

**ARIZONA GAME AND FISH DEPARTMENT'S  
SECTION 10(A)1(A) PERMIT ANNUAL REPORT 2011**

**TE-083636-0  
Topminnow and Pupfish SHA Statewide**

Note: Tasks identified below are from the Department's E5 Segment 22 performance report. Information covers the Department's fiscal year (FY) 2011 (July 1, 2010 to June 30, 2011).

Cumulative total of Cooperators enrolled under the SHA at the end of Fiscal Year 2011: 8

Cumulative total of populations being managed under the SHA during FY 2011: 14

<b>Landowner:</b>	<b>Site:</b>	<b>Species Stocked:</b>
Private	Timbucktwo Pond, Ruby	Gila topminnow
Maricopa County Parks & Recreation Department	Pemberton Pond, McDowell Mtn Regional Park	Gila topminnow & desert pupfish
Maricopa County Parks & Recreation Department	Nursery Tank, McDowell Mtn Regional Park	Desert pupfish
Maricopa County Parks & Recreation Department	Willow Springs, White Tanks Mtn Regional Park	Gila topminnow ( <b>failed site</b> )
Maricopa County Parks & Recreation Department	Spur Cross Solar Oasis	Gila topminnow & desert pupfish
Private	Hernbrode Pond, Tucson	Desert pupfish (Rio Sonoyta origin, not QBQ)
Private	Onofryton Pond, Phoenix	Desert pupfish (Rio Sonoyta origin, not QBQ)
Arizona Game & Fish Commission	Swimming Pool Pond, Robbins Butte Wildlife Area	Gila topminnow
Arizona Game & Fish Commission	Twin Tanks, Robbins Butte Wildlife Area	Desert pupfish
Arizona Game & Fish Commission	Stop Sign Tank, Robbins Butte Wildlife Area	Gila topminnow
Arizona Game & Fish Commission	Cottonwood Tank, Robbins Butte Wildlife Area	Desert pupfish
Vail School District	Cienega High School Pond	Gila topminnow
Private	National Audubon Society Appleton-Whittell Research Ranch	Desert pupfish
Private	The Nina Mason Pulliam Rio Salado Audubon Center	Gila topminnow and desert pupfish
Private	Kei Sundt Pond	Desert pupfish

Management activities that were implemented during FY 2011 include the evaluation, stocking, and/or monitoring of the above sites under the SHA, and the evaluation of additional sites for future enrollment. In FY11, Department staff evaluated several sites for enrollment, including: Terry Morgan (KT Ranch) Pond (Portal); Appleton-Whittell Research Ranch (Elgin); Nina Mason Pulliam Rio Salado Audubon Center ponds (Phoenix); Kei Sundt Pond (Thatcher); John Scheuring Pond (Tucson); Dale Keiser Pond (Wickenburg); and Utery Mountain Regional Park (Mesa); the SEMBRA Energy Corporation Mesquite Power Plant Wildlife Oasis (Arlington); Black Canyon Heritage Park Native Fish Pond (Black Canyon City); San Rafael Cattle Company (Sonoita).

Funding sources for activities associated with site evaluations, enrollment, and stocking of topminnow and/or pupfish under the SHA include: Arizona Heritage Fund; State Wildlife Grant; Arizona Game and Fish Fund; and CAP Funds Transfer Program.

### Topminnow / Pupfish

The Statewide SHA for Topminnow and Pupfish was finalized and signed by the Department and USFWS on March 12, 2008. A total of 3 new sites were enrolled and stocked under the SHA in FY11.

1. **Timbucktwo Pond**, a privately-owned pond in southern Arizona was first stocked with Redrock Canyon lineage Gila topminnow on September 3, 2008.

**Activities FY 2011** – No monitoring activities were conducted at this site during FY 2011.

2. **Pemberton Pond** at the McDowell Mountain Regional Park (Maricopa County Parks and Recreation Department [MCPR]) was stocked with Gila topminnow on March 13 and July 9, 2009, and desert pupfish on October 15, 2009.

**Activities FY 2011** - Monitored for Gila topminnow and desert pupfish in Pemberton Pond during June 2011. Gila topminnow have become rare (n=2) at Pemberton, while pupfish continue to do well (n=302).

3. **Spur Cross Solar Oasis** at the Spur Cross Natural Conservation Area (MCPR) was stocked on October 19, 2009 with Gila topminnow and on November 18, 2009 with desert pupfish.

**Activities FY 2011** - Populations of Gila topminnow and desert pupfish were monitored in June 2011. Gila topminnow numbers appeared low to moderate (n=100), but multiple size classes were observed, indicating successful reproduction. Desert pupfish were abundant (940 captured) and multiple size classes were also observed. Habitat at this site is relatively shallow, and it may prove unsuitable for two species.

4. **Hernbrode Pond**, is a privately-owned pond in Tucson that was stocked on April 10, 2009 with desert pupfish (Rio Sonoyta origin, not Quitobaquito; the entire population was removed from the Appleton-Whittell Research Ranch Headquarters Pond).

**Activities FY 2011** - monitoring was done on September 18, 2010 and April 23, 2011. Dozens of pupfish were visible and active, with many of the males displaying breeding colors. Numerous young were also seen, indicating successful recruitment.

5. **Onofryton Pond**, is a privately-owned pond in Phoenix that was stocked on September 29, 2009, with desert pupfish from another SHA site in Tucson AZ, the Hernbrode Pond. These fish derived from fish that long existed in Finley Tank, a spring-fed tank within the Babocomari River drainage. They were long suspected as hybrids between Quitobaquito and desert pupfishes, but recent genetic studies have identified them as pure Sonoyta pupfish of Rio Sonoyta origin, not hybrids, and not from Quitobaquito Springs. This makes them (fishes in the Hernbrode and Onofryton ponds) the only stocks derived from Rio Sonoyta pupfish existing in the US.

**Activities FY 2011** - 1 year post-stocking monitoring was conducted on September 1, 2010 at the Onofryton Pond (SHA enrolled site) in Phoenix. Sonoyta pupfish were present with several size classes apparent; population size was estimated at over 1000, males were still in full color, displaying and defending territories throughout most of the pond.

6. **Cienega High School Pond** in the town of Vail was stocked with Gila topminnow on November 9, 2009, from Davison Pond in Tucson (after that pond had received new founders from Cienega Creek). Monitoring on April 7, 2010 found topminnow very rare, almost non-existent ( $n < 5$ ). Stocked with longfin dace (*Agosia chrysogaster*,  $n = 122$ ) in the hopes that they may survive at this location.

**Activities FY 2011** - No monitoring activities were conducted at this site during FY 2011.

- 7-9. **Robbins Butte Wildlife Area**, owned by the Arizona Game and Fish Commission, was stocked on November 17, 2009: Gila topminnow ( $n = 629$ ) at **Swimming Pool Tank**, and desert pupfish ( $n = 128$ ) at **Twin Tanks**. The Gila topminnow came from Dexter National Fish Hatchery and Technology Center (Sharp Spring lineage) via Bubbling Ponds Fish Hatchery. The desert pupfish were collected from Boyce Thompson Arboretum, Deer Valley High School, Desert Botanical Gardens, Phoenix Zoo, and Dexter via Bubbling Ponds Fish Hatchery. A second stocking of Gila topminnow ( $n = 571$ ) took place on April 27, 2010, at **Stop Sign Tank**. These fish were from Deer Valley High School's refuge population.

**Activities FY 2011** - During August and September 2010, 2297 desert pupfish were stocked into **Cottonwood Tank** at Robbins Butte Wildlife Area, salvaged from Libby Elementary School Native Fish Pond in Avondale, AZ. **Twin Tanks** on the refuge also

received an augmentation of 196 desert pupfish on September 9, 2010. All sites at Robbins Butte were monitored during June of 2011. All populations of topminnow (Stop Sign and Swimming Pool tanks) continue to increase, and have been used as a source of topminnow to establish other populations. Numbers of pupfish in both Twin Tank (n=1333) and Cottonwood Tank (n=186) continued to increase, with multiple size-classes apparent at both sites.

10. After assurances that **Willow Springs** at the White Tanks Mountain Regional Park (MCPR) was a perennial water source, it was enrolled as a SHA site and following stocking, was monitored on October 30, 2009 and found to be dry; all fish had been extirpated.

**Activities FY 2011** - This is currently considered a failed site and no further action was carried out during 2010-11. Managers of the Park wish to build a dual-purpose pond, to be used as an equestrian water source and as habitat for topminnow and pupfish, so the original Certificate of Inclusion will likely be amended during 2012-13.

11. **Nursery Tank** at the McDowell Mountain Regional Park (MCPR) was stocked with desert pupfish on June 17, 2010. The fish were collected at Boyce Thompson Arboretum.

**Activities FY 2011** - Monitored the desert pupfish in Nursery Tank (McDowell Mountain Regional Park) during June 2011. Desert pupfish were extremely abundant (capture 6699) and multiple size classes were observed.

12. **National Audubon Society Appleton-Whittell Research Ranch** was stocked with 229 desert pupfish from populations at Robbins Butte Wildlife Area on June 4, 2011. The fish originated from SHA ponds Twin and Cottonwood tanks on Robbins Butte Wildlife Area, 115 individuals from each pond.

**Activities FY 2011** - No additional action took place during FY 2011, but plans are to conduct a one-year monitoring effort during May 2012.

13. **The Nina Mason Pulliam Rio Salado Audubon Center** was stocked with 496 desert pupfish and 544 Gila topminnow on August 31, 2010.

**Activities FY 2011** – Pupfish came from the Libby Elementary School pond salvage (n=353), Desert Botanical Gardens (45), Phoenix Zoo Mandarin Pond (n=107); there were 9 mortalities among the pupfish stocked, all juveniles (TL < 15 mm). Nine (9) of the desert pupfish salvaged from Libby Elementary School died during an augmentation stocking of Rio Salado Audubon Center Ponds on August 31, 2010. On September 28, 2010, Department staff salvaged 829 pupfish from the rapidly diminishing Libby Elementary School Pond; 582 of those fish were stocked into the Audubon Center's pond along with 102 from the Phoenix Zoo Mandarin Pond; on the next day, 29 September, 100 of the salvaged fish were stocked into the Desert Botanical Garden pond, with 80 to

the Phoenix Zoo's Mandarin Pond, and 20 to the zoo's Arizona Trail pupfish pond; 47 juvenile pupfish had died in transit during this stage of the salvage.

Topminnow (n=544) from Robbins Butte Wildlife Area were also stocked at the Rio Salado Audubon Center Ponds on August 31, 2010 with 8 mortalities. An additional 1500 topminnow (mortalities = 2) from ASU Animal Care Facility were stocked on 15 October 2010. These fish are from the Redrock Canyon stocks.

14. **Kei Sundt Pond** was enrolled under the SHA in 2010 and stocked with 194 on November 9, 2010. Source of the pupfish stocked into the pond was the captive population maintained at The Nature Conservancy's Lower San Pedro River Preserve in Dudleyville, AZ. Four (4) pupfish died during the stocking effort.

**Activities FY 2011** – A 6-month monitoring effort of the Sundt Pond was conducted on May 11, 2011, with 38 pupfish of multiple size classes sampled. Sampling with minnow traps proved ineffective, likely due to the low density of pupfish; most pupfish were captured using a dipnet. There were no mortalities during sampling.

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