

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

FY13 Estimate	FY13 Actual Obligations	Cumulative Expenditures Through FY13	FY14 Approved Estimate	FY15 Proposed Estimate	FY16 Proposed Estimate	FY17 Proposed Estimate
\$250,000	\$242,379.43	\$150,170.65	\$250,000	\$0	\$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: There is concern regarding the genetic integrity of pond-reared BONY due to spawning events that commonly occur in grow-out ponds. 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 SNARRC. This project will quantify average diversity of pond recruitment at SNARRC. The study will also assess utility of using a biological control, in this case an appropriate piscivore (fish-eating 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. 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 Accomplishments: BONY and piscivorous fish were stocked into nine research ponds at SNARRC in the spring of 2013. The ponds were harvested in the fall of 2013. The initial observation is a pond without piscivores had a significant amount of

recruitment and recruitment was controlled in ponds with piscivores. All genetic samples have been genotyped.

FY14 Activities: The genetic samples will be analyzed and used to determine genetic diversity and the extent of parental contribution. Data will be compiled into a final report.

Proposed FY15 Activities: Closed in FY14.

Pertinent Reports: Scopes of work are available upon request. A final report will be posted to the website when available.