

**ARIZONA GAME AND FISH DEPARTMENT'S
SECTION 10(A)1(A) PERMIT ANNUAL REPORT 2015**

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) 2015 (July 1, 2014 to June 30, 2015), including an additional 3 months to transition reporting to the Federal Fiscal Year cycle (October 1, 2014 to September 30, 2015).

Cumulative total of Cooperators enrolled under the SHA at the end of FY 2015: 19.

Cumulative number of populations of topminnow and pupfish being managed under the SHA during FY 2015: 21.

| #: | Site: | Landowner: | Species Stocked: |
|-----------|--------------------------------------------------------------------------|--------------------------------------------------------|--------------------------------------------------|
| 1 | Timbucktwo Pond , Amado | Private | Gila topminnow |
| 2 | Pemberton Pond , McDowell Mountain Regional Park | Maricopa County Parks and Recreation Department (MCPR) | Gila topminnow desert pupfish |
| 3 | Nursery Tank , McDowell Mountain Regional Park | MCPR | Desert pupfish |
| 4 | Willow Springs , White Tanks Mountain Regional Park | MCPR | Gila topminnow (failed site; ephemeral) |
| 5 | Spur Cross Solar Oasis | MCPR | Gila topminnow desert pupfish |
| 6 | Hernbrode Pond , Tucson | Private | Desert pupfish (Rio Sonoyta origin) |
| 7 | Onofryton Pond , Phoenix | Private | Desert pupfish (Rio Sonoyta origin) |
| 8 | Swimming Pool Pond , Robbins Butte Wildlife Area | Arizona Game and Fish Commission | Gila topminnow |
| 9 | Twin Tanks , Robbins Butte Wildlife Area | Arizona Game and Fish Commission | Desert pupfish |
| 10 | Stop Sign Tank , Robbins Butte Wildlife Area | Arizona Game and Fish Commission | Gila topminnow |
| 11 | Cottonwood Tank , Robbins Butte Wildlife Area | Arizona Game and Fish Commission | Desert pupfish |
| 12 | Cienega High School Pond | Vail School District | Gila topminnow |
| 13 | National Audubon Society Appleton-Whittell Research Ranch , Elgin | Private | Desert pupfish |
| 14 | The Nina Mason Pulliam Rio Salado Audubon Center , Phoenix | Private | Gila topminnow desert pupfish |

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|----|-----------------------------------------------------------------|--------------------------------------------|----------------------------------|
| 15 | Kei Sundt Pond , Thatcher | Private | Desert pupfish Gila topminnow |
| 16 | Keiser Pond , Wickenburg | Private | Desert pupfish |
| 17 | Usery Mountain Regional Park | MCPR | Gila topminnow |
| 18 | Terry Morgan/KT Ranch Pond , Portal | Private | Desert pupfish |
| 19 | San Rafael Cattle Company , Patagonia | Private | Gila topminnow |
| 20 | Mesa Community College Red Mountain Campus , Mesa | Maricopa County Community College District | Desert pupfish |
| 21 | Gary Nabhan Pond , Patagonia | Private | Desert pupfish |
| 22 | Jason Stearns/Marijilda Wash Native Fish Pond , Safford* | Private | --- |
| 23 | Coppa Pond* , Patagonia | Private | --- |
| 24 | AGFD Horseshoe Ranch | Arizona Game and Fish Commission | Desert pupfish |
| 25 | Walker Ranch Pond* , Sonoita | Private | --- |
| 26 | Native Seed Search , Patagonia* | NGO | --- |

* These sites are in the process of coordination, assessment and/or enrollment.

The Statewide SHA for Topminnow and Pupfish was finalized and signed by the Department and USFWS on March 12, 2008. 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.

Four new SHA sites were enrolled or stocked during FY15: MCC Red Mountain Campus Pond, Gary Nabhan Pond, AGFD Horseshoe Ranch Pond, and Jason Stearns/Marijilda Wash Native Fish Pond.

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

Activities FY 2015 –

- February 25, 2015 – Visited site to monitor population. More than fifteen-hundred topminnow were caught in five-hour minnow trap sets. At the end of the effort, I was informed by Frank and Kathy there was a serious water loss from the pond.
- October 11, 2015 – This pond had been losing a substantial amount of water (6 gal.s/min) for an unspecified time, and required repairs. During October 2015 (and in coordination with USFWS species lead) the Department and landowners installed a holding tank at this property to hold salvaged topminnow from the pond. The holding tank was established with water filter, heaters and aerator;

approximately 1100 topminnow from the pond have been salvaged and placed in the holding tank, where they are being held until repairs are completed during the spring of 2016. Topminnow will be reintroduced into Timbucktwo Pond within 2-4 weeks after the pond is repaired and refilled.

- 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 2015 - No monitoring activities were conducted at this site during FY 2015.

- 3. Nursery Tank** at the McDowell Mountain Regional Park (MCPR) was stocked on June 17, 2010, with desert pupfish from Ayers Lake at Boyce Thompson Arboretum State Park.

Activities FY 2015 - No monitoring activities were conducted at this site during FY 2015.

- 4. Willow Springs** at the White Tanks Mountain Regional Park (MCPR) was believed to be a perennial water source, and it was enrolled as a SHA site and stocked with Gila topminnow. Monitored on October 30, 2009, found the site to be dry; all fish had been extirpated.

Activities FY 2015 - No monitoring activities were conducted at this site during the FY.

- 5. 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 2015 - No monitoring activities were conducted at this site during the FY.

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

Activities FY 2015 –Monitoring was conducted on March 23, 2015. Efforts resulted in the capture of 113 Sonoyta pupfish; one juvenile pupfish died from handling. Another hundred or so pupfish were observed in the pond, outside of the three traps. The population, though small, appears to be doing well.

- 7. Onofryton Pond**, is a privately-owned pond in Phoenix that was stocked on September 29, 2009, with Sonoyta pupfish (n=220) from another SHA site in Tucson, the Hernbrode Pond. These pupfish are derived from the population originally occupying Finley Tank, a

spring-fed tank within the Babocomari River drainage. The Finley Tank population had been suspected as hybrids between Sonoyta and desert pupfishes, but recent genetic studies 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 known stocks of Sonoyta pupfish derived from the Rio Sonoyta existing in the US.

Activities FY 2015 – This site was monitored on May 28, 2015. Sampling of the entire habitat over 2 hours resulted in the capture of 124 Sonoyta pupfish; the sampling crew felt that the majority of pupfish at this site had been captured during this effort. This refuge population has not reached the density and numbers hoped for in this artificial concrete pond, and alternative management strategies will be examined for it in the near future.

8-11. Robbins Butte Wildlife Area, owned by the Arizona Game and Fish Commission:

Activities FY 2015 – Monitoring on December 11, 2014 determined that topminnow were no longer present in either **Stop Sign** or **Swimming pool** tanks. Cause of their disappearance in Swimming Pool Tank is believed to have been excessively high flows during flood-irrigation of neighboring fields during summer 2014. This situation has been addressed, and the groundwater well-head will be modified to ensure the tank will continue to receive sufficient water and flow, but won't flush fish out.

It is believed the topminnow population in Stop Sign Tank was extirpated earlier in summer 2014 following a cattail removal effort, which may have disrupted the water quality and dissolved oxygen levels causing a fish kill at this site.

- **Twin Tanks** – On August 17, 2015, a total of 216 desert pupfish were collected from Twin Tanks at Robbins Butte for stocking on Las Cienegas NCA. Pupfish were combined with 162 pupfish from Robbins Butte Cottonwood Tank and used to augment populations at Gaucho Tank, Egret Pond and Heart Pond on the Las Cienegas NCA.
- **Cottonwood Tank** - On August 17, 2015, a total of 162 desert pupfish were collected from Cottonwood Tank at Robbins Butte for stocking on Las Cienegas NCA. Pupfish were combined with 216 pupfish from Robbins Butte Twin Tanks and used to augment populations at Gaucho Tank, Egret Pond and Heart Pond on the Las Cienegas NCA.
- **Swimming Pool Tank** - On August 25, 2015, Gila topminnow (Sharp Spring lineage) were collected from AD Wash and Buckhorn Springs and stocked into Swimming Pool Tank (n=452). On August 26, 2015 additional Sharps Spring topminnow (n=99) from ASU's Animal Care Facility were stocked at Swimming Pool Tank.

- **Stop sign Tank** – On August 25, 2015, Gila topminnow (Sharp Spring lineage) were collected from AD Wash and Buckhorn Springs and stocked into Stop Sign Tank (n=454); on August 26, 2015, an additional 99 Sharps Spring topminnow from ASU's Animal Care Facility were stocked at Stop Sign Tank.

12. 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). The pond was stocked with longfin dace (n= 122) in the hopes that they may survive at this location.

Activities FY 2015 - No monitoring activities were conducted at this site during the FY 2015.

13. 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 Twin Tanks and Cottonwood Tank on Robbins Butte Wildlife Area, 115 individuals from each pond.

Activities FY 2015 – Monitoring at the Research Ranch was conducted by USFWS and BLM personnel on June 6, 2015. Sampling efforts resulted in the capture of 143 adults and 23 juveniles (n_{total} = 166) with an additional estimated 50 adults observed but not captured.

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

Activities FY 2015 – This site was monitored on November 3, 2014. Monitoring efforts resulted in the capture of 49 adult and 21 juvenile Gila topminnow; one adult topminnow had a black grub infection. Participants observed hundreds of topminnow and perhaps a few pupfish outside of baited traps and throughout the water column. The pond perimeter is heavily overgrown with cattails, sedges and rushes. At the Rio Salado Audubon Center, between August and September 2015, shoreline habitat improvements were completed to three locations along the perimeter of the Center's wetland pond. Volunteers with the Wells Fargo "Green Team" and Department staff removed cattails among the three locations, and installed black construction barrier plastic to the cleared substrate. The plastic was weighed down with concrete pavers and sand at each location. The modifications provide shallow, open water for topminnow and pupfish nursery habitat; they will also facilitate future monitoring and collection efforts. A fourth location is planned for a similar effort along the western end of the pond in late 2015 and early 2016. Within hours of completion, participants observed topminnow and pupfish using the shallow, open areas.

- 15. Kei Sundt Pond** was enrolled under the SHA in 2010 and stocked with 174 desert pupfish 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. On October 15, 2012, the pond was stocked with 325 Gila topminnow, from the Lower San Pedro River Preserve.

Activities FY 2015 – This site was monitored on July 22, 2014. Sampling efforts resulted in the capture of 594 Gila topminnow and 233 desert pupfish, with hundreds of young fish of both species observed outside of the traps. The parasite, *Lernaea*, which was detected on 17 adult fish in 2013 was not seen on any fish in 2014. The population of topminnow and pupfish at the Kei Sundt Pond continues to increase in size and demonstrates successful recruitment with all age classes present.

- 16. Keiser Pond** was stocked with 164 desert pupfish from the Phoenix Zoo on September 6, 2012. Keiser Pond had previously been stocked with longfin dace. Prior to the pupfish stocking, 67 dace were removed and transported to the Phoenix Zoo for use in their gartersnake program.

Activities FY 2015 – Monitoring was conducted on May 26, 2015, resulting in the capture and release of 101 desert pupfish. No longfin dace were detected.

- 17. Terry Morgan/KT Ranch Pond** at Portal, AZ, was stocked with 325 desert pupfish on October 31, 2012. Sources of the pupfish were Twin Tanks and Cottonwood Tank at Robbins Butte Wildlife Area near Buckeye (n=41), and the Phoenix Zoo Mandarin Pond (n=284).

Activities FY 2015 – On June 25, 2014, Department personnel surveyed the Terry Morgan-KT Ranch Pond; a total of 2,409 desert pupfish were captured and released.

- 18. Usery Mountain Regional Park** was enrolled in May 2010 and the initial stocking occurred on October 19, 2011 when 92 Gila Topminnow were released.

Activities FY 2015 - No monitoring activities were conducted at this site during the FY.

- 19. Ross Humphreys/San Rafael Cattle Company Ranch** was enrolled under the SHA in July 2012, and the initial stocking occurred on March 28, 2013, with 495 Gila topminnow released into Pasture 2 Tank (source of the Sharp Spring-lineage Robbins Butte Swimming Pool Tank).

Activities FY 2015 – Pasture 2 Tank was monitored July 9, 2015. Four 1 m dipnet sweeps through shoreline vegetation resulted in the capture of 46 adult topminnow, all of which appeared in good health. This result also indicates that topminnow have reached a high density in this pond.

20. Mesa Community College (MCC) – Red Mountain Campus – Enrollment of the MCC Red Mountain Campus under the SHA was completed on March 27, 2014. The pond was previously stocked with longfin dace to control mosquitoes and to establish the necessary biotic components to maintain a balanced system. In March 2014, the Department removed 226 longfin dace from the pond for translocation to the Phoenix Zoo and in preparation for the pupfish stocking in Fall of 2014.

Activities FY 2015 - On November 4, 2014, a total of 307 desert pupfish from the Phoenix Zoo (Mandarin Pond and Arizona Trail Pupfish Pond) were stocked at the MCC Red Mountain Campus pond. A visit during 2015 found pupfish doing well, with juvenile and adult pupfish observed.

21. Gary Nabhan Pond – Pond renovations of this site took place in 2014 and the pond was enrolled under the SHA on January 29, 2015.

Activities FY 2015 –

- August 18, 2015 - A total of 300 adult pupfish were stocked at the Nabhan Pond. Source of the fish were the Mandarin Pond and Arizona Trails Pond at the Phoenix Zoo. There was one mortality during transport.
- October 9, 2015 – Post-stocking visual survey; observed nine (n=9) juvenile fish in the shallows of the SE quadrant of the pond, but no adults were seen. Weather had become overcast, cool and breezy prior to our arriving and adults may have moved to deeper water. Conditions improved for a short while during the site visit, allowing observation of juvenile fish in shallows of the pond.

22. Jason Stearns/Marijilda Wash Native Fish Refuge Pond –This site on the east side of Safford consists of a series of abandoned fish ponds that the landowner wishes to turn into an 8-acre lake for watercraft recreation (family, not public) and to assist with Department and USFWS with native fish conservation. The site will be filled and maintained by warm, artesian groundwater (estimated at 233 gallons/minute), which the landowner has full waters rights.

Activities FY 2015 - This site was enrolled under the SHA on February 26, 2015; the site is still under construction.

23. Coppa Pond – Coordination was initiated for the potential enrollment of this site under the SHA. This site consists of a small pond adjacent to a wet meadow in the Patagonia Mountains of south-central Arizona, southeast of Patagonia. The current owner wishes to enlarge the habitat and create a semi-natural Cienega consisting of a series of pools and streams in the meadow adjacent to the existing pond. Once constructed, the system will be used as a water supply for local wildlife and for native fish conservation.

Activities FY 2015 - This site is currently under construction; no conservation activities involving topminnow or pupfish occurred at this site during FY 2015.

24. Horseshoe Ranch Pond – This site along the Agua Fria River, north of Phoenix, was enrolled under the SHA on January 27, 2015. This is an Arizona Game and Fish Commission-owned wildlife area. The pond will be used as a refuge for lowland leopard frogs, northern Mexican gartersnakes, desert pupfish, and Gila topminnow. A small population of longfin dace were initially stocked in early 2014. Ranid frogs and gartersnakes have not been reintroduced yet. The perimeter of the pond has a fence to exclude bullfrogs and crayfish.

Activities FY 2015 -

- March 28, 2015 - this site was initially stocked with 112 desert pupfish from the Phoenix Zoo (Mandarin Pond).
- May 29, 2015 – carried out an augmentation stocking of 330 desert pupfish, also from the Phoenix Zoo.
- October 19, 2015 - Visual observation found pupfish present and abundant, appearing to number in the thousands.

25. Walker Ranch Pond – Coordination was initiated to enroll this site in Sonoita under the SHA. This property contains a large pond that the current owner wishes to enroll for native fish conservation. The pond requires renovation before enrollment, which the owners planned to undertake during 2015.

Activities FY 2015 - No conservation activities involving topminnow or pupfish occurred at this site during FY 2015.

26. Native Seed Search - Coordination was initiated to enroll this site near Patagonia under the SHA. This property is a downstream water-user of water from the Nabhan Pond, and as such, will be a non-participating permittee; current managers have expressed an interest in enrolling the property for the protections offered under the SHA.

Activities FY 2015 - No conservation actions involving topminnow or pupfish occurred at this site during the FY.