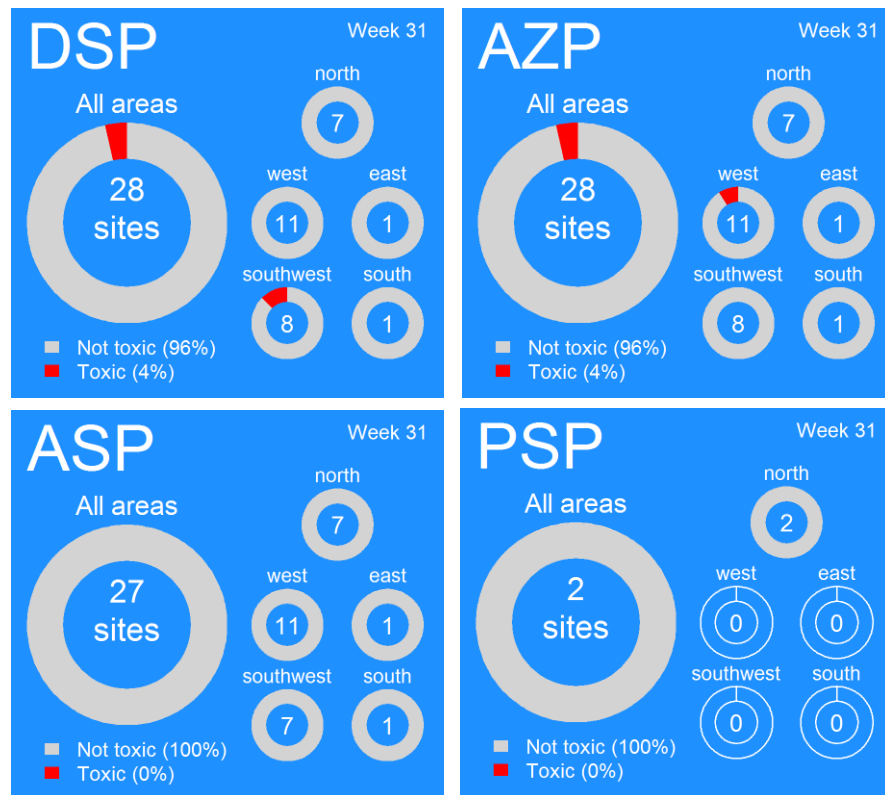


Ireland: Current Conditions

Shellfish biotoxin report (last week)



EU Regulatory Limit:

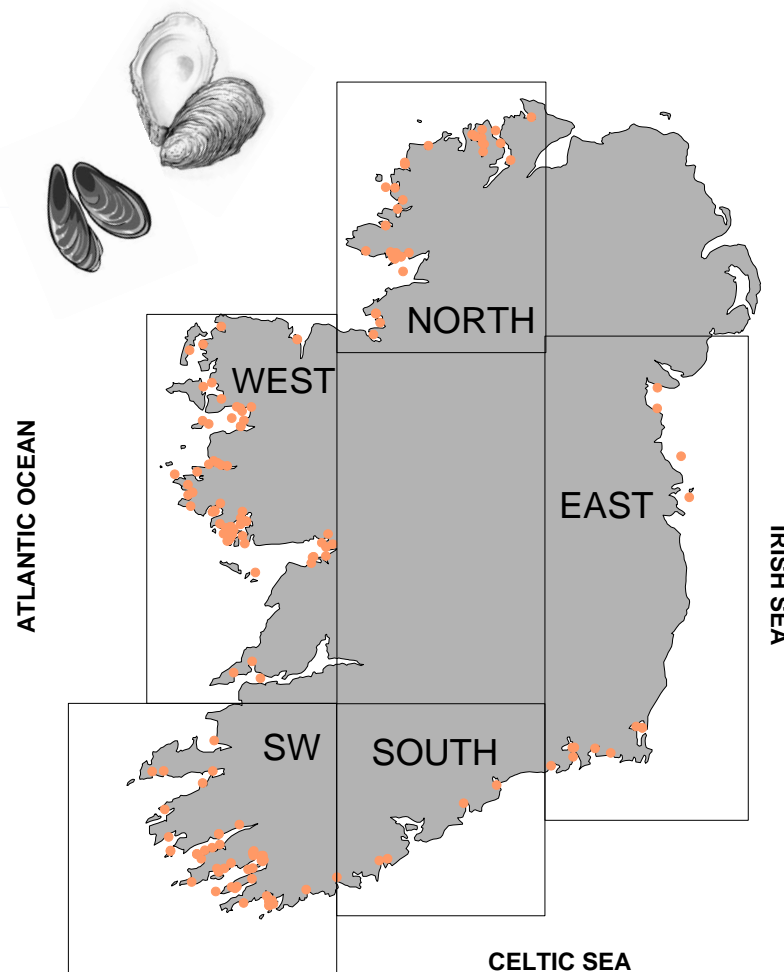
ASP 20 µg/g; AZP 0.16 µg/g; DSP 0.16 µg/g; PSP 800 µg/kg

Toxin groups

ASP = **A**mnesic **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: High – currently region specific.

DSP event: High (site specific)

PSP event: Moderate to high (site specific)

Why do we think this?

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

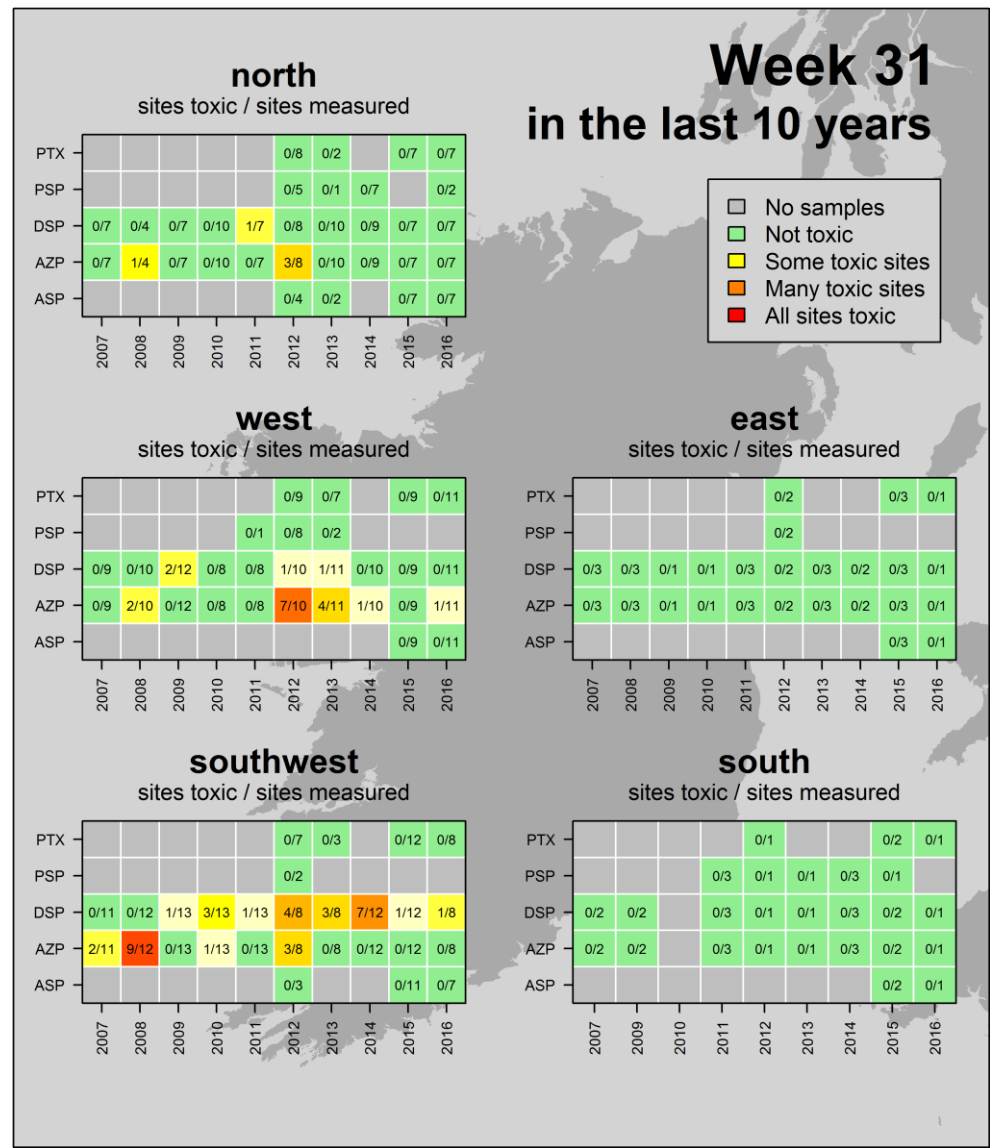
AZP: Fluctuating levels of *Azadinium* type species continue to be observed in multiple areas throughout the coastline. Biotoxin levels in localised areas (West) have increased to near and above regulatory limits. All adjacent sites should observe higher levels of caution while such conditions continue. This is historically within the period of occurrence so vigilance is encouraged.

DSP: This is historically the main risk period. The presence, magnitude and spread, of these species is increasing in general, and has already 'jumped' in some sites earlier this season. Currently increasing biotoxin levels appear to be site specific in the SW and West but all areas should exercise caution and adjacent regions to closed areas should take all precautions necessary.

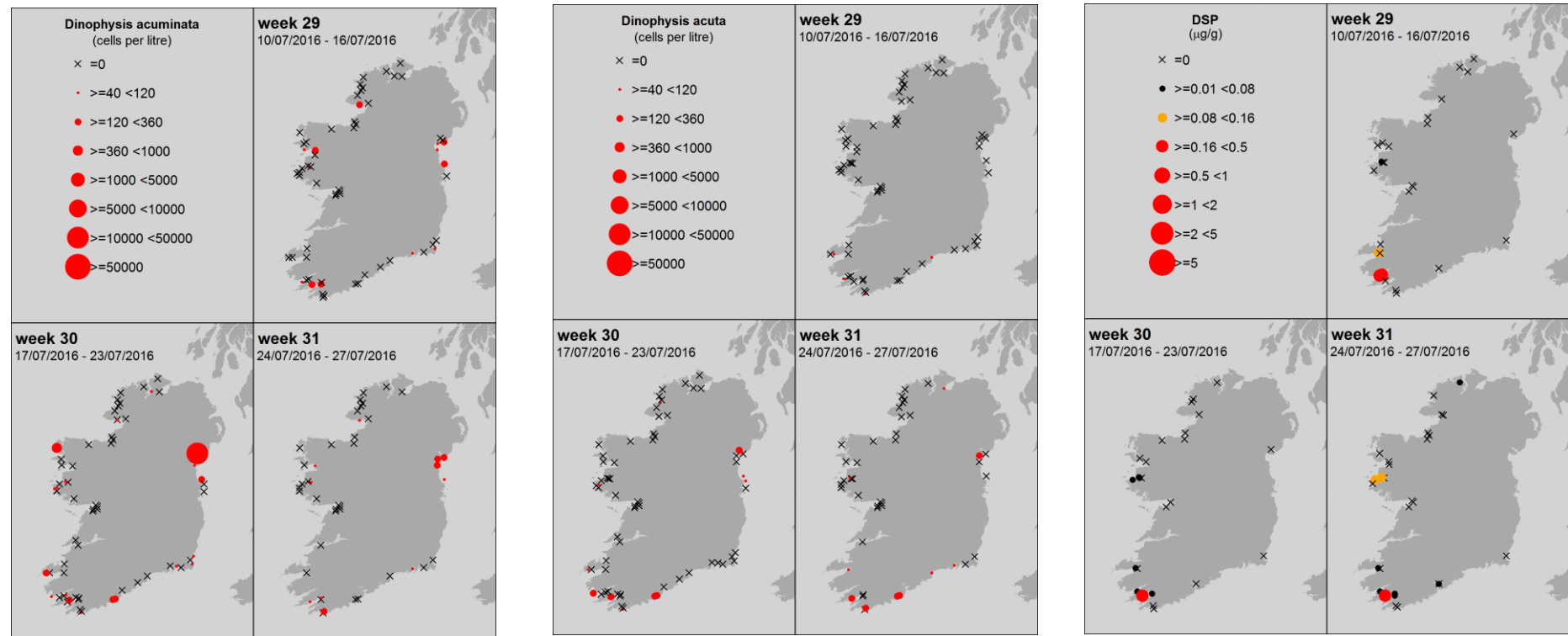
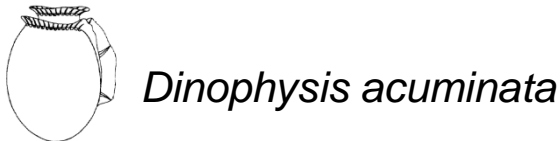
PSP: Biotoxin issues related to the presence and abundance of specific *Alexandrium* species have historically occurred in very localised areas in the south only. *Alexandrium* levels can increase dramatically in suitable conditions. Increased levels of preparedness is advised in previously affected site areas as this is the beginning of the historical risk period and environmental conditions may be becoming suitable for growth. While *Alexandrium* sp cells have been observed in low levels throughout the coastline only 1 site in the SW has had related biotoxin levels, at well below regulatory limit.

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



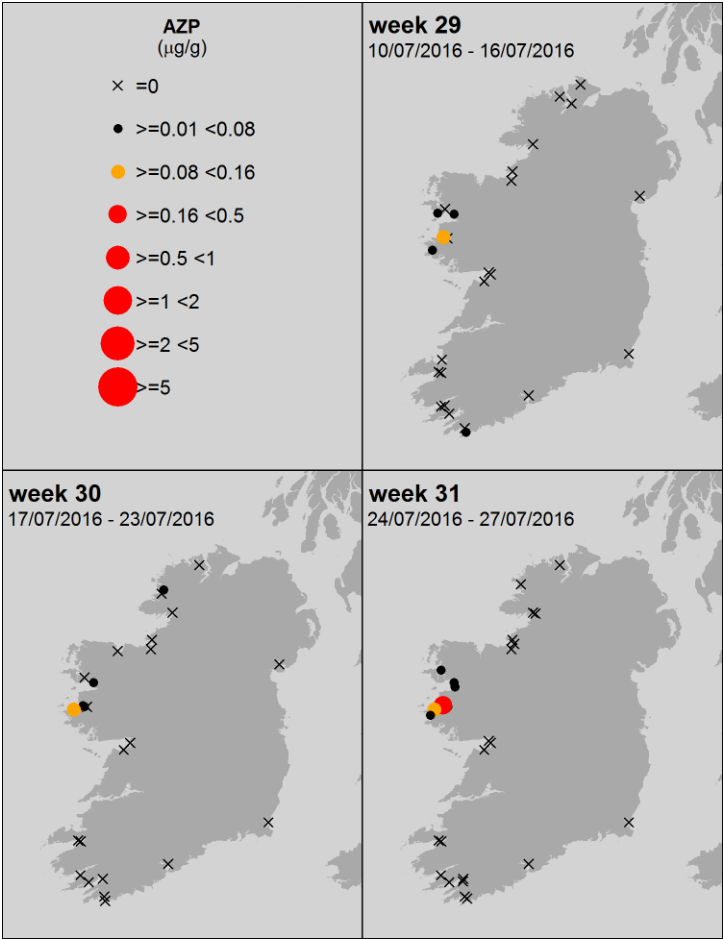
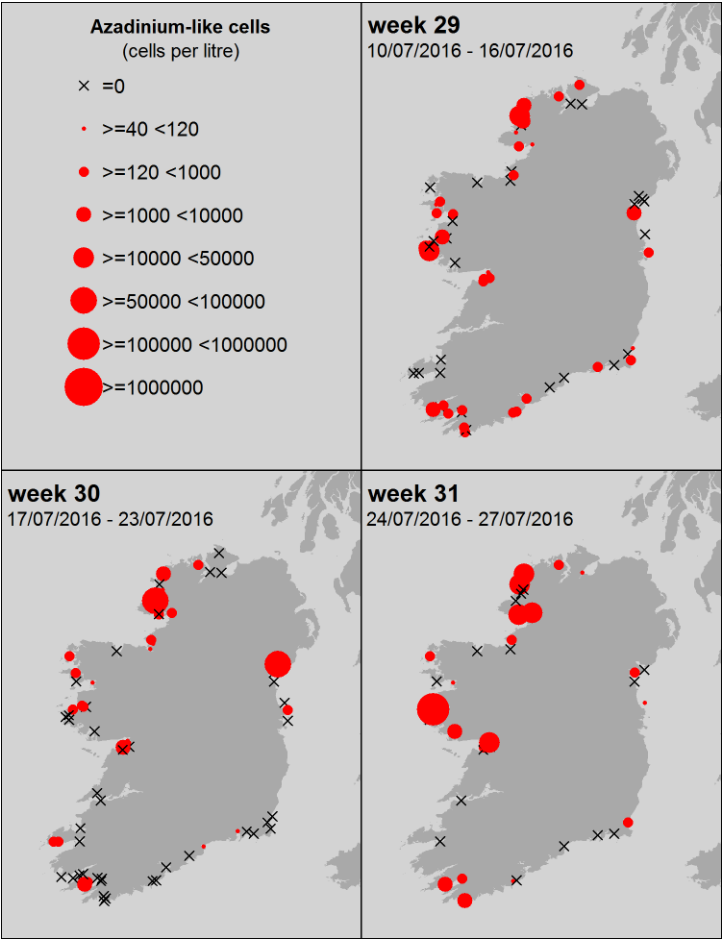
Ireland: Last 3 weeks of available National Monitoring Programme data



Azadinium – like spp.



AZP



Ireland: Last 3 weeks of available National Monitoring Programme data

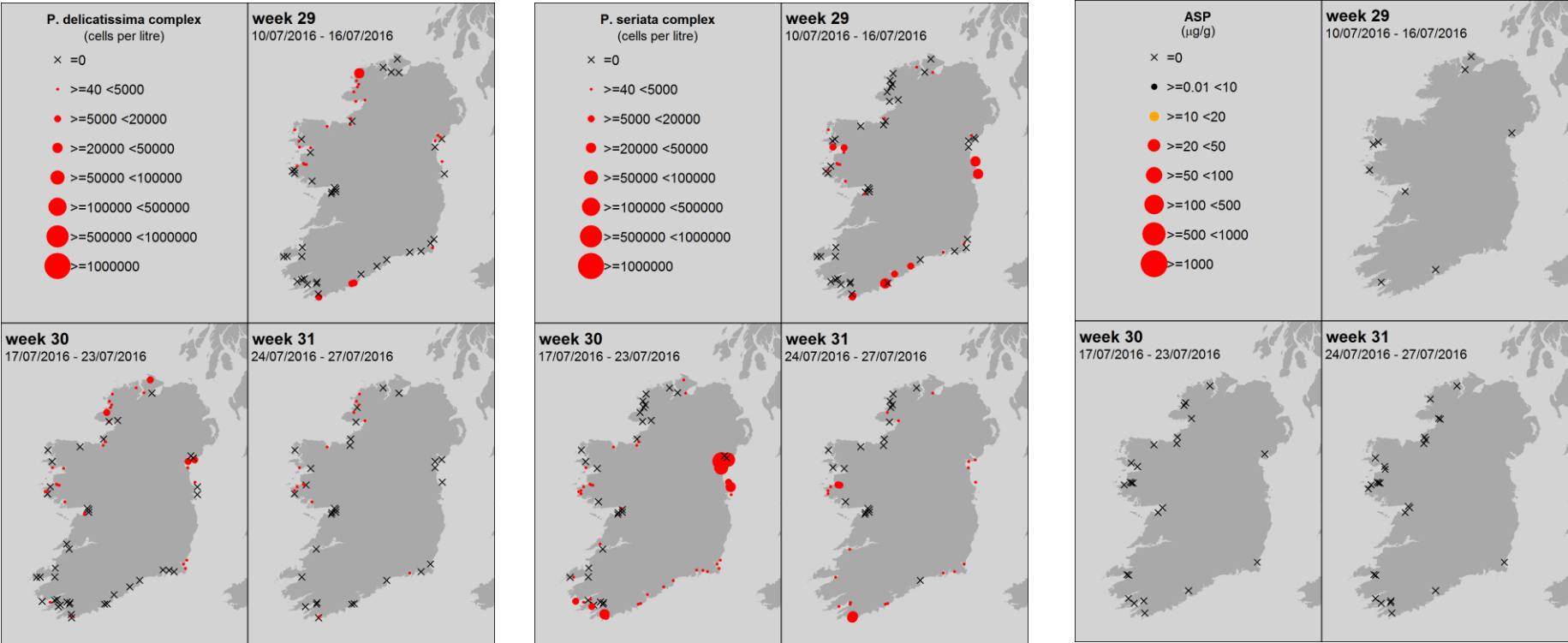
Pseudo-nitzschia spp.



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.

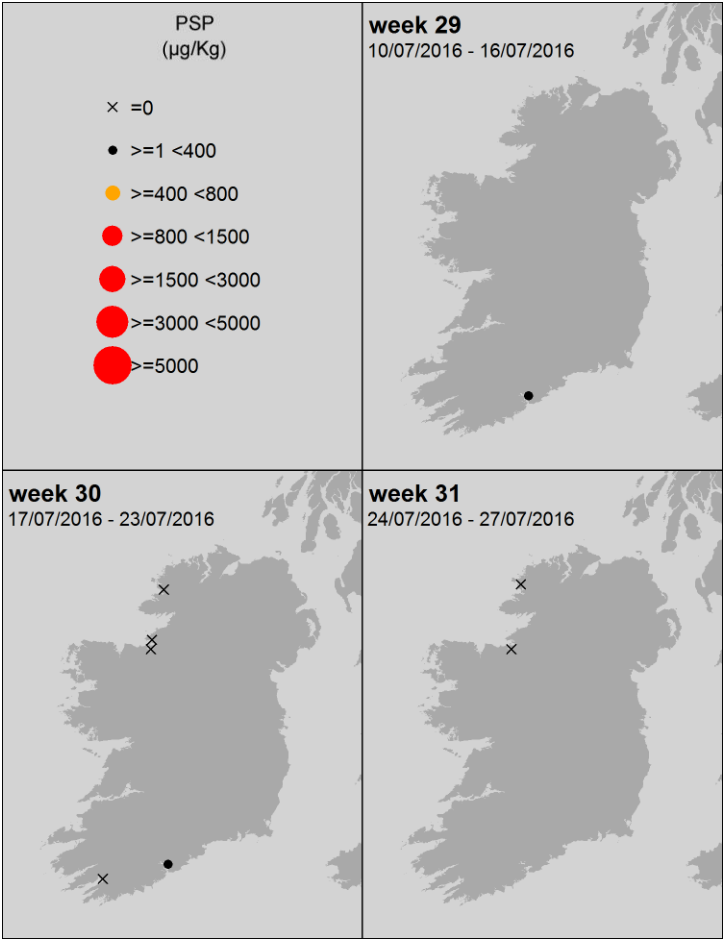
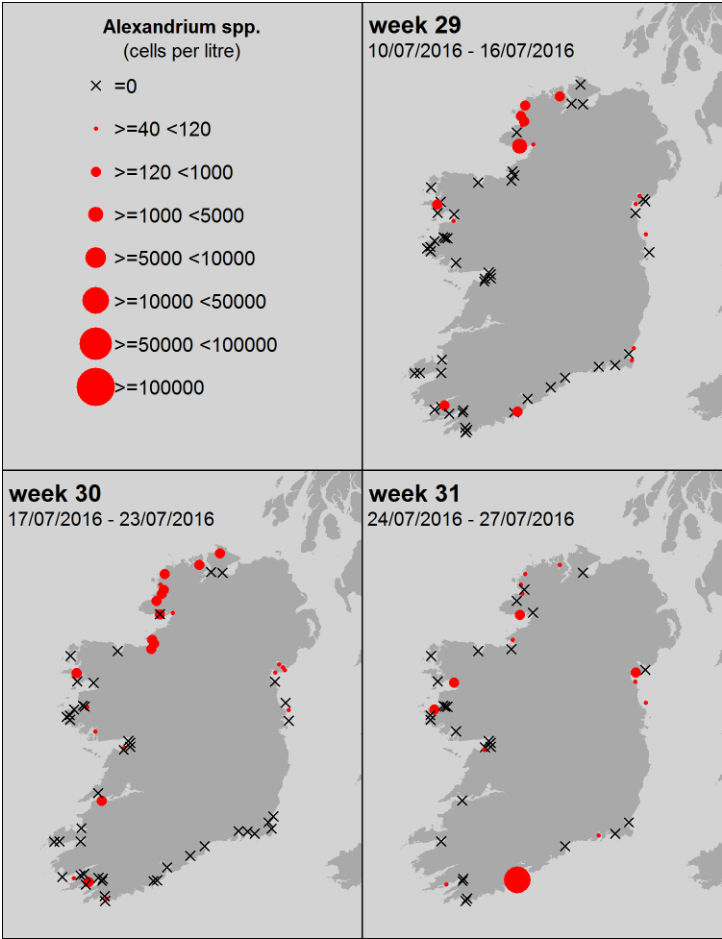
Ireland: Last 3 weeks of available National Monitoring Programme data



Alexandrium spp.



PSP



Ireland HAB & Biotoxin temporal trends

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

Ireland: Biotoxins



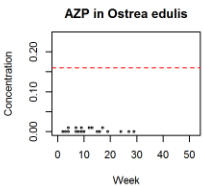
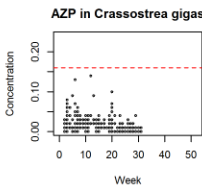
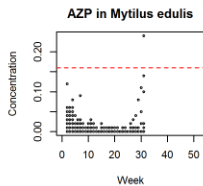
Toxin groups

mussels

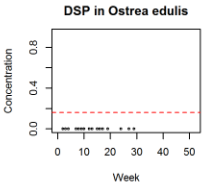
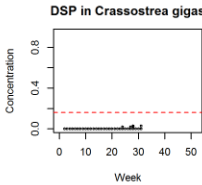
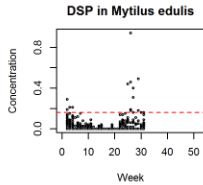
oysters

oysters

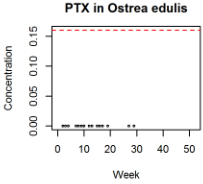
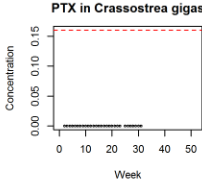
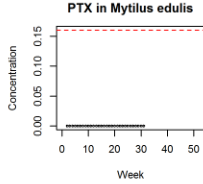
AZP
AZaspiracid
Poisoning



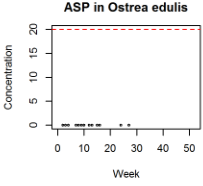
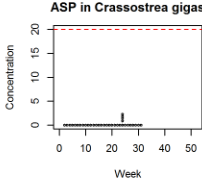
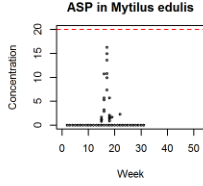
DSP
Diarrhetic
Shellfish
Poisoning



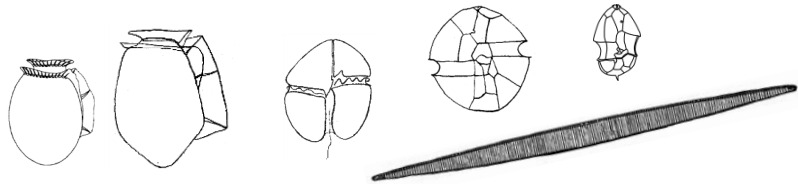
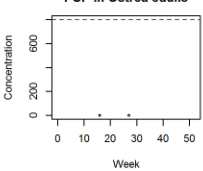
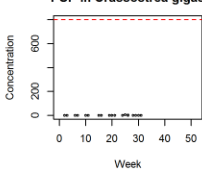
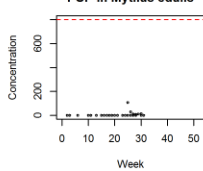
PTX
Pectenotoxin



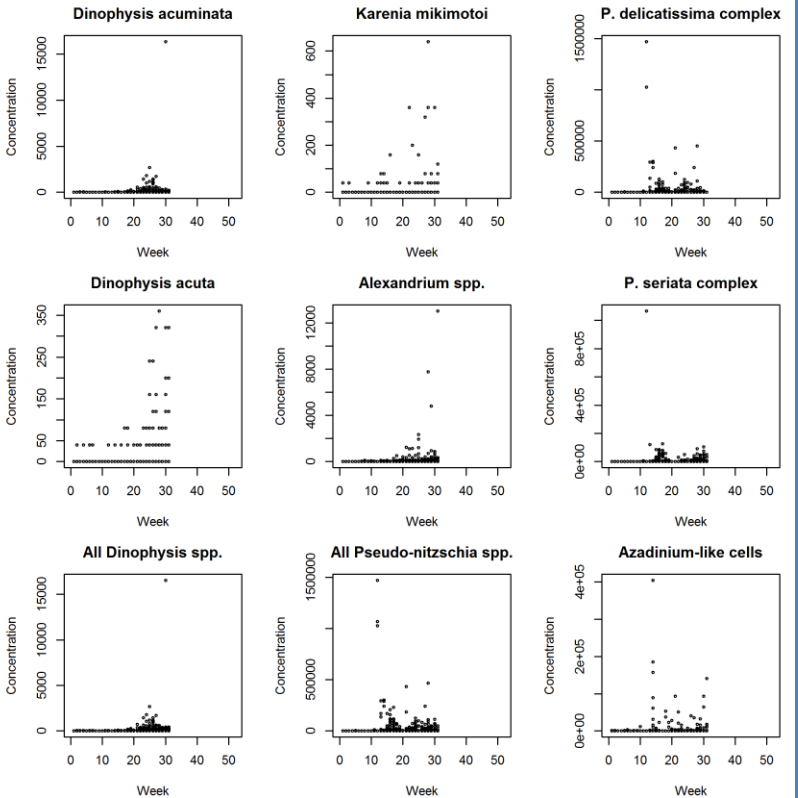
ASP
Amnesic
Shellfish
Poisoning



PSP
Paralytic
Shellfish
Poisoning



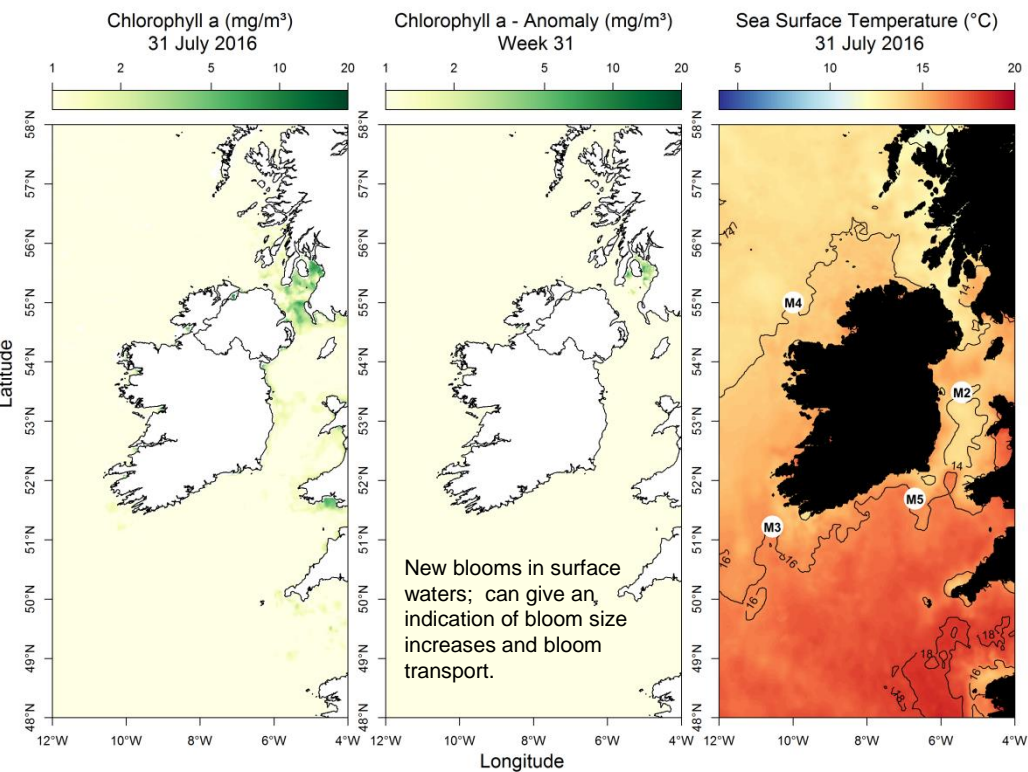
Ireland: HABs



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

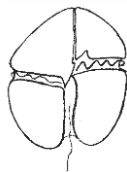


SST (°C) anomaly for last week:
Data taken from the Irish data buoy network where the anomaly is the weekly difference in SST compared to the long term mean (~ 10 yrs)

- NW coast (M4) Below average by 0.52°C
- SW coast (M3) Above average by 0.40°C
- SE coast (M5) Below average by 0.37°C

What phytoplankton were blooming at inshore coastal sites last week?

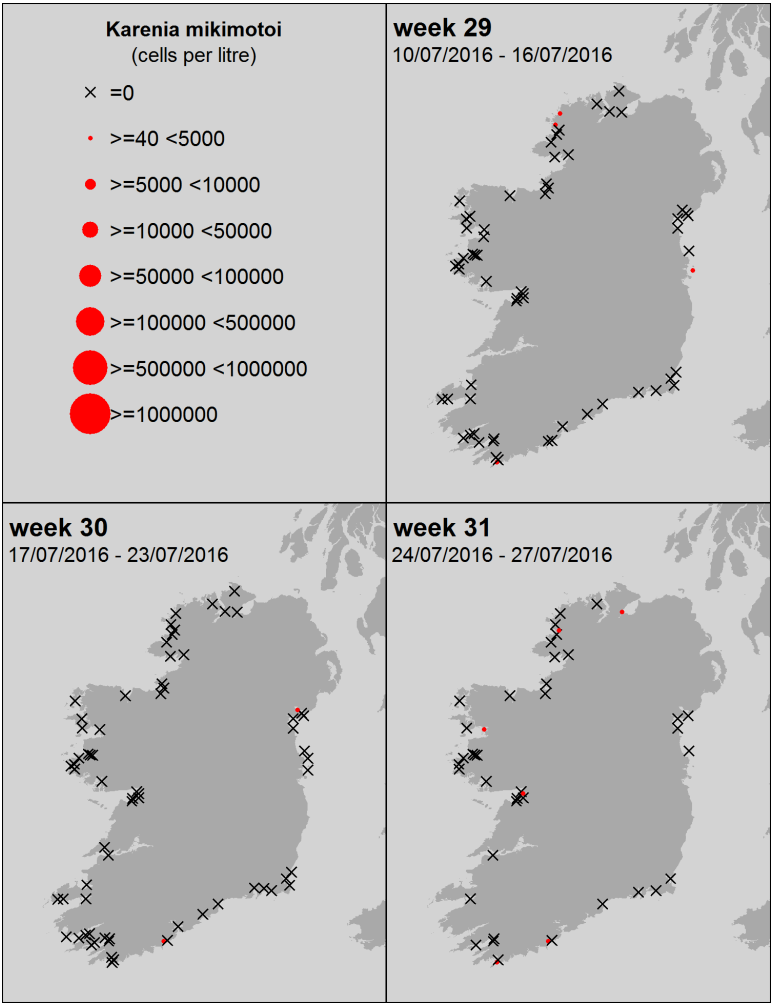
Region	Predominant Phytoplankton (most abundant taxa)	Cells/L (rounded)
North:	Diatoms:	
	<i>Leptocylindrus minimus</i>	23,238,000
	<i>Leptocylindrus danicus</i>	518,000
	<i>Pleurosigma/Gyrosigma</i>	49,000
	Others	
	Microflagellate sp.	958,000
West:	Diatoms:	
	<i>Chaetoceros (Hyalochaete) spp.</i>	3,149,000
	<i>Leptocylindrus danicus</i>	50,000
	Dinoflagellates:	
	<i>Azadinium/heterocapsa spp.</i>	140,000
	<i>Glenodinium spp.</i>	48,000
	Others	
SW:	<i>Euglena/Eutreptiella spp.</i>	221,000
	Diatoms:	
	<i>Pseudo-nitzschia seriata complex</i>	49,000
	<i>Thalassiosira spp.</i>	7,000
	Dinoflagellates:	
South:	<i>Ceratium fusus</i>	25,000
	Diatoms:	
	<i>Pseudo-nitzschia seriata complex</i>	5,000
	<i>Leptocylindrus danicus</i>	4,000
	Dinoflagellates:	
east:	<i>Alexandrium spp.</i>	13,000
	Others	
	Microflagellate sp.	4,110,000
	Diatoms:	
	<i>Skeletonema spp.</i>	291,000
	<i>Thalassiosira spp.</i>	21,000
	<i>Rhizosolenia sp</i>	18,000
	<i>Chaetoceros (Hyalochaete) spp.</i>	15,000



Karenia mikimotoi
(old name: *Gyrodinium aureolum*)

A *Karenia mikimotoi* bloom is NOT expected this week

Currently cell levels of less than 5000 cells per litre have been observed in some (5) sites. While the slow spread of the presence of this species is being observed closely, the current levels are well below concern levels which would be in the order of 100,000's to 1,000,000's cells per litre.

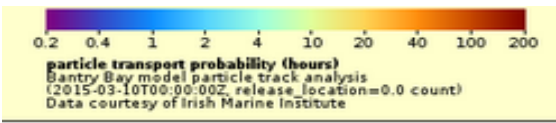


SOUTHWEST: Bantry Bay

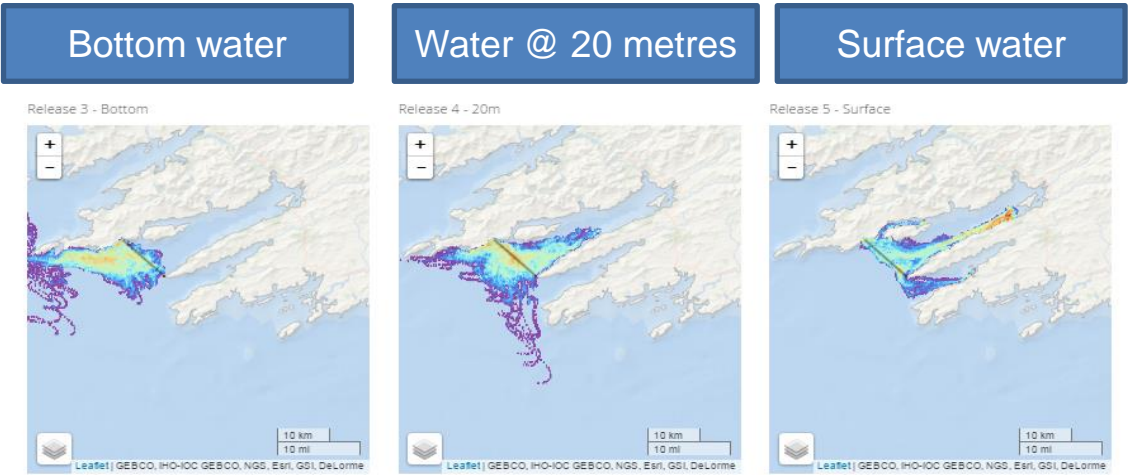
The maps show the **most likely transport pathways for the next 3 days of phytoplankton** found along the **presented transects** (black lines off Mizen Head and the Mouth of Bantry Bay) and **water depths** (bottom, 20 metres and surface)

Reddish colours represent areas where phytoplankton remain longest

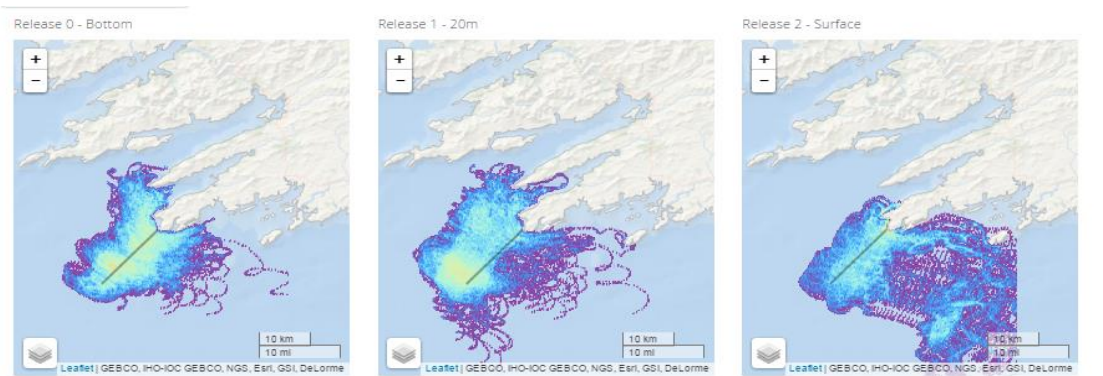
Cooler colours represent areas where phytoplankton remain for shorter periods



Forecast for the next 3 days



Weak WNW movement of water at bottom depths out of bay area. As depth decreases towards surface waters, water movement into bay increasing in ENE direction allowing for incursions of offshore waters into inner bay areas.



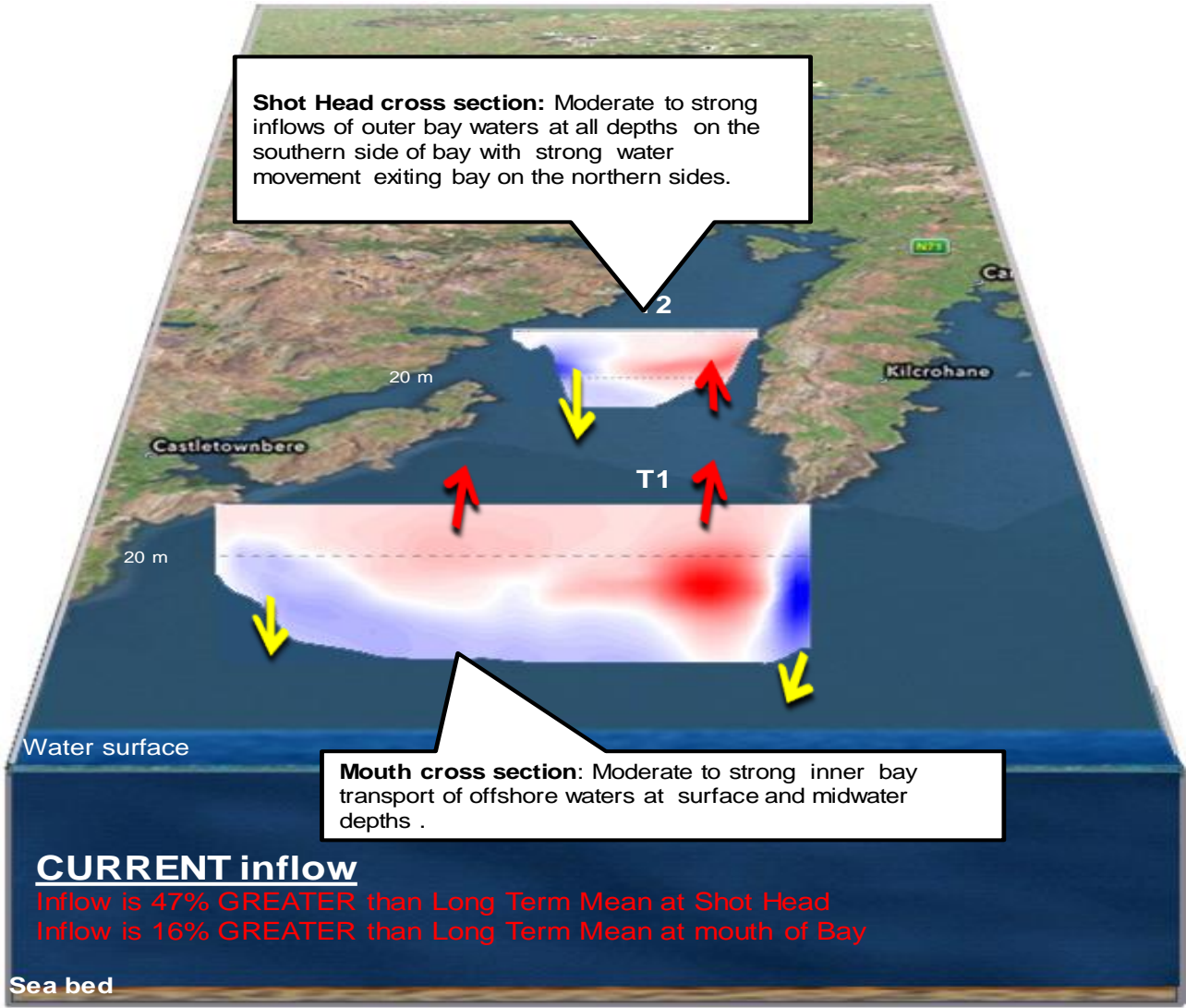
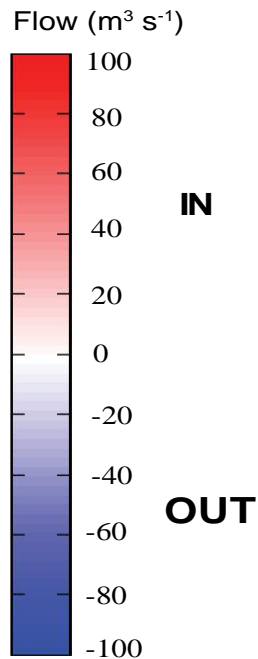
Mixed water movement at all depths allowing for the possibility of inner bay incursions from off shore waters.

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

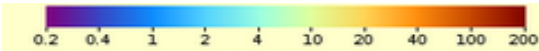
Forecast for next 3 days



WEST: Killary Harbour

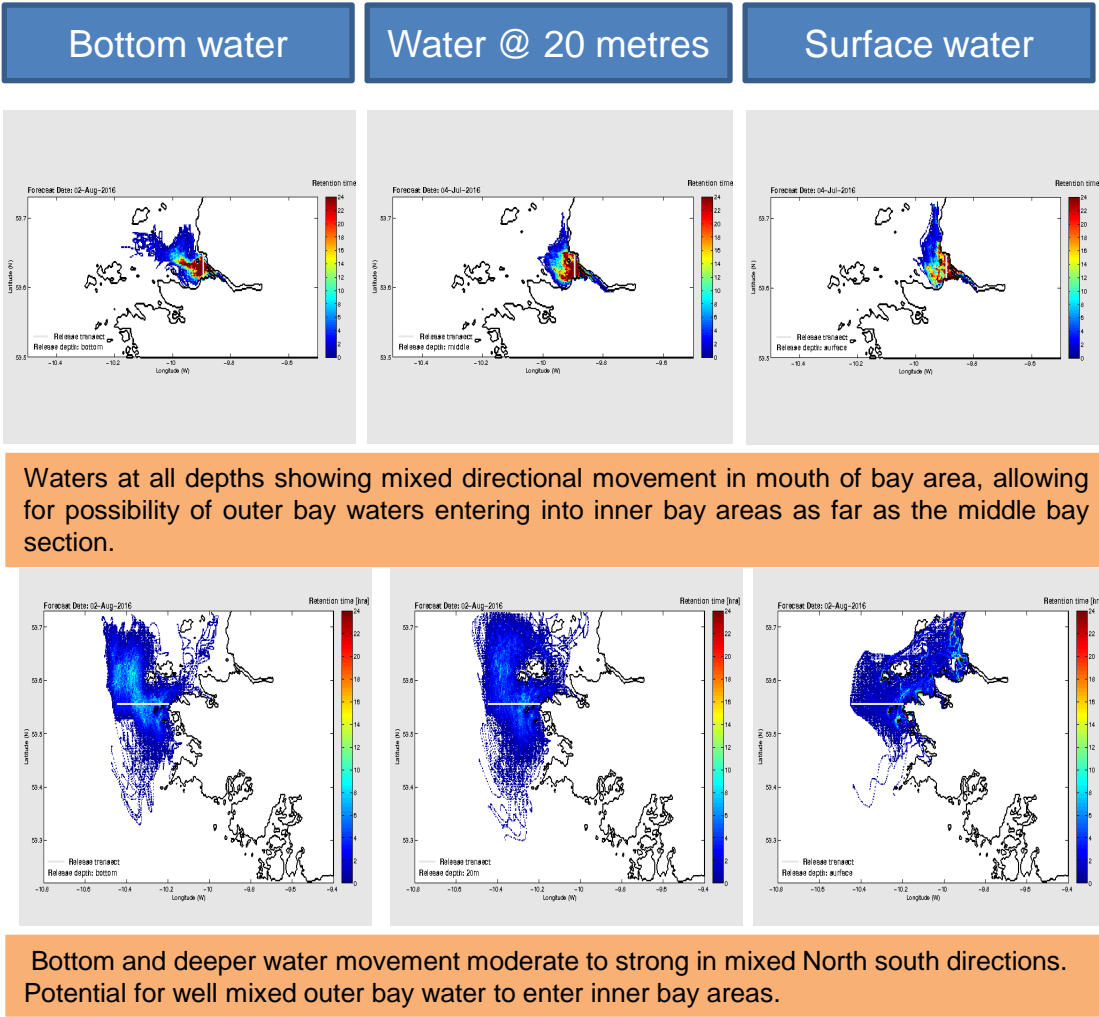
The maps show the **most likely transport pathways for the next 3 days of phytoplankton** found along the **presented transects** i.e. white lines off Aughrus Point and the Mouth of Killary Harbour, and **water depths** (bottom, 20 metres and surface)

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



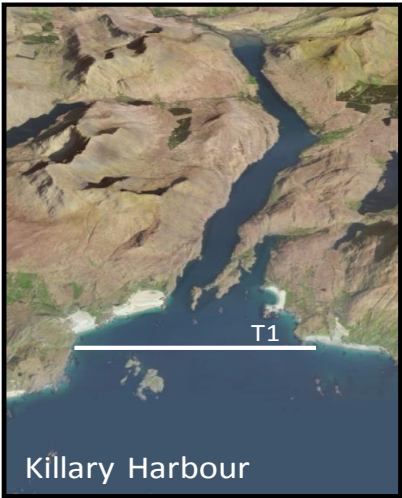
0.2 0.4 1 2 4 10 20 40 100 200
particle transport probability (hours)
Bantry Bay model particle track analysis
(2015-03-10T00:00:00Z, release_location=0.0 count)
Data courtesy of Irish Marine Institute

Forecast for the next 3 days

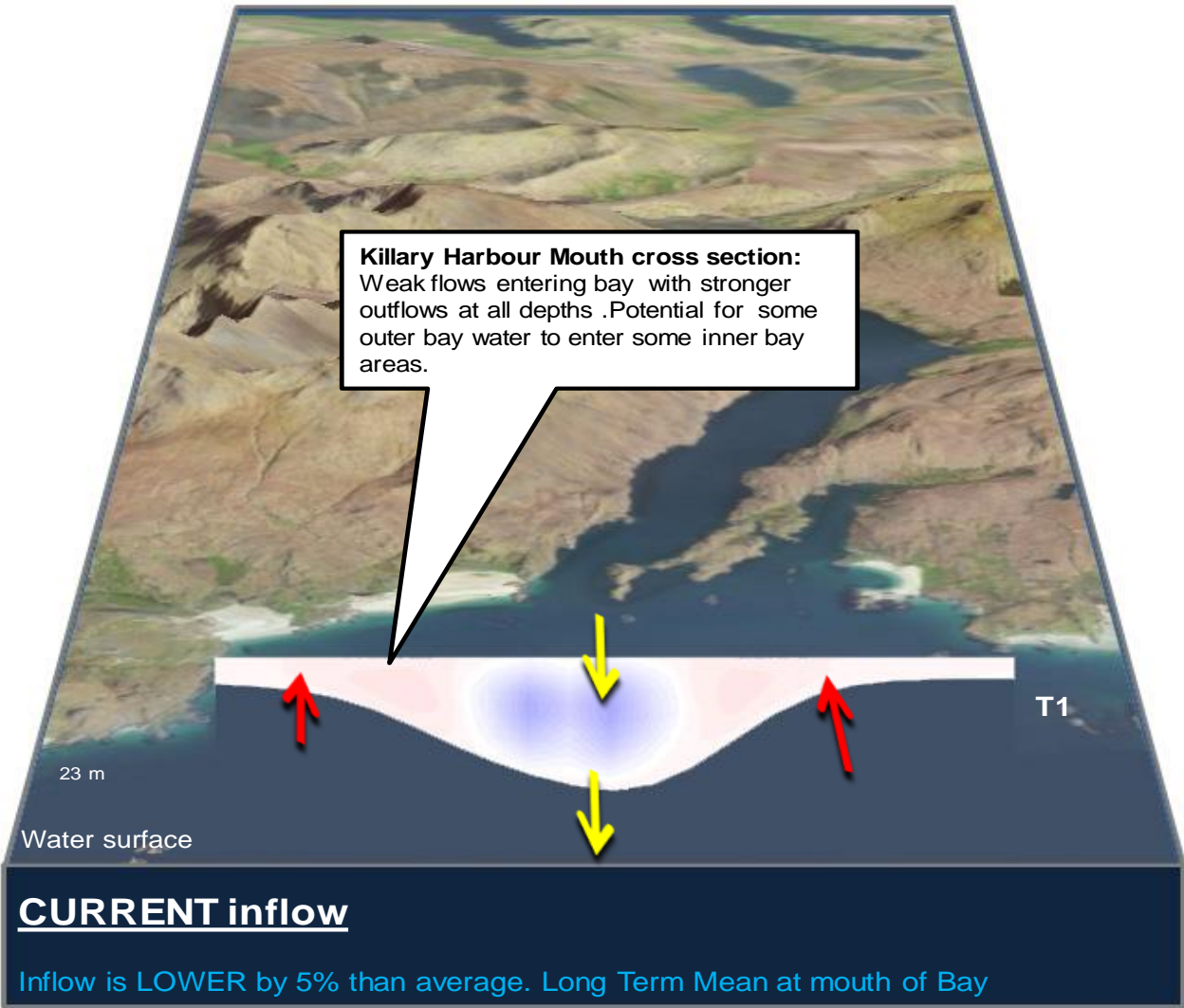
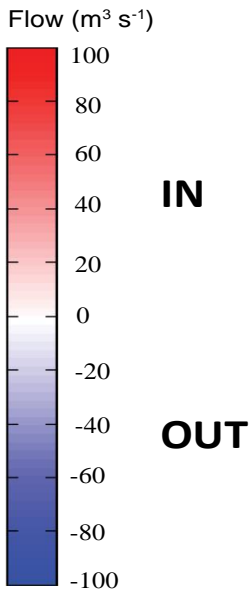


Killary Harbour

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

