

Project Title

POPULATION STRUCTURE, THREATS AND PROTECTION OF ORSINII VIPER (*Vipera ursinii macrops*) ON BJELASICA MOUNTAIN (MONTENEGRO)

Country of planned activity

MONTENEGRO, BJELASICA MOUNTAIN, TERRITORY OF NATIONAL PARK "BIOGRADSKA GORA"

Name of project leader or organisation

DR JELKA CRNOBRNJA ISAILOVIĆ

Contact address

DEPARTMENT FOR EVOLUTIONARY BIOLOGY
INSTITUTE FOR BIOLOGICAL RESEARCH
29. NOVEMBRA 142
11060 BELGRADE
SERBIA
FR YUGOSLAVIA

Tel: 381 11 764 422/191

Fax: 381 11 761 433

Email: jelka@ibiss.bg.ac.yu olijela@eunet.yu

Number of project members

1. JELKA CRNOBRNJA-ISAILOVIĆ, Ph.D. – RESEARCH ASSISTANT AT INSTITUTE FOR BIOLOGICAL RESEARCH, BELGRADE & ASSISTANT PROFESSOR AT BIOLOGICAL FACULTY, UNIVERSITY OF BELGRADE
2. IVAN ALEKSIĆ, Ph.D. – RESEARCH ASSISTANT AT INSTITUTE FOR BIOLOGICAL RESEARCH, BELGRADE
3. LJILJANA TOMOVIĆ, M.Sc. – ASSISTANT AT BIOLOGICAL FACULTY, UNIVERSITY OF BELGRADE
4. RASTKO AJTIĆ – STUDENT AT BIOLOGICAL FACULTY, UNIVERSITY OF BELGRADE

Project Summary

Orsinii's viper is included in both CITES and IUCN lists as endangered species. To carry out long-term conservation actions we need data about population biology, habitat preferences and factors of threat for every taxon. These parameters are well known for some population groups of this species (*V. ursinii ursinii*, *V. ursini rakosiensis*, *V. ursinii moldavica*). Concerning *Vipera ursinii macrops*, subspecies distributed exclusively in the Balkans (Nilson & Andren, 1997), all data relevant for conservation plans are still on the level of anecdotal information. Distribution of this subspecies in the countries of former Yugoslavia is known as restricted on specific habitats of Dinaric mountain belt and of Šara and Korab mountains as well. These parts of The Balkans were exposed to extremely negative anthropogenic influences during past decade of XX century and the most of them are and will be unreachable from the same reason (Bosnia, Herzegovina, border line between Montenegro and Kosovo, Kosovo & Metochia, western part of Former Yugoslav Republic of Macedonia). Populations in Albania are also difficult for studying because of inhospitable terrain and difficult communication with local inhabitants.

One of the very few localities where population biology of *Vipera ursinii macrops* could be easily studied is Bjelasica Mountain in eastern Montenegro (Crnobrnja-Isailović, 2002). We choose one mountain pasture situated above the tree line at app. 1450 – 1600 m altitude and oriented, broadly speaking, toward south - southwest. Pasture could be reached by terrain

vehicle or by foot. The locality is suitable for camping, having few mountain springs and streams running toward Biogradsko lake. The several shepherd cabins are built there and during the summer families use to reside there. The study area has heterogeneous landscape structure, consisting of open grass, stones, juniper trees and bilberry bushes in various combinations. On the basis of experience from preliminary study made in July 2002 we are planning to perform three field trips in 2003: first in the late spring (start of vegetation season and start of Orsinii's viper reproductive season) in order to obtain data about reproductive biology, population size & dynamics and sex ratio; second in the summer when pregnant females are the most easily recognizable; third in early autumn for checking newborns and obtain additional demographic data.

Deleted: ..

The results obtained upon completing this project will serve as a foundation for developing long-term monitoring of *Vipera ursinii macrops* on several localities in Montenegro while simultaneously checking for the new ones in southern parts of Serbia. We hope that these first results will improve our chance to join some international conservation project focused on conservation status of *Vipera ursinii* in whole Europe.

The aims of project

1. Obtain detailed information about diurnal activity and microhabitat preference of this particular population
2. Obtain detailed information about population size, sex ratio, effective population size, duration of reproductive period, clutch size (optional), age structure (optional)
3. [To collect sample for studying population genetic structure](#)
4. Make foundation for further research on survivorship and age-dependent mortality by marking newborn vipers in the field
5. Find out characteristics of thermal biology
6. Detect potential predators
7. Find out factors of threat
8. Define conservation measures necessary for long-term survival of this population

Formatted: Bullets and Numbering

Formatted: Bullets and Numbering

Threatened species targeted by this project

(Information about conservation status is copied from Gasc *et al* 1997):

	HABITATS	BERN	CITES	IUCN
<i>Vipera ursinii</i>	II/IV	II	I	EN

Main problem or threat this project is intending to address

Main problem is the complete lack of studies necessary for making conservation plans for *Vipera ursinii macrops*. It is important to note that man and its activities are the main visible factor of threat there: This habitat of Orsinii's viper is used as a summer pasture for cattle and families of shepherds live there during vegetation period from end of May to September for making ecological dairy products. They generally recognize vipers as dangerous for them. Syntopic occurrence of *Vipera berus* and consequences of its bites additionally increase local public animosity to vipers. One of the main peripheral goals of this project is education of local inhabitants toward co-existence with vipers instead of trying to exterminate them. We already made first steps during this summer, teaching shepherds how to differentiate Orsinii's vipers from Adders (which have more dangerous poison) and to avoid occasional bites by appropriate behaviour and clothing. Also, we are trying to explain to local inhabitants that they already benefit from presence of vipers as indicators of unpolluted environment (*Vipera ursinii macrops*) and controllers of haemorrhagic fever vectors – the small mammals (*Vipera berus*).

Previous work in the area or on the same species

Basic information about Orsinii's viper in area of Central Balkans is summarized in following

Deleted: ¶

Page Break

¶

Formatted

references:

Crnobrnja-Isailović, J. 2002. Another population of *Vipera ursinii macrops* Mehely, 1911 in Montenegro(Central Balkans); (Squamata: Serpentes: Viperidae). *Herpetozoa* 14 (3/4), 137-141.

Nilson, G., Andren, C. 1997. *Vipera ursinii* (Bonaparte, 1835). In : Gasc, J-P., Cabela, A., Crnobrnja-Isailović, J., Dolmen, D., Grossenbacher, K., Haffner, P., Lescure, J., Martens, H., Martinez-Rica, J.P., Maurin, H., Oliveira, M.L., Sofianidou, T.S., Veith, M., Zuiderwijk, A. (Eds.). *Atlas of Amphibians and Reptiles in Europe*. Societas Europaea Herpetologica & Museum Nationall d' Histoire Naturelle (IEGB/SPN),Paris, 400-401.

Preliminary investigations of highland area within territory of National park “Biogradska gora” were made in 1997. First population study and first data concerning habitat preferences, thermal biology, spatial arrangement, daily activity and reproductive status of *Vipera ursinii macrops* are obtained this summer (our intentions are to present these results in international journal either in a form of paper or short communication). The quality of data is not perfect regarding fact that we were not equipped appropriately for camping. Our daily activity was 4-6 hours less than optimal because we spent these hours walking from rangers’ house (at 1094 m altitude) to working area (1450 –1600 m altitude) and *vice versa*. Lack of funds was the main reason that we organized only one field trip. Conclusion made from that experience is that with appropriate camping equipment and funds for petrol we can easily continue our research and include seasonal aspect in it. The most of the specimens captured and measured during this summer (18 of 21) were sexed, marked by ventral scale clipping, photographed (head dorsally and laterally from both sides, body pattern-dorsal view) and released at the place of capture. We plan to continue collecting data on the same way, taking all measurements on live animals and releasing them after appropriate marking.

The major activities planned within project, along with an approximate time-scale for these activities

1. First field trip: May 20th-30th 2003.
2. Data processing and analysis: June 1st-July 19th 2003.
3. Second field trip: July 20th-30th 2003.
4. Data processing and analysis: August 1st-September 1st 2003.
5. Third field trip: September 5th-15th 2003.
6. Data processing and analysis: September 17th-October 30th 2003.
7. Final report: November 1st-30th 2003.

Data collected:

Sex, reproductive status (for females), part of the day, weather condition ([cloudiness](#), air & ground temperature, wind speed and direction), altitude, microhabitat, exposition, behaviour, body size and shape, body weight, cloacal temperature, presence of scars, recapture status.

Deleted: cloudness

Dissemination of results at the end of the project

Results will be presented in the form of final report submitted to SEH Council at the end of 2003 year and/or in the form of scientific paper published in one of international herpetological or conservation/biodiversity oriented journals during 2004/05 year.

Heading	Details	Total cost	
Travel Expenses	1000km x3field trips =3000km		
- Petrol	300l x 0.75EUR	225.00 EUR	
- Oil	3l x 4.17 EUR	12.51EUR	237.51 EUR
Logistics			
- -tents	2x 200 EUR	400 EUR	400EUR
Accommodation, subsistence and allowances			
Person per day	10EUR x4 persons x 10 days x 3 field trips	1200 EUR	1200 EUR
Administration			
-Data analysis	50 EUR	50 EUR	
-Final report	25 EUR	25 EUR	75 EUR
Contingency		87.49 EUR	87.49 EUR
Other			
TOTAL COST:			2000 EUR

Note:

Scientific Project B1725 funded by Ministry of Science will provide vehicle, additional camping equipment and measuring equipment, Technology and Development of Republic of Serbia (project leader Dr Jelka Crnobrnja-Isailović) or/and personal equipment and vehicle will be used. Permissions will be obtained from Montenegro Institute for Nature Protection and authorities of National Park "Biogradska gora".

I the undersigned confirm that the information presented here is correct

Date -----