



Amazon Research Center for Ornamental Fishes

ANNUAL REPORT 2022



We are making a difference!

Letter from the Founders

This past year proved to be a year of highs and lows. The year started off on a high with a trip to the research center immediately after the holidays. Anthony spent a lot of time working with our staff on the processes involved to build the large tanks while I worked on getting the dorms ready for the summer. By the time we left in mid January, the tanks were well underway and the dorms were in good shape.

Within a month of our return, we launched the first annual raffle to win a trip to the research center located in the Peruvian Amazon about 10 kilometers southwest of Iquitos. Anthony became a frequent presence on several of YouTube's fish keeping / environmental live streams and did an excellent job promoting the raffle. The added benefit of Anthony's presence on the various live streams was an increase in the number of people who now follow us via different social media platforms. The research projects specific to the Tigrinus Catfish and the Red Pencil Fish were moving forward, we received applications for internships, our raffle winner had booked his trip and would be at the center during the planned opening of the Aquarium, and we were actively promoting our spring and summer fundraiser.

Unfortunately, the construction of the large tanks proved to be problematic and by July we recognized that we would not be able to purchase the materials we needed, to make the tanks watertight, in this part of the world. We ultimately made the decision to have the 10 large tanks be manufactured in China from fiberglass. This entire process took considerably more time than anticipated delaying the opening of the Aquarium to the Summer of 2023. In spite of this setback, we continued to move forward. We took our environmental education program featuring Nalda the River Princess to two different schools, focusing on 5th and 6th graders. Carlos Chuquipondo, our Resident Director, made an exploratory trip to the villages of Frontera, España, and Curinga to determine the needs of the fishers in this area, and the excavation of the road leading to the research center and the aquarium was completed in November. We eagerly look forward to the Summer of 2023 and the long awaited opening of ARCOF's Aquarium of the Amazon.

- Anthony and Renee Mazeroll



Conservation Projects

It has been several months since we have updated you about Tigrinus Catfish (*Brachyplatystoma tigrinum*) that came to the Center via Peruvian customs. A large shipment of these fish was confiscated as part of a larger illegal shipment. The fish were divided between two organizations for care. Last summer we applied to the Ministry of Fishes to reintroduce the fish under our care. The response we received from the Ministry was a surprise. At that time, we had been caring for these fish for approximately 6 months and all of the fish were doing well. The Tigrinus Catfish is a difficult fish to care for, in part because they are well known to be poor eaters. The Ministry was impressed that our fish were doing so well. Subsequently, they asked us to not reintroduce the fish under our care, but to determine if we could develop a sustainable breeding program for this fish. We have now had these fish in our care for a little over a year and all continue to do well. No breeding yet, they are too young, but we will keep you posted.



A second project the Center has undertaken is a pilot aquaculture project with the Red Pencil Fish. The Red Pencil Fish is one of two fish listed as critically endangered by the IUCN in the Iquitos, Peru region. The fish was first recognized in 2000 and accurately described in 2001. Because of its brilliant red coloring the fish quickly became popular in the aquarium trade and within 10 years the fish became endangered. To date this fish has not been found outside of the flood plain of the upper Rio Nanay, in the vicinity of the village of Alvarenga. In short, it is range restricted and could become extinct. The habitat of the Red Pencil Fish is the soft acidic water of the Rio Nanay where the currents are sluggish (often found in the floodplains) and where the water is covered in dense vegetation, leaf litter and wood.

ARCOF has taken on a three-phase multi-year project specific to the Red Pencil Fish. The first phase of the project was started in the summer of 2021. Approximately 100 Red Pencil Fish were collected and brought to the research center. There the fish have been slowly acclimated to the water differences between the two regions and are being introduced into the center's aquaculture ponds. They are being monitored for stress, disease, and reproduction. The second phase due to start the summer of 2023 entails the use of environmental DNA to establish the true range of the fish and its native habitats. This phase will occur over 2 seasons. The third phase is the creation of aquaculture ponds in the fishing village of Alvarenga, Peru, approximately 165 km northeast of Iquitos. Alvarenga is the ideal village for this project as its location is well suited to support the aquaculture ponds for this fish.

Conservation Education

We are very excited to share the results of our educational program featuring Nalda the River Princess. In the accompanying pictures you will see 6th grade students (aged 10 to 12) reading the book we produced with the grant from the Jim Smith Foundation. The book is a story that introduces the children to conservation and the damage being done to the environment. It is a coloring activity book that allows the children to color many of the characters found in the story as well as do activities that also mimic the story. Nalda, our hero, has basically led a carefree life until she meets Huayo who educates her.

After spending some time together they agree to meet again soon and Nalda swims away. Much later Nalda comes across bird poachers and decides she needs to do something, resulting in the rescue of Eduardo and thus we have our team, a team that the children can relate to.



School activity



Our resident director, along with our education coordinator, and students from the local university were in attendance in the classroom and led the activities. I'm not sure who was more excited, the children who were very engaged or our staff. The next school we visited was in Belen, a somewhat poorer school, but the children were just as excited.

In addition to ARCOF taking conservation education into the classroom; Carlos Chuquipondo, our Resident Director, acted as a judge at a science fair where several different schools from Iquitos and the surrounding area participated. The understanding of the

importance associated with preservation of the biodiversity is relatively new and beginning to gain some momentum. Sustainable breeding, recycling, looking at alternatives to littering and/or burning the "trash" are all concepts that are secondary to putting food on the table. The waterways and forests of the Amazon River System have always provided food, transportation, and materials for the peoples living in that region with little thought going into the idea that these natural resources may have a limit.

In late August, Carlos made an exploratory trip to the villages of Frontera, España, and Curinga. These small villages are located some distance from the city of Requena off the Tapiche River and the Rio Blanco. After reaching Requena, Carlos had to travel an additional day by boat just to get to Frontera. The area is remote, the forests are wild and the rivers are abundant with fish, particularly fish exported for the ornamental fish (aquarium) trade. Fifteen fishermen from each village came together as a group to approach the Ministry of Fisheries to ask for help and the Ministry of Fisheries referred the group to ARCOF.



Science Fair

Conservation Education

The group realized that they lack the knowledge to provide the care necessary to properly care for the wild caught fish over a period of time and to actually breed these same fish. We were particularly excited about this opportunity as the ornamental fish found in this area of Peru are fish of ecological and economic importance. Initially, the focus of the fishermen was to improve their knowledge so that the “intermediaries”, who buy the fish from the fisherman and go on to sell these same fish to the exporters, would stop taking advantage of them and start paying a more competitive price for the fish.



Carlos at Frontera

Carlos spent a week with this group and provided three focused educational presentations, with hands on training. The fishermen were very happy with the training and asked for additional training, both on site in their villages and at the research center. Since their first meeting in August, a contingent of the larger group of fishermen came to the research center to not only continue their training but to ask for additional training on the establishment of aquaculture ponds in

their own villages.

Being able to sustainably breed high demand ornamental fish via aquaculture ponds will provide the fishermen with a year-round income as well as relieve the pressure on the numbers of wild caught fish currently removed from the environment.



Carlos at Frontera



The group visiting ARCOF

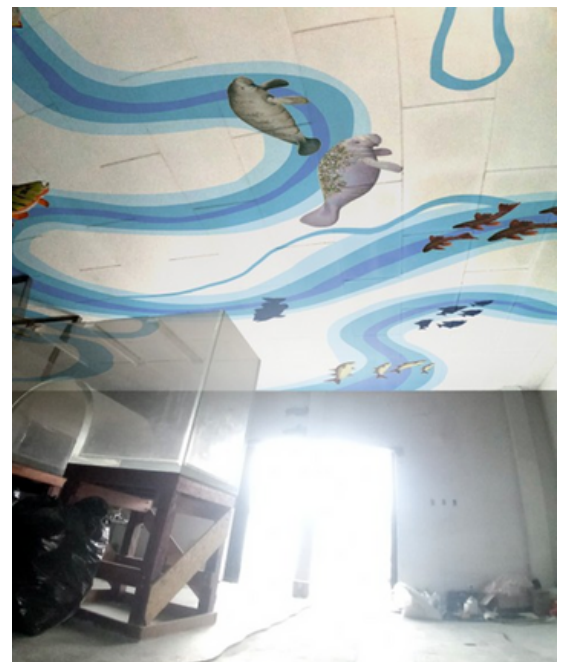
The Aquarium of the Amazon

Unfortunately, after an exhaustive attempt to use materials produced in Peru to construct the larger tanks we were faced with the reality that we could not construct the tanks in such a way that they would not leak. Following a discussion with our board of directors, the decision was made to dismantle the leaking tanks (10 in total) and to have them rebuilt utilizing fiberglass. We have since purchased these tanks from a large manufacturer in China. Installation of the new tanks is scheduled to begin in May of 2023.

As we await the arrival of the fiberglass tanks we have not been idle. The floor of the Aquarium was completed to include a representation of the river poured with blue cement. Just follow the river to see all of the exhibits.



We have spent a lot of time discussing ways to make the Aquarium an experience that visitors will enjoy and learn from. The blue in the tile floor represents the river as it meanders through the Amazon Rain Forest. To better help our visitors get a sense of the river and the life within it they only have to look up. To the right and below is an artist's graphic representation of what the ceiling of the Aquarium will look like. This artist works closely with a sculptor who is completing a statue of Nalda and Eduardo. The statue is almost complete, just need to add Eduardo.



Year in Review

- SUNAT officially recognized the research center as a non-profit tax exempt organization that is legally able to receive donations in Peru.
- Construction projects completed:
 - Outdoor auditorium
 - Public Bathrooms
 - Pump and filter room
 - Excavation of the road leading to the research center and the aquarium
 - The poison arrow frog terrarium
 - Tanks for the nocturnal room
 - Small tanks in the aquarium
 - Large fiberglass tanks
 - Replaced closet and shelf areas in the dormitories with insect treated melamine.
 - Interior floor of the aquarium
- Successful launch of the first annual raffle for a trip to the research center
- Hosted visiting researchers from Germany and from the University of the Pacific, Stockton, California.
- Supported 4 interns over the summer of 2022
- Launched environmental education program
- Hosted USAID at the research center
- Hosted lectures for graduate and undergraduate students from Universidad Nacional de la Amazonía Peruana (UNAP)
- Participated in two conferences hosted by the Department of Fisheries, Peru
- Participate in large multischool science fair.
- Contracted with artistic team to paint the inside of the aquarium and to build the Nalda and Eduardo statue along with a pink dolphin.
- Ongoing research projects focused on the Red Pencil Fish and the Tigrinus Catfish.
 - Registered with Concytec - Peruvian oversight for all research
- Increased onsite livestock in preparation to open the aquarium.
- Brought on two additional board members: Tim Haywood, founder of OS Aquatics, Dorset, UK and Luis Felipe Huertas del Pino, environmental law attorney, Hernández & Cía, Lima, Peru.

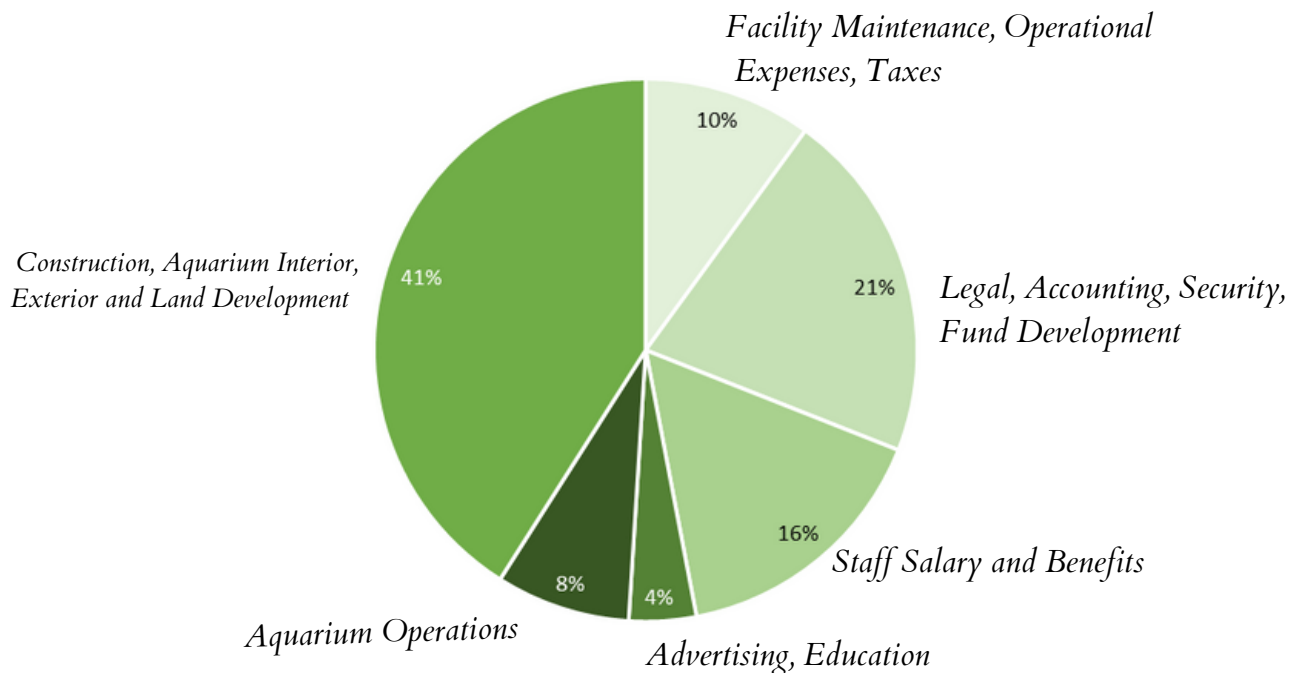


Financial Insights

In 2022, the largest single expense was in construction. Additionally, operational expenses doubled over the previous year, with the three following areas demonstrating the most significant increase:

- Contract labor - increased 165%
 - Increased costs associated with Development Consultants
- Personnel costs - increased 43.5%
 - Increased costs associated with benefits and unemployment taxes
- Aquarium operations - increased by 392%
 - Increased costs associated with livestock purchase, food and supplies

The total income for 2022 was \$264,374.21. Total expenses were \$143,316,93, with a net ordinary income of \$121,067.



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