

Work Task B2: Willow Beach National Fish Hatchery

FY15 Estimate	FY15 Actual Obligations	Cumulative Expenditures Through FY15	FY16 Approved Estimate	FY17 Proposed Estimate	FY18 Proposed Estimate	FY19 Proposed Estimate
\$325,000	\$312,306.38	\$3,496,327.15	\$325,000	\$325,000	\$325,000	\$325,000

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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: To annually contribute razorback suckers and bonytail to the LCR MSCP Fish Augmentation Program

Connections with Other Work Tasks (Past and Future): The Willow Beach National Fish Hatchery (Willow Beach NFH) receives larval razorback suckers under Work Task B1 and bonytail under Work Task B4. A portion of the fish from the hatchery is reared at the Achii Hanyo Native Fish Rearing Facility (B3). Some fishery research actions described in Species Research (Section C) have occurred at the Willow Beach NFH, including Work Tasks C10 (closed) and C30 (closed).

Project Description: The Willow Beach NFH is managed by the U.S. Fish and Wildlife Service. The hatchery receives program funding to rear razorback suckers and bonytail for the LCR MSCP Fish Augmentation Program. There are three primary tasks at this hatchery:

1. **Receive fish to be reared.** The Willow Beach NFH annually receives wild razorback sucker larvae collected from Lake Mohave and fingerling bonytail (25–75 millimeters [mm] total length [TL]) from the Southwestern Native Aquatic Resources & Recovery Center (B4).
2. **Provide fish to other hatcheries.** Initially, the Willow Beach NFH was to provide fingerling razorback suckers to the Bubbling Ponds Fish Hatchery to be further reared and ultimately stocked into Reaches 3–5, provide fingerling razorback suckers from wild-caught larvae to the Southwestern Native Aquatic Resources & Recovery Center for further

rearing and eventual repatriation into Lake Mohave, and provide juvenile bonytail to the Achii Hanyo Native Fish Rearing Facility for further rearing and ultimately for stocking into Reaches 3–5. Due to quagga mussel infestations, the Willow Beach NFH is only delivering fish to the Achii Hanyo Native Fish Rearing Facility and the Lake Mead Fish Hatchery.

- 3. Annually rear razorback suckers for release into the lower Colorado River.** The Willow Beach NFH will rear 8,000 subadult razorback suckers for stocking into Reaches 2–5 and, in addition, rear up to 1,000 razorback suckers greater than 400 mm TL for repatriation into Lake Mohave. All razorback suckers stocked into Reaches 2 and 3 will be a minimum of 300 mm TL. All razorback suckers stocked into Reaches 4 and 5 will be a minimum of 305 mm TL.

Previous Activities: This cold-water hatchery began operation in 1962 to produce rainbow trout for recreational fishing. Between 1994 and 1997, the U.S. Fish and Wildlife Service and the Bureau of Reclamation cooperatively added solar heating systems to the hatchery, converting 50 percent of its rearing capacity to warm-water fish production. Each year since 1996, the hatchery has received wild razorback sucker larvae, reared juvenile razorback suckers, and repatriated fish back into Lake Mohave.

During January 2007, the exotic quagga mussel was discovered in Lake Mead and was subsequently found at the Willow Beach NFH. Larval razorback suckers that were to be transferred to the Bubbling Ponds Fish Hatchery were not collected (B1), and no razorback suckers were delivered to waters outside the lower Colorado River corridor. Quagga mussels have not severely impacted the maintenance or operation of the Willow Beach NFH; however, they continue to have an impact on the delivery of fish.

FY15 Accomplishments: The rearing strategy at the Willow Beach NFH was changed in FY15 in an attempt to produce larger (400 mm) fish for stocking into Lake Mohave. This change was made to improve post-stocking survival of razorback suckers stocked into Lake Mohave and to ultimately increase the adult population of the lake.

During 2015, 17,841 razorback sucker larvae were received from Lake Mohave, 750 razorback sucker juveniles were stocked to lake-side rearing ponds (B7), and 14,472 razorback suckers of at least 300 mm TL were repatriated into Lake Mohave (Reach 2). A total of 2,021 razorback suckers were stocked in Reach 3; 791 at Laughlin Lagoon, 687 in Jack Smith Park, and 543 in Tampas Cove. A total of 723 year class 2011 razorback suckers, 3,270 year class 2012 razorback suckers, and 15,000 year class 2014 bonytail were transferred to the Achii Hanyo Native Fish Rearing Facility (B3) for further grow-out. The majority of funds were for salary and consumable materials (fish feed,

medicines, chemicals, etc.). Installation of two new wells was completed at the Willow Beach NFH along with pumps and associated electrical parts. In addition, a new pump with associated electrical parts was installed on an existing well.

FY16 Activities: The Willow Beach NFH will receive razorback sucker larvae from Lake Mohave and will continue to rear and distribute the razorback suckers and bonytail currently at the hatchery. This includes 12,132 razorback suckers of the 2013 year class, 9,043 razorback suckers of the 2014 year class, and 10,007 razorback suckers of the 2015 year class. No bonytail were reared at the Willow Beach NFH in FY16.

One well will be extended and re-screened to improve flow rates and is expected to be completed in FY16. By adding this redundancy, well water will supply the Willow Beach NFH with a reliable source of pathogen-free water, thereby helping to eliminate quagga mussels from this facility.

Proposed FY17 Activities: The Willow Beach NFH will continue to receive razorback sucker larvae from Lake Mohave and rear and distribute razorback suckers and bonytail for the LCR MSCP Fish Augmentation Program.

In addition, genetic samples may be collected at the time of tagging in order to obtain data for inference regarding genetic trends of the Lake Mohave broodstock. This change in genetic sampling may also reduce future needs for intense netting efforts during the spawning season. Discussions are ongoing, but depending on any necessary changes in effort, budget estimates may need to be altered in subsequent years.

Pertinent Reports: Annual administrative reports are available upon request.