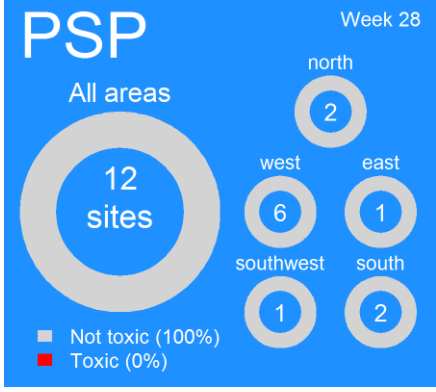
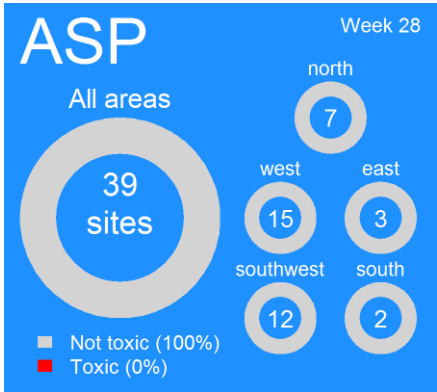
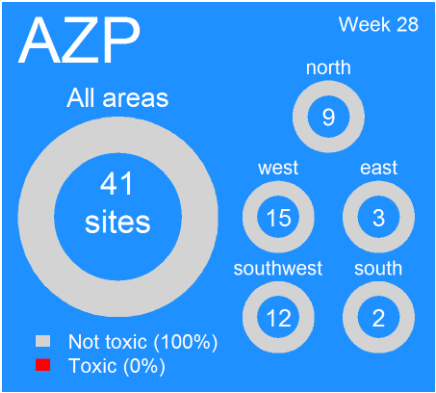
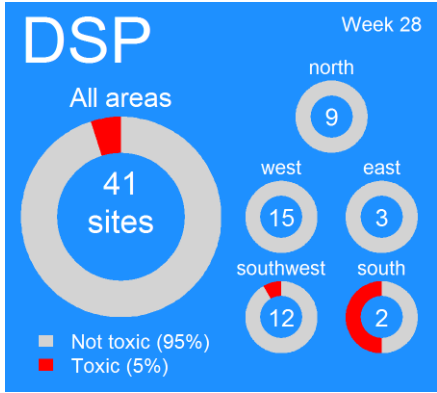


# Ireland: Current Conditions

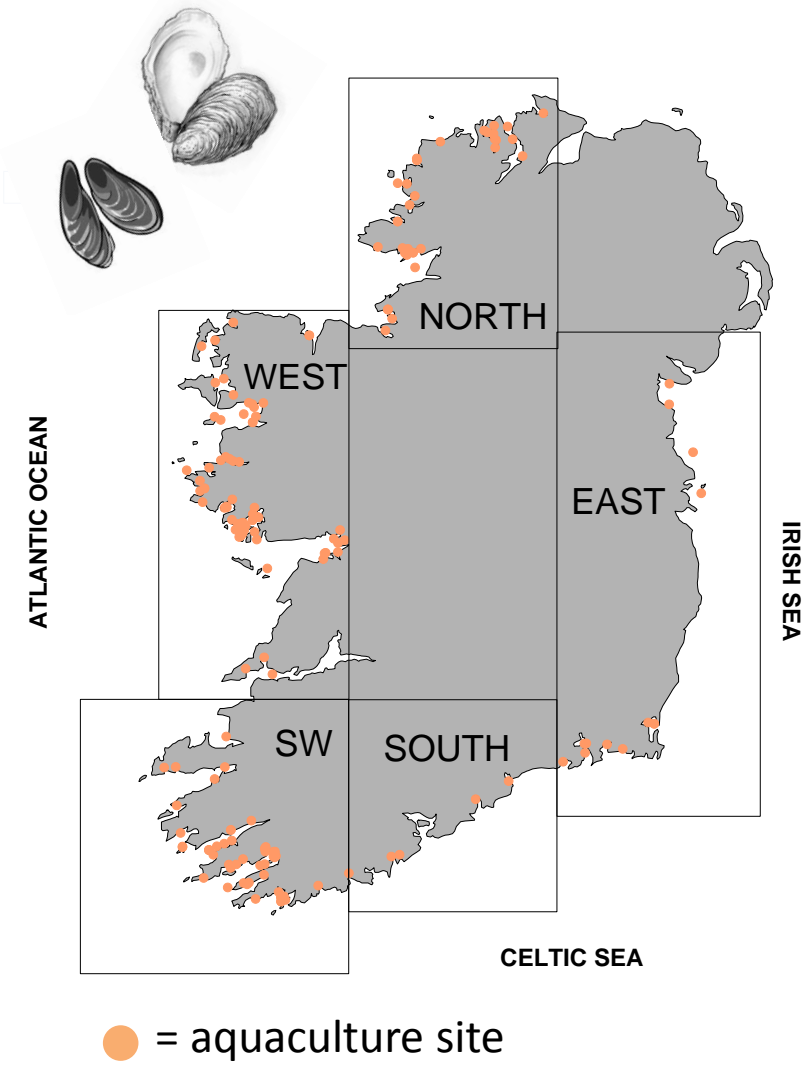
## Shellfish biotoxin report (last week)



**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

## Prediction for this week:

ASP event: Low

AZP event: Moderate

DSP event: High (SW)

PSP event: High(Cork Harbour) Low all others

## Why do we think this?

ASP: Low cell levels of *Pseudo nitzschia* species continue to be observed in many sites around the coast . Corresponding biotoxin levels continue to remain well below regulatory limits. Toxin issues from this species would not historically be expected at this time.

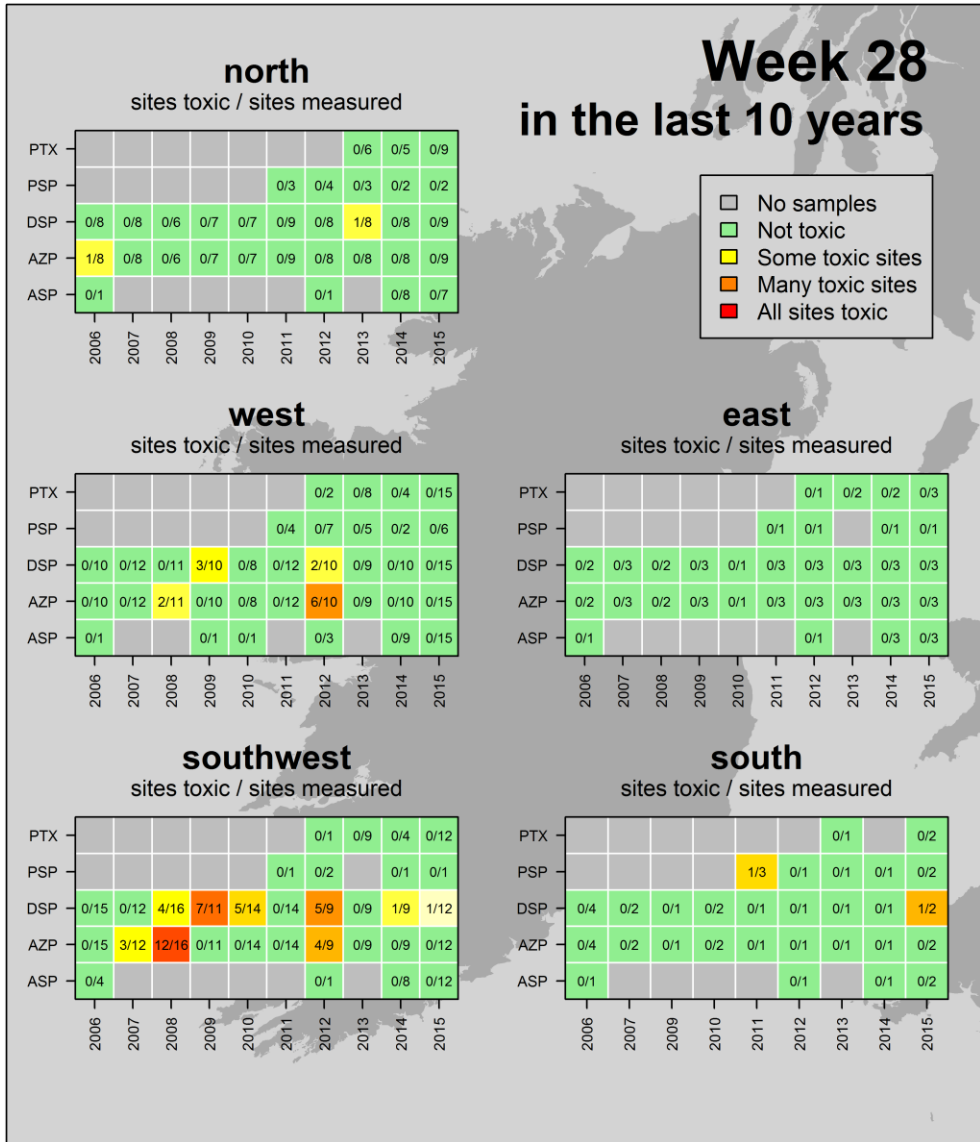
AZP: Fluctuating levels of *Azadinium* type species continue to be observed in multiple areas throughout the coastline. Biotoxin levels currently remain well below the regulatory limit in all sites. This is historically within the period of occurrence so caution is encouraged .

DSP: This is historically the main risk period *Dinophysis* spp. have appeared in the SW and numbers are likely to remain the same in the next few. All areas should exercise caution and adjacent regions to closed areas should take all precautions necessary.

PSP: Biotoxin issues related to the presence and abundance of specific *Alexandrium* spp. species have historically occurred in very localised areas in the Cork Harbour only. *Alexandrium* spp. levels can increase dramatically in suitable conditions. Increased levels of awareness is advised in previously affected site areas as this is the beginning of the historical risk period and environmental conditions may be becoming suitable for growth.

# 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

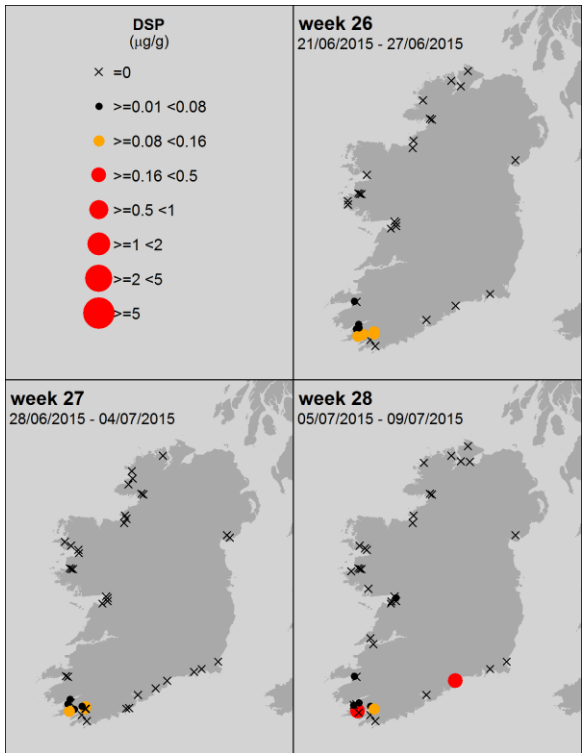
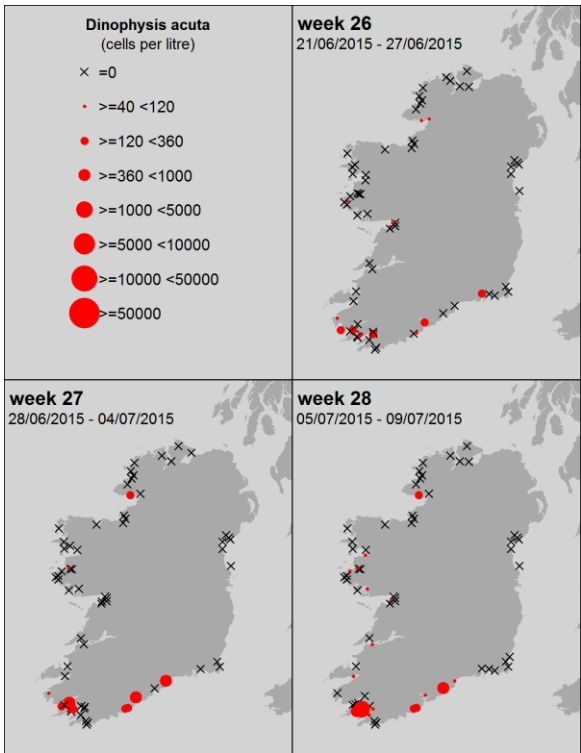
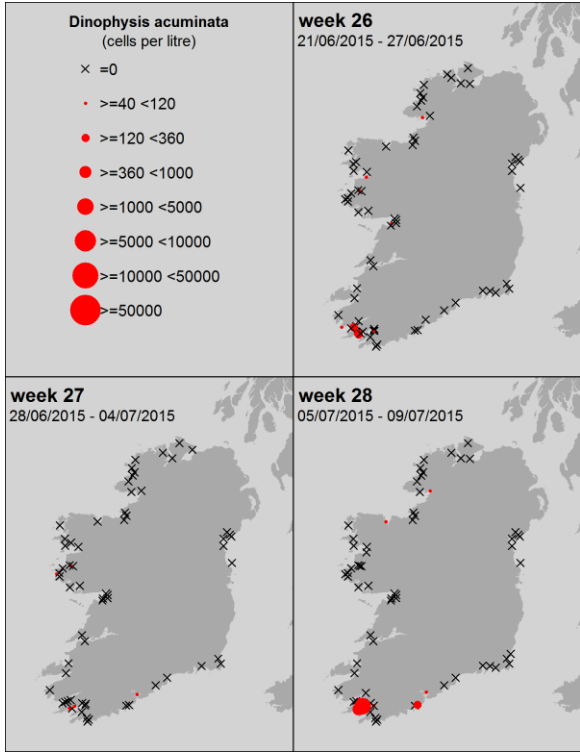
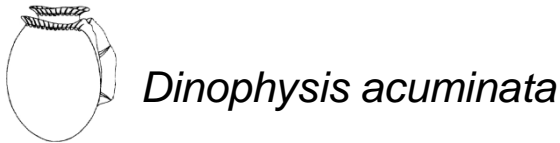
- ASP events: mid-March to early May
- AZP events: April to December
- DSP events: May to December
- PSP events: June to mid-July and end September; only in Cork Harbour



# Ireland HAB & Biotoxin Distribution maps

[current status of harmful and toxic algae]

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



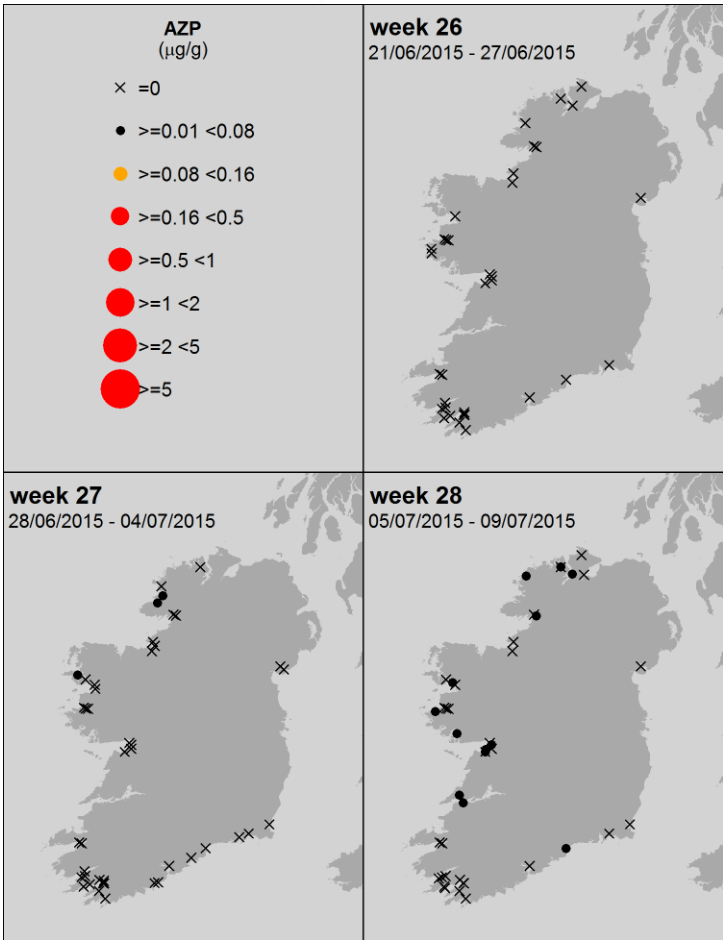
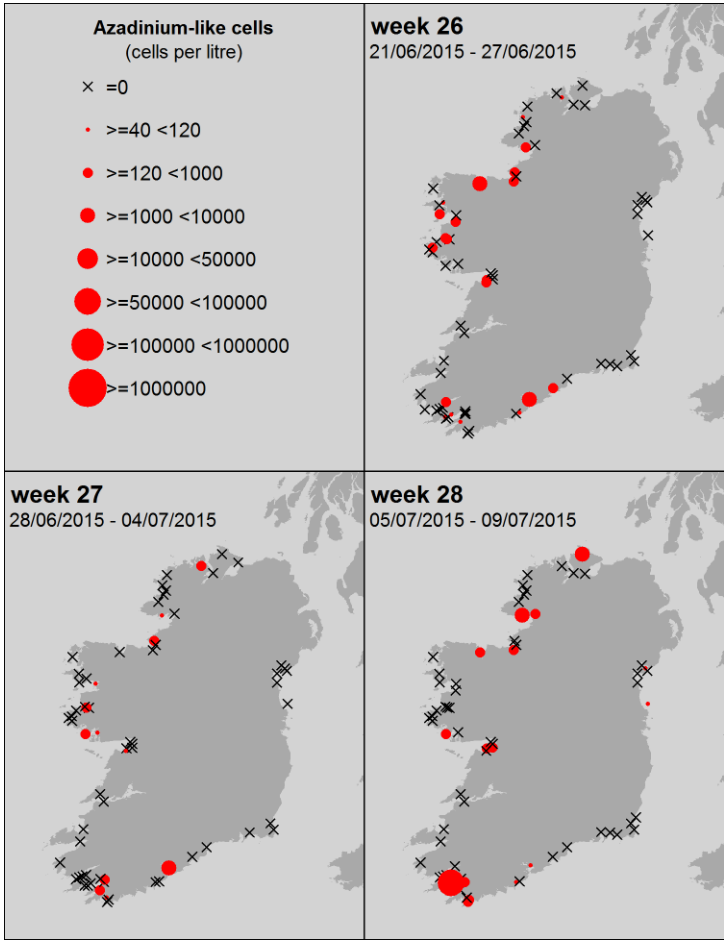
Ireland: Last 3 weeks of available National Monitoring Programme data



*Azadinium* – like spp.



AZP



Ireland: Last 3 weeks of available National Monitoring Programme data

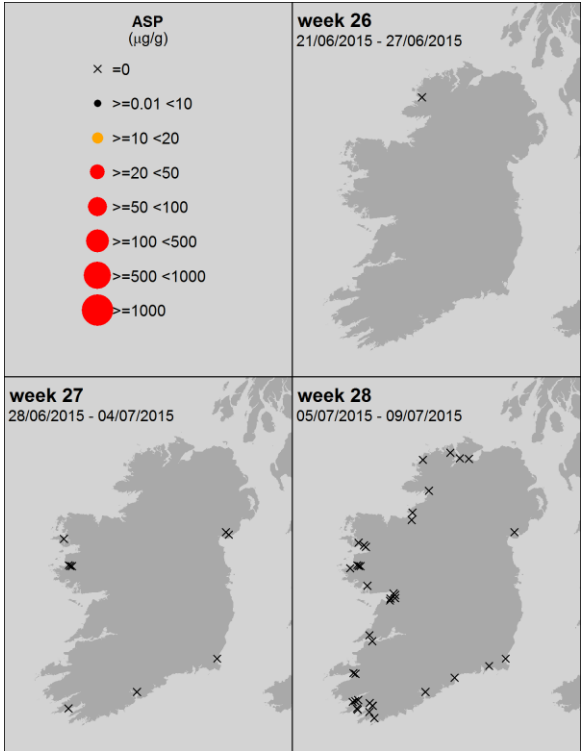
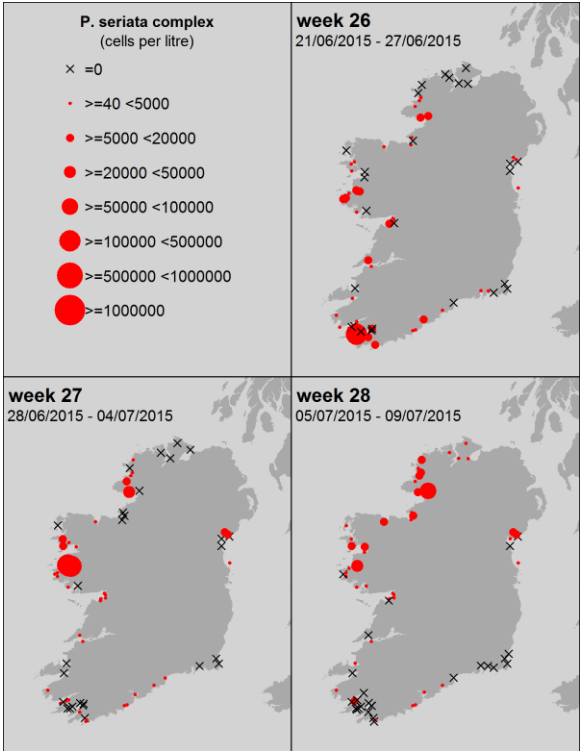
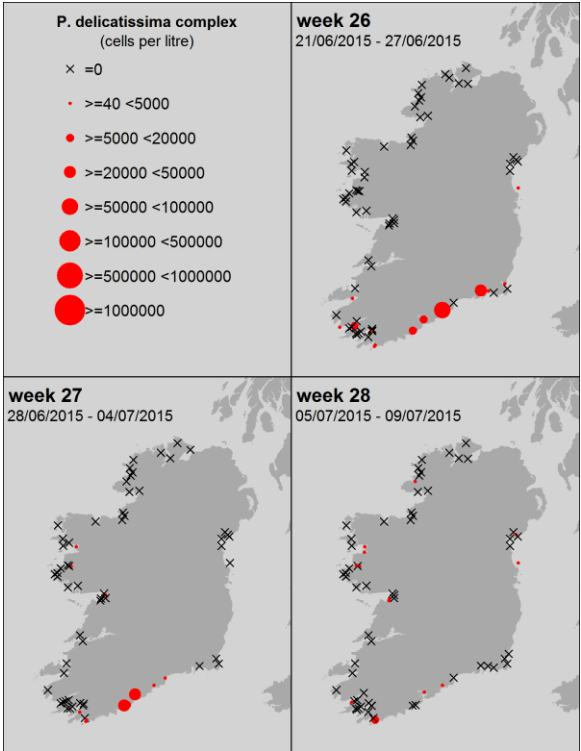
*Pseudo-nitzschia* spp.



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.

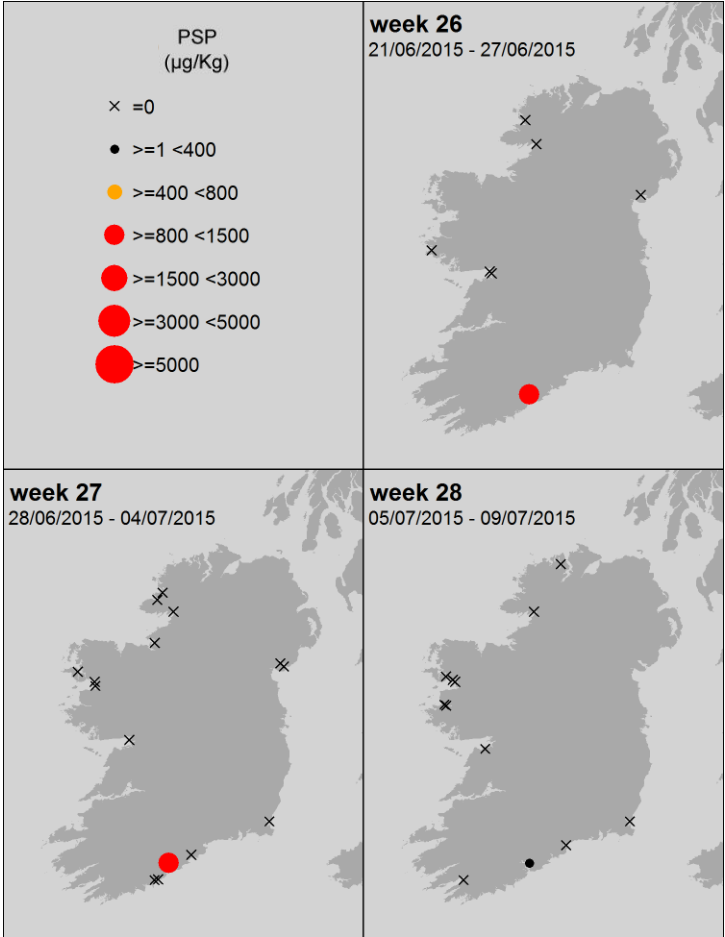
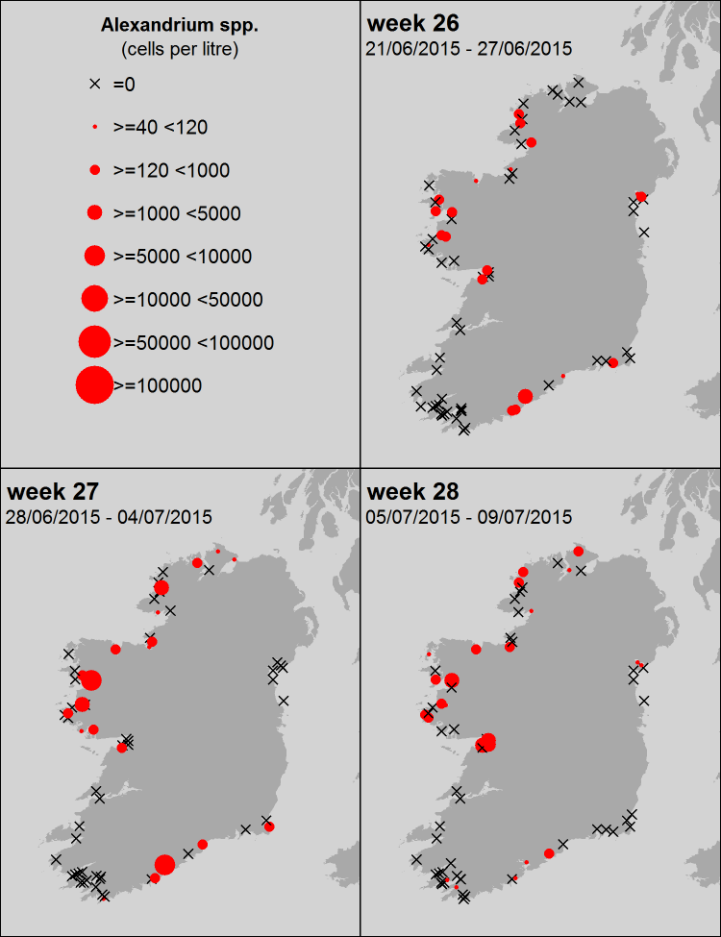
Ireland: Last 3 weeks of available National Monitoring Programme data



*Alexandrium* spp.



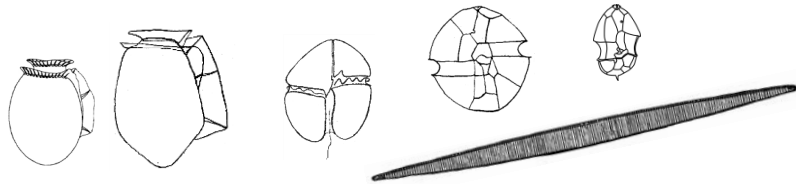
PSP



# Ireland HAB & Biotoxin temporal trends

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

## Ireland: Biotoxins



Toxin groups

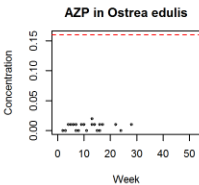
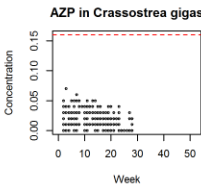
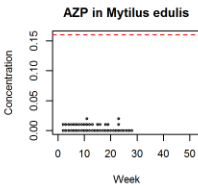
mussels

oysters

oysters

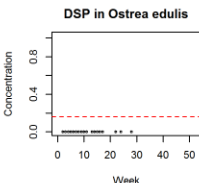
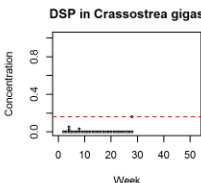
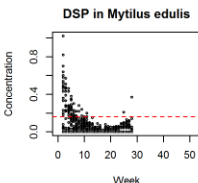
**AZP**

AZaspiracid  
Poisoning



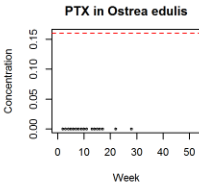
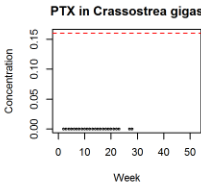
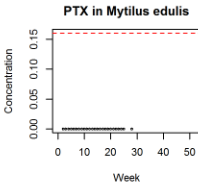
**DSP**

Diarrhetic  
Shellfish  
Poisoning



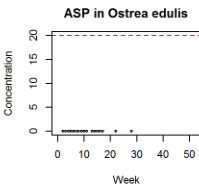
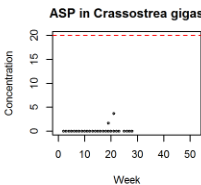
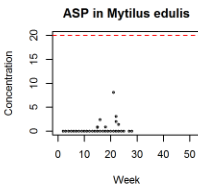
**PTX**

Pectenotoxin



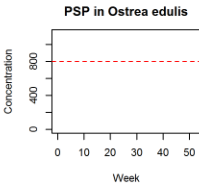
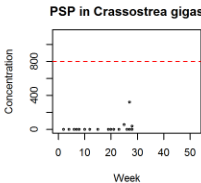
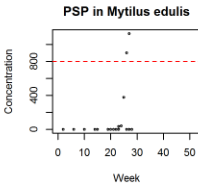
**ASP**

Amnesic  
Shellfish  
Poisoning



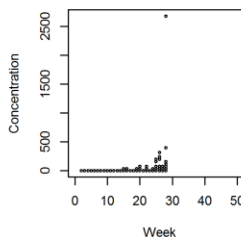
**PSP**

Paralytic  
Shellfish  
Poisoning

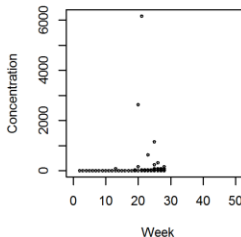


## Ireland: HABs

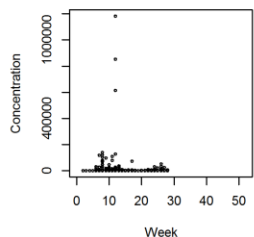
**Dinophysis acuminata**



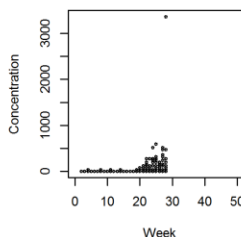
**Karenia mikimotoi**



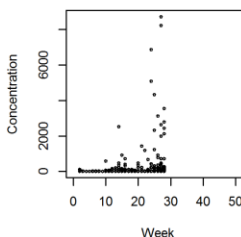
**P. delicatissima complex**



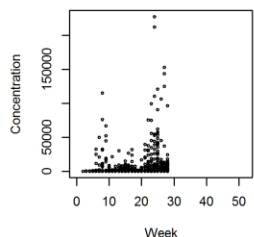
**Dinophysis acuta**



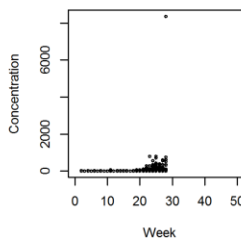
**Alexandrium spp.**



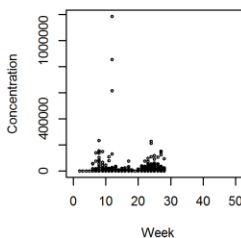
**P. seriata complex**



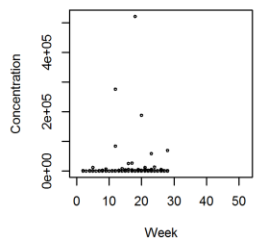
**All Dinophysis spp.**



**All Pseudo-nitzschia spp.**



**Azadinium-like cells**

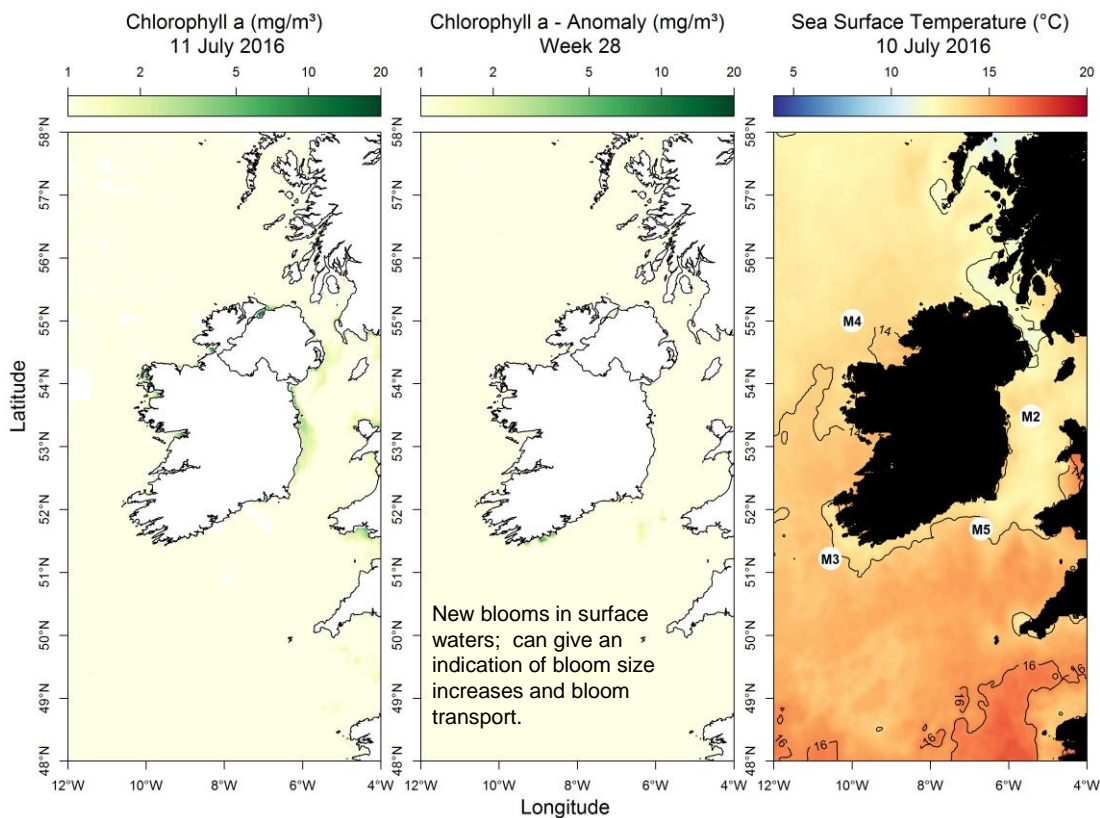


EU Regulatory Limit: ASP 20 µg/g; AZP 0.16 µg/g; DSP 0.16 µg/g; PSP 800 µg/kg

Regulatory limit = ■■■■■

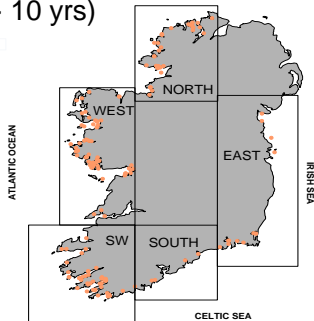


Most up to date available satellite data



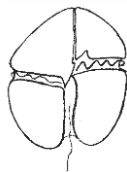
**SST (°C) anomaly for last week:**  
Data taken from the Irish data buoy network where the anomaly is the weekly difference in SST compared to the long term mean (~ 10 yrs)

- NW coast (M4) Below average by -1.26 °C
- SW coast (M3) Below average by -0.47 °C
- SE coast (M5) Below average by -0.65 °C



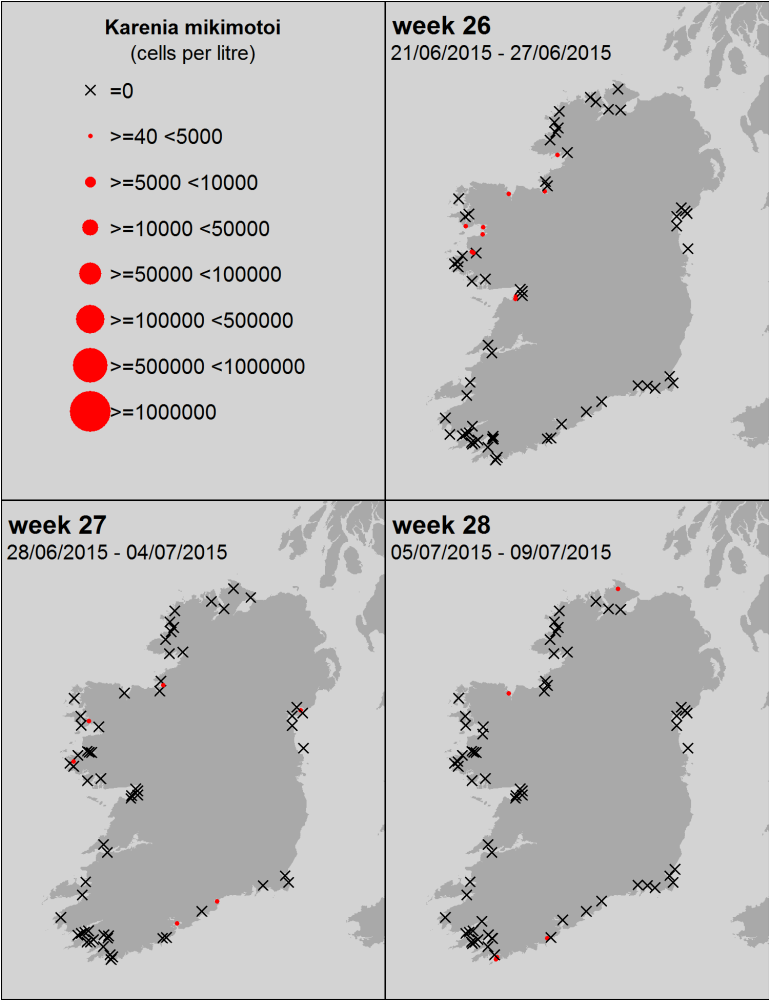
What phytoplankton were blooming at inshore coastal sites last week?

north:	<b>Diatoms:</b>	
	<i>Dactyliosolen fragilissimus</i>	597,000
	<i>Chaetoceros</i> (Hyalochaete) spp.	524,000
	<i>Cylindrotheca closterium/ Nitzschia longissima</i>	479,000
	<i>Leptocylindrus minimus</i>	291,000
west:	<b>Dinoflagellates:</b>	
	<i>Scrippsiella</i> spp.	117,000
	<b>Others:</b>	
	Microflagellate sp.	1,226,000
	<b>Diatoms:</b>	
SW:	<i>Chaetoceros</i> (Hyalochaete) spp.	327,000
	<i>Skeletonema</i> spp.	269,000
	<i>Leptocylindrus danicus</i>	173,000
	<i>Chaetoceros</i> spp. (H) (small)	118,000
	<i>Pseudo-nitzschia seriata</i> complex	55,000
south:	<b>Diatoms:</b>	
	<i>Lauderia / Detonula</i> sp	180,000
	<i>Leptocylindrus danicus</i>	17,000
	<i>Skeletonema</i> spp.	13,000
	<b>Dinoflagellates:</b>	
east:	<i>Ceratium fusus</i>	13,000
	<b>Others:</b>	
	Haptophytes	3,421,000
	<b>Diatoms:</b>	
	<i>Cerataulina</i> spp.	106,000
	<i>Lauderia / Detonula</i> sp	79,000
	<i>Cerataulina pelagica</i>	70,000
	<i>Leptocylindrus danicus</i>	45,000
	<b>Diatoms:</b>	
	<i>Thalassiosira</i> spp.	9,099,000
	<i>Chaetoceros socialis</i>	2,909,000
	<i>Chaetoceros</i> (Hyalochaete) spp.	2,860,000
	Pennate diatom <20µm	2,520,000
	<i>Asterionellopsis glacialis</i>	51,000
	<i>Pseudo-nitzschia delicatissima</i> complex	35,000
	<b>Others</b>	
	Microflagellate sp.	50,000



*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



0.2 0.4 1 2 4 10 20 40 100 200

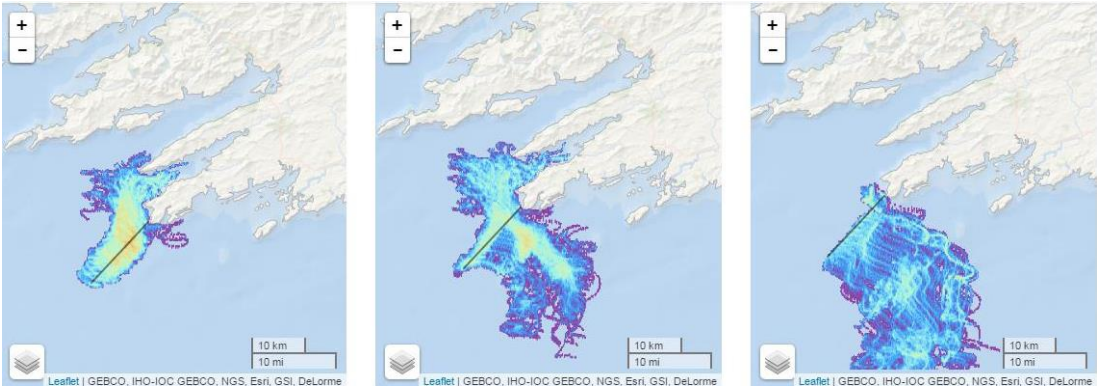
particle transport probability (hours)  
Bantry Bay model particle track analysis  
(2015-03-10T00:00:00Z, release\_location=0.0 count)  
Data courtesy of Irish Marine Institute

## Forecast for the next 3 days

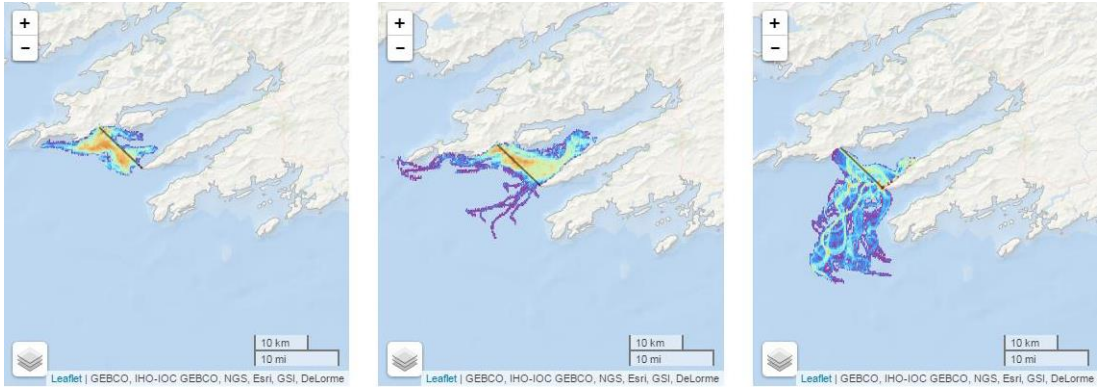
Bottom water

Water @ 20 metres

Surface water



Estimated water circulation patterns at Mizen Head will be predominately south flowing. Small amounts of bottom and water at depth will enter Dunmanus Bay.

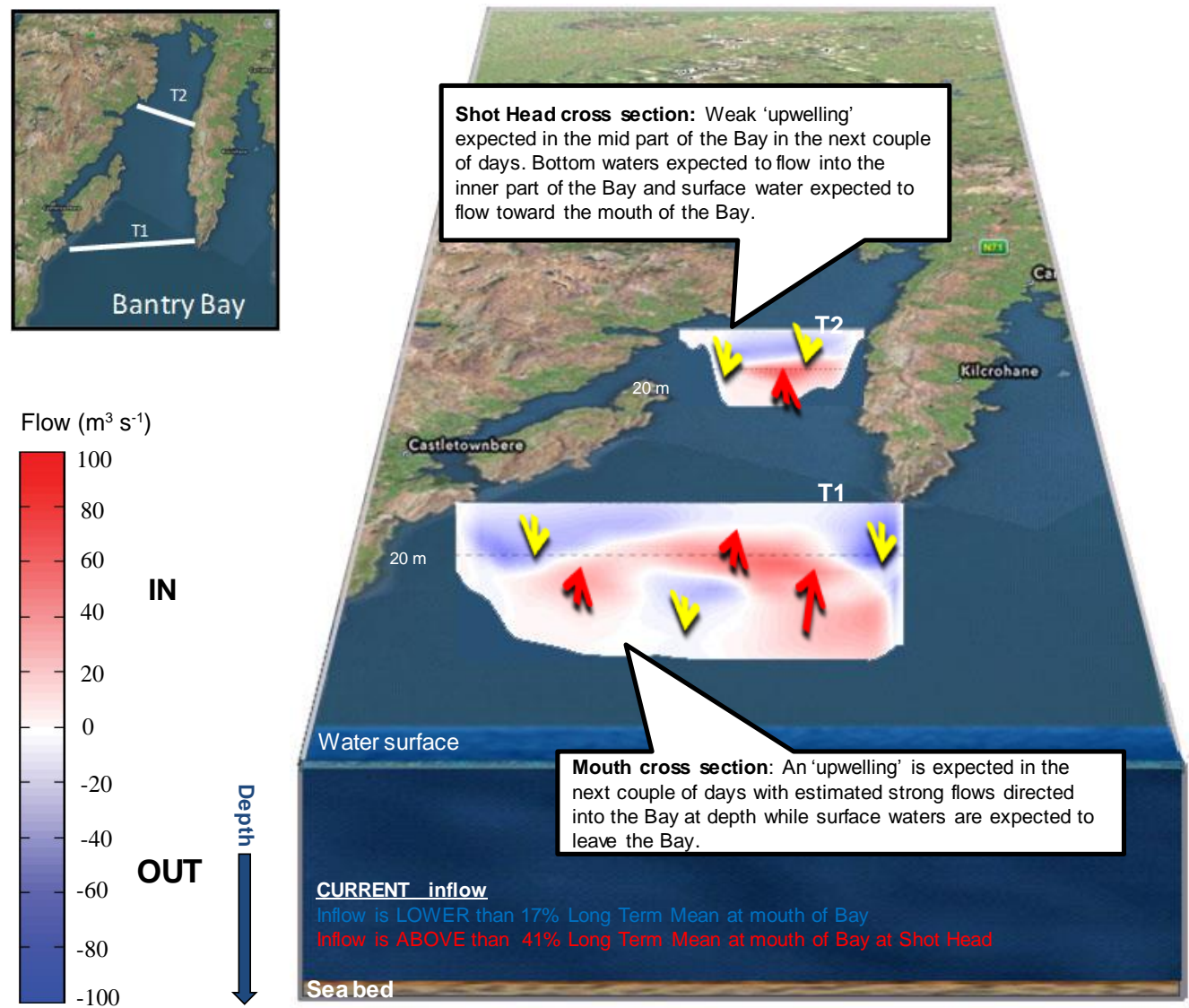


Bottom waters will be retained at the mouth of Bantry Bay while waters at depth will enter Bantry Bay. Surface waters will flow south.

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

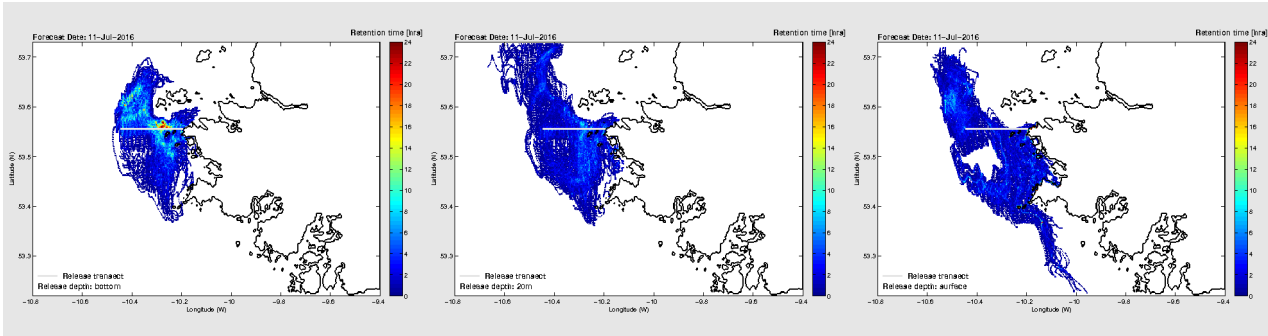


0.2 0.4 1 2 4 10 20 40 100 200

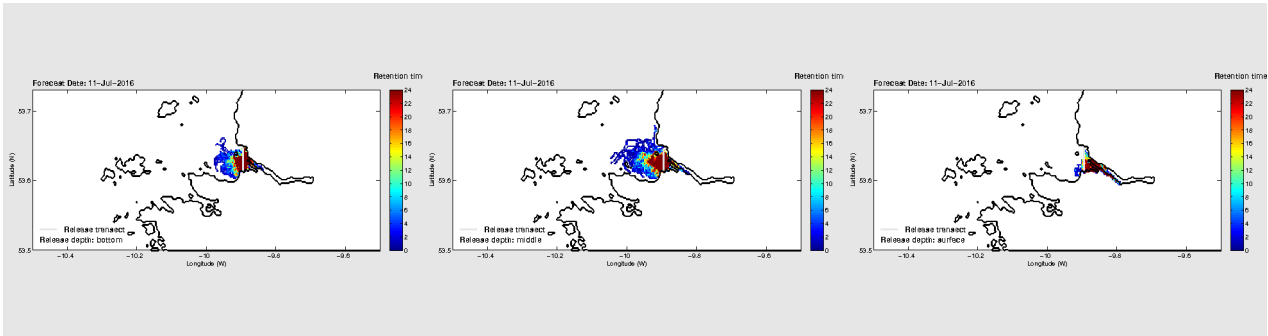
particle transport probability (hours)  
Bantry Bay model particle track analysis  
(2015-03-10T00:00:00Z, release\_location=0.0 count)  
Data courtesy of Irish Marine Institute

Forecast for the next 3 days

- Bottom water
- Water @ 20 metres
- Surface water



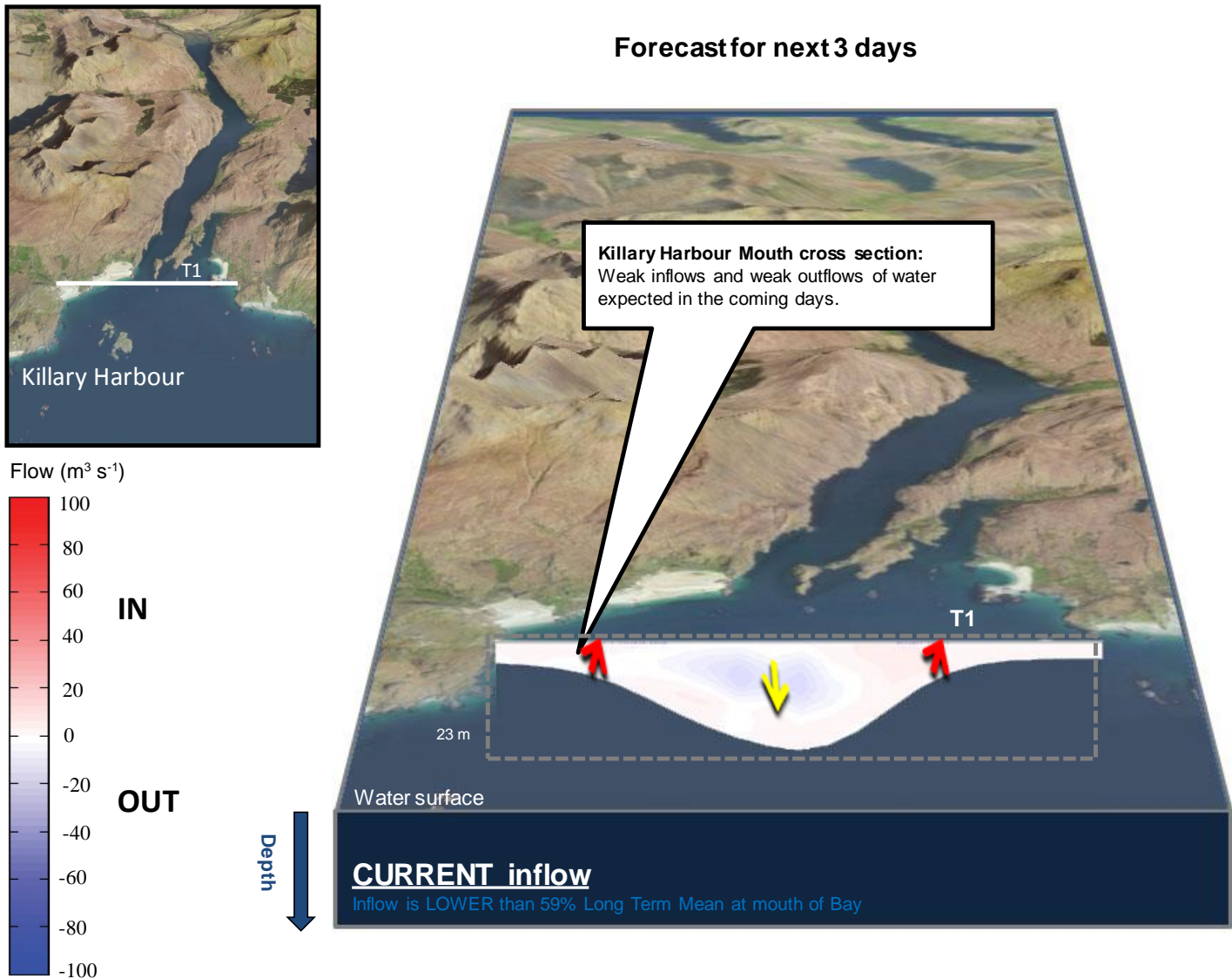
Water flows off the west coast will be northward directed. With some southward directed flows at the surface. Water masses offshore are unlikely to reach the mouth of Killary Harbour.



Estimated water circulation patterns at the mouth of Killary shows that in general, waters will be retained at the mouth. However, a small volume of surface water will be able to reach the mid-bay region.

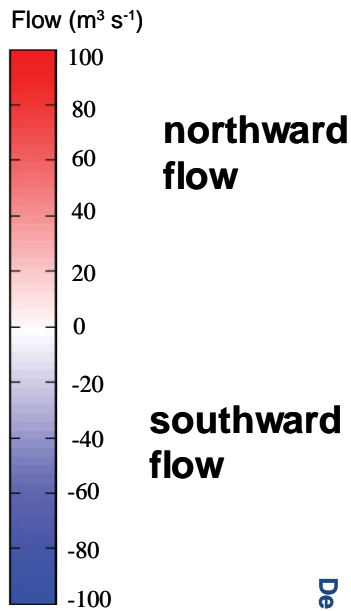
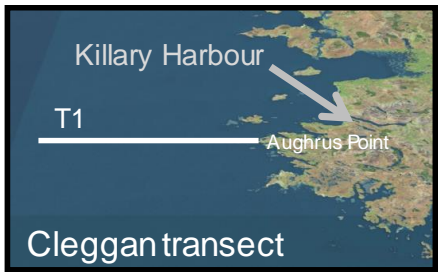
# Killary Harbour

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



Depth

