

PERFORMANCE REPORT

STATE: Alaska

GRANT NO.: F-40-9

GRANT TITLE: Ruth Burnett Sport Fish Hatchery, Operations and Maintenance

PERIOD COVERED: July 1, 2017 - June 30, 2018

STUDY NO. AND TITLE: F-40-09 Ruth Burnett Sport Fish Hatchery

STUDY OBJECTIVES:

Smart Objective- Needs/Threats

1-Administrative

8. Oversee performance of the facility as needed to operate and rear sport fish for stocking.
7. Monitor equipment and facility for proper operation and perform scheduled maintenance and make necessary repairs.

Smart Objective – Purpose/Targets

Purpose/Target ID-1

Stocking of hatchery produced fish will contribute significantly to a wide variety of recreational fisheries, provide a broad diversity of fishing opportunities, allow for continued and improved protection of natural stocks, make appropriate use of site potential, and benefit anglers during all seasons of the year.

Projected Stocking for FY18

1. Rainbow trout
 - i. 139,120 catchables
 - ii. 108,000 fingerlings
2. Arctic char
 - i. 26,825 sub-catchables for September 2017
 - ii. 7,000 catchables for May 2018
3. Chinook salmon
 - i. 40,150 catchables

4. Coho salmon
 - i. 73,500 fingerlings
10. Arctic grayling
 - i. 6,000 fingerling by December 2017
 - ii. 26,600 catchables for May and June 2018

Purpose/Target ID-2

Spawn wild brood source Arctic grayling, Chinook and coho salmon for the production egg source.

Projected Wild Egg Collection for FY18

6. 49,600 Chinook salmon eggs for RBSFH in July 2017
5. 52,000 coho salmon eggs for RBSFH in October 2017
9. 107,850 Arctic grayling eggs for RBSFH and WJHSFH in May 2018

RESULTS/DISCUSSIONS:

SMART OBJECTIVE

Needs/Threats

1- Administrative Needs

Objectives 7 & 8 were met as personnel monitored equipment and facility for proper operation and performed or contracted for scheduled maintenance or repairs.

- Performed daily and weekly monitoring of boiler operations, HVAC systems, oxygen generation equipment, back-up generator functionality, and building walkthrough.
 - HVAC monitoring and maintenance was performed per preventative maintenance schedule or as needed, including lubrication of motors and fans, and filter and belt replacement,
 - Backup generator was monitored for proper fluid levels, engine and enclosure heaters operation, and exercised weekly.
 - Conducted annual maintenance on exterior grounds including landscaping and preventative maintenance on paved surfaces.
- Full water quality testing of influent filtration performance was conducted twice weekly for each individual filter train skid.
- Daily monitoring of influent filtration system included composite water quality testing, permanganate delivery, oxygen injection, and incubation and startup degassing equipment.

- 30' Recirculation System monitoring.
 - Water quality was conducted three times per week to track nitrite and nitrate levels and continued until bio-filter was established when testing frequency was reduced to one time weekly on three Rainbow trout modules, one Arctic grayling module and one Chinook salmon module.
 - Daily monitoring for Low Head Oxygen (LHO), bio-filter fluidization, recirculation pumps, ozone generators and module drum filters occurred to verify their proper operation.
 - Monitored module temperature, pH, dissolved oxygen, carbon dioxide, total dissolved gas pressure, ORP (ozone) levels and verified that all were within production parameters.
- 10' Reuse system monitoring
 - Operations of low head oxygenation and re-use pumps were monitored daily and adjusted as needed.
 - Recorded daily water temperature, pH, dissolved oxygen, and water flow to verify they were within production parameters
 - Weekly water quality tests are conducted to monitor ammonia levels when modules are operated as at least 50% reuse.

Purpose/Targets

Purpose/Target ID -1

Purpose/Target ID-1 was met for rainbow trout, Chinook and coho salmon. Objective goals for Arctic char were partially met. Objective goals for Arctic grayling were not fully met.

1. Rainbow trout stocking met the objective goals. Rainbow trout fingerling stockings were stocked at 101% of the stocking goal. Rainbow trout catchables were stocked at 105% of the objective goal. The total number of Rainbow trout stocked was 103% of the original objective goal.
 - 255,332 Rainbow trout stocked
 - 18,491 catchables in August 2017
 - 127,407 catchables in May and June 2018
 - 109,434 fingerling in June 2018
2. Arctic char stocking partially met the objective. Arctic char sub-catchables were stocked at 137% of the objective goal. Arctic char catchables were stocked at 94% of the objective goals due to a discrepancy between tank inventory and stocking inventory. The char are an ungraded population and develop a fair amount of size difference between individuals which can lead to higher variation between sample size estimates and the true population size. The total number of Arctic char stocked was 128% of the objective stocking goal for both life stages.
 - 43,383 Arctic char stocked

- 36,816 sub-catchables stocked in September 2017
- 6,567 catchables stocked in May and June 2018
- 3. Chinook salmon stocking fully meet the objective. Catchable Chinook salmon stocked equaled 107% of the objective goal.
 - 43,077 Chinook salmon stocked
 - 43,077 catchables in September and October 2017
- 4. Coho stocking met the objective. Fingerling stockings were 115% of the objective goal.
 - 84,446 Coho salmon stocked
 - 84,446 fingerlings in June 2018
- 10. Arctic grayling stocking goals were not fully achieved. Fingerling Arctic grayling were not stocked at all in FY18 due to a shortage of available fingerling and the desire of area management staff to preserve the catchable Arctic grayling production. Catchable Arctic grayling were stocked at 95% of the objective. Goals were not fully met due to fecundities during the egg take being significantly below historical average, leading to fewer eggs being taken. Incubation and post ponding survivals were also below historical average. Overall, the total number of Arctic grayling stocked was 78% of stated objective.
 - 25,290 Arctic grayling stocked
 - 25,290 Arctic grayling catchables stocked in May and June 2018

Purpose/Target ID -2

Purpose/Target ID-2 was met. Arctic grayling, Chinook and coho salmon green egg collection met objective goals.

6. Wild Chinook salmon brood spawning fully met the objective producing 125% of the goal. Coho salmon egg collection was 183% of the objective goal.

9. The Arctic grayling program was continued for the Ruth Burnett Sport Fish Hatchery and restarted for the William Jack Hernandez Sport Fish Hatchery in FY18. Arctic grayling egg take objectives were fully met with 156% of the egg take goal achieved.

Wild Spawn Green Egg Collection Summary for FY18

- 6. 61,950 Chinook salmon green eggs spawned in July 2017.
- 5. 95,226 Coho salmon green eggs spawned in October 2017.
- 9. 168,313 Arctic grayling green eggs spawned in May 2018.

FINAL REPORT STATUS:

This performance report serves as the final report for this contract period.

PREPARED BY: Travis Hyer

DATE: August 2, 2018