

Bozeman Staff

December 2020

Fish Technology Center

Lacey Hopper, Acting Complex Director

Zach Conley, General Biologist

Cal Fraser, Fish Biologist

Dr. Gibson Gaylord, Physiologist (Lead Researcher-Diet and Nutrition)

Jon Gilleen, Maintenance Mechanic

Jason Ilgen, Biological Science Technician

Kevin Kappenman, Research Fish Biologist (Lead Researcher-Fish Passage)

Sharri Lunde, Administrative Assistant

Dr. Wendy Sealey, Physiologist (Lead Researcher-Diet and Nutrition)

Matt Toner, Fish Biologist (MGMT)

Dr. Molly Webb, Fish Biologist (Lead Researcher-Reproductive Physiology)

Bozeman Fish Technology and Health Complex



December Report – FTC

Diet and Nutrition Program



Biologist Matt Toner sampling rainbow trout for a diet study

Photo: USFWS/C. Fraser

The Bozeman FTC diet and nutrition research program continued trials for improved

salmonid diets. Diet trials investigate alternative ingredients to enhance and improve growth and overall health.

Feed was also manufactured for the USGS Yankton Field Research Station to assess the effect of selenium on razorback sucker fecundity and larval survival. Diet trials for the bonytail chub system-wide funding project continued and are set for termination on Jan. 3rd, 2020.



Comal Springs Riffle Beetle

Photo: USFWS/San Marcos ARC

Researchers manufactured experimental feed for the endangered Comal Springs Riffle Beetle for a collaborative diet trial with San Marcos Aquatic Resources Center in San Marcos, TX. The riffle

beetle is native to the headwaters of the Comal and San Marcos Rivers in Texas and was listed as endangered in 1997.

Fish Health Center

Rick Cordes, Acting Project
Leader/Fish and Wildlife
Biologist

Molly Bensley, Fish Biologist

Amberly Huttinger, Fish
Biologist

Tammy Weiss, Fish Biologist

Renee Yamamoto (Martin),
Fish Biologist

Contact Us

Bozeman Fish Technology
Center
4050 Bridger Canyon RD
Bozeman, MT 59715
(406) 994-9900

Bozeman Fish Health Center
1805 S. 22nd Ave Suite #1
Bozeman, MT 59718
(406) 582-8656

Physiology

Several reports, manuscripts and a graduate student thesis were developed and/or submitted during December. These included:

- Second manuscript on burbot sex and stage of maturity in collaboration with the Confederate Tribes of the Colville Reservation
- Surveying current use of sterile stocking practices at federal and state fish hatcheries: Manuscript revisions were submitted for publication
- Annual reports for reproductive readiness of pallid sturgeon, larval pallid sturgeon first-feeding enhancement, sex and stage of maturity in Westslope cutthroat trout, and sex and stage of maturity of Lake Sturgeon were drafted or submitted
- Histology was completed for a project involving Green River, WY mountain whitefish spawning characteristics and juvenile sampling methods
- Finalized plasma sex steroid analysis by radioimmunoassay for Green Sturgeon contaminants and their effects on plasma sex steroids
- Determine reproductive structure of hatchery-origin White Sturgeon in BC, Canada: Graduate student thesis revision



Research Biologist Kevin Kappenman assisting Montana State University graduate students with measuring an adult pallid sturgeon
Photo: USFWS/C. Fraser

Bozeman FTC continued working on a

collaborative project with Montana State University to investigate the ecological mechanisms underlying the occurrence of emaciated adult pallid sturgeon. Development of a research, monitoring and evaluation program for streamside health and condition assessment of adult pallid sturgeon continues to be developed. A quarterly report was submitted to partners.

Fish Passage

On December 20th, Bozeman FTC hosted a meeting with Montana State University and USDA engineers to discuss completed progress and current research needs relating to arctic grayling and Denil fish ladders. In addition, an abstract was submitted by Bozeman FTC and partners for possible presentation at the 2020 International Conference on River Connectivity (“Fish Passage 2020”) in Lisbon, Portugal.

December Report – FHC

Laboratory Services – Health Inspections:

- Ennis NFH Arlee ovarian fluid was submitted for virology testing
- Kansas Department of Wildlife, Parks and Tourism- Virology for 350 fish, 9 species at 3 sites
- Montana Fish, Wildlife and Parks- Virology for 210 fish, standard bacteriology on 100 fish, 190 fish tested for *Renibacterium salmoninarum* (BKD) and 130 whole heads tested for whirling disease for two private hatcheries

Laboratory Services – Diagnostic Cases:

- Received multiple diagnostic cases from 3 facilities. Identified and confirmed *Flavobacterium psychrophilum* (coldwater disease) and *Aeromonas salmonicida* (furunculosis) via bacteriological and molecular testing and histopathology



Cultured *Aeromonas salmonicida* bacterium (furunculosis) Photo: USFWS/Bozeman FHC

- Analyzed histological samples collected from brown trout, rainbow trout and muskellunge for gas bubble disease surveillance
- Analyzed histological samples collected from Yellowstone cutthroat trout for unexplained mortality/gill issues



Chilodonella sp. parasites observed in gill tissue, H & E stain. Photo: USFWS/A. Huttinger

Laboratory Services – Molecular Biology/Genetics:

- Received fin clips collected from 3 rainbow trout broodstock strains at Erwin NFH, TN for genetic strain analysis and identification
- Utilized real-time PCR for identification and confirmation of isolated bacterial pathogens
- New publication: R.M. Martin(Yamamoto), Meador, H., Bender, L., and Hopper, L. “Isolation and Characterization of 27 Novel Microsatellite Loci in Critically Endangered Wyoming Toad” published in Journal of Fish and Wildlife Management: December 2019, Vol. 10, No. 2, pp. 563-566

Laboratory Services – Wild Fish Health:

- Montana Fish, Wildlife and Parks (MFWP) is concerned about the observed decline of adult brown trout in SW Montana rivers. State biologists provided brown trout tissue samples collected from the Beaverhead River, MT for histological analyses. Bozeman FHC will be assisting MFWP with health testing of MT trout species in FY20.

Fungal lesion in a brown trout
Photo: USFWS/Bozeman FHC



*Adult brown trout,
Beaverhead River,
Montana*
Photo: MFWP

Employee Development & Upcoming Activities – FTC and FHC

- Rick Cordes, Lacey Hopper, Renee Yamamoto, Gibson Gaylord and Kevin Kappenman attended the FMT/FTC/FHC Joint Meeting in State College, PA
- Rick Cordes participated in the first AFS-Fish Health Section Laboratory Quality Assurance/Quality Control Tier 2 audit of the Colorado Parks and Wildlife Aquatic Animal Health Laboratory in Brush, CO on December 17th
- Jason Ilgen and Lacey Hopper attended a meeting with the Sacajawea Audubon Society regarding assistance and outreach opportunities associated with restoration of a large wetland in Bozeman
- Cal Fraser will serve a one month detail in January at the San Marcos Aquatic Resources Center, TX to learn more about non-traditional species propagation
- Dr. Gibson Gaylord will serve as a judge for student abstracts for the US Aquaculture Society/World Aquaculture Conference 2020
- Dr. Gibson Gaylord, Dr. Wendy Sealey and Lacey Hopper will participate in AADAP's semiannual IACUC meeting and inspection

HAPPY NEW YEAR TO ALL!



Photo: USFWS/C. Fraser