

Coldwater fish culture course advances aquaculture workforce training in the West

AT A GLANCE

The Idaho Coldwater Fish Culture Course equips aquaculture professionals and students with hands-on skills in hatchery management, water quality, fish health and fish nutrition.

The Situation

Idaho produces more than 70% of the nation's commercial rainbow trout, supporting thousands of jobs and contributing hundreds of millions of dollars annually to rural economies. Sustaining this production requires a skilled workforce proficient in cold water fish culture techniques, biosecurity and environmental management. However, turnover and retirements in hatcheries, combined with limited training opportunities, have created gaps in technical knowledge among early-career professionals and students entering the aquaculture field. Without continued professional development, operations risk reduced efficiency, poorer fish health outcomes, and decreased compliance with evolving environmental and regulatory standards.

Our Response

The University of Idaho's Aquaculture Research Institute hosted the 2025 Idaho Coldwater Fish Culture Course (CWFC) at the Hagerman Fish Culture Experiment Station from Aug. 4-8. This five-day intensive workshop integrated classroom instruction, hands-on laboratories, and onsite industry tours, providing participants with a comprehensive view of modern hatchery operations. Topics included anatomy and physiology, water quality management, nutrition, hatchery



Course participants learn about early life stage rearing practices at an Idaho farm during the Coldwater fish culture course.

math and solids management, fish health and biosecurity, spawning, genetics and transportation.

Thirty-four participants attended, representing state and federal agencies, industry suppliers, universities and private farms across Idaho, Oregon, Washington and Montana.

The course was taught by a team of leading experts from the University of Idaho, USDA-ARS, Mississippi State University and the Idaho Department of Fish and Game. Participants received a certificate to advance their continuing education.

Program Outcomes

Course assessments and evaluations demonstrated significant learning gains and high satisfaction. Average

impact University of Idaho Extension

post-test scores increased by 21% compared to pre-test results, showing clear improvement in participants' understanding of fish physiology, water quality, feed management and biosecurity.

Evaluation responses indicated that 100% of attendees agreed or strongly agreed that the course met their learning needs, was well organized, and that instructors were knowledgeable and engaging. Participants described the course as “a rare chance to learn directly from experts while working hands-on with fish” and “the most comprehensive hatchery training I’ve attended.” Many noted specific skills they planned to apply immediately, including implementing biosecurity protocols, solids management techniques, and hatchery math for feeding and density calculations.

The course also strengthened professional networks by bringing together diverse aquaculture stakeholders, creating new channels for knowledge exchange and collaboration across Idaho’s aquaculture community.

The Future

The Idaho Coldwater Fish Culture Course will now be offered annually as a cornerstone of University of Idaho’s aquaculture Extension programming. Building on its success, the course will continue to expand workforce education opportunities for hatchery professionals, producers and students across the region. Future offerings will integrate emerging technologies, new instructor partnerships, and additional field

components to further strengthen Idaho’s leadership in cold water salmonid aquaculture training and workforce development.

Cooperators and Co-Sponsors

The course was hosted by the University of Idaho Aquaculture Research Institute in collaboration with the Idaho Department of Fish and Game, USDA-ARS Hagerman Fish Culture Experiment Station, Mississippi State University, Riverence Farms, Hagerman National Fish Hatchery, First Ascent Fish Farm and Fish Breeders of Idaho.



Thirty-four course attendees representing hatcheries, agencies and aquaculture producers from across the western U.S.

FOR MORE INFORMATION

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