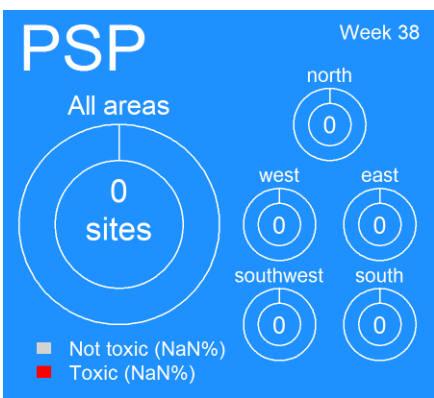
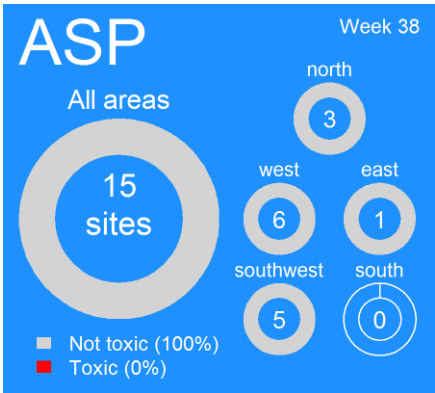
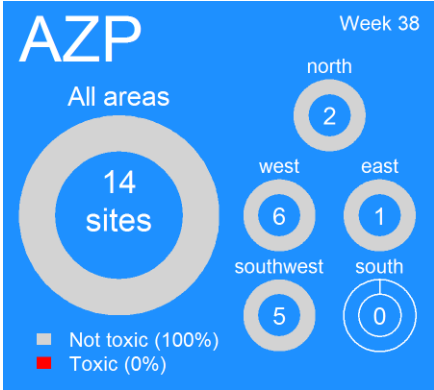
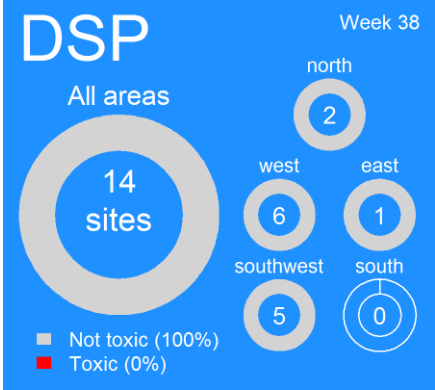


Ireland: Current Conditions

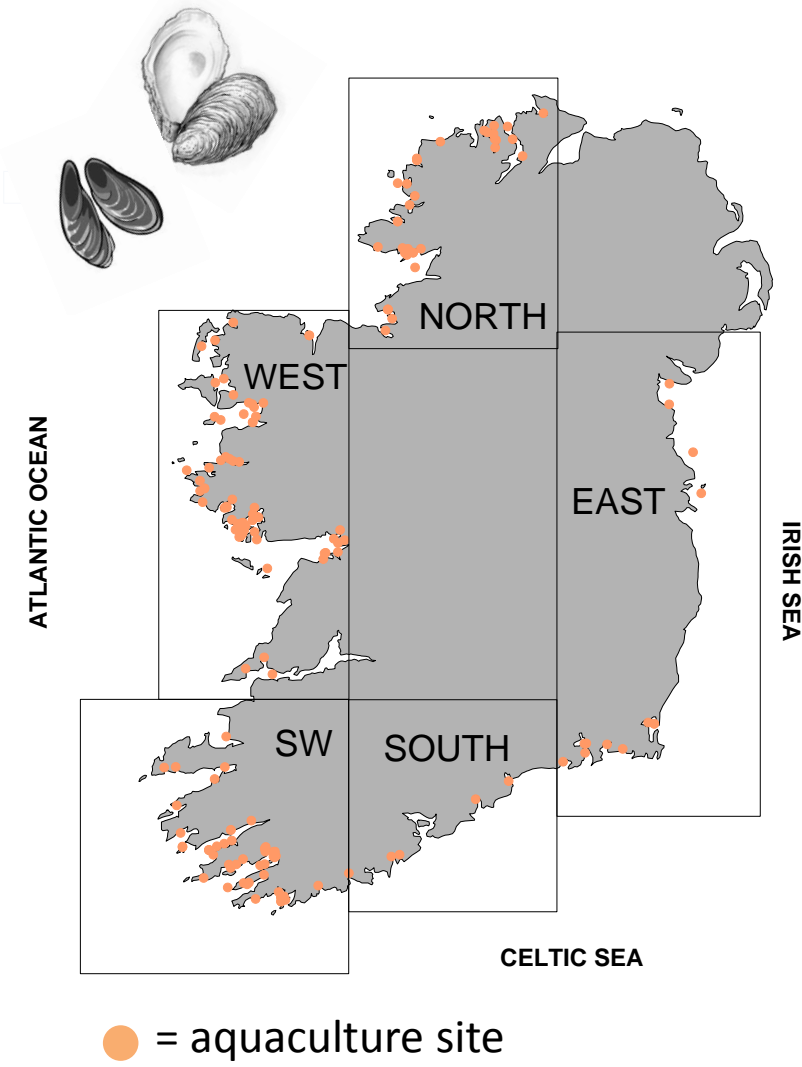
Shellfish biotoxin report (last week)



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: High – west and south currently.

DSP event: High – region specific.

PSP event: Low

Why do we think this?

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

AZP: Fluctuating levels of *Azadinium* spp. continue to be observed around the coast. Biotoxin levels have been recorded in localised areas throughout the coastline but are currently below regulatory limits . Biotoxin levels associated with this species have been know to ‘jump’ so caution is advised.

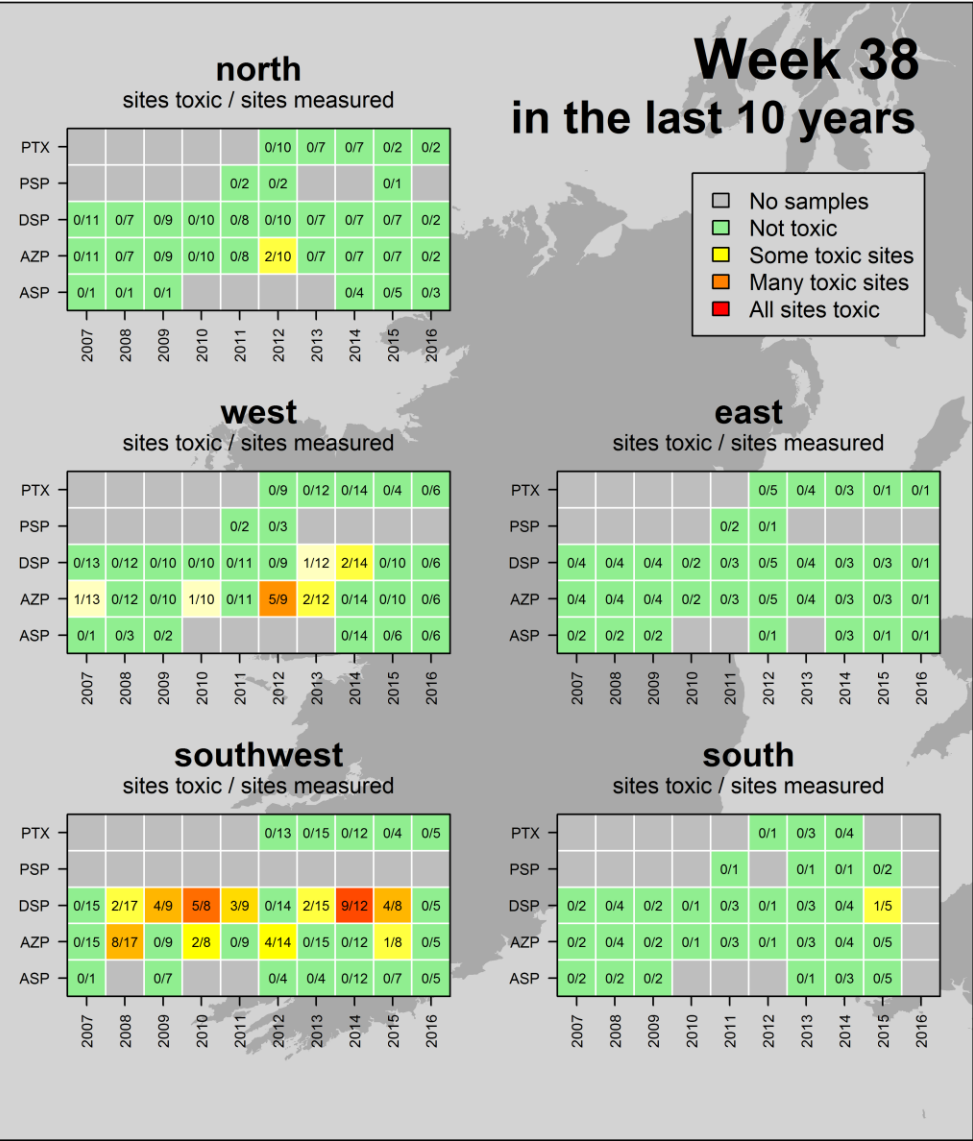
DSP: This is historically still within the risk period. Some southern sites ,not currently being harvested from, are still displaying high cell levels. Caution is advised in all adjacent areas .

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

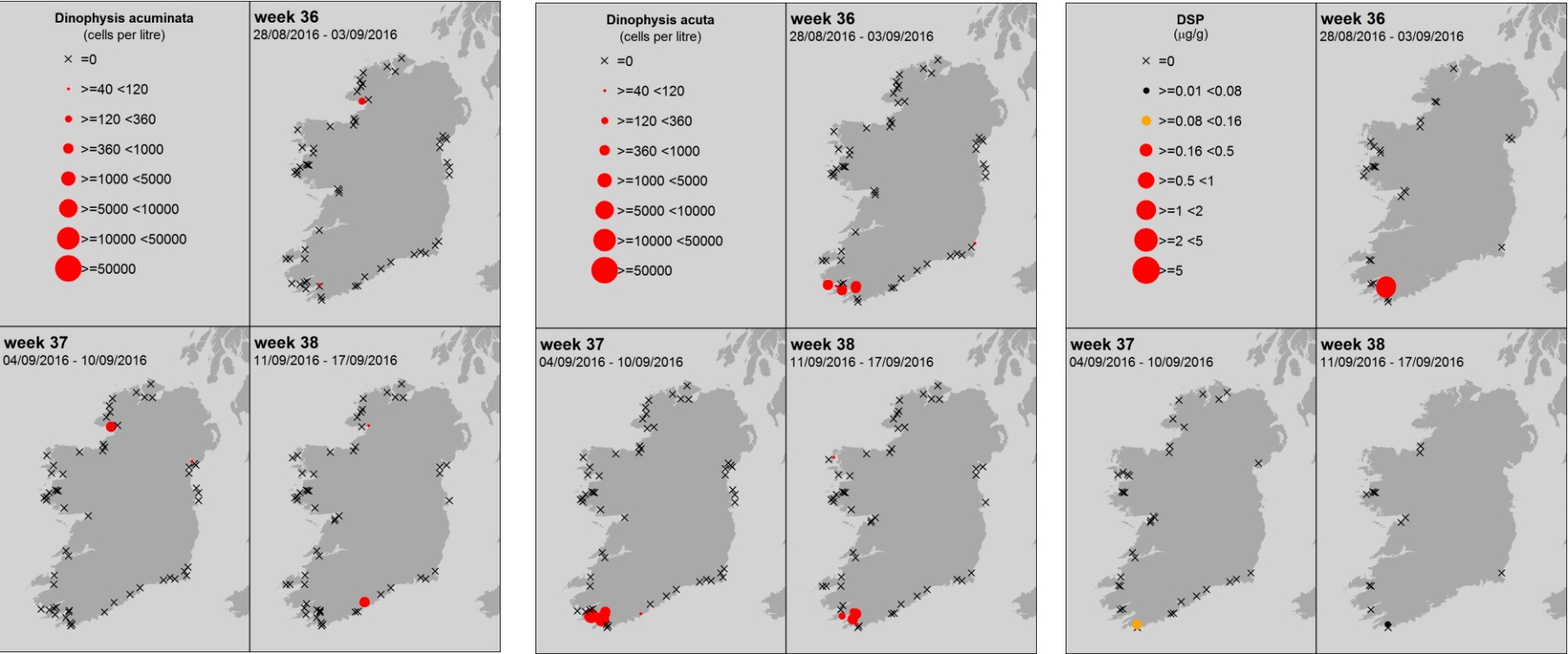
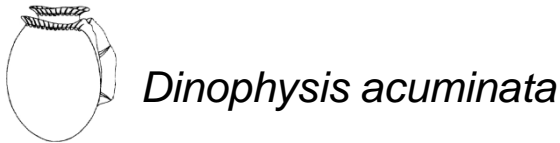
Blooms: A bloom of *Karenia mikimotoi* has been observed in the SW. There are tentative indications that the bloom may be moving slowly up the western coastline, at lower cell concentrations. Weather conditions may dilute or break it up, but caution is advised and close monitoring of all farmed stock for signs of potential stress.

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



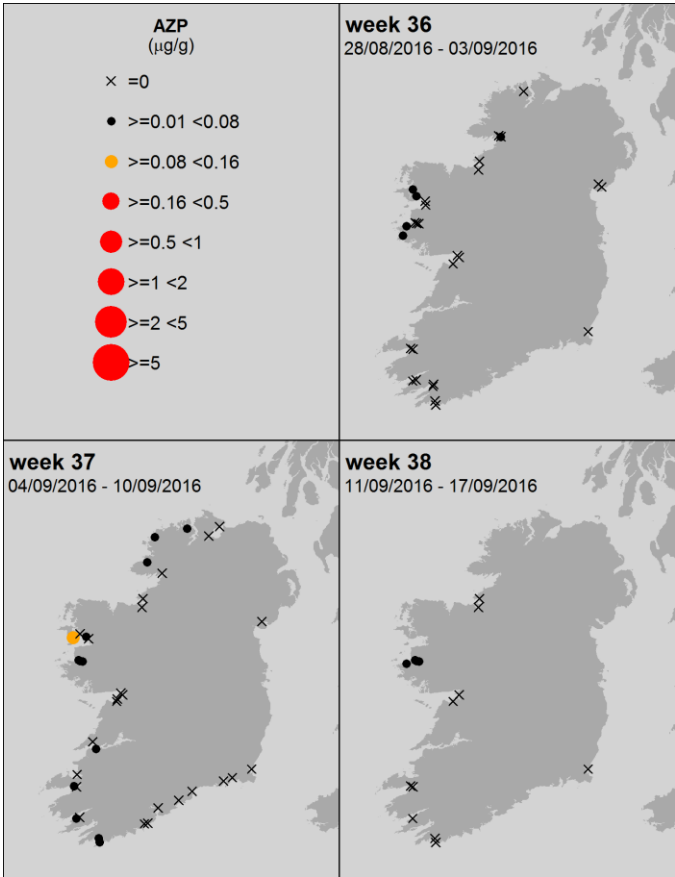
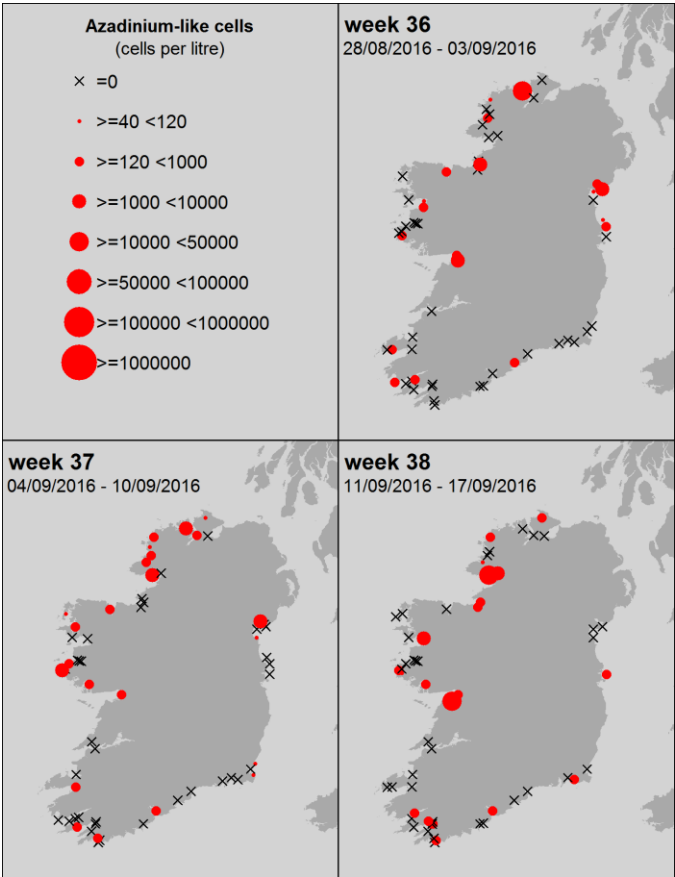
Ireland: Last 3 weeks of available National Monitoring Programme data



Azadinium – like spp.



AZP



Ireland: Last 3 weeks of available National Monitoring Programme data

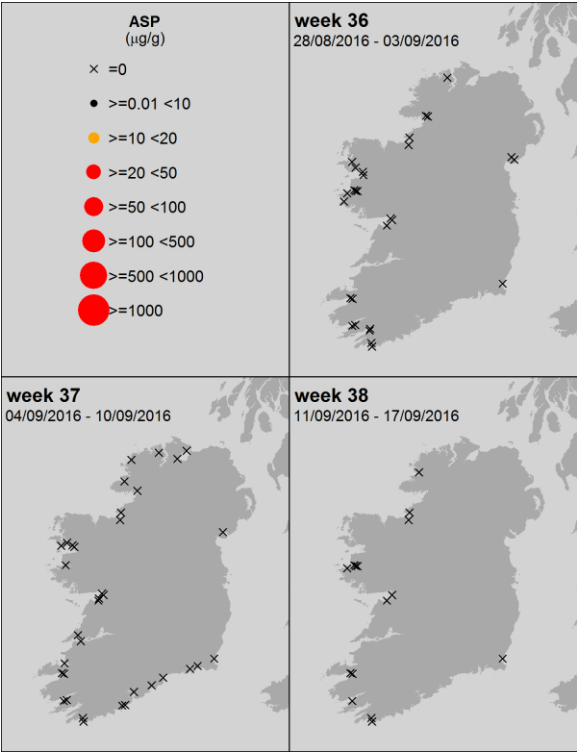
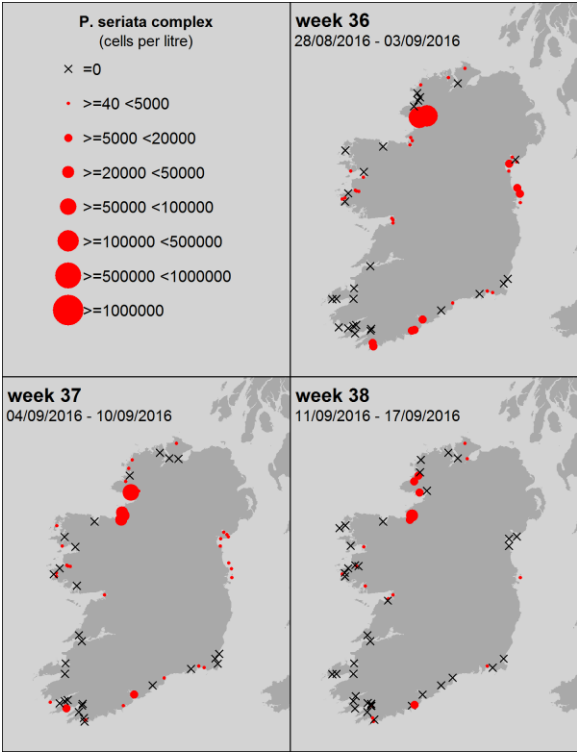
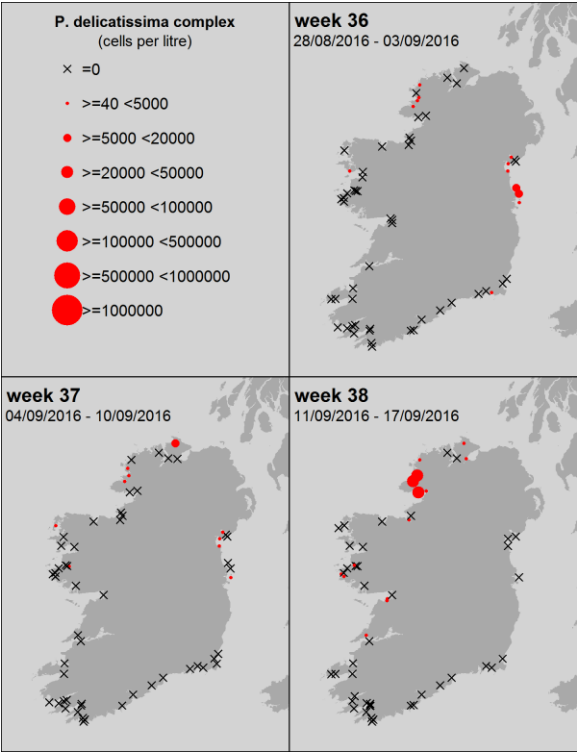
Pseudo-nitzschia spp.



ASP

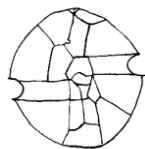
“*P. delicatissima*” complex = small cells
Taken from the literature:
3 species confirmed in Irish waters

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

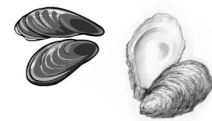
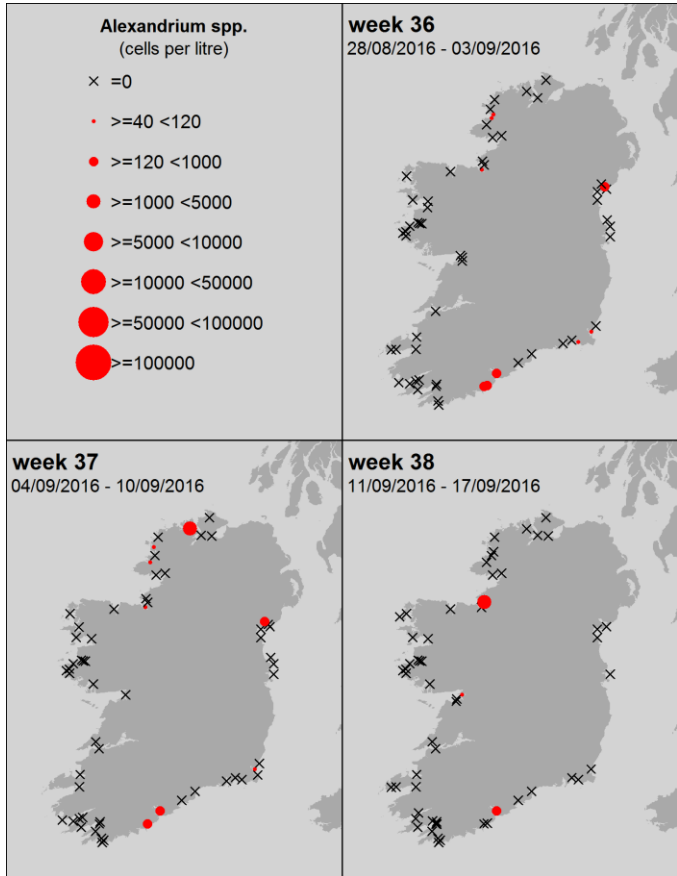


Taken from the literature: Of the 4 species (*P. fraudulenta*, *P. australis*, *P. pungens* and *P. delicatissima*) from Irish waters, tested for ASP toxins in culture work, only one, *P. australis* (from the “*P. seriata*” group) was toxic.

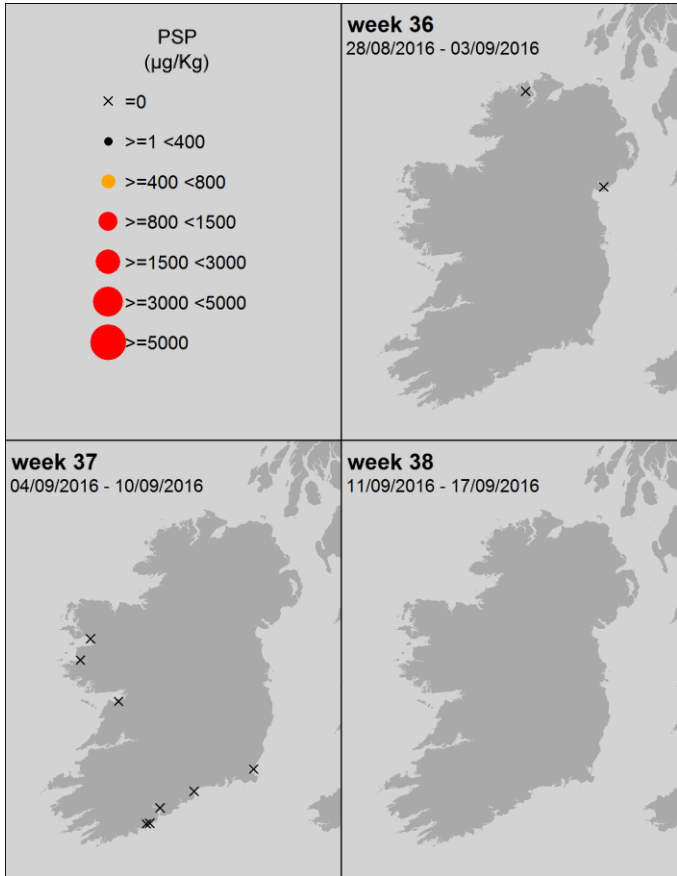
Ireland: Last 3 weeks of available National Monitoring Programme data



Alexandrium spp.



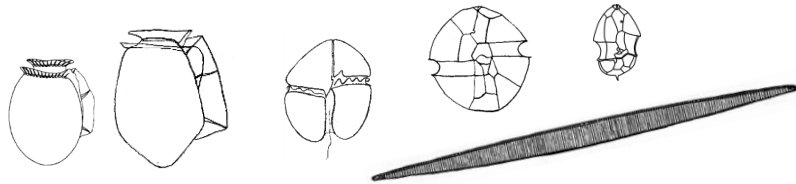
PSP



Ireland HAB & Biotoxin temporal trends

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

Ireland: Biotoxins



Toxin groups

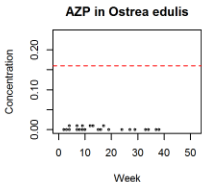
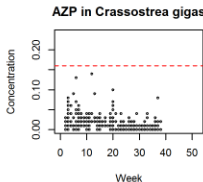
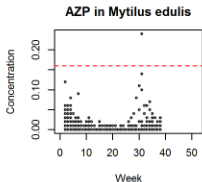
mussels

oysters

oysters

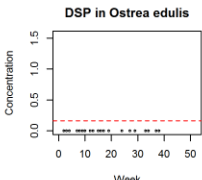
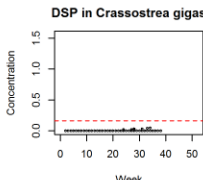
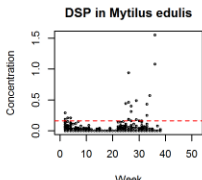
AZP

AZaspiracid
Poisoning



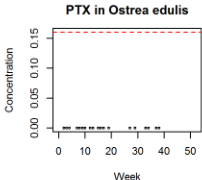
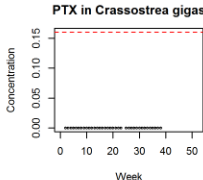
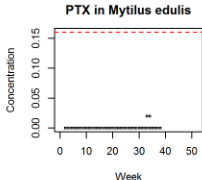
DSP

Diarrhetic
Shellfish
Poisoning



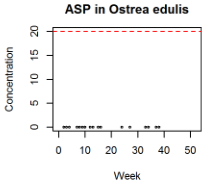
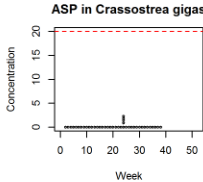
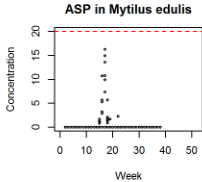
PTX

Pectenotoxin



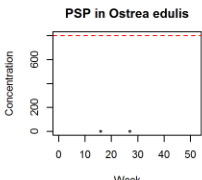
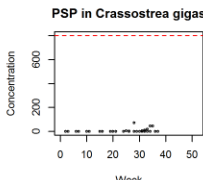
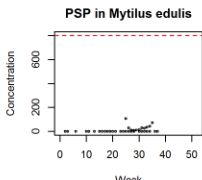
ASP

Amnesic
Shellfish
Poisoning

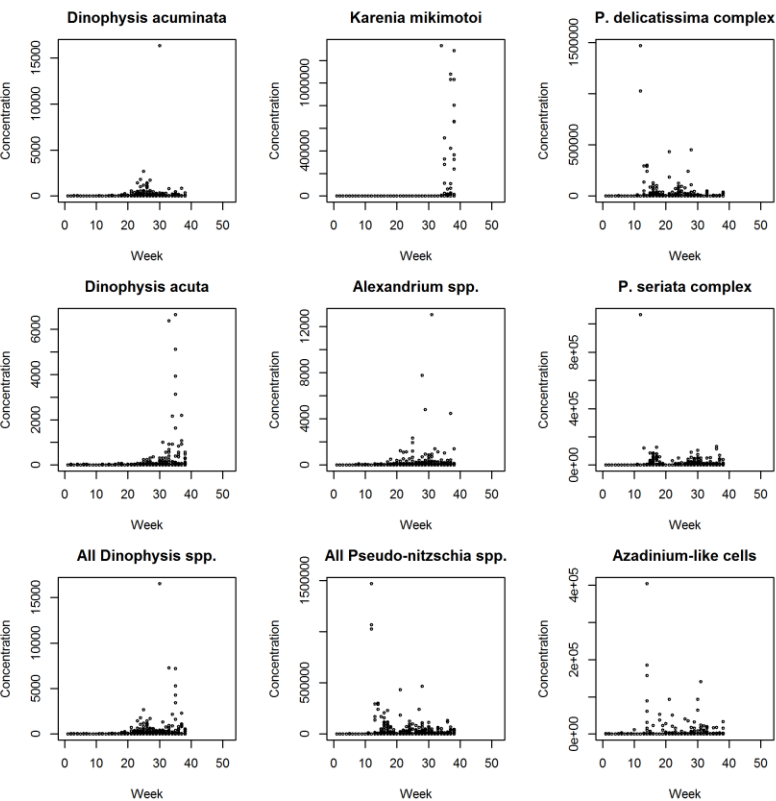


PSP

Paralytic
Shellfish
Poisoning



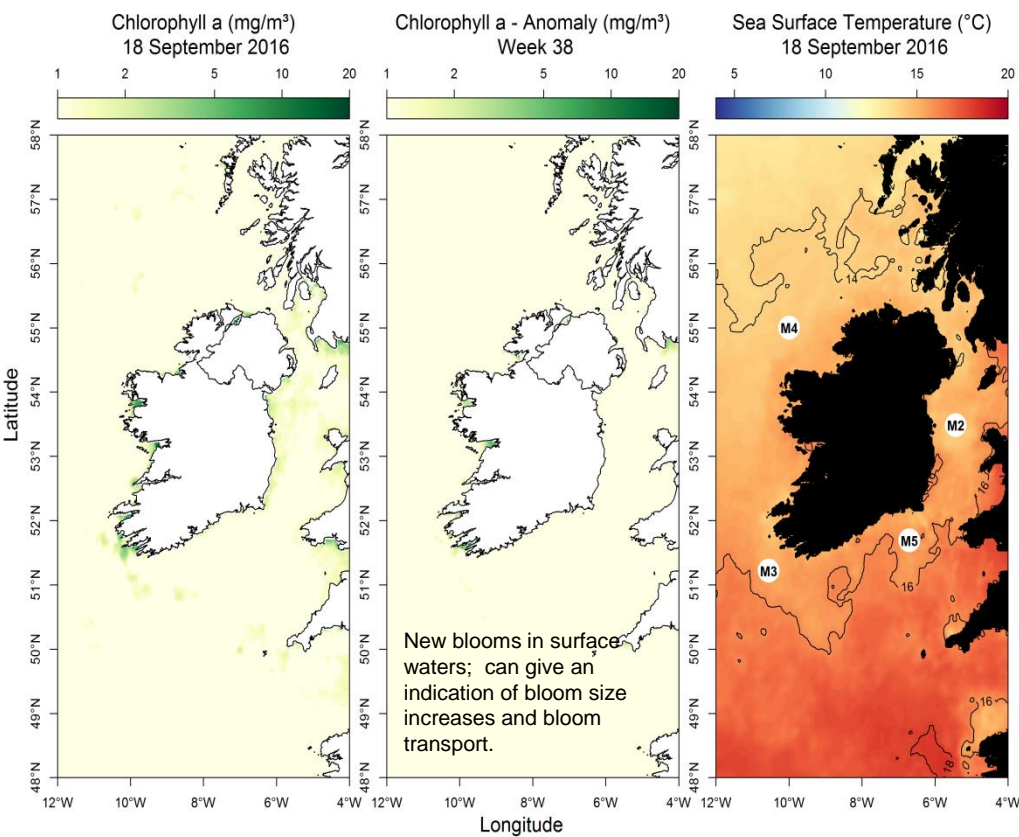
Ireland: HABs



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

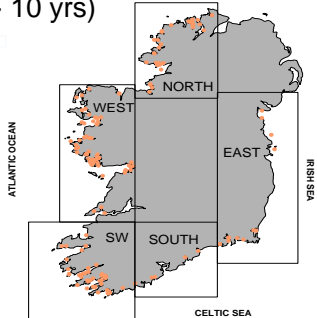
Regulatory limit = ■■■■■

Most up to date available satellite data



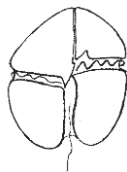
SST (°C) anomaly for last week:
Data taken from the Irish data buoy network where the anomaly is the weekly difference in SST compared to the long term mean (~ 10 yrs)

- NW coast (M4) Below average by 0.14 °C
- SW coast (M3) Below average by 0.10 °C
- SE coast (M5) above average by 0.77 °C



What phytoplankton were blooming at inshore coastal sites last week?

Region	Predominant Phytoplankton (most abundant taxa)	Cells/L (rounded)
north:	Diatoms:	
	<i>Asterionellopsis</i> spp.	240,300
	<i>Leptocylindrus danicus</i>	127,600
	<i>Chaetoceros (Hyalochaete)</i> spp.	93,900
	Dinoflagellates:	
west:	<i>Azadinium/heterocapsa</i> spp.	33,500
	Diatoms:	
	<i>Chaetoceros (Hyalochaete)</i> spp.	31,700
	Pennate diatom	24,100
	Dinoflagellates:	
SW:	<i>Prorocentrum micans</i>	30,600
	<i>Azadinium/heterocapsa</i> spp.	16,300
	Others:	
	Microflagellate sp.	32,700
	Diatoms:	
south:	<i>Asterionellopsis glacialis</i>	757,700
	<i>Lauderia / Detonula</i> sp	235,700
	<i>Chaetoceros (Hyalochaete)</i> spp.	178,500
	Dinoflagellates:	
	<i>Karenia mikimotoi</i>	1,285,800
east:	Others:	
	Prymnesiophytes	161,900
	Diatoms:	
	<i>Leptocylindrus minimus</i>	656,600
	<i>Chaetoceros (Hyalochaete)</i> spp.	107,700
	<i>Cylindrotheca closterium/ Nitzschia longissima</i>	73,800
	Others:	
east:	<i>Haptophytes</i>	82,100
	Diatoms:	
	<i>Leptocylindrus minimus</i>	2,288,600
	<i>Cylindrotheca closterium/ Nitzschia longissima</i>	551,700
	<i>Skeletonema</i> spp.	165,700
	<i>Asterionellopsis glacialis</i>	103,100
	Dinoflagellates:	
	<i>Glenodinium</i> spp.	848,300
	<i>Gymnodinium</i> spp.	94,600
	Others:	
	Microflagellate sp.	1,696,000

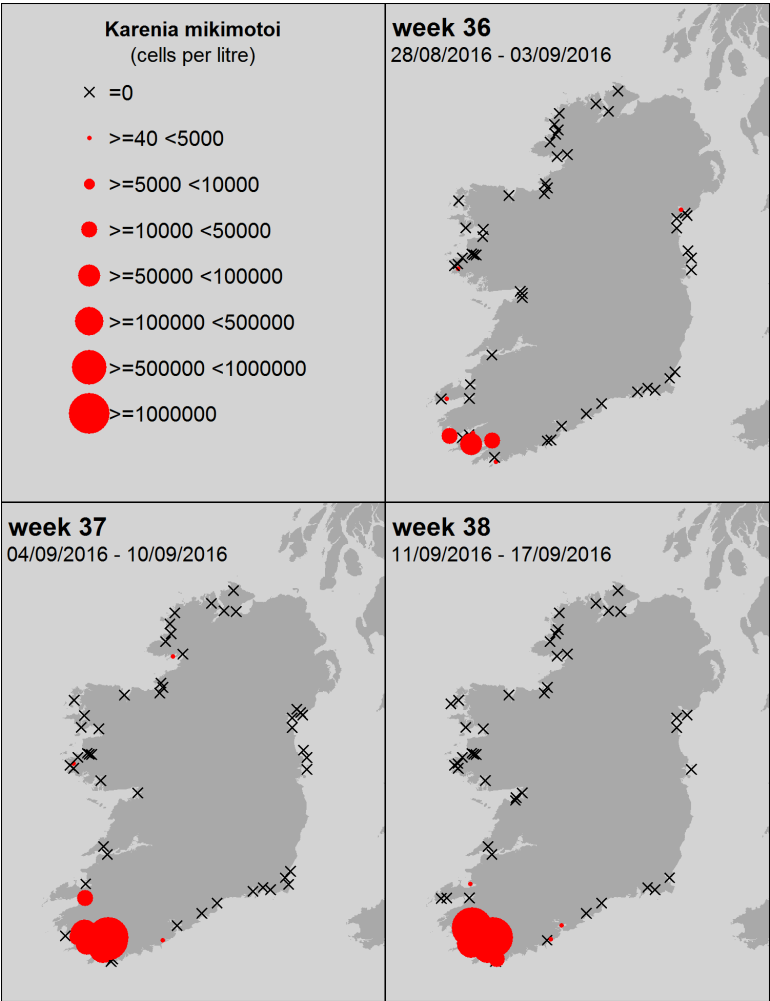


Karenia mikimotoi
(old name: *Gyrodinium aureolum*)

High cell levels in some areas

The bulk of the *Karenia* bloom appears to be still broadly in the South West with some indications that it may be traveling up the western coast slowly .The direction and cell concentration, and potential impact, will be directly related to weather conditions.

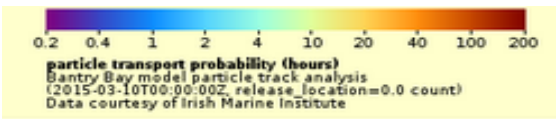
This species can cause stress and mortalities due to its affect on water quality in both farmed shellfish and finfish as well as many wild marine shore species i.e. lugworms, cockles etc. Low impact husbandry for farmed fish is traditionally recommended to reduce any additional stress in affected sites. 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

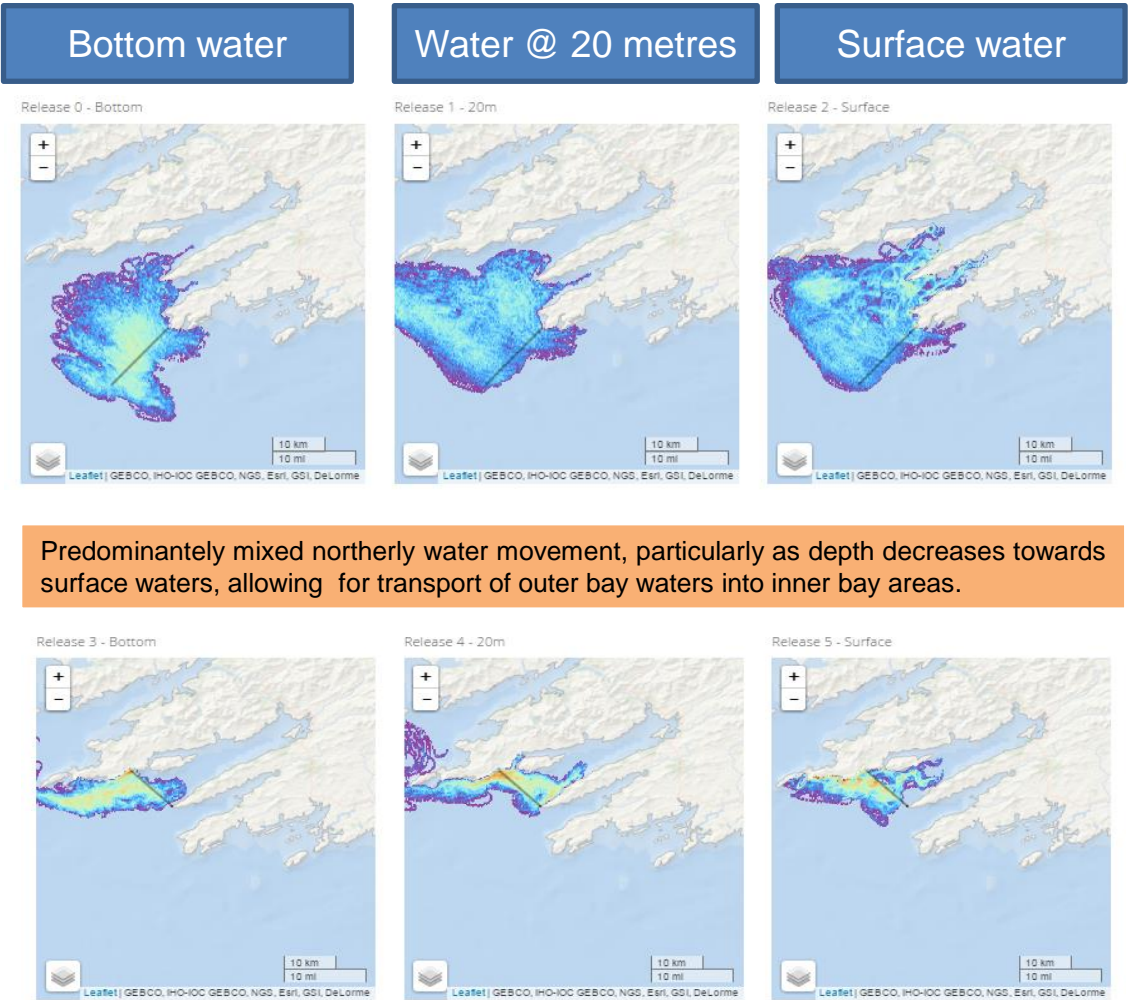
The maps show the **most likely transport pathways for the next 3 days of phytoplankton** found along the **presented transects** (black lines off Mizen Head and the Mouth of Bantry Bay) and **water depths** (bottom, 20 metres and surface)

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



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

Forecast for the next 3 days



Predominantly mixed northerly water movement, particularly as depth decreases towards surface waters, allowing for transport of outer bay waters into inner bay areas.

Bottom and deeper waters moving out of the bay areas with some movement into inner bay areas as depth decreases.

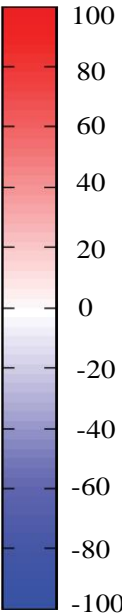
Bantry Bay

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

Forecast for next 3 days



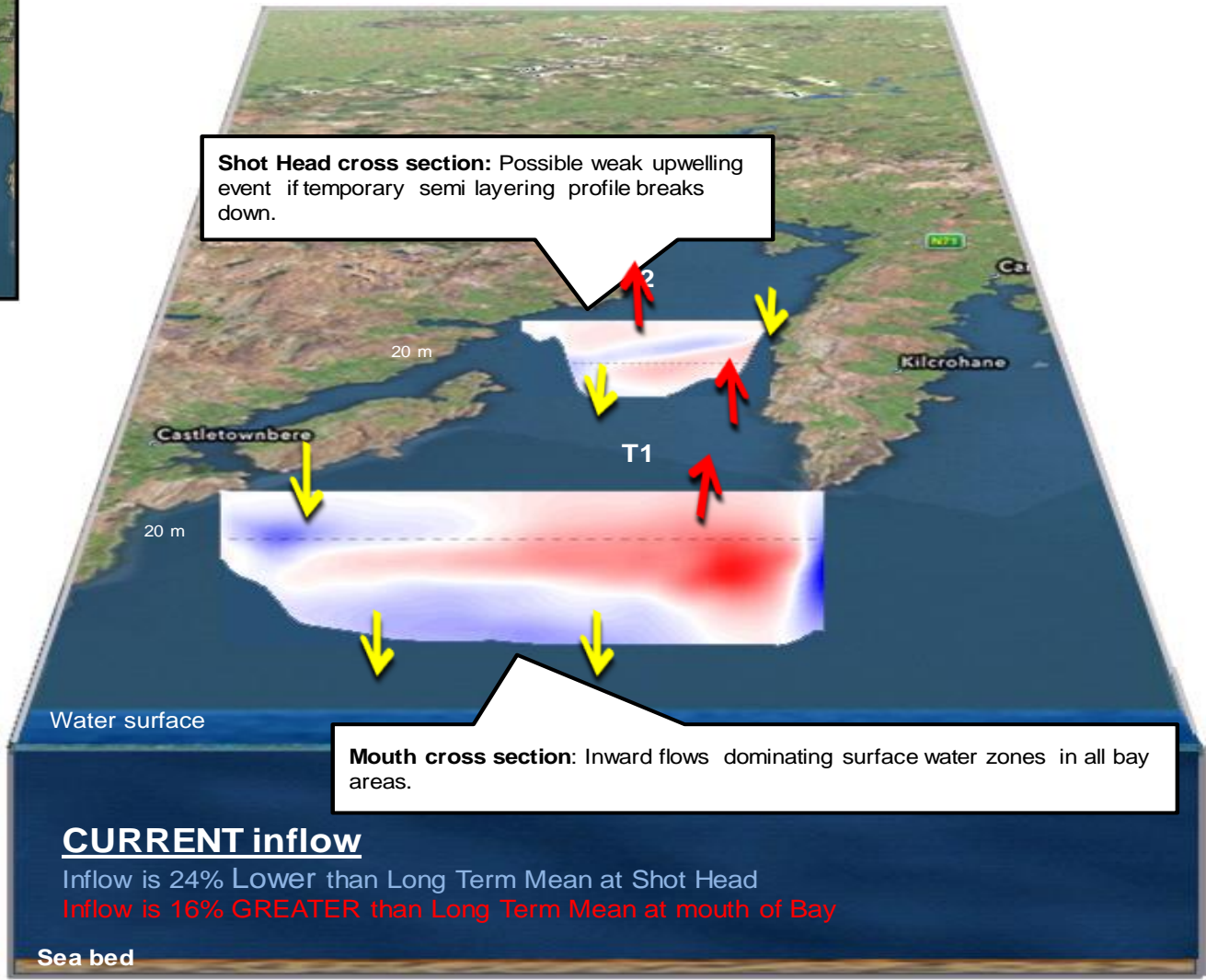
Flow ($\text{m}^3 \text{s}^{-1}$)



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

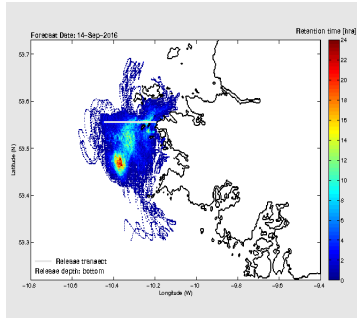


0.2 0.4 1 2 4 10 20 40 100 200

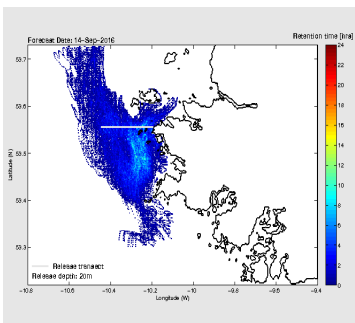
particle transport probability (hours)
Bantry Bay model particle track analysis
(2015-03-10T00:00:00Z, release_location=0.0 count)
Data courtesy of Irish Marine Institute

Forecast for the next 3 days

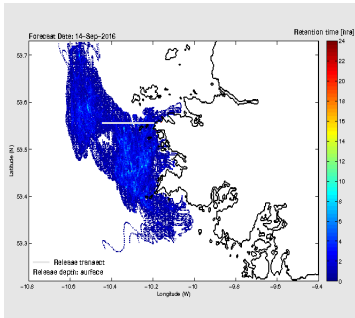
Bottom water



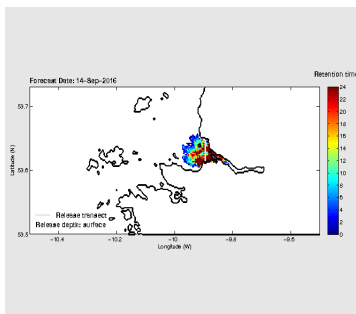
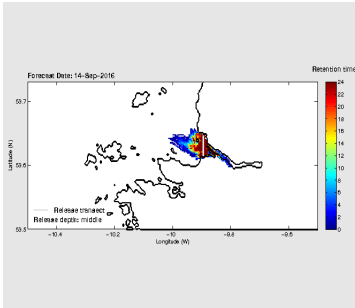
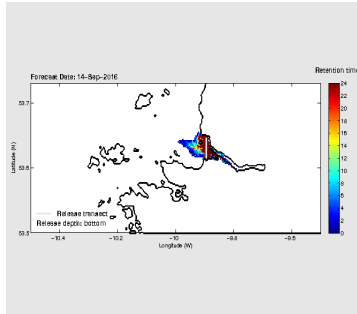
Water @ 20 metres



Surface water



Bottom and deep waters moving predominantly in a southerly direction with surface and shallower waters movement appearing well mixed and moving equally in north and south directions.



Potential at all depths for outer bay waters to inter inner bay areas at least to the mid bay section and possible into the inner bay area.

Killary Harbour

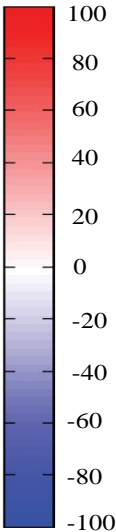
3 day estimated water flows at the mouth of Killary Harbour



Forecast for next 3 days

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

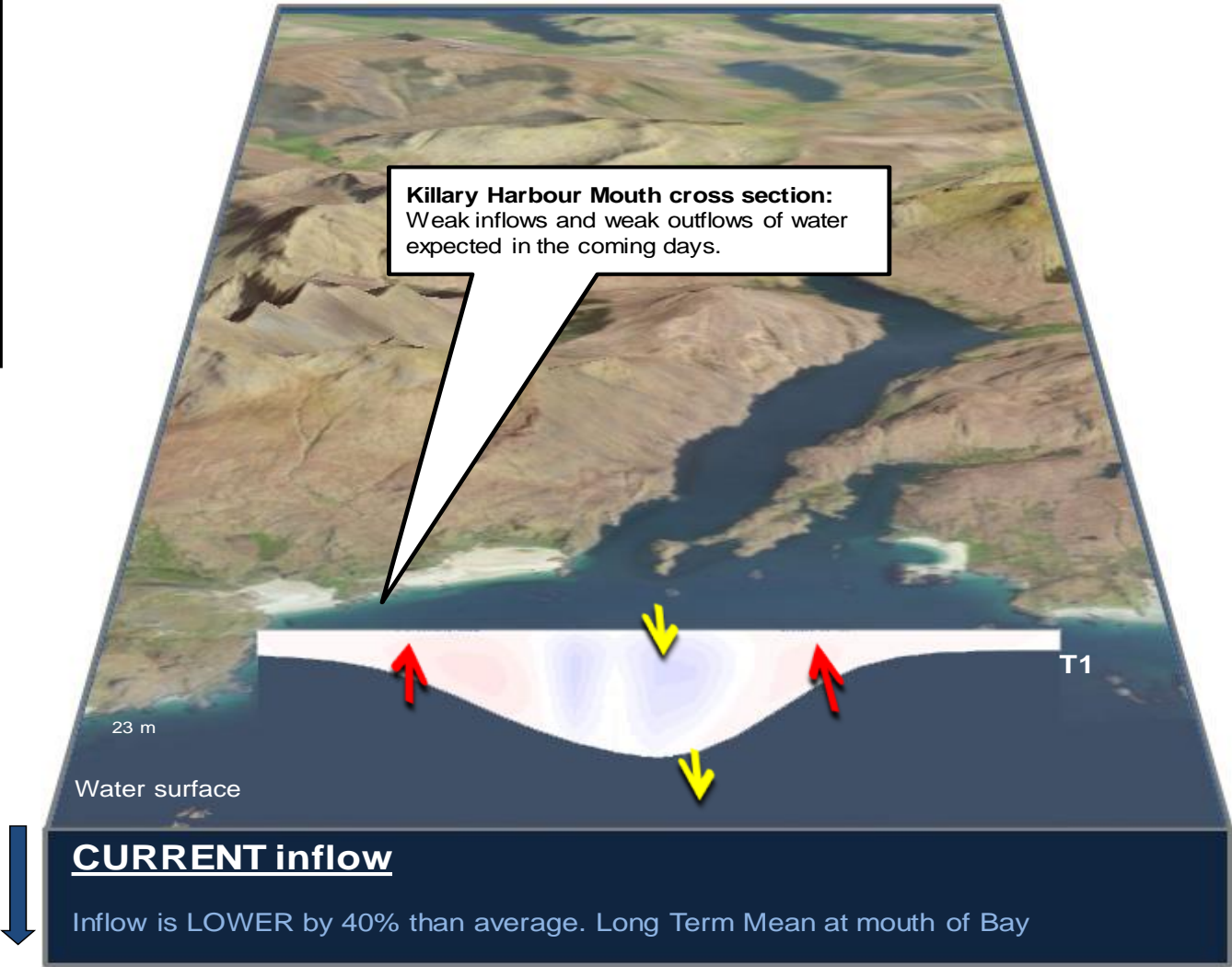
Flow ($\text{m}^3 \text{s}^{-1}$)



IN

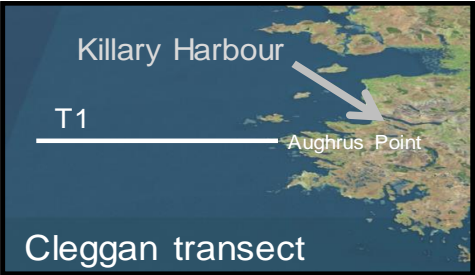
OUT

Depth

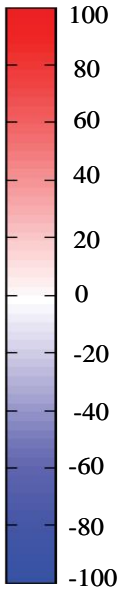


West Coast - 3 day estimated water flows along a transect off Aughrus Point

Forecast for next 3 days



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



northward
flow

southward
flow

Depth

