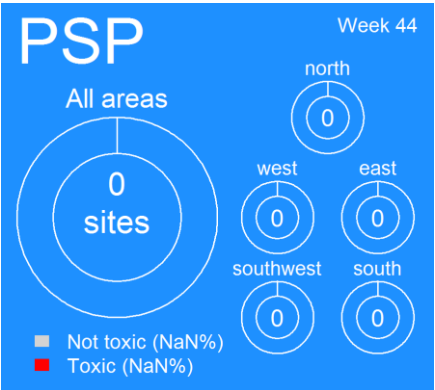
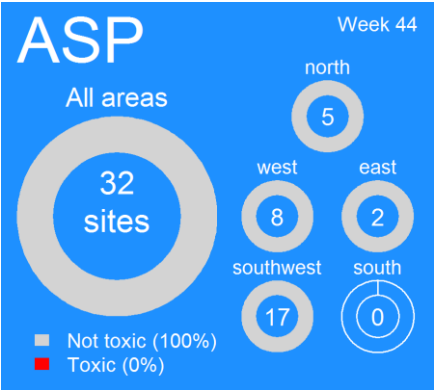
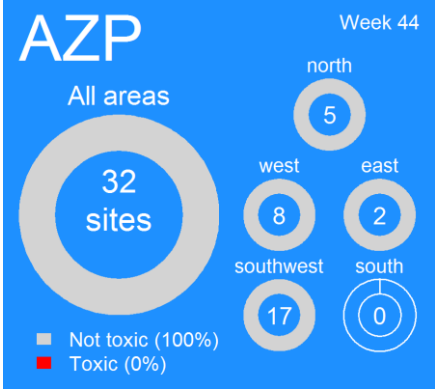
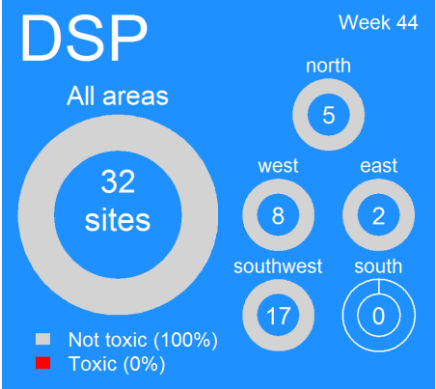


Ireland: Current Conditions

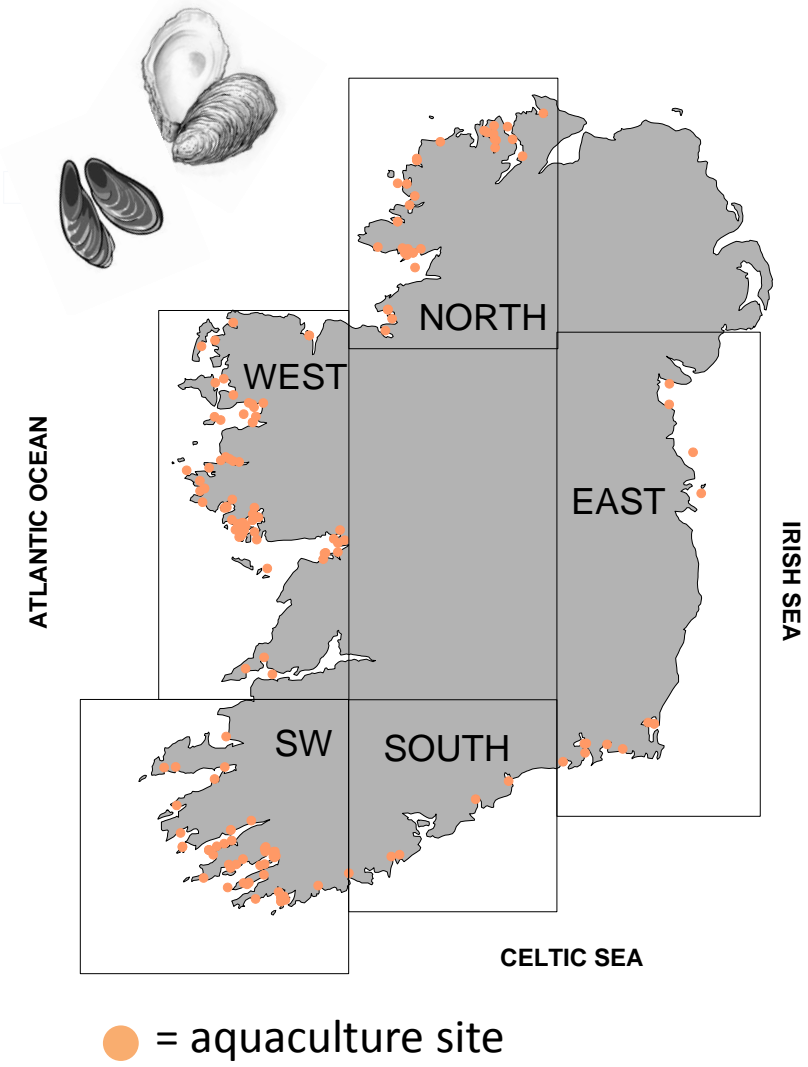
Shellfish biotoxin report (last week)



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: Medium

DSP event: Low

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. In recent weeks, low *Pseudo-nitzschia* cell levels continue to be reported and ASP biotoxins have not detectable levels at any site countrywide.

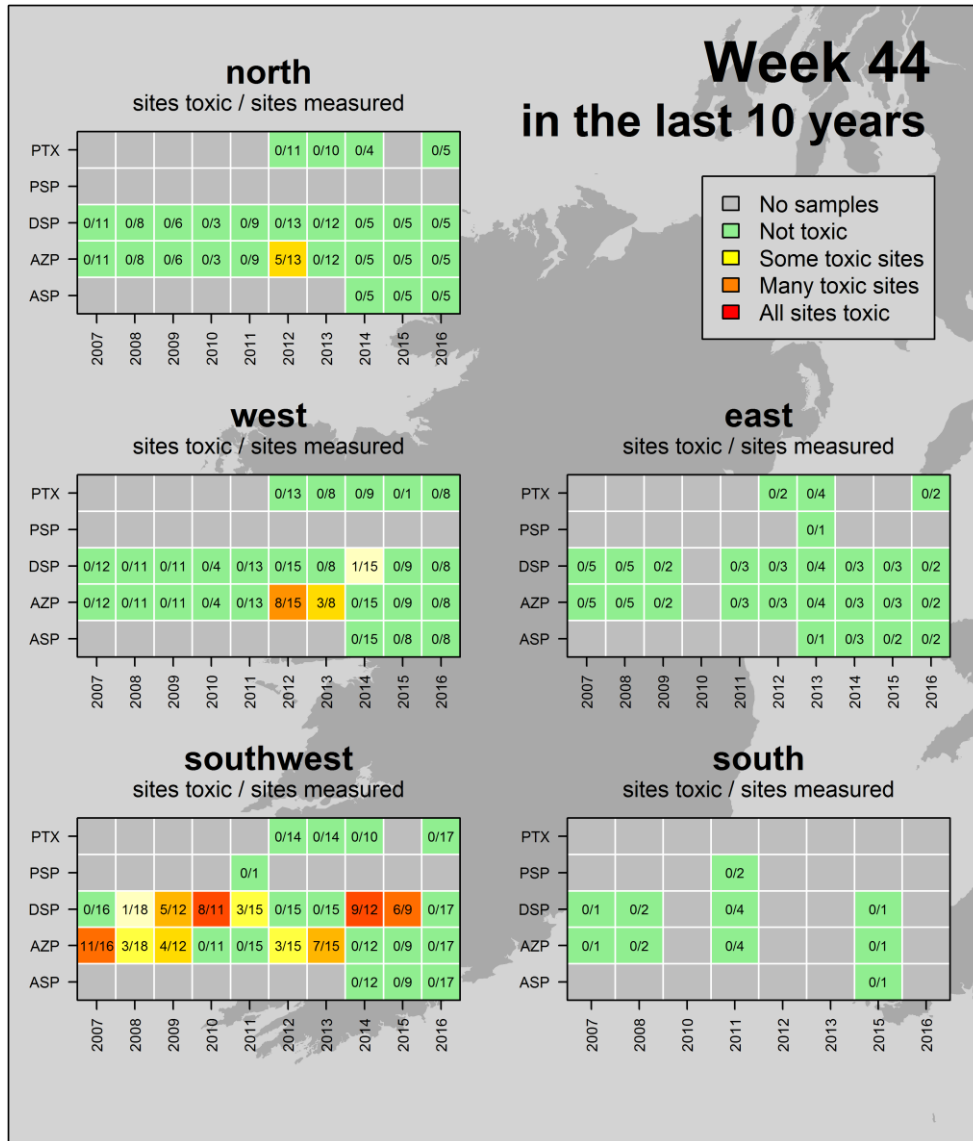
AZP: This is considered a high risk period for AZP. Fluctuating levels of *Azadinium* spp. continue to be observed around the coast, there was a spike in *Azadinium*-like cell levels in the west last week but molecular results have shown this is not toxic *Azadinium* spp. Biotoxin levels are currently below regulatory limits.

DSP: This is historically a risk period . But DSP is below regulatory limits in the SW there are no *Dinophysis* cells.

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

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

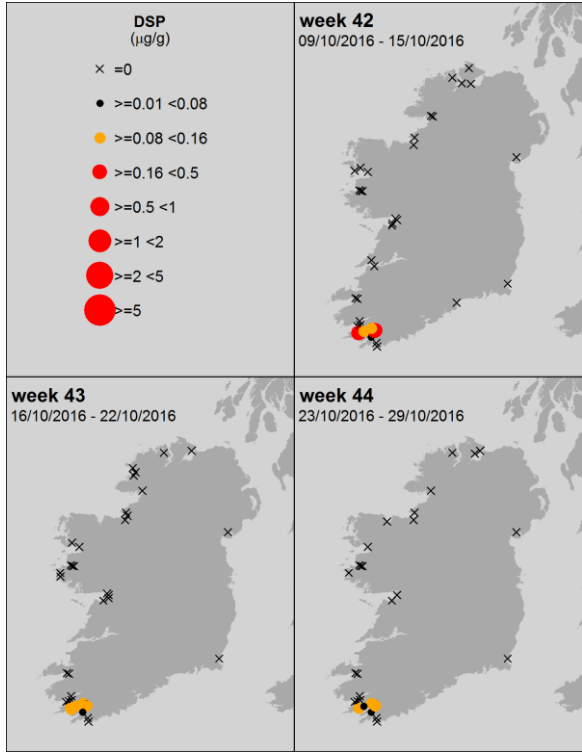
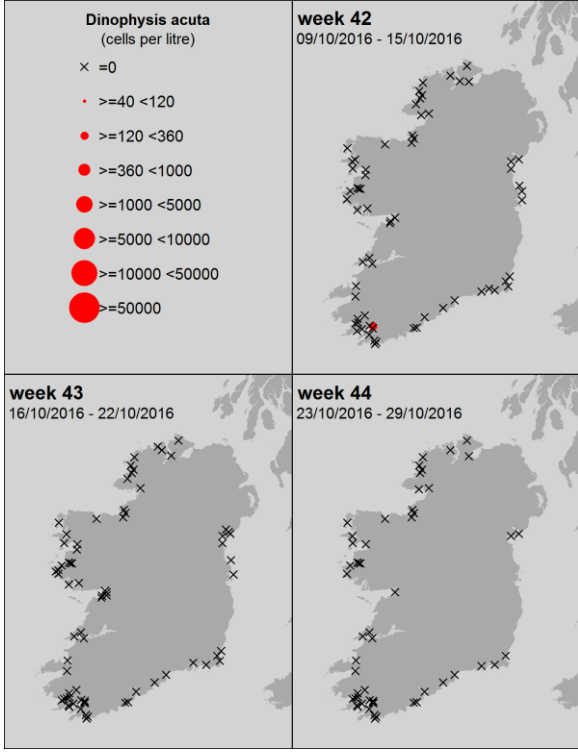
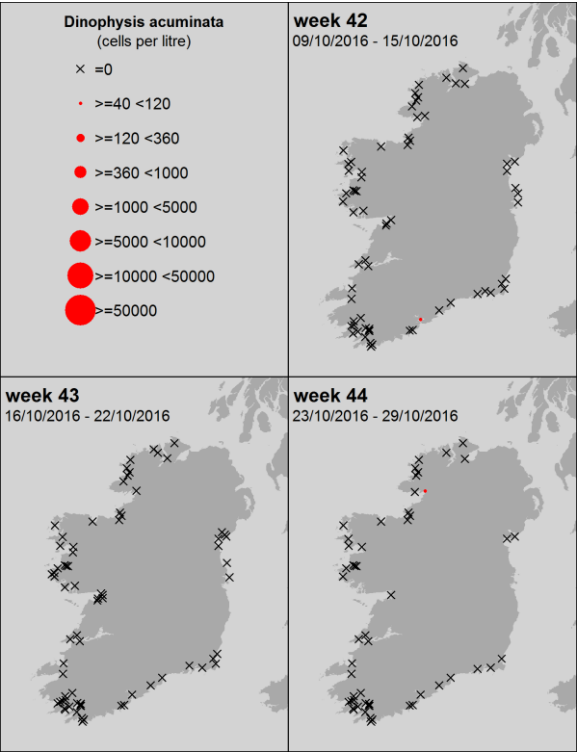
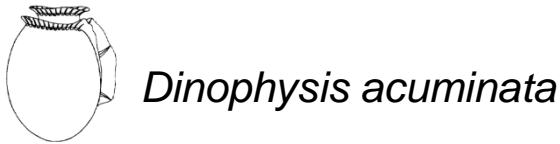
AZP events: April to December

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



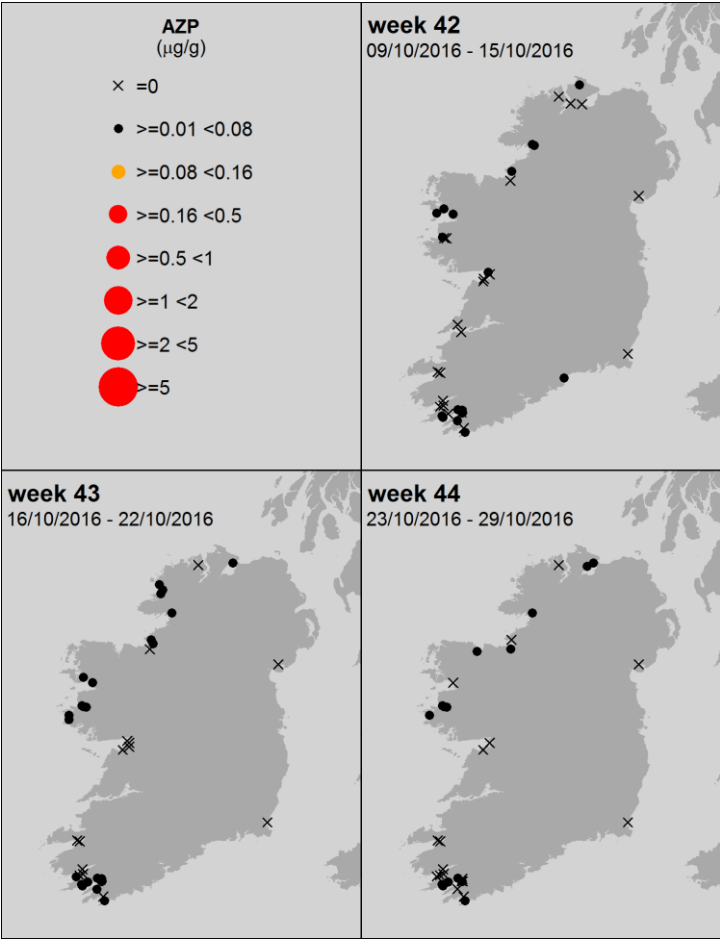
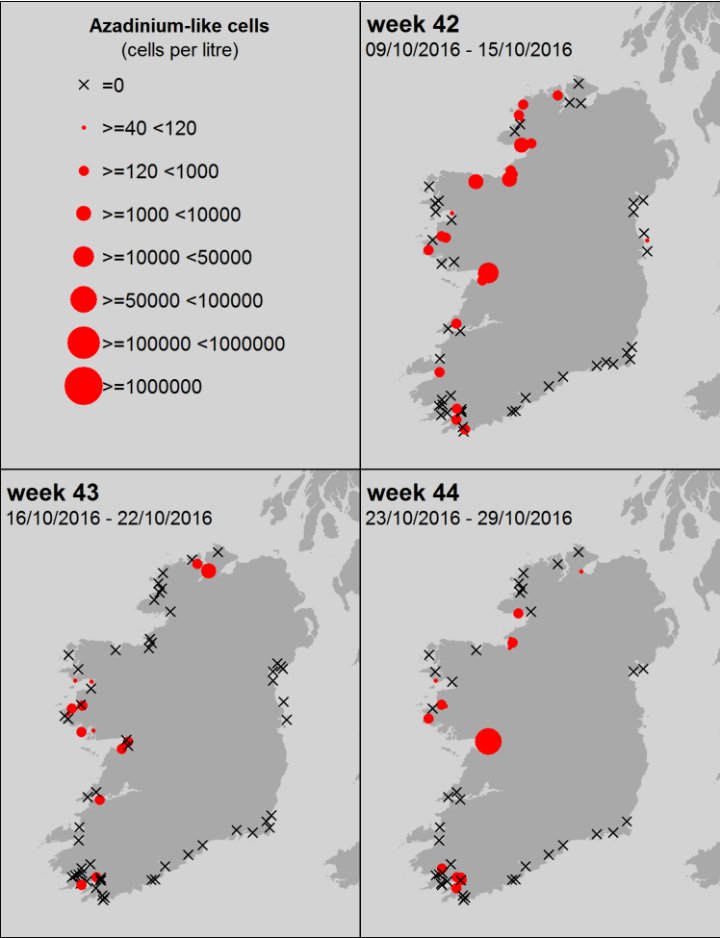
Ireland: Last 3 weeks of available National Monitoring Programme data



Azadinium – like spp.



AZP



Ireland: Last 3 weeks of available National Monitoring Programme data

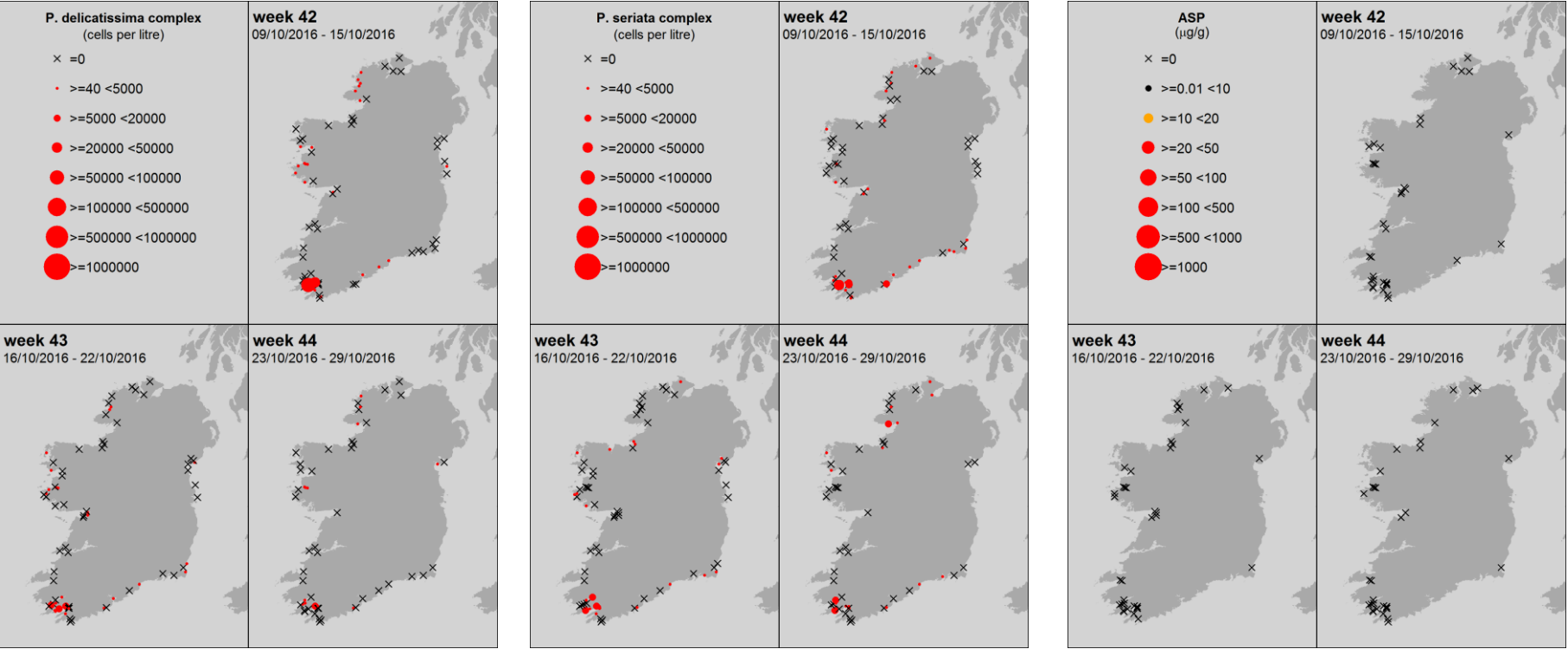
Pseudo-nitzschia spp.



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

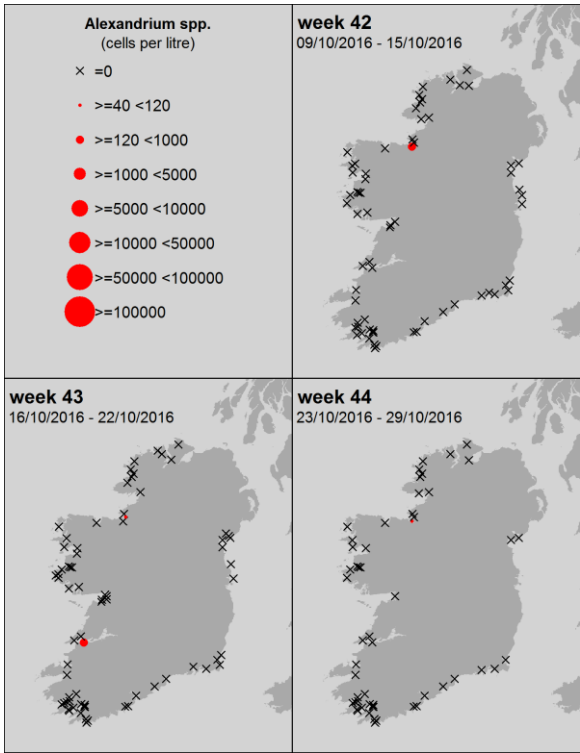


Taken from the literature: Of the 4 species (*P. fraudulenta*, *P. australis*, *P. pungens* and *P. delicatissima*) from Irish waters, tested for ASP toxins in culture work, only one, *P. australis* (from the “*P. seriata*” group) was toxic.

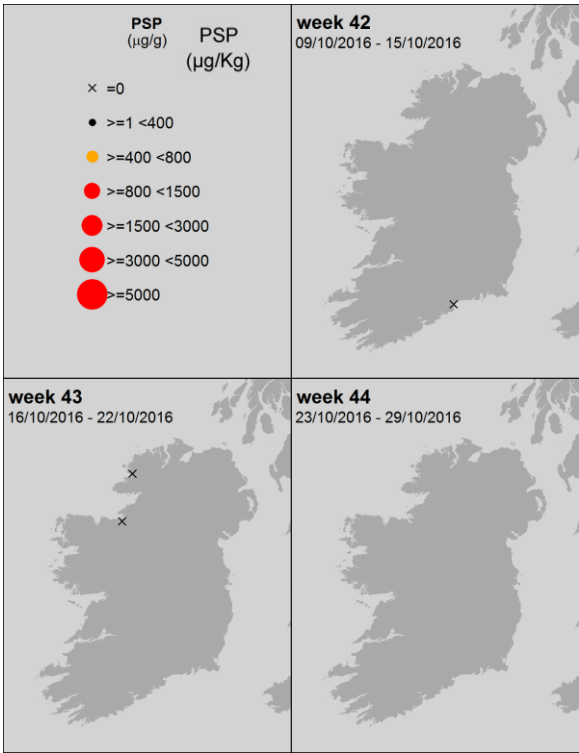
Ireland: Last 3 weeks of available National Monitoring Programme data



Alexandrium spp.



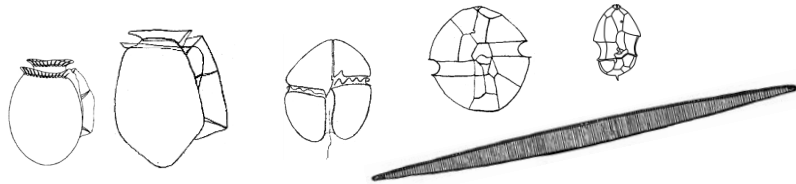
PSP



Ireland HAB & Biotoxin temporal trends

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

Ireland: Biotoxins



Toxin groups

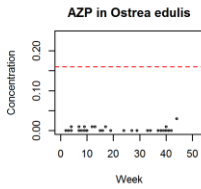
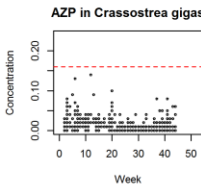
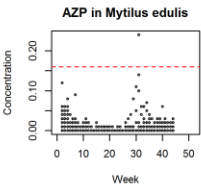
mussels

oysters

oysters

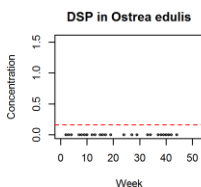
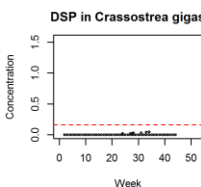
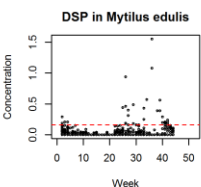
AZP

AZaspiracid
Poisoning



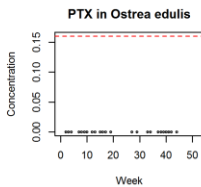
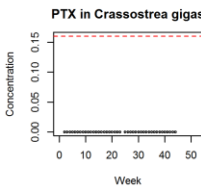
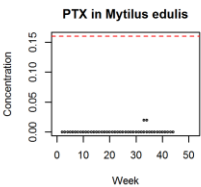
DSP

Diarrhetic
Shellfish
Poisoning



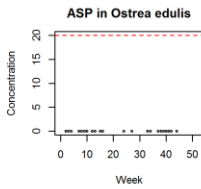
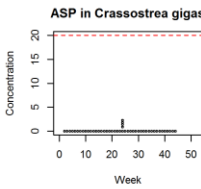
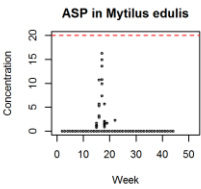
PTX

Pectenotoxin



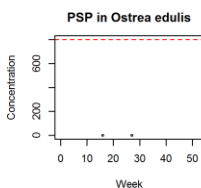
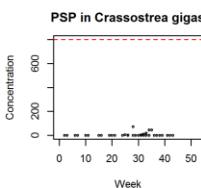
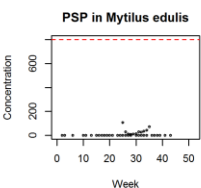
ASP

Amnesic
Shellfish
Poisoning

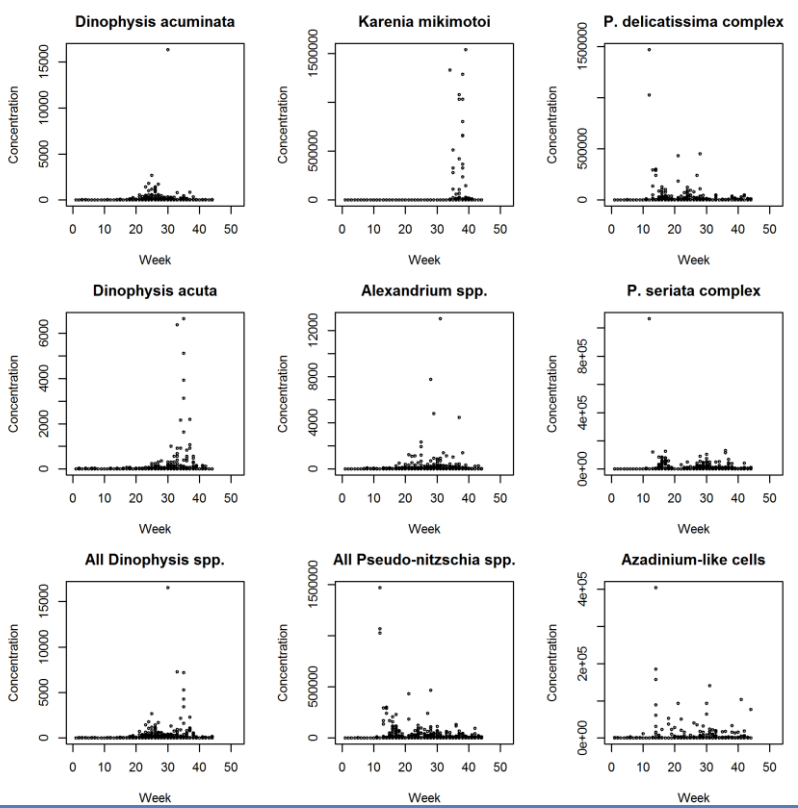


PSP

Paralytic
Shellfish
Poisoning



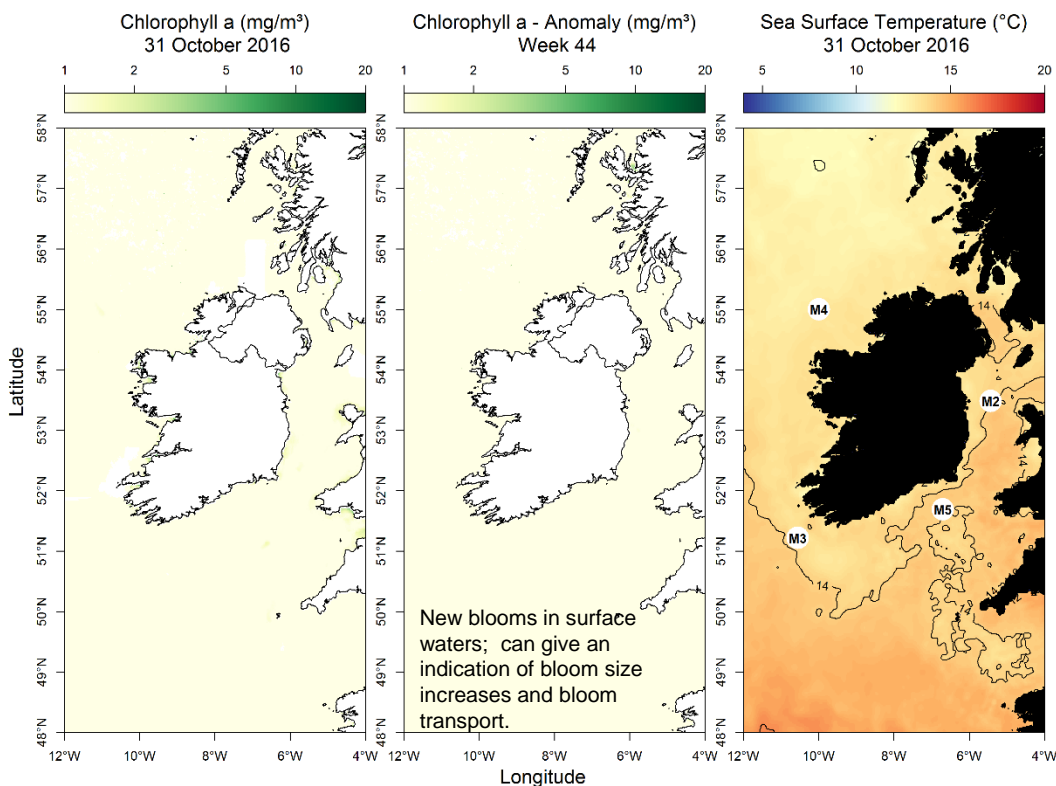
Ireland: HABs



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

Regulatory limit = ■■■■■■

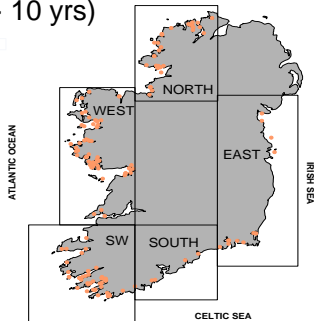
Most up to date available satellite data



SST (°C) anomaly for last week:

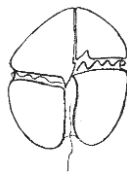
Data taken from the Irish data buoy network where the anomaly is the weekly difference in SST compared to the long term mean (~ 10 yrs)

- NW coast (M4) above average by 0.42 °C
- SW coast (M3) above average by 0.46 °C
- SE coast (M5) above average by 0.80 °C



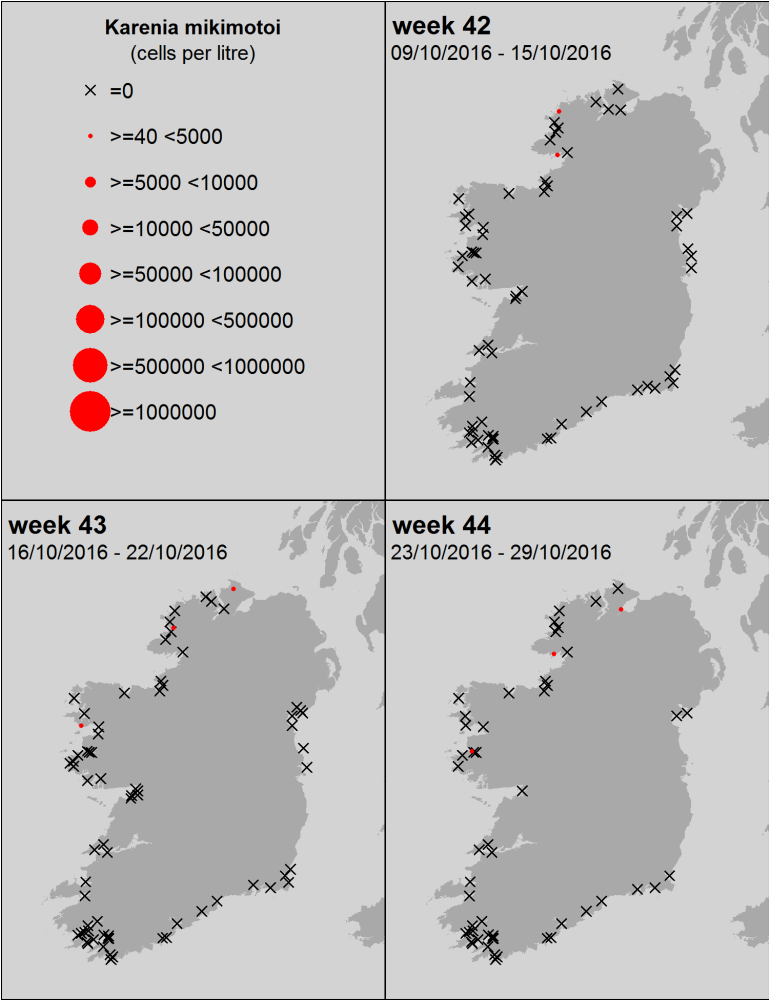
What phytoplankton were blooming at inshore coastal sites last week?

Region	Species	Rounded Count
east	Ciliates	42000
east	<i>Cylindrotheca closterium</i> / <i>Nitzschia longissima</i>	41000
east	<i>Heterocapsa triquetra</i>	15000
east	Pennate diatom	1000
east	<i>Prasinophytes</i>	1000
north	<i>Asterionellopsis</i> sp	373000
north	<i>Chaetoceros</i> (Hyalochaete) spp.	40000
north	<i>Cryptophyte</i>	17000
north	<i>Leptocylinndrus minimus</i>	12000
north	<i>Skeletonema</i> sp	11000
south	Navicula sp <25µm	44000
south	<i>Skeletonema</i> sp	30000
south	<i>Odontella</i> sp	18000
south	<i>Prymnesiophytes</i>	13000
south	<i>Paralia sulcata</i>	10000
southwest	<i>Skeletonema costatum</i>	200000
southwest	Navicula sp 20-50µm	145000
southwest	<i>Chaetoceros</i> (Hyalochaete) sp	96000
southwest	<i>Lauderia</i> / <i>Detonula</i> sp	35000
southwest	<i>Meuniera membranacea</i>	34000
west	<i>Azadinium</i> / <i>heterocapsa</i> sp	77000
west	<i>Paralia sulcata</i>	9000
west	<i>Lauderia</i> / <i>Detonula</i> sp	7000
west	<i>Paralia</i> sp	7000
west	<i>Guinardia delicatula</i>	5000



Karenia mikimotoi
(old name: *Gyrodinium aureolum*)

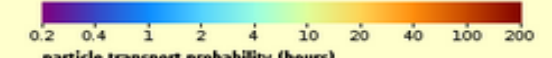
A *Karenia mikimotoi* bloom
is NOT expected this week



SOUTHWEST: Bantry Bay

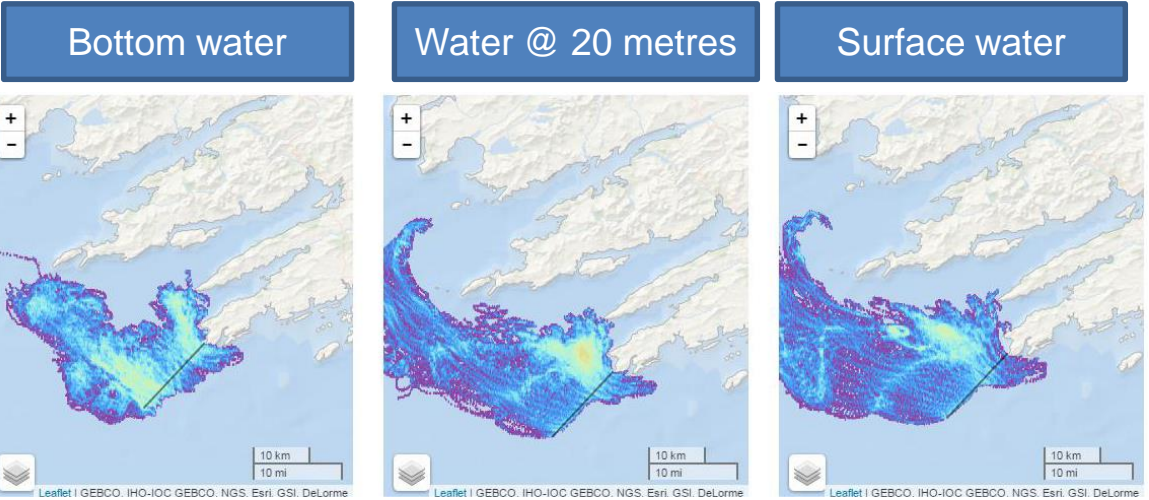
The maps show the **most likely transport pathways for the next 3 days of phytoplankton** found along the **presented transects** (black lines off Mizen Head and the Mouth of Bantry Bay) and **water depths** (bottom, 20 metres and surface)

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

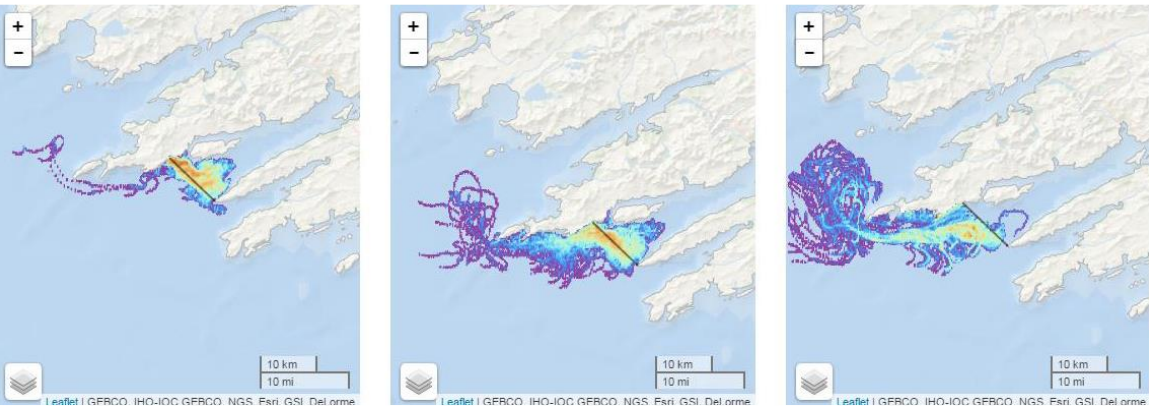


particle transport probability (hours)
Bantry Bay model particle track analysis
(2015-03-10T00:00:00Z, release_location=0.0 count)
Data courtesy of Irish Marine Institute

Forecast for the next 3 days



Conditions are favourable for Celtic Sea water to reach the bays of SW Ireland. Bottom and water at depth are expected to enter Bantry Bay while waters at shallower depths are expected to leave the Bay in the next couple of days.

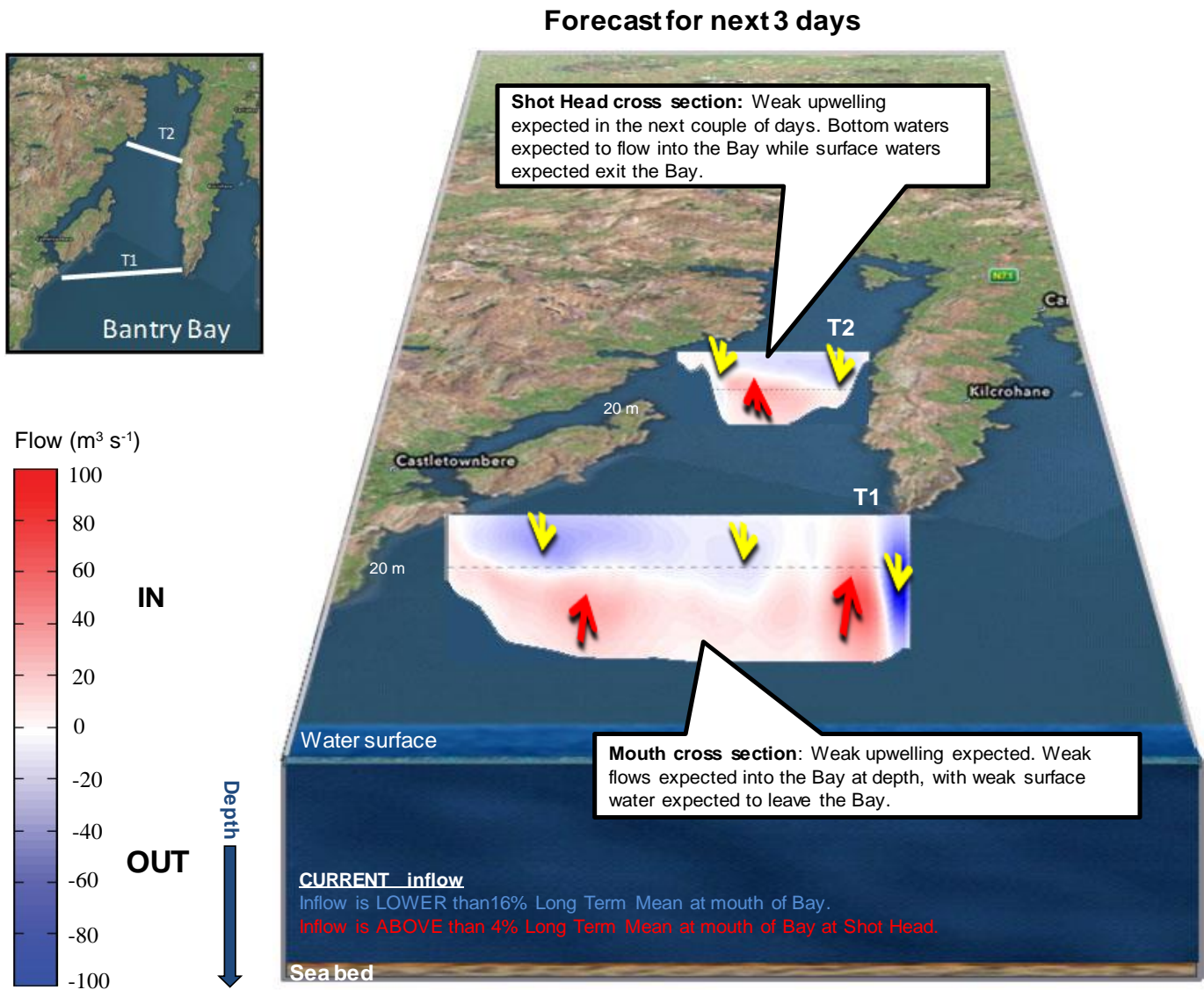


No big water exchange event is expected to occur in Bantry Bay in the next couple of days.

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)

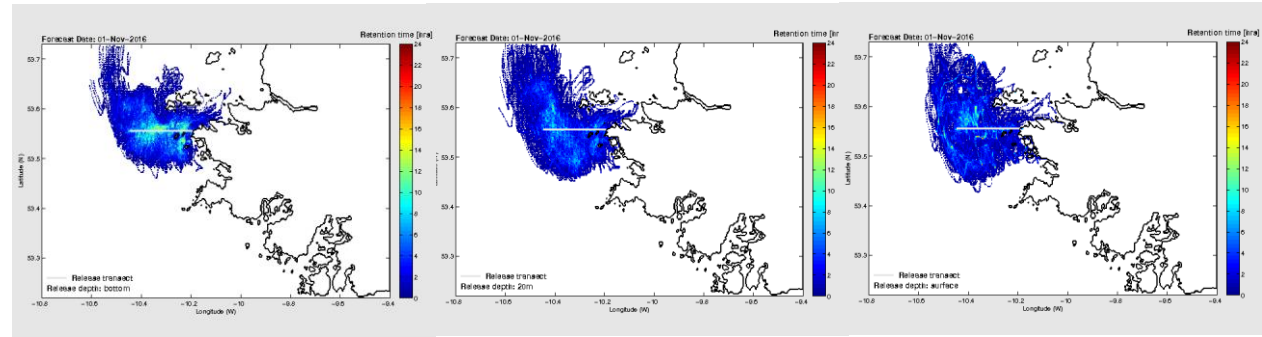
Reddish colours represent areas where phytoplankton remain longest
Cooler colours represent areas where phytoplankton remain for shorter periods



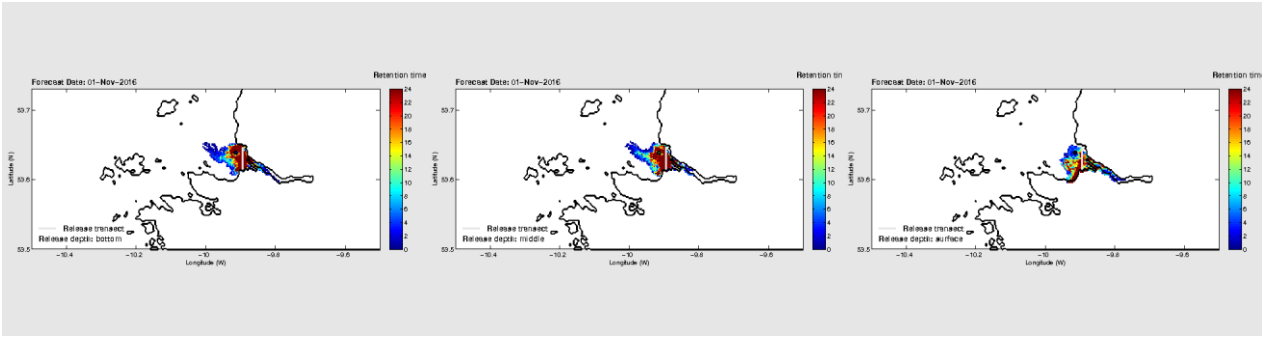
0.2 0.4 1 2 4 10 20 40 100 200
particle transport probability (hours)
Bantry Bay model particle track analysis
(2015-03-10T00:00:00Z, release_location=0.0 count)
Data courtesy of Irish Marine Institute

Forecast for the next 3 days

- Bottom water
- Water @ 20 metres
- Surface water



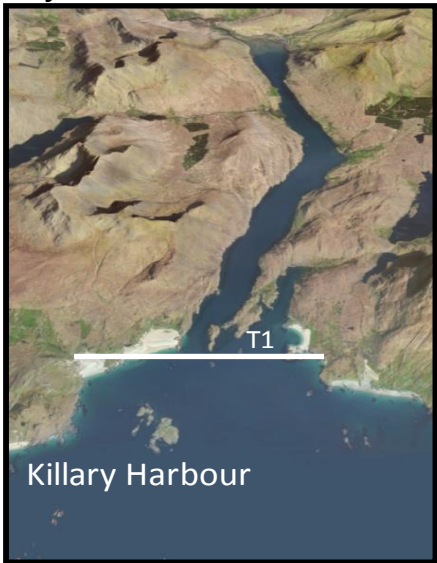
Water flows off the west coast will be variable with prevalent northward directed flows. Offshore water masses are unlikely to reach the mouth of Killary Harbour.



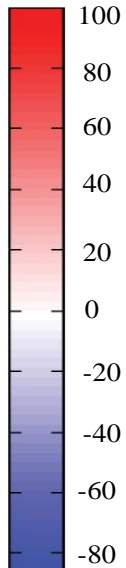
Estimated water circulation at the mouth of Killary shows that in general, waters will be retained at the mouth. However a water at all depths will reach the mid-Bay region.

Killary Harbour

3 day estimated water flows at the mouth of Killary Harbour



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



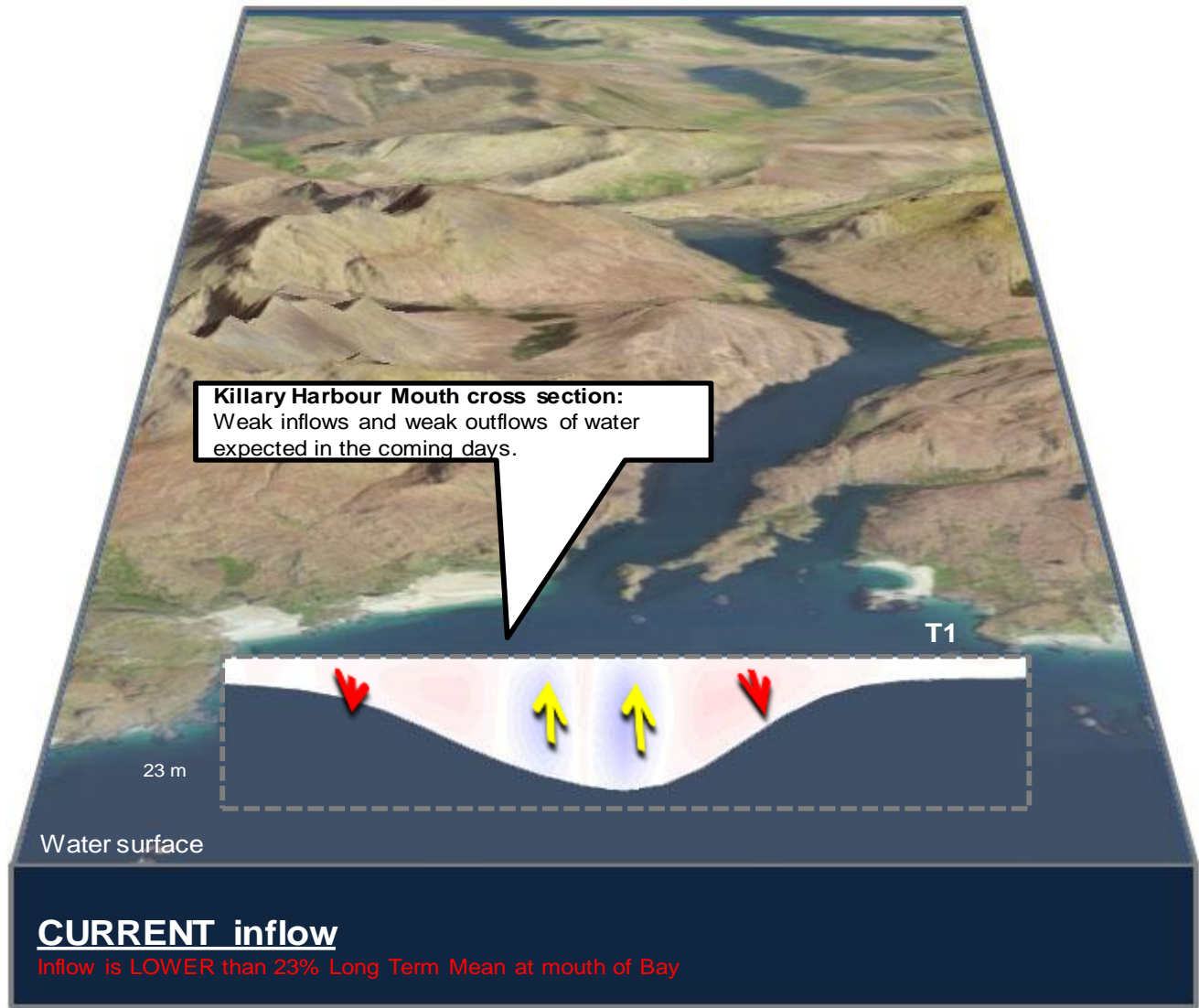
IN

OUT

Depth



Forecast for next 3 days



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

T1

23 m

Water surface

CURRENT inflow

Inflow is LOWER than 23% Long Term Mean at mouth of Bay

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

Forecast for next 3 days

