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## Maine Clammers Association Newsletter Winter 2018

Maine Clammers Association

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# Clam Whistler

Newsletter of the Maine Clammers Association

WINTER 2018

## Why are Maine's Clams Disappearing?

Where have all Maine's clams gone? Many of us remember the not so distant past when the clam was king in Maine. Before the lobster boom, clamming sustained our coastal communities. For generations, almost anyone who was willing to work hard could either earn a living or supplement their income through clamming. With a modest investment in a hoe, boots, and a sled, a clammer could get started.

Very sadly, wild clam landings and harvest has dwindled. We used to blame it on the vast closures put in place during the 2000s due to poor water quality. The Maine Clammers Association mobilized clammers to force policymakers and regulators to take actions that resulted in cleaner waters and better water quality testing methods. After statewide clammer action spurred massive improvements in Department of Marine Resources' water quality monitoring, it became clear that water quality was and is not the major problem, the problem is actually reduced clam stocks.

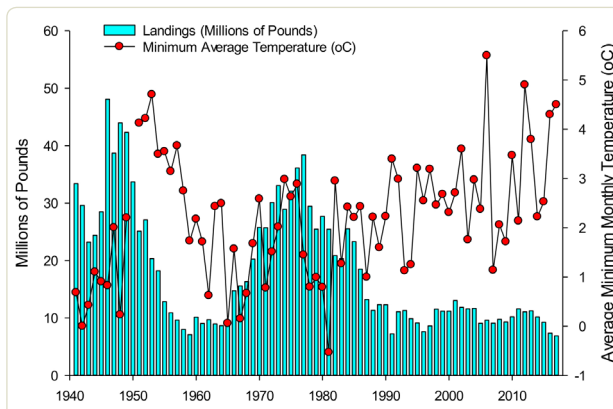
Dr. Brian Beal, the country's leading expert on soft-shell clams, has spent more than 30 years conducting scientific research to find the answer to the question of why Maine's clam populations are declining. Beginning with the eastern Maine clam decline that occurred in the 1980s, from which the region has never fully recovered, and since then, time and time again at locations up and down the coast, Dr. Beal's work has revealed that as seawater temperatures rise, predators such as invasive green crabs are consuming juvenile bivalves long before they reach commercial size. This is largely due to the fact that invasive green crabs thrive in warming ocean waters and have no natural predators to keep their populations in check. In fact, we should consider green crabs to be a permanent part of the marine ecosystem. With warmer waters our ecosystem will never be restored to what it once was.

This should come as no surprise, during an unusually warm period in the 1950's, Maine's clam fishery was virtually wiped out by green crabs. However, the fishery, and many other fisheries, rebounded when ocean temperatures cooled back down over the next two decades. However, since 1983 Maine's ocean waters have been trending warmer. In fact, water temperatures in the Gulf of Maine (GoM) have been rising faster than anywhere on the planet (Pershing et al., 2016). Despite occasional severe cold snaps, Maine's winters have become much milder and shorter (Fernandez, et al. 2015). In fact, over the same time that our ocean waters have warmed, soft-shell clam landings have declined by 75% (Fig. 1; Beal et al. 2016).

Today, the clam fishery is a shadow of what it once was and is in danger of disappearing altogether along much of the coast. In 2017, Maine's soft-shell clam landings were the lowest in 80 years. We can confidently predict that landings will continue to fall as Maine's ocean continues to warm. Unfortunately, the warming shows no

sign of abating. 2018 was the 3rd warmest year in the GoM on record, after 2012 and 2016, running 2.8° F above normal (*Portland Press Herald*, Dec. 6, 2018).

**So what can we do?** First, we know that conservation closures will not save juvenile bivalves that green crabs are wiping out. We need to stop spinning our wheels thinking that conservation closures will have any meaningful impact on this problem. Second, we need to urge politicians and regulators, at all levels of municipal, state and federal government, to act swiftly with respect to climate change. We cannot afford to wait decades and to slowly address climate change. However, given that it is difficult to accelerate climate change policy, we need to adapt now. We need to look promote and adapt clam protection techniques, such as netting, and continue to invest in science that will inform good shellfish policy and management.



**Figure 1.** Maine soft-shell clam landings (1940-2017) (green bars) and average winter minimum seawater temperatures (Boothbay Harbor, ME).



## MESSAGE FROM THE PRESIDENT - Chad Coffin

I am grateful for the opportunity to deliver this informational update to Mainers who work in or care about Maine's clam fishery. The MCA continues to believe that clammers are the experts who will find solutions to adapt to the changing environment. Clammers must be armed with credible and accurate information to adapt to

changing conditions. The information you find may challenge the value of current and past "conservation" methods and surely some will feel offended. However, it is my hope that it will spur debates and strategies that will lead to active efforts to increase production of soft-shell clams for both current and future generations.

Happy Clamming,

*Chad*

## Explaining the Clam Decline Through Science



*Clammers worked with scientists to test different methods of protecting clams from predators.*

In 2013 the MCA teamed up with Dr. Brian Beal and the Downeast Institute to determine why vast amounts of mudflats are no longer producing clams. Over the course of the six years and conducting 36 different field experiments, we sieved over 35 tons of mud through 1mm mesh. We made significant discoveries that can be applied to fisheries management to help save Maine's clamming industry.

**IT'S A FACT!** Maine's clam fishery continues its historic decline, with annual landings hitting an 80 year low in 2017. Many clammers may find it hard to believe that overall clam landings are declining because in some individual cases, clammers have increased their individual catches. Limited entry programs, combined with an aging population of clam harvesters, has in a number of cases led to higher individual catches for some clammers. However, keep in mind that while some clammers are landing more clams, overall there are increasingly fewer active clammers because the resource simply cannot support the same number of active, full-time harvesters that it has in past decades. Ironically, this has proved to be key in helping to preserve

the profession and culture of commercial clamming in many coastal communities, particularly in communities that are fast becoming too expensive for working class families. Although there is some good news here, in that some of the remaining clammers are harvesting more clams and are keeping the industry and tradition alive, the bigger picture is bad news, as overall, long-term declining clam landings has forced more clammers out of the fishery, and new clammers are not able to entry the fishery.

**IT'S A FACT!** In Washington County, water temperatures are warming at a slower rate than they are in other areas of the coast. Interestingly, this "cold zone" is where lobster landings have skyrocketed and some of last significant commercial stocks of blue mussels, scallops and soft-shell clams are found. It's also where field research has demonstrated excellent success in clam enhancement techniques using predator netting. When protected, survival rates of planted clams often exceeds 80%!

**IT'S A FACT!** Ocean or coastal acidification is not a significant source of clam mortality at this time. Extensive field research uncovered that even when we created more acidic sediments, clam survival was three times higher when protected with netting.

**IT'S A FACT!** Overfishing or mortality associated with commercial clamming is not the cause of declines in commercial soft-shell clam populations. That is why misguided regulations that ignore the environmental causes of reduced shellfish populations and only focus on limiting the impacts of fishing have failed to sustain Maine's clam fishery.

**IT'S A FACT!** Methods to increase clam production or survival rates of wild shellfish vary by region and even within the confines of small coastal communities. We often run into people who say things like, "that's interesting for your town, but it's different where we live." What we discovered is what actually makes mudflats in one



*Clint "The Rock" Goodenow pulls a green crab trap with his wife Andrea in 2013.*





Clammer Mike Ashby holds a green crab found in one of the experiment samples.

area different from others and why shellfish enhancement methods may find success in one location but not another.

Mudflats and coastal regions vary in:

- **Water Temperature:** Clams and other native bivalves have a much better chance of surviving to commercial sizes in colder water, which slows down invertebrate predators like crabs.
- **Salinity:** Low salinity can slow or even eliminate the presence of many predators of soft-shell clams. This biological fact places even greater emphasis on the importance of maintaining access to mudflats in upper intertidal embayments or river systems where the last significant shellfish resources are found today.
- **Tidal Height & Flow Rates:** Survival rates for soft-shell clams vary along tidal heights, with survival rates generally highest along the shoreline and lowest closer to the water's edge at low tide.

**IT'S A FACT!** TRAPPING GREEN CRABS DOES NOT PROTECT SHELLFISH. That's because it is juvenile crabs that are the size of a pencil tip or smaller that are eating all the baby clams. Further, green crabs have an overwhelmingly high reproductive capacity. The planktonic nature of their reproductive cycle makes it impossible to have any impact on settling crab numbers, which again, are the crabs that are eating all the baby clams.

**IT'S A FACT!** PLACING ANYTHING on the mudflats (structures, cages, debris or fir boughs/brush) creates additional habitat for predators. Consequently, municipal shellfish programs should avoid this activity when done in the name of conservation. Remember, clams are likely settling onto most intertidal mudflats, but green crabs are simply consuming them before we ever see the clams or the crabs.

#### KNOWLEDGE IS POWER!

Learn more about any of the field research by visiting the following locations:

Beal, B.; Coffin, C.; Randall, S; Goodenow, C. Jr.; Pepperman, K.; Ellis, B.; Jourdet, C.; and Protopopescu, G. 2018. Spatial Variability in Recruitment of an Infaunal Bivalve: Experimental Effects of Predator Exclusion on the Softshell Clam (*Mya arenaria* L.) along Three Tidal Estuaries in Southern Maine. *Journal of Shellfish Research* 37 (1), 1-27.

[www.downeastinstitute.org/research/soft-shell-clams](http://www.downeastinstitute.org/research/soft-shell-clams)

## Did you know?

Large clams have exponentially more reproductive capacity than smaller clams. This is why lowering the legal size to 1.5-inches and implementing an upper size limit to harvestable clams makes sense biologically.

The current 2-inch minimum size limit on clams is a market based consideration rather than as a conservation method. It was put in place in 1985 after Massachusetts shifted to a 2-inch minimum size, and it was no longer possible for Maine clam buyers to ship "undersized clams" into Massachusetts.

Prior to the implementation of any kind of size law, during the 1960's and 1970's when the ocean was colder, Maine's clam industry boomed.

## Maine Clammers Association Santa Fund



The MCA Santa Fund is still at it working to bring gifts and assistance to families and people in many different areas of the Maine coast. The generosity of some of our dearest friends and families, as well as the less fortunate circumstances we find of others in our communities humbles all of us. The MCA would like you to know that although

you may be receiving this letter after the Christmas holiday, anytime is a good time to support the MCA Santa Fund. Thank you so much for allowing clammers to maintain a positive connection in Maine's coastal communities through the true joy of giving. Merry Christmas and Happy New Year!

## Please Consider Donating to the Maine Clammers Association

Your generosity allows the MCA to reach out and brighten the lives of Mainers all year round. It also helps us continue to advocate for measures that work towards the long-term sustainability of the profession of clamming.

### We need your help.

Renew your membership by donating today. Use the enclosed envelope or give online at: [www.maineclammers.org/give](http://www.maineclammers.org/give).



One of our clammer elves delivering presents in Waldoboro.



Keep Our Waters Clean!  
MAINE CLAMMER'S ASSOCIATION

### Maine Clammers Association

[www.maineclammers.org](http://www.maineclammers.org)

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### Board of Directors

Chad Coffin, *President*


Walt Coffin, *Vice-President*

Clinton Goodenow, *Treasurer*

### Scientific Advisor

Dr. Brian Beal

Design & Printing: *Partners Printing*

Follow us on 



Bob Crocker loading up after a hard day's dig.



Clammers are a vital part of Maine's coastal culture.

## Special Thanks to our Most Generous Supporters

Bessie's Farm Goods

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Kim & Elizabeth Housewright

Alice Ingraham

Rachel Meinart and her elves