

Ireland: Predictions

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

NMP Current closures			
ASP	AZP	DSP	PSP
0	0	4	0

ASP: In general there is a steady decreasing trend in toxicity . 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: Additional caution is advised as this is now the beginning of the historical period of occurrence coupled with the continued presence of cell observations throughout the coastline and the presence of low toxin 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.

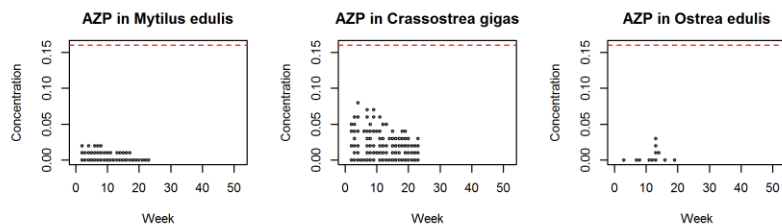
PSP: Increased levels of caution should be exercised as we get closer to the historical period of occurrence and/or we experience favourable environmental conditions.

Blooms: There is a low but slowly increasing, possibility of a *Karenia* bloom occurring.

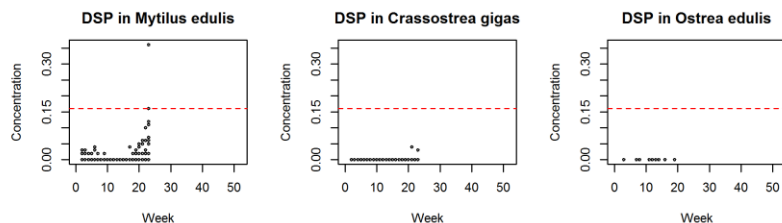
Please note: We will be updating the format of this bulletin throughout the year in an active effort to increase end user applicability and incorporate developing technologies. All feedback is welcome at Joe.Silke@Marine.ie .

National Monitoring Programme

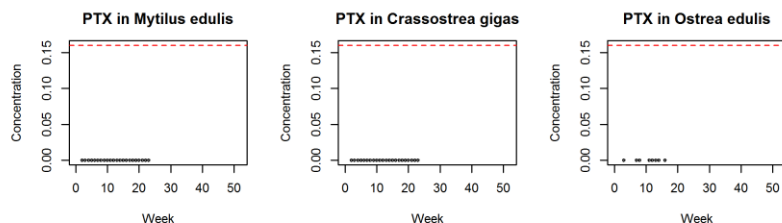
AZP



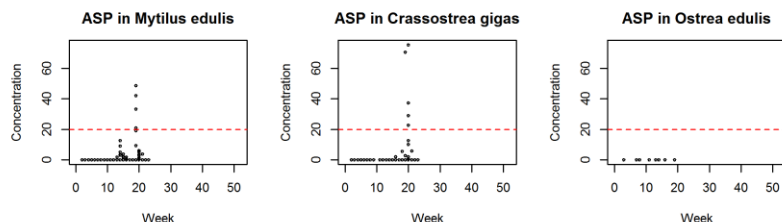
DSP



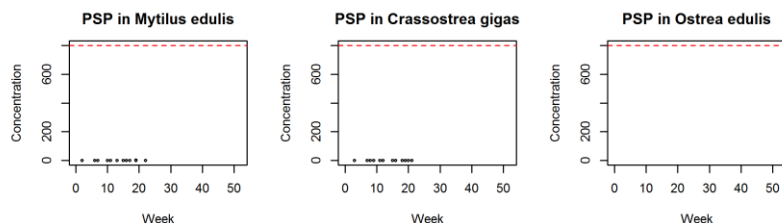
PTX



ASP



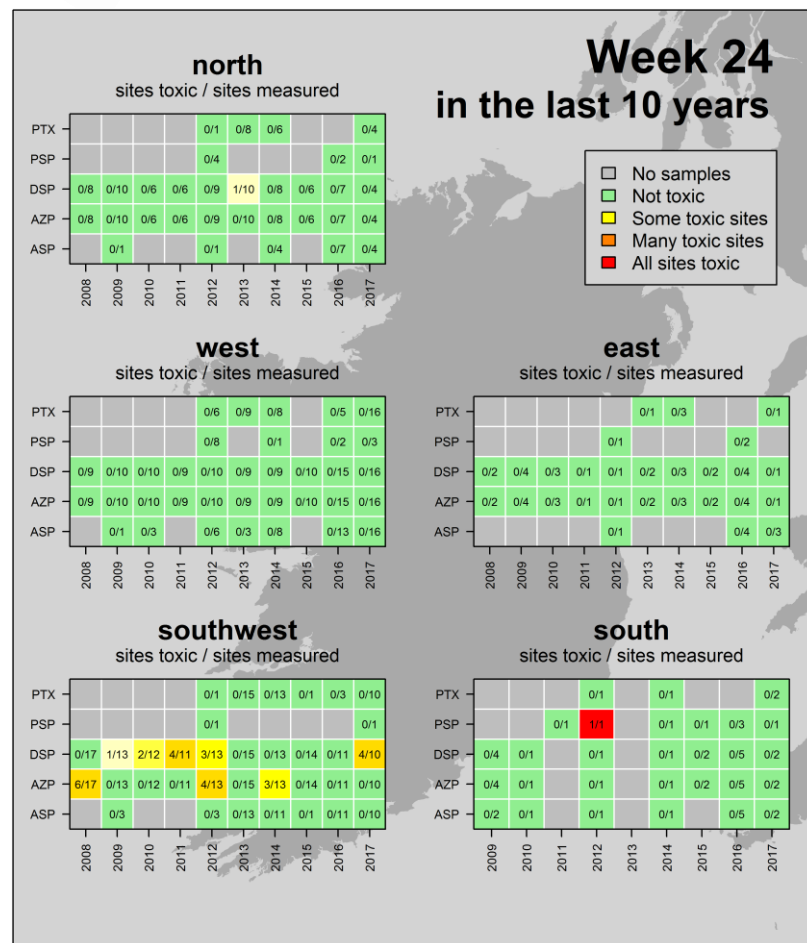
PSP



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



HISTORIC TRENDS



ASP events: mid-March to early May

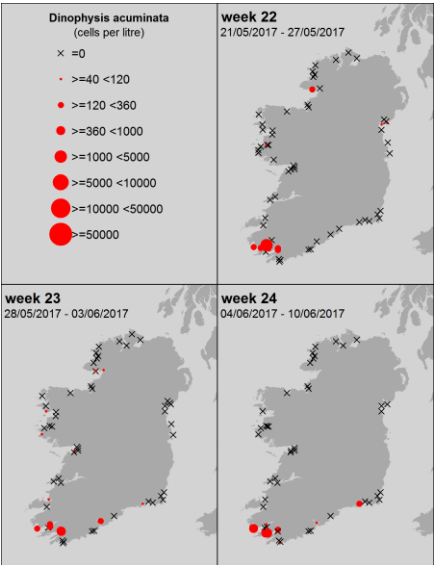
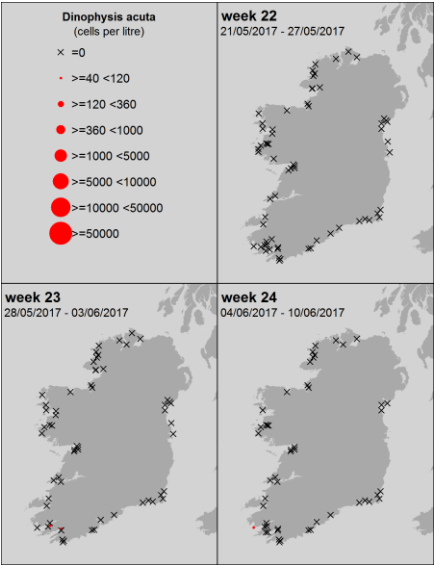
AZP events: April to December

DSP events: May to December

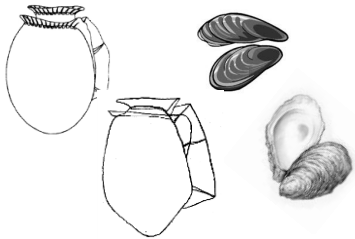
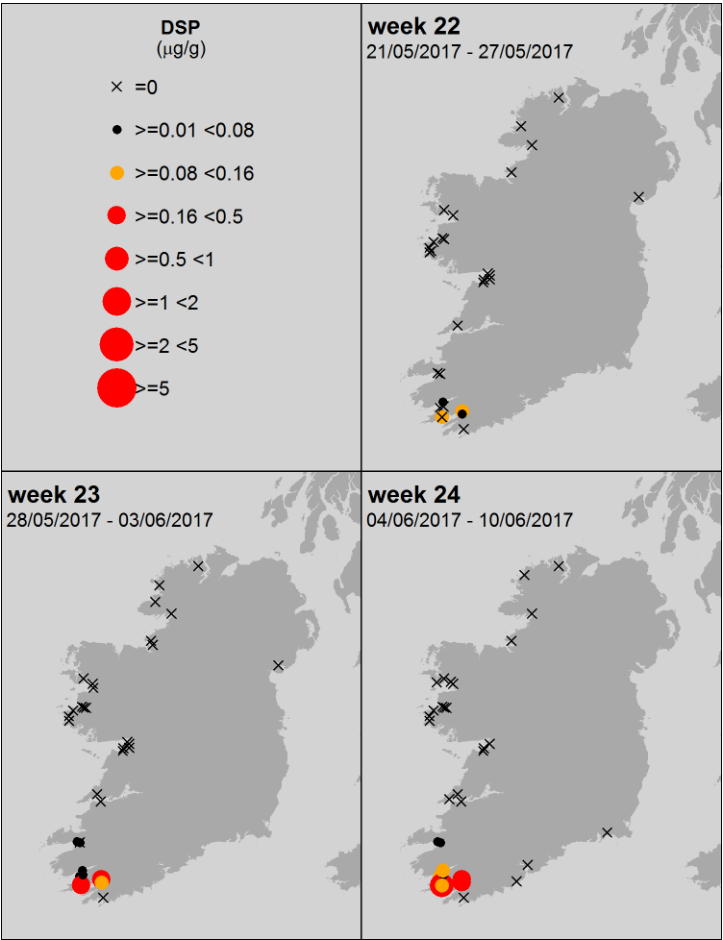
PSP events: June to mid-July and end September; only in Cork Harbour

DSP and Dinophysis sp. current trends

Phytoplankton species – 3 wks.

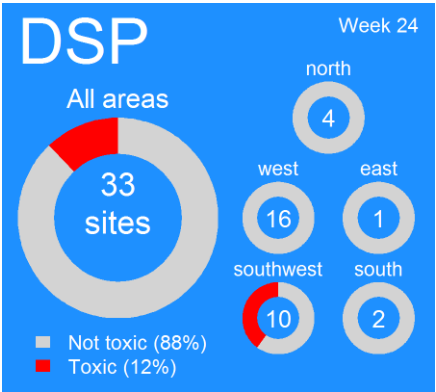


All levels of DSP biotoxin recorded- 3 wks.



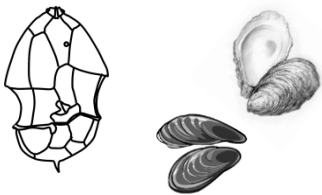
Current closures levels

≥ 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.

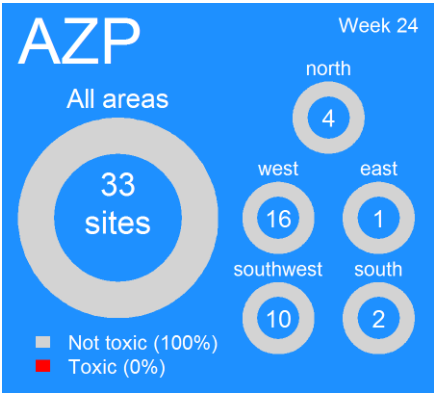
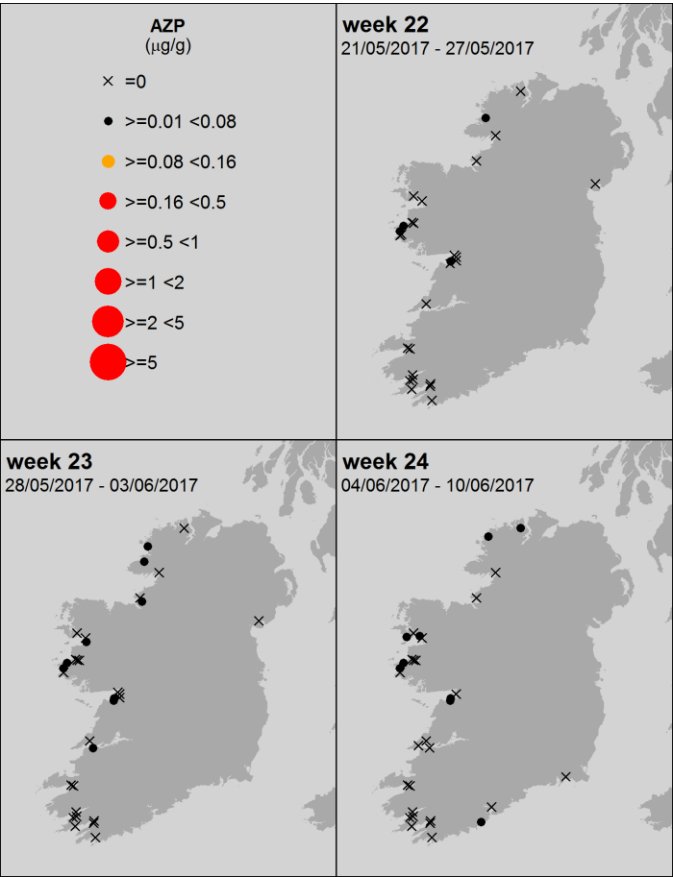
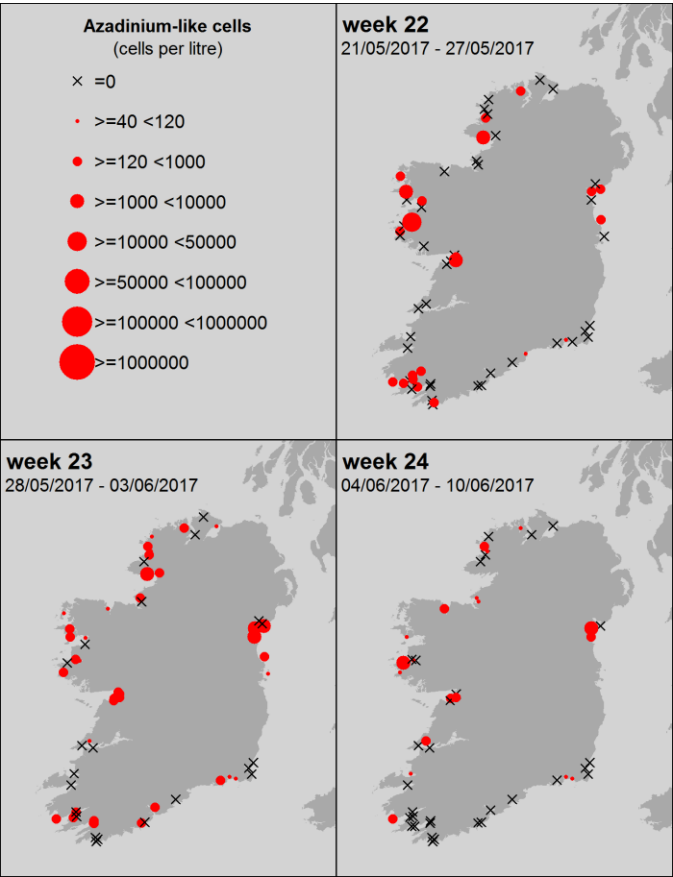
AZP and Azadinium like species current trends



Phytoplankton species – 3 wks.

All levels of AZP biotoxin recorded - 3 wks.

Current closures levels
≥ AZP 0.16 µg/g

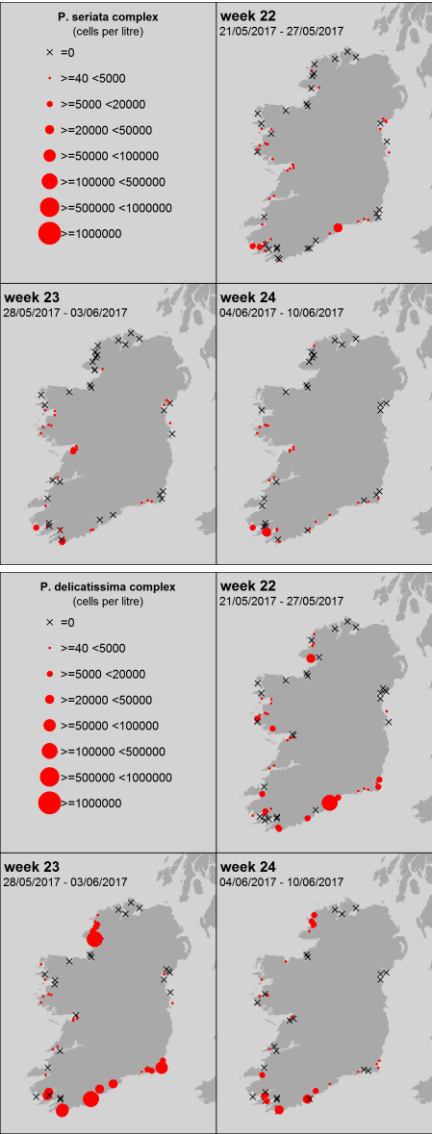


Comments

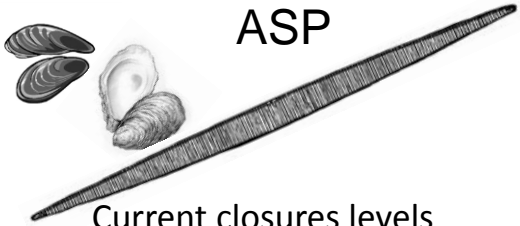
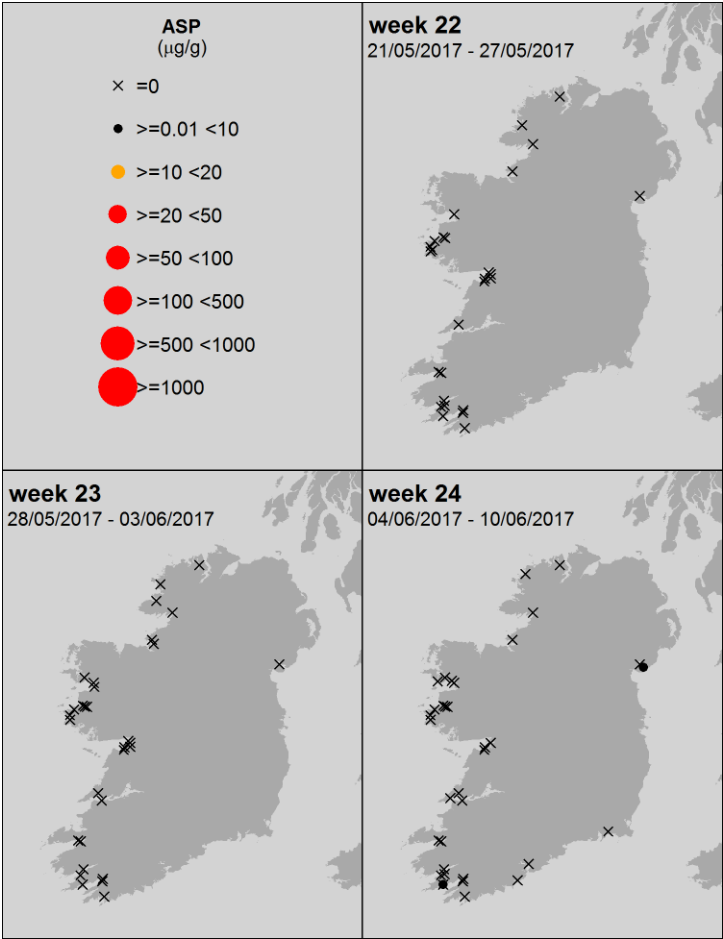
Cell levels continue to fluctuate but we are now in an historically high likelihood period . Potential cells appearing in more sites but related low levels of toxicity levels decreasing temporarily. Toxicity related to this species can occur quickly if the causative species 'comes in'. Additional caution advised.

ASP and Pseudo nitzschia sp. current trends

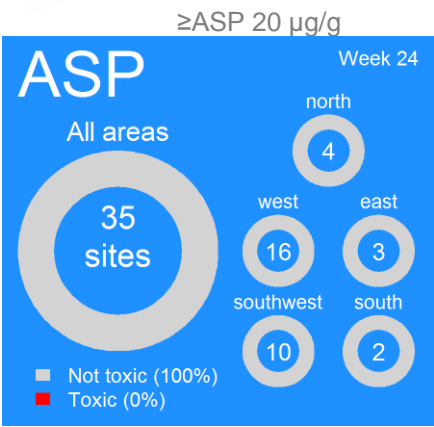
Phytoplankton species – 3 wks.



All levels of ASP biotoxin recorded - 3 wks.



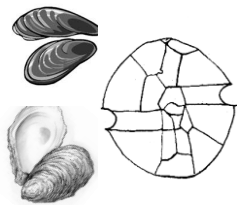
Current closures levels



Comments

Continued decreasing trend in levels of cells ,on average ,but some sites exhibiting low background toxicity. Moderate levels of caution are still advised until cell levels decrease further.

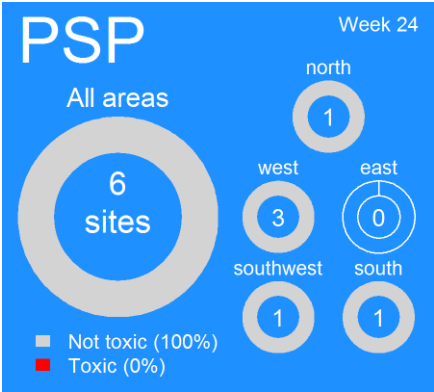
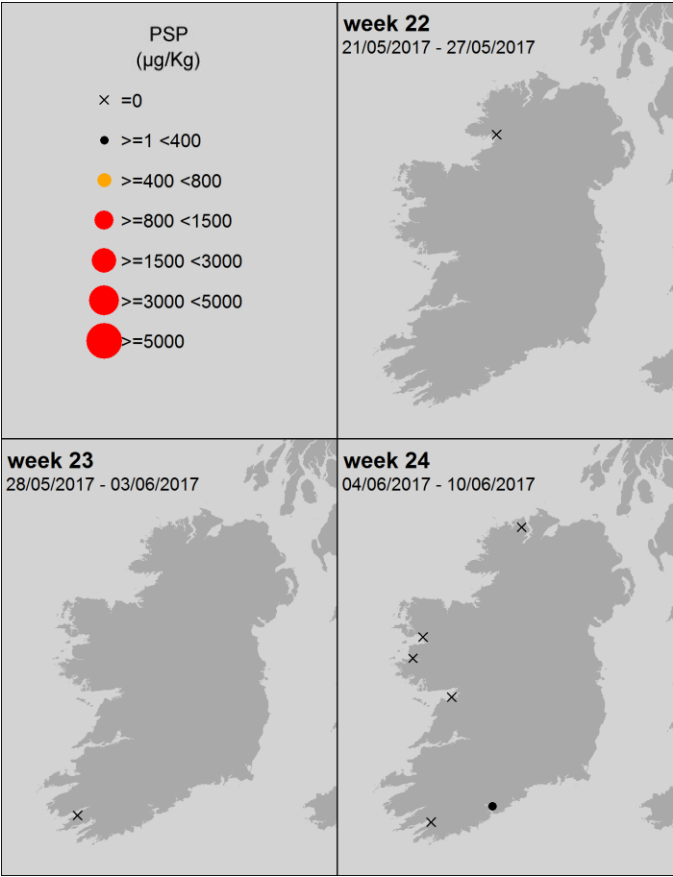
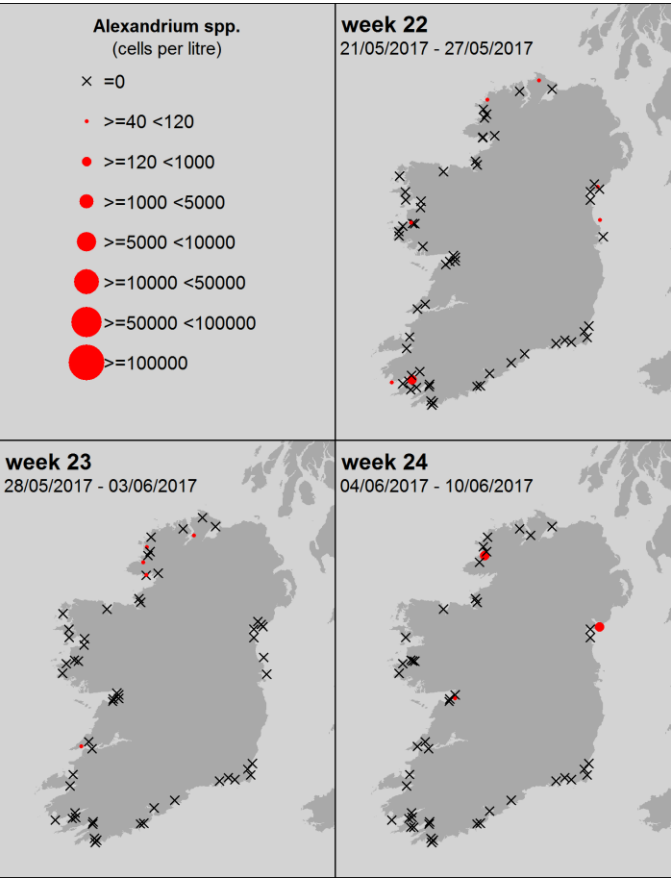
PSP and Alexandrium sp. current trends



Phytoplankton species – 3 wks.

All levels of PSP biotoxin recorded - 3 wks.

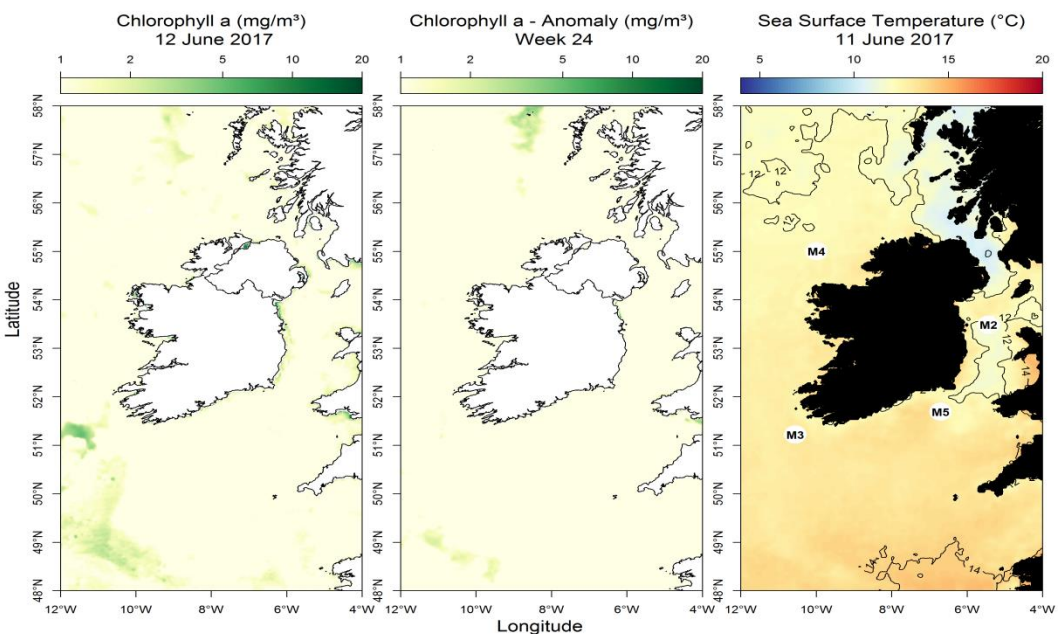
Current closures levels
≥ PSP 800 µg/Kg



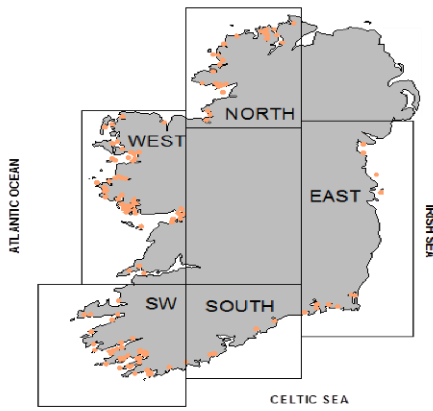
Comments

Conditions becoming slowly more favourable for this species but currently only low levels of cells observed and related 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. Additional caution advised.

Most up to date available satellite data



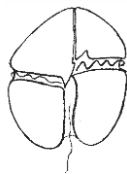
Chlorophyll levels indicate potential bloom patches off the Northern and western coasts. High levels of beneficial diatoms (see table) continue to be observed in most inshore areas.



NW coast (M4) Below average by 0.34°C wk23
SW coast (M3) Below average by 0.70°C wk 23
SE coast (M5) Below average by 0.70°C wk23

What phytoplankton were blooming at inshore coastal sites last week?

Rank	Region	Species	Rounded Count
1	east	Microflagellate sp.	1264000
2	east	Skeletonema spp.	214000
3	east	Chaetoceros (Hyalochaete) spp.	55000
4	east	Pennate diatom	18000
5	east	Cylindrotheca closterium/ Nitzschia longissima	9000
1	north	Dactyliosolen spp.	1032000
2	north	Dactyliosolen fragilissimus	653000
3	north	Chaetoceros (Hyalochaete) spp.	295000
4	north	Cerataulina pelagica	30000
5	north	Pseudo-nitzschia delicatissima complex	7000
1	south	Prymnesiophytes	267000
2	south	Navicula spp. 20-50 um	117000
3	south	Pseudo-nitzschia delicatissima complex	35000
4	south	Lauderia / Detonula sp	30000
5	south	Chaetoceros (Hyalochaete) spp.	15000
1	southwest	Leptocylindrus minimus	247000
2	southwest	Prymnesiophytes	179000
3	southwest	Bacteriastrum spp.	103000
4	southwest	Skeletonema spp.	78000
5	southwest	Pseudo-nitzschia delicatissima complex	30000
1	west	Licmophora spp.	365000
2	west	Guinardia delicatula	352000
3	west	Chaetoceros (Hyalochaete) spp.	122000
4	west	Chaetoceros spp. (H) (small)	113000
5	west	Dactyliosolen spp.	109000



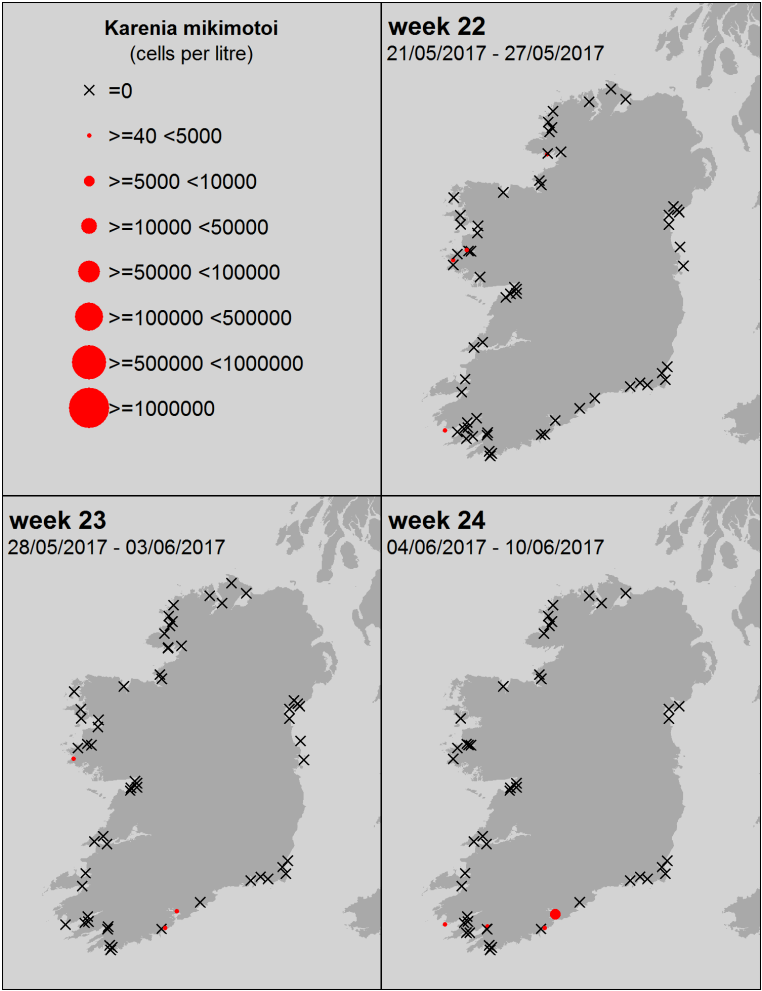
Karenia mikimotoi bloom warning level
- Moderate -

While only low levels of cells have been observed in some sites , this species can rapidly come inshore at bloom levels . This species can bloom offshore and come inshore rapidly during favourable transport conditions. Caution levels will be increasing 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.

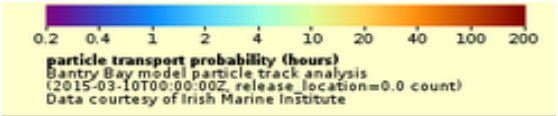
Karenia mikimotoi
(old name: *Gyrodinium aureolum*)



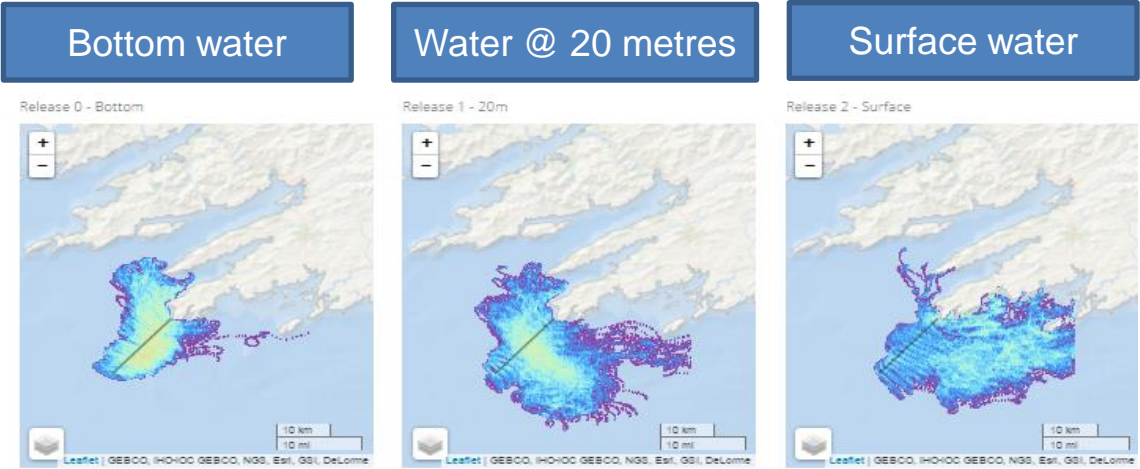
SOUTHWEST: Bantry Bay

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)

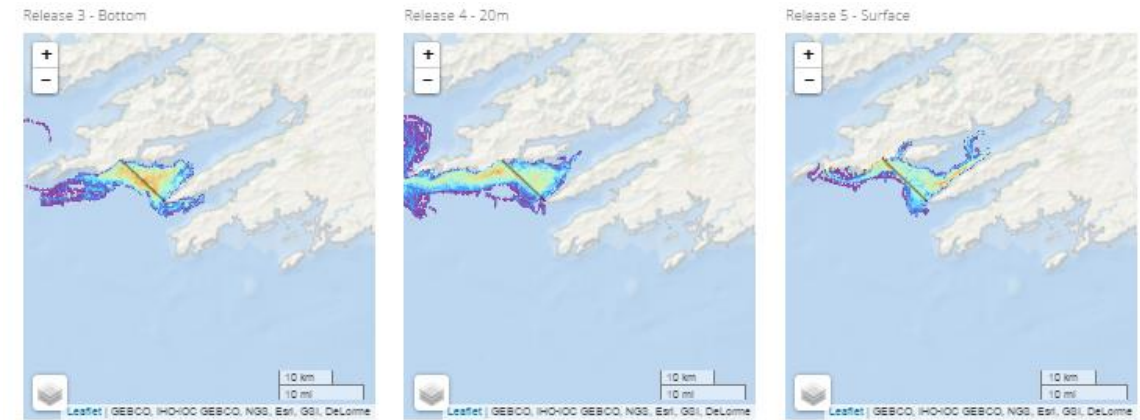
Reddish colours represent areas where phytoplankton remain longest
Cooler colours represent areas where phytoplankton remain for shorter periods



Forecast for the next 3 days



South / South-easterly water movements dominant particularly at mid water and surface depths. Strong possibility of outer bay waters entering inner bay areas .



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

Bantry Bay

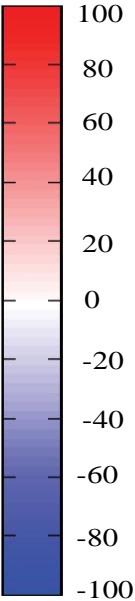
3 day estimated water flows at the mouth and mid-bay sections of Bantry Bay



Forecast for next 3 days

Shot Head cross section: High likelihood of upwelling conditions.

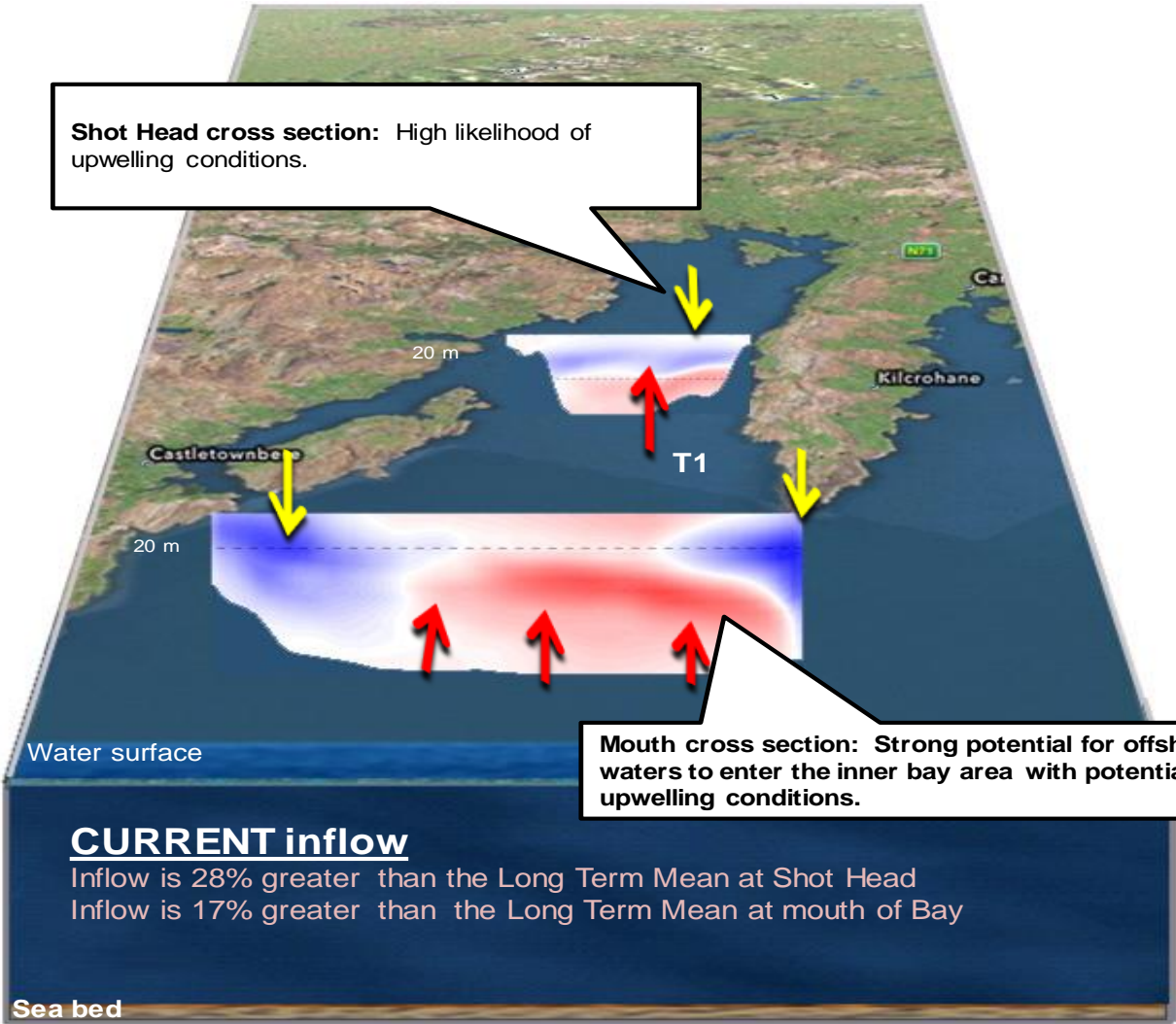
Flow ($\text{m}^3 \text{s}^{-1}$)



IN

OUT

Depth



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

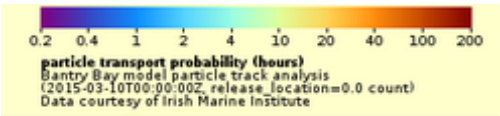
CURRENT inflow

Inflow is 28% greater than the Long Term Mean at Shot Head
Inflow is 17% 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)

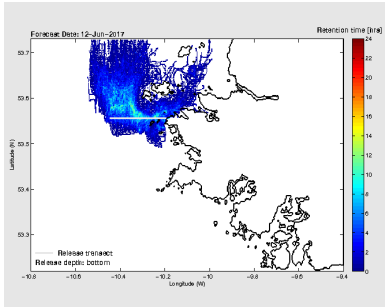
Reddish colours represent areas where phytoplankton remain longest
Cooler colours represent areas where phytoplankton remain for shorter periods



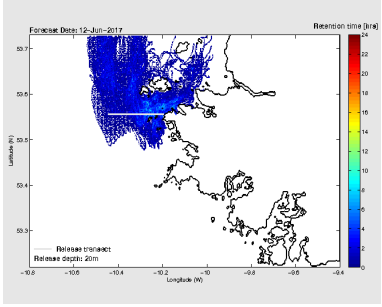
0.2 0.4 1 2 4 10 20 40 100 200
particle transport probability (hours)
Bantry Bay model particle track analysis
(2015-03-10T00:00:00Z, release_location=0.0 count)
Data courtesy of Irish Marine Institute

Forecast for the next 3 days

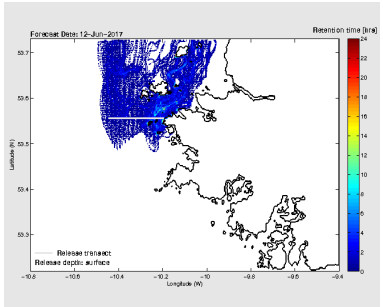
Bottom water



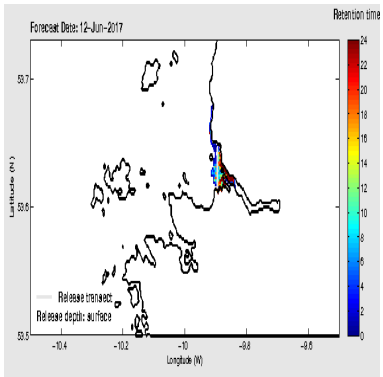
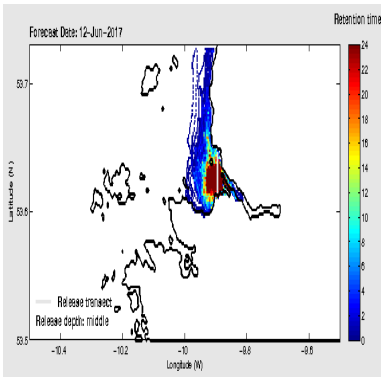
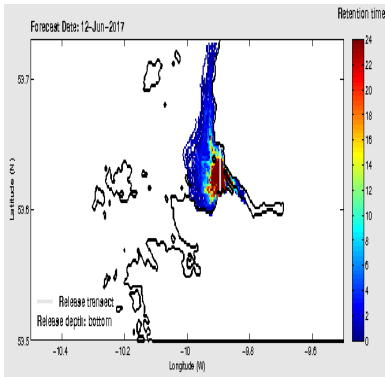
Water @ 20 metres



Surface water



Cleggan
Strong northerly flows and movement dominating all water depth profiles. Possibilities of offshore waters reaching inshore areas high.



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

Killary Harbour

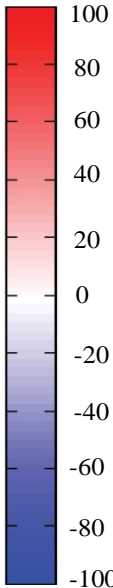
3 day estimated water flows at the mouth of Killary Harbour



Forecast for next 3 days

Killary Harbour Mouth cross section:
Weak inflow rates still dominating this week but possibility of marginal upwelling conditions further in the bay area possible.

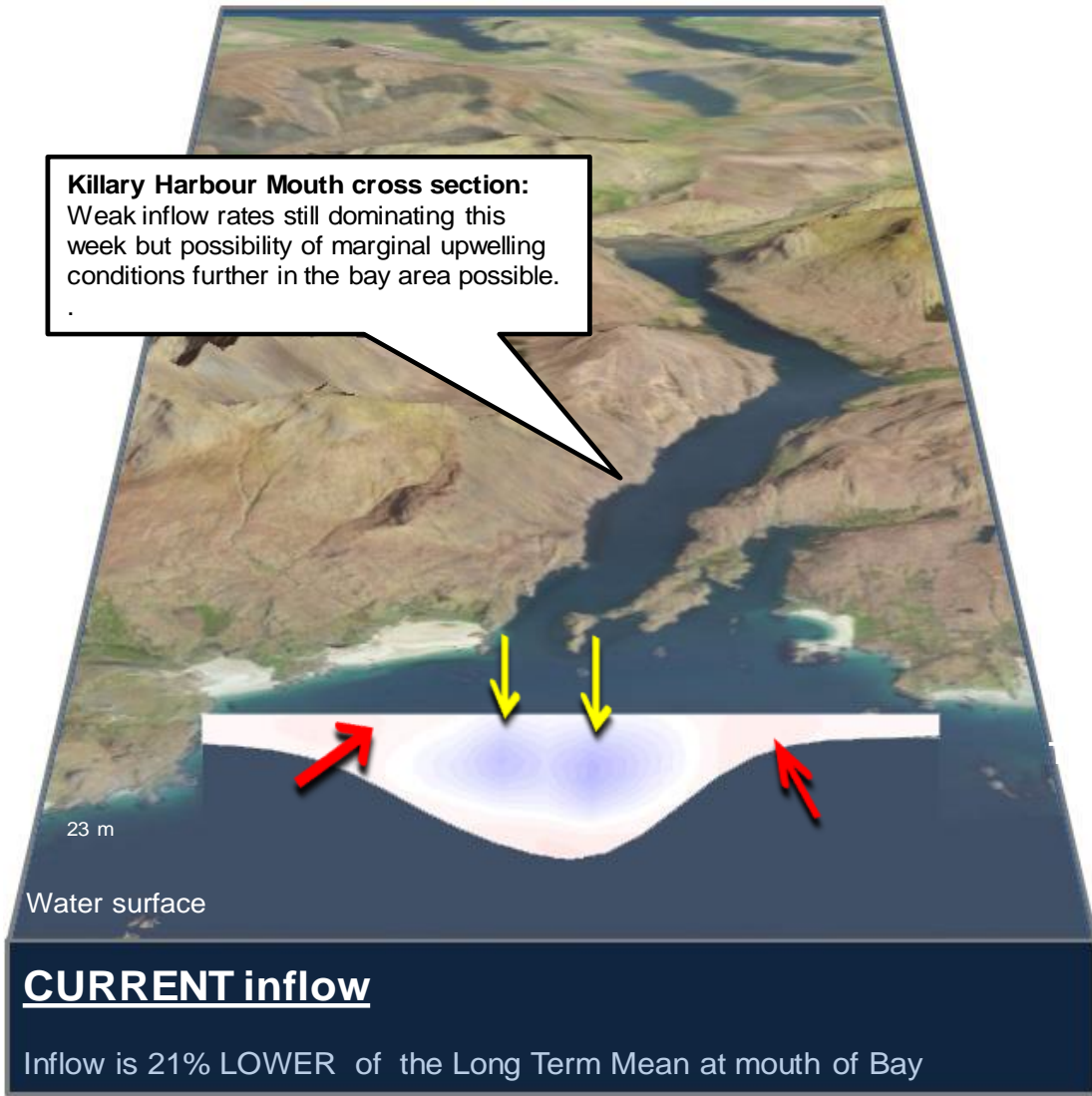
Flow ($\text{m}^3 \text{s}^{-1}$)



IN

OUT

Depth



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

