



Garrison Dam National Fish Hatchery Complex

Restoring America's Fisheries

"We work with our partners and engage the public, using a science-based approach, to conserve, restore and enhance fish and other aquatic resources for the continuing benefit of the American people."

November 2019

Chinook Spawning

Chinook Salmon spawning wrapped up the first of November exceeding our goals with 1.64 million eggs taken. The hatchery annually stocks a half million smolts in Lake Sakakawea in support of this unique recreational fishery. The Chinook Salmon fishery on the three Corps of Engineers Reservoirs in the Dakotas and Montana is maintained through the cooperative efforts of the state game and fish agencies and the Garrison Dam National Fish Hatchery. Eggs taken in excess of the hatchery's requests were made available to the South Dakota Game Fish and Parks Department to maintain the Chinook fishery on Lake Oahe.



The Missouri River Chinook Salmon population is unique in that the population was established before the outbreaks of BKD (Bacterial Kidney Disease) in West Coast salmon and is the only Chinook Salmon population that is not affected by the disease – which is why we rely on our partnership between the three Missouri River states to supply the brood fish rather than looking to the West Coast for eggs. Much of the success of this year's spawn can be attributed to the salmon returning to the hatchery as a result of imprinting. The overwhelming majority of the salmon spawned were fish that had immigrated

through the Garrison Dam's spill tunnels or gates over the past few years, spent time in South Dakota's Lake Oahe, and when the urge to spawn took over, migrated back to the creek flowing from the hatchery to complete their cycle of life.



Since options for receiving disease free Chinook Salmon eggs from our West Coast hatcheries doesn't exist, we are looking at advances in science to help. We have used cryopreservation of Pallid Sturgeon milt for the past couple decades to increase the genetic composition of our progeny, cryopreservation may be the answer for Chinooks as well. Working with the Warm Springs FTC we are exploring options for obtaining milt from West Coast Chinook Salmon stocks from the Coleman and Livingston Stone NFH's to reinvigorate the genetics of our Missouri River fish. The Warm Springs FTC has been working to develop viable options for freezing milt and has had some success with motility approaching 30%. The Warm Springs FHC will evaluate sperm samples for the presence of BKD prior to freezing and if we can obtain BKD negative straws will use that milt to fertilize eggs next fall. Just to be on the safe side, our Bozeman FHC will confirm the status of the milt using PCR.



Fish Culture

The curse of the brown trout continues at Garrison Dam NFH and is keeping the Fish Health Center busy. This time of the year, when the water temperatures drop, we typically see the brown trout having



difficulty maintaining their equilibrium with several fish bobbing in the water and Cold Water Disease sets in. We obtained a Veterinary Feed Directive (VFD), administered TM-200 in medicated feed and increased water temperatures with no change in mortality or behaviors. Fungus invaded the lesions opened up by the bacteria causing additional erosion. A 1% salt bath was administered as well as CLT treatments to no effect. Culling of visibly infected fish is standard protocol but we are now at the point where 35% of the fish are showing signs. The biologists began a more aggressive approach sorting through the raceway, dipping all fish in a 2% salt solution and transferring all clinical fish to a separate rearing raceway, further reducing densities until the space is needed for Chinooks.

We have been alternating the source of brown trout eggs at Garrison Dam NFH for the past several years with odd years' eggs coming from the Story SFH in Wyoming and even years coming from Saratoga NFH. To add to the brown trout blues, this year Story's brown trout broodstock tested positive for Enteric Redmouth. Fortunately, Saratoga NFH was able to supply our brown trout egg needs. The eggs arrived in great condition and now the sac fry are buttoning up. Hopefully this lot of fish can make it through their stay at the hatchery unscathed.

Upcoming Activities

Burbot spawning ramps up into January. Burbot fingerlings were requested once again for the Blackfeet Reservation's Duck Lake in western Montana. We will attempt to locate additional wild burbot adults to add to the genetics of the captive broodstock used in last year's production of 140,000 fingerling and advanced fingerling burbot.

We will be meeting the first week of December with the ND Game and Fish to discuss next Spring's fish requests and spawning goals. Their ANS specialist will also be attending to discuss the results of the water samples submitted by the

Valley City NFH crew in their ongoing monitoring of Zebra Mussels in the Sheyenne River. Until we can establish proven techniques for propagating mussel free fish from our facilities at Valley City and Baldhill Dam NFH's our fish production will be limited to the watershed currently positive for the mussel.



Partnerships

The North Dakota Game and Fish Department does not maintain state operated fish hatcheries but rather has a longstanding Memorandum of Agreement with the Fish and Wildlife Service to provide financial and in-kind support for our activities. It was apparent to the individuals who signed on to that agreement

in 1944 that construction of additional state owned fish hatcheries to support recreational fishing was not the most effective way to manage the resource. Rather, an agreement was drawn up for the mutual benefit of the resource agencies, a partnership that has resulted in 75 years of cooperative management of the state's fishery resources. To hold up their end of the agreement, the North Dakota Game and Fish Department contributes financially to the Service to cover costs associated with fish stockings to the benefit of the resource and sport fishing in the state. This Fall an additional four 1.5 acre ponds were lined to increase fish production.



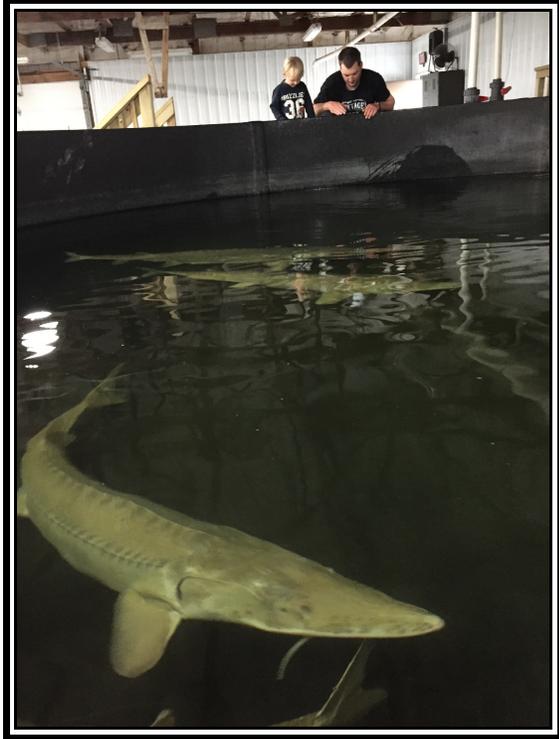
The opportunity to provide kid fishing opportunities was the impetus for the Garrison Dam NFH to partner with the Corps of Engineers and ND Game and Fish Department in the rehabilitation of a trout pond immediately downstream of the hatchery and within the Corps Downstream Campground. Issues with the control structure collecting debris and overflowing



prompted a re-do this past month. The three agencies partnered to purchase and install a beaver unfriendly control structure which is being installed at the outfall of the pond. We hope to have the unit installed and the pond ready to receive catchable trout in the Spring when the campers return.

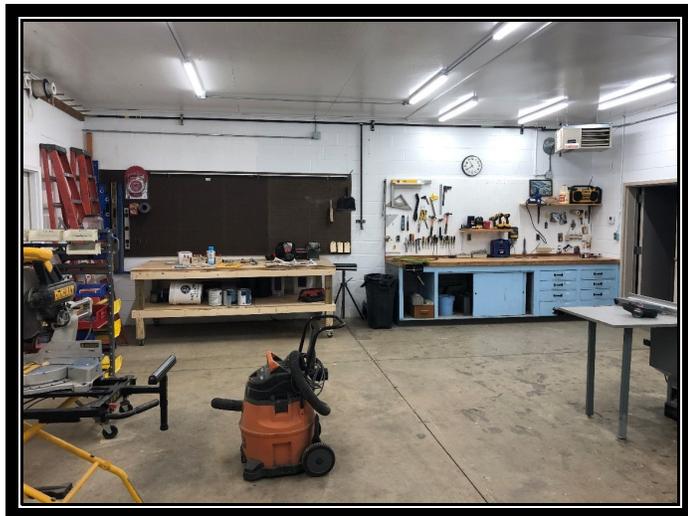
Public Use

Our visitor center is finally getting a few of the finishing touches added. An acrylic aquarium is being manufactured to provide the opportunity for visitors to see some of the native Missouri River fishes. The Pallid Sturgeon Recovery Plan identifies the need to increase public awareness of this species through aquarium displays and this addition will enable us to do just that. While we do have adult sturgeon available for public viewing in the spring, these fish are released after spawning. We hope to pick up the tank in January and have it up and operational by Spring when our tourist season begins.



Maintenance

The shop at Valley City NFH has been expanded to facilitate the maintenance needs there at the hatchery. A partition wall was removed and insulated doors added to provide year-around comfort and space to complete repairs. The space also received new LED lighting so you can actually see what you are accomplishing! Rehabilitation on the Isolation Building at Valley City is ongoing. Aluminum stands are being constructed to mount the new filtration and UV sterilization equipment and plumbing work continues to provide a water source for additional rearing tanks. The additional tanks will be used for future mussel refugia and propagation.



Hatchery Quarters

The blue house at Valley City (now vacant) is scheduled to get maintenance and repairs made. As of now paint contractors have come out and estimates are being collected, an estimate for bathroom repairs is being put together, and light fixtures that needed to be replaced have been replaced. In the white house, a new washer and dryer have been installed and the basement floors have been stripped and painted. New light fixtures have been installed well to replace failing fixtures.

Two of the three quarters at Garrison Dam NFH had the decks renovated. The 25 year old treated lumber was replaced with new composite and aluminum railing. The project is a work in progress that will hopefully be completed before next Spring's busy fish production season.

