

From the Flat: How stakeholders respond to and gain information about shellfish flat closures

Elisabeth A. Maxwell and Teresa R. Johnson
New England Sustainability Consortium
University of Maine, Orono, Maine, 04469

Introduction

Maine's soft-shell clam industry, which in 2013 landed **over 10 million pounds** valued at more than **\$16.9 million dollars**, is co-managed by local municipalities and the Maine Department of Marine Resources (Figure 1; ME DMR 2013).

Shellfish area closures due to **pollution** or **toxic algal blooms** prevent harvest of shellfish and have a significant impact on landings (Figure 2 and 3). Closures can be short-term responses to brief changes in environmental conditions (e.g. heavy rainfall), seasonal variation (e.g. temperature), or can be long-term and permanent (e.g. extended fecal

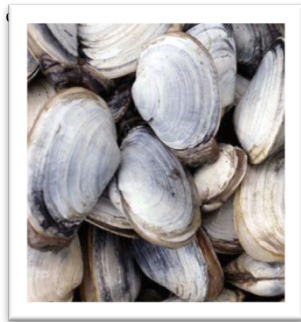


Figure 1: Soft-shell clams at legal harvest size (2-inches).
(Photo: P. Wellenbach, BDN).

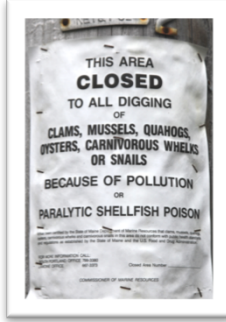


Figure 2: Notice of shellfish area closure for harvesting.
(Source: National Ocean Service).

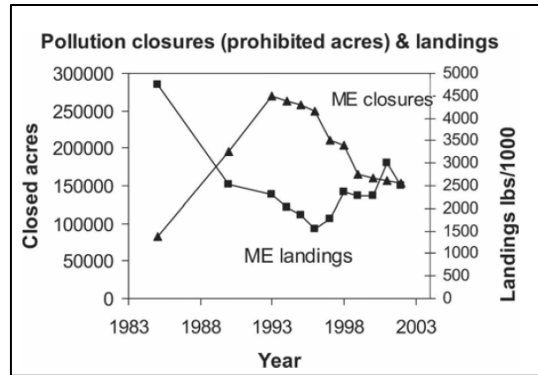


Figure 3: Pollution closures and landings in Maine
(Source: Congleton et al. 2006).

Results

"How do you get information about closures?"

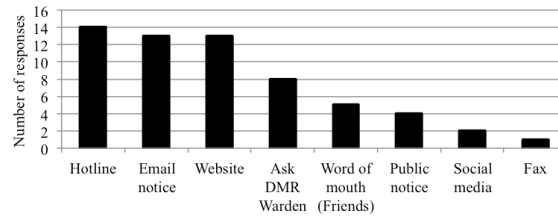


Table 1: Frequency of information source reported for gaining closure information.

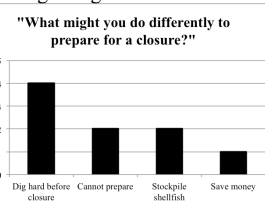


Table 2: Industry responses in anticipation of a closure.

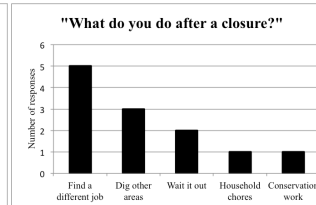


Table 3: Industry responses following a closure.

Stakeholder Responses:

"They weren't going to the stores, the restaurants, the gas stations or even paying their bills because they didn't have the income."

"... either just take your time off and do what you like or other things you can catch up on. Some people just plan it that way."

"You can't raise a family doing it. You've got to pick up another job or try and do them both together, or you pack up and leave the industry."



Figure 4: Screen-shot of Maine Department of Marine Resources bacterial closure alert webpage.
(Source: Maine DMR).

Conclusion

Communicating closure information through use of the **hotline**, **email bulletins**, and **website alerts** are the most common ways to reach harvesters.

Wardens and friends are also critical sources of information for harvesters about closures

Harvesters can **dig hard if they anticipate a closure** but generally have few options for preparing for a closure or changing their activities after a closure is in effect. Most find work outside the industry.

References Cited

- Congleton, et al. (2006). *Journal of Shellfish Research*
- ME DMR (2013). Commercial Fisheries Statistics.

Research Questions

How do stakeholders **obtain information** about closure locations?

How do stakeholders **respond** prior to a closure or after a closure has been established?

Methods and Analysis

From July-September 2014, we conducted a total of **19 semi-structured interviews** with Maine shellfish industry stakeholders. All interviews were recorded and transcribed.

Qualitative analysis: Transcripts of interviews were coded using Nvivo and the results were summarized in Excel. We report on responses to questions regarding how harvesters obtain closure information and how they adapt their behavior before and after a closure.



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