

## Work Task B10: Uvalde National Fish Hatchery

FY09 Estimates	FY09 Actual	Cumulative Accomplishment Through FY09	F10 Approved Estimate	FY11 Proposed Estimate	FY012 Proposed Estimate	FY13 Proposed Estimate
\$60,000	\$89,956.67	\$481,270.53	\$85,000	\$0	\$0	\$0

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**Start Date:** FY06

**Expected Duration:** FY10

**Long-term Goal:** Maintain fish-rearing capability to provide RASU and BONY for the LCR MSCP Fish Augmentation Program.

**Conservation Measures:** RASU3, RASU4, BONY3, and BONY4

**Location:** Uvalde, Texas

**Purpose:** Provide backup source and rearing capacity for RASU and BONY as needed for the Fish Augmentation Program, and provide a facility where species research can occur.

**Connections with Other Work Tasks (past and future):** This work task was added in April 2006 following approval by the Steering Committee, with concurrence from the USFWS. Funds were allocated to this work task from B5. This work is related to B4, as RASU and BONY for Uvalde NFH will be supplied by Dexter NFH. The work is also related to B1 and B2, as Uvalde NFH may also rear RASU for repatriation to Lake Mohave. Finally, the work is related to C10 and C11, as species research relative to rearing and growth of BONY and RASU may be conducted at this facility.

**Project Description:** Uvalde NFH is a large warmwater fish culture facility established in southwest Texas in 1934. The facility has 47 ponds totaling more than 50 surface acres for fish production. Water is supplied by two deep wells, which provide 72°F water year-round. A third, undeveloped well (Wilson Well) will be developed to secure the long-term water supply for rearing ponds. The facility was shut down for renovation in 2001 following a major flood event and is now again ready for fish culture activities.

The LCR MSCP and the San Juan River Basin Recovery Implementation Program are sharing costs for upgrading water supply systems and for rearing native fishes. The LCR MSCP will utilize the facility to assess rearing capacity for BONY, rear RASU for brood stock development at Lake Mohave, and conduct research on fish hauling and transportation.

The LCR MSCP has a requirement to stock 12,000 BONY each year for five consecutive years. This is beyond the current capacity of the LCR MSCP Fish Augmentation Program, primarily because of the target size being 300 mm TL (12 inches). Bonytail tend to be sexually mature by the time they reach 150 mm TL. During pond culture, these fish typically spawn and increase the number of fish in the pond. This in turn results in slow growth of the original fish. Initial actions at Uvalde NFH will focus on capability and techniques to grow BONY to target size in one growing season.

**Previous Activities:** During both 2006 and 2007, fingerling BONY were brought on station from Dexter NFH to assess growth rate and rearing capacity. The fingerling fish averaged 172 mm TL and were stocked into 1-acre ponds at densities of 500, 1,000, and 1,500 fish per acre. In October, these fish were harvested and hauled by tank truck to Dexter NFH. Growth and survival were remarkable, with roughly 92% surviving and 88% of those reaching target size in one season.

During routine fish health inspections in July 2007, Guadalupe largemouth bass on station tested positive for Largemouth Bass Virus, a restricted pathogen in both Arizona and California. BONY were also tested and came up negative; however, the states of Arizona and California have asked that no fish from this facility be stocked into the Colorado River until the hatchery receives a Class A rating. As a result, no BONY were stocked from Uvalde NFH into the LCR during 2007. The fish are being held at Uvalde NFH for future research. These fish are now in the 400+ mm size range.

BONY growth studies were repeated in 2008 using similar densities to those used in 2007; however, most of the fish were smaller to begin with (94 mm). Some 7,500 fish were stocked into six ponds in early May and harvested in late October. Over the 173 days in the pond, there was 72% survival with most fish attaining target size. In July 2008 the hatchery was tested for Largemouth Bass Virus and was clean.

**FY09 Accomplishments:** BONY growth research continued at Uvalde NFH. The FY09 study compared stocking densities of 1,500 fingerlings per acre with 2,000 fingerlings per acre. The study used four lined ponds, all covered with bird deterrent netting to minimize the predation variable. All fish spent approximately 200 days in the ponds. Average size of all fish at time of stocking was 207 mm TL. Average size of harvested fish from 1,500 fish per acre study ponds was approximately 361 mm TL (1.08 fish/lb). Average size of fish harvested from the 2,000 fish per acre study ponds was 372 mm TL (1.05 fish/lb). Fish stocked at 1,500 fish per acre attained a survival rate of 96%, with 99.7% of those individuals reaching or exceeding target size. Fish stocked at 2,000 fish per acre had a survival rate of 94%, with 99.7% of those individuals reaching or exceeding target size.

It should be noted that FY09 was recorded as one of the worst draught periods on record with exceedingly high temperatures throughout the study period. Results of the growth study may have been influenced by these high temperatures.

In July 2009, the hatchery received its second annual consecutive clean fish health report. With this clean report the facility returns to Class A status.

**FY10 Activities:** Growth and survival research has been temporarily halted and will not continue until resolution of stocking issues for BONY already reared and on station. Should approval be received for this stocking, growth and survival studies will continue. Development of a specific diet formulation for BONY is being conducted under C11. BONY on station at Uvalde NFH will be used to test effectiveness of this new diet.

**Proposed FY11 Activities:** No production activities are planned for Uvalde NFH for FY11. Any work being conducted at Uvalde will be associated with species research actions covered under section C. Production funds originally scheduled for Uvalde have been shifted to Achii Hanyo (B3).

**Pertinent Reports:** A report summarizing BONY research activities at Uvalde NFH will be developed and posted to the Web site.