FRESHWATER INSTITUTE
THE CONSERVATION FUND

Fish Hatchery Water Reuse Evaluation

Eastbank Fish Hatchery (Wenatchee, WA)

SUMMARY: The Chelan County Public Utility District (PUD) in Washington State produces over four million juvenile anadromous and resident Pacific salmonids annually for stocking the Upper Columbia River and surrounding waters. These fish are currently raised in a series of facilities that employ traditional flow-through rearing units. As water supply and discharge permits in the region become increasingly restricted, PUD managers are looking ahead at the possibility of adopting new technologies, such as partial water reuse systems, for raising fish. Water reuse systems are capable of conserving water, concentrating waste for ease in removal and increasing overall production capacity.

CHALLENGE: In order to choose the partial reuse technology over traditional raceway rearing units, hatchery managers expect comparable, if not superior, fish health and performance from fish raised in these new systems.

SERVICES PROVIDED:

- Study Planning
- Sample Collection
- Data Analysis
- Health Assessment
- Performance Assessment

SOLUTION: During the winter of 2008, a partial water reuse system was installed at the Eastbank Hatchery in Wenatchee, Washington, and professionals from The Conservation Fund's Freshwater Institute were commissioned as a third party to evaluate the health of fish reared in the pilot system relative to those raised in the older flow-through units. An observational cohort study was carried out between June and November to assess the performance, health, and welfare of juvenile Chinook salmon *Oncorhynchus tshawytscha* reared in the new reuse system relative to salmon from the same spawn reared in a nearby raceway.

RESULTS: Findings of this observational study indicated that fish reared in the partial reuse system performed as well as their raceway comparisons in terms of growth and survival. The results of this pilot study demonstrate that juvenile Chinook salmon can be raised in a water efficient reuse system environment with comparable performance and survival to those reared in traditional flow-through raceways.

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