

# Strained mussels: Causes of the first US offshore farm's demise are up for debate

By [Jason Smith](#) May 4, 2020 19:55 BST



 Credit: Catalina Sea Ranch Facebook page

The dramatic flourish in the YouTube video occurs about six seconds in when the whales show up.

The 2017 video, titled “The vision of Jacques Cousteau is becoming a reality” (see below), starts off showing a picture of offshore mussel farmer Catalina Sea Ranch (CSR), the first such operation in US federal waters. Then, for around 30 seconds, viewers are treated to drone footage of three gray whales cavorting near the ocean’s surface as John Denver croons a line from his 1975 hit “Calypso” about Cousteau’s research vessel: “To sail on a dream on a crystal clear ocean; to ride on the crest of a wild raging storm”.

That gives way to images of CSR divers checking the ranch’s underwater long-lines laden with mussels. The video finishes with a Cousteau quote about aquaculture’s importance.

The 55-second video conveys the ambition and vision of CSR. The mussel farming pioneer succeeded in capturing industry and mainstream media attention, raising millions from private investors and another \$2m in state and federal grants — before, ultimately, falling into bankruptcy in December.



#### FIRST OFFSHORE AQUACULTURE FACILITY IN U.S. FEDERAL WATERS

The founder of the San Pedro, California-based firm, veteran entrepreneur Phil Cruver, told *Undercurrent News* that he believes the reason for the company’s demise is simple: onerous regulation.

“Catalina Sea Ranch didn’t make it because of the FDA [US Food and Drug Administration]. There’s just no question about that,” he said.

Cruver listed several factors he said were major contributors to CSR's downfall: large disparities between state and federal shellfish biotoxin testing, requirements that he said cost as much as 50 times what state growers face; difficulties in finding a lab that conformed to federal rules; a more than \$146,000 loss due to allegedly faulty test-kits; and challenges in navigating an uncharted regulatory system.

The vision of Jacques Cousteau is becoming a reality



The FDA takes issue with that account, asserting that it worked with CSR for four years to help it comply with existing shellfish safety requirements.

Others who watched the rise and fall of a company with so much promise pointed to several reasons for CSR's bankruptcy including a lack of capital and harvesting assets that were too small, site selection that lacked extensive data about biotoxin risks, and an alleged lack of "focus" on the company's core mussel business. Other factors, such as a boater's tragic death at the ranch and infighting among shareholders that made it difficult to raise more capital, reportedly didn't help.

## 'All the wrong boxes'

The venture's future isn't over as Pacific Mariculture, a subsidiary of Long Beach, California-based investment partnership Pacific6, [is set to buy CSR's assets in a \\$1.75m deal](#). But CSR's impact thus far hasn't been wholly positive on aquaculture, especially as the financial issues left its farm site in "disarray" and the company was once in danger of losing its crucial Army Corps of Engineers (USACE) permit, according to its bankruptcy filing. Additionally, according to the California Coastal Commission (CCC), CSR had promised to comply with extensive monitoring requirements and failed to do so throughout its operation, the CCC told *Undercurrent*.

The mussel farmer ticked "all the wrong boxes" with its actions over the years, Scotty Schmidt, whose seaweed company Primary Ocean Producers Holdings (POPH) was an investor in CSR, added.

“You don’t want to destroy the benthic environment, you don’t want to have a farm in disarray. You don’t want to go bankrupt. Pretty much they did everything that you don’t want to do, which is going to create much higher barriers to capital availability and regulatory availability,” he said.

John Molina, a co-founder of Pacific6, whose Pacific Mariculture loaned over \$1.1m to CSR, called Cruver a “visionary” who “did a great job in seeing and seizing the opportunity”.

“But he struggled with capital and he struggled to put the operational infrastructure in, I think, that was needed for long-term success. Ultimately, I think they fell out of compliance and there were a number of issues at the farm itself that led it into bankruptcy,” said Molina.

The bankruptcy filing — prepared while Molina chaired CSR’s board — also blamed a shift in the company’s focus away from mussels to also include microalgae, oysters, scallops, sea urchins, abalone and seaweed.

“This shift in strategy and failure to execute on its original business plan caused depletion of cash, and confusion, disillusionment and frustration amongst investors,” claimed a bankruptcy status report detailing the reasons behind CSR’s filing.

Cruver disputes this account, arguing that he never spent more than \$10,000 on non-mussel related projects and that the seaweed research, in particular, brought in badly needed funds that helped cover the expense of mussel farming.

## **Oil, wind, trains and mussels**

In federal waters off the southern California coast are nearly two dozen offshore oil platforms, many of them now dormant. But in the 1980s and 1990s, marine biologist Bob Meek and his company EcoMar Marine Consulting had a contract to help oil companies with a problem.

“They have to scrape those rigs every two years because the mussel mass gets so heavy it starts to jeopardize the structural integrity of the legs,” Cruver said.

He was familiar with the platforms’ mussel growth, having gone scuba diving there. He also became acquainted with Bernard Friedman, a former diver for Ecomar who later started his own mussel operation offshore in California state waters, Santa Barbara Mariculture Company. In the 1980s,

Cruver led a publicly-traded wind turbine installation company, served as an executive at the Auto Train Corporation, which transported cars by rail, and later founded an online start-up, among other ventures. By 2010, Cruver — who is now on his seventh start-up — had founded KZO Sea Farms “to develop public-private sector open ocean mariculture programs”.



📷 Credit: Catalina Sea Ranch Facebook page

After completing some non-profit oyster restoration work through that company’s charitable arm, Cruver got a call in October 2011 from a senior US National Oceanic Atmospheric Administration (NOAA) executive, telling him about the agency’s launch of its "National Shellfish Initiative", which sought to rebuild bivalve populations on US coasts. The official invited him to consider developing an aquaculture project in federal waters. So he did, first proposing a site off the San Pedro Shelf that turned out to be in the middle of several shipping lanes. The US Coast Guard then steered him to site the farm closer to its current location some six miles off the coast of Huntington Beach, California.

## Down at the sea ranch

CSR’s farm itself is 100 acres dedicated to growing Mediterranean mussel (*Mytilus Galloprovincialis*). The species is not naturally found in California but has “naturalized” to the area's environment, having first been transported there in ships' ballast water decades ago.



📷 Phil Cruver, founder of Catalina Sea Ranch. Credit: Catalina Sea Ranch Instagram

At the farm, forty 600-foot long "backbone" nylon ropes (1.25 inches thick) tie to long metal anchor poles that are bored into the seafloor and are suspended at depths of about 20 feet into the water. Hanging 30-50 feet below the backbone are the "grow-out" ropes that hold the mussels, roughly 5 lbs on every foot of rope. Flotation devices are the only things visible above the water.

After a lengthy application process involving reviews from multiple federal agencies, USACE awarded a permit on June 9, 2014, to KZO Sea Farms, which later transferred it to CSR. The company then began fundraising via a series of private share offerings to "accredited" investors, through private placement memorandums, in part because financial "institutions" are largely scared by aquaculture, Cruver said.

"You can't get institutional capital. They don't want to even look into it. They just run," he said.

However, the company had success in its early days attracting capital from individuals from within and outside of the seafood industry that saw the project's promise. Roger O'Brien, the CEO of major California distributor Santa Monica Seafood, joined CSR's board. Molina, who sits on the board of the Aquarium of the Pacific, got involved, as did G. Hall Martin, an investor and friend of Cruver's who helped CSR raise money.

And the momentum was building, Cruver said, particularly after the company's first harvest on July 17, 2017, and through the next year. But the company's regulatory issues getting its mussels to market eventually depressed sales and caused cash flow problems, he claimed.

"We were flying high. I thought the FDA would back off," Cruver said.

## Heightened requirements

According to Cruver, as a farmer in federal waters, he faced heightened requirements for biotoxin testing compared to his peers in state waters who are only a few miles closer to shore. His testing costs were "50 times" more expensive than state growers, he said.

The 19 shellfish growers in California, for instance, are allowed to perform their own shellfish sampling and mail off the specimens to state-run labs, a cost that is borne by taxpayers, Cruver said.

By contrast, the FDA required CSR to hire NOAA personnel at the cost of \$200 per hour to supervise its harvesting of samples, Cruver said.

"It was just unbelievable. And they'd just sit there and we had to clean these mussels and get 250 samples and you had to do it within two hours so that you could get them to Fedex by the cutoff period, 4:30 p.m., so that it could get to the lab the next day within 24 hours so that we could sell in the market," he said.

His company, unlike state growers, also had to perform water quality tests for bacterial pathogens, an expense typically borne by the state, Cruver said.

## Lab problems

Finding a lab in 2018 for biotoxin testing was another issue. As a grower in federal waters, CSR had to send its samples to an "FDA conforming" lab, but the usual labs on the US West Coast were out of conformity with federal regulations.

The FDA evaluates state labs to make sure that they're operating the way that they should be operating. Labs' biotoxin testing methods have to follow particular protocols, and in 2018 it emerged that the process that state labs in Oregon and Washington used to test shellfish had deficiencies that needed to be corrected. During the deficiency period, the FDA didn't want

CSR to use the state labs.

“It was bad timing,” Ken Moore, the executive director of the International Shellfish Sanitation Conference (ISSC), told *Undercurrent*. “Had Catalina survived a little bit longer, those problems have now been corrected. They can use those labs on the West Coast now.”

Still, Moore added that state shellfish testing labs are often overworked and CSR would have had to pay for testing -- if space was available.



 Credit: Catalina Sea Ranch Facebook page

As a workaround, CSR tried to send its mussels for testing to a lab in Maine that conformed with FDA requirements, but the logistics of getting the samples there within a narrow time window proved too tricky, Cruver said.

“We had no lab. We had no choice. We couldn’t do anything,” he said.

There were other problems too.

In November 2018, CSR began receiving a large number of false test readings with “pre-harvest” test-kits it was using for paralytic shellfish poisoning (PSP). Cruver said it later became clear that the kits, made by a firm named

Eurofins Abraxis, were faulty and the FDA eventually granted CSR a waiver from the requirement to use the tests.

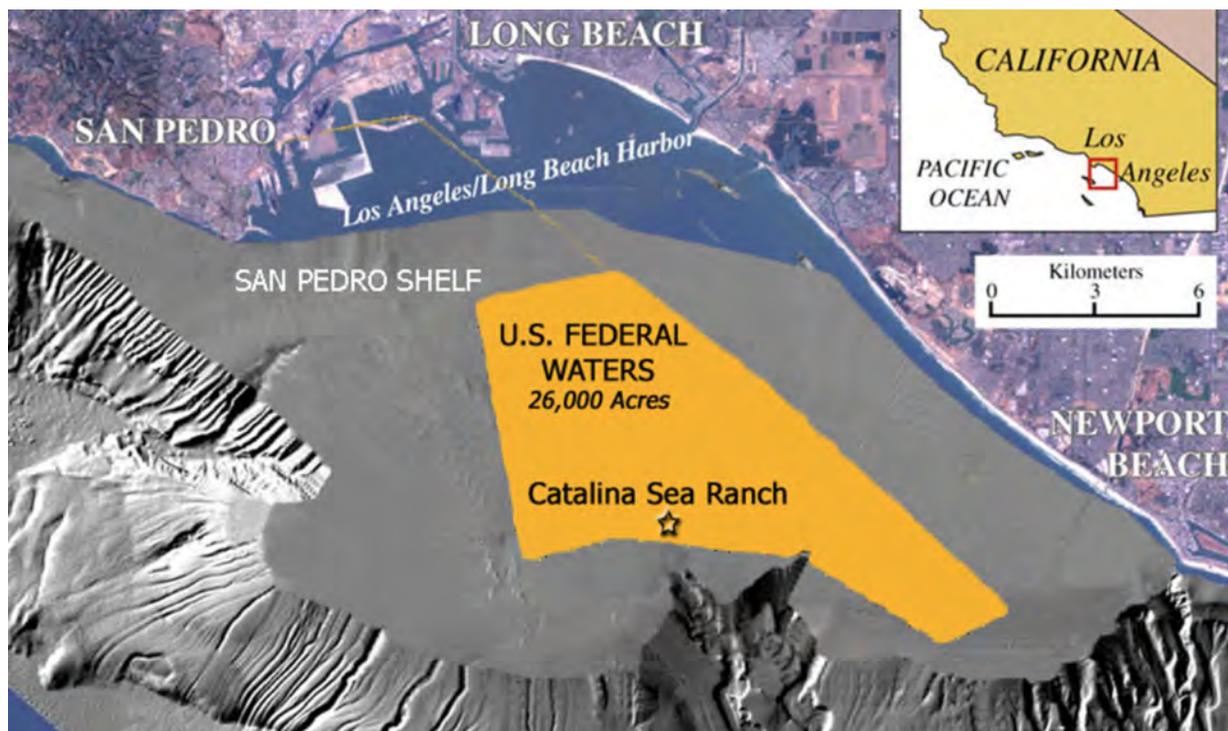
But, CSR claimed in a letter from its attorney to Abraxis, repeated issues with the test cost it over \$146,000 in damages, including expenses and lost income.

The test-kit maker acknowledged that CSR had “encountered difficulties with PSP testing kits, but this problem appears to be unique to CSR” and that the tests had successfully passed its quality control testing, it said in a May 21, 2019, letter seen by *Undercurrent*.

## Gottlieb letter

Cruver told *Undercurrent* in January 2019 that CSR had the capacity to harvest and sell 2m lbs of mussels per year. It never came close to that figure, selling only 65,440 lbs over its lifetime, or just 3% of its annual target, according to its December bankruptcy filing.

Cruver said that he believes most of the company’s regulatory issues would have been resolved if the FDA had worked with the California Department of Public Health to establish a dockside testing program for CSR.



📷 Credit: Catalina Sea Ranch website

“All we’re saying is give us the same requirements as California. That’s our landing state. Even though we’re in federal waters, our sales, our distribution, our processing, that’s all in California, why can’t we have California requirements,” Cruver said.

He said as much in an Oct. 3, 2018, letter to the then FDA commissioner Scott Gottlieb but the change was not implemented.

Part of what made CSR’s situation difficult was that it did not have decades of water quality data available like many state growers do, Moore of the ISSC said.

“When they started growing shellfish, no one knew what the biotoxin risks were. We didn’t know. So we had to develop a monitoring program to find out what was there,” he said.

Moore added that one way to gauge biotoxin risks would have been for CSR to develop a water quality monitoring program, performing water tests and test-farming mussels to see if biotoxin accumulated prior to selecting its farming site.

“The issue here was when they wanted to harvest the shellfish; no one had any idea what the risk of biotoxin was in the area where they were growing the shellfish. We didn’t have the luxury of a database. We had none,” he said.

Moore said that the FDA was willing to relax some of the requirements on CSR in the future once it understood what the risks of the site were.

Cruver said that West Coast experts had data showing that offshore biotoxin risks were lower than the risks of farming closer to shore.

When contacted by *Undercurrent*, the FDA brought up another issue.

“Members of CSR attended the ISSC biennial meeting in October 2017 and proposed a change to the water quality monitoring requirements in federal waters. State regulatory officials did not concur with CSR’s proposal and voted it down. The FDA provided guidance and assistance for more than four years to CSR on steps forward to comply with existing requirements,” the agency said.

Moore added that at its last meeting, ISSC members approved changes that could have benefitted CSR.

“I think the changes that were recently made would give some flexibility to a company trying to what Catalina Sea Ranch did. But what they would have to do is create a database up front and create a monitoring program based on the database.”

## The seaweed brothers

Even as Cruver was working to navigate the regulatory environment, he was working to shore up more capital for CSR. That’s how the company got into seaweed.

Scott Schmidt of the seaweed company POPH told *Undercurrent* that around Christmastime of 2016, his brother Brian had just returned from a “career break” in Myanmar, where he learned to meditate and eventually realized his “life’s purpose” would be related to seaweed, Scott said.



📷 Seaweed. Credit: divedog/Shutterstock.com

At the time, Scott and his wife had just returned from a long honeymoon, prior to which, he’d left the consumer packaged goods marketing company he’d co-founded, Impulse One, and divested his e-commerce and real estate development ventures.

“I was interested in sustainability. He brought this to my attention. I had no other projects to pursue. I said let’s investigate seaweed aquaculture. And we did,” he said.

It was, and remains, an exciting time for seaweed producers. The crop is being looked at as a way to sequester carbon and as a carbon emissions mitigation measure from beef production. By feeding cows seaweed, some research indicates that they will emit less methane, a major source of climate change.

“We thought, OK, nobody is growing seaweed in the United States. If you’re going to feed a whole bunch of cows seaweed to mitigate methane on a scale that can save the world, we need to grow a hell of a lot more of this stuff. So maybe we can figure out to grow it,” Scott said.

That required aquaculture permits — which they soon learned was an arduous process. That’s when they learned about CSR.

“We went out, and we interviewed Phil. He’s a wonderful salesman. He gave us this wonderful dog and pony show of ‘look at my ranch, look at my boats, look at the opportunity,’” Schmidt said.

But CSR at that time was wholly focused on mussels and while Cruver indicated that he saw the promise in seaweed, CSR’s board wanted him to focus on making mussels work because the ranch was a “mussel company”, Schmidt said.



 Credit: Catalina Sea Ranch Instagram

“We said, “Well, that’s wonderful Phil because we want to be a seaweed company. Can you grow seaweed out here?”. “Actually, my permit says I can grow seaweed out here.’ Can we grow seaweed out here if your board doesn’t want to? He said, well, “I need money. So if you guys have money you can grow seaweed”,” Schmidt recalled.

In October 2017, POPH made a small equity investment in CSR, which gave them the right to use CSR’s platform and permits to grow giant kelp (*macrocystis pyrifera*).

## The ARPA-E grant

At first, the arrangement worked out well for both parties. The US Department of Energy’s ARPA-E research arm announced Sept. 17, 2017, that CSR would lead a \$495,022 research grant under its “MARINER” program, designed to develop large-scale systems for growing seaweed for potential use as a biofuel. It was only the first phase of a three-phase project that meant the opportunity for future, more substantial grants.

The grant kicked off in January 2018, and for the next 18 months, POPH worked under CSR as grant administrators and technology-to-market contractors.

But, Schmidt said, CSR kept running out of working capital due to the regulatory issues and kept asking POPH for it.

“Because of the value of the ARPA-E research and the value of the operating asset, Catalina Sea Ranch, and since we were more or less insiders and could see that a lot of these hurdles were likely to be overcome with the FDA and the regulatory environment, we elected to issue Catalina Sea Ranch a line of credit,” Schmidt said.

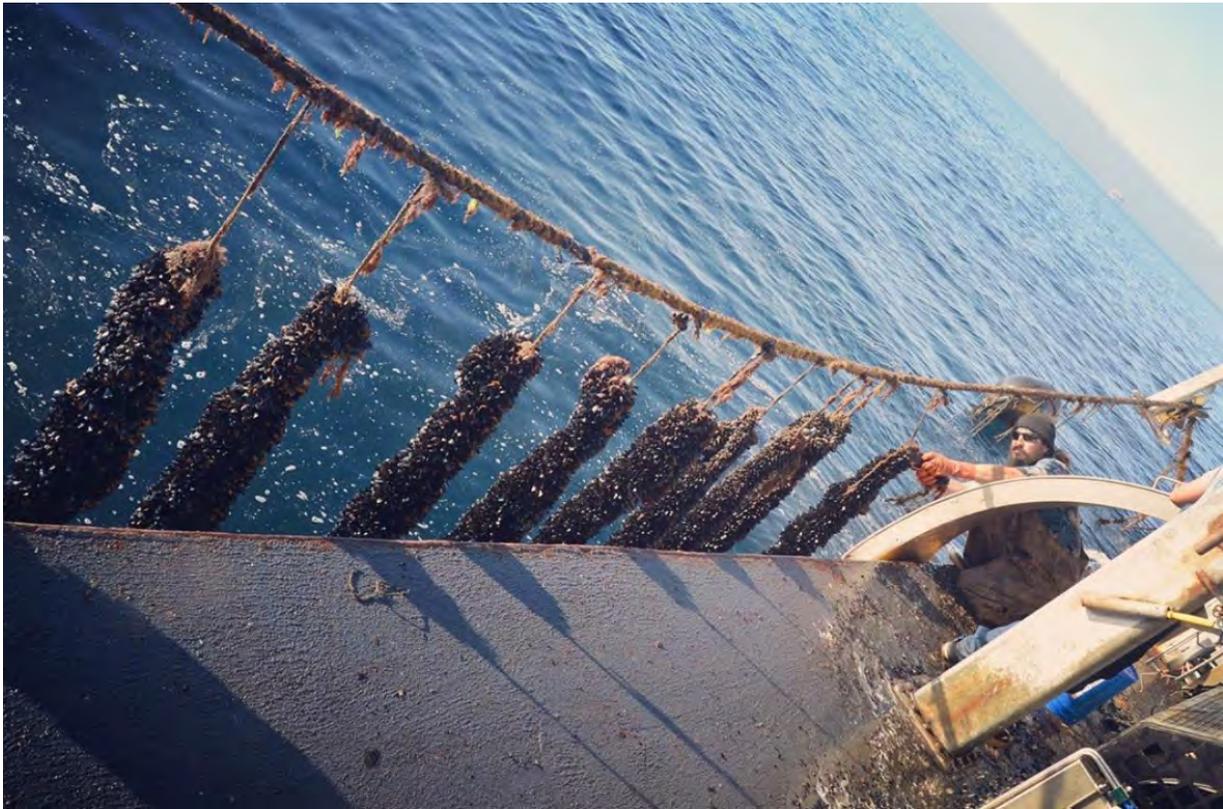
That line was valued at up to \$1m, which CSR eventually fully drew against.

To protect itself in case of CSR’s potential default, POPH filed a lien against CSR’s inventory, work vessels and other assets.

## Diversification disagreements

Seaweed and regulatory issues weren’t the only issues facing CSR in 2018. At the same time, disagreement between longtime investor and board member Molina and the rest of CSR’s board was brewing over its strategy and

management.



 Credit: Catalina Sea Ranch Instagram

Molina called Cruver “a great visionary and a great advocate”.

“And I think one of the challenges with folks like that who are great entrepreneurs and great at seeing and starting something, Phil’s skill-set didn’t transfer over to day-to-day operations,” Molina said.

Molina, the former chief financial officer of publicly traded insurer Molina Healthcare, added that he believed CSR needed to focus on its core mussel business rather than pursue research grants.

Like POPH, Molina also lent CSR money when it had run out of cash and in January 2018 “out of frustration and a desire to move the company forward”, he filed suit against CSR in a California state court in an attempt to effect change and bring in “professional management”.

“Nobody wants a lawsuit, especially against the folks that you’re part of the board on, but it got to the point where I felt that not only were the inactions hurting the company, but the spillover effects were going to be dramatic,” Molina told *Undercurrent*. “If this company failed, I think it would have set back aquaculture another five to ten years because everybody who was a

naysayer already would say 'look, I told you so.'”

Following his lawsuit, the company counter-sued Molina. While both suits were eventually dismissed, the specter of litigation between board members made it even more difficult to raise money, Cruver said.

## **Mooted expansion amid growing concerns**

Cruver believed that increasing CSR’s scale would have solved many of the company’s problems. In January 2019, he told *Undercurrent* that he planned to apply to USACE for permission to expand the farm to 3,000 acres, adding 900 acres more of mussels, 1,000 acres of giant kelp and 1,000 acres of other cage-culture shellfish, including oysters, rock scallops and abalone.

In an April 2020 interview, he confirmed that that the expansion application was filed with USACE — and had to be ratified with the CCC — it was later retracted as the parties had agreed to revisit the over a dozen monitoring conditions that CSR had voluntarily agreed to when it had first applied for the permit, Cruver said.

According to the CCC, those conditions included evaluating “fish, marine mammal and seabird populations in the project area”, tracking changes to “the chemical and biochemical conditions of seafloor sediments”, and producing an evaluation of “the production of eggs and larvae from the cultivated non-native species”, among several others.



📷 Credit: Catalina Sea Ranch Instagram

Cruver said it later emerged that many of the conditions “had no scientific basis” and were set to be renegotiated. In a statement to *Undercurrent*, the CCC claimed that CSR was “never in compliance” with the terms of the project it certified.

“The operators never completed many of the most critical monitoring activities, provided the required monitoring reports incomplete and months late, and misrepresented the facts on the ground from the start,” the CCC said.

The CCC would later write to USACE, which twice wrote to Cruver in 2019, asking him to remedy deficiencies at the farm.

At the same time, CSR was contending with another serious issue: the Jan. 3, 2019, death of Maynard Poynter, who drowned when his boat overturned. According to an Orange County Sheriff’s Report, the fisherman and a friend were motoring over the farm site around 10 a.m when the propeller of their

vessel, Nai'a, wrapped around a nearly 400-foot section of "broken, coiled line". It took four responders to lift the body of the nearly 350-pound Poynter into another boat, the report said.

The farm's line had been tied to another line to keep it out of the way but created an "unseen hazard that would have made it very difficult to avoid", it said, adding that Nai'a's "excessive speed", estimated at 20 to 25 miles per hour, "exacerbated" the incident as it contributed to the boat's capsizing.

Lawyers for Poynter's family are seeking \$10m for the man's "wrongful death". Richard Golubow, an attorney for CSR told *Undercurrent* that no lawsuit has been filed in connection with the claim and the company is engaging in dialogue with the estate's lawyers about a possible settlement.

## Cash crunch

CSR's cash flow problems worsened in the early part of 2019 and the company struggled to build up a brand and sell its mussels at \$3/lb, a premium from the going rate of \$2/lb for imported mussels, Cruver said.

"To be candid, I think I underestimated the difficulties of bringing a fresh mussel into a new marketplace even though it had the Catalina clean brand, offshore," he said.

Schmidt of POPH told *Undercurrent* that CSR also struggled because it lacked the capacity to harvest large quantities of mussels.

"Essentially, what they boxed themselves into was a situation where they could only harvest a few thousand pounds each harvest day. But each time they harvested based on their sales price and the cost of their regulatory testing, they lost money every time they harvested," Schmidt said.

That "negative margin", a large debt burden, the regulatory uncertainty, and the Molina lawsuit meant that CSR's efforts to raise more money were futile, he added. "It was a lack of foresight that boxed them into this position, and they became uninvestable because they were working on a treadmill that was working faster than they could sprint."

By May 2019, POPH had notified the company that it was in default of the \$1m line of credit it had lent it. A month later, CSR ran out of cash altogether.



📷 Credit: Catalina Sea Ranch Instagram

## Terrible timing

The timing couldn't have been worse for POPH. The company, which had only bought into CSR so that it could have the seaweed-growing rights needed to participate in the \$495,000 ARPA-E grant, was being considered for a "phase two" grant, valued at as much as \$4.5m.

"We had to essentially let ARPA E know that, wait a minute, Catalina Sea Ranch, the prime contractor, is insolvent. What happens to our ARPA-E grant," Schmidt said.

ARPA-E informed POPH that, as the prime contractor, if CSR went away, the phase two funding would too. POPH, its investors and its advisors ultimately determined that the value of the research was worth risking the \$1m and they made the decision to try to recapitalize CSR.

"While CSR was in default, I put the entire Primary Ocean Producers

business development on hold and spent my entire summer trying to recapitalize CSR so we could save the ARPA-E grant, save the permit that's out there," Schmidt said.

As Schmidt worked to bring in new investors, Cruver agreed to step aside from the company. On June 26, Molina and two new board members took control and two days later Pacific Mariculture lent CSR \$1.1m, and placed a lien on the company's assets.

The board worked to remediate the farm's problems. They brought in mussel farming experts from New Zealand, met with USACE and the CCC, fixed CSR's vessels and reinstated the company's insurance policy, which had lapsed.

Recapitalization negotiations ended unsuccessfully on Sept. 1, 2019, Schmidt said. Months earlier, CSR's board had hired an insolvency firm to wind up CSR through a state-run liquidation process known as an "assignment for the benefit of creditors".

This effort was derailed on Sept. 15 when CSR investor Hall Martin asked a Florida federal court to place CSR into Chapter 7 bankruptcy through an "involuntary petition". CSR entered a voluntary Chapter 11 petition in Los Angeles, California, on Dec. 18. Pacific Mariculture was the lone qualified bidder. The \$1.75m deal was approved by the court and is expected to close soon.

## Beyond mussels

Molina told *Undercurrent* that he doesn't know when CSR will be able to return to harvest but added that Pacific Mariculture is focused on marking things right with regulators and reinvesting in the business with a view of possibly expanding the farm one day.

"We don't want to run before we are sure that we can walk," he said. "So, yes, there will be investments made in all components of the growth and sale of mussels."

CSR's bankruptcy was less than favorable for POPH. While the company had filed a lien on the farmer's assets — two vessels, farm equipment and mussel inventory — to protect it against default, it did so in California — the "operating state" — and not Delaware where CSR's incorporation papers were filed. Additionally, because the vessels were longer than 60 feet, maritime law, not commercial law applied, a lawsuit filed by CSR against POPH stated. That means that POPH's secured claim will likely be converted

to an unsecured claim, Schmidt acknowledged.

Still, there was a silver lining. Given everything that happened at CSR, ARPA-E withdrew its contract with the company and invited POPH's seaweed research consortium partner, MacroSystems to reapply for phase two led by a new prime contractor, and a new grow site near Santa Barbara.

"We're optimistic that we will sign and execute that phase two contract but it has not occurred," Schmidt said.

He brims with optimism when he talks about seaweed's potential despite POPH's "depressing" involvement with CSR, calling it a "good investment" despite the losses.

"It got us involved with some of the industry-leading researchers and experts as part of ARPA-E, it got us really involved in the aquaculture community. It provided us with the platform and the streamlined strategy to go to market and engage with investors," he said.

As for Cruver, he's put mussels and CSR behind him. In January, he started a new company, Regen Biomass, which works to convert giant kelp into bioethanol and other biofuels. He plans to apply for phase three of the ARPA-E's grant program.

Regarding his experience with CSR, he said he's "deeply disappointed" with the way things turned out, having lost over \$500,000 and "ten years of my life". He quickly added that he enjoyed the project but not its outcome.

"This really set back aquaculture and the blame has to go right where it's deserved, which is on the FDA," Cruver said.

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