



Midterm Report

“Current protection status of Armenian amphibians and elaboration of measures of their conservation including public awareness rising”

Application ID: 13769-1

Principal Investigator: Dr. Ilona Stepanyan

Scientific Center of Zoology and Hydroecology National Academy of Sciences of Armenia,
P. Sevak str. 7, Yerevan 0014, Armenia

Phone: +374 (010) 281621

E-mail: stepanyanil@yahoo.com

Armenia is a small country with developed mining industry, constructing and framings. Thereby, our amphibian's fauna is under great anthropogenic pressure. According to thus, as primary study areas we selected the localities, which are characterised by amphibian species richness being under high anthropogenic pressure.

The following steps of the work were done:

The field surveys were carried out during August to September 2013 in Lori, Kotayk and Armavir Provinces of Armenia (Fig. 1). The activities were done in the following study areas:

- First one is located near Tsaghkashat village (**Lori Province**). East vicinities of Tsaghkashat village are under cooper-molybdenum mining industry transformation. Fauna of amphibians previously was not studied. The identification of amphibian species, the determination of amphibian species richness of the study area and habitats' presence were done in this area.
- The second studied area is located in the vicinities of the Artavaz village (**Kotayk Province**), including two separate localities, namely Marmarik river gorge and south slope of Pambak Range in the gorge under Tezh Mountain. Surrounds of Artavaz village are under constructing of resorts, cottages and deforestation. The comparison between existing data and our observations on the amphibian' fauna conditions were carried out. Besides, the diversity of phenotypes of *Rana macrocnemis* was analyzed.
- Third one is surroundings of Echmiadzin town and the vicinities of Khanjyan & Noravan villages (**Armavir Province**). This area was included into the territory of Project implementation due to following reason: existence of Red Book species *Pelobates syriacus* according to private communications from our colleagues (Dr. M. Arakelyan, Dr. T. Tadevosyan and Prof. S. Pipoyan) and richness of population of *Hyla savignyi*.

All the data obtained were GPS-positioned and included into GIS-based database.

Results of the field survey:

- **Lori Province (East vicinities of Tsaghkashat village).** – In this area estimation of the amphibians biodiversity revealed one richest locality characterized by rich species composition and high populations' density - artificial pond at the higher part of Dukanadzor gorge: 4 species were found, as follows: *Pelophylax ridibundus*, *Hyla orientalis shelkownikowi*, *Bufo variabilis* and *Rana macrocnemis*. From these *Pelophylax*, *Hyla* and *Bufo* were very numerous, when *Rana* was registered by very few specimens. In general, mass escape of underyearlings of *Hyla* and *Bufo* was observed during field survey in August (Fig. 2 B - C). *Ommatotriton ophryticus* was not found.
- **Kotayk Province (vicinities of the Artavaz village).** Four amphibian species were found into 2 gorges studied. But their abundance was partly different: *Pelophylax ridibundus*, *Rana macrocnemis* and *Bufo variabilis* were very abundant, when *Hyla orientalis shelkownikowi* was presented by single specimens. Three types of the phenotypes of *Rana macrocnemis* were observed (Fig. 3 B - D).
- **Armavir Province (vicinities of the Khanjyan, Noravan villages, Echmiadzin town).** Several localities rich in amphibians were observed here (Fig. 1, 4 - 6). *Hyla savignyi*, *Pelophylax ridibundus* and *Bufo variabilis* can be considered as common species in numerous natural and artificial water-bodies from the vicinities of the Khanjyan, Noravan villages and Echmiadzin town (Fig. 4 B - D).

In all the areas surveyed, morphometric characters of each species/ population, as well as phenotype features were registered.

The public awareness program was carried out during October - December 2013, and January - February 2014. It included:

1. Preparation and publication of posters, informational flyers, pocket calendars as follows:
 - poster “Know and protect Armenian Amphibians”;
 - informational flyers, dedicated to each species of Armenian amphibians;
 - pocket calendars presenting Armenian amphibians;
2. Elaboration of information programs for schools and local communities’ members on themes: “Know, like and preserve the Armenian amphibians” and “Amphibians as a helpful animals”;
3. Preparation of the presentations on following themes: “Amphibians”, “Must be know and protect of Armenian amphibians”;
4. Lecturing on role of amphibians in functioning of ecosystems and importance of their protection with distribution of the posters, informational flyers and pocket calendars, in Secondary schools of Yerevan, Vedi, Ararat towns and Voghjaberd, Lchashen, Surenavan, Goravan, Haitag, Khanjan, Noravan, Rind villages of Kotayk, Ararat, Armavir, Vayots Dzor Provinces.
5. Organizing the meetings with authorities of the Surenavan, Goravan, Haitag, Rind villages, and Vedi, Ararat towns targeted to explanation of importance and benefits of amphibians conservation;
6. Some consultations with authorities and staff of Armenian Protected Areas, including: “Khosrov Forest” and “Erebuni” State reserves, “Sevan” National Park, “Vordan karmir” sanctuary, “Sochut” and “Idjevan” dendroparks, etc.

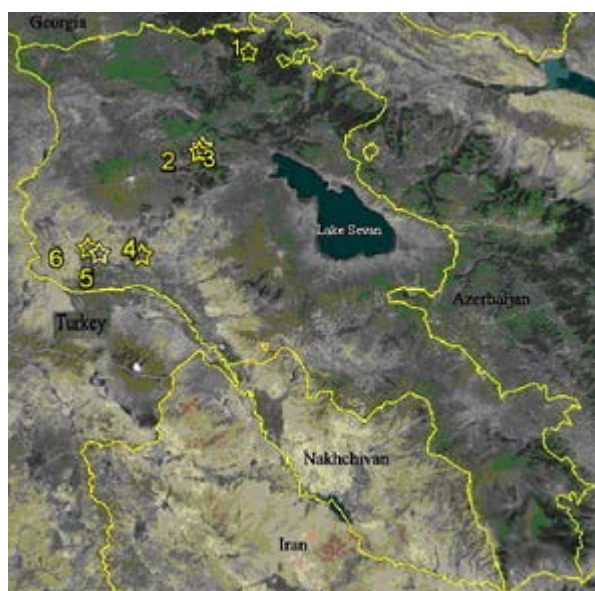


Fig. 1. Map of field survey areas. 1- Vicinities of Tsaghkashat village; 2 – Marmarik river gorge; 3 - south slope of Pambak Range, the gorge under Tezh Mountain; vicinities of: 4 - Echmiadzin town; 5 – Noravan village, 6 – Khanjyan village.

FIELD SURVEYS

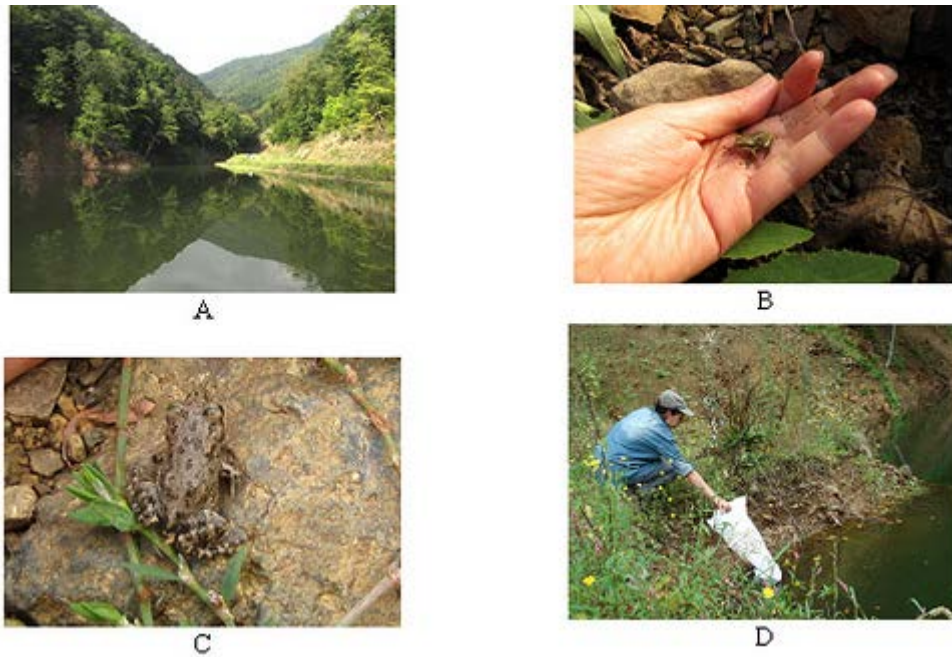


Fig. 2. Lori Province (vicinities of Tsaghkashat village) A- Artificial pond in Dukanadzor Gorge (habitat of *Bufo variabilis*, *Hyla orientalis shelkovnikovi*, *Pelophylax ridibundus*, *Rana macrocnemis*); B – underyearling of *Hyla orientalis shelkovnikovi*; C – underyearling of *Bufo variabilis*; D - Examination of the newt trap.

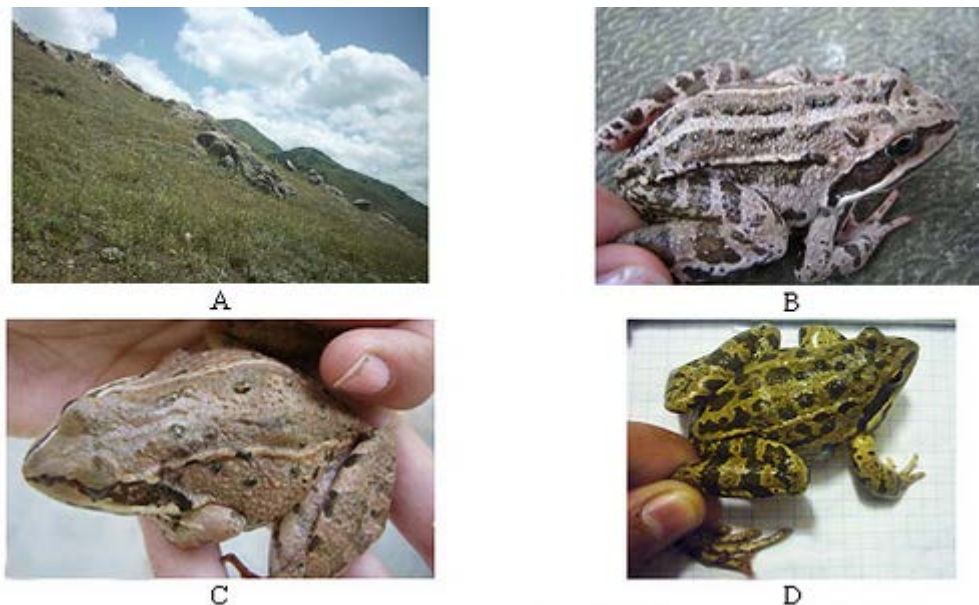


Fig. 3. Kotayk Province (vicinities of the Artavaz village). A- Slopes of Pambak Range (gorge under Tezh Mountain); B - *Rana macrocnemis* (phenotype *striata maculata*); C – *Rana macrocnemis* (phenotype *nonstriata*); D - *Rana macrocnemis* (phenotype *green maculata*).

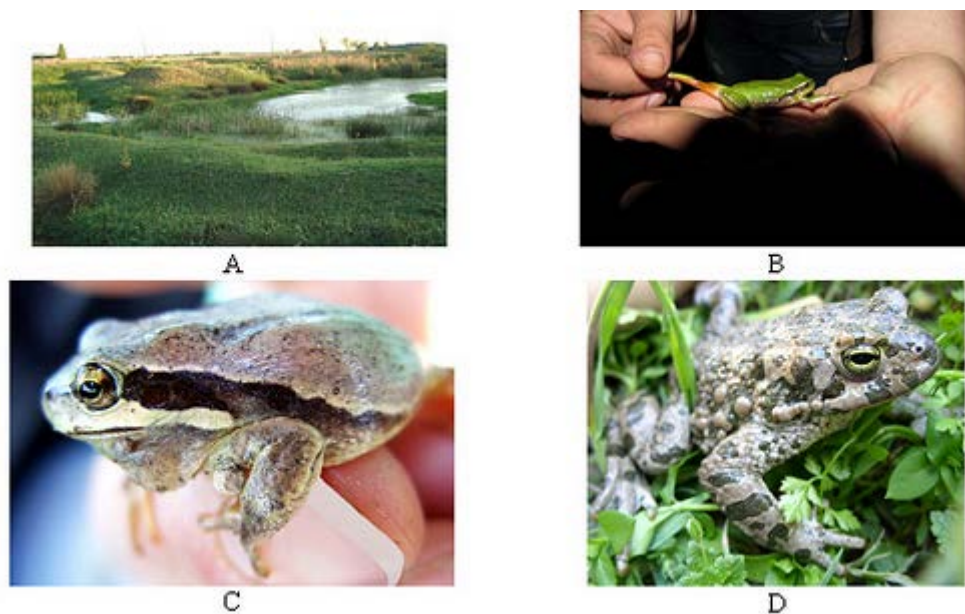


Fig. 4. Armavir Province. A – the pond near Echmiadzin (habitat of *Bufo variabilis*, *Hyla savignyi*, *Pelophylax ridibundus*); B – *Hyla savignyi* (green phenotype, vicinities of Echmiadzin tw.n.); C – *Hyla savignyi* (brown phenotype, vicinities of Khanjyan village); D – *Bufo variabilis* (vicinities of Khanjyan village).

THE PUBLIC AWARENESS PROGRAM



Fig. 5. In the Secondary schools of villages: A – Goravan, B – Surenavan, C – Haytagh, D – Lchashen.



Fig. 6. Poster (the title in Armenian is “Know and protect Armenian amphibians”).

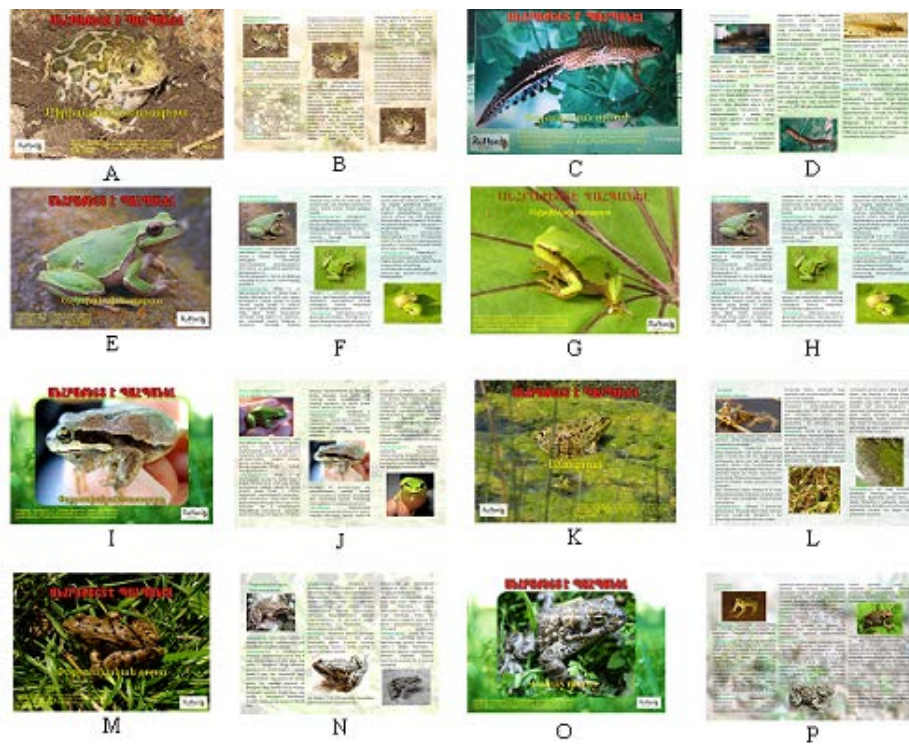


Fig. 7. The information flyers, presenting Armenian amphibian species (one species per flyer, cover and back pages, the title of the cover pages in Armenian is “Must be conserved”). A,B - *Pelobates syriacus*; C, D - *Ommatotriton ophryticus*; E - H - *Hyla orientalis shelkovnikovi*; I, G - *Hyla savignyi*; K, L - *Pelophylax ridibundus*, M, N - *Rana macrocnemis* - ; O, P - *Bufo variabilis*.



Fig. 8. Pocket Calendars