

Case study

Transforming Cooke Aquaculture's network to advance sustainable fish farming

Feeding fish housed in sea farm net pens can be a challenging task. When Cooke Aquaculture, the largest producer of Atlantic salmon in North America, wanted to make the process safer and more efficient, it needed help to build a reliable, high-bandwidth network that could reach all of its Atlantic feed barges. They turned to Bell, a long-trusted partner, to help them design, deploy and manage the private network infrastructure they needed.

Challenge — Enabling remote feeding systems

Because of the wet, windy conditions aboard Cooke's feed barges and marine vessels, the company had already embraced the use of digital and cloud-based inspections, maintenance records and timesheets. But staff wondered what other processes they could optimize with these technologies.

Feeding the fish was a critical but arduous task that involved taking marine vessels out to the net pens, monitoring the fish and manually dispensing the food. It was time and labour-intensive – and if the weather turned, it could even be dangerous.

After looking at how fish farms in other countries approach this challenge, Cooke decided to look for a way to monitor and feed fish remotely. They quickly learned it wouldn't be a simple task. Their current wired infrastructure didn't reach the offshore feed barges and their existing wireless networks didn't have the capacity to handle 24/7 video streaming.

Cooke needed a partner who could rise to the challenge and bring connectivity to some of the most remote feed barges in the Atlantic.



Cooke Aquaculture Inc. is a family-owned company based in Blacks Harbour, New Brunswick. The company has salmon farming operations in Atlantic Canada, the United States, Chile and Scotland, as well as seabass and seabream farming operations in Spain. Cooke is committed to sustainability and supporting coastal communities – always looking for ways to produce the freshest seafood with the smallest carbon footprint.

"No two sites are alike, so everyone involved had to be flexible and think outside the box every step of the way."

– Adam Todd, Director of IT Operations, Cooke Aquaculture

Solution — A reliable managed network designed for unpredictable conditions

The project called for the right combination of infrastructure, expertise and ingenuity – and that's exactly what Bell brought to the table. The existing Bell Ethernet fibre network formed the backbone of the system, and Bell's advanced wireless technologies and dedicated team made it possible to extend that network farther than ever before.

The initial plan was to deliver fibre-optic cable to all of Cooke's feed barges. However, barges located in tidal waters have constantly changing landscapes, making it impossible to cost-effectively run cable. Bell's engineers adapted the plan to these conditions – working with the Bell Mobility wireless network team and using radio towers to extend bandwidth to the feed barges.

"Leveraging Bell's wireless infrastructure allowed us to get the kind of enterprise-level connectivity we needed in areas where cable would have been cost prohibitive," explains Adam Todd, Cooke's Director of IT Operations. Cooke Aquaculture's network solution includes:

- A high-bandwidth, managed private Ethernet network using Bell fibre
- Carefully positioned radio towers to supplement the fibre

"As we move away from traditional, on-site feeding techniques, having fast, reliable connectivity is key to our operations," says Todd. "And Bell played a central role in that."



Results — Advancing sustainable fish farming

Thanks to live video streaming on their new private network, Cooke's feeding staff can easily monitor the behaviour and health of fish at multiple sites, and feed fish with the press of a button. Fish no longer miss a scheduled feeding due to bad weather and on-site workers are now able to focus on additional critical tasks.

As fish feed is Cooke's biggest expense, feeding the fish only when needed avoids waste and helps the company stay competitive. The health and growth rates of the fish have also improved thanks to better monitoring practices, which has bolstered the company's bottom line.

In addition to eliminating food waste, remote feeding also means staff take fewer trips out to the barges, cutting fuel usage and emissions – all of which contribute to Cooke's sustainability goals. Nearby coastal communities have also benefited, since the connectivity infrastructure built for the barges now gives them access to high-speed Internet.

With the success of the initial rollout in Nova Scotia and New Brunswick, Bell and Cooke are working to expand the remote feeding initiative to Newfoundland and Labrador – and Cooke is even considering implementing it in Scotland.



Todd says, "If we had tried to do this without Bell, we would have said 'This is impossible' and that would have been it. The level of engagement and partnership from the Bell team has directly contributed to making the remote feeding project a success."

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