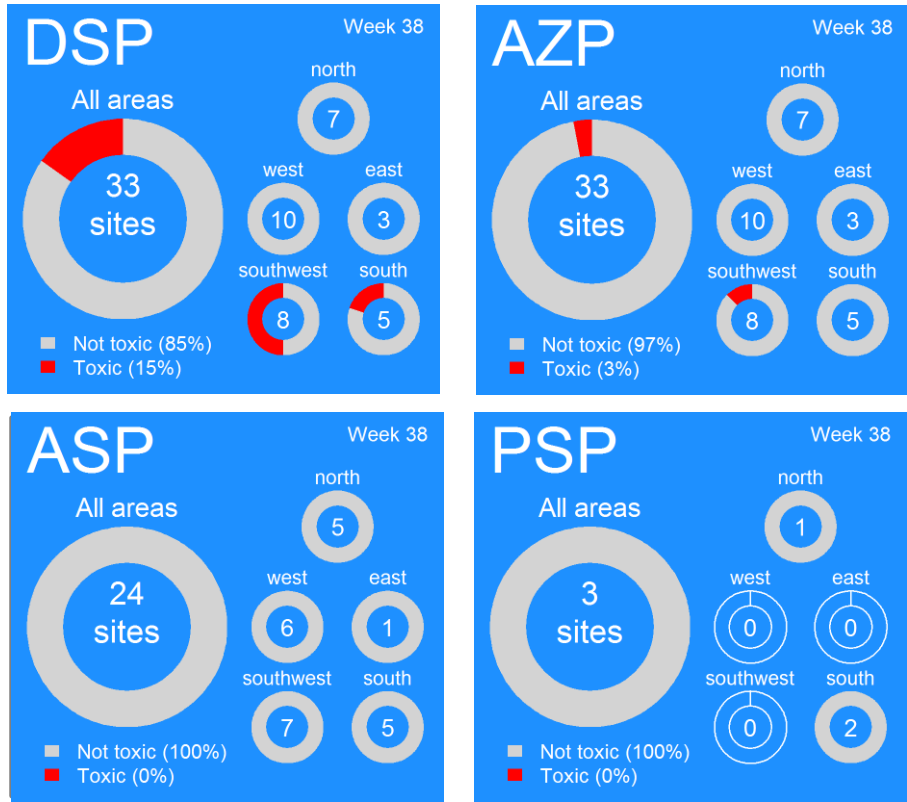


Ireland: Current Conditions

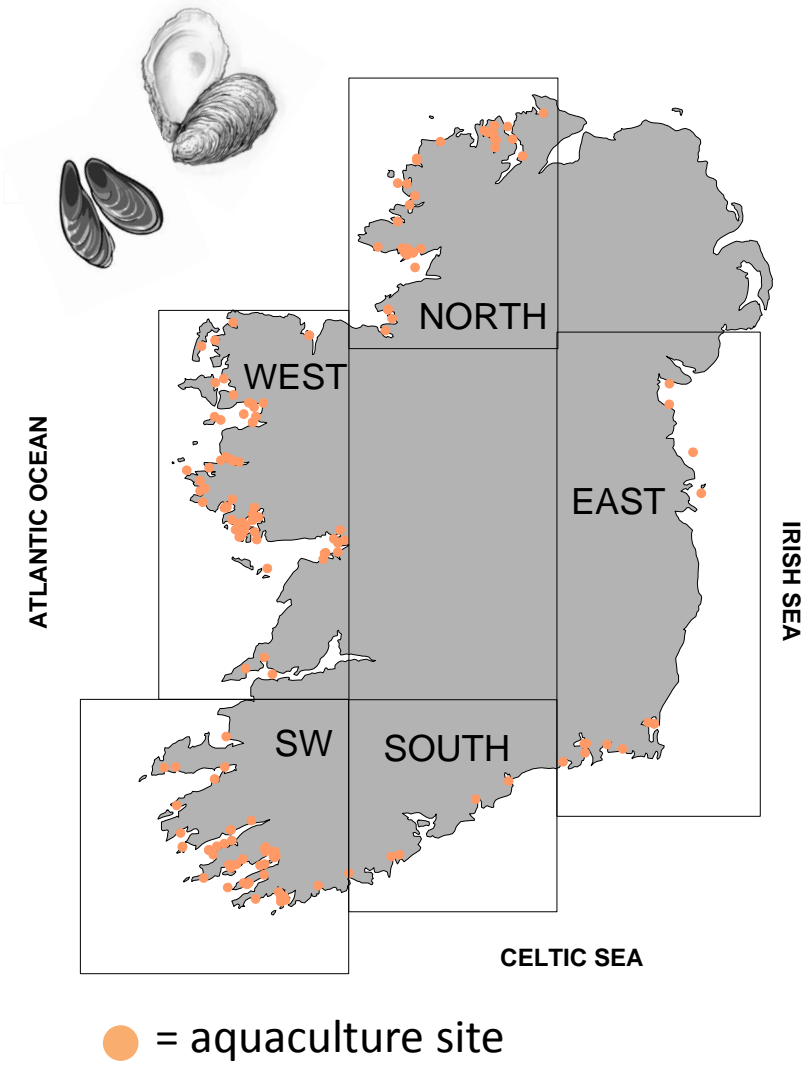
Shellfish biotoxin report (last week)



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**mnesic **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



Ireland: Predictions

Prediction for this week:

ASP event: Low Risk

AZP event: Moderate to High Risk in most areas.

DSP event: High Risk in the SW and S

PSP event: Low Risk

Why do we think this?

ASP: Historically ASP has not been recorded at this time of year. However, the '*Pseudo-nitzshia seriata*' group has been present at many sites nationwide with no corresponding toxin increase in shellfish except for background levels detected in the west.

AZP: There is a history of AZP events at this time of year in the north, west and SW with a higher frequency of events in western and southwestern regions. High levels of Azadinium-like species are present at many sites nationwide. There is no obvious relationship between toxin levels and cell counts except at one site in the north. This is because the current phytoplankton identification method cannot differentiate between toxic and no-toxic species. Toxin levels are decreasing in the south and increasing in the SW.

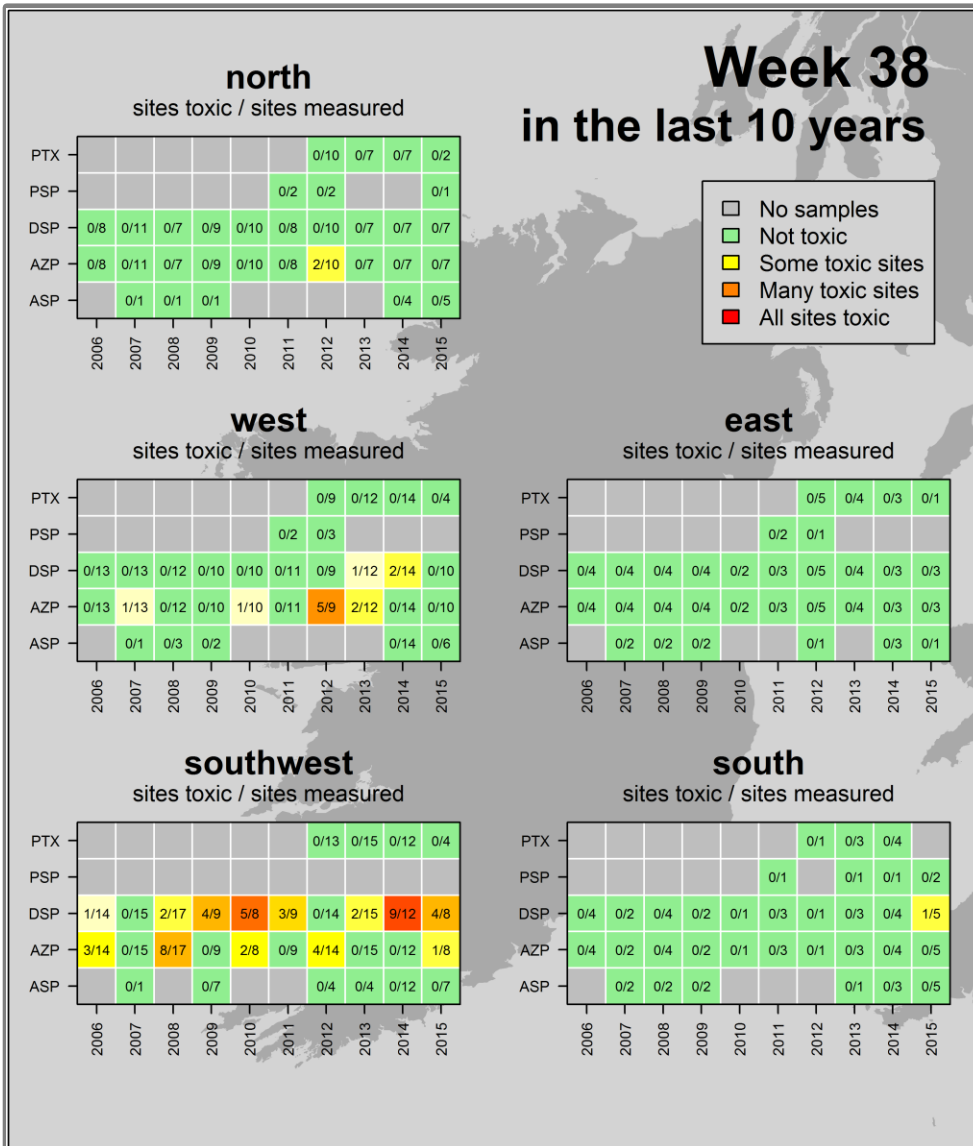
DSP: Toxins and the presence of *Dinophysis* spp continue to remain a strong feature in SW sites in particular. Toxin levels remain well above EC regulatory levels at many sites in the SW. Sites in the north, west and east have zero to background levels of *Dinophysis* spp.

PSP: Low levels of *Alexandrium* spp have been recorded in the north and east. Based on historical data, a PSP event is very unlikely to occur at this time of year.

The *Karenia mikimotoi* bloom has subsided at many sites in the south and SW, it is likely that this bloom will continue to decline in the coming weeks.

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



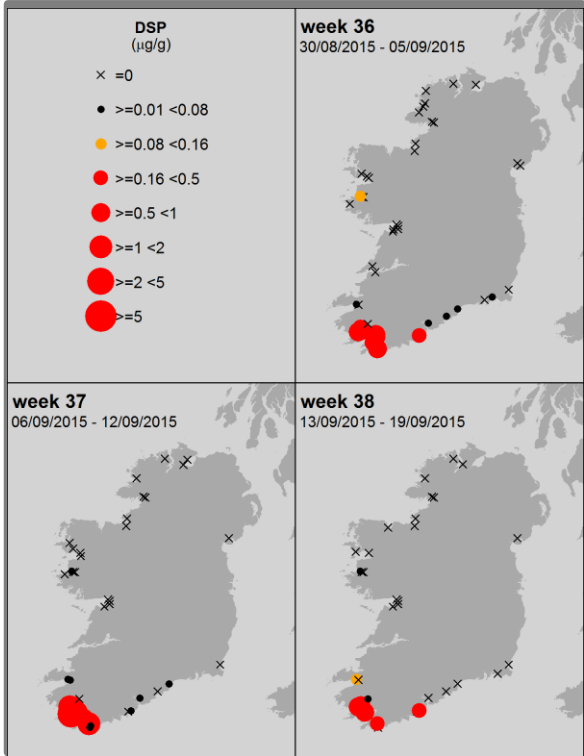
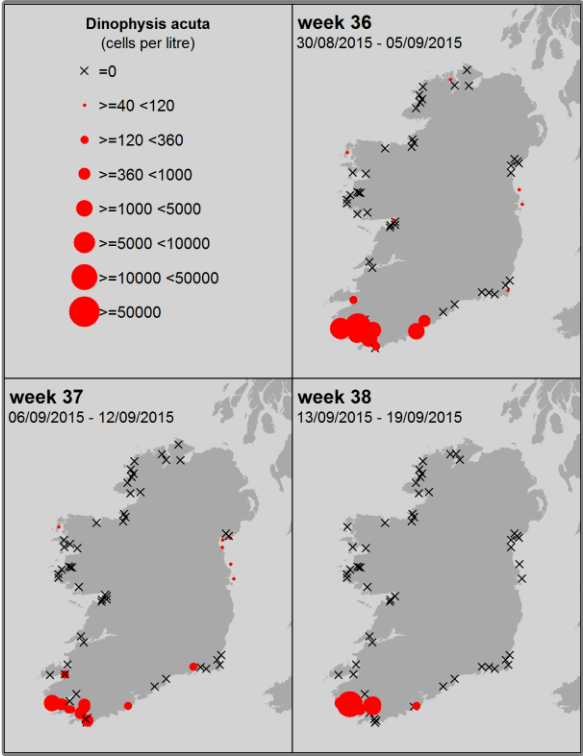
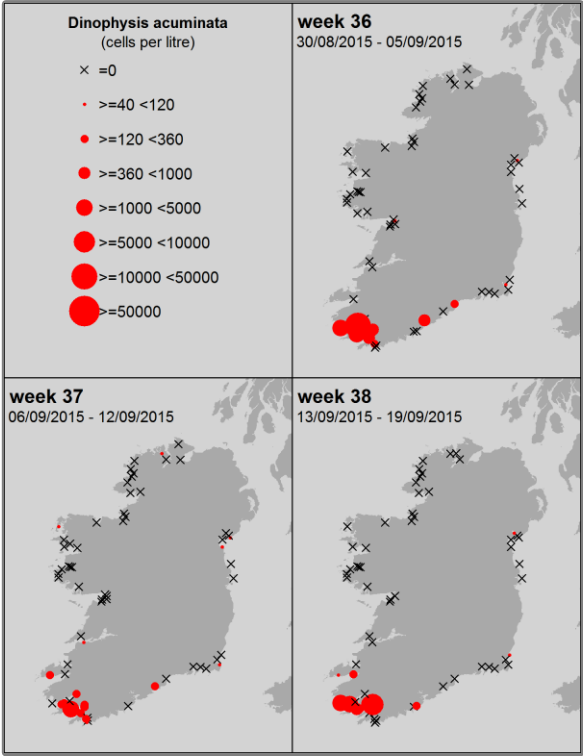
Dinophysis acuminata



Dinophysis acuta



DSP



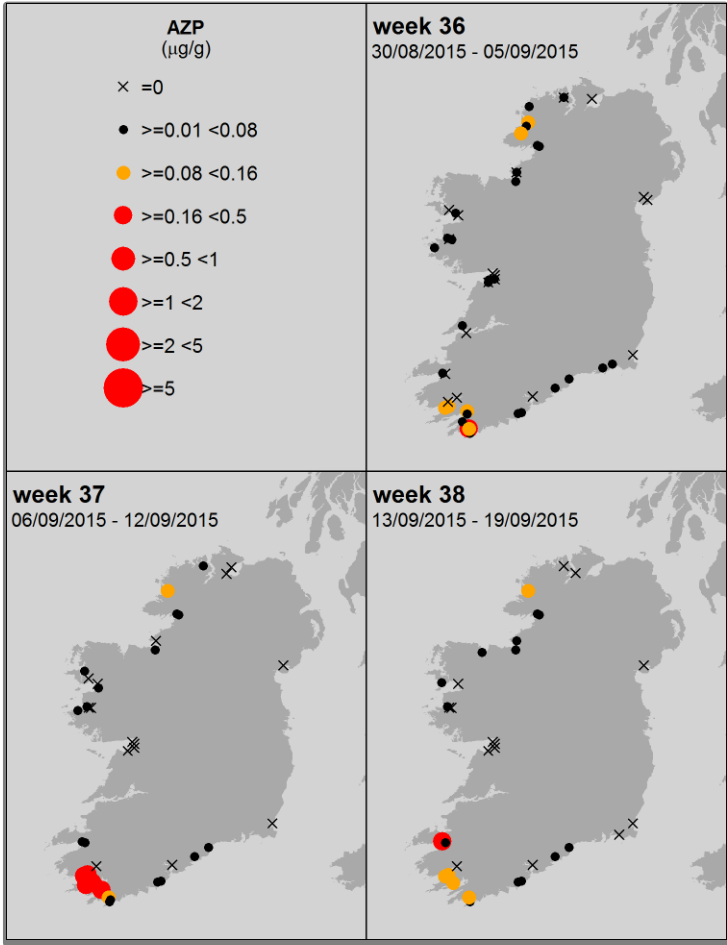
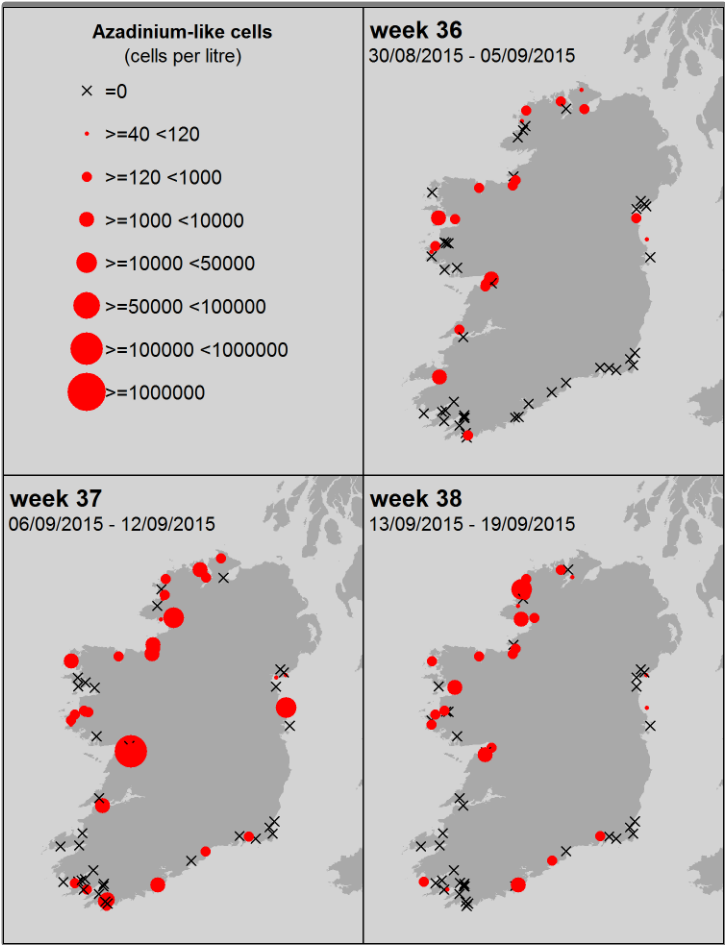
Ireland: Last 3 weeks of available National Monitoring Programme data



Azadinium – like spp.



AZP



Ireland: Last 3 weeks of available National Monitoring Programme data

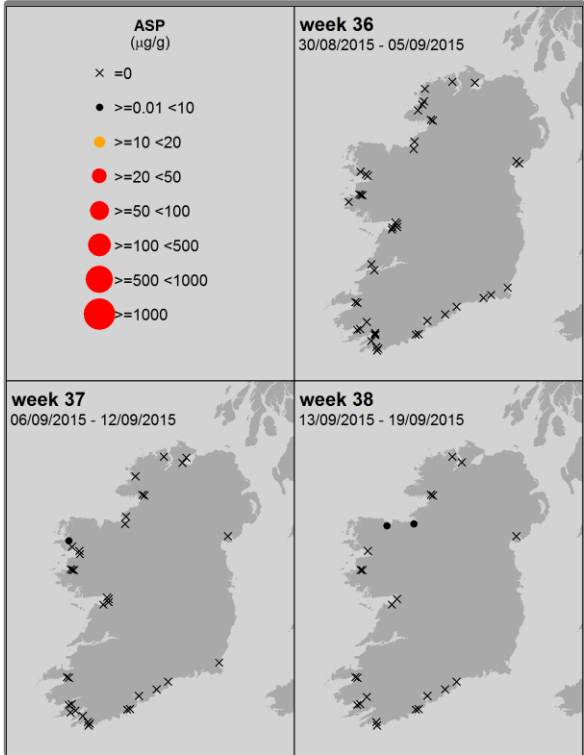
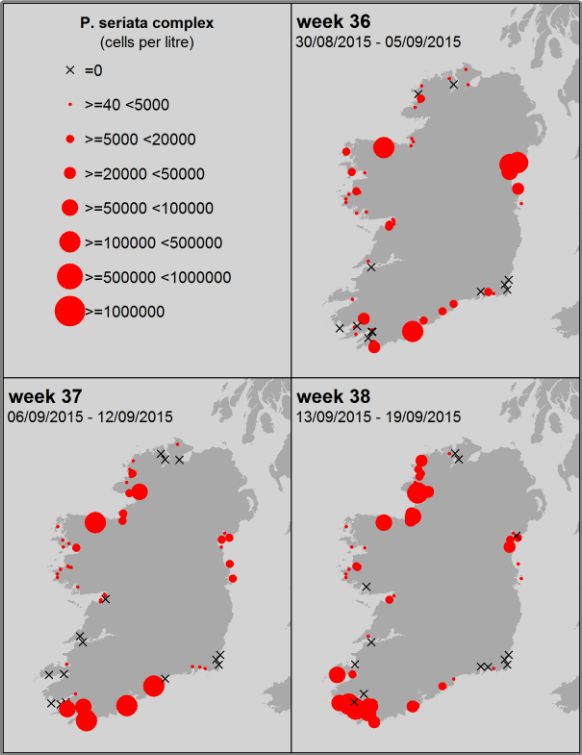
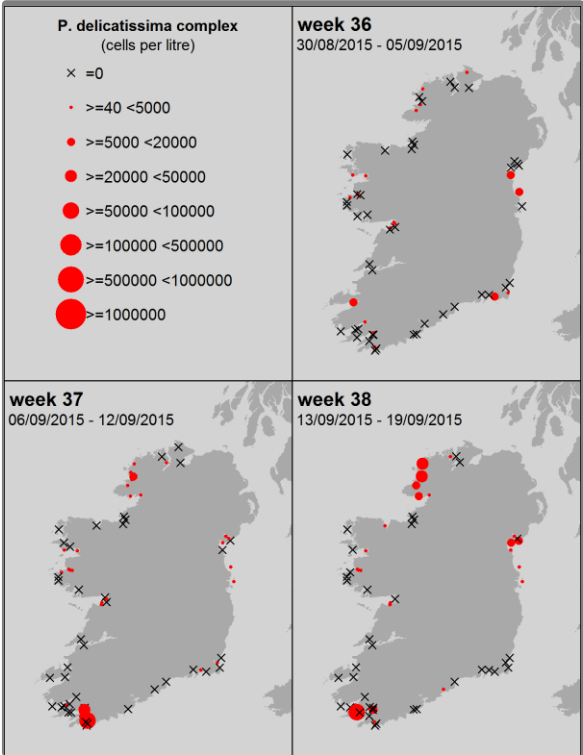
Pseudo-nitzschia spp.



ASP

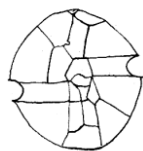
“*P. delicatissima*” complex = small cells
Taken from the literature:
3 species confirmed in Irish waters

“*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.

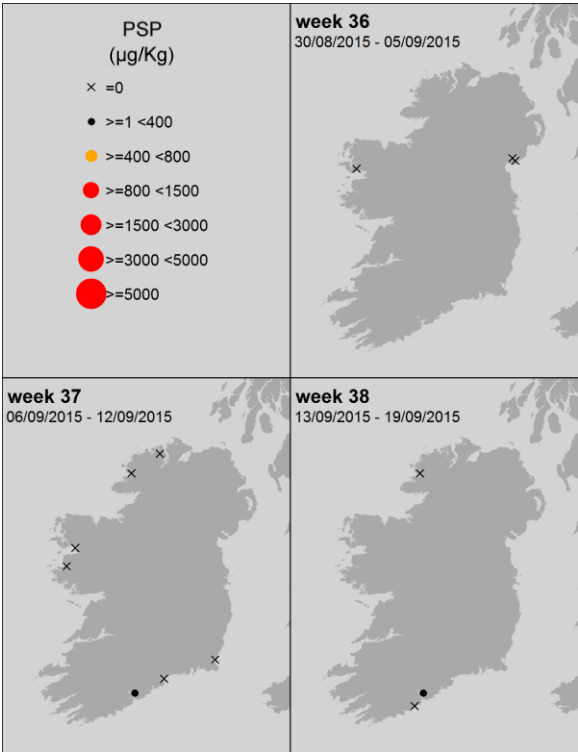
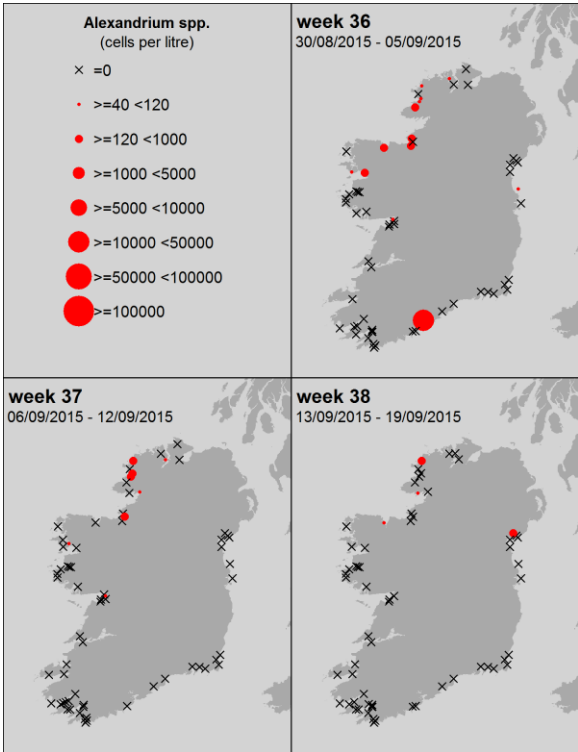
Ireland: Last 3 weeks of available National Monitoring Programme data



Alexandrium spp.



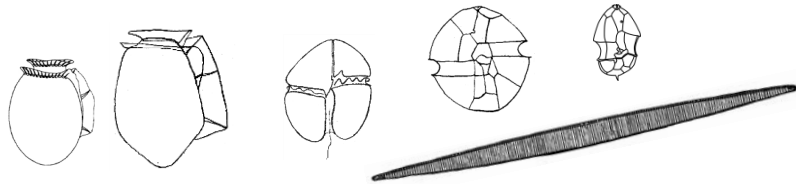
PSP



Ireland HAB & Biotoxin temporal trends

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

Ireland: Biotoxins



Toxin groups

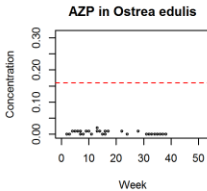
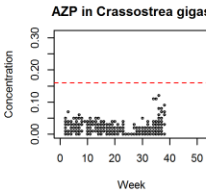
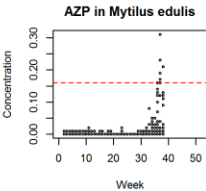
mussels

oysters

oysters

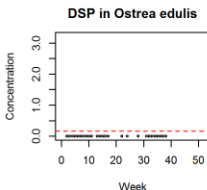
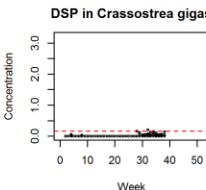
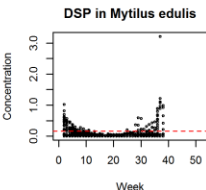
AZP

AZaspiracid
Poisoning



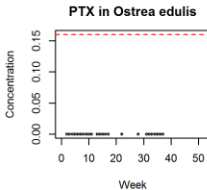
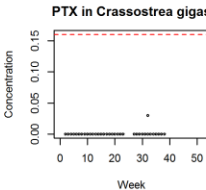
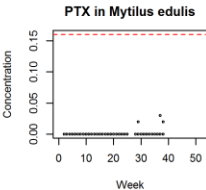
DSP

Diarrhetic
Shellfish
Poisoning



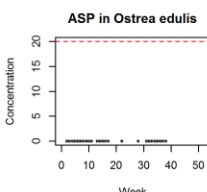
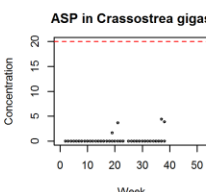
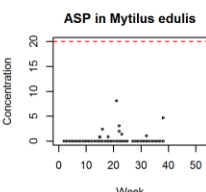
PTX

Pectenotoxin



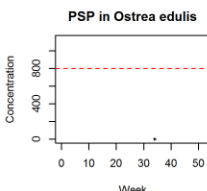
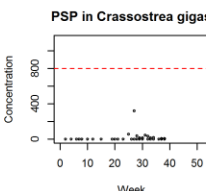
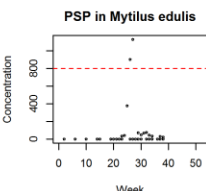
ASP

Amnesic
Shellfish
Poisoning

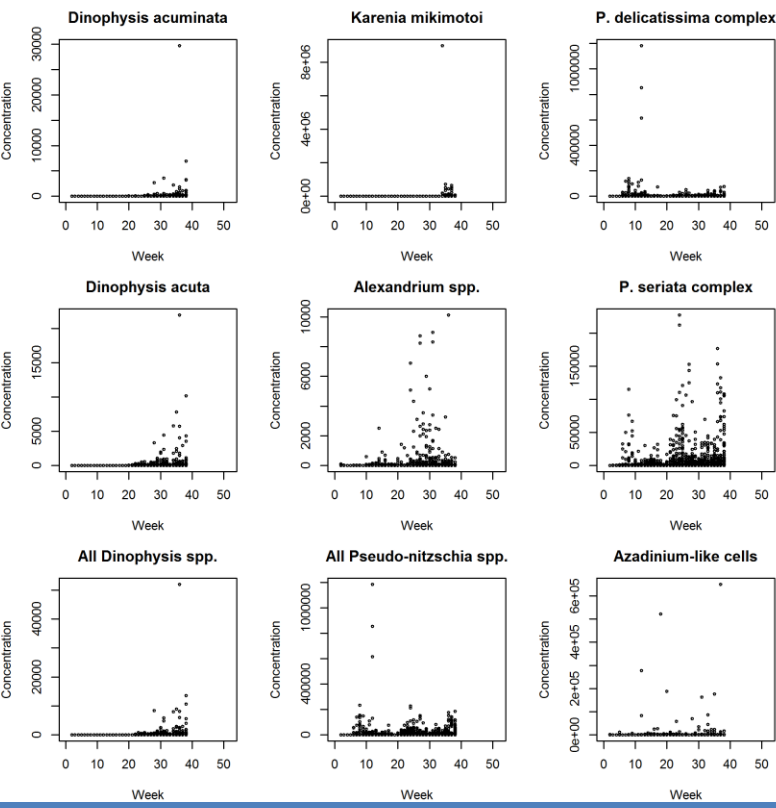


PSP

Paralytic
Shellfish
Poisoning



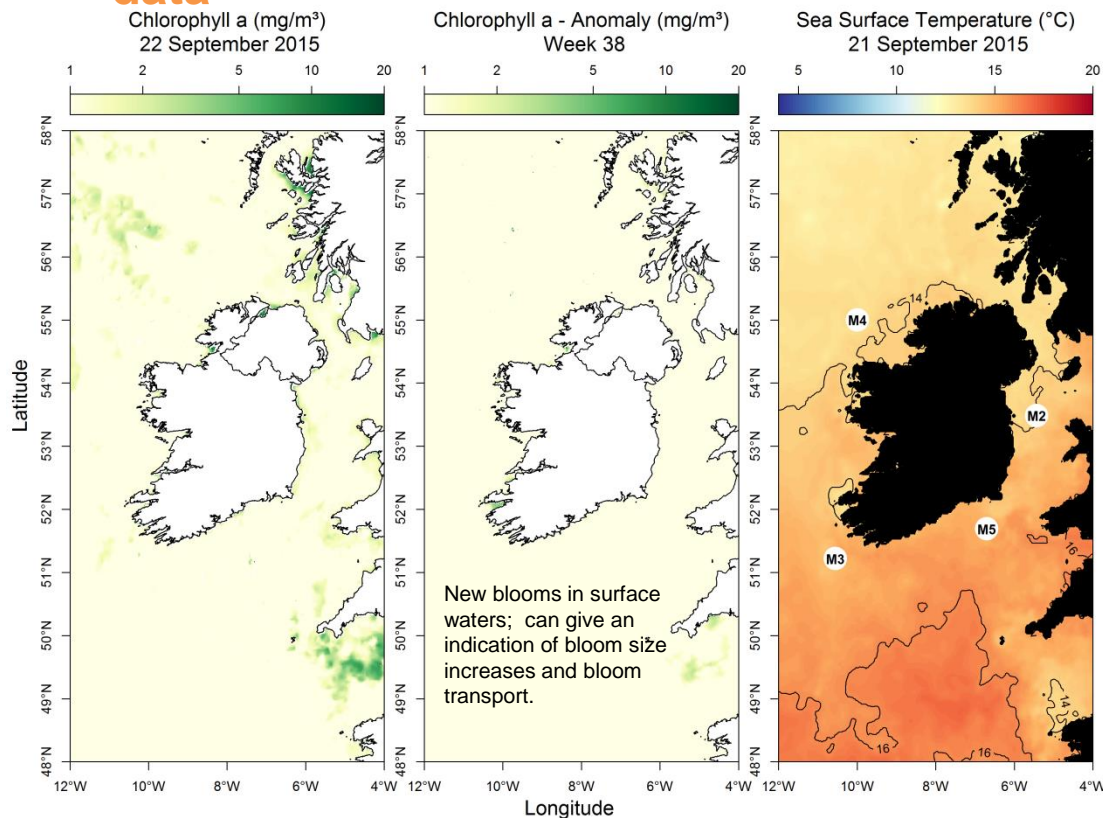
Ireland: HABs



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 1.02 °C

SW coast (M3)

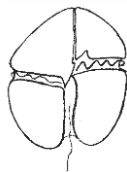
Offline

SE coast (M5)

No difference to LTM

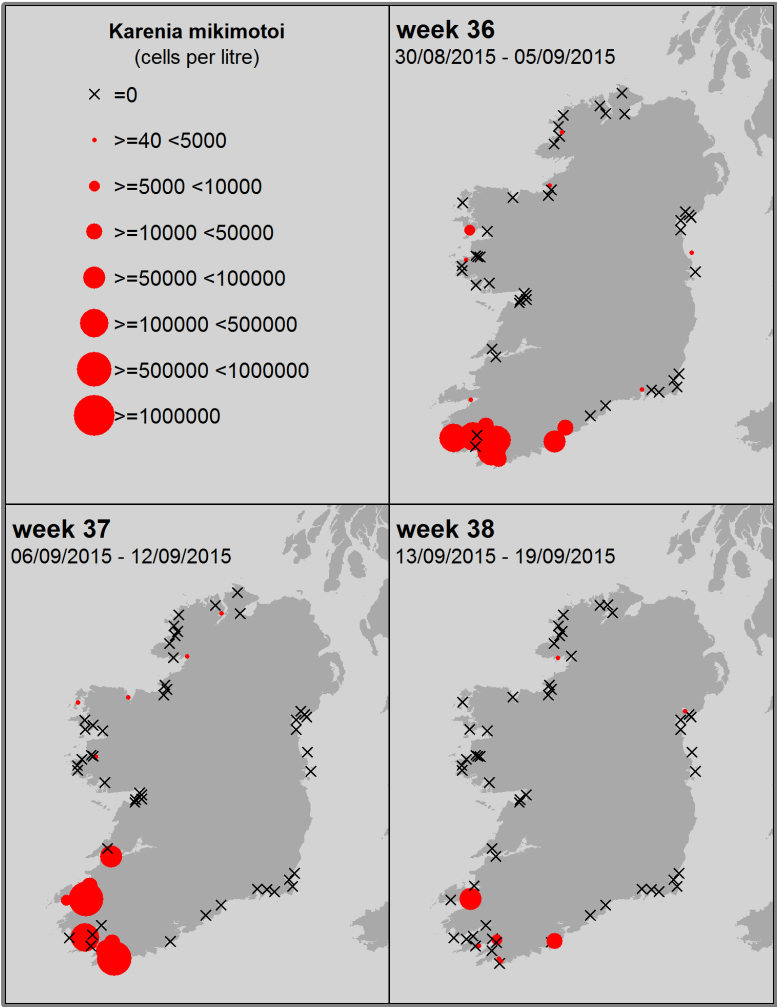
What phytoplankton were blooming at inshore coastal sites last week?

Region	Predominant Phytoplankton (most abundant taxa)	Cells/L	Cells/L (rounded)
north:	Diatoms:		
	<i>Asterionellopsis glacialis</i>	449,180	449,000
	<i>Skeletonema</i> spp.	146,520	147,000
	' <i>Pseudo-nitzschia seriata</i> ' complex	105,099	105,000
	<i>Cylindrotheca closterium</i> / <i>Nitzschia longissima</i>	65,120	65,000
	Others:		
	Microflagellate	87,252	87,000
west:	Diatoms:		
	<i>Thalassiosira</i> <20um	77,971	78,000
	<i>Navicula</i> spp. <25um	77,214	77,000
	' <i>Pseudo-nitzschia seriata</i> ' complex	74,032	74,000
	Others:		
	Microflagellate	69,405	69,000
SW:	Diatoms:		
	<i>Lauderia</i> / <i>Detonula</i> spp.	248,296	248,000
	' <i>Pseudo-nitzschia seriata</i> ' complex	82,513	83,000
	<i>Cerataulina pelagica</i>	69,120	69,000
	<i>Guinardia delicatula</i>	67,520	68,000
south:	Diatoms:		
	<i>Chaetoceros</i> (Hyalochaete) spp.	215,745	216,000
	<i>Navicula</i> spp. <25um	162,755	163,000
	<i>Thalassiosira</i> <20um	100,681	101,000
	<i>Bacteriastrum</i> spp.	87,812	88,000
	Dinoflagellates:		
	<i>Karenia mikimotoi</i>	12,240	12,000
	Armoured dinoflagellate <20um	12,240	12,000
	Others:		
	Haptophytes	8,680	9,000
east:	Diatoms:		
	<i>Navicula</i> spp. <25um	1,228,752	1,229,000
	<i>Asterionellopsis</i> spp.	350,208	350,000
	<i>Leptocylindrus danicus</i>	300,276	300,000
	<i>Cylindrotheca closterium</i> / <i>Nitzschia longissima</i>	105,223	105,000
	<i>Bacteriastrum</i> spp.	102,952	103,000
	<i>Thalassiosira polycorda</i>	100,681	101,000



Karenia mikimotoi
(old name: *Gyrodinium aureolum*)

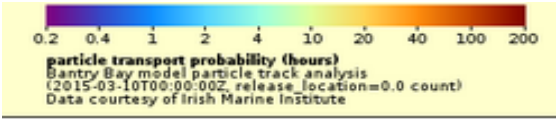
The large *Karenia mikimotoi* off the SW and South coasts is still evident. But is getting smaller as the weeks progress.



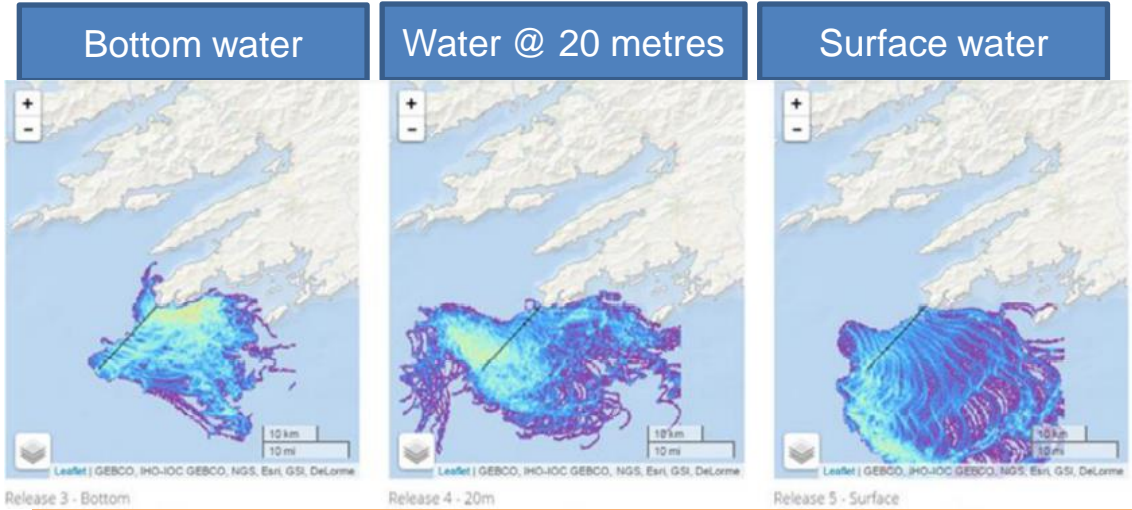
SOUTHWEST: Bantry Bay

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)

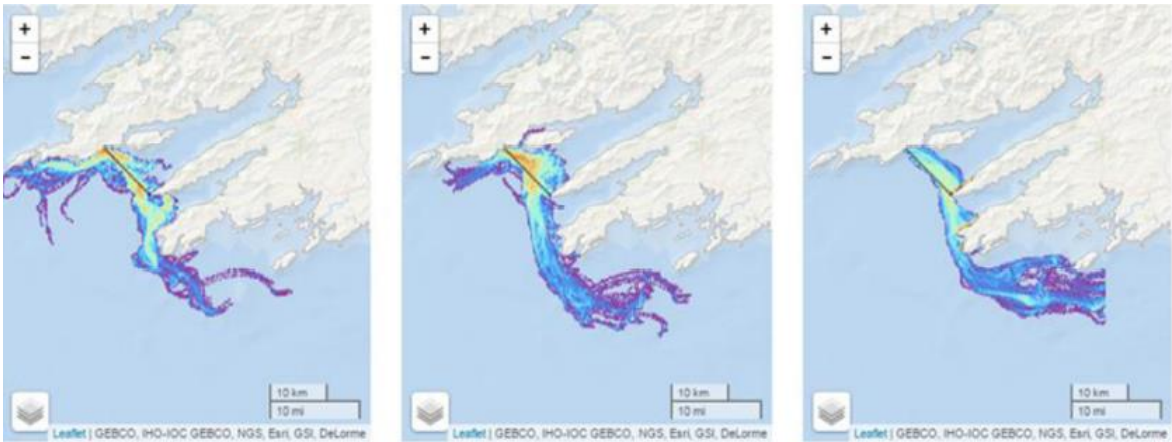
Reddish colours represent areas where phytoplankton remain longest
Cooler colours represent areas where phytoplankton remain for shorter periods



Forecast for the next 3 days



Estimated water circulation patterns at Mizen Head show that the waters flowing from the Celtic Sea in the coastal current will be for the most part restricted. Water flows are not expected to reach the mouth of Bantry Bay.

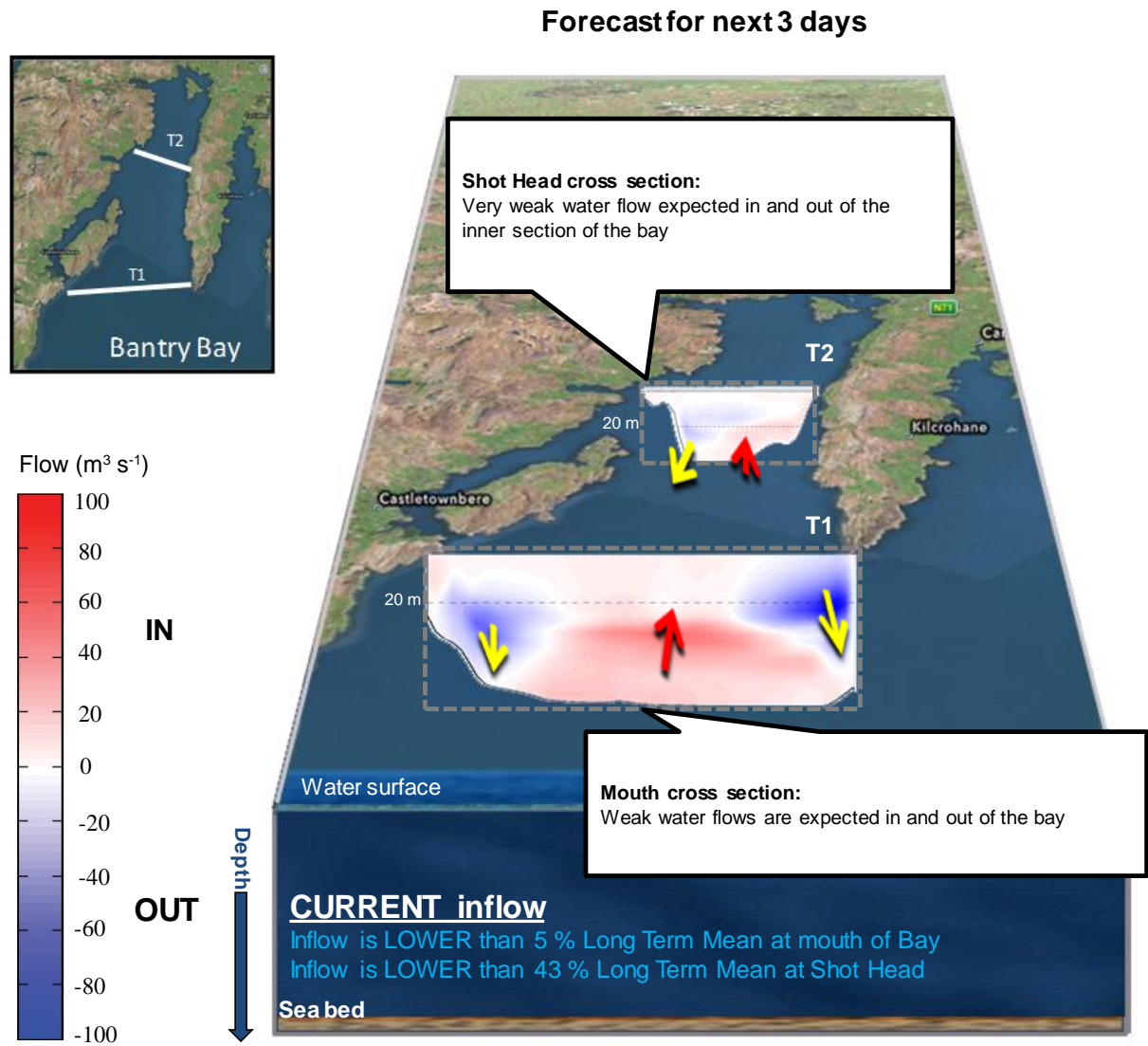


Estimated flows at the mouth of Bantry Bay show a predominant movement of water out of the bay at all depths in the next couple of days.

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

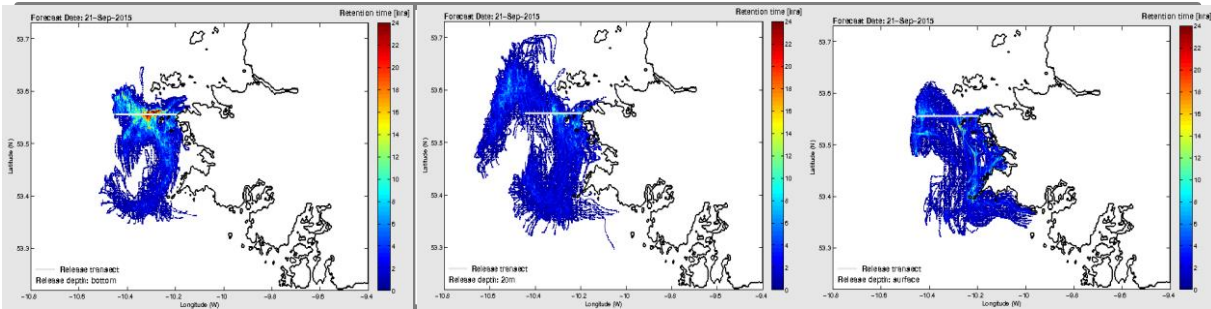


0.2 0.4 1 2 4 10 20 40 100 200

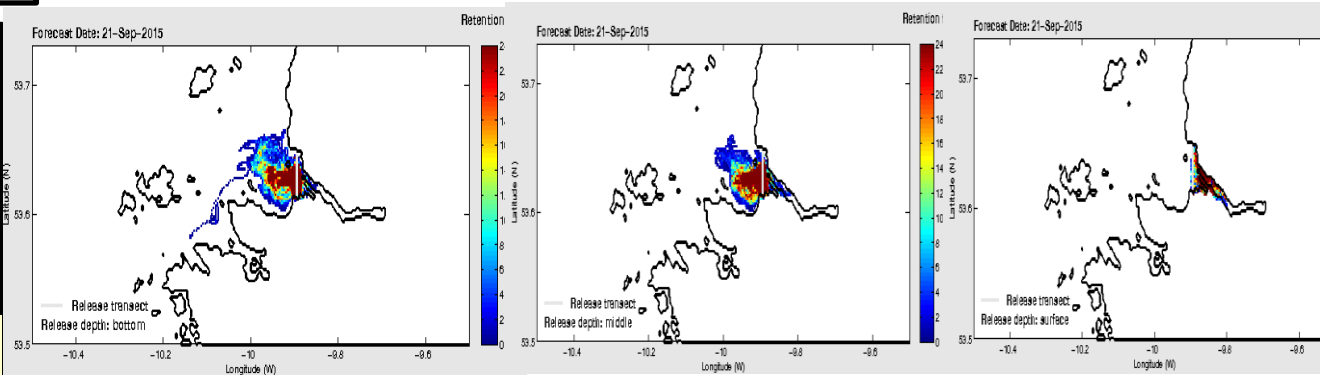
particle transport probability (hours)
Bantry Bay model particle track analysis
(2015-03-10T00:00:00Z, release_location=0.0 count)
Data courtesy of Irish Marine Institute

Forecast for the next 3 days

- Bottom water
- Water @ 20 metres
- Surface water



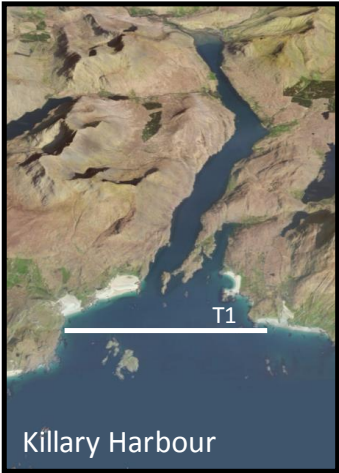
Water flows off the west coast will primarily be directed southward with some water movement at 20 m predicted to have a westerly flow. Offshore water masses are unlikely to reach the mouth of Killary in the next couple of days



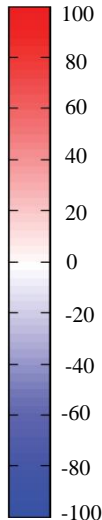
Estimated water circulation at the mouth of Killary shows that bottom waters will be somewhat restricted. Mid to surface water flows, however, show some movement into the mid-fjord region.

Killary Harbour

3 day estimated water flows at the mouth of Killary Harbour



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



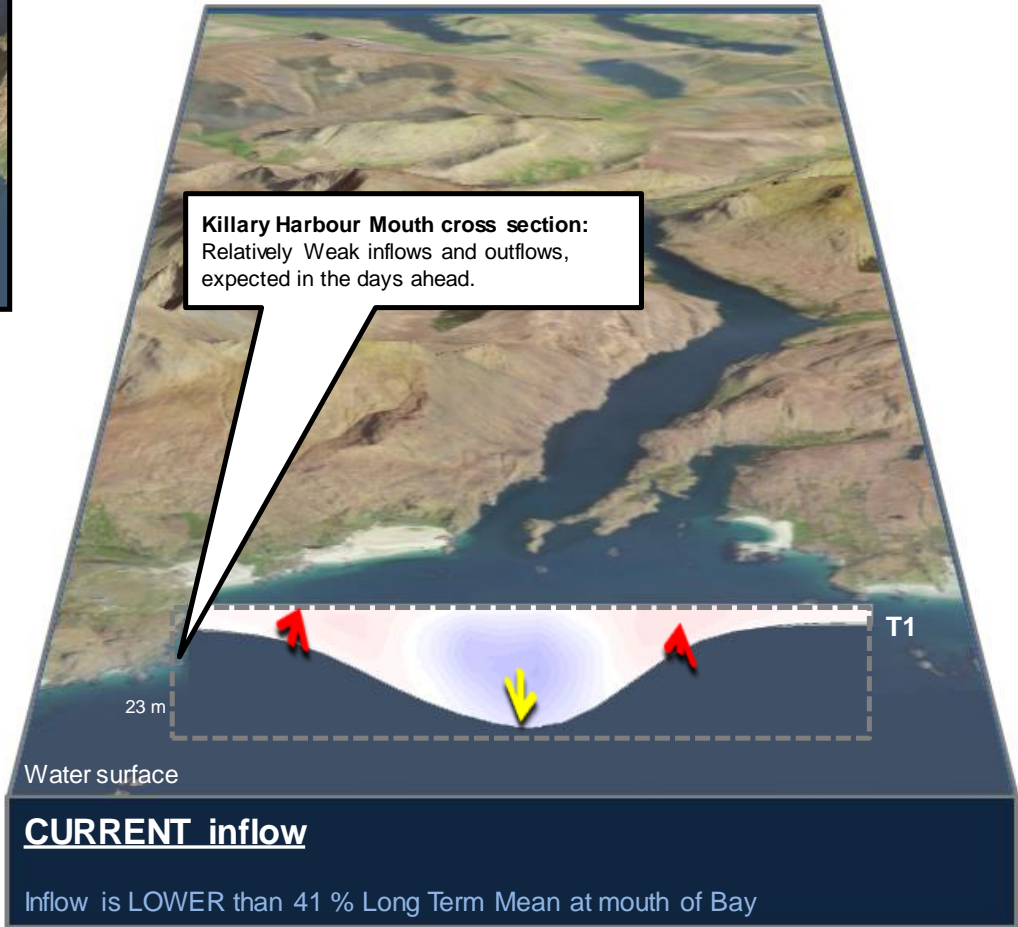
IN

OUT

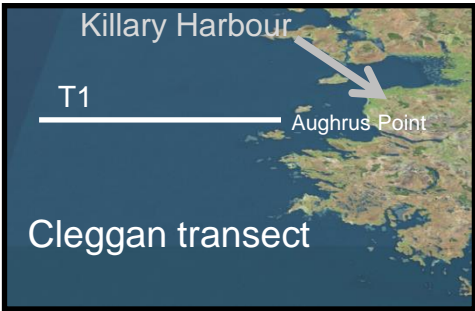
Depth



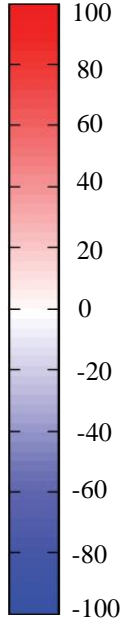
Forecast for next 3 days



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



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



northward
flow

southward
flow

Depth



Forecast for next 3 days

