



## AMPHIBIAN ARK SEED GRAND 2016

- 1) **Project title:** Ex situ conservation project for *Ambystoma dumerilii* – Chapultepec Zoo, General Direction of Zoos and Wildlife, Mexico City.
- 2) **Project leaders:** MVZ Erika Servín, Chapultepec Zoo: [eservinz@hotmail.com](mailto:eservinz@hotmail.com) , Biol. Adriana Fernández, Chapultepec Zoo: [fernandez727@hotmail.com](mailto:fernandez727@hotmail.com) , M. en C. Alberto Olascoaga Chaultepec Zoo: [albertoolascoaga@hotmail.com](mailto:albertoolascoaga@hotmail.com) , M. en C Juan Arturo Rivera, General Direction of Zoo's and Wildlife: [jarturorivera.sma@gmail.com](mailto:jarturorivera.sma@gmail.com)
- 3) **Total founding requested:** \$ 4, 950.00
- 4) **Executive summary:** *Ambystoma dumerilii* is a Critically Endangered amphibian species endemic to the Patzcuaro Lake in Michoacán,. Main threats to the species are habitat loss due pollution, introduced fish species and over-collection. There have been some efforts in the past to protected them in the wild, none of them considering ex situ captive reproduction as alternative to secure an assurance population. Zoos and other ex-situ facilities are excellent alternatives for breeding and research activities, even more it is possible to develop excellent educational programs focused on the conservation of the species. The Chapultepec Zoo has more than 14 years housing and breeding a similar species, the Axolotl (*Ambystoma mexicanum*); the zoo also participates in a research and conservation program for the Axolotl with the ultimate goal of supplement the already almost extirpated wild population. This project propose the creation of a new facility to house *Ambystoma dumerilii* to develop knowledge, techniques and protocols to maintain and breed the species for reintroduction purpose. .

### 5) Introduction

*Ambystoma dumerilii* is an urodele amphibian, also called “Achoque”, described by Dugés in 1870, endemic to the Patzcuaro Lake, this neotenic amphibian has been used extensively for consumption and in local traditional medicine: Now a days the species is considered Critically Endangered by the IUCN and NOM 059 by Mexican laws as Special Protection Specie.. The main treats are habitat loss, introduced predatory fish and illegal fishing and sale.

Some efforts like workshops and educational material has been made for the conservation of the species, including the Michoacana University and the UMA in the monastery of “La Inmaculada de la Salud”, where the Dominic nuns house and reproduce the species to use it for elaboration a tonic for respiratory diseases, this traditional medicine has been made since 1860.

The Chapultepec Zoo, located in Mexico City, is one of the most important and visited Zoo's in Mexico, with more than 4,000,000 visitors per year. The zoo has extensive experience in *Ambystoma mexicanum* captive reproduction and husbandry, and also educational activities





and veterinary research since 2002. Since *A. dumerillii* is a similar species, the Zoo has the technical capacity to start a new program with it.

This project propose to start a new *ex-situ* conservation program for *Ambystoma dumerillii*, in order to support the conservation of the species. The zoo will build a sustainable facility to house and breed the species, increase the knowledge of the species by research, start an educational specific programs, supporting with these actions the conservation of the species,

The main short term goal for the General Direction of Zoo's and Wildlife and the Chapultepec Zoo with this project will be to support the conservation of the species with *ex situ* management, reproduction and developing specific captive husbandry techniques, and in the long-term help in the conservation of the species and its habitat in the wild.

## 6) Methodology

This project will be run at the Chapultepec Zoo. To ensure biosecurity and proper management, it will be necessary to build a new dedicated facility. This project proposes to build a 4 x 4 mts facility with sustainable and thermic materials such as Durok walls and lighting by solar cells, and a rain water capitation system. This facility will be out of the exhibit area, in order to keep a quiet place avoiding stress to the animals. All the animal will be keep in 40 lts containers, keeping 15°C of temperature, all of them connected in a filtration system. For feeding, live food will be providing: *Artemia salina*, tubifex and small fishes for the newts and small fishes, tubifex, shrimps and earthworms. All the tanks will be adapted with substrate, plants, and hide places.

Biosecurity will be stressed in this facility following standard protocols when keeping animals outside its native range. Footbath, dedicated clothing, dedicated footwear, tools and utensils will be all in place within this facility. Medical test will be done regularly for the *Ambystomas*, including Bd test, skin samples and if it possible blood test.

Once we have the facility, 20 *Ambystoma dumerillii* will be arrive to the Chapultepec Zoo from a legal breeding institution by donation, been carefully to choose pure animals knowing the origin of them. The contact with this institution is already done, they are waiting us to have a proper facility to send the *Ambystomas*. Once they arrived, they will be housed in individual tanks, Bd test will be performed, water quality and temperature will be measure every day, if it necessary air conditioner will be install. All time we will keep records of the management, behavior and feeding, using the experience in *Ambystoma mexicanum*.

Once we establish the new colony, we will try to breed the species in the winter season, controlling the genetic pool and keeping record in order to avoid inbreeding.

Educational programs will be designed especially for the specie, these activities will be included: chats, activities for kids, and small workshops for the visitors, planning in the future to make these activities in collaboration with Michoacán institutions.

Research projects will be run, in order to improve the knowledge of the species, including management and medical care.





## 7) Budget

Budget category	Item/amount	Requested from AArk	Other sources/status
<b>Facility</b>	Prefabricated house	\$ 2,800.00	
	Solar electric installation	\$ 500.00	
	Furniture	\$ 100.00	
	Aquaria	\$ 300.00	
	Water installation		\$350.00 Chapultepec Zoo (ChZ)
	Air conditioner	\$ 350.00	
	Water filtration	\$ 600.00	
	Building cost		\$850.00 Chapultepec Zoo (ChZ)
<b>Husbandry</b>	Water conditioners (for 1 year)		\$350.00 Chapultepec Zoo (ChZ)
	Nets		\$50.00 Chapultepec Zoo (ChZ)
	Sanitary pool and disinfectants (for 1 year)		\$333.00 Chapultepec Zoo (ChZ)
	Keeper and veterinary salary (for 1 year)		\$13,333.00 Chapultepec Zoo (ChZ)
	Food for 20-100 Ambystomas (for 1 year)		\$500.00 ap. Chapultepec Zoo (ChZ)





	Veterinary care (for 1 year)		\$1,000.00 Chapultepec Zoo (ChZ)
<b>Research and educational programs</b>	Initial print material for visitors	\$ 300.00	
	Research projects (first year)		\$2,000.00 Chapultepec Zoo
	Chats and visual material		\$1,000.00 Chapultepec Zoo (ChZ)
<b>TOTAL</b>		\$ 4,950.00	\$19, 766.00
<b>PERCENTAGE</b>		20%	80%

8) Timeline of work

Activity	july-sep 2016	oct-dec 2016	jan-mar 2017	apr-jun 2017	jul-sep 2017	oct-dec 2017
Facility construction	X					
Habituation of the animals		X				
First reproductive time (possible fist hatches)			X	X		
Educational programs			X	X	X	
Research				X	X	
Second reproductive period (expected hatches)						X

