

EAST COAST SHELLFISH GROWERS ASSOCIATION



The East Coast Shellfish Growers Association represents more than 2,000 shellfish farmers from Maine to Florida and the Gulf states. These proud stewards of the marine environment produce sustainable, farmed shellfish while providing thousands of jobs in rural coastal towns.

The ECSGA informs policy makers and regulators to protect a way of life.

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From the President Fear the Winter



President
Jeff Auger

Time to put the farms to bed. Up here on the Northeast Coast we have all begun (or finished) preparing our farms for winter. Cages are being sunk, gear is coming onto land, and oysters are either being planted safe on the sea floor or packed tightly away in our winter cellars (have you read about over-wintering oysters on ECSGA.org yet? It's under the Grower Resources tab

ecsga.org/wp-content/uploads/2020/07/Over-wintering-oysters.pdf). We expend all this effort to prepare for a winter that may or may not bring ice to our leases in the coming months.

Every fall it's natural to try and convince ourselves that we won't need to undertake the work involved to adequately prep our farms. After all, winters have been warmer lately, with significantly less ice than we've had before, and it can seem unnecessary to move hundreds or even thousands of pieces of gear off our leases for a few inches of ice that may not even come to pass.



JEFF AUGER

Fear the winter. My first job on an oyster farm involved hauling twisted metal that had been buried in the sand by icebergs from the previous winter. I have seen Oystergro® cages effortlessly break free when ice sheets only a few inches thick collide with them. If you are new to the industry, I urge you to heed the advice from ECSGA's Best Practices Manual (also found under the Grower Resources tab, ecsga.org/best-practices): "talk to other growers or extension agents in your area to learn about what to expect in the winter."

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New Rules Could Burden Growers

by Robert Rheault,
ECSGA Executive Director

The National Marine Fisheries Service (NMFS) published a [Federal Register announcement](#)¹ on September 24, 2024, proposing new rules on shellfish and kelp aquaculture (as well as dozens of marine fisheries) describing how growers should deal with the provisions of the Marine Mammal Protection Act (MMPA).

The proposed rule categorizes certain types of shellfish farming and regional practices according to what NMFS perceives as risk of injury or mortality of marine mammals. The classification of a fishery on the [List of Fisheries](#)² determines whether participants in that fishery are subject to certain MMPA provisions regarding registration, permitting, fees, observer coverage and take-reduction plan requirements.

The classifications are:

Category I: frequent incidental mortality/serious injury of marine mammals.

Category II: occasional incidental mortality/serious injury of marine mammals.

Category III: remote likelihood of or no known incidental mortality/serious injury of marine mammals.

Regulatory implications

Owners of vessels or gear engaging in a Category I or II fishery are required under the MMPA to register with NMFS and obtain a marine mammal authorization to lawfully take marine mammals incidental to commercial fishing operations. The take of **threatened or endangered marine mammals** requires additional authorization under the Endangered Species Act.

Owners of vessels or gear engaged in a Category III fishery are not required to register with NMFS or to obtain marine mammal take authorization. The definition of "take" can include any activity that interferes with what a marine mammal



NOAA FISHERIES

An endangered North Atlantic right whale breaches. Although aquaculture operations are not actually fisheries, and whales are rarely—if ever—spotted near shallow, inshore shellfish farms, proposed regulations could require growers to obtain permits to lawfully take marine mammals incidental to commercial fishing operations.

might be doing—or even merely approaching too closely.

Most of our gear types are currently classified as Category III, but mussel rafts in Maine, and the so-called "long-line aquaculture fishery" (including suspended gear and floating cages)

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Member Spotlight Saltbox Sea Farm

by Mason Bailey
ECSGA Executive Assistant

On a brisk October morning I set out with Matthew Griffin on his boat from the town dock in Wickford, Rhode Island. I am not a stranger to the water, but as a Kentucky native, I am unfamiliar with the day-to-day activities of an oyster grower. I stood on the boat as we motored for 15 minutes out to scenic Narragansett Bay, with my iPhone's notes app at the ready. After completing the customary small-talk and bonding over our similar ties to the Gulf Coast, Matt and I delved into an illuminating conversation about shellfish farming.

Matt got started in the business while earning his bachelor's degree in marine biology at the University of Rhode Island. There he worked with the National Oceanic and Atmospheric Administration (NOAA) on shellfish restoration projects after the North Cape Oil Spill, which had devastated the ecology of Narragansett Bay in the late 1990s. In 2007, he was at the Rhode Island Department of Environmental Management's (DEM) Division of Marine Fisheries,



MASON BAILEY/ECSGA

The floating gear on Saltbox Sea Farm's 8-acre lease in Narragansett Bay regularly sees 4-foot waves, resulting in naturally tumbled oysters with strong shells and deep cups.

working on lobster and menhaden stocks. He bounced back and forth between DEM and NOAA, serving as a project assistant director at the latter, before becoming an adjunct professor and researcher at Roger Williams University in 2011. In his role monitoring shellfish restoration and as an aquaculture extension agent—getting close with farmers—Matt realized he wanted to work with his hands “using a scientific mind and putting that to production with growing.”

Starting with a 1-acre lease in 2016, Matt raised oysters, expanding his operations gradually until working on 9 acres full-time since 2021. His company, Saltbox Sea Farm, uses 8 acres for floating gear in 20-foot-deep open waters and 1 acre for bottom trays in a shallow cove of the Sakonnet River. I toured the portion of the lease with floating gear, where Matt says his oysters experience “4-foot waves on a regular basis, really knocking them around, making a great product.”

Saltbox is a locally channeled business, with a 60% wholesale/40% retail split. Just four employees maintain 512 cages on 4 acres of the floating lease, and nearly 300 trays in the 1-acre, shallow lease, which is relatively dense for these types of operations.

“We realize it's a privilege to be here in public waters, so we try to take up the least amount of space while being the most productive,” Matt said. Productivity and efficiency are key for Matt, who explained that he “never invested much time in marketing; we have built this business slowly and steadily. Our strategy is to provide high-quality and consistent products while building trustful relationships with our customers. We don't operate flashy and fast.”

It's clear to me that his approach is paying off, especially after taking a break from our interview to taste an oyster or two fresh from the water. Once I reviewed the configuration of his oyster cages and bags (including the critical stocking densities) and received a quick shucking lesson, we cheers-ed and



MASON BAILEY/ECSGA

Saltbox Sea Farm owner Matt Griffin explains oyster-shell structural integrity on his floating gear lease in Narragansett Bay.

slurped down some delicious oysters. I was clearly impressed, but Matt assured me that he doesn't pretend to have it all figured out.

“The biggest challenges we face from year to year are from hard-bodied fouling organisms [mussels and barnacles]. We work hard to catch them and air-dry them quickly and adequately, but the different organisms set during different cycles, so treating everything at just the right time is tough.”

Thankfully, Matt doesn't have a problem with birds on his gear, unlike some growers. Even when the terns are migrating through the area, his oysters receive plenty of flushing from the water movement.

After stopping to greet his two harvesters, we made our way back to the dock. I was curious about what Matt envisioned for the future of this industry, and it was evident that he has confidence in it. “There's been a lot of fast growth, which can be scary, but I see more markets opening—especially as untapped markets inland open up. I also foresee more species diversification on farms, increasing productivity and efficiency on the same footprint.”

As a passionate industry professional, Matt is a member of the Ocean State Aquaculture Association and is Rhode Island's grower representative for the ECSGA. He is glad to support the ECSGA because “it's really nice to have an outspoken intermediary, as it's hard to be a farmer and an effective political advocate at the same time.”

Back at the dock I thanked Matt for his time and the tour of Saltbox Sea Farm, where he would soon return for the rest of the workday. As I walked back to my car, content with a new wealth of shellfish aquaculture knowledge and even more proud to be part of the ECSGA's intermediary force, I twisted my first oyster knife in hand—a parting gift from Matt.

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How Might the Trump Administration Affect Shellfish Farming?

by Robert Rheault,
ECSCGA Executive Director

Almost every shellfish farmer will tell you that the primary impediment to industry growth is over-regulation. The incoming Trump administration has promised to take a fire axe to the administrative state and the regulatory climate, but as with any changes, there are likely to be pluses and minuses with this approach.

On the plus side, the Farm Bill should finally start moving again now that the Republican majority won't have to argue about preserving the Supplemental Nutrition Assistance Program (SNAP). With any luck, crop insurance programs and some of the measures we have been supporting will survive. Specifically, we are pushing for lifting the Adjusted Gross Income cap on crop-insurance eligibility and forming an Office of Aquaculture in

the U.S. Department of Agriculture (USDA) to coordinate programs (the SHELLs Act). We are also hoping that the USDA's Agricultural Research Service remains intact so that our Oyster Breeding Project can continue to work on improving disease resistance, and tolerance to heat waves and intense rain events.

Lawmakers are talking about clawing back \$13 billion in as-yet-unspent dollars allocated for Climate-Smart Agriculture, which can be accomplished through budget reconciliation without Democratic votes. These cuts will impact the conservation titles of the Farm Bill Environmental Quality Incentive Programs (EQIP), which has supported oyster restoration in many states. Drafters are also eyeing cuts to the Commodity Credit Corporation, which funds crop insurance.

I am concerned that Robert F. Kennedy, Jr., who as of this writing has been put forward for Secretary of Health and Human Services, says he wants to "eliminate several entire departments of the FDA." We must work to make sure the Shellfish Branch is not eliminated, since their research is crucial in determining how to avoid pathogen



MARTIN FALBISONER/CC BY-SA 3.0

risk. If regulations on shellfish sanitation are loosened, I fear that even slight increases in illnesses could tank consumer confidence, destroy our markets and collapse prices.

The Clean Water Act of 1972 and the investments made in improving wastewater treatment and restricting the use of oceans as dumping grounds have made more of our waters fishable, swimmable and suitable for shellfish farming. I hope that the proposed evisceration of the Environmental Protection Agency (EPA) doesn't reverse that trend, but I suspect that a gutted agency will lead to a much longer permitting process and cut-backs on enforcement. On the one hand, I would love to see permits become easier and faster to obtain, and I could make suggestions on how to fix certain regulations, but I fear that permitting will grind to a halt with fewer staff and scientists on the job.

In the rush to kill climate science and to privatize NOAA's National Weather Service it's important to note that accurate hurricane forecasts have saved countless lives and

helped us prepare for storms, saving millions of dollars in storm damage. Shellfish farms will continue to bear the brunt of climate change impacts no matter who is in office. Maybe if we can reframe the discussion to "bad weather and increasing storm intensity" instead of "global warming and climate change," we can preserve some of the climate measures the previous administration funded in the Inflation Reduction Act. I was personally a big fan of moving away from fossil fuels after suffering through several big oil spills in Rhode Island, and I fear for future generations if we can't curb carbon emissions, but I have to admit that warmer winters are nice for everyone who works on the water.

It is one thing to lay off regulators and scientists at the FDA, EPA and NOAA, but remember that if we don't change the statutes first then there won't be staff in the agencies to write the permits that you need. For instance, your Army Corps of

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What do PFAS Mean for Shellfish Farmers?

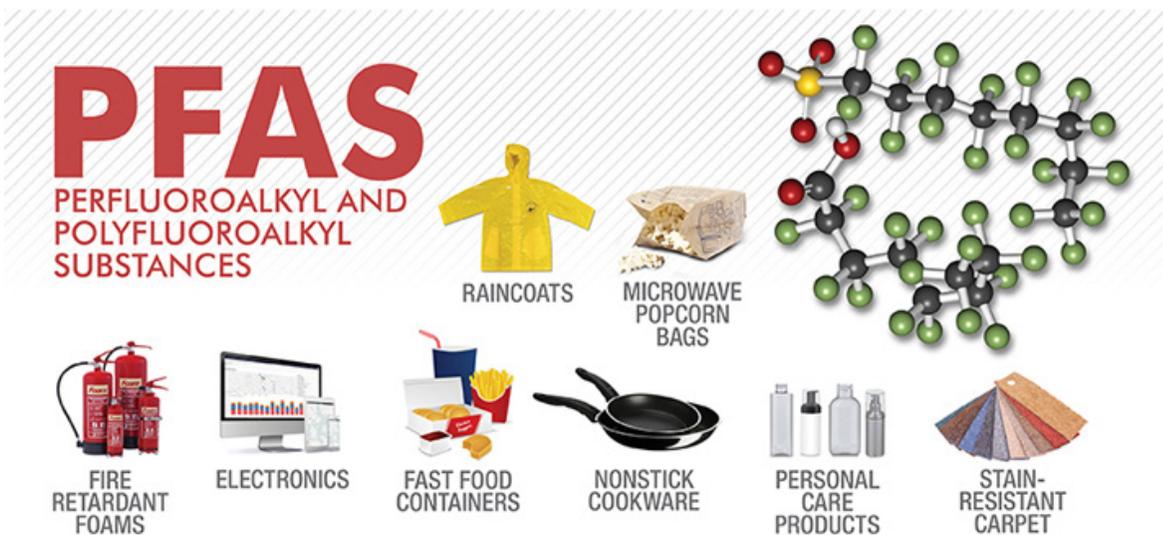
by Robert Rheault,
ECSCGA Executive Director

Per- and polyfluoroalkyl substances (PFAS), sometimes called GenX chemicals, encompass thousands of synthetic compounds that have been used in industrial processes and consumer products since the 1940s. They are sometimes called “forever chemicals” because they are hard to break down due to the strength of the fluorine-carbon bond. PFAS are used in firefighting foam, stain-resistant fabrics, water-resistant fabrics, non-stick cookware and some consumer packaging.

The Environmental Protection Agency (EPA) is rolling out new limits on PFAS in drinking water and looking at what these chemicals are doing to aquatic organisms, while the Food and Drug Administration (FDA) is trying to determine appropriate limits for PFAS in foods. As consumers start to hear more about forever chemicals, you can expect these agencies to field a lot of questions from the public.

It is important to state up front that I am unaware of any commercially harvested shellfish from U.S. waters showing PFAS at levels determined to be a potential health risk. Our regulatory system works and our products are safe.

PFAS have been found in the drinking water of nearly 2,800 communities nationwide. Of the many chemicals in the class, six have



been shown to be carcinogenic or teratogenic (causing birth defects) even at very low levels. Regulators are scrambling to determine how widespread the problem is and what can be done to remediate affected areas.

PFAS contamination has been found mostly around military facilities or airports where firefighting foam is stored, or in biosolids taken from wastewater treatment plants. The FDA has started to investigate the food supply, and in their initial sampling of 810 food products the agency found that only 23 contained detectable levels of the chemicals. Since seven of these foods were seafood, it triggered another round of more intensive seafood sampling.

In 2022 the FDA tested some of the most popular seafoods consumed in the U.S. While most levels were quite low, two samples of canned clams from China tested

alarmingly high, initiating a recall based on the assumption that there would be a potential health concern for consumers who eat more than approximately 10 ounces (oz.) of these clams per month.

Most of the shellfish tested in North America had undetectable PFAS levels, but in a literature review of various studies published on clams from around the world, a few clam samples from China and Europe came in at 20–100 ppb PFOA (perfluorooctanoic acid). This triggered another round of sampling and data collection by the FDA to get a handle on how widespread the issue might be in the U.S. Meanwhile the agency continues to develop recommendations of dietary consumption limits.

Until PFAS dietary guidelines are developed it is impossible to say where we are headed, but it is alarming to hear that some envi-

ronmental groups are claiming that any detectable amounts are dangerous. (This is not what toxicological studies are revealing!) The good news is that most of the sampling done in the U.S. is not detecting PFAS in shellfish. The bad news is that if you go looking for problems in areas next to wastewater treatment plants or naval airbases you are likely to find them.

Adjacent to the former Brunswick Naval Air Station in Maine are two ponds that had been contaminated with PFAS-containing firefighting foam. Sampling of ribbed mussels (a species that is not commercially harvested) at the mouth of the stream in 2020 revealed PFOS (Perfluorooctane sulfonate), and PFBA (Perfluorobutanoate) levels as high as 0.8 ppb wet weight.

Reassuringly, these PFAS were not detectable in edible blue mussels sampled a mere 3 miles away or in softshell clams sampled in the cove near the outlet

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Marine Mammal Rules

were proposed to be classified as Category II. If adopted, the rule will require vessel registration, permitting and fees for growers.

The ECSGA hastily set up meetings with the Pacific Coast Shellfish Growers Association (PCSGA) and the National Aquaculture Association (NAA) to coordinate a response to the proposed rule. I want to emphasize that Paul Zajicek of the NAA was instrumental in helping us develop our comments.

The ECSGA board coordinated on submitting a public comment that included:

1. Explaining that we see no evidence of our gear causing marine mammal injuries or entanglements.
2. Requesting an extension of the comment period (which was granted).
3. Requesting a workshop with the Office of Protected Resources so we can better understand their concerns and help them to see why our gear is not similar to deep-water trap fisheries.
4. Questioning whether NMFS has the authorization to regulate aquaculture as a “fishery by analogy” and pointing out the MMPA statutory language allowing NMFS to regulate fisheries (but not aquaculture).

We dispute that NMFS has the authority to regulate shellfish farms under the MMPA, because we are not a “commercial fishery” (Section 101(a)(2) page 9; Section 104(a) page 22). We asked that aquaculture activities be removed from the List of Fisheries because aquaculture products are not “stocks of fish” or a “fishery” under federal law. Since several court decisions have determined that aquaculture is not “fishing,” we fully expect that if we were to end up in court again that precedent would stand.

We were able to gather public information from NOAA’s Office of Coastal Management and the National Centers for Environmental Information’s (NCEI) Coastal Relief Models showing the locations of shellfish farms along the East and Gulf Coasts. The vast majority (93%) are in

waters less than 6 meters deep, and 72% are in waters less than 3 meters deep, with most being in shallow coastal embayments.

In our submission we noted that oysters are filter feeders that grow best in rich, eutrophic, coastal waters and are not commonly farmed offshore. We rarely, if ever, observe whales (especially right whales) near our farms. While we might occasionally see seals, dolphins or manatees, we do not believe that our gear is likely to cause entanglement or injury for these species, nor are we aware of any evidence that this is happening.

Regarding the two categories of aquaculture that were proposed to be listed as Category II “fisheries”—longline aquaculture operations and mussel rafts—we pointed out that these require the use of thick lines moored between two anchors under heavy tension (as recommended by Price *et al.* 2016), making it nearly impossible to entangle a mammal. Price showed that longline mussel farms have been implicated in only 15 marine mammal interactions globally in the past 42 years.

We also noted that we have strong evidence that our farms improve water quality, provide excellent fish habitat, and increase biodiversity and fish productivity. We acknowledged the efforts of NMFS to preserve marine mammals and limit negative interactions with shellfish farms and our gear. However, we are not aware of any marine mammal injuries or mortalities caused by our farming practices.

We will continue to seek meetings with the Office of Protected Resources to see if we can allay their concerns and avoid unnecessary regulations.

Notes

1. Visit www.regulations.gov/search?filter=NOAA-NMFS-2024-0037. Click on the first box to read the updated proposed rule. To submit a comment click on the “Comment” icon in the second box, complete the required fields, and enter or attach your comments before the 12/1/24 submission deadline.
2. www.fisheries.noaa.gov/national/marine-mammal-protection/list-fisheries-summary-tables

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“We are hopeful that there is a future for oyster farmers, but that really depends on whether we prioritize sustainable sources of protein.”

*Sarah Malinowski, Fishers Island Oyster Farm
Fishers Island, New York*

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Under the Surface: Unraveling the Impact of Algal Oxylipins on Oyster Hatcheries

by Samantha Glover, M.S.
Research and Development Director,
Oyster Seed Holdings, Grimstead, VA

Recap: Oyster Larval Production Issues

In 2020, Mook Sea Farm in Maine began noticing significant issues with larval development, including delayed growth and feeding problems (evident by undigested algal cells), which led to poor production. Similar symptoms were observed again in 2021, 2023 and 2024, not only at Mook Sea Farm but also at other hatcheries along the East Coast. Bioassays conducted at Mook in 2020 established a link between these symptoms and the UV-treated water used for rearing larvae (see [ECSGA Newsletter, October 2021](#), by Dr. Meredith White).

The current hypothesis suggests that UV sterilization may inadvertently increase concentrations of oxylipins in the water. Oxylipins are oxidized forms of polyunsaturated fatty acids (PUFAs). PUFAs are released and enzymatically oxidized by some phytoplankton, mainly diatoms, in response to stresses such as grazing by copepods ([Pohnert, 2002](#)). Some oxylipins are known to decrease copepod egg viability, leading to reproductive failure in copepods ([Collins et al., 2018](#); [Lauritano et al., 2016](#)), and to halt sea urchin larval development ([Miralto et al., 1999](#)).

Our Experience

At Oyster Seed Holdings, we have encountered similar feeding and development issues with our larval cultures during different times of the year over the past few seasons. These problems have occurred despite the absence of visible water quality issues, algae culture problems or

broodstock concerns. In early 2024, we observed feeding and growth difficulties in our larval cultures that coincided with a bloom of *Pseudo-nitzschia delicatissima*, first noted in mid-January during sampling for the NOAA Aquaculture Phytoplankton Monitoring Program. This species of diatom has the potential to produce domoic acid, a toxin that causes amnesic shellfish poisoning (ASP) in humans and that can be fatal.

While this particular bloom was not producing domoic acid (based on testing by the Virginia Department of Health and the Virginia Institute of Marine Science), we hypothesized that using UV light to treat hatchery water during the bloom was adversely affecting our larval cultures. This theory was informed by the bioassay data collected at Mook in 2020. After we stopped using UV-treated hatchery water, larval feeding and growth improved, despite the bloom persisting until mid-April. This supports the hypothesis that PUFAs are inadvertently being photo-oxidized to oxylipins in the UV treatment of hatchery water.

Ongoing Research

Currently, our hatchery is part of a NOAA Fisheries Saltonstall-Kennedy Program research project led by Dr. Juliette Smith's lab at the Virginia Institute of Marine Science and Dr. Bethanie Edwards at the University of California, Berkeley. Over the past two hatchery seasons (2023–2024), we have collected various water samples to support analyses aimed at better



SAMANTHA GLOVER/OYSTER SEED HOLDINGS

D-stage larvae with feeding issues during the *Pseudo-nitzschia* bloom. Photo on right shows undigested algal cells in the gut.

understanding the types and concentrations of oxylipins during periods of poor larval performance, as well as during normal conditions. During the bloom period, we increased our sampling frequency to gather as much data as possible on the diatom species involved, the oxylipins being produced, and how their concentrations change over the course of the bloom. All of the collected samples are currently being analyzed, and our next steps will involve conducting bioassays and developing protocols to help hatcheries adapt to and manage oxylipin-related challenges when they arise.

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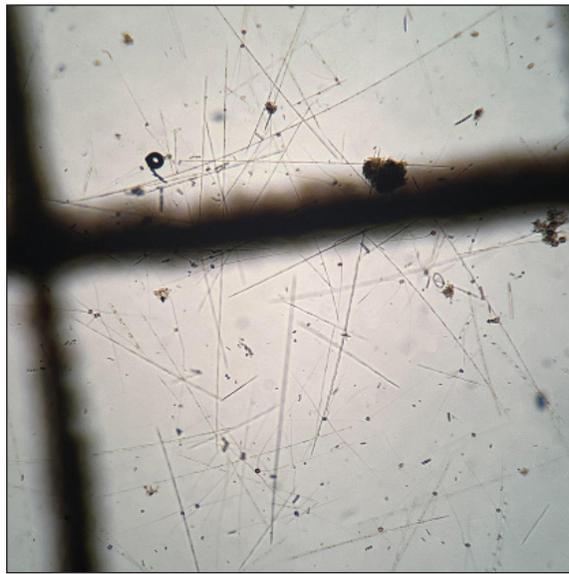
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Oxylipins Impact on Hatcheries

Emphasizing the Importance of Industry Collaboration

The success of our industry depends heavily on access to reliable, high-quality seed. Hatcheries are vulnerable to environmental changes, and with the ongoing shifts in climate, new challenges will continue to emerge. As Mook Sea Farm highlighted in their previous article, it is essential for hatcheries to communicate openly with one another and with researchers in order to develop effective solutions to the environmental issues we face. Given the many unanswered questions about the impact of oxylipins on larval oysters, collaboration and communication are key to strengthening our case and securing the funding needed to address these issues.



SAMANTHA GLOVER/OYSTER SEED HOLDINGS
Microscope photo (100x magnification) of the *Pseudo-nitzschia* bloom.

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PFAS and Shellfish

of the stream. The area near the mouth of the creek has always been closed to harvest due to other legacy pollution issues, and the Maine Department of Marine Resources expanded the closure area when an accidental spill of aqueous film forming foam (used in firefighting) occurred in late summer 2024. The Navy is remediating the site and sampling is ongoing.

PFBA is described as a “ubiquitous breakdown product of stain- and grease-proof coatings on food packaging, couches, carpets, etc,” and appears to have been found in trace amounts (<0.03 ppb) at several sites. [Toxicological studies](#)¹ indicate that chronic and short-term exposure to PFBA below 7 ppb is not likely to have health impacts.

In 2020 blue mussels sampled near the Pease Air Force base in Portsmouth, New Hampshire, revealed PFOS levels of 0.4–1.6 ppb. **Thankfully, we have rafts of data showing that PFAS**

are not detectable in the vast majority of samples tested. We don’t tend to grow shellfish near wastewater treatment plants or airports. In fact, the National Shellfish Sanitation Program requires waters to be classified as “prohibited” around point sources of pollution for reasons including chemical contaminants.

Many questions remain. Are PFAS more likely to accumulate in sediments as heavy metals do, or in the surface layer like aromatic hydrocarbons? Are they lipophilic and likely to bioaccumulate in lipid-rich fish and shellfish? Do tissue levels decline over time if shellfish are in PFAS-free waters, or are they persistent? Are there regional differences?

A massive amount of work still remains to be done in determining which of the most common PFAS chemicals have measurable health impacts. Which ones might impact aquatic or terrestrial animals?

Then there are dietary questions that the FDA will need to

consider: How often do most people eat shellfish? What is the common meal size? Do people typically eat 3, 6 or 12 petite oysters, or two-dozen large ones? Do meal sizes differ regionally?

And then the most important questions: How will the media handle the PFAS issue and what will consumers do? (I think we can count on the media to publish alarming stories of unimagi-

nable harm and worst possible scenarios because if it bleeds, it leads.) Whether forever chemicals impact shellfish markets is impossible to predict, but we will continue to keep you informed as the science develops.

Notes

1. www.health.state.mn.us/communities/environment/risk/docs/guidance/gw/pfba2summ.pdf

—Continued from page 4
Trump Administration

Engineers permit requires consultations with NOAA and the U.S. Fish and Wildlife Service to address issues with protected resources concerns. Without staff to do the consultations, expect massive permit backlogs. I can think of a dozen regulations that I would change to be more workable, but we need to fix the statutory language to make that possible. Unfortunately, revamping the 14 federal statutes we work under will present a massive challenge.

Perhaps the most visible impact of the new administration on our industry will come with the promised deportation of millions of undocumented immigrants. If the U.S. does not radically increase the number of H2A temporary agricultural worker visas (not to mention H2B non-agricultural workers in restaurants and retail markets) to make up for the loss of immigrant workers, we can expect that all farmers will need to pay more for laborers, assuming they are able to find citizens willing to do the hard work.

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Farewell to Aquaculture Legend Mike Oesterling

It is with a heavy heart that I share the sad news that Michael James Oesterling passed away on October 23, 2024. He will be sorely missed. Throughout his life Mike impacted the lives and careers of many in the aquaculture realm. His easy wit and great knowledge made him a joy to work with. I leaned on him for decades as a historian, scientist, extension agent and friend. I find it hard to put into words my respect and admiration—and the giant hole in our community

that is left by his untimely passing.

I worked with Mike on bay scallops in the late 1980s and would contact him regularly for updates on the industry in Virginia. After he retired as an extension agent he was recruited to serve as the executive director of the Shellfish Growers of Virginia from 2012–2023. Mike also served on the Virginia Marine Product Board and had been a member of the Interstate Shellfish Sanitation Conference since 2013. He served on many boards and advisory committees and



was an active advisor to the Virginia legislature. Mike was a welcome participant in our ECSGA Walk the Hill efforts for well over a decade.

Mike Oesterling was selfless, knowledgeable and fun to be around. There are tons of stories friends

have shared that are not suitable for publication, but they reveal his good nature, his love of the natural world and his strong, enduring friendships with colleagues across the country (most of whom predeceased him).

—Bob Rheault

Mike spent his career in multiple capacities supporting aquaculture. He was my predecessor at the Virginia Institute of Marine Science (VIMS) for 30 years, and then an industry advocate for the later part of his career. Mike was involved in the Regional Shellfish Seed Biosecurity Program (RSSBP) from the start. He served as a hatchery auditor, helped fine tune the audit process and last year traveled solo to five facilities in Virginia and Maryland to conduct renewal audits with his clipboard in hand. This is such a small snapshot of what he contributed to the RSSBP. There isn't enough space for me to

—Continued on page 13

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Mike Oesterling

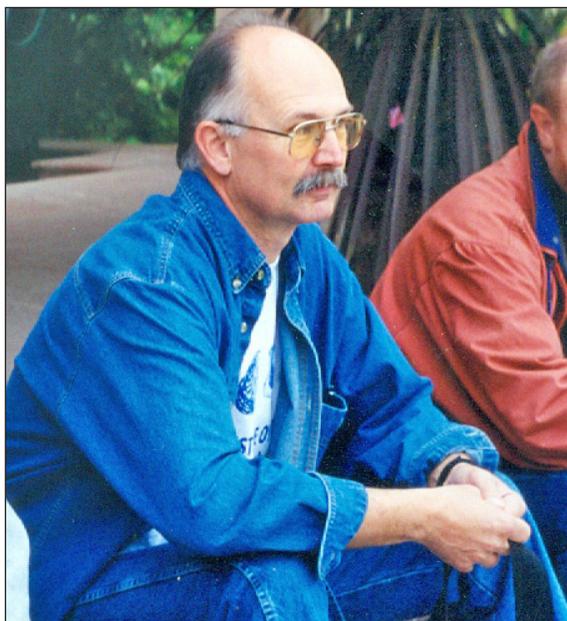
include what he meant to me personally and professionally. Saying he will be missed is an understatement.

—Karen Hudson

All of us who knew and worked with Mike are very sorry to learn of his passing. We were friends and colleagues for a long time—literally decades—and more recently as co-auditors for the RSSBP, visiting numerous hatchery facilities together in Virginia and Maryland. He was a good man—very smart and technically competent and highly reliable, with a great sense of humor. It was fun to spend time with Mike during work and at off times. I take some solace knowing that he is at peace and in a better place, but my heart goes out to his grieving family and closest friends trying to cope with his loss. I'm glad we had the opportunity to travel and work together, and I will certainly miss his company. RIP, Mike O. —John Ewart

Mike was already an extension wunderkind when I arrived at VIMS in the late 1990s. I always regarded him as an older and wiser advisor on the practical issues of aquaculture, even though we were virtually the same age. After all, he had dealt with so many different industry issues over his career. I could always rely on him to provide what seemed to me to be the most rational and objective advice on any issue. Because of that, I sought him out frequently. At the same time—offline, so to speak—it was always possible to enter the world of candid opinion, especially if it involved multiple beers and/or a crab boil, for which he was noted at his Gloucester home. I will miss Mike's affable and cautious style. —Stan Allen

In 1996, Mike served on a project funded by the state of Florida to retrain commercial fishermen impacted by a state constitutional amendment banning the use of gill nets in coastal waters. The topic was soft blue-crab production. Mike was the perfect choice. His humor, ability to connect with people who were angered by the amendment, and obvious enthusiasm to share his hard-won knowledge yielded workshops that were well received and acted upon. The Florida landings for soft crab jumped in volume and value for the next several years. We became good friends and shared many a chuckle at life's contradictions and conundrums. It was a delight to visit Congress in Mike's company and advocate on behalf of the shellfish farming community. To his family, please



SANDY SHUMWAY/UCONN
Mike Oesterling at a scallop workshop in Coquimbo, Chile, in 2021.

accept my thanks for sharing Mike, for I am sure there were many days, nights and hours when he pursued his career over family. Your generosity and support was and is very much appreciated.

—Paul Zajicek

Like many in our industry Mike was my introduction to Virginia shellfish. I always admired his passion, knowledge and demeanor when our paths crossed, and although it saddens me to think his advice has concluded, I feel fortunate to have a career shaped by his hard work and efforts. Our community comprises some of the best people I have met in my life, and Mike is top of the class. He will be missed dearly. —Jeff Auger

I met Mike as a grad student at VIMS, he was growing fish at the time in a Quonset hut across from the now demolished oyster hatchery. He was always happy to chat and share information regarding plumbing, pumps and systems specific to fish to a curious kid who had only really spent time with oysters up until then. After his retirement from VIMS I was fortunate to get to work closer with Mike as the long-time executive director of Shellfish Growers of Virginia, where he operated as a preeminent purveyor of information, connections and calm. He was a champion for aquaculture of all kinds and his contributions to it will be enjoyed by generations to come.

—Mike Congrove

A sad time and a huge loss. Mike was a great friend and outstanding contributor to the shellfish world. Always ready to share his expertise or lighten the day with his humor. We shared many an adventure, will miss him. Fair winds and a following sea, Mike.

—Sandy Shumway

To read Mike's obit and make a memorial contribution visit www.legacy.com/us/obituaries/washingtonpost/name/michael-oesterling-obituary?id=56609635

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What's Going On With Markets Right Now?

I think we can all agree it has been a tough year in the shellfish markets. Many growers and retailers have been telling me that they saw a significant dip in demand and sales this year. Several members pointed out that consumers are feeling pinched by inflation, and many observed that summer vacation rentals were off, all of which spilled over into decreased restaurant sales.

The typical fall swoon we see in the oyster market when the wild harvest opens up (usually in October) seems worse this year than most. Interestingly, I have even been hearing that clam prices and demand have been soft all year, even with clam production out of Florida essentially demolished by three hurricanes in two years.

Growers are reporting that their input costs (insurance, labor, gear) continue to shoot up, but their market price seems stuck. And many growers are telling me they are getting pressured by wholesalers and restaurants to drop prices. If you watch my Introduction to Marketing Oysters video (ecsga.org/marketing/#marketingvid) you'll see that I strongly caution about dropping prices to stimulate demand. If demand is weak, then dropping prices rarely stimulates sales, and worse, it can take years to get your price back up. The urge to cut prices is a race to the bottom. You should find a better way to boost sales than simply cutting prices. You work too hard to accept chump change for your product.

When I was a grower I regularly saw markets tank in the fall, but if I was patient, things would perk up around Valentine's Day, when the wild harvest usually tapers off and most

growers have oversold their inventory. Those of us who had inventory left in the spring never had problems finding customers, and often had latitude to raise prices a few cents. It will be interesting to see if this market snaps back in the spring as it usually does, or if we are seeing an issue of oversupply. If we see growers sitting on inventory in July then I'll start to worry.

I know that many restaurants didn't survive the COVID pandemic, and that the cost of labor and supplies, especially food items, has put the squeeze on our restaurant partners. Wholesalers are saying prices are steady or dipping, but I think we have seen a significant increase in restaurant prices for oysters.

I am involved in an interesting project funded by the National Oceanic and

—Continued on page 15

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—Continued from page 1
Fear the Winter

The work it takes to protect your farm pales in comparison to the work it takes to make it whole again after ice damage.

Securing our farms lets us all focus on the important things this time of year: the upcoming holidays. Thanksgiving is a great time to promote shellfish dishes—oyster stuffing, clams casino, oyster stew and mussels cooked in our favorite wines are all staples in our household. Shellfish continue to be heralded as the healthiest, most sustainable form of protein available, so why not indulge over the holidays? The New York Times just recently published a great article, “Are Shellfish Good for You?” (www.nytimes.com/2024/11/16/well/eat/bivalve-clams-scallops.html), again highlighting the benefits associated with choosing shellfish as a protein source. We all know the story, but it’s great to see the food we grow being heralded as “nutrition-packed and an environmental success story.”

I hope we all can be thankful for the industry we get to work in and for the healthy, delicious food we produce. Good luck this winter, and here’s to wishing for no ice.

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What’s With Markets?

Atmospheric Administration (NOAA) to model future oyster demand, working with Bobbi Hudson, Executive Director of the Pacific Shellfish Institute, and Matt Parker at the University of Maryland. We’ve been collecting historical oyster production data from the states and interviewing oyster experts in order to identify trends and expectations. It’s an interesting exercise talking to folks from different parts of the country, and it will be a challenge to pull all the perspectives together into something coherent. Many industry veterans are predicting consolidation, with most pointing to the need to cut costs and increase mechanization. The other point I keep hearing is the need for marketing and new customers, something I have been saying for decades. Hang in there....

—Robert Rheault

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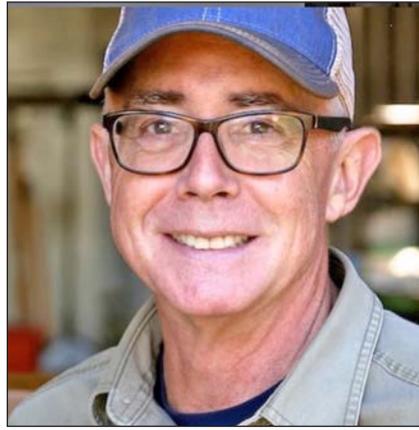
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Changing of the Guard for Maryland Board Members

After seven years serving as Maryland's representative to the ECSGA board of directors, Tal Petty announced it was time for him to step aside and allow some "new blood" to take the reins. Looking back, Tal said that "the best part of the job was the opportunity to meet some of the top leaders of industry and learn about what growers are doing in other parts of the country."

He took part in a half-dozen Walk the Hill events and noted that it was eye-opening to learn how the sausage gets made while meeting congressional



[@HOLLYWOOD_OYSTER/INSTA](#)

Tal Petty of Hollywood Oyster Co. served as the Maryland representative on the ECSGA board of directors for the past 7 years.

representatives and working the system in DC. Tal expects that his successor, Stephan Abel, will do a great job for the growers in the state of Maryland and for the association.

Stephan has over three decades of experience in the business, tech, fisheries and environmental fields, having spent the last 20 years developing and implementing market-based solutions for oyster and Chesapeake Bay recovery efforts. Most recently, he oversaw the construction of and currently operates the Ferry Cove Oyster hatchery located on Maryland's Eastern Shore. He currently serves on the Maryland Seafood Marketing Advisory Council and the Governor's Oyster Shell and Substrate Task Force. Previously, Stephan enjoyed a distinguished career in the U.S. Navy and held leadership positions at the Oyster Recovery Partnership, Maryland Department of Natural Resources, Sallie Mae and CareerBuilder.com.



WWW.FERRYCOVE.ORG

Stephan Abel of Ferry Cove Oyster Hatchery brings a wealth of experience to his new role as Maryland representative on the ECSGA board of directors.

Thanks for stepping up, Stephan, and many thanks, Tal, for all your hard work for the ECSGA and for your constituents in Maryland.

Shells of Black Sea Mollusks a Potential Source of Rare Earth Metals

Specialists of the A.O. Kovalevsky Institute of Biology of the South Seas (InBUM) of the Russian Academy of Sciences assessed the content of rare earth elements (REE) in the shells of mollusks common in the coastal zone of the Black Sea. The scientists found that the shells of marine life have the ability to accumulate REE.

Due to their unique physical and chemical properties, rare earth metals are in high demand in modern industry. They are indispensable in the production of smartphones,



WIKIMEDIA COMMONS

Rapana venosa, the veined rapa whelk, was one of several species of mollusks from the Black Sea whose shells were found to contain rare earth elements used in many high-tech industries.

liquid crystal displays, wind turbines, electric vehicles, solar panels, powerful permanent magnets, LEDs, lasers and other high-tech products. At the same time, unlike heavy metals, whose environmental impacts are well studied, information on the forms of REE in marine ecosystems is practically absent.

Crimean scientists have studied the shells of bivalve mollusks: anadara (ark clams), the Black Sea scallop, the Mediterranean mussel,

the giant oyster, and the gastropod mollusk rapana. These make up the most numerous species of Black Sea mollusks, with mussel, oyster and rapana being commercially valuable seafood, and scallop and anadara having great potential for Black Sea aquaculture.

"We collected samples of shellfish in 2023–2024, mainly at the locations of the oyster farm in the coast of Sevastopol. The REE analysis was performed at the Center for Collective Use 'Spectrometry and Chromatography'. As a result of this extensive work, we have revealed that the shells of the Black Sea mollusks are good accumulators of rare earth elements," said the head of the study, Doctor of Biological Sciences Vitaly Ryabushko.

The shells of the specimens studied were abnormally enriched with scandium, yttrium, lanthanum, europium and terbium. The highest total REE concentrations were recorded in mussels and anadara, up to 1.9 mg per kg of shell. This is almost twice the REE content in algae of the Crimean coast.

According to scientists, the shells of edible shellfish, which are traditionally considered waste, can serve as valuable biogeochemical indicators and potential sources of scarce metals.

"It is possible that over time, a technology will be developed that allows the extraction of REE from shellfish shells, as well as from seaweed emissions," said the first author of the article, Sergey Kapranov, a leading researcher at the Department of Aquaculture and Marine Pharmacology FITZ InBUM.

To read the original paper visit doi.org/10.3390/jmse12050713

—News Release dated November 2, 2024 from the AK&M Information Agency



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Rookie Mistakes: Don't Get Fooled Again

by Robert Rheault,
ECSCGA Executive Director

If you have been around this business for a while you have probably watched newcomers make the same mistakes that you did when you were getting started. I have tried to think of as many of these common errors as I could in order to help newcomers avoid the same costly missteps. I came up with 27 tips, and I continue to add to the list.

I presented these at the Northeast Aquaculture Conference and Expo (NACE) a few years ago, and a dozen folks came up to me afterwards asking for copies. It's pretty rare that anyone asks for a copy of one of my presentations, so I guess there is a need for this type of information. I recorded the presentation and we posted the video and the full list on ECSCGA.org under the "Grower Resources" tab (ecsga.org/rookie-mistakes).



PETER DARNELL

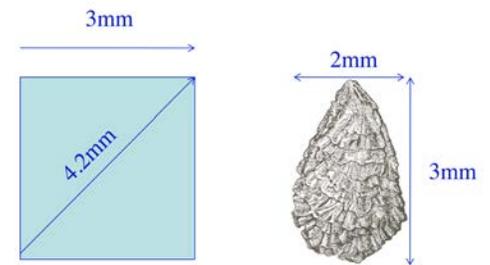
Failing to stay on top of fouling is a common mistake that can result in a dead crop. If water flow is blocked by seaweed/eelgrass/kelp or anything else that impedes the flow of food, the crop will starve and may even die.

A Few Examples

1. Don't think you know it all. Volunteer to work with more experienced growers. The money you save from the tips you learn will more than pay for your time.

2. Don't get greedy. Don't buy/plant more seed than you have gear to grow it in or time and manpower to maintain. Overcrowding and poor husbandry lead to poor growth, bad meat condition, and potentially to diseases and mortality. Overstocking bags and failing to stay on top of fouling are the most common factors leading new growers to fail. If you are not sure how many to stock in a bag, I suggest trying a range of initial stocking densities and looking at growth and meat in the animals after several weeks.

Seive Size ≠ Seed Size



Seed measuring 3 mm can easily fall through a 3-mm mesh bag. Order seed that is retained on a mesh larger than your smallest mesh growout bag, or ask the hatchery what size screens they sort their seed on. Most hatcheries sell with a designation like "R3," which means the seed will be retained on a 3-mm mesh screen.

3. Learn the difference between sieve size and seed size. Three-mm seed will not be retained in a 3-mm mesh bag. Order seed that is retained on a mesh larger than your smallest mesh growout bag, or ask the hatchery what size screens they sort their seed on.

Most hatcheries are selling with a designation like "R3," which means the seed are retained on a 3-mm mesh screen. They may ship the wrong size, so when you get your seed, test it first in a way that you can recover any seed that slips through the mesh.

4. Don't put seed in bags with openings that are too close to the sieve size. Many animals will grow into the mesh and you will have to kill them to separate them from the bag. My rule of thumb: mesh size of the sieve you are sorting with should be ~1.5 times the mesh size of the bag you are going into.

5. Start small. Don't plant millions until you know it works with a few thousand. You can learn just as much by killing a few thousand as you can by killing millions.

6. Don't let brine dips warm up in the sun. A 10-minute dip in hot brine to get rid of mud blister worms or boring sponges will kill a lot more than just fouling organisms.

Coming Events

Milford Aquaculture Seminar. Jan. 13-15. 44th annual conference. Courtyard by Marriott, Shelton, CT. Visit www.fisheries.noaa.gov/new-england-mid-atlantic/aquaculture/milford-aquaculture-seminar.

East Coast Commercial Fishermen's & Aquaculture Trade Expo. Jan. 17-19. 50th annual trade show and truck raffle. Powell Convention Center, Ocean City, MD. Visit marylandwatermen.com/Home.html.

Applied Shellfish Farming. Jan. 28–May 6. Hybrid course every Tuesday. 6pm. Roger Williams University, Bristol, RI. Contact Hisham Abdelrahman, habelrahman@rwu.edu.

Aquaculture 2025. March 6-10. Triennial conference and tradeshow. Marriott, New Orleans, LA. Visit www.was.org/meeting/code/AQ2025.

Seafood Expo/Seafood Processing North America. March 16-18. Convention and trade show. Boston Convention and Exhibition Center, Boston, MA. Visit www.seafoodexpo.com/north-america.

NC Aquaculture Development Conference. March 27-29. Conference & ECSGA annual meeting. Crystal Coast Civic Center, Morehead City, NC. Visit ncaquaculture.com.

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ECSGA Dues Categories

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Member Type	Gross Annual Sales	Dues
Grower	\$0 to 50,000	\$100
Grower	\$50,000 to \$100,000	\$200
Grower	\$100,000 to 300,000	\$500
Grower	\$300,000 to 1 million	\$1,000
Grower	\$1 million to \$3 million	\$2,000
Grower	over \$3 million	\$3,000
Shellfish Dealers and Equipment Suppliers		\$250
Restaurant Ally		\$100
Non-voting Associate		\$50

Because ECSGA is a 501(c)(6) non-profit trade organization, a portion of your membership dues may be tax deductible as a business expense; please contact us for details.

You can pay online using PayPal or your credit card on our website ECSGA.org or mail this form with your check to:

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