# Vermont Hatchery Saves Millions in Energy Costs with Innovasea Designed Recirculating Aquaculture System

Vermont's Ed Weed Fish Culture Station on Lake Champlain rears four species of trout as well as landlocked Atlantic Salmon and Walleye. When it needed to cut the cost of heating frigid lake water for its tanks, Innovasea helped it transition to a state-of-the-art recirculating aquaculture system (RAS).

## Challenge

In operation since 1992, the Ed Weed Fish Culture Station's early rearing production sector was originally designed with 56 rectangular tanks that operated on single pass flow-through that used up to 2,000 gallons per minute from Lake Champlain. The water was continuously pumped uphill 700 feet from the lake and heated to 50 degrees to provide sufficient temperature to meet production goals. This inefficient process generated enormous electric and propane costs for the Vermont Fish & Wildlife Department.

## Solution

Over the course of four years, Innovasea designed a series of recirculating aquaculture systems (RAS) for the hatchery. The modern, energy-efficient closed loop systems reduced lake water usage to a maximum of 70 gallons per minute, enabling the facility to downsize from a 250 horsepower water pump to a 100 horsepower pump. The systems also utilized a circular tanks for rearing units, which improved waste management and provided more exercise for the fish, improving their health.

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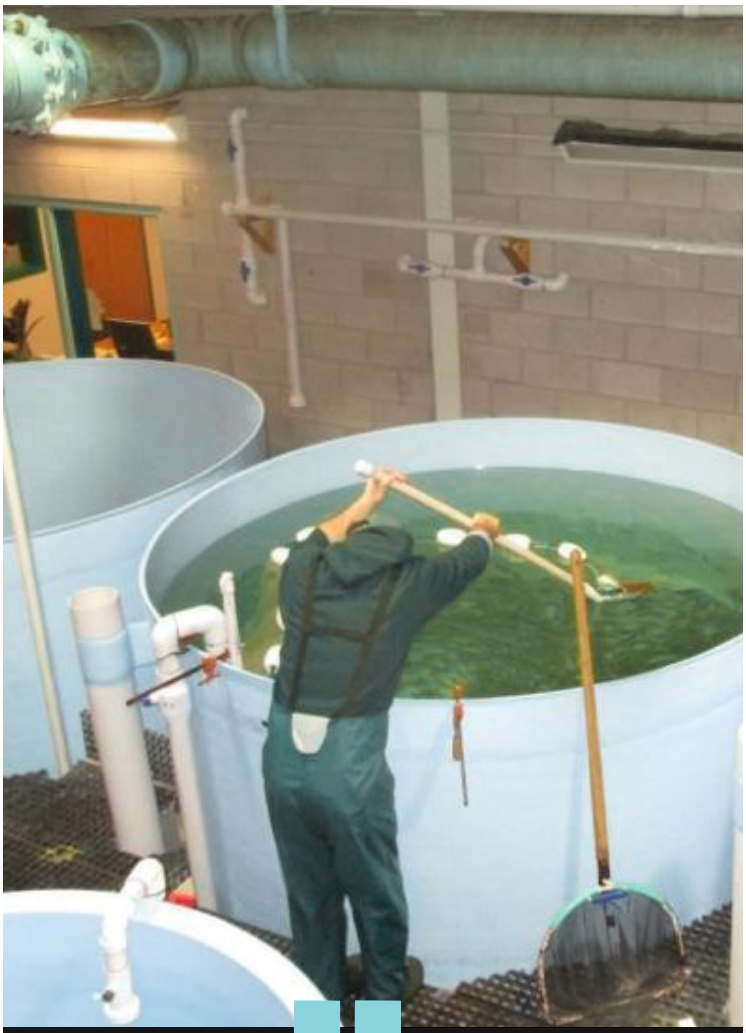

## Result

- The switch to a series of RAS-based systems has made the Ed Weed fish hatchery more energy efficient and has dramatically shrunk its carbon footprint.
- Propane usage has decreased a whopping 83 percent, from 130,000 gallons a year to roughly 22,500, saving the facility nearly $1 million over a 10 year period.
- With significantly less water being pumped into the hatchery, the facility is using 650,000 fewer kwh of electricity each year – a savings of $84,500 annually.
- Better waste management from the circular tanks has improved fish health and reduced labor and operational costs.
- The significant propane, energy and operational savings enabled the hatchery to pay off the loans used to finance the project in just a few years.

**"The savings that came with putting these systems in has been tremendous, and the fish are better exercised and have a better rearing environment. It's just a completely better setup."**

– Kevin Kelsey, Facility Manager at the Ed Weed Fish Culture Station

Learn more at **www.innovasea.com**.

**About Innovasea**

Innovasea designs the world's most technologically advanced aquatic solutions for fish tracking and fish farming – and builds them to withstand the toughest conditions. We partner with customers to fully understand their needs and solve their most pressing challenges. It's all driven by a commitment to make our ocean and freshwater ecosystems sustainable for future generations. Today. Tomorrow. For life.

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