FCSal Final Update

Grant Recipient
Center for Conservation & Research at San Antonio Zoo
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Date Funding Awarded
March 2022

Date of Update
January 2024

Photos

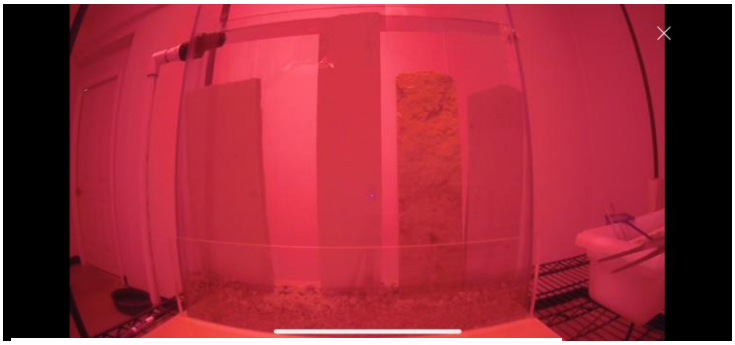

Image 1

Image 2

Images of novel breeding tank design as seen from security camera footage. *Image 1* taken with light on (lights have red bulb covers). *Image 2* taken with lights turned off.

Image 3

Image 4

Image 5

Images of adult Georgia blind salamanders (*Eurycea wallacei*) visible in breeding tank. *Image 3* taken with lights on, with red bulb covers. *Images 4 and 5* taken with lights on, with no red bulb covers.

Project Title:	Development of Novel Breeding Enclosures for Groundwater Salamanders
Principal Investigator (PI) name: Job title: Institution: Address: Phone: Fax number: Email address:	Dr. Danté Fenolio and others (*denoted below), the organizer is Dr. Andy Gluesenkamp Vice President of Center for Conservation & Research San Antonio Zoo 3903 N Saint Mary's St, San Antonio, TX 78212 (210) 734-7184, ext.1600 Dante.Fenolio@sazoo.org
Amount of Grant Award:	$1400
Collaborator name:	*Matt Niemiller (assisted in tank design)
Collaborator name: Job title: Institution: Address: Phone: Email address:	*Dr. Danté Fenolio, Bekky Muscher-Hodges, Kamryn Richard, Brittany Nunn, Ariana Aronis, Dr. Andy Gluesenkamp Vice President, Manager, Technicians and Director Center for Conservation and Research at San Antonio Zoo 3903 N Saint Mary's St, San Antonio, TX 78212 (210) 734-7184, ext.1602 conservationinfo@sazoo.org

Project Description

The Center for Conservation & Research at San Antonio Zoo proposed to refine a breeding tank design (BTD) for groundwater salamanders. We hoped the novel BTD would (1) provide greater observation potential, (2) offer the opportunity to record and document breeding and egg laying behavior and (3) simulate the natural conditions under which egg-laying is thought to occur. More consistent and predictable breeding success of groundwater salamanders is critical to the conservation and research of these species since captive breeding is key to both captive assurance colonies and laboratory studies.

Project Report

We acquired four customized tank stands, completed the construction of one novel breeding enclosure and customized a wire rack shelf to fit the enclosure and plumbing. Additionally, we purchased and set up a Wyze security camera to record salamander behavior and improved the Wi-Fi infrastructure of our building. After testing out the tank and confirming plumbing was working properly, we transferred a group of Georgia blind salamanders (*Eurycea wallacei*) to the enclosure.

As we hoped, the tank was successful in simulating more natural aquifer-like water flow patterns and it increased observation potential. While it was successful in many of the ways we had hoped, the design proved to be challenging in other ways, particularly when some of the salamanders developed unforeseen health issues and had to be removed from the enclosure for treatment. The design of the tank made it challenging to remove the animals that required treatment. With no definitive signs of increased breeding behavior, out of concern for the salamander's wellbeing, we eventually removed all the individuals from the breeding enclosure.

Next Steps and Future Directions

Even though breeding did not occur during this trial period with this enclosure design, this project has provided us with many necessary supplies and improvement ideas for future breeding tank implementations. Additionally, the improvements to our Wi-Fi infrastructure will allow us the ability to record behavior in future setups.

Due to the unforeseen health issues we observed in the salamanders, we did not have an immediate use for the remaining $312.66. We refunded the remainder of these funds back to FCSal in January 2024.

Budget Allocation

Budget Category	Item/Amount	Amount spent	Monies remaining
Tank Setup:	Tank stands (4): $689.64 Plumbing supplies: $343.80	$1033.44	--
Cameras:	Wyze Camera: $29.98 SD Cards: $23.92	$53.90	--
Total			**$312.66** ***Refunded back to FCSal***