

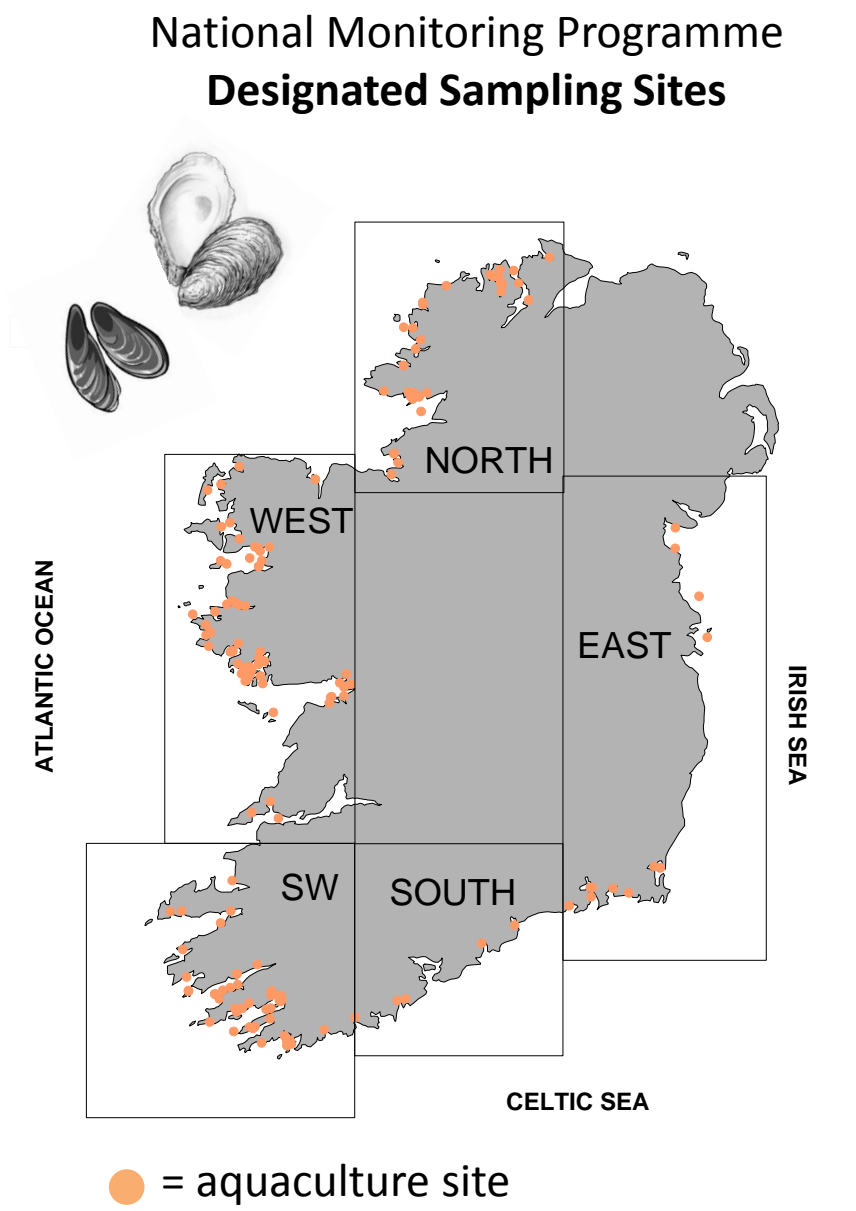
Ireland: Current Conditions

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 with a Slight risk in some areas (see below)

AZP event: Low risk

DSP event: Low risk with a Slight risk in some areas (see below)

PSP event: Low risk

Why do we think this?

ASP : Very low domoic acid levels detected at 2 sites in the southwest (max = 3.1 µg/g in long-line mussels).

“*P. seriata*” group found in 30 sites nationwide (max = 76,000 cells/L in southwest). A toxic species, *P. australis*, detected in the southwest and south. The “*P. seriata*” population makes up a significant proportion of the phytoplankton flora in several southern and southwestern sites. The “*P. seriata*” group percentage composition of the total phytoplankton in the southwest ranges from 1 to 46 % and in the south ranges from 26 to 43 %. Because the “*P. seriata*” group represents a larger part of the phytoplankton assemblage in some sites in this region, the risk of toxicity occurring still exists, albeit at low levels.

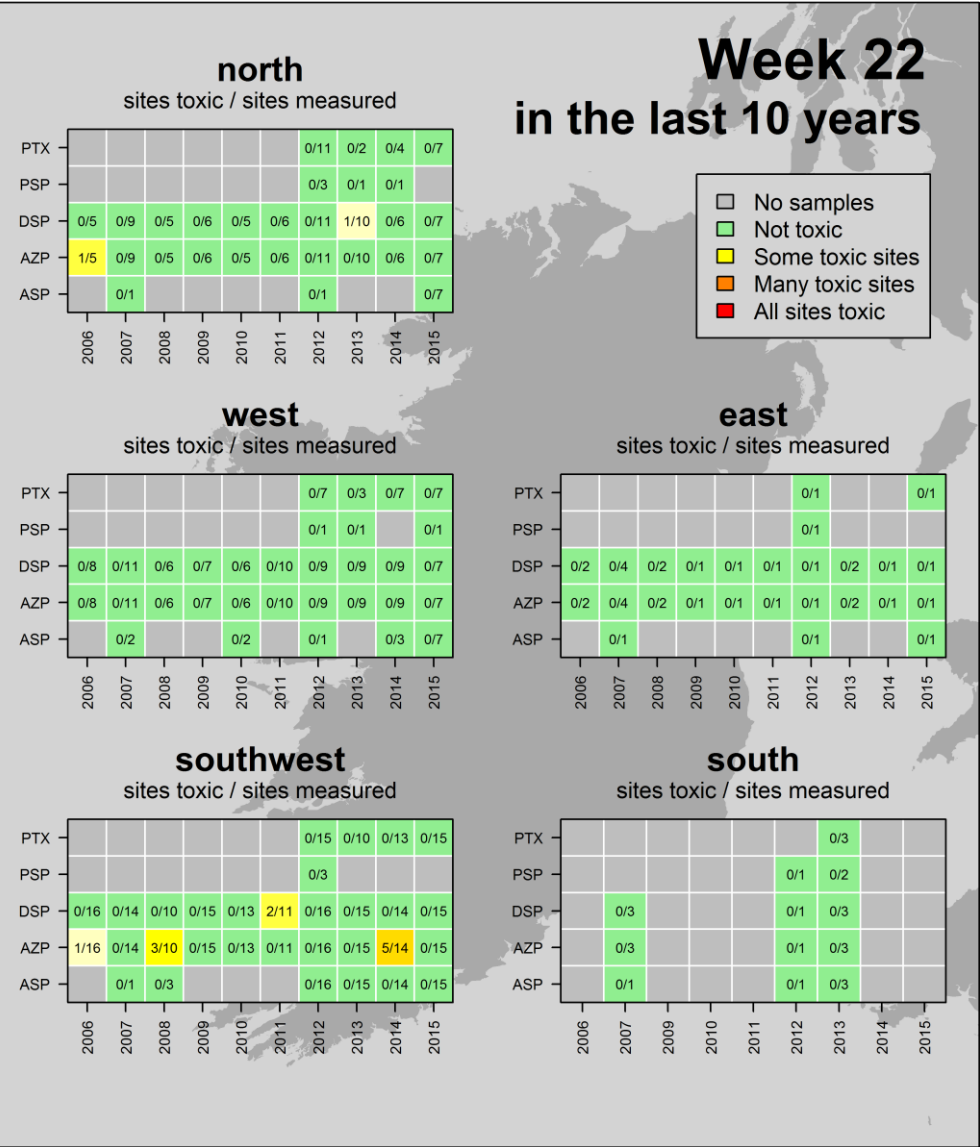
AZP: Low levels of toxins (i.e. background levels of up to 0.02 µg/g in oysters) picked up at 5 sites nationally. *Azadinium*-like species recorded at 21 sites - cell levels range from present to ~ 3,760 cells/L. Historically this is early in the toxic season for AZP at all sites.

DSP: DSP toxins only detected in the southwest at low levels (up to 0.06 µg/g in long-line mussels). Historically, this week presents as a slight risk period for DSP at all sites. *Dinophysis* observed at relatively low levels in 12 sites nationwide (north, southwest and east). *Dinophysis acuta* appears to be slowly, but, steadily establishing its presence at many southwest sites (max = 280 cells/L).

PSP: No toxins detected. *Alexandrium* species present at 7 sites out of 60 sites nationally; maximum cell levels in the north @ 1,200 cells/L. *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.

Ireland: Historic Conditions

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

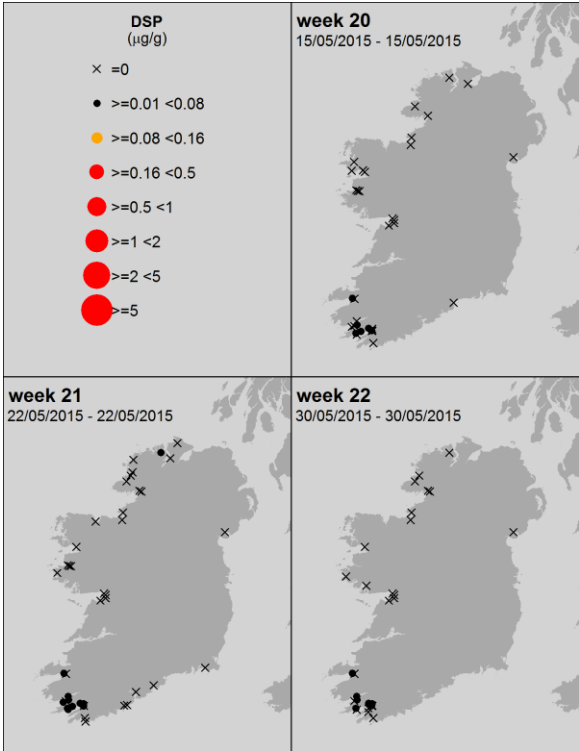
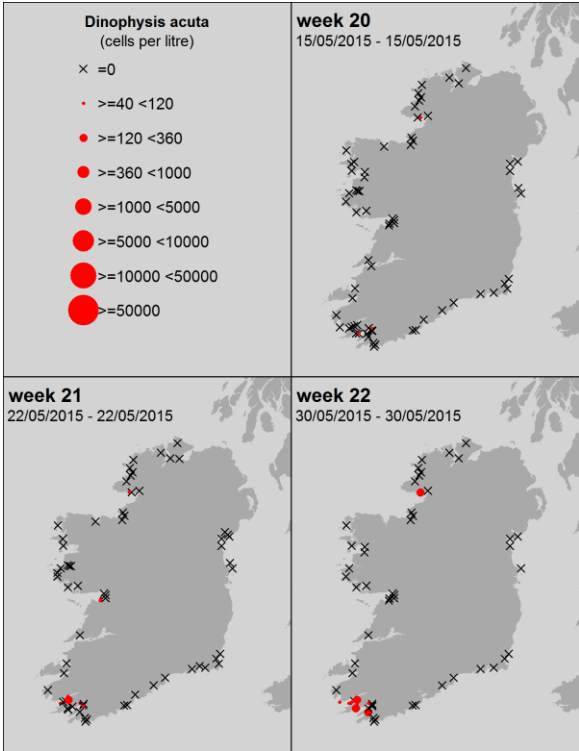
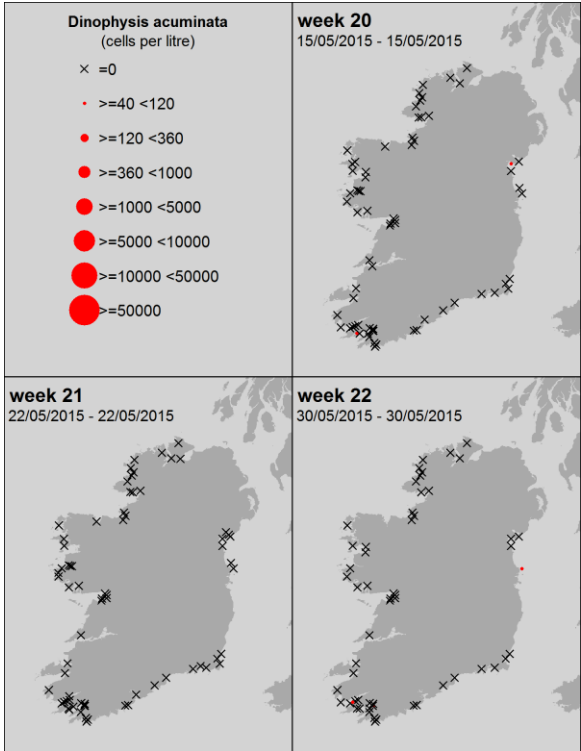


Ireland: Last 3 weeks of available National Monitoring Programme data

Dinophysis acuminata

Dinophysis acuta

DSP



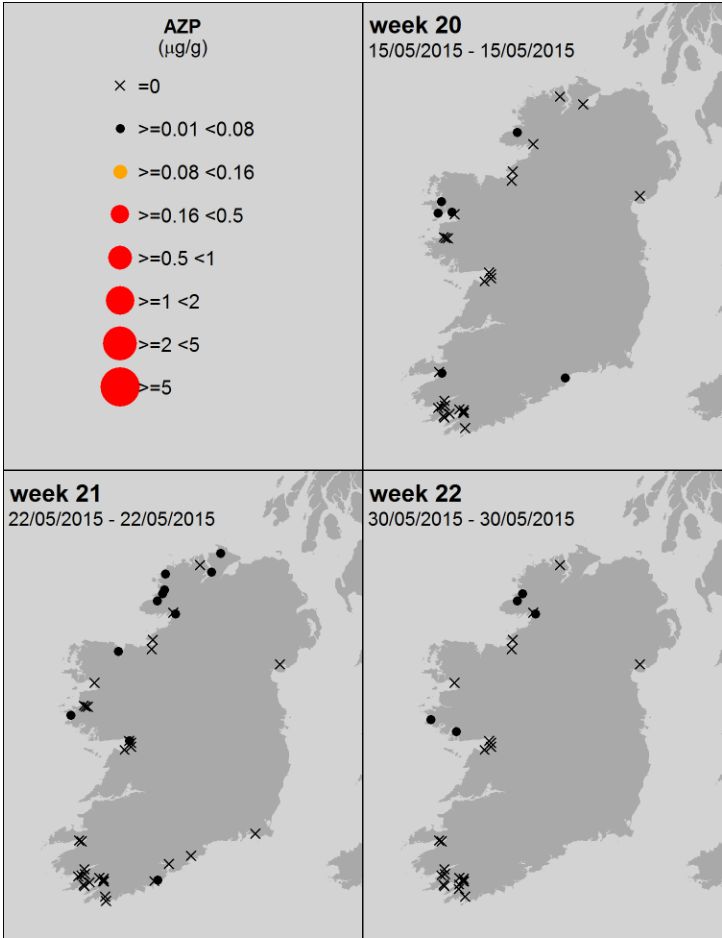
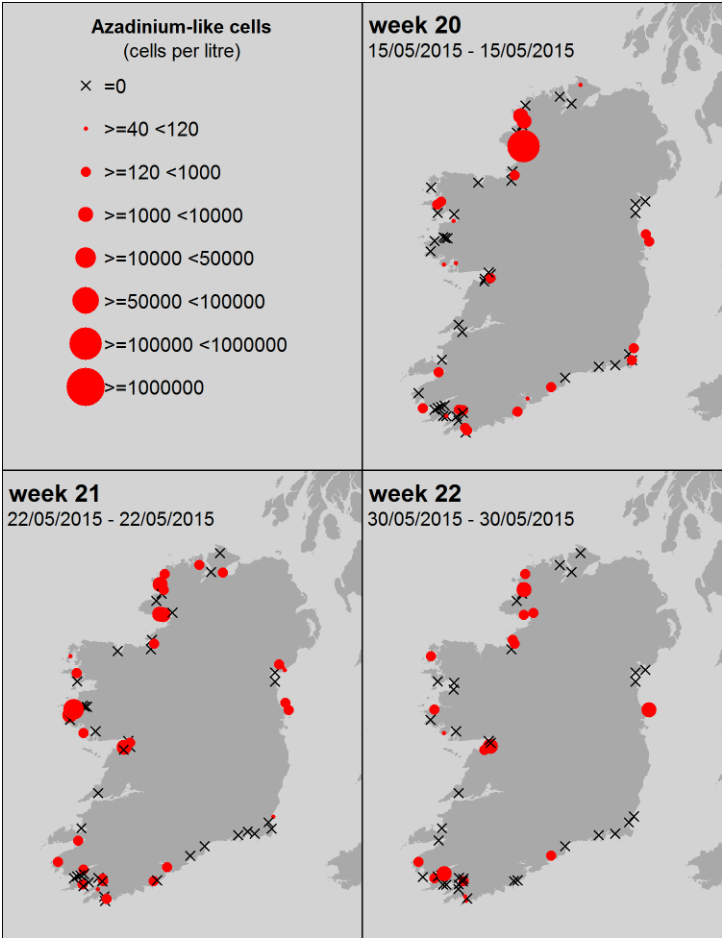
Ireland: Last 3 weeks of available National Monitoring Programme data



Azadinium – like spp.



AZP



Ireland: Last 3 weeks of available National Monitoring Programme data

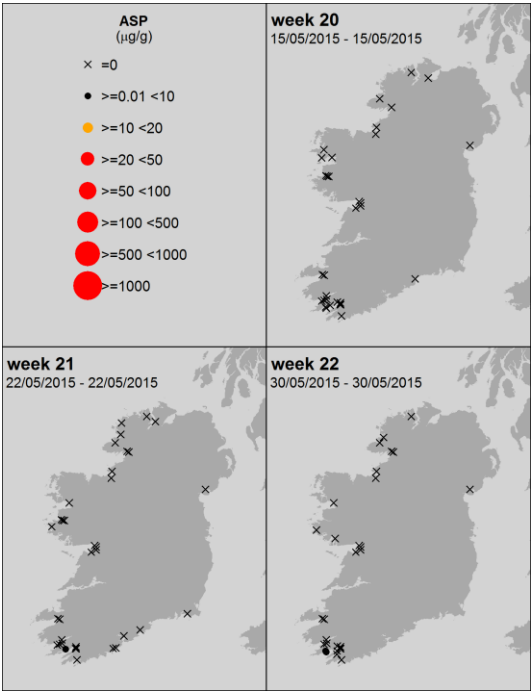
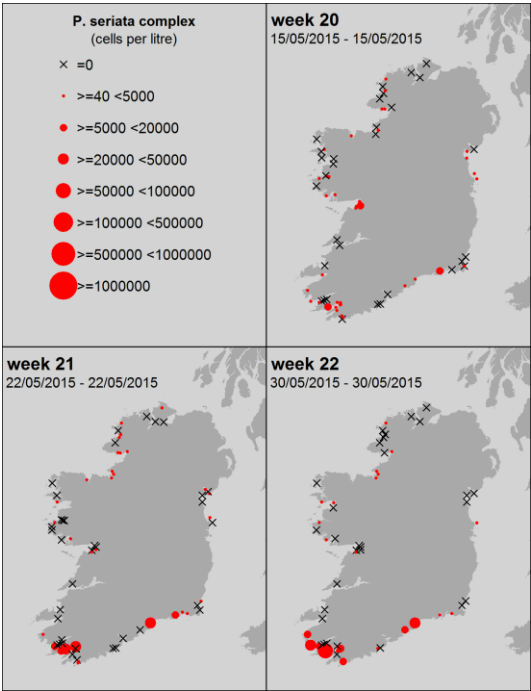
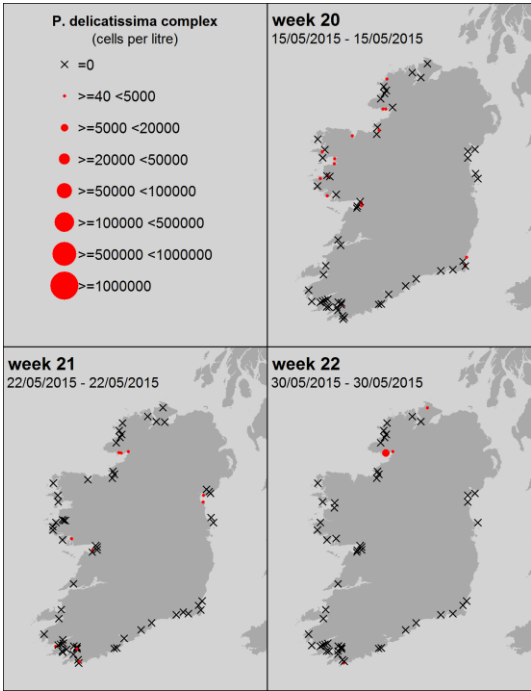
Pseudo-nitzschia spp.



ASP

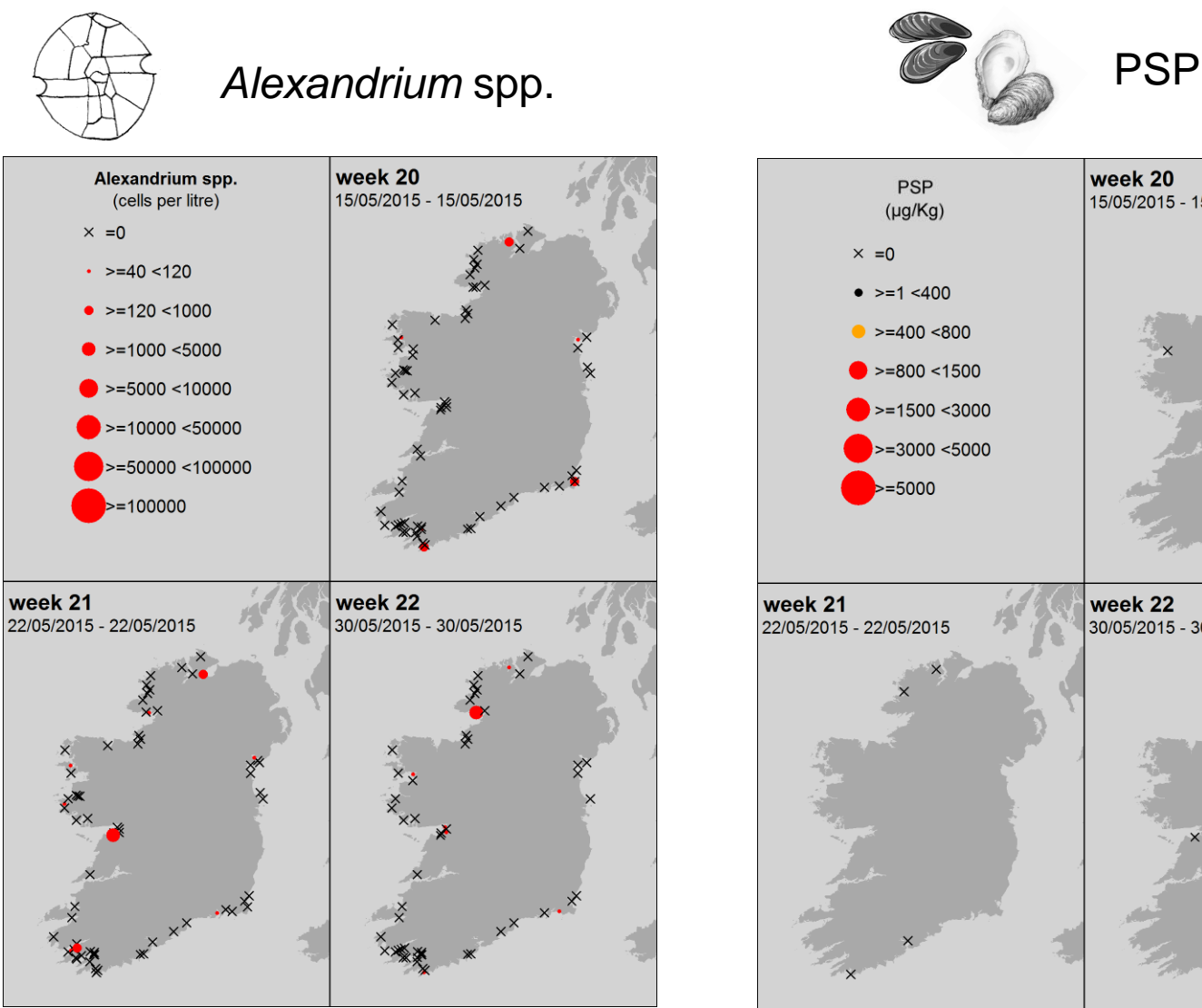
“*P. delicatissima*” complex = small cells
Taken from the literature:
3 species confirmed in Irish waters

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



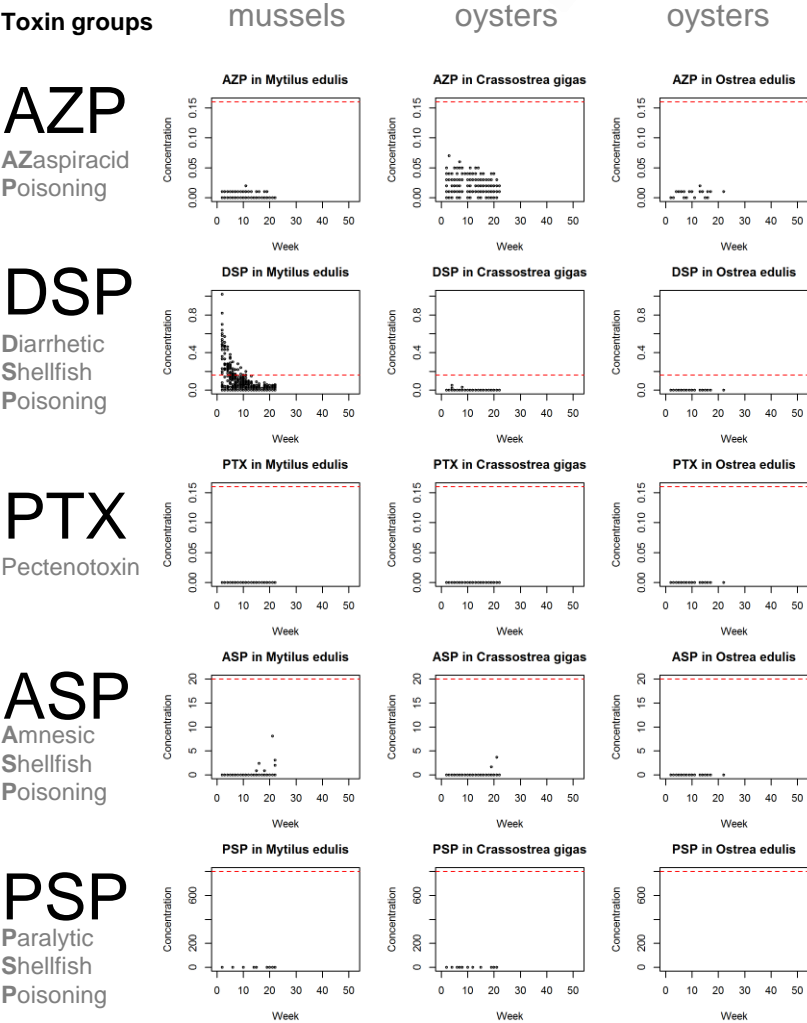
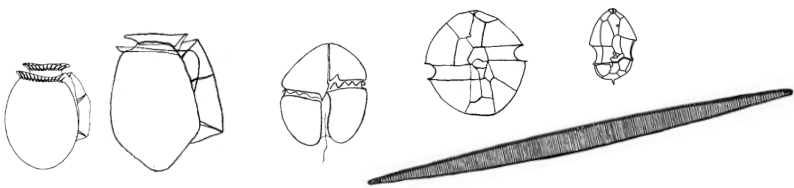
Taken from the literature: Of the 4 species (*P. fraudulenta*, *P. australis*, *P. pungens* and *P. delicatissima*) from Irish waters, tested for ASP toxins in culture work, only one, *P. australis* (from the “*P. seriata*” group) was toxic.

Ireland: Last 3 weeks of available National Monitoring Programme data

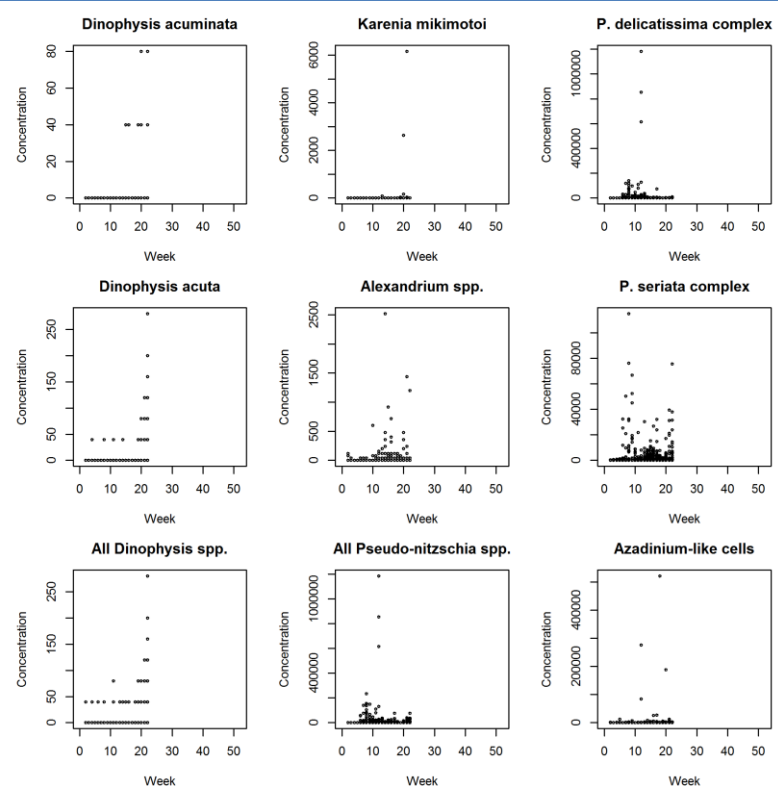


Ireland: **HABs and biotoxins** Levels from week 1 to present

Ireland: **Biotoxins**



Ireland: **HABs**



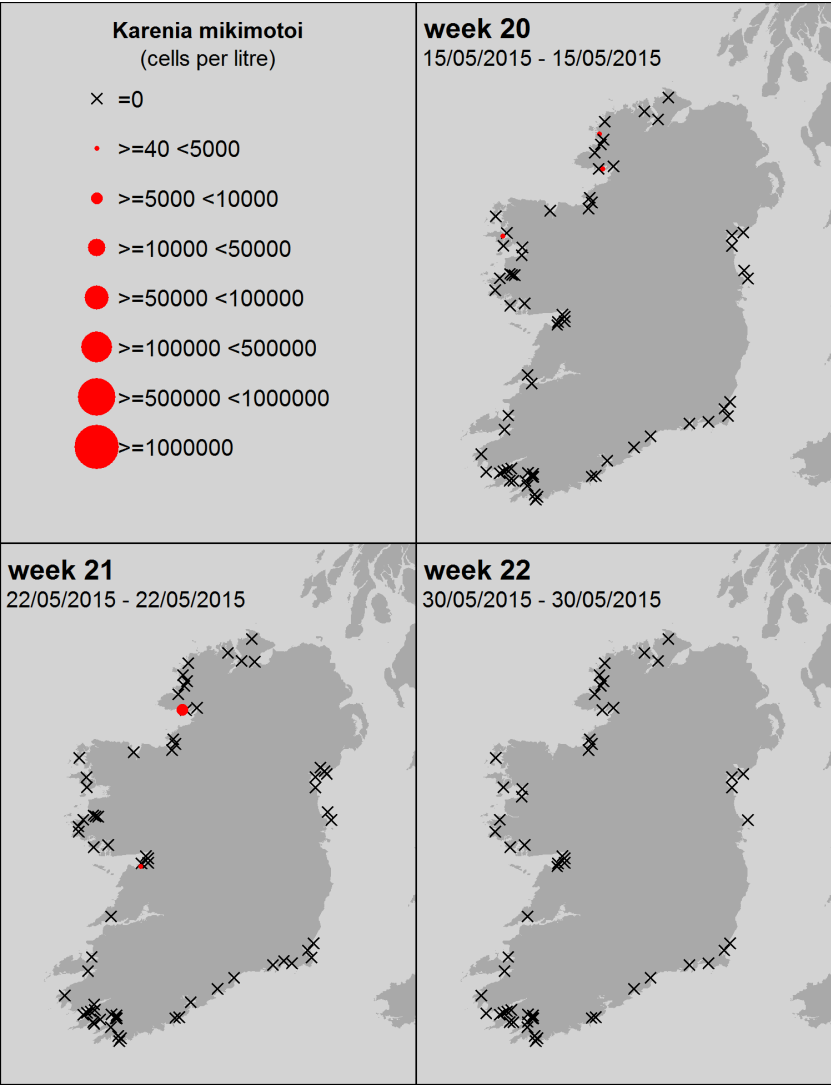
Week number: 1 to 22

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

Regulatory limit = ■■■■■

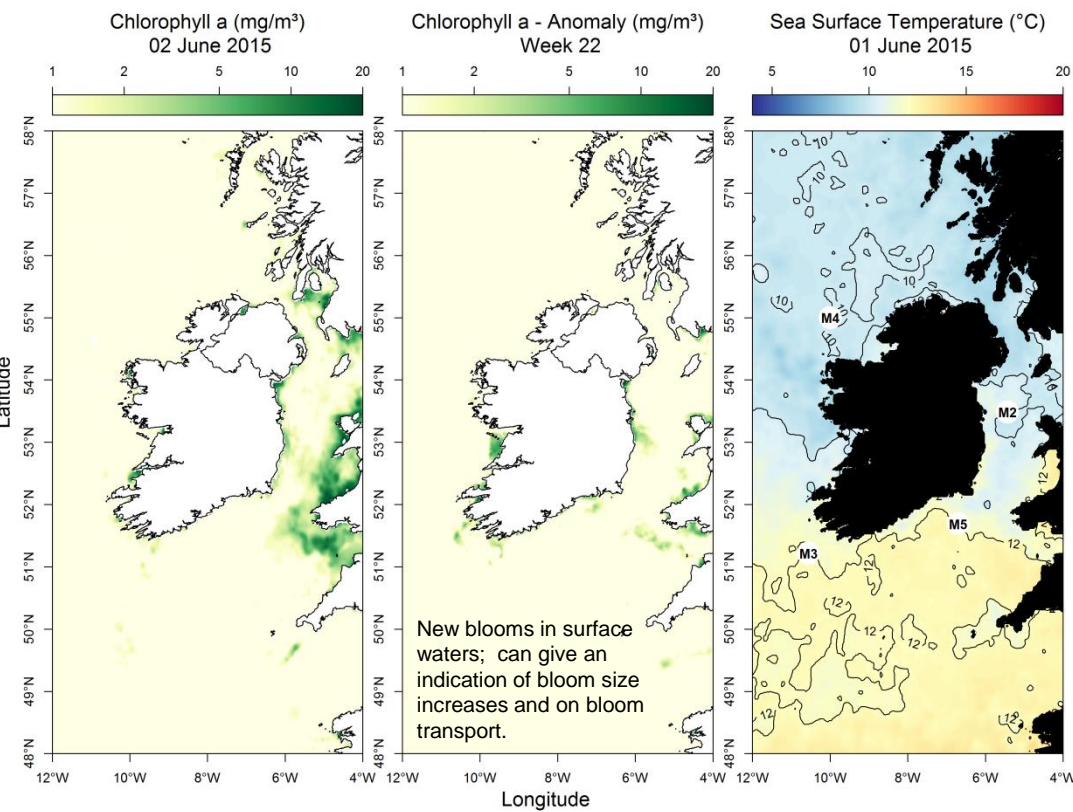


Karenia mikimotoi
(old name: *Gyrodinium aureolum*)



Most up to date available satellite data

What phytoplankton were blooming around the coast last week?



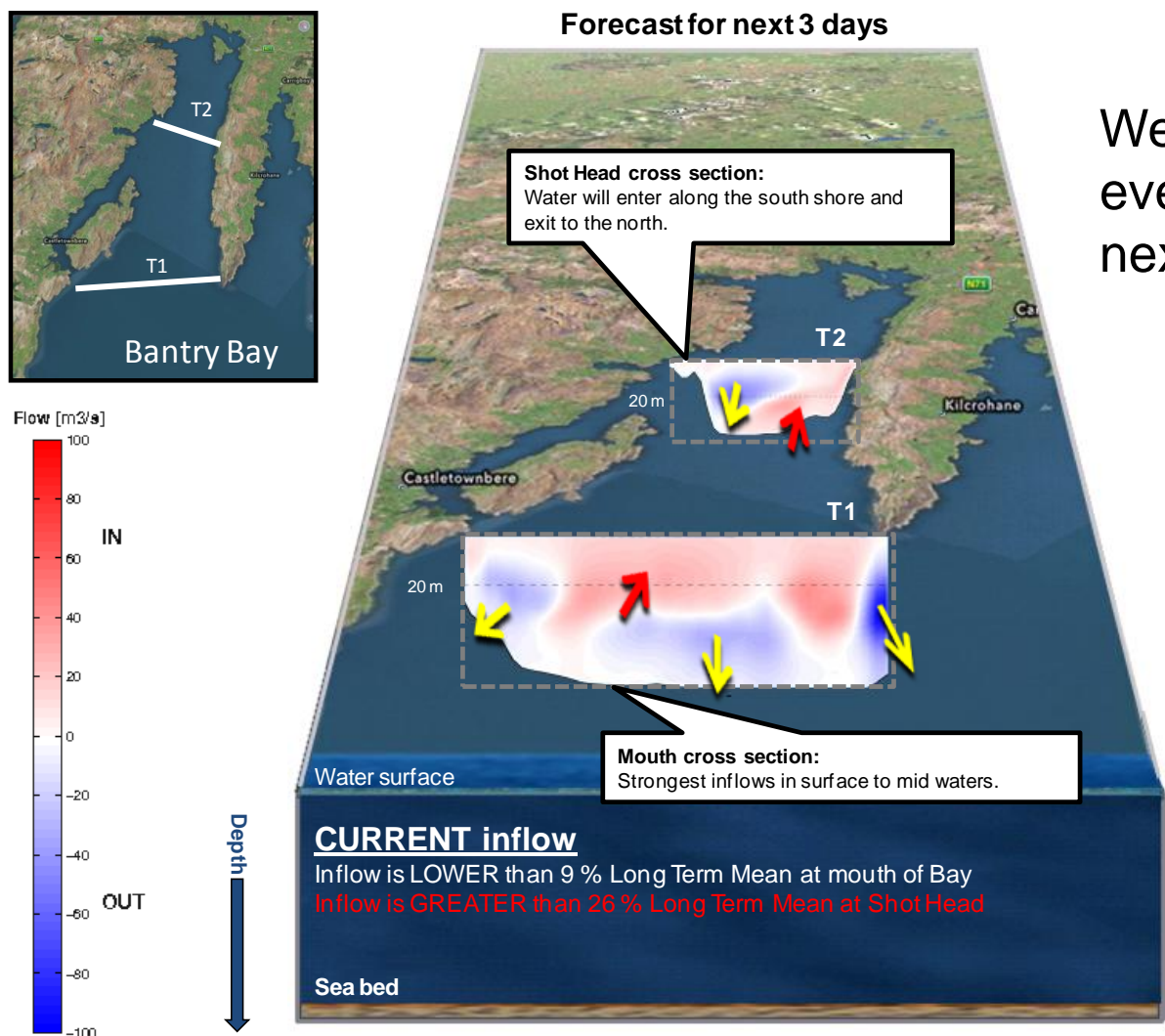
SST (°C) anomaly for last week:
Data taken from the Irish data buoy network where the anomaly is the weekly difference in SST compared to the long term mean (~ 10 yrs)

- NW coast (M4) below average by 1.64 °C
- SW coast (M3) Offline
- SE coast (M5) below average by 0.37 °C

Region	Predominant Phytoplankton (most abundant taxa)	Cells/L (rounded)
north:	Other: Microflagellates	1,000,000
	Diatoms:	
	<i>Guinardia delicatula</i>	203,000
	<i>C. closterium</i> / <i>N. Longissima</i>	142,000
west:	<i>Chaetoceros</i> (Hyalochaete) spp.	139,000
	Other: Microflagellates	9,000,000
	Diatoms:	
	<i>Chaetoceros</i> (Hyalochaete) spp.	249,000
SW:	<i>Guinardia delicatula</i>	116,000
	Pennate diatoms	56,000
	<i>Licmophora</i> spp.	54,000
	Diatoms:	
south:	<i>Cerataulina pelagica</i>	464,000
	<i>Leptocylindrus minimus</i>	243,000
	<i>Thalassiosira</i> spp. (< 20 µm)	142,000
	<i>Leptocylindrus danicus</i>	116,000
east:	Diatoms:	
	<i>Thalassiosira nordenskiöldii</i>	248,000
	<i>Thalassiosira</i> spp. (< 20 µm)	139,000
	<i>Leptocylindrus minimus</i>	95,000
	Other:	
	Prasinophytes	101,000
	Ciliates	101,000
	Diatoms:	
	<i>Guinardia delicatula</i>	912,000
	<i>Lauderia</i> / <i>Detonula</i> spp.	660,000
	Dinoflagellates:	
	<i>Heterocapsa</i> spp. (20-50 µm)	463,000
	Other: <i>Phaeocystis</i> spp. (cells)	78,000

Bantry Bay

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



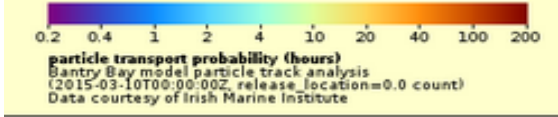
Weak “downwelling” event forecast in the next couple of days

“Downwelling” events are associated with the advection of *Dinophysis* populations from offshore

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

