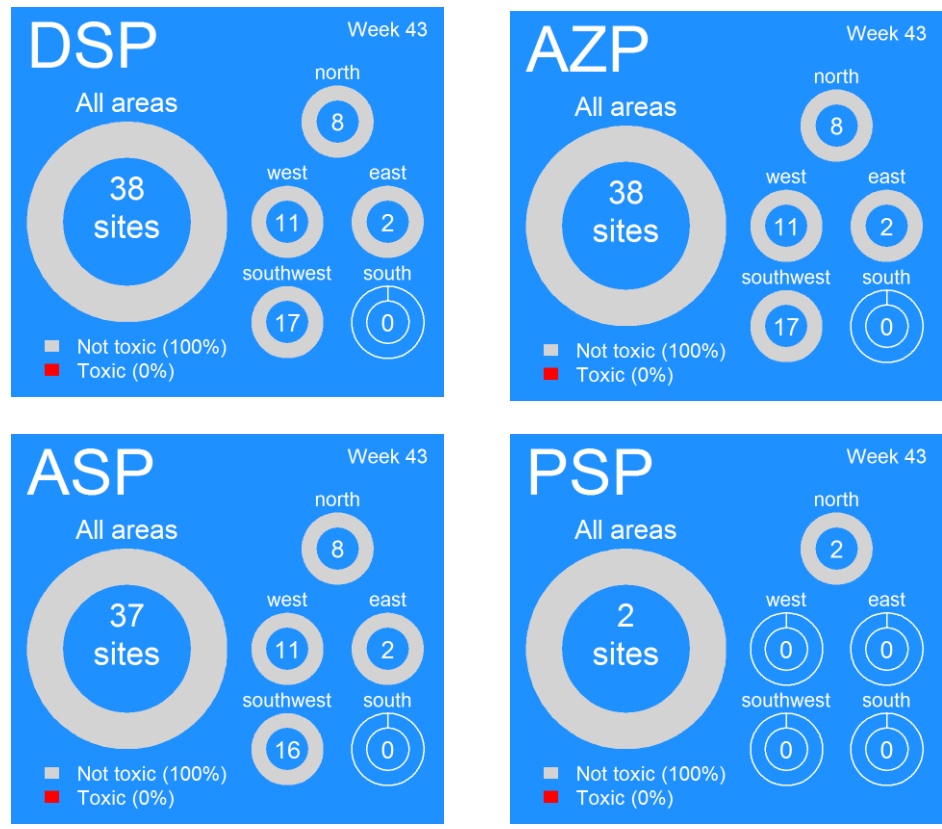


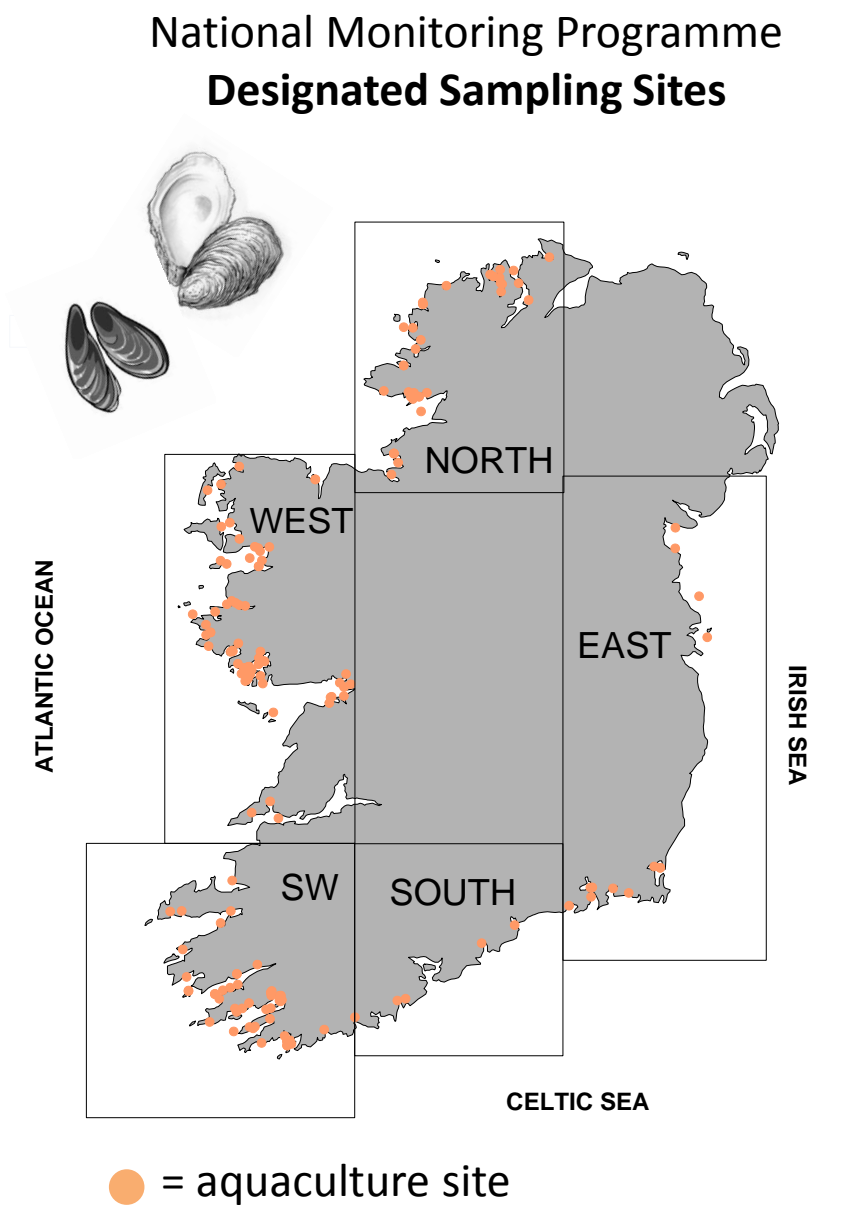
Ireland: Current Conditions

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

AZP event: High

DSP event: Low

PSP event: Low

Why do we think this?

ASP: Toxin issues from this species are not expected at this time of year. Cell levels of *Pseudo-nitzschia* species, *both* groups, continue to be observed around the coast but currently corresponding biotoxin levels continue to remain well below regulatory limits.

AZP: October is considered a high risk period for AZP. Fluctuating levels of *Azadinium* spp. continue to be observed around the coast, with a current slight upward trend. Biotoxin levels continue to remain below closure levels at present but caution is advised in this high risk period.

DSP: Dinophysis levels continue to decrease in the affected areas and this trend would be normal for this time of year and reflects the current cell levels observed in general in all sites.

PSP: A toxic event is not expected at this time of year.

Ireland HAB & Biotoxin Distribution maps

[current status of harmful and toxic algae]

Ireland: Last 3 weeks of available National Monitoring Programme data



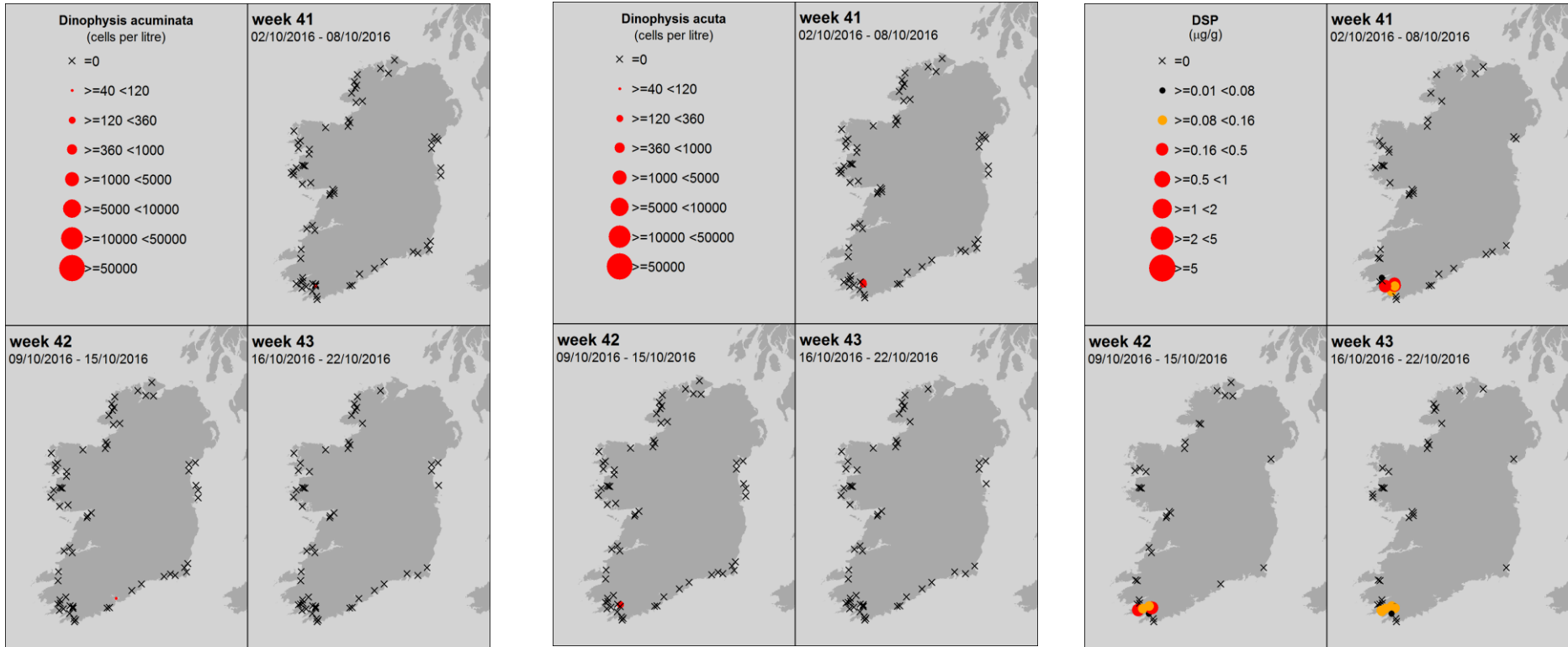
Dinophysis acuminata



Dinophysis acuta



DSP



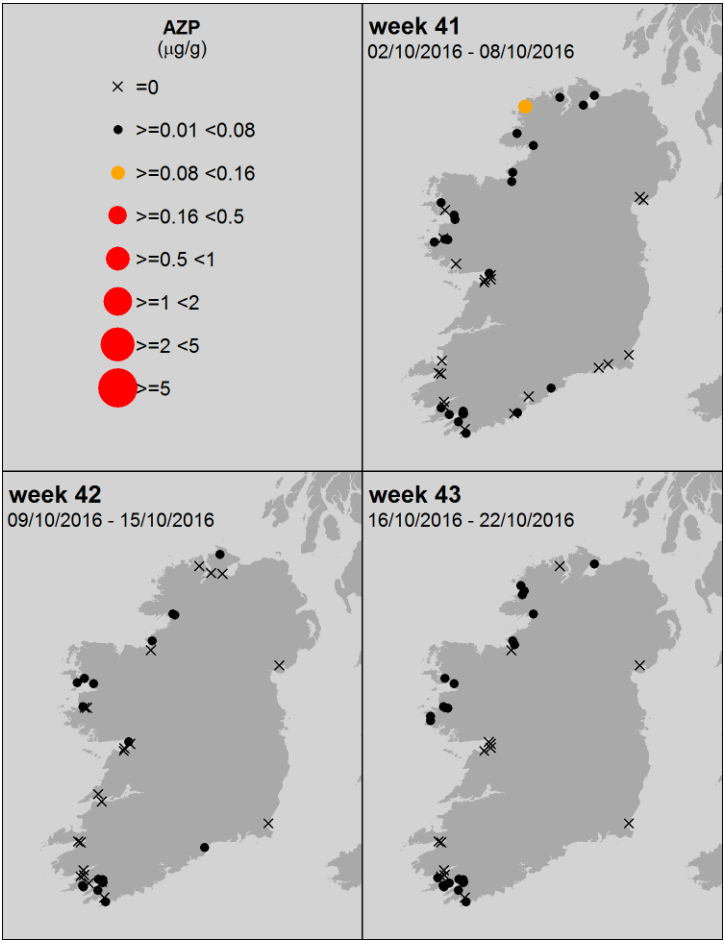
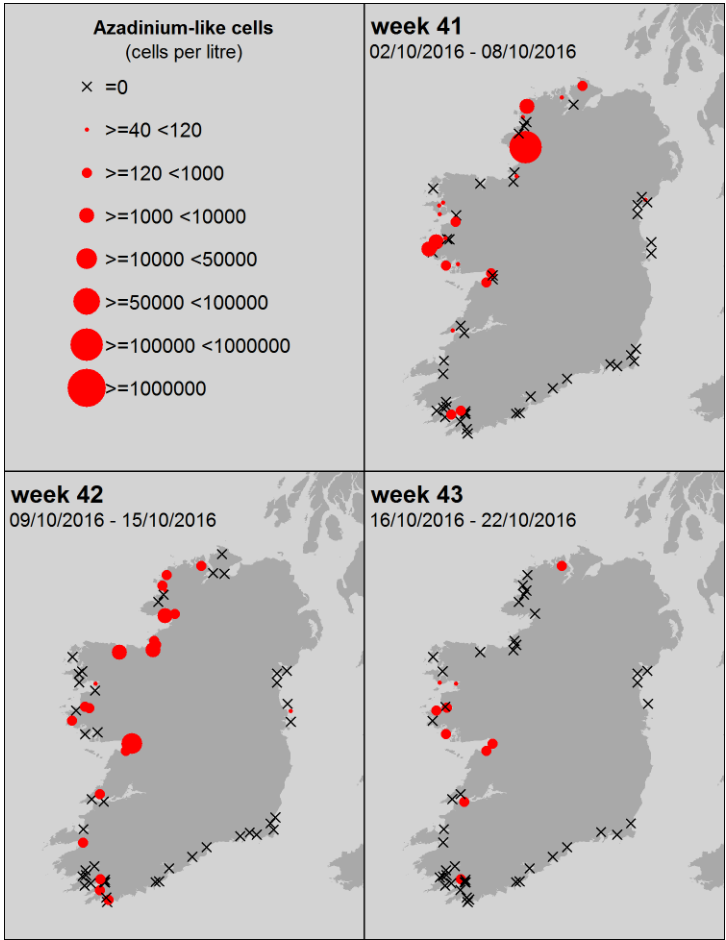
Ireland: Last 3 weeks of available National Monitoring Programme data



Azadinium – like spp.



AZP



Ireland: Last 3 weeks of available National Monitoring Programme data

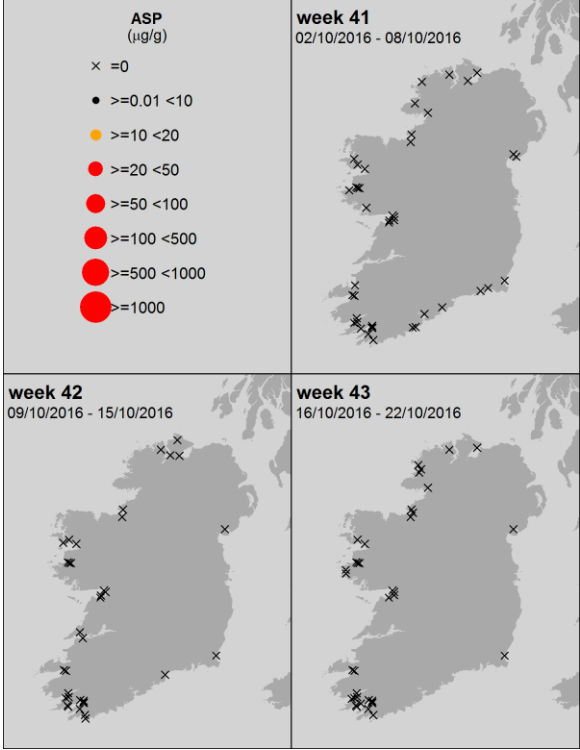
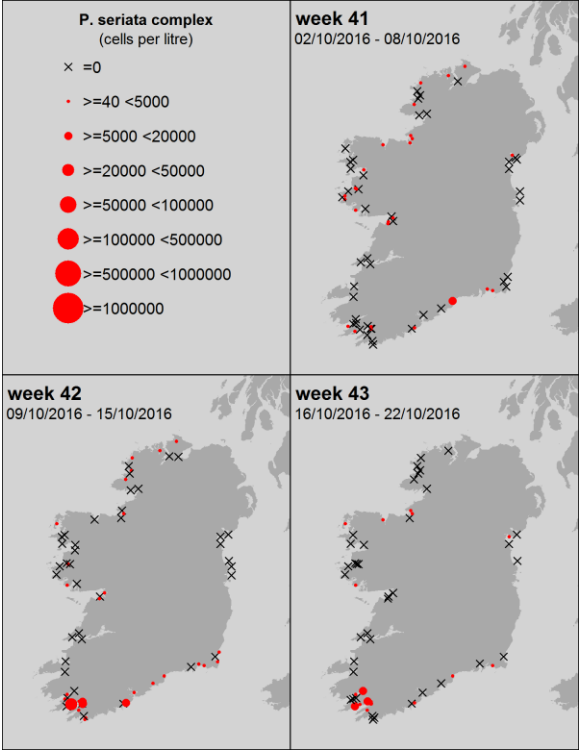
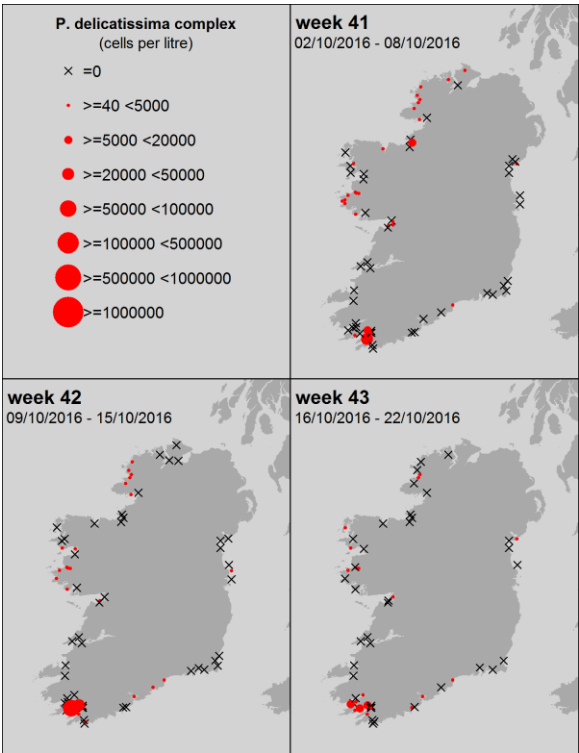
Pseudo-nitzschia spp.



ASP

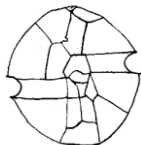
“*P. delicatissima*” complex = small cells
Taken from the literature:
3 species confirmed in Irish waters

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

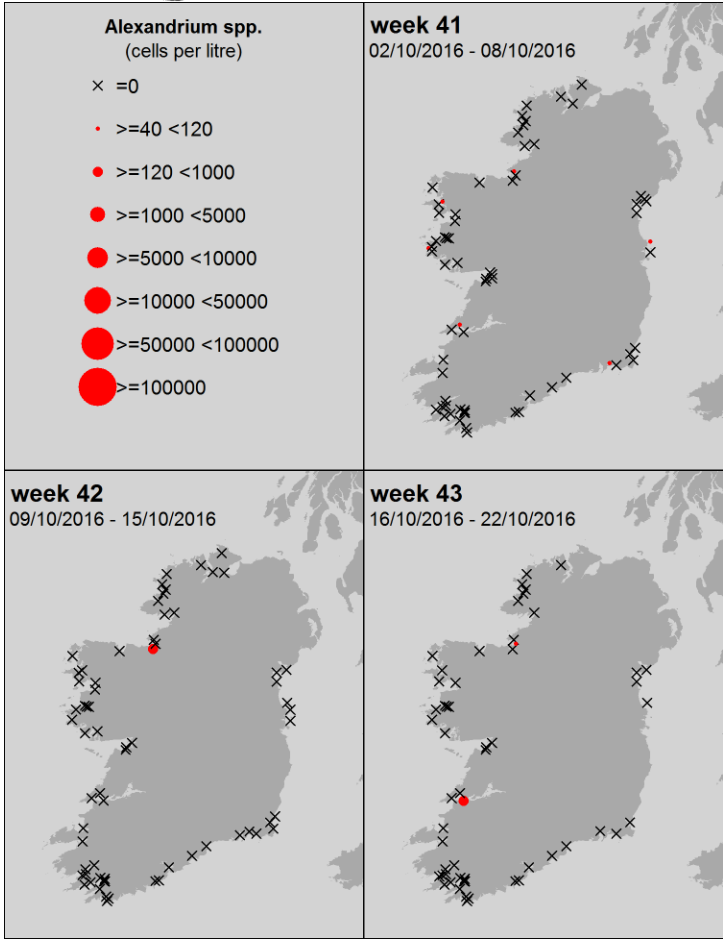


Taken from the literature: Of the 4 species (*P. fraudulenta*, *P. australis*, *P. pungens* and *P. delicatissima*) from Irish waters, tested for ASP toxins in culture work, only one, *P. australis* (from the “*P. seriata*” group) was toxic.

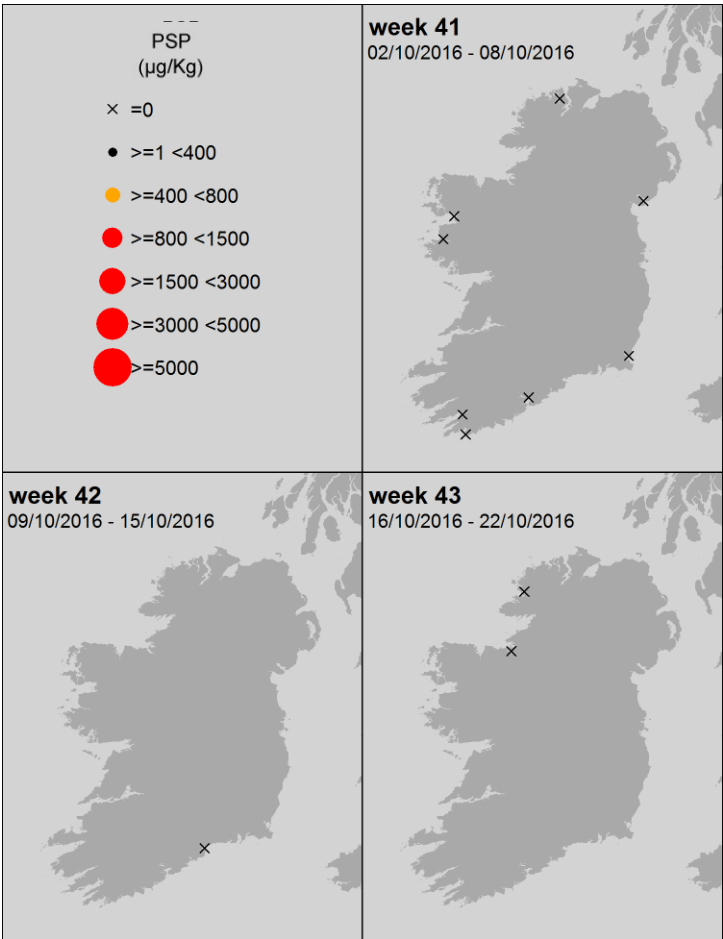
Ireland: Last 3 weeks of available National Monitoring Programme data



Alexandrium spp.



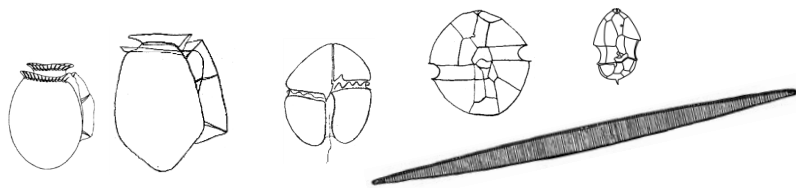
PSP



Ireland HAB & Biotoxin temporal trends

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

Ireland: Biotoxins



Toxin groups

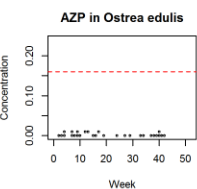
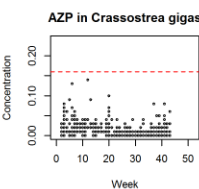
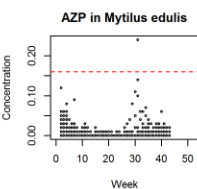
mussels

oysters

oysters

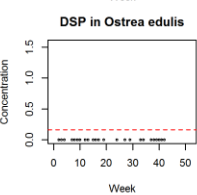
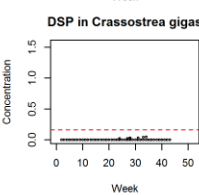
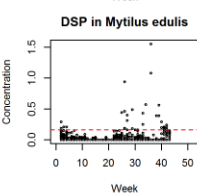
AZP

AZaspiracid
Poisoning



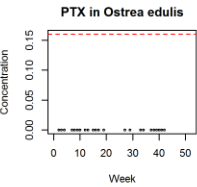
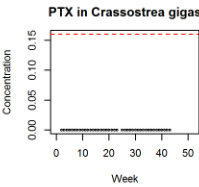
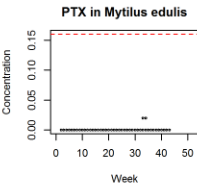
DSP

Diarrhetic
Shellfish
Poisoning



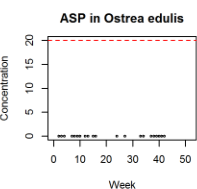
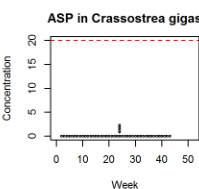
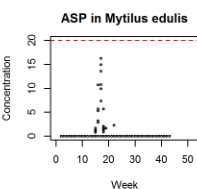
PTX

Pectenotoxin



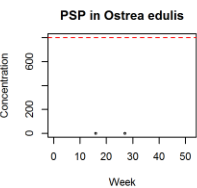
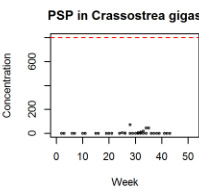
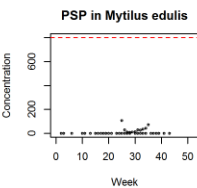
ASP

Amnesic
Shellfish
Poisoning

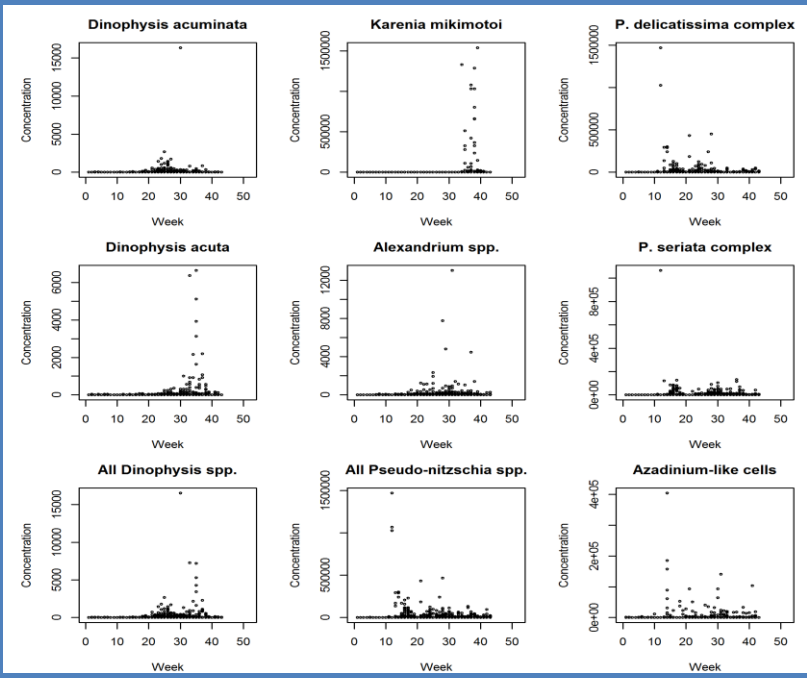


PSP

Paralytic
Shellfish
Poisoning



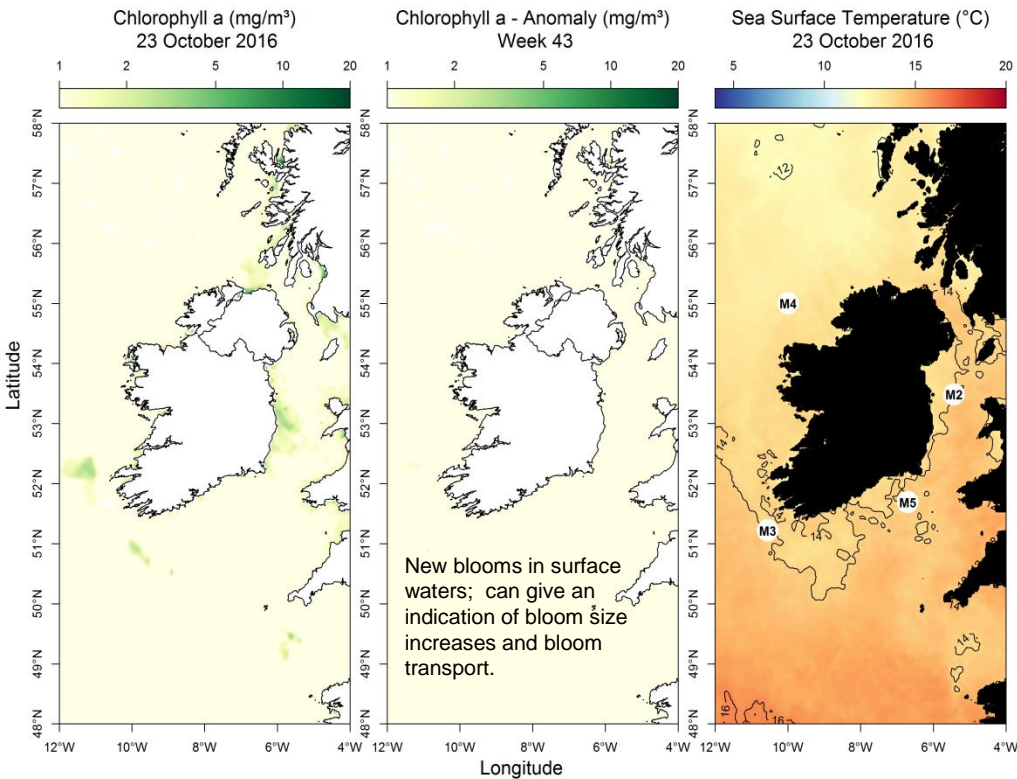
Ireland: HABs



EU Regulatory Limit: ASP 20 µg/g; AZP 0.16 µg/g; DSP 0.16 µg/g; PSP 800 µg/kg

Regulatory limit = ■■■■■

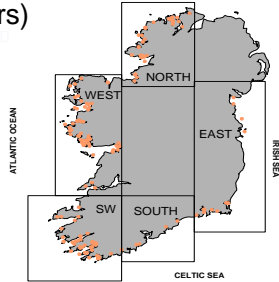
Most up to date available satellite data



SST (°C) anomaly for last week:

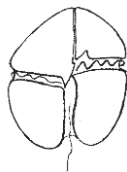
Data taken from the Irish data buoy network where the anomaly is the weekly difference in SST compared to the long term mean (~ 10 yrs)

- NW coast (M4) above average by 0.04 °C
- SW coast (M3) above average by 0.15°C
- SE coast (M5) above average by 0.69°C



What phytoplankton were blooming at inshore coastal sites last week?

Region	Predominant Phytoplankton (most abundant taxa)	Cells/L (rounded)
North:	Diatoms:	
	<i>Asterionellopsis glacialis</i>	285,500
	<i>Chaetoceros (Hyalochaete) spp.</i>	40,500
	<i>Cylindrotheca closterium/ Nitzschia longissima</i>	4,500
West:	Diatoms:	
	Pennate diatom	207,100
	Centric diatoms <20um	76,800
	<i>Navicula spp. <25um</i>	73,800
	Others:	
	Microflagellate sp.	
	<i>Prymnesiophytes</i>	
SW:	Diatoms:	
	<i>Skeletonema spp.</i>	375,700
	Pennate diatom <20um	264,300
	<i>Nitzschia spp. (small)</i>	130,300
	<i>Lauderia / Detonula sp</i>	69,000
	<i>Chaetoceros (Hyalochaete) spp.</i>	38,500
South:	Diatoms:	
	<i>Skeletonema spp.</i>	179,200
	<i>Lauderia / Detonula sp</i>	52,700
	<i>Chaetoceros (Hyalochaete) spp.</i>	44,900
	<i>Thalassiosira <20um</i>	29,600
East:	Diatoms:	
	<i>Cylindrotheca closterium/ Nitzschia longissima</i>	9,000
	<i>Guinardia striata</i>	3,600
	<i>Asterionellopsis spp.</i>	3,200
	Pennate diatom	2,800

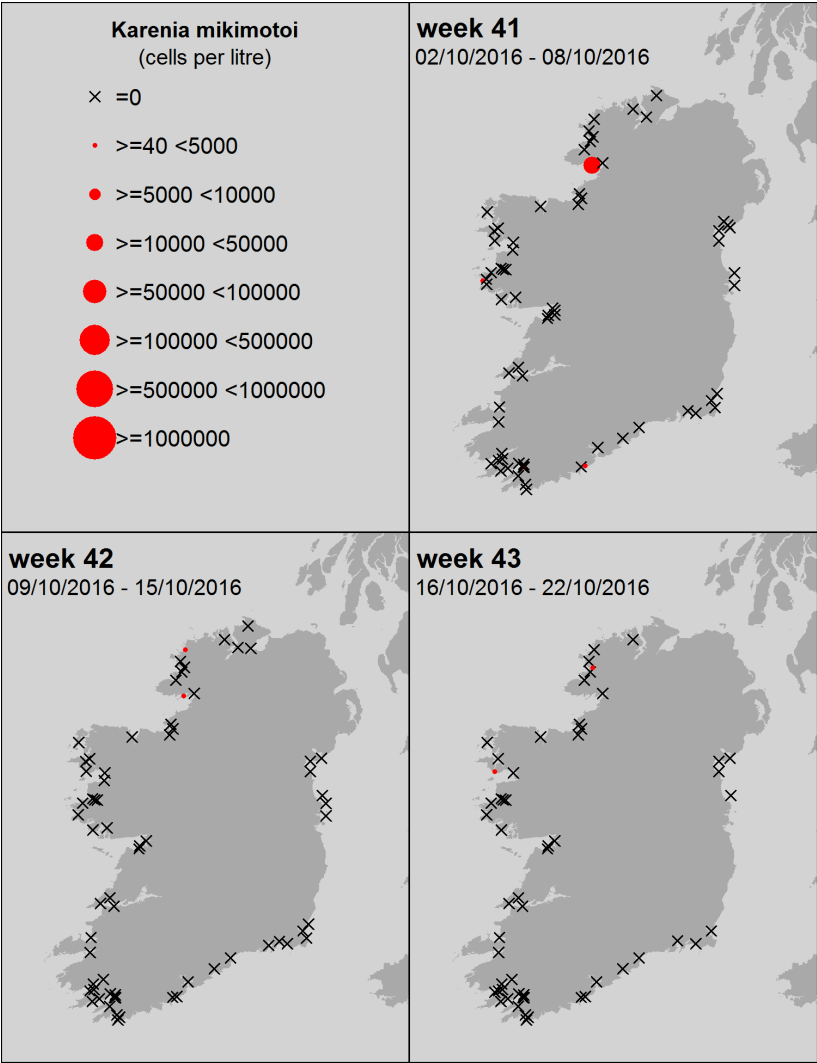


Karenia mikimotoi
(old name: *Gyrodinium aureolum*)

Karenia spp. - Issues unlikely.

This species can cause stress and mortalities due to its effect on water quality in both farmed shellfish and finfish as well as many wild marine shore species i.e. lugworms, cockles etc.

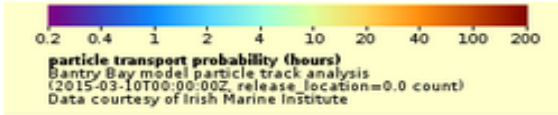
Low impact husbandry for farmed fish is traditionally recommended to reduce any additional stress in affected sites. Increased frequency in checking fishing and keeper pots is traditionally advised for wild fisheries to remove live catch before potential losses in affected sites.



SOUTHWEST: Bantry Bay

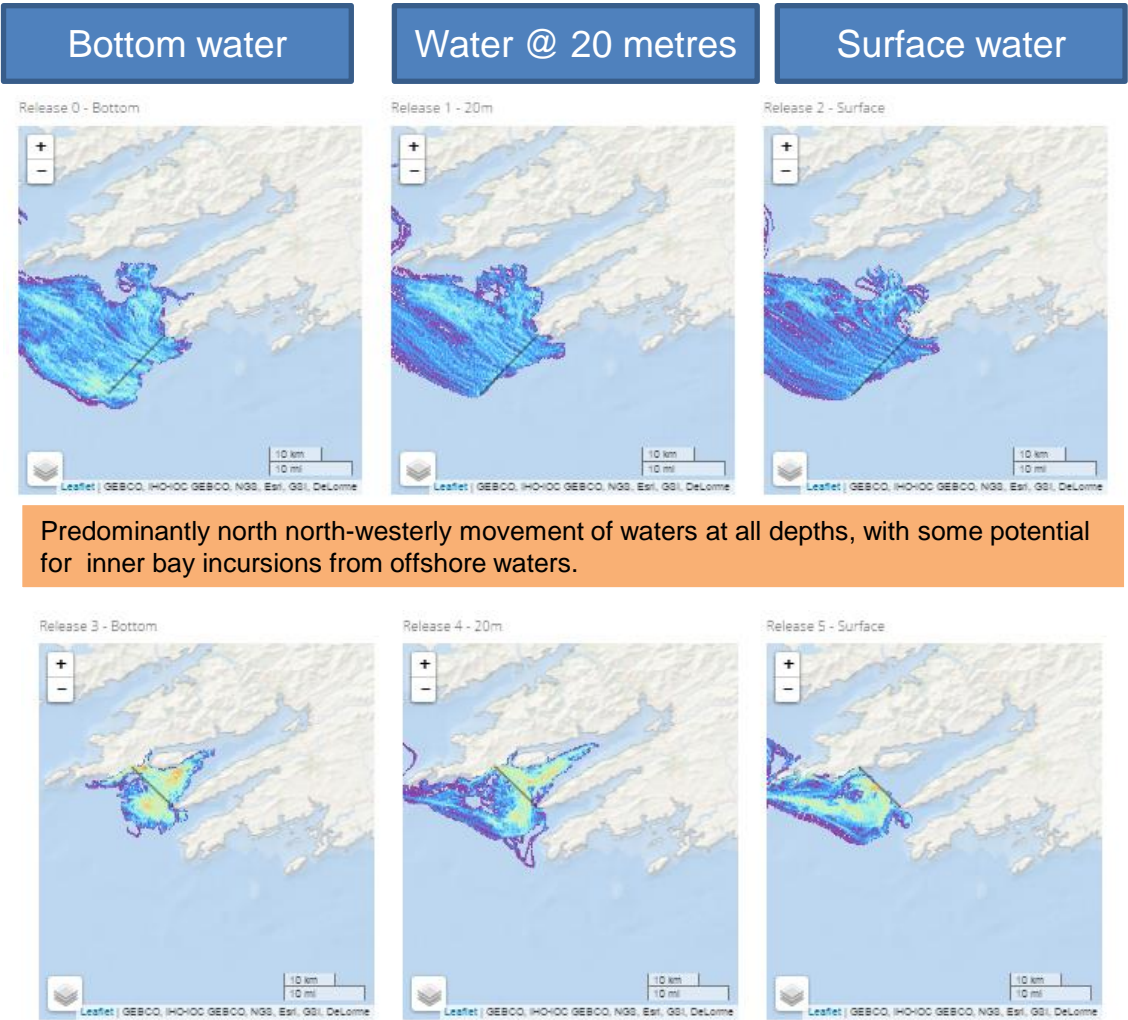
The maps show the **most likely transport pathways for the next 3 days of phytoplankton** found along the **presented transects** (black lines off Mizen Head and the Mouth of Bantry Bay) and **water depths** (bottom, 20 metres and surface)

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



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

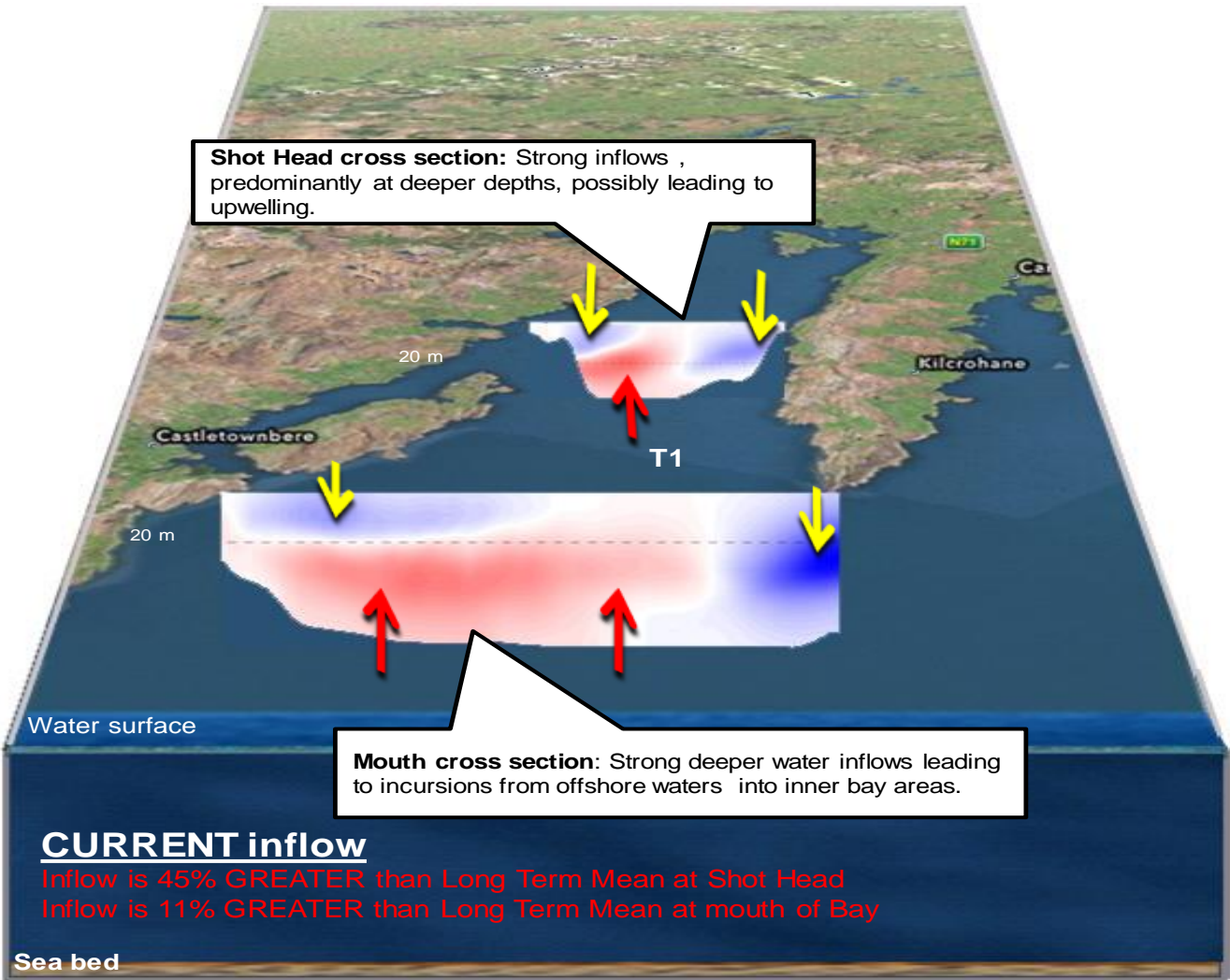
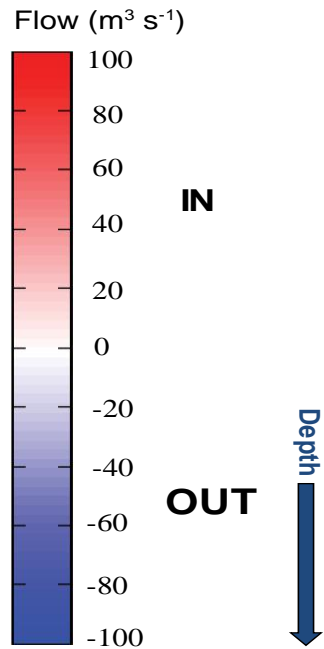
Forecast for the next 3 days



Bantry Bay

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

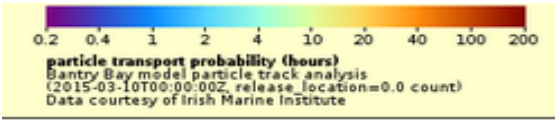
Forecast for next 3 days



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)

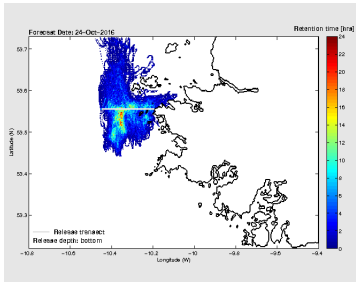
Reddish colours represent areas where phytoplankton remain longest
Cooler colours represent areas where phytoplankton remain for shorter periods



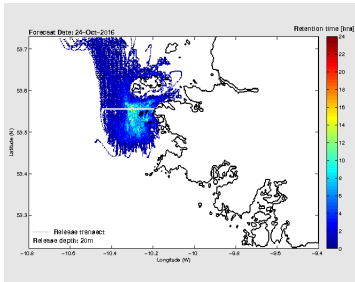
particle transport probability (hours)
Bantry Bay model particle track analysis
(2015-03-10T00:00:00Z, release_location=0.0 count)
Data courtesy of Irish Marine Institute

Forecast for the next 3 days

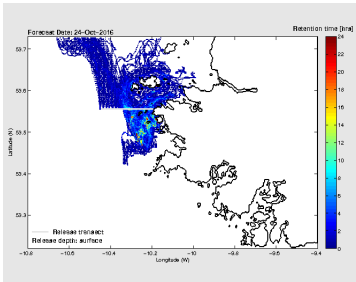
Bottom water



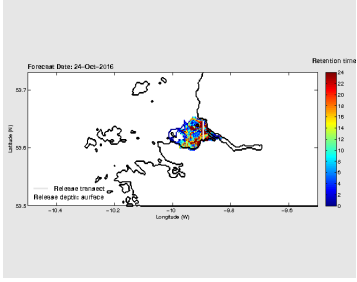
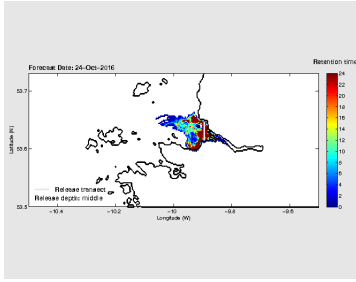
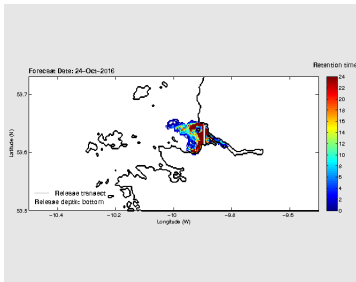
Water @ 20 metres



Surface water



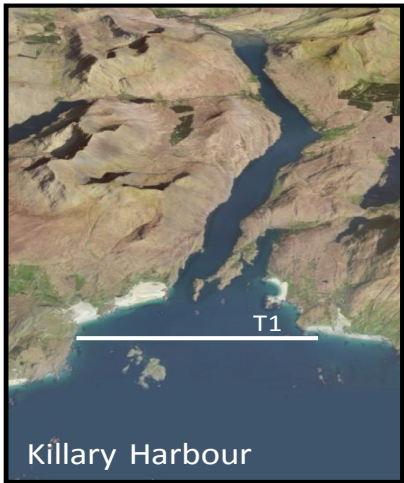
Mixed predominantly northerly strong water movements, possibly allowing inner bay transport from offshore waters.



Water movements low regionally , at all depths, with low likelihood of strong transport of outer bay waters to innermost bay areas,

Killary Harbour

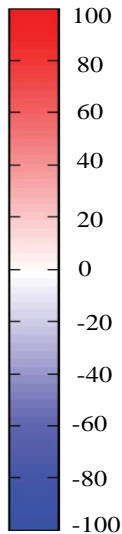
3 day estimated water flows at the mouth of Killary Harbour



Forecast for next 3 days

Killary Harbour Mouth cross section:
Weak water movements in and out of bay area .

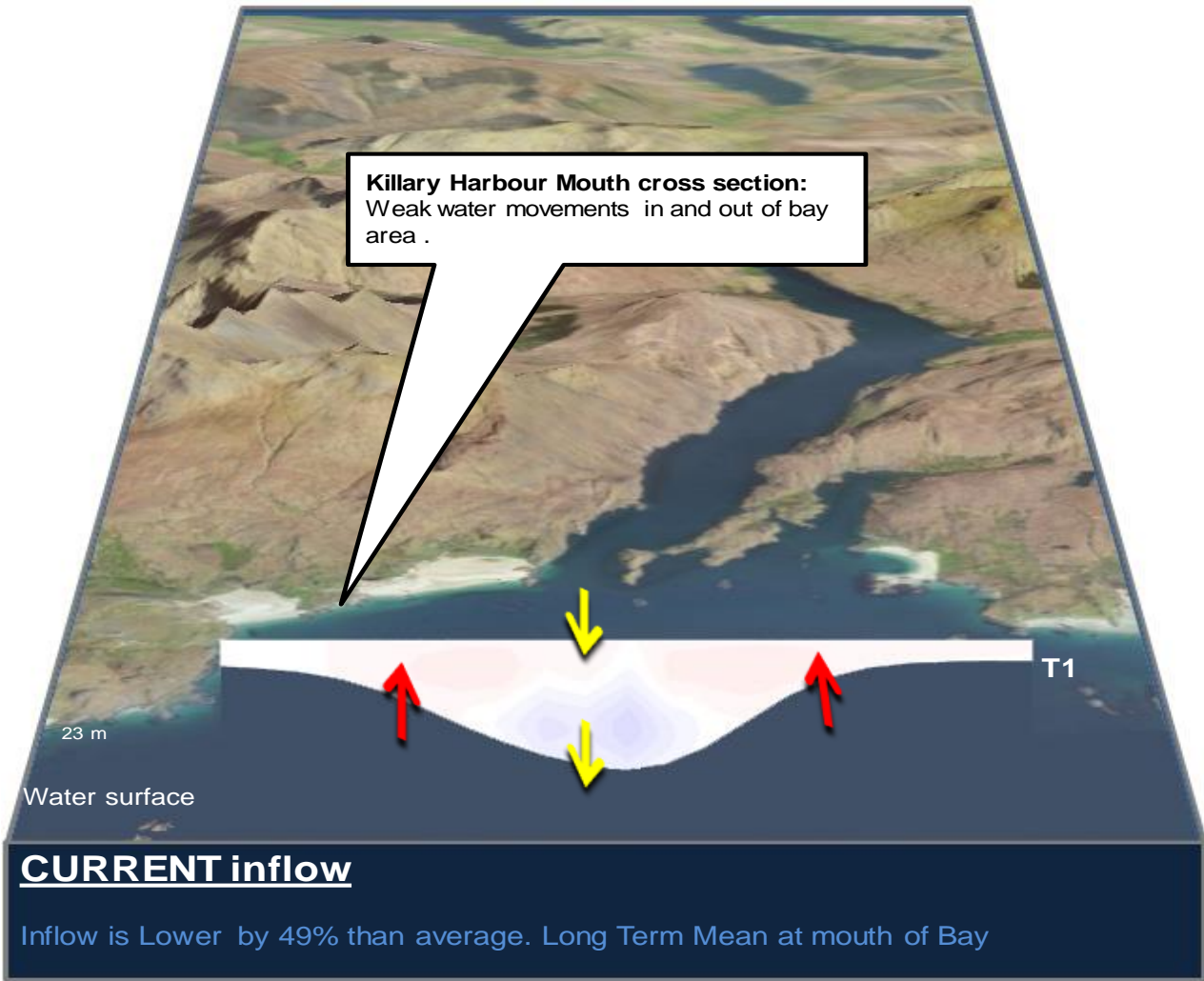
Flow ($\text{m}^3 \text{s}^{-1}$)



IN

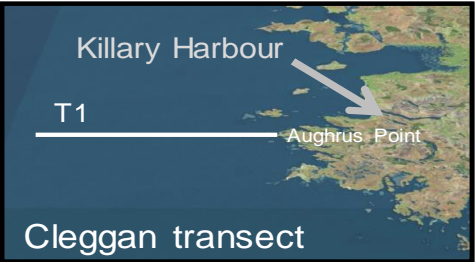
OUT

Depth

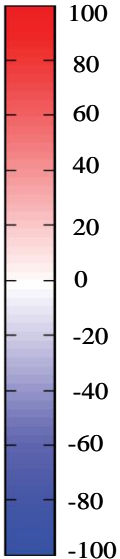


West Coast - 3 day estimated water flows along a transect off Aughrus Point

Forecast for next 3 days



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



northward
flow

southward
flow

