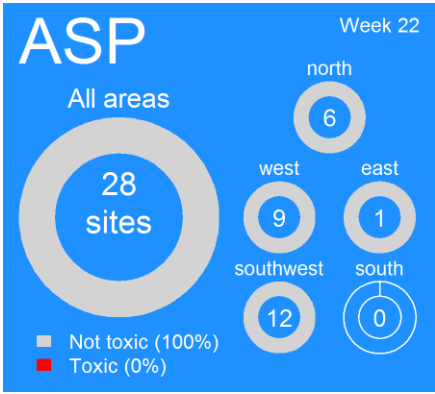
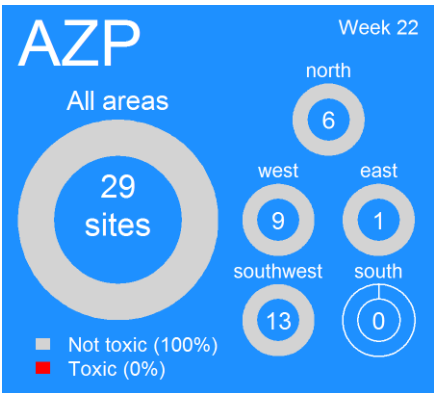
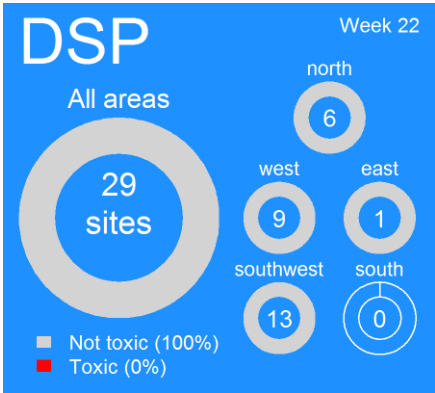


# Ireland: Current Conditions

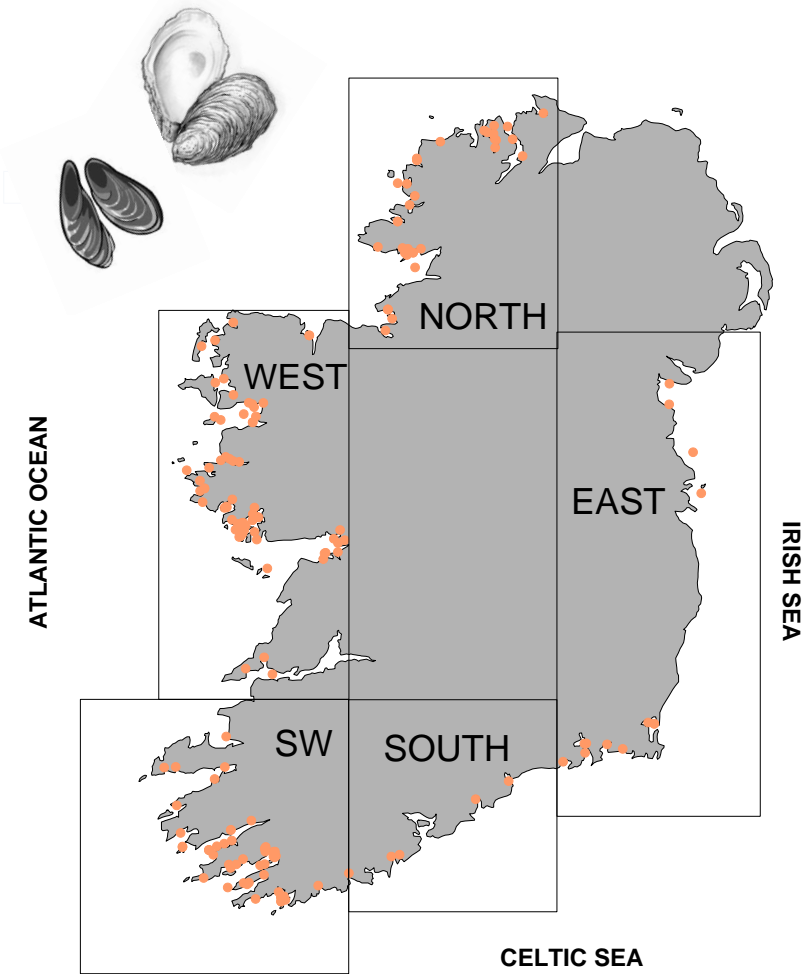
## Shellfish biotoxin report (last week)



**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



● = aquaculture site

# Ireland: Predictions

## Prediction for this week:

ASP event: Low

AZP event: Moderate to Low

DSP event: Moderate – particularly in South West

PSP event: Low

## Why do we think this?

ASP: While low level of cells continue to be observed around the entire coastline, biotoxin levels continue to remain in some sites but at very low levels and only occurring in isolated areas.

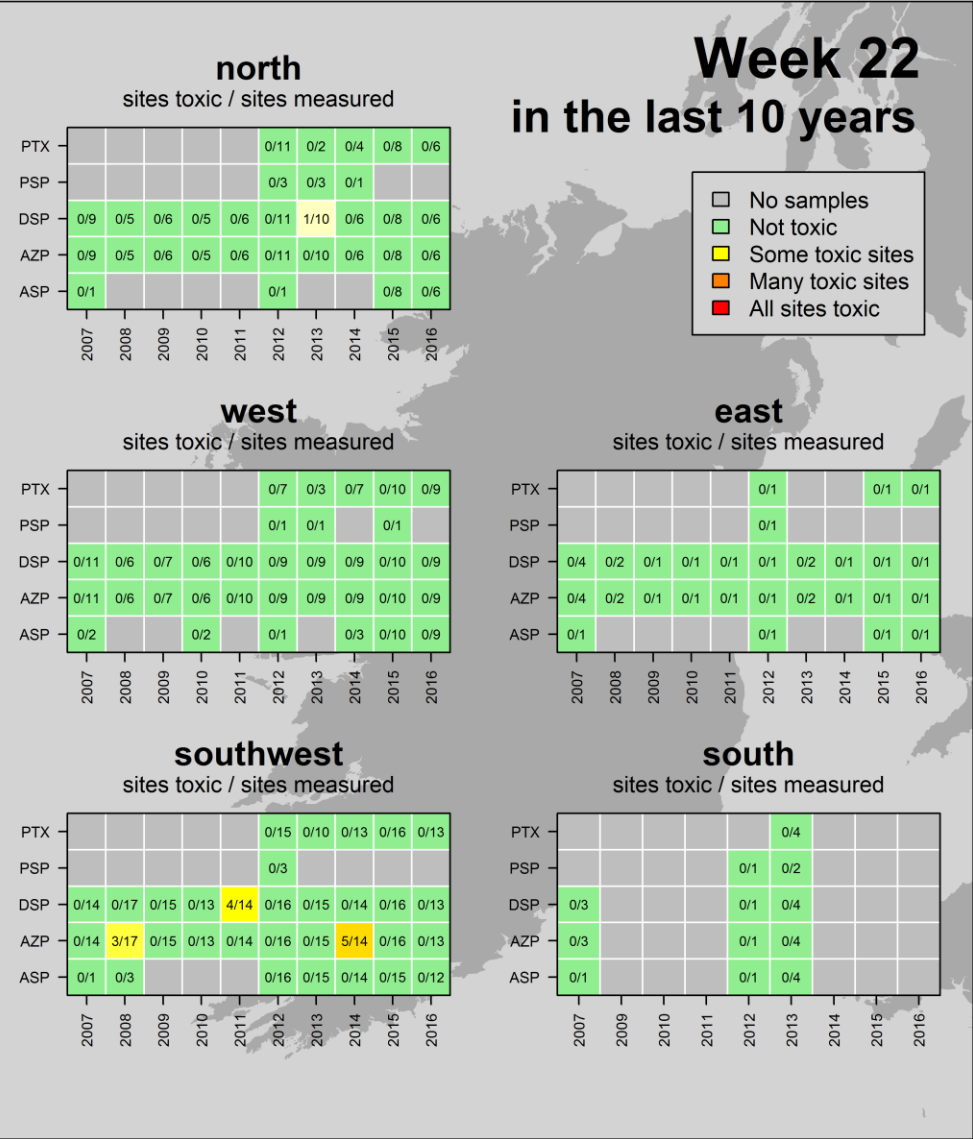
AZP: While this may not be a higher historical risk period, caution is advised based on the current presence of azadinium type species throughout the western coastline combined with the continued and fluctuating very low levels of biotoxin results.

DSP: *Dinophysis acuminata*'s presence is increasing, still at low levels, in many sites throughout the coast. Biotoxin levels in the majority of sites currently remain well below regulatory limits. Increased caution is advised as we are in the historical high risk season and levels of *Dinophysis* can increase swiftly. Changes in phytoplankton communities, such as *Dinophysis acuta* replacing *D. acuminata*, in magnitude, would be a typical summer pattern.

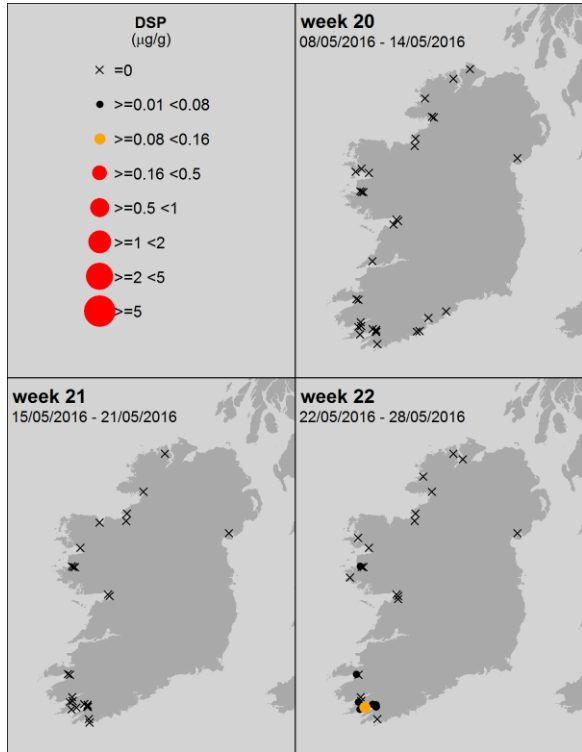
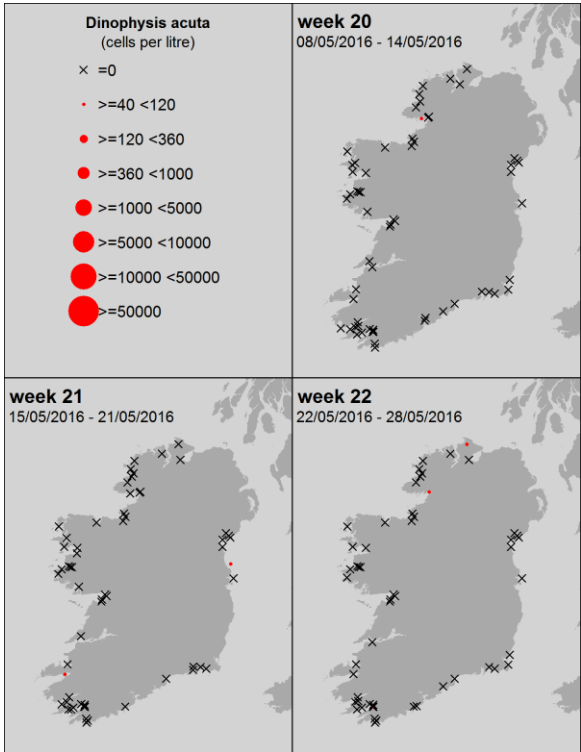
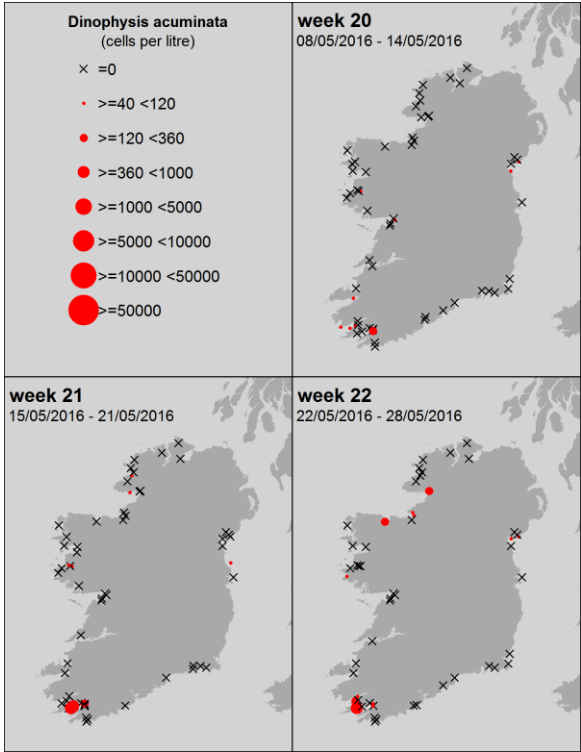
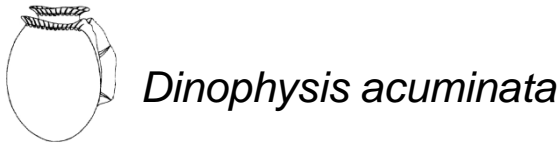
PSP: Historical trends and current conditions, particularly water temperatures, indicate an event is unlikely to occur.

# Ireland: Historic Conditions

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



Ireland: Last 3 weeks of available National Monitoring Programme data



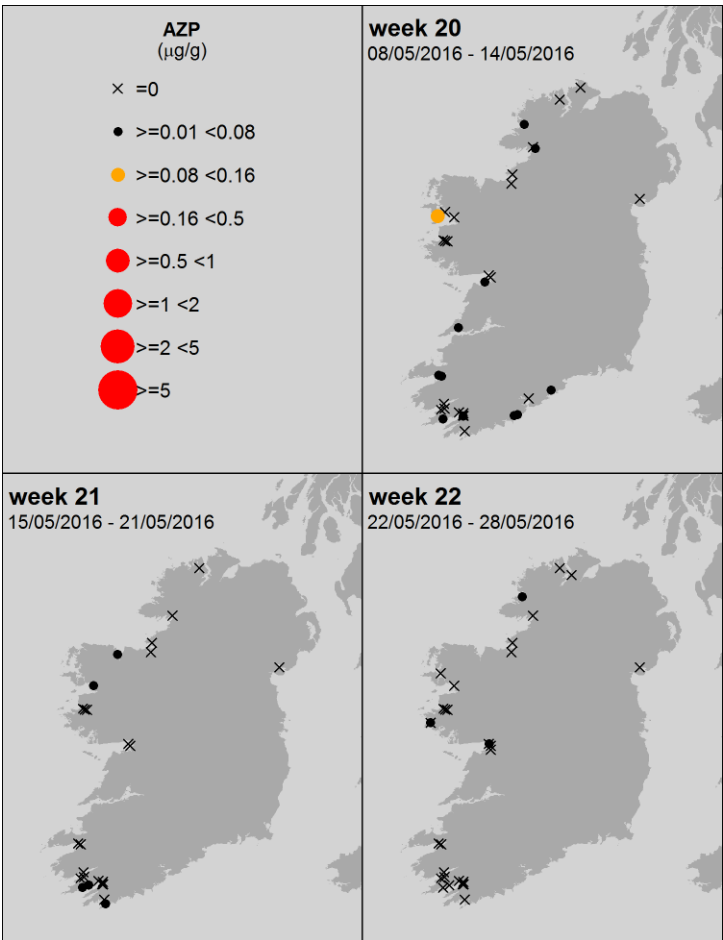
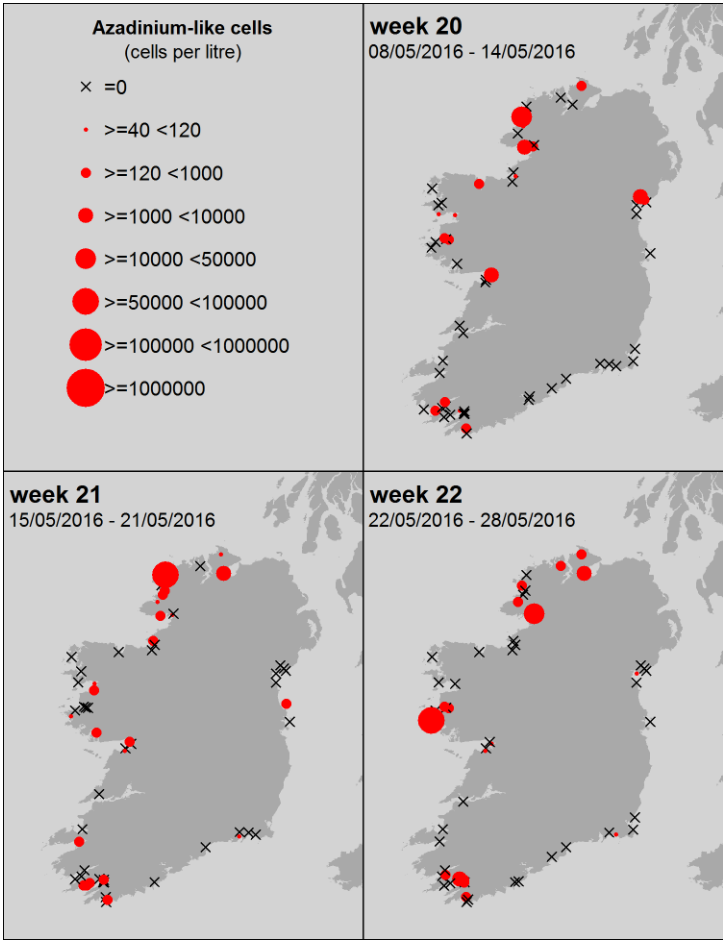
Ireland: Last 3 weeks of available National Monitoring Programme data



*Azadinium* – like spp.



AZP



Ireland: Last 3 weeks of available National Monitoring Programme data

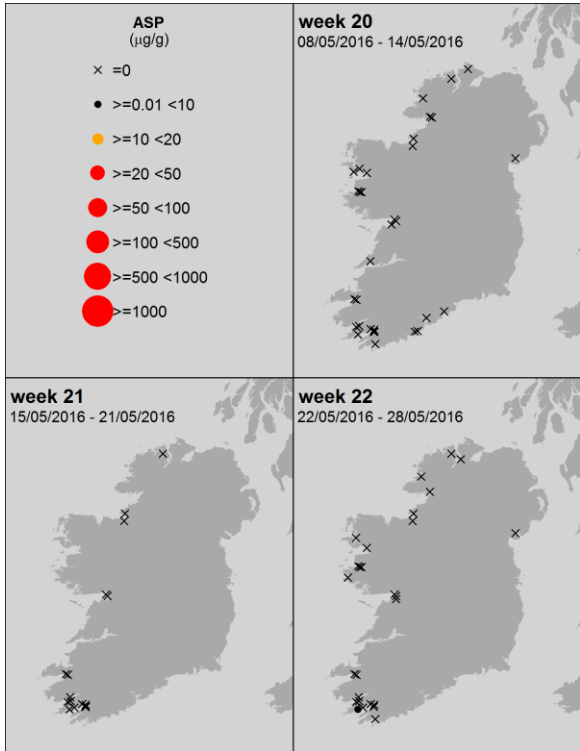
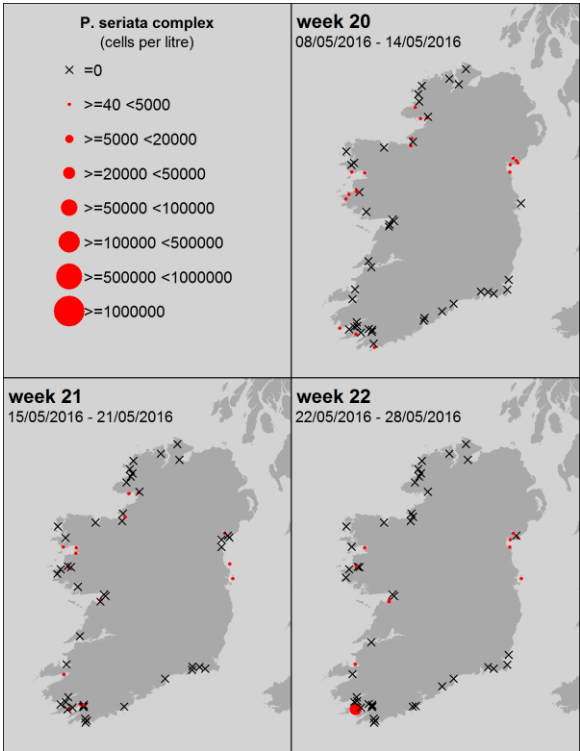
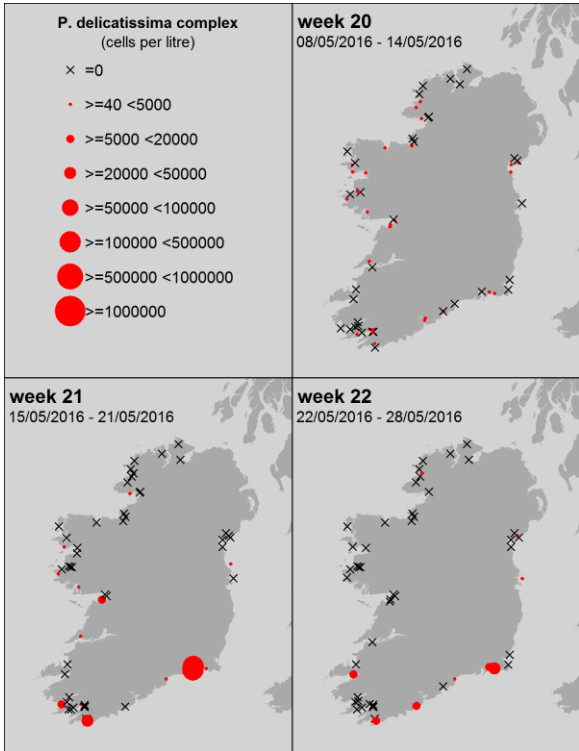
*Pseudo-nitzschia* spp.



ASP

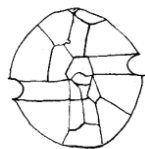
“*P. delicatissima*” complex = small cells  
Taken from the literature:  
3 species confirmed in Irish waters

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

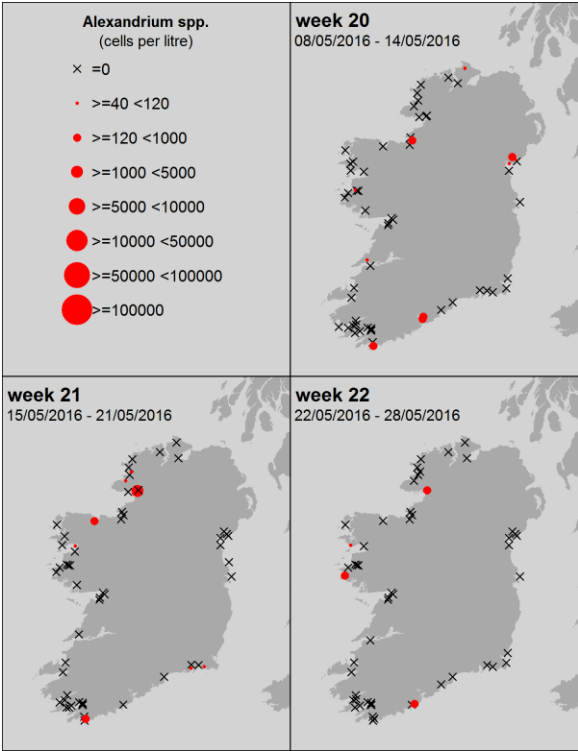


**Taken from the literature:** Of the 4 species (*P. fraudulenta*, *P. australis*, *P. pungens* and *P. delicatissima*) from Irish waters, tested for ASP toxins in culture work, only one, *P. australis* (from the “*P. seriata*” group) was toxic.

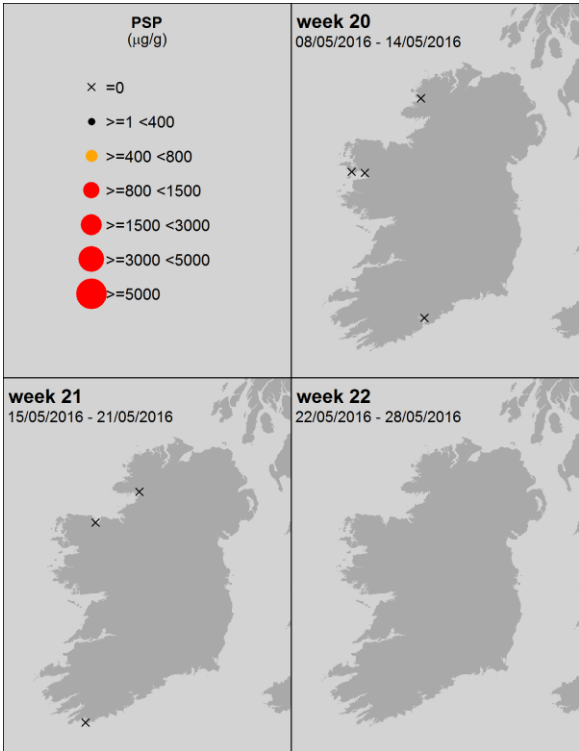
Ireland: Last 3 weeks of available National Monitoring Programme data



*Alexandrium* spp.



PSP



# Ireland HAB & Biotoxin temporal trends

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

## Ireland: Biotoxins



Toxin groups

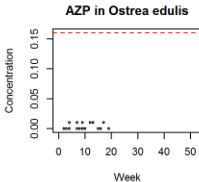
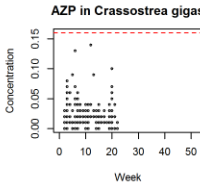
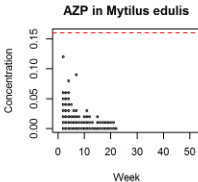
mussels

oysters

oysters

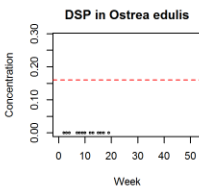
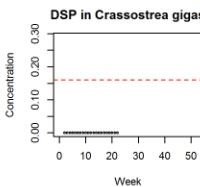
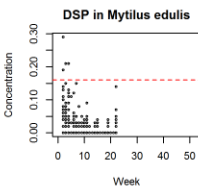
**AZP**

AZaspiracid  
Poisoning



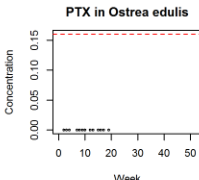
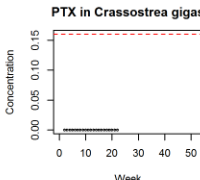
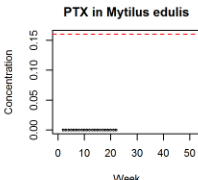
**DSP**

Diarrhetic  
Shellfish  
Poisoning



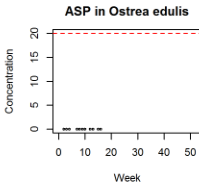
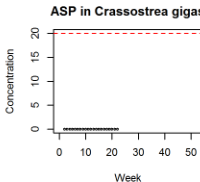
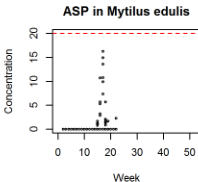
**PTX**

Pectenotoxin



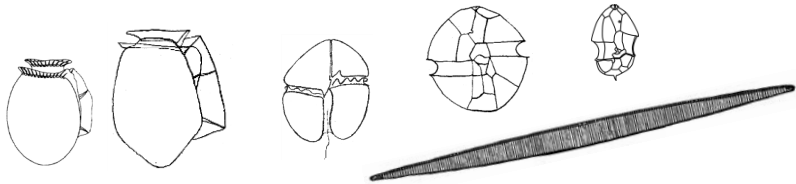
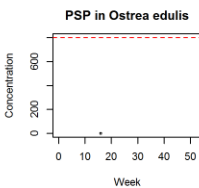
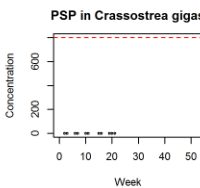
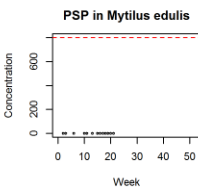
**ASP**

Amnesic  
Shellfish  
Poisoning



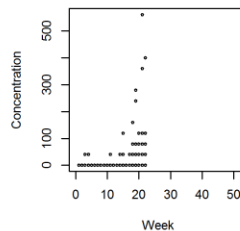
**PSP**

Paralytic  
Shellfish  
Poisoning

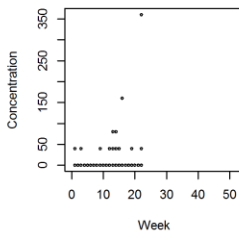


## Ireland: HABs

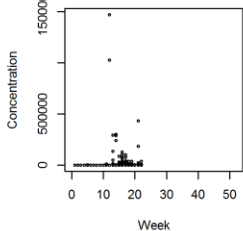
**Dinophysis acuminata**



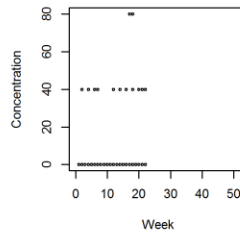
**Karenia mikimotoi**



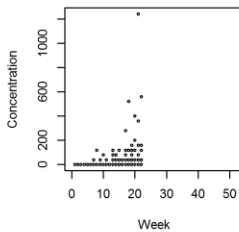
**P. delicatissima complex**



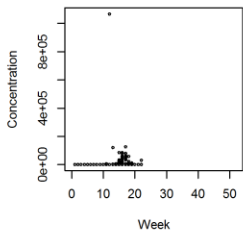
**Dinophysis acuta**



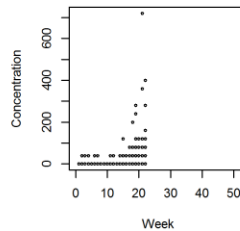
**Alexandrium spp.**



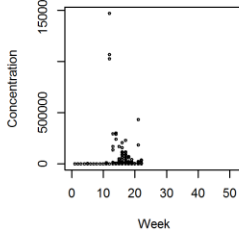
**P. seriata complex**



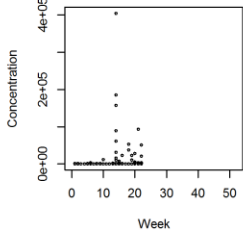
**All Dinophysis spp.**



**All Pseudo-nitzschia spp.**



**Azadinium-like cells**

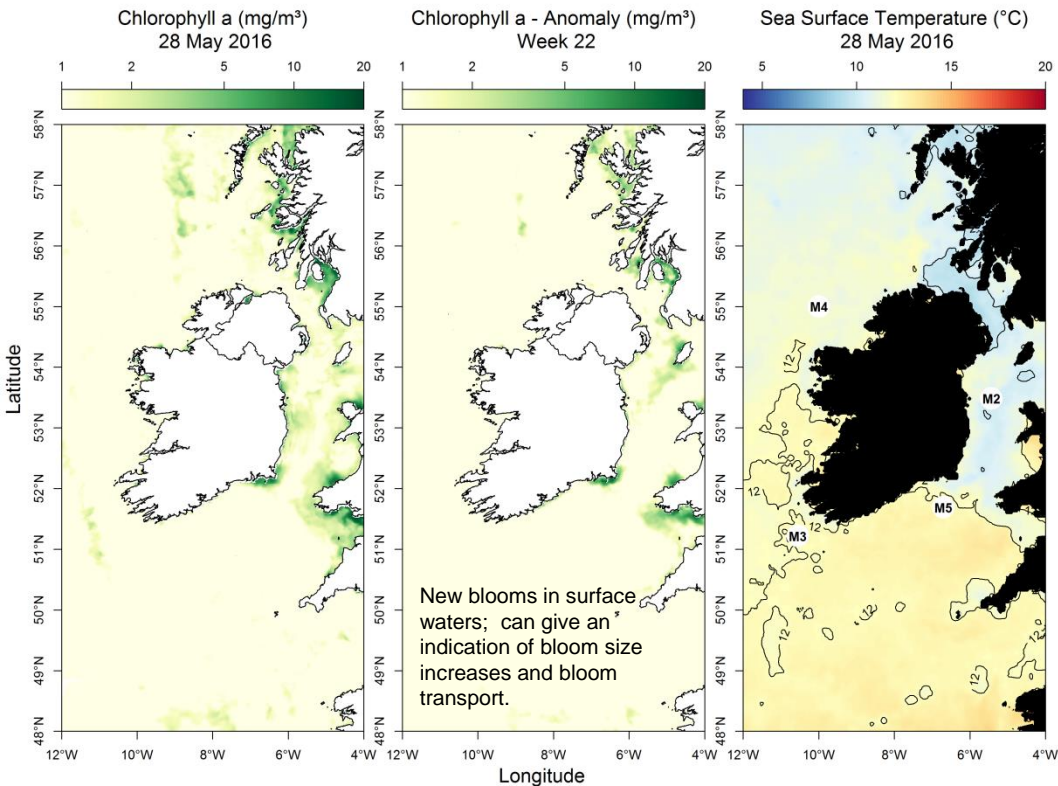


EU Regulatory Limit: ASP 20 µg/g; AZP 0.16 µg/g; DSP 0.16 µg/g; PSP 800 µg/kg

Regulatory limit = ■■■■■



Most up to date available satellite data

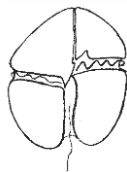


**SST (°C) anomaly for last week:**  
Data taken from the Irish data buoy network where the anomaly is the weekly difference in SST compared to the long term mean (~ 10 yrs)

- NW coast (M4) Offline
- SW coast (M3) Below average by -0.42 °C
- SE coast (M5) Below average by -0.10 °C

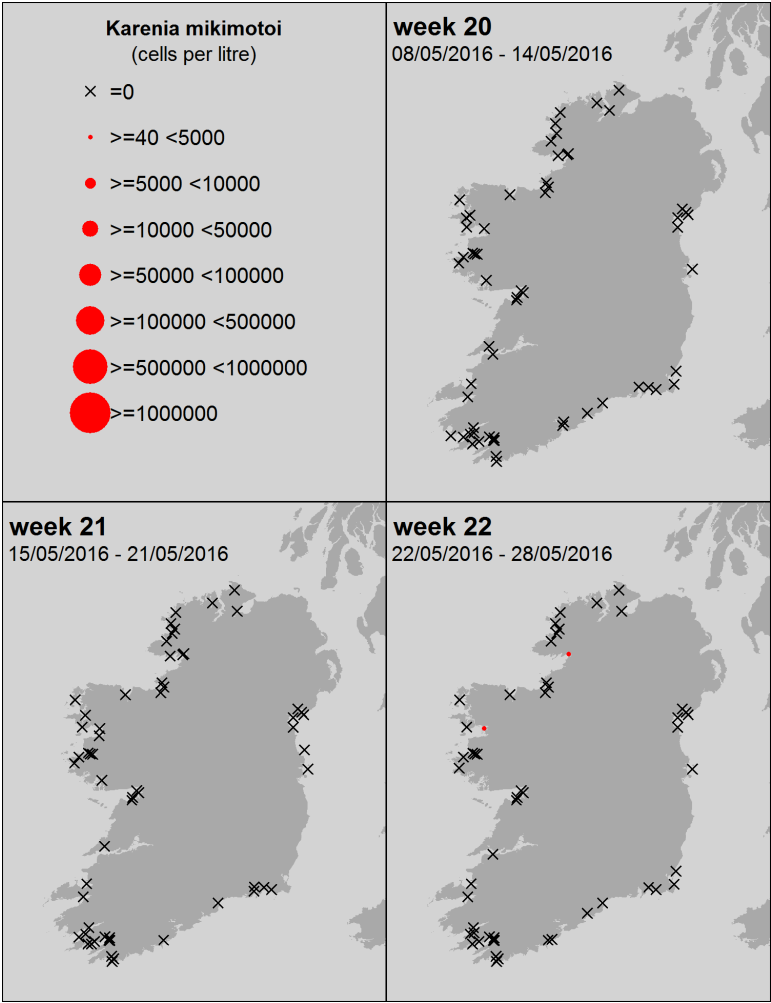
What phytoplankton were blooming at inshore coastal sites last week?

Region	Predominant Phytoplankton (most abundant taxa)	Cells/L (rounded)
north:	<b>Diatoms:</b>	
	<i>Guinardia delicatula</i>	64,800
	<i>Pennate diatom</i>	62,200
	<b>Dinoflagellates:</b>	
	<i>Azadinium/heterocapsa spp.</i>	21,600
	<b>Others:</b>	
west:	Microflagellate sp.	1,430,000
	<i>Euglena/Eutreptiella spp.</i>	90,200
	Cryptophyte	31,500
	<b>Diatoms:</b>	
	<i>Cylindrotheca closterium/ Nitzschia longissima</i>	109,500
	<i>Cerataulina pelagica</i>	90,100
SW:	<i>Licmophora spp.</i>	75,500
	<b>Dinoflagellates:</b>	
	<i>Azadinium/heterocapsa spp.</i>	50,600
	<b>Others:</b>	
	Microflagellate sp.	207,600
	<b>Diatoms:</b>	
south:	<i>Pseudo-nitzschia seriata complex</i>	30,800
	<i>Lauderia / Detonula sp</i>	26,200
	<i>Chaetoceros (Hyalochaete) spp.</i>	17,600
	<b>Dinoflagellates:</b>	
	Armoured dinoflagellate <20um	40,200
	<b>Others:</b>	
east:	Prymnesiophytes	39,900
	<b>Diatoms:</b>	
	<i>Thalassiosira nordenskiöldii</i>	107,700
	<i>Thalassiosira &lt;20um</i>	100,900
	<i>Leptocylindrus minimus</i>	73,000
	<i>Cylindrotheca closterium/ Nitzschia longissima</i>	31,300
	<b>Others:</b>	
	<i>Phaeocystis spp. (cells)</i>	224,000
	Prymnesiophytes	100,100
	<b>Diatoms:</b>	
	<i>Asterionellopsis spp.</i>	897,400
	<i>Asterionellopsis glacialis</i>	361,600
	<i>Skeletonema spp.</i>	332,200
	<i>Pseudo-nitzschia delicatissima complex</i>	38,200
	<b>Dinoflagellates:</b>	
	<i>Heterocapsa triquetra</i>	117,100
	<b>Others:</b>	
	Microflagellate spp. <10um	43,300



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

A *Karenia mikimotoi* bloom  
is NOT expected this week

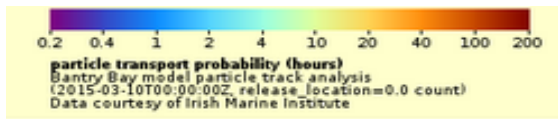


## SOUTHWEST: Bantry Bay

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)

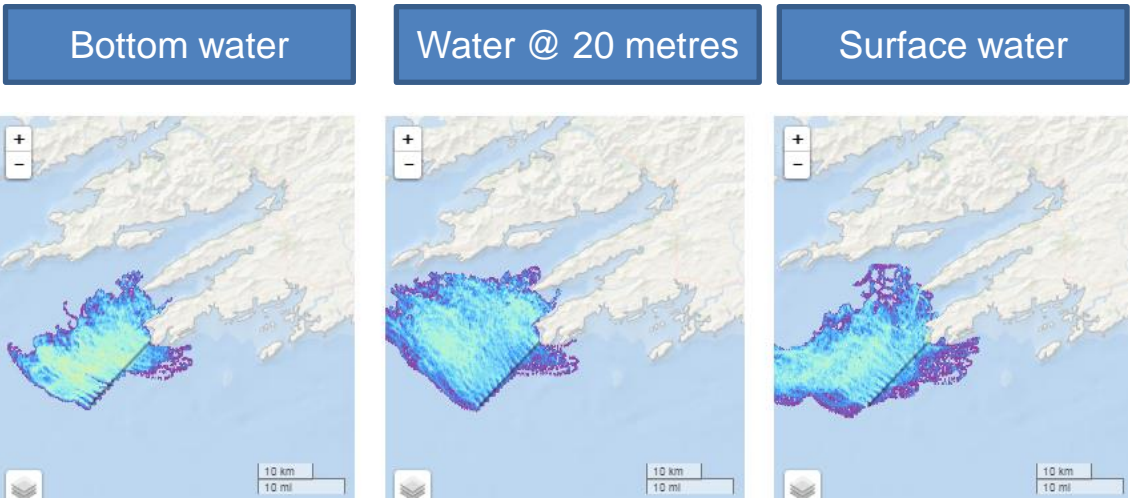
Reddish colours represent areas where phytoplankton remain longest

Cooler colours represent areas where phytoplankton remain for shorter periods

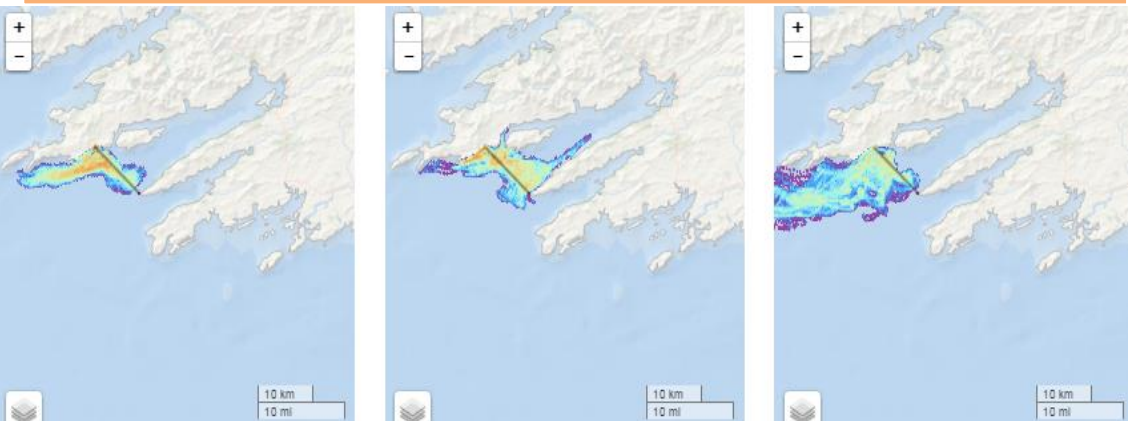


Go to <http://vis.marine.ie/particles/> to view daily forecasts

### Forecast for the next 3 days



Low water movement in general, predominantly in a northerly direction with some south-westerly movement at surface.



Slack water movement at depth and midwater, however southwest direction of midwater movement indicates potential upwelling is possible combined with surface water movement in a north easterly direction.

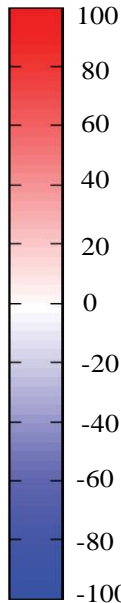
# Bantry Bay

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

Forecast for next 3 days

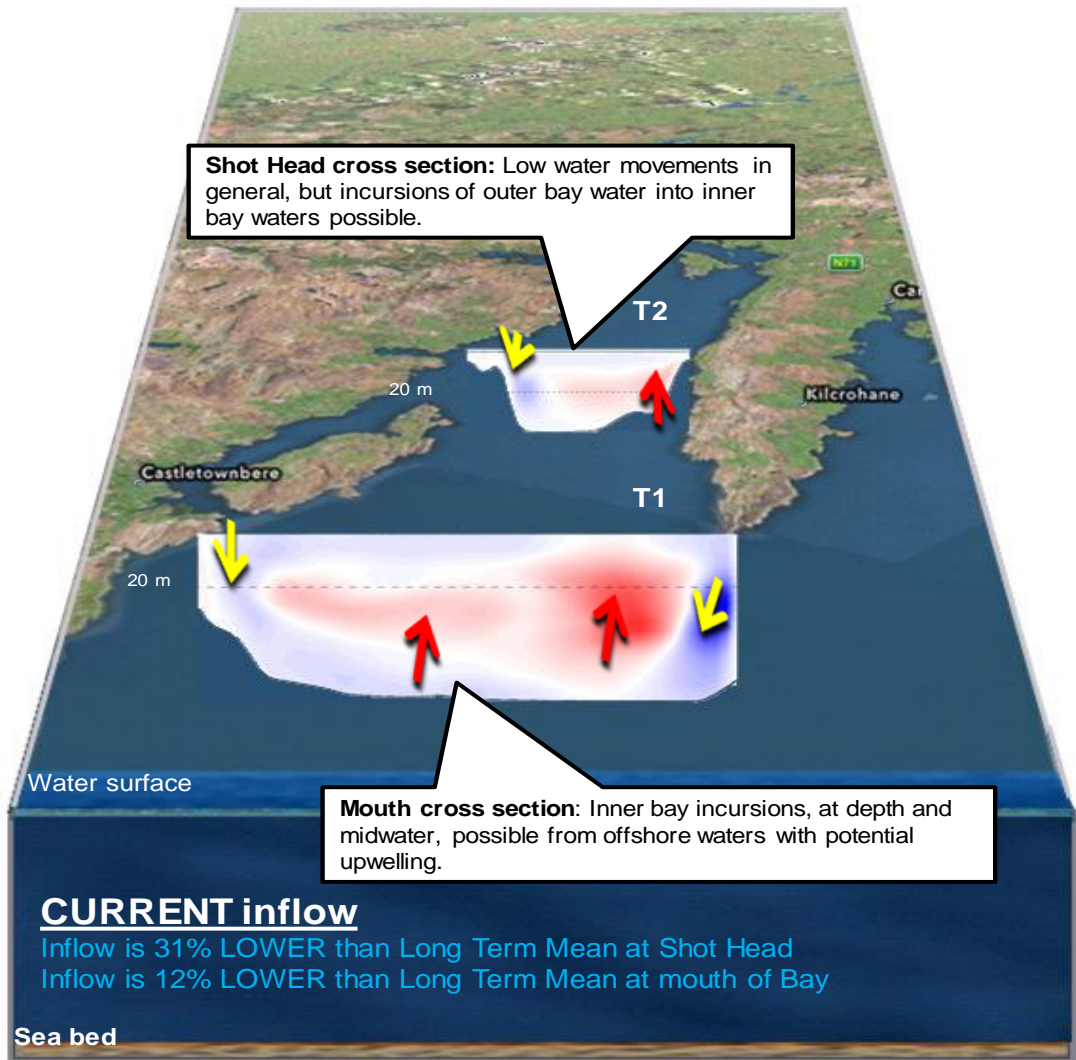


Flow ( $\text{m}^3 \text{s}^{-1}$ )



IN

OUT






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

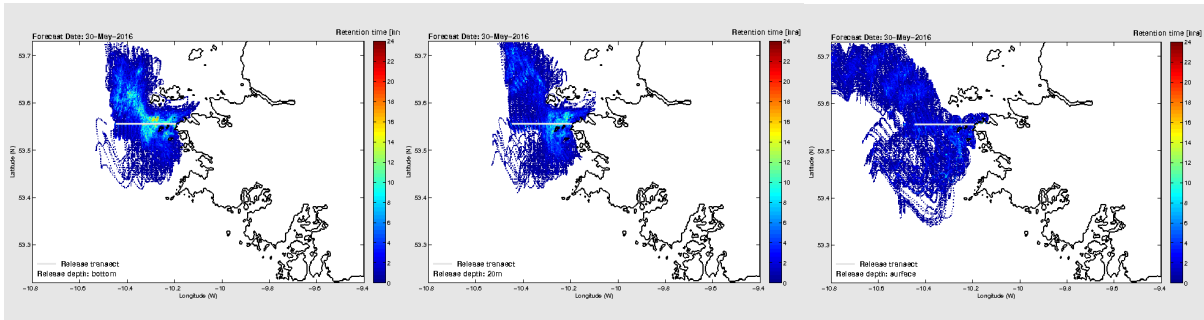


0.2 0.4 1 2 4 10 20 40 100 200

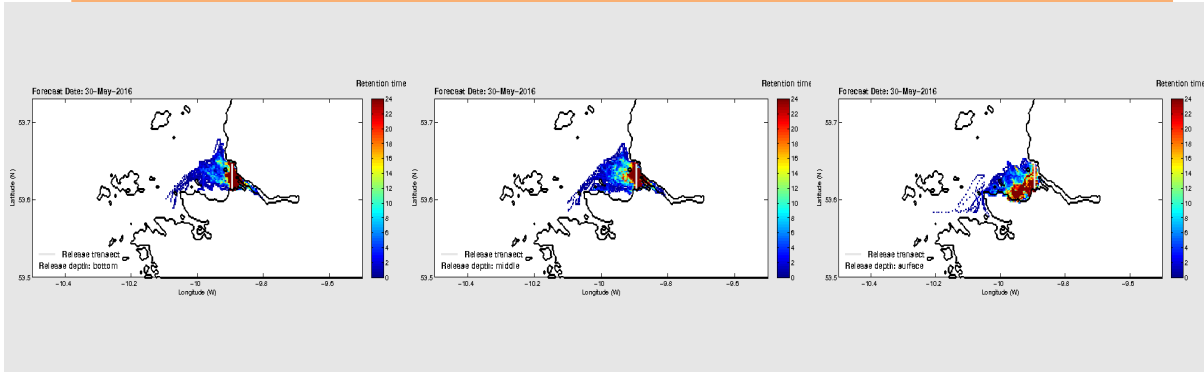
particle transport probability (hours)  
Bantry Bay model particle track analysis  
(2015-03-10T00:00:00Z, release\_location=0.0 count)  
Data courtesy of Irish Marine Institute

Forecast for the next 3 days

- Bottom water
- Water @ 20 metres
- Surface water



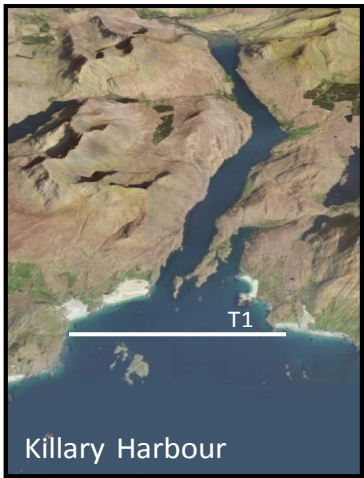
Mixed water movement, both in southerly and northerly directions, in offshore regions, at all depths.



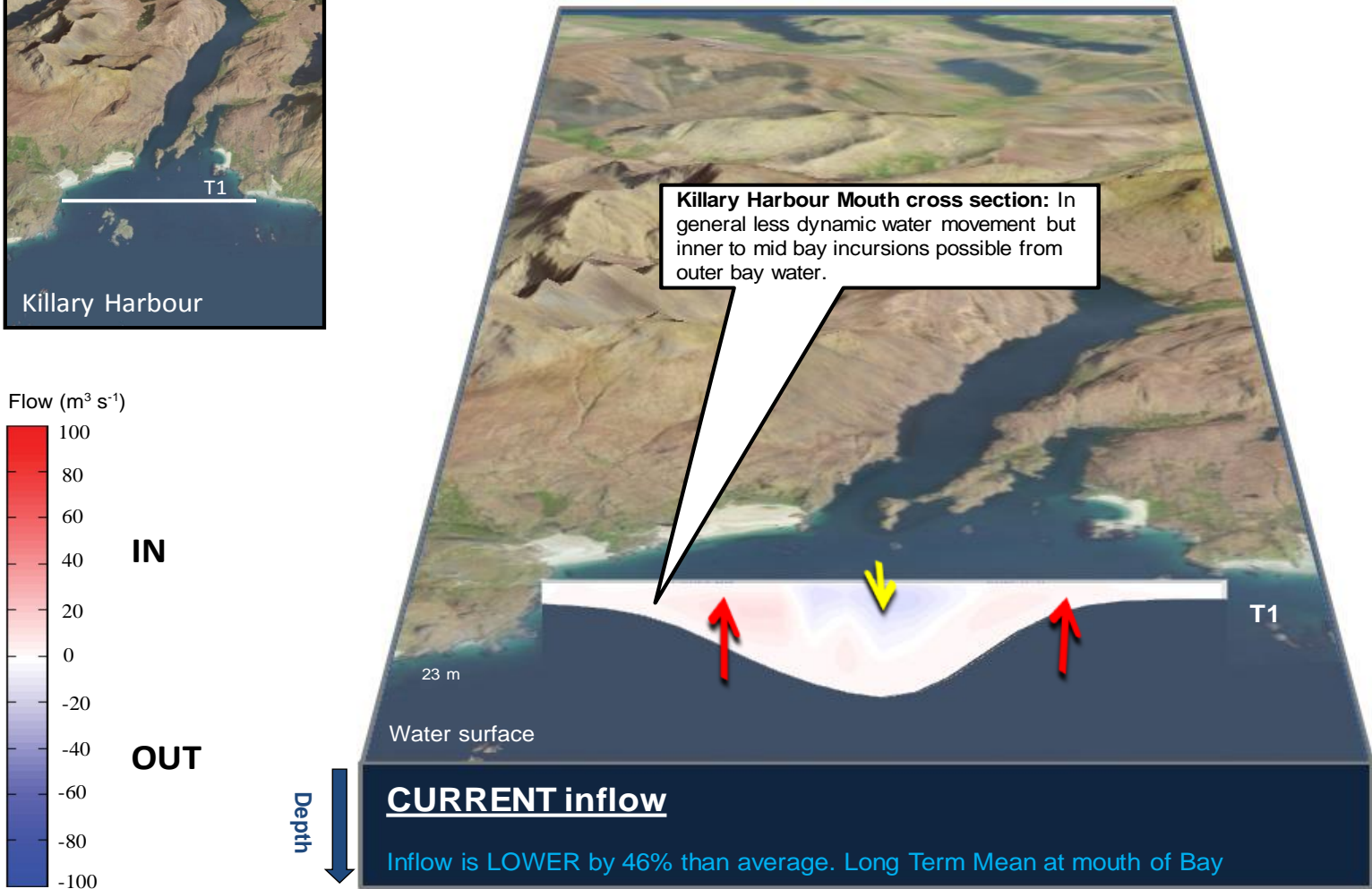
Moderate south, south easterly movement of water at entrance to bay, at bottom and depth. Slight possibility of inner bay incursions as far as mid bay region.

# 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

