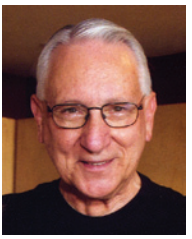
CATALINA SEA RANCH BLAZES NEW TRAILS

by Herb Zimmer



Operating out of several repurposed shipping containers inside AltaSea's warehouse at Berth 58, Catalina Sea Ranch (CSR) is pioneering new ways to sustainably mine the ocean for its resources to feed a fast-growing world population. As its initial foray into sustainable aquaculture, CSR has created a high-tech mussel farm at a 100-acre site six miles off the coast of Huntington Beach with plans to expand to 1,000-acres. It's the first shellfish farm permitted in U.S. federal waters.

So, why farm mussels? First, mussels are environmentally friendly. They are non-invasive, have no natural predators and produce zero environmental impact. They filter their nutrients from ocean water and don't need additional feed. Second, in warm Southern California waters, they grow to maturity and can be harvested in just 6-8 months. Third, they're in demand. Millions of pounds are being imported annually. Fourth, they are highly nutritious. One serving offers 75-85% of a person's daily protein requirement. Fifth, they are very profitable. CSR's farming method will produce 50-80% earnings margins. And, finally, the experience and knowledge gained from CSR's farm has already earned them the stability and credibility necessary to win several government grants for cutting edge aquaculture research.

I recently spent time touring CSR's facility and speaking with CEO Phil Cruver and his staff about the technology they're applying to the mussel ranch and the research they're conducting under those government grants. I was amazed when they mentioned genetic selection, cryogenics, bioenergy and IoT (Internet of Things) technologies. According to Cruver, CSR is working on two grants aimed at increasing the mussel's value as a nutritional source. One is increasing its meat-to-shell ratio. To accomplish that, CSR is collecting mussels along the California coast and using DNA analysis and selective breeding to try to create the meatiest, most nutritious mussel possible. Since mussels only spawn twice a year in the natural world, CSR is also experimenting with methods of cryogenically freezing mussel larvae, which would enable year-round seeding, growth and harvesting. These technologies may be applied to other high-value shellfish such as scallops and oysters.

CSR is also experimenting with growing giant kelp at its offshore ranch. This kelp grows an astounding two-feet per day. It pulls from the water five times as much carbon as land-based plants and draws in nitrogen and phosphorus. It can be used as a carbon neutral, renewable bioenergy feed source. And when added to livestock feed, it can reduce bovine methane production to virtually zero. Methane has more than 30 times the global warming potential as carbon, and California has mandated that our dairy industry must reduce methane emissions to 40% below 2013 levels by 2030. Kelp can help.

Watching over the offshore ranch operation is another example of CSR's use of cutting edge technology: a data-capturing IoT platform, which is powered by a donated buoy from the National Oceanic and Atmospheric Administration (NOAA). It collects data from an array of sensors and cameras positioned all around the facility, and gives a real-time snapshot of the ocean environment, like an underwater weather report. The results are uploaded to the cloud, via cellular network, for use by CSR staff, regulators and academic researchers.

As global warming continues to adversely affect land-based food crop production, aquaculture will become increasingly important. CSR is pioneering many of the technologies that will be necessary to feed a growing world population. spt

Herb Zimmer owns PriorityOne Printing in downtown San Pedro.