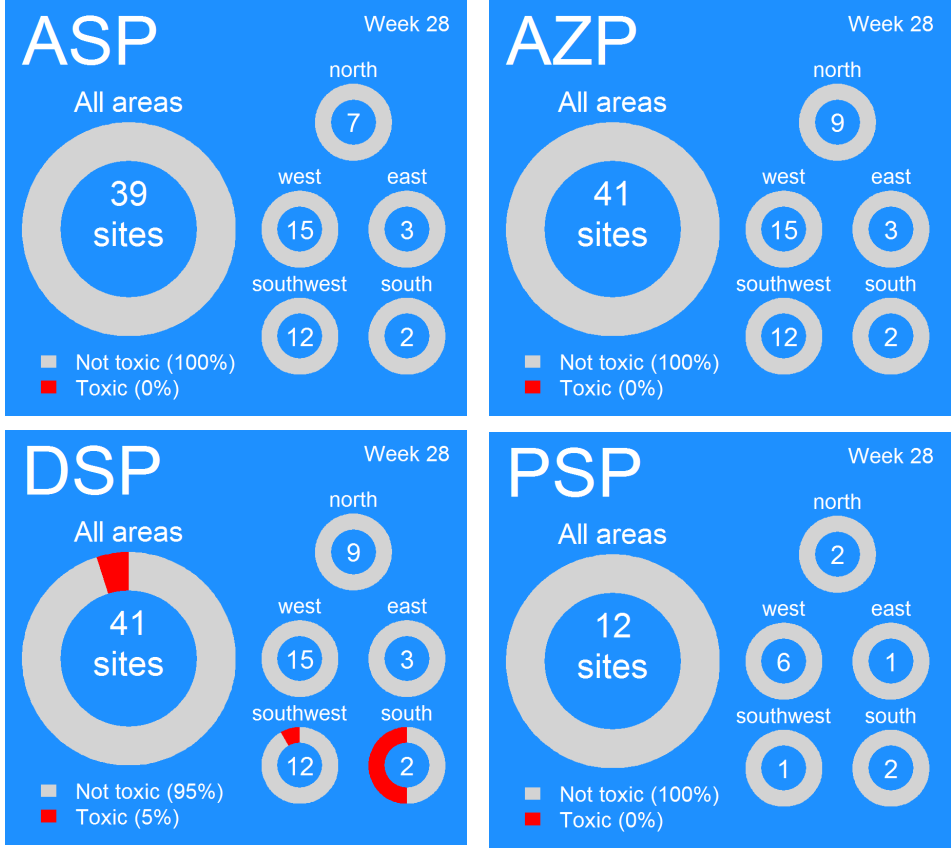


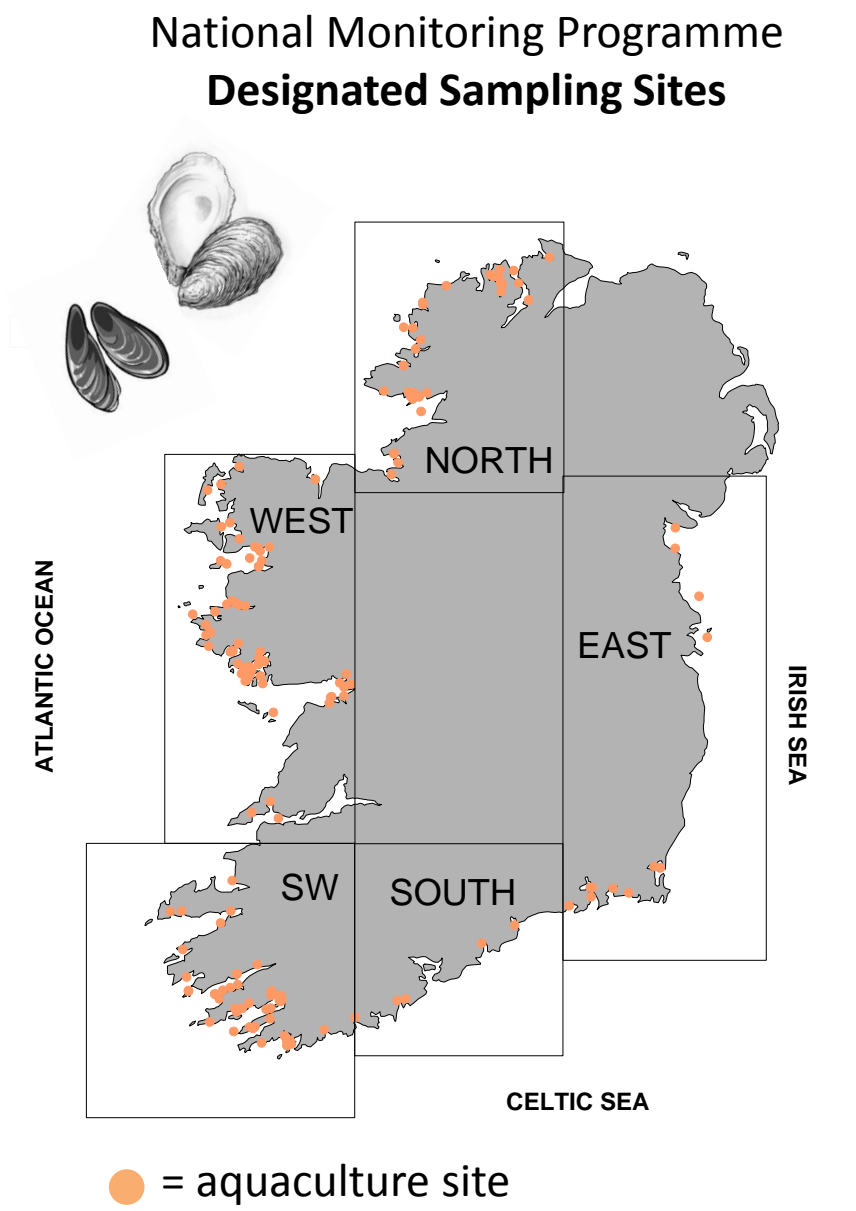
Ireland: Current Conditions

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 risk

AZP event: Low risk

DSP event: High risk in some areas

PSP event: Decreasing risk in Cork Harbour

Why do we think this?

ASP: 39 samples (mussels and oysters) sampled - Toxins not detected. The “*P. seriata*” group was found in 40 out of 62 sites nationwide with highest cell counts in the north, however, no toxins were detected. Historically this is NOT a high risk week.

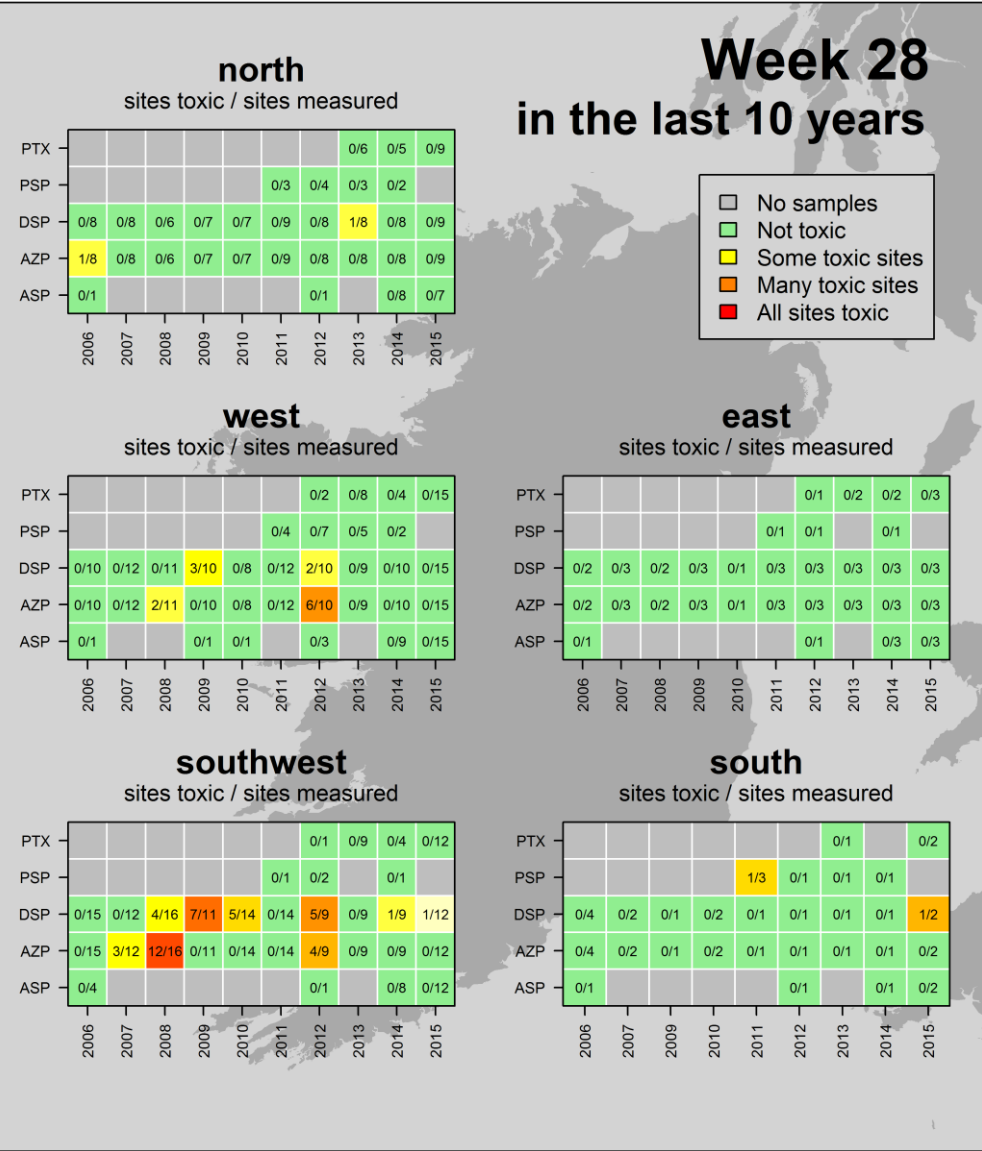
AZP: 41 sites sampled nationwide. Toxin not detected in long-line mussels while background levels in oysters. *Azadinium*-like species recorded at low levels at 15 sites – maximum cell levels of 2,000 cells/L. Historically, this week presents some risk for AZP, but in general, it is during the month of August when AZP is experienced.

DSP: Toxin detected in south and SW sites. Very high cell levels of *D. acuta* have been detected in offshore waters between Kinsale and Dungarvan. This is highly likely to impact sites on the south and southwest coasts in the coming weeks; intensity is likely to vary and will depend on local meteorological/sea conditions and site location. One site in the southwest has exhibited a sudden peak in *Dinophysis* species presence. We are now in a HIGH risk period given historical data and the recent increase in toxins and high cell levels offshore in all southern areas. Based on historical weekly trends, this is a moderate risk period in the west coast.

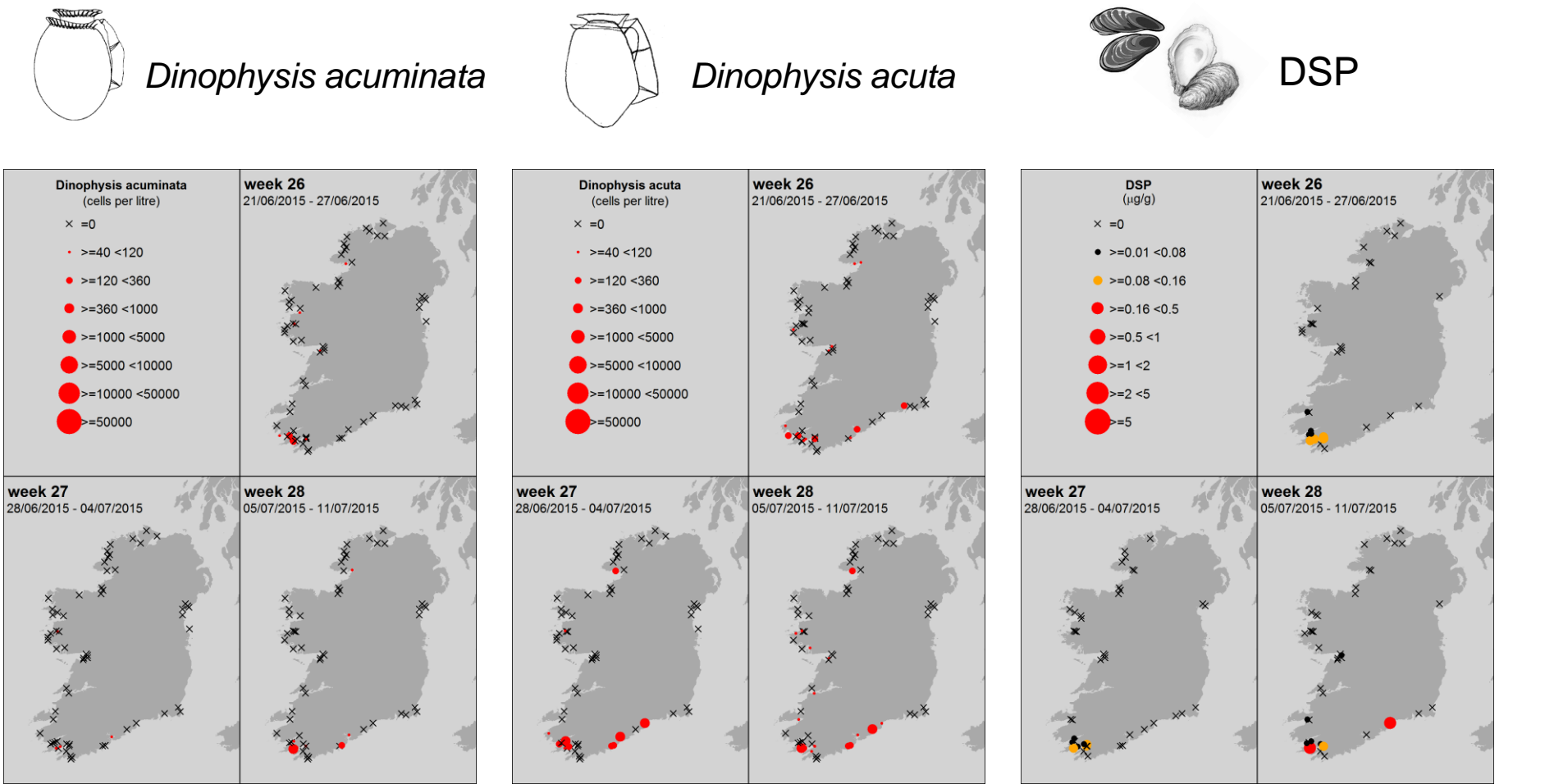
PSP: *Alexandrium* species present in 23 sites. Toxins are beginning to drop in Cork Harbour oysters. This along with a drop in *Alexandrium* cell levels in the area indicate that toxin levels in Cork Harbour are likely to continue to fall in the week ahead.

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



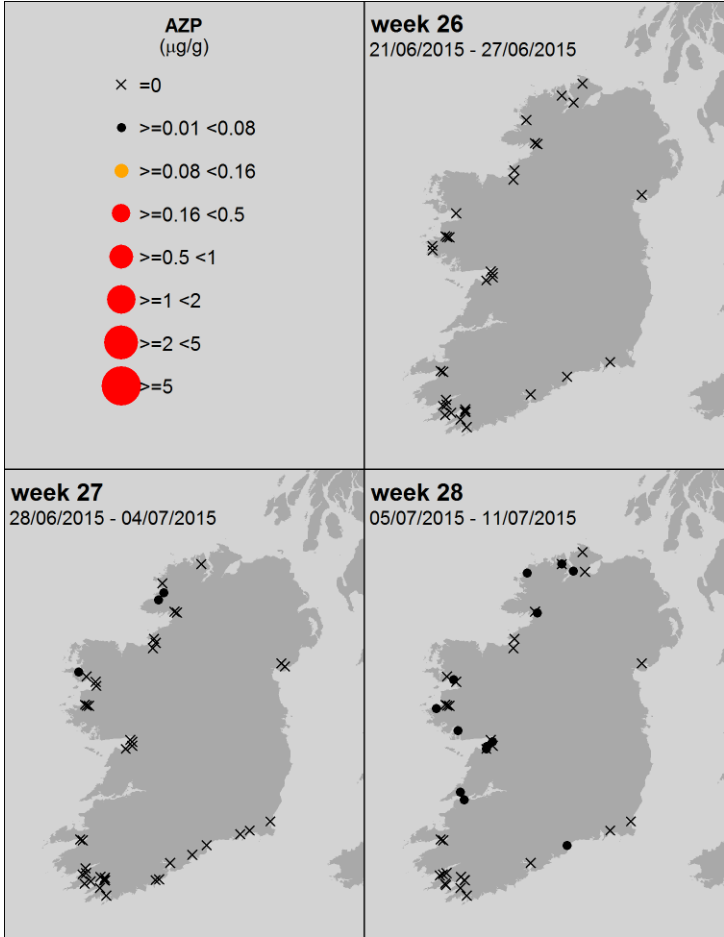
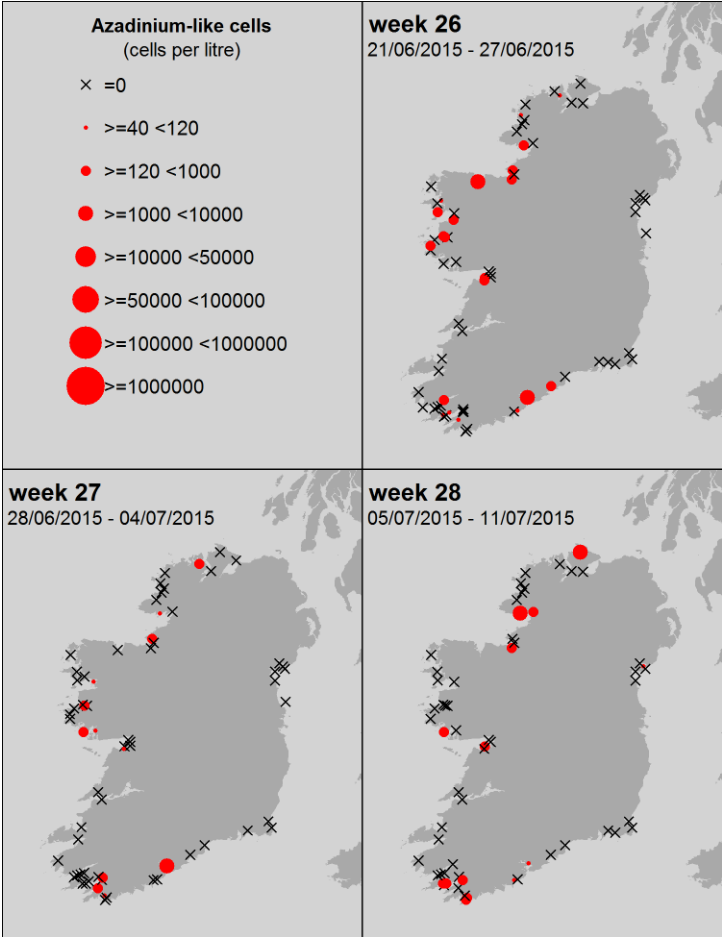
Ireland: Last 3 weeks of available National Monitoring Programme data



Azadinium – like spp.



AZP



Ireland: Last 3 weeks of available National Monitoring Programme data

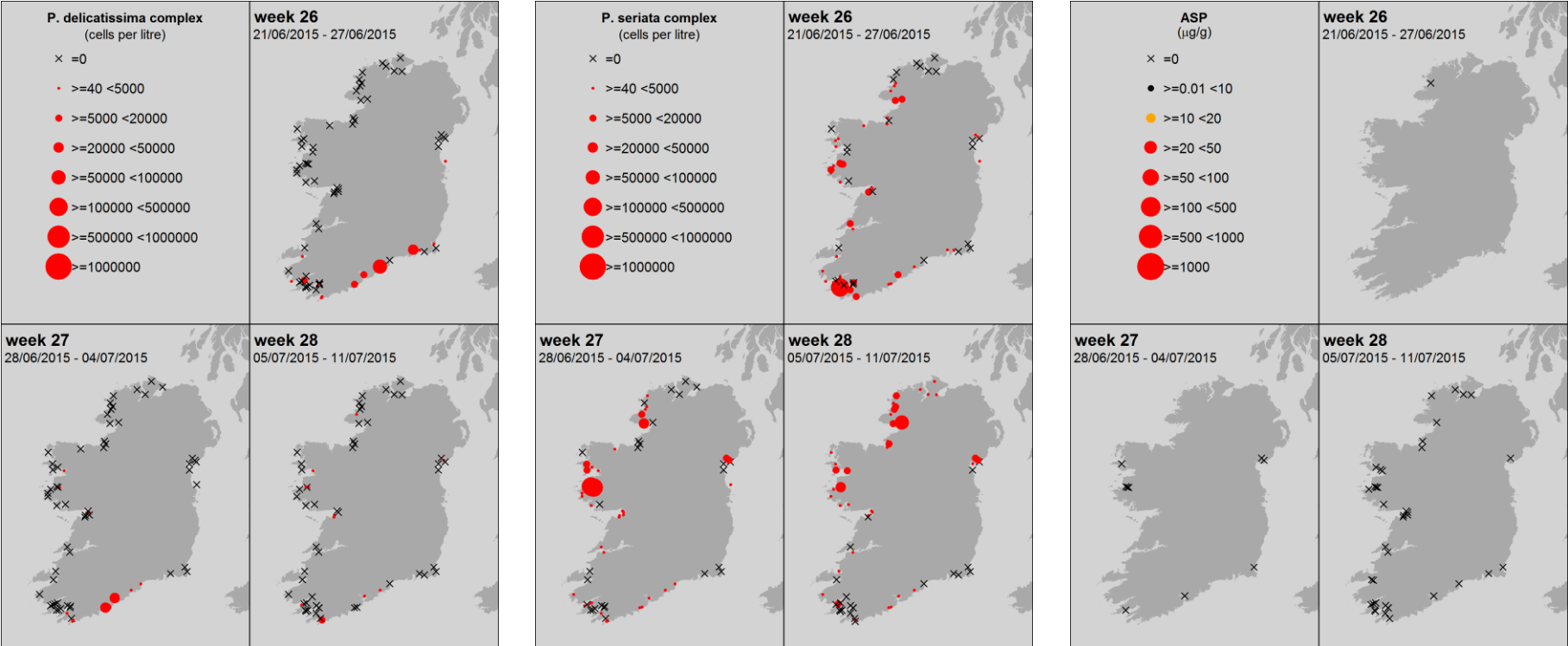
Pseudo-nitzschia spp.



ASP

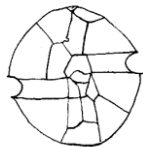
“*P. delicatissima*” complex = small cells
Taken from the literature:
3 species confirmed in Irish waters

“*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.

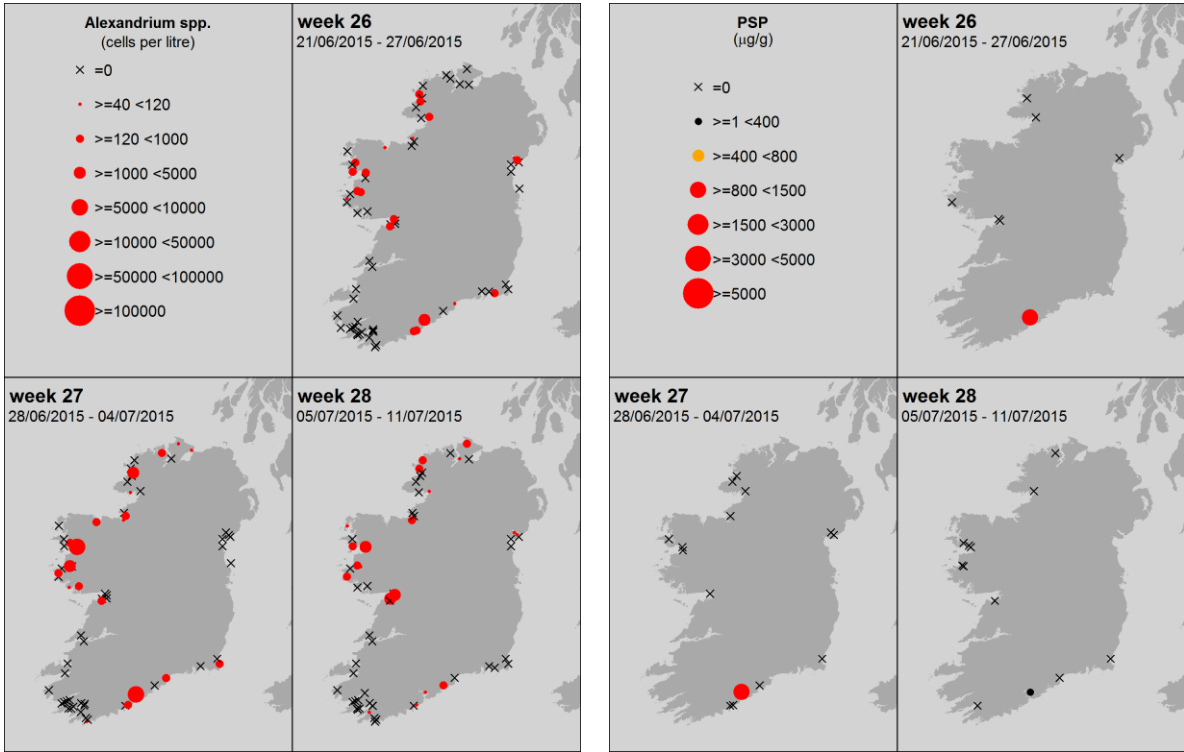
Ireland: Last 3 weeks of available National Monitoring Programme data



Alexandrium spp.

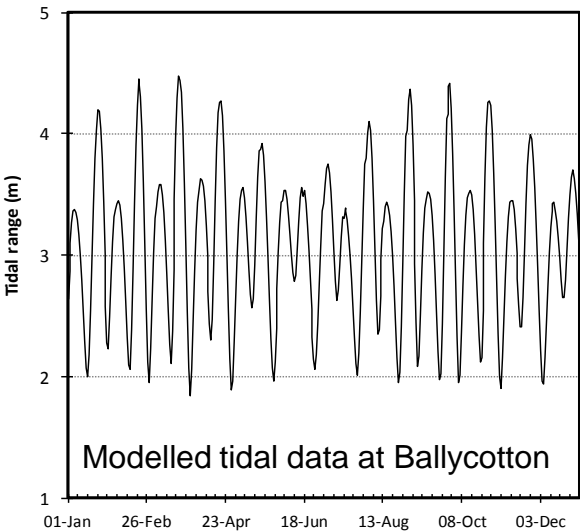


PSP



Only samples from Cork Harbour tested positive for PSP

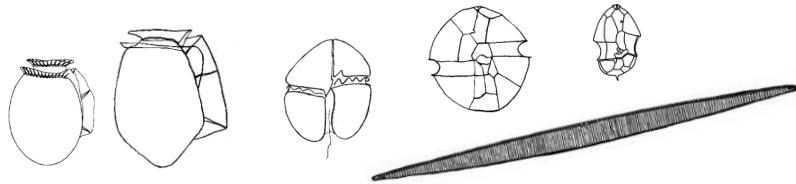
Tidal Range Cork 2015 (Predicted)



Usually the *Alexandrium* bloom in Cork Harbour begins on the first spring tide in June (around the time of the summer solstice) as small tidal range is important in bloom initiation (lower tidal dilution rate). Optimum conditions for *Alexandrium* are a water temperature of 15 °C and an irradiance of > 100 µM/m²/sec. Historically, production areas in Cork Harbour are the only sites that have experienced closures due to Paralytic Shellfish Poisoning toxins (one of the most dangerous shellfish toxins).

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

Ireland: **Biotoxins**



Toxin groups

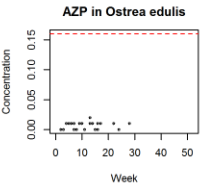
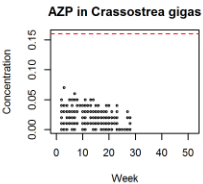
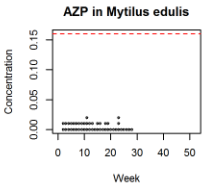
mussels

oysters

oysters

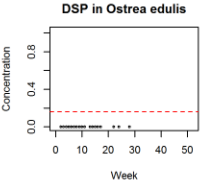
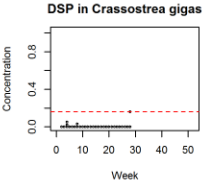
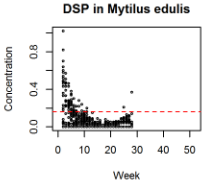
AZP

AZaspiracid
Poisoning



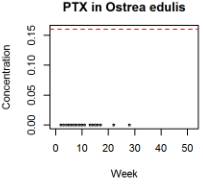
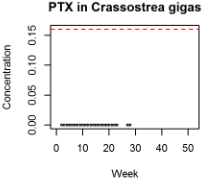
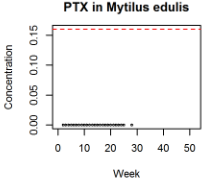
DSP

Diarrhetic
Shellfish
Poisoning



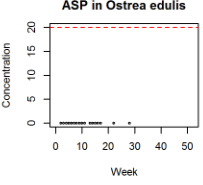
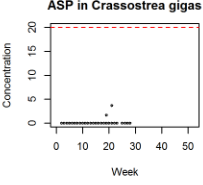
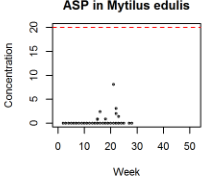
PTX

Pectenotoxin



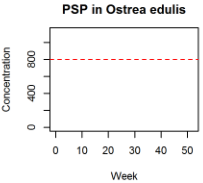
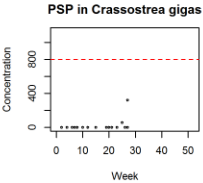
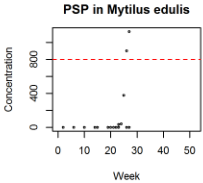
ASP

Amnesic
Shellfish
Poisoning

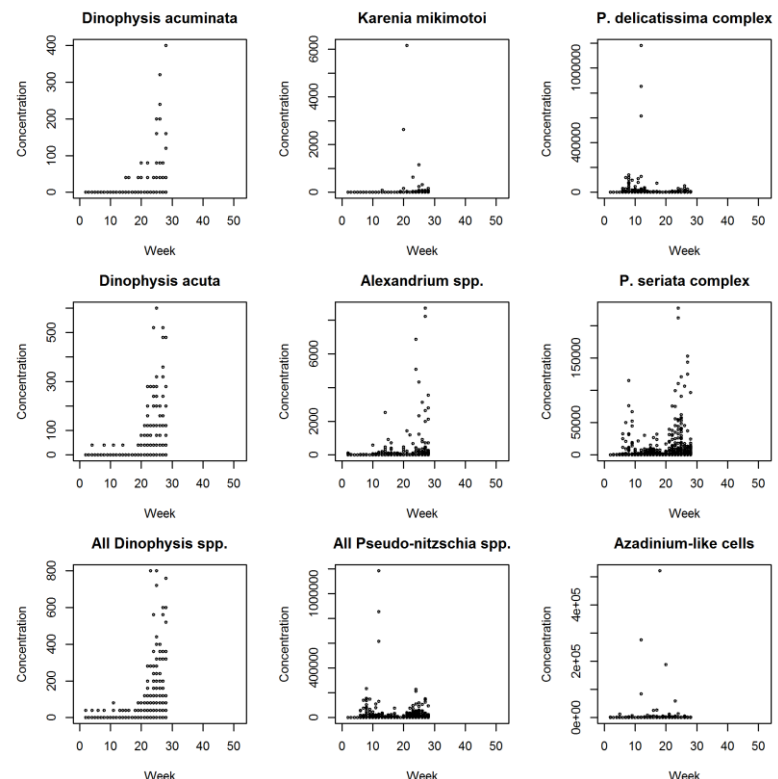


PSP

Paralytic
Shellfish
Poisoning



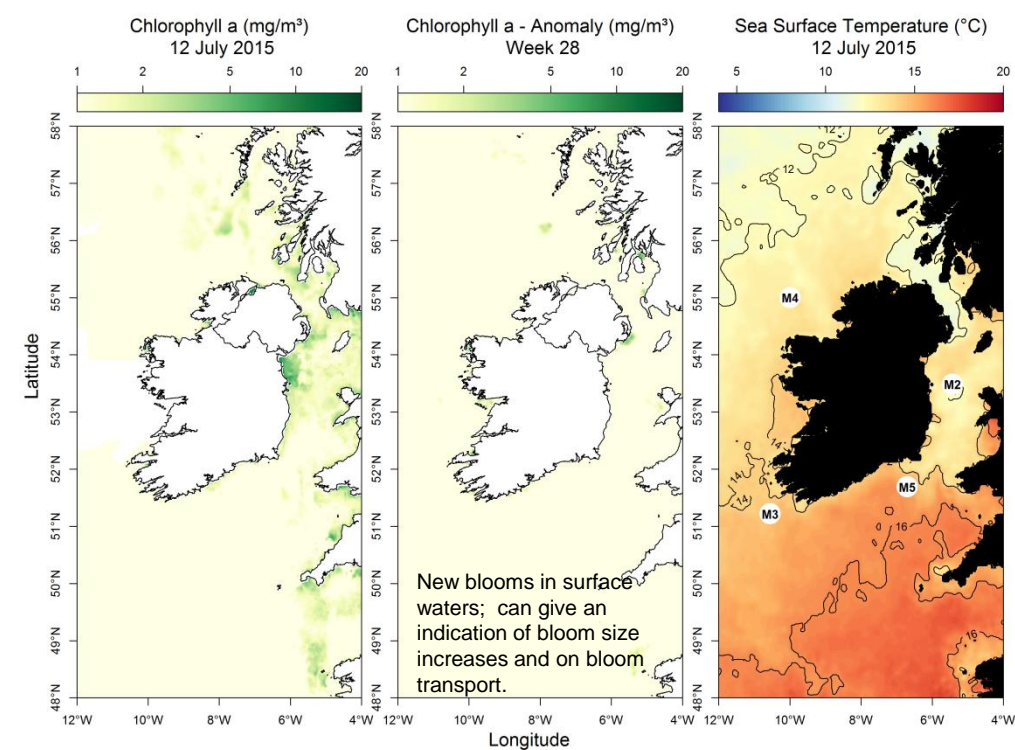
Ireland: **HABs**



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) below average by 1.30 °C
- SW coast (M3) Offline
- SE coast (M5) above average by 0.46 °C

What phytoplankton were blooming at inshore coastal sites last week?

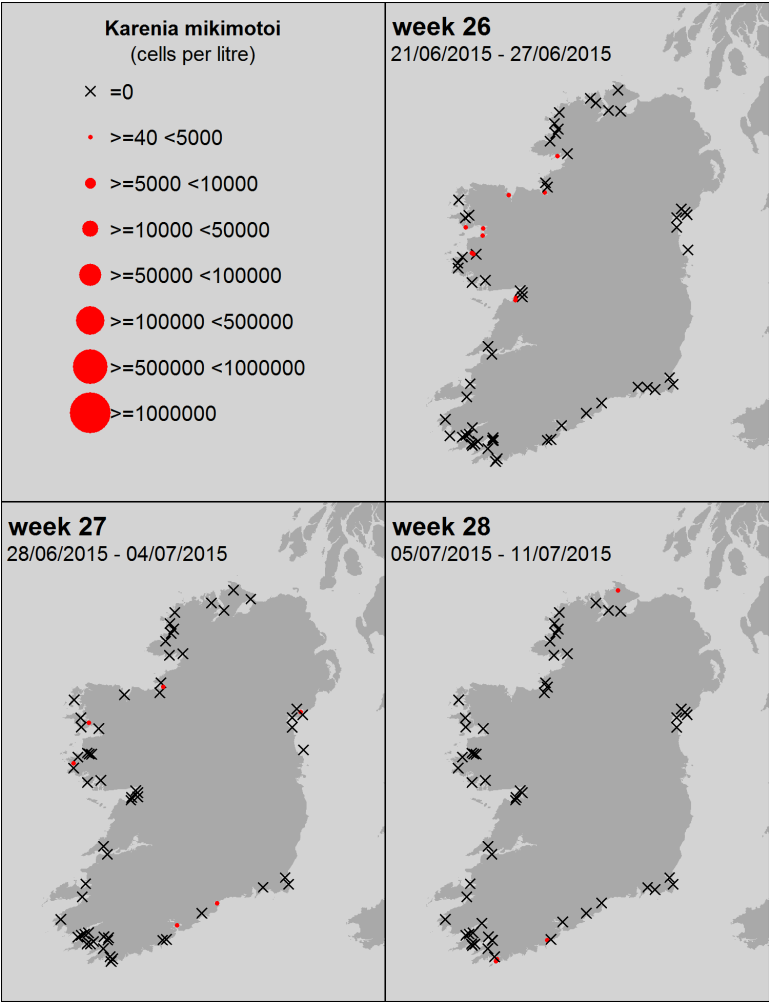
Region	Predominant Phytoplankton (most abundant taxa)	Cells/L (rounded)
north:	Diatoms: <i>Thalassiosira</i> spp. <i>Chaetoceros</i> (Hyalochaete) spp. <i>Asterionellopsis</i> spp. <i>Skeletonema</i> spp.	3,350,000 390,000 390,000 224,000
west:	Diatoms: <i>Chaetoceros</i> (Hyalochaete) spp. “ <i>Pseudo-nitzschia seriata</i> ” group	339,000 24,000
SW:	Diatoms: <i>Bacteriastrum</i> spp. <i>Bacillaria</i> spp. <i>Detonula confervacea</i> Dinoflagellates: <i>Ceratium fusus</i> Other: Haptophytes	721,000 706,000 124,000 215,000 247,000
south:	Diatoms: <i>C. Closterium</i> / <i>N. Longissima</i> Pennate diatom <i>Licmophora</i> spp. Other: microflagellate sp.	1,091,000 93,000 72,000 928,000
east:	Diatoms: <i>Chaetoceros</i> (Hyalochaete) spp. <i>Leptocylindrus danicus</i> Centric diatoms <i>Navicula</i> spp. <i>Skeletonema</i> spp. <i>C. Closterium</i> / <i>N. Longissima</i>	285,000 142,000 101,000 80,000 62,000 48,000



Karenia mikimotoi
(old name: *Gyrodinium aureolum*)

A *Karenia mikimotoi* bloom is NOT expected this week

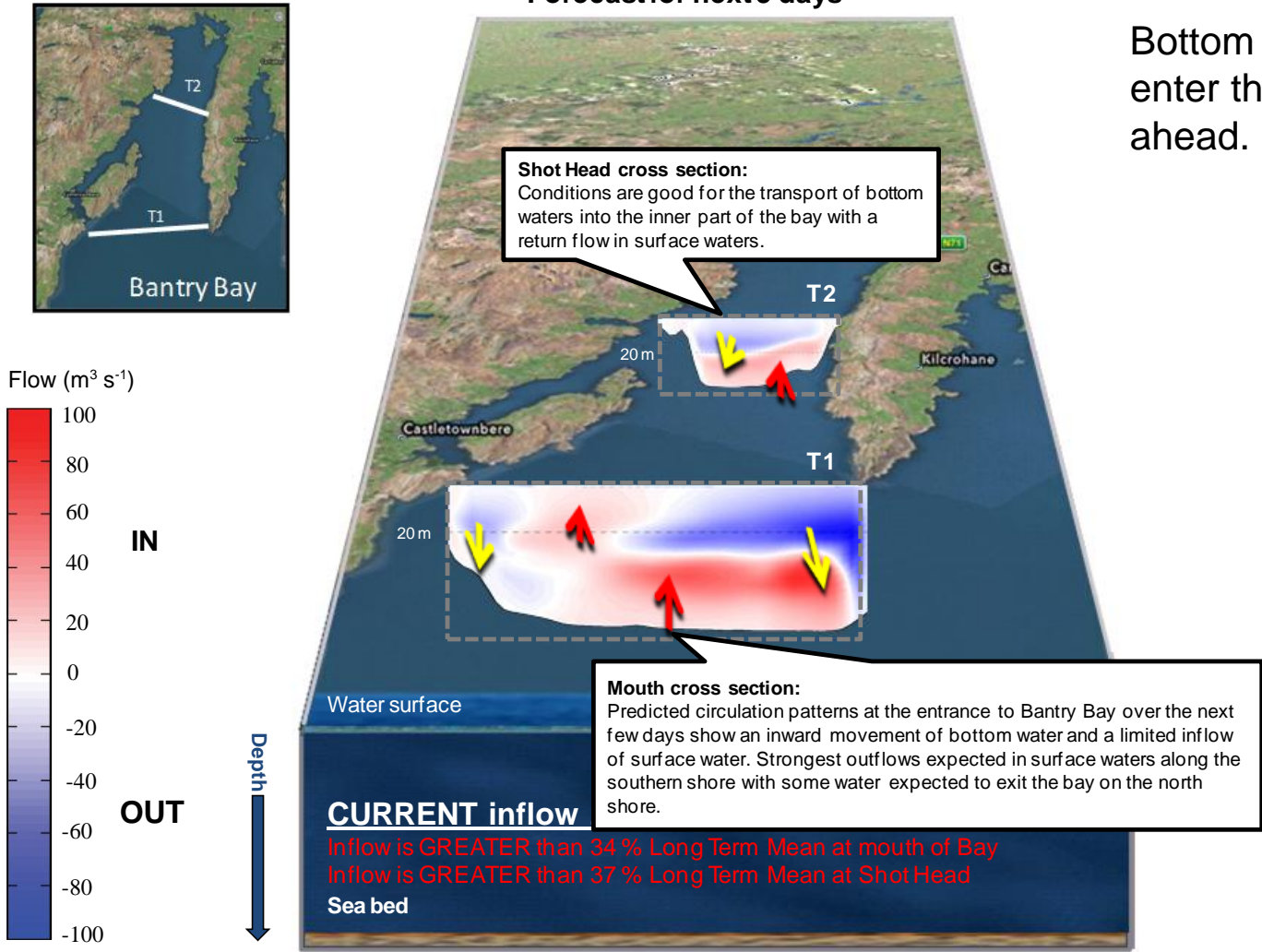
Cell concentrations remain at background levels at 4 sites nationwide (max = 160 cells/L)



Bantry Bay

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

Forecast for next 3 days

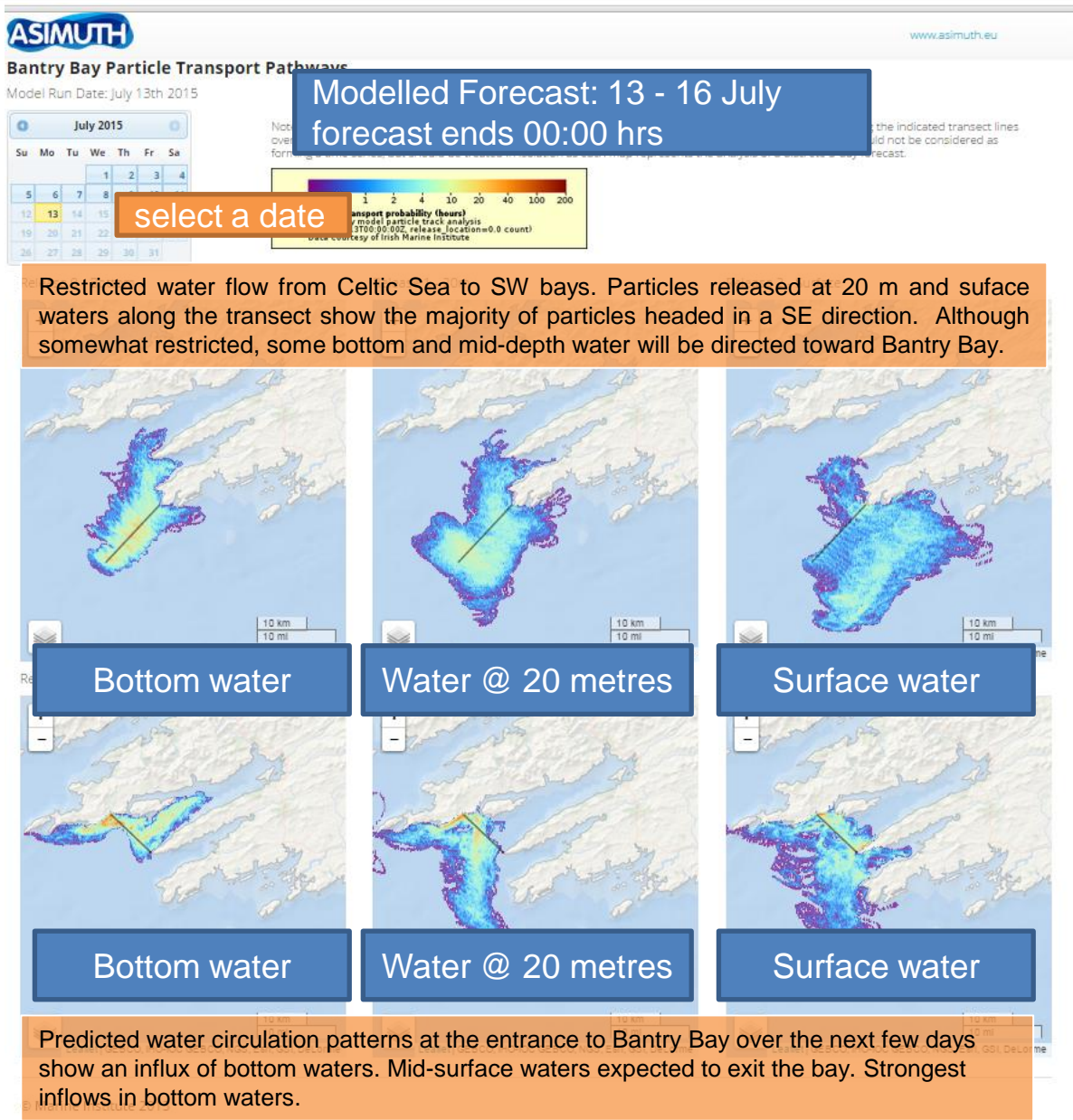
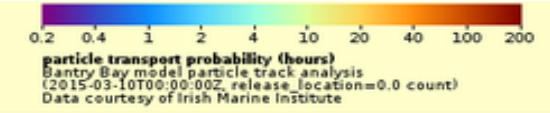


Bottom water expected to enter the bay in the days ahead.

SOUTHWEST: Bantry Bay

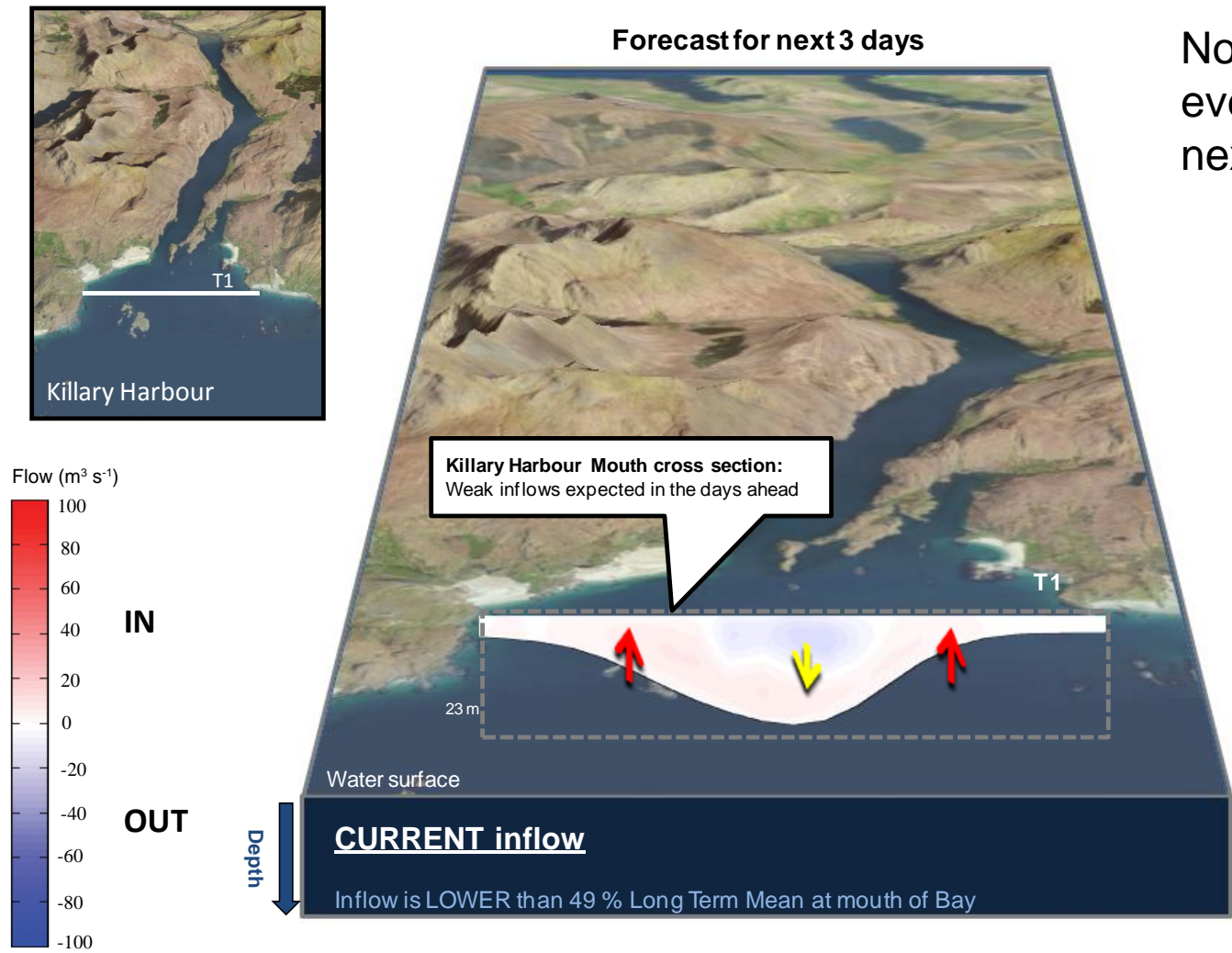
The maps show the **most likely transport pathways for the next 3 days of phytoplankton** found along the **presented transects** (black lines off Mizen Head and the Mouth of Bantry Bay) and **water depths** (bottom, 20 metres and surface)

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



Killary Harbour

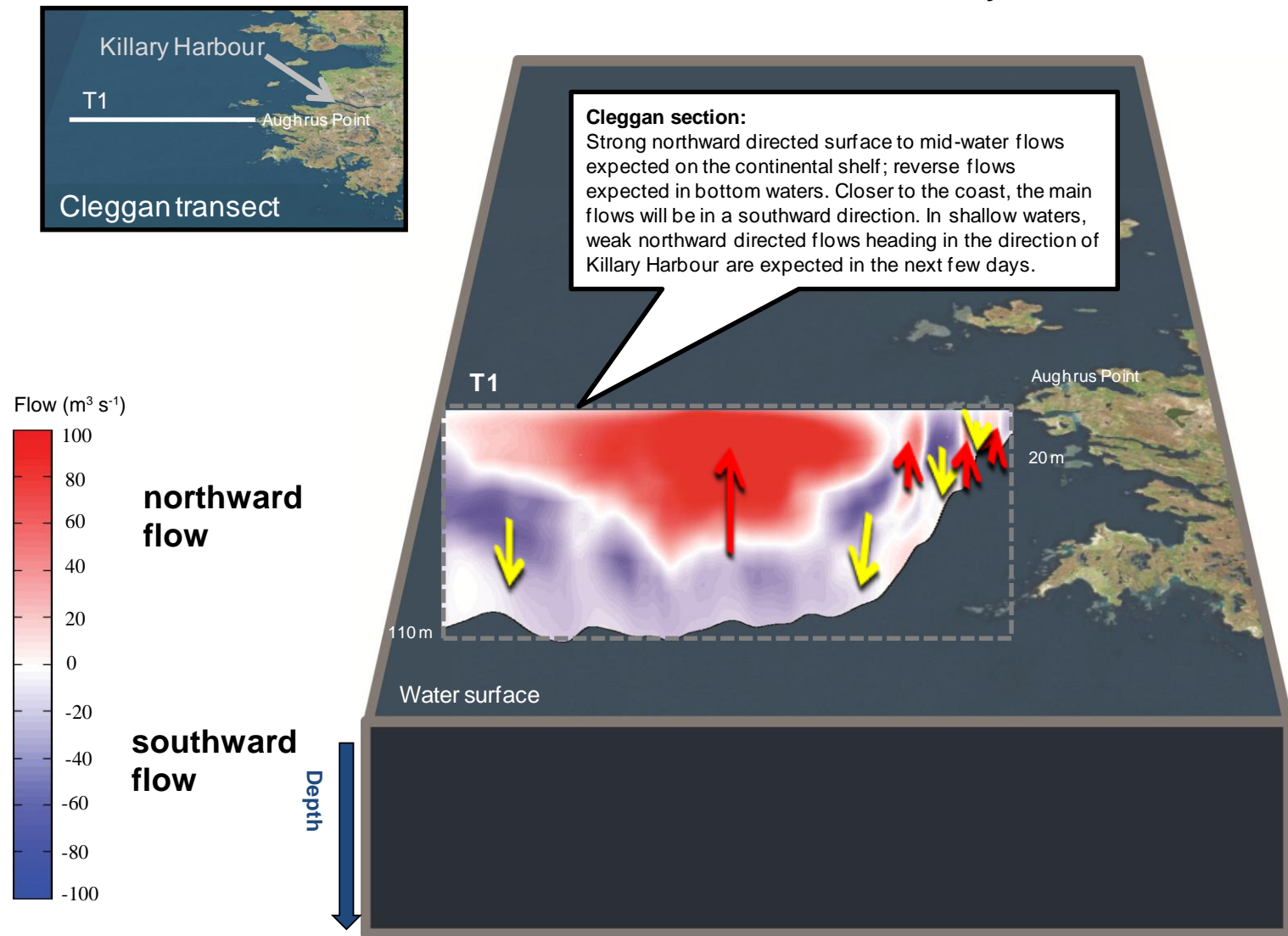
3 day estimated water flows at the mouth of Killary Harbour



No big water exchange event predicted in the next few days

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

Forecast for next 3 days




13 July – 16 July, 2015 (forecast ends at 00:00 hrs)

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

