ASP Events In Maine 2016 and 2017

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In late November to December, 1987, three deaths and over 100 illnesses were traced to the consumption of cultivated mussels (*Mytilus edulis*) from PEI.

The source of DA in the 1987 episode on PEI was *Pseudo-nitzschia multiseries*.

Toxic blooms of *P. multiseries* have always appeared during the autumn, in eastern and northern embayments of PEI. The highest observed levels of DA (790 μg/g) and of *P. multiseries* cell numbers (15 million cells per litre) occurred during the original 1987 bloom.
Occurrence of Pseudo-nitzschia (PN) in Maine

- Phytoplankton monitoring since 1996
- PN present since monitoring began
- Observations trigger target cell alert
- Previous trigger was 15,000 c/L prior to 2016
- Trigger since 2016 is 2,000 c/L
ASP in 2016

- PN counts high in June (>5,000)
- Shellfish samples showed no toxicity through early September
- Late September samples were suddenly over the quarantine limit
- Closed most of eastern ME as a result

Brain-damaging toxin closes Down East shellfish industry

A bloom producing 'very nasty' domoic acid, a biotoxin that can cause illness, memory loss, brain damage and possibly death in humans, is unprecedented for Maine.
2016 Maine Recall

- DMR recalled 1 week of mussel harvest and one lot of quahogs that were wet stored
- Also recalled clams from 3 harvest days
- Almost 11,000 lbs impacted
- 96% recovered and destroyed

- NO ILLNESSES
Example of phyto and toxicity

PS Cells/L

9/19
9/12
Shellfish 84 µg 9/27
Example of phyto and toxicity 2015

PS Cells/Liter

Shellfish < 0.8 µg 8/23, 8/31 and 9/6

8/16

8/23
ASP in 2017

- PN counts high in June (>100,000 small cells)
- Shellfish samples showed no toxicity till early September
- PN bloom transitioned to large cell
- Samples were over the quarantine limit by September 10th
- Closed a portion of eastern ME
2017 Maine Recall

- DMR recalled 5 days of mussel harvest
- 58,480 lbs impacted
- 98% recovered and destroyed

- NO ILLNESSES
2017 Closure

- Closure lasted until early October in Frenchman Bay region
- Expanded to eastern ME and closure lasted through early November
- Smaller precautionary closures lasted into early December
December PN bloom started in Casco Bay
- Large cells
- Cell count peaked at almost 500,000 c/L
- Toxicity peaked at 23 µg
- Closure lasted till mid-January

The low temperature on January 1 in Brunswick was −18° F