

Ireland: Predictions

ASP event: Moderate to low (decreasing)
AZP event: Moderate (constant fluctuation)
DSP event: **Very High** (Increasing- S, SW and W)
PSP event: low (very slow increase)

NMP Current closures			
ASP	AZP	DSP	PSP
0	0	2	0

ASP: A potential decreasing trend in toxicity was predicted in the last 2 weeks continues. It would be expected that this trend would continue based on current results. Suitable environmental and water transportation patterns may slow the trend of decreasing risk so caution is still advised this week.

AZP: Same as last week -Continuing cautious moderate warning remain due to the continued observation of potential cell levels in some sites with low levels of toxins present (all currently below closure levels) .Issues with this toxin can occur suddenly and acutely .Caution is advised.

DSP: Unfortunately ,as indicated, this species is now causing toxicity issues in some sites. This is still the main season to be traditionally affected by this group so highest caution is advised until the impact has peaked and past. All sites should insure best sampling practices and obtaining the most recent results available. Continued rise and impact of this species is to be expected at present based on current trends, historic patterns and predictive marine models.

PSP: A toxic event is not expected at this time of year. Low levels of caution should be exercised as we get closer to the historical period of occurrence and/or we experience favourable environmental conditions.

Blooms: Currently no substantial indications of detrimental blooms indicated but species of concern may occur suddenly and acutely as environmental conditions change.

Please note: We will be updating the format of this bulletin throughout the year in an active effort to increase end user applicability and incorporate developing technologies. All feedback is welcome at Joe.Silke@Marine.ie .

National Monitoring Programme

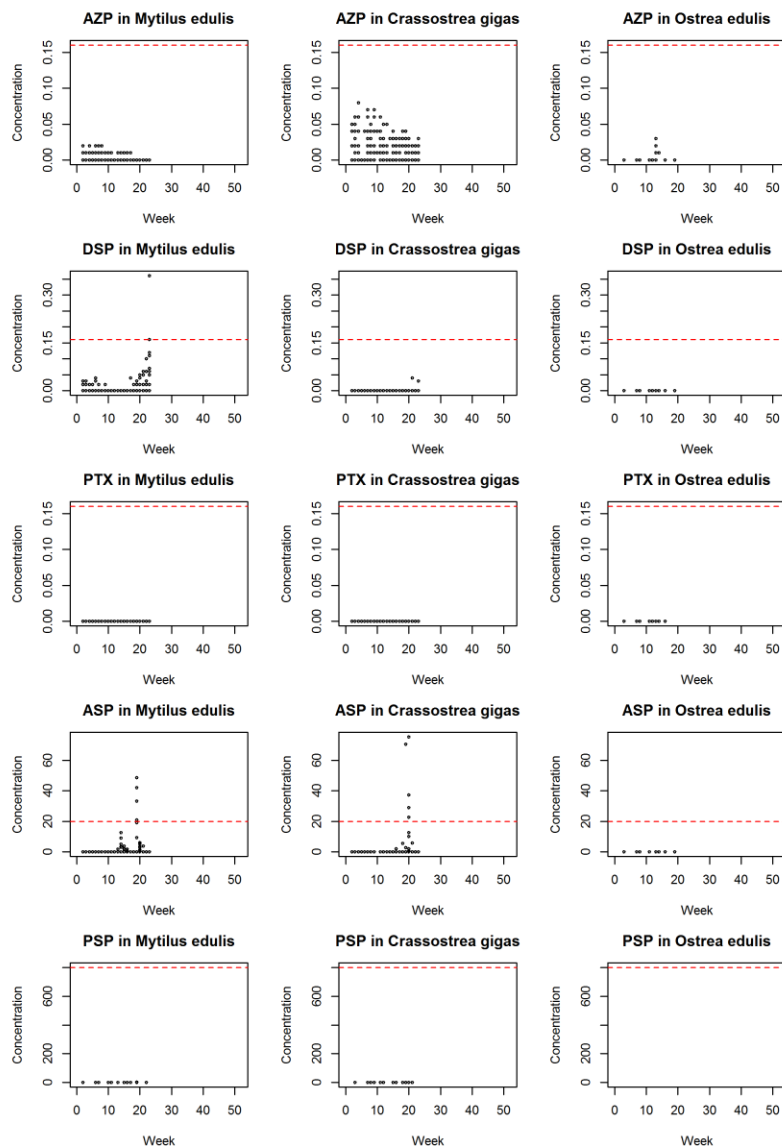
AZP

DSP

PTX

ASP

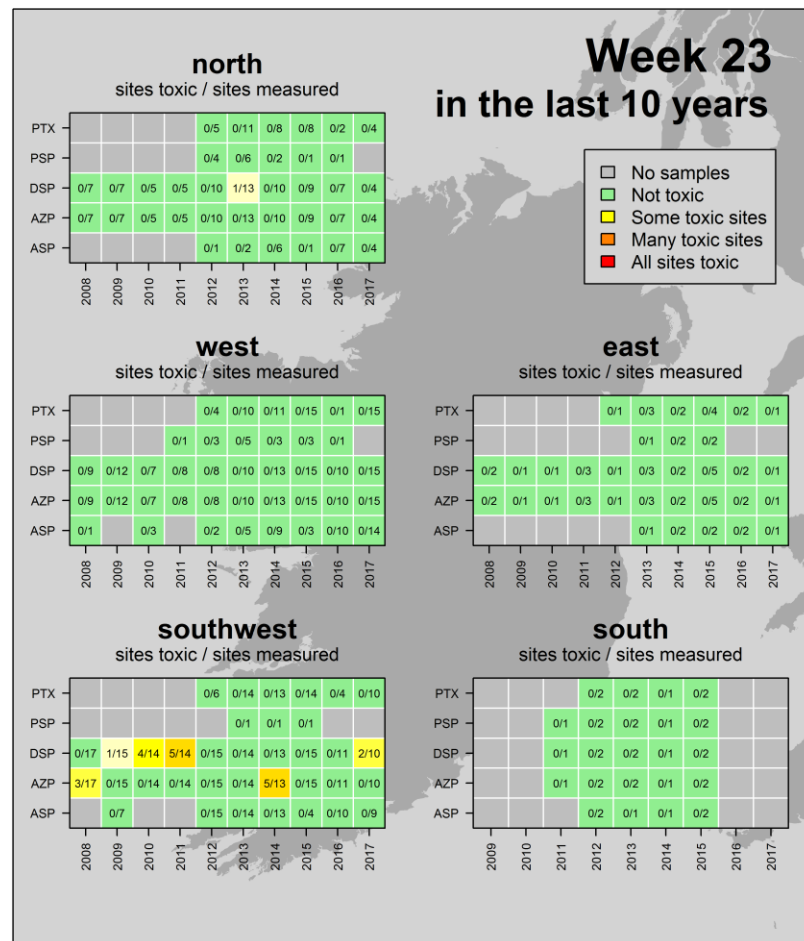
PSP



Levels from week 1 to present week. Regulatory limit - - - - -



HISTORIC TRENDS



ASP events: mid-March to early May

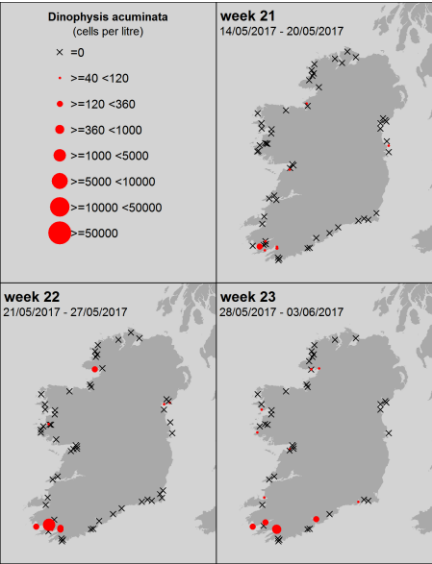
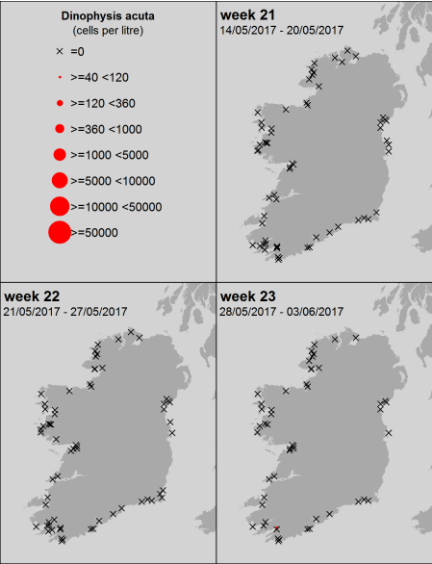
AZP events: April to December

DSP events: May to December

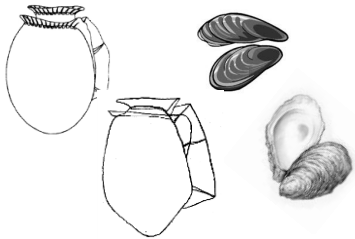
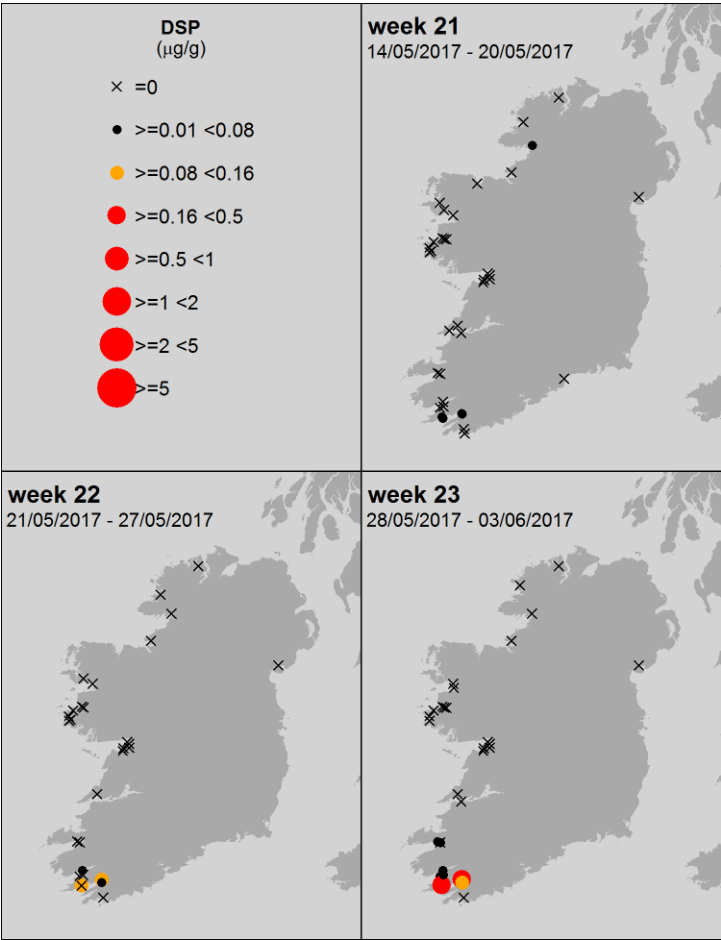
PSP events: June to mid-July and end September; only in Cork Harbour

DSP and Dinophysis sp. current trends

Phytoplankton species – 3 wks.

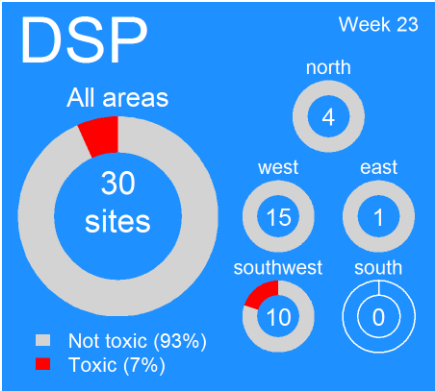


All levels of DSP biotoxin recorded- 3 wks.



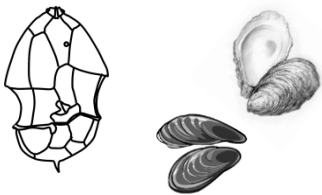
Current closures levels

≥ DSP 0.16 µg/g

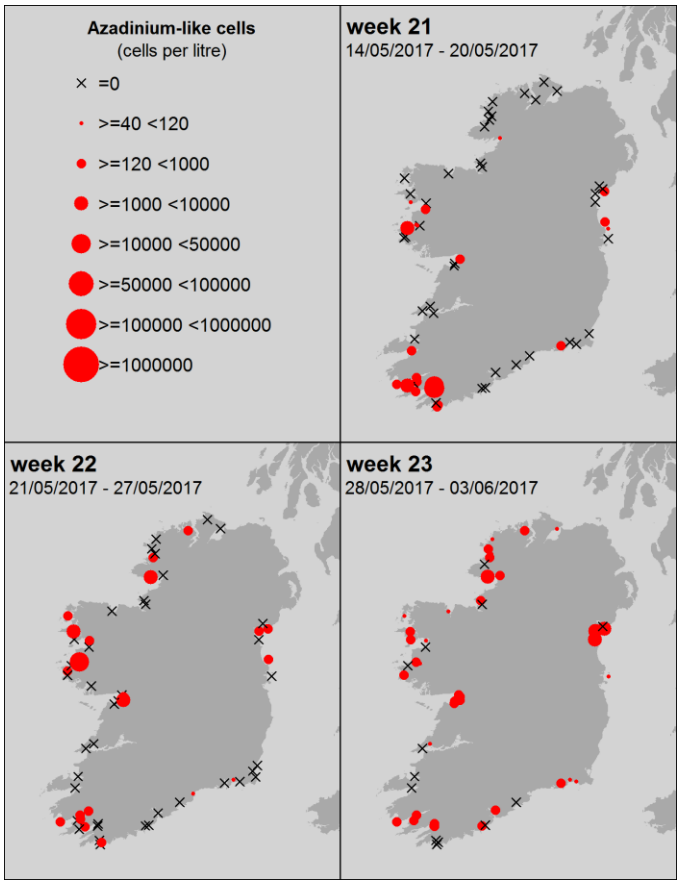


Comment – Unfortunately as warned in the last few weeks , Dinophysis species are now causing a toxicity issue in some sites in SW. This event would be ‘normal’ for this time of the year and indeed cell levels will probably go higher and increase coastal area coverage before coming to a natural end. Highest caution advised in all areas affected.

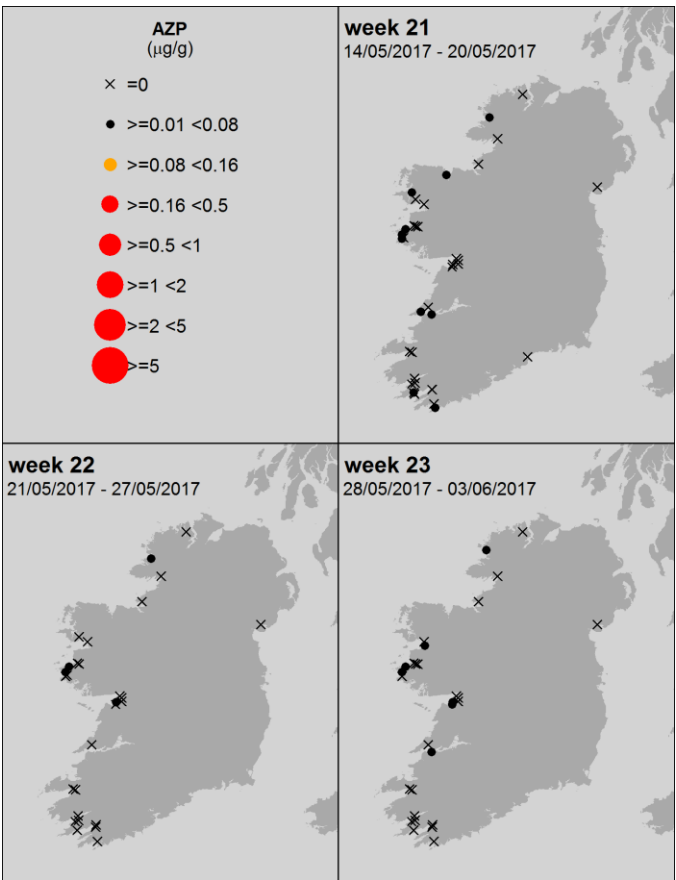
AZP and Azadinium like species current trends



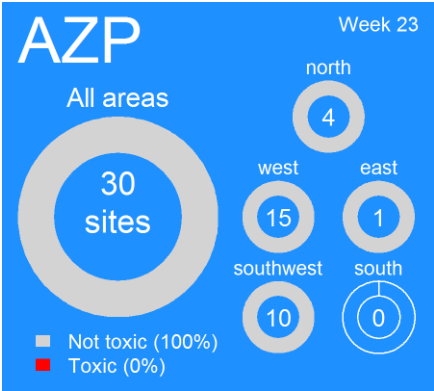
Phytoplankton species – 3 wks.



All levels of AZP biotoxin recorded - 3 wks.



Current closures levels
 $\geq \text{AZP } 0.16 \mu\text{g/g}$

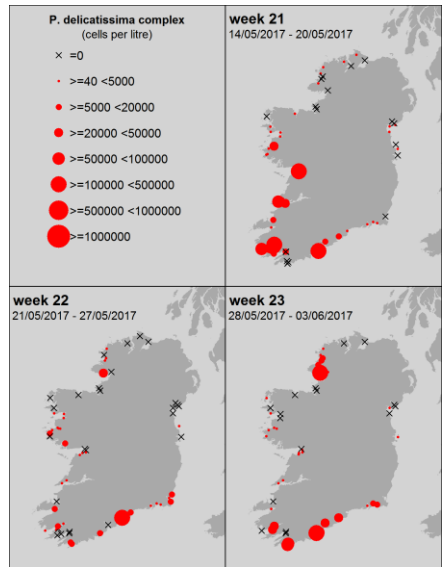
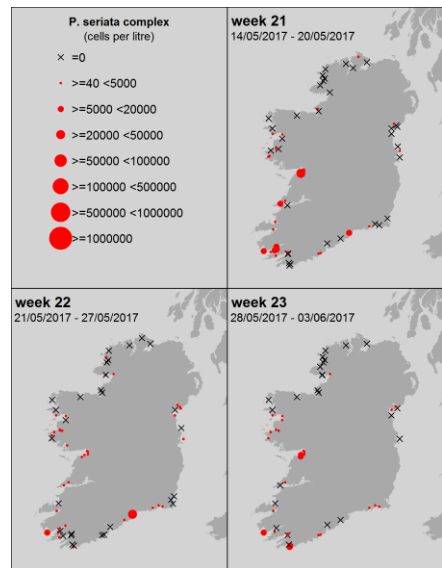


Comments

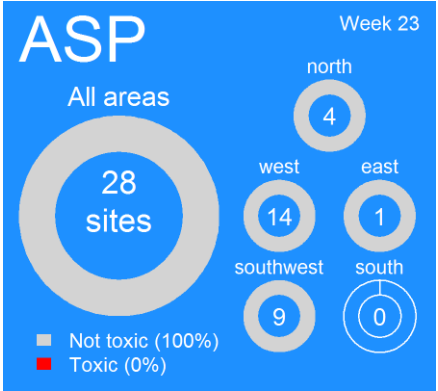
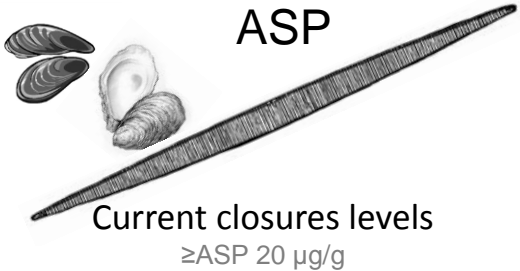
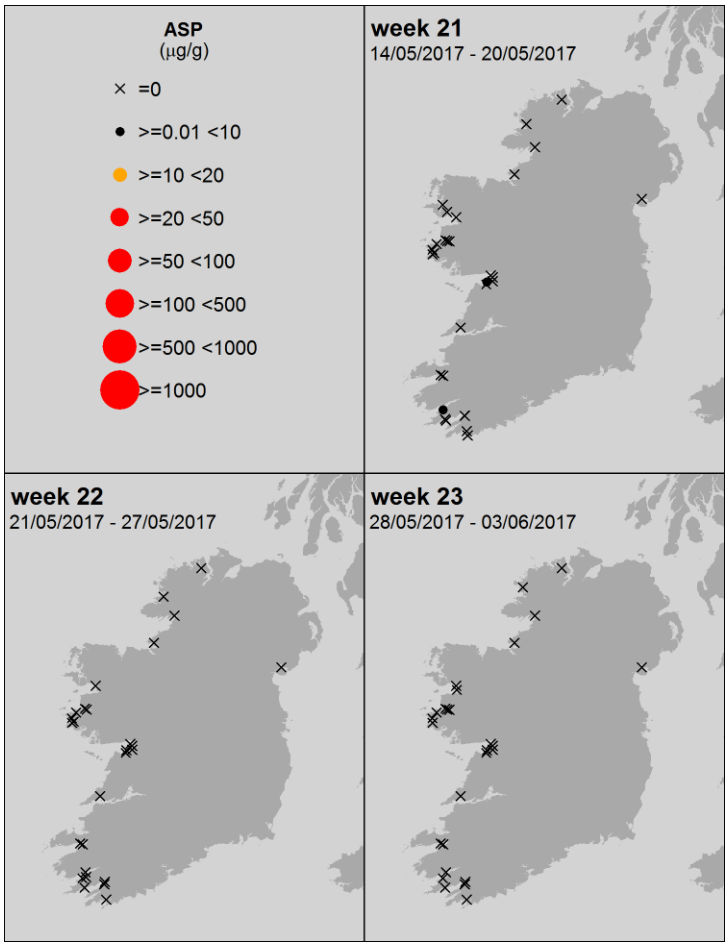
No change -Fluctuation in cell levels continue to dominate . Potential cells appearing in more sites but related low levels of toxicity levels decreasing temporarily. Toxicity related to this species can occur quickly if the causative species 'comes in'. Caution advised.

ASP and Pseudo nitzschia sp. current trends

Phytoplankton species – 3 wks.



All levels of ASP biotoxin recorded - 3 wks.



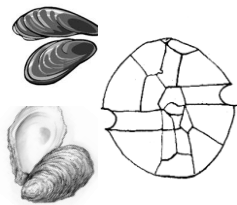
Comments

Continued decreasing trend in levels of toxicity predicted in last 2 weeks appears to be continuing in affected areas. It is possible this trend will continue but potential inshore water transportation predictions for this week may cause localised issues. Caution still advised until cell levels drop further.

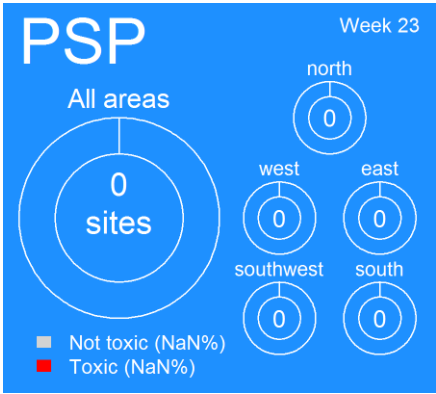
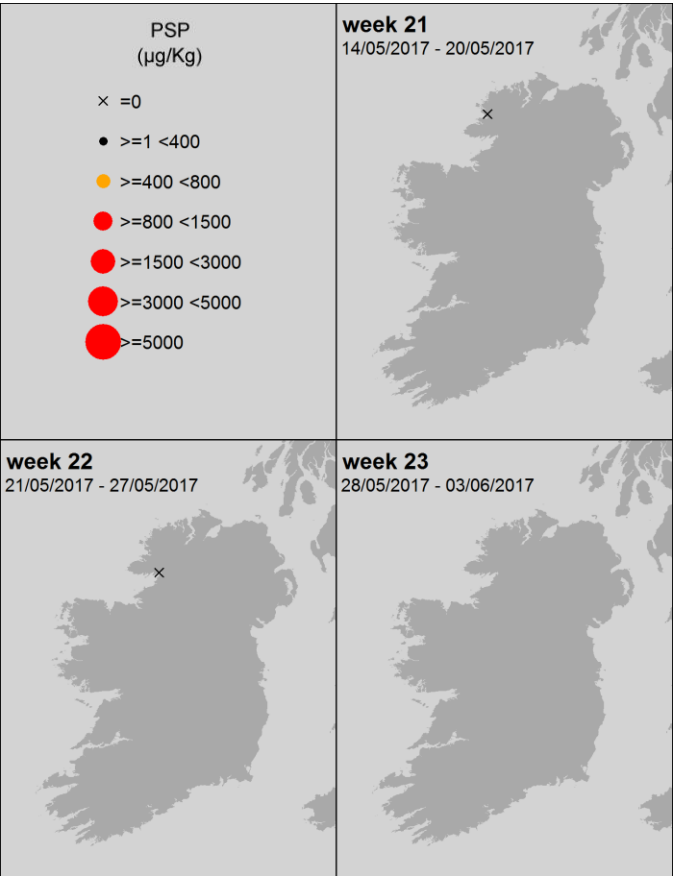
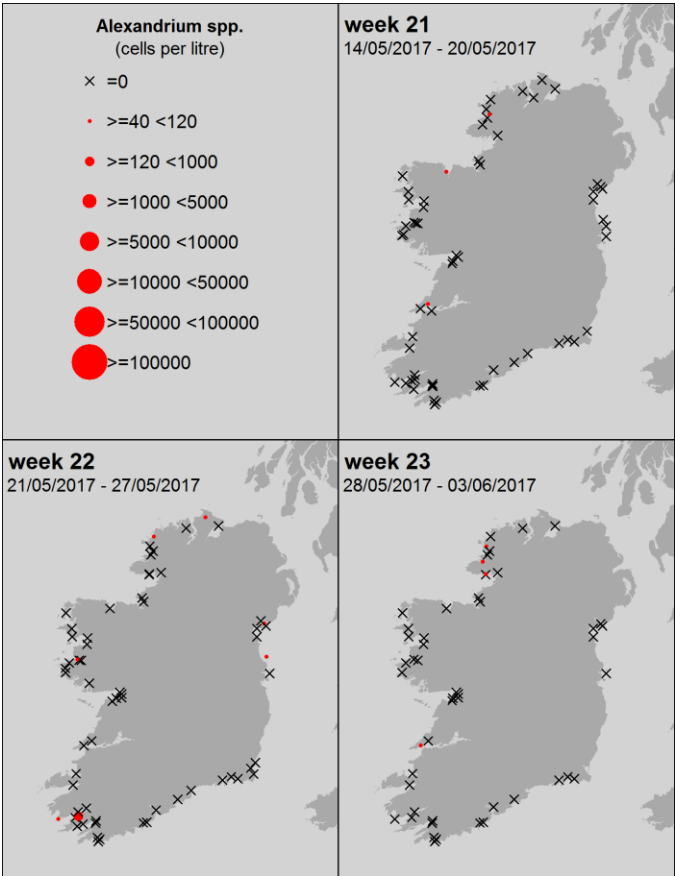
PSP and Alexandrium sp. current trends

Phytoplankton species – 3 wks.

All levels of PSP biotoxin recorded - 3 wks.



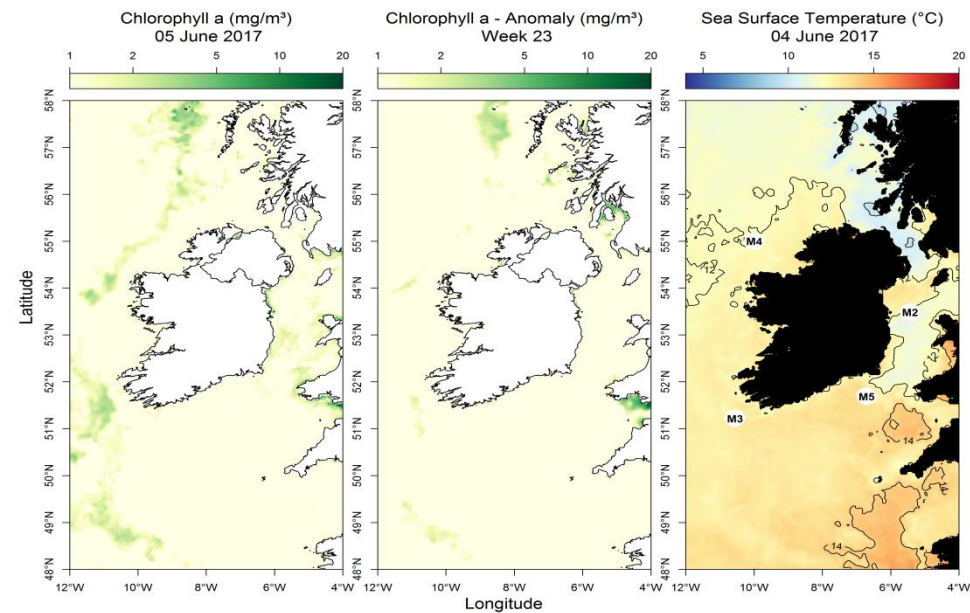
Current closures levels
≥ PSP 800 µg/Kg



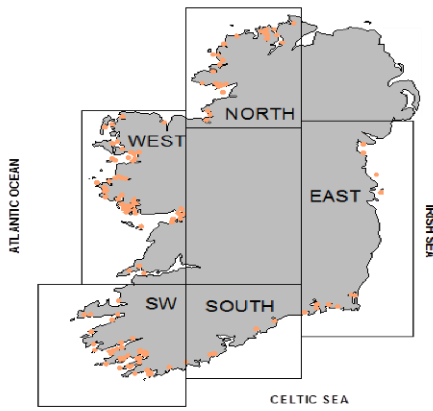
Comments

Low levels of cells observed throughout the coastline but currently no toxin issues with this group. Records of issues with this species have been very site specific and associated with specific environmental conditions and high cell levels. Low likelihood of issues this week.

Most up to date available satellite data



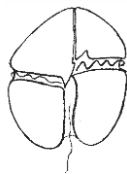
Chlorophyll levels indicate potential bloom patches off the Northern and western coasts. High levels of beneficial diatoms (see table) continue to be observed in most inshore areas.



NW coast (M4) Above average by 0.53°C wk22
SW coast (M3) Above average by 0.85°C wk 22
SE coast (M5) Above average by 1.46°C wk22

What phytoplankton were blooming at inshore coastal sites last week?

Rank	Region	Species	Rounded Count
1	east	Microflagellate sp.	532000
2	east	Leptocyldrus minimus	72000
3	east	Guinardia flaccida	55000
4	east	Skeletonema spp.	42000
5	east	Chaetoceros (Hyalochaete) spp.	37000
1	north	Dactyliosolen spp.	3167000
2	north	Chaetoceros (Hyalochaete) spp.	668000
3	north	Pseudo-nitzschia delicatissima complex	91000
4	north	Cylindrotheca closterium/ Nitzschia longissima	75000
5	north	Prorocentrum micans	38000
1	south	Pseudo-nitzschia delicatissima complex	191000
2	south	Lauderia / Detonula sp	124000
3	south	Leptocyldrus minimus	92000
4	south	Chaetoceros (Hyalochaete) spp.	77000
5	south	Cerataulina spp.	58000
1	southwest	Bacteriastrium spp.	642000
2	southwest	Skeletonema spp.	300000
3	southwest	Skeletonema costatum	245000
4	southwest	Lauderia / Detonula sp	140000
5	southwest	Leptocyldrus minimus	102000
1	west	Dactyliosolen spp.	205000
2	west	Cylindrotheca closterium/ Nitzschia longissima	172000
3	west	Pennate diatom	105000
4	west	Chaetoceros (Hyalochaete) spp.	52000
5	west	Guinardia delicatula	51000



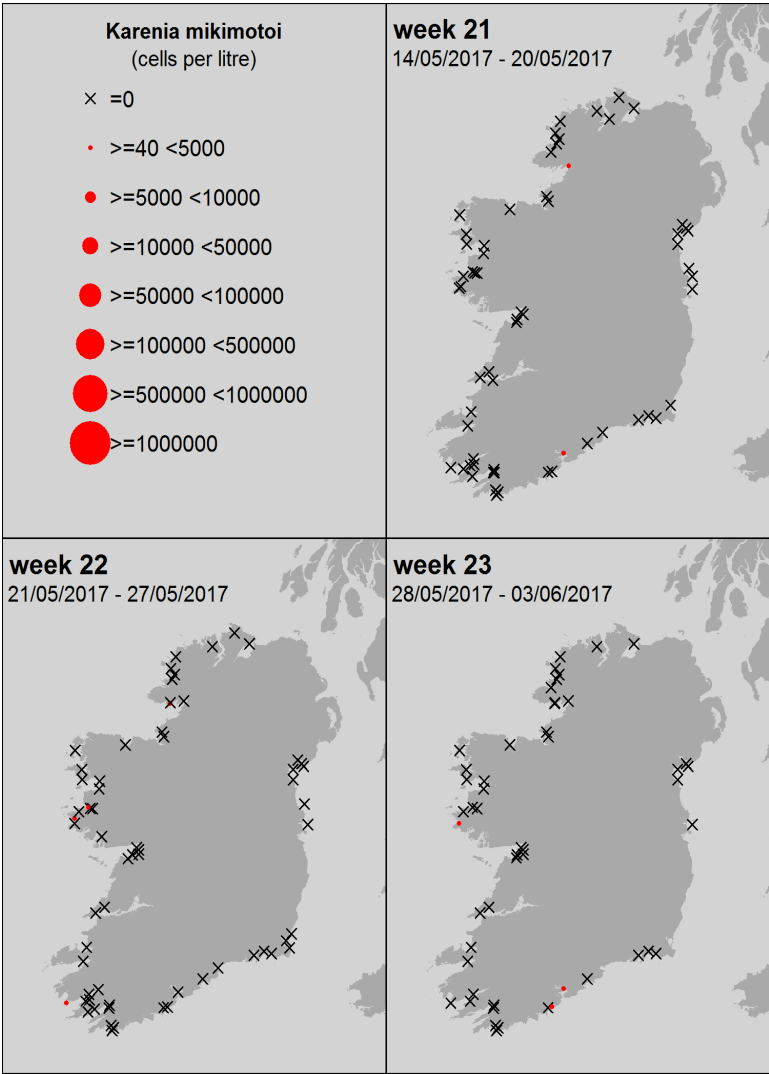
Karenia mikimotoi bloom warning level
- Low but increasing -

Currently very low levels of cells have been observed in isolated sites only. This species can rapidly come inshore at bloom levels during suitable environmental growing and transport conditions. Caution levels will be increasing slowly as cell levels and conditions change.

Other bloom species news

Dominant species in all areas currently diatoms. Each geographical sector appears to be dominated by its unique species or group. Currently no major treats/ ictyotoxic species evident but please use the dominant species table to see specific localised areas of interest.

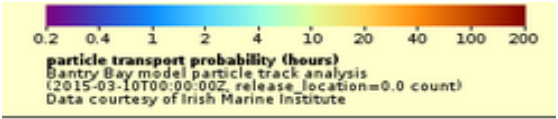
Karenia mikimotoi
(old name: *Gyrodinium aureolum*)



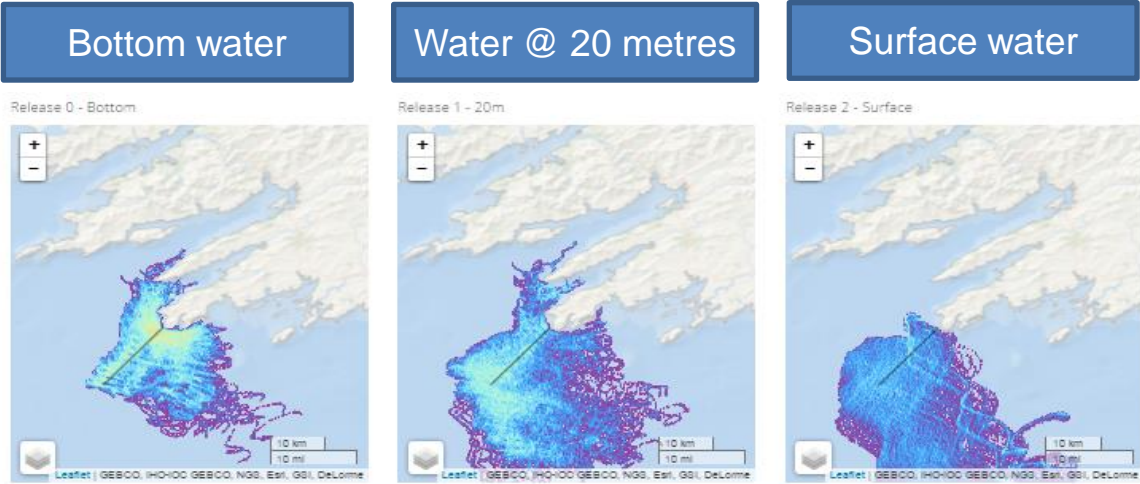
SOUTHWEST: Bantry Bay

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



Forecast for the next 3 days



South-easterly water movements dominant at all depths. Strong possibility of outer bay waters entering inner bay areas .



Upwelling conditions likely as deeper waters likely to enter inner bay areas with counter surface transport at shallow depth and surface layers.

Bantry Bay

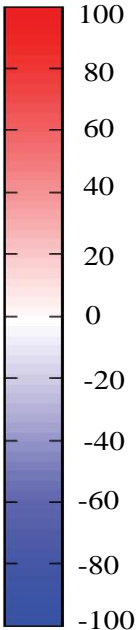
3 day estimated water flows at the mouth and mid-bay sections of Bantry Bay



Forecast for next 3 days

Shot Head cross section: High likelihood of upwelling conditions.

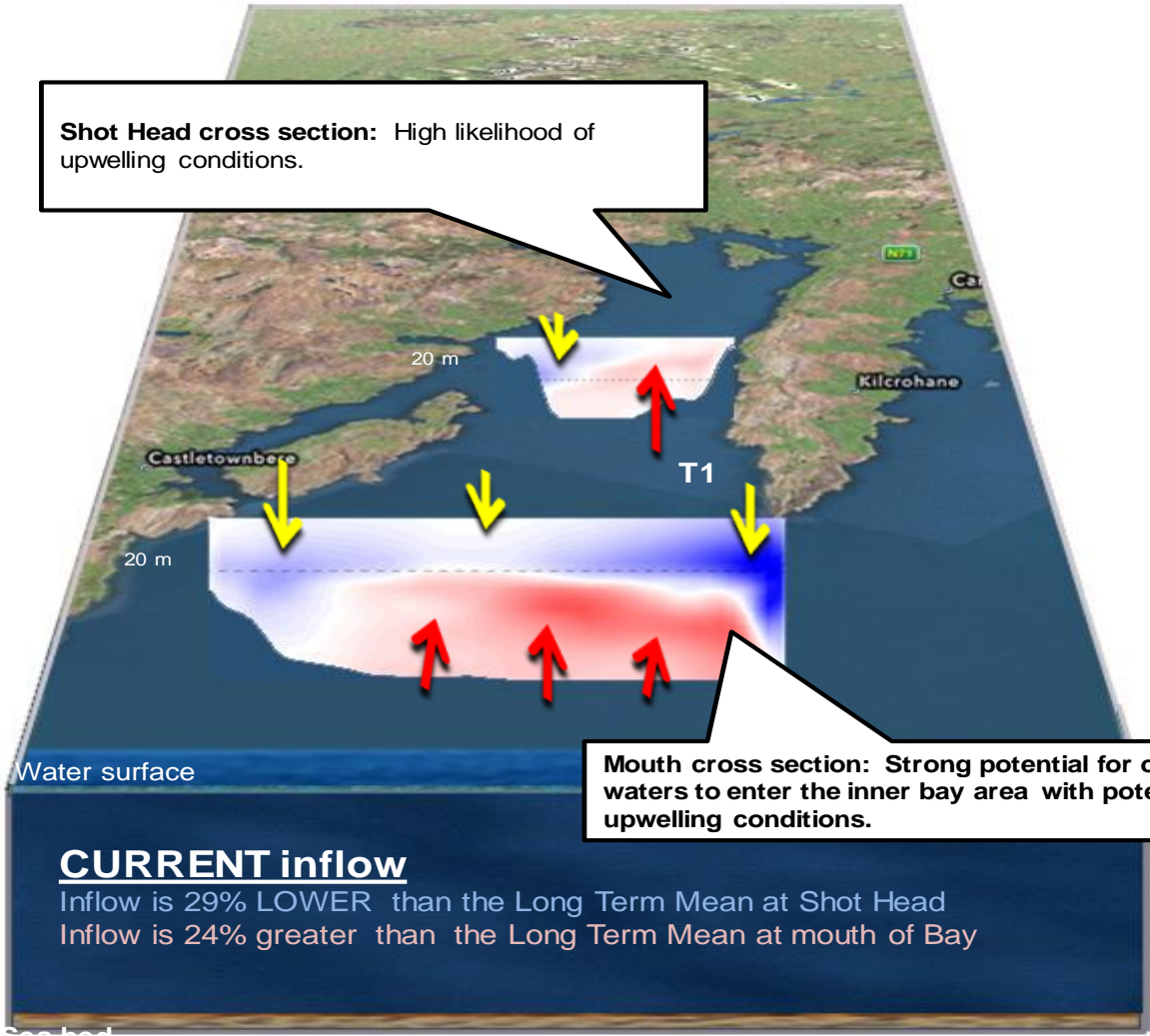
Flow ($\text{m}^3 \text{s}^{-1}$)



IN

OUT

Depth



Mouth cross section: Strong potential for offshore waters to enter the inner bay area with potential upwelling conditions.

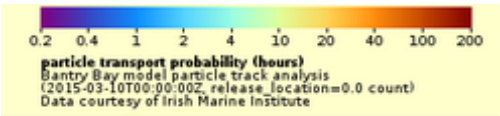
CURRENT inflow

Inflow is 29% LOWER than the Long Term Mean at Shot Head
Inflow is 24% greater than the 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)

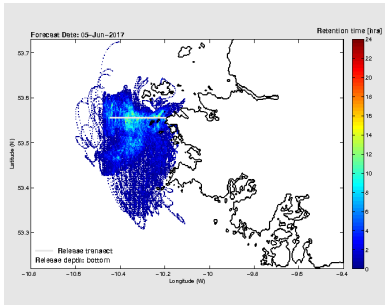
Reddish colours represent areas where phytoplankton remain longest
Cooler colours represent areas where phytoplankton remain for shorter periods



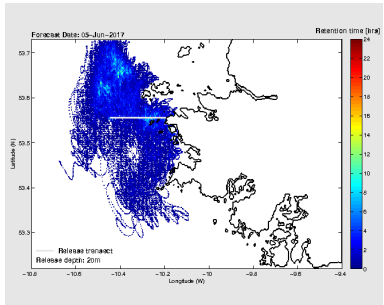
0.2 0.4 1 2 4 10 20 40 100 200
particle transport probability (hours)
Bantry Bay model particle track analysis
(2015-03-10T00:00:00Z, release_location=0.0 count)
Data courtesy of Irish Marine Institute

Forecast for the next 3 days

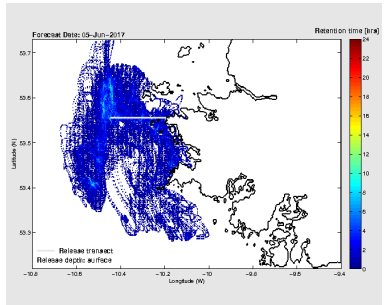
Bottom water



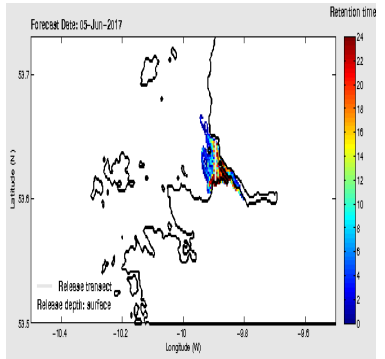
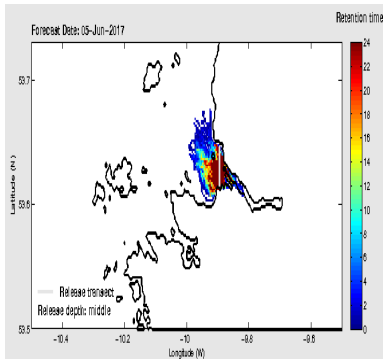
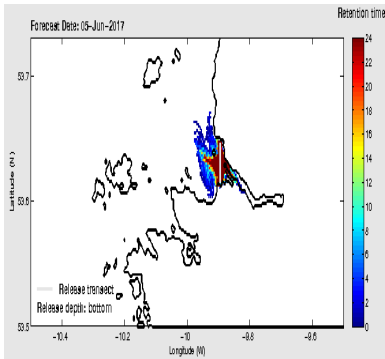
Water @ 20 metres



Surface water



Cleggan
Strong southerly flows and movement dominating deeper water areas offshore with more mixed directional strong movements as depth decreases towards surface.



Killary
Significant possibility of offshore mixed waters entering inner bay areas , upwelling conditions possible.

Killary Harbour

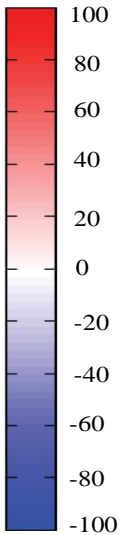
3 day estimated water flows at the mouth of Killary Harbour



Forecast for next 3 days

Killary Harbour Mouth cross section:
Weak inflow rate but possibility of marginal upwelling and innerbay incursions from outer bay waters.

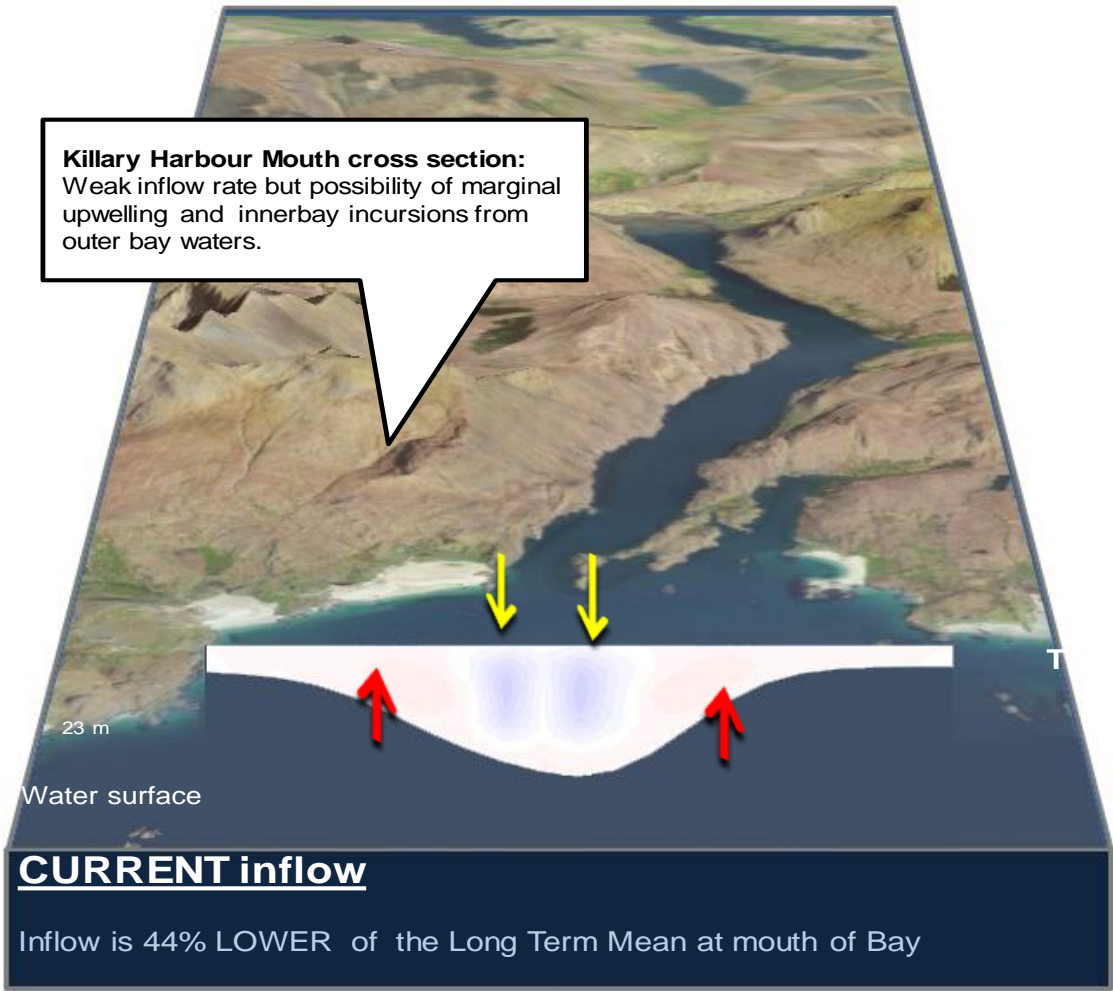
Flow ($\text{m}^3 \text{s}^{-1}$)



IN

OUT

Depth



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

