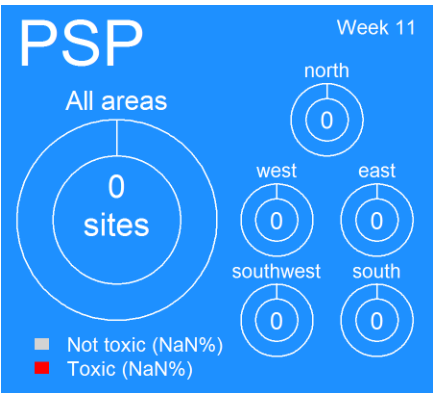
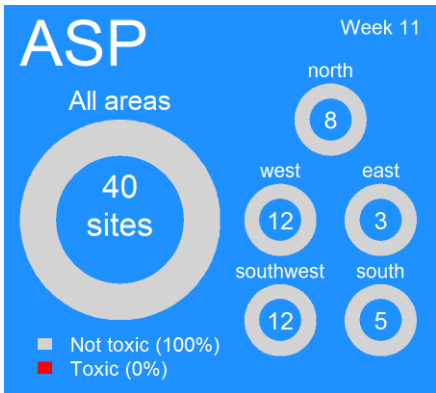
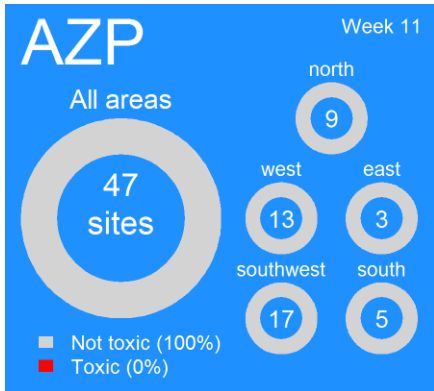
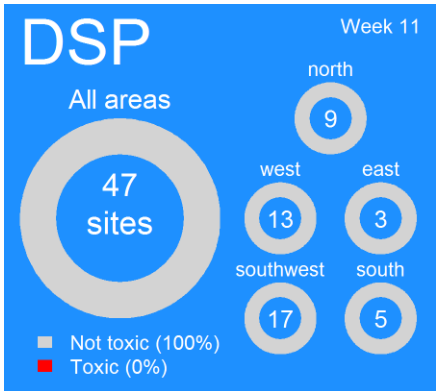


Ireland: Current Conditions

Shellfish biotoxin report (last week)



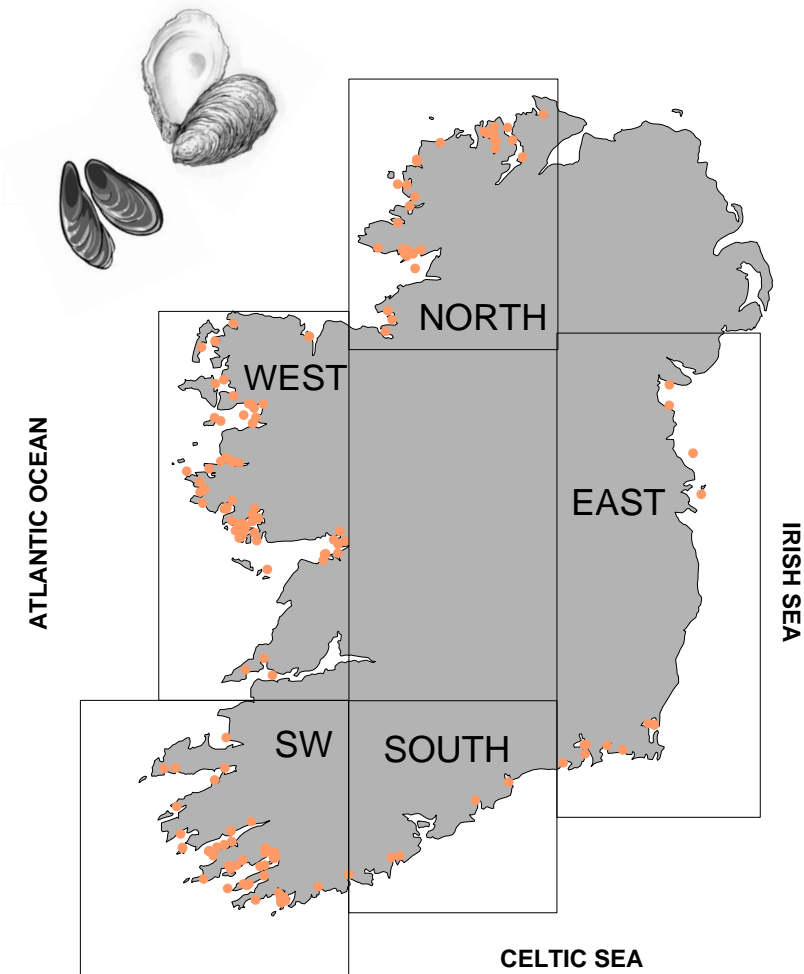
EU Regulatory Limit:

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



● = aquaculture site

Ireland: Predictions

Prediction for this week:

ASP event: Moderate to high.

AZP event: Low

DSP event: Low

PSP event: Low

Why do we think this?

ASP: *Pseudo-nitzschia* cell densities are still low but increasing. This is the beginning of the historical trend period of occurrence so moderate caution is advised in case of sudden rises.

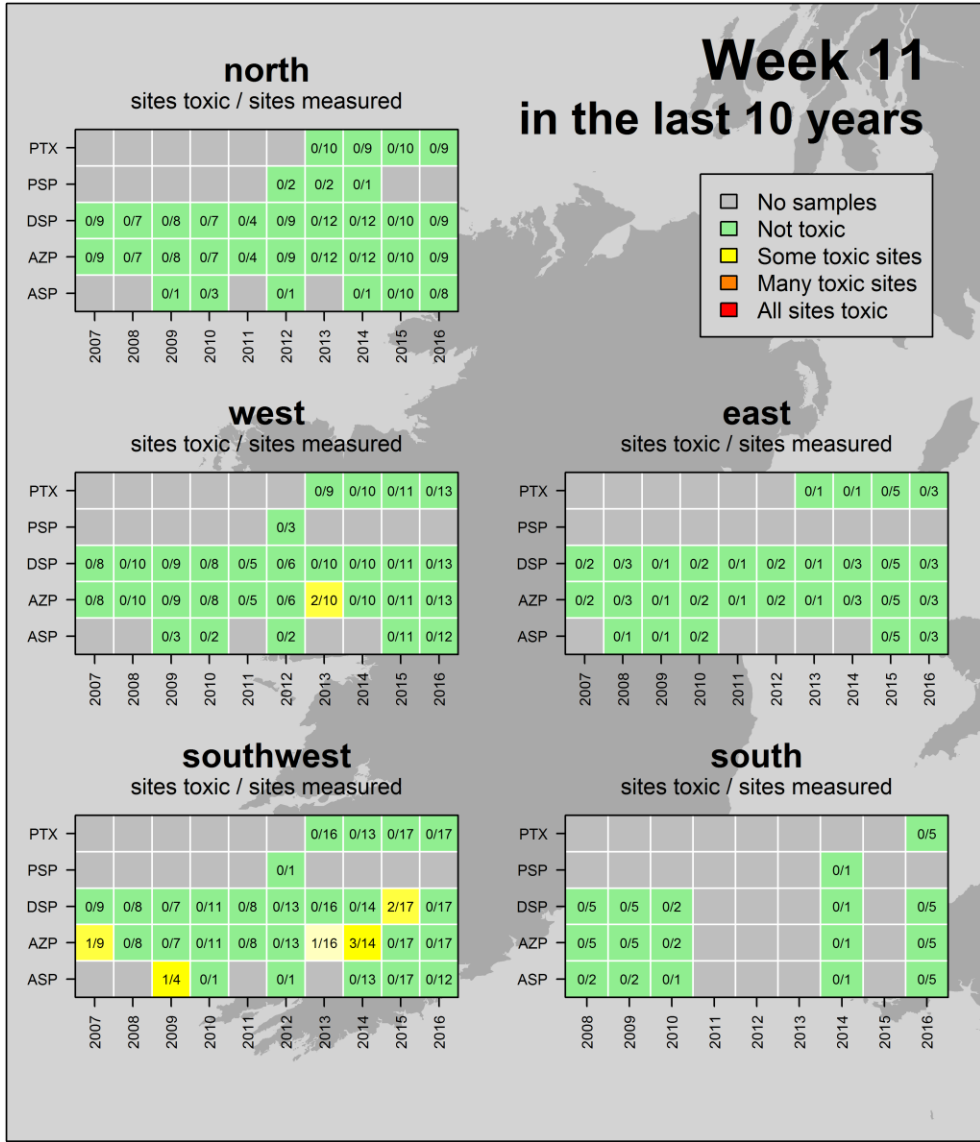
AZP: Biotoxins have remained below EU regulatory levels. However, *Azadinium* - like cells are present at some sites and are increasing. Historical data demonstrates that this biotoxin(s) can be present in shellfish at this time of year.

DSP: Low to negligible levels of *Dinophysis* spp. and biotoxins in most sites except “residual” sites in SW. *Dinophysis* spp. have not been recorded in recent weeks. The very low background biotoxin levels detected in the SW shellfish are most probably due to winter carry over and will be flushed out as the growth season continues.

PSP: Toxicity issues are not expected at this time in the year. Associated toxic phytoplankton are not blooming.

Ireland: Historic Conditions

A look back at how last weeks biotoxin results compares to other years



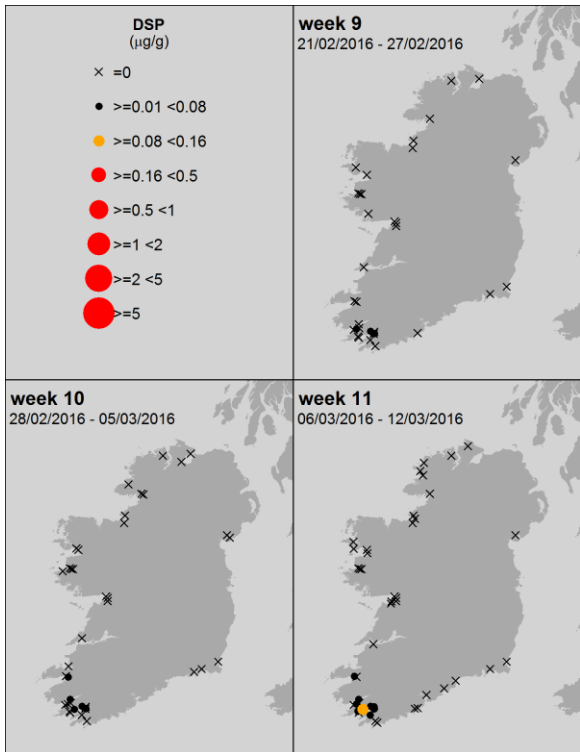
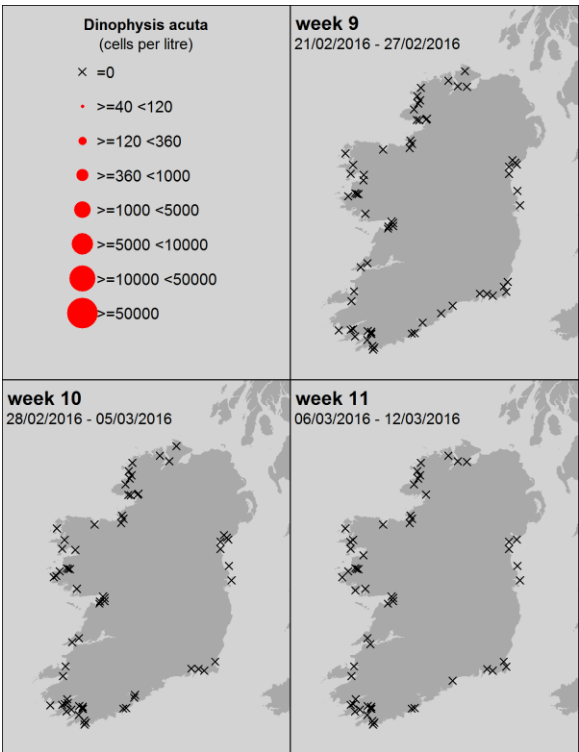
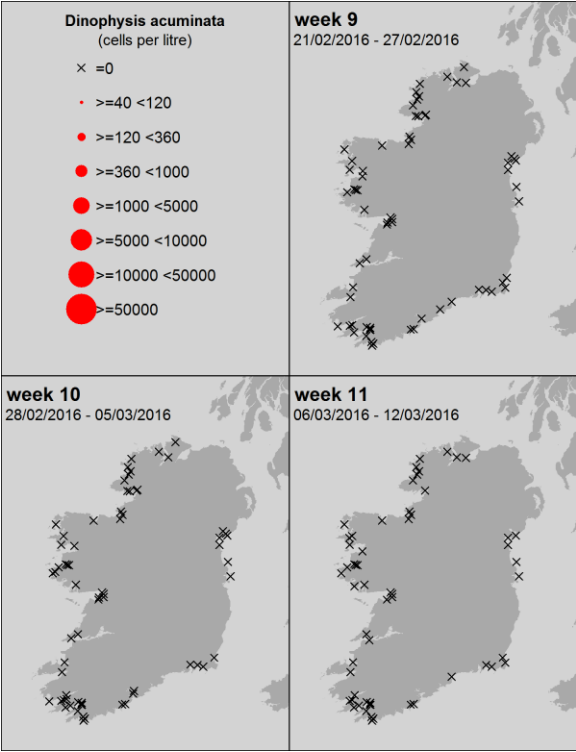
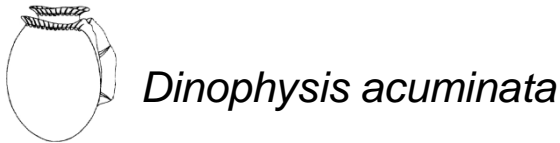
Ireland HISTORIC TRENDS

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



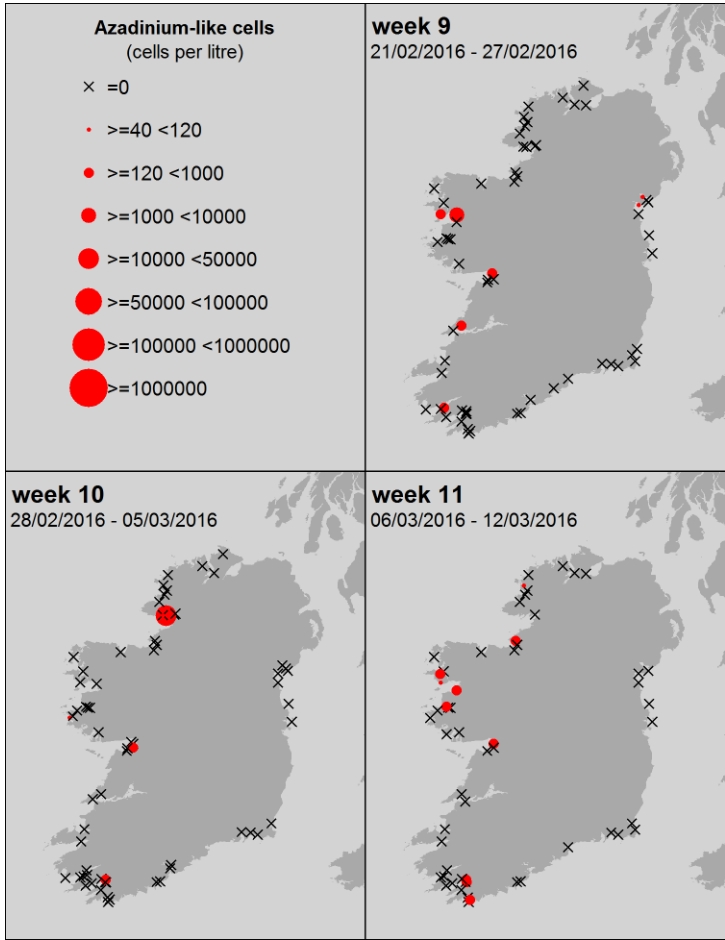
Ireland: Last 3 weeks of available National Monitoring Programme data



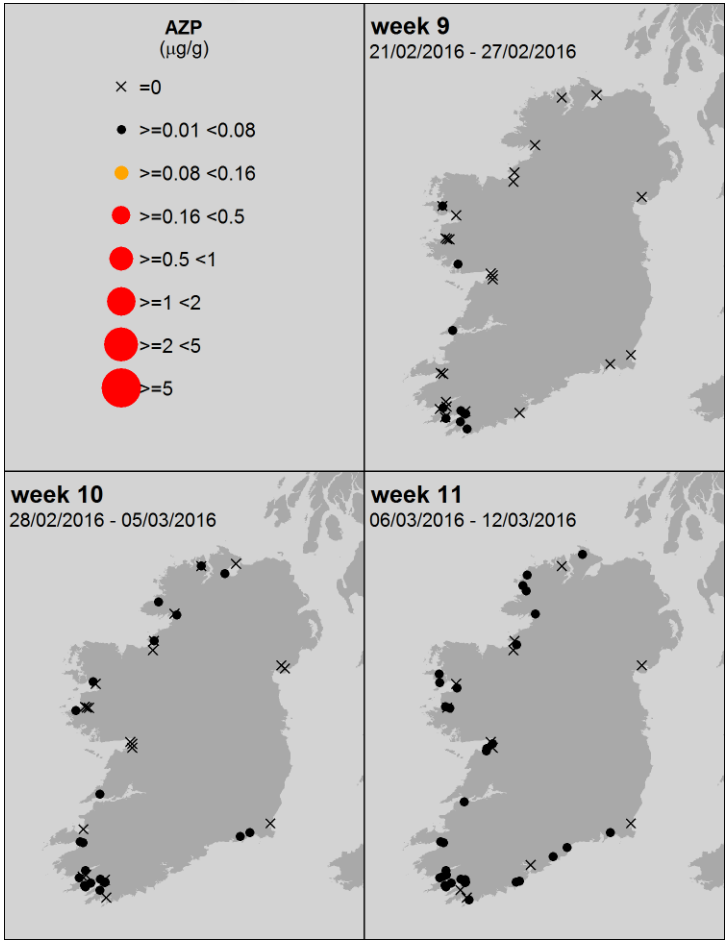
Ireland: Last 3 weeks of available National Monitoring Programme data



Azadinium – like spp.



AZP



Ireland: Last 3 weeks of available National Monitoring Programme data

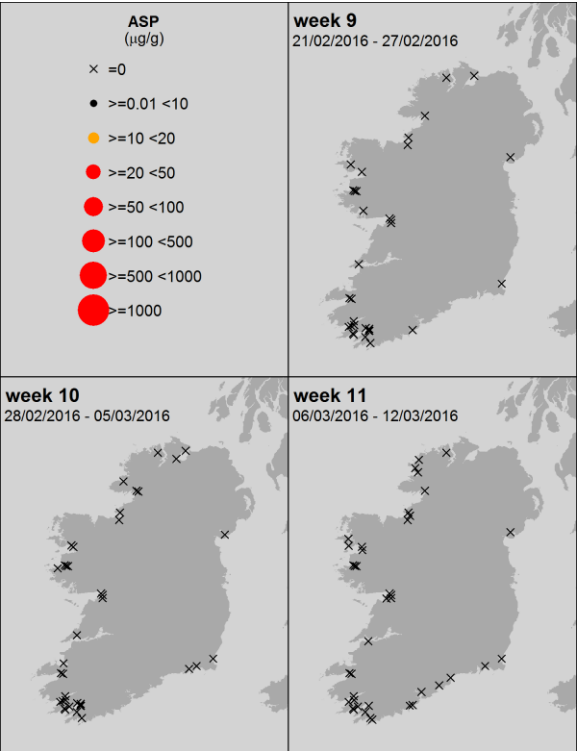
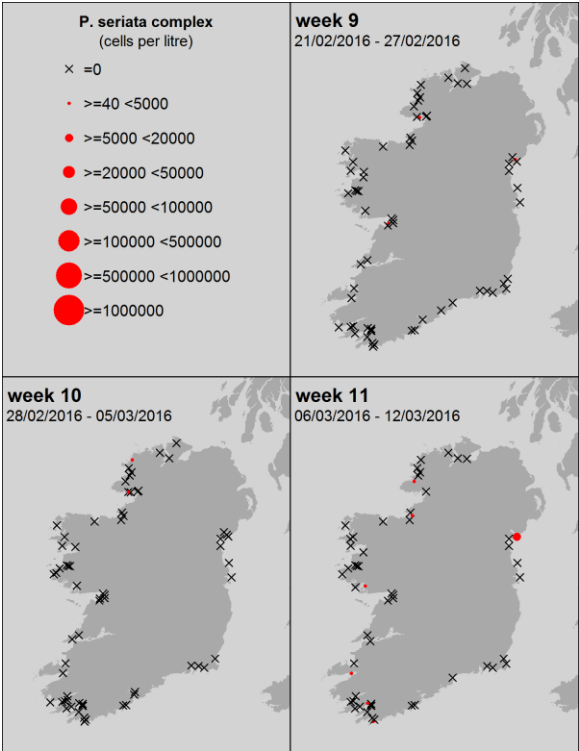
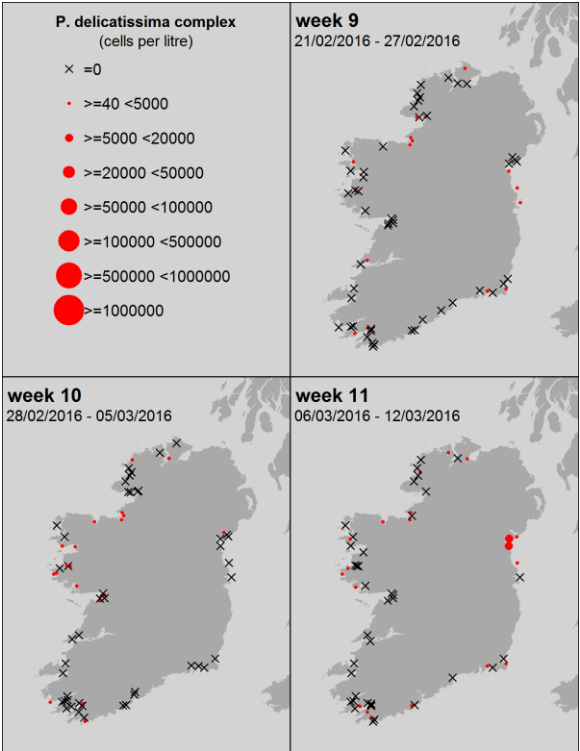
Pseudo-nitzschia spp.



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.

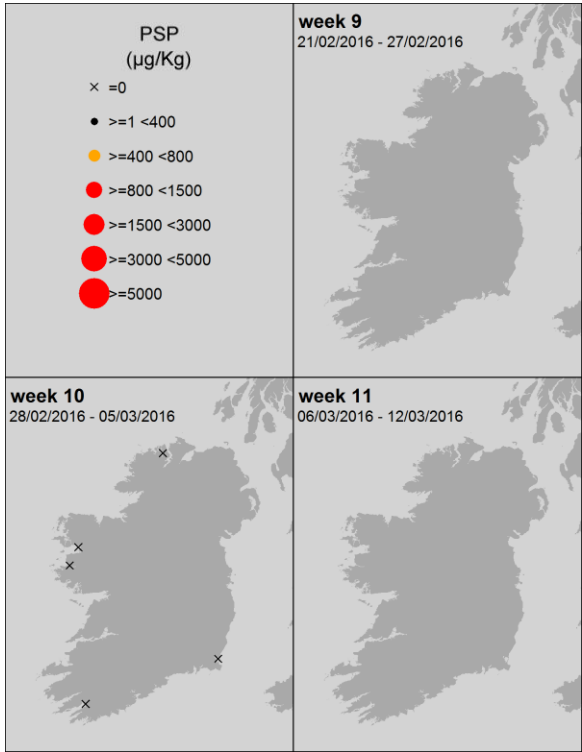
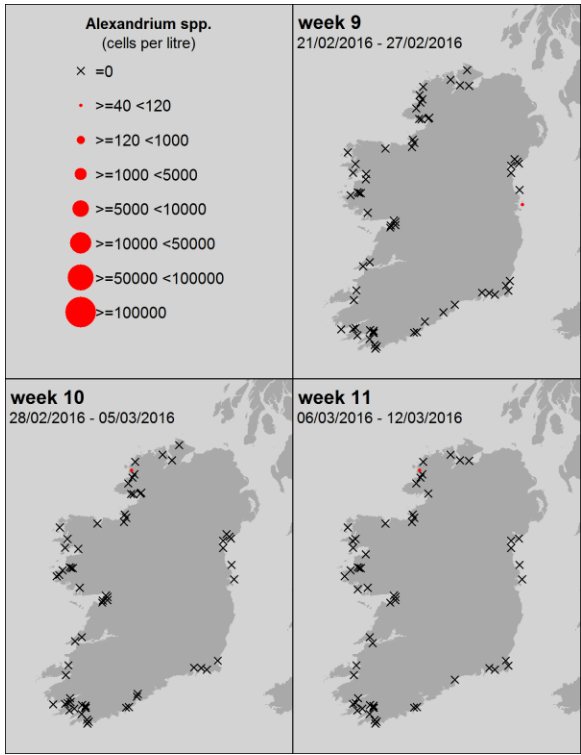
Ireland: Last 3 weeks of available National Monitoring Programme data



Alexandrium spp.



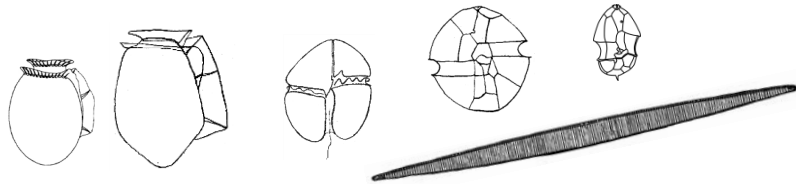
PSP



Ireland HAB & Biotoxin temporal trends

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

Ireland: Biotoxins



Toxin groups

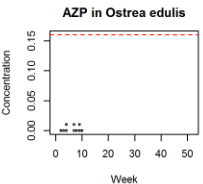
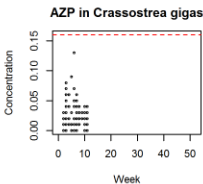
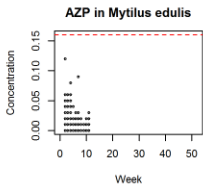
mussels

oysters

oysters

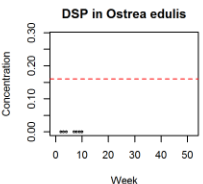
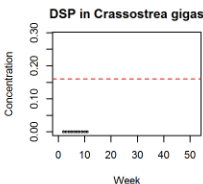
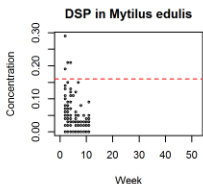
AZP

AZaspiracid
Poisoning



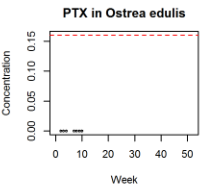
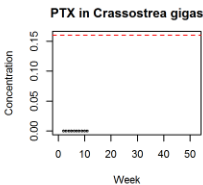
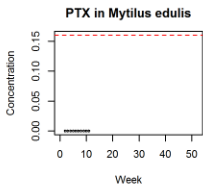
DSP

Diarrhetic
Shellfish
Poisoning



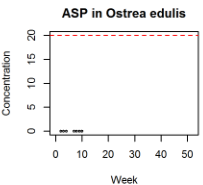
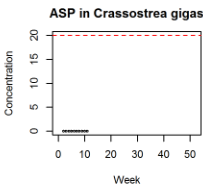
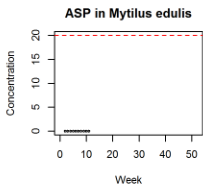
PTX

Pectenotoxin



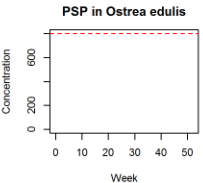
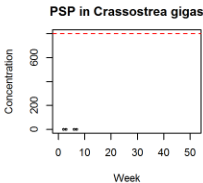
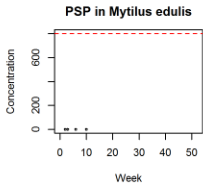
ASP

Amnesic
Shellfish
Poisoning

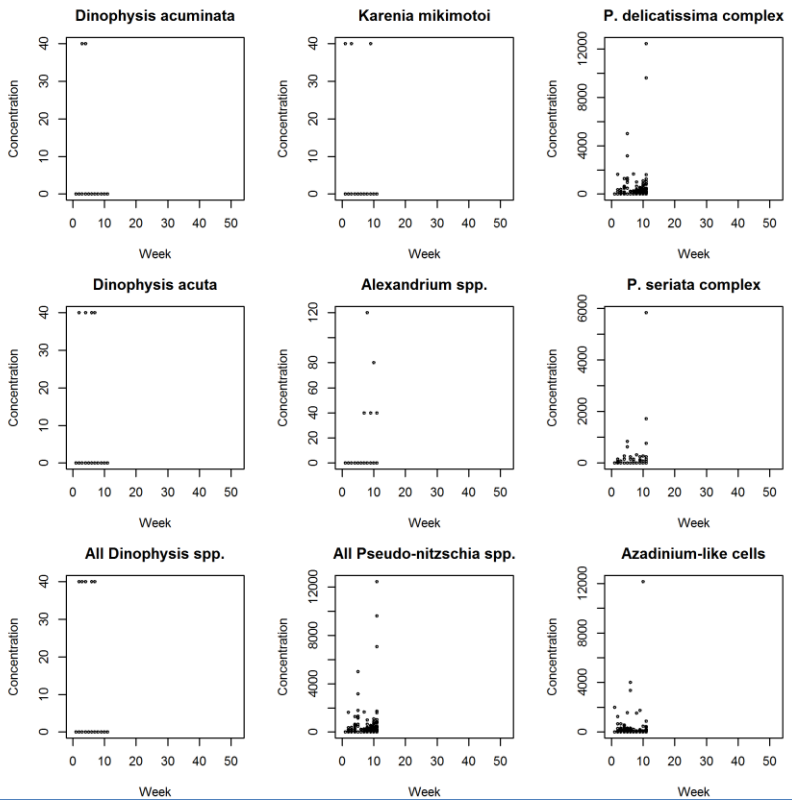


PSP

Paralytic
Shellfish
Poisoning



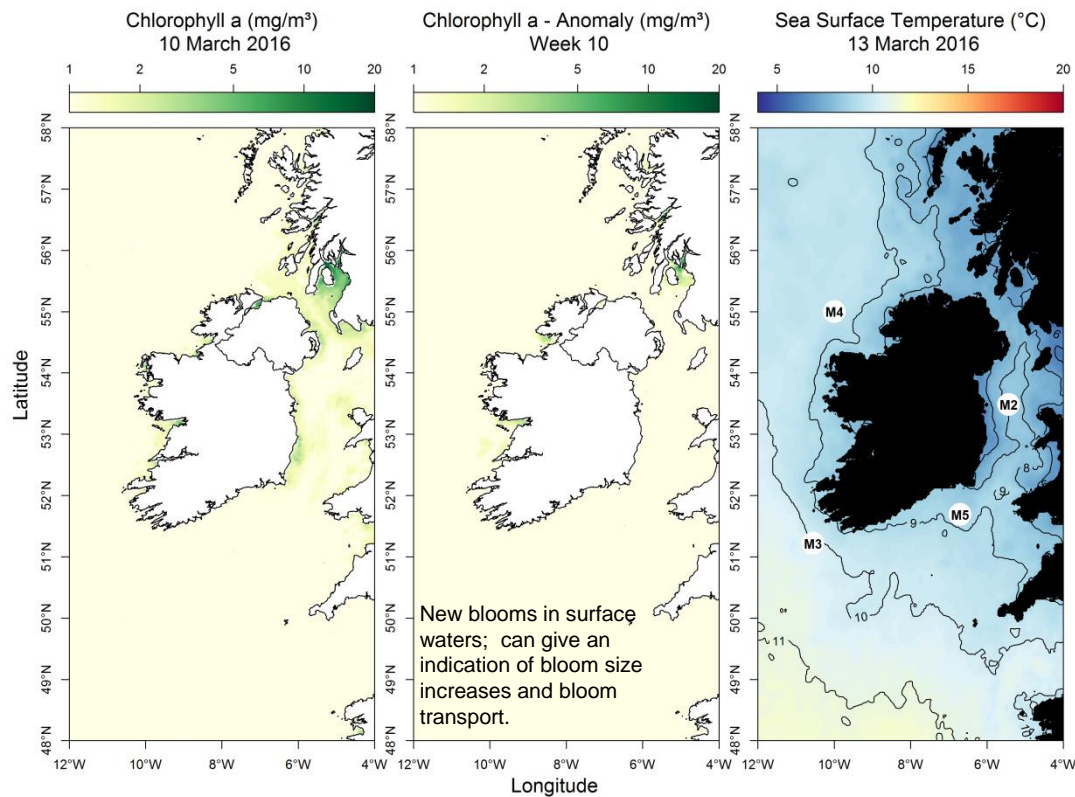
Ireland: HABs



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

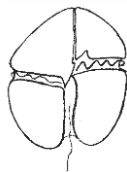


SST (°C) anomaly for last week:
Data taken from the Irish data buoy network where the anomaly is the weekly difference in SST compared to the long term mean (~ 10 yrs)

- NW coast (M4) Below average by 0.88 °C
- SW coast (M3) Offline
- SE coast (M5) Offline

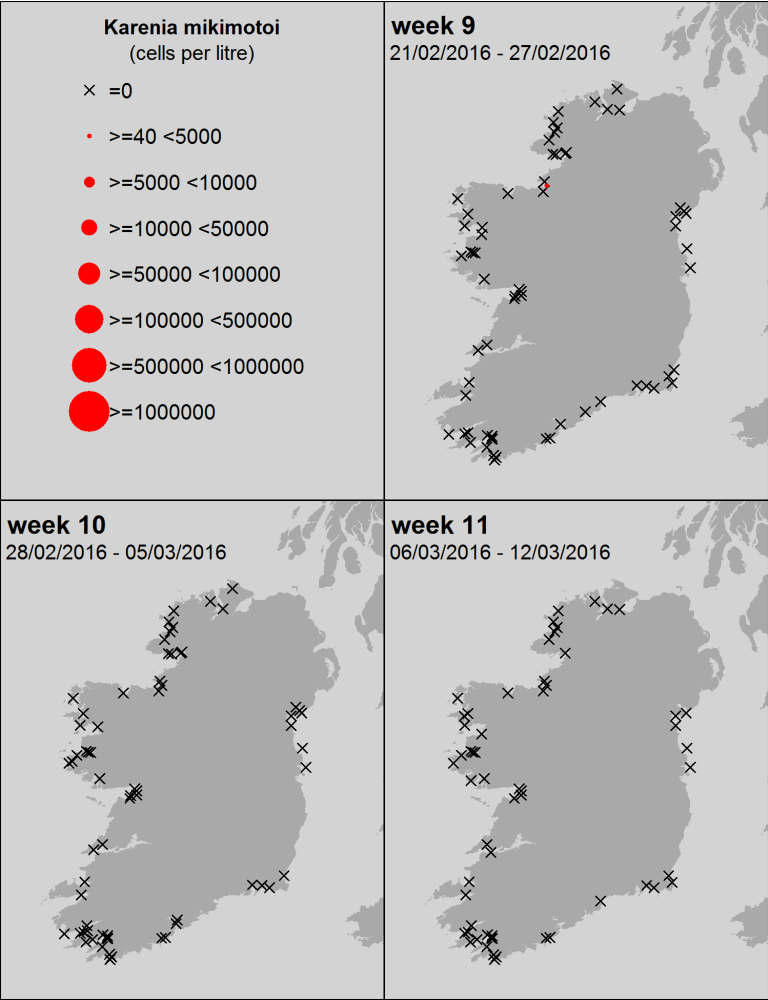
What phytoplankton were blooming at inshore coastal sites last week?

Region	Predominant Phytoplankton (most abundant taxa)	Cells/L (rounded)
north:	Diatoms:	
	<i>Skeletonema</i> spp.	477,000
	<i>Cylindrotheca closterium</i> / <i>Nitzschia longissima</i>	37,000
	Dinoflagellates:	
west:	<i>Scrippsiella</i> spp.	24,000
	Diatoms:	
	<i>Skeletonema</i> spp.	238,000
	<i>Cylindrotheca closterium</i> / <i>Nitzschia longissima</i>	98,000
SW:	Pennate diatom	81,000
	Diatoms:	
	<i>Leptocylindrus minimus</i>	581,000
	<i>Paralia sulcata</i>	5,000
	<i>Cylindrotheca closterium</i> / <i>Nitzschia longissima</i>	3,000
	<i>Lauderia</i> / <i>Detonula</i> sp	2,000
south:	Others:	
	Tintinnid	2,000
	Diatoms:	
	<i>Skeletonema</i> spp.	10,000
	<i>Paralia sulcata</i>	5,000
	<i>Cylindrotheca closterium</i> / <i>Nitzschia longissima</i>	3,000
east:	<i>Lauderia</i> / <i>Detonula</i> sp	2,000
	Others:	
	Tintinnid	2,000
	Diatoms:	
	<i>Skeletonema</i> spp.	327,000
	<i>Thalassionema</i> spp.	163,000
	Pennate diatom	51,000
	<i>Pseudo-nitzschia delicatissima</i> complex	10,000
	<i>Chaetoceros</i> (<i>Hyalochaete</i>) spp.	5,000



Karenia mikimotoi
(old name: *Gyrodinium aureolum*)

A *Karenia mikimotoi* bloom
is NOT expected this week



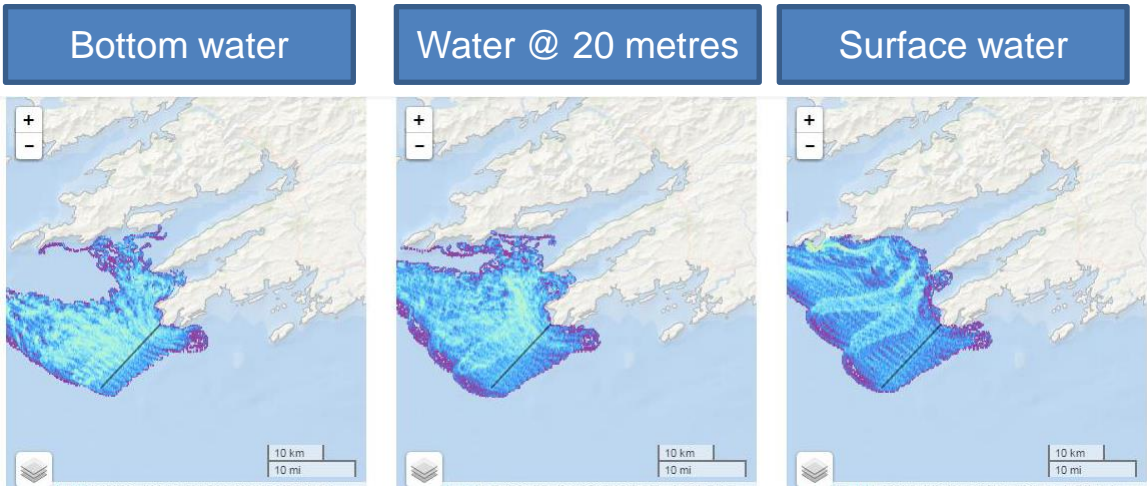
SOUTHWEST: Bantry Bay

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)

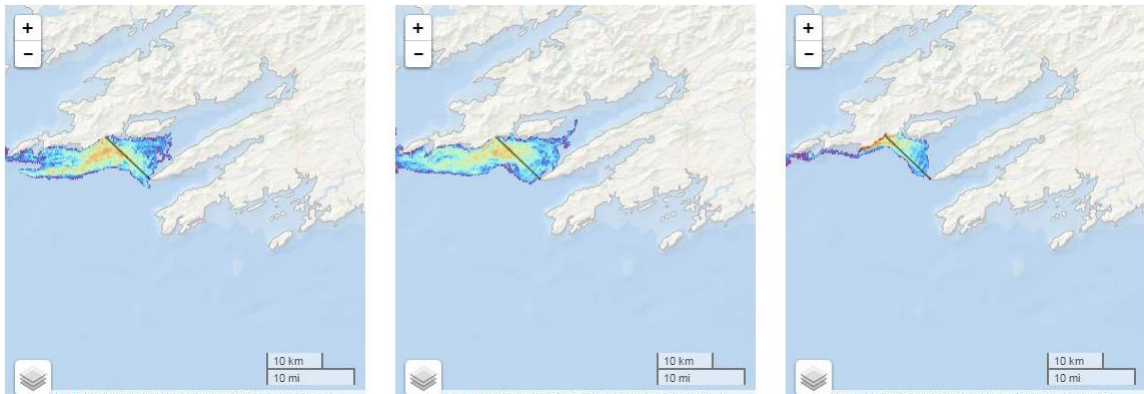
Reddish colours represent areas where phytoplankton remain longest
Cooler colours represent areas where phytoplankton remain for shorter periods

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



Water masses from the Celtic Sea are likely to reach the mouth of SW bays in the days ahead.



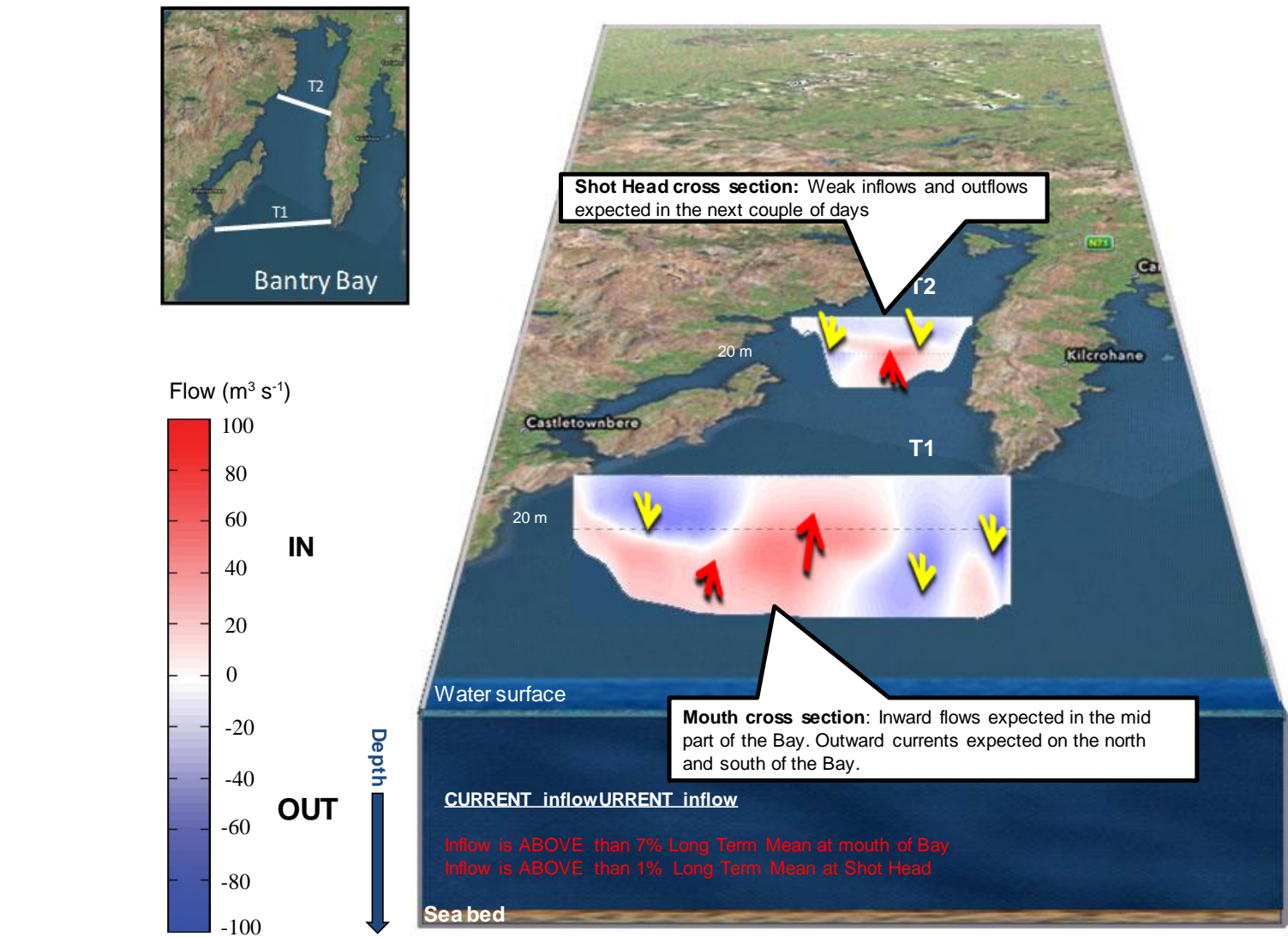
No big water exchange events expected in Bantry Bay in the days ahead.

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

Forecast for the next 3 days

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)

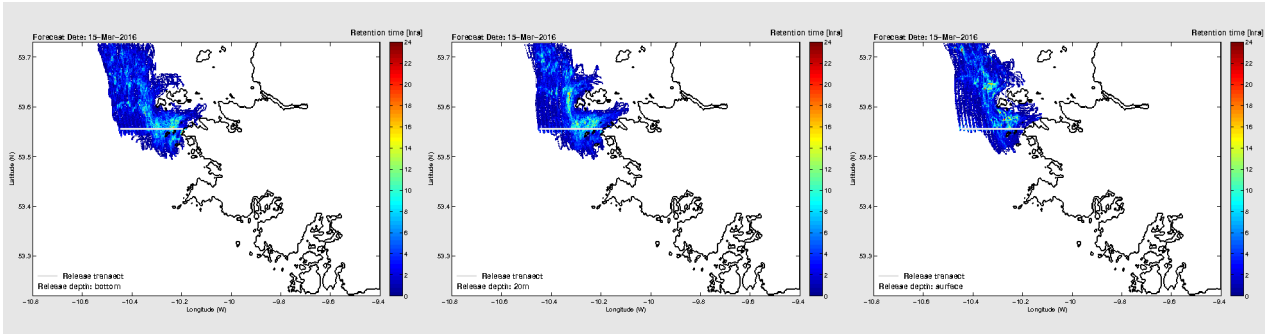
Reddish colours represent areas where phytoplankton remain longest

Cooler colours represent areas where phytoplankton remain for shorter periods

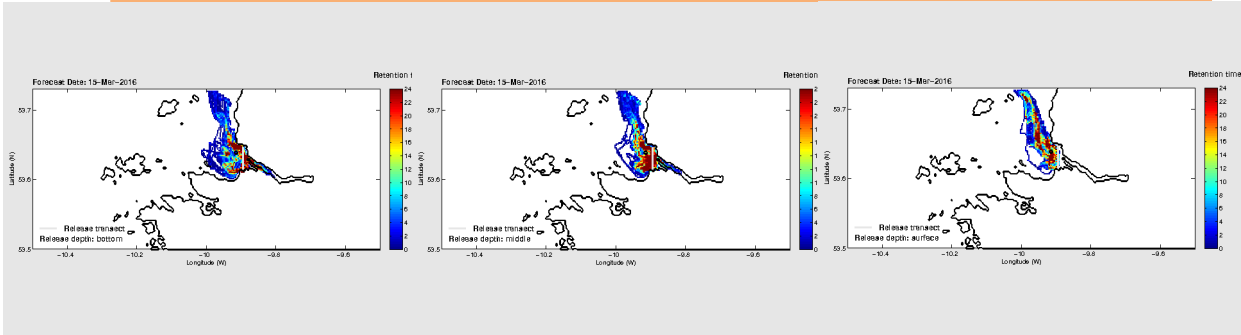


particle transport probability (hours)
Bantry Bay model particle track analysis
(2015-03-10T00:00:00Z, release_location=0.0 count)
Data courtesy of Irish Marine Institute

Bottom water Water @ 20 metres Surface water



Water flows off the west coast will flow north. Shelf waters are not expected to reach Killary Harbour in the next few days



Water masses at the mouth of Killary Harbour are expected to exit the fjord and flow in a northward direction. However, some of the subsurface water is also likely enter the Harbour and reach Killary-middle.

Killary Harbour

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

23 m

Water surface

CURRENT inflow

Inflow is LOWER than 52% Long Term Mean at mouth of Bay

Depth

T1

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

Forecast for next 3 days

