Bert Wecker, co-CEO at indoor shrimp farmer Oceanloop: 'This function is used as an early warning system, but also to validate our stock density model.' Photo: Oceanloop

'Technological advances can change entire sectors': New system allows crucial insight into farmed shrimp health

The development of this technology represents an important milestone on the road to industrial-scale shrimp farming, according to the group behind the project.

30 June 2023 5:11 GMT *UPDATED 30 June 2023 5:11 GMT*

By Rachel Mutter

A computer vision system has been developed to monitor growth, population size, mortality and signs of stress in farmed shrimp.

MonitorShrimp is the outcome of a project between German scientific organization the Alfred Wegener Institute, the Helmholtz Centre for Polar and Marine Research (AWI), European indoor shrimp farmer Oceanloop and water treatment specialist Sander Holding.

The system can count and measure length up to 95 percent accuracy, even in high stocking densities and cloudy water, according to the group.

The new technology was developed to meet the needs of Europe's land-based shrimp farms, which are increasingly focused on improving sustainability and animal welfare. The first prototype was tested at Oceanloop's research and development farm in Kiel, Germany last year.

'It's like the holy grail': Indoor shrimp farming group sees a path for competing with commodity producers

Read more

A modern smartphone, installed above the water's surface, automatically photographs the shrimp once a minute and transfers the live data to a local server.

Then, computer-vision-based algorithms are used to count the number of shrimp in each image and measure the length of individual animals.

The resulting information is provided to fish-farming software package AquaManager, making it possible to optimize growth and feeding models on the basis of live data.

In addition, the group was able to visually detect stress symptoms in the shrimp.

"This function is used as an early warning system, but also to validate our stock density model," said Oceanloop Co-CEO Bert Wecker.

"This bleeding-edge technology allows us to more precisely determine the density for each size group, which improves survival rates, growth, and feed efficiency."

Is indoor shrimp farming the next land-based aquaculture boom?

Read more

I said the shrimp farming industry needed to consolidate. But maybe there's another way.

Read more

"The mortality rates, which can range from 13 to 26 percent in salmon and can be up to 50 percent in shrimp, are substantially higher than with any other type of livestock," said Stephan Ende, project coordinator at AWI. "Online monitoring allows aquaculture companies to more quickly respond to signs of stress among their stock."

"Technological advances can change companies and entire sectors," said Tomasz Kowalczyk, founder and CEO of NeuroSYS, which contributed to algorithm development for the project.

The development of this technology represents an important milestone on the road to industrial-scale shrimp farming, according to the group behind the project.

Oceanloop plans to significantly expand its capacities in Europe by 2027 by building the largest and most sustainable land-based shrimp farm in the world, with an annual production volume of more than 2,000 metric tons.

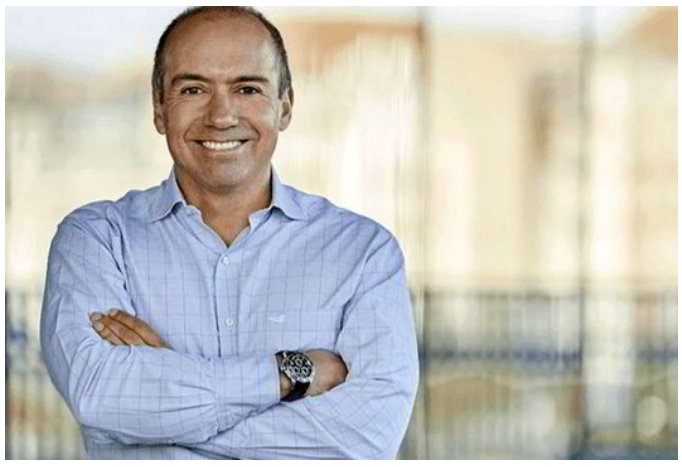
"The ability to monitor the shrimp's growth and health with live data in real-time will on the one hand help to reduce risk in aquaculture," said Wecker's co-CEO at Oceanloop, Fabian Riedel.

"At the same time, it will offer complete transparency regarding the biomass, making it possible to optimize the value chain from farming to processing to sale." (Copyright)

Read more

- On the trail of 'rainmakers': Indian supply chain giant Captain Fresh in talks with US, European seafood distributors
- After watching his family get squeezed, this tech entrepreneur wants to change the power balance in shrimp farming
- Aquaculture feed tech startup enters 'unicorn' status as it passes $1 billion valuation

Aquaculture Technology Oceanloop Farmed shrimp Artificial Intelligence (AI) Germany Indoor shrimp farming



Value chain acceptance key to use of genetically modified oil, says BioMar CEO

Russia's salmon market sees dramatic price drop amid surging Chilean imports, abundant wild harvests and fading consumer demand

Alaska pollock producers looking for ways to compete with discounted Russia product

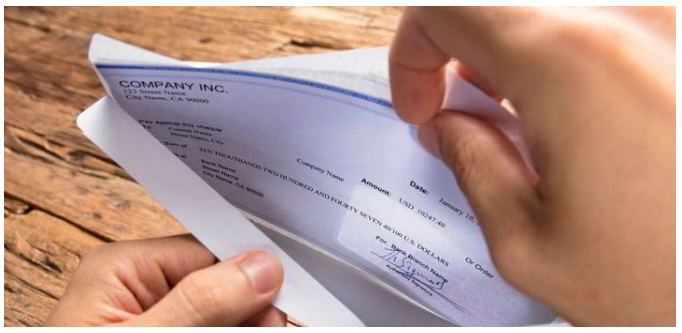
'We now find our group in extremely challenging times': Barramundi Group posts $24 million loss in 2022

CDQ group executive joins Alaska fisheries management council as friction between tribes, pollock sector builds

Norwegian land-based salmon farmer granted first permits, accelerates hunt for investors

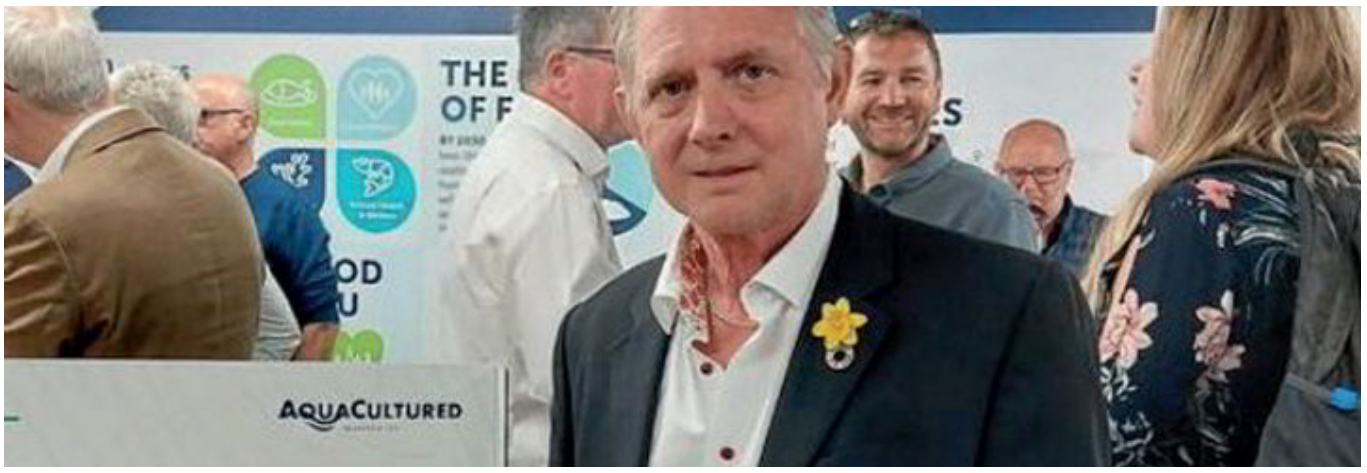
Columbia tilapia exports to key US market 'unaffected' by ongoing disease outbreak

Norwegian authorities approve genetically modified rapeseed oil for use in fish feed

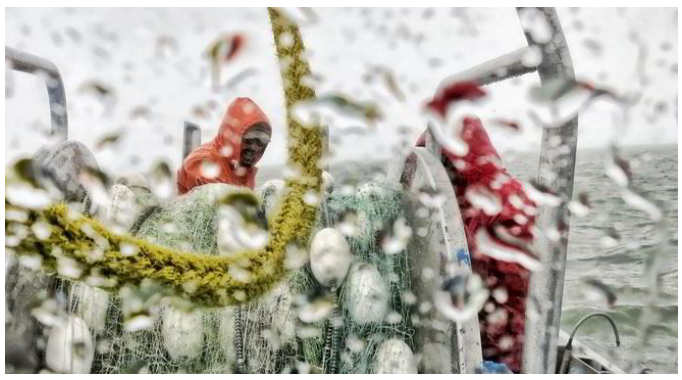


EXCLUSIVE | Seafood CEO Salary Ranking: Here is what the industry's top executives were paid in 2022

ISA outbreak confirmed at Grieg Seafood site in Norway

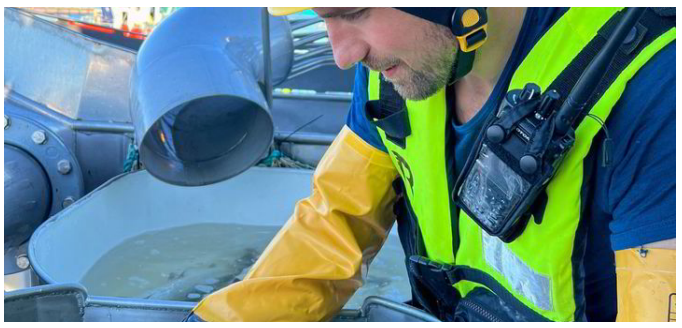


UK's $90 million land-based salmon farm officially submits planning application in significant step forward

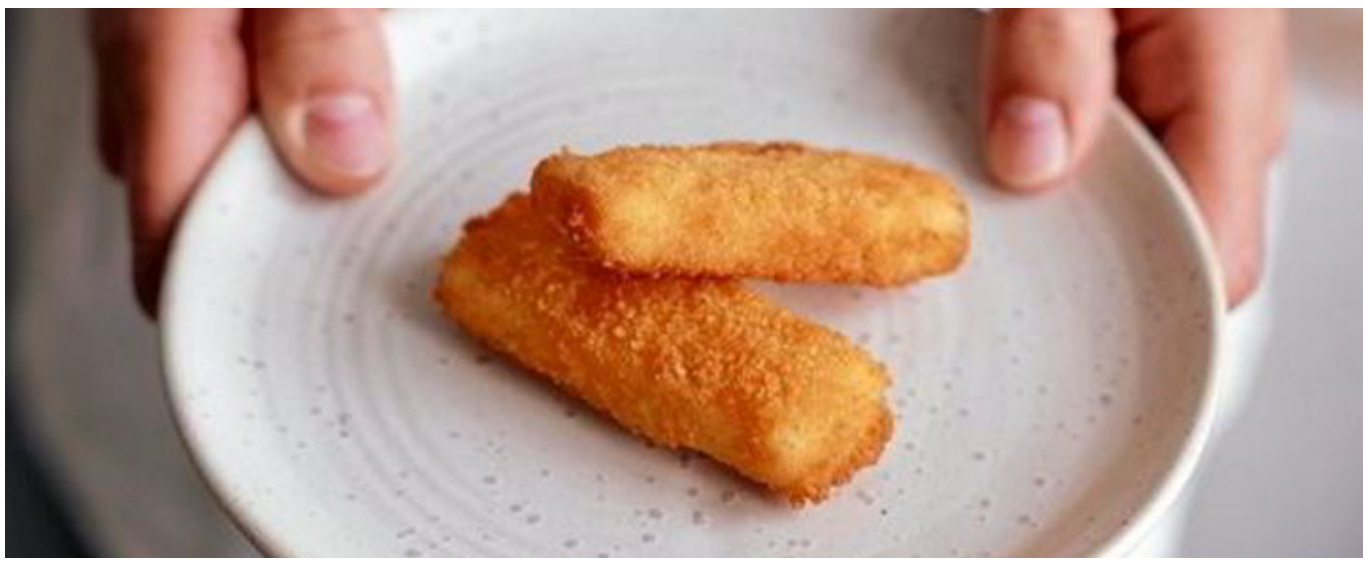


Bristol Bay fishermen 'hedging bets, not pushing things' as fears over low prices loom

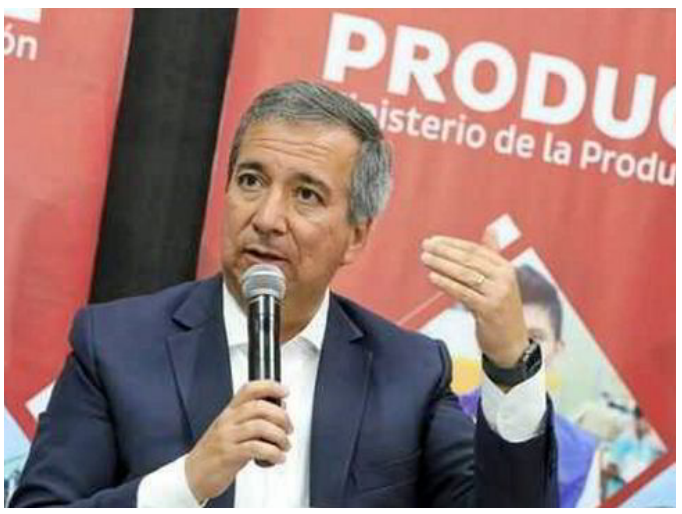
Scottish government ditches plans for controversial 'no-take' zones following backlash



'We need an action plan to reduce mortality': New Norwegian report highlights not enough is being done to reduce mortality

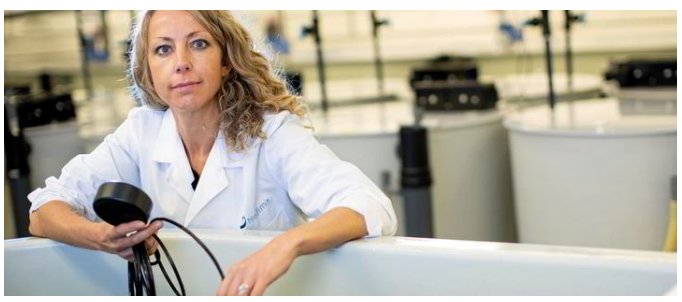


Cell-cultured fish finger startup raises more than $17 million, plans launches in Singapore, United States

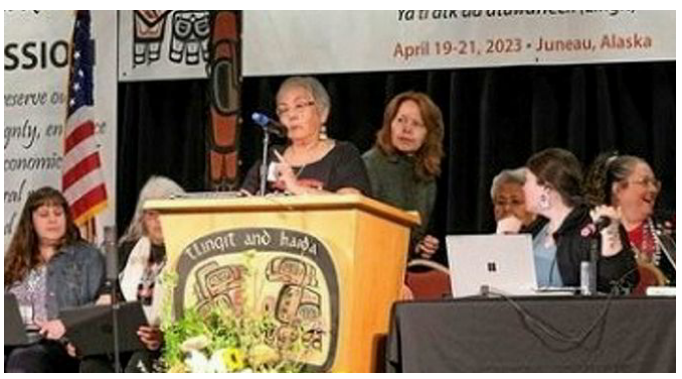


Peru cancels all-important first anchovy fishing season

Cod farmer Norcod secures millions in new financing



'Temperatures in the Atlantic will increase beyond what is optimal for cod': Cod farmers should seek advice from the salmon industry on dealing with global warming



Tribal group acquires Alaska seafood processor as part of food security initiative