

# CONSERVATION MEASURES FOR THE CRITICALLY ENDANGERED SPECIES OF LIZARD IN ARMENIA (*EREMIS ARGUTA TRANSCAUCASICA*)

**Arakelyan M. S., Petrosyan R. K.**

Yerevan State University, Faculty of Biology, Alex Manoogian 1, Yerevan 0025, Armenia

e-mail: [arakelyanmarine@ysu.am](mailto:arakelyanmarine@ysu.am)

## Abstract

The monitoring of population of steppe racerunner lizard, surviving only in one location on shores of Lake Sevan in Armenia have shown drastic reducing of their number. We start up the reintroduction and captive breeding programs for this critically endangered subspecies of lizards to prevent the extinction of them in wild.

The single population of (*Eremis arguta transcaucasica*, Darevsky, 1953) known from Armenia lives on the southern shoreline of the Lake Sevan (1,2,3). This species listed as Critically Endangered CR A2c; B2ab (ii,iii) in Red Book Armenia (2011) (4). Currently, according to our study, the area of population of this species located in degraded lands fragmented by large areas of agriculture and occupies near 30 hectares. The result of our monitoring from 2008 up to 2016 have revealed a trend of decreasing of number of *E. arguta* population (Table 1). The census was made according to standard method of counting of the lizards on 25 experimental plots (20 x 20 m).

Table 1. The results of census of steppe racerunner lizard (*E. a.transcaucasica*) during 2008-2016.

Date of census on plots	Total number of lizards	Individuals/ha
September 12-15, 2008	85	70
September 12-18, 2011	46	42
September 23 – 26, 2015	38	23
June 5-8, 2009	21	36
June 1-5, 2012	14	11
June 1-5, 2016	24	15

The one of the reason of drastic reducing of the number of *E. arguta* is a competition with other species of lizards striated green lizard (*Lacerta strigata*) - a large lizard with ecological similar requirements. We noted that adults of green lizards prey on young individuals of *E. arguta*. According to results of our census of lizards on experimental plots, the population of steppe racerunner lizard declined 3 times in the period of 2008-2015, while the population of the competing striated green lizard increased proportionally in 3 times. The mean of number of lizards on 10 plots from central part of population in fall 2008 was 3.2 for *E. arguta* and 0.8 for *L. strigata* while in 2015 the mean of lizards on 10 plots from the same area was 0.9 for *E. arguta* and 3.2 for *L. strigata*.

For the first time we start up the captive breeding *E. arguta transcaucasica* to promote the conservation this rare subspecies of lizard. During first experimental year, we caught in field 5 pregnant females (64 – 70 mm of body length) in May 26 and June 1, 2016 and transported to laboratory in Yerevan State University. We kept adult animals in laboratory two week after that they were released at sites of their captured. We did not hold adults more than two weeks and released all

lizards including the one pregnant female. The four females laid the eggs in 8 June, 9 June and 13 of June. Eggs were examined and separated each from its neighbor on special plates with sterilized sand and soil as substrate. Then the eggs have been inputted in reptilian incubator and held at a temperature + 28°C ( $\pm 2^\circ$ ) and 60-70% of humidity. The clutch which was incubated on soil were affected by mould and died. All next clutches were held on sand and survived. The period of incubation was 45-47 days. Of the 15 eggs, one was ruptured, two were infertile, 6 affected by mould and 6 produced normal hatchling. The hatchlings had SVL 27.6 -28.2 mm. Hatchlings were housed in small boxes (15 x 20 cm) with shelters. After one month when hatchlings had grown, they were transferred to terrariums. Hatchlings began to feed 4 days after emergence from eggs. The small crickets, mealworms dusted by calcium and D3 vitamin were fed the hatchlings. The lizards had skin shedding 3 times: the first at 15-18 July after one month of emergence from eggs, second in period September 9-15 and third - October 14-20.

In framework of in-situ conservation program, we selected the area for reintroduction in vicinity of Lichk villages, in place of historical habitat of lizards, where still remain sandy soils suitable for this species. Previously *E. arguta* had not been recorded in this region for almost 80 years and have been reported as extinct. However, we were pleasantly surprised when happened upon to meet the single individual of steppe runner lizard near of Lichk village in 2016 at place where we are planning to release the captive bred lizards.

Thus, we are implementing both the ex-situ and in-situ conservation activities to receive a sufficient result in saving a critically endangered species of lizard for Armenia.

1. Darevsky I.S., 1953. [About systematic position of transcaucasia steppe-runner *Eremias arguta* (Pallas)] Dokladi Arm ASSR 16 (4): 117-121.
2. Arakelyan M. Conservation status of the last Armenian population of racerunner *Eremias arguta* transcuacasica // Biological Journal 1(64), 2012: 6-9.
3. Arakelyan M., Danielyan F., Corti C., Sindaco R., Leviton A. Herpetofauna of Armenia and Nagorno-Karabakh // Salt Lake City SSAR, USA, 2011: 154.
4. Red Book of Animals of the Republic of Armenia, Yerevan, 2010 ([http://www.mnp.am/red\\_book\\_fauna/](http://www.mnp.am/red_book_fauna/))