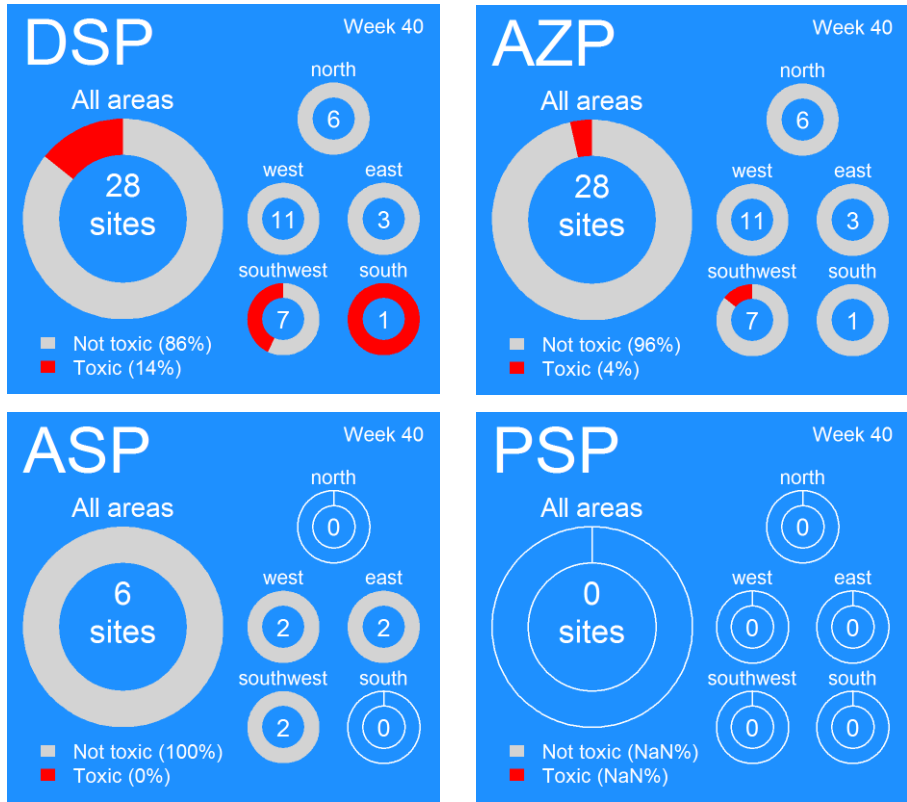


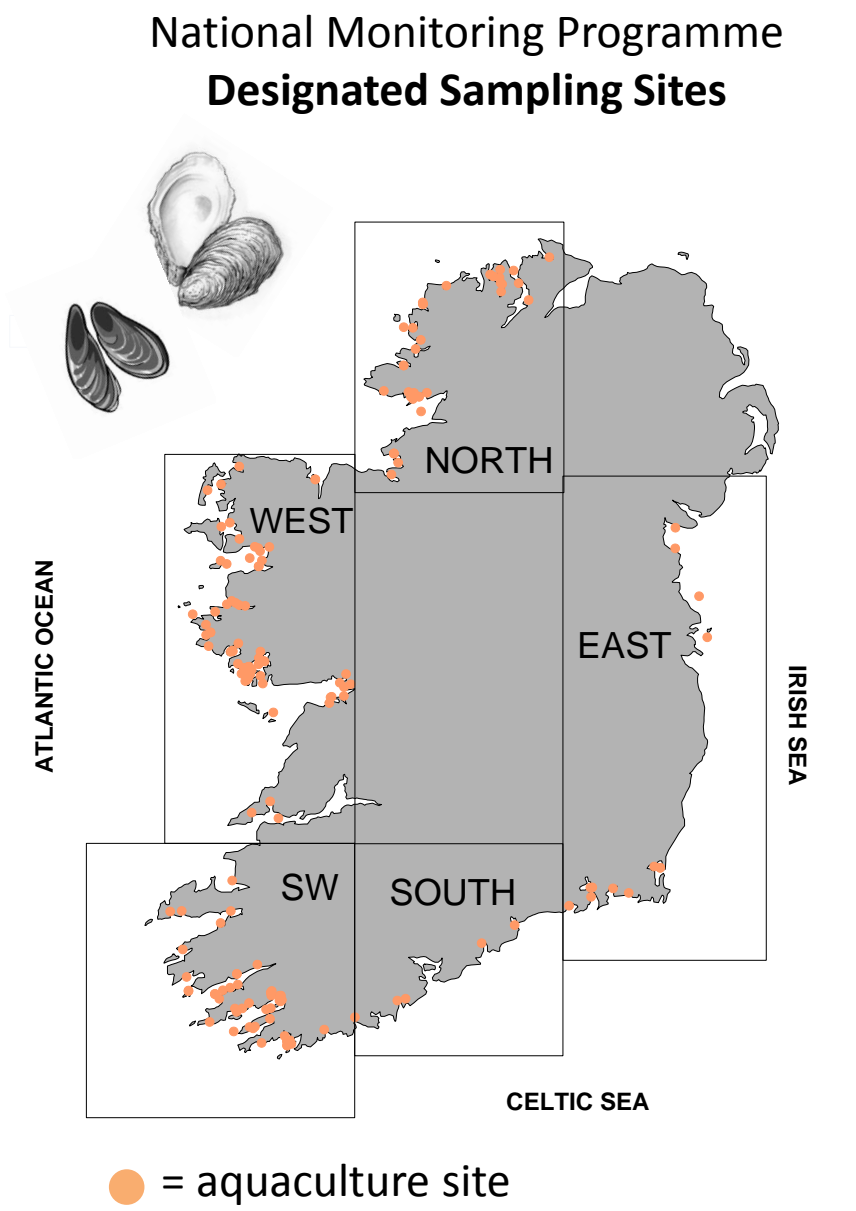
Ireland: Current Conditions

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



Ireland: Predictions

Prediction for this week:

ASP event: Low risk

AZP event: Moderate to high

DSP event: High to moderate in south and SW

PSP event: Low risk

Why do we think this?

ASP: Historically this is a low risk period. The current *Pseudo-nitzschia* blooms that are recorded around the coastline are not exhibiting any toxin profiles.

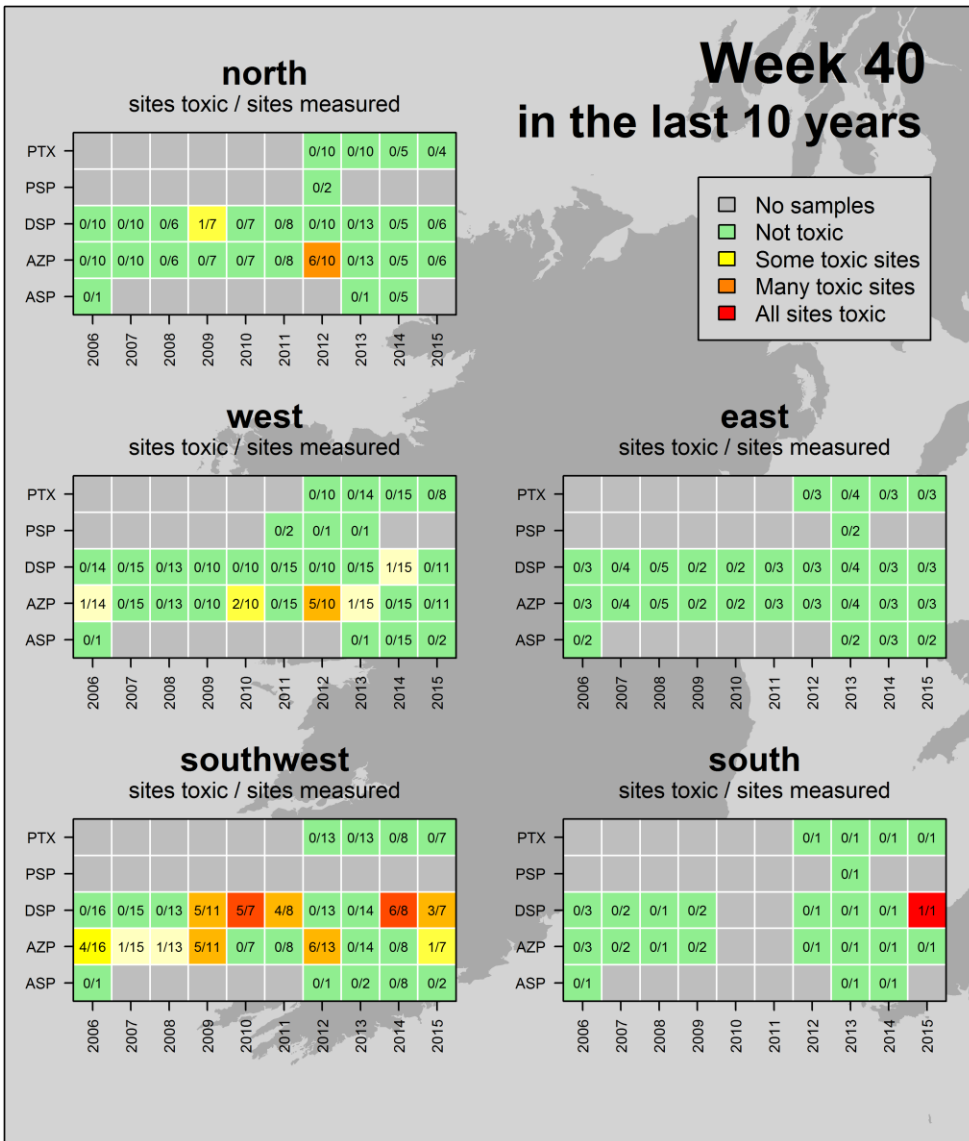
AZP: There is a history of AZP events at this time of year in the north, west and SW. While the current toxin trend appears to be fluctuating with an upward trend at some sites. We have also in the past experienced sudden rapid increases. Caution is definitely needed at this time.

DSP: *Dinophysis* spp. appear to be in decline in many SW sites affected, but, there are still some sites where high cell levels remain. In order for toxic shellfish to depurate completely, *Dinophysis* cell levels need to decrease significantly.

PSP: Toxicity issues are not expected at this time in the 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



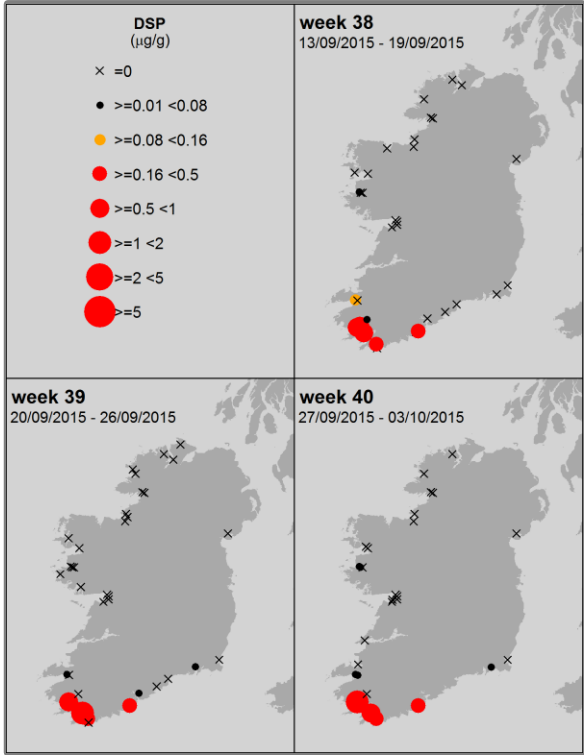
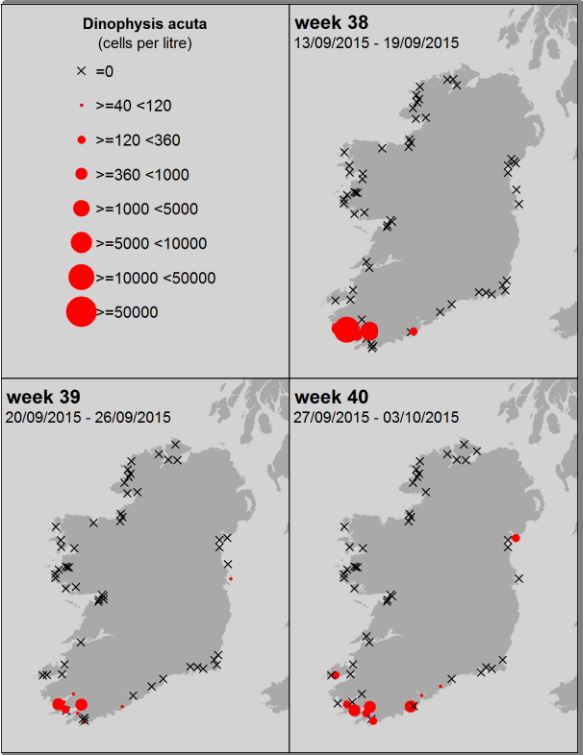
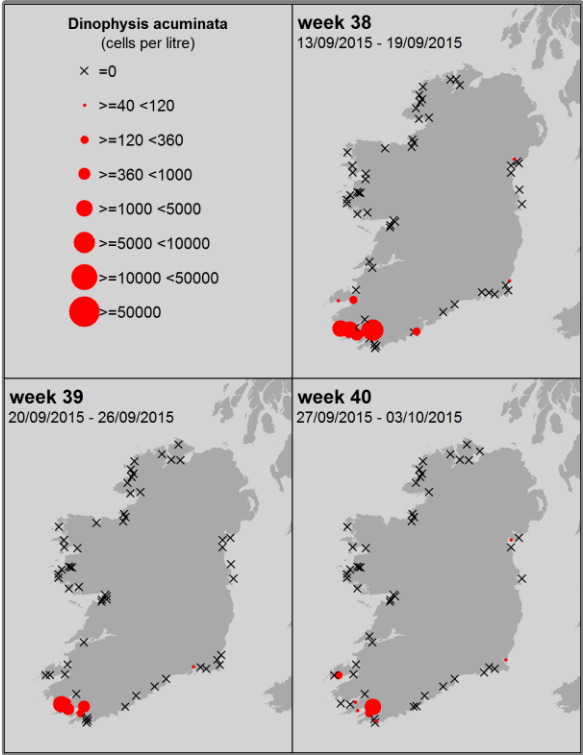
Dinophysis acuminata



Dinophysis acuta



DSP



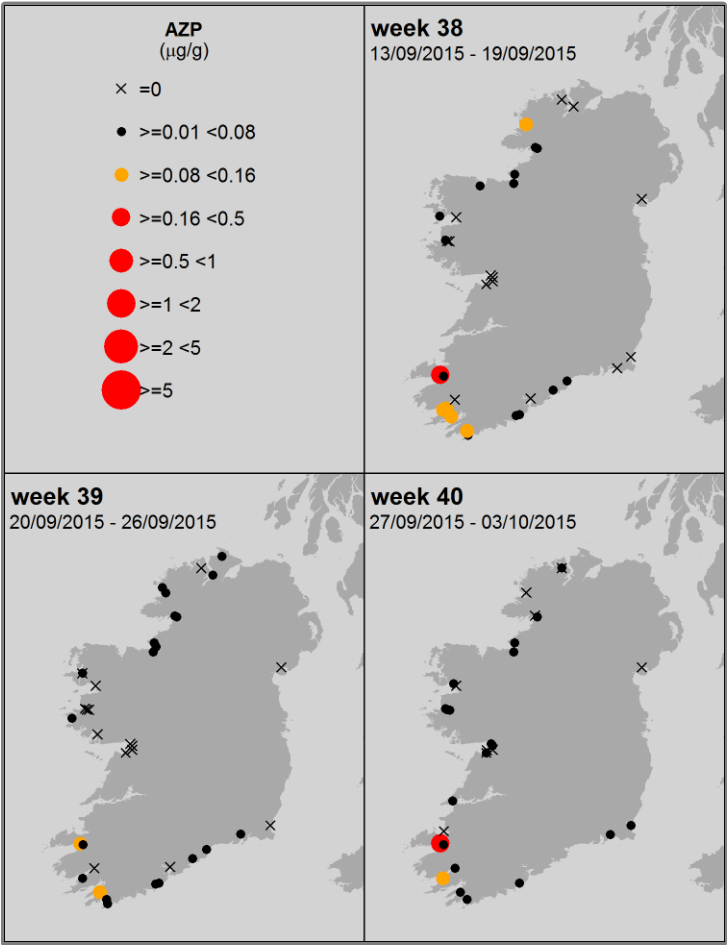
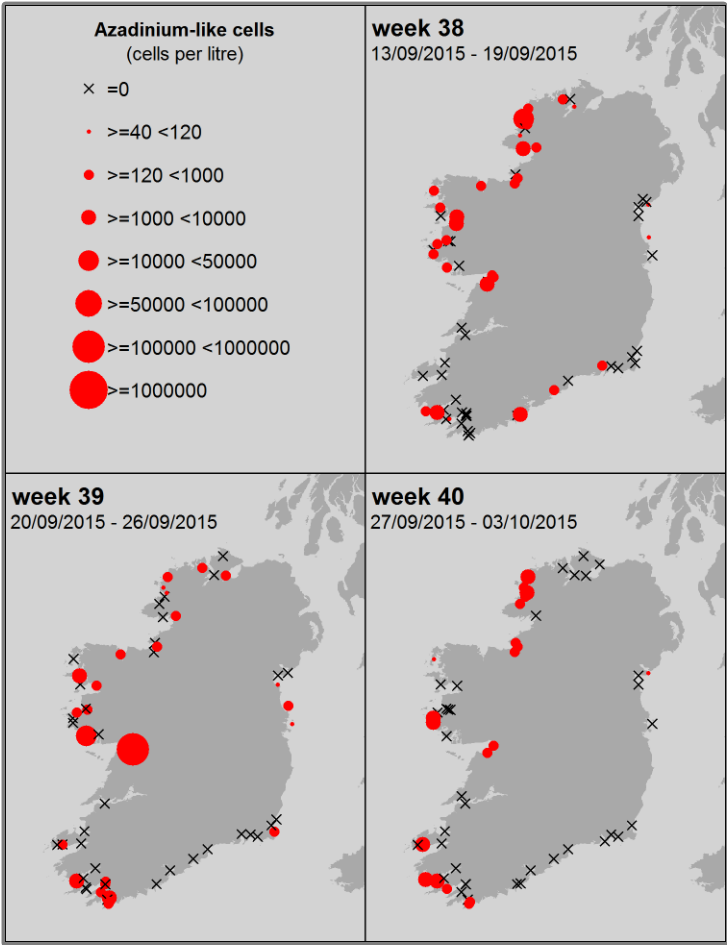
Ireland: Last 3 weeks of available National Monitoring Programme data



Azadinium – like spp.



AZP



Ireland: Last 3 weeks of available National Monitoring Programme data

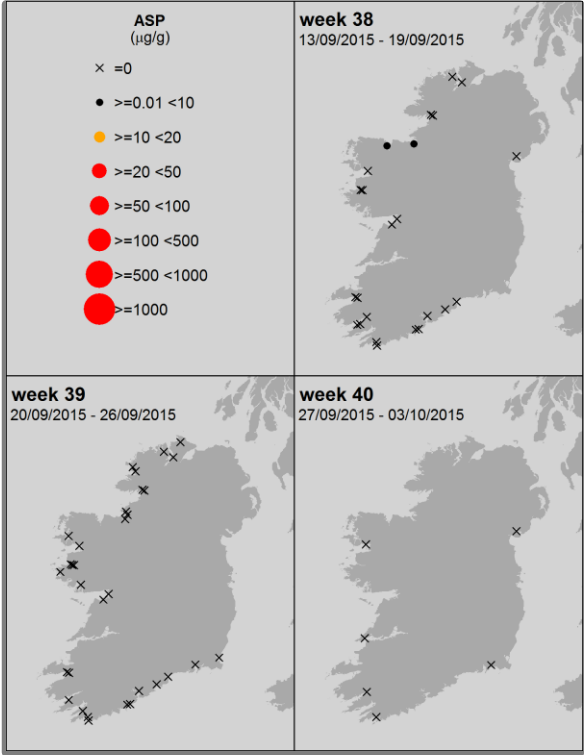
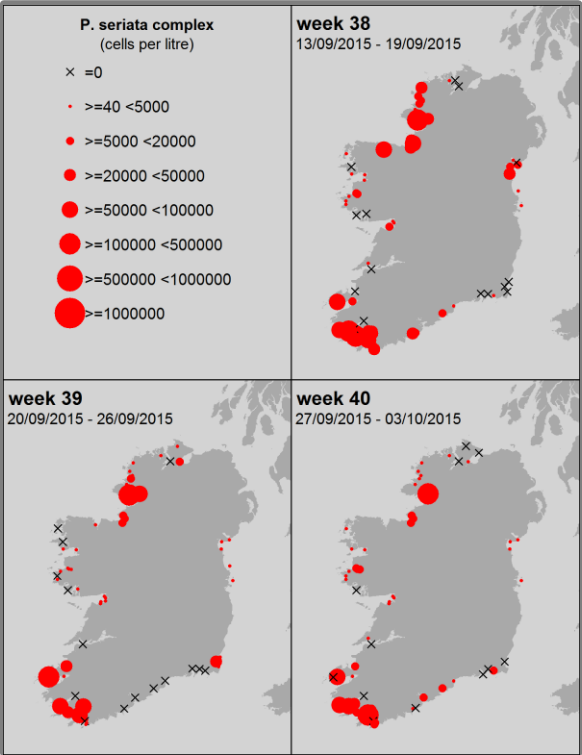
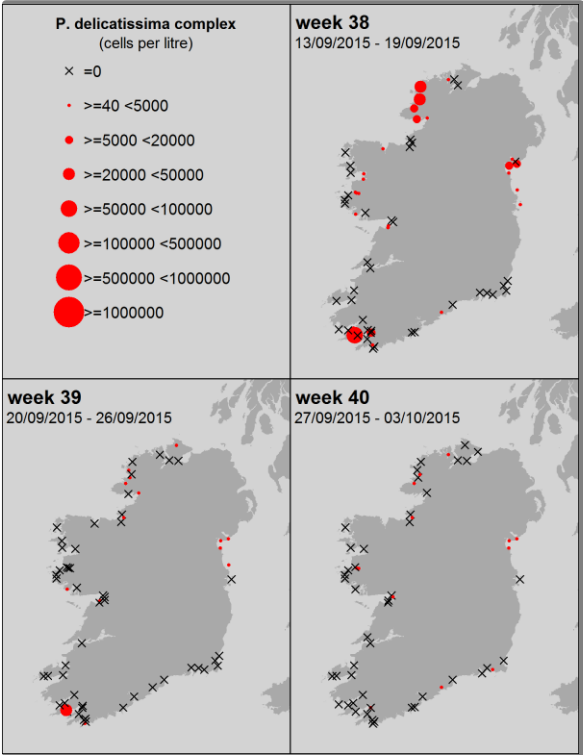
Pseudo-nitzschia spp.



ASP

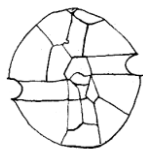
“*P. delicatissima*” complex = small cells
Taken from the literature:
3 species confirmed in Irish waters

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

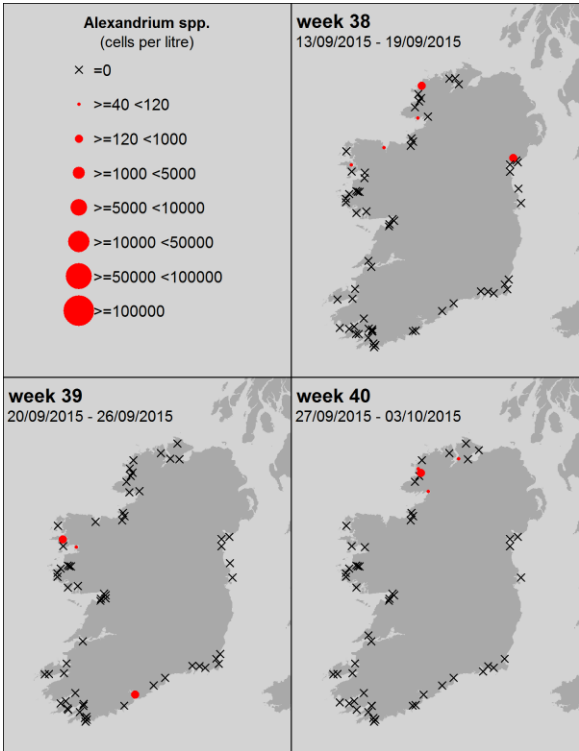


Taken from the literature: Of the 4 species (*P. fraudulenta*, *P. australis*, *P. pungens* and *P. delicatissima*) from Irish waters, tested for ASP toxins in culture work, only one, *P. australis* (from the “*P. seriata*” group) was toxic.

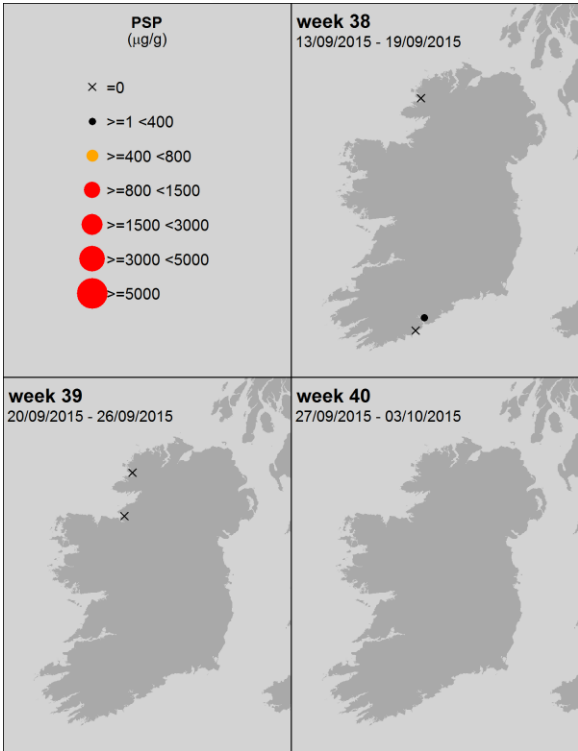
Ireland: Last 3 weeks of available National Monitoring Programme data



Alexandrium spp.



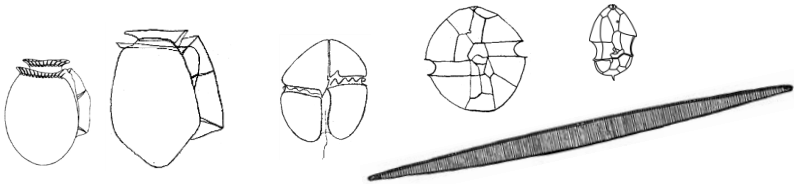
PSP



Ireland HAB & Biotoxin temporal trends

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

Ireland: Biotoxins



Toxin groups

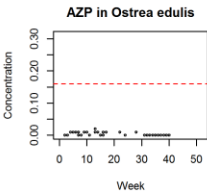
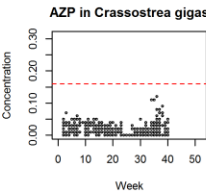
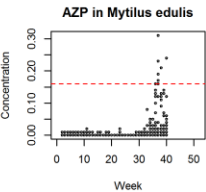
mussels

oysters

oysters

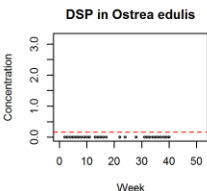
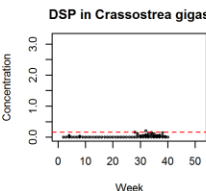
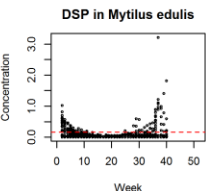
AZP

AZaspiracid
Poisoning



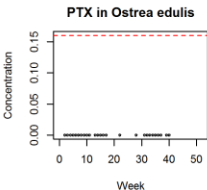
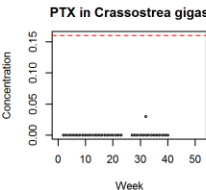
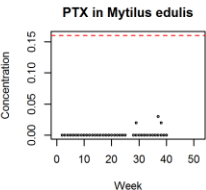
DSP

Diarrhetic
Shellfish
Poisoning



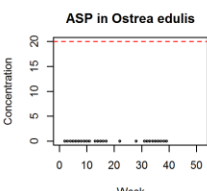
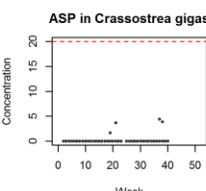
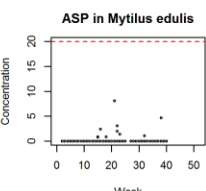
PTX

Pectenotoxin



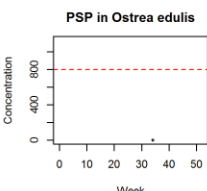
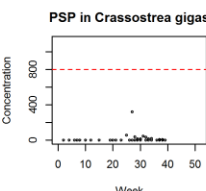
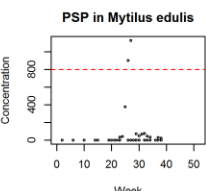
ASP

Amnesic
Shellfish
Poisoning



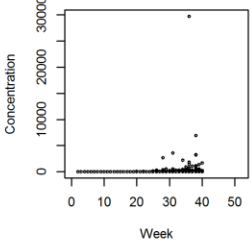
PSP

Paralytic
Shellfish
Poisoning

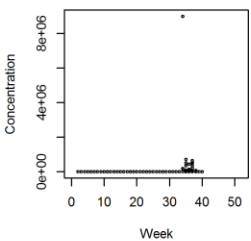


Ireland: HABs

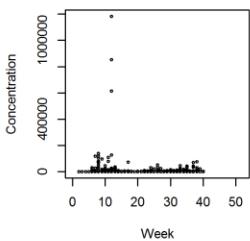
Dinophysis acuminata



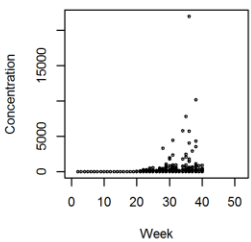
Karenia mikimotoi



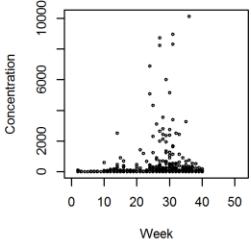
P. delicatissima complex



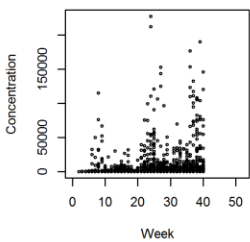
Dinophysis acuta



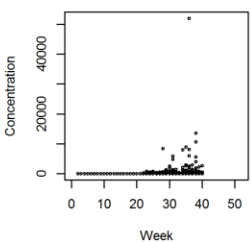
Alexandrium spp.



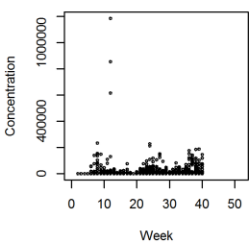
P. seriata complex



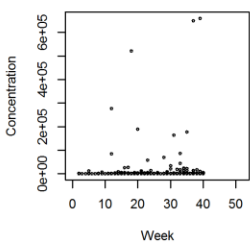
All Dinophysis spp.



All Pseudo-nitzschia spp.



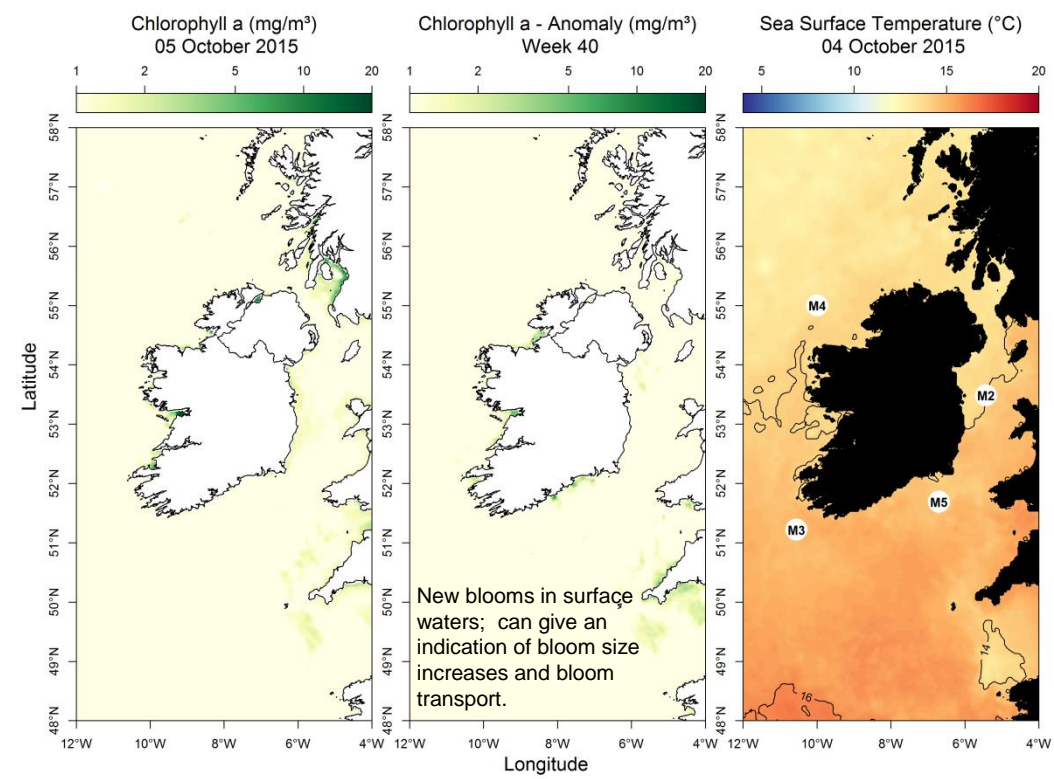
Azadinium-like cells



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

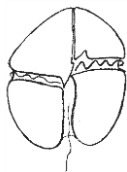


SST (°C) anomaly for last week:
Data taken from the Irish data buoy network where the anomaly is the weekly difference in SST compared to the long term mean (~ 10 yrs)

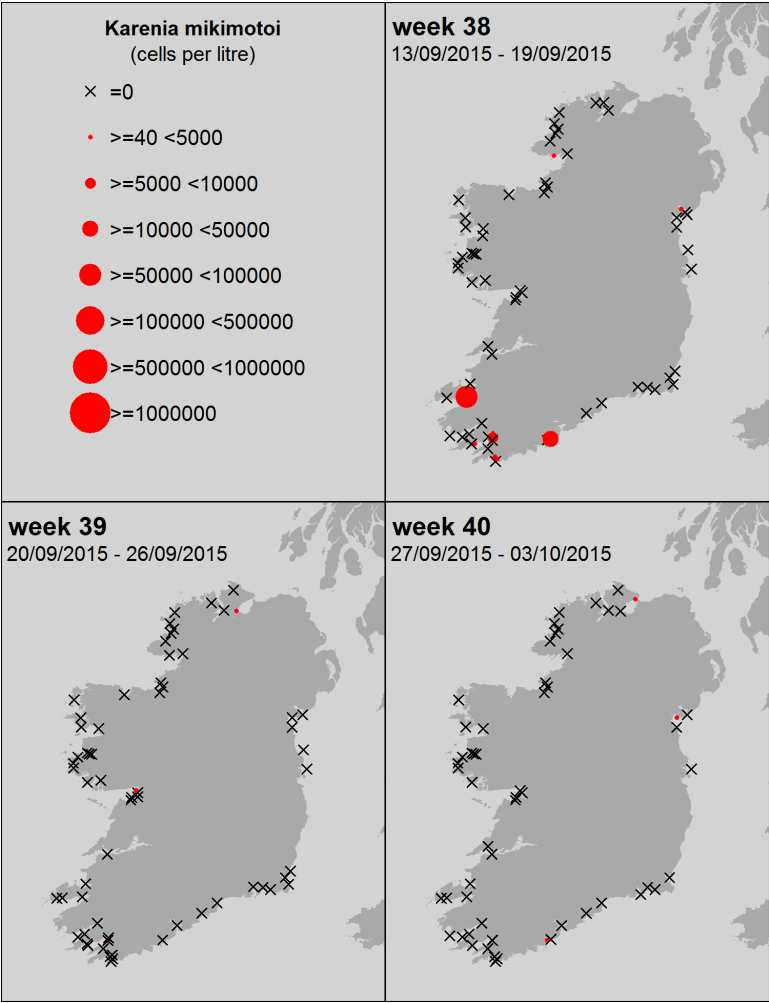
- NW coast (M4) below average by 0.47 °C
- SW coast (M3) Offline
- SE coast (M5) below average by 0.01 °C

What phytoplankton were blooming at inshore coastal sites last week?

Region	Predominant Phytoplankton (most abundant taxa)	Cells/L	Cells/L (rounded)
north:	Diatoms:		
	<i>'Pseudo-nitzschia seriata'</i> complex	120,320	120,000
	<i>Chaetoceros</i> (Hyalochaete) spp.	75,600	76,000
	<i>Guinardia delicatula</i>	37,062	37,000
	<i>Leptocylindrus danicus</i>	30,560	31,000
west:	Diatoms:		
	<i>Navicula</i> spp. 20-50um	80,999	81,000
	<i>'Pseudo-nitzschia seriata'</i> complex	39,932	40,000
	<i>Paralia</i> sp.	34,040	34,000
	Centric diatom 20-50um	29,760	30,000
	Dinoflagellates:		
	<i>Prorocentrum micans</i>	58,408	58,000
SW:	Diatoms:		
	<i>'Pseudo-nitzschia seriata'</i> complex	146,101	146,000
	<i>C. closterium/ N. longissima</i>	76,457	76,000
	<i>Skeletonema</i> spp.	75,280	75,000
	Dinoflagellates:		
	<i>Noctiluca scintillans</i>	86,298	86,000
south:	Diatoms:		
	<i>Navicula</i> spp. 20-50um	950,544	951,000
	<i>Bacillaria paxillifera</i>	146,858	147,000
	Centric diatom 20-50um	133,989	134,000
	<i>Striatella unipunctata</i>	88,569	89,000
	Others:		
	<i>Rhaphidophytes</i>	74,480	74,000
east:	Diatoms:		
	<i>Asterionellopsis glacialis</i>	114,560	115,000
	<i>Bacteriastrum</i> spp.	51,920	52,000
	<i>Chaetoceros debilis</i>	40,480	40,000
	<i>Chaetoceros</i> (Hyalochaete) spp.	39,280	39,000
	<i>Leptocylindrus danicus</i>	35,145	35,000



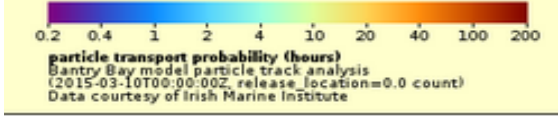
Karenia mikimotoi
(old name: *Gyrodinium aureolum*)



SOUTHWEST: Bantry Bay

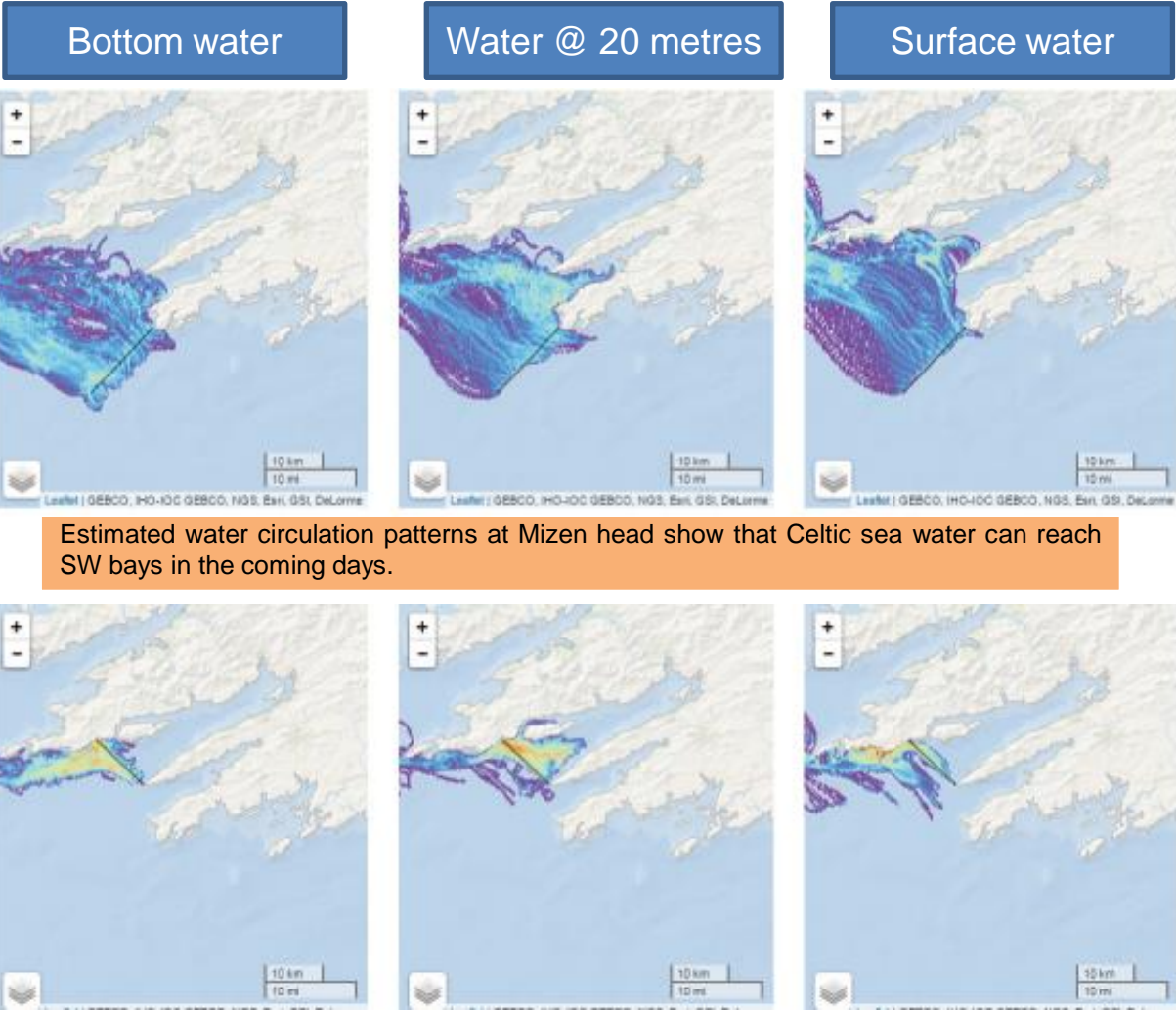
The maps show the **most likely transport pathways for the next 3 days of phytoplankton** found along the **presented transects** (black lines off Mizen Head and the Mouth of Bantry Bay) and **water depths** (bottom, 20 metres and surface)

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



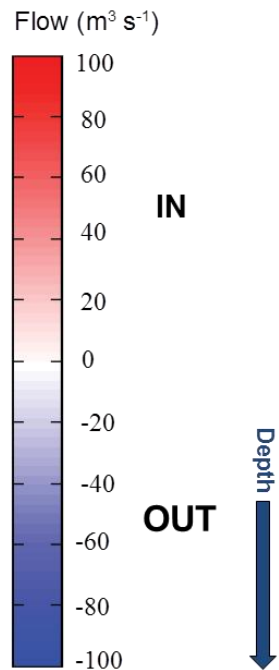
Estimated water circulation patterns at Mizen head show that Celtic sea water can reach SW bays in the coming days.

Waters at depth are expected to exit Bantry Bay. Mixed conditions expected at surface waters.

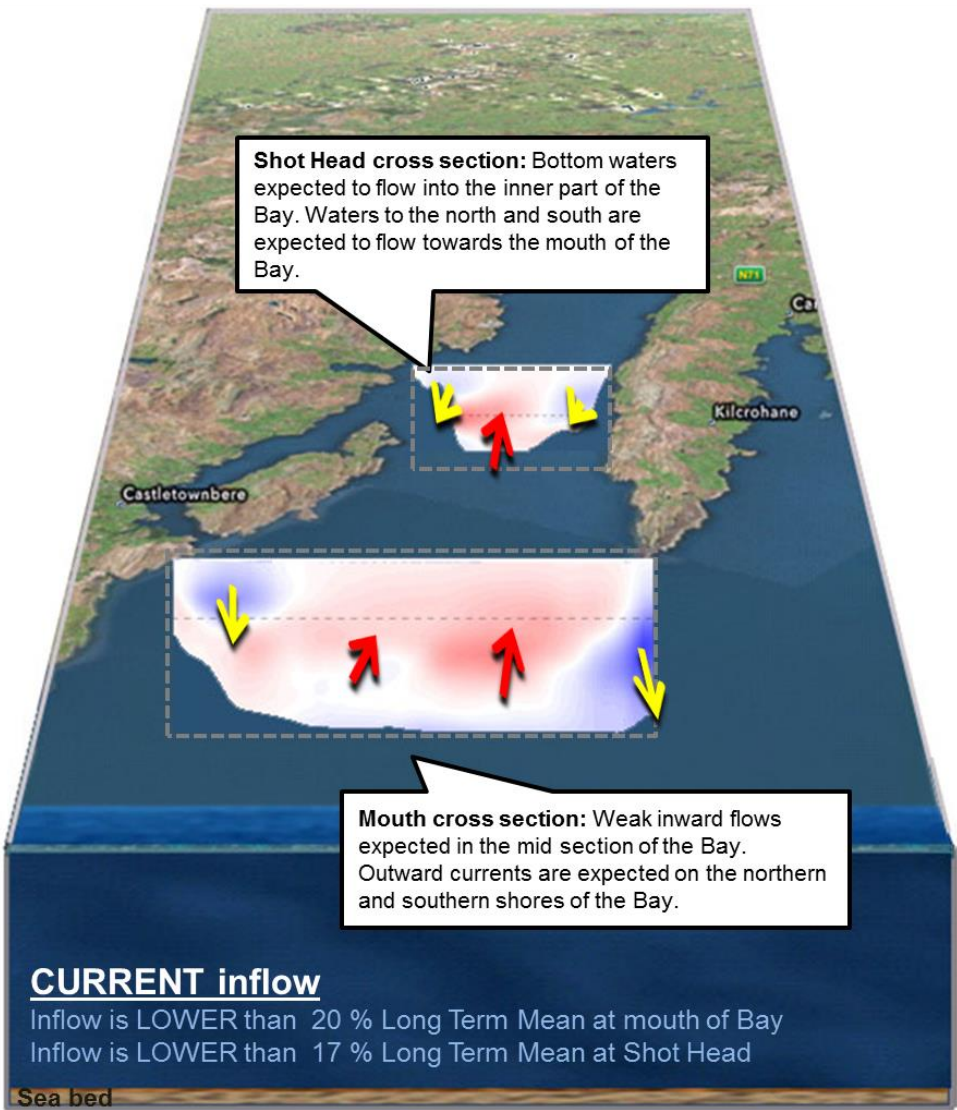
Go to <http://vis.marine.ie/particles/> to view daily forecasts

Bantry Bay

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



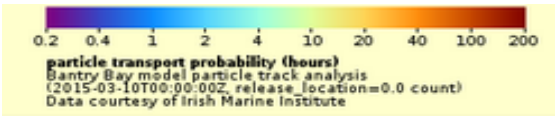
Forecast for next 3 days



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



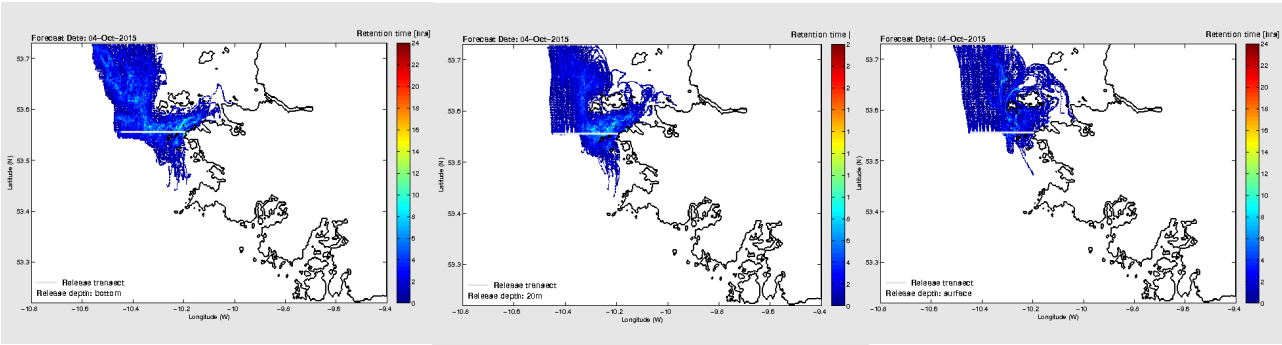
0.2 0.4 1 2 4 10 20 40 100 200
particle transport probability (hours)
Bantry Bay model particle track analysis
(2015-03-10T00:00:00Z, release_location=0.0 count)
Data courtesy of Irish Marine Institute

Forecast for the next 3 days

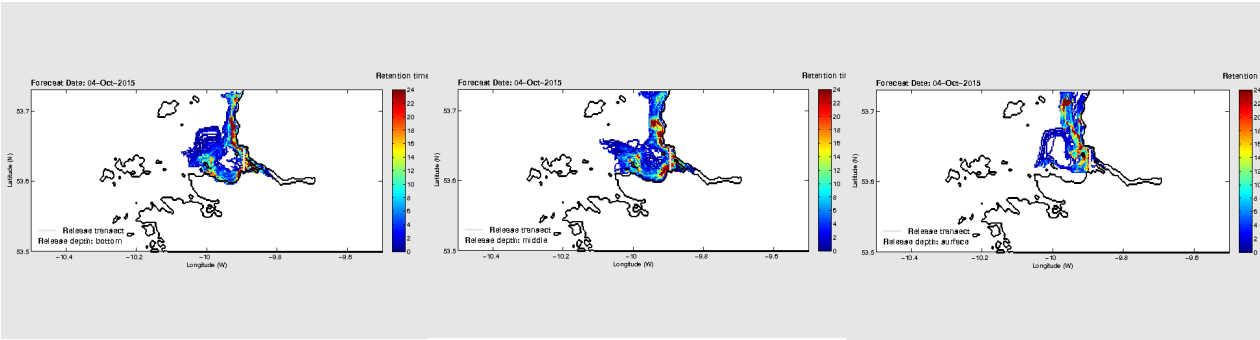
Bottom water

Water @ 20 metres

Surface water



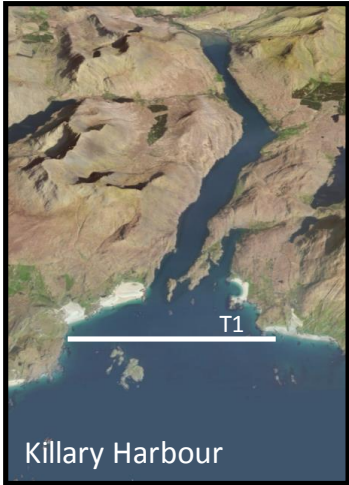
Water flows off the west coast will be primarily directed northward.



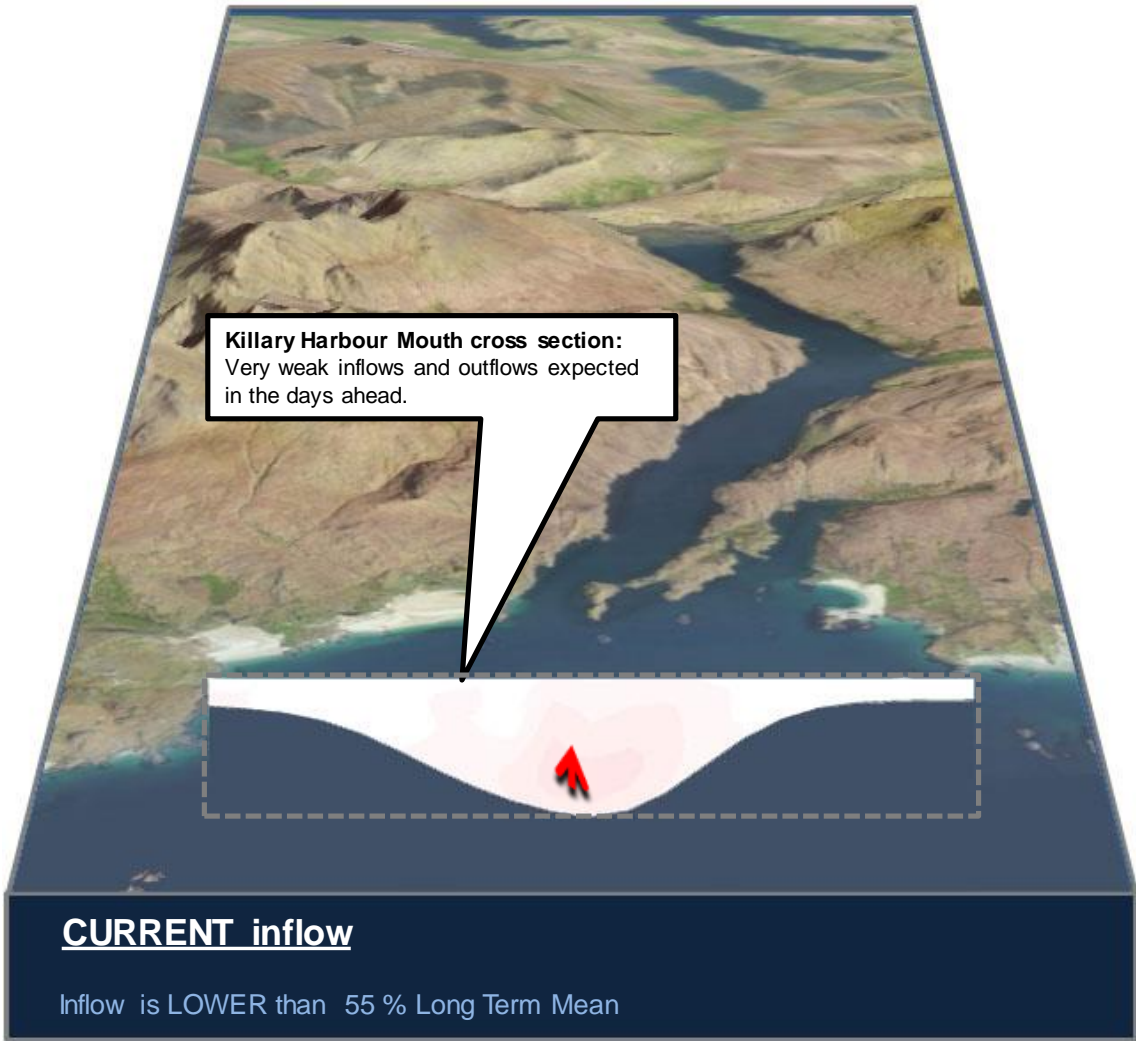
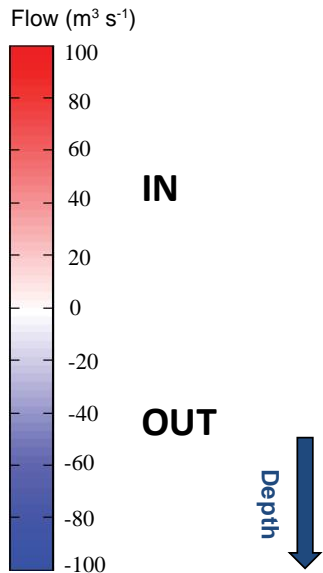
Estimated water circulation at the mouth of Killary shows that bottom and mid-depth waters will enter the Bay travel as far as Killary outer water here will also travel northwards. Surface water are expected to flow in a northward direction out of the Bay.

Killary Harbour

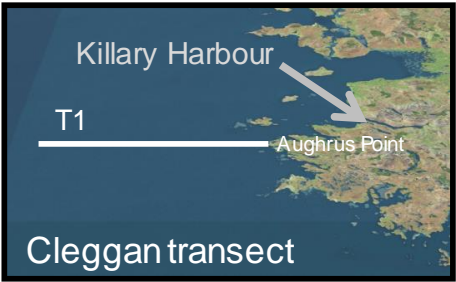
3 day estimated water flows at the mouth of Killary Harbour



Forecast for next 3 days



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



Forecast for next 3 days

