RI Sound as a potential source of HAB toxin for Narragansett Bay

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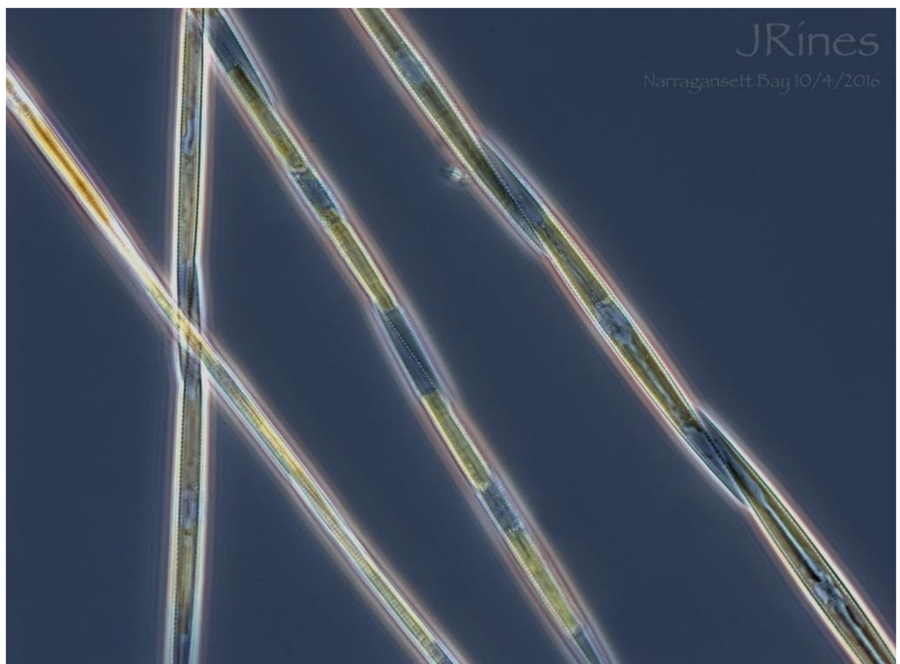
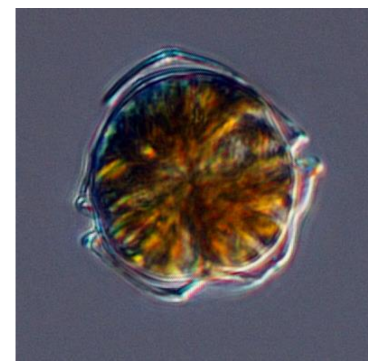
RI DEM





https://www.eoas.ubc.ca/

RIMFI
October 10 2017

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The ultimate goal:

To provide basic physical and biological data toward a safe and cost efficient management of shellfish harvesting in Rhode Island waters

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Our proposal:

1. **seek the most appropriate sentinel station for shellfish monitoring in RIS**

2. **establish the occurrence, abundance, and distribution of the *Pseudo-nitzschia* spp., *Alexandrium* spp., and *Dinophysis* spp.**

3. **relate domoic acid uptake in blue mussels (*Mytilus edulis*) with *Pseudo-nitzschia* abundance and toxin content**

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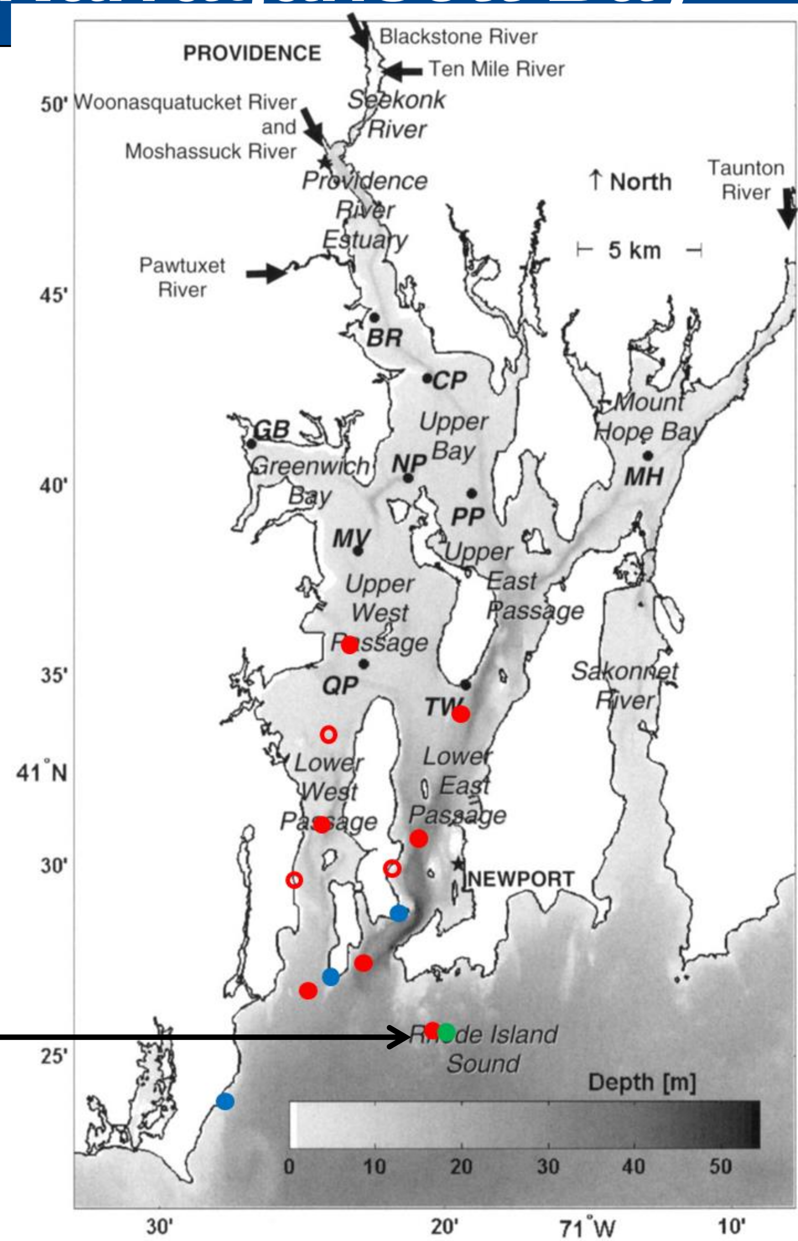
- Physical parameters
  Phytoplankton abundance
- Phytoplankton net tows
  (toxin assay)
- Wild mussel station
  (toxin assay)

Sentinel station



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<u>At each station ~ every two weeks</u>:

Parameters of the whole water column:

- Temperature
- Salinity

→ degree of stratification

- Chlorophyll fluorescence
- Dissolved oxygen
- Integrated plankton tow (>20 µm) → - Toxin assay - DNA

Data/samples collected at three depths:

- Nutrients
- Water concentrated 200:1 by reverse filtration (>20 µm)

→ Species enumeration

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In addition, at the sentinel station:

Mussels (surface and mid depth) ⟶ Toxin assay

Acoustic Doppler current profilers (ADCP)

CTDs deployed at five depths

→ Water column structure

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Our sentinel station $\longrightarrow$ Only open water station

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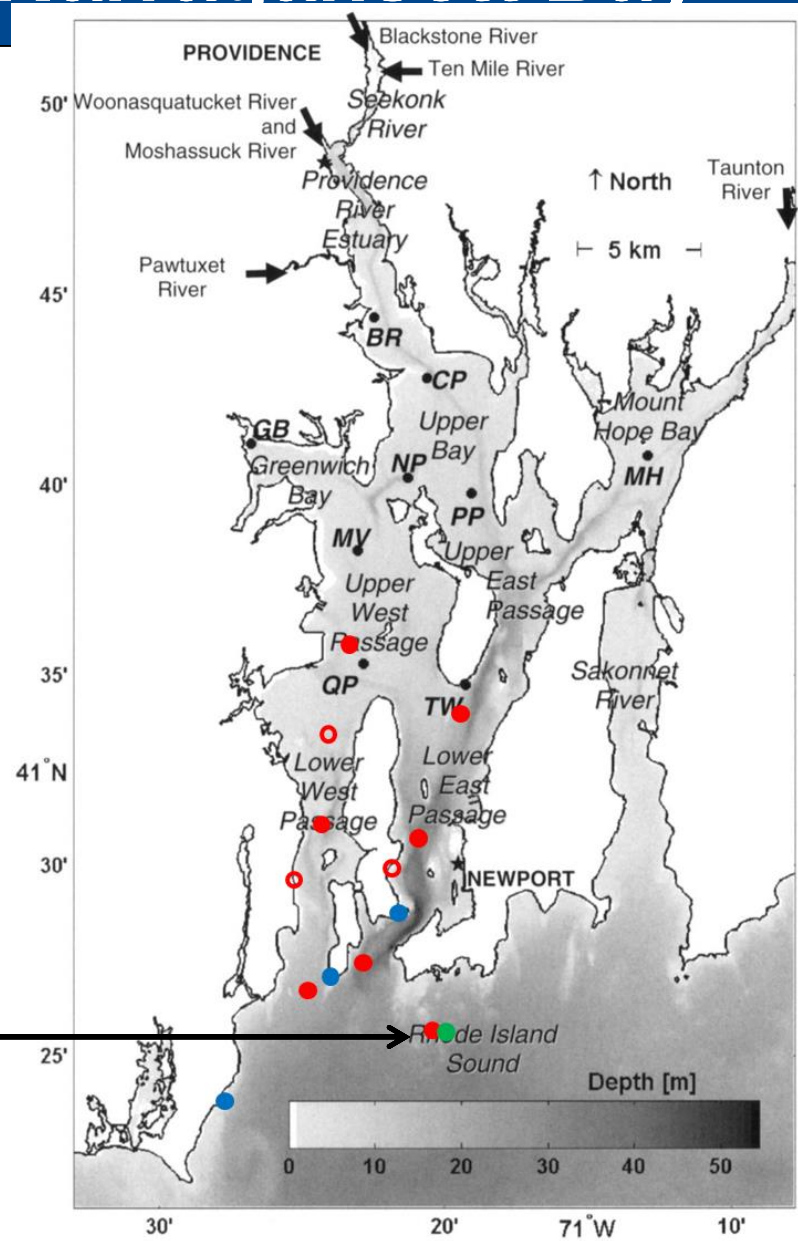

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Positive tests from phytoplankton tows:

- Jamestown dock: Aug 22 and Sep 6
- GSO dock: September 8

Negative tests for all mussels sampled

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