

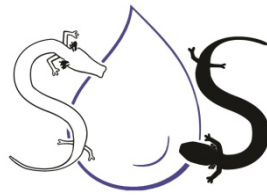
**Upon the 260th anniversary
of the first scientific description of *Proteus anguinus* [Lacerta caeca]
by Joannes Antonius Scopoli,**

**in partnership of
Speleovivarium Erwin Pichl, Adriatic Speleological Society,
Trieste Natural History Museum, Municipality of Trieste, and Tular Cave Laboratory,**

we are cordially inviting you to the

**4th International meeting SOS *Proteus*:
CONSERVATION OF *PROTEUS* AND ITS HABITAT
FACING CLIMATE CHANGE CHALLENGES**

*Research and conservation of *Proteus* and protection of karst water resources
in climate change perspective*



**May 21 – 22, 2022,
at the
Trieste Natural History Museum,
Trieste, Italy,**

*under the patronage of
European Commission, Italian Ministry for Ecological Transition,
Friuli Venezia Giulia Region, Elettra Sincrotrone Trieste, Italian Speleological Society,
and Regional Speleological Federation FVG*

Supported by

Fondazione
FONDAZIONE CRTRIESTE

*In collaboration with
Illy Caffè and LifeWatch ERIC*





DETAILED PROGRAMME

(LIVE STREAMING @ <https://www.youtube.com/watch?v=kn9XZMfbXzU>)

Saturday, 21st May, 2020

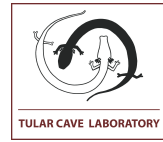
Morning sessions		
9.00 – 9.45	Registration of participants	
9.50 – 10.00	Opening of meeting and welcome speeches	Municipality of Trieste Trieste Natural History Museum Italian Speleological Society Regional Speleological Federation FVG Tular Cave Laboratory
HABITAT ASSESSMENT		
<i>Chair: Peter Trontelj</i>		
10.00 – 10.20	Hydrogeology of the Classical Karst Region	<u>Luca Zini</u> <i>Department of Mathematics and Geosciences. University of Trieste, IT</i>
10.20 – 10.40	Assessment of environmental risks to groundwater ecosystems for chemical substances	<u>Boris Kolar</u> <i>National Laboratory of Health, Environment and Food, SI</i>
10.40 – 11.00	Characterization and delineation of the Jelševniščica and Otovski Breg catchment areas - actions to identify and mitigate anthropogenic pressure on black and white proteus	Metka Petrič ¹ , Mitja Prelovšek ¹ , Marina Pintar ² , Nina Mali ³ , Rozalija Cvejič ² , Miha Curk ² & Janko Urbanc ³ <i>¹ Research Centre of the Slovenian Academy of Sciences and Arts, Karst Research Institute, SI; ² Department of Agronomy, Biotechnical Faculty, University of Ljubljana, SI; ³ Geological Survey of Slovenia, SI</i>
11.00 – 11.20	Chytrid fungi infection in olm: screening for pathogens in wild populations and olm's susceptibility to infection	<u>Rok Kostanjšek</u> ¹ , Mojca Vek ¹ , Martina Turk ¹ , Ion Gutiérrez-Aguirre ² , Nina Gunde-Cimerman ¹ , Zhimin Li ³ , Elin Verbrugghe ³ , Maja Lukač ⁴ , Frank Pasmans ³ , Ivan Cizelj ⁵ & An Martel ³ <i>¹ Department of Biology, Biotechnical Faculty, University of Ljubljana, SI; ² National Institute of Biology, SI; ³ Wildlife Health Ghent, Department of Pathology, Bacteriology and Avian Diseases, Faculty of Veterinary Medicine, Ghent University, BE; ⁴ Department of Poultry Diseases With Clinic, Faculty of Veterinary Medicine, University of Zagreb, HR; ⁵ Zagreb Zoo, HR</i>
11.20 – 11.40	Conservation activities managed inside the Riserva Naturale Regionale Laghi Di Doberdò e Pietrarossa, Italy: historical mission, present challenges and future hopes - Pavees Società Cooperativa	<u>Gerardo G. Sarno</u> <i>Regional Nature Reserve of Doberdò and Pietrarossa lakes, IT</i>





11.40 – 12.00	Coffee break	
Key-note session: CLIMATE CHANGE CHALLENGES <i>Chair: Raoul Manenti</i>		
12.00 – 12.30	KEY-NOTE LECTURE Climate change or global warming?	Renato R. Colucci <i>Institute of Polar Sciences, National Research Council, IT</i>
12.30 – 12.50	Climatic pollution and underground life: threat or evolution?	Nicola Bressi <i>Trieste Natural History Museum, IT</i>
13.00 – 14.40	Lunch break	
Afternoon sessions		
EVOLUTION OF PROTEUS <i>Chair: Rok Kostanjšek</i>		
14.40 – 15.00	The evolutionary role of the genome size of <i>Proteus</i>	Ettore Olmo, Adriana Canapa, Federica Carducci & Maria A. Biscotti <i>Department of Life and Environmental Sciences, Marche Polytechnic University, IT</i>
15.00 – 15.20	Multiple independent transitions to cave life and high diversity in the olm	Hans Recknagel, Valerija Zakšek & Peter Trontelj <i>SubBio lab, Biotechnical Faculty, University of Ljubljana, SI</i>
CHALLENGES IN SCIENCE OUTREACH <i>Chair: Anne Ipsen</i>		
15.20 – 15.40	A dramatic tale of scientific fraud and political propaganda with <i>Proteus</i> in the main role and a Slovenian biologist as tragic hero, along with some new data	Peter Trontelj, Rok Kostanjšek & Hans Recknagel <i>Department of Biology, Biotechnical Faculty, University of Ljubljana, SI</i>
15.40 – 16.00	From science to clickbait	Gergely Balázs¹, Brian Lewarne² & Gábor Herczeg¹ <i>¹ Eötvös Loránd University, HU; ² Devon Karst Research Society, UK</i>
16.00 – 16.20	Black proteus information centre in Jelševnik, Slovenia	Nina Jankovič & Andrej Hudoklin <i>Institute of the Republic of Slovenia for Nature Conservation, SI</i>
16.20 – 16.40	Neotenus dark dwellers Lygophilia	Robertina Šebjanič <i>Independent artist, SI</i>
16.40 – 16.50	Images of proteus (video film, 5 min)	Ciril Mlinar <i>Water Cycle Institute, SI</i>
16.50 – 17.00	Coffee break	
17.00 – 18.00	POSTERS <i>Chair: Lucia Mancini</i>	
	Predator recognition is not a major problem in <i>Proteus anguinus</i>	Enrico Lunghi¹, Andrea Melotto², Olivier Guillaume³, Gentile Francesco Ficetola² & Raoul Manenti^{2,4} <i>¹ Ruđer Bošković Institute, HR; ² Department of Environmental Science and Policy, University of Milano, IT; ³ Moulis</i>





		<i>Subterranean Laboratory, CNRS, FR;</i> ⁴ <i>Laboratory of Subterranean Biology "Enrico Pezzoli", Parco Regionale del Monte Barro, IT</i>
	New developments in <i>Proteus</i> eDNA quantification in standing and running water	<u>Špela Gorički</u> ¹ , Gregor Aljančič ² , Blaž Kogovšek ³ , Uršula Prosenč Zmrzljak ⁴ & Rok Košir ⁴ ¹ <i>Scriptorium biologorum – Biološka pisarna, SI;</i> ² <i>Institute Tular Cave Laboratory, SI;</i> ³ <i>Research Centre of the Slovenian Academy of Sciences and Arts, Karst Research Institute, SI;</i> ⁴ <i>BIA Separations CRO, Labena d.o.o, SI</i>
	Experience of introducing the olm to the Caves of Oliero, Venetian Prealps, Italy	<u>Marco Lazzarotto</u> <i>Oliero grotte Valbrenta Ivanxteam, IT</i>
	Speleovivarium Erwin Pichl (1990–2022): conservation, disclosure, change	<u>Edgardo Mauri</u> <i>Speleovivarium Erwin Pichl, Adriatic Speleological Society, IT</i>
	Neotenus dark dwellers Lygophilia	<u>Robertina Šebjanič</u> <i>Independent artist, SI</i>
	Monography "Proteus" (Association Hyla, Zagreb, 2019: 250 p.)	<u>Katarina Koller Šarič</u> ¹ , Dušan Jelič ² , Branko Jalžič ³ & Petra Kovač Konrad ¹ ¹ <i>Association Hyla, HR;</i> ² <i>Croatian Institute for Biodiversity, HR;</i> ³ <i>Croatian Biospeleological Society, HR</i>

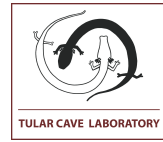
Sunday, 22nd May, 2022, World Biodiversity Day

RESEARCH HIGHLIGHTS

Chair: Nicola Bressi

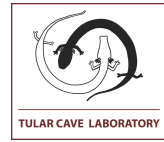
9.00 – 9.20	A virtual tour at the Elettra, a powerful investigation tool in Trieste	Lucia Mancini <i>Slovenian National Building and Civil Engineering Institute, SI</i>
9.20 – 9.40	3D exploring of <i>Proteus anguinus</i> by X-ray computed microtomography	<u>Markéta Tesařová</u> ¹ , Lucia Mancini ² , Edgardo Mauri ³ , Gregor Aljančič ⁴ , Magdalena Năpăruș Aljančič ^{4,5} , Rok Kostanjšek ⁶ , Lilijana Bizjak Mali ⁶ , Tomáš Zikmund ¹ , Markéta Kaucká ⁷ , Federica Papi ³ , Jana Goyens ⁸ , Anass Bouchnita ⁹ , Andreas Hellander ¹⁰ , Igor Adameyko ¹¹ & Jozef Kaiser ¹ ¹ <i>Central European Institute of Technology, CZ;</i> ² <i>Elettra-Sincrotrone Trieste S.C.p.A., IT;</i> ³ <i>Speleovivarium Erwin Pichl, Adriatic Speleological Society, IT;</i> ⁴ <i>Institute Tular Cave Laboratory, SI;</i> ⁵ <i>Research Centre of the Slovenian Academy of Sciences and Arts: Karst Research Institute, SI</i> ⁶ <i>Department of Biology, Biotechnical Faculty, University of Ljubljana, SI;</i> ⁷ <i>Max Planck Institute for Evolutionary Biology, DE;</i> ⁸ <i>Laboratory of Functional Morphology, University of Antwerp, BE;</i> ⁹ <i>Department of Information Technology, Uppsala University, SE;</i> ¹⁰ <i>Department of Integrative Biology, University of Texas at Austin, TX, US;</i> ¹¹ <i>Medical University of Vienna, AT</i>
9.40 – 10.00	Does age matter? Examining olms from 16-80 year of age.	<u>Susanne Holtze</u> ¹ , Olivier Guillaume ² , Anne Ipsen ³ & Thomas B. Hildebrandt ¹ ¹ <i>Leibniz Institute for Zoo and Wildlife Research, DE;</i> ² <i>Moulis Subterranean Laboratory, National Center for Scientific Research, FR;</i> ³ <i>Gesellschaft für Freilandökologie und Naturschutzplanung</i>





10.00– 10.20	Linking different approaches for sex identification of <i>Proteus anguinus</i>	<u>Tajda Gredar</u> , Lilijana Bizjak Mali & Rok Kostanjšek Department of Biology, Biotechnical Faculty, University of Ljubljana, SI
10.20 – 10.30	Coffee break	
FIELD RESEARCH <i>Chair: Gregor Aljančič</i>		
10.30 – 10.50	Behavioral observations of the olm (<i>Proteus anguinus</i>) in a karst spring	<u>Ester Premate</u> , Žiga Fišer, Žan Kuralt, Anja Pekolj, Tjaša Trajbarič, Eva Milavc, Živa Hanc & Rok Kostanjšek Department of Biology, Biotechnical Faculty, University of Ljubljana, SI
10.50 – 11.10	Activity of the olm (<i>Proteus anguinus</i>) in Italian spring habitats, close to A4 highway: conservation implications	<u>Raoul Manenti</u> ¹ , Benedetta Barzaghi ¹ , Edgardo Mauri ² , Marco Restaino ³ , Veronica Zampieri, Bianca Lombardi & Gentile Francesco Ficetola ¹ ¹ Department of Environmental Science and Policy, University of Milano, IT; ² Speleovivarium Erwin Pichl, IT; ³ Adriatic Speleological Society, IT
11.10 – 11.30	Preliminary study in cephalic morphology of <i>Proteus anguinus</i> between individuals found outside caves vs. those found deep in caves	<u>Benedetta Barzaghi</u> ^{1,2} , Gentile Francesco Ficetola ¹ , Edgardo Mauri ^{3,4} , Marco Restaino ³ , Bianca Lombardi ¹ & Raoul Manenti ^{1,2} ¹ Department of Environmental Science and Policy, University of Milano, IT; ² Laboratory of Subterranean Biology "Enrico Pezzoli", Parco Regionale del Monte Barro, IT; ³ Adriatic Speleological Society, IT; ⁴ Speleovivarium Erwin Pichl, IT
11.30 – 11.40	Coffee break	
Round Table Session: e-SCIENCE AND OPEN SCIENCE TO ADDRESS CHALLENGES IN CONSERVATION OF <i>PROTEUS</i> <i>Chair: Magdalena Aljančič</i>		
11.40 – 11.55	Round table key-note: Invasive species - a key issue in biodiversity	<u>Alberto Basset</u> ^{1,2} ¹ Department of Biological and Environmental Sciences and Technologies, University of Salento, IT; ² LifeWatch ERIC, IT
11.55 – 12.10	Building virtual laboratories to monitor <i>Proteus</i> and its karst groundwater habitat	<u>Gregor Aljančič</u> ^{1,2} , Magdalena Aljančič ^{3,2} , Tanja Milotic ^{4,5} , Octavian Machidon ⁶ , Alina Machidon ⁶ , Jim Casaer ^{4,5} , Tanja Pipan ^{3,2} ¹ Institute Tular Cave Laboratory, SI; ² LifeWatch Slovenia, SI ³ Research Centre of the Slovenian Academy of Sciences and Arts, Karst Research Institute, SI; ⁴ Research Institute for Nature and Forest, Open Science Lab for Biodiversity, BE ⁵ LifeWatch Belgium, BE; ⁶ University of Ljubljana, Faculty of Computer and Information Science, SI
12.10 – 12.40	Round Table Discussion	





Social and cultural programme

Friday, 20th May

If you are already in Trieste on **Friday evening**, the meeting point is at the Natural History Museum of Trieste (Via Tominz 4, Trieste) at **18.15**.

From there, a bus transfer is organised to take us to the Trieste Karst tourist farm "Milič Zagrski" (Località Sagrado 2, Sgonico, Trieste; <https://www.miliczagrski.com/>), returning back to the Museum before 23.00.

Saturday, 21st May

Saturday evening social dinner at the "Pizzeria Da Pino" at 19.30.

It is a pizzeria, but also a restaurant in the centre of town (www.dapino.it/2020/08/26/da-pino-trieste/). Those who confirm their presence at the secretariat, will receive a coupon with a special discount of 12 €, reserved only for the participants of SOS *Proteus*. Then you can order and pay a meal of your choice.

After the dinner, you will have the opportunity to visit the **Speleovivarium Erwin Pichl** (<https://sastrieste.it/index.php/speleovivarium/>).

Sunday, 22nd May

On **Sunday afternoon** (15.30), we invite you to a free guided tour of the Grotta Gigante (Jama v Briščakih) near Sgonico, in the Trieste Karst (www.grottagigante.it/).

Registration required at the registration desk. Participants should organize their own transport to the cave by car or by bus (line 42 from Piazza Oberdan).

