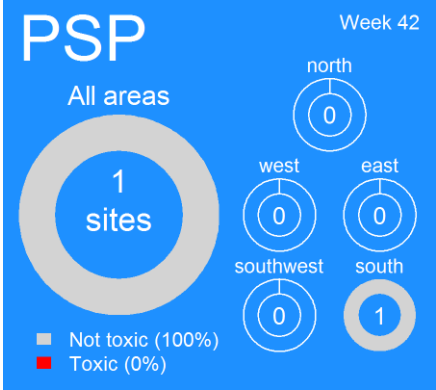
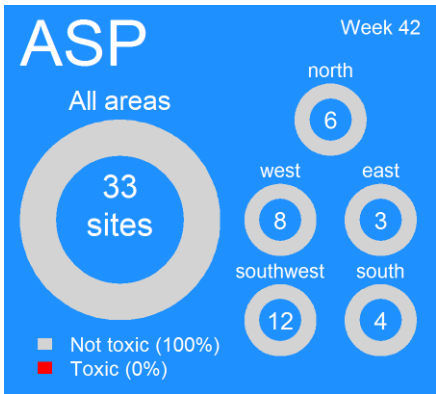
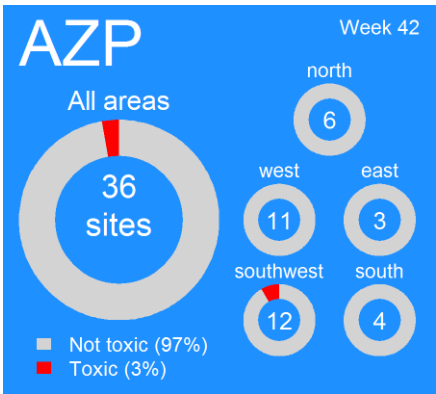
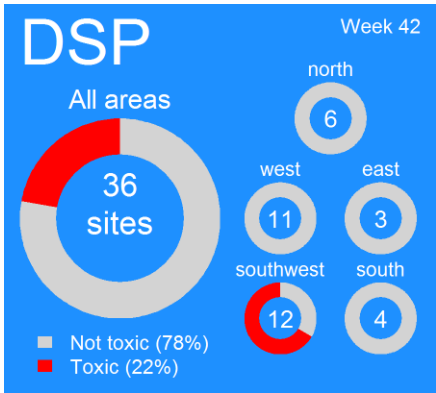


Ireland: Current Conditions

Shellfish biotoxin report (last week)



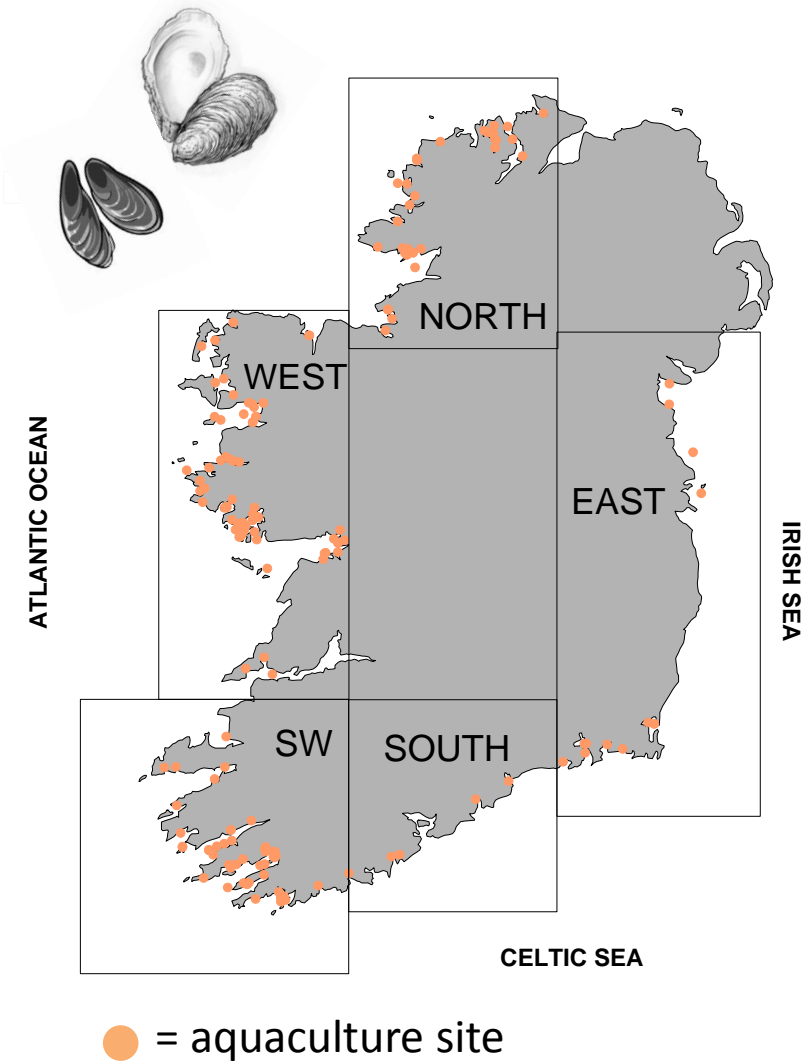
EU Regulatory Limit:

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

Prediction for this week:

ASP event: Low Risk

AZP event: Moderate to high

DSP event: Moderate to low for most sites (site specific)

PSP event: Low risk

Why do we think this?

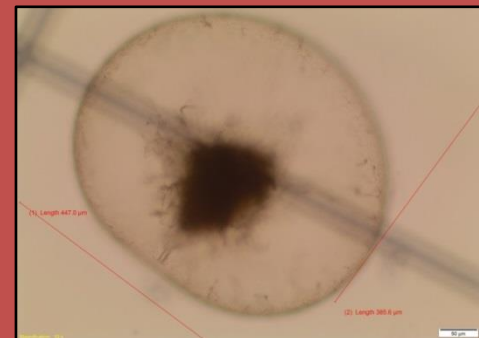
ASP: Historically ASP has not been recorded at this time of year. While the '*Pseudo-nitzschia seriata*' group is still present in many sites nationwide, no corresponding toxin increase has been observed in shellfish. The current *Pseudo-nitzschia* populations appear to be declining in both quantities and geographical coverage.

AZP: There is a history of AZP events at this time of year in the north, west and SW. The current toxin trend appears to be fluctuating. This is a time to be cautious, as in the past there has been sudden rapid toxin increases at this time of year.

DSP: *Dinophysis* spp. continue to decline in the main SW sites affected, but, there are still some sites where significant cell levels remain. DSP toxin has increased again in some sites in the SW but this could be due to patchy sampling and not a new event. While there are no current environmental / water movement indicators to suggest any imminent new DSP event, we are still in a time period of historical occurrence, so caution is advised.

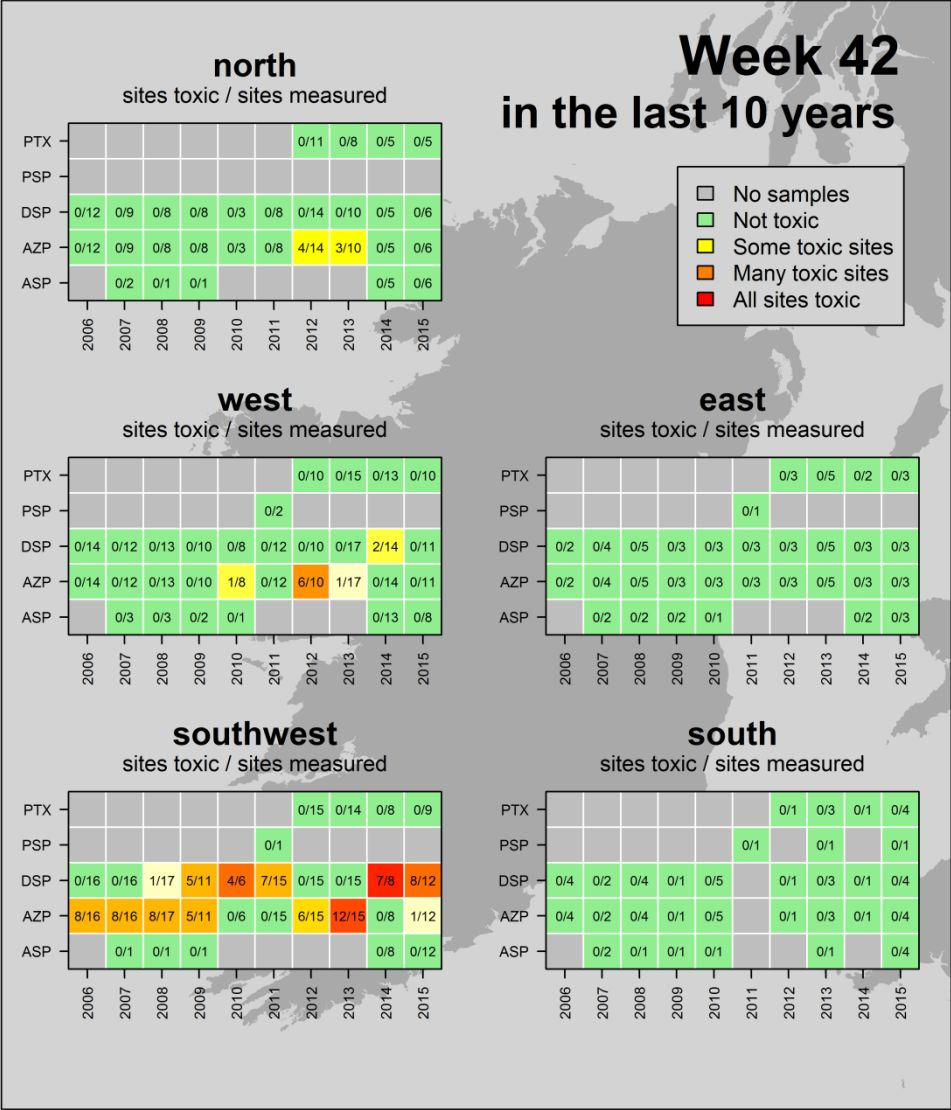
PSP: Toxicity issues are not expected at this time in the year.

Blooms: There have been reports of discoloured water in the west and SW over the past few weeks. This is currently due to a dinoflagellate called *Noctiluca scintillans*; well known for its bioluminescent properties. While *Noctiluca scintillans* is non-toxic to shellfish, it can cause stress to finfish and related gill damage. This species has no impact on human health and its occurrence is not uncommon. The algal bloom is red/orange in colour and can appear quite dense in bays where there is slack water circulation. Water quality and oxygen levels may deteriorate when localised dense blooms die off rather than disperse.

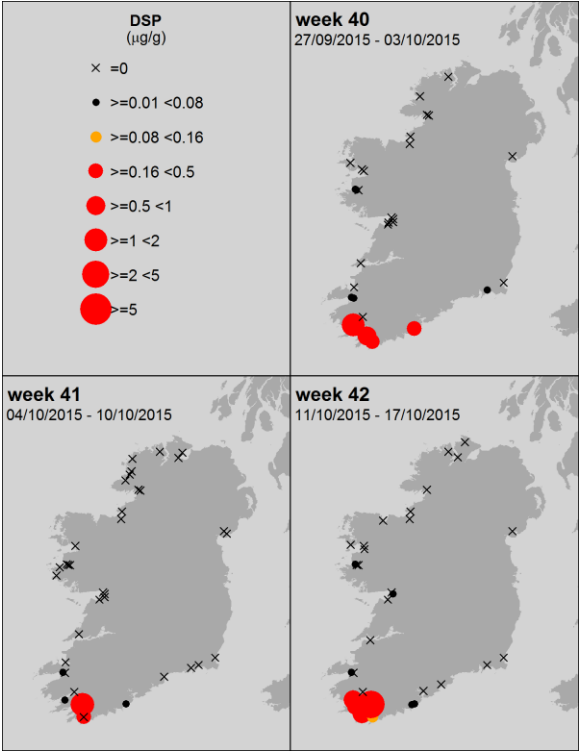
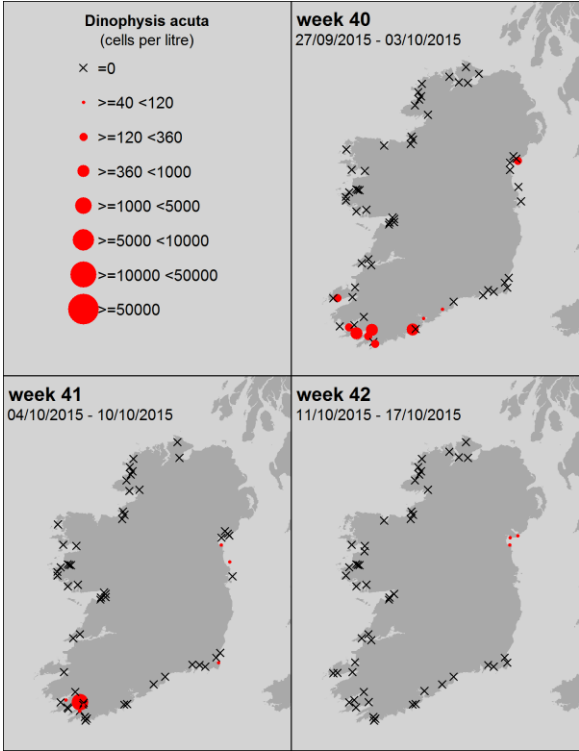
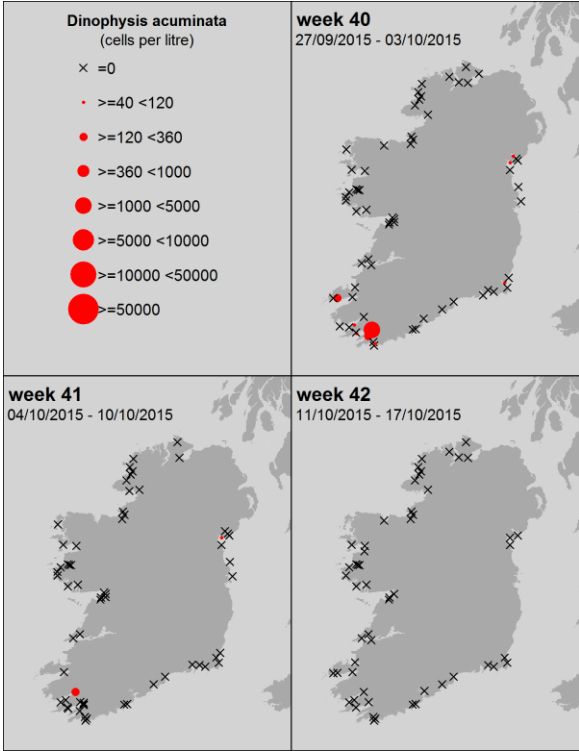
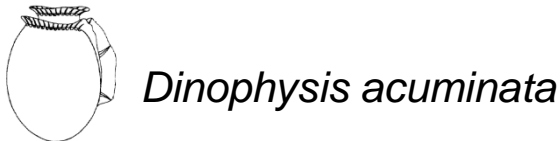


Ireland: Historic Conditions

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



Ireland: Last 3 weeks of available National Monitoring Programme data



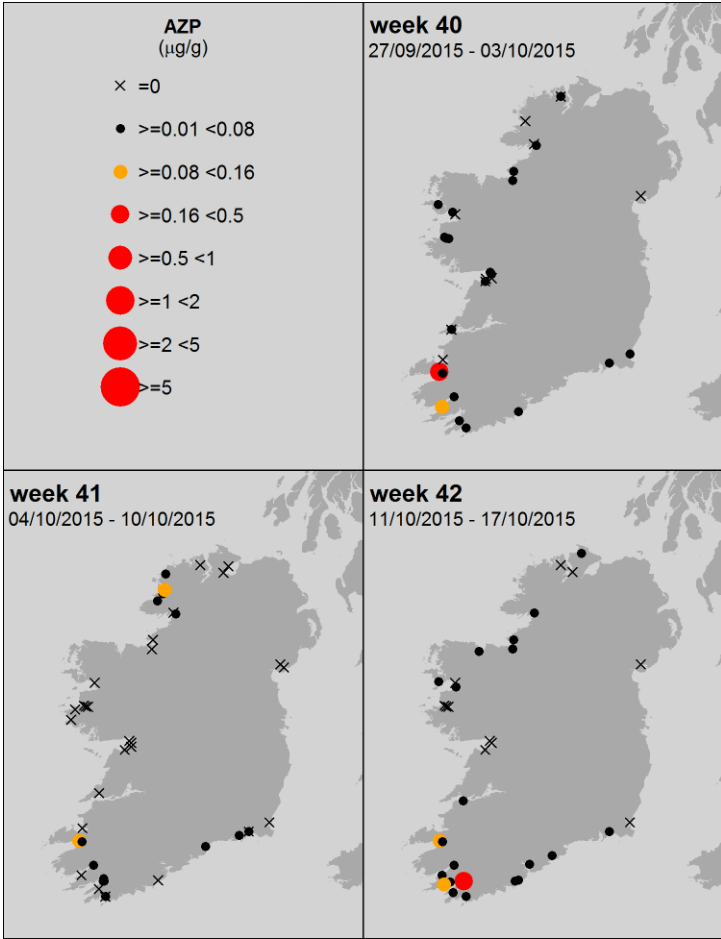
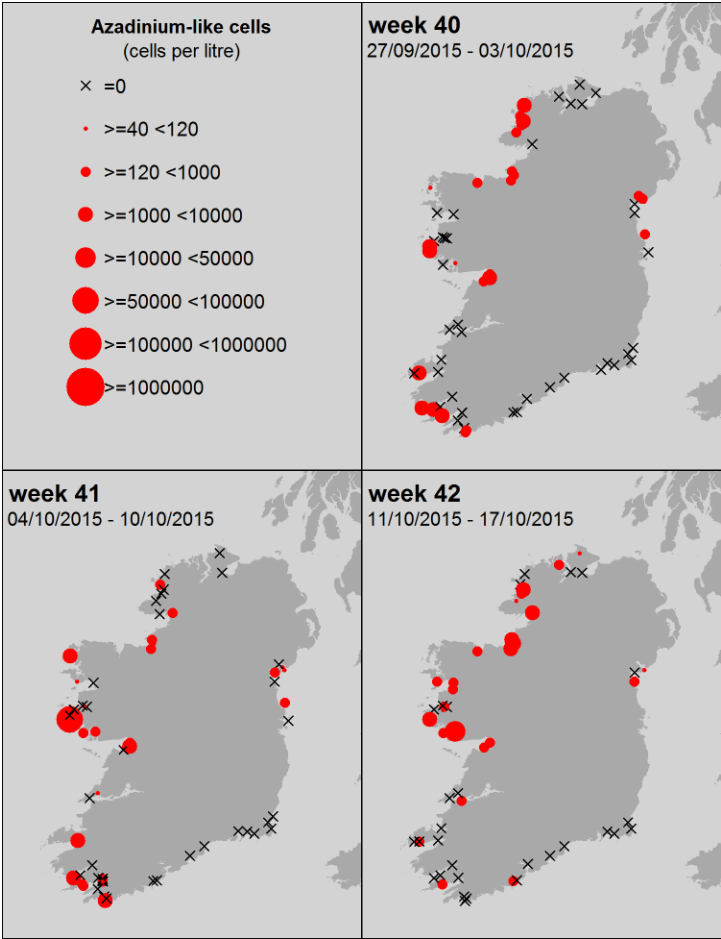
Ireland: Last 3 weeks of available National Monitoring Programme data



Azadinium – like spp.



AZP



Ireland: Last 3 weeks of available National Monitoring Programme data

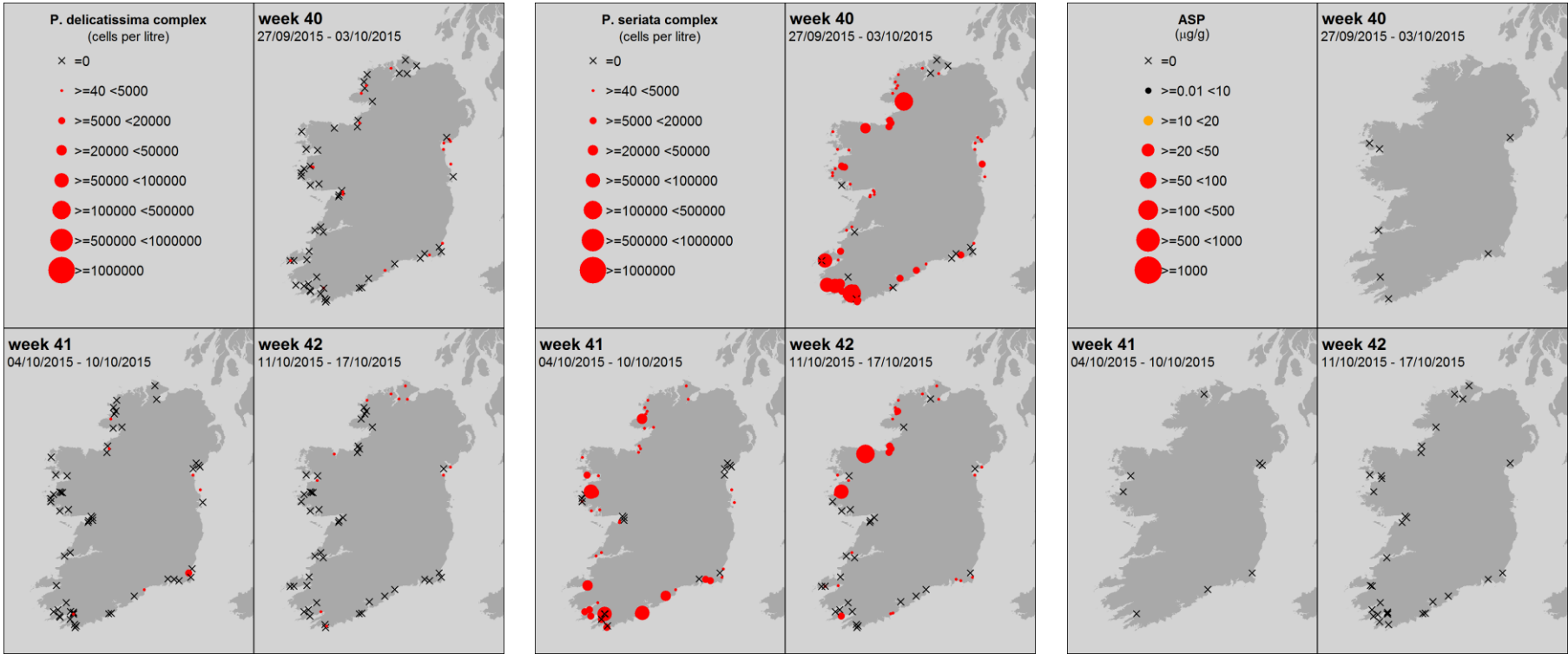
Pseudo-nitzschia spp.



ASP

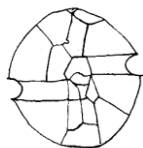
“*P. delicatissima*” complex = small cells
Taken from the literature:
3 species confirmed in Irish waters

“*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.

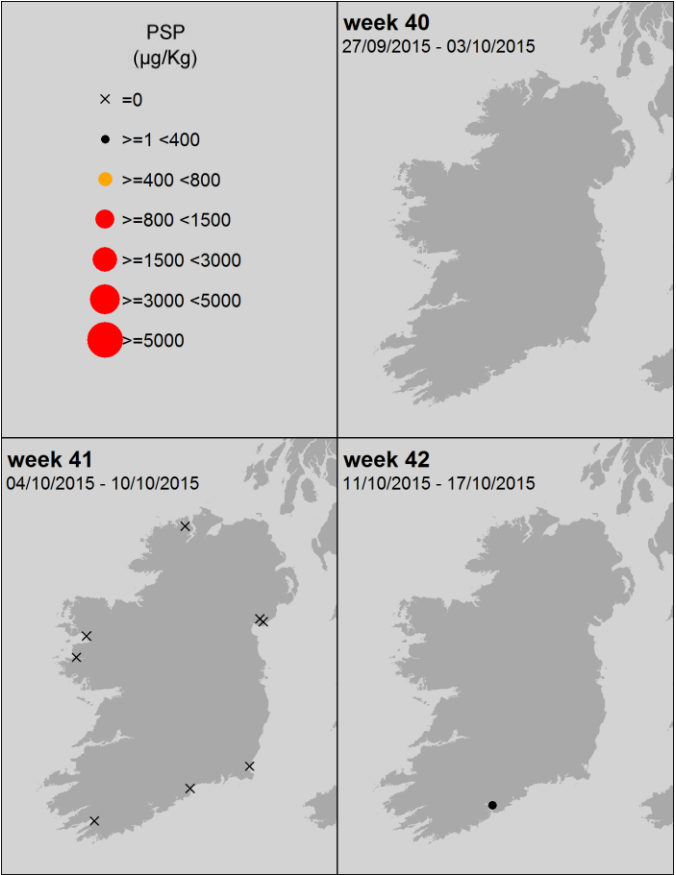
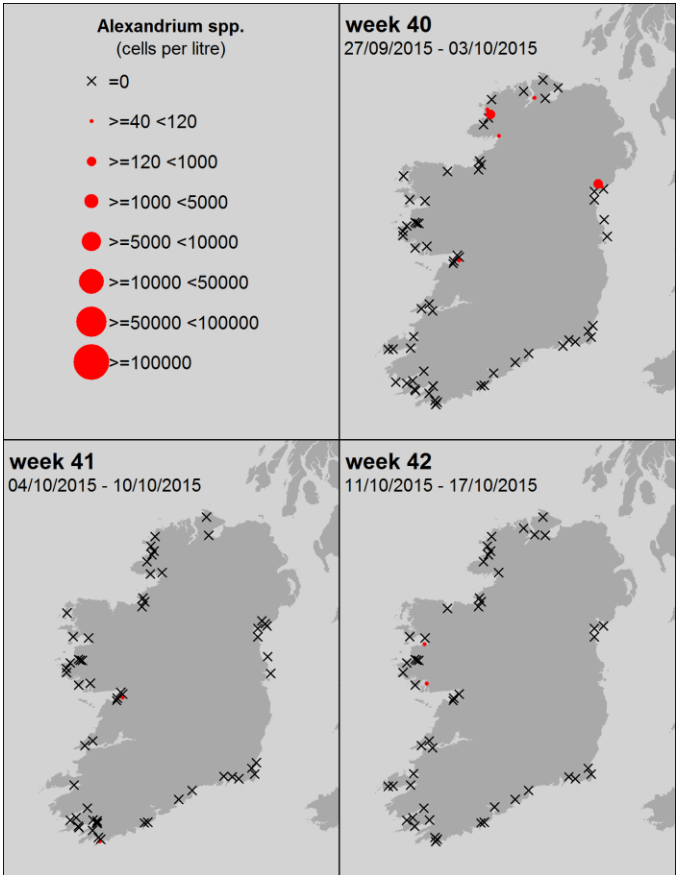
Ireland: Last 3 weeks of available National Monitoring Programme data



Alexandrium spp.



PSP



Ireland HAB & Biotoxin temporal trends

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

Ireland: Biotoxins



Toxin groups

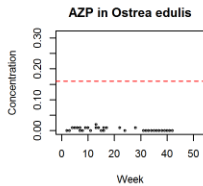
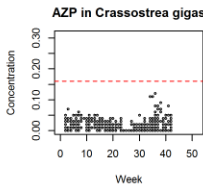
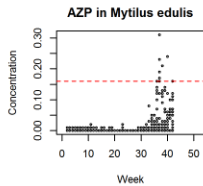
mussels

oysters

oysters

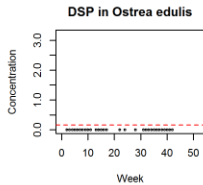
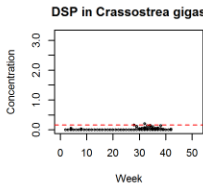
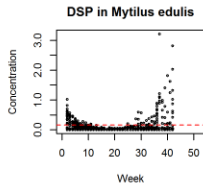
AZP

AZaspiracid
Poisoning



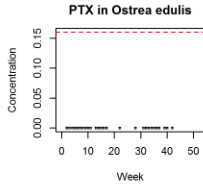
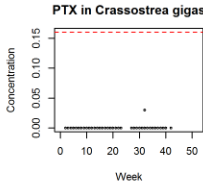
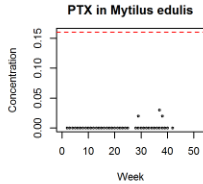
DSP

Diarrhetic
Shellfish
Poisoning



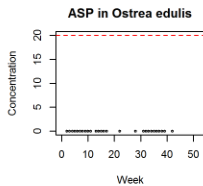
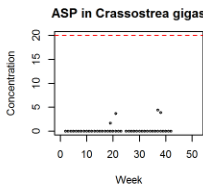
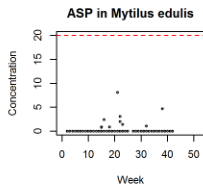
PTX

Pectenotoxin



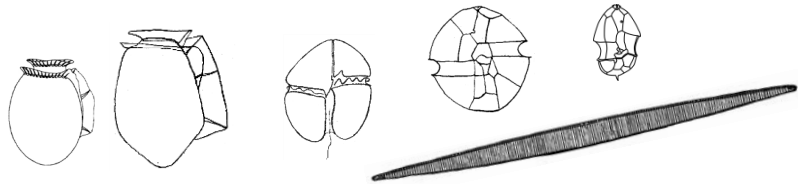
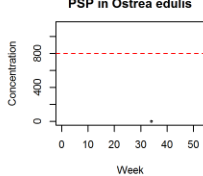
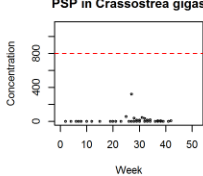
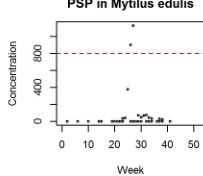
ASP

Amnesic
Shellfish
Poisoning

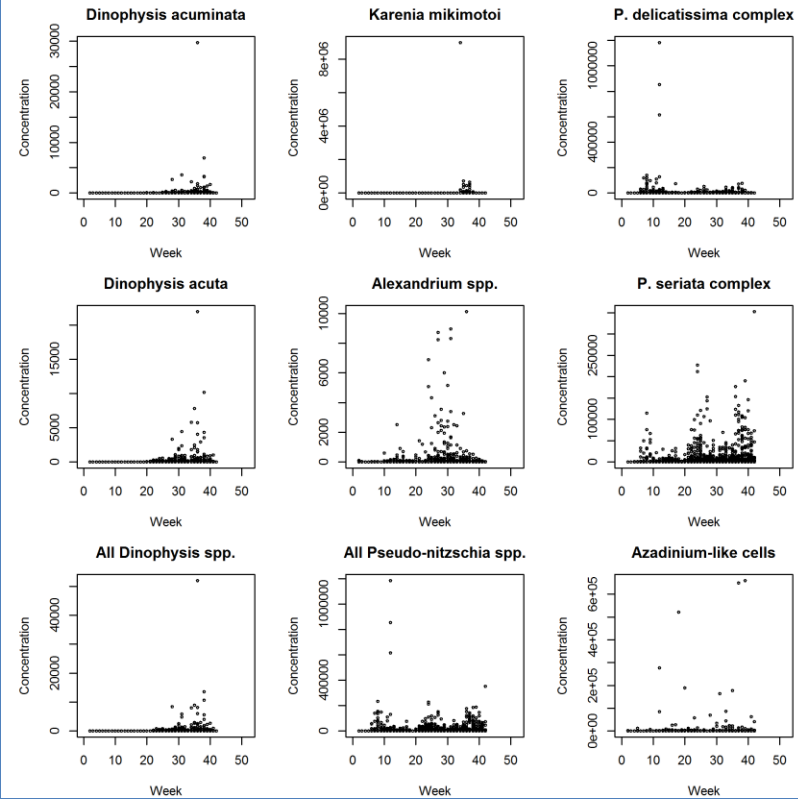


PSP

Paralytic
Shellfish
Poisoning



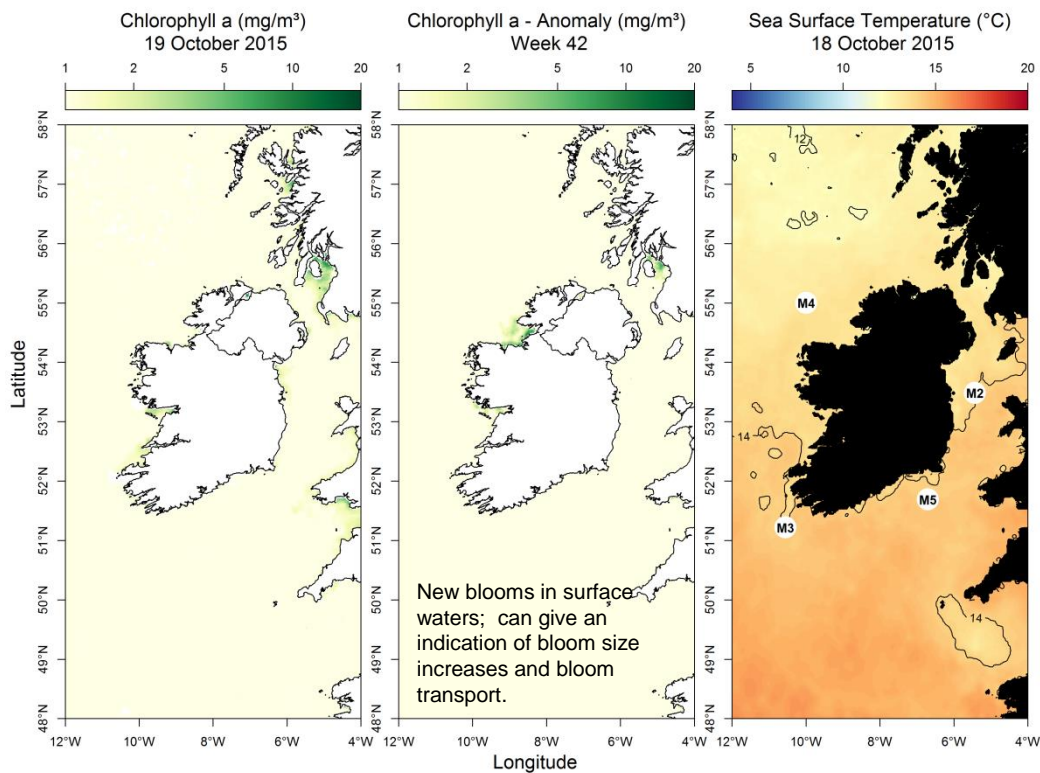
Ireland: HABs



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

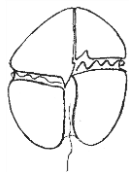


SST (°C) anomaly for last week:
Data taken from the Irish data buoy network where the anomaly is the weekly difference in SST compared to the long term mean (~ 10 yrs)

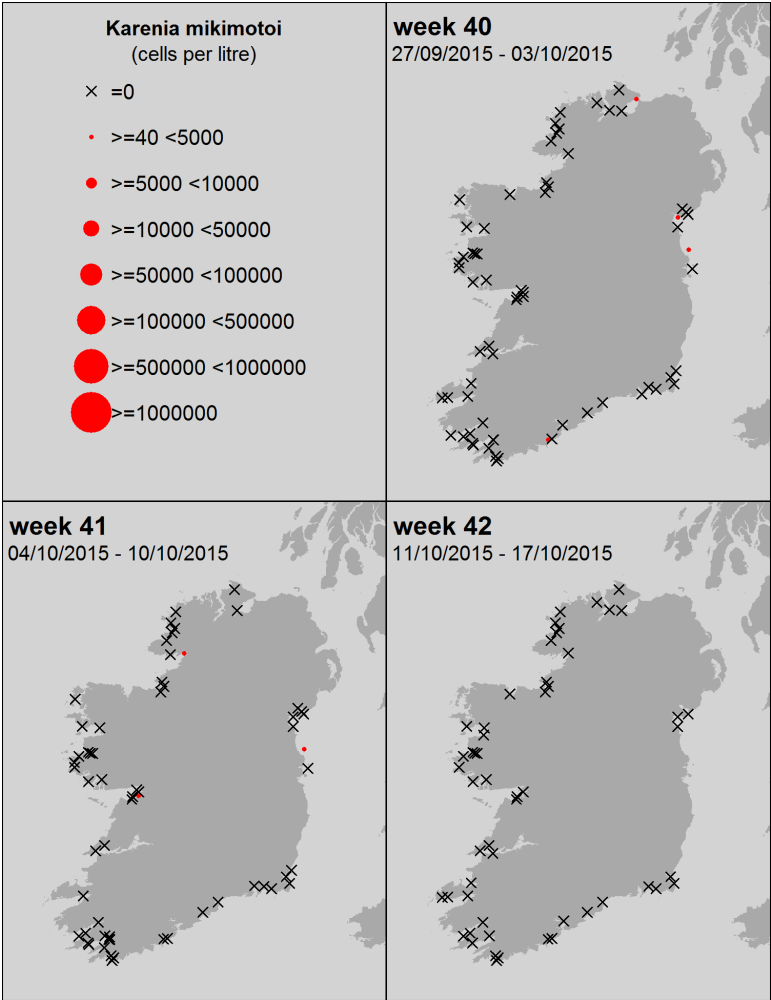
- NW coast (M4) Above average by 0.10 °C
- SW coast (M3) Offline
- SE coast (M5) below average by -0.13 °C

What phytoplankton were blooming at inshore coastal sites last week?

Region	Predominant Phytoplankton (most abundant taxa)	Cells/L	Cells/L (rounded)
north:	Diatoms:		
	<i>Chaetoceros</i> (Hyalochaete) spp.	68,083	68,000
	<i>Asterionellopsis</i> spp.	59,508	60,000
	<i>Ditylum brightwellii</i>	17,847	18,000
	<i>C. closterium/ N. longissima</i>	17,020	17,000
west:	Diatoms:		
	' <i>Pseudo-nitzschia seriata</i> ' complex	352,313	352,000
	<i>Navicula</i> spp	86,298	86,000
	Pennate diatom	52,640	53,000
	<i>Chaetoceros</i> (Hyalochaete) spp.	46,931	47,000
	<i>Ditylum brightwellii</i>	28,423	28,000
SW:	Diatoms:		
	<i>Navicula</i> spp	107,494	107,000
	<i>Lauderia / Detonula</i> spp.	38,080	38,000
	<i>Skeletonema</i> spp.	29,280	29,000
	<i>Leptocylindrus minimus</i>	15,080	15,000
	<i>Paralia</i> sp.	12,840	13,000
	Others:		
	Cyanophyte	61,200	61,000
south:	<i>Haptophytes</i>	60,160	60,000
	Diatoms:		
	<i>Navicula</i> spp	109,008	109,000
	Centric diatom	76,457	76,000
	<i>Paralia sulcata</i>	49,680	50,000
	<i>Odontella</i> spp.	40,160	40,000
	<i>Lauderia / Detonula</i> spp.	27,120	27,000
	Diatoms:		
	<i>Asterionellopsis</i> spp.	52,880	53,000
	<i>Chaetoceros</i> (Hyalochaete) spp.	52,219	52,000
east:	<i>Eucampia</i> spp.	35,694	36,000
	<i>Lauderia / Detonula</i> spp.	30,480	30,000
	<i>Leptocylindrus danicus</i>	15,864	16,000




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)

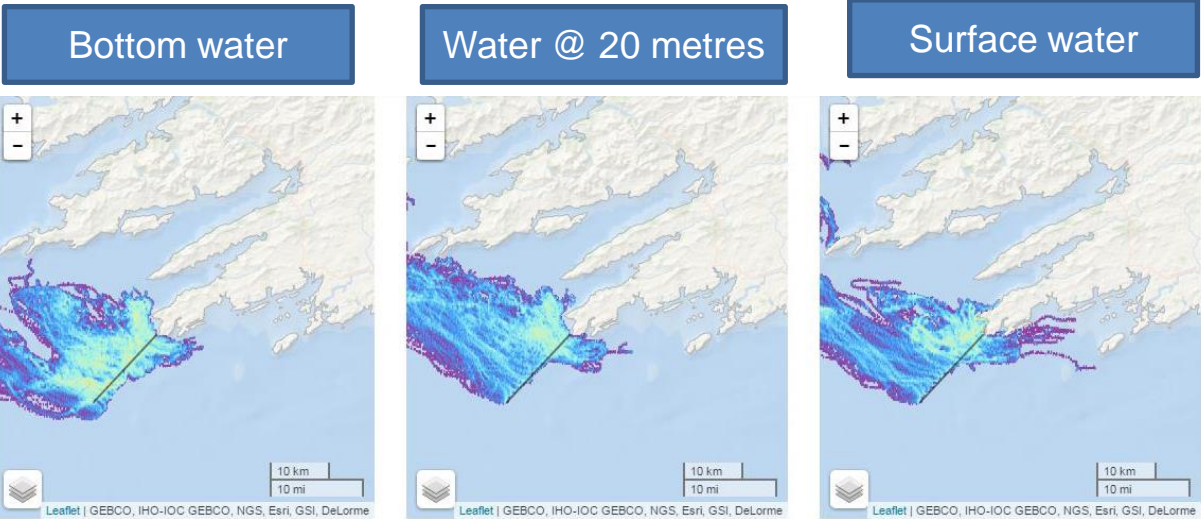
Reddish colours represent areas where phytoplankton remain longest
Cooler colours represent areas where phytoplankton remain for shorter periods



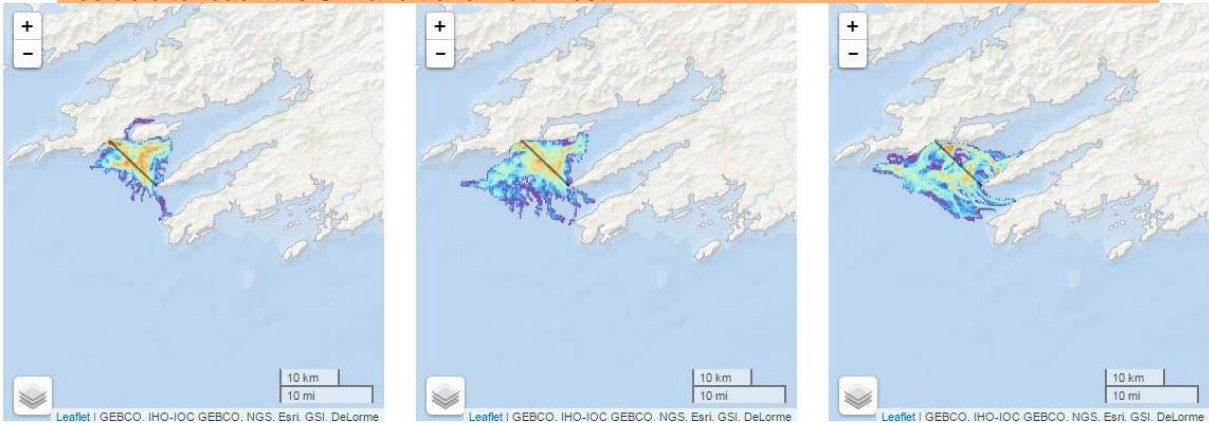
0.2 0.4 1 2 4 10 20 40 100 200

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



Estimated water circulation patterns at Mizen head show that water from the Celtic Sea will be able to reach the SW and travel northwest.

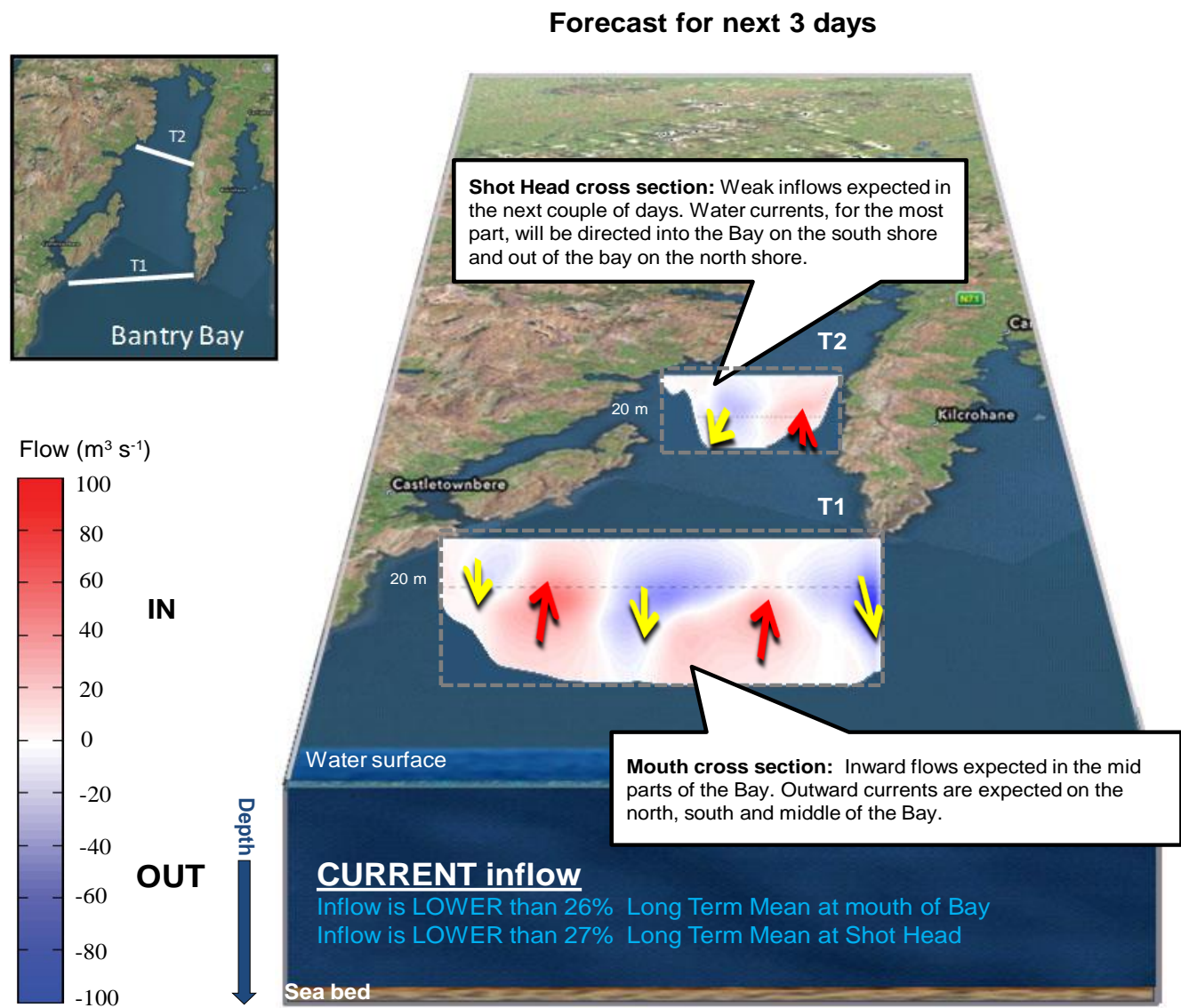


Predicted water circulation patterns at the entrance to Bantry Bay over the next few days show an inward movement of surface water. In general, water flow will be restricted at all depths.

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

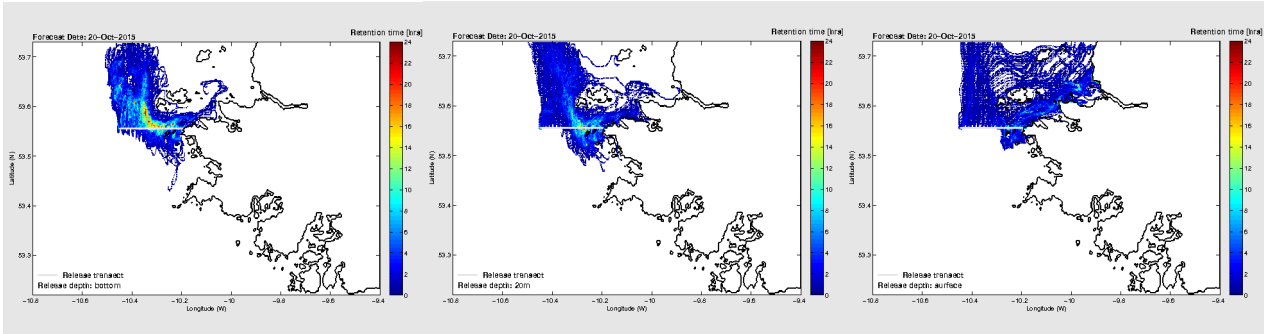
particle transport probability (hours)
Bantry Bay model particle track analysis
(2015-03-10T00:00:00Z, release_location=0.0 count)
Data courtesy of Irish Marine Institute

Forecast for the next 3 days

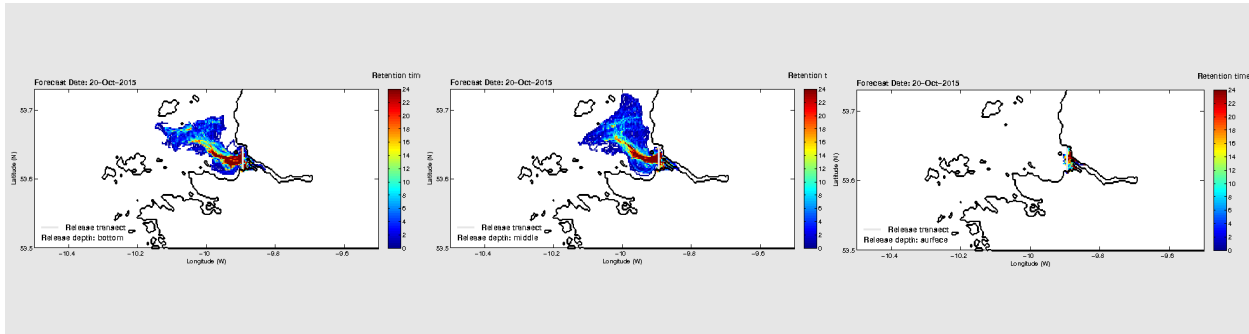
Bottom water

Water @ 20 metres

Surface water



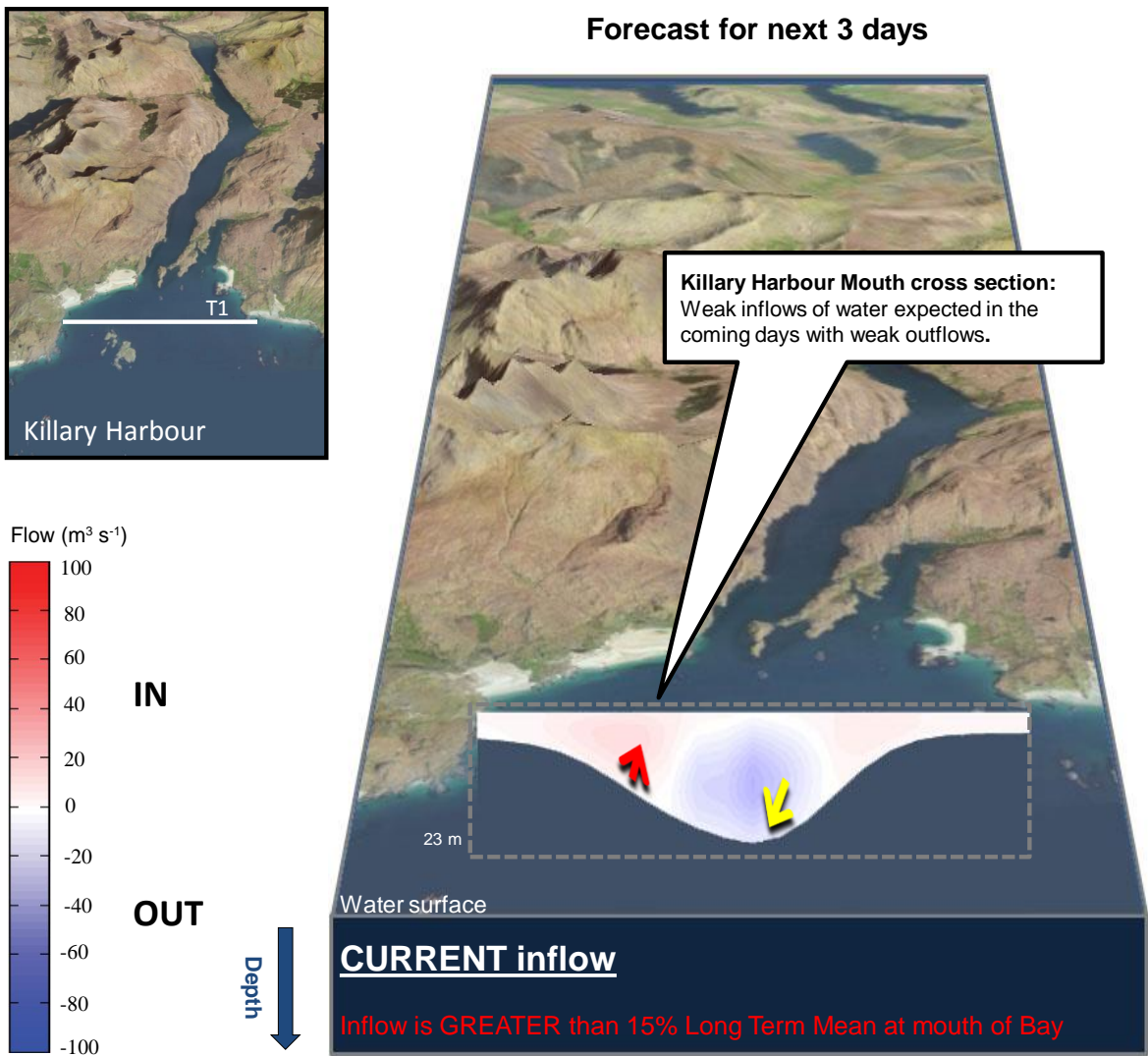
Water flows off the west coast will be predominantly northward. Water at the surface and midwater are expected to reach the mouth of Killary Harbour in the next few days.



Estimated water circulation at the mouth of Killary Harbour is expected to leave the Harbour at depth and travel north. Some water at depth will travel into the Harbour. Surface waters will be retained at the mouth.

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

