LONGLINES

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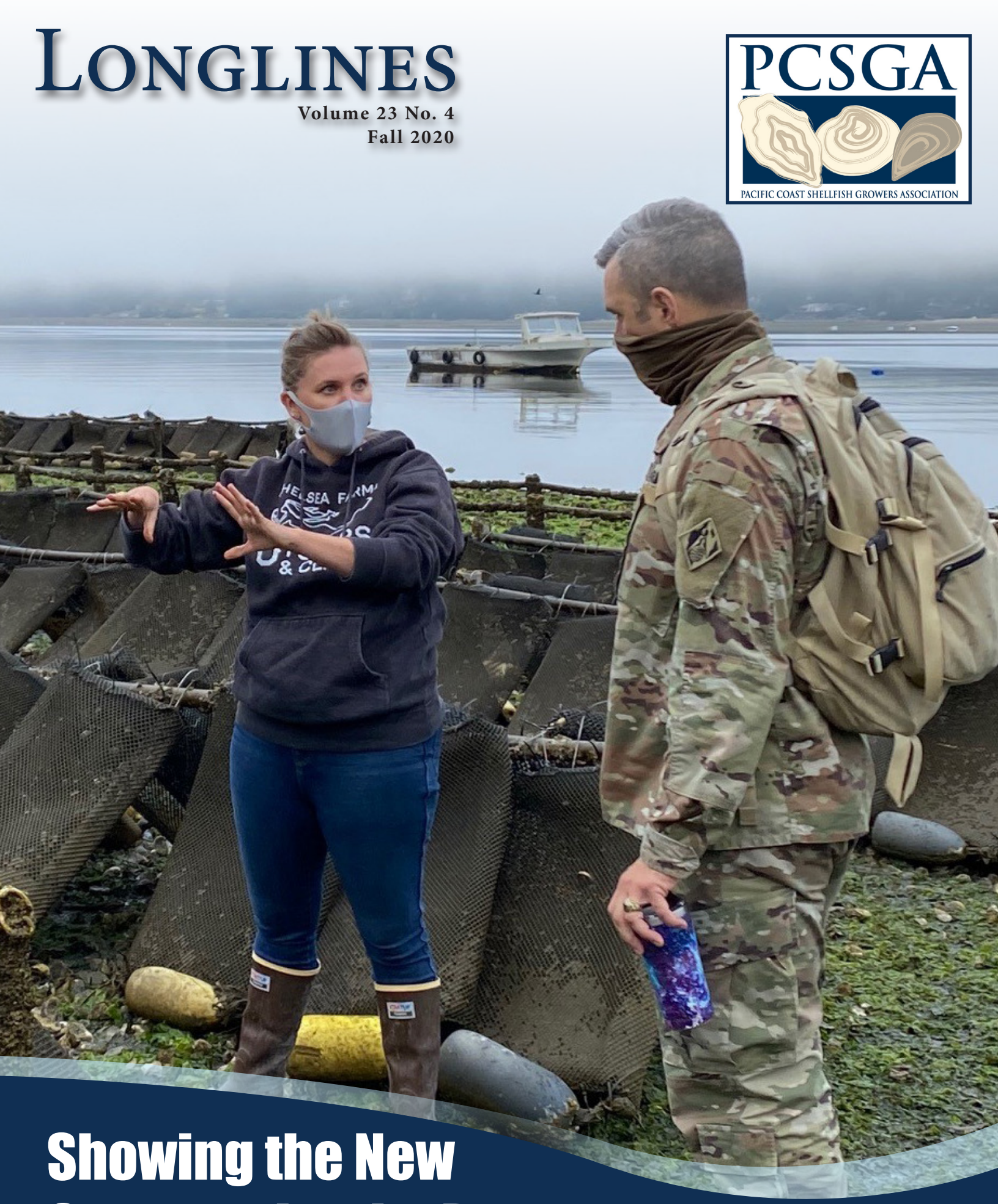
PCSGA
PACIFIC COAST SHELLFISH GROWERS ASSOCIATION



Showing the New Commander the Ropes...

PCSGA
PACIFIC COAST SHELLFISH GROWERS ASSOCIATION
120 State Avenue NE #142
Olympia, WA 98501
www.pcsga.org
pcsga@pcsga.org
(360) 754-2744

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

Comments and questions about *Longlines* are invited. Please email: outreach@pcsga.org

What the Tide Brought In

Notes from the Director

When I started here with PCSGA over ten years ago, I floated the idea of hosting monthly digital board meetings in order to solve the problem of long in-person meetings with a phone-in option, during which people calling in rarely felt engaged, people in the room were noisy, and it was impossible to not be interrupted. Needless to say, in the glory (pre-COVID) days of 2010, that idea landed like a lead balloon. Board Members were mostly concerned about not meeting face to face. What about the hugging?

Digital meetings made sense for several reasons, it allowed members from the far reaches of Alaska and California to participate without travel, and we could direct attention to common documents that I could show on the screen. But Board members were reluctant. There were lots of reasons why it didn't make sense – poor internet connections, the requirement to sit in one place for hours, and the lack of personal connection. Nonetheless, we decided to give it a shot after I promised that meetings would not exceed 2 hours. We had a couple missteps and a few board members who begrudgingly accepted the switch.

About three months in, we asked for input on the use of the "new technology". Surprisingly, digital meetings got rave reviews! People really liked the efficiency of the meeting. Board members liked many of the features a digital meeting offered and I REALLY liked (and still do) the button that allows me to mute everyone.

Fast forward to summer of 2020… we found ourselves in a similar experience when considering options for our Annual Conference. Would people participate in virtual sessions? How would we encourage interactions with speakers, and whatever would we do with the tradeshow?? Connie Smith in our office led the charge to find a suitable platform. For weeks prior to the event, we hosted trials and test sessions in the office. Our goal was to provide a seamless conference experience. We were excited to get the first few registrants, but then as the numbers kept coming in, we became increasingly more nervous! Were we setting high expectations that could not be met?

The first day was very scary, but somehow, things worked. There were a few issues, but mostly things that only we knew about. In total, we had 240 registrants for the three-day conference, and on any given day, had nearly 200 people digitally connected to the talks. Tradeshow vendors were happy with their exposure, and several of us enjoyed the first ever virtual limerick contest. Let me just say, shellfish people (and their beverages) did not disappoint.

It is safe to say that the First Ever Digital Shellfish Conference was a SUCCESS! Thank you all for having faith in PCSGA and for trying something new. Next year's conference is expected to be live – during the week of September 20th in Seaside, OR. Even though you will have to wear shoes, we hope you will join us! Perhaps we'll be able to hug by then.

Be well.

Margaret A. Pilaro

Cover Photo: PCSGA's Army Corps Committee hosted the new Army Corps Commander, Colonel Alexander Bullock, on a shellfish farm tour in South Puget Sound. Pictured here is Shina Wysocki of Chelsea Farms and Colonel Bullock. See "Farmers' Corner" on page 6 for more details about this event. Photo credit: Daniel Hanson, HC Snail LLC

Pearls from the Prez...

Fall has arrived, and with it, another election of PCSGA board officers. I am humbled to have been re-elected as President for a fourth term. While issues important to the industry come and go, some issues remain a constant. Such is the tale of the yellow rope.

Yellow rope has been a crucial part of oyster farming on the West Coast for decades. The rope is strung between evenly spaced pipes and is laced with a mother shell that has been set with larvae. This culture method allows for oysters to be placed into the estuary above the substrate, higher in the water column for better access to food and offering protection from predation. While it is an ideal growing method for some, it is not without its challenges.

Yellow rope is synthetic and bright in color, and over the course of several years, it has become a glaring black eye to the industry on the Washington Coast. The problem is yellow rope has historically been cut during shellfish harvest and has then floated ashore. Literally thousands of small 6-inch pieces of bright yellow rope litter the beaches, stuck in amongst all the rocks and rip-rap for beachcombers to see, question and begin to investigate.

In 2019, the PCSGA office received communication from a local NGO in Westport, who tracked the yellow rope to the shellfish industry. Some members of the environmental group were understandably angry, and wanted to file a lawsuit, claiming the shellfish industry was polluting the waters. Although all true, it certainly was not intentional. PCSGA's Director Margaret Pilaro pulled together a group to meet this concern head on.

Although this issue has been around for quite some time, we needed to better understand where all the "new" rope was coming from. Turns out the new rope was being introduced into the water when farmers planted cultch that had previously been recycled from shell piles that were littered with rope. After my head quit spinning, I was ready to take action. Pulling my own company into the issue, we began to create solutions, not just at the processing plant, but across every location and department.

At the farms, team members inspected piles of shell with pliers and bags, removing any debris. The dredge boats got a new companion, a chase boat. Anytime a batch of cultch was taken out to be planted, a chase boat went along with big nets with the goal of removing any floating rope or debris. A group of local teenagers were hired on to our newly created "Marine Debris Team" to scour the local beaches, picking up all marine debris but focusing on yellow rope. And then the most expensive change (cue the music), we built the Cluster Buster. Two engineering team members created a machine to break apart the shell, allowing access to the mother shell and rope attached. Still requiring more labor than ideal, we now have the beginnings of shell piles with zero debris.

This is not the end or the final solution. But this is the start we needed. Eight months of our efforts are paying off. In September, the state and Port found zero strands of yellow rope on local beaches following a high tide, coupled with strong winds. We still have work to do, but when pushed, it is amazing what one group can accomplish.

Miranda Ries
Pacific Seafood, Pacific Shellfish

Monthly Winners of Ecosystem Services Photo Contest!

July: Marc Dewey discovered that stickleback fish have been creating egg nests under seaweed within the protective environment of the geoduck nursery tubes.

August: Fiona Boardman photographed Lesser Yellowlegs at Brady's Oysters in Grays Harbor, where she is studying the foraging behavior of shorebirds in and out of oyster aquaculture. These birds use their long bills to capture small invertebrates from the mud.

September: Fiona Boardman photographed a Sea Lemon, dorid nudibranch, that was found munching on a sponge in the baskets they use to monitor oyster growth. She saw sponges growing on several of their oysters, like the ones pictured.

SNAP A PHOTO, WIN $100!

Contest rules at **www.pcsga.org**

Photo and caption are due on the 15th of every month!

PCSGA Names John Shaw as the 2020 Prince of Tides

By: Margaret Pilaro, PCSGA

Each year, in advance of the annual conference, I select an individual who has gone above and beyond in their support of the shellfish community so that we may honor them as the Princess or Prince of Tides. Throughout the year, I maintain a list alongside my computer of names of people who do things that stand out to me. As the conference approaches, I review my list and talk to PCSGA members about who may be deserving of recognition and a public thank you. It is a humbling experience.

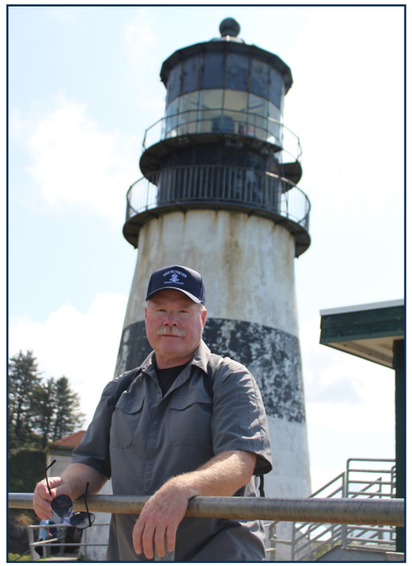
John Shaw talking a beach walk at Shoalwater Reach in Willapa Bay. Photo credit: John Shaw

Since this year has been so different from all the others, I wondered how I would select a worthy recipient. 2020 has been filled with disappointment, divisiveness, unrest, and uncertainty. Yet somehow through it all, I found it fairly easy to select the 2020 Prince of Tides.

Although few of you actually know this year's recipient, I can assure you he deserves it. If this person didn't act the way he did (patient, trusting, inclusive, thoughtful, and creative) his name would be known by all of you. If he didn't have all of those attributes I listed above, hearing his name would likely instill negative feelings each and every time you heard it.

Some time ago PCSGA was contacted by John Shaw – a retired boat builder, turned Executive Director of the Westport Maritime Museum. John was leading a pleasant life leading and teaching residents and tourists about the unique maritime history of Westport WA. The black cloud in his days were increasing questions and frustrations about fragments of yellow rope that was collected by beach combers in the area. Yellow rope pieces were omnipresent – on the beach, buried in the dunes, and among tufts of grass after a high tide. It was not John's role to defend the industry, nor was it in his manner to ignore it. It didn't take long for John to confirm that these pieces of rope were from longline oyster culture.

John had a choice. Instead of acting out of anger, demanding an immediate regulatory solution, and stimulating public outrage (all of which would have been justified), John reached out to PCSGA. The conversation began with him saying, "This town and this county depend on shellfish growers. Please let me work with you to help solve this problem". John invited PCSGA, representatives from Willapa Grays Harbor Oyster Growers Association (WGHOGA) and some of his most active beach combers to a meeting. We talked for hours. We educated each other not just on the source of the yellow rope, but also on how betrayed community members felt by the lack of care and attempts to address the problem. We discussed challenges with night tides, storms, and growing practices and tossed around creative solutions.



John Shaw at the "Cape D" Lighthouse. Photo credit: John Shaw

Based on the meetings led by John Shaw, shellfish companies considered new practices with the goal of reducing new yellow rope from entering the environment. Pacific Seafood has spent tens of thousands of dollars to address this issue, including the new machinery specifically designed to separate yellow rope from the shucking line, called the "cluster buster" and deploying a "sweeper skiff" to catch yellow rope released during the spreading of shell. In addition, crews from Northern Oyster, Taylor Shellfish, and others have been conducting regular beach patrols throughout the area. The work is far from over but the shellfish community has completed a critical first step - a step led by John Shaw who made the choice to work with shellfish companies.

As we continue to navigate the challenges that are likely to remain ahead of us during this already difficult year, I encourage you to be like John Shaw. Be thoughtful in your actions, be patient, kind, and understanding. Seek creative solutions by being inclusive. We are so much stronger together.

I am honored to work with John and to have both learned and benefited from his steady and thoughtful leadership. I am thrilled to introduce John to all of you and to award him with the 2020 PCSGA Prince of Tides.

Farmers' Corner

Written for you, by you - this is a place to share all the news from your farm. Celebrations, acquisitions, new ventures, the sky's the limit. Submit your news any time! Send to ***outreach@pcsga.org***

NEW ARMY CORPS COMMANDER TOURS SOUTH SOUND SHELLFISH FARMS

By: Bill Dewey, Taylor Shellfish Farms

Photo credit: Bill Dewey

Every three years the Army Corps rotates command of the Districts. On June 30th Colonel Alexander ("Xander") Bullock assumed command of the Seattle District. Over the twenty or so years that PCSGA has been engaged on Corps permitting of the industry we have rotated through multiple District Commanders. With each new commander PCSGA reaches out to educate them about the industry they are regulating. This is critical since ultimately the Commander is the one who signs your permit.

On August 28th Colonel Bullock and Amy Reese, Chief of Operations at the District met up with PCSGA's Army Corps Committee for a socially distanced tour of South Sound shellfish farms. We toured Chelsea Farms on Eld Inlet to observe flip bag oyster, geoduck and Manila clam culture. From there we went to Taylor Shellfish Farms' Olympic View farm in Totten Inlet to see bottom culture of oysters, native Olympia oysters, their oyster breeding program and take a boat ride out with Gordon King to their North Totten mussel farm. Next it was off to Taylor's seed nursery (flupsy) in Oakland Bay, then we wrapped up with slides and discussion at Taylor's conference room. Marilyn Sheldon, with Northern Oyster, and I walked through slides to show aspects of the industry in other regions that Colonel Bullock didn't see on the tour.

It was reassuring to the Committee that Colonel Bullock was well informed about the shellfish permitting issue and the District Court decision invalidating the NWP48 permit. He seemed sincerely committed to getting new permits issued in a timely manner and resolving Corps shellfish permitting issues with long term solutions.

Meet PCSGA's New Allied Members:

Searen LLC

Searen serves the shellfish community with the Vacuum AirLift (VAL™), an industry leading water treatment technology. VAL™ provides innovation, performance, and cost-benefits for recirculating aquaculture systems (RAS) fish farms, fish hatcheries, shellfish producers and public aquariums. The patented VAL™ delivers superior water quality, higher yields and sustainable operation at lower capital and operating costs. The VAL™ is a multi-functional solution that performs water circulation, gas transfer and particulate/ pathogen extraction with high efficiency and effectiveness, fulfilling the needs of shellfish depuration.

Visit **www.searen.com** for more information.

AquaSured

AquaSured provides guidance and access to available risk management programs offered by the USDA for aquatic grown crops.

We are dedicated to helping you improve, build and preserve your farm, business and family. AquaSured provides sound advice, education and is committed to building complete and correct risk management packages with integrity. Our licensed agents are experienced and ready to discuss risk protection that may be available for your operation.

Visit **www.aquasured.com** to learn more about us. AquaSured is a division of AgriSured, LLC and is privately owned and operated.

Dudek

In our first 40 years, Dudek has grown from a two-person Southern California engineering firm to a 600-person national multidisciplinary environmental and engineering firm. With projects in 44 states, Dudek is ranked as one of the Top 130 U.S. Environmental Firms (Engineering News-Record, 2019).

We are environmental planners, scientists and engineers who help clients plan, design and build projects that improve communities' built and natural infrastructure. We are creative, pragmatic problem-solvers working at the intersection of science, engineering, regulations, and multiple stakeholders' interest to help clients achieve project goals.

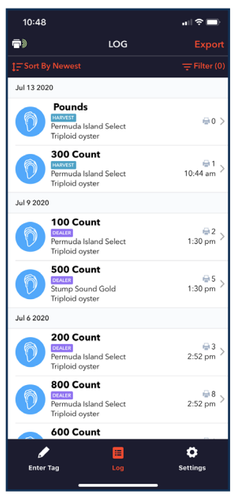
Visit **www.dudek.com** to learn more.

Our Shellfish Tagging Journey - Oyster Tracker

by: Chip Terry, Oyster Tracker
Date: October 2020

The talented team at Oyster Tracker recently launched a new shellfish tag printing solution. You can now print harvester, dealer and bulk tags from your phone to a portable Bluetooth printer. The tags are waterproof, perforated and thermally printed (that means no ink refills). They comply with all regulations (even the ones unique to WA and CA). The cost is roughly the same as pre-printed tags and it saves you a ton of time. No more handwriting in cold weather or filling out the same information in a separate harvest log. You can learn more at www.oystertracker.com

We launched our shellfish tagging in March and as of this writing we have clients in 10 states. Not bad for a product launched in a pandemic.



So how did we get here and where are we heading?

In visiting over 100 farms in the last couple of years, we watched folks handwriting tags and then the dealers immediately taking those tags off and putting on their own tags--also sometimes handwritten. Regulators changing the wording slightly and thousands of tags being thrown out. Log books that were nearly indecipherable and regulators who claimed that 50% of tracebacks were failing because of poor record keeping. Most importantly, nervous consumers avoiding shellfish because they had read a clickbait article claiming 35,000 people got sick from Vibrio in the US last year. In other words lots of wasted time and not the results anyone is hoping for.

Creating a digital cloud based solution seemed obvious, but it took a long time to sort out for a number of reasons.

1. Printers: We needed a durable printer that could connect wirelessly to a phone. We tried (broke) quite a few printers before we found one that met our standards.

2. Paper: The paper needed to be waterproof and work with a thermal printer. It also needed perforations and hole punches. We had to order custom paper.

3. Regulations: Although most states follow the NSSP Model Ordinance, many have added subtle but important differences. We had to build a database of each state regulation so we could handle the dozens of differences between states. For example, landing times in Virginia and harvest temperatures in Washington are different requirements. Not to mention, the Cadmium warning for any imports to CA.

4. Cost: This cost needed to be roughly in line with the price of pre-printed tags. And a lot less when you factor in labor savings.

What's next?

Our main focus is the supply chain. In talking to distributors, the issue of transcribing tags, keeping track of every lot so you know where it came from and where it went to is extremely time consuming. In addition, there is so much wonderful information about each farm/product that is lost in the supply chain. How do we help folks comply with the regulations and connect the story of that shellfish with the end consumer?

To that end we applied for and won a grant from NOAA to build out our Tide to Table Traceability and Marketing System. We are working with great partners in CA, VA, NY, MA and ME to make that system a reality. Expect to see more in the future. In the meantime, give us a call if you want to save time and make your life easier. Our mission is to make you successful.

Grower Testimony:

Oyster Tracker (OT) simply makes sense for us. Our small family shellfish farm faced a quandary of either going conventional and buying a new order of pre-printed tags, or go a new route (that allowed greater flexibility) offered by Oyster Tracker. The company promised what we needed, but "change is challenging". Looking at just 'cost', it seemed a toss-up.

The decision became clear as we discarded boxes of unusable, pre-printed tags because of new language requirements prescribed by state and federal regulators. Hand-writing in changes was no longer feasible. OT had clear advantages:

1. *Data entry for dealer, harvester, or bulk tags was easy from any of our iPhones.*
2. *Customized language on our tags was easy, as regulations change we or OT could make the required changes simply.*
3. *An impressive cloud-based database keeps track of all our shipments automatically.*
4. *The QR code printed on each tag contains all information to make regulators happy with chain of custody. The purchase included a small, weather-resistant and portable printer, that connects to our iPhones by Bluetooth. It also came with enough tags for a year, at our rate of use.*

The investment of a little over $500 has probably been the best business investment we made this year.

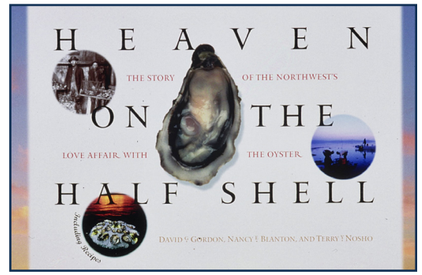
Duane Fagergren
Calm Cove Oyster Co. LLC
Shelton, WA

Heaven on the Half Shell Version 2 co-authors request your input!

by: David Gordon
Date: October 2020

In 2001, Washington Sea Grant published the popular book *Heaven on the Half Shell: The Story of the Northwest's Love Affair with the Oyster*. Over the nearly 20 years since then, the shellfish and oyster industry has tremendously grown and changed. We plan to substantially revise and expand the book in a new edition. To do so, we come to you, the experts, with a request: who and what should we make sure does not get left out?

The book's text and historic and contemporary photos showcase the efforts of pioneering aquaculturists, scientists, field technicians, oyster connoisseurs and others who have shaped this unique industry. An assortment of oyster recipes rounds out this lively portrait of the bivalve that figures so prominently in the economies and cultures of our region.



We invite you to contribute your ideas and favorite photos. We are looking for input on people to interview and any stories or pictures related to the following topics:

- The trailblazers and stars of the oyster industry today
- The pioneering women who got the oyster industry off the ground, and who continue to shape it today
- The past and current role of oysters and shellfish to Pacific Northwest tribes
- The role of Japanese immigrants and their descendants in the industry
- The major technological advancements over the past 20 years
- Favorite oyster recipes and family photos

Please send your suggestions to Heaven on the Half Shell co-authors:
David G. Gordon at david@davidgeorgegordon.com (206-841-6326)
Samantha Larson at larsonsa@uw.edu

PCSGA'S ECOSYSTEM SERVICES PHOTO CONTEST 2020 GRAND PRIZE WINNERS

1st Place – Nyle Taylor ($500)

This weekend's extreme low tides exposed ground that does not often go dry. Prior to planting geoduck, this bed was bare sand. The addition of the mesh tubes provided structure for the kelp forest that is to the north of the farm to expand covering nearly a half-acre of our mesh tubes. Kelp provides many ecosystem services, from carbon sequestration to habitat for a variety of native Puget Sound species.

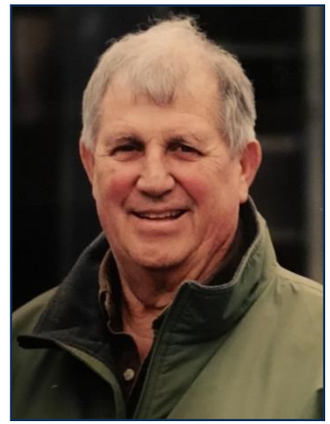
2nd Place – Nick Wenzel ($300)

Deep intertidal mesh tubes provide a great surface for organisms such as hydroids, bryozoans and anemones to grow on. These organisms are an important food source for many animals, including the three White-Lined Dirona nudibranchs pictured here.

3rd Place – Jeremy Esposito ($200)

Although stock checks of scallop broodstock lead to reports of mortalities, we tend to get a kick out of the new residents. Pictured here is a purple-hinged rock scallop repurposed. Looks to me like a sculpin, nesting below Manchester's NMFS Sablefish pens.

Remembering Dick Poole of the Lummi Shellfish Hatchery



"I was on the phone with Ralph Solomon at Lummi Shellfish when I think my subconscious mind realized I had not heard from Dick Poole in a while, so I asked Ralph how he was doing. He informed me that Dick had passed over a year ago. Sad news for me to hear.

Dick was the Hatchery Manager at the Lummi Shellfish Hatchery for many years. I first met Dick back in September 1996 when I stopped at the Lummi hatchery while returning from my first shellfish conference up in Campbell River, BC. At that time, I knew next to nothing about shellfish farming, but did know I wanted to become a geoduck clam farmer.

When I met Dick, he confirmed to me that he had produced some geoduck seed for Harold Wickston at Minterbrook Oyster and I then asked if he could produce some for me. He promptly said, "Money talks." Two days later I borrowed some money on a credit card and gave it to Dick. At that time no one really knew how much algae geoduck seed would consume to get to planting size. As a result, the seed was very cheap. If Dick and the Lummi hatchery could produce it, they did.

Dick sent it down to me wrapped in old t-shirts. Brett Bishop and I planted the first 100,000. By 1997 I'd hired Paul Harris and also had Lynn Goodwin working with me, and we promptly killed most of the remaining seed. Dick would produce geoduck seed for us for 2 or 3 more years. He would also produce geoduck seed for several others in the industry.

In a very real sense, Dick Poole and the Lummi Hatchery were very important parts of the then-developing geoduck industry. I don't mean to diminish their other contributions within the shellfish industry, because I know they produced lots of oyster and Manila clam seed as well.

Continues on next page...

Dick was an honorable man who always seemed to be working on an idea. It was just in early last year that he was still running an idea by me. He always seemed to want to do what was best for the Lummi tribe, too, and I admired that in him as well."

Jim Gibbons, Seattle Shellfish

"I think I met Dick back in the 70's, when I graduated from the UW. I think I was farming salmon and my mentor and fishing partner, Tony Novotny, introduced us at his place in Manchester. Tony helped lots of tribes get established in shellfish and salmon aquaculture research leading to production facilities. Lummi was one of those tribes. Tony was the consummate matchmaker.

I remember seeing Dick at one of the PCSGA meetings, maybe at Semiahmoo several years back, and we had a nice chat about old friends like Tony. Another of the giants in the aquaculture industry that made it viable. We forever hold memories of those great people, and I am thankful for that."

Duane Fagergren, Calm Cove Shellfish

"He was among the pioneers of his generation of shellfish growers here in the northwest, particularly with hatchery seed production."

Bill Dewey, Taylor Shelfish Farms

"He taught me a lot and it was an honor to work and know this man."

Ralph Solomon, Lummi Shellfish

"Loss of a good man that always treated me fair. He was closed about procedures, but would soften and by the time you were through, you would know the essentials."

Steve Bloomfield, Seattle Shellfish

Shellfish growers honored for debris-reduction efforts

by: Chinook Observer
Date: September 29, 2020

PORT OF PENINSULA - Willapa-Grays Harbor Oyster Growers Association President Ken Wiegardt, right, and WGHOGA Executive Director David Beugli, center, were recognized Sept. 24 for their members' successful marine debris reduction efforts. A copy of Pacific County Proclamation of Coastal Cleanup Month by the Pacific County Board of Commissioners is held up by Chairman Frank Wolfe, who stands next to the marine debris receptacle located at Port of Peninsula.

PCSGA and WGHOGA hosted dumpsters for a week at two locations in Willapa Bay, Washington this past September. This event is a component of our initiative to provide resources to our growers to support stewardship of the tidelands. Growers were able to access the dumpsters on their own time and were able to dispose of debris found on and along their farms in Willapa Bay.

Fight underway against invasive crab in Samish Bay

by: Kimberly Cauvel, Skagit Valley Herald (e)
Date: August 28, 2020

The invasion of the European green crab in local waters continues.

In Samish Bay, what began as the discovery of a few of the crabs in Taylor Shellfish Farm's aquaculture beds in January 2019 has this summer grown into a full-fledged trapping effort. As of Thursday, 88 non-native crabs had been pulled from the water.

"These are all signs that this could be a new situation that we want to keep a pretty close eye on and intervene if possible," Washington Sea Grant Crab Team Program Lead Emily Grason said.

The green crab has been found along the West Coast for decades, and made its debut in the Salish Sea in 2016. In September 2016, the first was found in Skagit County: a lone green crab in the mud of Padilla Bay.

Through 2018, intensive monitoring led by the Crab Team, state Department of Fish & Wildlife and Padilla Bay National Estuarine Research Reserve turned up a few green crabs in Skagit waters. Six were found in Padilla Bay and one empty shell called a molt was found in Fidalgo Bay.

Now there have been dozens found in Samish Bay and one was again found in Padilla Bay — discoveries that have sparked concern among local businesses and scientists.

"The reason we're very concerned about the European green crabs is because in some of the other places they've invaded and reached high densities, they've destroyed large areas of salt marsh and eelgrass meadows, largely through their burrowing," said the Padilla Bay National Estuarine Research Reserve's Roger Fuller, who found the single invasive crab in Padilla Bay last week during regular monitoring of the reserve's wildlife.

"And they have sometimes also devastated native species including shellfish and crabs."

They threaten aquaculture, too, particularly clams.

"One of my real concerns is that they will eat clams, which I grow on my farm," said Bill Dewey, spokesperson for Taylor Shellfish Farms and owner of Chuckanut Shellfish.

Read the full article - HERE

Project launched to tackle oyster mortalities

by: Rob Fletcher, The Fist Site
Date: September 4, 2020

Shellfish genetics and breeding company Pacific Hybreed is taking part in a NOAA-funded project to develop genetic markers for resistance to the virus causing Pacific oyster mortality syndrome (POMS).

POMS is caused by a variant of a herpes-like virus that has devasted oyster culture in France, Australia and New Zealand and is considered an existential threat to US domestic production. Two years after its initial discovery on the US west coast, the virus was detected at a "sentinel" facility in San Diego Bay in mid-July. Depending on the particular origin of the affected oysters, mortality levels ranged from 37 percent to 97 percent, with an average of 77 percent. So far, the virus has not affected commercial production in the US.

"The reappearance of the virus in US waters reinforces the importance of our strategy to produce resistant stocks within our overall breeding programme, including in collaboration with other world-class scientists. A recent award from NOAA's Small Business Innovation Research (SBIR) programme is funding our collaboration with Dr Colleen Burge, the preeminent shellfish pathologist focused on POMS in the US. The project is aimed at discovering the fundamental genomic basis of resistance naturally displayed by some oysters. These insights will allow the development of biomarkers that can be used to find resistant oysters in natural populations, providing a genetically diverse base population for breeding programmes focused on POMS resistance as well as overall yield and resilience," explains Dennis Hedgecock, chief science officer at Pacific Hybreed.

Pacific Hybreed is also starting to work on understanding the genetic and environmental drivers that are causing increasing summer mortality among Pacific oysters, especially triploids. With environmental stressors likely a significant driver, mortalities of Pacific oysters are on the rise, posing a threat to production. Pacific oysters had (as of 2013) a retail value of nearly $300 million on the US west coast alone, yet producers in Willapa Bay, Washington, reported 20-80 percent loss of near market-ready oysters over several growing areas, from the summers of 2018 and 2019, and many west coast shellfish farms have reported similar losses in 2020.

"Mass mortalities among triploid Pacific oysters, which are more valuable commercially and carry minimal genetic risk to wild stocks, have been especially concerning for many farmers. Many growers are seriously questioning whether triploid production is viable given increasing mortality, particularly since there is no real understanding of its causes and no credible path forward toward an adaptive response," Hedgecock reflects.

Read the full article - HERE

PCSGA
PACIFIC COAST SHELLFISH GROWERS ASSOCIATION
120 State Avenue NE #142
Olympia WA 98501
360.754.2744
pcsga@pcsga.org
www.pcsga.org

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Please pass the newsletter along or recycle after reading.

Calendar of Events

November

- 12: PCSGA Board Meeting via Conference Call
- 15: Ecosystem Services Photo Contest Submission Due

December

- 10: PCSGA Board Meeting via Conference Call
- 15: Ecosystem Services Photo Contest Submission Due

January 2021

- 15: Ecosystem Services Photo Contest Submission Due
- 19-21: Alaska Shellfish Growers Association Virtual Conference
- TBD: PCSGA Board Meeting via Conference Call

Other Noteworthy Industry News

Port of Port Townsend Gets Taste of Oyster Idea - Peninsula Daily News

What the Pandemic Has Done to WA's Flagship Shellfish Industry - Crosscut

State to Provide $300K in Emergency Grants to Washington Shellfish Growers - WA State Department of Commerce

Nine Things You Probably Didn't Know About Aquaculture - NOAA Fisheries

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PCSGA Grower Enrichment and Development Fund

The fund provides financial assistance to members of PCSGA for expenses related to education opportunities, experimental practices, and attending PCSGA events such as the Annual Conference or Walk the Hill in Washington, DC

Apply for funds at: www.pcsga.org