Clear Creek Dam Fish Passage Assessment

2012-2016

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Trap Data

- Trap was operated for three weeks in mid to late September (2012-2014)
- A total of 29 fish were tagged (14 males, 15 females)
- During the last season, five fish were tagged. Seven other fish trapped were recaptures from the two previous years
- All 29 fish tagged genetically keyed to the NF Tieton River population, however…
- Six (21%) were first generation hybrids (bull trout x brook trout)

Hook and Line Data

- Hook and line sampling was conducted in the stilling basin directly below Clear Creek Dam on July 31 (2014) and July 2 (2015)

- A total of 28 fish were captured, 22 were tagged (7 males, 15 females)

- Genetic samples were obtained from 25 fish. Twenty-three (92%) keyed to the NF Tieton population. **Only one was a hybrid**

- One of the bull trout captured in 2015 genetically keyed to the SF Tieton River population and another to Indian Creek

Key Findings

- 27 of the 29 fish tagged at the trap were detected in subsequent years of the study
- 20 of these fish migrated back to Clear Lake after spawning where they overwintered
- Just four fish were confirmed to have migrated downstream of Clear Lake after spawning
- The maximum likelihood estimate for the size of the spawning population was 59 individuals with a 95% confidence interval of 37-135

Key Findings (cont'd)

- Large numbers of NF Tieton bull trout congregate directly below Clear Creek Dam in July and August
- The size of this population was estimated at 71 individuals with a 95% confidence interval of 41-95
- These fish, without exception, appear to be unable or unwilling to ascend the spillway channel
- Seven bull trout were unsuccessful in 24 attempts over the course of 20 different days

The Bottom Line

The North Fork Tieton Bull Trout population exists in two segments which are roughly equivalent in size. One segment spawns in the river above Clear Lake and predominantly uses the lake for foraging and overwintering habitat. The other segment resides in Rimrock Lake and congregates below Clear Creek Dam in the summer, unable to migrate up the spillway channel. Both high water temperatures and extreme hydraulic conditions preclude upstream passage.

Bull Trout Transport

From July 7 thru August 3 of this year we angled in the stilling basin on a weekly basis (5 total sampling occasions). Thirty adult bull trout were captured and transported above the dam. All were PIT tagged and had genetic samples taken. Nineteen of those fish were subsequently detected up the NF Tieton River; four have been detected in Clear Creek where the presence of bull trout has never been documented.

Beginning next year we will acquire genetic samples from the progeny of NF Tieton spawners and conduct a genetic parentage analysis to determine the reproductive contribution of transported bull trout to the NF Tieton bull trout population.

Our efforts to augment this population will continue until effective fish ladders are provided at Clear Creek Dam.

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