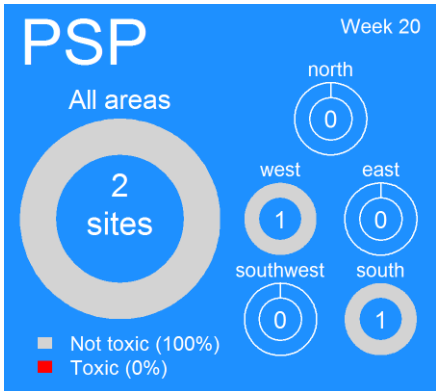
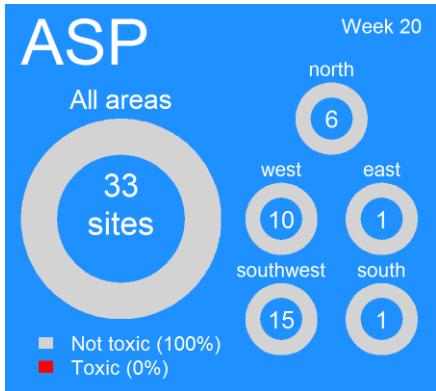
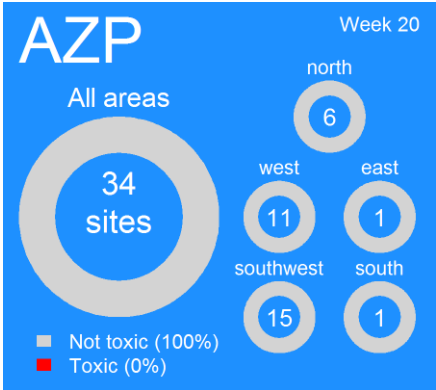
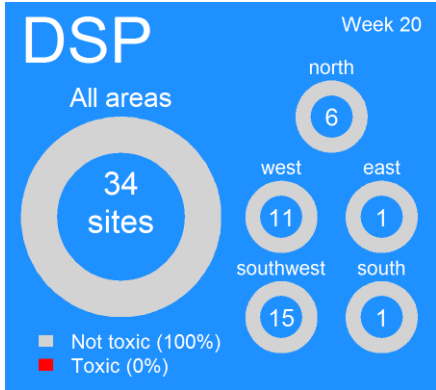


# Ireland: Current Conditions

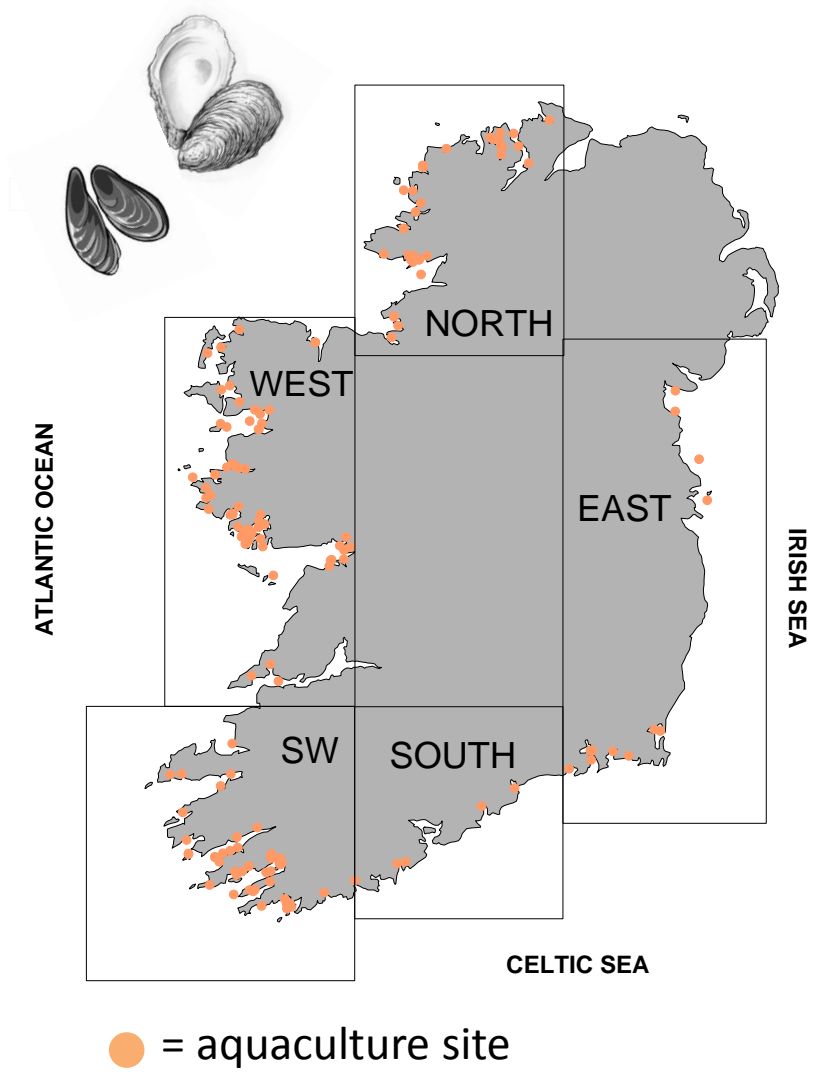
## Shellfish biotoxin report (last week)



**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. Medium for SW Bays

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.

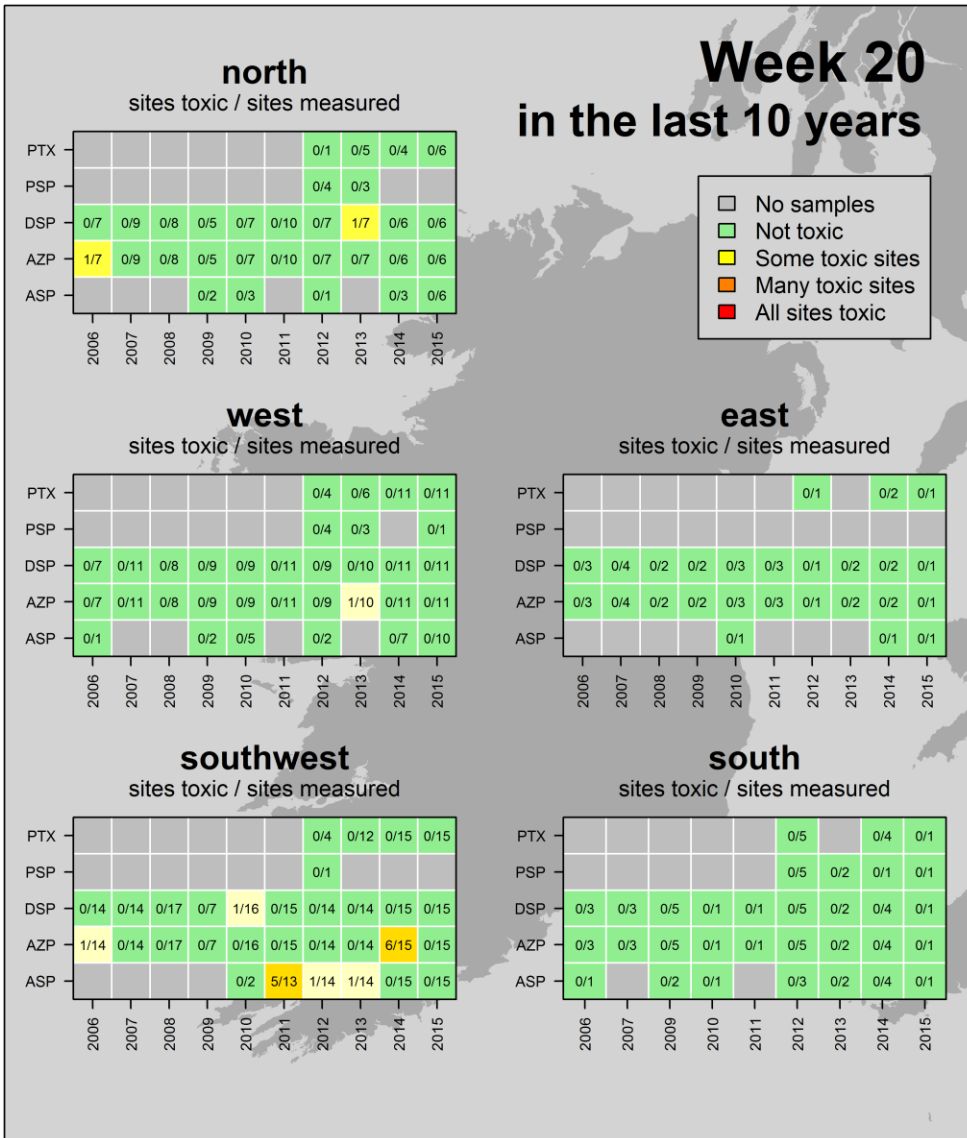
AZP: Historically low levels of caution should apply at this time of the year however due to the geographical spread and persistent presence of Azadinium like cells, combined with a potential trend of low increases in biotoxin levels (still below reg. limit) additional caution is currently advised.

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 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

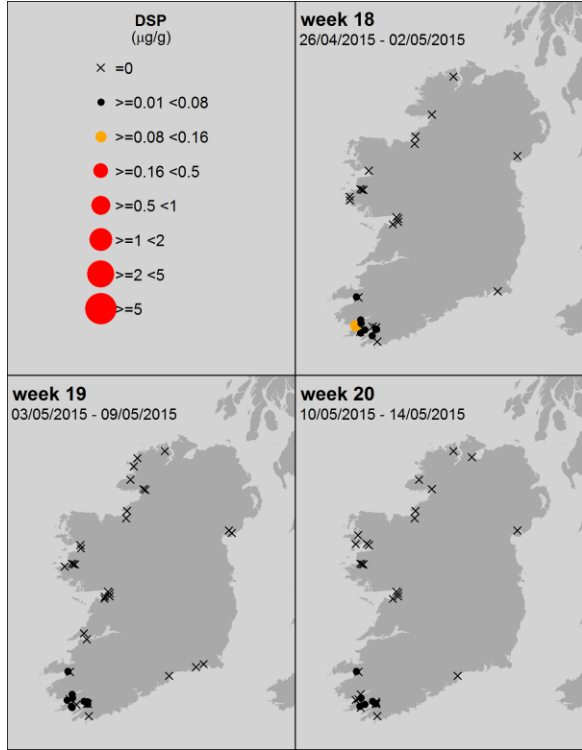
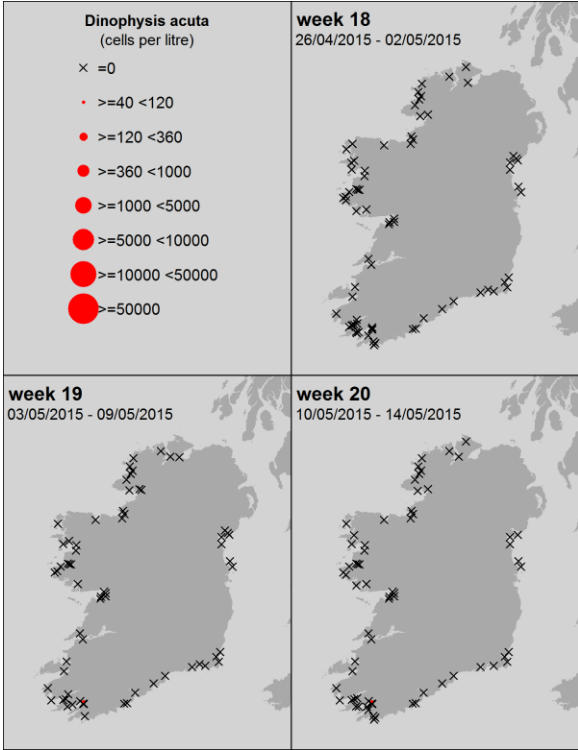
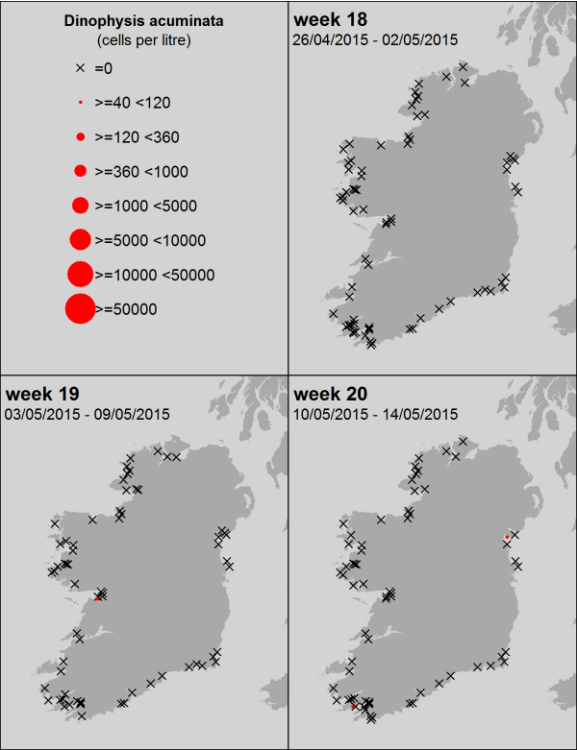
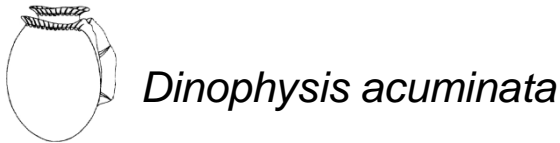
AZP events: April to December

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



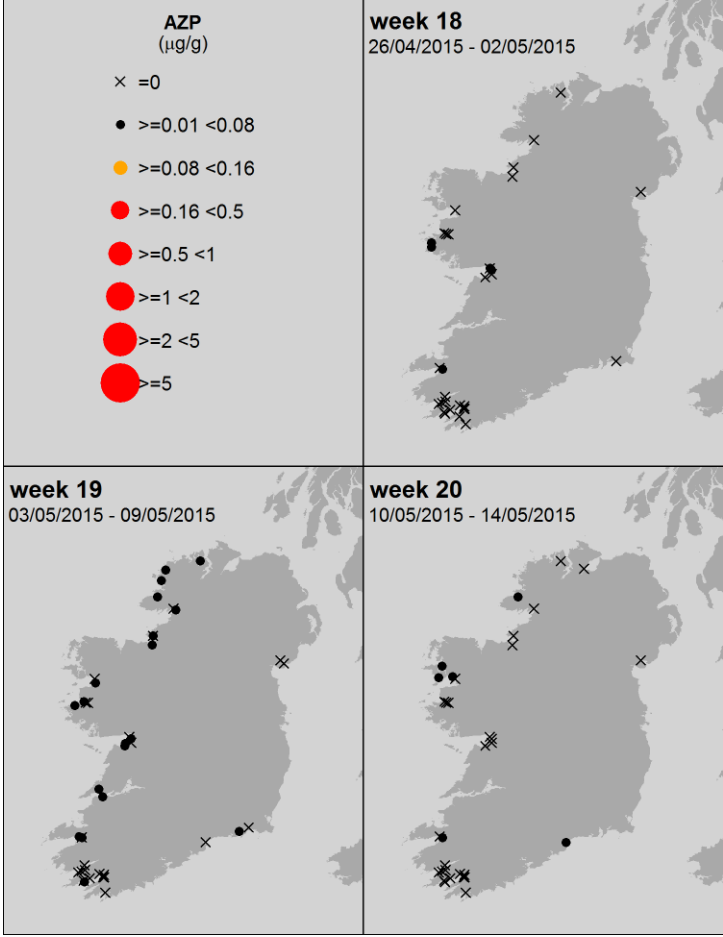
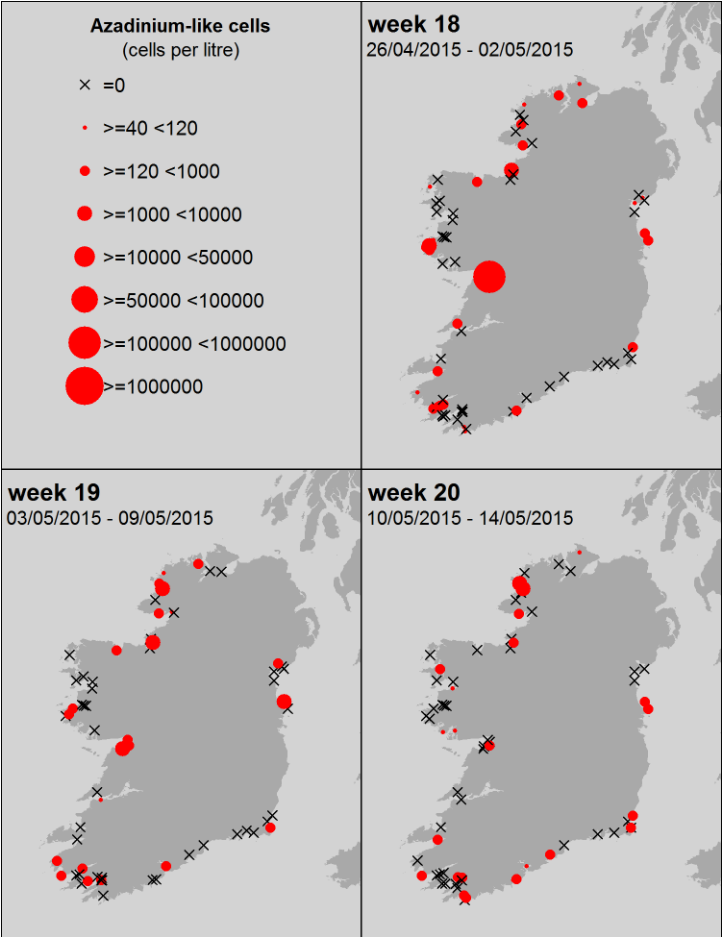
Ireland: Last 3 weeks of available National Monitoring Programme data



*Azadinium* – like spp.



AZP



Ireland: Last 3 weeks of available National Monitoring Programme data

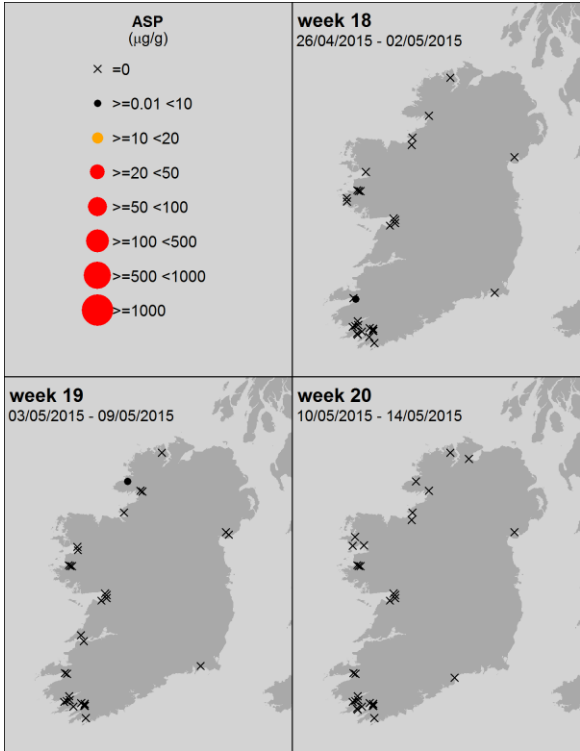
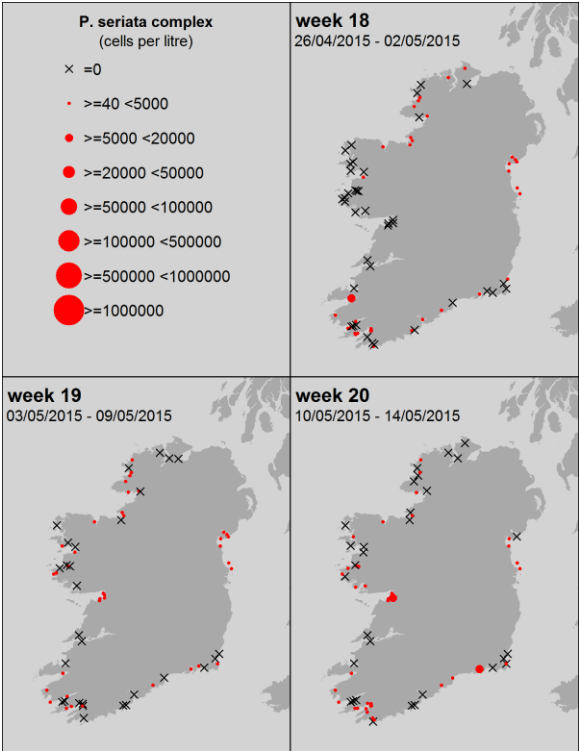
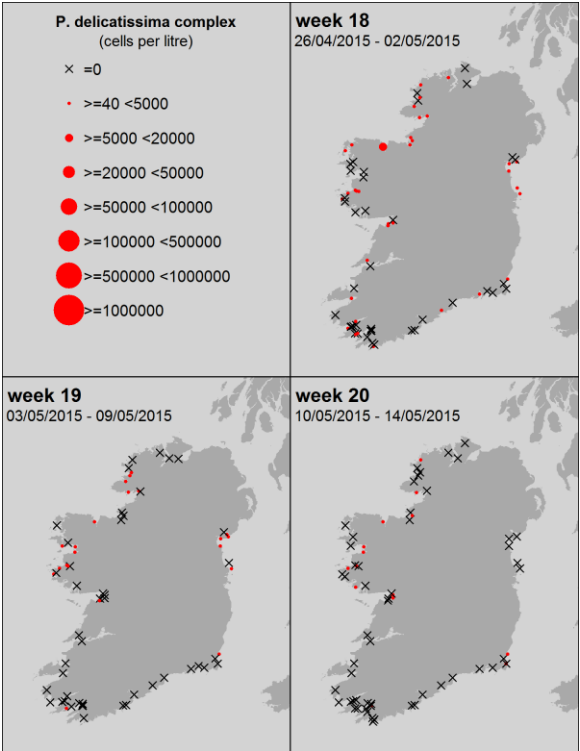
*Pseudo-nitzschia* spp.



ASP

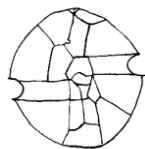
“*P. delicatissima*” complex = small cells  
Taken from the literature:  
3 species confirmed in Irish waters

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

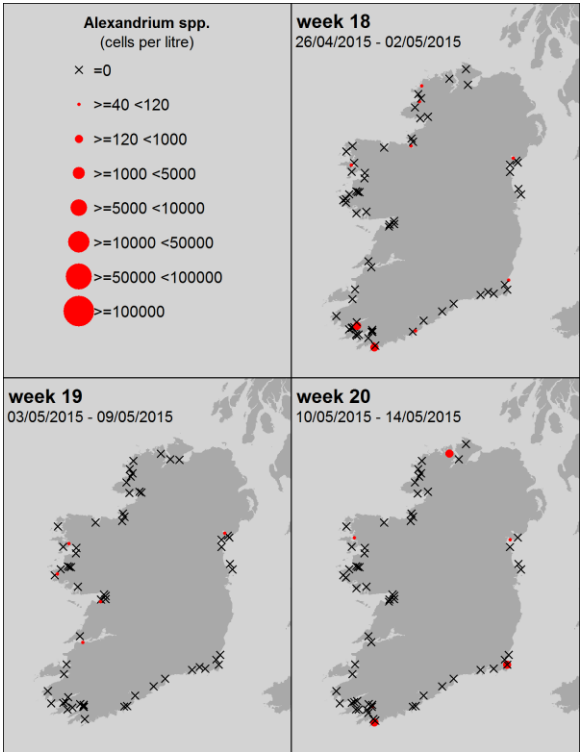


**Taken from the literature:** Of the 4 species (*P. fraudulenta*, *P. australis*, *P. pungens* and *P. delicatissima*) from Irish waters, tested for ASP toxins in culture work, only one, *P. australis* (from the “*P. seriata*” group) was toxic.

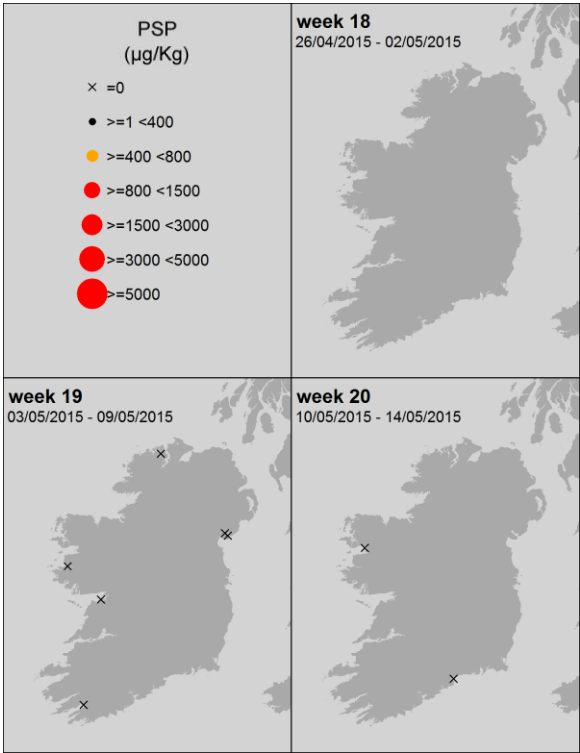
Ireland: Last 3 weeks of available National Monitoring Programme data



*Alexandrium* spp.



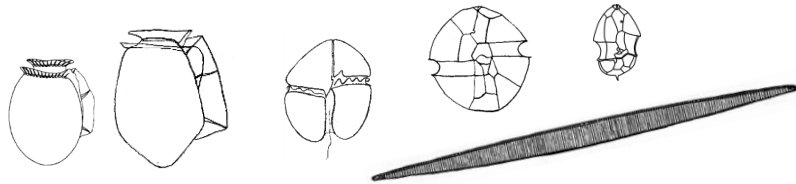
PSP



# Ireland HAB & Biotoxin temporal trends

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

## Ireland: Biotoxins



Toxin groups

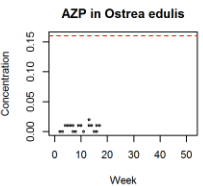
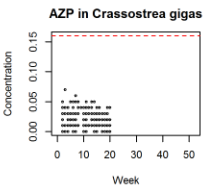
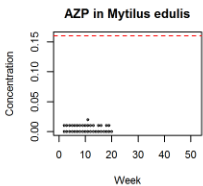
mussels

oysters

oysters

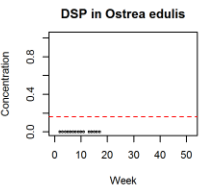
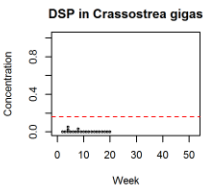
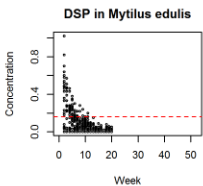
**AZP**

AZaspiracid  
Poisoning



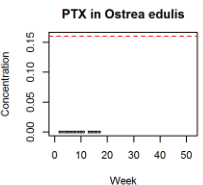
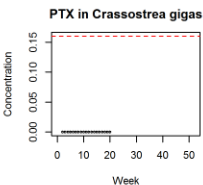
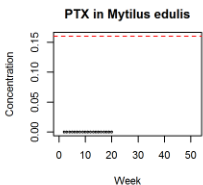
**DSP**

Diarrhetic  
Shellfish  
Poisoning



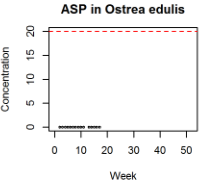
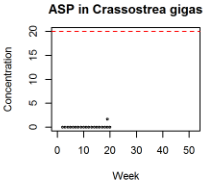
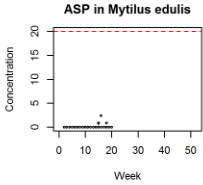
**PTX**

Pectenotoxin



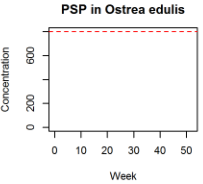
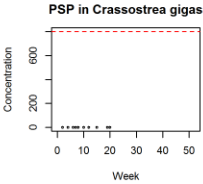
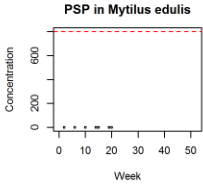
**ASP**

Amnesic  
Shellfish  
Poisoning



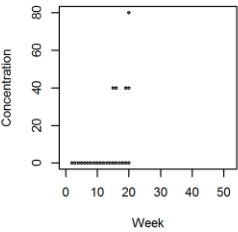
**PSP**

Paralytic  
Shellfish  
Poisoning

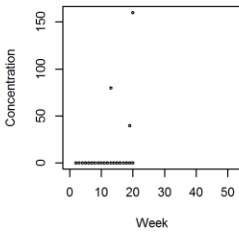


## Ireland: HABs

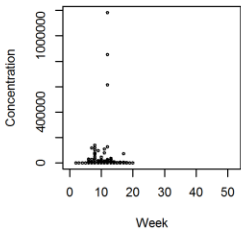
**Dinophysis acuminata**



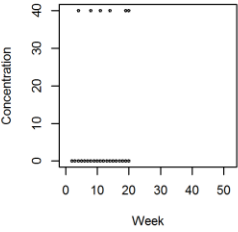
**Karenia mikimotoi**



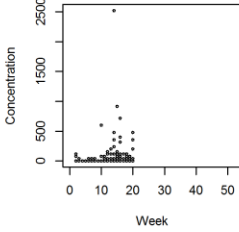
**P. delicatissima complex**



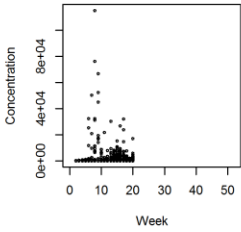
**Dinophysis acuta**



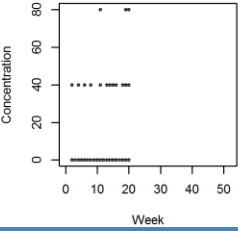
**Alexandrium spp.**



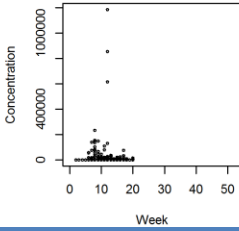
**P. seriata complex**



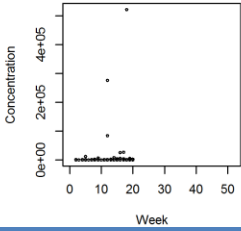
**All Dinophysis spp.**



**All Pseudo-nitzschia spp.**



**Azadinium-like cells**

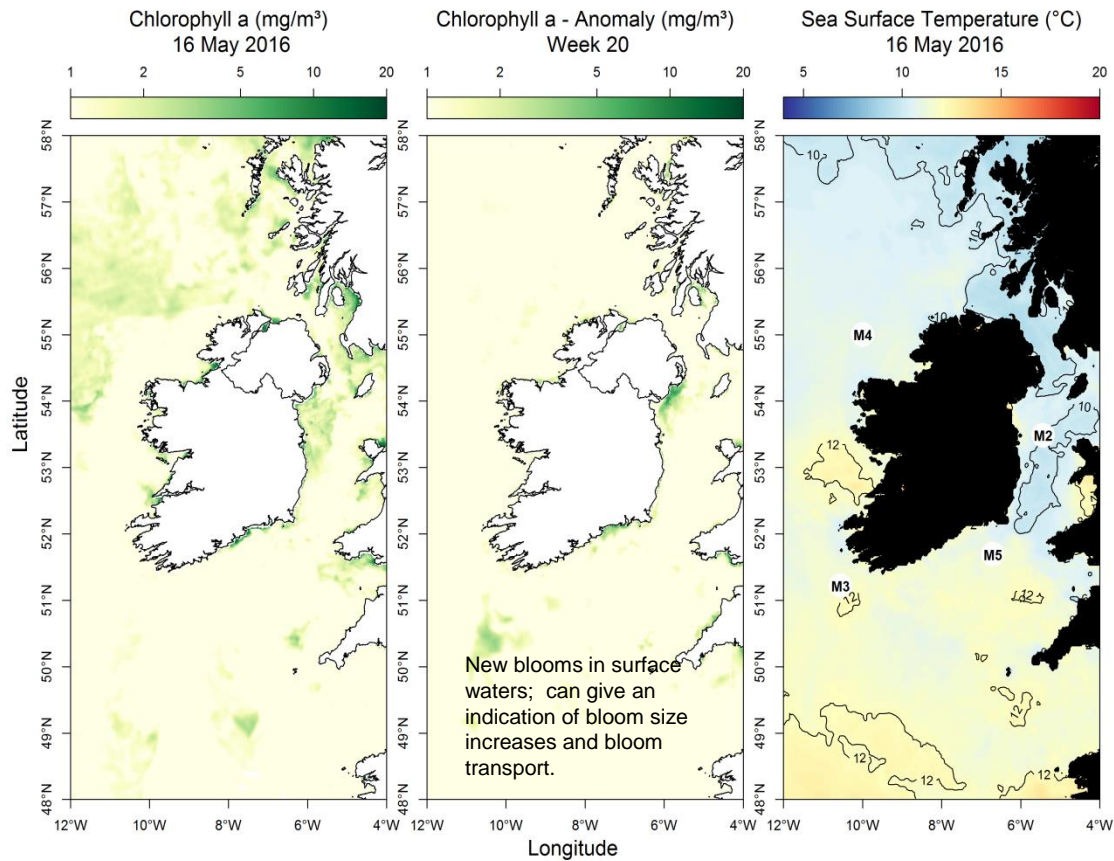


EU Regulatory Limit: ASP 20 µg/g; AZP 0.16 µg/g; DSP 0.16 µg/g; PSP 800 µg/kg

Regulatory limit = ■■■■■



Most up to date available satellite data

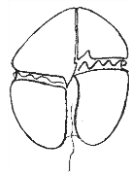


**SST (°C) anomaly for last week:**  
Data taken from the Irish data buoy network where the anomaly is the weekly difference in SST compared to the long term mean (~ 10 yrs)

- NW coast (M4) above average by 0.43 °C
- SW coast (M3) Offline
- SE coast (M5) below average by -0.39 °C

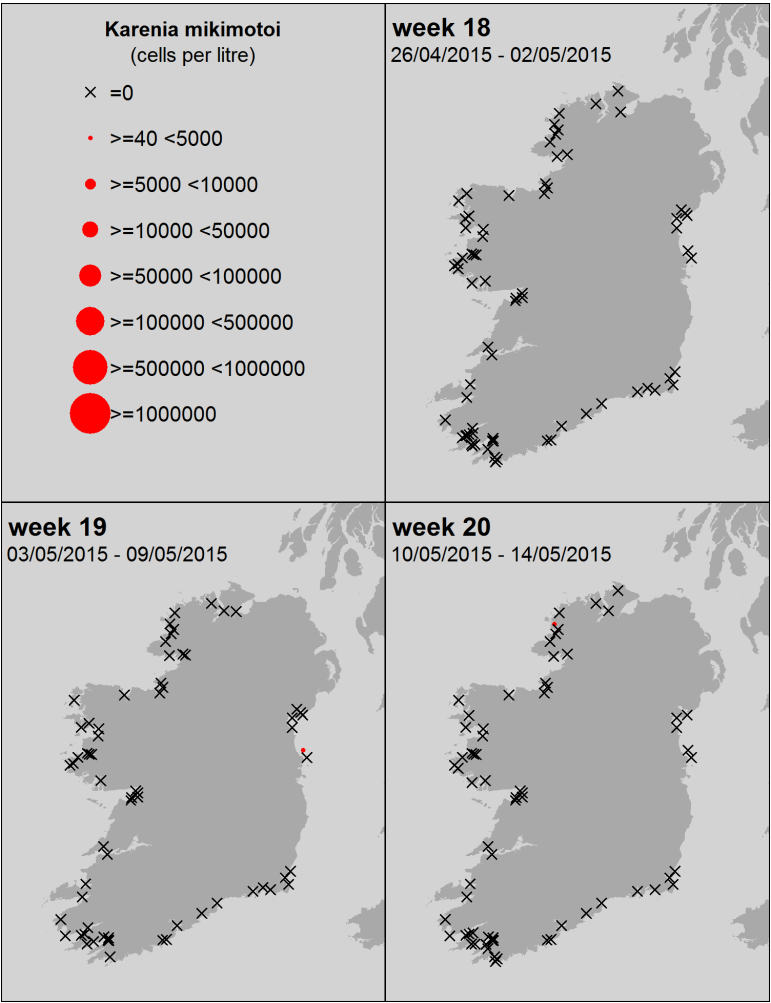
What phytoplankton were blooming at inshore coastal sites last week?

Region	Predominant Phytoplankton (most abundant taxa)	Cells/L (rounded)
north:	<b>Diatoms:</b>	
	<i>Fragilaria</i> spp.	361,000
	<i>Cerataulina</i> spp.	148,000
	Pennate diatom	73,000
	<b>Others:</b>	
	<i>Euglena/Eutreptiella</i> spp.	306,000
west:	<i>Microflagellate</i> sp.	305,000
	<b>Diatoms:</b>	
	<i>Chaetoceros socialis</i>	2,407,000
	<i>Cylindrotheca closterium/ Nitzschia longissima</i>	552,000
	<i>Cerataulina</i> spp.	125,000
	<i>Chaetoceros (Hyalochaete)</i> spp.	63,000
	<i>Guinardia delicatula</i>	63,000
	Pennate diatom	40,000
	<b>SW:</b>	
	<b>Diatoms:</b>	
south:	<i>Chaetoceros socialis</i>	488,000
	<i>Thalassiosira &lt;20µm</i>	206,000
	<i>Asterionellopsis glacialis</i>	105,000
	<i>Thalassiosira polycorda</i>	86,000
	<i>Cerataulina pelagica</i>	78,000
	<b>Others:</b>	
	<i>Phaeocystis</i> spp. (cells)	80,000
	<b>Diatoms:</b>	
	<i>Thalassiosira &lt;20µm</i>	291,000
	<i>Thalassiosira nordenskiöldii</i>	77,000
east:	<i>Skeletonema</i> spp.	22,000
	<i>Navicula</i> spp. <25µm	17,000
	<i>Cylindrotheca closterium/ Nitzschia longissima</i>	13,000
	<b>Dinoflagellates:</b>	
	<i>Amphidinium</i> spp.	6,000
	<b>Diatoms:</b>	
	<i>Thalassionema</i> spp.	601,000
	<i>Chaetoceros</i> spp. (H) (small)	576,000
	<i>Leptocylindrus minimus</i>	171,000
	<i>Cylindrotheca closterium/ Nitzschia longissima</i>	95,000
	<i>Lauderia / Detonula</i> sp	15,000
	<b>Others:</b>	
	<i>Euglena/Eutreptiella</i> spp.	259,000



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

A *Karenia mikimotoi* bloom  
is NOT expected this week



# SOUTHWEST: Bantry Bay

Forecast for the next 3 days

Bottom water

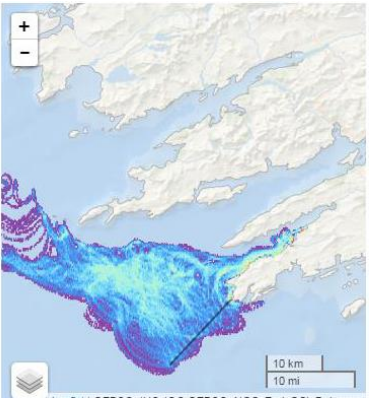
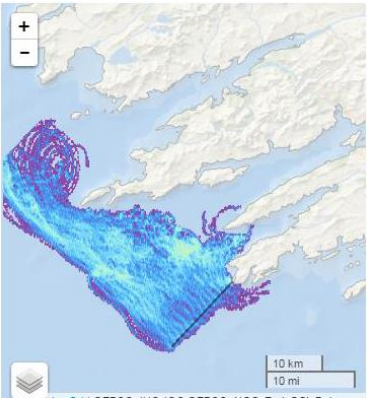
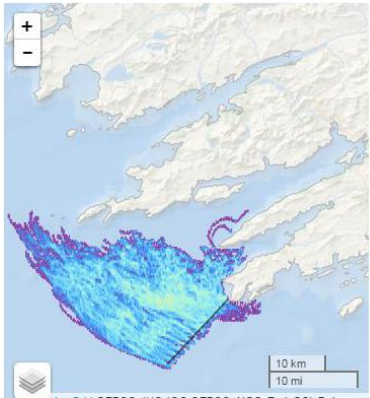
Water @ 20 metres

Surface water

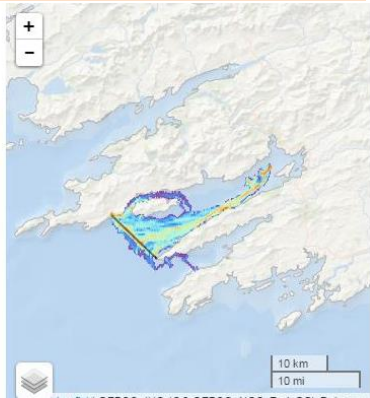
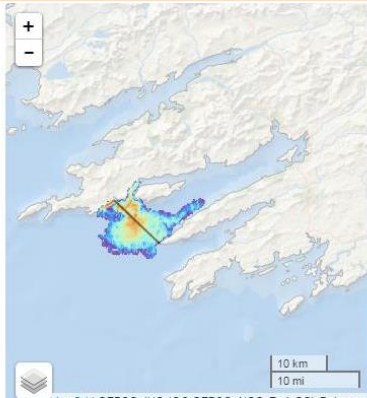
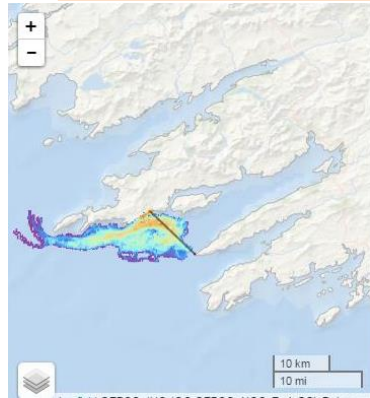
The maps show the **most likely transport pathways for the next 3 days of phytoplankton** found along the **presented transects** (black lines off Mizen Head and the Mouth of Bantry Bay) and **water depths** (bottom, 20 metres and surface)

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



Estimated water circulation patterns at Mizen head will flow northwest some surface waters will enter Dunmanus Bay.



Bottom waters are expected to exit the bay and travel northwest, water at 20m will remain and surface waters are expected to enter Bantry Bay.

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

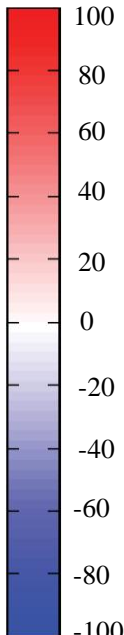
# Bantry Bay

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

Forecast for next 3 days



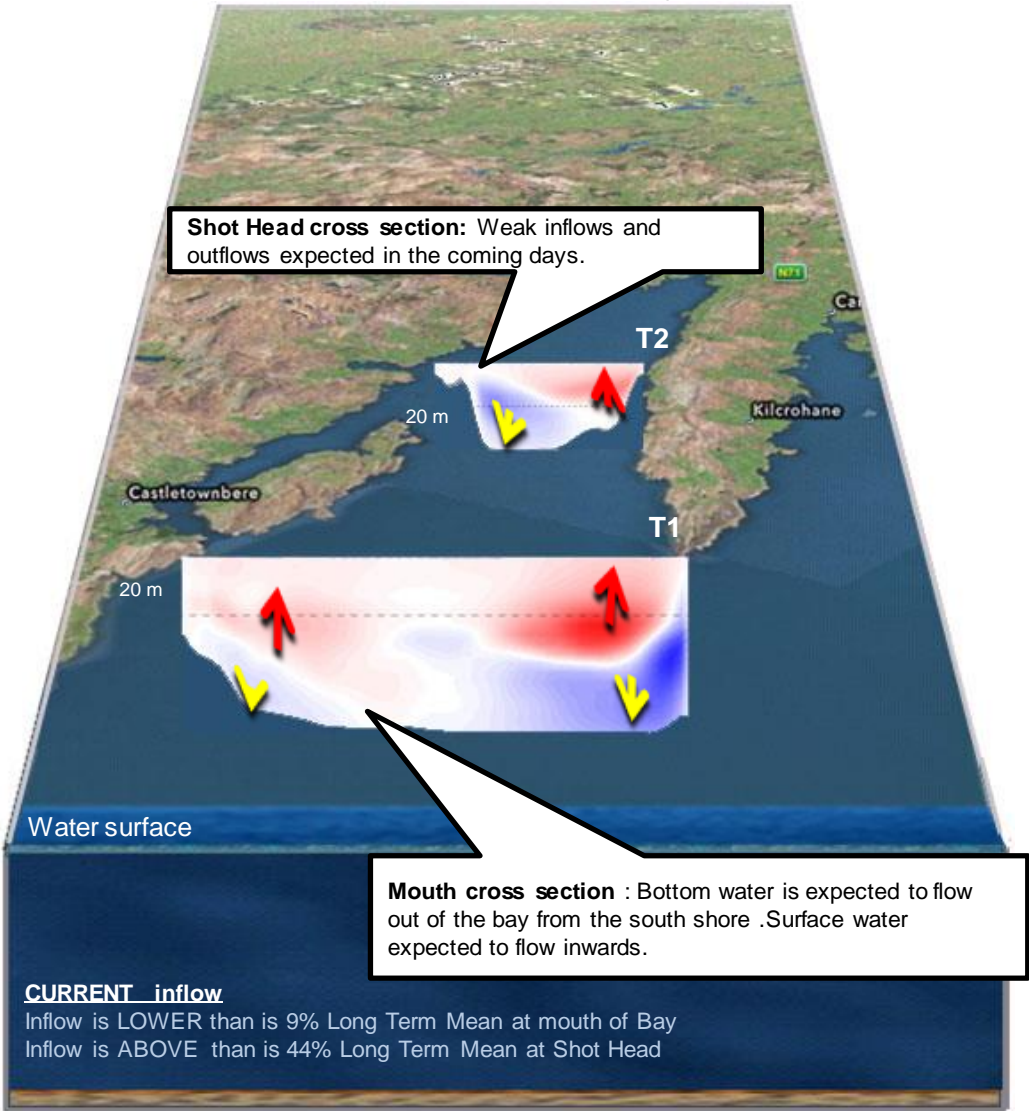
Flow ( $\text{m}^3 \text{s}^{-1}$ )



IN

OUT

Depth

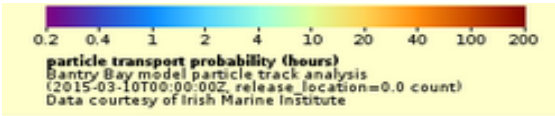




WEST: Killary Harbour

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)

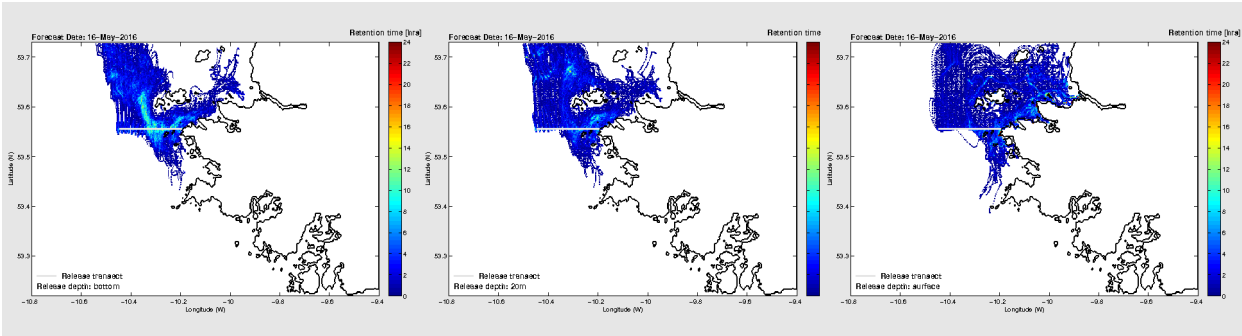
Reddish colours represent areas where phytoplankton remain longest  
Cooler colours represent areas where phytoplankton remain for shorter periods



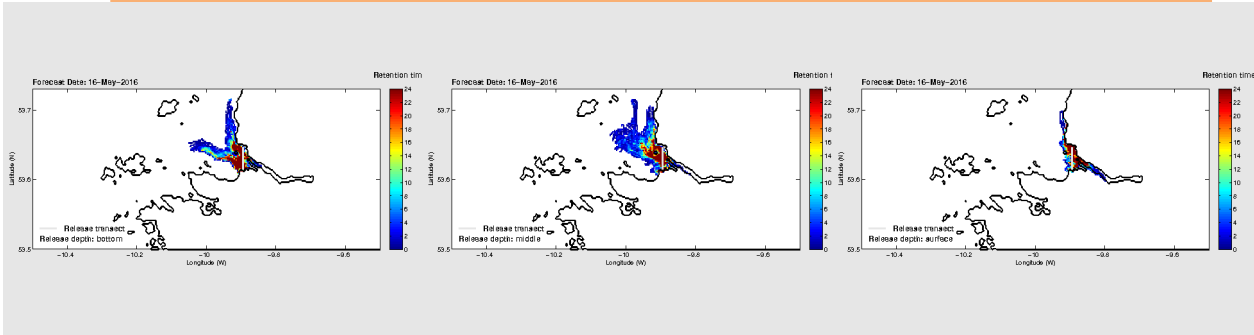
particle transport probability (hours)  
Bantry Bay model particle track analysis  
(2015-03-10T00:00:00Z, release\_location=0.0 count)  
Data courtesy of Irish Marine Institute

Forecast for the next 3 days

- Bottom water
- Water @ 20 metres
- Surface water



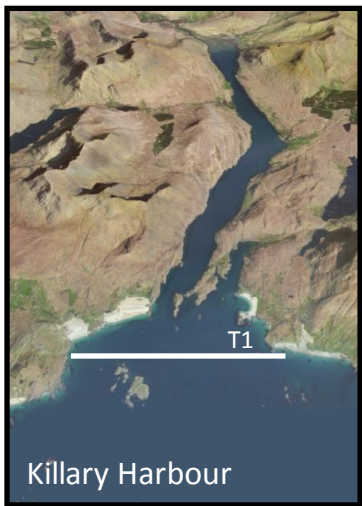
Water flows off the west coast will flow north with some surface waters likely to reach Killary Harbour.



Water circulation at the mouth of Killary Harbour shows that in general, waters will be retained at the mouth otherwise some will flow out and go north. However a small volume of surface water is expected to reach Killary Middle.

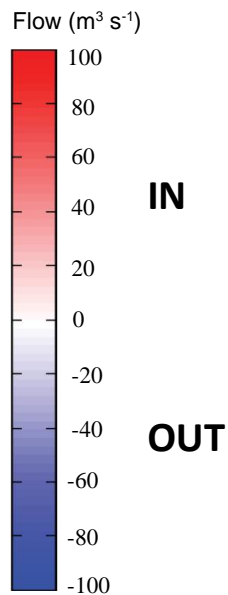
# Killary Harbour

3 day estimated water flows at the mouth of Killary Harbour

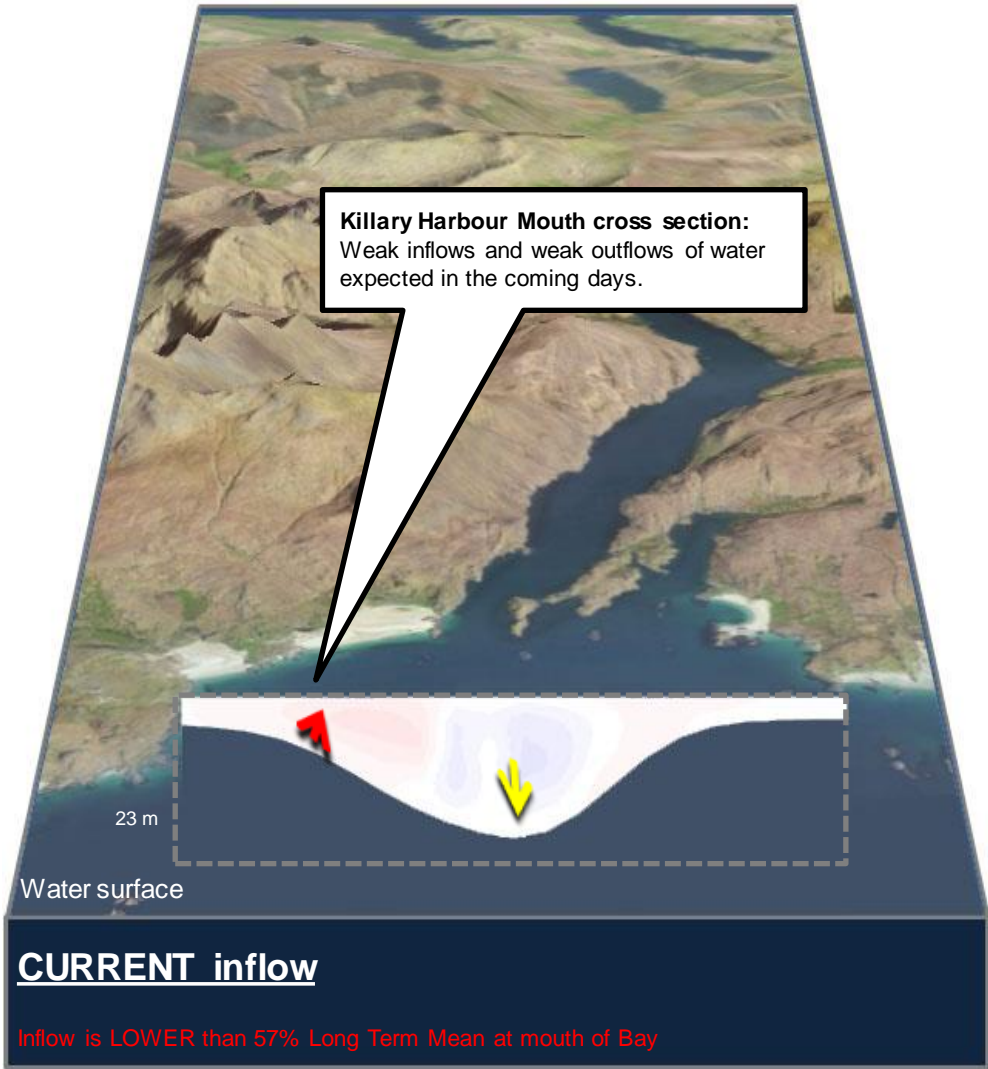


Forecast for next 3 days

Killary Harbour Mouth cross section:  
Weak inflows and weak outflows of water  
expected in the coming days.

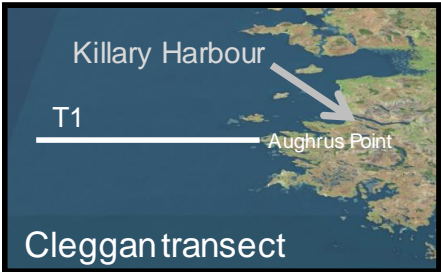


Depth

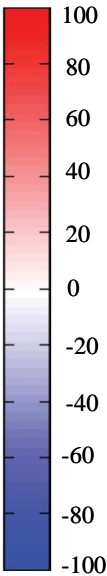


# West Coast - 3 day estimated water flows along a transect off Aughrus Point

Forecast for next 3 days



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



northward  
flow

southward  
flow

Depth

