



Final Report

Jana Bedek

SCIENTIFIC ACTIVITIES

Staff member, Helena Bilandžija graduated with the thesis "Ecological and morphological characteristics and biogeography of freshwater subterranean sponge *Eunapius subterraneus* Sket & Velikonja 1985 (Spongillidae, Demospongia)" on 26th October 2005, following the results from the project.

Great cooperation was started with Vera Gamulin, PhD, (from Ruđer Bošković Institute in Zagreb) and the work on DNA analyses of the sponge. Results show that there exist unresolved taxonomical problem, and that the sponge should be placed into different genus.

Based on those and previous results the cooperation was started with Renata Manconi, PhD, the expert on sponge (from Dipartimento di Zoologia e Genetica Evoluzionistica, Università di Sassari, Italy) and the work on morphology analyses of the whole genus and different species.

We participated on the XVIIIth International Symposium of Biospeleology in Cluj-Napoca, Romania, from 10th till 15th July 2006 (<http://www.fi.cnr.it/sibios/18isb.htm>) with poster presentation "Recent research of cave sponge *Eunapius subterraneus* Sket & Velikonja 1985 (Spongillidae Demospongia)".

(Att1_poster_presentation)

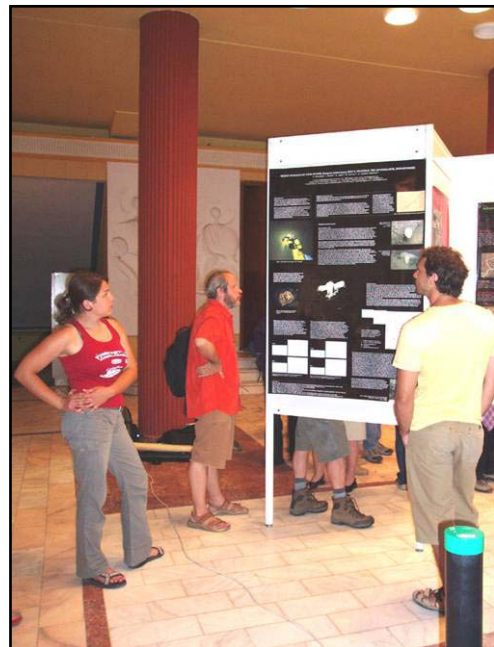


Photo by J. Bedek

We will participate on the 9th Croatian Biological Congress with international participation in Rovinj, September 23 - 29, 2006 (http://www.hbd1885.hr/hrvatski_bioloski_kongres.htm) giving the lecture "Croatian endemic stygobitic freshwater sponge does not belong to the genus *Eunapius*" and poster presentation "Morphological characteristics, biogeography and endangerment of ogulin cave sponge *Eunapius subterraneus* Sket & Velikonja 1985 (Spongillidae, Demospongia)".





FIELD RESEARCH ACTIVITIES

We have tried to find the sponge in known habitats but were unable to find it during the project. On 14th January 2006 we visited Đula Medvedica system but unfortunately we didn't find it again. This was the third attempt to find the sponge.



Photographing an Amphipod (Jana Bedek, Branko Jalžić and Helena Bilandžija), photo by M. Lukić



In the Đula Medvedica cave system, (Marko Lukić, Jana Bedek and Branko Jalžić), photo by H. Bilandžija

On 8th July 2006 we visited a cave in the Tounj Quarry, but the devastation in that cave is so significant that the passage to the part where the sponges are is completely blocked. The rest of the cave (the majority) is probably blocked. Although there is a great probability of finding the sponge populations in Đula-Medvedica cave system and in the cave in the Tounj Quarry, the fact that in these habitats populations weren't found is most disturbing. Namely, both speleological objects are listed as one of the ten most endangered karst phenomena in Croatia; the cave in the Tounj Quarry because of physical destruction and Đula-Medvedica because of continuous pollution, sewage and waste dumping.

Together with the Speleological Society Željezničar we received funding from the Croatian Electricity Company (Hrvatska Elektroprivreda d.d.) for the cave diving research in Ogulin area, which is a fundamental part of the sponge distribution research. Three more habitats of the sponge were found during that research.



Preparing for diving in Zagorska peć (Alan Kovačević, Goran Šafarek), photo by: B. Jalžić



Dive into Zagorska peć (Petra, Alan Kovačević, Vedran Jalžić), photo by: B. Jalžić





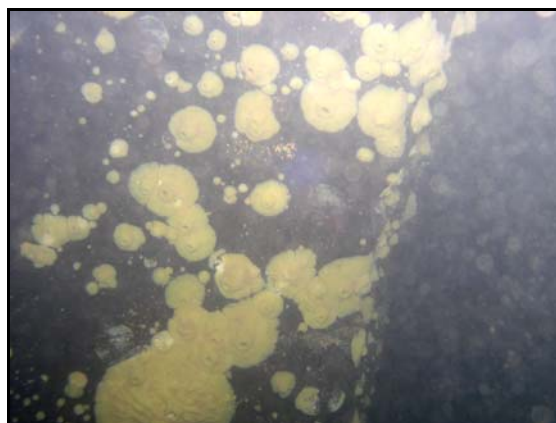
Branko Jalžić with local kid Denis Ivanac in Zagorska peć, photo by: Dražen Kunović



Diving into Zagorska Mrežnica, photo by: V. Jalžić



Cave salamander (*Proteus anguinus*) in Spring Rupečica with waste dumping, photo by: Ž. Ludvig



Population of ogulin cave sponge (*Eunapius subterraneus*) in Šmitovo jezero, photo by: B. Jalžić





CONSERVATION ACTIVITIES

in October 2005, the Croatian Biospeleological Society together with the Speleological Committee of the Croatian Mountaineering Association (<http://public.carnet.hr/speleo/hrv/komisija.html>) and Croatian Speleological Federation (<http://jagor.srce.hr/~mgarasic/hsd.htm>) were proposed for the protection of the cave in the Tounj Quarry (<http://public.carnet.hr/speleo/hrv/tounj.html>) as the Geomorphologic Monument. The cave in the Tounj Quarry is the third longest cave in Croatia (<http://public.carnet.hr/speleo/karta.html>) and the second largest on "List of ten most endangered karst phenomena in Croatia" (<http://public.carnet.hr/speleo/zastitaprirode/index.html>). State Institute for Nature Protection made an expert explanation for the protection (<http://www.dzpp.hr/Novosti-102005Tounj.htm>) based on our proposition and gave it to the Ministry of Culture. Unfortunately, the Quarry Tounj still works above the cave and the changes in it are great. The passage to the main channel is probably completely demolished. Until now our effort didn't pay-off, but we are still hoping that it will be possible to save the cave and its creatures.



The national daily newspaper "Vjesnik" covered this issue on 27th and 28th May 2006. The title of the article was "Private interest or protections of unique cave in the world" (Privatni interes ili zaštita u svijetu jedinstvene špilje) and ogulin cave sponge was mentioned as one of the main reasons for protection. (Att2_article)

Construction of artificial lake for the Hydroelectric Power Plant Lešće started on Dobra River, downstream from the town of Ogulin. Although subterranean flow of Dobra River is habitat for many endemic species including ogulin cave sponge, this particular part has not been explored at all. No biospeleological research was conducted for the ecological expert explanation (done in 1988). Since building of artificial lakes has mayor impact to the subterranean habitats and fauna together with NGO "Green Activities" (<http://www.zelena-akcija.hr/eng/index.html>) on 20th June 2006 we organized a small trip for media into one of the caves that is to be flooded (Dragina špilja). In this particular cave nursery roosts has long-fingered bat (*Myotis capaccini*), which is protected at state and European level. We have also sent an official complaint to the State Institute for Nature Protection and they are making expert explanation. This action was covered by Croatian National Television (HRT) with a film report in daily programme "Dobro jutro Hrvatska" on 5th July 2006, Radio 101 in programme "Pisele pise" on 26th June 2006 and several newspapers, such as the national daily newspaper "Večernji list", and the following web sites:



In front of Dragina špilja, photo by H. Cvitanović

http://www.adventure-sport.net/index.php?option=com_sport&task=article&id=1806§ionid=62&rid=3
<http://www.lupiga.com/vijesti/index.php?id=4236>
<http://www.kontra-punkt.info/modules.php?op=modload&name=News&file=article&sid=54381>
<http://www.alertonline.org/ajfork/print.php?id=1151482944&archive=>





Part of the 13 km long canyon of Dobra River which will be flooded, photo by J. Bedek



Constructions for artificial lake on Dobra River, photo by: J. Bedek

MEDIA COVERAGE

I was invited to the Croatian Radio international programme "Voice of Croatia" to present the project and all its aspects and problems. In April 2006 the interview was translated into English and Spanish and broadcasted all over the world.



Goran Šfarek, reporter for the National Geographic magazine writes an article for the Croatian edition about the project and ogulin cave sponge

In the meantime I was selected the Vice President of the Croatian Biospeleological Society, owing to the reward from The Rufford Maurice Laing Foundation, among other things.

