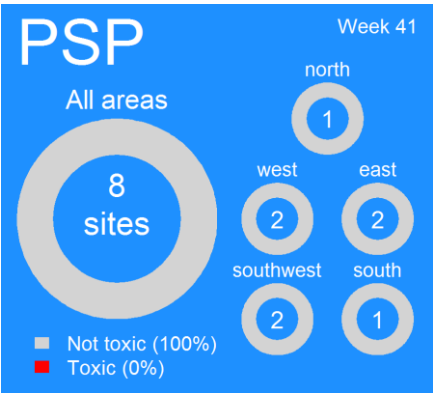
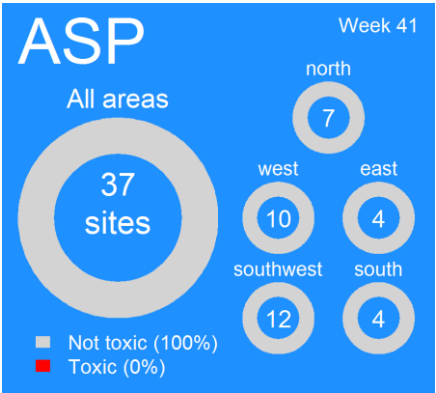
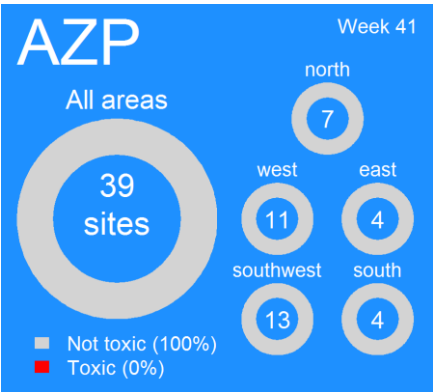
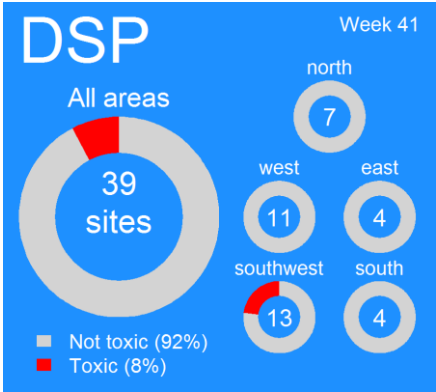


# Ireland: Current Conditions

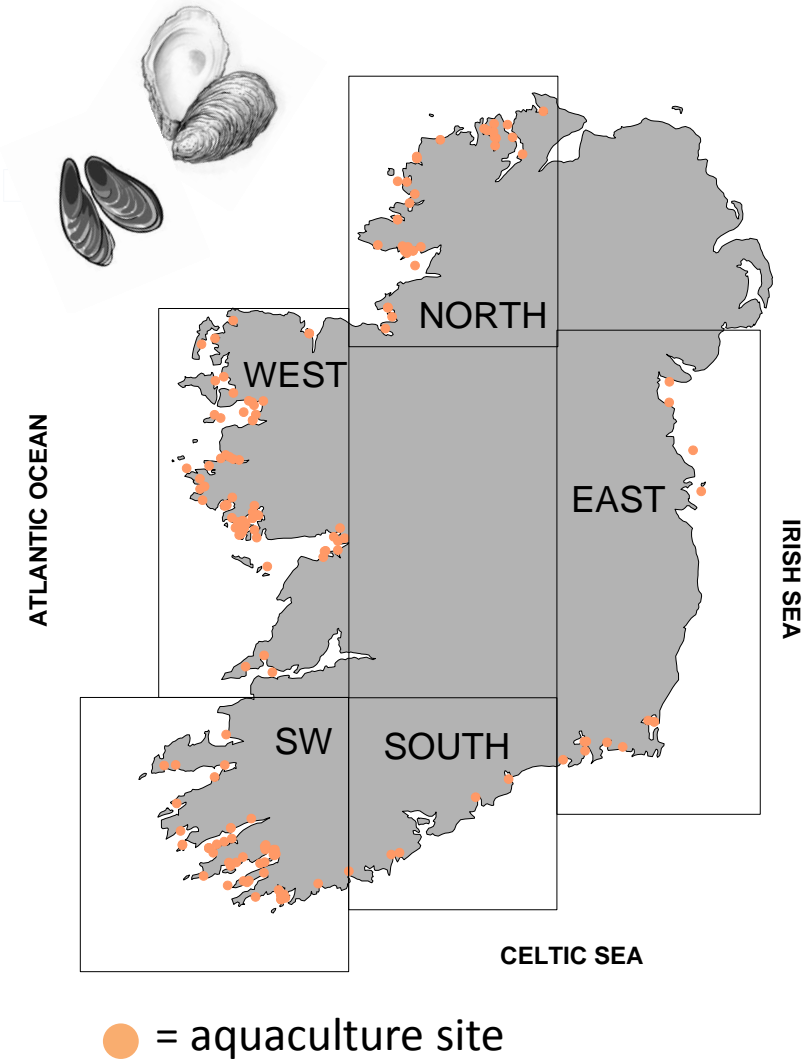
## Shellfish biotoxin report (last week)



**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: Medium - High

DSP event: High

PSP event: Low

## **Why do we think this?**

ASP: Toxin issues from this species are not expected at this time of year.

Declining cell levels of *Pseudo-nitzschia seriata* group continue to be observed around the coast.

Corresponding biotoxin levels continue to remain well below regulatory limits.

AZP: October is considered a high risk period for AZP. Fluctuating levels of *Azadinium* spp. continue to be observed around the coast, since there was a spike in *Azadinium*-like cell levels in the NW last week caution is advised. Biotoxin levels in localised areas SW are currently below regulatory limits.

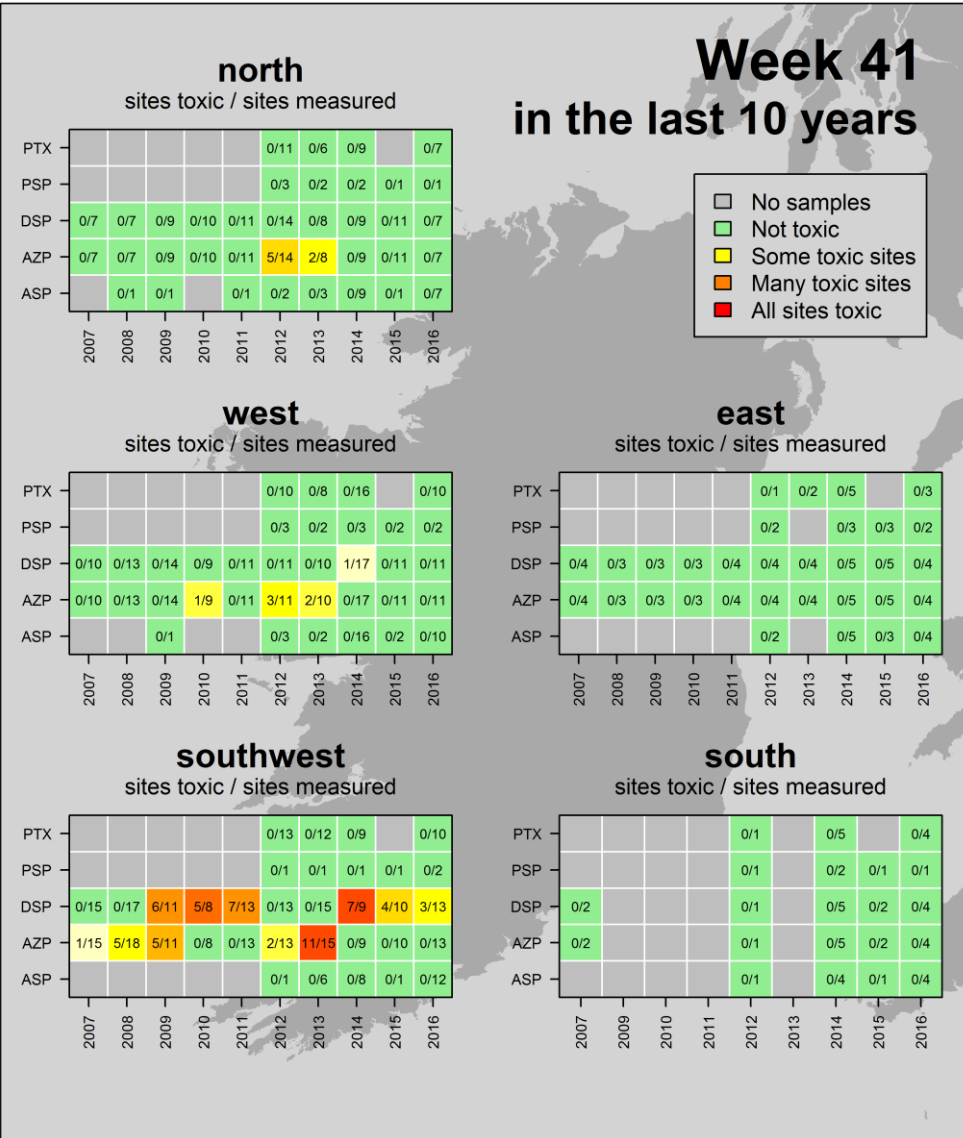
DSP: This is historically the main risk period . There seems to be some fluctuating levels of *Dinophysis* spp in the SW with mostly a downward trend.

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

**Blooms**: The bloom of *Karenia mikimotoi* in the SW has subsided. Cells levels have increased slightly in the NW, but, are currently below what is normally considered harmful. We will continue to monitor the situation.

## 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

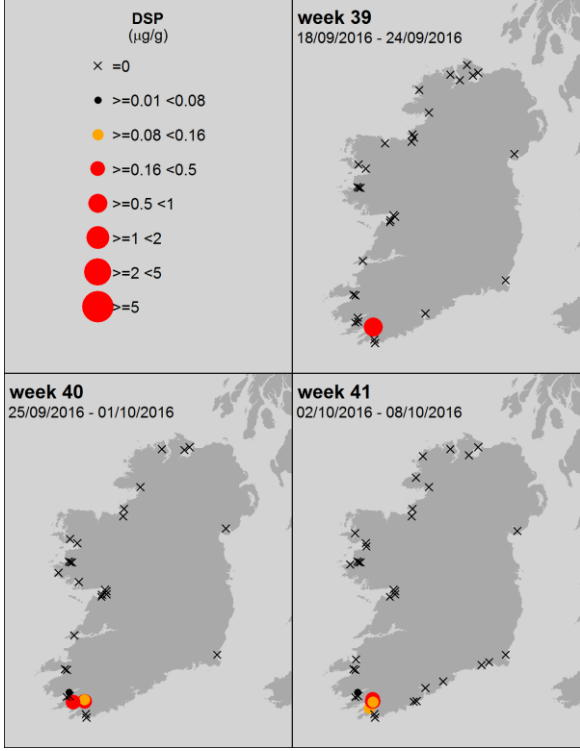
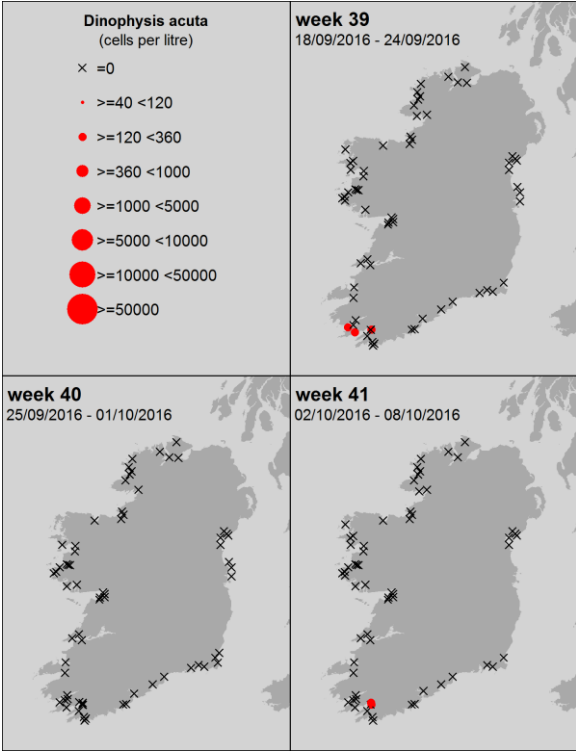
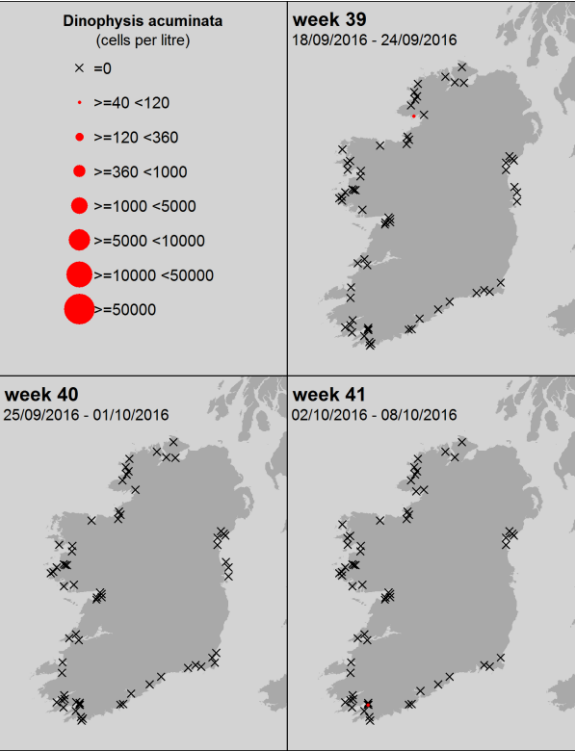
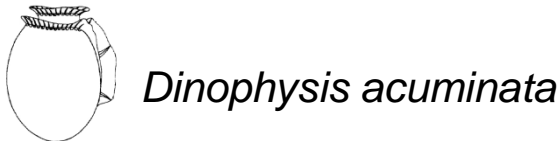
AZP events: April to December

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



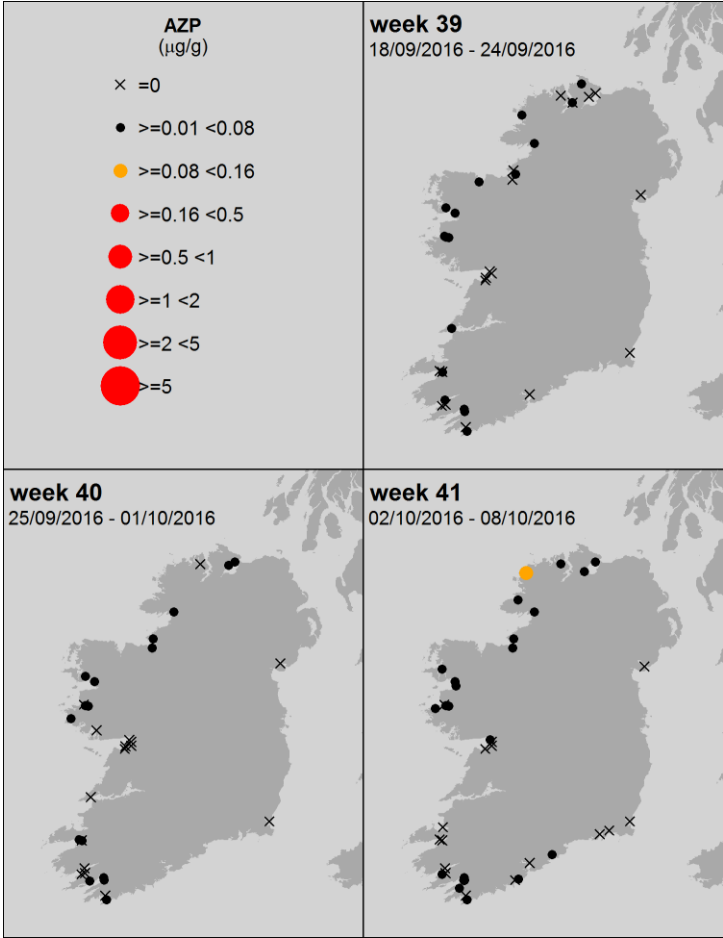
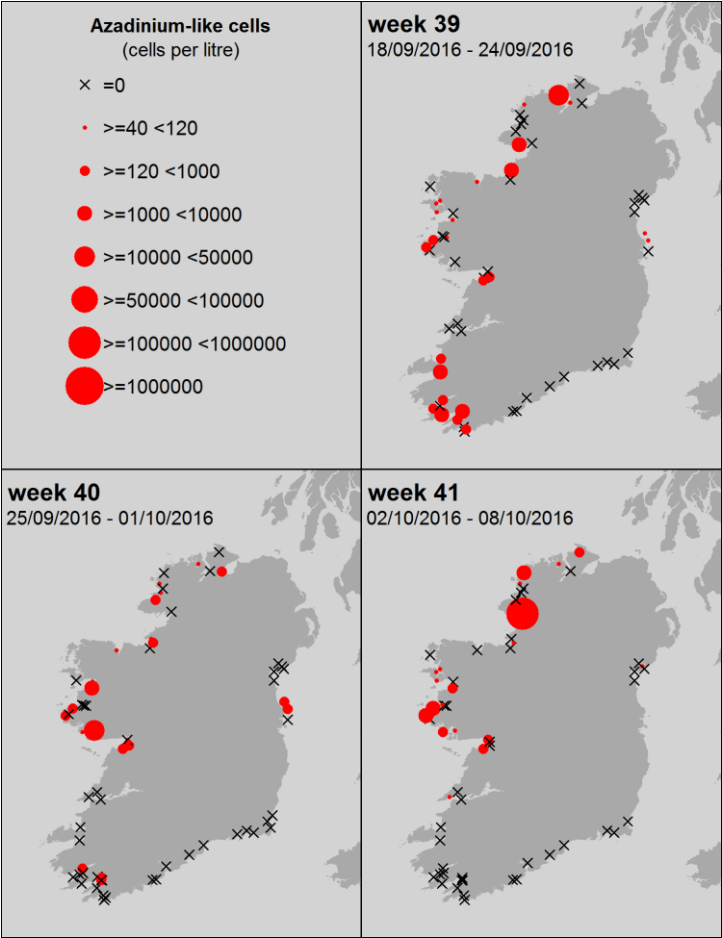
Ireland: Last 3 weeks of available National Monitoring Programme data



*Azadinium* – like spp.



AZP



Ireland: Last 3 weeks of available National Monitoring Programme data

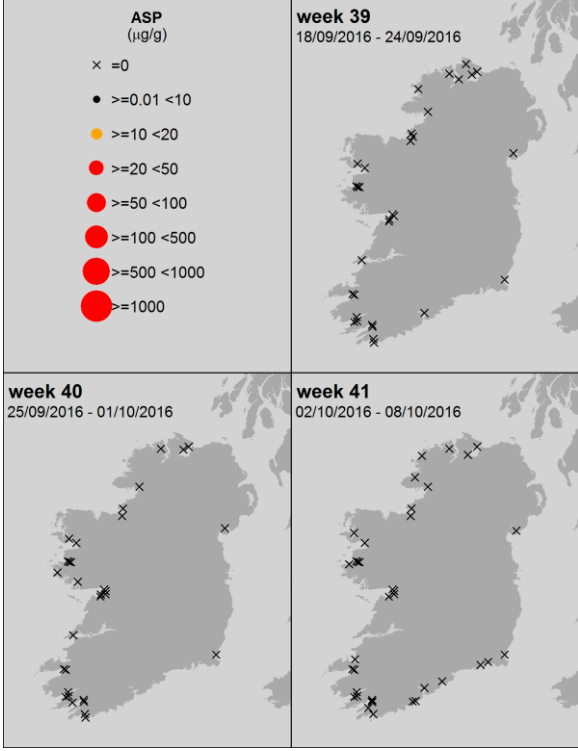
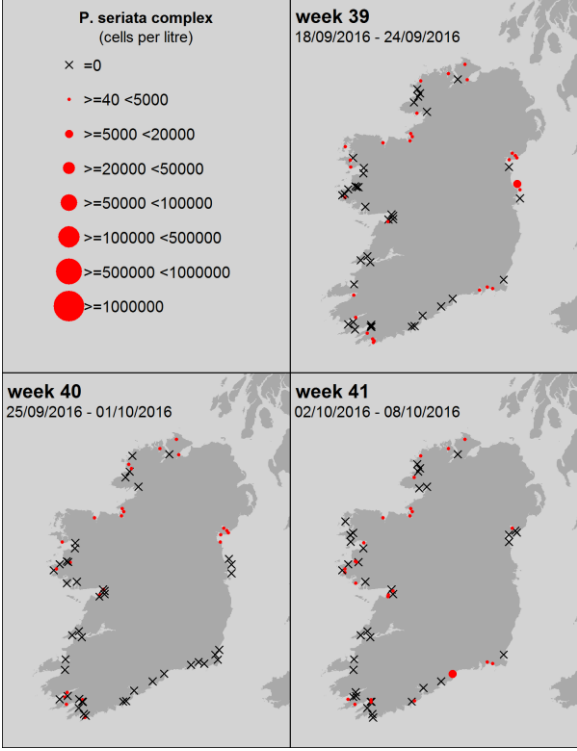
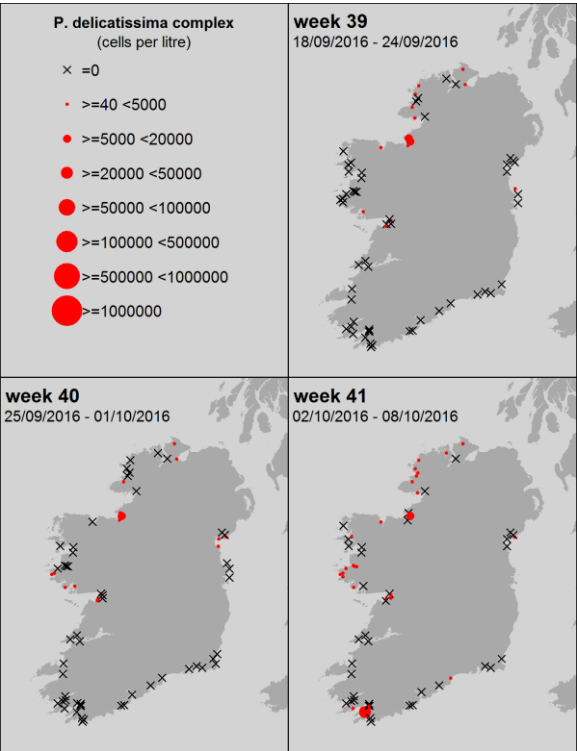
*Pseudo-nitzschia* spp.



ASP

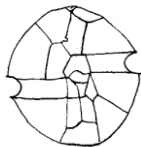
“*P. delicatissima*” complex = small cells  
Taken from the literature:  
3 species confirmed in Irish waters

“*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.

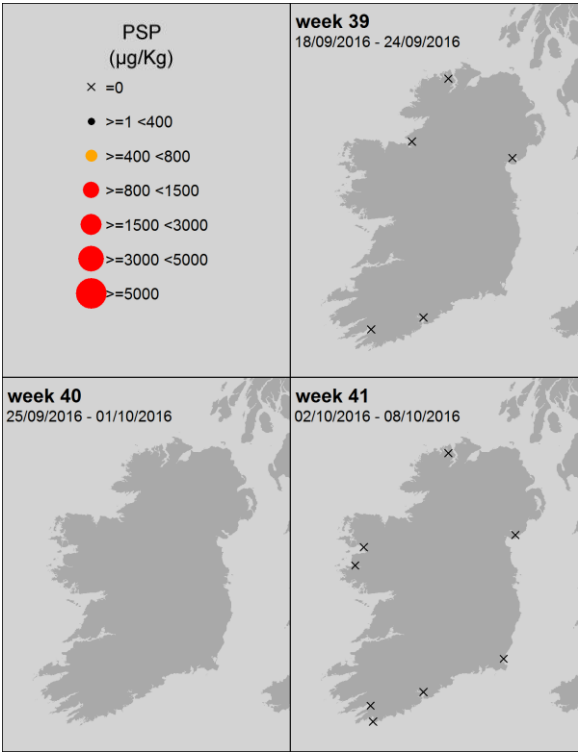
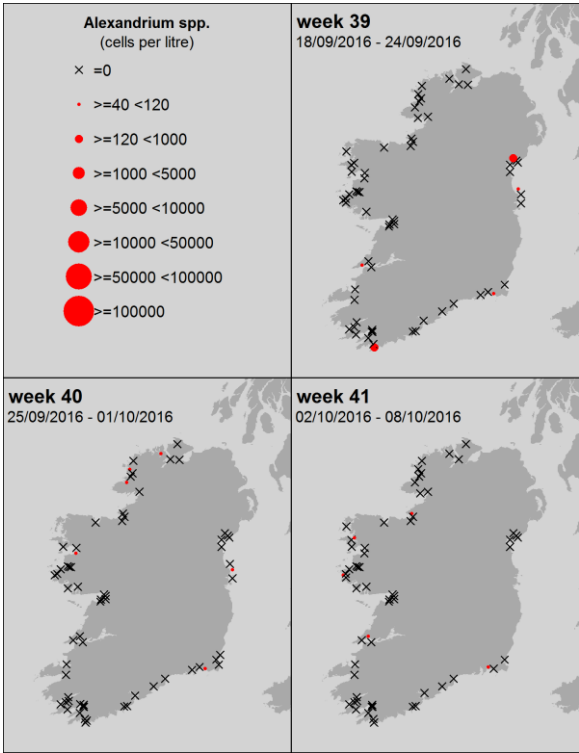
Ireland: Last 3 weeks of available National Monitoring Programme data



*Alexandrium* spp.



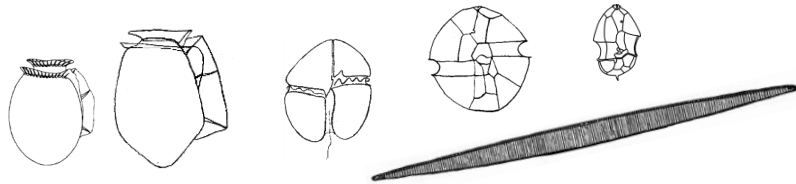
PSP



# Ireland HAB & Biotoxin temporal trends

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

## Ireland: Biotoxins



Toxin groups

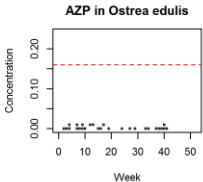
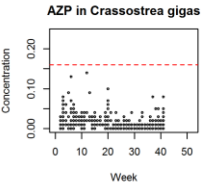
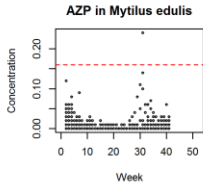
mussels

oysters

oysters

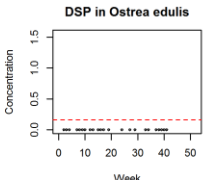
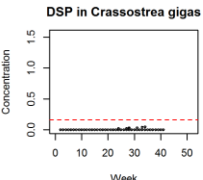
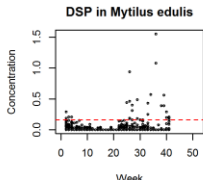
**AZP**

AZaspiracid  
Poisoning



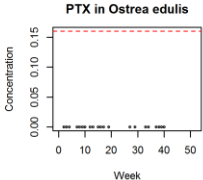
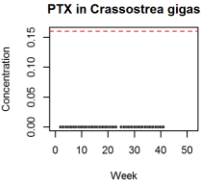
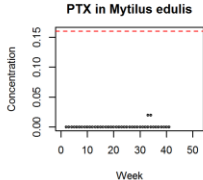
**DSP**

Diarrhetic  
Shellfish  
Poisoning



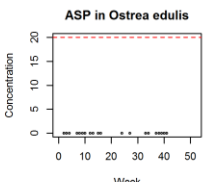
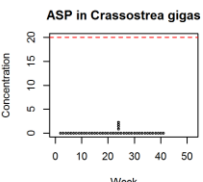
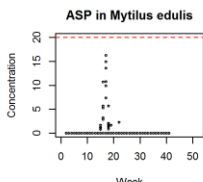
**PTX**

Pectenotoxin



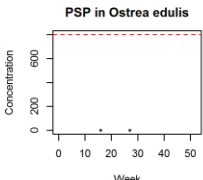
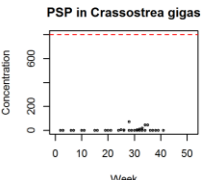
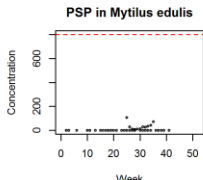
**ASP**

Amnesic  
Shellfish  
Poisoning

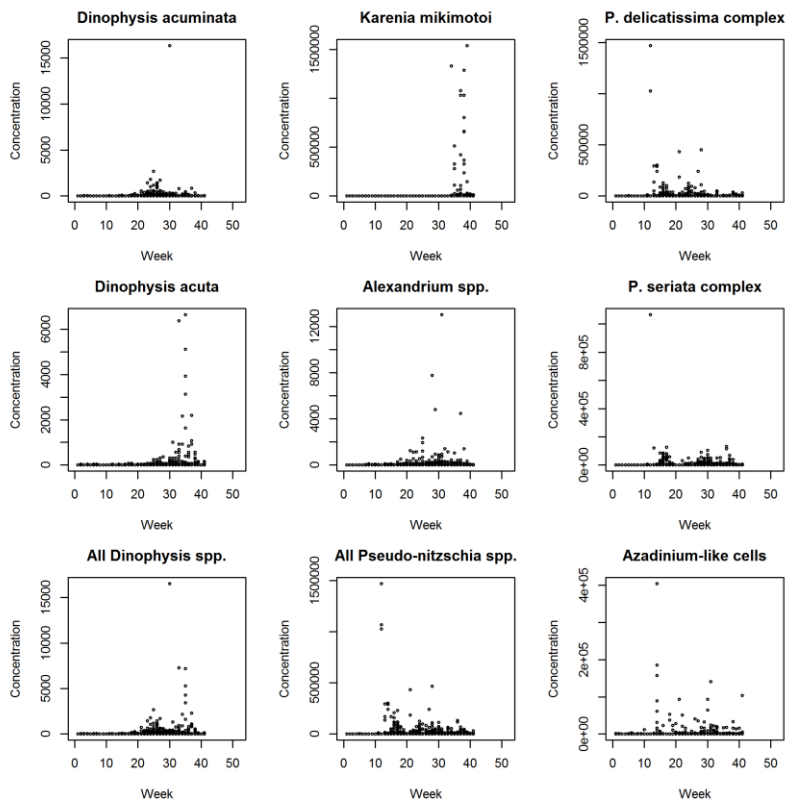


**PSP**

Paralytic  
Shellfish  
Poisoning



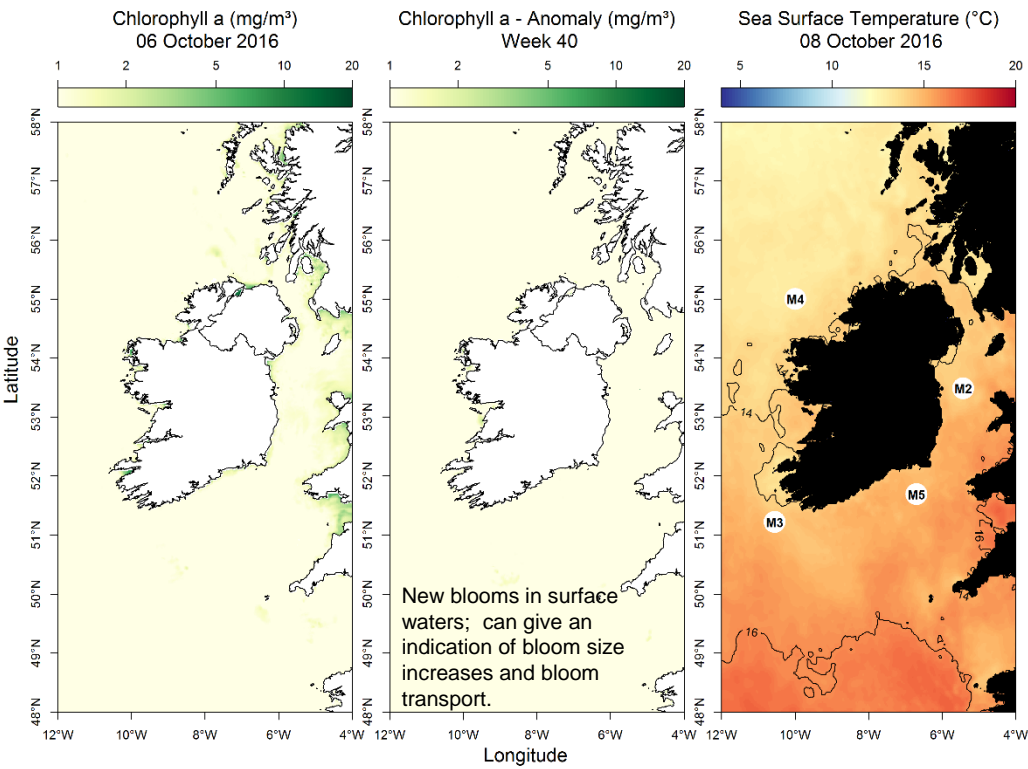
## Ireland: HABs



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

Regulatory limit = ■■■■■

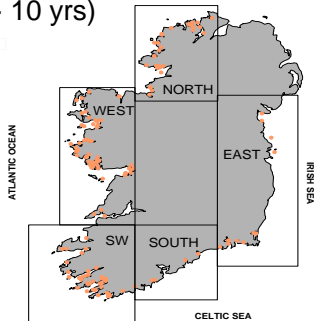
Most up to date available satellite data



SST (°C) anomaly for last week:

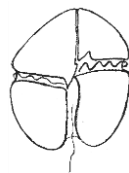
Data taken from the Irish data buoy network where the anomaly is the weekly difference in SST compared to the long term mean (~ 10 yrs)

- NW coast (M4) below average by -0.07 °C
- SW coast (M3) above average by 0.08 °C
- SE coast (M5) above average by 0.60 °C



What phytoplankton were blooming at inshore coastal sites last week?

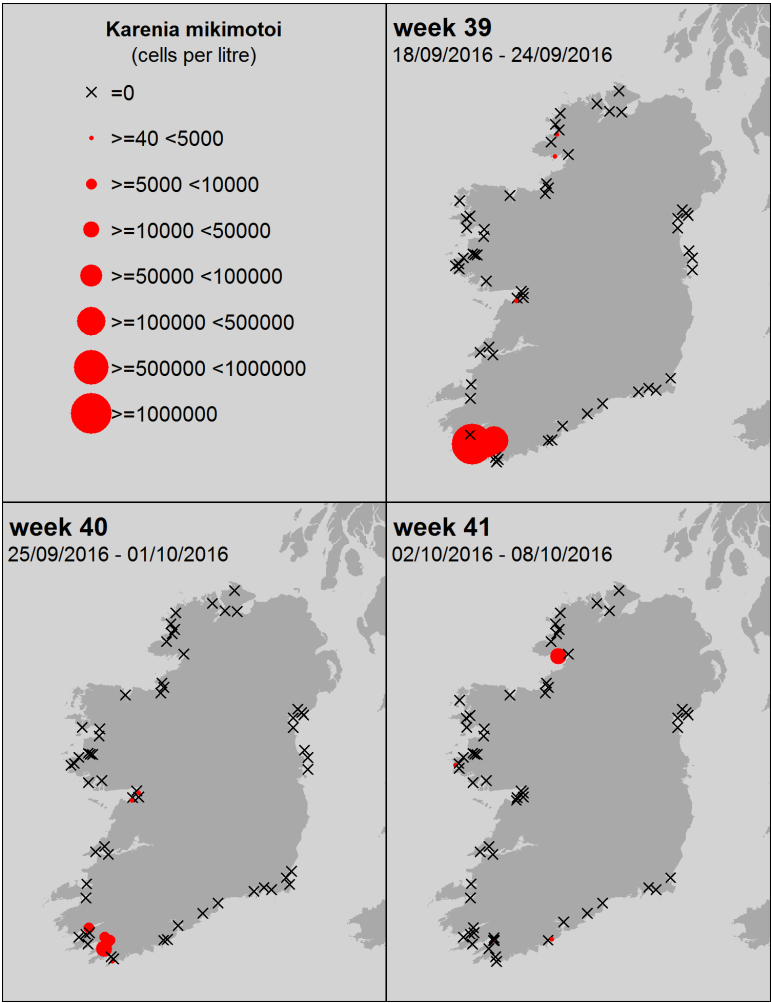
Region	Predominant Phytoplankton (most abundant taxa)	Cells/L (rounded)
north:	<b>Diatoms:</b>	
	<i>Asterionellopsis glacialis</i>	120,000
	<i>Chaetoceros</i> spp. (H) (small)	79,000
	<i>Thalassiosira</i> 20-50µm	73,000
	<i>Skeletonema</i> spp.	21,000
	<b>Dinoflagellates:</b>	
	<i>Azadinium/heterocapsa</i> spp.	104,000
	<b>Others</b>	
	Microflagellate spp.	32,000
west:	<b>Diatoms:</b>	
	<i>Asterionellopsis</i> spp.	530,000
	Pennate diatom	107,000
	<i>Fragilaria</i> spp.	75,000
	<i>Lauderia / Detonula</i> sp	46,000
	<i>Chaetoceros</i> (Hyalochaete) spp.	24,000
SW:	<b>Diatoms:</b>	
	<i>Leptocylindrus minimus</i>	111,000
	<i>Detonula confervacea</i>	103,000
	<i>Skeletonema costatum</i>	102,000
	<b>Others</b>	
	<i>Prymnesiophytes</i>	174,000
south:	<b>Diatoms:</b>	
	<i>Skeletonema costatum</i>	52,000
	<i>Odontella</i> spp.	22,000
	<i>Chaetoceros curvisetus/debilis</i>	13,000
	Pennate diatom	9,000
	<i>Navicula</i> spp. <25µm	8,000
east:	<b>Diatoms:</b>	
	<i>Asterionellopsis</i> spp.	1,148,000
	<i>Skeletonema</i> spp.	60,000
	<i>Cylindrotheca closterium/ Nitzschia longissima</i>	48,000
	<i>Chaetoceros</i> (Hyalochaete) spp.	28,000
	Pennate diatom	28,000



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

*Karenia* spp. have declined significantly.

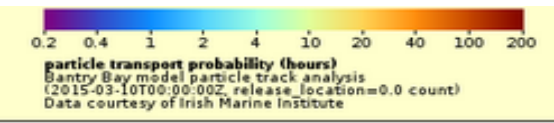
This species can cause stress and mortalities due to its effect on water quality in both farmed shellfish and finfish as well as many wild marine shore species i.e. lugworms, cockles etc. Low impact husbandry for farmed fish is traditionally recommended to reduce any additional stress in affected sites. Increased frequency in checking fishing and keeper pots is traditionally advised for wild fisheries to remove live catch before potential losses in affected sites.



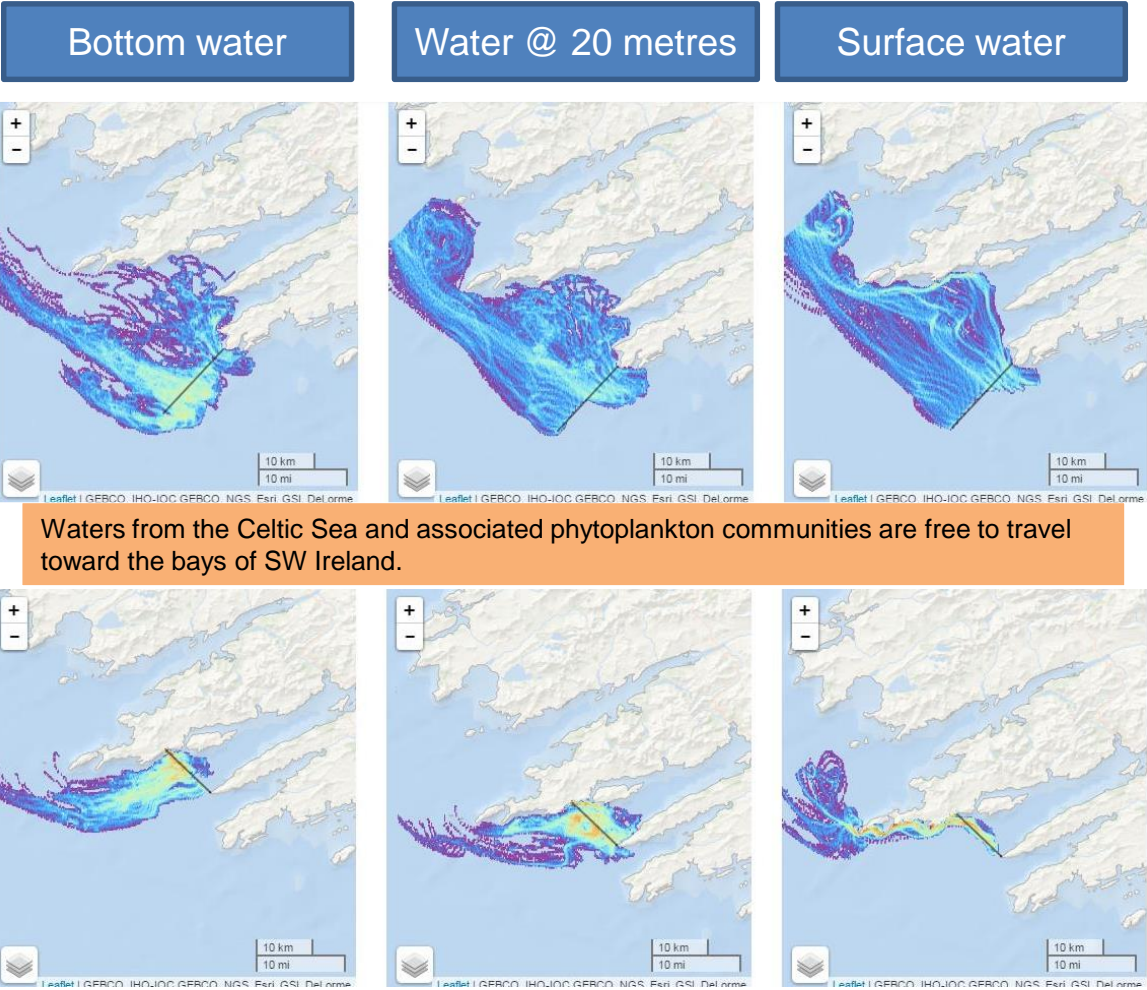
## SOUTHWEST: Bantry Bay

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



### Forecast for the next 3 days



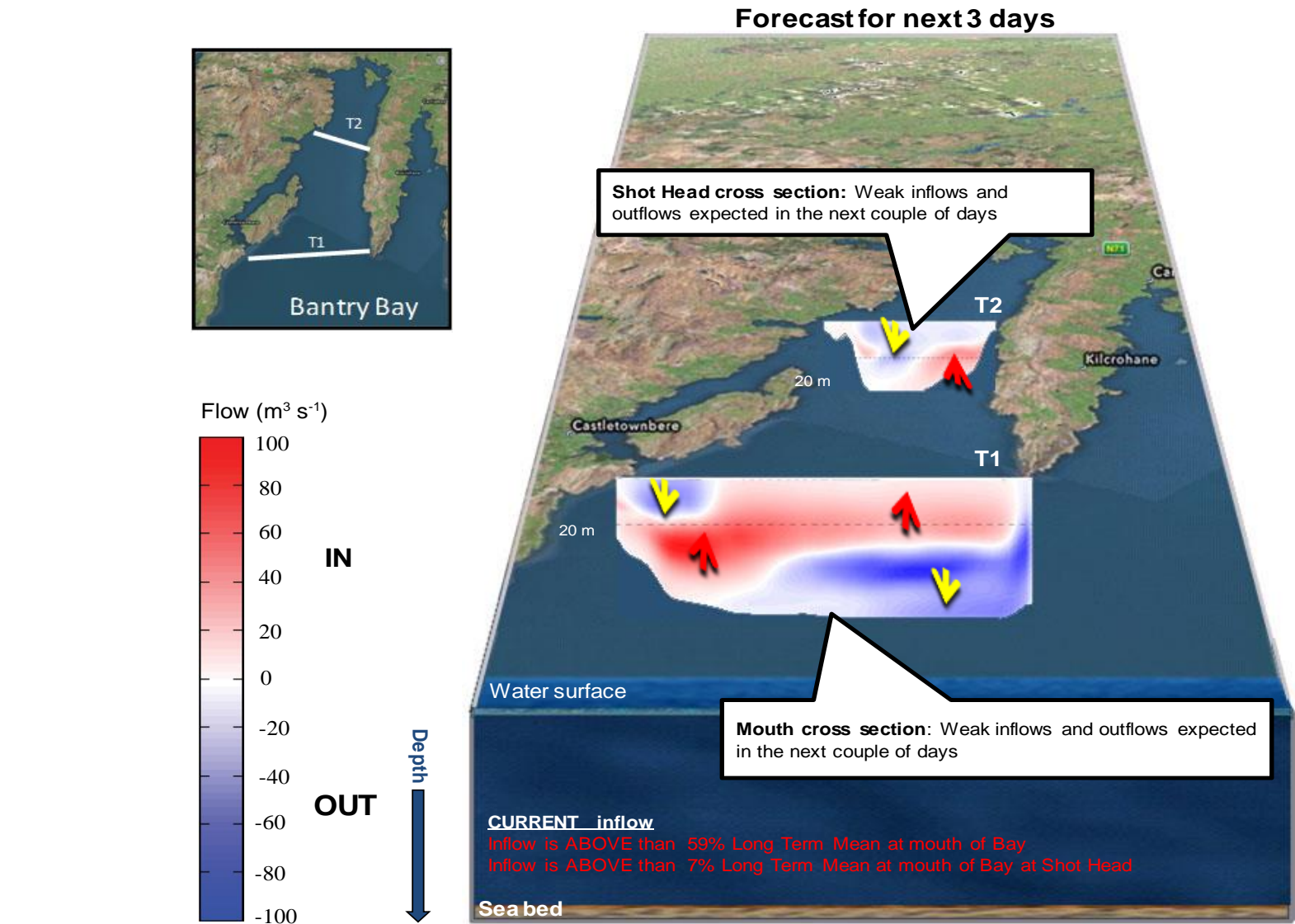
Waters from the Celtic Sea and associated phytoplankton communities are free to travel toward the bays of SW Ireland.

No big exchange event with waters outside the bay and associated phytoplankton is likely in next couple of days. Predicted water circulation patterns at the entrance to Bantry Bay show that water at all depths are expected to exit the bay. A small movement of mid-bottom waters into the bay is expected.

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




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



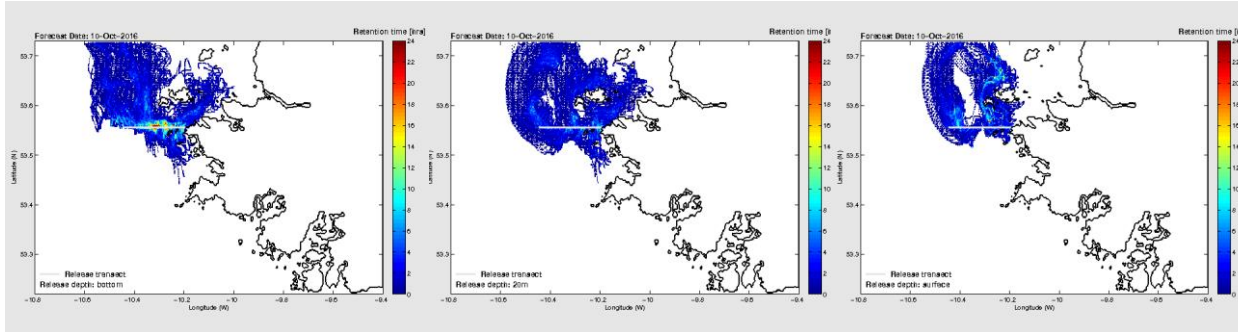
particle transport probability (hours)  
Bantry Bay model particle track analysis  
(2015-03-10T00:00:00Z, release\_location=0.0 count)  
Data courtesy of Irish Marine Institute

Forecast for the next 3 days

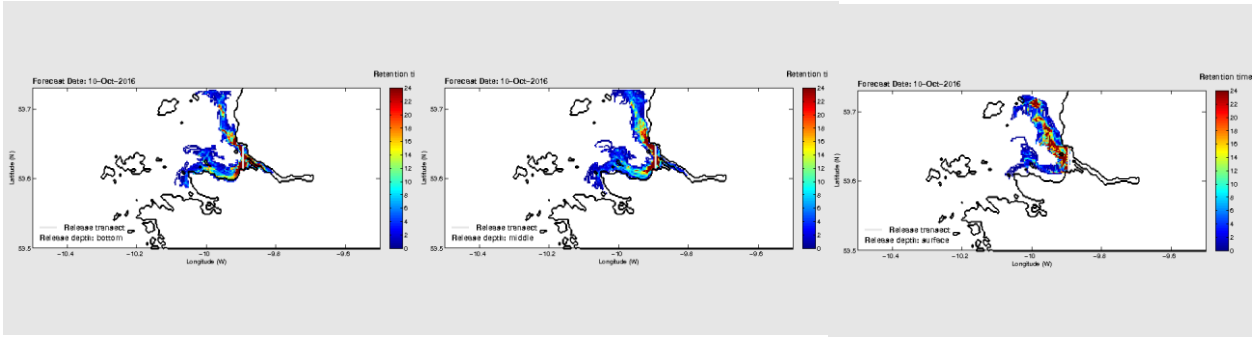
Bottom water

Water @ 20 metres

Surface water



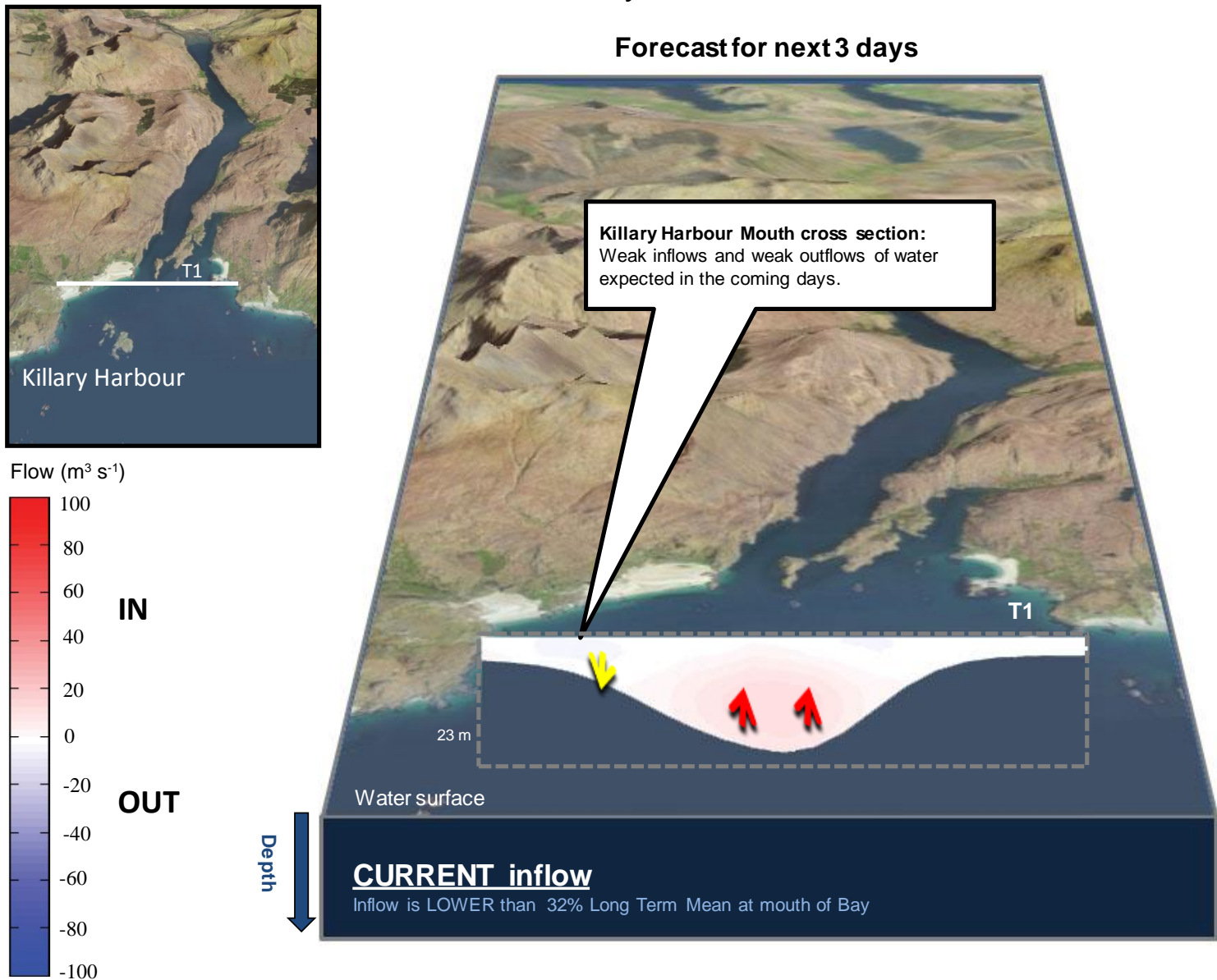
Shelf water and associated phytoplankton flora are expected to reach Killary Harbour in the next couple of days.



A subsurface intrusion event is expected in Killary Harbour, this will facilitate the transport of offshore phytoplankton into the bay.

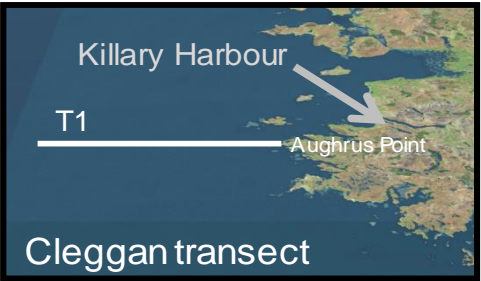
# Killary Harbour

3 day estimated water flows at the mouth of Killary Harbour

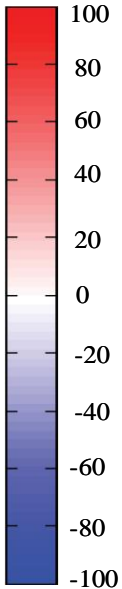


# West Coast - 3 day estimated water flows along a transect off Aughrus Point

Forecast for next 3 days



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



northward  
flow

southward  
flow

Depth

