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.

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The Mouth of the Bay

Read This Money-Making Tip

Executive Director Bob Rheault

I'm always a little surprised and dismayed to learn that many of our members don't take the time to read the ECSGA newsletter. But then I remember, it was not that long ago that I was managing a farm, and often if something hit my inbox and it was not directly related to keeping my company afloat, it went into an ever-growing pile of things I could put off while I dealt with more pressing concerns. I get it. Running a farm is hard. New challenges come at you every day, and you are often running behind and running on fumes.

Sometimes when I look at the companies selling farm-management software that can remind you when it's time to restock a thousand overgrown bags, I have to laugh because the software never explains how you can clone yourself (or your team) to actually get the work done. While no software can guarantee you'll finish all the tasks on time, I do think that these programs can be critical in helping with the onerous job of inventory management.

When the inevitable catastrophe strikes, having reliable, up-to-date inventory data will put you in a much better place to take advantage of crop-insurance programs like Emergency Assistance for Livestock, Honey Bees, and Farm-raised Fish (ELAP), which we wrote about in the August 2021 newsletter. If you have not yet signed up for ELAP at your county Farm Service Agency office (www.fsa.usda.gov/state-offices/index), you need to put that task at the top of your to-do list! ELAP is free crop-disaster assistance that pays you 70% to 90% of the value of your weather-related loss!

I know you're busy. That's why you need the ECSGA to stay on top of things so you can focus on keeping your farm afloat. We will keep track of new regulatory challenges and great new inventions and programs (like ELAP) so you can keep your head focused on running the farm. But you might want to take a quick peek at our newsletter when it hits your mailbox. We work really hard on it. My wife, Ann, corrects all my mistakes and makes sure it looks good, and you might just learn about something important (like ELAP). I just heard about six growers on Cape Cod who received ELAP payments totaling $713,200 after a heat wave at low tide caused mass mortalities last summer. Hopefully, that caught your attention and maybe you will go sign up for that great program now!

Did I mention it's free?

Market Disruptions, Inflation Fuel Skyrocketing Costs

by Robert Rheault,
ECSGA Executive Director

It has been a strange couple of years for the nation, and for the shellfish industry in particular. In early 2020 we discovered just how tied we were to the restaurant industry when pandemic closures shut down our main customers and locked up the shellfish market for months. Markets recovered as the year wore on, but most states reported 20% to 40% declines in shellfish sales year over year. Some growers survived by pivoting to direct sales, and many received relief checks that helped them survive. Since nobody could predict where this was going to go, many farms canceled seed orders and pulled back on plans to expand gear purchases.

The second year of the pandemic was quite a different story. In 2021 we saw a sizeable pop in consumer demand. Despite the emergence of the delta and omicron variants it appears that folks were sick and tired of sheltering at home. Consumers had money to spend and they wanted to go out and have a good time. Despite the fact that a lot of the restaurants in major cities were shuttered or struggling, sales of many luxury products took off. With limited supplies and huge demand we saw the prices of lobster, crab, sea scallops and even steamers all increase by 60% to 80%. Most of our members tell me that 2021 was one of their strongest sales years ever.

MAERSK LINE

The price of just about everything oyster growers need to get their product to market (cage wire, growout bags, fuel, boxes, shipping) has skyrocketed over the past year. The cost of shipping a 40' container from China to the U.S. West Coast soared from $2,000 pre-pandemic to over $20,000 in the summer of 2021! Meanwhile, shipping behemoth Maersk posted $18 billion in net profits for 2021, a 520% increase from the previous year.

While wandering the Boston Seafood Show in mid-March, growers and dealers from Prince Edward Island to Florida to Washington State told me that they were pretty much sold out of their mid-range oysters. Many had high-end, "perfect rawbar" products to sell because so many of the finer restaurants had either gone under or had yet to re-open their raw bars. Clams appear to be in tight supply too; and it sounds as if clam sellers have enjoyed a fair price increase over the past few years. But curiously, most

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Member Profile:

Vitsab Enhances Direct Oyster Sales During COVID and Beyond

By Jeff Desrosiers, Executive Vice President
Vitsab International AB, Winslow, Maine

Faced with the existential crisis of surviving the widespread restaurant shutdowns of the pandemic, many oyster growers were forced to pivot to selling directly to consumers. The farmer's goal has always been to facilitate the journey from farm to fork swiftly and safely, while maintaining quality and delivering an excellent customer experience.

But the pandemic smacked growers with a double whammy: in addition to the overnight evaporation of their customer base, previously unheard-of delays in shipping and distribution often led worried consumers to refuse delivery because of fears about product safety.

Happily, Vitsab makes an affordable, easy-to-use product that can show consumers at a glance whether or not their product has undergone significant thermal abuse. After years of collaborative research with regulators and members of academia and industry, we developed the Vitsab Freshtag™. This small label changes color to clearly tell customers if their oysters are safe to eat.

Effective direct sales

Over the past two years we at Vitsab have been working hard to gather information about how to make an effective direct-to-consumer sales program. I learned a lot through Zoom meetings, email correspondence and face-to-face opportunities (even though those have been few and far between). One especially helpful event was the meeting of the International Association for Food Protection held in Arizona in July 2021.

It was the first in-person event we had attended since COVID hit, and it was incredibly helpful. We met many attendees from tech companies, academia and training companies, and end-users themselves, who helped us understand the "last mile" of shipments and the direct-to-consumer process, especially the website interface. We learned that successful direct-sales programs have three characteristics in common: they are simple (the simpler the better), easy to understand and cost effective.

It all starts with the face of your company, the website. Some things to consider when building your website:

- ❑ use high-quality videos and/or photos;
- ❑ tell your company's unique "story";
- ❑ educate visitors and consumers;
- ❑ focus on ease of navigation; and
- ❑ provide clear direction to customers on what to expect after they place their order.

Vitsab's Freshtag™ labels are an easy-to-use, inexpensive way to reassure consumers that their shipment of oysters has arrived safe to eat. Before activation the label is white; pushing and mixing the contents under the center dot turns it green, which is how it will stay under perfect shipping conditions. If the dot is yellow to light orange (as shown in the background of the label above the white line), the product has not been compromised by time/temperature exposure. If the dot has turned dark orange or red, the product has experienced thermal exposure over the safe levels recommended by the FDA and should not be eaten.

The best website in the world will fail without your dedication to working it every day to ensure fast order processing, quick shipment confirmation and speedy responses to customer questions and comments. Pull-through branding from the website to the packaging will ensure an excellent customer unboxing experience and lead to buyer retention and referrals. Colorful packaging is your friend. Environmentally conscientious packaging will be remembered.

Reassuring customers their order is safe

Once the shipment leaves your facility you are wholly at the mercy of the delivery carrier. Everyone can agree that COVID has put a strain on all delivery companies, so assume that your orders will be delayed—sometimes by a few hours, a half day, a full day or more. Nothing puts a consumer who is already living in fear on high alert like a delay in their shipment of oysters. The Food and Drug Administration (FDA) Risk Analysis on *Vibrio* bacteria tells us that as long as the temperature of the product inside the box remains below 50°F, *Vibrio* will not multiply. Just because the gelpacs might be melting by the time the box arrives, it does not mean that the product inside has warmed up significantly. Of course, forcing the consumer to pull out a thermometer is not a great solution. Safety validation in each shipment needs to be simple to include, easy for your customer to understand and inexpensive.

The customer needs validation that the oysters are fresh and safe; that's where my two-plus years of research with the FDA, state regulators, safety plan educators, and many of you in the oyster industry comes into play. Freshtag™

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Shellfish Trade With EU Resumes—*Finally!*

by Robert Rheault,
ECSGA Executive Director

After more than a decade of working the issue of reciprocal trade of shellfish with the European Union we can finally claim victory! About 12 years ago shellfish exporters in the United Kingdom asked for permission to sell their live molluscan shellfish to the U.S. But when the U.S. Food and Drug Administration (FDA) evaluated the UK's shellfish sanitation program, they decided to deny the request based on concerns about norovirus contamination. The EU retaliated by shutting off all imports of molluscan shellfish (except scallop meats) from the U.S.

Our FDA is quite restrictive on who is allowed to export into our markets. They require that any country shipping into the U.S. must have an equivalent shellfish sanitation program in place. Currently, only Canada, South Korea, New Zealand and a few bays in Mexico have been able to clear this high bar.

One of the big sticking points was that our sanitation program relies on testing the water quality in our growing areas, while the Europeans test for indicator bacteria in the shellfish meats. After a bunch of statisticians got together to hash things out, the FDA and its European counterparts were finally able to agree that the two methods are statistically equivalent. And this opened the door for negotiations on a limited reopening of trade.

A few years ago we were able to get the U.S. trade representative involved in the negotiations, which was critical in moving the negotiations along. The FDA had been trying to work the issue, but their concerns lie almost exclusively with issues of sanitation and they don't have expertise in negotiating trade agreements. We had heard that an agreement was imminent for so many years that it started to sound like a running joke. But once the U.S. trade rep got involved we started to see some real progress, and at last the door has opened and the first shipments have been made.

Initially only two U.S. states are eligible to participate. Washington State and Massachusetts will be allowed to ship to any EU country, while the Netherlands and Spain will be allowed to ship anywhere in the U.S. Further restrictions apply, in that only product harvested from waters classified as "open" in the U.S. may be shipped to the EU. Likewise, only product harvested from "Class A" waters in the EU (meaning the shellfish meats pass rigorous testing regimes and do not require depuration) may be shipped to the U.S.

WWW.LOCALGUIDESCONNECT.COM

Oysters for sale at the famous outdoor market in Cancale, France. After taking into account shipping costs and exchange rates, it's anybody's guess which side of the Atlantic will have a price advantage now that U.S./EU trade in molluscan shellfish has resumed.

We have been assured that other U.S. states and EU countries will be added to the list of eligible participants by the end of 2022 (but I would caution you not to hold your breath).

The trade announcement was greeted with limited enthusiasm in Massachusetts because the market last year was so strong that very few oysters and clams are available to ship overseas.

Dealers are optimistic that by this fall inventories will have rebounded and some of the typical fall glut of product can be taken off the market by sharing it with consumers in Europe, who in past years showed a fondness for our Eastern oysters and clams.

It will be interesting to see what sort of volume develops out of the new opportunity. The Netherlands had live oysters (the Pacific oyster, *Crassostrea gigas,* and the European flat oyster *Ostrea edulis*) on display at the Seafood Expo in Boston in mid-March. The cost of airfreight will pose a barrier unless dealers can put together air-container loads, but there is plenty of confusion about which side of the Atlantic will have a price advantage after exchange rates and shipping costs are taken into account.

It will take some time for dealers to develop relationships and build trust. It is somewhat an act of faith sending a few thousand dollars' worth of product across the ocean in the hopes you will eventually get paid. And while it may take years for markets to develop, I have always said that any market is good for producers. It takes a little pressure off local supplies if we can send some product to Europe, which should help us keep our prices up here at home.

— *Continued from page 2*

Direct-to-Customer Sales

Shell Safe Shipping labels are easy to activate and stick on the inside of your packaging. They look like a stoplight so anyone can understand them, and they cost no more than 70 cents each. The technology relies on a thermally driven chemical reaction, changing the color of the tag (from green to yellow to red) as it is exposed to time/temperature increases that might allow *Vibrio* to reproduce.

Companies that use our Freshtags™ have reported 20% to 72% fewer refunds and credits during the warmest months of the year because customers are able to quickly determine if their delayed shipments are still safe to eat. (These results were compiled by comparing rejection rates before using Freshtag™ vs. after starting a Freshtag™ program). Having even slightly fewer shipments rejected in a year will more than pay for the Freshtag™ labels that most shippers would use annually.

A few oyster companies that have already started using Freshtag™ are: Barnegat Oyster Collective, Cape May Salt Oyster Farms, Cascumpec Bay Oyster Co., Carolina Gold Oyster Co., Glidden Point Oyster Farms, Locals Seafood, Taylor Shellfish Farms, and Willapa Wild (Oysterville Sea Farms).

Since the Freshtag™ brand has other formulations, we have been gathering very helpful information from not only the shellfish industry, but also the many firms that have sprung up offering direct-to-consumer home-meal preparation kits. We have also helped many growers create branded information about Freshtag™ to promote their success. After all the time we've spent developing this useful tool and engaging many people in the evaluation process, we can help you develop product-appropriate informational inserts about the best applications for Freshtag™ use to ensure happy buyers, safe products and fewer rejected shipments.

If you focus on those three characteristics of your direct sales program—keep it simple (the simpler the better), easy to understand and cost effective—I am confident you will have a successful and growing direct sales organization.

For more info on the Shell Safe Freshtag™ visit www.vitsab.com.

The Power of Persistence

by Robert Rheault, ECSGA Executive Director

After many years of hard work, with support from dozens of folks all pulling on the same oar, we are about to realize two exciting improvements for the shellfish farming industry: a law exempting shellfish aquaculture employees from Jones Act coverage, and establishing a shellfish genetics research program. The success of these efforts speaks to the power of associations and the determination of a few good people to see things through. I may not be the smartest or the strongest person, but I am often the most persistent. Some call it grit, or being stubborn (my wife calls it pigheadedness), but there is a lot to be said for never taking "no" for an answer.

Just before we went to press I learned that our bill to exempt aquaculture workers from the Merchant Marine Act (MMA) had passed the House with the Coast Guard Authorization Act (CGA). From here the CGA will go to the Senate, either as a stand-alone bill or as a subchapter of the National Defense Authorization Act. If our little section doesn't get carved out, it is quite likely it will become law this fall.

What does that mean? Our bill quite simply says that if you are eligible for state workers compensation, then you are no longer considered a seaman under the Merchant Marine Act (a.k.a Jones Act) unless you are a licensed mariner or hold a captain's license. Many of our members have to pay into state workers compensation funds while also being liable for lawsuits from injured workers under the MMA. These are potentially unlimited-liability lawsuits that could easily bankrupt most farms.

While some members argue that Jones Act insurance coverage is less expensive than state workers compensation, the specter of an unlimited-liability lawsuit was enough to convince the ECSGA board that this was a measure worth fighting for. Many of our members pay into state workers compensation funds while also paying for Jones Act coverage. Some firms have gotten their insurance agencies to parse their

— *Continued on page 14*

April 27-29 NACE/Milford Aquaculture Seminar: This Is Definitely It

After Covid hurled its most recent curveball at the end of 2021 and caused the postponement of this perennial favorite conference and trade show, excitement is mounting as the time draws near (again) for the Northeast Aquaculture Conference & Exposition/41st Milford Aquaculture Seminar. Slated to take place April 27-29, 2022 at the Holiday Inn by the Bay in Portland, Maine, the event will feature concurrent sessions on all aspects of aquaculture, multiple workshops, field trips to area aquaculture farms

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and research facilities, a trade show with 40 vendors and of course, many opportunities to schmooze. The organizers have partnered with local restaurants in the famed foodie mecca of downtown Portland; many of them will be offering reduced prices for NACE attendees.

The ECSGA will hold its annual meeting on Thursday, April 28, at 6 pm at The Shop restaurant/bar. The after-party starts at 7 pm and requires registration at www.eventbrite.com/e/ecsga-after-party-at-the-shop-tickets-292628438537.

Given the state of the ever-morphing pandemic, hosting a group of enthusiastic attendees for the first time in three years has been both exciting and challenging for the organizers, but after consulting with the Maine Centers for Disease Control and hotel management, they have planned for an environment that will be safe for everyone: attendees and hotel staff, as well as the very important people everyone will be going home to.

To that end, evidence of full vaccination is required (digital copies of vaccination cards will be destroyed after the conference). The hotel has installed HEPA air-handling filtration and hand sanitizers, and will spread out seating in the meeting halls. To avoid overcrowding, registration has been capped at 450, so don't delay, register today:

www.northeastaquaculture.org/registration.

SIGN UP TO BE COUNTED IN THE 2022 CENSUS OF AGRICULTURE

You can help yourself and your industry by filling out the Census of Aquaculture. Reliable census data is key in delivering you crucial help when disaster strikes. The information you submit could lead to new crop-insurance and disaster-relief programs tailored specifically to the shellfish industry.

If you have never received a census form from USDA before, visit www.agcounts.usda.gov/static/get-counted.html by June 30, 2022. to register. If you have received an Ag census in past years you do not have to register again.

Census of AGRIculture forms will be mailed out in December 2022. You can fill out the paper form and mail it back to USDA, or use your special code on the paper form to enter your info online. When you indicate that you're a shellfish grower on the Census of AGRIculture, USDA will then mail you a Census of AQUAculture form in December 2023.

By law, your individual info must **remain confidential,** and won't be disclosed to any other government or private entity, or be used for purposes of taxation, investigation or regulation.

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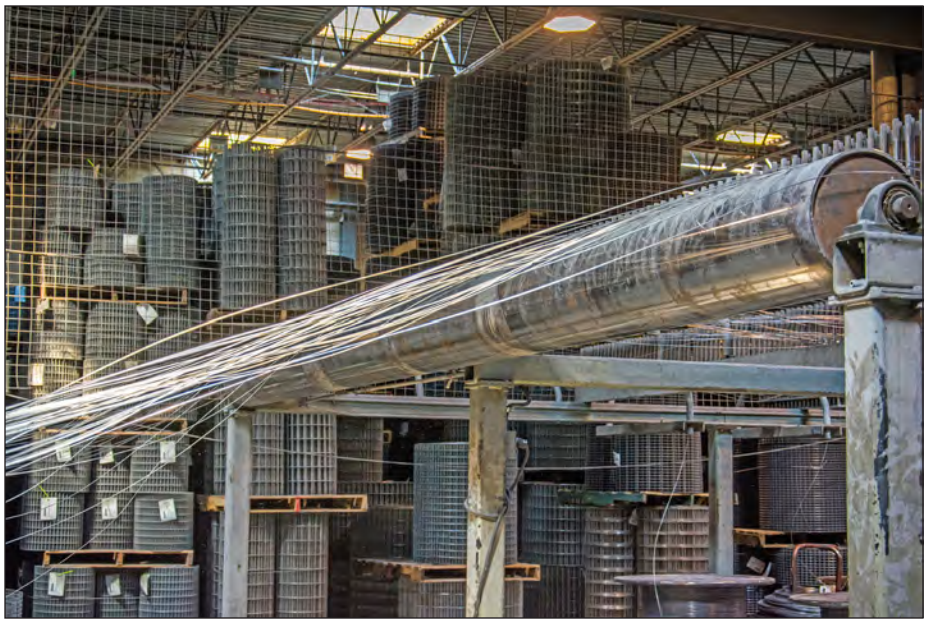
Market Disruptions

oyster growers are telling me they are getting serious pushback on any attempts to increase prices, despite the tight supply.

Growers sitting on a nice pile of seed won't be seeing much growth until the water warms up, so we can expect supplies to remain constrained for a few more months, extending the current seller's market into early summer at least. Any price increases would provide much-needed relief for growers, who are seeing all of their input prices skyrocket. Cage wire, growout bags, fuel, boxes, shipping and basically everything you need to grow and ship shellfish have all gone up in price. Supply-chain issues have caused imbalances in supply and demand that further exacerbate the pressure to raise prices, and now the war in Ukraine is heaping uncertainty on everything, just when we thought we were emerging from the COVID funk.

Inflationary pressure

When growers go to buy new cages this year they are in for some serious sticker shock. I spoke with the leading supplier of cage wire, Jim Knott Jr., (CEO of Riverdale Mills in Northbridge, Massachusetts) and he explained this "perfect storm" of factors that has forced Riverdale to bump up prices on cage wire. The industry's woes started with Trump's executive order imposing a 25% tariff on imported steel back in March 2018. Then five U.S. steel mills went down for extended planned and unplanned maintenance in 2020, and one of the largest Canadian mills got hit with labor strikes. It didn't help that the energy-intensive steel industry saw the cost of natural gas and electricity more than double. Knott watched the price of domestic steel shoot up from $520 a ton to $940 a ton when the tariffs first hit, and it is up to around $1,200 a ton today. Riverdale is proud that they use only North American steel and see the tariffs as a tax on those who buy steel to make value-added, steel-demanding products. As a result, the American end-consumer is the one who is harmed and winds up paying for the tariff.



RIVERDALE MILLS

The price of steel used by Riverdale Mills in Northbridge, Massachusetts, to manufacture cage wire increased from $520 a ton to $940 a ton when the Trump tariffs first hit in March 2018; it's up to around $1,200 a ton today.

The tariffs were intended to help the steel- and aluminum-producing industries, but they imposed substantial costs on a much larger segment of the U.S. economy that buys steel to manufacture many thousands of downstream products. The restriction on the supply of goods and raw materials because of the tariffs has sent a ripple effect throughout these downstream industries, disrupting supply chains, driving up costs, and threatening the economic security of 6.5 million U.S. workers employed by steel-consuming manufacturers.

Riverdale is fortunate to be able to take advantage of hydroelectric power, and they have installed a super-efficient CHP (combined heat and power, also known as cogeneration) system to support some of their energy-intensive processes.

Zinc has almost doubled in price since the pandemic hit, and zinc is critical to the galvanizing process. Similarly, plastic resins shot up in lock-step with oil, gas and electric price increases, as well as supply-chain issues. Riverdale also formulates and manufactures their own PVC compounds for vinyl-coating their wire. Knott said, "I could reduce vinyl costs, but I am not willing to cut corners on the quality of the vinyl we use to coat our Aquamesh® wire, ...[which] is known to have the best coating in the world for sub-sea applications.

"This proprietary coating is critical to the durability of our wire in seawater. Honestly, our globally recognized vinyl coatings and the fact that we galvanize our wire mesh after we weld it with the heaviest zinc coating, is what sets our wire apart from the competition."

Knott went on to describe how the war in Ukraine has added to Riverdale's costs. Russia accounts for about 10% of the global nickel supply. Nickel was rallying before Russia's invasion of Ukraine, as there was robust demand for stainless steel and that demand had started to drain global inventories. In the first three weeks of March, Western sanctions against Russia over its invasion of Ukraine raised concerns about the metal supply, and the price of nickel gyrated madly, briefly topping $100,000 per ton.

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Market Disruptions

The Eastern Bloc countries are some of the biggest steel producers in Europe. The war between Russia and Ukraine is constraining raw material supplies to most of the wire producers in Europe and may cause some of these wire mills to declare *force majeure* (a contract provision that frees both parties from obligation if an extraordinary event directly prevents one or both parties from performing).

All this means that cage manufacturers have seen wait times on wire deliveries jump to as long as six months, which means their costs will rise significantly between the time they order and the time the wire arrives.

Growing shellfish just got a lot more expensive

Growers are already suffering from severe sticker shock when they go to buy cages. Prices are going up almost weekly as dealers try to handle the crazy increases in everything they are buying. Plastic-mesh growout bags have almost doubled in price due to the one-two punch of rising marine freight costs and oil prices. Then there are often shipping delays in the little items like clips that can hold up the fabrication and sales of completed cages. Of course, the floats are plastic, which is made from oil; and the cost of wax-coated, corrugated cardboard has soared because wax is also derived from petroleum.

To make matters worse, anyone who is trying to find workers can vouch for the rising cost of wages, which in turn boosts the cost of workers compensation insurance. And if you're shipping product you now have to pay fuel surcharges that went from 13% pre-pandemic to 65% to 75% today.

To add to growers' problems we are seeing a tight supply in the seed market as well. After a record sales year, growers are all hoping to increase their production. Hatcheries tell me they are getting lots of calls, but since few hatcheries have the capacity to bump up production, they can't readily take on new customers. I have not heard that seed prices are up, but the profit margins for hatcheries have always been tight, so I expect the laws of supply and demand could drive seed prices higher in the near future as well.

When I look at how the costs of production have gone up and the fact that supplies are tight and demand for oysters has never been stronger, I have to scratch my head when I hear that oyster prices have barely budged. Something's got to give. Profit margins in shellfish farming were never great, especially at a small scale. One has to wonder how growers will stay afloat unless they can either boost their efficiency or get more for their products.

RIVERDALE MILLS

Riverdale Mills takes advantage of hydroelectric power, and installed this super-efficient combined heat and power (CHP) system to drive some of their energy-intensive processes.

Profiteering?

Lastly, I have to wonder how much of the inflationary price increases we are seeing is simply producers passing on their rising input costs, and how much is the result of some firms' taking the opportunity to pad their bottom lines. International shipping giant Maersk just posted $18 billion in net profits for 2021 (up from $2.9 billion in 2020, a 520% increase), which might explain why the cost of shipping a 40-foot container from China to the West Coast went from $2,000 pre-pandemic to over $20,000 in the summer of 2021! Some of this cost increase relates to the time freight vessels have to wait offshore before they can unload, but when you see profit margins grow like this you know that some companies are doing more than just passing along their costs.

We have all seen food prices spiking, but how much of this is due to rising input costs when meat-packing houses are posting record earnings? The same is true for the major oil companies. And I love it when I see the price at the gas pump go up almost instantly when the price of a barrel of oil on the other side of the planet increases, but when the price per barrel dips back down it seems to take months for that drop to be reflected at the pump.

It's true that many of the price increases we see today, whether in cars or washing machines, can be tied to supply-chain woes and imbalances of supply and demand. But I am still left scratching my head when I see that lobster, crab and sea scallops all went up by 70%, but we can't seem to get 10% more for an oyster.

Take-Home Messages from Aquaculture 2022

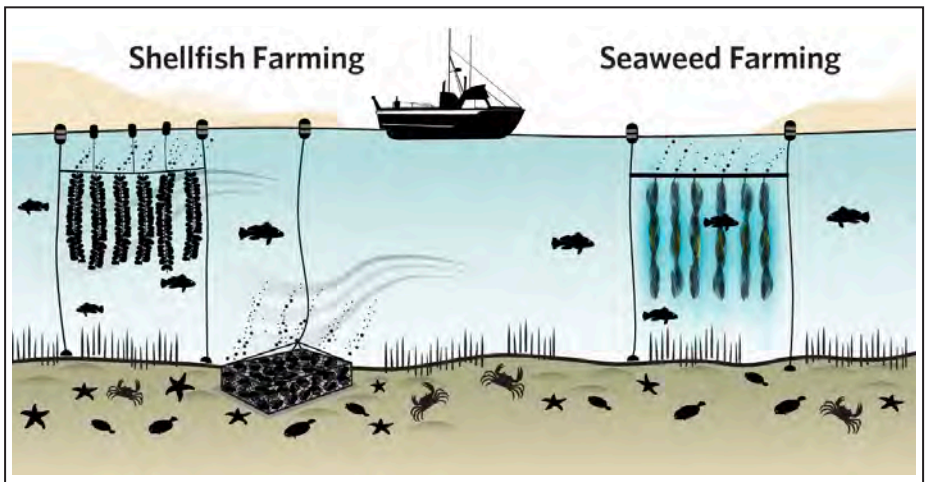
by Robert Rheault, ECSGA Executive Director

It was a real treat attending Aquaculture 2022, the big triennial conference and trade show, held in San Diego in early March. It's been a couple of years since I've been able to attend an in-person conference—virtual pandemic conferences have been poor substitutes for the real deal. The triennial also provided a venue for the annual meetings of the World Aquaculture Society, National Shellfisheries Association and the National Aquaculture Association, among others. Although it is typically a huge event drawing 3,000-4,000 attendees, COVID depressed attendance somewhat, both among vendors and attendees. Nevertheless, it was still great to catch up with old friends and see what the rest of the aquaculture community has been up to.

When I heard that Roz Naylor was the keynote speaker I nearly did a spit take. Dr. Naylor had written what I would call a "hit piece," throwing aquaculture under the bus in a paper titled, Effect of aquaculture on world fish supplies[1] published 22 years ago in *Nature*. The authors attacked the sustainability of fish farming largely on the premise that it was contributing to worldwide declines in wild fish stocks, based on calculations of the number of pounds of wild fish needed to grow a pound of farmed fish, the so-called fish-in:fish-out ratio (FIFO). Many of us in the aquaculture community spent the next decade trying to refute that paper and repair the damage it had done to the image of global fish farming.

I was pleasantly surprised to hear Naylor acknowledge in her keynote address the tremendous advances we have made in fish farming in the intervening 22 years. In her recent retrospective review of global aquaculture[2] she showed how fish farmers had become far more efficient in their use of fish meal and fish oil, replacing most of these expensive feed ingredients with plant-based substitutes.

While global production of fed fish has tripled, the annual harvest of forage fish used for fish chow has declined from 23 metric tons to 16 metric tons. FIFO ratios have gotten much better in the past two decades, but there's still room for improvement. Naylor had high praise for extractive aquaculture of shellfish and algae, which has doubled globally in the past two decades.



Over four days the 2,000 or so attendees enjoyed nearly 600 presentations on a wide range of topics. Unfortunately, many of our federal partners were not able to join us due to COVID restrictions, but the few who could make it were featured in a number of Town Hall meetings where they shared federal priorities. NOAA and USDA continue to show broad support for aquaculture, and the diversity and breadth of the programs that we can benefit from would fill several pages.

I **thought a few programs were worthy of bringing to your attention.** Afton Vigue, outreach and development specialist with the Maine Aquaculture Association (MAA), described her work trying to spread positive messages about aquaculture through a variety of short films that were created and then pushed out through social media. The films are really great at telling a positive story and engaging the viewer. I encourage you to take a look at both the Maine Coast Harvest documentary film series: www.mainecoastharvest.com and the shorter MAA educational videos featuring member operations: www.maineaqua.org/video-gallery.

The most intriguing part of Vigue's work was her success pushing content to a few tightly targeted demographic groups with low-cost Facebook ads. She explained that you can purchase a certain number of views for $100 and can narrow the audience by interests, gender or location to maximize engagement.

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Aquaculture 2022

For example, you could aim for affluent waterfront homeowners or fishermen in an effort to win the hearts and minds of some folks who might typically oppose a lease in their community. It is hard to gauge impact beyond clicks and views, but anecdotally it appears that one campaign Vigue described had some positive impact in helping at least one controversial lease win approval with few objections. I would love to see if we could replicate this type of success with our association.

One of the other sessions I enjoyed was called *Aquaculture for Ecosystem Outcomes*, organized by Robert Jones of The Nature Conservancy (TNC) and Ken Riley of NOAA. Presentations discussed much of the work that went into the new TNC document *Restorative Aquaculture for Nature and Communities*[3], which was covered in the December 2021 newsletter.

Other presenters examined the science behind the valuation and assessment of habitat benefits and nitrogen-removal benefits, which I believe are extremely helpful in negotiating our social license to add farms in crowded coastal waters.

Having TNC and Pew out there calling for massive increases in shellfish and seaweed farming in order to benefit water quality and provide habitat for juvenile fish is a significant positive development. The line in their infographic (previous page) that really caught my eye was: "Increases the abundance of wild fish by up to 5 tons per year."

Colby Johnson (l) andTim Reed of Reed Mariculture were at the triennial show in San Diego in March. Theirs was one of the 166 booths of exhibitors at the show, which drew a somewhat smaller crowd than the pre-pandemic triennials of yore.

I certainly saw dramatic increases in abundance of the rock-fish/reef-fish assemblage on my own farm back in the day, and I love to point out that bottom cages improve ecosystem biodiversity and productivity. Other studies have shown that cages act as more than just "fish-attracting devices"—they can also enhance growth, reproduction, juvenile survival and productivity of fish species.

This information should really help win the hearts of commercial and recreational fishermen everywhere! In fact, the Coastal Conservation Association (one of the biggest and most influential sport-fishing lobbying groups in the country) has advocated for more shellfish aquaculture in South Carolina and North Carolina. This is just the type of help we need to push back on the anti-aquaculture anger we are facing in many states.

I attended dozens of other great talks, but for me the ability to connect with our federal partners and catch up with old friends is really the best part of attending these conferences. Some of the most satisfying information exchanges often happen while networking and having conversations over a beer at happy hour.

Notes

1 Naylor, R. L. et al. Effect of aquaculture on world fish supplies. Nature 405, 1017–1024 (2000).

2 Naylor, R.L. et al. A 20-year retrospective review of global aquaculture. Nature Review. (2021) doi.org/10.1038/s41586-021-03308-6.

3. www.nature.org/en-us/what-we-do/our-insights/perspectives/restorative-aquaculture-for-nature-and-communities

ECSGA Annual Meeting

Thurs., April 28
6 pm

The Shop
Portland, Maine

Free after-party, 7 pm requires registration: www.eventbrite.com/e/ecsga-after-party-at-the-shop-tickets-292628438537

Aquaculture 2022: A Resounding Success

"Come one, come all, for aquaculture large and small." And come they did! The triennial is now in the rear-view mirror and it was a joy to meet ***in person*** and see friends old and new at the newly renovated Town and Country Resort in sunny San Diego! The meeting was a roaring success thanks to the steering committee (Mick Walsh, Michael Masser, Sandy Shumway and Paul Zajicek) and the program committee (Jay Parsons and Sandy Shumway, co-chairs, Jim Tidwell, Steve Allen and Jeff Heindel).

The team of John and Noah Cooksey, Mario Stael, and George McKee did their usual amazing job of keeping things organized on all levels. Plenary speaker Roz Naylor from Stanford University set the meeting in motion for almost 2,000 participants representing 54 countries with 987 abstracts, 166 trade-show booths, 114 posters and 560 presentations in 79 sessions. Students made a strong showing with 223 in attendance.

The student organizing committee (LIST) did an outstanding job providing several special opportunities for engagement, and the auction was the usual raucous occasion and raised around $2,100 for the Student Endowment Fund.

WORLD AQUACULTURE SOCIETY

Table sales and book raffles raised another $3,000 or so.

It's now on to Baltimore for the National Shellfisheries Association's 115th annual meeting. Watch for details and block the dates: March 21-25, 2023. See you there!

—The National Shellfisheries Association

New Product Spotlight

Buoy Up Farm-Management System

by Robert Rheault,
ECSGA Executive Director

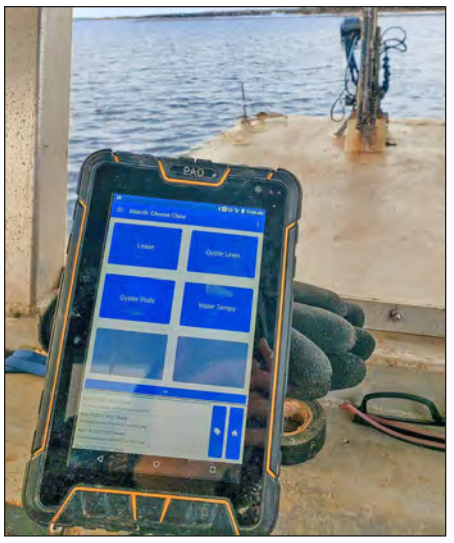
I recently had a chance to talk to Ryan Ellis and Matt Derry of Compass Aquaculture Solutions, a six-person company that operates out of Charlottetown, Prince Edward Island, Canada. The company was born in 2015 when shellfish growers looking for a way to manage the day-to-day operations and inventory on their farms approached founding members Jeremy Noonan and Gary Compton for help. After spending countless hours working with various shellfish farms to learn about their operations, Jeremy and Gary developed the Buoy Up farm-management system—easy-to-use software and tools tailored to meet the practical needs of shellfish growers. Their motto is, "Built for your office," whether it's on land or on the water.

Many growers face challenges staying on top of their businesses, especially as they grow in size, and even the most computer-savvy among them find that inventory management can be a significant chore. Any shellfish grower who has suffered a crop loss can vouch for the fact that if you don't have good inventory tracking prior to a loss, you won't be able to file a claim for crop insurance. Likewise, if you are looking for a loan to expand your business, the bank will want to see solid numbers before they give you a penny.

So the Compass team set out to develop a simple, easy-to-use software package that is adaptable to the highly diverse shellfish farming community. Buoy Up can help growers keep track of various processes such as brine-dipping schedules, cage desiccation, dividing of bags as the crop grows, etc. The software was designed to be able to work offline, with an inexpensive tablet or even a cell phone, to record the tasks you are doing on the water; and each member of your team can enter data so the whole team knows what needs to be done at any given time.

The software is highly adaptable and can be used to keep track of almost anything, from mussel lines to the wide variety of trays and cages that growers now use. You can even use it to help remind you when it's time to change the oil in your truck or perform routine maintenance on your outboard.

Data from the software application can be exported into Microsoft Excel, which makes it easy to gain insights by running additional analytics on anything you want to track. In addition, the reporting feature allows you to generate reports that can calculate inventory on the whole farm, per lease, by grade or even on individual lines, to help you stay in control of the normally chaotic farm-management tasks.



Because internet connectivity while working on the water is never a sure thing, the Buoy Up farm management software was designed to be able to work offline using a tablet, cell phone or this rugged, inexpensive device available from Compass.

The Compass team is really proud of their IT talent, and they are constantly improving the Buoy Up system to meet the changing needs of growers and to address new concerns. They have worked hard to make Buoy Up user-friendly and easy-to-learn, understanding that most growers are not computer geeks or math whizzes. They believe these features really set them apart from the competition.

Currently, most of the Compass customer base is located in Canada, but that is likely to change soon. U.S. customers are quickly coming onboard after seeing Buoy Up's capabilities and features, especially its ability to be used offline, as many farmers have faced difficulty with connectivity issues out on the water in the past. Interest has soared since Oyster Tracker shifted its business focus away from farm management to concentrate on marketing, tagging and traceability.

With the recent growth of shellfish farming, particularly in the southern U.S., the Compass team is eager to continue learning about different techniques and challenges in the diverse shellfish aquaculture industry, and they are pleased to bring their considerable skills to bear on innovating and improving what has traditionally been a more conventional, tech-averse sector.

For more info on the Buoy Up farm-management system, visit www.compassaq.com.

Listserv Woes

by Robert Rheault,
ECSGA Executive Director

For the past 20 years the ECSGA had maintained an active on-line discussion group, known to subscribers as the LIST. It was a great way to send timely information about relevant publications, meetings and news reports out to our community, and as a bonus, periodically I could get on and rant about topical issues. I know that most members don't read the newsletter, so it was a great way to easily reach most of our membership when something important came up.

Many loved the LIST for the reliable flow of shellfish-aquaculture news we were able to share. Some hated the fact that it was not solely an industry LIST and that other stakeholders were allowed to post. Some complained that the average of five posts a week was overwhelming their inbox. I also know that lots of the information I pump out gets passed along to non-subscribers (and often gets forwarded back to me!).

About four years ago the board of directors decided to make ECSGA membership a prerequisite for being on the LIST, but we retained an exception for extension agents, regulators and members of the media, thinking that it provided a valuable way for us to get our views into their inboxes.

A few months ago I was alerted that our ECSGA Listserv host, the University of Rhode Island, was canceling its subscription to the L-SOFT software in a cost-cutting measure. We were informed that hundreds of URI discussion groups were going to be forced to migrate to Google Groups. Like a good soldier, my wife, Ann, (who has a master's degree in computer science and is pretty savvy with all things digital) read up on all the instructions, and we prepared to migrate all our LISTeners.

Not surprisingly, things went off the rails pretty quickly. We were limited to 200 invitations a day for some reason. Or we could directly sign up to ten a day manually. Half of the folks who got invitations never made it over. Dozens complained they couldn't figure it out and needed help. There were some unique "features" of Google Groups, such as setting the default subscription preference to "no e-mail" for some people, which means if you don't notice this you have just signed up to join a group, but you will never receive a post from the group. Absolute genius! Dozens of members had group e-mails shunted directly to their spam folders.

Many members asked us to sign them up with a cryptic gmail address like FishRCool@gmail.com, but we had no idea who they were, so we had to email them to find out so we could check their membership status. Ann and I have spent about a hundred person-hours on this exercise, but as far as I can tell we have lost about half of our previous LISTeners. Many government employees are not allowed to use Google-anything.

Be sure to join our new list

So in an effort to get back on track (and throwing sunk cost to the wind) I asked the University of Connecticut if they would host an ECSGA LIST on their L-SOFT software platform and they agreed. We are in the process of setting that up and still working out the bugs there, but soon you should be able to subscribe to the new LIST by clicking the soon-to-be-revived big blue "JOIN Listserv" button under the main menu on our website. As soon as I see your request I will let you in (or ask you to pay your dues) and you should get a welcome message. If not, then check your spam folder. Some people have very aggressive filters that require you to "whitelist" specific domains or you will never see anything. Most don't even tell you they are filtering your mail.

Hopefully we will have things back to normal soon. I still see the LIST as a great way to share timely and important information with our community. I promise to prefilter what gets posted so you won't see holiday greetings or silly jokes. We typically keep it under five posts a week and the delete key is always handy, so I like to think the pros of being on the LIST far outweigh the cons. Stay tuned.

— *Continued from page 4*

Persistence Pays Off

boat-based hours for Jones Act coverage and their workers' land-based hours for state workers compensation coverage, but not all insurers are able to make this happen. Some growers try to skirt the rules and pay neither, but that is another story.

It is probably too early to take a victory lap because it's possible someone might object to our little carve-out and have it pulled from the CGA, but right now I think we are in a good position. Getting to this point was the product of six years of lobbying in DC, and at least a hundred repetitions of a wonky explanation about a bill that few legislators want to touch and fewer still could even begin to understand. (I can practically repeat it in my sleep).

We won the support of the maritime unions, then managed to convince the Congressional staff on the House Coast Guard Committee to get behind it, and then got about half the members of the House Coast Guard Committee to co-sign it. Finally, we seem to be on the threshold of victory. All those trips to DC, all those meetings with skeptical staffers, all those hours in uncomfortable dress shoes and a suit, all those receptions and Zoom calls may finally pay off.

Shellfish genetics

In another testament to perseverance, more than 14 years of effort trying to fund and perform research on shellfish genetics is about to bear fruit. After the first two years trying to make this happen, I was feeling pretty good because I had managed to secure support for $3 million a year in genetics research through the U.S. Department of Agriculture's Agricultural Research Service (ARS). The funding wasn't even an earmark, it was actually in the base budget and assured of passage—until the wheels came off the bus and Congress failed to pass a budget in what was to become the first of several years of "sequestration" budget cuts.

Not to be deterred, I continued to push and eventually was able to secure $2.7 million in ARS funds to support a significant team of genetic talent in the 2020 budget. After some COVID-related hiring delays we expect to have four top genetics experts hired by the fall. Each geneticist comes with staff and funding for facilities and equipment; we hope to soon be growing out 100 families in five different states to evaluate performance and disease resistance in a range of environments.

We have had MSX-resistant lines for the Mid-Atlantic region for several years due to the efforts of Stan Allen and others at the Virginia Institute of Marine Science and Rutgers University, and now we hope to soon have MSX-resistant lines for colder waters. With the new genetics tools that are available we hope to develop lines of animals that are also resistant to Dermo and probably Seaside Organism (SSO) and other pathogens that plague our industry. We should also be able to isolate the genes that affect shell shape, hinge morphology and shell coloration. I am very excited about the next 10 years of genetics progress in the fields of oyster breeding and eventually clam breeding.

I may not be patient, but I sure am persistent!

Oyster Seed On the Go: Mobile Hatcheries Support Increased Oyster Production

Mathews, Virginia—A U.S. Department of Agriculture (USDA) research project is helping to meet the country's growing demand for fresh, domestically raised shellfish. Oyster Seed Holdings, Inc. (OSH) in Mathews County, is expanding oysters' availability for the East Coast's $100 million shellfish aquaculture industry.

Nearly every oyster consumed in the United States began in a shellfish hatchery as what is called a "seed" oyster. In the earliest stages of an oyster's life, it is microscopic and at the mercy of water drawn from adjacent waterways where water quality can change quickly, threatening production. Until now, hatcheries have been in fixed locations, where they must ride out unfavorable conditions.

To address this vulnerability, OSH has developed a scaled-down hatchery that fits into a standard 53-foot tractor trailer or container. As such, it is mobile. A mobile hatchery can be picked up and moved if local conditions become unfavorable, providing a more agile response to changing site conditions. It can also be a vehicle for testing the adequacy of building a hatchery in a new location.

OSH is an independent shellfish hatchery at the "growing edge" of developing products and techniques to support oyster production. Since 2008, it has been a trusted source of seed and expert advice to oyster growers, as well as an open source of information into the complex world of shellfish hatcheries. Mike Congrove, OSH's president and owner, has been working on the mobile concept since 2014.

"Originally, I was looking to spread the risk of my own hatchery production," said Congrove, a graduate of the Virginia Institute of Marine Science with a Master's degree in Fisheries. "Then we realized that the mobile hatchery could have a much broader application and help the industry through bottlenecks in seed production."

In August 2021, OSH received a Phase 2 Small Business Innovation Research (SBIR) award from the USDA based on previous successful work on a prototype. With over a half-million dollars in funding, OSH has renovated the original prototype mobile hatchery and fabricated two others. OSH has deployed the three trailers alongside existing hatcheries to allow comparisons of seed production. In addition to the OSH site in Virginia, there are sites in Florida and Georgia, with university partners. Each unit is designed to deliver 15 million, 1-mm seed for each spawning run, which lasts approximately 4 weeks.

MIKE CONGROVE

Conical larval culture tanks are set up for high-density, flow-through culture in the mobile hatchery.

"USDA funding has given us the opportunity to show proof of concept in the commercialization of the mobile hatchery," said Stan Allen, emeritus director of the Aquaculture Genetics and Breeding Technology Center at the Virginia Institute of Marine Science. Allen is now coordinator of OSH's commercial research and development. "OSH's research and development portfolio builds on their commitment to provide the highest quality shellfish seed for their customers and help advance the industry writ large."

Updates on the SBIR project will be posted on the OSH website, www.oshoyster.com.

MIKE CONGROVE

The scaled-down hatchery fits into a standard 53' tractor trailer or container so it can be picked up and moved if local conditions become unfavorable. It can also be used to determine if a site is suitable before building a full-sized hatchery in a new location. The cost of moving the mobile hatchery is basically the same as having a full tractor trailer delivered—$3 to $4 per mile, depending on fuel costs.

For more info contact:
Mike Congrove
msc@oysterseedholdings.com
757.268.7575

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ECSGA Membership Categories and Dues

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!