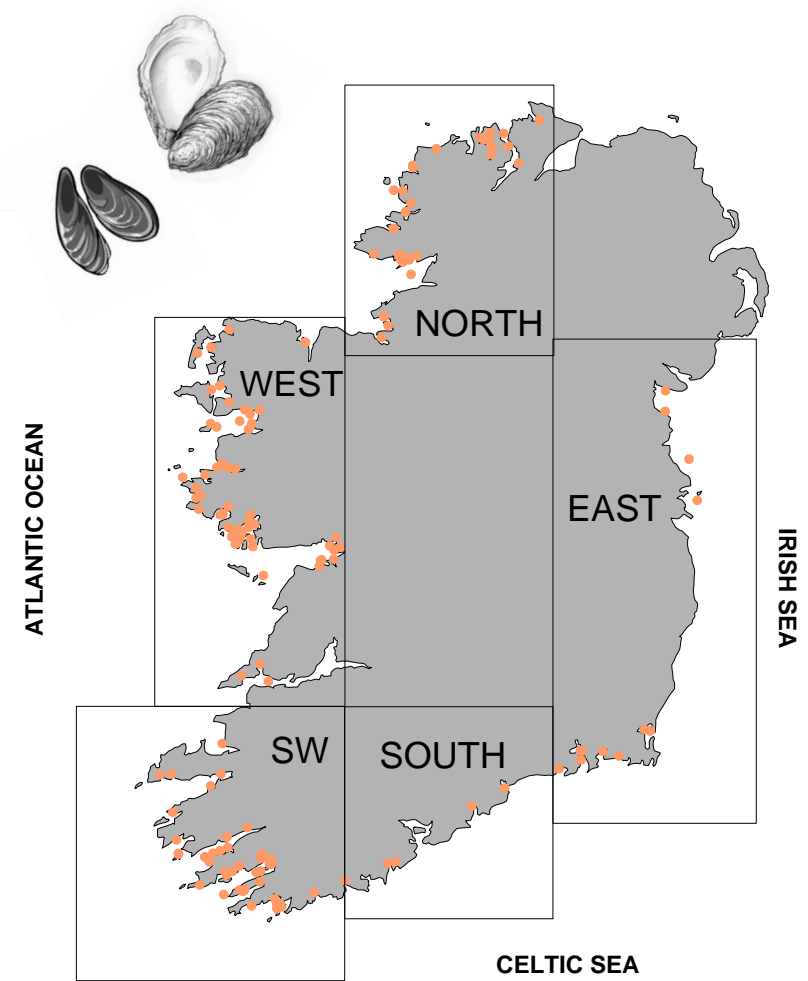
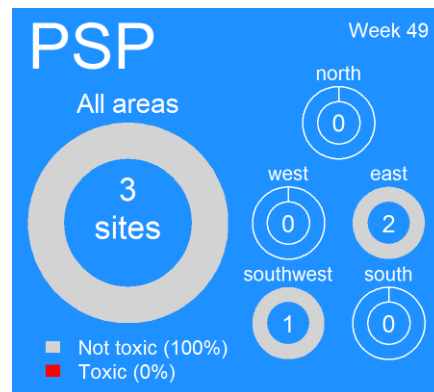
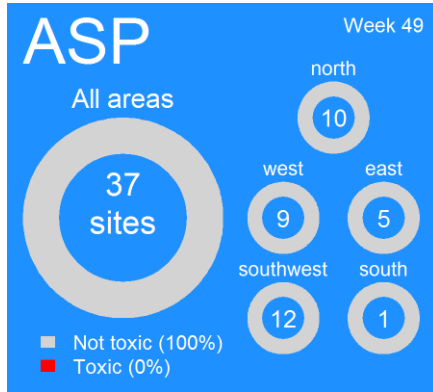
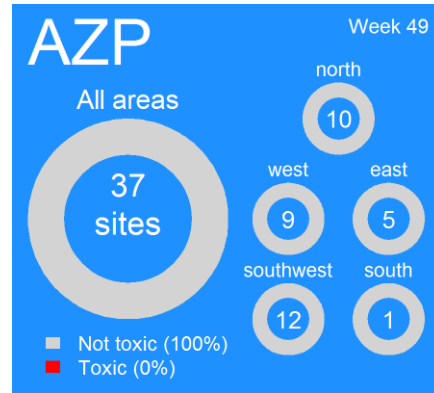
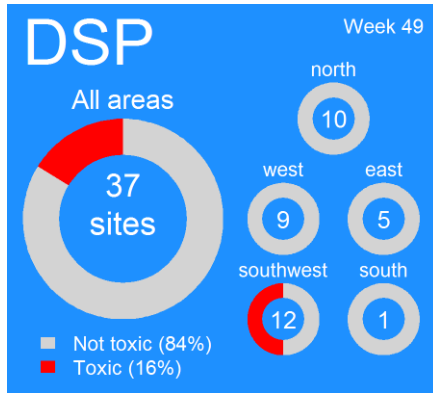


Ireland: Current Conditions

Shellfish biotoxin report (last week)

National Monitoring Programme Designated Sampling Sites



● = aquaculture site

EU Regulatory Limit:

ASP 20 µg/g; AZP 0.16 µg/g; DSP 0.16 µg/g; PSP 800 µg/kg

Toxin groups

ASP = Amnesic Shellfish Poisoning; AZP = AZaspiracid Poisoning;
 DSP = Diarrhetic Shellfish Poisoning; PSP = Paralytic Shellfish Poisoning

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To view them online: <http://www.marine.ie/Home/site-area/data-services/interactive-maps/weekly-hab-bulletin>

Ireland: Predictions

Prediction for this week:

ASP event: Low Risk

AZP event: Low to Moderate

DSP event: Low Risk for most sites

PSP event: Very Low

Why do we think this?

ASP: Cell levels are very low on average in all sites, with no significant toxin levels detected. Historically this is not a high risk period and environmental conditions are not very suitable for growth.

AZP: Potentially toxic phytoplankton cells are still being observed in some areas. Low corresponding toxin levels have been detected in the south west only. Moderate risk due to historical likelihood of an event during this period.

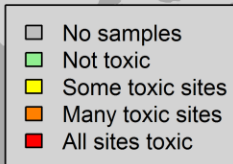
DSP: Low to negligible levels of Dinophysis cells and toxins in most sites except “residual” sites in SW. Very low levels of Dinophysis cell levels and residual fluctuating toxin levels still remain in SW as the shellfish continue to attempt to depurate in unfavourable conditions ie. phytoplankton food source is low and difficult environmental conditions.

PSP: Historically and environmentally this is not a period of any significant risk factor.

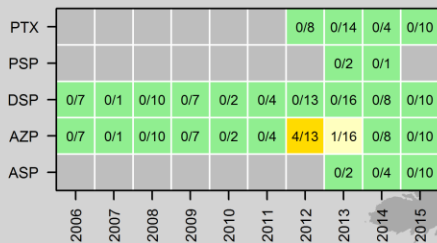
Ireland: Historic Conditions

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

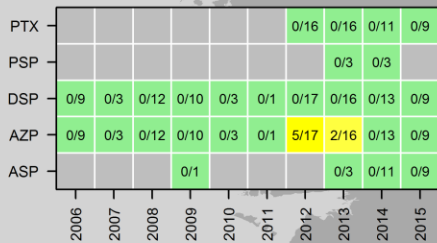
Week 49 in the last 10 years



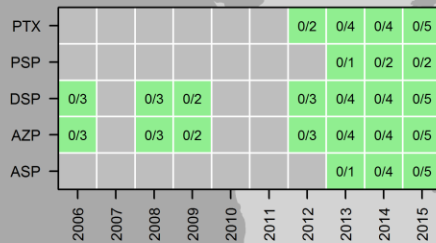
north
sites toxic / sites measured



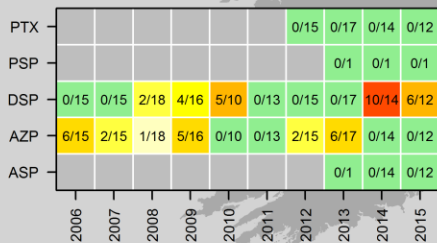
west
sites toxic / sites measured



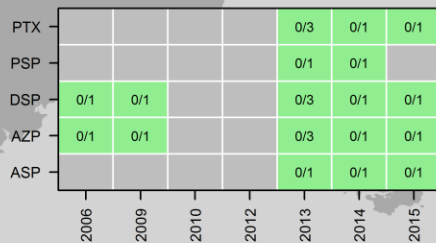
east
sites toxic / sites measured



southwest
sites toxic / sites measured



south
sites toxic / sites measured



Ireland HISTORIC TRENDS

Likely times for Shellfish Toxicity: does not include winter carry over of biotoxins

ASP events: mid-March to early May

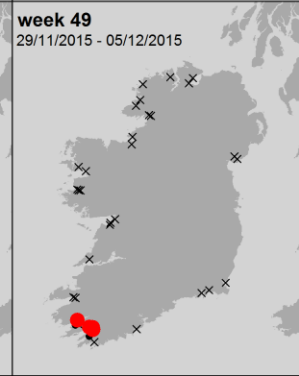
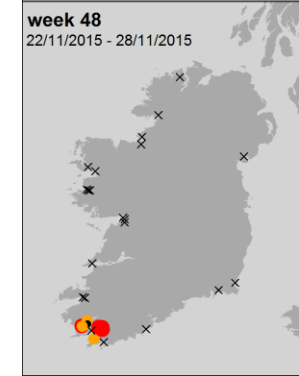
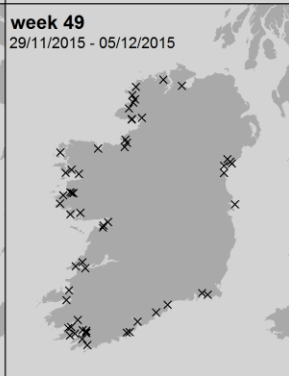
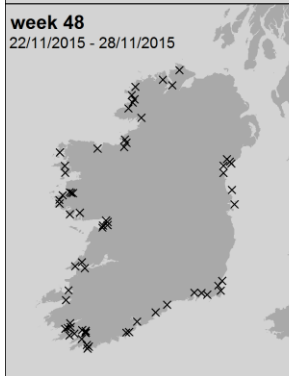
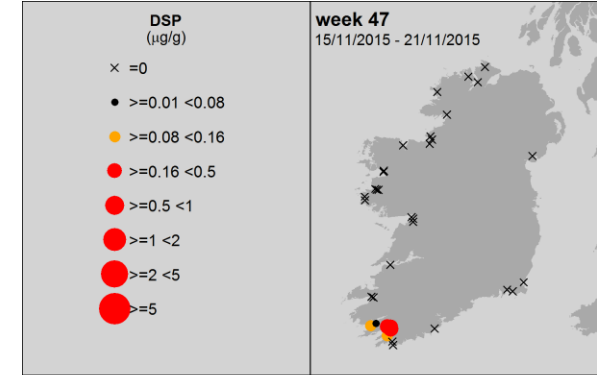
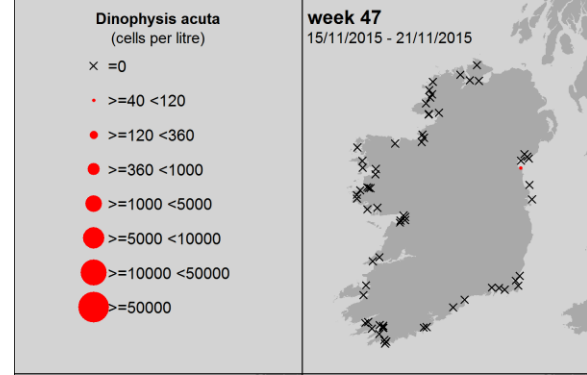
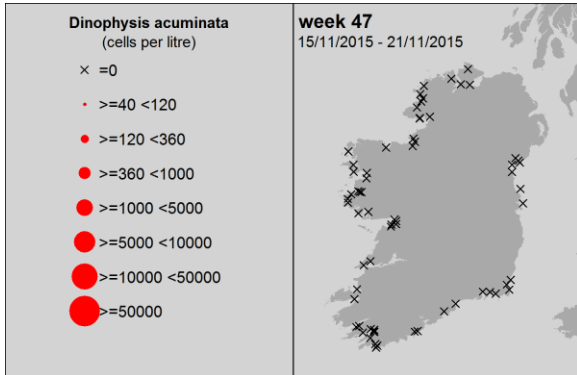
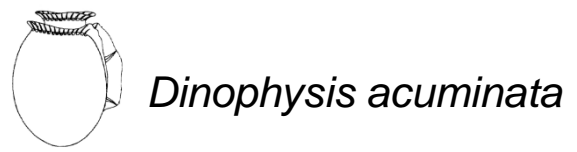
AZP events: April to December

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



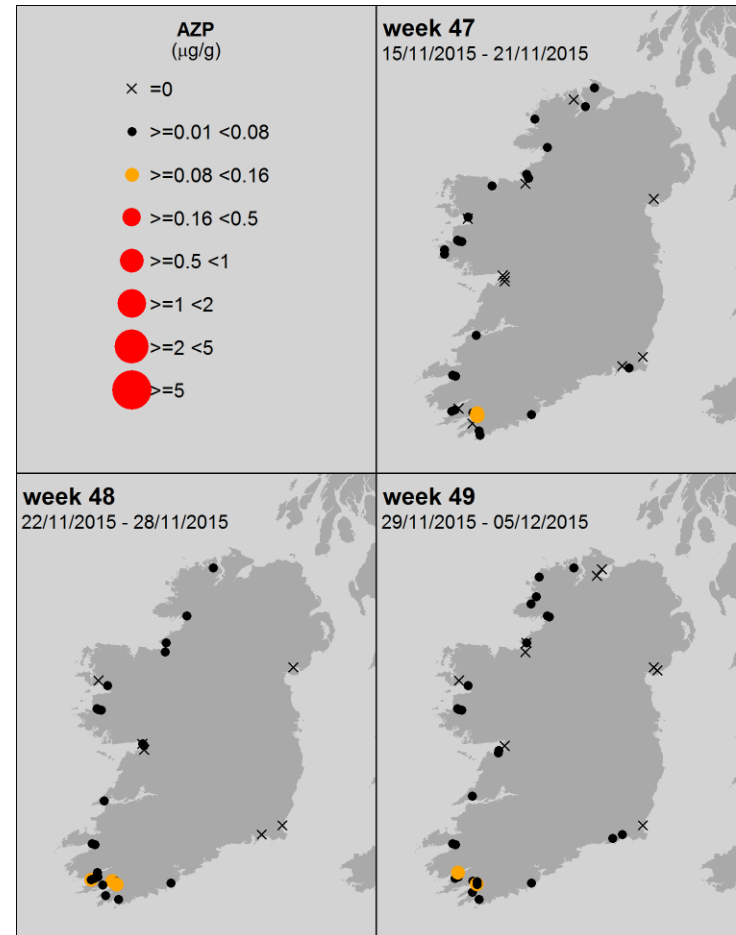
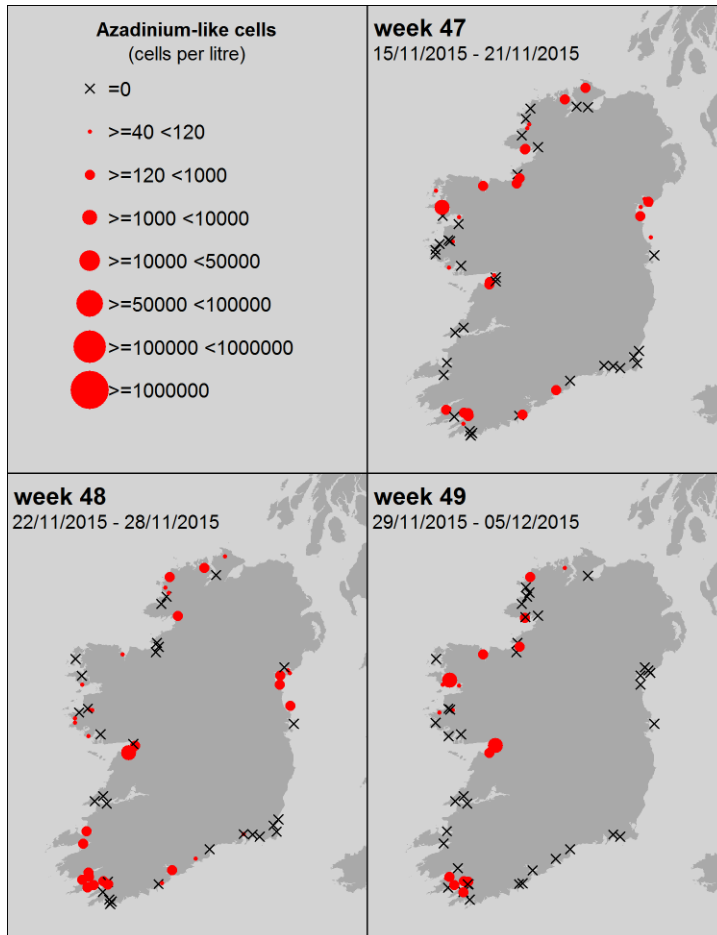
Ireland: Last 3 weeks of available National Monitoring Programme data



Azadinium – like spp.



AZP



Ireland: Last 3 weeks of available National Monitoring Programme data

Pseudo-nitzschia spp.



ASP

“*P. delicatissima*” complex = small cells

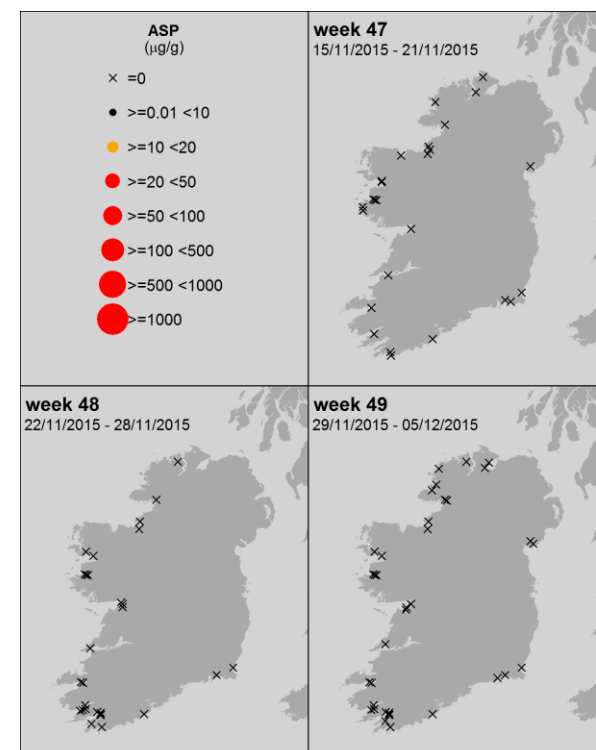
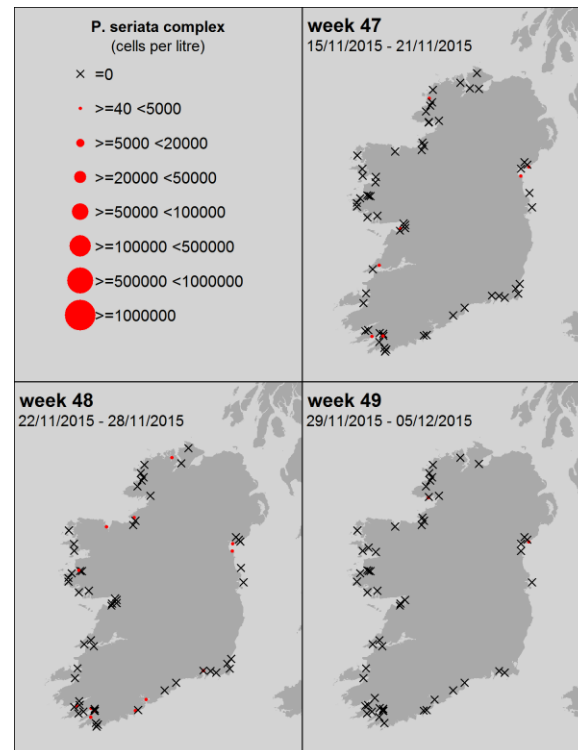
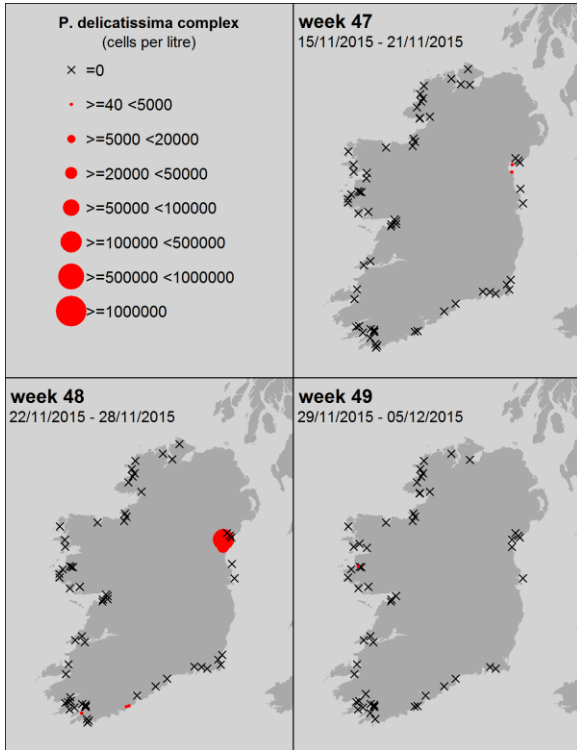
Taken from the literature:

3 species confirmed in Irish waters

“*P. seriata*” complex = large cells

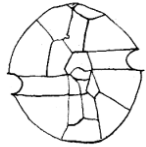
Taken from the literature:

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.

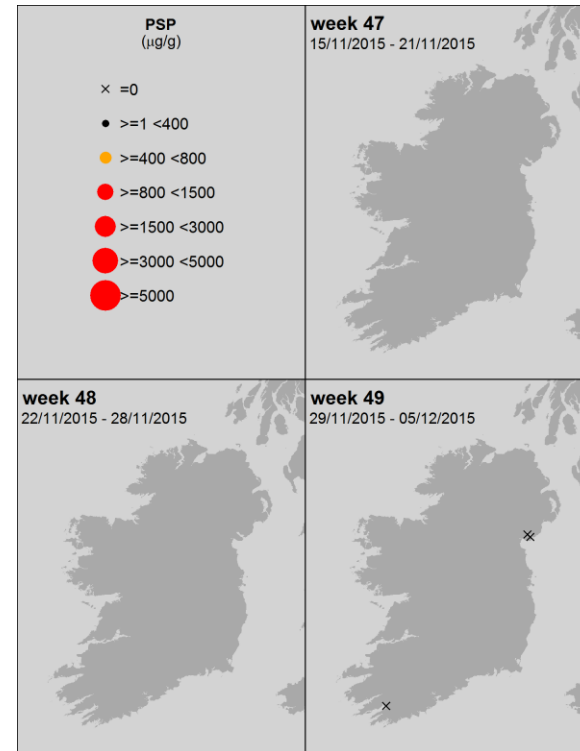
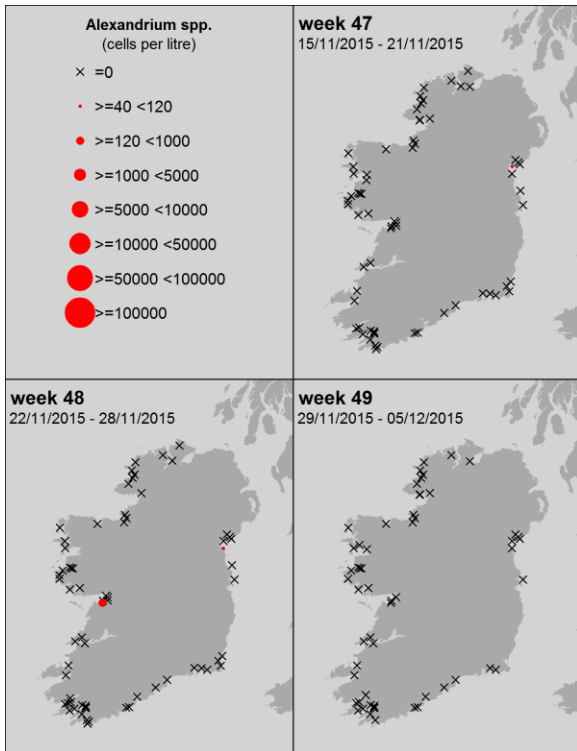
Ireland: Last 3 weeks of available National Monitoring Programme data



Alexandrium spp.



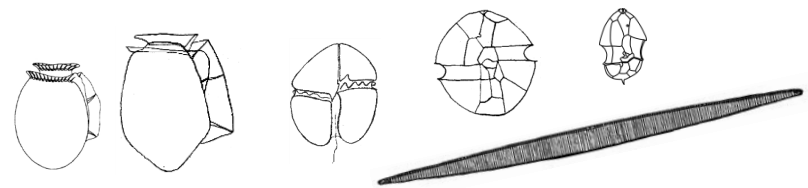
PSP



Ireland HAB & Biotoxin temporal trends

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

Ireland: Biotoxins



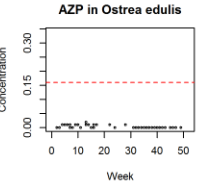
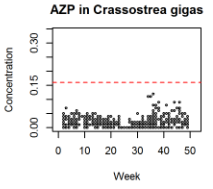
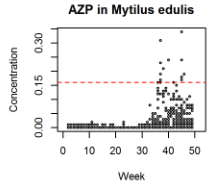
Toxin groups

mussels

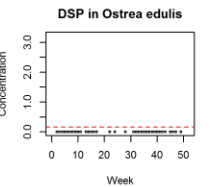
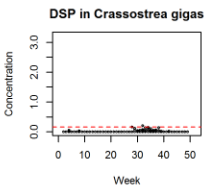
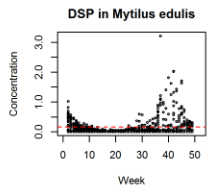
oysters

oysters

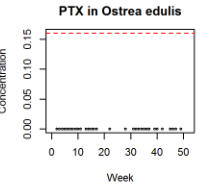
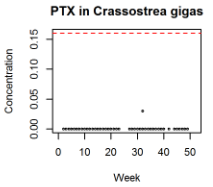
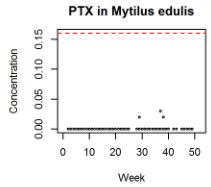
AZP
AZaspiracid
Poisoning



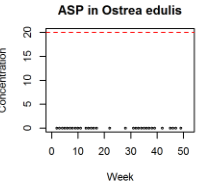
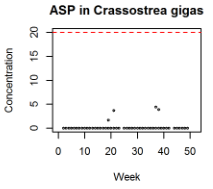
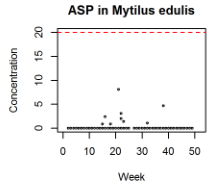
DSP
Diarrhetic
Shellfish
Poisoning



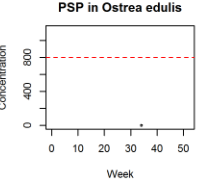
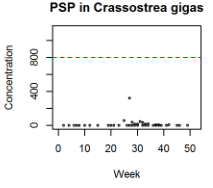
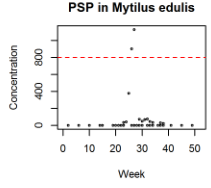
PTX
Pectenotoxin



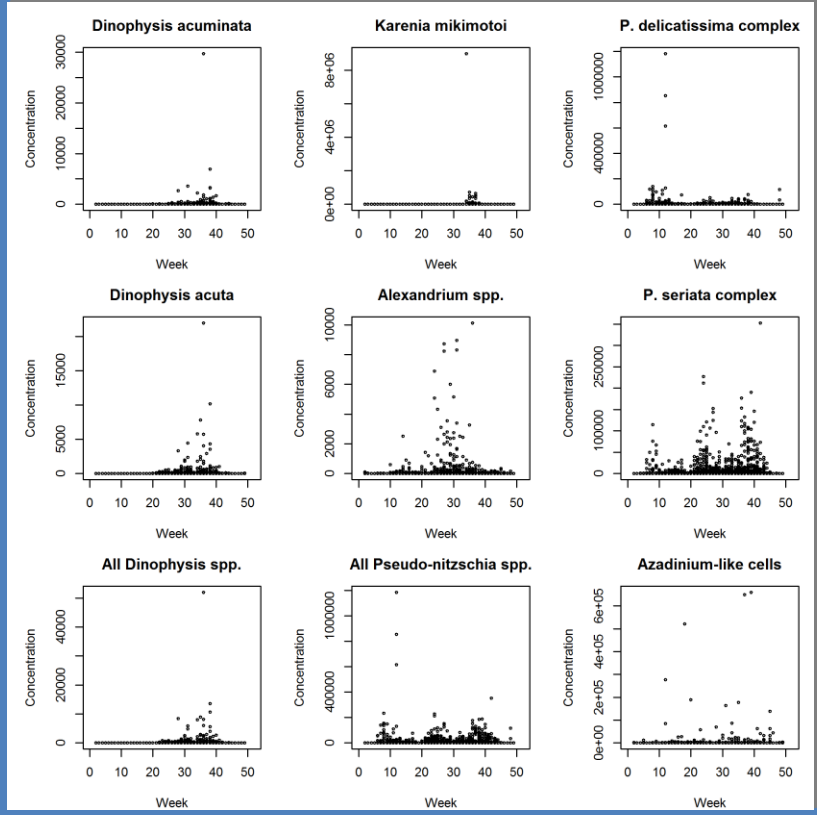
ASP
Amnesic
Shellfish
Poisoning



PSP
Paralytic
Shellfish
Poisoning



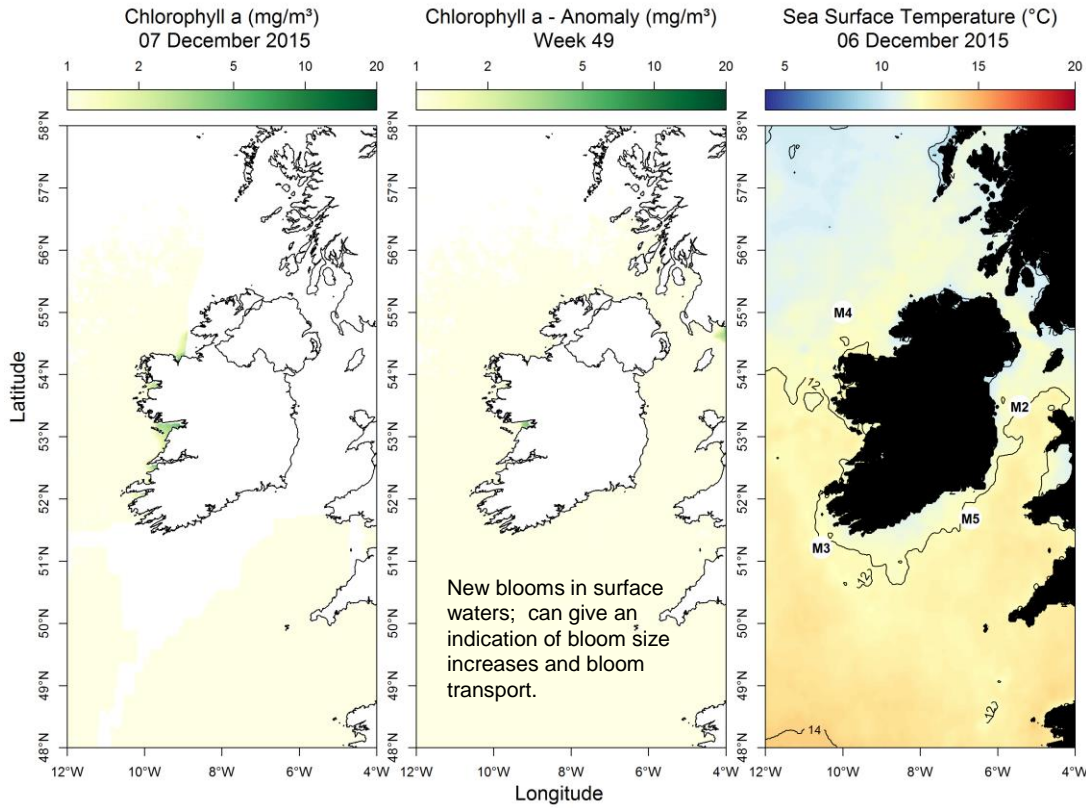
Ireland: HABs



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

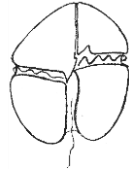


SST (°C) anomaly for last week:
 Data taken from the Irish data buoy network where the anomaly is the weekly difference in SST compared to the long term mean (~ 10 yrs)

- NW coast (M4)** above average by 0.33 °C
- SW coast (M3)** Offline
- SE coast (M5)** above average by 0.51 °C

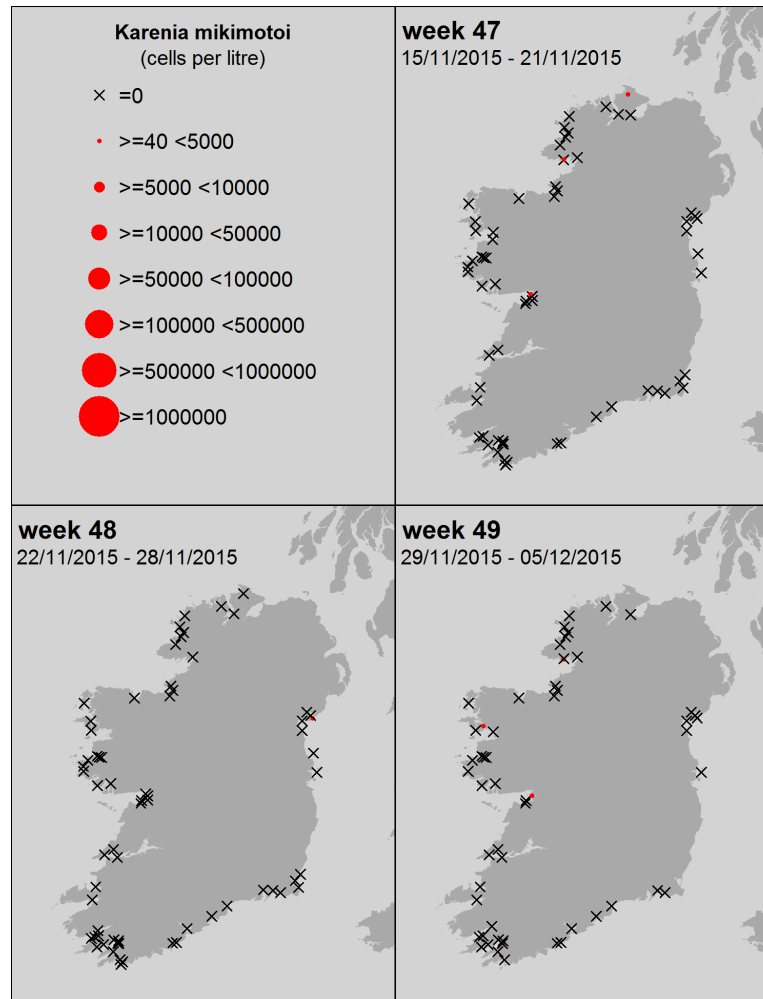
What phytoplankton were blooming at inshore coastal sites last week?

Region	Predominant Phytoplankton (most abundant taxa)	Cells/L	Cells/L (rounded)
north:	Diatoms:		
	Pennate diatom	880	1,000
	<i>Asterionellopsis glacialis</i>	680	1,000
	Dinoflagellates:		
	<i>Akashiwo sanguinea</i>	880	1,000
	<i>Gymnodinium</i> spp.	880	1,000
	Others:		
Microflagellates	40,656	41,000	
Cryptophytes	6,080	6,000	
Ciliates	1840	2,000	
west:	Diatoms:		
	<i>Navicula</i> spp. < 25 µm	12,240	12,000
	<i>Paralia sulcata</i>	8,640	9,000
	<i>Paralia</i> spp.	5,480	5,000
	<i>Skeletonema</i> spp.	3,000	3,000
	Dinoflagellates:		
	<i>Azadinium/heterocapsa</i> spp.	3,760	4,000
	Others:		
	Ciliates	36355	36,000
	Microflagellates	4,440	4,000
<i>Mesodinium rubrum</i>	4,440	4,000	
SW:	Diatoms:		
	<i>Skeletonema</i> spp.	16,280	16,000
	<i>Lauderia / Detonula</i> spp.	11,520	12,000
	<i>Paralia</i> spp.	11,520	12,000
	<i>Paralia sulcata</i>	10,920	11,000
	Pennate diatom > 50 µm	7,600	8,000
	Others:		
Haptophytes	4,360	4,000	
south:	Diatoms:		
	<i>Navicula</i> spp. 20-50 µm	26,080	26,000
	Centric diatoms < 20 µm	17,320	17,000
	<i>Paralia sulcata</i>	15,240	15,000
	<i>Skeletonema</i> spp.	6,920	7,000
	Others:		
<i>Nematodinium</i> spp.	1,840	2,000	
east:	Diatoms:		
	<i>Paralia sulcata</i>	6,960	7,000
	Pennate diatom > 50 µm	6,640	7,000
	<i>Paralia</i> spp.	3,920	4,000
	<i>Pleurosigma angulatum</i>	1,040	1,000
	Others:		
	<i>Trachelomonas</i> spp.	1,480	1,000



Karenia mikimotoi (old name: *Gyrodinium aureolum*)

A *Karenia mikimotoi* bloom is NOT expected this week



SOUTHWEST: Bantry Bay

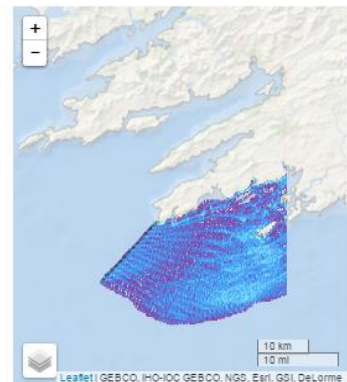
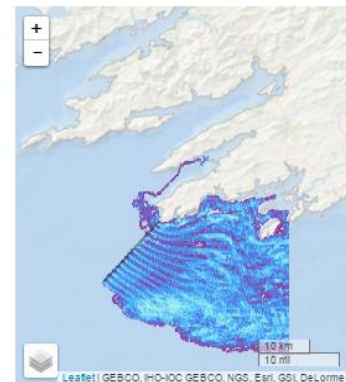
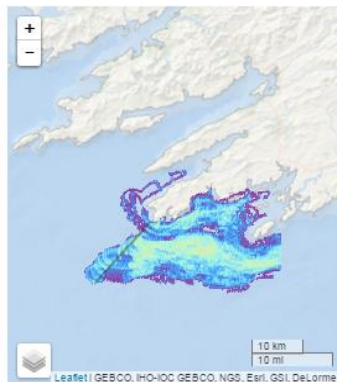
The maps show the **most likely transport pathways for the next 3 days of phytoplankton** found along the **presented transects** (black lines off Mizen Head and the Mouth of Bantry Bay) and **water depths** (bottom, 20 metres and surface)

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

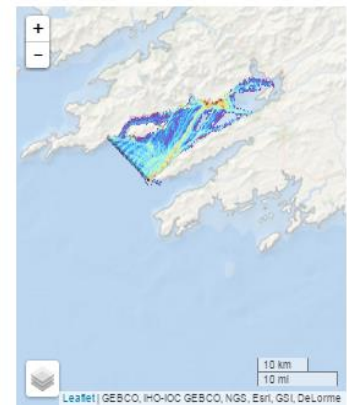
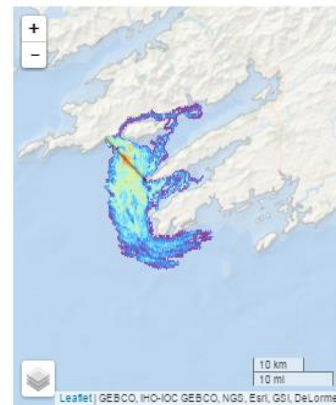
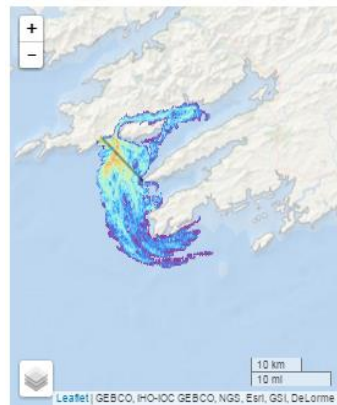
0.2 0.4 1 2 4 10 20 40 100 200
 particle transport probability (hours)
 Bantry Bay model particle track analysis
 (2015-03-10T00:00:00Z, release_location=0.0 count)
 Data courtesy of Irish Marine Institute

Forecast for the next 3 days

Bottom water Water @ 20 metres Surface water



Conditions are NOT favourable for the transport of Celtic Sea Water movement toward SW bays.



Predicted water movement at the mouth of Bantry Bay shows that large volumes of subsurface water will exit Bay while surface water will enter and reach the inner parts of the Bay.

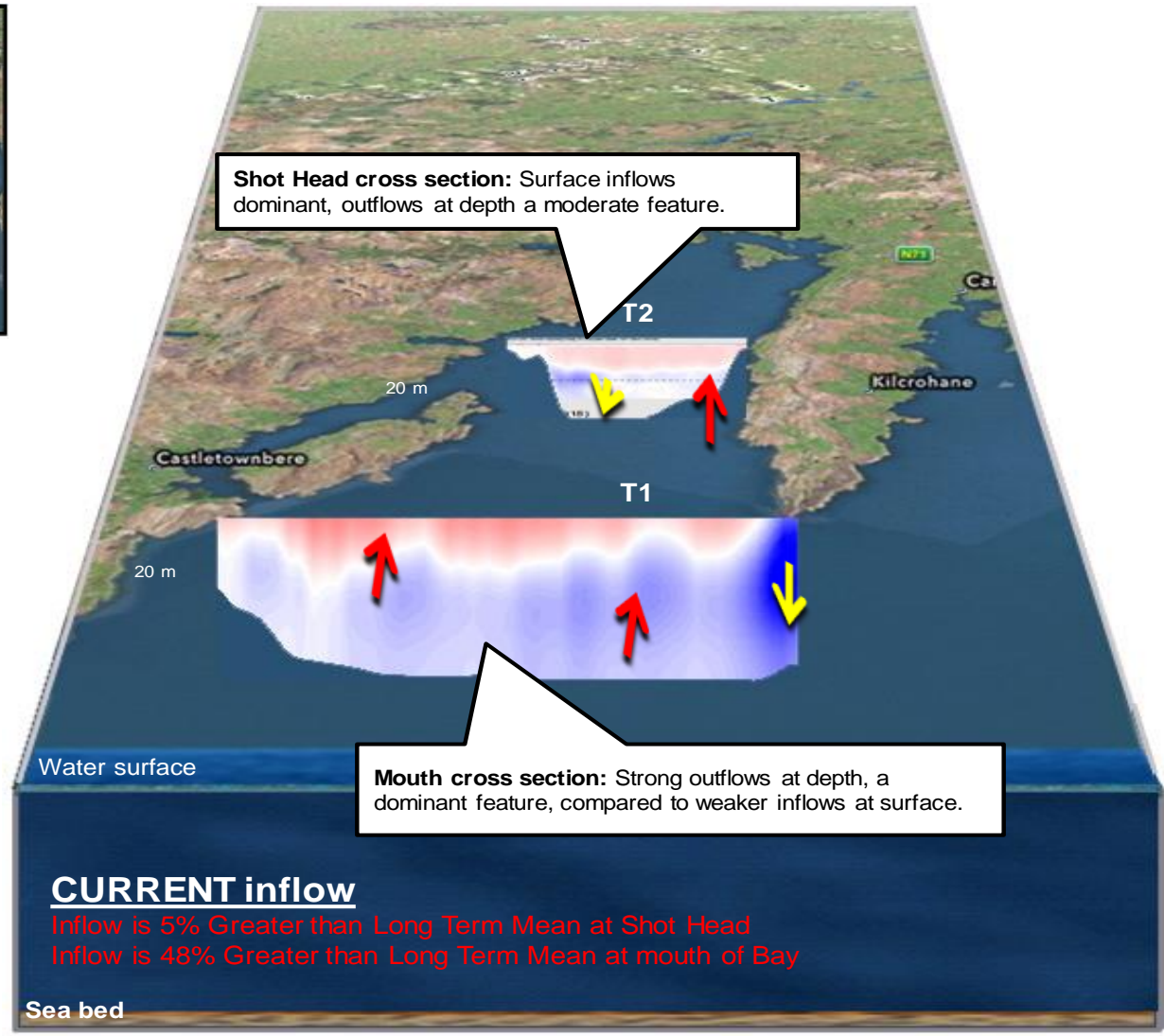
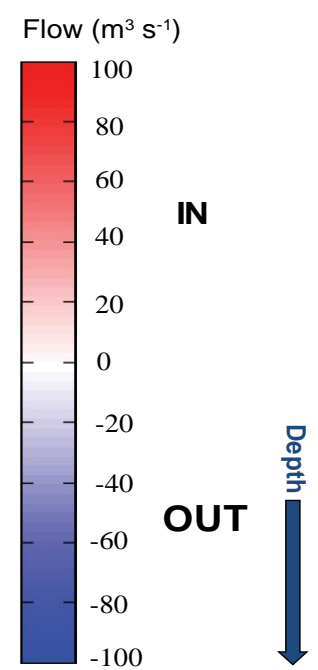
Go to <http://vis.marine.ie/particles/> to view daily forecasts

Bantry Bay

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



Forecast for next 3 days



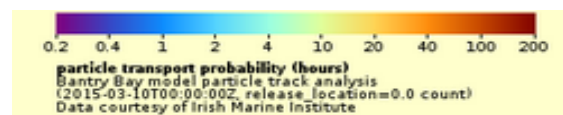
CURRENT inflow

Inflow is 5% Greater than Long Term Mean at Shot Head
Inflow is 48% Greater than Long Term Mean at mouth of Bay

WEST: Killary Harbour

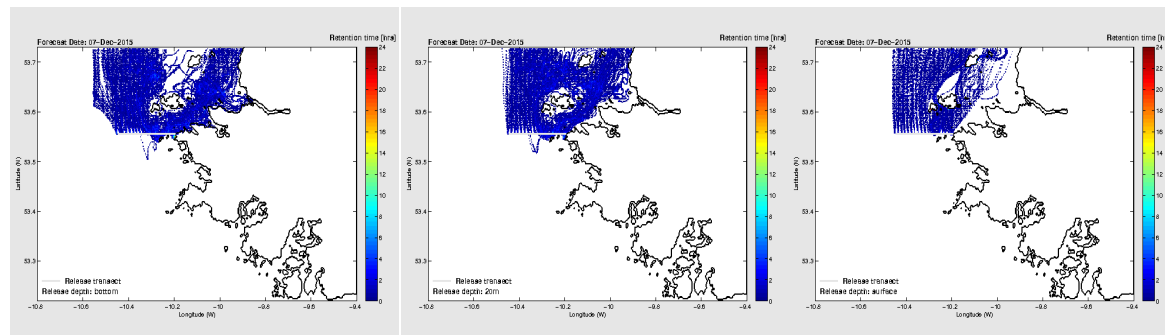
The maps show the **most likely transport pathways for the next 3 days of phytoplankton** found along the **presented transects** i.e. white lines off Aughrus Point and the Mouth of Killary Harbour, and **water depths** (bottom, 20 metres and surface)

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

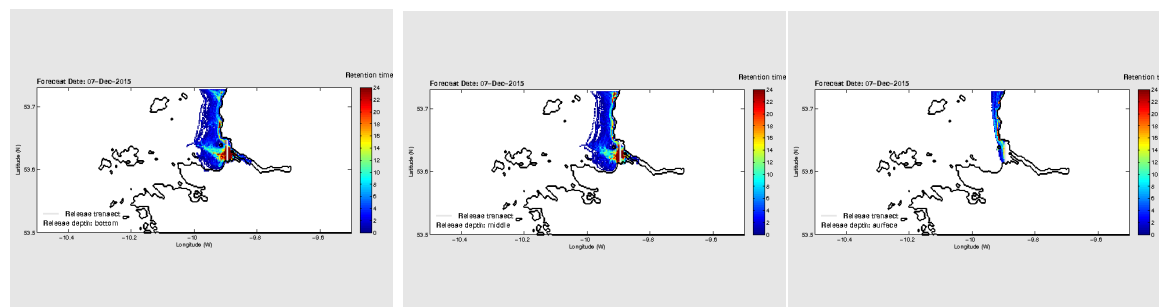


Forecast for the next 3 days

Bottom water Water @ 20 metres Surface water



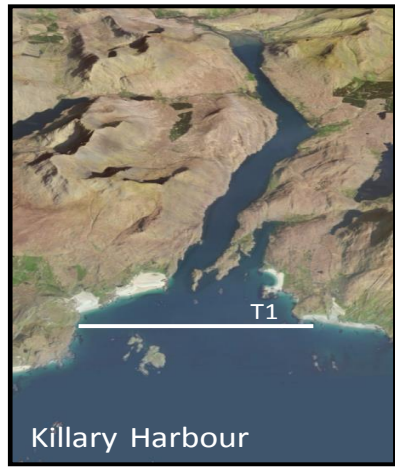
Significant northerly water movement at all depths.



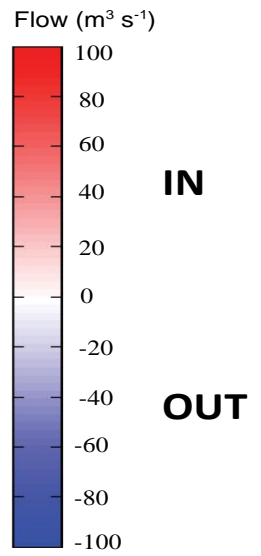
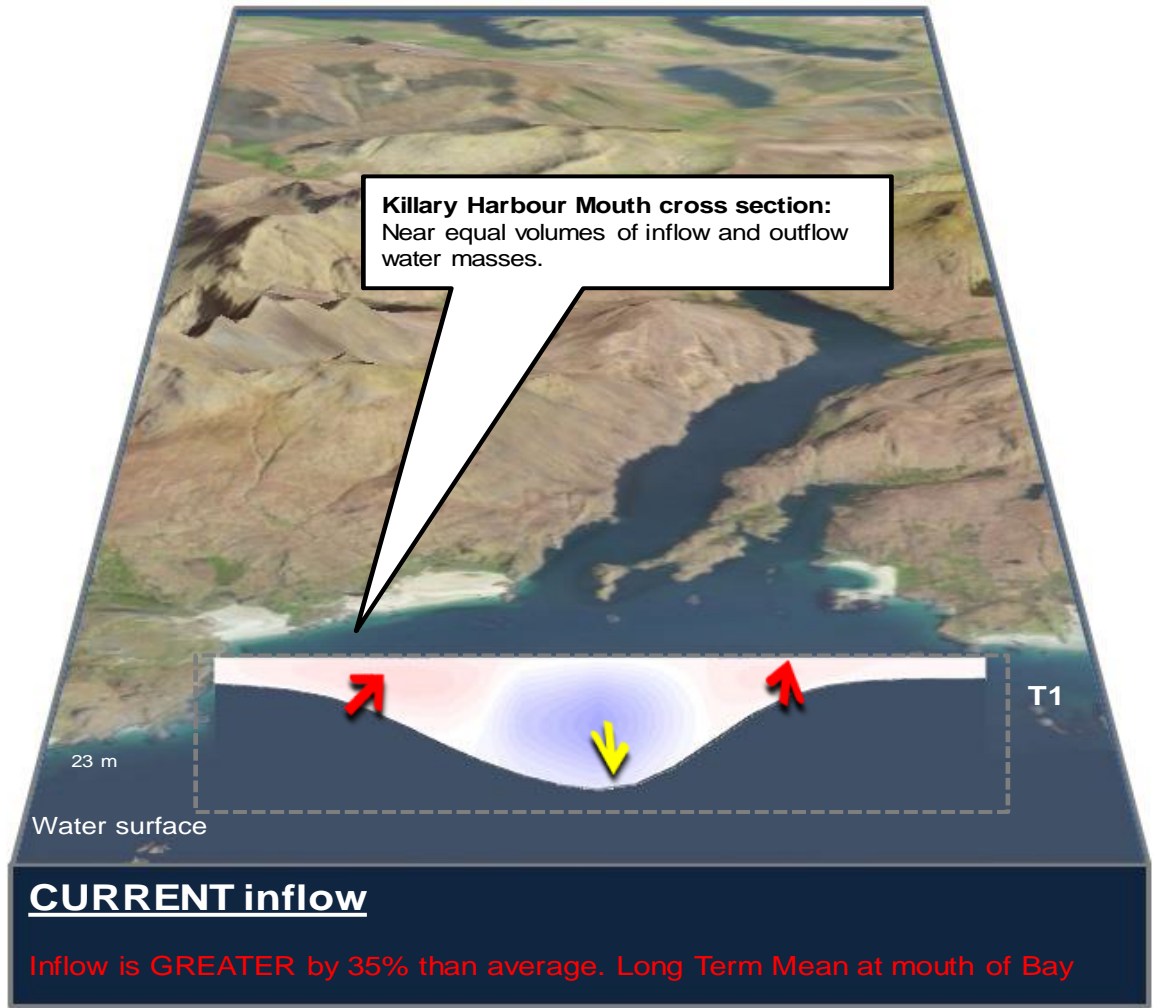
Water movement at all depths in a predominantly northerly direction with minimal bay inflow.

Killary Harbour

3 day estimated water flows at the mouth of Killary Harbour



Forecast for next 3 days



Depth ↓

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

