



# PROJECT PROFILE

## DEEP BAY MARINE FIELD STATION

For millennia, Indigenous peoples have practiced sustainable shellfish farming by creating and managing rock-guarded clam gardens. Today, for coastal communities, shellfish aquaculture remains as relevant as ever as a source of economic activity and vitality.

Field stations have played an important role in the development of modern agriculture, and in the early 1970's the shellfish industry began to consider the development of an aquaculture focused field research station.

Baynes Sound is a channel between Denman Island and Vancouver Island. With 90% of its coastline under shellfish tenures, and responsible for the production of half of all BC shellfish, the area offered the perfect conditions for a shellfish research facility.

Flash forward to 2011, with financial support from senior government, industry and ICET, the Vancouver Island

University Centre for Shellfish Research opened its doors.

Known as the **Deep Bay Marine Field Station**, the facility has helped to support the sustainable growth and expansion of Vancouver Island shellfish production, through targeted applied research.

“Deep Bay Field Station may have been ahead of its time, but it has always been positioned to play a crucial role within a vital regional sector,” said Carl Butterworth, Deep Bay Marine Field Station Manager. “With growing global demand for sustainably-produced seafood, we’ve seen it come into its own as an industry-recognized centre for shellfish aquaculture.”

Today, the centre provides a connection point for all facets of the sector, from academia and industry, tourism and education, to aquaculture and environmental science.

This role as a connection point is

evidenced by the industry-related events hosted at the facility, including the Baynes Sound Environmental Intelligence Collaborative Workshop. In 2019, the working group hosted global thought leaders in shellfish and oceanographic research, inspiring new ideas and partnerships within the field.

The applied research that takes place at the Field Station is grounded in supporting industry, and this has led to projects that will help to improve oyster survivability, better understand oyster mortality events in the field, and improve our understanding of climate change in the ocean.

One of the Station's key projects is a Pacific oyster brood stock development program. As the environment continues to change, growing shellfish is becoming more difficult. Water temperature, PH level, dissolved gas content and more are changing, and growing oysters in those environments requires adaptation.

VIU's Canada Research Chair in Shellfish Health and Genomics, Dr. Tim Green, is spearheading a quantitative genetics program to breed oysters that are harder to environmental change and have a higher percentage of survival. This process uses natural selection, similar to a horse breeding program.

“One quarter of Baynes Sound oysters die before they go to market,” Dr. Green explained. “Improving the survivability by just 20% would yield \$10 million to the local oyster industry.”

As a byproduct of this research, the station produces large amounts of oyster seed. In an arrangement with the BC Shellfish Growers Association, the station is able to support its research and sustainability by selling the surplus oyster seed to BC oyster farmers at market rates. This has been a great example of industry and academia working together toward a shared goal.

As the industrial research at the Field Station continues, the next area of development is underway. The facility has an on-site commercial kitchen and is looking to optimize that capacity by becoming a ‘Seafood Innovation Centre.’

“We have submitted a proposal as part of the BC Food Innovation and Processing Hub initiative,” explained Butterworth.

If successful, the project would expand the field station's scope of research to the commercial side, understanding best practices in shellfish packaging, shipping and processing, and even how to effectively market shellfish products.

While the field station provides direct support and transfer of innovation to industry, it's the consistent focus around educational tourism that sets it apart from other research facilities.

Open year-round to the public, school groups and other visitors are encouraged to engage with the industry through

touch tanks and other interactive educational exhibits, demonstrating how the Field Station's research connects back to everyday realities.

The Field Station also provides high level educational events and tours, hosting industry professionals, academics and investors. For example, during the annual BC Seafood Festival's Industry Expo, the Field station hosted international delegates and seafood buyers, showcasing the strength and credibility of the Baynes Sound shellfish sector.

“This is just one example of the connection point Deep Bay Field Station provides for the industry,” explained Butterworth. “Above all, it is emblematic of the sophisticated value-chain for shellfish aquaculture in BC.”

