Maine Marine Invasive Update

Robert Russell
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New England Rapid Assessment Surveys (RAS)

• Goal
  – Detect new marine invaders
  – Document regional patterns of established invaders and native species

• Past RAS (5)
    – NY to ME depending on year
  – Expert taxonomic team
    – Marine invertebrates & algae
  – Marinas
    – 2010: rocky intertidal

2003, 2010 and 2013 RAS Reports:
2018 “mini” RAS (8 sites)

- Marinas
- MA (5), NH (1), ME (2)
  - Port Harbor Marine, Portland
  - Brewer South Freeport
- 12 Scientists and 6 grad students
- 3 EPA Divers
2018 “mini” RAS: Preliminary Findings

- Port Harbor Marine, Portland
  - rich growth on kelp blades
    - spirorbids, hydroids,
      *Lacuna vincta, Botrylloides*
- Grateloupia turuturu
  - Salem, MA (2018)
- Potential new (native) bryozoan in the region
  - *Schizoporella pungens*
  - Warm water species
    - Gulf Coast/Florida
- Polychaetes DNA barcoding
  - 11 unique species
  - All native to NE
RAS 2013: 18 sites, RI to ME

All Species (298)

- Native: 218
- Cryptogenic: 27
- Transient: 5
- Introduced: 39

Maine Species (132)

- Native: 100
- Cryptogenic: 21
- Transient: 11
- Introduced: 11

Cristina Kennedy slide credit
Marine Invader Monitoring & Information Collaborative (MIMIC)

• A network of trained volunteers, scientists and state agencies
• Monitor for marine invasive species along the New England coastline
• Goals
  — Patterns of established invasive species
  — Early detection of potential invaders
  — Educate the public
  — Share data
  — Get outside and have fun!

Jeremy Miller slide credit
MIMIC Program Overview

2017
69 sites monitored
183 monitoring events
~170 volunteers
9 Current Partners

Jeremy Miller slide credit
MIMIC Program Overview

- Visual survey (1 hr)
- 18 Established Species

Monitoring Protocol:
MIMIC Updates

- Species and ID Card update (2019)
- Story Map (2019)
  - Coming winter 2019!
- MIMIC iNaturalist Page
  - [https://www.inaturalist.org/projects/mimic](https://www.inaturalist.org/projects/mimic)
G. turuturu was introduced to New England in 1994 in Newport, RI. Since then, the species range has expanded to include New York, Connecticut, Massachusetts, New Hampshire, and now Maine.

G. turuturu made a major leap northward in 2007 to Boston Harbor. This introduction into the colder waters of the Gulf of Maine present concerns about further expansion and vessel mediated transport from Boston’s major shipping corridors.
Grateloupia turuturu:
Preventing the spread of this invasive seaweed in Maine

Grateloupia turuturu is native to Japan, but it has spread to other areas, including New England. Although marine, it can live in a range of temperatures and salinities. After slow spread north and south of its accidental introduction to Rhode Island in 1994, Grateloupia has expanded its range and recently was documented in the upper Damariscotta River Estuary in Maine.

Why is Grateloupia harmful?
- Grateloupia competes with native marine algae such as Irish Moss (Chondrus crispus) and affects the distribution of other native species (Matheuson et al. 2008, Jamieson & Whitham 2011, Krasemer et al. 2007).

How does it reproduce and spread?
- Each Grateloupia blade produces thousands of spores that can grow into new blades. Spores settle on nearly any artificial or natural surface in the lower intertidal to shallow subtidal zone.
- If colonized buoys, ropes, rafts, boats or shells are moved to a new location, Grateloupia can easily spread.

Identification
Where? Grateloupia grows in the low intertidal and shallow subtidal where it attaches to rocks, shells, and pilings as well as floating structures such as ropes, floats, and rafts.

Look for these characteristics
- Long, lobed blades are deep red to reddish brown and grow from a single holdfast.
- Blades commonly lost soft and slippery to the touch. Depending on age and habitat, blades may have different shapes and textures, including proliferations near the base of blades and small bumps when reproductive.
- Grateloupia may be misidentified as the commercially important, native red algal species "Tahoe" (Polysiphonia palmata) which has a firmer, more leathery texture, and lobes that form from a single blade.

What you can do if you find Grateloupia:
- Remove and Report—Blades should be completely removed from the area at the base and discarded in terrestrial garbage. Note the date and location (coordinate, local landmarks, etc.) where you found the Grateloupia. If possible, take photos of the sample. This information and any further questions should be directed to Maine Sea Grant. Please request private property owner's permission before accessing or removing Grateloupia growing on docks and other marine equipment.

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References
Palmaria palmata

Grateloupia turuturu
Maine Marine patrol takin’ care of business
GREEN CRAB
R&D

THE
GREEN CRAB
COOKBOOK

written & edited by
Mary Parks & Thanh Thai
& Contributors to the Green Crab R&D Project
Green crab working summit Portland ME June 6-7, 2018
...and now for the scary part

<table>
<thead>
<tr>
<th></th>
<th>2018 Quota</th>
<th>NEFMC 2019</th>
<th>Loss</th>
<th>Loss</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Area 1A</strong></td>
<td>27,743</td>
<td>4,354</td>
<td>23,389</td>
<td>84%</td>
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<tr>
<td><strong>Area 1B</strong></td>
<td>2,639</td>
<td>647</td>
<td>1,992</td>
<td>75%</td>
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<tr>
<td><strong>Area 2</strong></td>
<td>8,200</td>
<td>4,188</td>
<td>4,012</td>
<td>49%</td>
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<tr>
<td><strong>Area 3</strong></td>
<td>11,318</td>
<td>5,876</td>
<td>5,442</td>
<td>48%</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>49,900</strong></td>
<td><strong>15,065</strong></td>
<td><strong>34,835</strong></td>
<td><strong>70%</strong></td>
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</tbody>
</table>

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<tr>
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<th>NEFMC 2019</th>
<th>Loss</th>
<th>Loss</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Area 1A</strong></td>
<td>61,162,773</td>
<td>9,598,915</td>
<td>51,563,857</td>
<td>84%</td>
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<tr>
<td><strong>Area 1B</strong></td>
<td>5,817,992</td>
<td>1,426,389</td>
<td>4,391,603</td>
<td>75%</td>
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<tr>
<td><strong>Area 2</strong></td>
<td>18,077,884</td>
<td>9,232,949</td>
<td>8,844,935</td>
<td>49%</td>
</tr>
<tr>
<td><strong>Area 3</strong></td>
<td>24,951,889</td>
<td>12,954,347</td>
<td>11,997,542</td>
<td>48%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>110,010,538</strong></td>
<td><strong>33,212,600</strong></td>
<td><strong>76,797,938</strong></td>
<td><strong>70%</strong></td>
</tr>
</tbody>
</table>
Drastic cut to herring quota puts Maine lobstermen over the bait barrel

There aren't enough pogies to take up the slack, and Maine's strict bait rules prohibit species that could sicken another fishery, leaving state regulators pursuing other strategies.

BY PENELPOE OVERTON STAFF WRITER

A bait shortage in Maine means the crustaceans are chewing on cowhide and calcium

August 25th, 2016
by H. Claire Brown
The following list includes all freshwater species that have been reviewed by the Department of Marine Resources. Beginning June 1, 2015, it is illegal to sell or use any marine or freshwater organism as bait to fish for or take lobsters or crabs that is classified as "prohibited," or that has not been reviewed by the Department. Bait dealers may be granted an exemption that allows them to sell a "prohibited" bait if they agree to follow specific procedures that the Department considers sufficient to remediate the risks of introduction (e.g. establishing a chain of custody, pre-importation testing, processing). Individuals may apply for review of a non-listed bait source, or petition for use of a prohibited bait source by completing the "Lobster and Crab Bait Review Form." If you have questions regarding the use or sale of a bait source, contact Sarah Conoir at sarah.conoir@maine.gov or (207) 624-6696. Applications and additional information about the use of lobster and crab bait is available at http://www.maine.gov/dmr/mrlobster/index.htm under "Commercial Fishing, Lobsters, Maine Lobster Management."

### Freshwater Approved

<table>
<thead>
<tr>
<th>Species</th>
<th>Region of Origin</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carp</td>
<td>Maine</td>
</tr>
<tr>
<td>Pickerel</td>
<td>Central Canada</td>
</tr>
<tr>
<td>Suckerfish</td>
<td>Maine, Canadian provinces of Manitoba &amp; Saskatchewan</td>
</tr>
</tbody>
</table>

Any freshwater species that was legally harvested in Maine.

### Freshwater Prohibited

<table>
<thead>
<tr>
<th>Species</th>
<th>Region of Origin</th>
<th>Unacceptable Risk</th>
</tr>
</thead>
<tbody>
<tr>
<td>All Carp, including Asian Carp (grass carp, common carp, Amur carp, silver carp, largescale silver carp, bighead carp, black carp, goldfish, crucian carp, mud carp)</td>
<td>Asia, US (caught outside of Maine) &amp; Canada.</td>
<td>Exotic pathogens</td>
</tr>
<tr>
<td>Catfish</td>
<td>Asia</td>
<td>Exotic pathogens</td>
</tr>
<tr>
<td>Mudshad</td>
<td>Central US &amp; Virginia</td>
<td>Unknown pathogen status</td>
</tr>
<tr>
<td>Northern Pike</td>
<td>Central Canada</td>
<td>Exotic pathogens</td>
</tr>
<tr>
<td>Sheepshead (Freshwater Drum)</td>
<td>US &amp; Canada</td>
<td>Exotic pathogens</td>
</tr>
<tr>
<td>Farmed or Wild Tilapia</td>
<td>Africa, Asia, Florida, Latin America and Vietnam</td>
<td>Exotic pathogens</td>
</tr>
</tbody>
</table>
Notes:

Vessel Incidental Discharge Act (VIDA), SB140

- Just passed – removes state oversight of vessel discharges under the Clean Water Act
- State laws more stringent than current VGP will be retained until the new national standards for all vessel types are in place
- States now do have the authority to engage in the process of creating the new federal standards
- Also “states can petition federal agencies for higher national standards” – substitute for their own individual authority
- States retain the ability to enforce federal standards and requirements
- Coast Guard promulgates EPA standards into vessel technology requirements and is lead agency on monitoring inspection and enforcement of those standards
- Non-grandfathered states may develop and implement vessel inspection programs
- National standards will take a minimum of a year to develop, and likely longer, so there’s an opportunity for states to develop an inspection program and/or develop a fee structure for violations
- Included in VIDA – Coastal Aquatic Invasive Species Mitigation Grant Program and Mitigation Fund
  - Appropriations = to fines under Sec. 312(p) of the CWA during previous fiscal year
  - Additional authorization - $5 million in each fiscal year
  - Purpose of this fund and grant program
    - Implement including permissible State ballast water inspection programs
    - Kevin is looking for contacts from each state to work with him to develop vessel and BWM systems inspection programs – must be in place prior to promulgation of national standards
    - NEANS Panel – regional coordination role: Inspection Programs
      - Assist interested states in developing inspection programs
      - Organize inspection program training for state/regional agency personnel
    - NEANS Panel – regional coordination role: National Standards
      - Establish work group to provide regional input for national standards
    - Coordinate with Ballast Water Work Group regarding national standards
- NOTE: these new national rules will apply to vessels 80 feet in length and over, and most of Maine's vessels are 79 feet and under, so under this newly passed version of VIDA, states will retain authority to regulate vessel discharges from those “small” vessels – 79 feet and under