



## Case Study: Using the AquaMetrix 2300 at Cooke Aquaculture Monitoring

### Problem

Cook Aquaculture is a billion dollar processor and seller of Atlantic salmon, sea bass and sea bream. It has over 100 farm sites off the coasts of New Brunswick, Nova Scotia, Newfoundland and Main. At its flagship facility, Oak Bay Hatchery in New Brunswick, Cooke hatches eggs, raises brood stock and sends the eggs and young fish to their other freshwater facilities, where the fish are reared to smolt stage, at which time t can be transferred to saltwater farms.

The water used in the hatchery is critical for fish health. Temperature must be kept to within 0.1 °C in order to tightly control egg development. The control of pH is equally important for maintaining the health of the fry. Sodium Hydroxide (caustic soda) is added for pH control. The hatchery already has always had sensors and controllers connected to PLC's but there was no way of monitoring or data logging parameters outside the building. Employees need to be present to check temperature, pH and flow.

### Solution

In late 2014, Mitchell Dickie, Freshwater Projects Manager, searched for a controller with a web interface so that he could check water parameters at any time of the day. He investigated PLC's with Email capability but the price tag was \$4000 to \$5000 per unit. The AquaMetrix 2300 had 100% web control, could connect up to 7 sensors, had 4 relays, and could send notifications via emails and text messages. Michell set up two in the Oak Bay Hatchery as a pilot project. For pH control he chose AquaMetrix P65C8 pH probe and for flow he chose a Seametrics paddle wheel sensor. He plans to add temperature sensors in the near future.

The hatchery recirculates 95% of its water and replenishes the other 5% with make-up water. Some of the more recent RAS systems operate in the 99% recirculation rate. A typical system turns over its entire volume of water every 30 to 60 minutes. It is for this reason that monitoring flow is as vital, monitoring/controlling pH.

Mitchell found that set up of the 2300 was fast. "I'm not a PLC programmer and being able to configure the 2300 by following the wizard made set-up easy." Since installing the two 2300's the Oak Bay Hatchery has been able to cut down on chemical use (mainly caustic) and maintain the PH within the optimal range. It's difficult for Mitchell to estimate the cost savings incurred by switching to the 2300 at this time but we feel confident the payback for equipment won't be long. "Any time I can just go to my phone and check on the tanks puts me in a comfort zone I've never had before." Data logging has been a critical feature that allows Dickie and his staff to troubleshoot problems. The staff noted pH fluctuations that weren't obvious when they were

Water Analytics, 100 School Street, Andover, MA 01810 • 978-749-9949



simply looking at the local readout. By looking at data logs they were able to determine that the pH fluctuated during feed times. They were then able to control their pH via the 2300 more effectively.

Cooke plans to install 2300's on more of its farm sites and install additional sensors for conductivity, turbidity and dissolved oxygen.

*For more information on Aquametrix products go to [www.Aquametrix.com](http://www.Aquametrix.com).*

*For more information on Cook Aquaculture go to <http://www.cookeaquaculture.com>.*

