



# 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."*

**June 2020**

### *Spawning*

Shovelnose sturgeon were transported from the Yellowstone River to the hatchery for spawning June 2<sup>nd</sup>. This is the 12<sup>th</sup> year Garrison Dam NFH has spawned shovelnose for restoration stockings in the Bighorn River of Wyoming above Yellowtail Reservoir. Of the 83,860 fingerlings sturgeon that have been released in the Bighorn River 74,540 are from Garrison Dam NFH. Angler reports in the past few years indicate that the population has rebounded as catches are occurring regularly. Marking studies conducted the last three years will shed light on whether or not natural recruitment is occurring. If recruitment is confirmed, hatchery intervention will end.



Shawn and volunteer Lisa Shoff spawning shovelnose sturgeon



Aspirating milt from a pallid sturgeon

Two male pallid sturgeon were spawned on June 22<sup>nd</sup> and milt taken was sent to the Warm Springs Fish Technology Center for cryopreservation. The milt repository started in 1999 with the first successful sturgeon cryopreservation efforts in North America. Currently the repository has milt from 101 extant males from the Upper Basin pallid sturgeon broodstock representing 78% of the known males. No female pallid sturgeon were collected this year in the Upper Basin due to limitations in collection efforts resulting from COVID-19 restrictions.

### *Fish Culture*

Phase one walleye ponds have been harvested at Garrison Dam NFH and another record broken - this time for total weight. Average survival of fingerling walleye was 67% and a total of 10,752,000 walleye weighing 8,435 pounds were harvested. The fingerlings were stocked to support recreational fishing in 152 waters in North Dakota and 11 reservoirs in Wyoming. Walleye production from the Garrison Dam

NFH Complex at 12 million fingerlings annually doubles the output of fingerlings from the second largest fingerling producing state of Ohio and triples that of the third and fourth largest producers, Michigan and Nebraska.



Loading Wyoming Game and Fish distribution trucks with walleye

All of the ponds stocked with walleye at Valley City National Fish Hatchery were harvested in June. In total over two million walleye were harvested from the ponds. Following hatchery protocol the fish were brought into the house to undergo a quarantine period before being shipped to monitor for the presence of zebra mussel veligers. Over 770,000 walleye were tested clean by North Dakota staff and permitted to be stocked. Survival during the overnight flush period was over 90%. As pond harvest progressed however zebra mussel veligers were found in the water supply and as a precaution from that point on all walleye were stocked back into the source water. A total of 1.8 million have been stocked out of Valley City this year. The hatchery has 13 remaining walleye ponds to be harvested during the month of July. Additionally in June largemouth bass fry were received from Colorado Parks and Wildlife and stocked into four rearing ponds at Baldhill National



Handful of fingerling walleye from Valley City NFH

Fish Hatchery.

Diet trials are ongoing with shovelnose larvae evaluating the suitability of processed larval feeds to increase survival during the transition to exogenous feeding. Half way through the study, the results indicate a 62% transition to feeds with Otohime and Gold Pearl both looking like acceptable diets.

This year's transition to feed for the production shovelnose has been difficult with only 34% converting leaving us with 9,892 fingerlings.

### *Upcoming Activities*

Installation of water monitoring sensors in the Salmon Building and initiating trials to determine the effect of nanobubble supplementation on growth, conversion, and overall health of our rainbow trout.

Development of facilities to incorporate YY male walleye broodstock into our production programs. The idea of creating a YY walleye broodstock comes from the successes of the Idaho fisheries biologists in

eradicating brook trout from streams where they are invasive. A similar strategy may work to eradicate walleye, carp and other species from waters where they have been introduced. This technology brings a new tool to the table for fishery managers to use in their quest to maintain native fish populations.

Like humans, many fish species have two sex chromosomes that can be X or Y – males are XY, while females are XX. Researchers were able to create ‘egg bearing’ male trout by feeding them a diet laced with estrogen. The eggs of these XY males are crossed with other XY males. Approximately a quarter of the offspring of this crossing will be YY males. If a YY male successfully mates with a female, all of their offspring will be male. In our case, if the YY hatchery fish successfully mate after being released in the wild, eventually all of the walleye in that lake will be XY male, and unable to reproduce, effectively sterilizing the population.

### *Partnerships*

The North Dakota Game and Fish Department’s distribution trucks have been getting a workout over the past month hauling fish on a near daily basis from the three federal hatcheries in North Dakota. Without the help of the North Dakota Fisheries crews, the hatchery would need to employ a couple temporary employees just to cover our distribution needs.

### *Public Use*

Garrison Dam NFH reopened in June following guidance from the Governor’s North Dakota Smart Restart. Visitors came in waves. Initially we had scheduled tours on the hour, however soon realized that we wouldn’t be able to meet our COVID-19 guidelines as we wanted to limit the group size to under 25. We opted instead for self-guided tours to keep visitors flowing through the facilities while our tour guides roamed throughout the hatchery answering questions.

The visitor center at the Valley City NFH was closed for most of the spring but that did not discourage people from coming out to enjoy the outside aspects of the hatchery. Numerous visitors can be seen taking a stroll around the hatchery ponds to enjoy the nice weather, exercising, and bird watching. North Dakota Game and Fish stocked yellow perch into the fishing pond on station earlier this spring and people of all ages have been at the hatchery almost every evening fishing for them.

### *Maintenance*

Valley City got some help from Arrowwood and Devils Lake National Wildlife Refuges in June with tree removal and trimming. Fire seasonals from the two refuges visited the hatchery on multiple occasions to assist the range technician stationed at Valley City in giving the hatchery staff a helping hand. Trees surrounding the ponds and dikes have overgrown the roads in many spots and multiple storms have caused trees to break all around the complex. The fire technicians cleared roads and green spaces allowing staff of the Valley City complex to get equipment around as necessary without causing property damage.



Fire crews clear the pond dike roads

### *Hatchery Quarters*

The deck was replaced on quarters 2 at Valley City. The rotted decking was removed and replaced with new composite decking and new aluminum railing was installed. Railing was also completed on quarters 2 at Garrison Dam NFH by hatchery staff.



Composite decking and rails at Valley City NFH

## ***Salmonid Production Summary***

Station:	Garrison Dam NFH		Period Covered:	October 1, 2019		Through	May 31, 2020					
		Fish on Hand the Last Day of the Period				To Date This Fiscal Year						
Lot Number	Number	Weight (Lbs)	Length (in)	Density Index	Flow Index	Weight Gain	Feed Expended		Fish Shipped		% Survival	Feed Conversion
							Pounds	Cost	Number	Weight		
RBT-SSD-19-ENN	1,751	854	11.2	0.05	0.26	14,175	23,597	\$14,116	55,323	26,933	100	1.66
RBT-SSD-20-ENN	73,949	1,531	3.9	0.41	1.41	1,547	1,237	\$1,166			98.3	0.80
BNT-PRD-18-SAR	0		10.4				6,250	\$6,023	11,602	5,157	61.3	5.86
BNT-PRD-19-SAR	18,501	857	4.9	1.17	1.17	857	820	\$760			96.4	0.96
RBT-HCD-18-WY	0		11.0			2,911	6,000	\$3,566	14,422	6,868	92.3	2.06
FCS-LSW-19-FR	0		5.1			16,252	14,902	\$13,341	424,945	16,400	96.7	0.87
<b>Totals/Averages</b>	<b>94,201</b>	<b>3,242</b>				<b>35,742</b>	<b>51,996</b>	<b>\$38,971</b>	<b>506,292</b>	<b>55,358</b>		<b>1.45</b>

### ***Hatchery Complex Personnel***

<i>Employee</i>	<i>Functional Title</i>	<i>Grade</i>
<i>Robert Holm</i>	<i>Project Leader</i>	<i>GS-13</i>
<i>Jerry Tishmack</i>	<i>Fishery Biologist</i>	<i>GS-11</i>
<i>Sean Henderson</i>	<i>Fishery Biologist</i>	<i>GS-11</i>
<i>Shawn Cole</i>	<i>Fishery Biologist</i>	<i>GS-7</i>
<i>Toni Ganje</i>	<i>Administrative Support</i>	<i>GS-7</i>
<i>Ben Oldenburg</i>	<i>Fisheries Technician</i>	<i>NDGF</i>
<i>Aaron Von Eschen</i>	<i>Assistant Project Leader</i>	<i>GS-12</i>
<i>Vacant</i>	<i>Biological Technician</i>	<i>GS-5</i>
<i>Paul Drabus</i>	<i>Maintenance Worker</i>	<i>GS-7</i>

Volunteers CB and Lisa Shoff and Barry and Peggy McCormick came onboard after a period of self quarantine. The volunteers have been busy guiding visitors around the hatchery and exploring the North Dakota outdoors.