

ASP Events In Maine 2016 and 2017

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Where did ASP start

- ▶ 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 multiseriis*
- ▶ Toxic blooms of *P. multiseriis* 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. multiseriis* 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

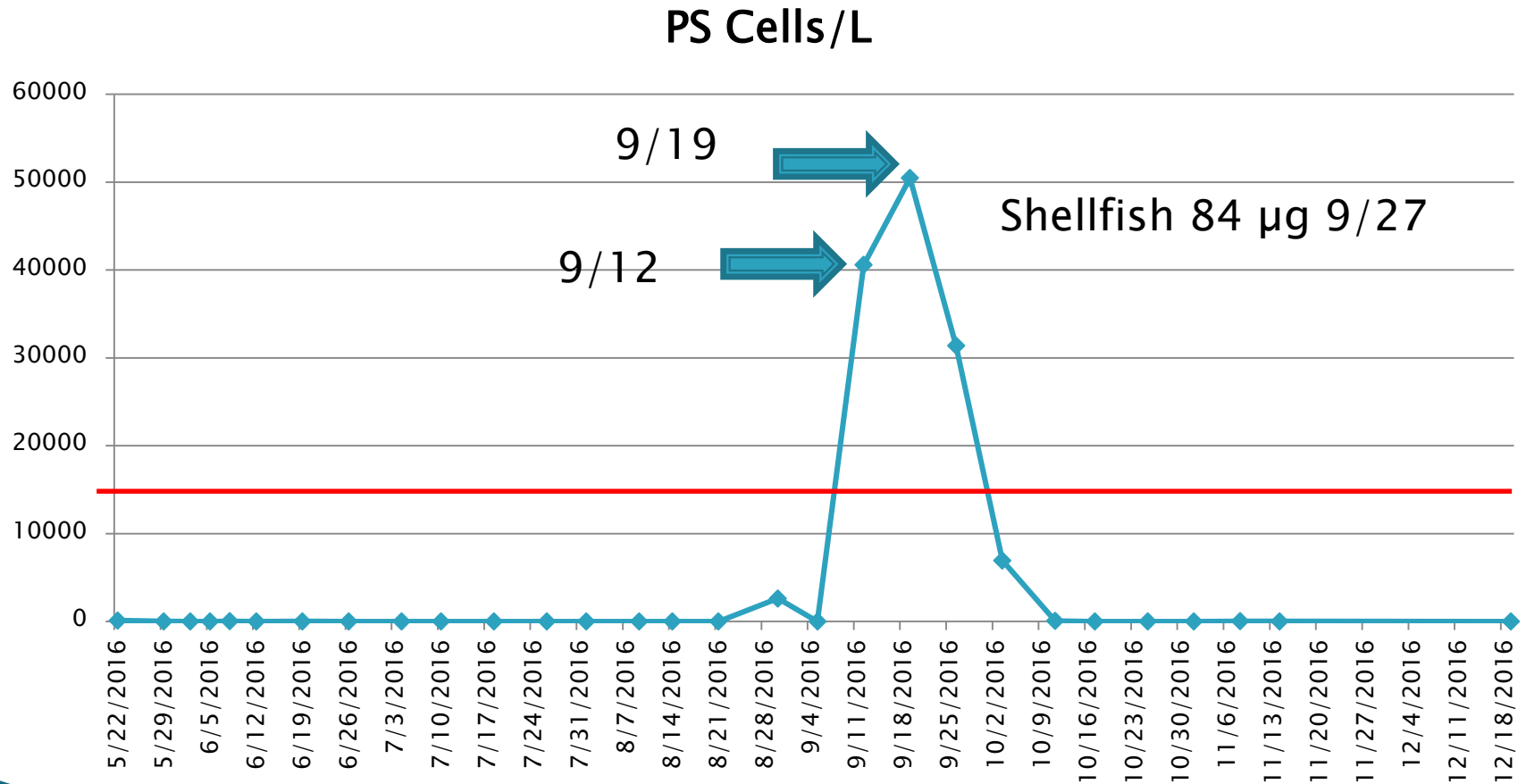
A bloom producing 'very nasty' domoic acid, a biotoxin that can cause illness, memory loss, brain damage and possibly death in humans, is unprecedented for Maine.

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

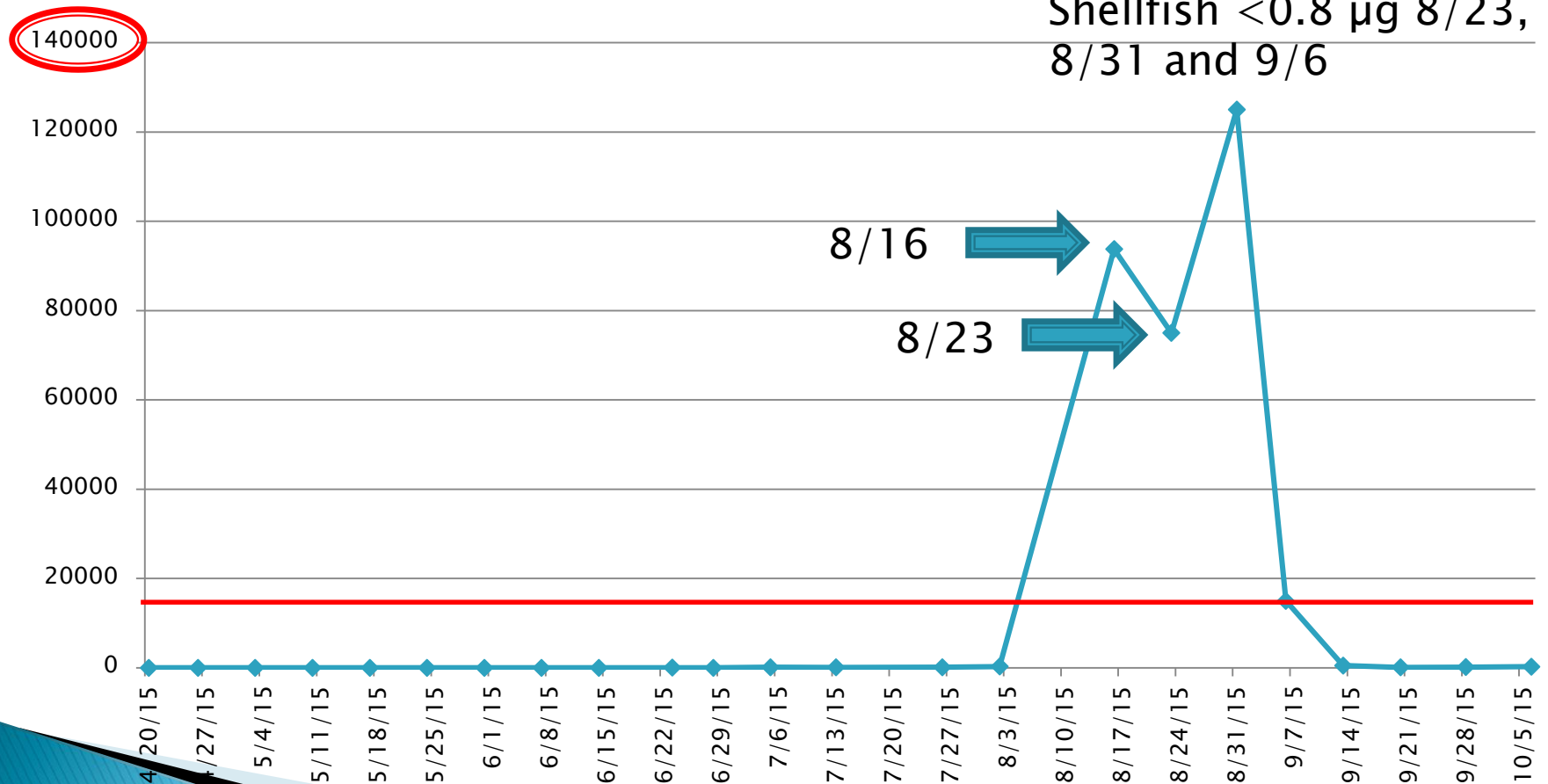
- ▶ NO ILLNESSES

Example of phyto and toxicity

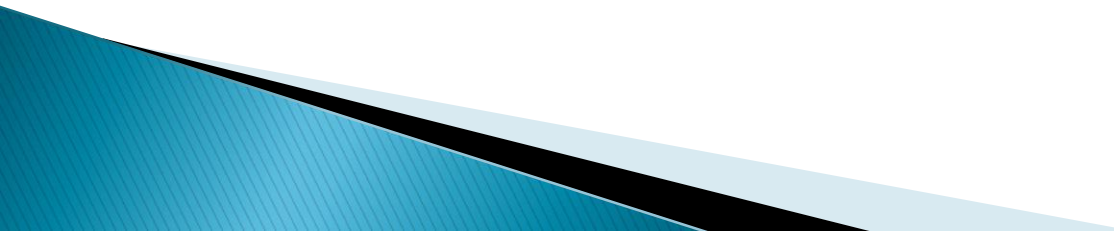


Example of phyto and toxicity 2015

PS Cells/Liter

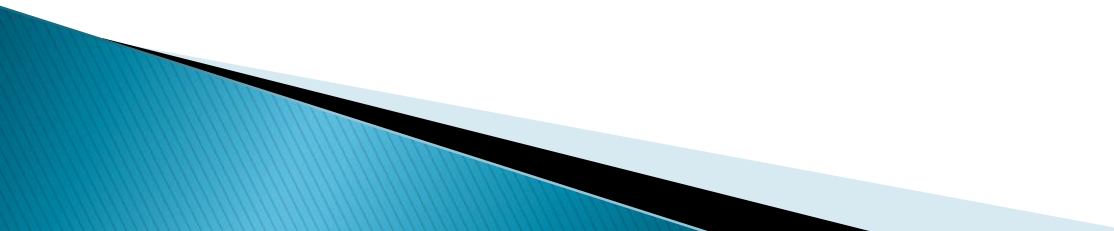


ASP in 2017

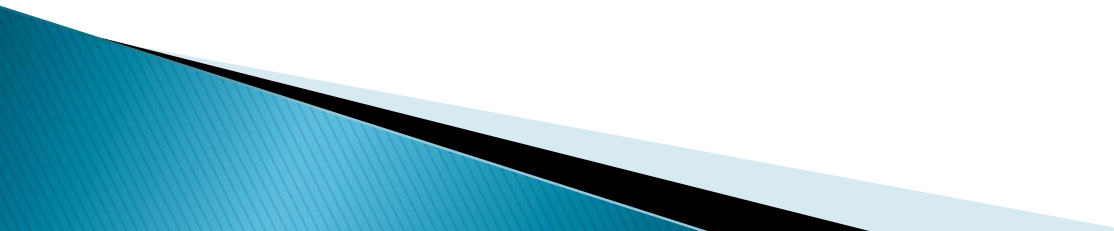
- ▶ PN counts high in June ($>100,000$ small cells)
 - ▶ Shellfish samples showed no toxicity till early September
 - ▶ PN bloom transitioned to large cell
 - ▶ Samples were over the quarantine limit by September 10th
 - ▶ Closed a portion of eastern ME
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2017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

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

 - ▶ NO ILLNESSES
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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
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It wasn't over.....

- ▶ 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