

Work Task C47: Genetic Monitoring and Management of Recruitment in Bonytail Rearing Ponds

FY12 Estimate	FY12 Actual Obligations	Cumulative Expenditures Through FY12	FY13 Approved Estimate	FY14 Proposed Estimate	FY15 Proposed Estimate	FY16 Proposed Estimate
\$250,000	\$237,437.06	\$51,837.75	\$250,000	\$250,000	\$0	\$0

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Start Date: FY12

Expected Duration: FY14

Long-term Goal: To maintain an effective fish augmentation program.

Conservation Measures: BONY3, BONY4, and BONY5.

Location: Off-site rearing stations (SNARRC and Achii Hanyo Rearing Station).

Purpose: To assess effects of volunteer spawning by BONY in holding ponds on the genetic integrity and goals of the captive management plan for this species.

Connections with Other Work Tasks (past and future): This work is related to Willow Beach National Fish Hatchery (B2), Achii Hanyo Rearing Facility (B3), Dexter National Fish Hatchery (B4), and Bonytail Rearing Studies (C11).

Project Description: This three-year study will characterize the genetic diversity of inadvertently spawned BONY in ponds at Achii Hanyo Rearing Facility, SNARRC, and Uvalde NFH, and compare these fish to the founder population of BONY broodstock at Dexter. This project will determine average diversity of pond recruitment at SNARRC. The study will also assess utility of using a biological control (piscivorous fish) to reduce or eliminate inadvertent spawns in grow-out ponds at SNARRC.

Previous Activities: BONY tissue samples have been collected from Uvalde NFH, Achii Hanyo Rearing Station, and SNARRC.

FY12 Accomplishments: Two-thirds of the BONY tissues samples have been genotyped using a suite of 20 microsatellite markers. Piscivorous fish have been obtained and quarantined.

FY13 Activities: Biological controls will be investigated to reduce or eliminate inadvertent spawns, which may lead to overcrowding, and high densities resulting in oxygen depletion, and increased susceptibility to disease. Ponds will be prepared for stocking in April 2013. Treatments include BONY with no piscivorous fish, one half

pound piscivorous fish for every 50 pounds of BONY, and one pound piscivorous fish for every 50 pounds of BONY.

Tissue samples are to be taken and analyzed from 1,000 bonytail derived from inadvertent spawns. All fish are to be inventoried from the study ponds, total parent versus recruitment biomass recorded and compared to determine effects and efficiency of piscivore use.

Proposed FY14 Activities: The initial treatment protocols looking at a biological control will be adjusted for effectiveness based on previous year's results and repeated in FY14.

Pertinent Reports: Scopes of work are available upon request.