

Amphibian Ark Seed Grant

AArk Seed Grant Application

Lake Oku Clawed Frog (*Xenopus longipes*) Recovery Project, Cameroon

By

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Content Requirements

1. Project Title: Lake Oku Clawed Frog (*Xenopus longipes*) Recovery Project, Cameroon

2. Names, institutional affiliations, and email addresses of project leaders

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3. Total funding amount requested from Amphibian Ark: US\$ 5000

4. Executive summary

The African clawed frogs have undergone drastic changes in chromosome number during their evolution, making them some of the most genetically unusual creatures in the world. They exhibit polyploidy, meaning they have more than the two sets of chromosomes found in most other organisms (known as diploid). The Lake Oku clawed frog has 12 sets of chromosomes, so is dodecaploid. Once common, Lake Oku Clawed Frog (*Xenopus longipes*) were thought to have been extirpated from Cameroon in the 1960s, until an isolated population was found in Lake Oku, in 1993. They are classified as critically endangered in Cameroon. In 2009, Bova Wildlife Conservation Center, Safe the Frog, Cameroon and HELPSUSDEV Program came together to form the Lake Oku Clawed Frog (*Xenopus longipes*) Recovery Project.

The ultimate goal of the project is to increase the populations of Lake Oku Clawed frog by initiating a captive-breeding program for an assurance population in at least three institutions: Bova Wildlife Conservation Center, Cameroon, Limbe Zoo, Cameroon and University of Bamenda, Cameroon. It would require maintaining multiple small groups of adult frogs in different enclosures and breeding them sustainably. Bova Center has been asked to help expand the overall capacity of this effort by building a full-scale headstarting facility and acquiring the equipment necessary to contribute to efforts to headstart the frog and assistance in drafting an updated Recovery Plan. We are requesting \$5000 from AARK SEED Grant to help reach these goals. AARK SEED Grant funds would cover some of the costs of materials to construct a

headstarting facility at Bova Center, cover costs associated with transporting metamorphs to at least three institutions: Bova Wildlife Conservation Center, Cameroon, Limbe Zoo, Cameroon and University of Bamenda, Cameroon. We shall maintain multiple small groups of adult frogs in different enclosures and breeding them sustainably. The Grant will also cover the stipend of a student research technician who will assist the HELPSUSDEV in finalizing an updated Recovery Plan for the frog.

5. Introduction, identifying the main conservation problem, the proposed corrective actions, the anticipated outcomes, and how these relate to the AArk values

Bova Center has been asked to help expand the overall capacity of this effort by building a full-scale head starting facility and acquiring the equipment necessary to contribute to the headstarting effort in the 2012 season and beyond. In addition, Safe the Frog, Cameroon has requested Bova Center's assistance in drafting an updated Recovery Plan for the frog. We are requesting \$ 5000 from AARK SEED Grant to help reach these goals. AARK SEED Grant would cover some of the costs of materials to construct a headstarting facility at Bova Center, and costs associated with transporting metamorphs to at least three institutions: Bova Wildlife Conservation Center, Cameroon (500), Limbe Zoo, Cameroon (300) and University of Bamenda, Cameroon (200) for sustainable breeding and cover the stipend of a student research technician who will assist the HELPSUSDEV in finalizing an updated Recovery Plan for the frog. Specific outcomes of AARK SEED Grant will include

- 1) Scaling up the Lake Oku Clawed Frog Recovery Project, increasing total Project capacity more than 10 times over
- 2) Completing an up-to-date Recovery Plan for the Lake Oku Clawed frog
- 3) Securely distribute more than 3,000 Lake Oku Clawed Frog metamorphs among at least three institutions for sustainable breeding by June, 2013.

Regular activity reports accompanied by photos will be written as the project unfolds and submitted to AARK SEED Grant. At the end of the project, a final report containing assessments of all possible short-term criteria would equally be submitted. We intend to submit copies of the report to Partners and the relevant authorities and institutions, to update and inform them on our current activities and successes.

The only known habitat of the African clawed frogs with 12 sets of chromosomes, so is dodecaploid, is Lake Oku, a freshwater lake completely surrounded by montane rainforest found 2,219 metres above sea level on Mount Oku, the second highest peak in mainland West Africa. Local people respect this lake as a sacred place and no fish have been introduced. Invasive predators could prove catastrophic to the clawed frog population.

6. Methodology, including a succinct description of the proposed work with enough technical detail for evaluation by experienced reviewers

The methodology for this project will consist of three main activities: headstarting, immature frogs, monitoring frog populations in the wild, and updating the Lake Oku Clawed Frog Recovery Plan.

Headstarting: To conduct headstarting at Bova Center, we will need to first construct the appropriate facility. This work will begin in July 2012. A framework covered with chain link will enclose the headstarting space, which is open to the weather. Inside, heavy-duty Rubbermaid tubs fitted with specially-made lids will house the tadpoles and just metamorphosed frogs. A plastic cistern will be used to hold aged or treated water for routine water changes, and could be used to store collected rain water. In spring of 2012, Safe the Frog, Cameroon will collect eggs from sites in the River drainage in Oku, North West Region, Cameroon and will transport them to Bova Center, Bamenda, North West. In order to maximize genetic diversity and minimize impact on extant populations, a sample of 20 eggs will be collected from each egg mass.

Eggs for headstarting will be transported to each participating Center in large (quart-sized) plastic yogurt containers filled halfway with water and then stabilized in a larger container with Styrofoam or recycled peanuts. Jostling can damage eggs or cause premature hatching, so all care will be taken to minimize egg movement during transport. Eggs hatch between 18-30 days after laying. At each partner, tadpoles will be reared in aquariums on a diet of varied vegetation and commercial fish foods. This “headstarting” process will take place for 8 months. Two hundred eggs will be collected to stock each tank; each tank is expected to result in 100 tadpoles. As frogs metamorphose, expected in fall of 2012, they will be screened for disease and Securely distribute to at least three institutions for captive breeding: Bova Wildlife Conservation Center, Cameroon, Limbe Zoo, Cameroon and University of Bamenda, Cameroon. Prior to release, the site will be monitored for presence of predators and chytrid fungus.

7. Budget, **no more than one page**, with distinction between funds requested from AArk and those from other sources, with the latter specified as ‘requested’ or ‘received’ and from where. Clearly identify the role of AArk funding as a proportion of overall project cost. All costs should be in USD\$. See sample below.

Budget category	Item/amount (Examples)	Requested from AArk	Other sources/status
Field study	Student Technician Stipend, to update Recovery Plan		\$1500 received from HELPSUSDEV
	Principle investigator salary		\$2000 received from BOVA Center and S
Ex situ facility	300 Gallon Plastic Tanks	\$1500	
	Lids for Tanks		\$4000 received from King Akwa Trust
	1,500 Gallon Cistern		\$2000 received from Great Soppo Conservation Committee
	Mesh top for headstarting Facility	\$2500	
Logistics	Transportation	\$1000	
Total		\$5000	\$9500
Percentage		%34	%66

Timeline of work (example below) and intended dissemination of results.

Activity	Jun-July'12	August-Oct '12	Nov-Feb '13	March-Jun '13
Fieldwork	X			
Construction of Headstarting facility		X		
field collection		X		
Headstarting		X	X	
Securely distribute and sustainably breed frog populations to at least three institutions				X