



# “Conservation of *Eunapius subterraneus*, the only subterranean freshwater sponge in the world II”



## Additional Report 2006-2008

for The Rufford Maurice Laing Foundation  
The Rufford Small Grant 2006



### Authors

Jana Bedek & Helena Bilandžija

Project leader

Jana Bedek



*Croatian Biospeleological Society*

October 2008





## PROJECT TEAM:

Due to the complexity of the project, a multidisciplinary team was gathered.

**Jana Bedek**, BSc (biology) – project leader; *co-ordination and full engagement in all activities*

**Helena Bilandžija**, BSc (biology) – project co-leader; *biospeleological fieldwork (including diving), laboratory work on sponge taxonomy; education*

**Branko Jalžić** – CNHM technician, speleology instructor, cave diver; *biospeleological fieldwork (including diving); education*

**Vedran Jalžić** – cave diver; *fieldwork, technical support; education*

**Petra Kovač Konrad** – cave diver; *fieldwork, technical support*

**Marko Lukić**, BSc (biology) – *fieldwork, technical support, education*

**Martina Pavlek**, BSc (biology) – *fieldwork, technical support, education*

**Hrvoje Cvitanović** – speleologist; *fieldwork, technical support*

**Robert Baković** – cave diver; *fieldwork, technical support*

**Kazimir Miculinić** – MSc (geology), cave diver; *fieldwork, technical support*

**Nikolina Vuglešić**, student at the Faculty of Food Technology and Biotechnology – *fieldwork, measuring physical and chemical water parameters for Graduation Thesis*

## COOPERATION

We were able to gather additional funds, mainly for research, from the following:

1. Department of Nature Protection, Ministry of Culture for the project: "Conservation of Ogulin Subterranean Waters through Ogulin Cave Sponge Protection", project leader Helena Bilandžija
2. "Gojak" Hydroelectric Power Plant, Croatian Electricity Company for the project: "Speleological and biospeleological research of the Izvor špilja Gojak Cave", project leader Branko Jalžić
3. Croatian Waters for the project: "Ecological Clean-up Actions – Rupećica, Zeleno jezero, Izvor Zagorske Mrežnice", project leader Vedran Jalžić

Different organizations supported our project:

- "Ecological Group" of Zagorje Regional School of the Ogulin First Primary School (Zagorje – Ogulin)
- "MI" Catholic Committee (Ogulin)
- "Sv. Juraj" Cultural and Artistic Society (Zagorje – Ogulin)
- Croatian Natural History Museum (Zagreb)
- Speleological Department of "Željezničar" Mountaineering Club (Zagreb)
- Speleological Department of "Velebit" Mountaineering Club (Zagreb)
- Estavela Speleological Society (Kastav)
- "Samobor" Speleological Club (Samobor)
- "Dinaric Alps" Society for karst phenomena exploration and filming (Zagreb)
- "3<sup>rd</sup> May" Club of Underwater Activities (Rijeka)
- Ruđer Bošković Institute (Zagreb)





## COMPREHENSIVE REPORT

### Fieldwork:

#### 1. Research of Single Population's Ecology (Zeleno jezero)

Although we proposed the Sinjac Spring population to be monitored, afterwards we changed our decision and opted for Zeleno jezero (Green Lake) population.

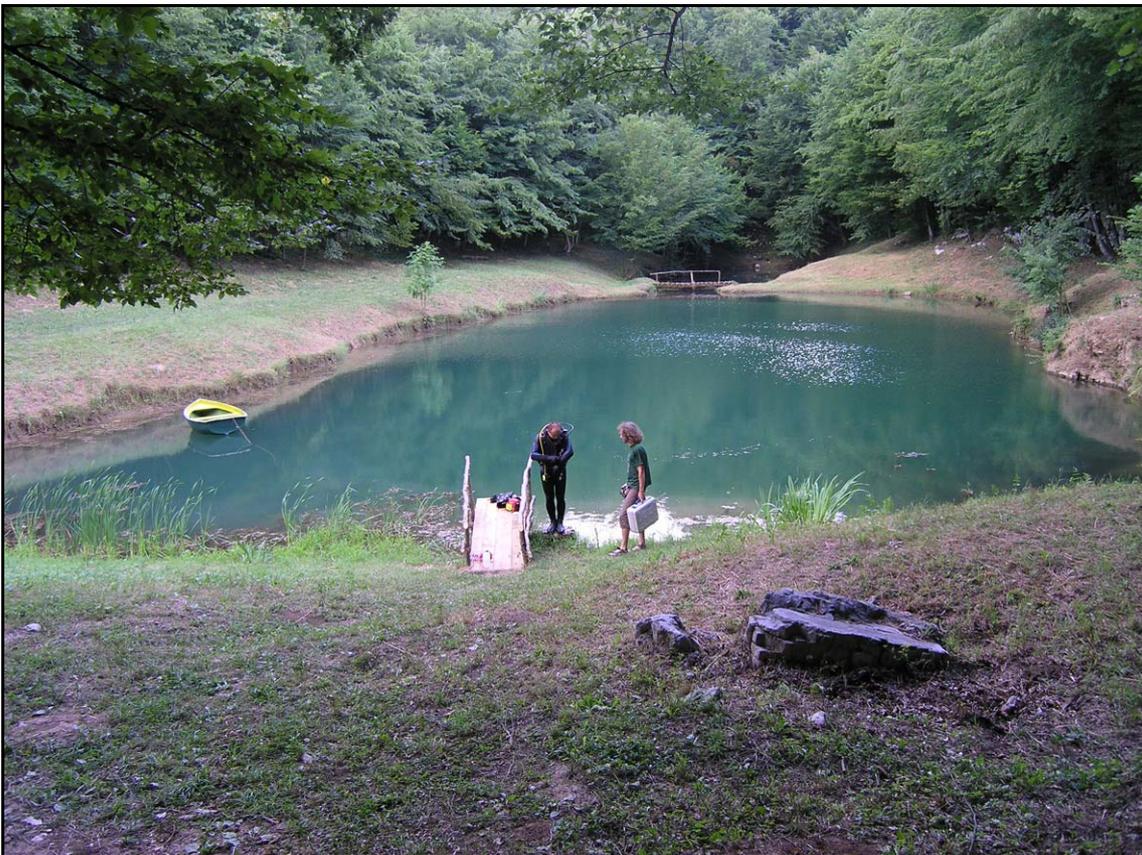


Photo 1 Green lake (Zeleno jezero). Photo by J. Bedek

We monitored the population's density and dynamics throughout the seasons in a year. We made two square frames (1x1 m) to measure sponge sizes. Although it was planned to photograph the frames every two months, we decided to do it once a month. That decision was made because of muddy water and growing algae on the measuring frame, which made visibility even more difficult. All collected data are being processed now, and the paper about them is forthcoming. We tried to put some tiles to see if the sponges would grow on them. We sampled the sponges to explore whether they are producing gemmules (asexual reproductive phase) during the whole year.





All other fauna was monitored and we made a complete list of the accompanying species to define potential predators.



Photo 2 The frame. Photo by V. Jalžić

During each visit we measured basic chemical and physical water parameters in the surrounding of sponges, at the lake surface and in three other sponge localities (RUPEČICA IZVOR, RUPEČICA PONOR and IZVOR ZAGORSKE MREŽNICE). The parameters measured were: dissolved oxygen, pH and electrolytical conductivity.



Photo 3 Measuring basic chemical and physical water parameters. Photo by M. Lukić



Photo 4 Measuring basic chemical and physical water parameters. Photo by M. Lukić

### Fieldtrip dates (15 days in total):

**2 December 2006**

**Team:** Branko Jalžić, Robert Baković, diving: Vedran Jalžić, Petra Kovač Konrad, Helena Bilandžija and Jana Bedek





**Task:** To inspect the sponge population  
To measure basic chemical and physical water parameters

**3 December 2006**

**Team:** Branko Jalžić, Helena Bilandžija, Jana Bedek, diving: Vedran Jalžić and Petra Kovač Konrad

**Task:** To insert the first frame  
To take photographs of the frame (it was too muddy, so only a partial photograph of the frame was taken)

**10 December 2006**

**Team:** Diving: Vedran Jalžić and Petra Kovač Konrad

**Task:** To take photographs of the frame

**6 January 2007**

**Team:** Helena Bilandžija, Jana Bedek, diving: Branko Jalžić, Vedran Jalžić and Petra Kovač Konrad

**Task:** To insert the second frame  
To take photographs of the frame  
To insert tiles for sponge growing in the lake  
To measure basic chemical and physical water parameters



Photo 5 Inserting of the frame. *Photo by J. Bedek*



Photo 6 Inserting of tiles. *Photo by J. Bedek*

**7 January 2007**

**Team:** Helena Bilandžija, Jana Bedek, Branko Jalžić, Petra Kovač Konrad, diving: Vedran Jalžić

**Task:** To take photographs of the frames

**3 February 2007**

**Team:** Helena Bilandžija, diving: Vedran Jalžić and Branko Jalžić

**Task:** To take photographs of the frames  
To measure basic chemical and physical water parameters





**3 March 2007**

**Team:** Branko Jalžić, Helena Bilandžija, Petra Kovač Konrad, Želimir Ludvig, diving: Vedran Jalžić  
**Task:** To take photographs of the frames  
To measure basic chemical and physical water parameters

**31 March 2007**

**Team:** Helena Bilandžija, Martina Pavlek, diving: Branko Jalžić  
**Task:** To take photographs of the frames  
To measure basic chemical and physical water parameters

**1 May 2007**

**Team:** Helena Bilandžija, diving: Vedran Jalžić and Branko Jalžić  
**Task:** To take photographs of the frames  
To measure basic chemical and physical water parameters

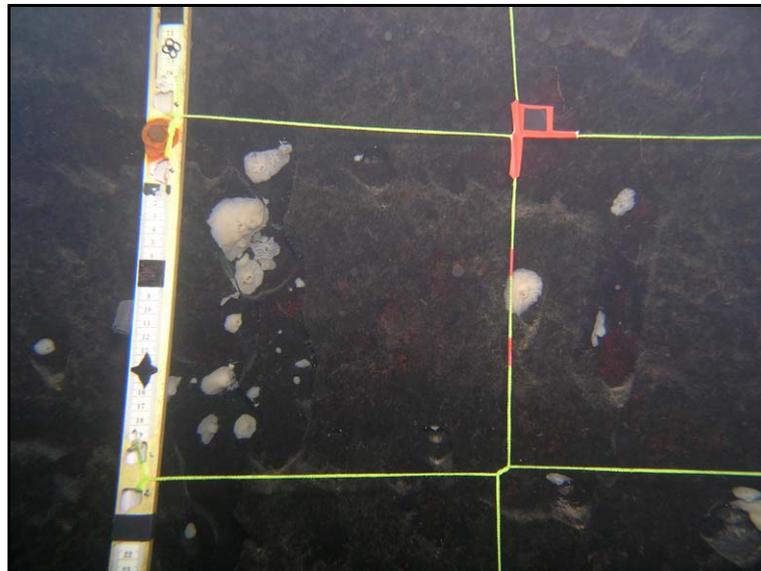


Photo 7 The frame with sponges. Photo by V. Jalžić

**3 June 2007**

**Team:** Helena Bilandžija, diving: Branko Jalžić  
**Task:** To take photographs of the frames  
To measure basic chemical and physical water parameters

**27 June 2007**

**Team:** Helena Bilandžija, Jana Bedek, Marko Lukić, diving: Branko Jalžić  
**Task:** To take photographs of the frames  
To measure basic chemical and physical water parameters

**25 July 2007**

**Team:** Helena Bilandžija, Martina Pavlek, Nikolina Raguž, diving: Branko Jalžić  
**Task:** To take photographs of the frames  
To measure basic chemical and physical water parameters





**27 August 2007**

**Team:** Helena Bilandžija, diving: Branko Jalžić  
**Task:** To take photographs of the frames  
To measure basic chemical and physical water parameters

**1 October 2007**

**Team:** Jana Bedek, Branko Jalžić, diving: Vedran Jalžić  
**Task:** To take photographs of the frames  
To measure basic chemical and physical water parameters

**29 October 2007**

**Team:** Jana Bedek, diving: Vedran Jalžić  
**Task:** To take photographs of the frames  
To measure basic chemical and physical water parameters



Photo 8 Sponges in Zeleno jezero (Green Lake). *Photo by V. Jalžić*





## 2. Research of *Eunapius*'s Distribution, Sources of Endangerment and Subterranean Biodiversity of the Area

Cave diving under extreme conditions is the only possible way to find and map new localities and conduct more thorough research. Every visited site was ecologically researched, and water and terrestrial animals were listed. All sources of endangerment and potential threats were recorded. We also collected more sponge samples for DNA analysis, which will be made by Helena Bilandžija, a member of the team. She works for the Ruđer Bošković Institute.



Photo 9 Cave diving in Izvor Zagorske Mrežnice Spring. Photo by V. Jalžić



Photo 10 The olm (*Proteus anguinus*). Photo by B. Jalžić



Photo 11 Illegal waste dumping at the entrance to Rupečica jama Pit. Photo by B. Jalžić

We had **20 fieldwork research days in total** throughout the year. Although it was planned to have 5 fieldwork days, we were able to obtain additional funds from "Gojak" Hydroelectric Power Plant and Department of Nature Protection, Ministry of Culture.





Research of each locality included:

*Sponges and other fauna sampling*

*Measuring of basic chemical and physical water parameters (temperature, dissolved oxygen, pH and electrolytical conductivity)*

*Microclimate measuring (temperature and air humidity)*

*Exploring sources of endangerment.*

**Fieldtrip dates:**

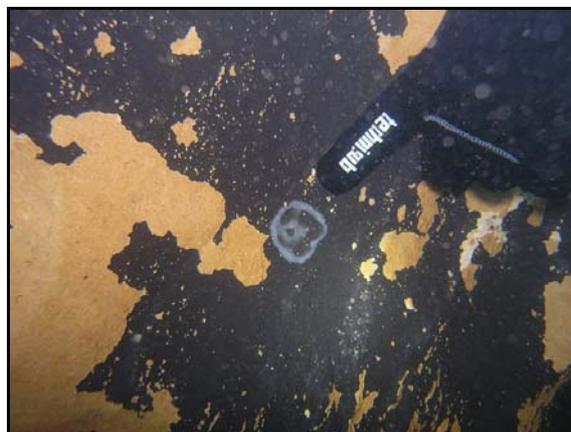
**7 January 2007**

**Team:** Branko Jalžić, Helena Bilandžija, Jana Bedek, diving: Vedran Jalžić and Petra Kovač Konrad

**Visited sites:** SINJAC



**Photo 12** Diving into Sinjac Spring. *Photo by J. Bedek*



**Photo 13** Sponge remains in Sinjac Spring. *Photo by P. Kovač Konrad*





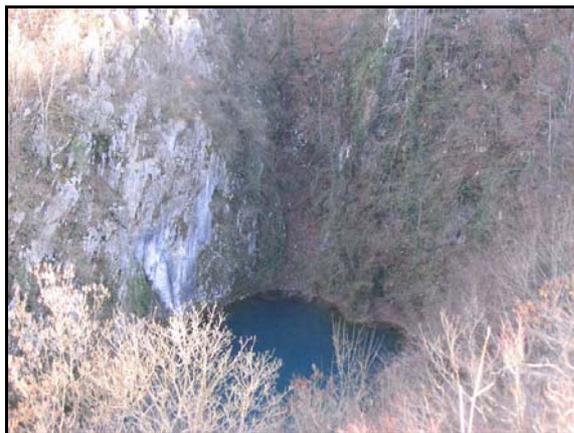
**4 February 2007**

**Team:** Helena Bilandžija, diving: Branko Jalžić and Vedran Jalžić

**Visited sites:** IZVOR SLUNJČICE



**Photo 14** Approach to Izvor Slunjčice Spring. *Photo by H. Bilandžija*



**Photo 15** Izvor Slunjčice Spring. *Photo by H. Bilandžija*



**Photo 16** Izvor Slunjčice Spring. *Photo by H. Bilandžija*





**3 March 2007**

**Team:** Helena Bilandžija, diving: Branko Jalžić, Želimir Ludvig,  
Vedran Jalžić and Petra Kovač Konrad

**Visited sites:** **SINJAC**  
**KLISURA JAMA**



Photo 17 Sinjac Spring. Photo by B. Jalžić



Photo 18 Diving into Sinjac Spring. Photo by  
H. Bilandžija



Photo 19 Diver in Sinjac Spring. Photo by B.  
Jalžić

**16 March 2007**

**Team:** Helena Bilandžija, Matija Harcet, Drago Perina, diving:  
Branko Jalžić





**Visited sites:** TOUNJČICA ŠPILJA  
RUDNICA ŠPILJA VI

**29 and 30 April 2007**

In cooperation with the project "Speleological and biospeleological research of the Izvor špilja Gojak Cave" conducted by the Croatian Biospeleological Society, funded by "Gojak" Hydroelectric Power Plant; project leader Branko Jalžić

**Team:** diving: Helena Bilandžija and Branko Jalžić and other participants of the project "Speleological and biospeleological research of the Izvor špilja Gojak Cave"

**Visited sites:** IZVOR ŠPILJA GOJAK



Photo 20 Diving into Izvor špilja Gojak Spring. Photo by H. Bilandžija

**9 June 2007**

**Team:** Branko Jalžić, Kazimir Miculinić, Nikolina Raguž  
**Visited sites:** PONOR SUŠIK

**13 July 2007**

**Team:** Branko Jalžić, Helena Bilandžija, Nikola Tvrtković, Marijana Vuković  
**Visited sites:** PONOR SUŠIK

**25 July 2007**





**Team:** Branko Jalžić, Helena Bilandžija, Martina Pavlek, Nikolina Raguž  
**Visited sites:** ZAGORSKA PEĆ

**27 August 2007**

**Team:** Helena Bilandžija, diving: Branko Jalžić  
**Visited sites:** PONOR RUPEĆICE



Photo 21 Sponge in Sušik Cave. Photo by B. Jalžić



Photo 22 Croatian dace (*Telestes polylepis*) in Ponor Rupećica Cave. Photo by B. Jalžić

**7 and 8 October 2007**

In cooperation with the Speleological Department of "Velebit" Mountaineering Club (SDV)

**Team:** CBSS: Branko Jalžić, Helena Bilandžija, Martina Pavlek, Ivica Jaklinović and Jana Bedek  
SDV: Damir Lacković, Slaven Boban, Marinko Malenica  
**Visited sites:** ŠPILJA U KAMENOLOMU TOUNJ  
PONOR LIČKE JASENICE  
ŠPILJA U KANJONU BISTRICE KOD KROMARA  
MIKAŠINOVIĆA ŠPILJA



Photo 23 The entrance in Špilja u kamenolomu Tounj Cave. Photo by J. Bedek





Photo 24 Crossing the lake in Špilja u kamenolomu Tounj Cave. Photo by J. Bedek



Photo 25 Crossing the lake in Špilja u kamenolomu Tounj Cave. Photo by J. Bedek



Photo 26 The entrance into Mikašinovića špilja Cave. Photo by M. Pavlek.



Photo 27 The sponge sample. Photo by M. Pavlek.

### 26 January to 2 February 2008

In cooperation with the project "Conservation of Ogulin Subterranean Waters through Ogulin Cave Sponge Protection" conducted by the Croatian Biospeleological Society, funded by the Department of Nature Protection, Ministry of Culture; project leader Helena Bilandžija

In cooperation with "Samobor" Speleological Club (SCS)

**Team:** CBSS: Branko Jalžić, Helena Bilandžija, Martina Pavlek, Marko Lukić, Vedran Jalžić, Kazimir Miculinić, Hrvoje Cvitanović, Robert Baković, Petra Kovač Konrad, Nikolina Vuglešić and Jana Bedek  
SCS: Nenad Buzjak, Alen Kirin, Marko Bašić, Domagoj Pleše and Domagoj Tomašković

**Visited sites:** ZAGORSKA PEĆ  
BISTRAC IZVOR  
BARE 1





**BARE 2**  
**BLATNO JEZERO**  
**JAMA KOZARICA**  
**DENISOVA JAMA**  
**TOUNJČICA ŠPILJA**  
**RUDNICA ŠPILJA VI**  
**MANDELAJA**  
**PERČEVIĆA ŠPILJA**  
**MORNARIČKA ŠPILJA**  
**GRGEČA ŠPILJA**  
**ORLJAČKA ŠPILJA**  
**BOBOVA ŠPILJICA**  
**BIBIČKA ŠPILJA**  
**IZVOR RIBNJAKA**  
**TAMNICA ŠPILJA**  
**IZVOR BISTRAC**  
**JAMA S LEŠINOM**  
**ŠPILJA POD MAČKOVOM DRAGOM**  
**IZVOR GLOBORNICE**  
**IZVOR BISTRAC 2**  
**MIKAŠINOVIĆA ŠPILJA**  
**CRNAČKA ŠPILJA**  
**MARKAROVA ŠPILJA**  
**CRNAČKA ŠPILJA**  
**PEĆINA**  
**VRUJAC**  
**PONOR SUŠIK**  
**VIDOVIĆA ŠPILJA**  
**VRNJIKA**  
**SUVAČA**  
**KOZARICA JAMA**  
**SMRDLJIVKA**  
**ŠPILJA U KANJONU BISTRACA KOD KROMARA**  
**ŠPILJA KOD RIMSKOG MOSTA**  
**SUSTAV MATEŠIĆEVA ŠPILJA-POPOVAČKA ŠPILJA-ŠPILJA**  
**POPOVAC**  
**ĐULA MEDEVEDICA**  
**SUSTAV**  
**IZVOR ŠPILJA GOJAK**  
**PERIODIČKI IZVOR U**  
**KRAKAR POLJU**  
**IZVOR ŽAGORSKE**  
**MREŽNICE**  
**IZVOR RUPEĆICE**  
**PONOR RUPEĆICE**  
**MACINKA ŠPILJA**  
**DAMIROVA JAMA**  
**JAMA POD HAUBOM**



Photo 28 Ogulin cave sponge. Photo by P. Kovač Konrad.



Photo 29 The entrance into Rudnica špilja VI Cave. Photo by J. Bedek.



Photo 30 Preparations for cave diving in Zagorska peč Cave. Photo by M. Pavlek.





Photo 31 Inside Mandelajaja Cave. Photo by B. Jalžić.



Photo 32 Diving in Mandelajaja Cave. Photo by K. Miculinić.



Photo 33 After cave diving in Rudnica špilja VI Cave. Photo by J. Bedek.



Photo 34 Entering Markarova špilja Cave. Photo by M. Pavlek.





Photo 35 Preparations for cave diving into Izvor Bistrac Spring. *Photo by H. Bilandžija.*



Photo 36 Inside Đula – Medvedica sustav Cave.  
*Photo by M. Pavlek.*



Photo 37 Cave millipede *Brachydesmus* sp. *Photo by M. Lukić*





Photo 38 Problems at Izvor u Krakar polju Spring (dead sheep). *Photo by J. Bedek.*



Photo 39 Minefield at the path to Izvor Vrnjike Spring. *Photo by D. Pleše.*





## Conservation and education activities:

### 1. Educational posters

We produced educational posters illustrating drinking water problems and the effects of garbage and other types of pollution on water quality ("Everything you dump in the karst will end up in the glass of water you drink eventually."). It was partially co-funded by the project "Conservation of Ogulin Subterranean Waters through of Ogulin Cave Sponge Protection" funded by the Department of Nature Protection, Ministry of Culture. 800 posters were printed and distributed during our educational events.



Photo 40 Educational posters illustrating drinking water problems and the effects of garbage and other types of pollution on water quality.





## 2. Waste Dumping Clean-up Actions for Zeleno jezero (Green Lake) and Ponor Rupećica submerged cave

**10, 11, 18 and 18 November 2007**

We organized the first Waste Dumping Clean-up Action for submerged speleological objects in Croatia. The action was carried out in cooperation with the project "Ecological Actions – Rupećica, Zeleno jezero, Izvor Zagorske Mrežnice" conducted by the Croatian Biospeleological Society, funded by Croatian Waters, project leader Vedran Jalžić. During the Clean-up Actions a short documentary movie was made, and presented on the Croatian National Television.

In cooperation with:

- "Ecological Group" of Zagorje Regional School of the Ogulin First Primary School (Zagorje – Ogulin)
- "MI" Catholic Committee (Ogulin)
- "Sv. Juraj" Cultural and Artistic Society (Zagorje – Ogulin)
- Local community (people from Ivanci village, Zagorje – Ogulin)
- Croatian Natural History Museum (Zagreb)
- Speleological Department of "Željezničar" Mountaineering Club (Zagreb)
- Speleological Department of "Velebit" Mountaineering Club (Zagreb)
- Estavela Speleological Society (Kastav)
- "Samobor" Speleological Club (Samobor)
- "Dinaric Alps" Society for karst phenomena exploration and filming (Zagreb)
- "3<sup>rd</sup> May" Club for Underwater Activities (Rijeka)

The Action was carried out by 20 speleologists and cave divers with the help of 15 pupils and 9 local people.



Photo 41 Divers in Rupećica Pit. *Photo by D. Lovretić.*



Photo 42 Pulling out waste from Rupećica Pit. *Photo by J. Bedek.*





Photo 43 Pulling out waste from Zeleno jezero (Green Lake). Photo by J. Bedek.



Photo 44 Pulling out waste from Zeleno jezero (Green Lake). Photo by H. Bilandžija.



Photo 45 "Ecological Group" of Zagorje Regional School of the Ogulin First Primary School as participants in the Action. Photo by J. Bedek.



Photo 46 A portion of collected waste. Photo by H. Bilandžija.



Photo 47 "Ecological Group" of Zagorje Regional School of the Ogulin First Primary School. Photo by J. Bedek.





The "Ecological Group" of Zagorje Regional School of the Ogulin First Primary School presented this Action in "Lijepa naša" Ecological Quiz of Primary and High Schools in 2007/2008. In the Karlovac County, the Quiz was held on 28th October 2008 and they won the **third** place.



Photo 48 One of the slides from the presentation of the "Ecological Group" of Zagorje Regional School of the Ogulin First Primary School in "Lijepa naša" Ecological Quiz.

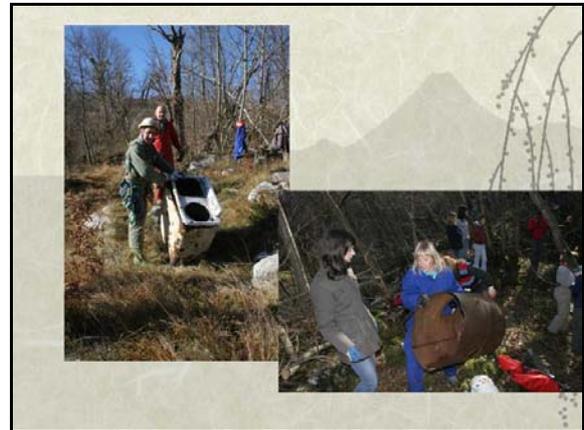


Photo 49 One of the slides from the presentation of the "Ecological Group" of Zagorje Regional School of the Ogulin First Primary School in "Lijepa naša" Ecological Quiz.





### 3. Lectures

**30 March 2007**

- Type: Open lecture  
Organizers: "MI" Catholic Committee from Ogulin.  
Place: Ogulin  
Lecturers: **Branko Jalžić**, Croatian Biospeleological Society  
**Dalibor Paar**, Speleological Department of "Velebit" Mountaineering Club (Zagreb)  
Visitors: Approximately 60 visitors from a wider area of the Town of Ogulin, including the representatives of local authorities of the Town of Ogulin, biology teachers, members of the Croatian Mountain Rescue Service, etc.



Photo 50 Open lecture in the Town of Ogulin. Photo by H. Bilandžija.

**4 and 13 April 2007**

- Type: Lecture at speleological schools in the Speleological Department of "Velebit" Mountaineering Club and the Speleological Department of "Željezničar" Mountaineering Club  
Organizers: Speleological Department of "Velebit" Mountaineering Club  
Speleological Department of "Željezničar" Mountaineering Club  
Place: Zagreb  
Lecturers: **Marko Lukić**, Croatian Biospeleological Society  
**Martina Pavlek**, Croatian Biospeleological Society  
Visitors: Around 25 attendees of each school, around 50 visitors in total





Photo 51 One of the educational slides.

### 9 and 30 May 2007

- Type: Role play workshop  
Organizers: "Vladimir Nazor" Library  
Place: Zagreb  
Lecturers: **Jana Bedek**, Croatian Biospeleological Society  
**Marko Lukić**, Croatian Biospeleological Society  
Visitors: Each time there was one class of approximately 30 pupils from the 4th grade of Primary School.



Photo 52 Lecture during role play workshop. Photo by M. Lukić.





Photo 53 Library decoration. Photo by J. Bedek.



Photo 54 Library decoration. Photo by J. Bedek.



Photo 55 Accompanying text. Photo by J. Bedek.



Photo 56 Playing. Photo by J. Bedek.





**30 November to 2 December 2007**

Type: Lecture during The Eight Croatian Speleological Meeting, Kastav 2007  
Organizers: Estavela Speleological Society (Kastav)  
Place: Kastav  
Lecturer: **Vedran Jalžić**, Croatian Biospeleological Society  
Visitors: Approximately 100 visitors from Croatia, mainly speleologists.

**29 February 2008**

Type: Lecture at Zagorje Regional School of the Ogulin First Primary School  
Organizers: Croatian Biospeleological Society  
Place: Zagorje - Ogulin  
Lecturers: **Jana Bedek**, Croatian Biospeleological Society  
**Vedran Jalžić**, Croatian Biospeleological Society  
**Marina Kipson**, Croatian Biospeleological Society  
Visitors: Approximately 90 pupils from Zagorje Regional School of the Ogulin First Primary School



Photo 57 Lecture at Zagorje Regional School of the Ogulin First Primary School. Photo by J. Bedek.

**29 February 2008**

Type: Open lecture  
Organizers: "MI" Catholic Committee from Ogulin.  
Place: Ogulin  
Lecturers: **Jana Bedek**, Croatian Biospeleological Society  
**Vedran Jalžić**, Croatian Biospeleological Society  
**Marina Kipson**, Croatian Biospeleological Society





Visitors: Approximately 30 visitors from a wider area of the Town of Ogulin, including the representatives of local authorities of the town of Ogulin, biology teachers, members of the Croatian Mountain Rescue Service etc.



Photo 58 Open lecture in the Town of Ogulin. Photo by H. Bilandžija.





## Media report:

### DAILY NEWSPAPERS:



, national newspapers

27-28 May 2007

Gordana Petrovčić: Private interest or protection concerning the unique cave in the world – Quarry Tounj, Quarrying destroys natural resources (Privatni interes ili zaštita u svijetu jedinstvene špilje – Kamenolom Tounj, Prirodno bogatstvo uništava eksploatacija kamena)

27 December 2007

Gordana Petrovčić: Appeal to save the the Olm's homeland – unique and rich Ogulin underground is endangered by waste and sewage dumping (Apel za spas "domovine" čovječje ribice – Smeće i otpadne vode ugrožavaju faunom iznimno bogato ogulinsko podzemlje)

1 March 2008

Zvonko Ranogajec: Elephant tooth in the Zagorska Mrežnica River Spring – A sensational discovery. Vedran Jalžić and Marina Kipson found valuable objects (U izvoru Zagorske Mrežnice zubi slona – Senzacionalno otkriće Vedran Jalžić i Marina Kipson pronašli vrijedne predmete)

### WEEKLY NEWSPAPERS:

 , local weekly newspaper

1 March 2008

Zvonko Ranogajec: Let's help the nature and our neighbours – Open lecture about Ogulin underground research and fauna (Pomozimo prirodi i bližnjemu – Tribina o istraživanjima i fauni ogulinskog podzemlja)

### MAGAZINES:



, scientific journal

March 2007

Helena Bilandžija, Jana Bedek, Branko Jalžić & Sanja Gottstein: The morphological variability, distribution patterns and endangerment of the Ogulin cave sponge *Eunapius subterraneus* Sket & Velikonja, 1984 (Demospongiae, Spongillidae)





[http://hrcak.srce.hr/index.php?show=clanak&id\\_clanak\\_jezik=20745](http://hrcak.srce.hr/index.php?show=clanak&id_clanak_jezik=20745)



, speleological journal, No. 54

October 2007:

Vedran Jalžić, Helena Bilandžija, Branko Jalžić: Cave diving and biospeleological research of the Town of Ogulin wider area (Speleoronilačka i biospeleološka istraživanja šireg područja grada Ogulina).



, collection of papers from The Eight Croatian Speleological Meeting, Kastav 2007

November 2007

Jana Bedek, Helena Bilandžija: Ecological Clean-up Actions: Rupećica, Zeleno jezero, Izvor Zagorske Mrežnice (Eko akcija: Čišćenje Rupećice, Zelenog jezera, Izvora Zagorske Mrežnice)



, speleological journal, No. 9

December 2007

Jana Bedek, Helena Bilandžija: Ogulin submerged underground clean-up (Čišćenje ogulinskog potopljenog podzemlja)



, local scientific collection of papers

September 2008

Jana Bedek, Helena Bilandžija, Branko Jalžić: Ogulin cave sponge *Eunapius subterraneus* Sket & Velikonja, its Distribution, Species and Habitat Ecology (Ogulinska špiljska spužvica *Eunapius subterraneus* Sket & Velikonja, 1984, rasprostranjenost i ekologija vrste i staništa)





**BROADCASTING:**



, Daily show on the Croatian National Television

29 November 2007

Tomislav Rataj, Sve Z, Ekstrem produkcija: Five minute feature about Waste Dumping Clean-up Actions for Zeleno jezero (Green Lake) and Ponor Rupećica submerged cave



, local Radio

3 February 2008

Live interview with Jana Bedek.

**WEB NEWS:**



9 November 2007

Biospeleologists are cleaning Ogulin sinkholes and pits (Biospeleolozi čiste ogulinske ponore i jame)

(<http://www.r-1.hr/view.asp?idp=6649&c=4>)



12 November 2007

Ecological Clean-up Actions in Zagorje (Ekološke akcije čišćenja u Zagorju)





([http://www.ogulin.hr/index.php?subaction=showfull&id=1194870646&archive=&start\\_from=&ucat=&](http://www.ogulin.hr/index.php?subaction=showfull&id=1194870646&archive=&start_from=&ucat=&))



13 November 2007

Weekend Ecological Clean-up Actions (Vikendima ekološke akcije)

([http://www.mojportal.hr/istra\\_i\\_primorje/mozaik/vikendima\\_ekoloske\\_akcije](http://www.mojportal.hr/istra_i_primorje/mozaik/vikendima_ekoloske_akcije))



1 December 2007

Ecological Clean-up Actions for Rupećica, Zeleno jezero, Izvor Zagorske Mrežnice (Eko akcija: RUPEĆICE, ZELENOG JEZERA, IZVORA ZAGORSKE MREŽNICE)

([http://www.akvarij.net/index.php?ltemid=158&id=448&option=com\\_content&task=view](http://www.akvarij.net/index.php?ltemid=158&id=448&option=com_content&task=view))



February 2008

"MI" Catholic Committee - Ogulin invites you to the open lecture "News from Ogulin underground" (Hrvatski katolički zbor «MI» - Ogulin poziva vas na tribinu "Novosti iz ogulinskog podzemlja")

(<http://gradiznadgrada.org/content/view/35/2/>)



INFORMATIVNA KATOLIČKA AGENCIJA  
CATHOLIC PRESS AGENCY

29 February 2008





Open lecture about ecology and Ogulin underground organised by "MI" Catholic Committee (Tribina HKZ MI o ekologiji i ogulinskom podzemlju)  
(<http://www.ika.hr/index.php?prikaz=vijest&ID=100864>)

