

Work Task B2: Willow Beach National Fish Hatchery

FY11 Estimate	FY11 Actual Obligations	Cumulative Expenditures Through FY11	FY12 Approved Estimate	FY13 Proposed Estimate	FY14 Proposed Estimate	FY15 Proposed Estimate
\$250,000	\$230,585.84	\$2,021,047.79	\$250,000	\$609,000	\$300,000	\$300,000

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Start Date: FY05

Expected Duration: FY55

Long-term Goal: Fish augmentation.

Conservation Measures: RASU3, RASU4, RASU5, BONY3, and BONY4.

Location: Reach 2, Willow Beach, Arizona.

Purpose: Annually contribute RASU and BONY to the LCR MSCP Fish Augmentation Program.

Connections with Other Work Tasks (past and future): Willow Beach NFH receives larval RASU from B1, and BONY from B4. Fish from Willow Beach are reared at Achii Hanyo (B3). Some fishery research actions described in Section C are ongoing at this facility, including Razorback Sucker Rearing Studies (C10), Bonytail Rearing Studies (C11), and Development and Evaluation of Measures to Reduce Transport of Quagga Mussel During Fish Transfer and Stocking Activities (C30).

Project Description: Willow Beach NFH is managed by the USFWS. The hatchery receives funding from the LCR MSCP for rearing of RASU and BONY for the Fish Augmentation Program. There are three primary tasks at the hatchery:

1. **Receive fish to be reared.** Willow Beach NFH annually receives wild RASU larvae collected from Lake Mohave, and fingerling BONY (25-75 mm TL) from Dexter NFH.
2. **Provide fish to other hatcheries.** Initially, Willow Beach NFH was to provide fingerling RASU to Bubbling Ponds SFH to be further reared and ultimately stocked into reaches 3-5 of the lower Colorado River, provide fingerling RASU from wild-caught larvae to Dexter NFH for further rearing and eventual repatriation to Lake Mohave, and provide juvenile BONY to Achii Hanyo Rearing Station for further rearing and ultimately for stocking into reaches 3-5 of the Lower Colorado River. Due to the current infestation of quagga mussels, Willow Beach NFH is only delivering fish to Achii Hanyo.

3. **Annually rear RASU for release to Lower Colorado River.** Willow Beach NFH will rear 6,000 subadult RASU to 300 mm TL for stocking into Reach 3, and rear up to 5,000 RASU to 500 mm for repatriation to Lake Mohave.

Previous Activities: This coldwater hatchery began operation in 1962 to produce rainbow trout for recreational fishing. Between 1994 and 1997, the USFWS and Reclamation cooperatively added solar heating systems to the hatchery, converting 50% of its rearing capacity to warmwater fish production. Each year since 1996, the hatchery has received wild RASU larvae, reared juvenile RASU, and repatriated fish back to Lake Mohave.

During January 2007, the exotic quagga mussel was discovered in Lake Mead, and was subsequently found at Willow Beach NFH. Larval RASU that were to be transferred to Bubbling Ponds SFH were not collected (B1) and no RASU were delivered to waters outside the lower Colorado River corridor. Quagga mussels have not severely impacted the maintenance or operation of the facility. However, quagga mussels continue to have an impact on delivery of fish. Fish transport protocols for the Lower Colorado River corridor are being tested (see C30).

FY11 Accomplishments: During 2011, 25,018 RASU larvae were received from Lake Mohave, and 904 RASU juveniles were stocked to lake-side rearing ponds (B7). A total of 5,300 FY10 RASU were transferred to Achii Hanyo Rearing Station (B3) for further grow out. A total of 4,891 RASU were repatriated into Lake Mohave (Reach 2), a total of 327 RASU were stocked into Lake Havasu (Reach 3), and a total of 507 RASU were stocked into Palo Verde Oxbow Lake (Reach 4). The majority of funds were for salary and consumable materials (fish feed, medicines, chemicals, etc.) but a portion of the funds were used to acquire motors, feeders, aluminum tubing, PVC pipe, tools, a trailer, and probes for monitoring ammonia, nitrate, and dissolved oxygen. A new well was drilled on station that will be able to supply 250 gpm at 19°C. Rehabilitation of one functioning well on station improved capacity from 120 gpm to 250 gpm. These two wells will be able to supply the hatchery with 500 gpm of pathogen free water.

FY12 Activities: Willow Beach NFH will receive RASU larvae from Lake Mohave, and continue to rear and distribute RASU and BONY that are currently on station. This includes 269 RASU of the 2007 year class, 4,306 RASU of the 2008 year class, 7,903 RASU of the 2009 year class, 19,628 RASU of the 2010 year class, and 20,659 of the 2011 year class. BONY have not been reared at the hatchery since 2010. BONY from Dexter NFH (B4) are delivered directly to Achii Hanyo Rearing Station (B3). Investigations into methods for removing quagga mussel from transport tanks at Willow Beach NFH (C30) will continue.

Proposed FY13 Activities: Additional funding of \$358,000 proposed in FY13 is to install a new well and pump, and a second pump with associated electrical parts will be installed on an existing well. A cost share from the USFWS will be supplied in the form of engineering and technical support for the installation of the new wells. Well water would supply Willow Beach NFH with pathogen free water, thereby helping eliminate quagga mussel from this facility. The hatchery will continue to receive RASU larvae from Lake Mohave and will continue to rear and distribute RASU and BONY for the LCR MSCP Fish Augmentation Program.

Pertinent Reports: The scope of work and annual administrative reports are available upon request.