

# LONGLINES

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# OYS OYSTERS

# **IT'S ALL ABOUT THE RESOURCES**



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The PCSGA strives to ensure a healthy industry and environment for shellfish farming on the Pacific Coast.

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#### What The Tide Brought In

#### PCSGA Keeps Growers 'Off the Menu' at ISSC

It's been six months since I took the helm of PCSGA. During this time I have learned a lot and I continue to be humbled by the dedication and breadth of knowledge our members have. A few weeks ago I attended my first Interstate Shellfish Sanitation Conference (ISSC). It was five days of intense discussion between growers and state and federal agencies about proposals to amend or change the National Shellfish Sanitation Program (NSSP) that you are all painfully familiar with. I'm told this was actually a 'tame' year for discussion, but intense nonetheless.

Being my first conference, I was mostly an observer this time around. There was a lot to take in, but one thing that really struck me was the amount of time, effort, and knowledge that a handful of our members contributed to ensuring that we are 'not on the menu' so to speak. I think a lot about the greatest value that we at PCSGA provide to our dues-paying members, and after this experience, I can tell you that our engagement at ISSC is one of the greatest and underappreciated values we provide.

Participation at ISSC is no small feat. The few growers who show up do so in a big way. They participate in committee meetings; review, evaluate, and present proposals that may impact the industry; and show up to engage directly with the agencies at the fiveday meeting. While they may be in it for their own benefit, those who participate on behalf of PCSGA do a wonderful job representing the perspective of collective rather than their own companies. These efforts ultimately benefit all of our grower members. Unless you are directly engaged, you may not appreciate all of this work because if we succeed and the potentially harmful proposal fails, there's no reason anyone outside of the process would know. While there are certainly elements in the NSSP that are less than ideal, it would be far worse without the engagement of PCSGA.

The next ISSC is in 2025. We need to deepen our bench strength in terms of participation at ISSC to ensure we remain effective. There are various opportunities to participate. You can join committees and attend the conference, draft or review proposals, or serve as an advisor for the broader strategy and proposal evaluation process that will start in 2024. Over the next year, I will be reaching out to recruit for 'team ISSC 2025'. I hope you will consider joining. At the very least, know that your dues are contributing to this important work to ensure that our growers are not on the menu at ISSC.

I want to thank our President, Miranda Ries and Bill Dewey for their mentorship and leadership through this process. I also want to thank all of our members and partners who participated in the planning, proposal evaluation, and/or represented growers at the conference this year: Max Rintoul, Terry Sawyer and Justin Mojonnier (Hog Island Oyster Co); Nyle Taylor, Bill Taylor, Tony Luoma, Joel Wood, Erin Ewald, Austin Docter, and Jason Ragan (Taylor Shellfish); Nate Tsao (Jamestown Seafood); Jenn Allison (Pacific Seafood); Vicki Wilson (Arcadia Point Seafood); Blair Paul (Skokomish Tribe); Margaret Homerding (Nisqually Indian Tribe); and David Fyfe and Sandy Zeiner (Northwest Indian Fisheries Commission).

Kim Thompson, Executive Director, PCSGA

Cover Photo by PCSGA: Perkins Family Farm

#### Pearls from the Prez

Spring has sprung on the West Coast, meaning that while we have daffodils and tulips popping up, we also have torrential downpours, hail events and even snow. This also means that it is time to begin the process of planting new crops and planning once again for the future needs of our farms and operations. Those needs require a bit of a crystal ball mentality when attempting to predict what the future holds. It should not surprise you that we can all count on changing regulations and policy updates that will impact us all. Most recently, we saw that take shape for ISSC.

In March, a small group of PCSGA members travelled to the bayou, Baton Rouge Louisiana, to attend the Interstate Shellfish Sanitation Conference which had not met since 2019. This group was made up of both experienced ISSC'ers and new representatives, including our Executive Director, Kim. Having a mixed group, although challenging to show the new members the ropes, it was also great to see that we will continue to be a strong West Coast industry voice in the national program as it pertains to the shellfish industry needs and the impacts associated with evolving regulations.

I can say we were extremely successful in the outcomes of the conference, which will be seen in the updated NSSP expected out later this year. We saw first time attendees like Max Rintoul, from Hog Island, write and submit two proposals for conference consideration and get the outcomes that he needed for both proposals; truly amazing to see. Max had an issue and instead of complaining, he went to work to find a solution. In the process of that solution, he also met state regulators from the East Coast that first took the time to understand his issue and then worked with him to develop language that would work for the national program. By the time of the conference in which Max needed to present his proposal, he was prepared and executed the proposal with confidence and from a place of knowledge and respect. As we execute our farm plans, get familiar with new rules and regulations, I hope you, reading this, understand the value that PCSGA brings to every operation and how your voice is wanted, needed and valued. We need the seasoned farmers with the wealth of experience and the new farmer with the energy and optimism of youth. I am not speaking of age but that of experience. When we are intentional about those we surround ourselves with, we become stronger together. That unity ensures we are considering a wide range of perspectives, learning from our history and seeking new innovations and fresh ideas.

So, while we are all out in our corners, doing the good work, please be mindful of the value each member has in making us better, whether in better understanding the past or finding ways to navigate the future, let us remember it is not the harvest that matters but the seeds you planted today.

If you see or know someone who participated in ISSC, please thank them. Attending the conference is a commitment of several days away from their normal work, a significant resource financially, but more consuming is the amount of preparation that the PCSGA team invested for months ahead of time to ensure we were poised to be effective upon our arrival at the conference. I also want to acknowledge Bill Plauche at Plauche and Carr for hosting us at his Baton Rouge office and his generous dinner and cocktails with a view of the Mississippi River, thank you Billy.

#### MinanderRus

Pacific Seafood, Pacific Shellfish

#### MONTHLY ECOSYSTEM SERVICES PHOTO **CONTEST WINNERS!**



January Winner Jeb Sheldon: Shellfish beds are home to a variety of wildlife that are being severely impacted by invasive European Green Crab. Shellfish growers have teamed up with WDFW and Washington Sea Grant to trap this harmful species and preserve the quality of the estuary.



February Winner Tracy Smith: Undesired habitat for the 1000's of invasive carcinus maenas in Netarts Bay.



March Winner Curtis Hicks: Oysters on the farm, providing a hatchery for these oyster toadfish eggs.



#### *Minorities in Aquaculture Founder Imani Black Speaks in New Orleans*

#### Excerpts from: Will Coviello, Gambit

While growing up on the Eastern Shore in Maryland, Imani Black got interested in oysters and marine biology. After working in oyster hatcheries and farms, she started Minorities in Aquaculture, the only advocacy group focusing on diversity in fisheries. She's also currently pursuing a masters degree in marine estuary science at the University of Maryland. She visited New Orleans to attend the Aquaculture America conference and gave talks on improving opportunities for minorities. For more information, visit mianpo.org.



Photo by: Caroline J. Phillips / Courtesy of Imani Black

Gambit: How did you get interested in the oyster industry?

Imani Black: I am from Maryland's Eastern Shore, so more the rural

side of the state. I grew up fishing as a hobby and doing science camps. I got bit by the science bug early on in life. In college I was interested in marine biology. Since I had done some oyster restoration growing up, I got an internship with the Chesapeake Bay Foundation in Virginia when I was in college. I thought that was what I wanted to do. I did another internship with the Virginia Institute of Marine Science. It is the hub of oyster aquaculture, genetics and things like that. That was my real introduction into aquaculture.

For the next six years after that, I worked at nurseries, hatcheries and farms along Virginia and then came back up to Maryland. The businesses I was part of were small to medium size, so I got to do all of the processes.

#### Gambit: Why did you start Minorities in Aquaculture?

Black: I started Minorities in Aquaculture in 2020. I had just ended a two-and-a-half year hatchery manager position. I had never seen any other women of color that owned a farm or were in leadership roles. The only people of color I interacted with were laborers. Or English was their second language — and they were the smartest people on the farms but never got a chance to advance.

I started Minorities in Aquaculture to find other women of color in aquaculture so we could create a network and support each other. In the last two years, it's become that and about advocacy, education and supporting our members.







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Website: www.marinellishellfish.com Not only do we advocate for women of color, but we recognize all the underrepresented demographics in aquaculture. We are making the definition of minorities our own. Usually, minorities means people of color, but when you look at aquaculture, women in general are a minority. Men of color are a minority. LGTB+ are a minority, and then people with disabilities. We're taking all of those demographics and trying to give them opportunities and a network where they feel safe enough and supported enough to continue their career. We try to help them figure out a path using their skills.

On oyster farms, I get more flack for being a woman then for being Black. The racial/social part is an issue, but women are so few and far between in most sectors of aquaculture. It's not because of my skin color, it's because I am a woman. In my experience, it's been challenging. Aquaculture is a male-dominated field. Having to work through that system and find your place while dealing with misogyny is not easy. It's like any other industry where women are the minority. We are losing a lot of generational (Black oyster farmers). Because there are better opportunities (in other fields) and the fisheries sometimes fluctuate and aren't as lucrative. As time went on, we could go and get higher education and better jobs. When options opened up and started to be more lucrative than fisheries, a lot of people moved on.

It's no secret that Black watermen were pushed out. They didn't have access to consistent capital. In the Chesapeake Bay area, African Americans weren't given bank loans. When you don't have that capital, you can't get the gear you need. When it comes to investing in equipment, you get left behind. Or you settle for lower income jobs in the packing house or in the shucking house.

What I would say about minorities in general and especially with women, a lot of our need comes from wanting to feel safe in the workplace. Being able to have safety where you are not in the field (subjected to) sexual harassment or misogyny. It's uncommon in talking to women who have been in aquaculture for a bit to not have dealt with that sort of thing.

There's also the need for resources and being able to fund things. Then also looking at the parameters of things like internships and jobs. Oyster farming is often remote. (Work spaces) are off the beaten path. People need support. Especially for women with children, schedules need to be flexible. It's similar to what women deal with in other industries.

We have talked to oyster farmers in the South and Gulf Coast, but it's really me trying to explore a little more. Each region of oyster farming is dealing with similar things, but specific to their area. How can aquaculture support their needs. It's an ongoing process of figuring out how we can support their needs.















## Farmers' Corner

#### Our Growers Making a Difference in March

PCSGA connected with senators and representatives of the house on March 13th at Washington's first Legislative Reception since the beginning of Covid. Some of our

grower members spoke to government officials in a relaxed atmosphere while snacking on amazing shellfish and side dishes at Chelsea Farms Oyster Bar, who graciously donated their space for the event.

Earlier in the day, the group had their "Walk the



Hill" day at the Capitol Building. Thank you to everyone who donated shellfish for the event: Perkins Family Farms, Taylor Shellfish Farms, Pacific Shellfish, and Chelsea Farms. We couldn't have done it without your help!

On March 29th, we had over 120 volunteers patrolling and cleaning over 60 miles of Beaches along Puget Sound in Washington. Crews brought in over 200 ft of canopy netting, 85 ft of yellow rope, and many oyster cages and purses which were reused and repurposed by our grower members.

We want to thank Chelsea Farms and Neptune Seafoods who cooked chili dogs and nachos at the Arcadia Boat Launch, and Pacific Seafood who donated and cooked chicken teriyaki at National Fish & Oyster. A huge shout-out to everyone who donated their time, effort, crews, staff, and money to make this event happen!









#### Shellfish – The Secret to Permeable Concrete?

Excerpts from: the construction index

The Circle project has been seeking to develop a low carbon, poured-in-place concrete pavement with improved drainage properties. Seashells, it seems, could be the answer.

The project began three years ago, led by French organisation Builders for Society (Ecole d'ingénieurs), with materials company Eqiom (part of the CRH group), Communauté d'Agglomération des 2 Baies en Montreuillois, the University of East Anglia (UEA), the University of Central Lancashire (UCLan) and French local authority Golfe du Morbihan.



Photo by: theconstructionindex UK

Over the past three years they have established that the addition of shellfish waste can successfully substitute other aggregates to reduce and preserve non-renewable components. Simultaneously, the use of

shellfish waste tackles another environmental issue by recycling materials.

The final event – presentation of the findings – took place at the UEA in Norwich on February 28th.

Circle researchers presented their results on optimising the concrete formulations and from monitoring the durability of the material and its draining properties over the seasons.

Case studies of the concrete trialled at several pilot sites were discussed, particularly the Eurovéloroute V4 pilot site and the Ostreapolis project, both in France.

Finally, research developed at UEA's Norwich Business School will propose business models that can support the adoption and marketing of this new concrete product.



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#### Shellfish and Carbon Sequestration

By: Bobbi Hudson, Executive Director, Pacific Shellfish Institute (PSI)

Like all living things, shellfish are made of carbon. Shellfish store carbon in their tissue and their calcium carbonate (CaCO3) shell. At first glance shellfish appear to sequester carbon in mineral form, but the process of shell formation actually releases some carbon dioxide (CO2) and decreases the ocean's buffering capacity (resisting pH change). Shellfish growth and respiration also release some CO2.

The degree to which shell formation releases CO2 to the atmosphere is the subject of scientific debate, but the fact that CO2 is released is not debatable. The chemical equation looks like this:

#### $Ca_2^+ + 2HCO_3^- \rightleftharpoons CaCO_3 + CO_2 + H_2O$

Colors denote the state (aqueous, solid, gas, liquid) of the reactants (left) and products (right) at equilibrium.

Shellfish restoration and shellfish aquaculture have been proposed as carbon offsets. Scientists continue to debate the degree to which shellfish influence the earth's carbon cycle, and how to frame the inclusion of shellfish in a carbon trading system. Because cultured shellfish are produced as food, not for sequestering carbon in their shells, the main ecosystem good provided is meat production. Shell can be considered a beneficial by-product of shellfish aquaculture.

When we harvest shellfish, we move carbon from the ocean. If the shell is later returned it has the capacity to buffer ocean chemistry, allowing the ocean to continue to absorb CO2. However, the extent to which this occurs depends on many variables.

Shell can also be recycled and reused to replace another carbon source, like building materials or limestone in cement. This reuse would reduce the CO2 production from mining activities and/or producing virgin materials. In this way shell recycling could reduce CO2 release to the atmosphere, which is carbon sequestration and could be considered a carbon offset. Carbon sequestration is the capturing, removal, and storage of CO2 from the atmosphere.

Shellfish aquaculture provides extensive and measurable ecosystem goods and services, but overall, the impact of shellfish on the earth's carbon cycle is likely negligible. In the absence of shell reuse or return to the ocean, it's difficult to make the case for carbon offsets.





#### Aquaculture Permitting: Why Can't We All Just Get Along?

By: Robert Rheault, ECSGA Executive Director

Looking at the various gear options available for farming oysters, three classes rise to the top: floating gear (such as the OysterGro), long-line gear (like the SEAPA or Hexcyl baskets) and various flip-bag designs. Growers comparing these three gear classes to bottom cages find that they are easier to work with, produce oysters with a better shape and fuller meats, and often result in dramatic improvements in survival rates.

But there is a huge drawback with these types of gear: they are all highly visible and prone to drawing attacks from waterfront homeowners and boaters. Permitting battles over floating gear installations and long-line arrays seem to be the new normal. Growers naturally want to deploy the best gear available, but opposition in many communities has been fierce. Some places have gone so far as to enact moratoriums on lease permits or to attempt passing legislation limiting aquaculture. Thankfully, most of those attempts have failed, but in many states aquaculture opponents have found they can delay applications for years by suing the permitting agency. Most often this approach eventually fails, but occasionally lawsuits have tied up applications for years.

Public resource agencies are tasked with managing a mixed-use, common-property resource to accommodate navigation, shipping, recreation, fishing and aquaculture. State constitutions typically charge managers with preserving access and protecting the environment, while also maximizing the value of the commons to the "sovereign." This means that managers must try to balance multiple uses for all residents of the state, not just boaters or waterfront homeowners. Shellfish farms check all the boxes for job creation, sustainable seafood production and negligible negative environmental impacts.

In many states lease applicants have found that the opposition is simmering in the permitting agency itself. While it is rare that an entire public resource agency will be antiaquaculture, it is not uncommon for one or two individuals to hold up applications for years by losing paperwork, slow-walking approvals or endlessly asking for additional information. Sometimes the best remedy is to have these individuals reassigned to managing the shell recycling program.

In some communities it has gotten so bad that lawyers are out trolling for clients in aggrieved homeowners' associations, selling themselves as defenders of the commons. One affluent group in Maine has funded a significant public media campaign to falsely suggest that oyster farming will somehow be bad for the state's iconic lobster fishery.

Thankfully, applicants are eventually winning most of these battles. Objectors don't get much traction when their only complaint is that aquaculture operations sully their viewscape, so they often claim interference with other users or predict negative ecological impacts. But thankfully, the science is on our side. Oyster farming has proven ecological benefits, and the Army Corps of Engineers has made it clear that if you can still get from point A to point B—even if you now need to go around an oyster farm— that is not called a "navigation hazard." That is called navigating!

I can't promise that every permit battle will be decided in our favor; some proposals are no doubt ill-advised. But I do counsel patience and persistence. These traits will serve any farmer well, not only in the permitting phase, but certainly later on as a shellfish grower. In fact, if you're not as stubborn as a mule you might not be cut out for oyster farming.

Recently one of our members related a great story. The names have been changed to protect the innocent, but the narrative is a familiar one. For nearly three years Fred had been anxiously awaiting his permits for a string of OysterGro cages. He kept getting assurances that the permit was coming, so he invested in gear and ordered seed. Even though the permits had still not materialized, the promises kept coming so Fred went ahead and drove some anchors and deployed the gear when the seed arrived because he didn't really have a choice.

Next thing you know, a Fisheries Enforcement officer comes knocking with instructions to arrest Fred for illegal aquaculture, and he is supposed to impound all the gear. Fred knows the officer pretty well and he explains the whole situation. When Fred threatens to demand a jury trial on the assigned court date the officer gets cold feet. What if Fred is right and the resource agency is wrong? The officer decides to do some research and discovers that Fred was right all along, and the charges are dismissed.

Fred had also invited some state representatives to come tour his operation, where he told them about the promise of new jobs and economic development. When these same politicians learned about Fred's permit problems, they applied pressure on the

resource managers. Suddenly, the folks writing permits are much more careful to ensure that the proper procedures are followed. The next applicant should have a much easier time.

Are there lessons to be learned? Build relationships, ask questions, know the process and stand up for your rights. Be persistent and rest assured that the science and the laws are on your side. Get the politicians and resource managers out on the water and explain the process to them early on. It's a lot easier to set the narrative before the opposition gets involved and convinces them that you are evil.

#### *Pro Tips:* How To Be a Good Neighbor

At the Virginia Aquaculture Conference held in Newport News in mid-November much of the agenda was directed at mitigating user conflicts and easing tensions between growers and those who would prefer not to look at them. On the first day, a panel of growers listed recommendations to avoid pissing off boaters and waterfront homeowners. Plenty of good ideas were shared, many of which boil down to the concept of trying to view your farm through the eyes of your potential opponents. Following are some suggestions for de-escalating or heading off the oyster wars:

- □ The appearance of your lease and your shoreside facilities is vitally important. Neat, tidy rows of gear will draw fewer complaints than piles of gear strewn about;
- □ Be mindful of the odor of drying gear and shell piles. Who is downwind?

□ Sign up to serve on conservation groups, harbor management committees, zoning boards;

□ Engage with your neighbors, your state reps, and your regulators. Invite them on tours and share some product. Listen to comments and don't argue;

 Never drop trash, zip ties or cigarette butts in the water;

□ Use trawl lines for bottom cages instead of dozens of individual buoys;

□ Piles of gear on the shore, at the dock or anywhere in sight should be tidy. A little wellplaced fencing can go a long way;



ROBERT RHEAULT

Space-age floating gear on display at the 2019 Virginia Aquaculture Conference. As more growers turn to floating gear, user conflicts with neighbors and boaters who wish they'd just go away are increasing.

Don't start with an application for a huge lease—it might scare potential allies into becoming opponents;

 Engage with passing boaters, high schools, community groups;

□ Implement Best Management Practices, like those developed by the <u>ECSGA</u> and the <u>Virginia</u> <u>industry</u>, to avoid flashpoints for conflict;

□ Limit loud music and colorful language, and especially refrain from running loud machinery early in the morning;

Work with state and regional aquaculture associations;

□ Ask for advice from other growers and extension agents; and

Keeping your head down is not a valid strategy.

#### Contagious Cancer in Shellfish Sparks Investigation by International Team of Scientists

By: Louise Maxwell, PRWeb

Michael Metzger, PhD, Assistant Investigator at Pacific Northwest Research Institute, in Seattle, WA, and a team of global co-investigators will study how a virus-like cancer spreads among basket cockles on the Pacific Coast and softshell clams on the Atlantic Coast through a \$3 million grant from the National Science Foundation's Division of Ocean Sciences.

"We don't normally think of cancer as an infectious disease," said Dr. Metzger. "But several transmissible cancers have recently been found in the wild, causing significant mortality—and marine bivalves, such as mussels, oysters, cockles, scallops, and clams appear particularly susceptible."

What is unique about this cancer compared to human cancers is that it is transmissible. The cancerous cells themselves spread from one animal to another, much like a virus. This strain of cancer is known to negatively affect the marine environment, commercial aquaculture industries, and Native American communities that rely on bivalves as traditional food sources.

The newly funded project brings together a diverse team of marine biologists, population geneticists, mathematical modelers, cancer biologists, and genomic/molecular biologists from the following organizations and institutions across the globe: Suquamish Tribe, Puget Sound Restoration Fund (PSRF), Western Washington University, Bigelow Laboratory for Ocean Sciences (Maine) and Gloucester Marine Genomics Institute (Massachusetts), and City, University of London.

Over the next five years, the interdisciplinary collaborative will collect samples, analyze genomes, develop mathematical models, and measure disease progression.

"It takes expertise in tribal resource management, marine conservation, and infectious disease ecology to solve this complex problem," said Ryan Crim, a PSRF marine biologist who has been working with the Suquamish Tribe in Washington state to restore marine habitats for more than a decade.

They found infectious cancer prevalent in local basket cockles, a favorite subsistence species for Tribal members that





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• POLICY DEVELOPMENT AND IMPLEMENTATION has become scarce in recent years.

Elizabeth Unsell, a marine biologist with the Suquamish Tribe, explained that the Tribe is motivated to work to restore local populations and learn more about the threats they may be facing.

"Increasing our awareness and understanding of the presence and severity of transmissible cancer in this favored bivalve species will give us tools to better understand population dynamics and inform management decisions," said Unsell.

On the eastern U.S. coast, soft-shell clams are consistently one of the most valuable fisheries for Massachusetts each year and the species has a strong cultural and historical relevance in the region. Transmissible cancer in soft-shell clams has caused major losses in Massachusetts in the past, severely impacting the commercial fishery.

"By gaining a better understanding of the infection dynamics and mechanisms of transmissible cancer in soft-shell clams, we will be more effective at preventing or managing the disease to better conserve this precious natural resource," said Tim O'Donnell, a freshwater and marine fish researcher at Gloucester Marine Genomics Institute.

"Understanding exactly how these bivalves fight or bounce back from this cancer directly impacts the survival of those species and the people who rely on them," Dr. Metzger said. "If successful, we will come away with a far better understanding of how these transmissible cancers spread and what we can do to stop them."

"I'm grateful that the NSF values this kind of interdisciplinary research," Dr. Metzger said. "Without their funding, we couldn't launch a study like this connecting genomic analysis of the cancers with multi-year ecological surveys and modeling to understand all the factors involved in disease spread."

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#### Hog Island Oyster Farm Helps Supplement California's Native Oyster Population Though Breeding Program

By: Samantha Klein, PCSGA

I sat down over zoom with Gary Fleener, the Science, Sustainability & Education Specialist at Hog Island Oyster Company to discuss the outcomes of their SOAR funded project to produce Olympia oyster seed for local markets and restoration.

SOAR, which stands for Supporting Oyster Aquaculture and Restoration, is the program started by The Nature Conservancy and PEW Charitable Trusts at the beginning of the pandemic to buy 2 million dollars' worth of oysters from shellfish farmers all over the country. The initial goal was to both support shellfish farms that were struggling during restaurant closures and use the purchased oysters in restoration projects.



Photo by: Gary Fleener, Hog Island Oyster Farm

In 2021 the SOAR program also put 1 million dollars towards a Resiliency Fund to support projects that increase shellfish farm resiliency and aid shellfish conservation efforts.

This fund supported 28 grants for smaller projects, 6 of which were awarded to PCSGA members and 8 larger grants, one of which went to PCSGA member and frequent collaborator, Puget Sound Restoration Fund.

Hog Island Oyster Company used their awarded funding to produce half a million Olympia oyster seeds at the Bodega Marine lab. Without this funding they could not have continued their Olympia oyster program due to the high cost of producing seed at a research hatchery and struggles caused by the pandemic.

Gary explains that "the market is very interested in Olympias, but not in volume. It's pretty complicated to create a business model for them. Even though the grow out time is not that much different from kumamotos (given the slow growth rate and small size), the cost of seed is prohibitive since it is not produced at any commercial scale hatcheries." In addition to growing Oympias to enjoy at their 5 Bay Area restaurants, they are also using the seed to study how well they grow in different areas of California. They just started a two-year study on the survival rate of these hatchery raised Olympias using SEPA grow out baskets in Tomales, Elkhorn Slough and Morro Bay. If this study is successful, it could show promise for helping declining populations of Olympias in Elkhorn Slough and Morro Bay.



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Going forward Gary tells me that they would want to design a low budget way to start their own hatchery system for Olympias in Tomales Bay, so they can produce small amounts of seed at low cost. Hopefully this system could be used in other small estuaries on the West Coast, where producing local genotype Olympia seed might help in their recovery. As we look to the next round of funding from the SOAR Resiliency Fund, PCSGA members should think of areas within their business model that they could incorporate native species, benefit restoration efforts and improve resiliency to climate change and economic fluctuations.

#### TNC and Pew Partner with Oyster Farmers to Restore Marine Ecosystems

Exerpts from: Ann Kaiser and Rebecca Theim, TNC and Pew

The Nature Conservancy (TNC) and The Pew Charitable Trusts (Pew) announced the second phase of their Supporting Oyster Aquaculture and Restoration (SOAR) program, which is restoring coastal ecosystems and fostering a thriving oyster aquaculture industry in the U.S. Over the next four years, an additional \$6.3 million in funding will sustain efforts to rebuild oyster reefs, as well as promote innovation, resilience, and diversity within the oyster aquaculture industry.

Phase two of SOAR significantly builds upon the initial \$5 million phase one investment through a \$3 million grant from the National Fish and Wildlife Foundation's National Coastal Resilience Fund and an additional \$3.3 million from Builders Initiative, the philanthropic team of Builders Vision.

In partnership with the U.S. National Oceanic and Atmospheric Administration (NOAA) and the U.S. Department of Agriculture (USDA), TNC and Pew launched SOAR in 2020 to simultaneously support struggling growers and imperiled oyster reef ecosystems. In its first two years, the Purchase Program redirected 3.5 million oysters from farms to 25 sites, encompassing 40 acres of oyster reef, while supporting 125 shellfish companies and preserving more than 450 jobs.

In its next phase, the Purchase Program will repurpose up to 2.5 million additional farmed oysters to rebuild 30 acres of reefs spanning 12 restoration sites in Maine, New Hampshire, Massachusetts, New York, New Jersey, Maryland, California, and Washington state, supporting 100 farms and 300 jobs.

The Purchase Program and Shellfish Growers Resiliency Fund will begin accepting applications later this year. For the latest information, visit nature.org/SOAR. Growers interested in participating in either program can email soar@ tnc.org.







#### PSI & Partners Developing a Shellfish Farming Curriculum

By: Mary Elizabeth Bissell and Aimee Christy, Pacific Shellfish Institute (PSI)

PSI's Environmental Education (EE) Team provides access to marine research to students, teachers, and the community at large. Our EE team supports K-12 classrooms with field experiences that bring youth to the shoreline for a muddy look at the intertidal zone. Our EE offerings include topics like changing ocean conditions, nutrient & bacteria pollution, plankton & harmful algal blooms, and shellfish population surveys.

Over the past year we've received countless inquiries from educators for career connected material, specifically for middle and high schoolers. PSI currently delivers career connections in marine sciences, so now we're diving deeper into aquaculture! PSI will embrace the rich history and culture of shellfish farming to develop a new curriculum. Students will look through microscopes at the different life stages of shellfish and make connections with environmental factors that influence growth and settlement of larvae. We also envision students being given tasks to create a suitable farm operation, considering factors like substrate and tidal flow, and try to map a calendar of workforce needs to get their product to market.

PSI currently has an annual reach of about 3,200 students, all of whom would benefit from this new trajectory of an aquaculture-based curriculum. Do you want to play a role in encouraging the next generation of shellfish farmers? If so, we need your help!

We look forward to developing unique hands-on field experiences that showcase the hard work and dedication that goes into hatchery, nursery and farming operations. During the upcoming year PSI will be reaching out to develop the curriculum and produce pictures and videos that will be vital to show students. PSI and partners would also like to compile a list of Washington growers interested in hosting a classroom or small group at your farm. Your participation in these trips could be as minimal or involved as you'd like. Please reach out if this is something you might consider. PSI is also seeking funding to aid in the curriculum building phase and will



Photo by: PSI

continue developing the curriculum as funding allows. PSI is excited to add a Shellfish Aquaculture curriculum to our current offerings and partner with PCSGA to extend the range of this important work. To learn more about PSI's K-12 programming, visit www.pacshell.org and click on the Education tab.

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#### Call for Oral Presentations for PCSGA and NSA's Annual Shellfish Growers Conference

The Pacific Coast Shellfish Growers Association and the National Shellfisheries Association - Pacific Coast Section invite submissions of abstracts for oral presentations at the 2023 Annual Shellfish Conference. Conference attendees include shellfish growers, suppliers, service providers, researchers, academicians, government agencies, environmental organizations and students.

Submit workshop titles and abstracts online at http://pcsga.org/annual-conferences/ abstract-login/

#### Deadlines- Submissions open April 15th

- Workshops (2 hour limit)
  - Workshop title and invited speaker names April 15, 2023
  - Full abstracts from invited speakers June 15, 2023
- Session Presentations (includes regular 15 min presentations) - Abstract Submission Open- April 15- June 15, 2023

View the full Call for Oral Presentations at https://pcsga.org/annual-conferences/

#### Help us find the next ... John Lentz Profiles in Innovation Speaker

Have you heard of any new innovative ideas that may change the way you think about farming? What about a new industry tool/plan/operation on the horizon?

PCSGA and NSA are planning for this year's annual conference. We need your help identifying our next John Lentz Profiles in Innovation Speaker. Think global, or think local. No suggestion is too small. Call the office at 360-754-2744 or email memberservices@pcsga.org





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#### \$5.5 Million Awarded to Improve Puget Sound Shellfish Habitats

by: Washington State Department of Health

The Washington State Department of Health (DOH) is pleased to announce a total of \$5.5 million in funding has been awarded to 11 proposed projects that aim to restore and protect shellfish habitats across Puget Sound. Awardees were chosen by DOH's Shellfish Strategic Initiative Advisory Team using Environmental Protection Agency (EPA) Puget Sound Geographic Funds.

The winners each submitted Request for Proposals that focused on three key investment priorities:

- Pollution identification and correction,
- Onsite sewage system management, and/or
- Livestock manure management.

Washington has a reputation for safe, wholesome shellfish. Our state is the leading producer of farmed shellfish in the nation, and commercial shellfish is shipped around the world. However, 16,000 acres of Puget Sound shellfish beds are currently closed to harvest due to nonpoint fecal pollution, such as water runoff from agricultural activities, pet waste, boater waste discharge, and onsite sewage systems. Proposals funded by this grant will work to find and fix nonpoint source pollution.

"Washington's marine waters are a dynamic and vital part of our unique ecosystem," said Todd Phillips, DOH Office of Environmental Health and Safety director. "We applaud the efforts of each award recipient for their role in water quality improvement and protection. Partnerships with these awardees, along with agencies such as the EPA, emphasize the commitment and importance of advancing our goal of reducing fecal coliform pollution and protecting Puget Sound shellfish growing areas, with the overarching objective of protecting public health."





#### WA Legislative Reception Connects Growers with House and Senate

#### by: PCSGA

On Monday, March 13th, PCSGA's Washington Growers mingled with government officials at the Legislative Reception at Chelsea Farms Oyster Bar in Olympia, Washington. It was the first one since Covid, so earlier in the day, many people contributed to a successful hill walk and reception. We had 58 legislators, legislative staff, and agency staff in attendance and 19 PCSGA members and affiliates. Many thanks to all who contributed to the planning and/or attended the meetings and reception. Despite my rookie status, the event went beautifully thanks to the hard work by:

 $\cdot$  Diana Carlen and Sophie Doumit who coordinated our hill meetings and brought the legislators and agencies to the reception;

 $\cdot$  Kyle and Shina along with their amazing crew at Chelsea for hosting and providing amazing food;

· Miranda Ries for shucking on site...a real crowd pleaser;

 $\cdot$  Vicky Rockey and Sam Klein for bringing all our gear and helping to staff the check in table, and to Sam for putting together our fact sheet and legislative priorities handouts;

• Chelsea Farms, Taylor Shellfish, Perkins Family Farms, and Pacific Seafood for donating the star of our show...shellfish, and;

• All of our members, collaborators and advocates who took the time to participate and engage with the legislators!

We look forward to many more of these events in the future!







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#### Calendar of Events

#### April

- 15: Ecosystem Services Photo Contest Submission Due
- 18: PCSGA Board Meeting CANCELLED
- 16-20: Walk the Hill- Washington D.C.

#### May

- 7-8: Grays Harbor National Wildlife Refuge Shorebird & Nature Festival
- 15: Ecosystem Services Photo Contest Submission Due
- 16-17: PCSGA Board Meeting- in-person

#### June

- 8: World Ocean's Day
- 13: PCSGA Board Meeting- via ZOOM
- 15: Ecosystem Services Photo Contest Submission Due



#### 77th Annual Shellfish Growers Conference & Tradeshow

September 19th - 21st, 2023

#### Location:

Seaside Convention Cntr. 4151stAve. Seaside, OR 97138

#### **Registration Dates:**

Registration Opens: 06/12/2023 Registration Closed: 09/15/2023 Early Bird Cut-Off: 08/18/2023 Early Bird Cut-Off for Tradeshow: 08/01/2023



