

EAST COAST SHELLFISH GROWERS ASSOCIATION



The East Coast Shellfish Growers Association represents over 1,300 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.

1623 Whitesville Rd.
Toms River, NJ 08755
ecsga.org

Executive Director
Bob Rheault
(401) 783-3360
bob@ecsga.org

President
Jeff Auger

Vice-President
Alex Hay
Secretary
Matt Behan

Treasurer
Gef Flimlin

Connecticut Brian Yarmosh
Delaware Mark Casey
FloridaAdrienne Johnson
Gulf Coast John Supan
Maine Dan Devereaux
Maryland Tal Petty
Massachusetts Mark Begley
New Hampshire Brian Gennaco
New Jersey Bill Avery
New York Matt Ketcham
North Carolina Chris Matteo
Rhode Island ... Jeff Gardner
South Carolina Trey McMillian
Virginia Chad Ballard

Equipment Dealer
Heather Ketcham

Shellfish Dealer
Chris Sherman

Ex Officio
Ed Rhodes, Leslie Sturmer

The Mouth of the Bay Does Science Really Matter?



Exec. Director
Bob Rheault

As a scientist I believe that scientific research should guide regulatory decisions and the choices we all make as individuals. So I am often surprised to discover that no matter what the facts are, these decisions are frequently made on the basis of public opinion or misinformation.

Take, for example, the regulatory approach of two states mandating that oysters grown in floating gear must be held at depth for three weeks before harvest to allow the animals to purge potential bird pathogens. Most studies on the depuration of enteric pathogens from shellfish show that pathogens are gone after 48 hours (exceptions are *Vibrio parahaemolyticus* and Norovirus, which are not associated with bird waste). Given the science, a one-week re-submergence period would be more than adequate, but so far my appeals for science-based regulations have fallen on deaf ears.

Even more disturbing are the recent decisions to ban net-pen fish farming in British Columbia and Washington State, despite the consensus of government and academic scientists that the practice has little or no significant negative environmental impacts. In December 2020 Fisheries and Oceans Canada forced the closure of salmon farms in the Discovery Islands off the coast of Vancouver, wiping

ing out hundreds of jobs and hundreds of millions in annual revenues.

The move was made in response to allegations of environmental impacts made by anti-salmon-farming advocacy groups, even though all the allegations had been disproven by government and academic scientists. Thankfully, a court overturned the ban, but since the future of salmon farming is in doubt, hatcheries have been closed and huge damage to the industry has already been done.

The case in Washington State was similar. A net-pen collapse in 2017 led to growing opposition, and in November state regulators effectively banned net-pen fish farming in Puget Sound. The ban came despite NOAA findings of little to no significant impact, and dozens of government and academic studies refuting allegations about disease, sea lice, benthic impacts and impacts to endangered species.

It is worth noting that salmon farming has evolved tremendously, and growers (especially under U.S. regulations) have figured out how to avoid most of the problems you may have heard about. Maine growers have not had an escape in decades and no longer use antibiotics. Benthic impacts are localized, and reversed quickly when sites are fallowed between crops. No food production is without impacts, but these firms have finally nailed sustainable fish farming.

Nevertheless, it's a tough pill to swallow when science and facts don't seem to matter in the face of an organized and vocal advocacy group or a risk-averse regulator looking for a promotion.

ISSC to Hold First Biennial Meeting Since 2019

by Robert Rheault,
ECSGA Executive Director

The biennial meeting of the Interstate Shellfish Sanitation Conference (ISSC) is slated for March 18-23, 2023 in Baton Rouge, Louisiana. I view this meeting as one of the most important events for our industry because it gives shellfish farmers, harvesters and dealers a chance to help shape the regulations that determine what they can and cannot do. These meetings usually happen every other year, but the year and a half delay due to Covid restrictions means we will have three and a half years of work to catch up on.

The meetings typically last six days, but most of the important work is done in the first three days, when industry has the opportunity to shape the out-

come of the debate in committee meetings and in Task Force debates. The days are long, often running into the evenings, but the work is crucial.

The March meeting will be attended by over 100 FDA regulators and scientists, and close to 100 state shellfish control authorities. It is vitally important that enough industry folks show up so our voice is heard and our concerns are clearly stated. Many regulators don't have a great grasp of the complexity of our industry, and writing regulations is difficult and fraught with unintended consequences. I cannot tell you how many times we have been on the cusp of passing a regulatory change when someone in the room points out that the change as written would put them out of business, and the language needs to be reworked.

The process can be frustrating and arcane at times. Rigid adherence to Roberts Rules of Order can be tedious, but it does ensure a fair debate. Attending

does not come cheap, and you do have to become an ISSC member to attend, but it is important work. In a few months, the ISSC executive office will release the package of several hundred proposed edits to the Model Ordinance, the 800-plus-page regulatory manual that we all have to live by.

Sausage making can get ugly, but the ECSGA and the Pacific Coast Shellfish Growers Association will form committees where we meet virtually ahead of the meeting to evaluate each proposal and weigh the impacts, so that we can decide in advance whether to support, oppose or amend each proposed rule change. This, too, is critically important work and we will be asking for your help.

So please make plans to attend. This is your opportunity to fix things, and it doesn't happen very often that you get a seat at the table. Conference details can be found at ISSC.org under the Conference Administration tab.

European Market Opportunities

by Robert Rheault,
ECSGA Executive Director

In September, Food Export USA–Northeast led its first shellfish trade mission to the Netherlands and France to introduce buyers to some of our products and to weigh interest and gauge reactions. This came in the wake of the long-awaited reopening of shellfish trade with the EU back in February 2022. This first stage of the resumption of trade allows shellfish sales only from Massachusetts and Washington State, and though we believe other states will be added to the list of eligible shippers, we don't

yet have a commitment from the FDA or their EU counterparts as to when that might happen.

Food Export–Northeast interviewed European seafood market representative Felipe Macías of FM Consulting to find out about the opportunities in France. Macías said that France is the biggest producer and consumer of oysters in the EU, with a majority of French people reporting that they eat oysters regularly or occasionally. He noted that the French are discriminating connoisseurs of the many varieties of oysters available from other countries and should be receptive to our products.

For nearly a decade the ECSGA and the Pacific Coast Shellfish Growers Association pushed



OSMANY TAVARES/ FOOD EXPORT USA –NORTHEAST

At the U.S. trade mission with France and the Netherlands, featured speaker Chris Schillaci presented an overview of Northeast U.S. oyster farming history, outlined the differences between the oyster species *virginica* and *gigas*, and explained U.S. shellfish food safety protocols. He is NOAA's Aquaculture Coordinator in the Greater Atlantic Region, based in Gloucester, Massachusetts, and Narragansett, Rhode Island.

hard for the reopening of trade with the EU, so we were quite excited when the deal was finally struck, but so far we're hearing that international trade has been pretty modest. We know that our oysters have great flavor, long shelf life and attractive price points, so we expect it is just a matter of getting European customers to try them and we should have ready markets.

Talking to dealers in Massachusetts, there are a few barriers to overcome before they make large investments in setting up trans-Atlantic trade. First of all, markets in the U.S. are quite robust and there is not a large surplus of product just hanging around. In addition, European markets are well established, and it might be a challenge to get Europeans to try something new.

EU regulations require that oysters be boxed and packed cup down to retain the liquor (probably because they are used to dealing with the Japanese oyster, *C. gigas*, which has a tendency to gape and dry out). Europeans are also accustomed to smaller packaging—25 and 50 count, instead of 100 count—and they prefer a 4" to 5" oyster with a full meat, as opposed to the petite oysters that have grown in popularity in the U.S. market.

The other consideration is that the French market is strongly seasonal, with about half of all oyster sales happening around the Christmas and New Year holiday period. I think this is actually a potential boon for the growers on Cape Cod because

they usually encounter a fall glut and suffer a price drop when the wild harvest opens up and growers become anxious to unload product before the ice comes in.

I remain optimistic that this market will expand and mature. I have always been of the mind that more markets are always better and will help keep prices strong as our production continues to grow. I hope we hear soon that more states will be added to the list of approved shippers; we will keep up the pressure on the FDA to ensure that it happens.



OSMANY TAVARES/ FOOD EXPORT USA –NORTHEAST

Local chefs, seafood buyers, wholesalers and importers, fishmongers, shellfish organizations, journalists and USDA Foreign Agricultural Service reps tasted oysters and talked about local products at the trade receptions.

Food Export USA–Northeast is a non-profit organization that works with 10 Northeastern states to facilitate trade between suppliers and worldwide importers to promote the export of food, agricultural and seafood products. For more info visit www.foodexport.org/our-programs/seafood-program




Shellfish Growers Climate Coalition

"The oyster industry is filled with environmental advocates, and that's a powerful thing."

– Bill Mook, Mook Sea Farm
South Bristol, Maine



Help us protect the shellfish we love and the waters that sustain them at
nature.org/shellfish4climate

Netting Protection



Predator Exclusion • Pens & Cages

- UV resistant plastic • Easy to fabricate
- Rolls, sheets and tubes custom cut-to-size in 24 hours

INDUSTRIAL NETTING

1-800-328-8456 www.industrialnetting.com

Floating Aquaculture, Birds and Public Health

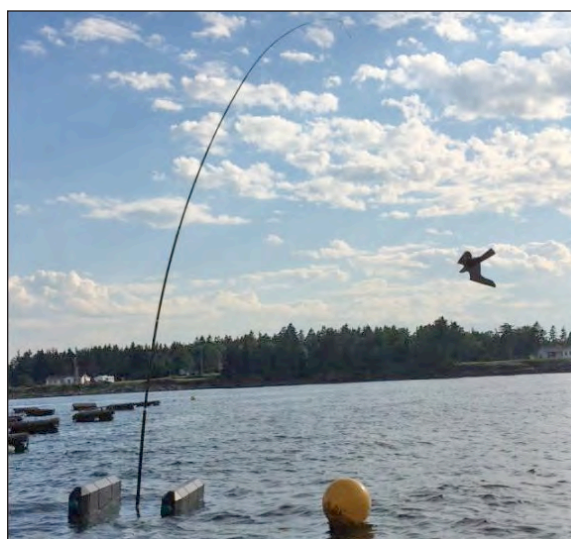
by Robert Rheault,
ECSCGA Executive Director

When the Interstate Shellfish Sanitation Conference (ISSC) updated the Model Ordinance chapter on aquaculture back in 2017, the FDA insisted it include a new requirement: if a farm has the potential to attract birds or mammals, the operator must propose an operational plan describing how they will deter such aggregations to prevent the contamination of shellfish crops by enteric pathogens to avoid the closure of harvest areas due to elevated coliform concentrations.

Ever since that update, state regulators have been struggling to figure out how to meet this requirement. In the absence of regulatory guidance their responses have varied widely. Some seem to think that one bird is too many, while others have a more lenient approach. An ISSC subcommittee has been tasked with developing regulatory guidance to impose some uniformity on how various states should regulate floating gear.

Similarly, growers have been left to develop repellants and deterrents with little guidance as to what will work. They have tried scare kites, ticklers and a variety of novel approaches (see ecsga.org/bird-interactions). Birds tend to be a seasonal problem, and repellants may show varying degrees of success with different species. The issue can be complicated by the fact that some birds are protected resources that we are not supposed to disturb. Cormorants might avoid floats with ticklers, but terns will often perch between the protrusions. To make matters worse, many birds tend to acclimate to various deterrents, so a mix of approaches may be necessary. Several researchers are working on these challenges, so we hope to have more advice on the issue soon.

While the scientific literature indicates that the prevalence of human enteric pathogens in wild bird guano is rare (doi.org/10.1111%2Fbrv.12581), there have been reports of illnesses, and the risk is not to be ignored. More research is needed on bird behavior, deterrents, pathogen prevalence and pathogen depuration rates to help industry grapple with this vexing problem. It is clear that water depth and tidal flushing play a large role in pathogen retention time in the water body and accumulation by filter feeders, but we don't have models to tell us how many birds are too many.



OYSTERGRO.COM

There's no shortage of bird deterrents out there: scare kites like this Birdaway system from Oystergro, ticklers and other structures on floats that discourage birds from landing, and so many more. The challenge is finding a deterrent that works for you.

Your State Shellfish Control Authority (SSCA) has no option but to close harvest areas if water quality samples trip their statistical maximums for coliform counts. It would be disastrous for most farms to have that happen, so your best defense will be an aggressive deterrent program, especially for sites with poor tidal flushing. Regulators should acknowledge that birds are also common in wild-fisheries harvest areas. This is not solely an aquaculture issue just because floating gear has been growing in popularity.

Some states are requiring growers to submerge product in deeper water off-site for 21 days prior to marketing, whether or not there is evidence of exposure to birds. The science on bacterial depuration rates is well estab-

lished and indicates that 48 hours is usually sufficient. *Maybe* a requirement for one week of submergence might be justified if there is evidence the product has been exposed, but three weeks seems like overkill. In addition, some growers may have a hard time acquiring deep-water sites to hold product prior to sale.

It is clear that the bird problem has become a big issue in several states, and the science on the subject is not yet well developed. Regulatory guidance is in flux and the FDA has been forcing states to crack down. Regulators don't get paid to take risks, so this issue will continue to present big challenges until we can develop workable solutions.

Stay tuned.

Print shellfish tags right from your phone.

"This has probably been the best business decision we have made all year."

- Duane Fagergren, Calm Cove Oysters, WA

 **BLUETRACE** blue-trace.com


Formutech
FOOD PROCESSING TECHNOLOGY

Formutech Inc.
135 Kent St.
PO Box 893
Charlottetown, P.E.I.
Canada C1A 7L9

E-mail address
jfortune@formutech.ca
Internet
www.formutech.ca
Phone number
1 855-599-0099

Jesse Fortune
Owner/President

Cell number 1 902-629-0126

Tetraselmis Live Algae Paste

- ▶ Frozen with a food-grade cryopreservative to keep cells viable.
- ▶ Superior shellfish growth rates.
- ▶ For salinities 20-30 ppt.

 **MOOKSEA FARM**
Our world is your oyster!

From our hatchery to yours!

Algae@mookseafarm.com | mookseafarm.com/algae





East Coast's #1 Supplier
of Grow Out Gear

Biodegradable Netting

Copolyester netting meets EN13232 and ISO20200 standards for biodegradability, and decompose within six months in landfills.

Burnt orange color netting is great for restoration projects. Green and blue make for handy market bags— or inquire about custom colors...



111 Myrtle Street
New Bedford, MA 02740
508.997.4787

www.ketchamsupply.com
info@ketchamsupply.com
f @ketchamtraps

Floats • Cages • Trays • Bags
Everything You Need for Aquafarming

Why Should You Support the ECSGA?

by Robert Rheault,
ECSGA Executive Director

Why are only 17% of shellfish growers on the East Coast members of the ECSGA? What can we do better to help growers understand the value of our organization? Most trade associations struggle with only 15% of their industry joining, so maybe we should be happy that we're doing better than average. But we want every grower to see the value of our work and to support us so that we can accomplish even more. Just in case you aren't aware of everything we do, let's take a minute to toot our own horn. Just remember that many of the efforts listed below can take years to bear fruit, so progress can seem slow or even imperceptible.

In our advocacy work, the ECSGA has many irons in the fire, and most of our efforts are ongoing, year-round tasks. They include, among other things:

Pushing for workable regulations.

Arguably our most important work centers on coordinating with the Interstate Shellfish Sanitation Conference (ISSC) to make sure the regulatory environment is science-based and practical. We have brought about significant changes to the ISSC rules that make shellfish farming easier while ensuring that our products are sanitary and wholesome. We participate in many subcommittees that do crucial work between the biennial conferences to deal with thorny issues. (see article on page 1.)

Connecting with Congressional representatives. Our second most critical effort involves maintaining relationships with elected representatives in Congress so they understand what we do and can help us out if the need arises. Our work in DC has resulted in changes to the Farm Bill that have improved crop insurance options and resulted in funding an annual \$2.8 million USDA shellfish breeding program to improve disease resistance, growth and production traits.

Exempting growers from the Jones Act. We have a bill (a decade in the making) pending in Congress that will exempt aquaculture employers from the need to carry Jones Act insurance, provided their workers can be covered by state workers compensation insurance. This exemption will protect employers from unlimited liability lawsuits.



ROBERT RHEAULT/ECSGA

ECSGA volunteers and their counterparts from the Pacific Coast Shellfish Growers Association emerge after the first of 100 meetings on their annual pilgrimage to Washington, D.C., in 2018. The “Walk the Hill” trips took a Covid hiatus, but will resume in the spring of 2023. Member support helps the association cultivate and maintain crucial relationships with elected officials that benefit growers in practical ways.

- Submitting public comments.** The ECSGA has offered reams of comments on proposed regulatory changes to issues like new FDA traceability requirements, Army Corps Nationwide Permits and requests for research priorities from funding agencies.
- Streamlining and rationalizing interstate seed transport regulations.** We have been working for years to improve these regulations, and together with a team at the Regional Shellfish Seed Bioscurity program (RSSBP.org) developed a novel hatchery certification program based on solid science.
- Advocating for disaster relief eligibility.** Working closely with allies in the National Aquaculture Association (NAA), the Pacific Coast Shellfish Growers Association and Oyster South, we have scored many wins, including the **FREE disaster relief program** known as the Emergency Livestock Assistance Program (ELAP), run through the Farm Service Agency (read about it in the

— Continued on page 7



4Cs Breeding Technologies, Inc.

Triploid Technology for the Oyster Industry



FIRST MONTH FREE
FOR ALL ECSGA MEMBERS

FARM MANAGEMENT SOFTWARE

www.compassaq.com

50% OFF
Onboarding Fee
FOR PAST OYSTER TRACKER USERS



The Algal Revolution

Place Your Orders Now

www.algafeed.com
sales@algafeed.com

(833) ALGAE-4U (833) 254-2348

Algafeed has broken the barrier to produce high-density, fresh microalgae on a commercial scale.

We grow a complete range of live, natural, high-density microalgae reliably delivered and ready to use.

Algafeed empowers leading shrimp, and shellfish hatcheries to access a portfolio of high-density microalgae of unequalled nutritional value.

BENEFITS

- Reliable Supply
- Consistent Quality
- Increased Survival
- Faster Growth
- Higher Yields
- Better Seed Quality

Algafeed Algal Menu

<p><i>Tisochrysis lutea</i></p>  <p>Avg. Density: (25-35) (million cell/mL) Cell Size: (5-10) (micron)</p>	<p><i>Chaetoceros muelleri</i></p>  <p>Avg. Density: (25-35) (million cell/mL) Cell Size: (5-20) (micron)</p>	<p><i>Thalassiosira weissflogii</i></p>  <p>Avg. Density: (8-12) (million cell/mL) Cell Size: (15-30) (micron)</p>
<p><i>Tetraselmis sp.</i></p>  <p>Avg. Density: (5-10) (million cell/mL) Cell Size: (10-20) (micron)</p>	<p><i>Nannochloropsis gaditana</i></p>  <p>Avg. Density: (100-200) (million cell/mL) Cell Size: (3-5) (micron)</p>	

Do You Pay Your Employees as 1099 Contractors?

by Robert Rheault,
ECSGA Executive Director

As a general rule, I would say don't take tax advice from a washed-up oyster farmer, but I recently learned a lot by watching a webinar geared to farmers about 1099 forms, put out by a group called RuralTax.org. If you are paying your farm workers as independent subcontractors you could face substantial penalties and be forced to re-file taxes and W2 forms if the Internal Revenue Service

ever discovers that they should have been paid as employees.

I know that some growers and fishermen choose to go the 1099 route to avoid the hassle of payroll deductions, and that some employees prefer it because their paycheck looks bigger (although they typically end up paying more taxes at year end.) But this practice is not legit in the eyes of the IRS.

The Internal Revenue Service has a list of criteria that employers should consider to determine whether they should pay someone for services as an employee or as a 1099 independent subcontractor. These criteria essentially show the degree of control or independence that the worker has from the employer, and they fall into three categories:

1. **Behavioral**: Does the employer control when, where and how the worker does their job? Does the employer provide training or instruction for the job? If the answer is yes, that worker is an employee.
2. **Financial**: How is the worker paid, hourly or by the job? Does the worker also work for other firms? Who provides the tools and supplies for the job?
3. **Type of Relationship**: Are there written contracts or employee-type benefits



(i.e. pension plan, insurance, vacation pay, etc.)?

If it walks like an employee, and quacks like an employee, it probably is an employee, and you need to pay them like an employee with a W2 form, and pay the IRS all the withholding taxes required by law.

I also learned that if you paid someone who is not your employee more than \$600 a year (this would include attorneys, accountants, veterinarians, diagnostic labs, etc.) you need to provide them with a 1099 form.

The one piece of advice the webinar emphasized was to get your tax advice from a professional—not from from guys like me. I learned a lot about my least favorite subject and you can too, at RuralTax.org and www.irs.gov/businesses/small-businesses-self-employed.



Coastal Development Projects

Combining coastal protection & restoration with oyster industry development

J. D. "Zach" Lea, PhD, Agricultural Economist

Shellevator Dealer for Louisiana

jdzea@hotmail.com 985-272-3681

ADVOCATES AND COUNSELORS REPRESENTING SHELLFISH GROWERS SINCE 1999

PLAUCHÉ & CARR LLP

SAMUEL W. "BILLY" PLAUCHÉ
billy@plauchecarr.com

MEGAN K. TERRELL
megan@plauchecarr.com

WWW.PLAUCHECARR.COM

Pacific Northwest Office
1218 3rd Ave., Ste. 2000
Seattle, WA 98101
206.588.4188

Gulf Coast Office
1110 River Rd. S., Ste. 200
Baton Rouge, LA 70802
225.256.0649

Coming Events

42nd Milford Aquaculture Seminar

Jan. 9-11. Annual conference with technical sessions and poster sessions focused on shellfish aquaculture. Court-yard by Marriott, Shelton, CT. Visit www.fisheries.noaa.gov/new-england-mid-atlantic/aquaculture/milford-aquaculture-seminar or contact lisa.milke@noaa.gov.

East Coast Commercial Fishermen's and Aquaculture Trade Expo

Jan. 13-15. Conference and trade show. Ocean City Convention Center, Ocean City, MD. Visit marylandwatermen.com/Trade-Show-2023.html.

Rutgers Shellfish Research Symposium

Jan. 18. Meeting for shellfish growers and researchers to communicate and collaborate; lunch and refreshments provided. Jacques Cousteau Coastal Education Center, Tuckerton, NJ. Visit tinyurl.com/yepcu5ej.

— Continued on page 7

BANKERS INSURANCE

SHELLFISH GROWER INSURANCE

Call for Commercial Boat Insurance!

- General Liability
- Jones Act
- Business Auto/Truck
- Workers' Compensation
- Marine/Boat
- All Others

CONNECT WITH



David Merriman, CPCU
Sales Executive
Phone: 434-327-1643
dmerriman@bankersinsurance.net
www.bankersinsurance.net/seafood



Bankers Insurance focuses on you, the client, and endeavors to become your trusted insurance agent. We are committed to No Excuse Client Service and pride ourselves on delivering the highest ethical and professional standards. Contact David, today!

— Continued from page 5
Why Join the ECSGA?

August 2021 issue of our [newsletter](#)).

- ❑ **Pushing USDA to include aquaculture producers in farm-saving Coronavirus Assistance Payments.**
- ❑ **Keeping growers informed.** Through our website, Listserv and newsletter we try to keep growers abreast of important developments, meetings and issues. If you have not looked at our website lately, you owe it to yourself to do so, and if you are not signed up for the Listserv, why not?
- ❑ **Educating reporters during crises.** As a point of contact for the media, whenever an illness outbreak, harmful algal bloom, or microplastics

More Coming Events

Aquaculture America 2023

Feb. 23-26. International conference and trade show, with association annual meetings. New Orleans Marriott, New Orleans, LA. Visit was.org/meeting/code/AA2023.

Oyster South

March 9-11. 7th annual industry symposium and trade show focusing on hands-on, practical information for oyster growers from the Southeast U.S.; includes producers, gear suppliers, distributors, chefs, food writers, vendors, researchers, students and managers. Ships of the Sea Museum, Savannah, GA. Visit www.oystersouth.com.

Interstate Shellfish Sanitation Conference

March 18-23. First ISSC biennial meeting since October 2019. Baton Rouge Marriott, Baton Rouge, LA. Visit www.issc.org/2023-issc-biennial-meeting.

National Shellfisheries Association

March 26-30. 115th annual meeting with sessions on biofouling, disease, hatcheries, genetics, *Vibrio* and more. Marriott Inner Harbor at Camden Yards, Baltimore, MD. Visit www.shellfish.org.

scare hits the news I carefully explain to reporters how products in the marketplace are safe because of our excellent surveillance and regulatory oversight, despite their desire to run with headlines like, “Man gets ‘flesh-eating’

bacterial infection from eating raw oysters.” (Not a made-up headline)

If you are already a member—thanks for your support. Please share this newsletter and help us convince the many growers out there who have not yet joined

to sign up so we can do more of the good work that supports our industry, you and your farm.

If there is something you think we should be doing more of, or doing better, let me know! I always enjoy talking with members.



Go Higher with Saeplast

Save floor space and maintain proper water flow from our shellfish storage containers



SÆPLAST | Saint John, NB Canada | Phone: +1 800 567 3966 | E-mail: sales.sj@saeplast.com | www.saeplast.com

Answers in Hours, Not Days New Domoic Acid (ASP) ELISA Test Kit

- Broadest sensitivity (down to 6.5 parts per trillion)
- Quantitative answers in < 2 hours
- Test shellfish or seawater
- Proven ELISA technology
- Ready to use standards – no serial dilution required
- Requires only basic lab skills and equipment

See our Algal Toxin and Marine Biotoxin test kits at www.abraxiskits.com!



Gold Standard Diagnostics Horsham, Inc., Warminster, PA, USA | P: 215-357-3911

Farmed Oyster Mortality Increasing in North Carolina Estuaries

by Tal Ben-Horin, NC State University Center for Marine Science and Technology;
Rachel Noble, UNC Chapel Hill Institute of Marine Sciences; and
Chris Matteo, North Carolina Shellfish Growers Association

North Carolina’s coastal sounds frequently experience episodic oyster mortality events during warm months. This year was no exception, with farms from Oregon Inlet to Brunswick County, and even south through Georgia, reporting heavy mortalities of mid- to market-sized oysters in late spring, again in late summer, and again in early fall. These events are often sudden, with near 100% mortality occurring over as few as three days. These dramatic events are typically localized to ocean-influenced coastal sounds, where salinities this summer routinely exceeded 40 ppt, and were likely magni-



MARK CIESIELSKI/UNC
Field researcher Thomas Clerkin deploying oyster lines to grow-out sites. Two of the researchers’ North Carolina sentinel sites experienced complete mortality of all deployed oysters.

fied by the ongoing regional drought. The North Carolina Shellfish Growers Association, working with oyster farmers across the region, estimates that approximately 90% of farms located in high-salinity coastal sounds have been impacted this year. Up-estuary farms in locations such as Hyde and Pamlico counties did not report any unusual mortality this summer.

Oyster mortality events across North Carolina in this and previous years must be considered within the broader context of other unexplained oyster mortalities occurring across the country and throughout the world, including the enigmatic triploid mortality events that have been observed over the past decade.

With funding from the North Carolina Commercial Fishing Resources Fund, and in col-

laboration with colleagues at University of North Carolina Wilmington and the Virginia Institute of Marine Science, we deployed half-sibling diploid and triploid oyster lines to eight field sites across North Carolina and Virginia last fall to better understand oyster health and pathology associated with these recurring events. Our sentinel field sites experienced mortality in line with that reported from commercial oyster farms this summer, with two of our North Carolina sites experiencing complete mortality of all deployed oysters.

Some sites saw more moderate mortality, while two North Carolina sites and all sites in Virginia experienced little to no mortality outside of what is seen over a typical summer. The diploid and triploid lines fared



MARK CIESIELSKI/UNC
Quantifying oyster mortality on the farm. Research suggests that impacted oysters are starving, even though food is plentiful in the growing waters.

Live Algae On Site

INDUSTRIAL PLANKTON

1-844-818-0304
industrialplankton.com

Global Leader in Live Feed Bioreactors

Introducing Improved Bottle Silos

- Seamless construction using PEGT modified acrylic resin
 - ~ near clarity of pure acrylic
 - ~ more resistant to cracking

- Deep discharge spout eliminates gasket/pipe/tubing
 - ~ allows higher flow rates and easier cleaning
- Includes a 1 3/8" marble
 - ~ eliminates spinning that can crush spat

- 4" diameter; 21 1/2" tall
- 3/4" FNPT water connection
- Neoprene O-ring marble seat reduces leakage during handling

- Custom built nursery systems available

Price: \$180 (US) each + shipping
Includes marble
VISA/MasterCard accepted

For additional information or to place an order, contact:
John Supan Ph.D.
Sea Farms Consulting LLC
jsupan2575@gmail.com

equally poorly at the impacted sites, where we saw similar pathology to previous years, characterized by sloughing absorptive cells within digestive tubules preceding mortality by two to three weeks, suggesting that impacted oysters are starving even with plentiful food in the water. We are still working through our data from this past summer, but in past years we have observed shifts in microbial communities associated with digestive tubule pathology, with *Vibrio* species becoming more dominant. Whether these microbial communities are the cause of disease or responding to pathology has become a major focus for our research groups.

We are also heavily focused on how oyster farmers and the industry can move forward. We know that high salinity is a necessary precursor for these events to occur, but it is not the sole driver. This summer’s second mortality wave occurred

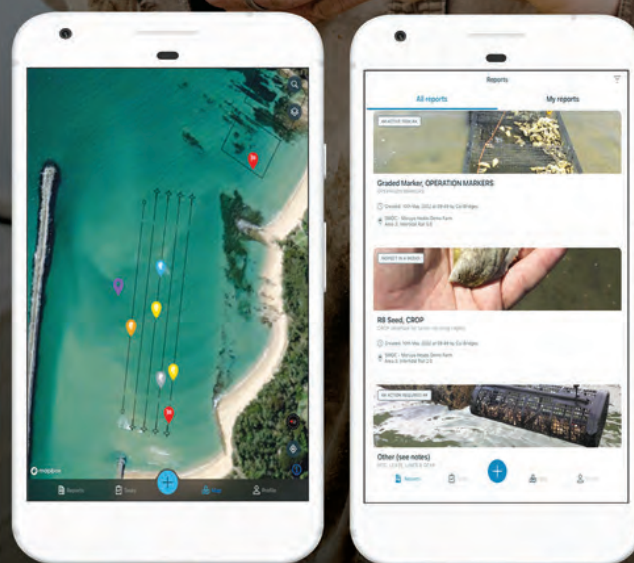
— Continued on page 12

oceanfarmr

**Farm Management Software:
Built by Farmers for Farmers**

oceanfarmr.com →

- Android & iOS (plus web dashboard)
- For farm operations of any size
- No lock-in contract
- Set-up, training and support included
- Simple & practical to use



oceanfarmr

HOT AQUACULTURE NEWS!!



Fish Farming News is the aquaculture industry's national newspaper, devoted exclusively to coverage and the betterment of domestic aquaculture.

Content is geared toward active commercial fish and shellfish farmers, covering all major commercially cultured species, in freshwater and saltwater, warmwater and coolwater, and both open and closed production systems.

Fish Farming News is published bi-monthly. Subscriptions are just \$14.95 per year in the US.

Subscribe to
Aquaculture's National Newspaper

GO DIGITAL - sign up at:

www.fish-news.com/ffn

© Fish Farming News
Compass Publications Inc. - Fisheries Division



Swap Meet

Looking for a job?
Want to buy or
sell seed or gear?

Join the
ECSGA-SWAPMEET
Google Group and keep
the main ECSGA Listserv
free for relevant issues,
growing tips and news you
can use. SWAPMEET is
free for all and you don't
have to be a member to
subscribe.

[ecsga.org/
swapmeet](http://ecsga.org/swapmeet)



Innovation

Does your heavy lifting

Shellevator™ is a patented aquaculture apparatus and method. Compressed air automates ascent and descent of any oyster gear through the entire water column, lifting oysters above the sea.

Shellevator™ provides many advantages:

- Automatic: Eliminates costly & dangerous manual labor
- Simple: No submerged moving parts
- Efficient: Compressed air lifts tons of oysters in seconds for pennies
- Scalable to any size
- Compact: 3-D (stacking) maximizes production in limited area
- Versatile: Deployable on bottom or suspended from floats
- Durable: Built like boats to last decades
- Secure: Stays put during storms due to wide body, low profile and weight
- Out of sight from NIMBYs, thieves and birds
- Portable: Timely and seamless relocation of product on massive scale
 - Escape harm from floods, freezes, HABs or contaminants
 - Maintain cash flow during pollution or HAB closures
 - Improve growth, quality and safety

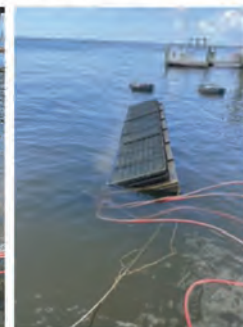
Shellevator™ Express: Delivers Over Land or Sea



Shellevator™ Shoreliner Living Shoreline & Working Waterfront



Desiccate



Tumble



Disappear



Does your heavy lifting

- **Portable** Andy DePaola
- **Durable** 251-455-3035
- **Efficient** andydepaola@gmail.com
- **Scalable** Shellevator.com

Microplastics and Shellfish

by Robert Rheault,
ECSCGA Executive Director

I continue to hear concerns from consumers about microplastics (MP) in shellfish. The mere fact that they are being detected virtually everywhere is raising alarms, despite scant evidence of health impacts from consuming them. A new paper (pubs.acs.org/doi/abs/10.1021/acs.est.2c06402) out of the lab of Drs. Sandra Shumway and J. Evan Ward at the University of Connecticut puts the issue in perspective, regarding shellfish at least.

In the study Kayla Mladinich et al. showed that mussels and oysters are quite selective in the particles they consume, and that they can reject a significant portion of the microplastics they trap on their gills. Of the fraction they do ingest, a significant percentage is egested within three hours. Different sizes of plastic polymers, in the form of either microplastic spheres (1 μm - 1 mm) or plastic fibers of various lengths, were offered to both species in two-hour feeding trials. The researchers monitored the rejection of particles in pseudofeces and egestion in true feces over time.

Oysters were shown to be more selective in what they consume (or reject) compared to mussels, rejecting up to 60% of plastic microfibers, whereas mussels rejected up to 30%. These differences between the species are likely due to differences in gill structure and the ways the gills process and handle particles.

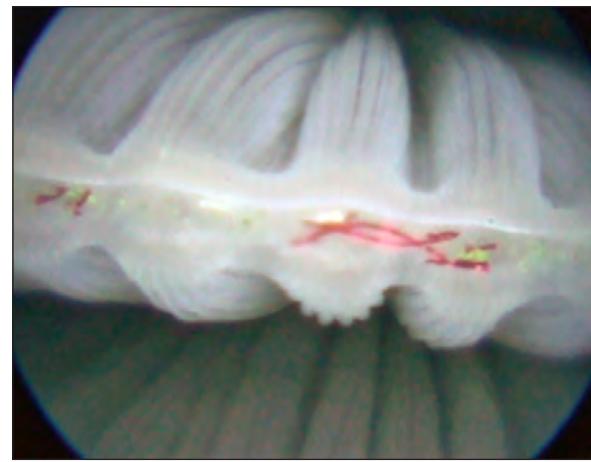
In almost all cases, the larger fibers were rejected at higher rates than the smaller ones, and at greater rates compared to microspheres. However, rejection rates did not appear to be substantially impacted by polymer type. Large fractions of what was ingested were subsequently egested within three hours for both species, but mussels tended to retain particles for longer periods than oysters, indicating that mussels were more likely than oysters to pass microplastic particles into their digestive gland before egestion. The good news is that the study helps us

understand why researchers are not finding more microplastics in field-collected bivalves. High rates of rejection and egestion prevent the accumulation of microplastics in shellfish. The fact that oysters (and to some extent mussels) are sorting and rejecting captured particles with remarkable efficiency suggests that they are handling microplastics much like the other inert particles they encounter in the environment, such as silt. Pretty smart for a critter with no brain.

When someone concerned about microplastics in shellfish asks me whether it is safe to eat bivalves, I like to point out that:

1. We have no evidence that eating small amounts of microplastics has negative health impacts;
2. Despite being filter feeders, most shellfish have very few microplastics in their guts; and
3. Depending on air quality, you are likely consuming more microplastics that have settled on your food during dinner (> 60,000 particles/year/person) or from drinking bottled water (> 3.5 million particles/year/person) than from the shellfish on your plate.

To see videos of shellfish feeding, visit ward.lab.uconn.edu/endoscopyvideos.



J. EVAN WARD/UNIVERSITY OF CONNECTICUT

Mussels and oysters are quite selective in the particles they consume. They can outright reject a significant portion of the microplastics they trap on their gills (shown here as yellow plastic spheres and red plastic fibers), but a significant portion of those particles that they do ingest will be egested within three hours.

Freshtag™

from  **Vitsab®**
The sign of freshness

Freshtag™ Time/Temperature Labels Calibrated to mirror bacteria growth - or customize for your temperature profile

	For Perishable Catering Products		Validates Caviar Freshness and Quality
	Engineered to C Bot Toxin for ROP/MAP		Cold Chain Monitoring for Shellstock

Using Spotlight technology, Vitsab **Freshtag™** labels stay green for most of their life. They turn yellow and then red, like a spotlight, if temperature abuse per formulation is detected



Mark Winowich Director, Business Development
Phone: +1(206)962-0437 mark.winowich@vitsab.com

www.vitsab.com

AQUAMESH®

PREMIUM QUALITY MARINE-GRADE WIRE PRODUCTS
PROUDLY MADE IN THE USA



www.riverdale.com

— Continued from page 8
NC Oyster Mortalities

in the weeks following a freshening event from the intense but brief rains in July, which is in line with previous mortality events following environmental perturbations. Anecdotally, we do not see the same magnitude of mortality in most wild oyster populations, which has led us to address susceptibility across wild and cultured oyster lines.

With follow-on funding from the North Carolina Policy Collaboratory, we are working with the shellfish aquaculture industry and partners at University of North Carolina Wilmington

and the Duke University Marine Laboratory to understand how growers can best adapt and respond to repeated mortality events, including shifts in planting and harvest schedules to keep larger, more susceptible oysters out of the water during warm, high-risk summer months; and, if and when possible, moving oysters to lower-salinity nursery habitats for the majority of grow-out.

Continued investment in USDA and private insurance programs, and educating growers about insurance options, will be critical to sustaining the industry while we work to better understand the conditions underpinning these events.

NOAA Releases Aquaculture Strategic Plan

In October NOAA published its first-ever Five-Year Strategic Plan for Aquaculture to guide the agency's work from 2023 to 2028.

"Through this plan, NOAA will support a thriving, resilient, and inclusive U.S. aquaculture industry as part of a competitive domestic seafood sector," said NOAA Fisheries Assistant Administrator Janet Coit.

"This plan will act as a framework to guide NOAA's Aquaculture Program, set priorities to achieve our mission, and support NOAA's vision of healthy and resilient ecosystems, communities, and economies," Coit added.

The Strategic Plan articulates a vision for an industry that supports jobs, expands access to nutritious domestic seafood, and reinforces healthy coastal and ocean ecosystems in a changing environment. This is supported by the program's mission of providing science, services and policies that create conditions for opportunity and growth of sustainable U.S. aquaculture.

The plan contains four key goals to expand sustainable aquaculture:

- 1. Manage Sustainably and Efficiently:** Improve the regulatory processes for sustainable coastal and marine aquaculture through collaboration with partners.
- 2. Lead Science for Sustainability:** Use world-class science expertise to meet management and industry needs for a thriving seafood production sector and share this knowledge broadly.
- 3. Educate and Exchange Information:** Build awareness and support for coastal, marine and Great Lakes aquaculture through two-way communication with diverse stakeholders and partners.
- 4. Support Economic Viability and Growth:** Facilitate a robust aquaculture



industry that thrives as a key component of a resilient seafood sector.

When farmed seafood is produced responsibly, as it is in the United States, it is good for people, good for the economy and good for the planet. Seafood, both wild and farmed, is one of the best sources of nutrients essential for human well-being. Aquaculture is a resource-efficient means to produce protein; it helps to improve nutrition and food security while supporting local economies in the United States and around the world. As a climate-smart form of food production, aquaculture will be increasingly important as we face a changing climate and uncertain future environmental conditions.

Aquaculture already provides over half the global seafood supply, and demand for seafood is poised to grow both globally and domestically. Currently, the U.S. imports at least 70% of its seafood. While we continue to sustainably manage our wild harvest fisheries, we cannot meet the increasing domestic demand for seafood through wild fisheries alone. Increasing the sustainable farming of finfish, shellfish and macroalgae is essential to increase domestic seafood supplies and provide a source of safe, nutritious and sustainable seafood for consumers in the United States and around the globe.

To read the full plan visit: media.fisheries.noaa.gov/2022-10/Strategic-Plan-102422-web.pdf.

K&L GATES

NAVIGATING THE WATERS OF REGULATORY REQUIREMENTS

Effectively managing your businesses requires careful regulatory compliance.

We represent a wide range of shellfish aquaculture enterprises. Our work ranges from project permitting and regulatory compliance, to litigation, tax, employment, real estate, and legislation and policy matters.

We have prepared testimony and presented the views of industry coalitions and aquaculture clients to the U.S. Congress, state legislatures, and local, state, and federal regulatory agencies. A national firm with offices in major cities including Washington D.C., Boston, New York, Charlotte, and Seattle, we bring both local and national perspectives to meet the needs of industry clients.

Before embarking on your next legal challenge, consider the resources we have to offer.

K&L Gates LLP. Global counsel across five continents. Learn more at klgates.com

P.E.I. Growers Hammered by Hurricane Fiona

by Robert Rheault,
ECSCA Executive Director

Despite projections for a very active hurricane season in 2022, the East Coast aquaculture community seems to have dodged a bullet for once. We did suffer the anxiety of a few near misses, but somehow managed to escape the devastation that shellfish farming communities saw in recent years when storms ravaged the Mid-Atlantic and Gulf Coasts.

In late September, growers in Cedar Key and the northwest coast of Florida were spared the brunt of Hurricane Ian's ferocity when the storm turned east into Fort Myers, plowed across the state and headed out into the Atlantic before turning west again. Ian finished up by drenching South Carolina growers and dumping a ton of rain on North Carolina and Virginia farms.

Mid-September brought Hurricane Fiona, which hammered Puerto Rico and then went out to sea and up the East Coast, bringing us high surf and rain but little else. However, Fiona wreaked devastation on Prince Edward Island, Canada. I had always thought that hurricanes north of Maine were nothing to fear, and it's true that by the time they reach cooler northern waters, their energy wanes. But Atlantic Canada suffered a lot of damage from post-tropical Fiona's storm surge, which results from the combined effects of extremely low atmospheric pressure raising sea levels (potentially by more than a foot and a half) and wind-whipped waves.

According to "The Globe and Mail," Fiona's storm surge broke water level records at four tidal gauges across Atlantic Canada, literally breaking at least two of them. Steen Gunderson of Bouctouche Bay Industries in New Brunswick, Canada, reported that growers using floating bags were hurt more than growers using his OysterGro® cages, which appeared to ride out the storm better when properly anchored.

An article in "Northern Aquaculture" indicated that mussel and oyster farmers in P.E.I. suffered \$28 million in damage. Shellfish growers there are hoping for some government disaster relief, but they don't have an established disaster relief program for aquaculture in Canada like we do. American growers should consider themselves lucky to have access to free crop-disaster assistance through the Farm Service Agency's Emergency Livestock Assistance Program (ELAP).



SALTWIRE.COM

The storm surge from Hurricane Fiona tossed oyster trays onto the shore on property owned by Raspberry Point Oysters in New London, Prince Edward Island, Canada.

An article in [SALTWIRE](#) put Fiona's damage estimate closer to \$75 million, with many mussel and oyster farmers still struggling to get damaged gear out of the water before winter ice sets in. SALTWIRE reported that not every farmer was impacted, and shipments of oysters and mussels contin-

ue, but the impacts of the storm could slow harvests for years. Mussel farmers apparently lost most of the spat collected this summer. According to data from Statistics Canada, in 2021 P.E.I. exported \$22.5 million worth of oysters and \$38.8 million of mussels. Up until September 2022, the industry had exported \$27.7 million in oysters, and \$28.4 million in mussels. Since the lion's share of these exports head right over the border to New England, it looks as if we can expect a hiccup in Canadian production for at least a few years to come.

SHIPMENT
TEMPERATURE
MONITORING

TP348

Food 10/50

2 4

hrs

34800000000

8/46

2 4

hrs

34900000000

Call to discuss shellfish temperature monitoring solutions

Stephanie Perl
phone: 201-914-9286
email: stephanie@timestripnorthamerica.com

North America

North America
BST Oyster
Supplies
Distributor

302-OYSTER-1

sales@delawareoysters.com

www.delawareoysters.com

Go Deep
International Inc.

Shellfish Aqua Products
Site/Lease Marking Solutions

10 Watertown Rd., Saint John
New Brunswick, Canada
E2M 7K2

International: (01) 506-633-7850
Toll Free: (North America) 1-877-446-3337

Website: www.godeeppintl.com
Email: info@godeeppintl.com

NEW!

REFRIGERATED
MICROALGAE FOR
SHELLFISH

TP1800™

Shellfish
Diet
1800™

TW 1800™

Pav 1800™

ReedMariculture.com/complete

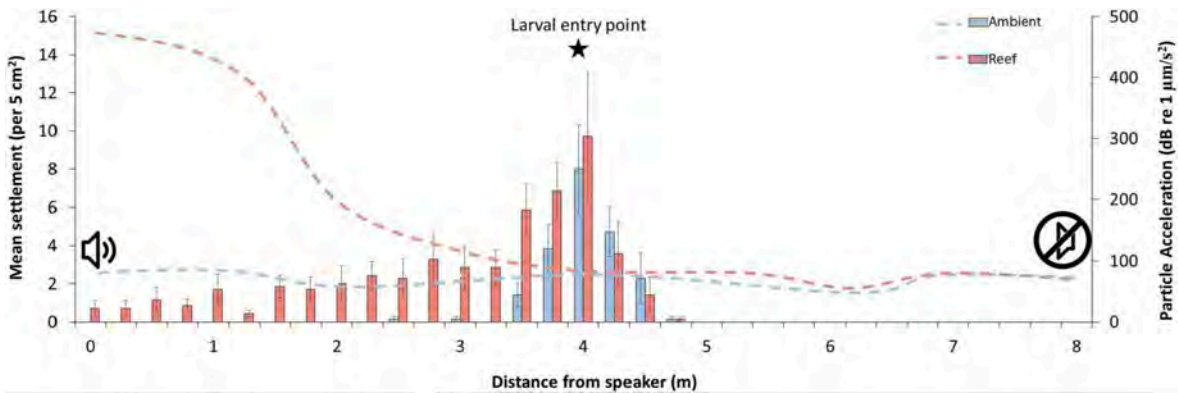
Reed Mariculture
ENSURING HATCHERY SUCCESS®

© 2022-2023 Reed Mariculture, Inc. All rights reserved. Instant Algae, Iso 1800, LPB frozen Shellfish Diet, Pav 1800, Shellfish Diet, Tet 3600, Tp 1800, Tp 3000, Tw 1800, Tw 2400, & Ensuring Hatchery Success are trademarks or registered trademarks of Reed Mariculture Inc.

Oyster Larvae Respond to Reef Sounds?!

When I first saw reports in the literature suggesting that oyster larvae respond to sound I confess I was more than a little skeptical. How could a dust-speck-sized organism with no brain respond to sounds, and why? But my curiosity got the better of me so I did a deep dive and it appears that the science and statistics are quite robust. Researchers in Australia have shown that competent larvae of the Australian flat oyster, *Ostrea angasi*, swam horizontally (up to 4 m over the 24-hour trials) in flume tanks toward broadcast reef sounds and settled at greater rates on tiles exposed to reef sounds than on tiles that were out of range of the sounds being broadcast (doi.org/10.1111/1365-2664.14188).

The team went on to test their findings in the field, comparing settlement rates at 10 oyster reef restoration sites with and without treatments of broadcast reef sounds. They found that “soundscape playback significantly increased oyster recruitment at eight



WILLIAMS ET AL./JOURNAL OF APPLIED ECOLOGY

Oyster larvae were released in the middle of an 8-meter tank with reef noise broadcast from the left end. Blue bars show where the larvae set without reef noise on, and pink bars show many larvae swam toward the sound before setting; none swam more than a meter away from the sound before setting.

of the sites by an average 5.1 ± 1.9 times (5281 ± 1384 more larvae per m^2), and by as much as 18 times.” While the mechanism is unknown, the team hypothesizes that sounds of a healthy reef probably indicate a good place to settle and grow, as opposed to sites devoid of sound or dominated by anthropogenic noises. We know that the American oyster will seek out sites with moderate salinity and substrates containing calcium car-

bonate and certain biofilms associated with oysters, and these are evolutionarily adaptive behaviors. So why not use sound as another cue for potentially advantageous settlement sites? Now we need to find out if this works for our native species and whether there are applications for hatcheries to explore. Back in the day we would play Marvin Gaye in the hatchery when we were trying to encourage our oysters to spawn. —RBR



Get growing today!



OysterGro® makes aquafarming productive and rewarding!

Partners in your success

Our experts are ready to assist with all aspects of your business, including site selection and growth planning.

5 models to choose from:

HighFlo™	ProFlo™	Pro-Compact™	LowProPlus™	LowPro™
6 Bags	6 Bags	4 Bags	3 Bags	2 Bags

Proven system

- Turnkey operation
- Predictable investment
- Environmentally friendly
- Dedicated support
- Profitable results

FREE CONSULTATION

1(506)743-5455

www.OysterGro.com



MADE BY FARMERS FOR FARMERS




INTRODUCING OUR ALL NEW OYSTER CAGES

MADE IN THE
CAROLINAS

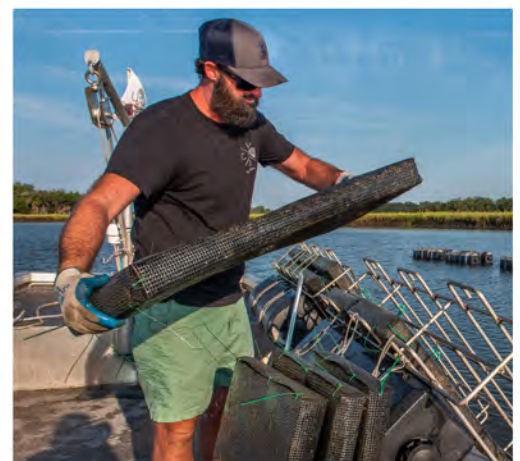


Lowcountry Oyster Company manufactures sturdy, aluminum cages with floats from start to finish. Invest in your farm with our durable, long-lasting equipment that can withstand the harshest of conditions for years to come. Ready to ship TODAY!

 Visit www.lowcoysters.com/cages online.

CAGE FEATURES

- 6-bag aluminum cages
- 100 liter pontoon capacity & 220lbs buoyancy
- High water flow for improved oyster growth
- Lighter weight (~50lbs with floats)
- Shipped directly to you



ECSGA Dues Categories

Growers, dealers and equipment suppliers enjoy full voting rights. (If you are both a grower and a dealer simply ask yourself where most of your revenue comes from.) If you don't fall into one of these industry categories please consider joining as a non-voting associate member.

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:

ECSGA, 1623 Whitesville Rd, Toms River, NJ 08755

Name _____

Company _____

Street Address _____

City, State, Zip _____

Email _____

Phone _____

Member Type and Level* _____

* Rest assured, your sales information will be closely guarded and will not be shared!

NEW

Plastic Corrugated Boxes!



MADE IN U.S.A.



- Tough & Durable Construction
- 100% Recyclable with Plastic # 5
- Waterproof
- Space Saving vs. Foam
- Weight Saving vs. Waxed Boxes



PACKAGING PRODUCTS CORPORATION

FISH AND SHELLFISH PACKAGING SPECIALISTS

198 Herman Melville Boulevard, New Bedford, MA 02740 USA Ph 1-508-997-5150

Fax: 1-508-993-9807 • USA & Canada Toll Free 1-800-225-0484

Email: info@pkgprod.com • Website: www.pkgprod.com

Reach out today!