

LONGLINES

Volume 23 No. 3
Summer 2020



**Finding Joy and
Resiliency from the Tides...**



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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

Notes from the Director

Virtual hug, anyone? In some ways it's hard to believe three months have passed since the last issue of *Longlines*. Time seems to have dragged on, yet it's already July. There's no question these past few months have been extremely trying for all of us. I write this piece with continued uncertainty and bewilderment, but also disappointment from canceling anticipated experiences and events, pride in the resiliency I've been seeing in my fellow humans, gratitude for the efforts of many who stepped up to help, and joy for the happy things that occurred despite the pandemic. All proof that a pandemic does not stop life.

COVID also has taught us that that we can accomplish more together than apart. We were able to very quickly rally support in Congress for shellfish aquaculture in order to get included in the CARES Act Relief Bill. This was in part possible because of the quick thinking of Jonathan van Senten (Virginia Tech) and Carole Engle (Engle-Stone Aquatic\$ LLC) who immediately developed a way to quantify the impact COVID will have on our industry. States are now developing spend plans for how CARE Act funds should best be used. Congresswoman Bonamici (D-OR) is leading a bill specifically aimed to assist restaurants who have been our main line to consumers. WA Governor's Office pulled together funds that will be granted to growers for purchasing seed and we also have new leads pathways for growers to develop and support their own direct marketing and sales.

COVID also taught us that we CAN master the Zoom meeting. As a community, we've gotten pretty good at being part of virtual meetings (Spoiler alert...you're so good, that we are hosting our annual conference virtually!) Feel like exercising your digital presence? PCSGA's weekly Virtual Grower Network (Thursdays at 10 am) has proven to be a great platform to learn about what growers need and advance the conversation into action.

These months have also brought joy. I'm very proud that my youngest (Annie) graduated high school and is looking forward to continuing her education. I also am happy to say that I found love and got married to my best friend, Don! PCSGA also welcomed some new boot-wearing babies to our shellfish family; congrats to Hama Hama and Taylor Shellfish. There are even a few new quarantine puppies who joined the fray.

Joy has been vital and helps balance the concern for the health of my loved ones, my friends, and trusted leaders – not just due to the pandemic, but also for the continued divisive tone and intolerance that seems to permeate every corner of life. If only more people could live by the tides. The tide shows up, refreshes the area, and then retreats – kind of like a hug from nature. The culture of intolerance which seems to be developing around us is not COVID-related, but for some reason it stings more under the pandemic. We've got the tides, but are severely deficient in giving and receiving physical hugs. I miss hugs and wish mightily I could share some with all of you.

Be well.

Margaret A. Pilaro

Cover Photo: Estella Sheldon's photo, while not being selected as a winner of the Ecosystem Services Photo Contest, has been highlighted as an honorable mention. She captions her entry with "This is a starfish and eelgrass that live on our oyster bed. These, along with many other fauna, populate our beds to feed and forage regularly." Submit a photo by the 15th of every month for your chance to win \$100 or be featured on the next cover of *Longlines*!

Pearls from the Prez...

What a world we are living in. No doubt 2020 has been a year to remember: the chaos of COVID-19, the final orders from the judge regarding the legality of our NWP-48 permits, and the insanity of selling my home and moving. Many times I thought I was going to snap and admit myself to the looney bin!

While we knew the judge's decision in October of last year, we didn't know how he was going to remedy our need for permits. I wasn't prepared for the devastating outcome that came down. Being on the frontline of this issue for several years, I have seen PCSGA, its membership, elected officials and many others work to secure a permit that allows us to continue to do what has been done for well over 100 years, spanning upwards of five generations. To have that coverage threatened, threatens us all and our way of life. As you would expect, this has resulted in high emotions and tested tolerances.

Thank you for your involvement, your kindness, and your patience. Thank you for your speedy engagement when there is information to be shared. Thank you for being a dues-paying member that supports the association and the work they do on your behalf.

Our PCSGA staff team is small, but mighty. Currently being paid only a part time wage, office staff are working at near full-time hours to support our needs. Thank you Margaret, Connie, Sara and Alexandra for your dedication.

Studies have shown that people are three times more likely to write a review or complaint than a compliment or expression of gratitude. That was made clear when, after weeks of emails expressing frustration, complaints and finger pointing, we received an email at PCSGA thanking us for all we do. The email expressed how much they depend on the resources PCSGA provides, and how they use the association to navigate so many industry issues. That two-sentence email was the highlight of my week. The joy I felt in knowing that at least one other member appreciated all the efforts made, helped to make all the other noise fade.

At some point we will see the end of the pandemic, the Army Corps issue will finally be settled, and I will have emptied the last of my boxes. Life will once again be normal, until the next issue arises. There might always be a reason to complain or be frustrated, but I also hope there is always a reason for you to be thankful.

If you have a chance, please thank our staff and our board members, they deserve it!

"Life is like the ocean; it goes up and down."

Take care of yourselves and each other.

Miranda Ries
 Pacific Seafood, Pacific Shellfish

Monthly Winners of Ecosystem Services Photo Contest!



April: Sergio Guevara's picture shows the happy coexistence of the oyster growing gear with Eelgrass (*Zostera marina*) bed. Eelgrass is the nursery ground for many aquatic species and is fertilized by oyster excretion.



May: Jeremy Esposito photographed a purple-hinged rock scallop that has been repurposed. Although stock checks of scallop broodstock lead to reports of mortality, we tend to get a kick out of the new residents.



June: Nyle Taylor photographed a geoduck bed at extremely low tide that does not often go dry. Prior to planting geoduck, this bed was bare sand. The addition of mesh geoduck tubes provides structure for the nearby kelp forest to expand.

SNAP A PHOTO, WIN \$100!

Contest rules at www.pcsga.org

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

Court Decision Vacates NWP 48 in Washington State; PCSGA Appeals Decision to Ninth Circuit

by: PCSGA
Date: July 8, 2020

Many of you have been following the ongoing legal challenges to Nationwide Permit (NWP) 48 in Washington State. PCSGA has actively participated as an intervenor in the litigation since 2017, to provide shellfish farmers' perspective and expertise and defend their interests. On June 11, U.S. District Court Judge Lasnik entered a final order in two cases, one brought by the Center for Food Safety and one brought by the Coalition to Protect Puget Sound Habitat, vacating NWP 48 in Washington and retroactively vacating existing farm verifications. The Court found that the Army Corps did not adequately support its decision to issue a national permit, essentially finding that it must take a harder look at the scientific record.

The decision allows limited planting of new crops on farms authorized under NWP 48, only for six months (through December 11), and only in areas that do not have mature native eelgrass beds. Maintenance and harvest of current crops, and shellfish activities that occur pursuant to and to provide treaty harvest in furtherance of treaty rights, are allowed to continue until NWP 48 verifications expire. Farmers who intend to conduct these maintenance, harvest, and/or seeding/planting activities must submit an application for an individual or other existing Corps permit as soon as practicable, and no later than December 11.

Judge Lasnik delayed implementation of the decision for a period of 60 days to allow for an appeal to the Ninth Circuit Court of Appeals. PCSGA has appealed the decision and the retroactive vacatur of shellfish farm authorizations, and requested a stay of the decision pending appeal, with the goal of securing continued use of NWP 48 in Washington and for verified farms to continue full operations until their existing verifications expire.

For the time being, under the District Court's decision shellfish farmers need to acquire new permits from the Corps, a complex, expensive and time intensive process. Although the Court directed the Corps to process new applications "as expeditiously as possible," the agency has said that it will take years to issue new permits for the hundreds of existing farms that are affected.

For more information, please contact PCSGA Executive Director Margaret Pilaro.

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Maryland-led, Multi-institutional Research Team Receives \$10M to Transform Shellfish Farming with Smart Technology

Source: (excerpt) University of Maryland A. James Clark School of Engineering
Date: June 24, 2020

A multidisciplinary team led by engineers at the University of Maryland (UMD) has received a \$10 million grant from the United States Department of Agriculture (USDA) National Institute of Food and Agriculture (NIFA) to accelerate sustainable shellfish aquaculture in the United States.

The team, led by Professor Miao Yu of UMD's A. James Clark School of Engineering, will develop novel technologies and a sustainable management framework to help farmers tap the economic potential and environmental benefits of shellfish aquaculture, which until now has been bottlenecked by outdated tools and methods.

"Aquaculture of shellfish such as oysters, mussels, and scallops provides a sustainable, environmentally beneficial source of high-protein food, as well as a way to grow the economy in rural coastal areas," said Yu, who will lead the multi-institutional team of engineers, biologists, computer scientists, economists, and educators. "Up to this point, we haven't really explored this industry's potential because it still relies on antiquated technologies—in some cases, tools that go back hundreds of years.

"By developing and incorporating advanced technologies into shellfish farming, including the use of underwater drone monitoring and smart harvesting, we can bring about a major boost in production," Yu said.

The team—representing extensive expertise in sensing and imaging, robotics and artificial intelligence, automation for

agriculture and seafood, aquaculture extension economics, shellfish biology, and software development—includes UMD collaborators from the A. James Clark School of Engineering; College of Agriculture and Natural Resources; and College of Computer, Mathematical, and Natural Sciences as well as researchers from the University of Maryland Center for Environmental Science (UMCES), University of Maryland Eastern Shore (UMES), Louisiana State University (LSU), Pacific Shellfish Institute, Virginia Polytechnic Institute and State University (VT), and Fraunhofer USA Center for Experimental Software Engineering.

Aquaculture of shellfish is perhaps the most ecologically sustainable form of aquaculture, as well as an important driver of coastal economy. The Food and Agriculture Organization of the United Nations (FAO) has ranked the U.S. high for potential industry growth of this high-quality and nutritious protein source, but the industry lacks the basic technological advancement found in today's digital, automated world.

"We need to modernize the technology used in shellfish aquaculture, which is decades if not centuries behind the technology used in land agriculture," said Clark School Professor Yang Tao, a collaborator on the grant. "Drone-based technologies for crop surveying and early disease detection. Vision-guided crop cultivation. GPS-guided harvesting. These technologies exist for land agriculture; why shouldn't they for shellfish aquaculture, too?"

Read the full article - [HERE](#)

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📷: Victoria Webb Photography

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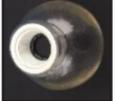
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Sea Farms Consulting LLC, based in Covington, LA, is a sole proprietorship of John Supan, established after retiring from 34 years of service with the Louisiana Sea Grant Program at LSU. John has old acquaintances and friends in the region from past participation at the Interstate Shellfish Sanitation Conference and National Shellfish Association annual meetings, and visits to the region. Additionally, his mentorship with the dearly departed Lee Hanson of Whiskey Creek Oyster Hatchery resulted in a lifetime gumbo gig. John has decades of design and management experience in shellfish culture systems, from soft shell crabs to oyster hatchery/nursery and depuration, using RAS and flow-through designs.

In addition to Sea Farms Consulting LLC, John is a founding production partner of Navy Cove Oyster Company LLC, Fort Morgan, AL. Sea Farms Consulting, in association with Steve Truesdale of Cape Fear Mariculture, includes the development and sale of new seamless bottle silos and/or systems.

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Norma Taylor - Taylor Family Matriarch Passes Away

Taylor Shellfish Farms via Facebook on June 29, 2020

To those close to our family....we wanted to let you know that Norma Taylor, one of the matriarchs of our family, passed away peacefully over the weekend.

After Norma retired from her work at Taylor Shellfish she spent the her time focused on the community here in Shelton and was an active member and supporter of Shelton's rotary club and Mason General Hospital Foundation. We will miss Norma's artistic flare and larger than life personality.

We have not been able to plan for a memorial service at this time due to Covid-19, but ask in lieu of sending flowers to please donate to the Mason General Hospital Foundation. Thank you.



Photos courtesy of Taylor Shellfish Farms

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The Tides are Turning: New Opportunities for Selling Direct-to-Market

by: Barn2Door, Inc.
Date: July 1, 2020

Across the country, restaurants are closed or operating well below full capacity in response to the pandemic. For food producers, this means a limit to consistent wholesale demand and business. The 'standing order' model that guaranteed ongoing sales for many Farms was disrupted with the economic shutdown, and producers are scrambling to cover costs and secure new avenues for sales.

The good news is that people haven't stopped eating, they're just buying elsewhere! This past spring, 1 in 3 Americans went online to purchase food, opening the virtual door to local producers to meet them online. At Barn2Door, we serve 1000's of Farms building their brands and selling direct to retail and wholesale buyers online. Here's the opportunity we're seeing .

Even prior to the pandemic, buyers wanted to purchase local food. In fact, 90% of Americans reported that they prefer local products; however, 99% do not source food from local purveyors - instead buyers opt for convenience. As a result, consumers are increasingly opting for online food or grocery delivery amidst busy schedules. The pandemic has further pushed consumers to explore online

options and door-to-door delivery. Of all the Farms Barn2Door serves across the US, we've seen a 30x increase in order volume in 2020 as buyers search online for local options.

Despite a drop in wholesale business, buyers are still seeking high-quality, local products—and they're willing to pay for it (delivered to their door). The opportunity for local producers selling direct means more profits and owning your customers relationships. The fewer boxes, hands and businesses involved, the more money is paid to the producer. When Farms handle their own direct-to-market sales online (on web, social media and email), they open more avenues to buyers who are spending 6+ hours a day on the Internet. Diversifying your sales to consumers, restaurants and other retail & wholesale channels gives your Farm business more resilience amidst economic uncertainties.

One of PCSGA's own members, **Jakolof Bay Oyster Company**, recently became a Barn2Door customer, bringing their Alaska-grown Pacific Oysters to customers for purchase online for delivery, pickup or shipping in addition to serving at several local restaurants. They're connecting with buyers to bring the strong community

relationships they've built in Jakolof Bay online. Their 1000+ followers on Instagram and Facebook keep up with harvest updates and oyster Farm, and easily hop over to their shop. Buyers can purchase whole oysters by the dozen, shucked by the pint, sauces, and even tools before choosing their delivery or pickup option. All this saves Frank and Margo (Jakolof Bay Oyster Co owners) time and lets them focus on navigating the extreme climate they grow in.

At Barn2Door, we exist to help Food producers succeed online - increase sales, access more customers and save time. We publish a wealth of free resources [here](#).

We also encourage you to register for the **DIRECT 2020 Farm Conference** - a free virtual conference on August 4th to help Farmers learn more about selling direct-to-market, and winning with Quality, Brand, Price and Convenience.

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Washington's Shellfish Farms Are the Heart of Rural Economies

by: Danielle Blacklock, Director, NOAA's Office of Aquaculture (San Juan Islander)
Date: June 10, 2020

When most Americans think of a farming state they probably picture the cornfields of Iowa or California's Central Valley. Washington might not rank high on their list. As the Director for NOAA's Office of Aquaculture, I know the importance of farming in Washington. Shellfish farming to be exact.

Shellfish harvest and farming is tradition in the Pacific Northwest. Tribes have harvested shellfish for generations, feeding their communities from Puget Sound and coastal shores. Washington's seafood farms as we know them today date back to the mid-1800s, three decades before the state even entered the Union.

Today, shellfish farming is a foundation for rural Washington economies. According to the latest aquaculture statistics these farms produced over 10 million pounds of shellfish worth nearly \$100 million in 2017. This production is not only important for the regional economy, but it is also a critical link in our nation's food security.

Why is Washington's shellfish industry successful? I can sum it up best with one word, connection. Shellfish farmers are connected to healthy ecosystems, their daily lives are driven by marine stewardship and their products provide many benefits to the environment, including improving water quality. A single adult oyster can filter up to 50 gallons of water a day.

Shellfish farmers are also connected to their communities. Last year Washington shellfish growers, directly and indirectly, employed thousands of people. These jobs include hatchery technicians, farm workers, distribution, delivery, divers, and even your favorite raw bar shucker. They also connect us to our food and the region's tradition of enjoying shellfish. These shellfish farms give us a healthy and sustainable product that carries the farms unique flavor to our plates.

Farmers and policymakers, whether on land or water, know that food production is not without challenges. Barriers that are often out of their

control, including extreme or unpredictable weather conditions, ocean acidification, changing water conditions, trade roadblocks, and increasingly the impacts of COVID-19.



Taylor Shellfish
Photo credit: NOAA

I know many of these risks, I studied them. As a graduate student at the University of Washington, I focused my research on shellfish growers' perception of risk. In many ways growers were ahead of their time with concerns about water quality, climate change and shifting markets making them sentinels for a changing environment. No one, however, saw anything like COVID-19 coming.

With restaurants closed to dine-in services shellfish farmers have lost their connection to the majority of their customers. While no one knows when restaurants will reopen to dine-in customers or when market

demand will increase, I am certain that aquaculture growers are some of the most resilient among us. They wake up early, work long hours, and battle through storms and summer heat to provide our communities with that connection to sustainable and healthy seafood.

We continue to hear stories of the sacrifices growers are making and the support they are providing in their communities, including taking pay cuts to keep staff employed, Sea Grant extension agents helping producers with direct to consumer marketing, and aquaculture product donations helping to feed hundreds of families in need. It is these actions that show just how essential aquaculture growers are.

The importance of local and reliable food sources has never been more evident, but shellfish aquaculture is so much more than just food production. These farms provide vital opportunities in rural economies, ecosystem services, and can improve access to seafood benefiting community health. Seafood farmers are the heart of rural communities.

<https://sanjuanislander.com/opinion/opinion-piece/31252/guest-column-washington-s-shellfish-farms-are-the-heart-of-rural-economies>

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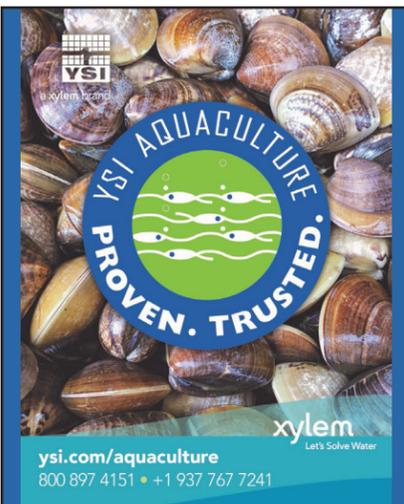
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Of Oysters and Polyester: Surveilling Microplastics in Aquaculture

by: Andy Chia (The Daily)
Date: June 1, 2020

The humble Pacific oyster might be the crown jewel of fine dining and yet, consumers have become increasingly wary of a microscopic lurker believed to be found in shellfish: microplastics.

“Washington is the number one state that produces farms or aquaculture fields around the U.S., and a huge contributor to this are Pacific oysters,” Julieta Martinelli, a postdoc at the School of Aquatic and Fishery Sciences, said. “Since aquaculture is so important, there are always projects coming from collaborating with industry, such as the concern with microplastics.”

Martinelli, along with chemistry graduate student Samantha Phan, began surveying oysters in Washington state parks to analyze the impact that microplastics have had on oysters in their native habitats like estuaries.

“In the Northwest, we have small coastal estuaries and the southern Salish Sea, which is a deep estuarine fjord,” Jennifer Ruesink, professor of biology and adjunct professor of aquatic and fishery sciences, said.

“Estuaries worldwide have become eutrophic, which means that nutrients have been added from fertilizers, sewage, and septic at their borders.”

Microplastics, which have been found in wastewater and sewage sludge, are found all over the world and are believed to be ingested in local wildlife. Bivalves like Pacific oysters were thought to have an especially concentrated amount of microplastics because they filter feed.

“We’ve always tried to be super careful about this topic,” Martinelli said. “Even though microplastics are found in the water, associating them with aquatic animals can have a negative impact on the industry and oysters that are a sustainable source of food.”

Prior to Martinelli and Phan publishing their research, other researchers who focused on oysters in estuaries reported finding a substantial amount of microplastics within oysters they sampled. However, the methodologies between these various studies were inconsistent. Oysters were being

collected from a variety of settings like farms and wild populations, and were being analyzed by hand.

“Sometimes you get really high numbers of microplastics, and sometimes you get really low numbers,” Martinelli said. “This is a very new field, so people have been trying out different ways of quantifying plastics. A lot of labs have particles counted by hand, but are unable to otherwise identify whether or not these particles are microplastics.”

Martinelli and Phan instead focused on developing a molecular approach to identifying microplastics to uncover the molecular profiles of microparticles found in Pacific oysters.

“We initially tried characterizing with infrared microspectroscopy, and that gave us some pictures,” Phan said. “But, I knew that we needed more techniques to get a fuller picture. Trying to find a technique that was reproducible was difficult, but asking around led us to Raman microspectroscopy.”

By combining both techniques, the researchers were able to find out that only around 2% of the microparticles they were analyzing were synthetic plastics. The remaining microparticles were found to be salts, proteins, shell fragments, and other naturally

occurring particles.

“Raman spectrometry allowed us to see the individual particle’s spectrum, which is kind of like a fingerprint for that compound,” Phan said. “Once we found a match, the particle we looked at could be identified.”

While spectrometry is reliable for differentiating microparticles, the technique is expensive and requires extensive training to perform. With similar techniques, Martinelli and Phan hope that molecular analysis will become a more accurate standard for the field.

However, they still believe that screening for microplastics is only part of the solution.

“It’s very easy for us to forget that microplastics exist since you can’t see them and don’t directly impact our lives,” Martinelli said. “But right now, we really have to assume the responsibility of plastics since it affects someone, somewhere in the world. Nothing is disconnected.”

http://www.dailyuw.com/science/article_cb917880-a3c4-11ea-82c4-538e468376d5.html

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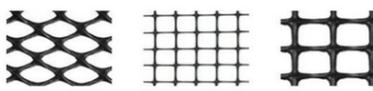


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How the Pandemic Has Impacted WA's Tribal Seafood Operations

by: Megan Hill, Eater Seattle (excerpt)
Date: July 2, 2020

When Suquamish Seafoods held its opening ceremony for its new retail store off Highway 305 in Poulsbo, Washington, this January, things looked promising. The company, operated as a separate charter entity of the Suquamish Tribe, celebrated with traditional songs and blessings, and a ribbon cutting ceremony. Customers flooded in to buy Manila clams, geoduck, Dungeness crab, halibut, and more.

“It was proving to be quite successful,” says the company’s general manager, Tony Forsman.

Suquamish Seafoods’ biggest revenue source has historically been geoduck sales to China, but that ground to a halt January 23, when flights to China to import seafood shut down due to the COVID-19 pandemic.

“It went to zero,” Forsman says of the company’s geoduck business. “We just quit harvesting.”

That part of the business had previously been cut down because of tariffs imposed by China as part of the trade war — a universal experience for Washington seafood companies selling geoduck to Asia. “From 2018 through 2019, we easily lost a million dollars of income because of the tariffs,” Forsman says. That tariff was removed recently, and business had been rebounding, until impacts from the novel coronavirus surfaced.

Suquamish Seafoods operates a seafood processing plant, pays contracted geoduck divers, grows and sells oysters, and buys salmon, crab, and clams from individual tribal members, in addition to operating its new store. Apart from exports and sales at the store, the company also sells to restaurants in Seattle and around the area. With dining rooms forced to close early in the crisis, sales were hit hard there, too. The company’s retail and wholesale oyster operations shut down entirely.

Read the full article [HERE](#).

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- 15: PCSGA Board Meeting via Conference Call

August

- 15: Ecosystem Services Photo Contest Submission Due
- 13: PCSGA Board Meeting via Conference Call
- TBD PCSGA/WGHOGA Beach Cleanup - Willapa Bay, WA

September

- 15: Ecosystem Services Photo Contest Submission Due
- 17: PCSGA Board Meeting via Conference Call
- TBD PCSGA Beach Cleanup - South Puget Sound, WA

Due to the COVID-19 pandemic, many events have been postponed or cancelled. Please check our online calendar for updates.

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