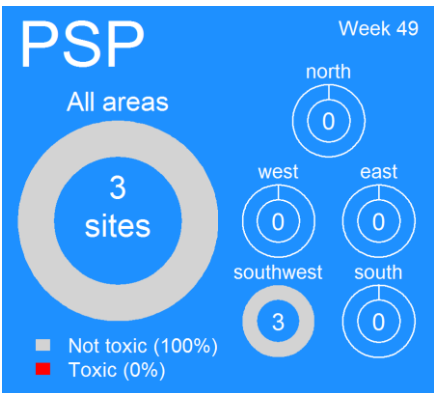
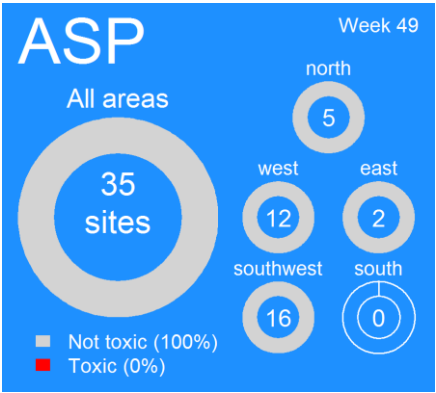
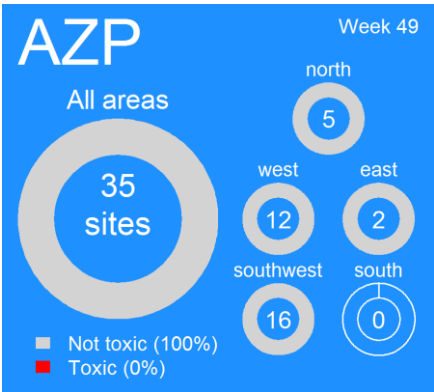
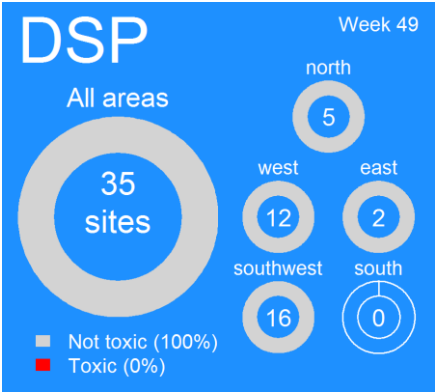


Ireland: Current Conditions

Shellfish biotoxin report (last week)



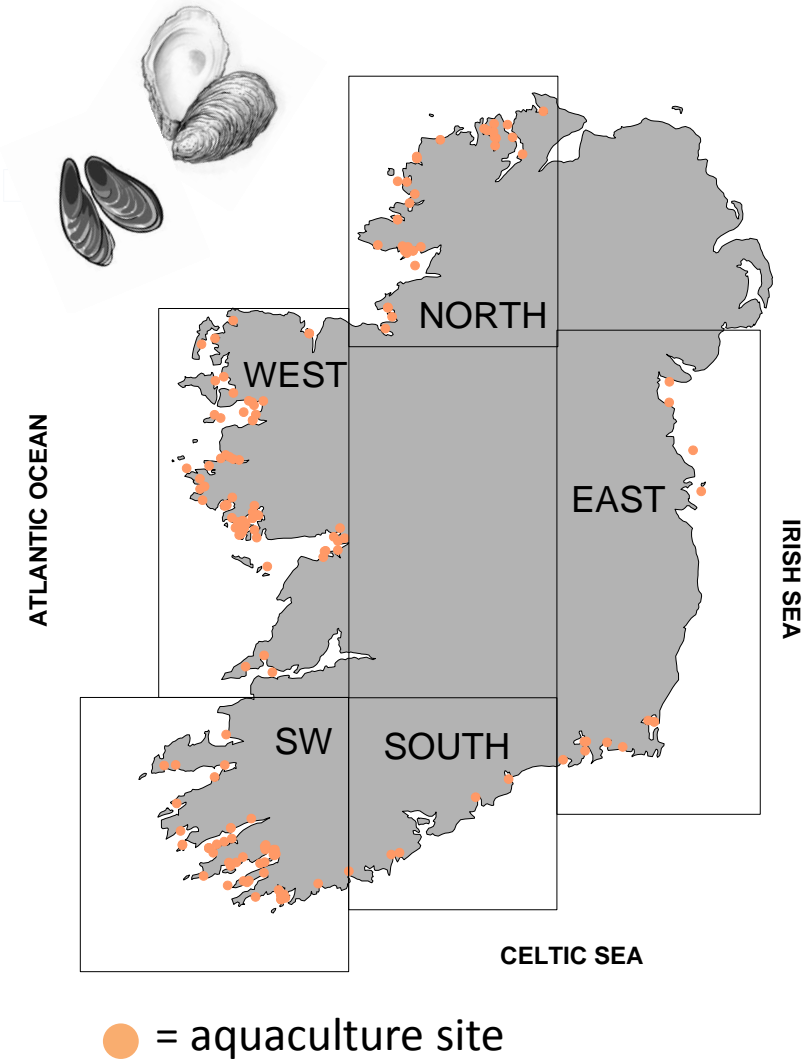
EU Regulatory Limit:

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

ASP event: Low

AZP event: Low-Medium

DSP event: Low-Medium

PSP event: Low

Why do we think this?

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

Cell levels of *Pseudo-nitzschia seriata* group have declined around the coast. Low *Pseudo-nitzschia* spp. cell levels continue to be reported and ASP biotoxins were not detected at any site countrywide.

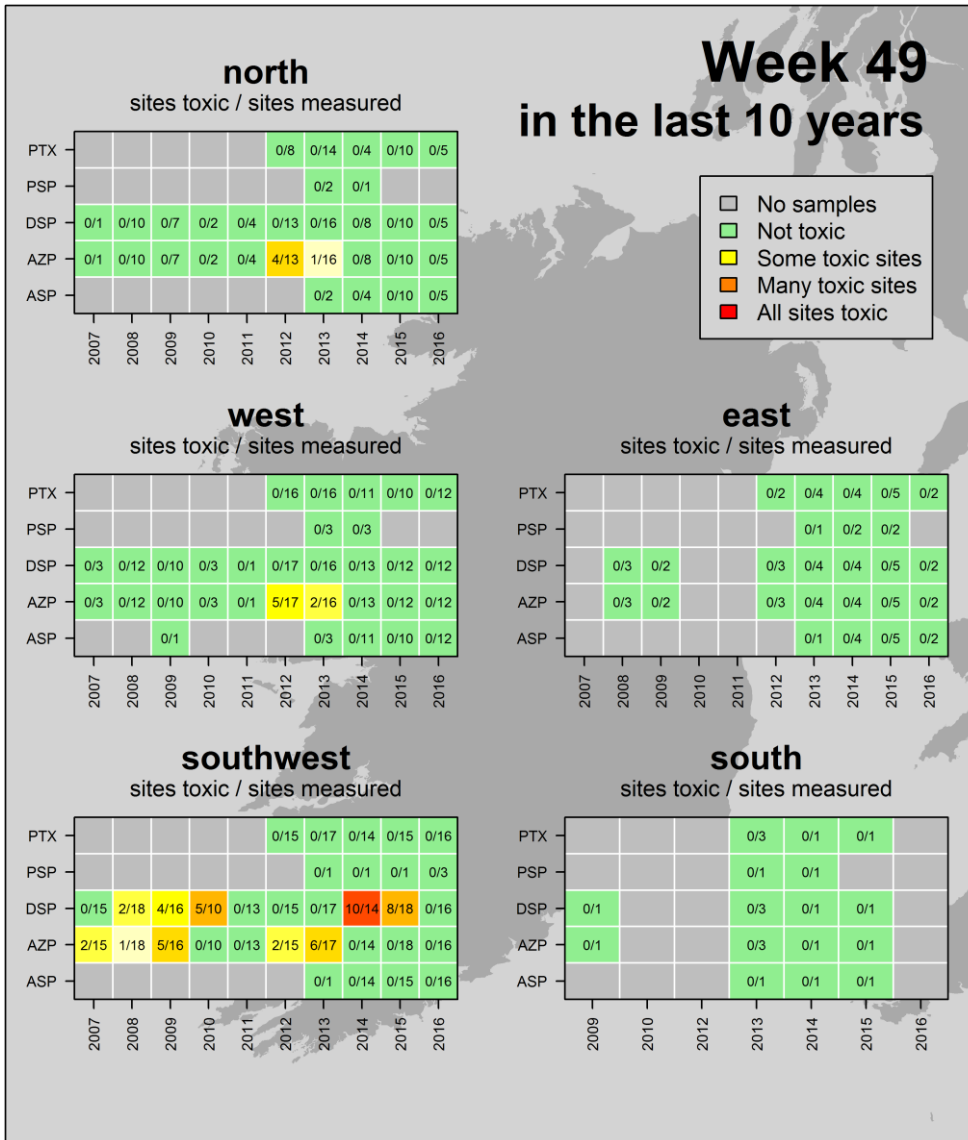
AZP: This is considered a high risk period for AZP. Fluctuating levels of *Azadinium* spp. continue to be observed around the coast with an increase in the SW, W and NW last week. Biotoxin levels are currently below regulatory limits.

DSP: This is historically a risk period . However, DSP has continued to fall in the SW and is well below regulatory limits, there are no *Dinophysis* spp. 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

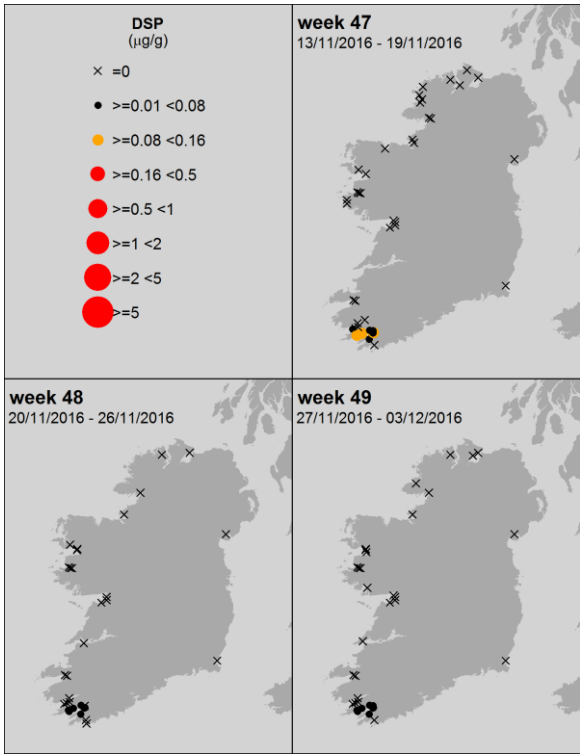
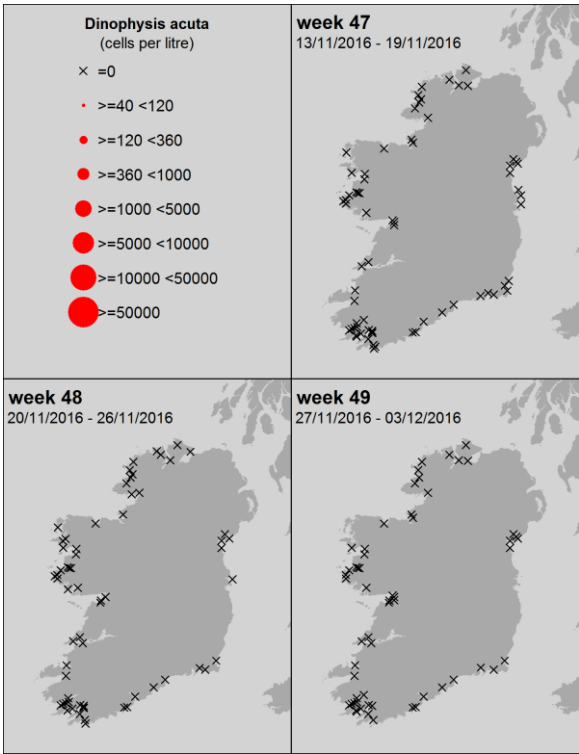
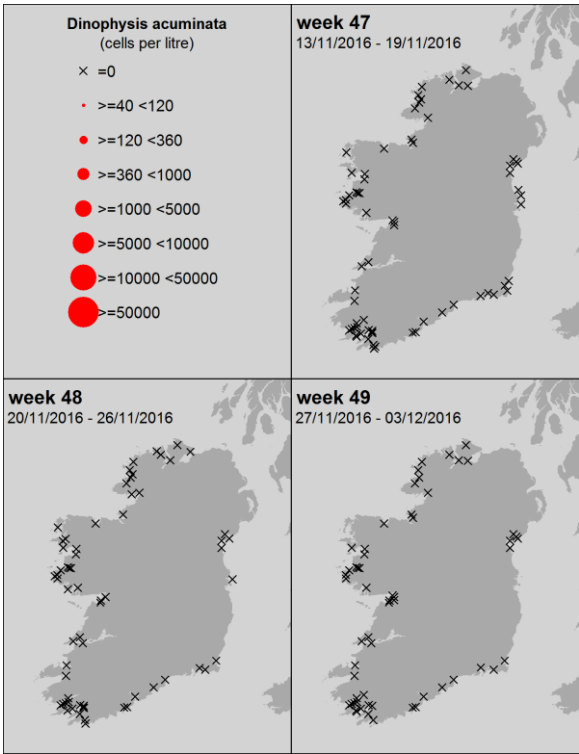
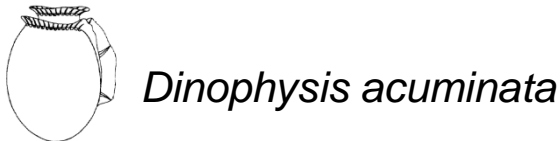
AZP events: April to December

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



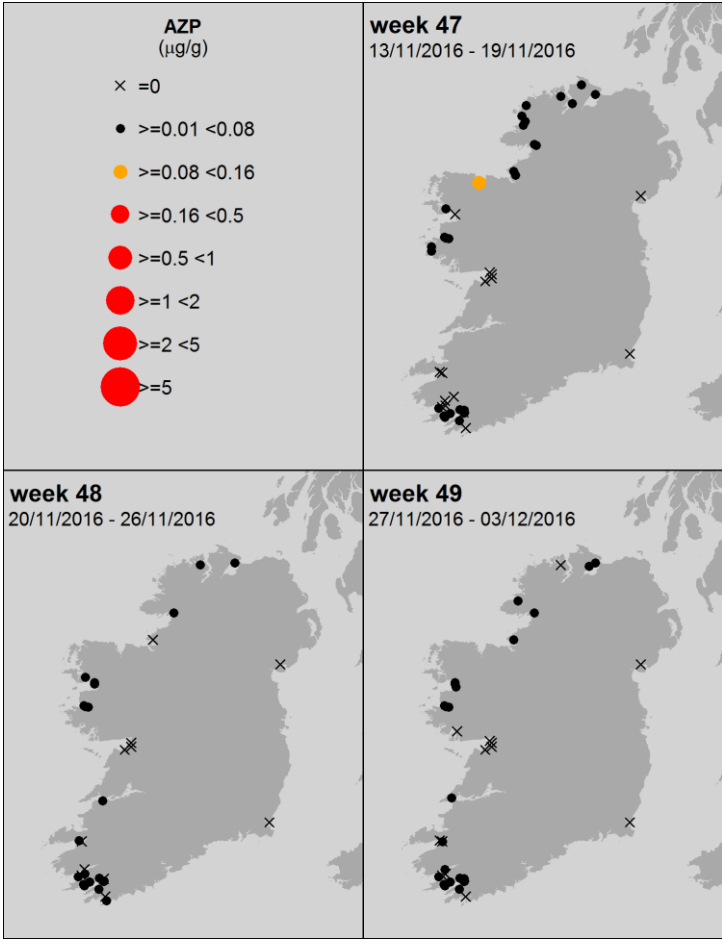
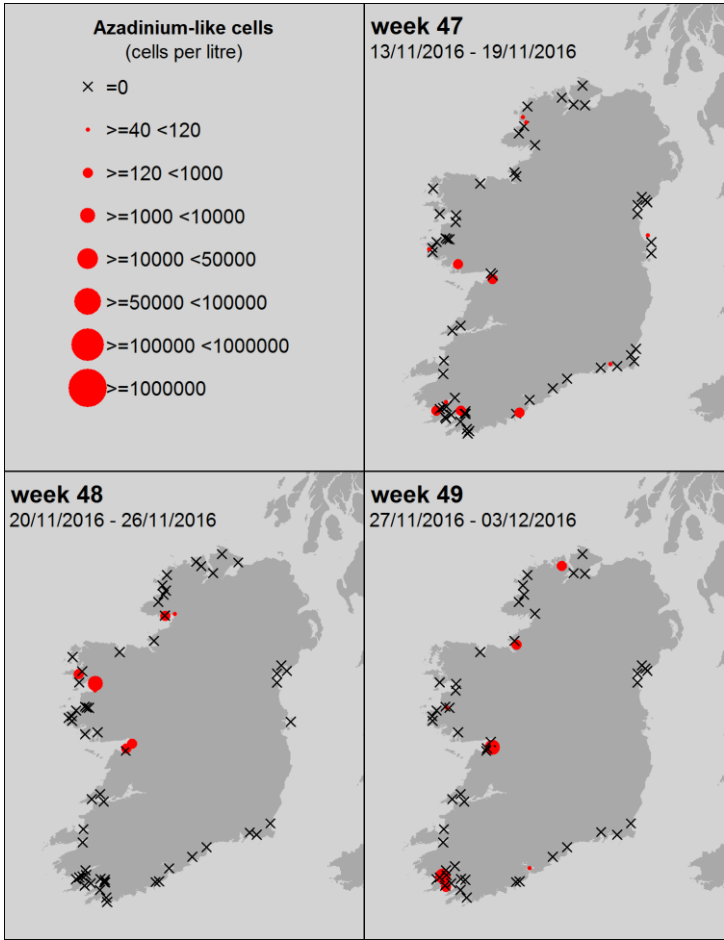
Ireland: Last 3 weeks of available National Monitoring Programme data



Azadinium – like spp.



AZP



Ireland: Last 3 weeks of available National Monitoring Programme data

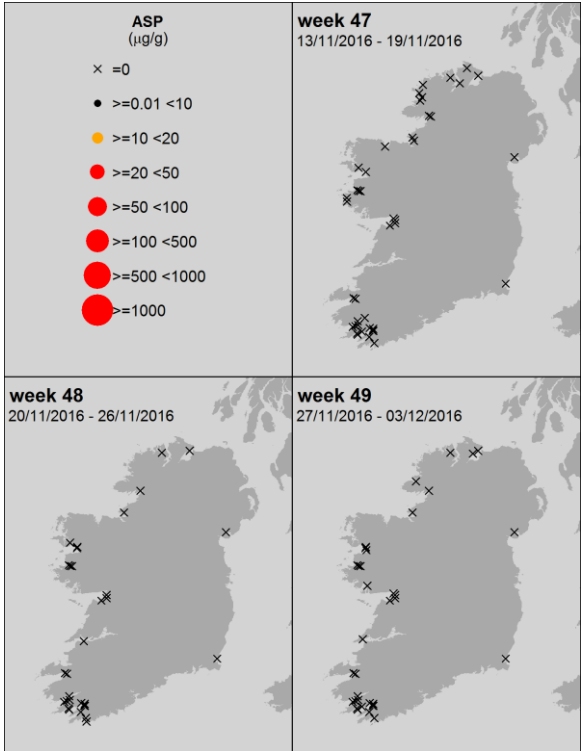
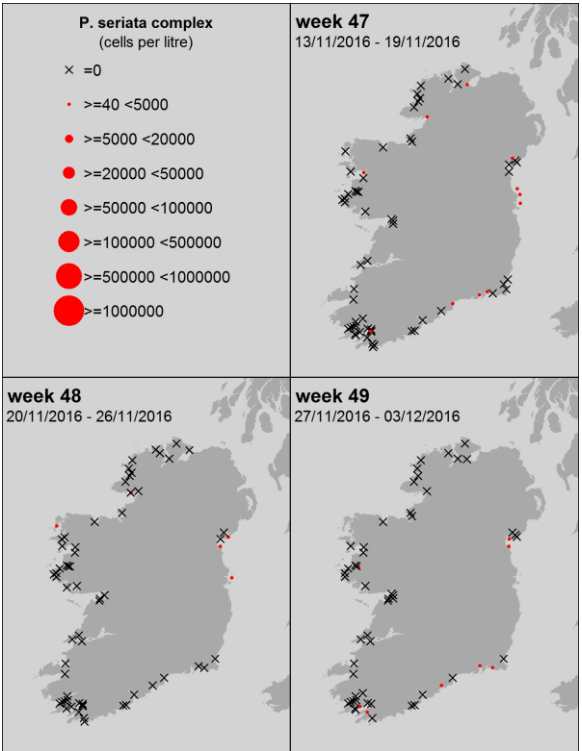
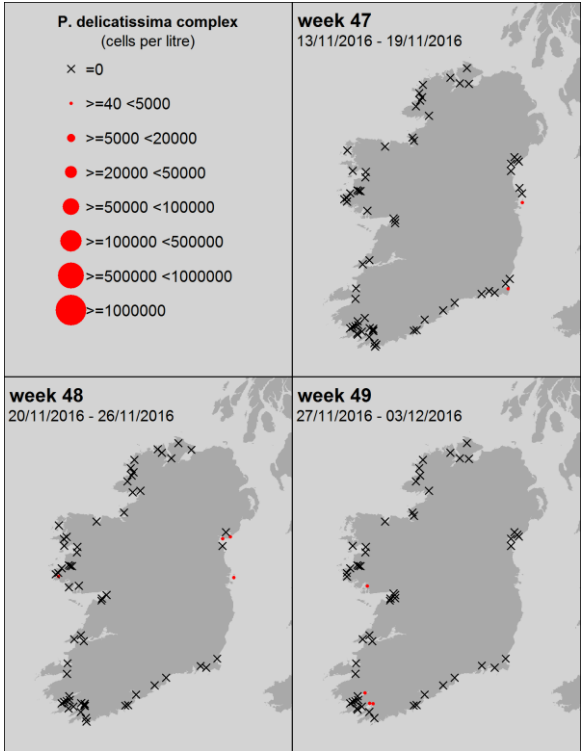
Pseudo-nitzschia spp.



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

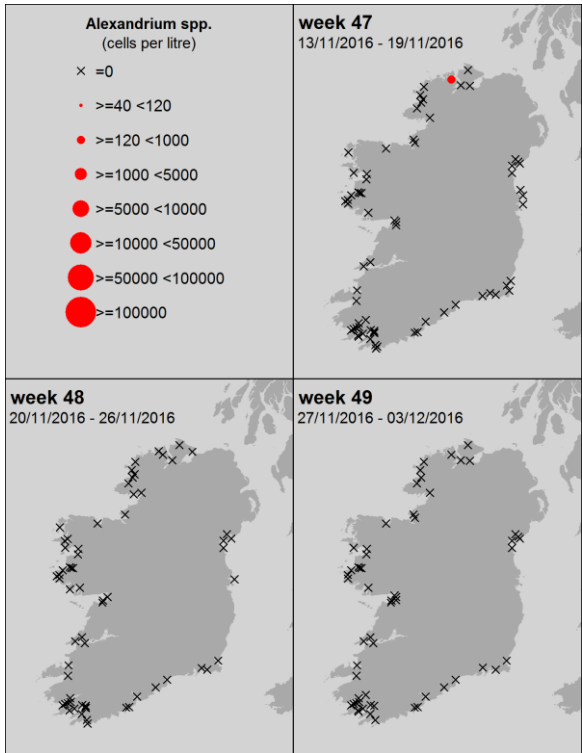


Taken from the literature: Of the 4 species (*P. fraudulenta*, *P. australis*, *P. pungens* and *P. delicatissima*) from Irish waters, tested for ASP toxins in culture work, only one, *P. australis* (from the “*P. seriata*” group) was toxic.

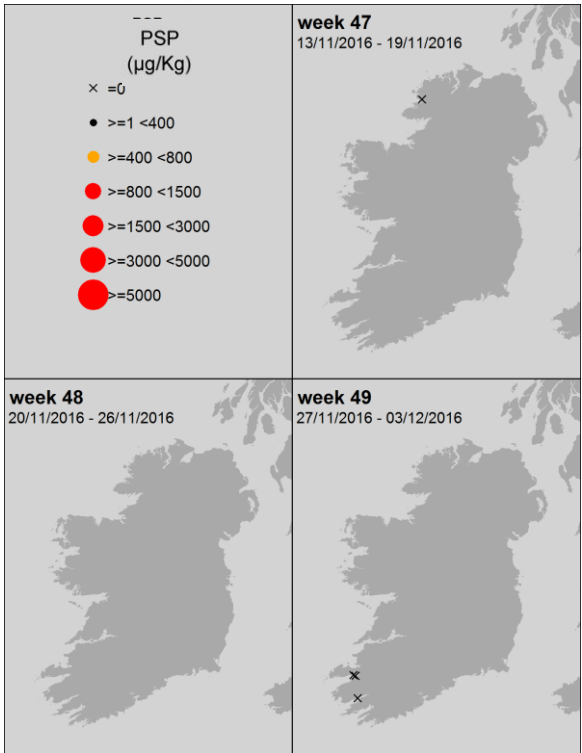
Ireland: Last 3 weeks of available National Monitoring Programme data



Alexandrium spp.



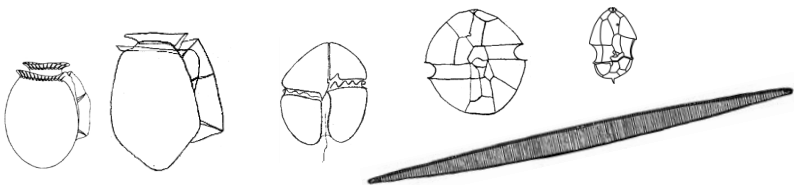
PSP



Ireland HAB & Biotoxin temporal trends

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

Ireland: Biotoxins



Toxin groups

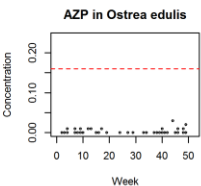
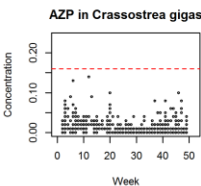
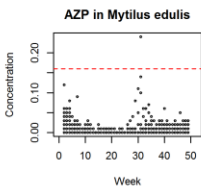
mussels

oysters

oysters

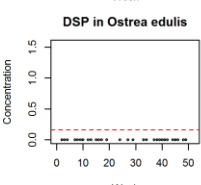
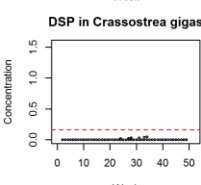
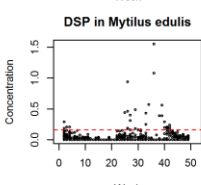
AZP

AZaspiracid
Poisoning



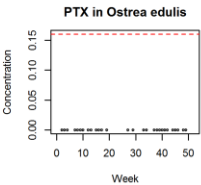
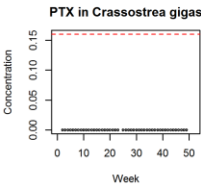
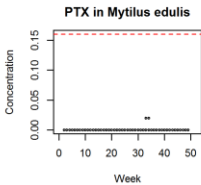
DSP

Diarrhetic
Shellfish
Poisoning



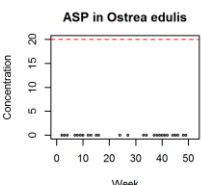
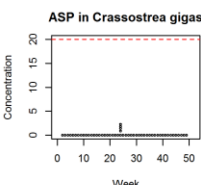
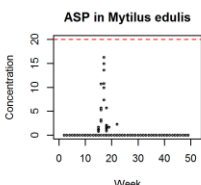
PTX

Pectenotoxin



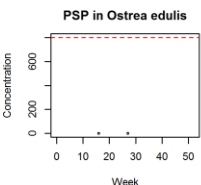
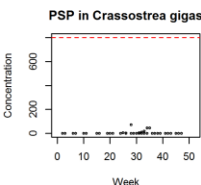
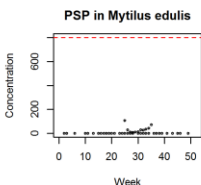
ASP

Amnesic
Shellfish
Poisoning

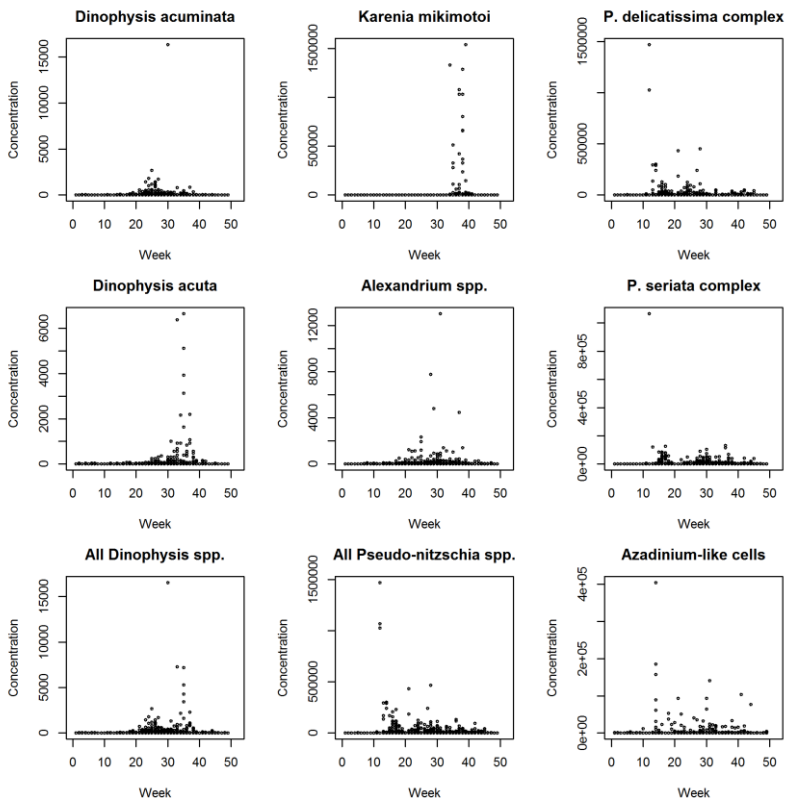


PSP

Paralytic
Shellfish
Poisoning



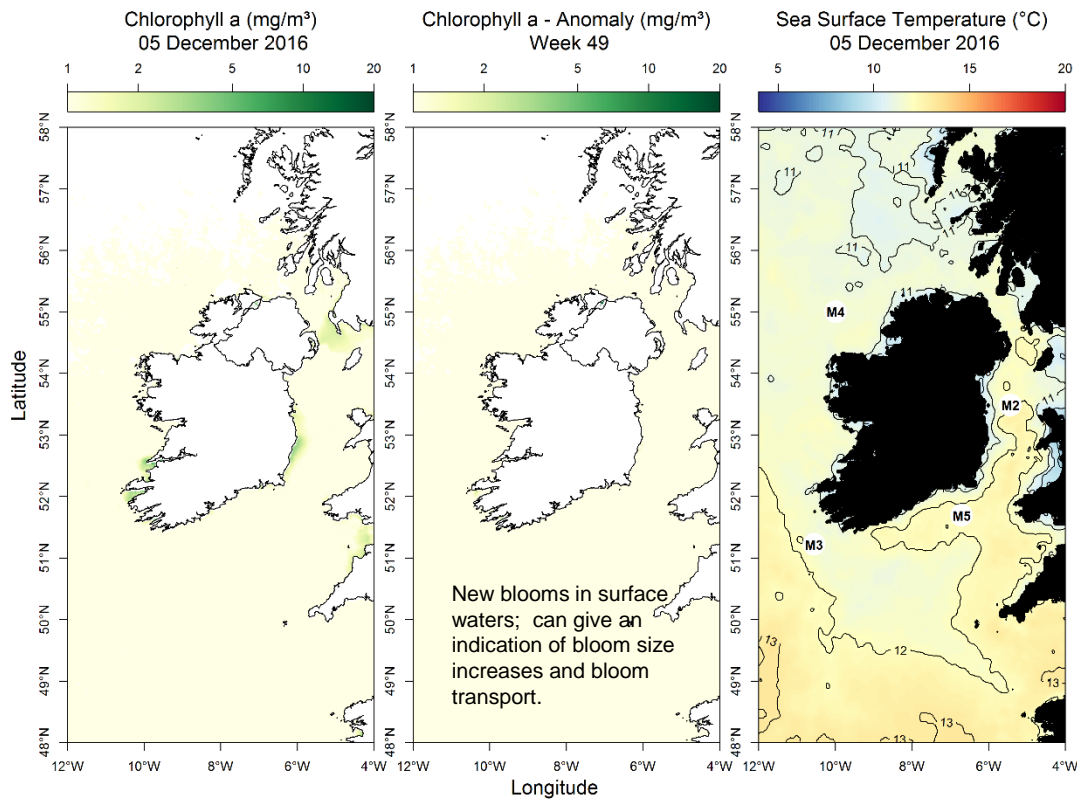
Ireland: HABs



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

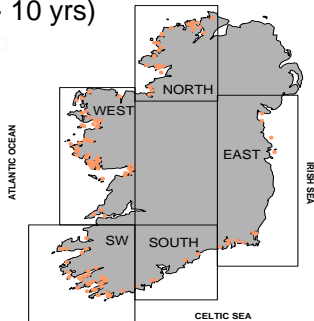
Regulatory limit = ■■■■■■

Most up to date available satellite data



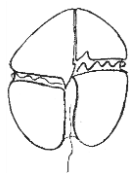
SST (°C) anomaly for last week:
Data taken from the Irish data buoy network where the anomaly is the weekly difference in SST compared to the long term mean (~ 10 yrs)

- NW coast (M4) above average by 0.46 °C
- SW coast (M3) above average by 0.04 °C
- SE coast (M5) above average by 0.66 °C



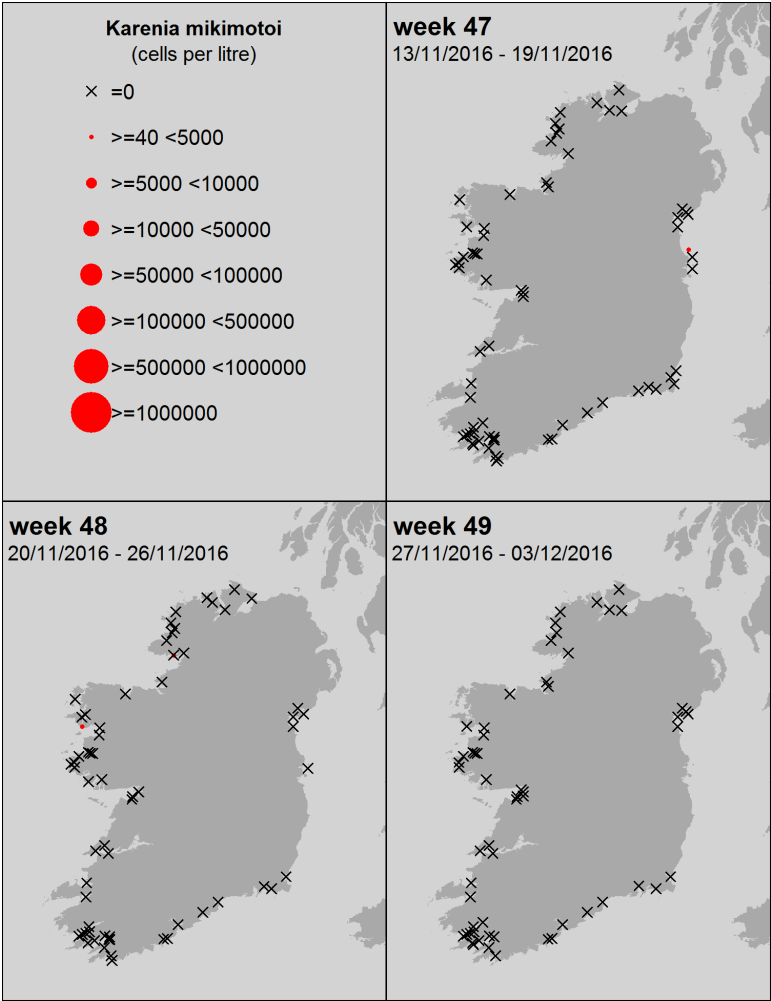
What phytoplankton were blooming at inshore coastal sites last week?

Region	Species	Rounded Count
east	Centric Diatom	33000
east	<i>Skeletonema</i> spp.	6000
east	Pennate diatom	4000
east	<i>Paralia</i> spp.	2000
east	<i>Thalassiosira</i> spp.	2000
north	Pennate diatom	23000
north	<i>Asterionellopsis</i> spp.	17000
north	<i>Prasinophytes</i>	4000
north	Pennate diatom 20-50µm	4000
north	<i>Cylindrotheca closterium</i> / <i>Nitzschia longissima</i>	3000
south	<i>Skeletonema</i> spp.	160000
south	<i>Odontella</i> spp.	39000
south	Pennate diatom	5000
south	<i>Leptocylindrus minimus</i>	2000
south	<i>Lauderia</i> / <i>Detonula</i> spp.	1000
southwest	<i>Prorocentrum micans</i>	6000
southwest	<i>Asterionellopsis</i> spp.	5000
southwest	<i>Thalassiosira</i> spp.	4000
southwest	<i>Thalassiosira rotula/gravida</i>	3000
southwest	<i>Azadinium</i> spp.	3000
west	<i>Cylindrotheca closterium</i> / <i>Nitzschia longissima</i>	130000
west	<i>Heterocapsa</i> spp.	23000
west	Pennate diatom	16000
west	<i>Skeletonema</i> spp.	7000
west	<i>Azadinium/heterocapsa</i> spp.	4000



Karenia mikimotoi
(old name: *Gyrodinium aureolum*)

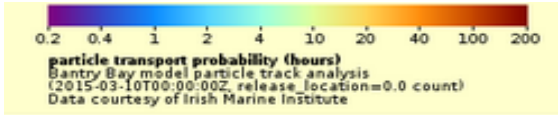
A *Karenia mikimotoi* bloom
is NOT expected this week



SOUTHWEST: Bantry Bay

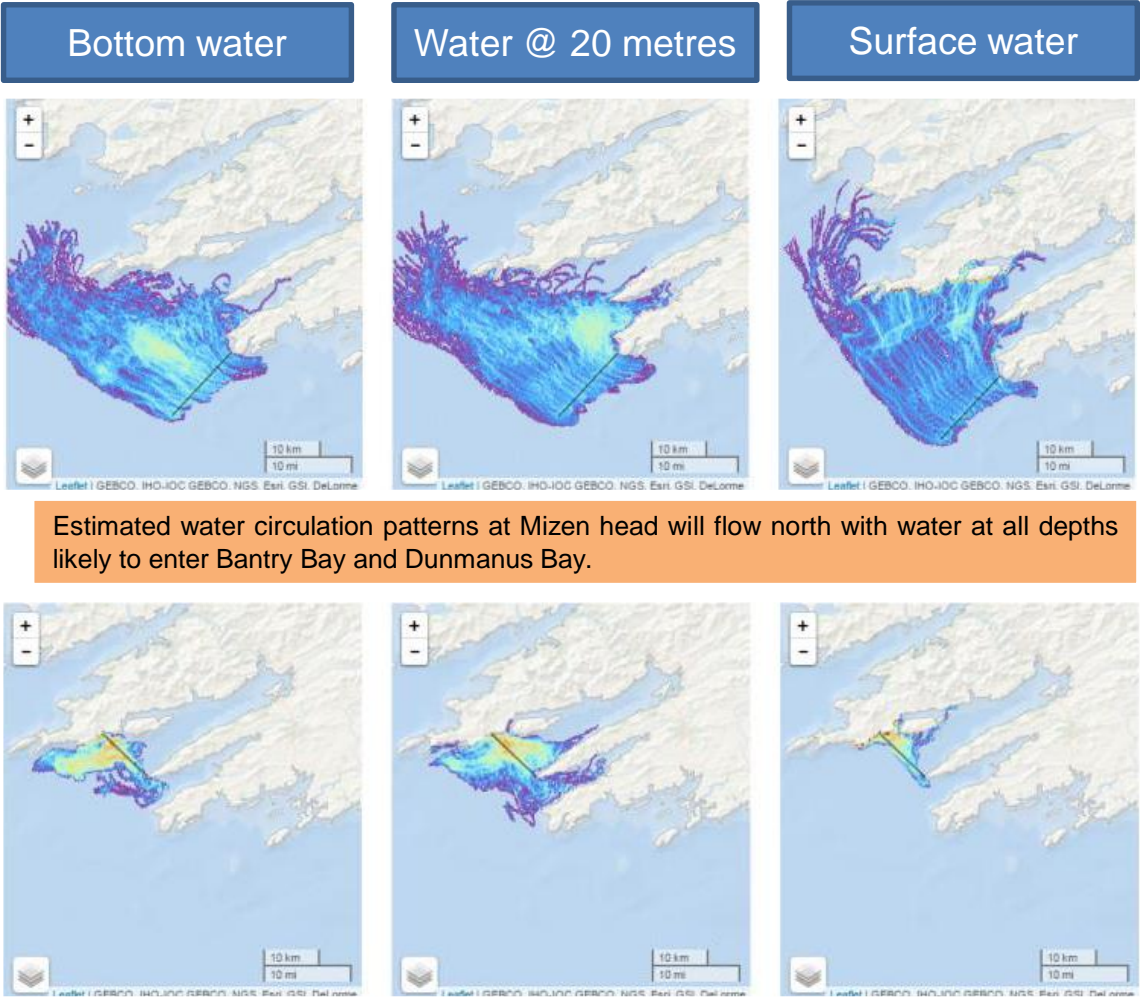
The maps show the **most likely transport pathways for the next 3 days of phytoplankton** found along the **presented transects** (black lines off Mizen Head and the Mouth of Bantry Bay) and **water depths** (bottom, 20 metres and surface)

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



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

Forecast for the next 3 days

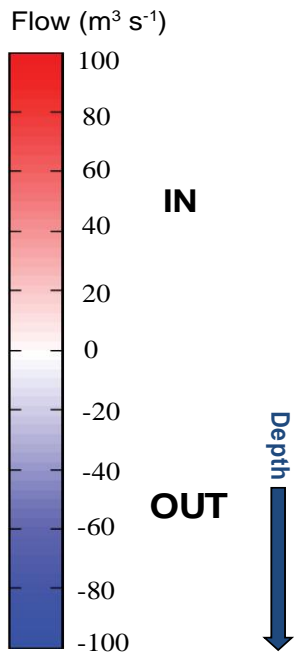


Estimated water circulation patterns at Mizen head will flow north with water at all depths likely to enter Bantry Bay and Dunmanus Bay.

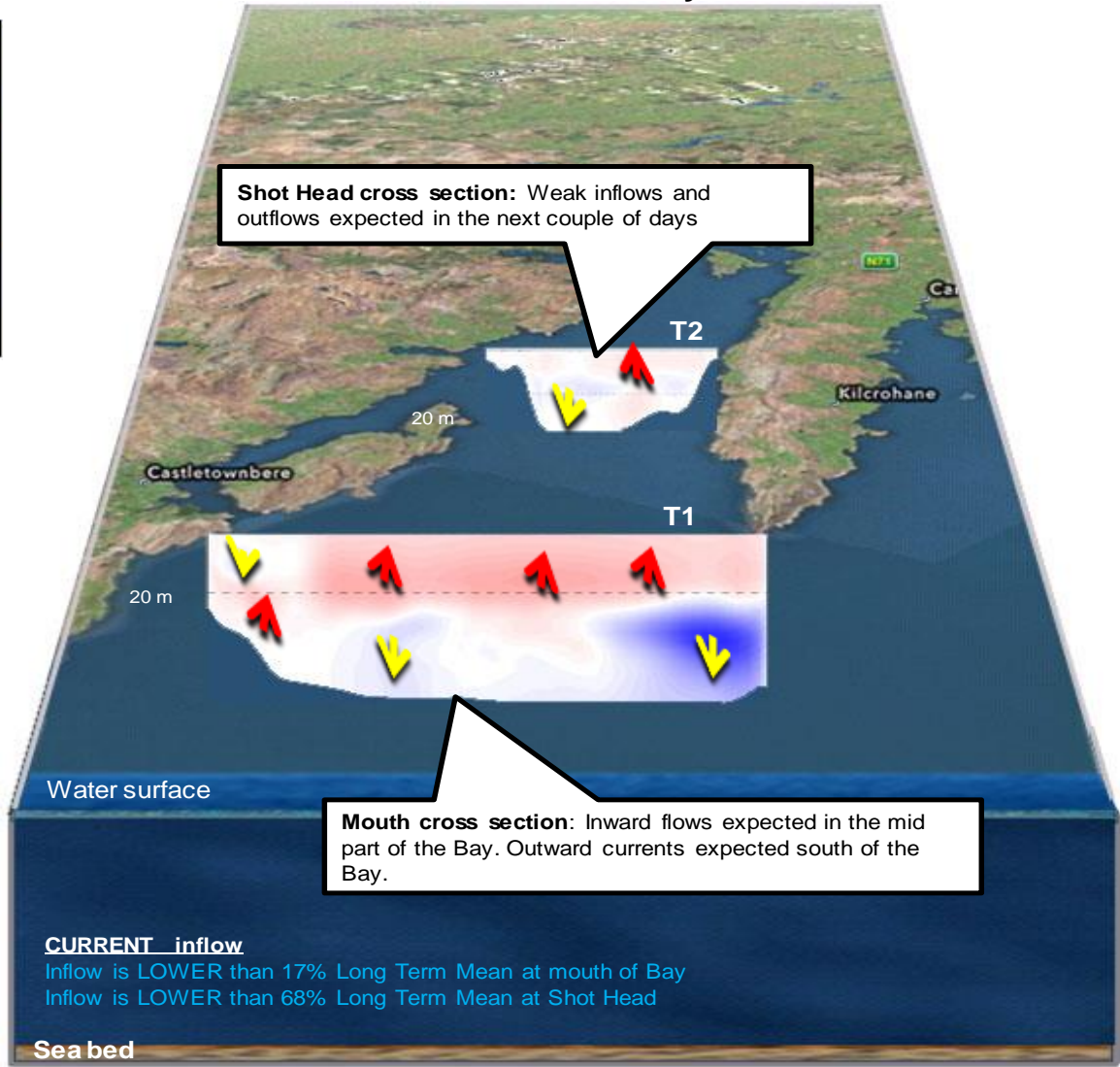
Water at depth and surface likely to enter Bantry Bay and Dunmanus Bay with bottom water and water at 20m flowing southwest.

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

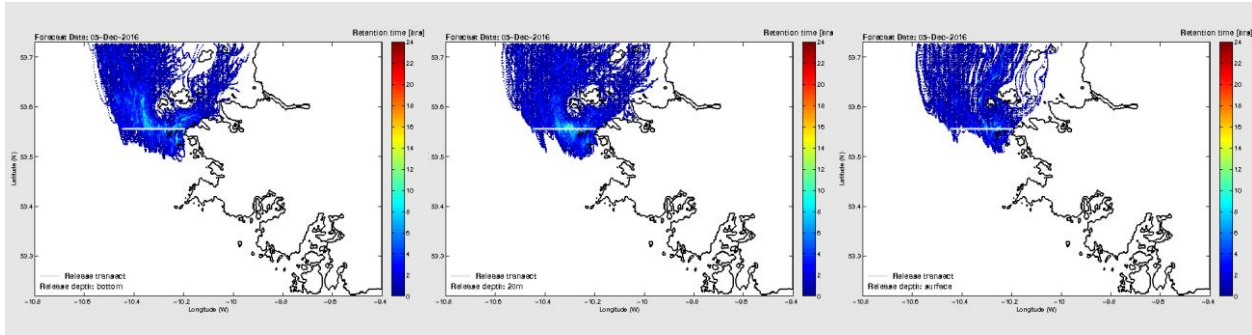
particle transport probability (hours)
Bantry Bay model particle track analysis
(2015-03-10T00:00:00Z, release_location=0.0 count)
Data courtesy of Irish Marine Institute

Forecast for the next 3 days

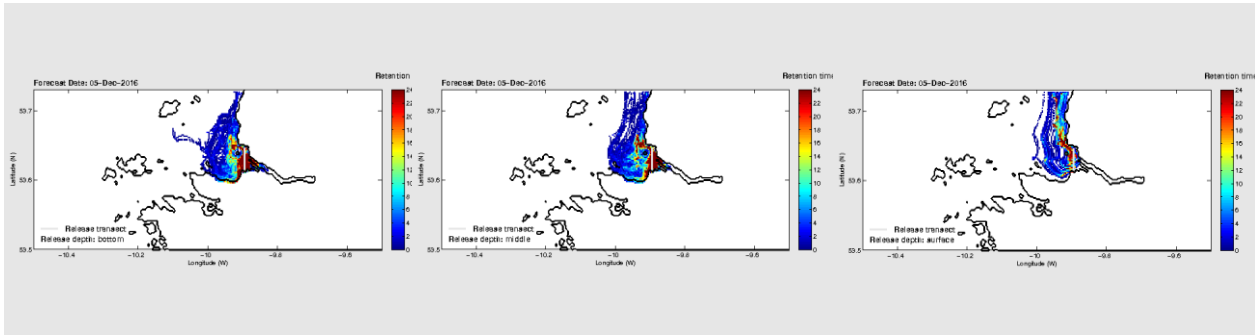
Bottom water

Water @ 20 metres

Surface water



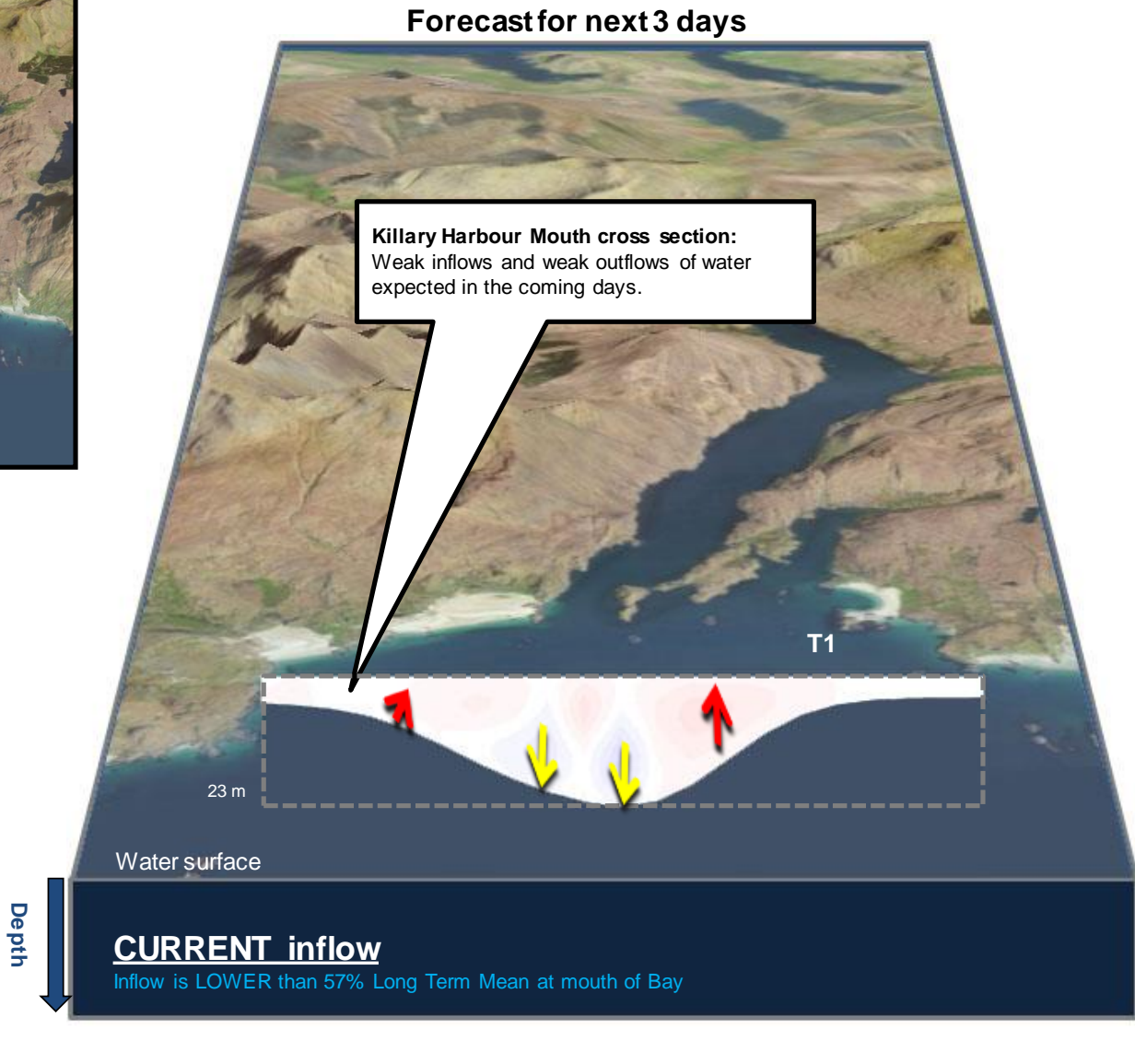
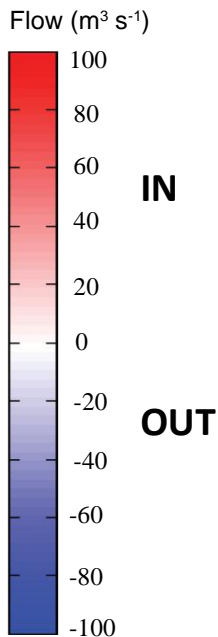
Water flows off the west coast will flow in a northward direction and offshore waters will likely reach the mouth of Killary Harbour.



Inward water flows at the mouth of Killary Harbour will be somewhat restricted. However, some bottom to mid-water flows are expected to reach Killary middle.

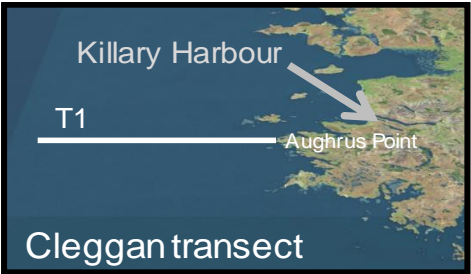
Killary Harbour

3 day estimated water flows at the mouth of Killary Harbour

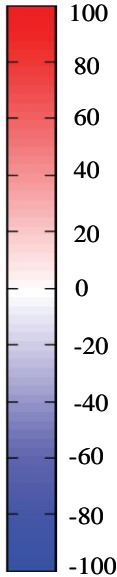


West Coast - 3 day estimated water flows along a transect off Aughrus Point

Forecast for next 3 days



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



northward
flow

southward
flow

Depth

