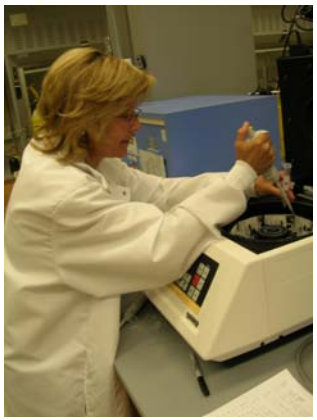
U.S. FISH AND WILDLIFE SERVICE

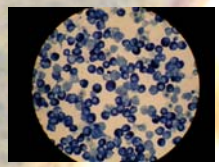
BOZEMAN FISH TECHNOLOGY CENTER –

Leadership in Science and Technology



Traditional Fish Culture and Water Treatment Systems

Our research focuses on improving capabilities of traditional rainbow trout production including fish quality and condition. Studies investigate fin erosion, diet, oxygen supplementation, densities at early life stages, and artificial rearing conditions. We provide technical assistance to the Service, State and private aquaculture facilities on water treatment systems design and trouble-shooting.



Sensitive Aquatic Species Conservation

Currently, we are conducting experiments to assess fish propagation diets, marking and tagging methods for the endangered pallid sturgeon, and are researching related physiological requirements of sturgeon spawning. We also maintain a population of endangered June sucker adults to determine the optimal means to assess spawning readiness.

Past and present studies on Greenback, Westslope, Yellowstone, and Snake River cutthroat trout also provide critical information to improve recovery and restoration success of these cutthroat trout.

Our Aquatic Ecosystem Health and Aquatic Invasive Species (AIS)

We provide technical assistance regarding water quality, conservation, monitoring, effluent, contaminants, fish health and immunology, pathogen escapement and transfer, and other hatchery management issues. We also provide guidance to partners to improve aquatic ecosystem health via the above and preventative protocols are part of managing for good ecosystem health.

The AIS (formerly Aquatic Nuisance Species /ANS) program compliments existing national and regional AIS efforts in providing state and partnership coordination and grants. BFTC's AIS program offers technical assistance in monitoring, detecting and preventing AIS to Service stations and other partners, as well as conducting research colonization vectors, pathways, and impacts and investigating controls and developing monitoring techniques.

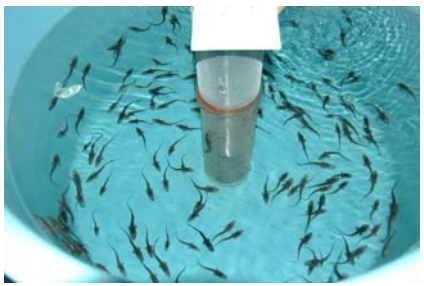
We have assisted with Hazard Analysis and Critical Control Point (HACCP) planning. HACCP plans describe protocols to stop the spread of Aquatic Nuisance Species. BFTC has assisted nearly 35 Fisheries field stations in the northwest and mountain-prairie regions to develop HACCP plans. We have provided HACCP training and planning assistance to Ecological Services offices in the Mountain-Prairie region.

Reproductive Physiology and Ecology Research

Our research focuses on improving ovulatory success and, embryo and larval quality, developing less invasive techniques and improving existing techniques for determining sex and stage of maturity, spawning readiness, and stress levels through blood chemistry, ultrasound, and spectroscopy. We are also focusing on the thermal requirements for spawning, embryo development, and larval survival in pallid sturgeon, the effects of contaminants on reproduction and health of sturgeon, and how the maturation cycle proceeds in wild sturgeon populations.

Fish Nutrition and Diet Development

This research program is a cooperative effort with Dr. Rick Barrows of the USDA, Agricultural Research Service Trout-Grains Program. Recent work includes development of plant-based fish feeds to reduce reliance on ocean forage fish for fish feed protein. A one-of-a-kind nutrition laboratory allows for the manufacturing of experimental larval, fingerling, and broodstock fish feeds and, the testing of many different kinds of ingredients to improve fish performance and quality. This program also develops specialized diets for use in captive rearing of endangered fish species like razorback sucker, June sucker, and Rio Grande silvery minnow.



Contact:
Bill Krise or Yvette Converse
Bozeman Fish Technology Center
(406) 587-9265
Bill_Krise@fws.gov
Yvette_Converse@fws.gov
http://www.fws.gov/bozemanfishtech/

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