

Ireland: Current Conditions

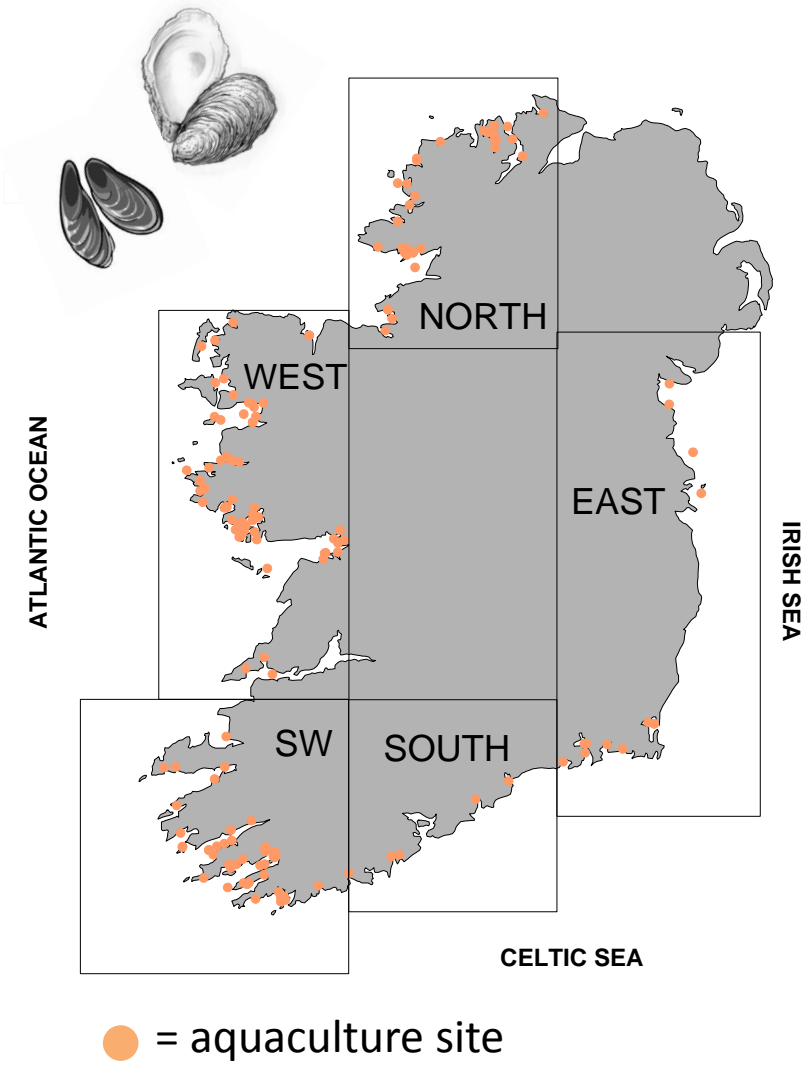
Shellfish biotoxin report (last week)



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**spiracid **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: Low risk

DSP event: Low risk

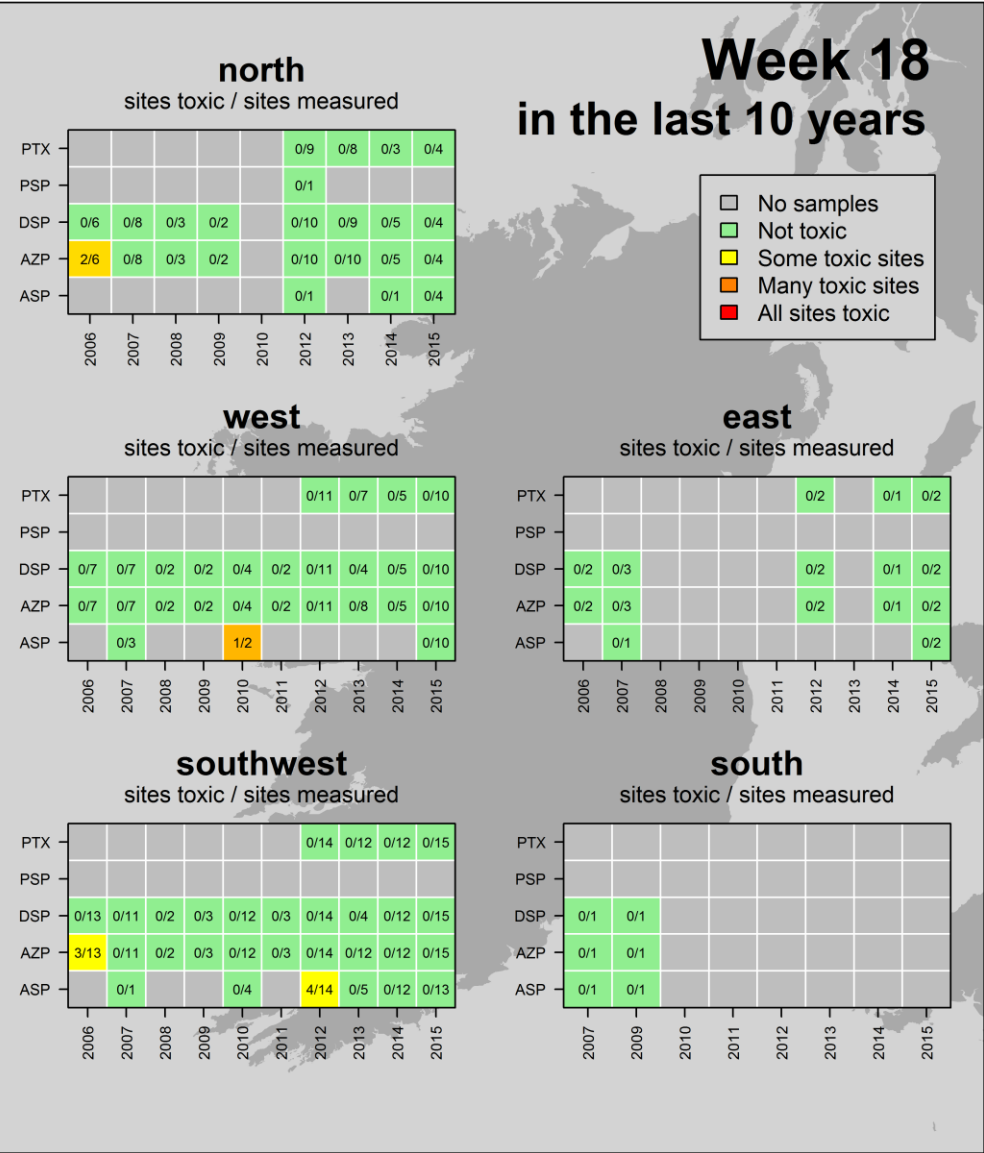
PSP event: Low risk

Why do we think this?

- ASP : No biotoxin recorded. *Pseudo-nitzschia* spp. found at 40 sites nationally; “*P. seriata*” size group present at 30 of these sites (max in SW = ~ 8,000 cells/L). *Pseudo-nitzschia australis*, a toxin producing species, was present in a sample from the north and southwest. However, *Pseudo-nitzschia* at these sites were at very low cell levels (1,000 to 8,000 cells/L). These *Pseudo-nitzschia* populations only represent a maximum of 2 % of the total phytoplankton present – so, this greatly reduces the risk of an outbreak. The risk of an event occurring in the SW is also reduced because no major “upwelling” event is forecast in the SW coast. “Upwelling” events are usually linked to ASP events in the SW at this time of year.
- AZP: No biotoxin detected at 28 sites nationally. Background levels (0.01 µg/g) of toxin picked up in Galway Bay. *Azadinium*-like species recorded at 25 sites nationally. All the sites with the exception of 1 had low cell levels (< 2,000 cells/L). Of particular note, is a site in Galway Bay where ~ 500,000 cells/L was recorded. The toxic nature of the species present is not fully known. Since historic data shows events in the past have occurred at this time of the year, caution is advised.
- DSP: Low levels of biotoxins detected in SW last week (range 0.02 to 0.08 µg/g). *Dinophysis acuta* and *D. acuminata* were not detected. From 2 to 6 May weak “downwelling” in the SW was estimated by the physical model. While we do not know what phytoplankton species are/have been present in offshore waters, a continued increase in biotoxin levels may occur if *Dinophysis* spp. is carried into the bays with this weak “downwelling” event.
- PSP: Historically this a low risk period of the year for all sites. *Alexandrium* species present at 7 sites nationally; maximum cell levels in SW @ ~ 120 cells/L. No biotoxins recorded.

Ireland: Historic Conditions

A look back at how last weeks biotoxin results compares to other years



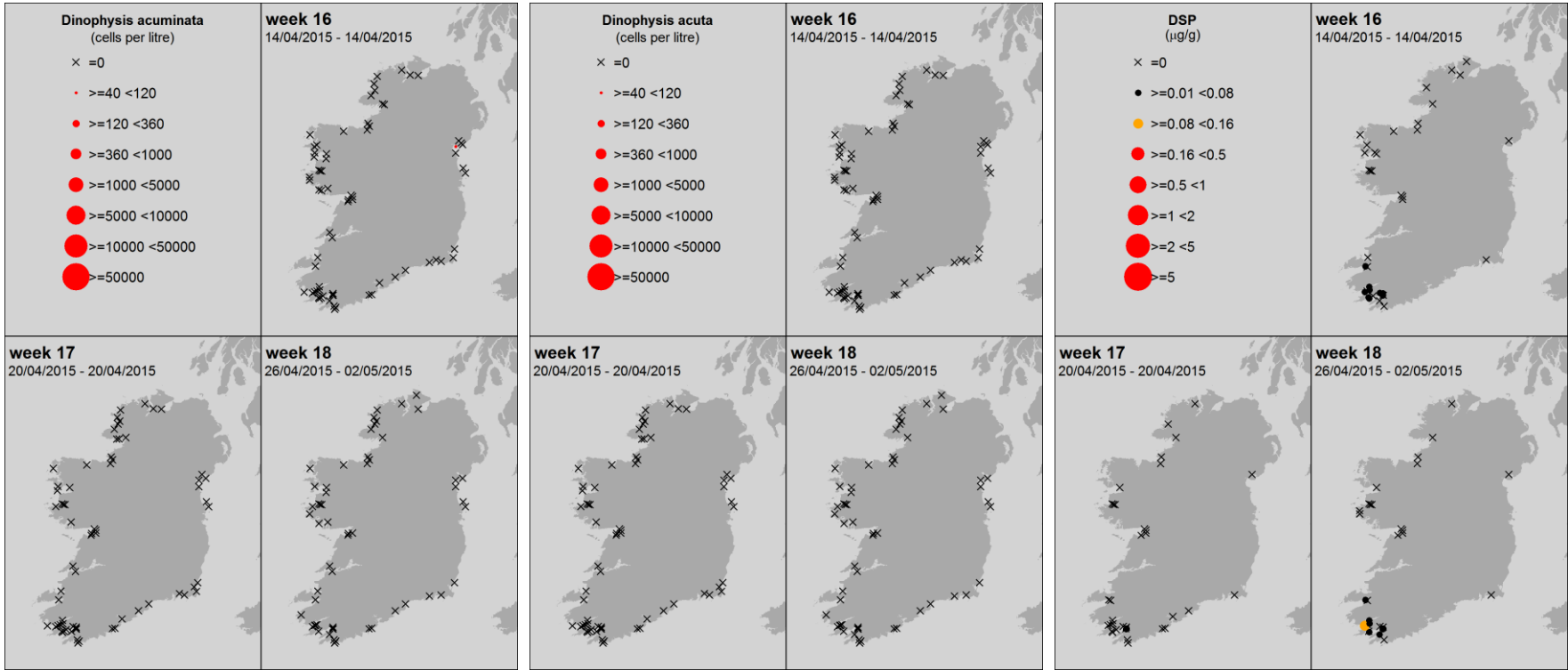
Ireland HISTORIC TRENDS

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: Last 3 weeks of available National Monitoring Programme data



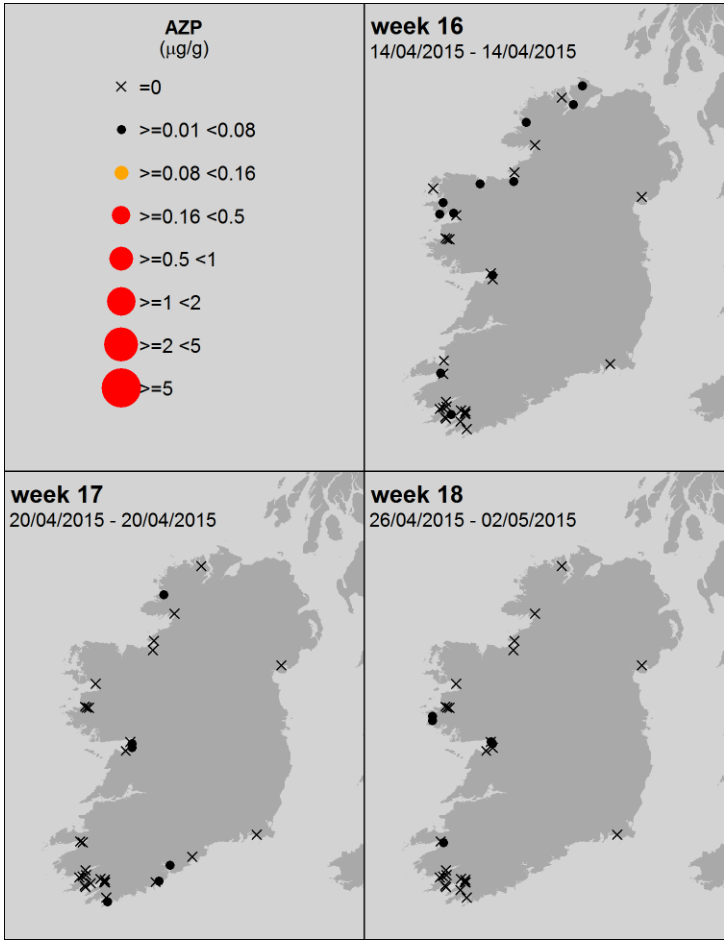
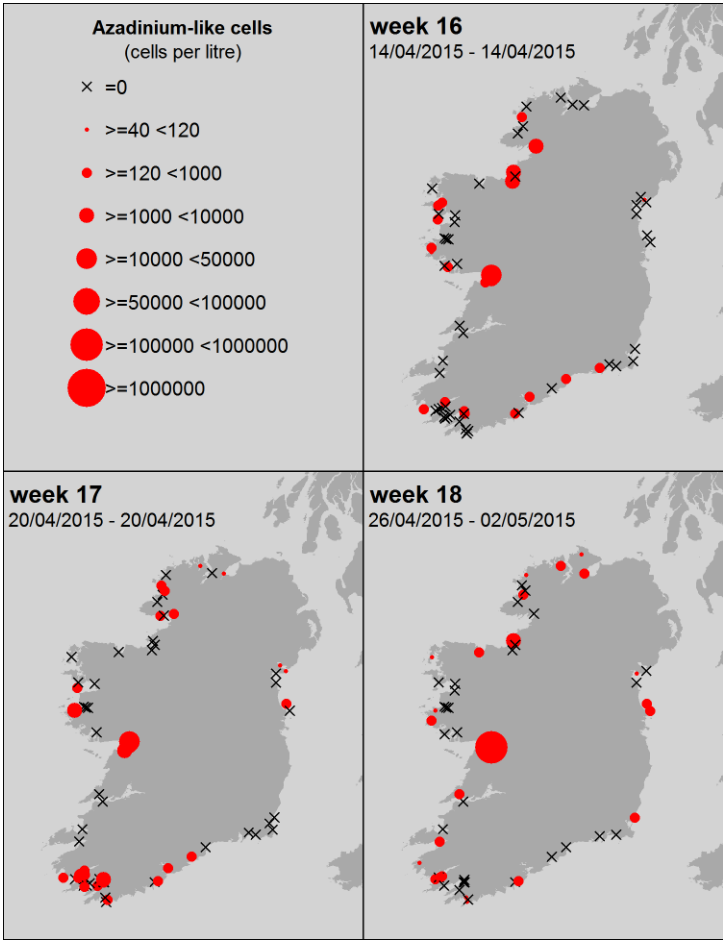
Ireland: Last 3 weeks of available National Monitoring Programme data



Azadinium – like spp.



AZP



Ireland: Last 3 weeks of available National Monitoring Programme data

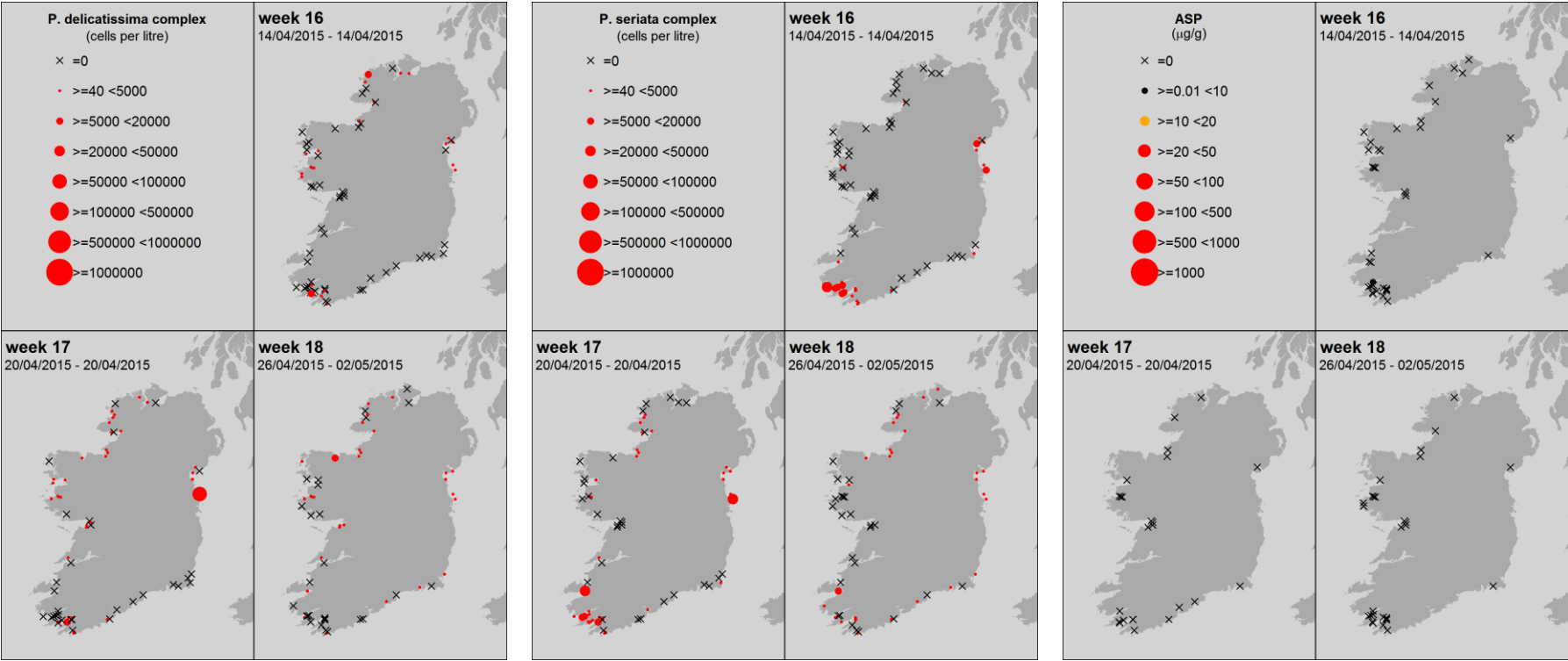
Pseudo-nitzschia spp.



ASP

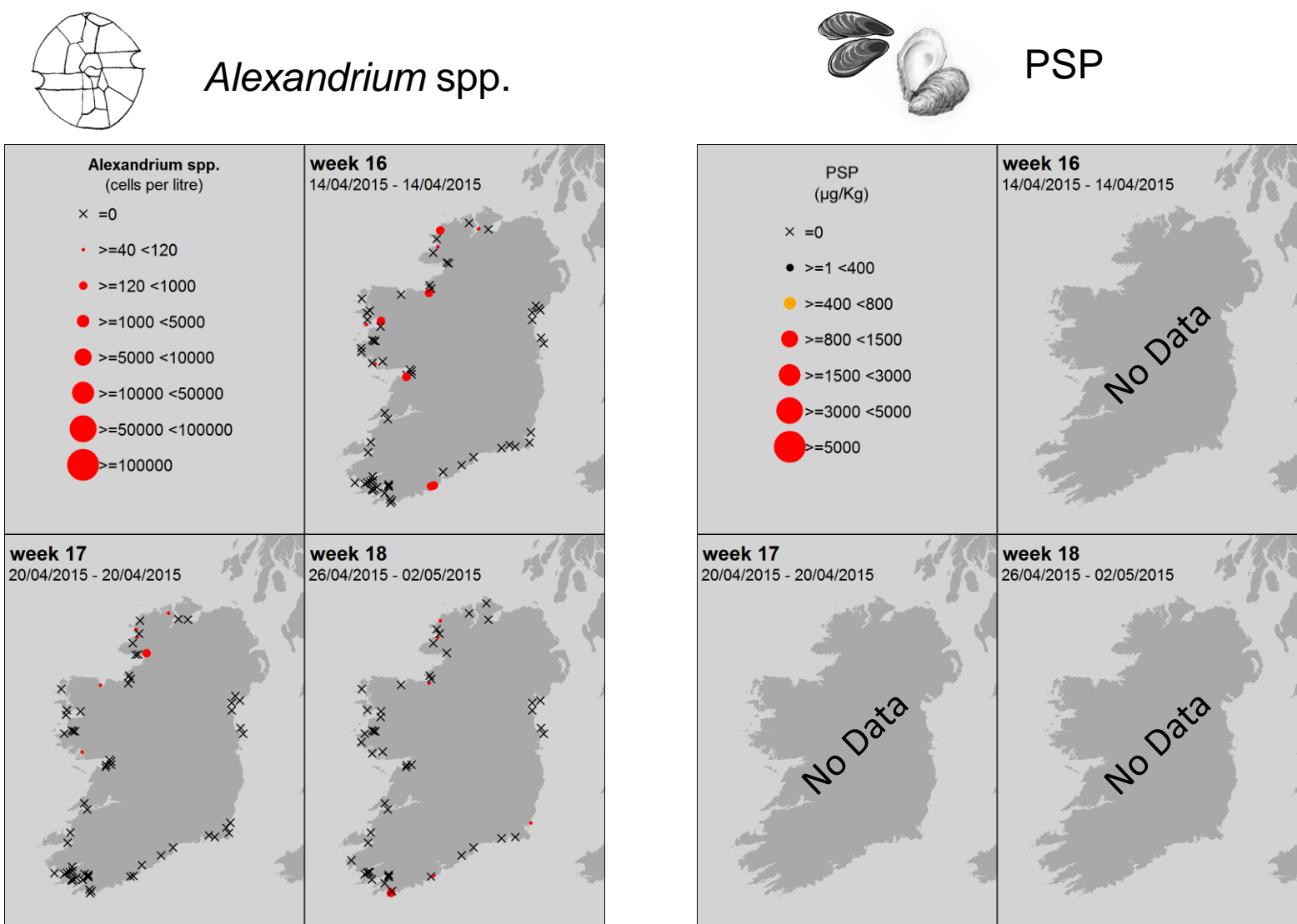
“*P. delicatissima*” complex = small cells
Taken from the literature:
3 species confirmed in Irish waters

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



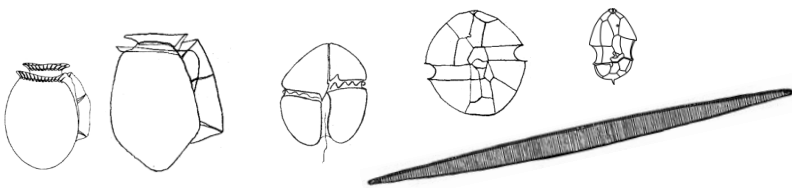
Taken from the literature: Of the 4 species (*P. fraudulenta*, *P. australis*, *P. pungens* and *P. delicatissima*) from Irish waters, tested for ASP toxins in culture work, only one, *P. australis* (from the “*P. seriata*” group) was toxic.

Ireland: Last 3 weeks of available National Monitoring Programme data



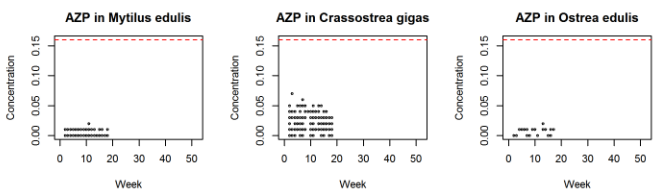
Ireland: **HABs and biotoxins** Levels from week 1 to present

Ireland: **Biotoxins**

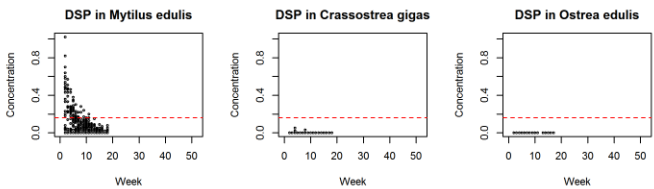


Toxin groups mussels oysters oysters

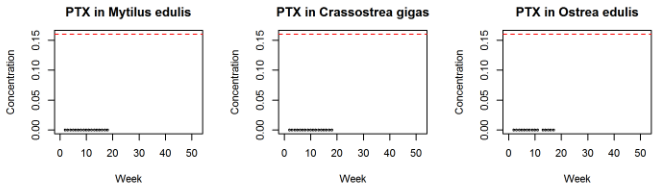
AZP
AZaspiracid
Poisoning



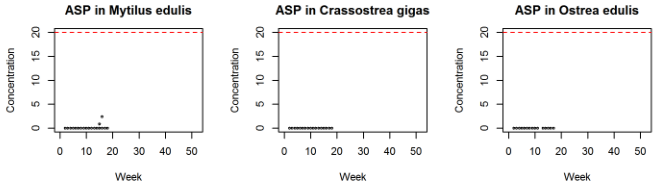
DSP
Diarrhetic
Shellfish
Poisoning



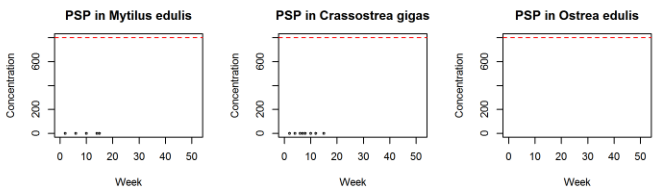
PTX
Pectenotoxin



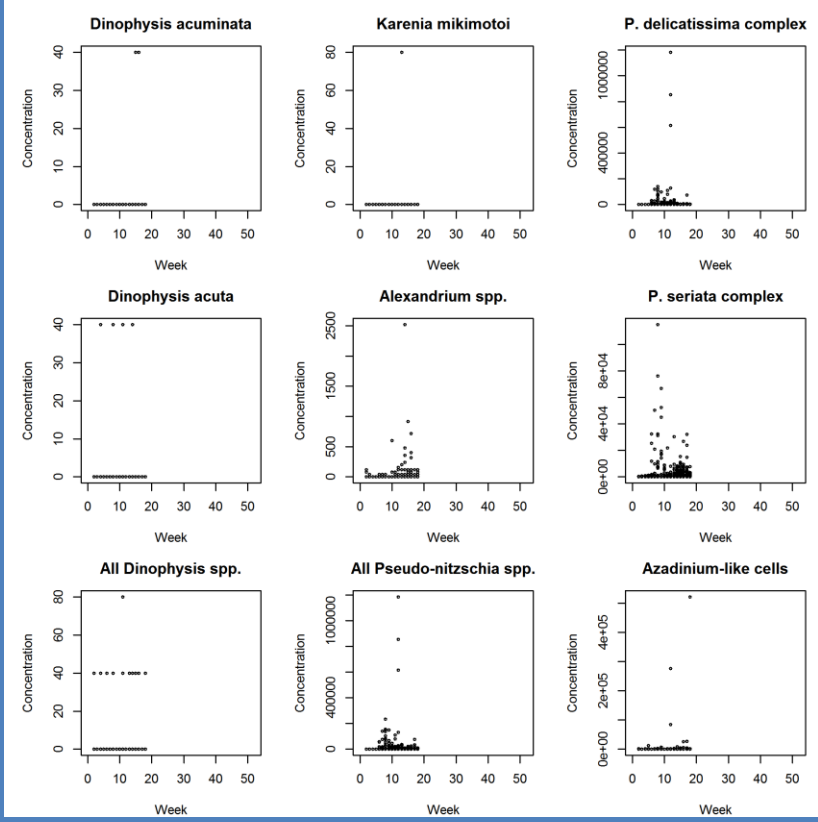
ASP
Amnesic
Shellfish
Poisoning



PSP
Paralytic
Shellfish
Poisoning



Ireland: **HABs**



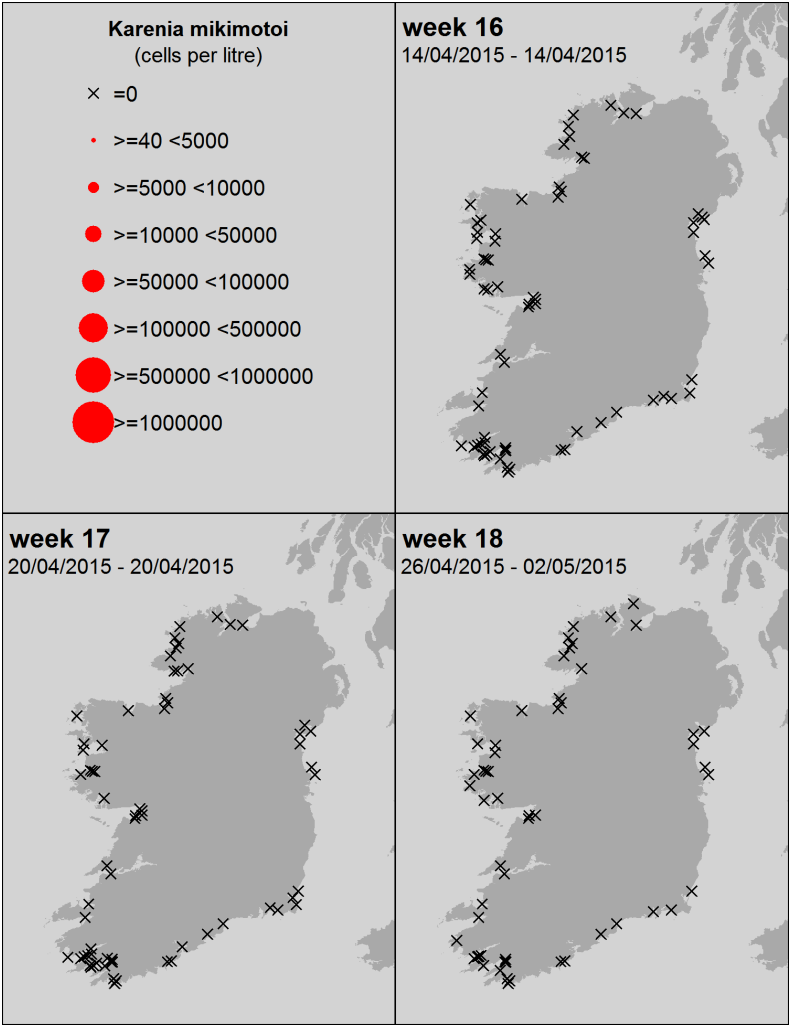
Week number: 1 to 18

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

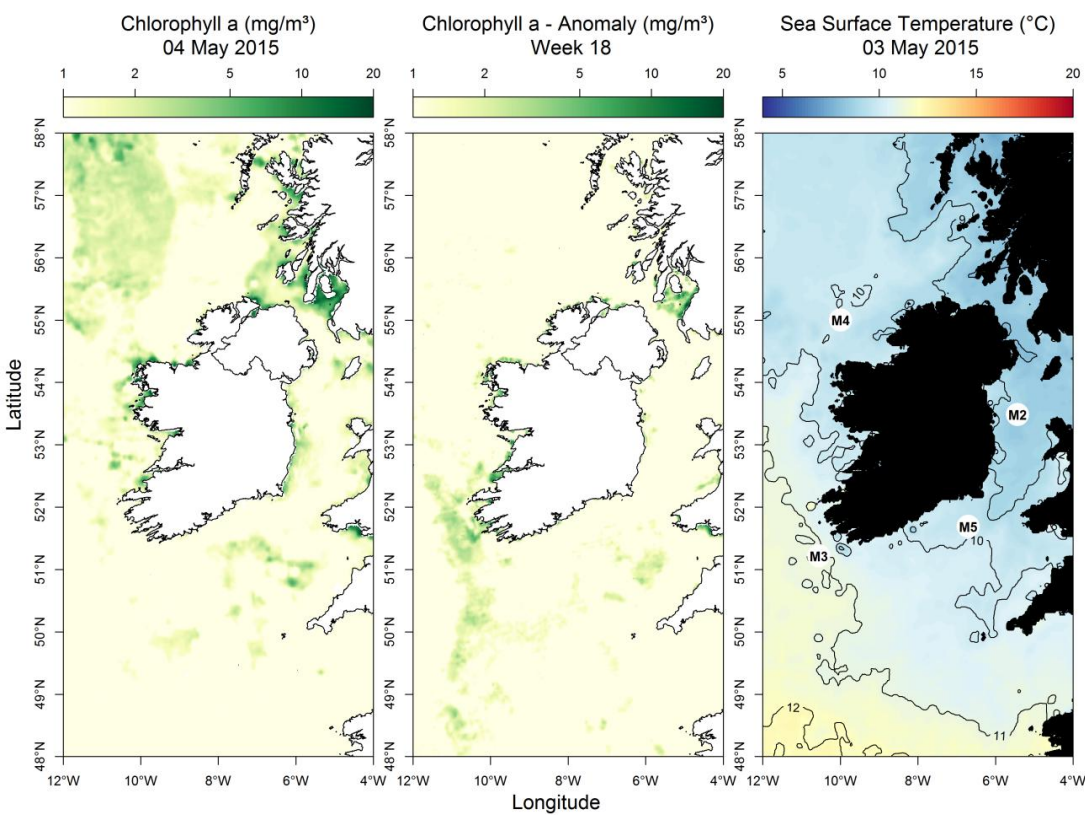
Regulatory limit = ■■■■■■



Karenia mikimotoi
(old name: *Gyrodinium aureolum*)



Most up to date available satellite data

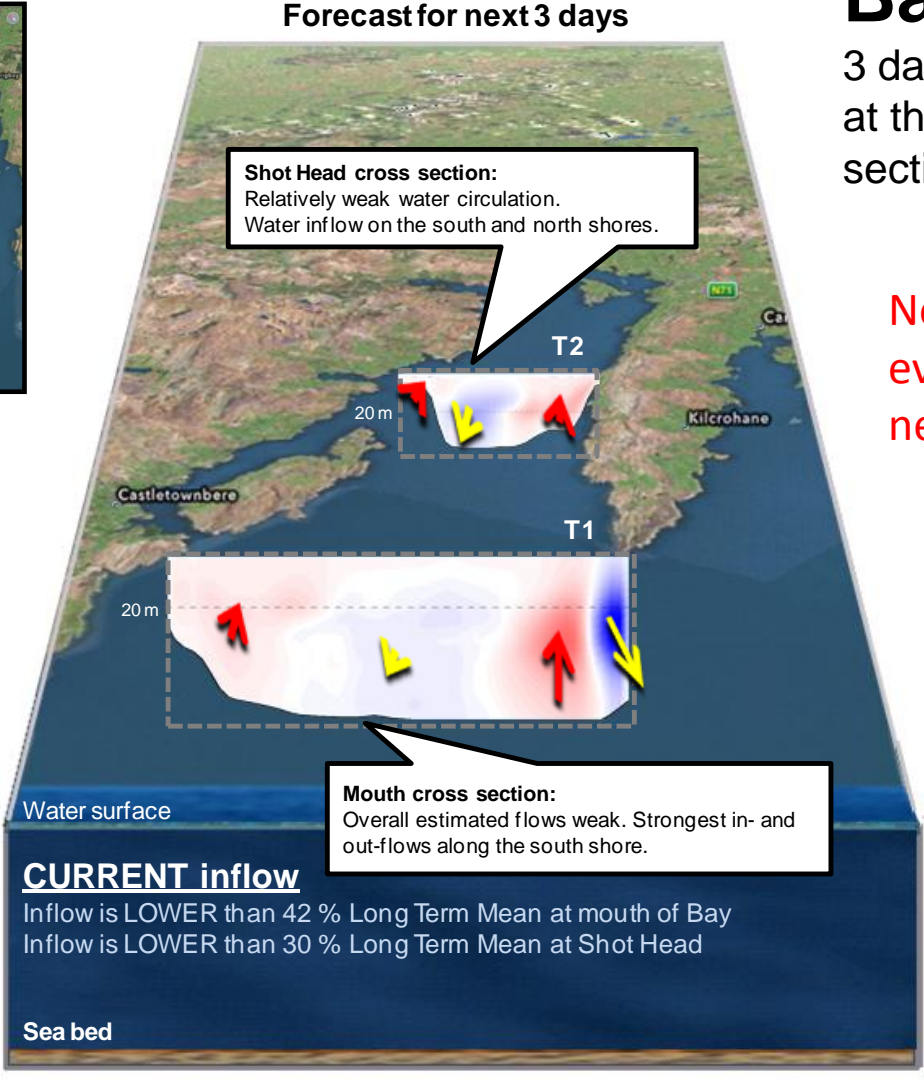
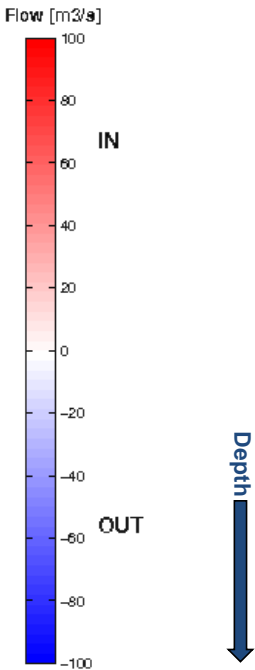
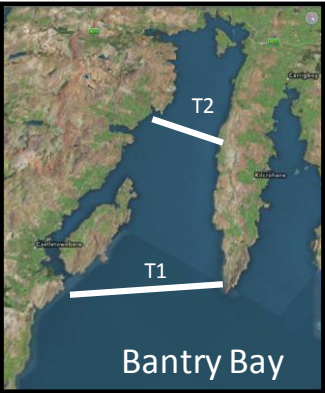


SST (°C) anomaly for last week:
Data taken from the Irish data buoy network where the anomaly is the weekly difference in SST compared to the long term mean (~ 10 yrs)

- NW coast (M4) below average by 0.33 °C
- SW coast (M3) above average by 1.25 °C
- SE coast (M5) below average by 0.67 °C

What phytoplankton were blooming around the coast last week?

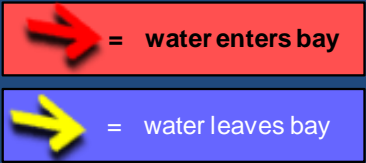
Region	Predominant Phytoplankton	Cells/L (rounded)
north:	Diatoms: <i>Chaetoceros</i> (Hyalochaete) spp. <i>Asterionellopsis</i> spp. <i>C. closterium</i> / <i>N. longissima</i>	560,000 up to 420,000 190,000
west:	Dinoflagellates: <i>Azadinium/heterocapsa</i> spp.	520,000
	Diatoms: <i>Skeletonema</i> spp. <i>Asterionellopsis</i> spp. <i>Chaetoceros</i> (Hyalochaete) spp.	350,000 up to 225,000 135,000
SW:	Diatoms: <i>Thalassiosira gravida</i> <i>Thalassiosira nordenskioldii</i> <i>Thalassiosira</i> spp. (20-50 µm) <i>Thalassiosira</i> spp. (< 20 µm)	630,000 580,000 up to 400,000 120,000
south:	Diatoms: <i>Skeletonema</i> spp. <i>Thalassiosira</i> spp. (20-50 µm) <i>Thalassiosira nordenskioldii</i> <i>Chaetoceros socialis</i>	80,000 80,000 up to 70,000 30,000
east:	Diatoms: <i>Dactyliosolen fragilissimus</i> <i>Skeletonema</i> spp. <i>Guinardia delicatula</i> <i>Rhizosolenia</i> spp.	245,000 210,000 90,000 up to 70,000



Bantry Bay

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

No big water exchange event predicted in the next few days

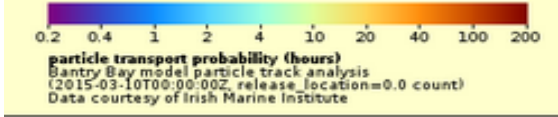


05 – 07 May, 2015 (forecast ends at 00:00 hrs)

Please go to <http://vis.marine.ie/particles/> to view daily forecasts in more detail

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



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

