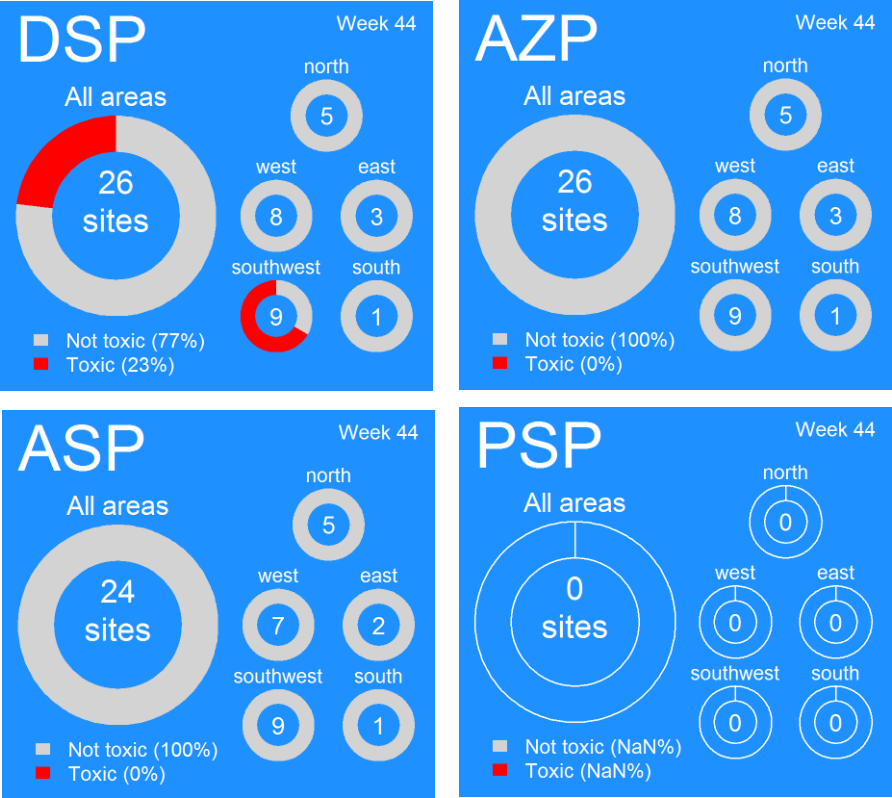


Ireland: Current Conditions

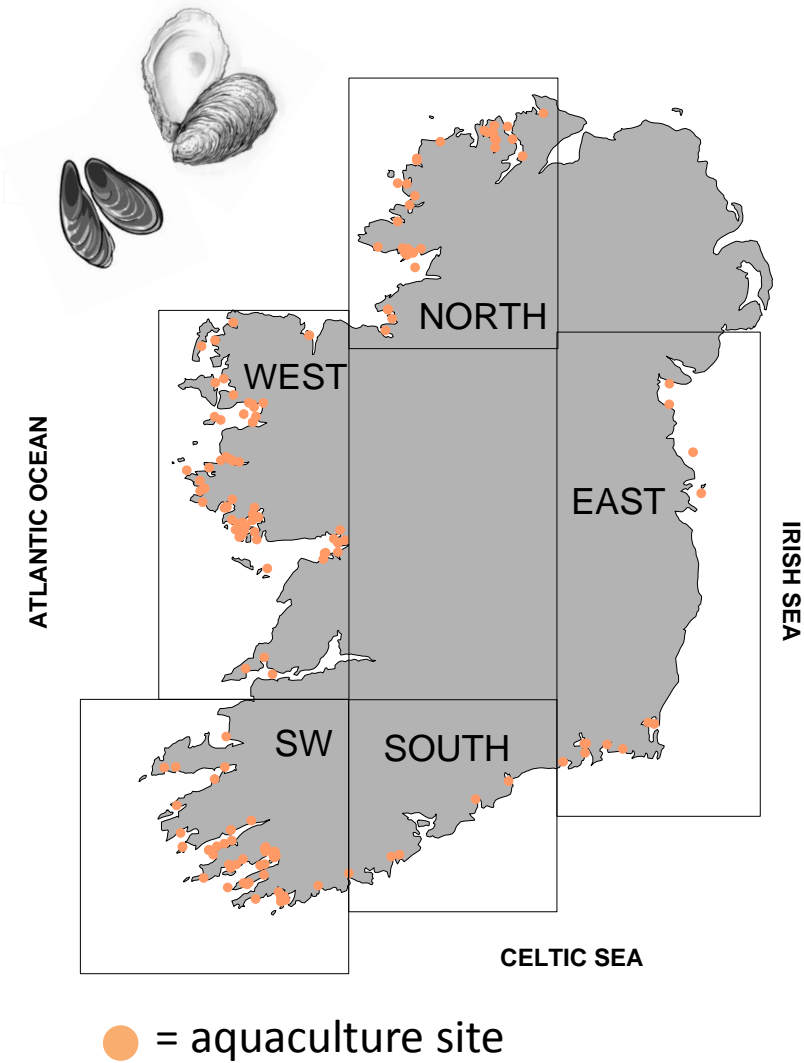
Shellfish biotoxin report (last week)



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

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. Cell levels of the '*Pseudo-nitzschia seriata*' group have declined in the past few weeks. While low cell levels are evident in the west and northwest of the country, no toxin has been detected.

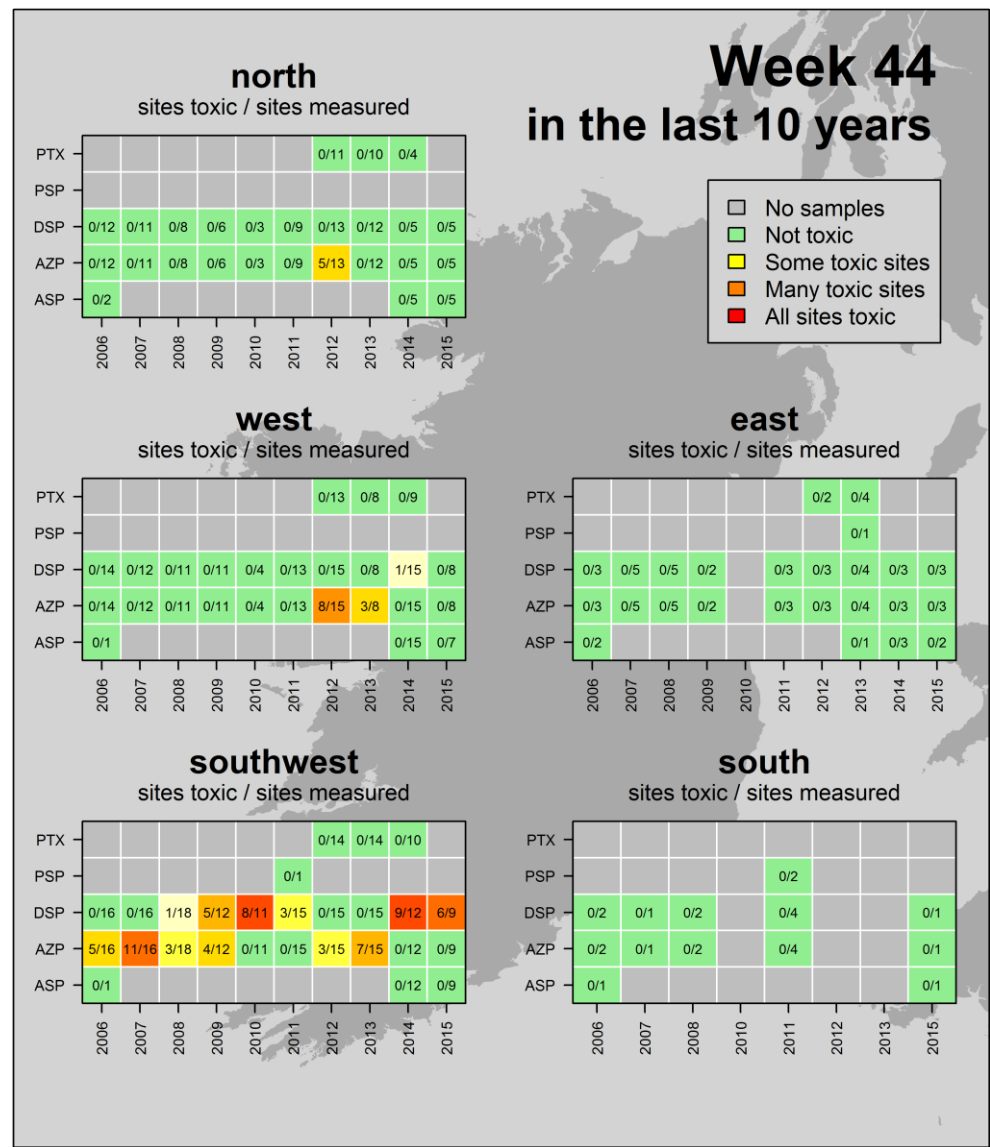
AZP: There are some historical records of AZP events at this time of year, particularly in the SW. The current toxin trend is changeable. This is a time to be cautious - in the past there has been a sudden rapid toxin increase at this time of year.

DSP: Cell levels of *Dinophysis* spp. have declined in the main SW sites affected, but, there are still some sites where significant toxin levels remain. DSP toxins have increased again in some sites in the SW - this could be due to patchy sampling and not a new event. However, we are still in a season of historical occurrence, so caution is advised.

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 HAB & Biotoxin Distribution maps

[current status of harmful and toxic algae]

Ireland: Last 3 weeks of available National Monitoring Programme data



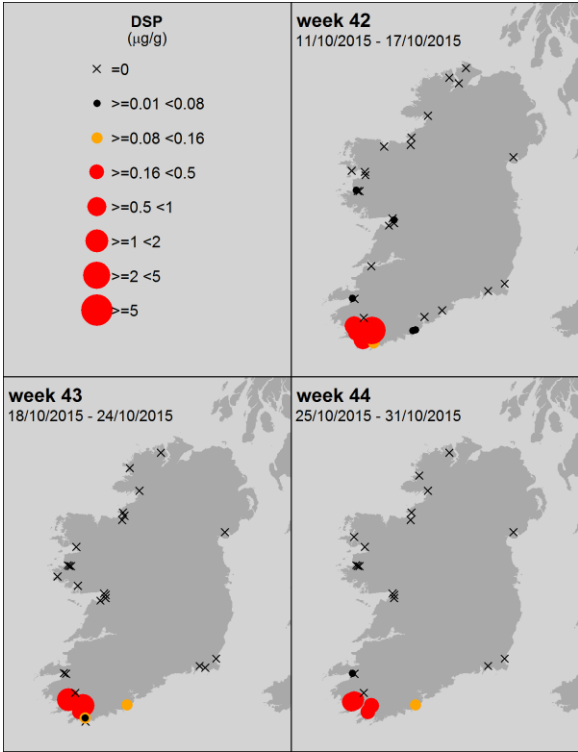
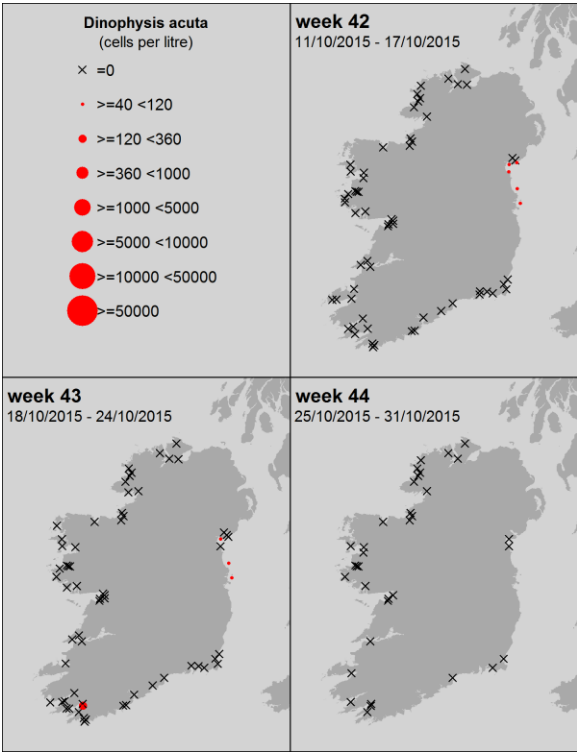
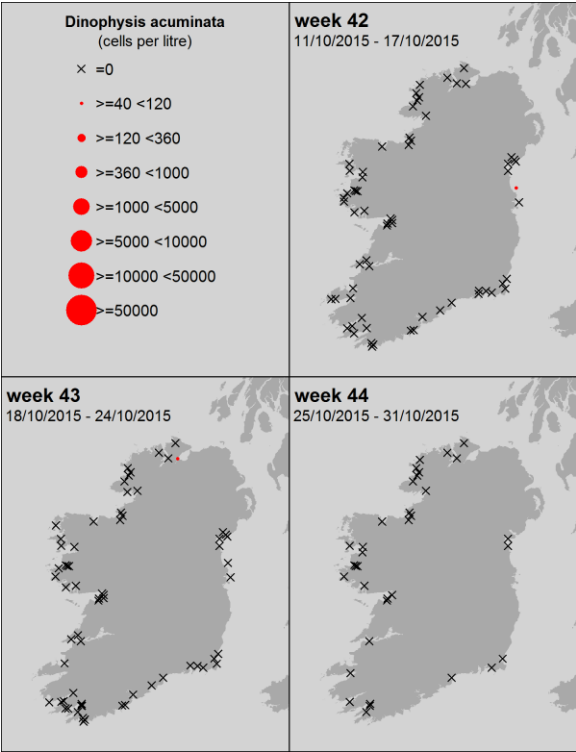
Dinophysis acuminata



Dinophysis acuta



DSP



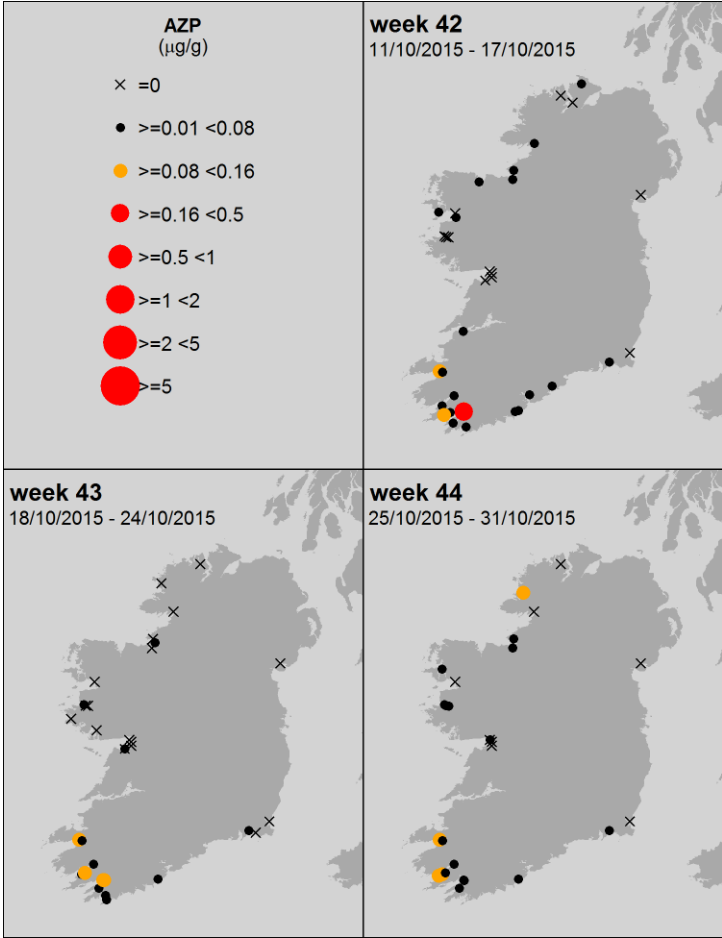
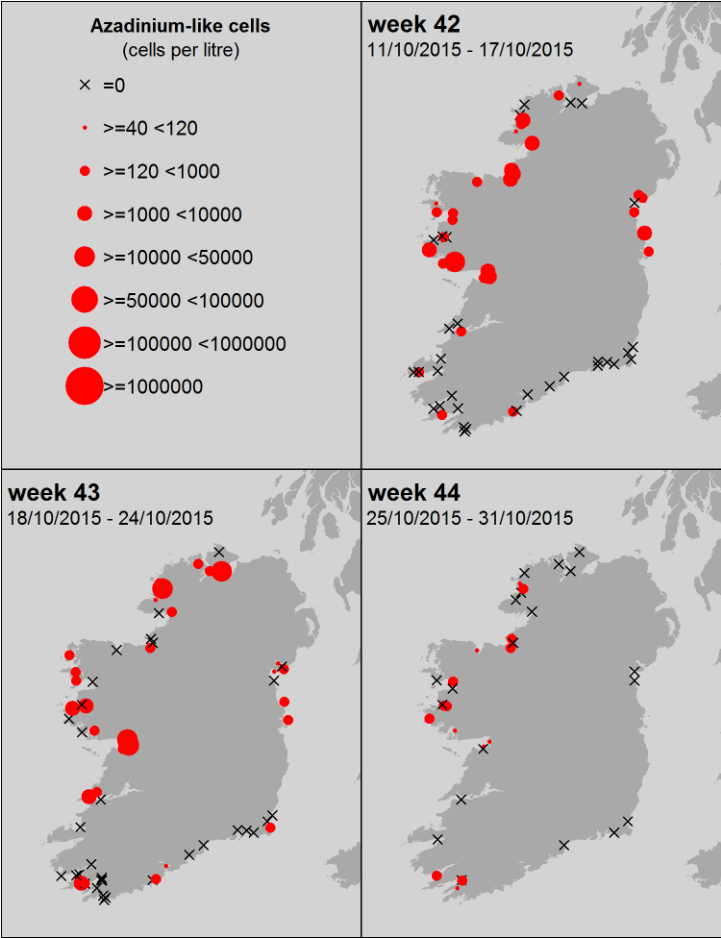
Ireland: Last 3 weeks of available National Monitoring Programme data



Azadinium – like spp.



AZP



Ireland: Last 3 weeks of available National Monitoring Programme data

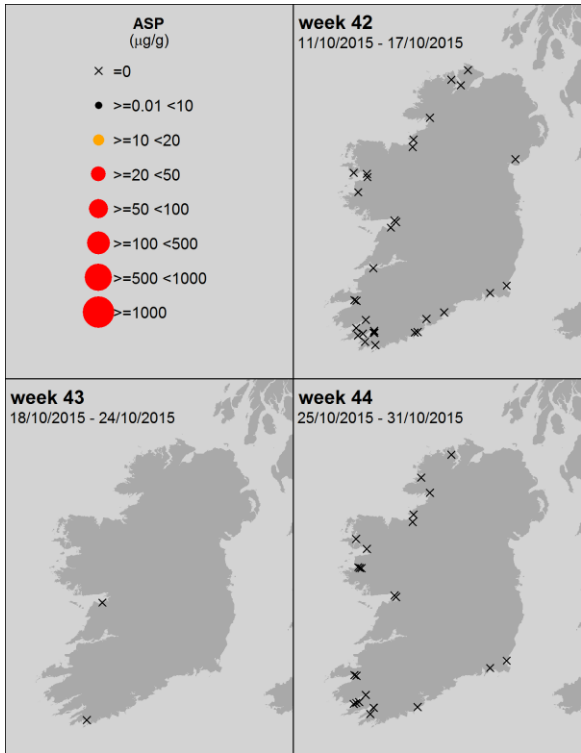
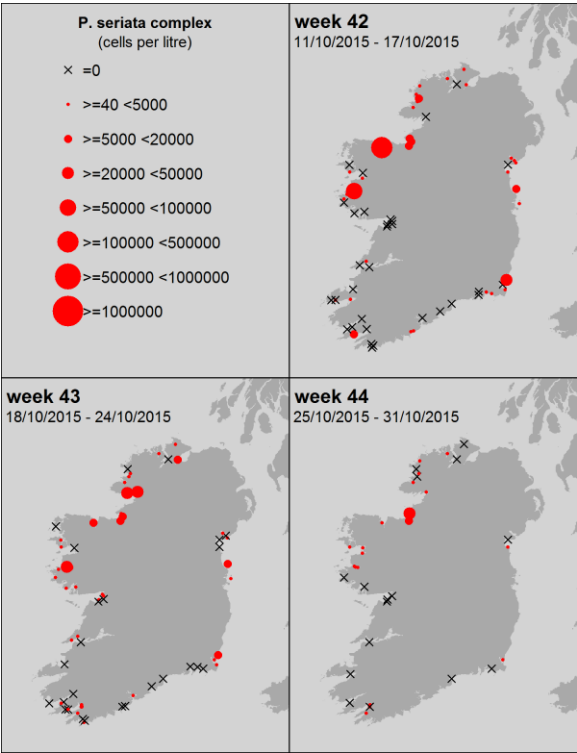
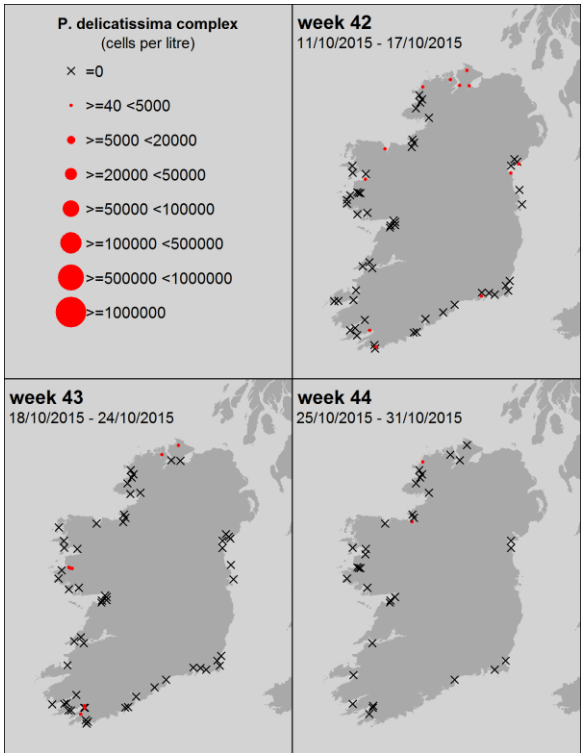
Pseudo-nitzschia spp.



ASP

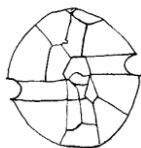
“*P. delicatissima*” complex = small cells
Taken from the literature:
3 species confirmed in Irish waters

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

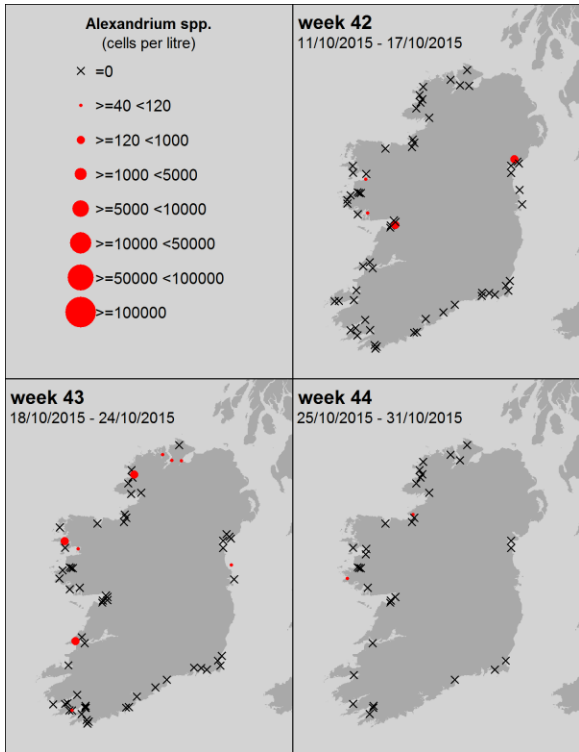


Taken from the literature: Of the 4 species (*P. fraudulenta*, *P. australis*, *P. pungens* and *P. delicatissima*) from Irish waters, tested for ASP toxins in culture work, only one, *P. australis* (from the “*P. seriata*” group) was toxic.

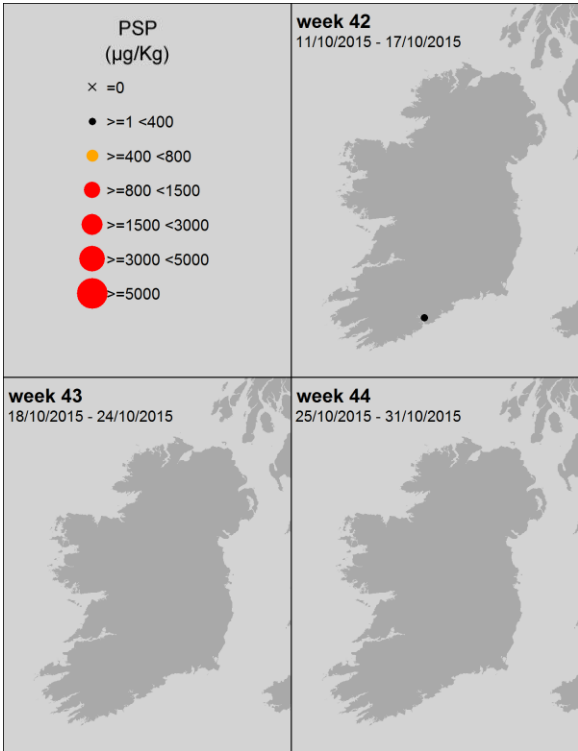
Ireland: Last 3 weeks of available National Monitoring Programme data



Alexandrium spp.



PSP



Ireland HAB & Biotoxin temporal trends

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

Ireland: Biotoxins



Toxin groups

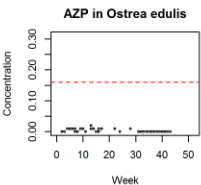
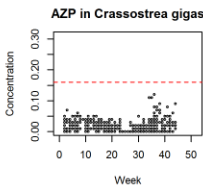
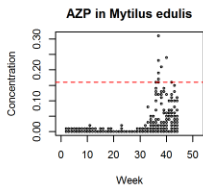
mussels

oysters

oysters

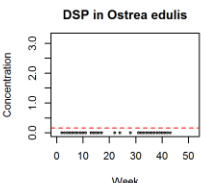
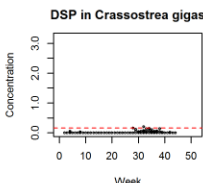
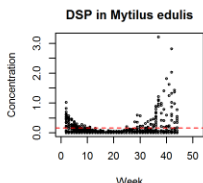
AZP

AZaspiracid
Poisoning



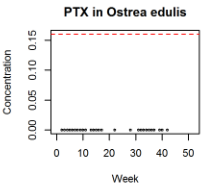
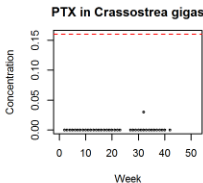
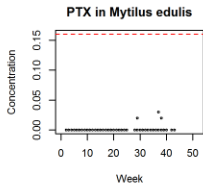
DSP

Diarrhetic
Shellfish
Poisoning



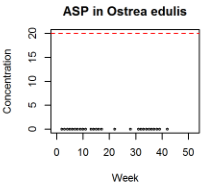
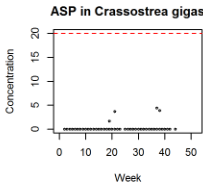
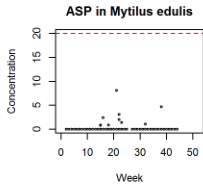
PTX

Pectenotoxin



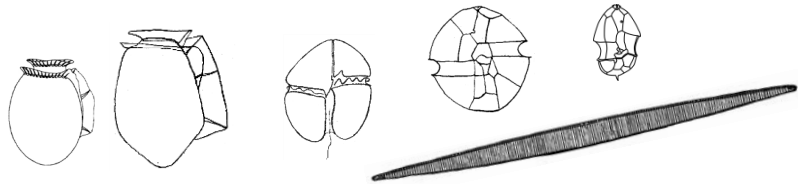
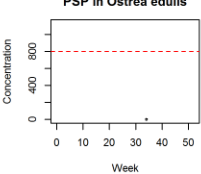
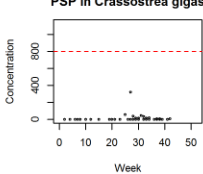
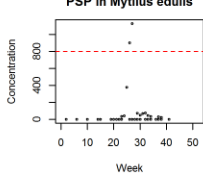
ASP

Amnesic
Shellfish
Poisoning

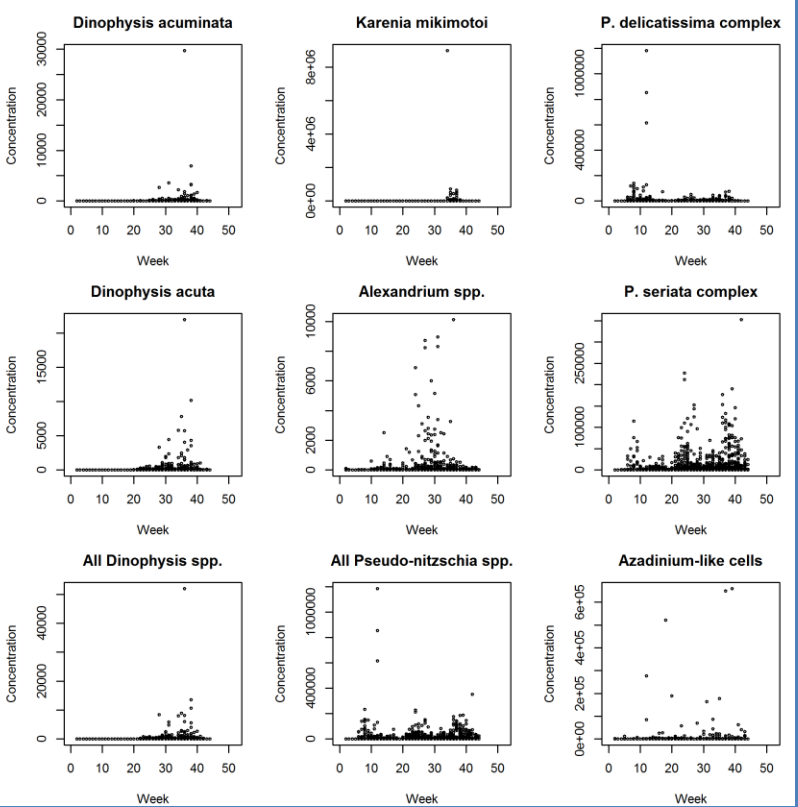


PSP

Paralytic
Shellfish
Poisoning



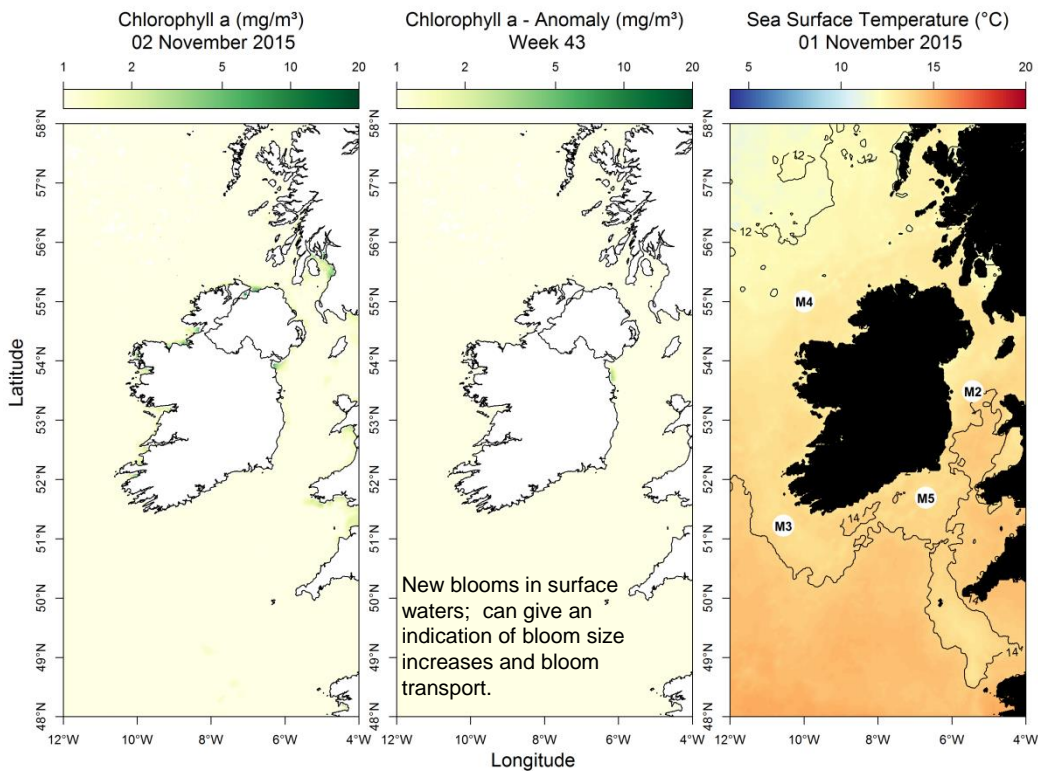
Ireland: HABs



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

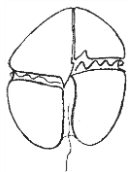


SST (°C) anomaly for last week:
Data taken from the Irish data buoy network where the anomaly is the weekly difference in SST compared to the long term mean (~ 10 yrs)

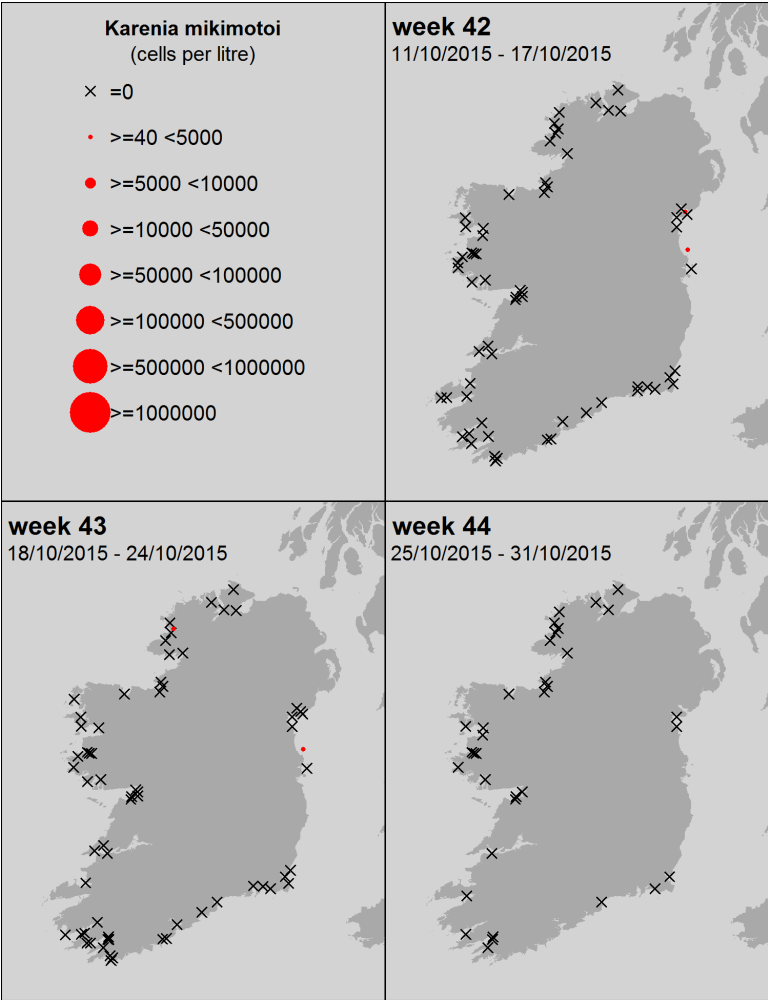
- NW coast (M4) above average 0.25 by °C
- SW coast (M3) Offline
- SE coast (M5) above average by 0.22 °C

What phytoplankton were blooming at inshore coastal sites last week?

Region	Predominant Phytoplankton (most abundant taxa)	Cells/L	Cells/L (rounded)
north:	Diatoms:		
	<i>Asterionellopsis</i> spp.	352,360	352,000
	Pennate diatom	67,095	67,000
	<i>Chaetoceros</i> (Hyalochaete) spp.	33,050	33,000
	<i>C. closterium</i> / <i>N. longissima</i>	31,080	31,000
	' <i>Pseudo-nitzschia seriata</i> ' complex	24,457	24,000
west:	Diatoms:		
	Pennate diatom	33,810	34,000
	<i>Grammatophora marina</i>	5,720	6,000
	<i>C. closterium</i> / <i>N. longissima</i>	5,200	5,000
	Dinoflagellates:		
SW:	<i>Heterocapsa triquetra</i>	4,880	5,000
	Diatoms:		
	<i>Leptocylinndrus danicus</i>	1,040	1,000
	' <i>Pseudo-nitzschia seriata</i> ' complex	680	1,000
	<i>Guinardia flaccida</i>	520	1,000
	<i>Chaetoceros</i> (Hyalochaete) spp.	400	0
south:	<i>Skeletonema</i> spp.	240	0
	Diatoms:		
	<i>Odontella</i> spp.	9,320	9,000
	<i>Paralia sulcata</i>	3,640	4,000
	Pennate diatom	1,400	1,000
	<i>C. closterium</i> / <i>N. longissima</i>	1,080	1,000
	<i>Fragilariopsis</i> spp.	640	1,000
	Others:		
	<i>Cryptophyte</i>	29,108	29,000
	Diatoms:		
east:	<i>Asterionellopsis</i> spp.	136,166	136,000
	Centric diatom	81,964	82,000
	<i>C. closterium</i> / <i>N. longissima</i>	46,931	47,000
	<i>Eucampia</i> spp.	15,864	16,000
	<i>Chaetoceros</i> (Hyalochaete) spp.	6,040	6,000
	<i>Leptocylinndrus danicus</i>	4,760	5,000
	Others:		
	Microflagellate sp.	40,982	41,000




Karenia mikimotoi
(old name: *Gyrodinium aureolum*)



SOUTHWEST: Bantry Bay

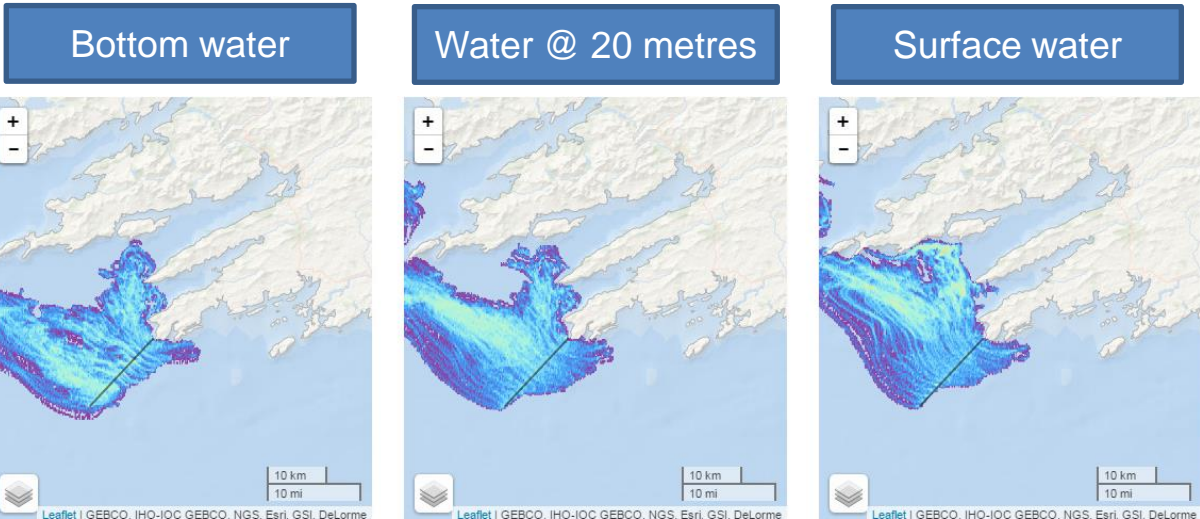
The maps show the **most likely transport pathways for the next 3 days of phytoplankton** found along the **presented transects** (black lines off Mizen Head and the Mouth of Bantry Bay) and **water depths** (bottom, 20 metres and surface)

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



Water circulation at Mizen head is moving in a northwest word direction.



Mixed conditions in Bantry Bay no big water exchange event expected.

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

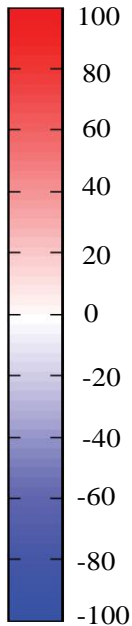
Bantry Bay

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

Forecast for next 3 days



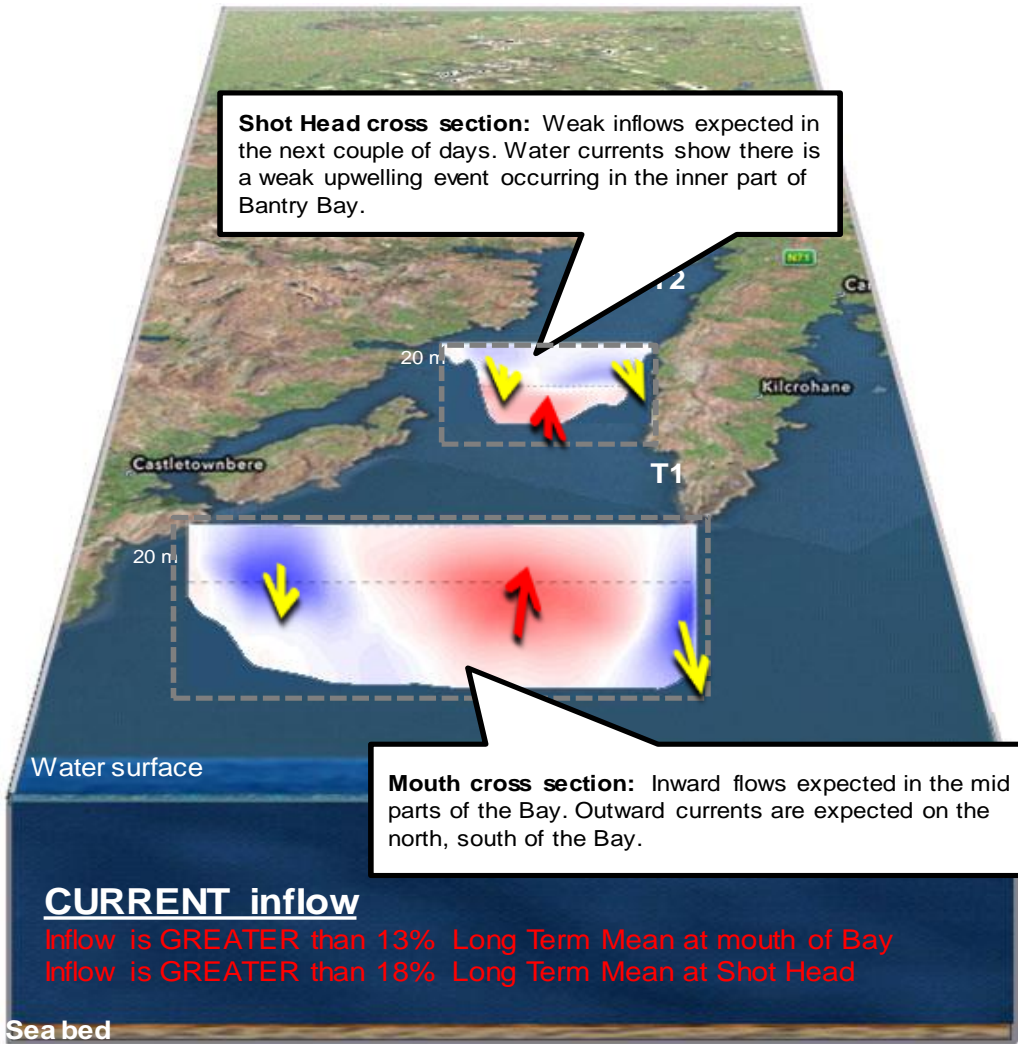
Flow ($\text{m}^3 \text{s}^{-1}$)



IN

OUT

Depth



Shot Head cross section: Weak inflows expected in the next couple of days. Water currents show there is a weak upwelling event occurring in the inner part of Bantry Bay.

Mouth cross section: Inward flows expected in the mid parts of the Bay. Outward currents are expected on the north, south of the Bay.


CURRENT inflow

Inflow is GREATER than 13% Long Term Mean at mouth of Bay
Inflow is GREATER than 18% Long Term Mean at Shot Head

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)

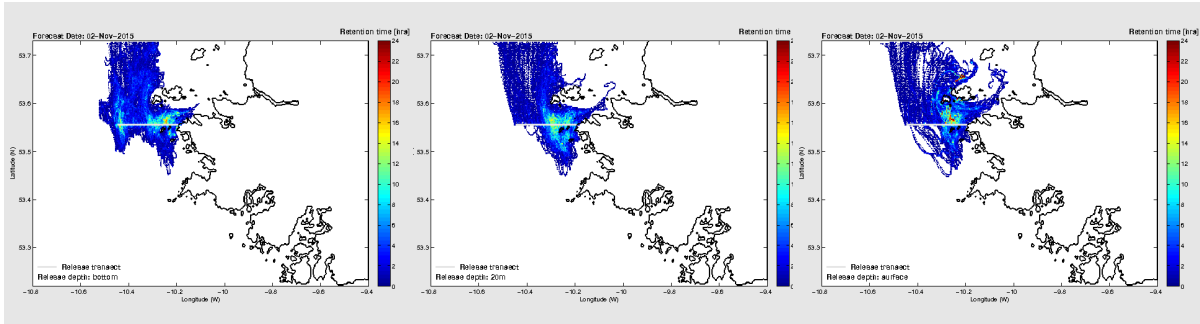
Reddish colours represent areas where phytoplankton remain longest
Cooler colours represent areas where phytoplankton remain for shorter periods



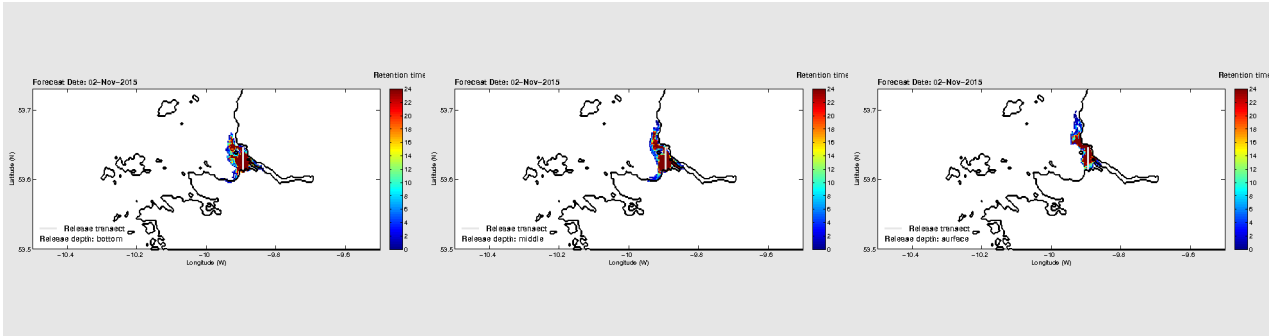
0.2 0.4 1 2 4 10 20 40 100 200
particle transport probability (hours)
Bantry Bay model particle track analysis
(2015-03-10T00:00:00Z, release_location=0.0 count)
Data courtesy of Irish Marine Institute

Forecast for the next 3 days

- Bottom water
- Water @ 20 metres
- Surface water



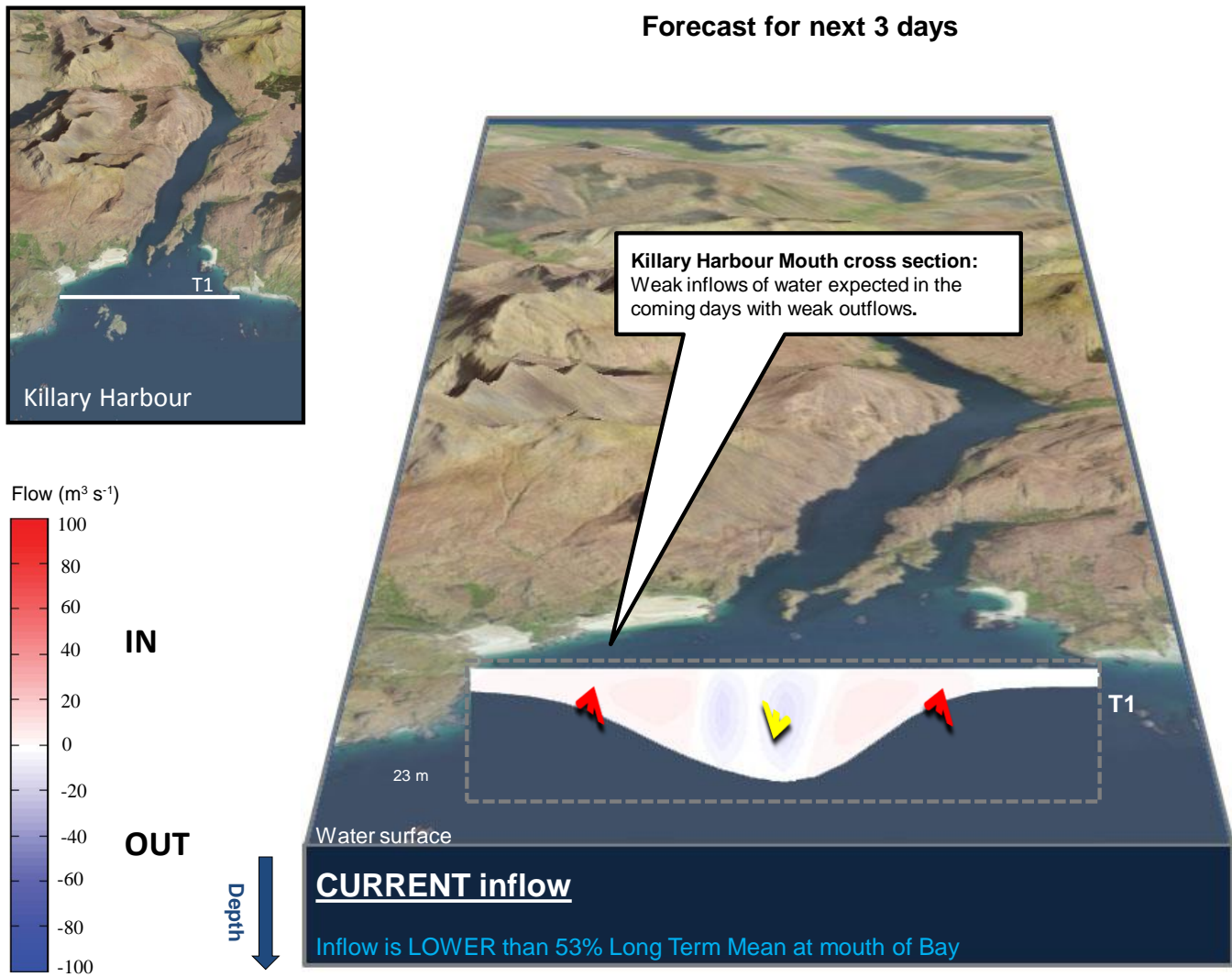
Water flows off the west coast will be predominantly northward. Water masses are not expected to reach Killary Harbour at this stage.



Water at the mouth of Killary Harbour is expected to be retained at all depths with some water at 20m and surface travelling northwards.

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

