

# Changing Rivers: A local knowledge mapping study of the Damariscotta River

Melissa Britsch & Sarah Risley  
Damariscotta Board of Selectmen's Meeting  
December 16th, 2020



# Presentation Goals

- **Share updates on progress of shellfish study in the Damariscotta River estuary:**
  - Provide 2019 Study background
  - Introduce 2020 Local Knowledge Mapping Study and provide updates
- **Questions for you:**
  - What would be useful outputs for the town?
  - What are some potential uses for these data?

# Questions Guiding 2019 Shellfish Study

1. What is the current state of shellfish populations (softshell clams, quahogs, and oysters) in the Damariscotta River estuary?
2. Are young shellfish (i.e. seed) recruiting to the estuary?
3. How have shellfish populations in the estuary changed over time?



# 2019 Study Findings

- Shellfish populations varied among locations and by tidal height.
- Recruitment of young softshell clams varied with tidal height. Showed effects of predators on young clam survival rate.
- Harvesters noted that shellfish populations in the estuary have changed over the last 20 years.

<https://umaine.edu/leslie-lab/2020/01/03/shellfish-resilience-project/>



## FINAL REPORT

*Current and historical trends in the shellfish resources  
of the upper Damariscotta River estuary*

20 December 2019

*Prepared by Dr. Kara Pellowe\* and Dr. Heather Leslie\*\*  
University of Maine Darling Marine Center*

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\*\* Director, Darling Marine Center and Joint Shellfish Committee member ([heather.leslie@umaine.edu](mailto:heather.leslie@umaine.edu))

# 2020: Pivoting in Response to the Pandemic

- Initially planned to continue shellfish surveys
- But, field surveys not possible due to COVID-19 restrictions in the spring
- Developed another approach to collect information on shellfish populations, from a safe distance



# 2020 Project Goal and Expected Outcomes

***To document local knowledge of the Damariscotta River estuary in and effort to...***

- Collect information on:
  - Softshell clam abundance and wild shellfish diversity
  - How shellfish abundance and diversity has changed through time
- Identify:
  - Areas of importance for wild shellfisheries to inform future field work in 2021
  - Areas of shared importance for different river uses

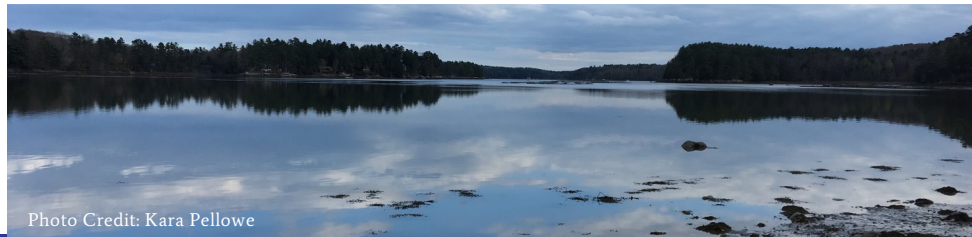
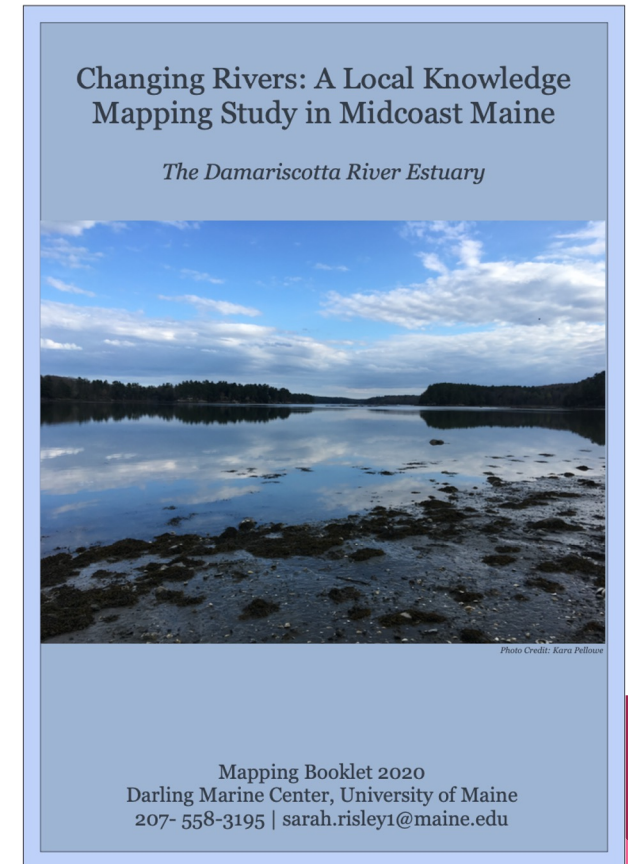


Photo Credit: Kara Pellowe

# Local Knowledge Mapping Study

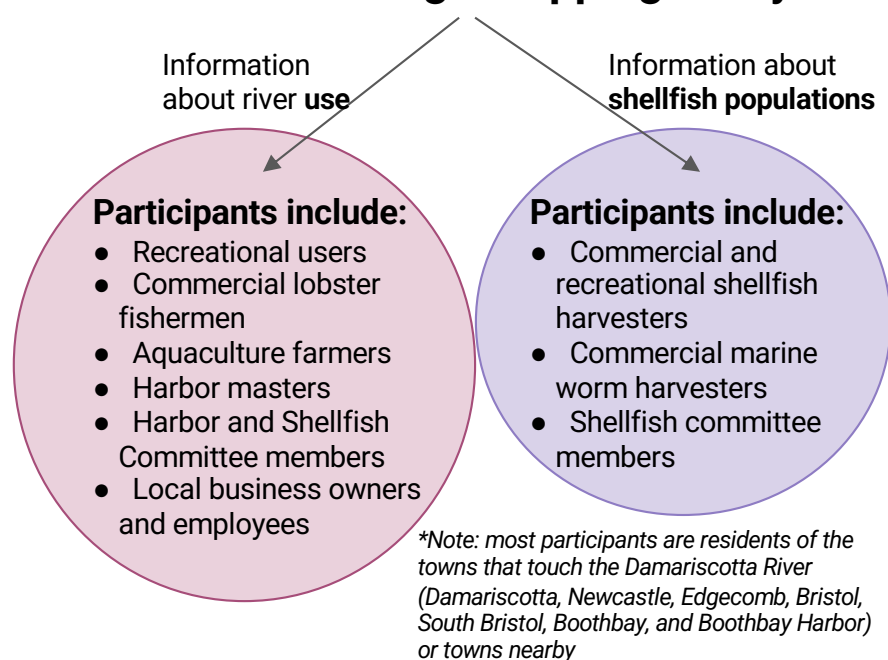
- Study distributed by mail
- Two part study:
  - Mapping Booklet
  - Phone Interview
- Gathering information on:
  - Location and abundance of shellfish and use
  - How the shellfish populations and use in the river have changed





# Participant Overview

## Local Knowledge Mapping Study




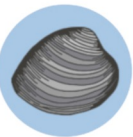




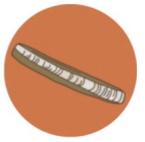

## Participant Description

		USE	SHELLFISH
# participants expected		18	16
# of participants completed		15	9
Gender	M	12	8
	F	3	1
Average age		60	55
Average years of experience		31	35

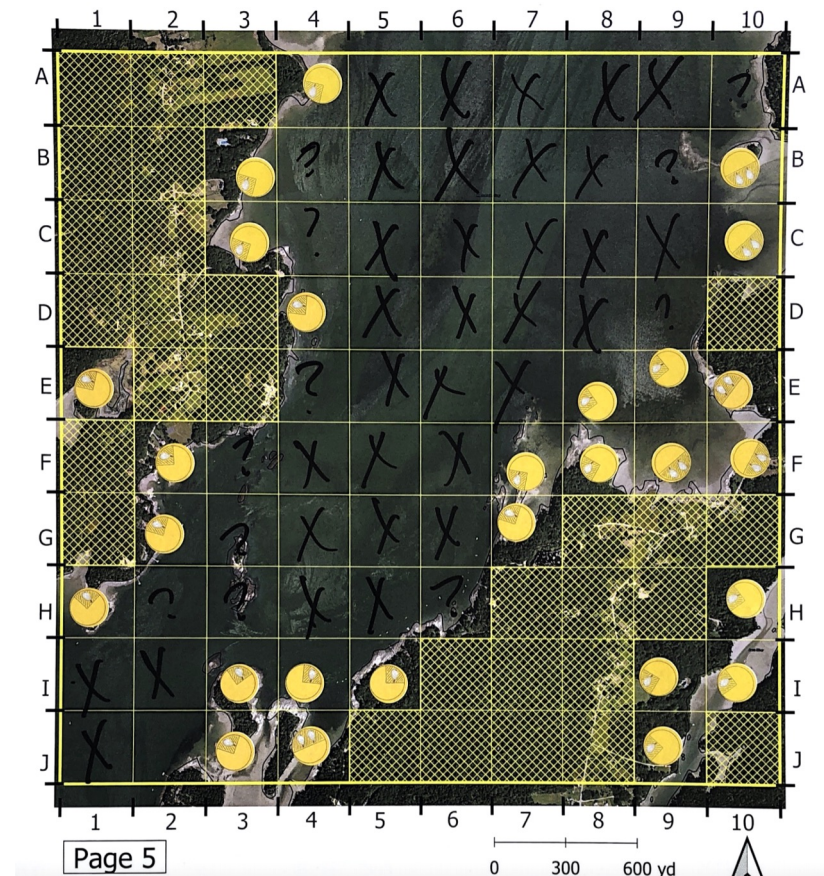


# Example Study Materials

## Stickers for Shellfish participants

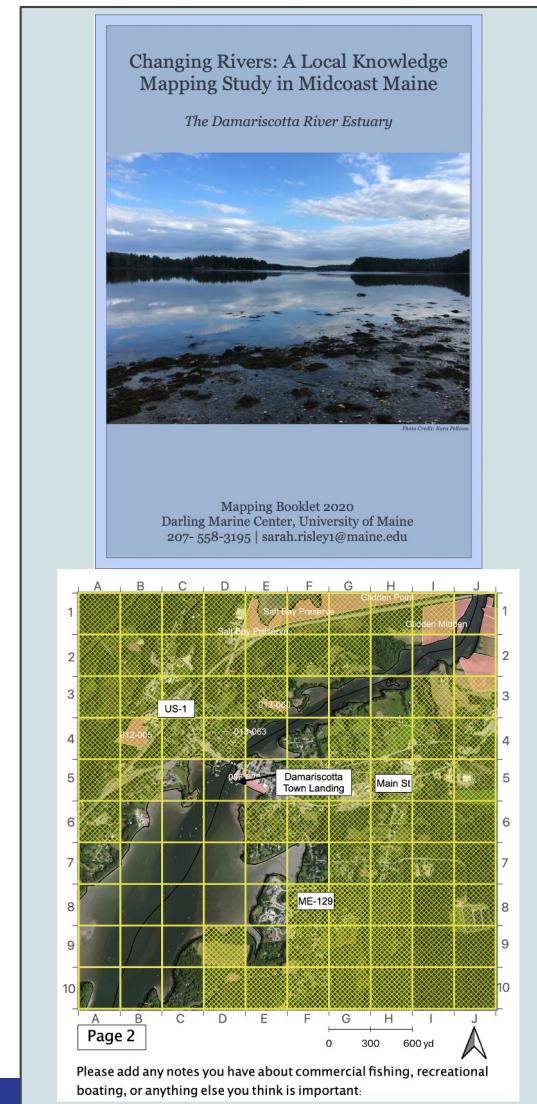
Image	Description	Image	Description
	Softshell Clam Numbers ( <b>Low</b> )		Quahog/Hard Clams
	Softshell Clam Numbers ( <b>Medium</b> )		Wild Oysters
	Softshell Clam Numbers ( <b>High</b> )		Marine Worm Digging
	Razor Clams		Area of Significant Change

## Example of completed Map Booklet page



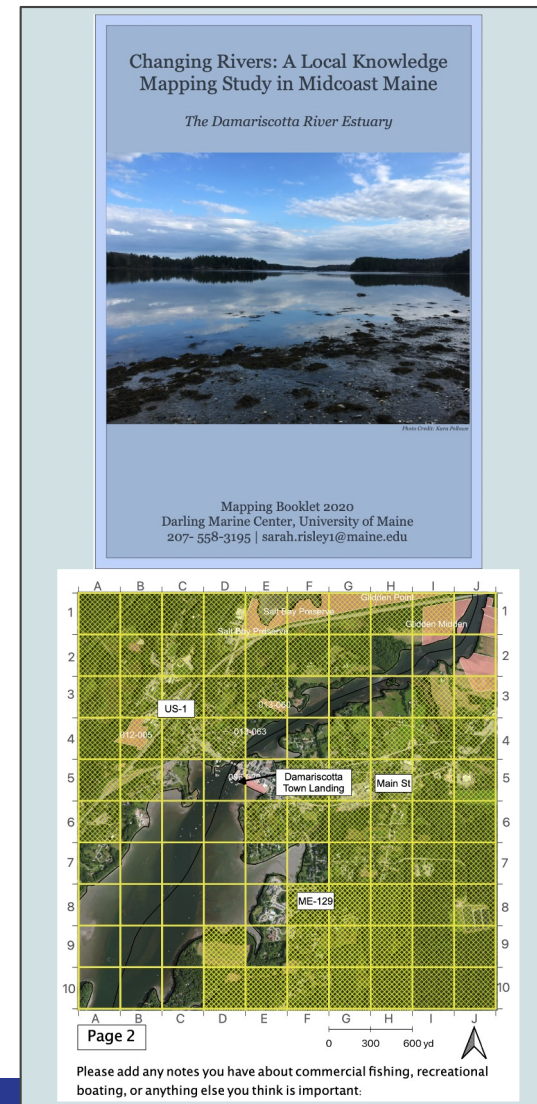
# Study Progress

- 1) Contact potential participants
- 2) Map packet mailed to participants who agreed to participate
- 3) Follow-up interview after map completed
- 4) Data entry
- 5) Data analysis
- 6) Wrap-up and sharing results back to the community, including the shellfish committee



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# Thank You!

- Broad Reach Fund
- Towns of Damariscotta, Newcastle, and Bremen
- NOAA Saltonstall Kennedy Program
- US National Science Foundation
- Study testers & participants
- Undergraduate assistant
- Profs. Heather Leslie & Josh Stoll, and members of the Leslie-Stoll Lab at the University of Maine

## Questions & Feedback

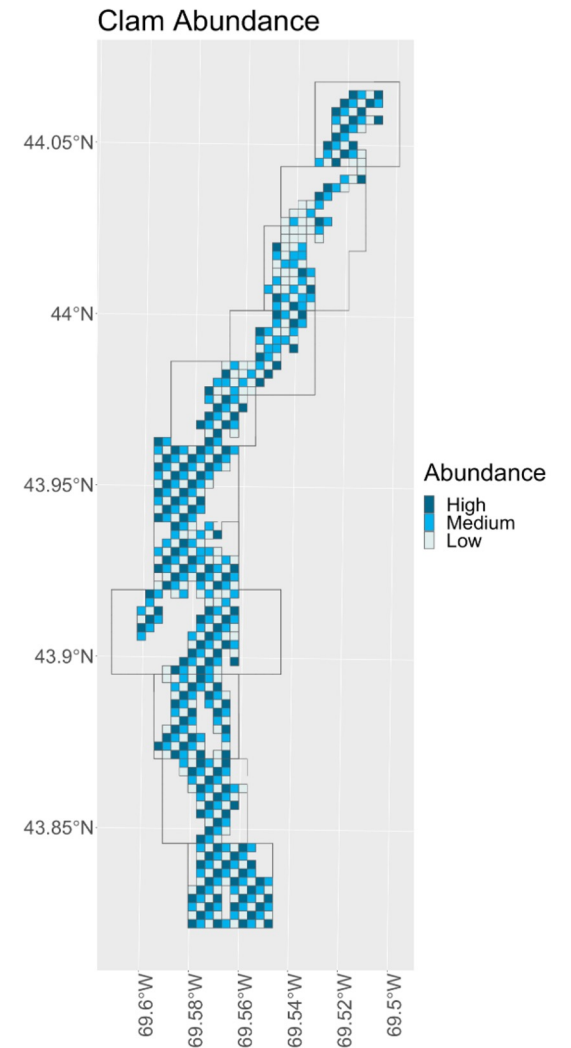
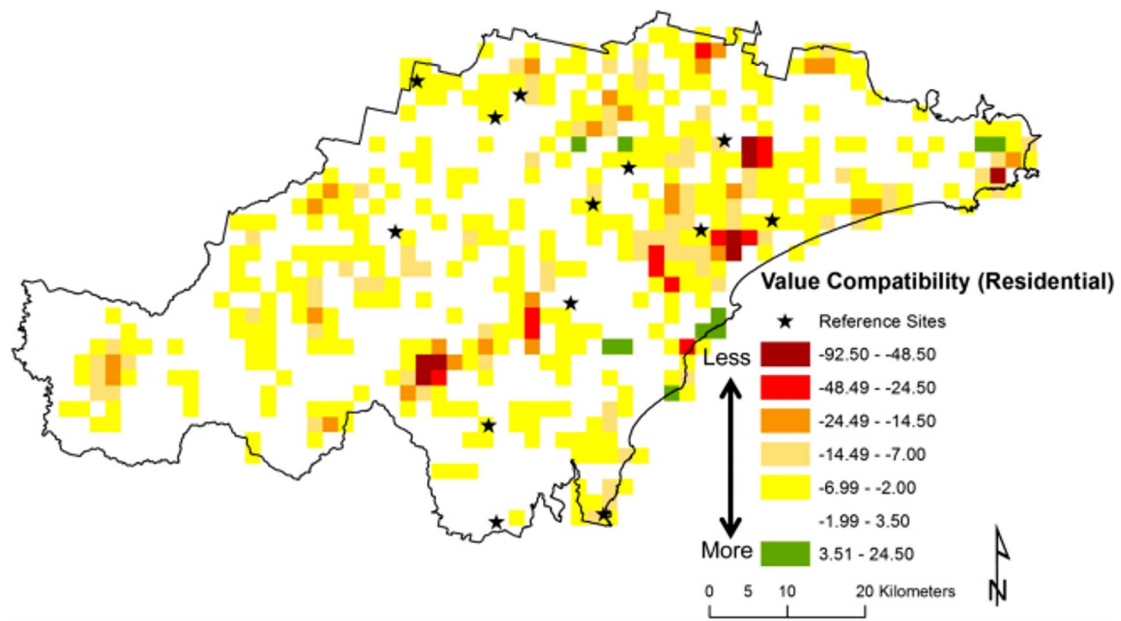
- How do you think this information could be useful for the town?

***Any questions for us?***

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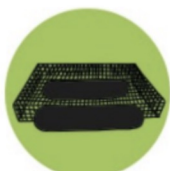

[melissa.britsch@maine.edu](mailto:melissa.britsch@maine.edu)





\*Note: practice map - not real data

# Stickers Use

Image	Description	Image	Description
	Recreational Fishing		Tourism & Sightseeing
	Sailing		Kayaking
	Aquaculture		Area of Significant Change

# Map Pages

