

Harpswell Marine Resources Coordinator
Activity Summary June 20 – July 21, 2014

The following headings detail the work that has been completed by the Marine Resources Coordinator or is ongoing to date:

Ongoing projects

Municipal Predator Control Pilot Project (Strawberry Creek Pilot Project)

The Town approved the conservation closure required for this project, and signage has been placed at the entrance to the cove, with my name and cell number listed if anyone has any questions. An initial shellfish survey was done on July 18 by four RAI staff and three DMR staff, showing extremely low shellfish numbers, no green crabs, and no milky ribbon worms. Traps were placed at the mouth of the cove by David Wilson on July 20, experimental test plots were staked out by RAI staff on July 21, and a pH survey of the entire cove, including initial readings for the test plots, was conducted on July 22. Green crab traps will be tended by Marine Resources Committee volunteers throughout the project period, and RAI will collect the biological data from the hauls. RAI staff will also be monitoring the test plots for pH and larval settlement at least weekly throughout the project period. I will be providing regular updates in my monthly reports to the Town on data as it is collected.



DMR Area Biologist Pete Thayer discusses standardized shellfish survey techniques with RAI staff and two volunteers from DMR on July 18, 2014.

All staff time for this project was donated, resulting in no additional cost to the Town of Harpswell.

Follow-up on Shoreline Survey and Water Quality Work with DMR

After an initial data request to DMR for the most current information on several target areas in Harpswell, which were identified by the Marine Resources Committee as high-priority areas, the DMR provided some tabulated water quality data, and suggested that a more refined request might be helpful.

I analyzed the available data, and refined our request to DMR to five very specific items, which include upgrades to the classification in areas at Brickyard Cove, Strawberry Creek, Indian Rest, Oakhurst Island, and Ash Cove. According to the data that I reviewed, all of these closed areas would qualify for either a full opening, or a seasonal opening. Details of the specific data review and request to DMR are included in the copy of the email correspondence provided in your packet.

Neoplasia studies in soft-shell clams

I had a discussion with DMR Area Biologist Pete Thayer during our shellfish survey work, and we determined that it may be possible to get a small run of neoplasia samples done at no cost through one of the scientists at Kennebec River Biosciences, who has a particular interest in the histology methods used in the last round of sampling. Pete and I will be having a conference call discussion with the researcher this week, and Marine Resources Committee members have already indicated they would be able to collect any samples needed as soon as required.

Recruit and Organize Green Crab Trapping Volunteers

Green crab trapping volunteers are standing by, while we finish up the transfer of loaner traps from the Town of Freeport. Harpswell has entered into an MOU with Freeport to borrow 25 traps at no cost for the remainder of the season; we are working to pin down a date for the final transfer of traps, and hope to have this completed by next week.

Mapping pH in sediments

Following the guidance from the Marine Resources Committee for priority areas, RAI staff completed pH mapping in Spruce Cove (north and south), as well as the west side of Widgeon Cove (east side is scheduled for completion this week). We were prevented from moving ahead on additional areas by the excessive rain during the last several weeks – pH measurements are not accurate after heavy rainfall.

Data points for the two coves have been plotted on maps, which are included in this packet. In Spruce Cove, the southern end looks more favorable for clam survival, and in

Widgeon Cove the central portion of the western shore looks most favorable. In both coves, the pH levels drop approaching any location in the cove that is influenced by a fresh water stream or marshy run-off area. Although we have thus far collected a fairly small data set, the pattern of lower pH near freshwater influence suggests that additional conservation strategies on the land adjacent to these coves, such as adding vegetative buffers and using best available practices to decrease nutrient run-off, might benefit the health of the shellfish coves.

I have not yet arranged for a training session with the Town pH meter for Harpswell staff and interested residents, but I hope to have this accomplished by the next meeting.

Identify Partnership Opportunities

I attended a Bowdoin Coastal Studies Symposium on July 14, 2014, where students were presenting research updates on their projects, which included two talks about green crab impacts in our area. I was able to have a broader discussion with the students, as well as talk with Dave Carlson again about potential future projects. Dave has offered to have genotyping done on a batch of green crabs from our area to help determine which strain of green crabs are here (southern Europe, Islandic, or a hybrid of the two). RAI staff are collecting and archiving green crabs for this analysis, which will be done later in the year by Dave Carlson's lab, as time permits.

Media contacts

I did a brief interview with Jennifer Van Allen from the Portland Press Herald, which appeared in part of a story published on July 12, 2014. The story was not focused solely on the Town of Harpswell, it included green crab work that is being done across the region, but I was encouraged to see that Harpswell is now recognized and included in the general media as an area where ongoing field-work and research is happening. I have provided a copy of the article in your packets.

I have been contacted by a reporter with the Times Record, as well as a reporter from WCSH / Channel 6, who are both interested in coming to do a story about the Strawberry Creek project. I have informed both of them that I will let them know as soon as the project is far enough along so that we have some interesting data to discuss, and some good visuals at the project site. I hope to invite them out to the area in the next month.

Other Activity

I attended a meeting of the Harpswell Conservation Commission on July 16, 2014, and was invited to share information about the marine resources in Harpswell and how we might have some overlapping interest in activities and priorities. I found the group highly engaged and interested in the information that I shared, and I plan to draft up a brief one-page document which helps to highlight some of the unique ecological features of the Town of Harpswell, and may be used in educational materials, as well as to launch talking points and frame potential future projects and efforts that deal with the environment and ecosystem in Harpswell. I firmly believe that the successful future of the marine ecosystems in Harpswell will rely on engaging and educating all of the people in Harpswell who share a connection to the shoreline, including property owners, landscapers who work in the coastal zone, marinas, and shoreline visitors. I hope that creating ties with local groups like the Conservation Commission will help to begin the process.

Subject: WK and WL data
From: Sirois, Alison (Alison.Sirois@maine.gov)
To: darcie.couture@att.net;
Cc: Kohl.Kanwit@maine.gov;
Date: Tuesday, July 15, 2014 8:28 AM

Hello

Apologies for the delay. Final draft reports for 2013 will be ready in August. Here are the tabulated data for WK and WL for the last 5 years and flood results from the July 5th, 2014 event for the Harpswell flood stations. Please pass my contact information on to industry, I am happy to answer any questions they have regarding the flood closure.

As you may or may not know, we met with the shellfish committee this spring and at that meeting they identified priority areas they are most interested in upgrades and access to resource. We have scheduled hot spot work in those areas with DEP this summer and fall. Also we are completing routine survey work for WK this year and if time allows will also target WL. At the end of this year we will be addressing those areas that are of most interest to the committee. Our policy is to work directly with the shellfish committee to identify priority areas and develop annual work plans based on those requests. We strongly encourage/require that a resource survey in some form, be completed to confirm priority areas requested indeed have the anticipated resource and are worth the effort.

Please let us know if you find anything from your investigation around these open approved flood stations.

STATION	LOCATION_N	AREA	7.8.14	7.9.14	7.10.14	7.11.14
WK011.00	Harpswell Sound	WK	260	22	1.9	
WK014.10	Harpswell Cove	WK	31	42	58	29
WK053.00	Card Cove	WK	108	78	84	10
WK060.00	Quahog Bay	WK	52	20	7.3	

Subject: Fw: More info for WK and WL
From: darcie.couture@att.net (darcie.couture@att.net)
To: Kohl.Kanwit@maine.gov;
Cc: keiane@town.harpswell.me.us; NCDAT5@yahoo.com;
Date: Monday, July 21, 2014 5:11 PM

Hi Kohl,

Just to follow-up on the data request in my e-mail from June 19, I wanted to thank you and Alison for sending the most recent tabulated data for WK and WL. I understand from Alison's email that current reports for those areas will not be available until August or even later, so in order to expedite things, I went through the tabulated data that Alison provided, along with the most currently available data from the DMR website, and I thought it might be most helpful to you and easier to have the DMR review these very specific items, rather than to try to get access to a broad range of information and get into a larger, more complicated conversation about these growing areas at this time.

I have the following five specific requests on behalf of the Harpswell Marine Resources Committee for consideration by DMR for immediate action:

1) Brickyard Cove (Pollution Area No. 18, section A.3.)

I reviewed the most currently available report for this pollution closure, which is the WK 2010 Triennial Report. I could not find any identified pollution source, either actual or potential, cited in the report for Brickyard Cove. The verbal information that I received from Harpswell Marine Resources Committee members was that Anna had told them several years ago that there was a new station established, and that there were not enough data points to change the classification. I know that Anna has been gone for several years now, so when I ran the 30 most recent data points for station WK 59.2, it looks like there are plenty of data points now, and the p90 now meets the "Approved" standard for classification; if there is no identified pollution source, and the water quality meets the "Approved" standard, then I would like to request that the section of Brickyard Cove that is currently described in section A.3. of Pollution Area 18 be immediately reclassified from "Prohibited" to "Approved".

2) Strawberry Creek (Pollution Area No. 17-A, section A.3.)

As with Brickyard Cove, I was not able to find any reference in the available

growing area reports for any identified pollution source affecting this area (WK 2010 Triennial Report), and the water quality at stations WK 19.8 and WK 20 seem to meet the "Approved" standard. I would like to request that the section of Strawberry Creek that is currently described in section A.3. of Pollution Area 17-A be immediately reclassified from "Prohibited" to "Approved".

3) Indian Rest (Pollution Area No. 19-A, section A.4.)

In the most recently available report for this area (WL 2009 Annual Report), I found the notation on p. 8 of the report for the downward classification on August 21, 2009, due to the presence of a malfunctioning septic system. Following a discussion with the Harpswell Marine Resources Committee members and a review of printed email correspondence with the DMR and the Harpswell Codes Enforcement Officer, it appears that the septic system issue was remediated several years ago. There are still issues with the water quality scores, which prevent the opportunity for an upward classification to "Approved" year-round, but in reviewing the data set that was made available to me, it looks as though the area would be suitable for a "Conditionally Approved" classification, with a seasonal closure from June 1 - October 31. I did not have access to enough of the older data to run 30 points under the seasonal conditions, so I would like to request that the Department review the appropriate data set, and then determine if the area is appropriate for a "Conditionally Approved" status with a seasonal closure from June 1 - October 31.

4) Oakhurst Island (Pollution Area No. 18, section A.2.)

The area that Harpswell Marine Resources Committee members refer to as "Oakhurst Island" includes the small islands and waters in section A.2. of Pollution Area 18 that are south and east of Bethel Point. In a review of the most recently available report for this area (WK 2010 Triennial Report), there does not appear to be any identified pollution sources in this area. A review of the water quality show that while two of the stations in the area (WK 67 and WK 68.10) meet the "Approved" standard, the other station in that area (WK 68) has some seasonal issues. Given the fact that there appears to be no identified pollution sources, and the water quality meets the "Approved" standard for part of the year, I would like to request a review of this area and a determination if the area could be upwardly classified to "Conditionally Approved" with a seasonal closure from June 1 - Sept 30. This area would be separated from the remainder of section A.2. by drawing a line beginning at the tip of Bethel Point and running east across the mouth of Hen Cove.

5) Ash Cove (Pollution Area No. 17-B, section B.1.)

According to the most recently available report for this area (2010 WJ Triennial Report), it appears that the four identified actual/potential pollution sources in this

area were remediated. Unfortunately, I did not receive the 2013 and 2014 tabulated data for this area, so I used the most currently available tabulated data (2012) to review water quality at the five stations in the Ash Cove area, and although three of them seem to meet the "Approved" standard (WJ 67, WJ 68.5, and WJ 70), there are two stations which have seasonal water quality issues (WJ 67.5 and WJ 68). The season appears to be in the fall, which may suggest issues with migrating water fowl in the area. Based on the data that was available to me, I would request that the Department assess the most current data in their files, and review the potential for an upward classification of Ash Cove from "Restricted" to "Conditionally Approved", with a closed season from September 1 - December 31.

I fully understand that given the fact that some of these reports are several years old, there could have been new issues identified in these areas during that time; I hope that I have provided enough detail and specific review so that I have significantly reduced the time it will take DMR staff to complete a review of these requests. I know that perhaps some of these areas seem geographically small, but I assure you, after the devastation last year from green crabs and milky ribbon worms, local harvesters are literally thankful for every extra acre they might be able to harvest, in the smallest of areas, even if it is only for part of the year.

Please let me know if you have any questions; I would be happy to continue to work with you on these classification changes, including any assistance I can offer with writing an addendum for the change to add to the next report, helping to draft the new boundary descriptions for the legal notice, or going into the field to review/remediate new pollution sources that you may have in your files.

Best,
Darcie

On Saturday, June 21, 2014 8:21 PM, "Kanwit, Kohl" <Kohl.Kanwit@maine.gov> wrote:

We will work on your request and get you the information we have. I anticipate it will take several weeks.

From: darcie.couture@att.net [mailto:darcie.couture@att.net]
Sent: Thursday, June 19, 2014 3:22 PM
To: Kanwit, Kohl
Subject: More info for WK and WL

Hi Kohl,

Kristi shared with me that DMR has acknowledged the letter of authorization from Harpswell, so I will move ahead with more detail in my inquiries now...

There are several areas in Harpswell that Shellfish Committee members have indicated were in a promising situation for an upward classification in the last several years, but which have not changed. Since I don't have a complete history of whatever dialogue may have taken place over time concerning these areas, or changes that may have affected the expectations, I am hoping to get the most current available information from the Department, both reports and tabulated data, for the following four specific areas in Harpswell:

Oakhurst Island
Indian Rest
Ash Cove
Quahog Bay

I would like to be able to review the current status of these areas, and I would welcome any additional insight from the scientists who have worked in these areas, if they have anything helpful to add. I have selected these areas for review based on the promising recollection of individuals in Harpswell who have worked with the DMR to assess them, but I would like to start with having a look at the actual facts and figures as they stand before anyone gets too excited.

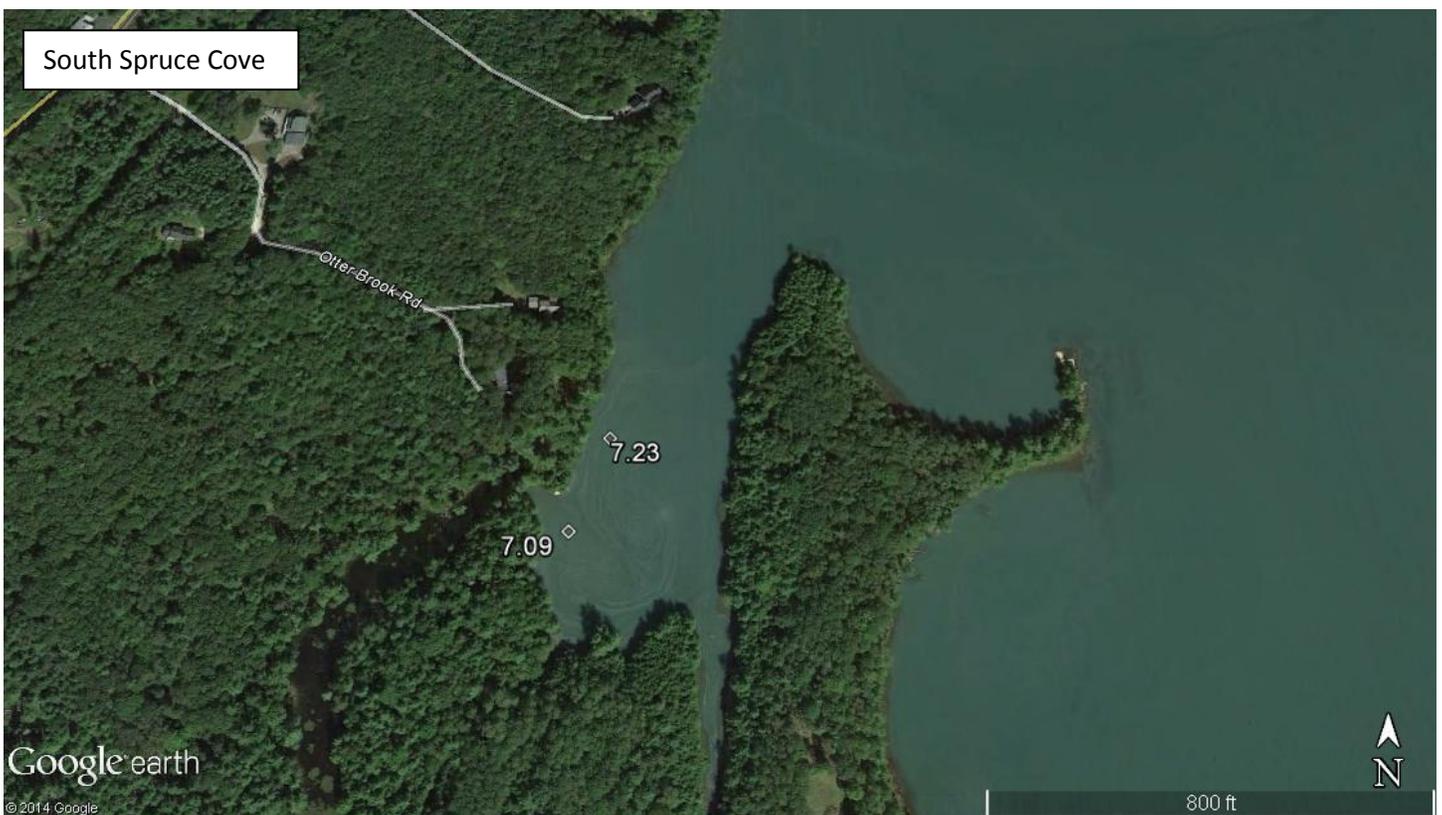
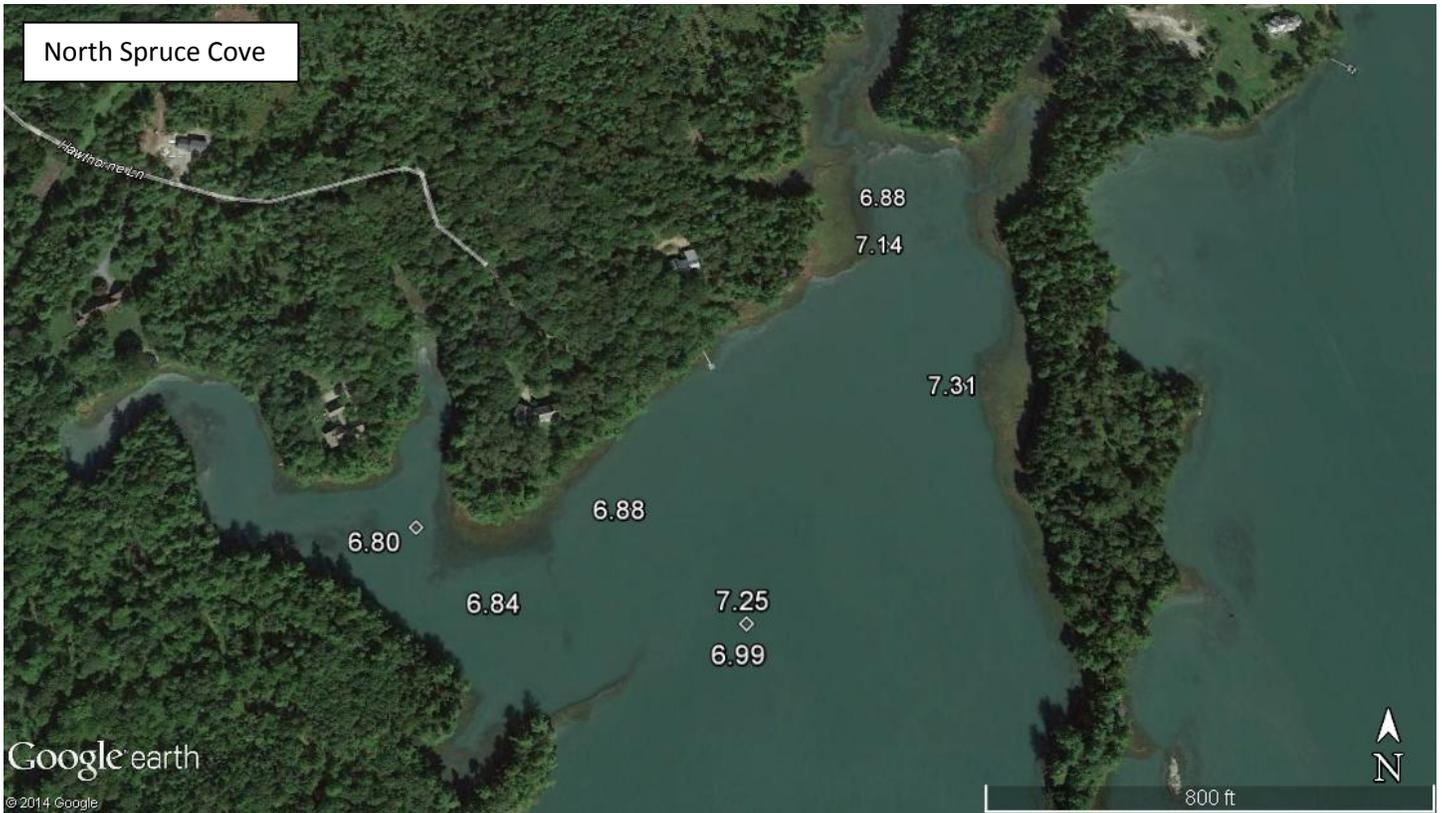
Let me know if you have any questions about this request or need additional details.

Best,
Darcie

Darcie A. Couture
Harpswell Marine Resource Coordinator

Spruce Cove, Harpswell Maine

Avg. pH readings - July 1 - 2, 2014



Widgeon Cove, Harpswell Maine

Avg. pH readings

July 3, 2014



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Maine trying to turn back green crab invasion

 pressherald.com/2014/07/12/some-claws-for-alarm-green-crabs/

By Jennifer Van Allen Staff Writer

Kohl Kanwit will never forget the tiny clicking sound she heard the first time she went to check out the green crab crisis for herself.

“It sounded like a horror movie,” said Kanwit, director of the public health bureau for the Maine Department of Marine Resources. As she crouched on the bank in Freeport for a closer look in the spring of 2013, she saw hundreds of the tiny 10-legged creatures scurrying about. “It was amazing.”

Photo Gallery

Videos





Now, public- and private-sector efforts are underway to prevent a green crab invasion from becoming a real-life horror to Maine's \$17 million soft-shell clamming industry and marine life along the Maine coast.

Green crabs prey on clams and wreak havoc on eelgrass. Although the critters, which can be anywhere from 2½ to 5 inches long, have been reported in Maine for more than a century, scientists speculate that warming ocean temperatures have allowed the crabs to multiply and move north.

Since April 2013, researchers have been trying to assess the damage green crabs are doing and how to effectively eradicate them. In December, hundreds of researchers gathered to discuss the issue at a Green Crab Summit. In February, Gov. Paul LePage ordered the creation of a task force to study their impact and potential solutions.

Four towns are studying the most effective ways to trap green crabs. The Department of Marine Resources is considering changing rules to make it easier to catch them. Meanwhile, entrepreneurs are exploring opportunities to turn the predators into profit by marketing green crabs for everything from fish food to gourmet meals.

"We need to figure out sustainable, cost-effective, long-term solutions to manage this issue so that they don't have a huge impact on marine life," said Kanwit. "The solutions have to be sustainable over the long haul."

Last August, a green crab-trapping survey was conducted over two days in 30 locations along the coast. It confirmed the abundance of the invasive species. Of the 208 traps set, 193 had crabs in them. The findings were presented at the Green Crab Summit at the University of Maine in Orono, where 600 scientists and researchers gathered to discuss the issue.

Since last spring, Brian Beal, a marine ecology researcher at the University of Maine at Machias, has been doing a series of studies in Freeport, tracking crabs and assessing how they're affecting clams in the area. Beal said he's finding about one-tenth of the volume of green crabs that he and his team located this time last year. Some speculate that the winter weather was cold enough to kill off some of the population. But, he said, researchers in nearby areas – as close as Cousins Island – are coming in with hundreds of green crabs per trap and many are smaller juvenile crabs.

"It's a puzzle with a whole bunch of pieces, and we're just beginning to fit those pieces together to figure out what the picture looks like," Beal said. "We don't have a very long record of data to give us a definitive answer."

Marine biologist Darcie Couture, who is involved in a number of green crab projects, has seen a surge off the coast of Harpswell in recent weeks.

“Now that we’ve had a stretch of warm weather, we’re going to see a little spike in the population, though maybe not the millions we saw last year,” said Couture, founder of Resource Access International LLC, a Brunswick-based consulting firm.

Scientists also are trying to determine what impact green crabs could be having on eelgrass, a marine plant that helps maintain fisheries, stabilize sediment and maintain water quality.

A group of federal, state and nonprofit agencies is trapping green crabs at five locations along the coast as part of a larger eelgrass study. A 2013 report showed a 58 percent decrease in eelgrass across Casco Bay since 2001, and green crabs were identified as a primary cause, said Hilary Neckles, a research ecologist with the U.S. Geological Survey, which is spearheading the current study. When the green crabs prey on clams, they dislodge and clip off eelgrass, she said.

Another leg of the effort is focusing on the best ways to get rid of green crabs.

During the most recent legislative session, a bill was signed that paved the way for municipalities to study different ways to control green crabs. Four towns – Freeport, Harpswell, West Bath and Brunswick – are conducting pilot projects, partly to determine if various fencing and netting techniques effectively rein in green crabs.

The Department of Marine Resources is considering rule changes that would make it easier to remove the invasive species. The proposed regulations include eliminating the restriction on taking green crabs caught unintentionally. Lobstermen would no longer need to get a license to sell green crabs, and they wouldn’t have to report what they harvested, as they do now.

There will be a public hearing on the proposed rule changes at 1 p.m. Monday at the Natural Resources Service Center in Hallowell. The deadline for public comments on the proposed rule changes is July 25.

As awareness about the problem has grown, so has the effort to harvest crabs. In 2013, there were 52 licenses to fish green crabs, and 10,596 pounds were harvested, according to preliminary data from the Department of Marine Resources. The year before, 36 licenses were issued and 3,762 pounds landed.

A number of entrepreneurs are looking at potential uses for green crab meat and shells. Christina Fulcher, manager of Bay City Crabs, a seafood processor based in Oriental, North Carolina, traveled to Maine last month to explore the feasibility of processing green crab meat.

Ron Howse, a businessman based in Ellsworth, is also trying to make a market in green crabs. He said he is negotiating to buy a 3,500-square-foot plant in Sullivan to process green crabs, rock crabs, Jonah crabs and lobster. He said he’s planning to hire up to 80 people in the next year, and he has deals with more than 40 fishermen to purchase the crabs. Howse said he has a letter of intent with a frozen food company to buy green crab meat and is working on deals to supply live crabs to companies in Asia.

An Arundel-based businessman, John der Kinderen, got a cluster grant from the Maine Technology Institute to study the feasibility of using green crab meat and shells for a variety of purposes. His company – Waste Not, Want Not – is exploring ways to efficiently extract meat so that it can be eaten or processed for other uses such as food for farmed salmon. He also is exploring the potential to use an extract from green crab called chitin.

“I knew this was a resource that was just waiting to be utilized,” he said, “but we really haven’t even explored all the possibilities yet.”

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