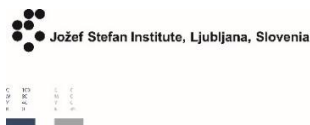
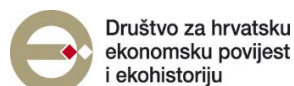


*Summer school Environmental History and Historical Ecology of the Dinaric Karst, held in Slovenia, primarily for master's students, Slovenia, 25–30 September 2023*

*(arrival on 22 September, plan to leave on Sunday, 1 October)*



**ZRC SAZU**



Faculty of Natural Sciences and Mathematics



University of Zagreb



### **Organized by:**

*University of Ljubljana, Faculty of Arts, Department of History & the research programme Slovene history (P6–0235)*

*University of Ljubljana, Faculty of Arts, Department of Geography & the research programme Sustainable regional development of Slovenia (P6–0229)*

*Research Centre of the Slovenian Academy of Sciences and Arts, Anton Melik Geographical Institute & the research programme Geography of Slovenia (P6–0101)*

### **in cooperation with:**

*Archives of the Republic of Slovenia*

*Geological Survey of Slovenia*

*Historical Association of Slovenia*

*Institute of the Republic of Slovenia for Nature Conservation*

*Jožef Stefan Institute, Department of Environmental Sciences*

*Kolpa Landscape Park*

*Lahinja Landscape Park*

*Museum of Lake Cerknica*

*Notranjska Regional Park*

*Research Centre of the Slovenian Academy of Sciences and Arts, Institute of Archaeology*

*Research Centre of the Slovenian Academy of Sciences and Arts, Karst Research Institute*

*Society for Croatian Economic and Environmental History*

*University of Ljubljana, Faculty of Natural Sciences and Engineering, Department of Geology*

*University of Maribor, Faculty of Natural Sciences and Mathematics, Department of Biology*

*University of Primorska, Faculty of Humanities, Department of History*

*University of Zadar, Department of Geography*

*University of Zagreb, Faculty of Humanities and Social Sciences, Department of History & Centre for Comparative Historical and Intercultural Studies, Environmental History Laboratory*

*University of Zagreb, Faculty of Science, Department of Geography*

### **Friday, 22 September 2023:**

arrival of participants (please note that student dorms in Ljubljana only enable check-in on Monday–Friday, so during the first weekend of your stay in Slovenia, plan to spend time in Ljubljana or make visits around Slovenia)

## **Monday, 25 September 2023:**

**8.00–8.30: registration** (University of Ljubljana's Faculty of Arts, Aškerčeva 2, <https://goo.gl/q4y6r7>), lecture room 102 on the first floor

**8.30–8.45: opening ceremony** (dean of the University of Ljubljana's Faculty of Arts, Dr Mojca Schlamberger Brezar, and main summer school organizers)

**8.45–9.45: *Geomorphology of the Dinaric Karst***, Dr Petra Gostinčar (Geological Survey of Slovenia)

**9.45–10.00: discussion**

10.00–10.10: break

**10.10–11.10: *Hydrogeographical characteristics of Slovenia with an emphasis on the Dinaric Karst***, Dr Tajan Trobec (University of Ljubljana's Faculty of Arts, Department of Geography)

**11.10–11.25: discussion**

11.25–11.35: coffee break

**11.35–12.35: *Reconstruction of paleohydrological settings in karstic landscapes: Examples from Slovenia and Australia***, Dr Mateja Ferik (Anton Melik Geographical Institute, Research Centre of the Slovenian Academy of Sciences and Arts); in case of her absence: Dr Matija Zorn from the same institute

**12.35–12.50: discussion**

12.50–12.55: break

**12.55–13.25: *Reconstruction of Relative Sea-Level Change and Climate Change using Lithophyllum rims – Examples from the eastern Adriatic coast***, Dr Sanja Faivre (University of Zagreb, Faculty of Science, Department of Geography, zoom lecture)

**13.25–13.30: discussion**

13.30–15.00: lunch

**15.00–16.00: *Paleoclimate records from speleothems:***

- ***Stalagmite analyses in paleoclimate reconstructions: examples from the Dinaric Karst of Slovenia***, Dr Sonja Lojen (Jožef Stefan Institute, Department of Environmental Sciences) & Dr Matej Lipar (Anton Melik Geographical Institute, Research Centre of the Slovenian Academy of Sciences and Arts)

- ***Palaeoenvironmental changes recorded in speleothems from Croatian coastal caves***, Dr Nina Lončar (University of Zadar, Department of Geography, zoom lecture)

**16.00–16.15: discussion**

16.15–16.25: coffee break

**16.25–17.25: *Recent Vegetation History of the Classical Karst or a Changing Landscape Identity***, Dr Mitja Kaligarič (University of Maribor's Faculty of Natural Sciences and Mathematics, Department of Biology)

**17.25–17.35: discussion**

**17.35–17.45: presentation of the *European Society for Environmental History***, Dr Žiga Zwitter (University of Ljubljana's Faculty of Arts, Departments of History)

## **Tuesday, 26 September:**

University of Ljubljana's Faculty of Arts, Aškerčeva 2 (<https://goo.gl/q4y6r7>), lecture room 102 on the first floor:

**8.00–9.00: *Palynological investigations into the Holocene vegetation and land-use history in the northern Dinaric Karst***, Dr Maja Andrič (Research Centre of the Slovenian Academy of Sciences and Arts, Institute of Archaeology)

**9.00–9.15: discussion**

9.15–9.25: coffee break

**9.25–10.25: *Big environmental changes revealed by tiny animal fossils. The Karst Plateau (SW Slovenia and NE Italy) in Late Pleistocene and Holocene***, Dr Borut Toškan (Research Centre of the Slovenian Academy of Sciences and Arts, Institute of Archaeology)

**10.25–10.40: discussion**

10.40–10.50: break

**10.50–11.50: *The commons as an asset in the integrated peasant economy. Slovenia, Italy and Sweden compared***, Dr Aleksander Panjek (University of Primorska, Faculty of Humanities, Department of History)

**11.50–12.00: discussion**

12.00–13.30: lunch

**13.30–15.00: *visit to the Archives of the Republic of Slovenia:***

**guided tour of the Archives**, Dr Gregor Jenuš, historian and archivist (Archives of the Republic of Slovenia)

***From archival sources identification to valid results in environmental history research***, Dr Žiga Zwitter

University of Ljubljana's Faculty of Arts, Aškerčeva 2 (<https://goo.gl/q4y6r7>), lecture room 102 on the first floor:

**15.00–16.00: *Forest histories of the Dinaric Karst:***

- *Deforestation and reforestation of the western Dinaric Karst from the Late Middle Ages to mid-twentieth century*, Dr Hrvoje Petrić (University of Zagreb, Faculty of Humanities and Social Sciences, Department of History),

- *Landscape change and fire risk in the Croatian Dinaric Karst: 19th to 21st century*, Dr Borna Fuerst-Bjeliš (University of Zagreb, Faculty of Science, Department of Geography)

**16.00–16.15: discussion**

16.15–16.25: break

**16.25–17.25: *Climate and discharge trends, and flood hazard in Slovenia's Dinaric Karst***, Dr Matija Zorn & Dr Mauro Hrvatin (Anton Melik Geographical Institute, Research Centre of the Slovenian Academy of Sciences and Arts)

**17.25–17.40: discussion**

17.40–17.50: coffee break

**17.50–18.50: *Role and meaning of old hydrological data for understanding climate and water cycle changes***, Dr Mihael Brenčič (University of Ljubljana, Faculty of Natural Sciences and Engineering, Department of Geology; if only the lecturer is in Slovenia at that time)

**18.50–19.00: discussion**

**Wednesday, 27 September:**

**Meeting at 8:30:** University of Ljubljana's Faculty of Arts, Aškerčeva 2 (<https://goo.gl/q4y6r7>), lecture room 102: **groups formation**

**9:00–16:00: Students' group work; all results will be used during the visit to the Lake Cerknica on Friday.** Supervisors: Dr Tajan Trobec, Dr Borna Fuerst Bjeliš, Dr Hrvoje Petrić, and Dr Žiga Zwitter:

**Group 1 works in the reading room of the Archives of the Republic of Slovenia**, supervised by environmental historians:

analysis of precise early-nineteenth century cadastral protocols dealing with Cerkniško polje: data collection at a plot level, creation of a data basis to be used by the Group 2 in the process of an innovative map production of the intermittent Lake Cerknica; the product will be used during our fieldwork on Friday

**Group 2 works in the Geographic-Information-Cartographic Laboratory at the Department of Geography:** Lake Cerknica maps production (supervised by a mentor geographer); the products will be used during our fieldwork on Friday

- georeferencing and digitizing the selected features of fundamental human interventions into the bottom of the Lake Cerknica,
- production of an innovative map of the Lake Cerknica: mapping the input data provided on-line by Group 1.

**Group 3 works in the classroom at the Faculty of Arts:** analysis of a detailed eighteenth-century description of the Lake Cerknica (supervised by a mentor environmental historian); the product will be used during the fieldwork on Friday

16:00: lunch, then free afternoon in Ljubljana

**3 days of excursions follow: wear hiking boots and be adequately dressed in the case of rainy weather**

### **Thursday, 28 September: Dinaric Karst in the SE Slovenia**



Photo by Žiga Zwitter.

8.15–9.30: Ljubljana–Dvor pri Žužemberku: tufa barriers in the Krka river as result of interactions between natural and human-induced processes (Dr Žiga Zwitter)

9.30–11.15: Dvor pri Žužemberku–Krupa: karstic spring of the Krupa river: major chemical pollution with polychlorinated biphenyls in the 20<sup>th</sup> century as a consequence of interaction between karstic hydrology & industrial pollution of the broader surroundings (Dr Tajan Trobec)

11.15–12.15: lunch

12.15–14.00: travel to Marindol, including an hour's walk to litter forests; long-term impacts of litter extraction, lasting for centuries, on soil characteristics, and, consequently, on species composition – and the question of recent vegetation changes in such light forests due to abandonment of litter-harvesting (Dr Žiga Zwitter)



Plut D. et al., 2014. Regionalni viri Slovenije: Vodni viri Bele krajine (Water resources of Bela krajina), 15.





Photo by Žiga Zwitter.

14.00–14.45: walk around Marindol, with an emphasis on the historical agricultural use of dolines – cultural dolines (Dr Daniela Alexandra Teixeira da Costa Ribeiro, Anton Melik Geographical Institute, Research Centre of the Slovenian Academy of Sciences and Arts)

14:45–15.00: Marindol–Žuniči

15:00–16:15: visit to the ethnographic museum Šokčev dvor: meeting with the director of the Kolpa Landscape Park: agriculture in Bela krajina since the 19th century & crucial recent challenges and solutions in biodiversity conservation in the Kolpa Landscape Park.

16:15–16:45: Žuniči–Veliki Nerajec

16:45–18.00: the wet meadow complex Nerajski lugi: former uses & crucial recent challenges and solutions in biodiversity conservation (guided by a specialist from the Lahinja Landscape Park & a specialist from the Institute of the Republic of Slovenia for Nature Conservation)



Photo by Uroš Rztresen; Lahinja Landscape park.

18.00–20:00: travel and return to Ljubljana

## **Friday, 29 September: The Lake Cerknica (Cerkniško jezero), one of the largest preserved intermittent lakes in Europe**



Photo by Tajan Trobec.

8.00–8.45: travel Ljubljana–Postojna

8:45–10.00: Visit to the Karst Research Institute:

- 8:45–9:05: Presentation of the Karst Research Institute, Research Centre of the Slovenian Academy of Sciences and Arts (Dr Nataša Ravbar)

- 9:05–9.25: Karst research for sustainable use of the Škocjan Caves as UNESCO heritage site (Dr Stanka Šebela)



Photo by Žiga Zwitter.

- 9:25–9:45: Trends in hydrological dynamics on the Cerknjško Polje (Dr Matej Blatnik)
- 9:45–10.00: discussion
- 10:05–10.40: travel Postojna–Dolenje Jezero
- 10.40–12:00: visit to the museum Jezerski hram:
  - explanation how the hydrology of the polje functions (Vekoslav Kebe with his model explaining, how the lake fills and drains)
  - the history of researches into the hydrology of this intermittent lake (Žiga Zwitter)
  - Wednesday’s groupwork presentation (Group 3)

12.00–13.15: lunch



Photo by Žiga Zwitter.

- 13.30–18.40: walk on Cerknjško polje: transdisciplinary renaturalization of a part of the bed of the Stržen brook in the bottom of the lake (guide from the Notranjska Regional Park).
- visit to several other interesting parts of the Lake Cerknica, selection based on the hydrological situation on the day of the excursion, including Wednesday’s groupwork results: Groups 1 & 2 (students, Dr Tajan Trobec & Dr Žiga Zwitter)

ca. 20.00: return to Ljubljana

## Saturday, 30 September: Dinaric Karst in the SW Slovenia: The Classical Karst



Photo by Žiga Zwitter.

8.40–10.10 travel Ljubljana–Krajna vas

- 10.10–11.10: land-use changes on the Karst plateau at Krajna vas, including also prominent examples of influences of land-use changes on plant species (Dr Žiga Zwitter)

11.10–11.30: travel Krajna vas–Kregolišče

- 11.30–12.00: preserved artificial waterhole at Kregolišče as cultural & natural heritage:





Photo by Žiga Zwitter.



Photo by Borut Lozej; © arhiv PŠJ.

hundreds of waterholes on the Karst plateau as artificially co-created ecosystems, their ecological functions, uses & traditional waterhole management (Dr Žiga Zwitter)

12.00–12.45: travel Kregolišče–Lipica stud farm

12.45–13.00: wooded meadows at the Lipica stud farm (with a 4.5-centuries-long tradition)

13.00–13.10: travel

13.10–14.40: lunch

14.30–14.40: travel to the Škocjan Caves

15.00–17.30: guided tour through the Škocjan Caves (on UNESCO's list of natural world heritage sites; in Ramsar Directory of Wetlands of International Importance) (guide from the Škocjan caves regional park), basics of the history of cave researches (Dr Žiga Zwitter), and geomorphology (Dr Matija Zorn)

17.30–18.45: travel to Ljubljana, end of the school

## Application:

Master's students from CEEPUS countries (<https://www.ceepus.info/content/about>) interested in the topics of the school are welcome to apply. In case of interest, doctoral students also are eligible.

### Application procedure:

1. **Step 1:** Apply for the summer school by sending an e-mail to [ziga.zwitter@ff.uni-lj.si](mailto:ziga.zwitter@ff.uni-lj.si) by **31 March 2023**. Priority will be given to students from faculties involved in the CEEPUS network EcoManAqua, nonetheless, a limited number of CEEPUS freemover grants (for highly motivated students from faculties in CEEPUS countries not involved in this CEEPUS network) also are available, so do not hesitate to apply, if your university is located in one of the CEEPUS countries (countries from Austria to Moldova and Bulgaria, and from Poland to Albania).

**Selection of candidates:** Selection of candidates will be based on your **letters of motivation** (so, write convincing letters of motivation (up to 1 page), including also your **average study grade**). Send them to [ziga.zwitter@ff.uni-lj.si](mailto:ziga.zwitter@ff.uni-lj.si) by the 31 March 2023. **Candidates will be notified of the final selection by 7 April 2023.**

2. **Step 2:** Soon after 7 April, **selected candidates** will be asked to apply for the school using the **CEEPUS online system**; this is the formal basis for CEEPUS to cover your accommodation costs.

### **Accommodation:**

Slovenian **CEEPUS will book your accommodation** in a student dorm in Ljubljana, so do not book your accommodation yourself!

### **Costs:**

Your accommodation will be paid by the CEEPUS.

+ the CEEPUS will kindly provide 180 EUR per student enabling your participation in the school free of charge (including your lunches Mon-Sat, entrance fees and costs of bus transport around Slovenia on the days of excursions, travel costs and lunches for lecturers delivering lectures at this summer school). If there is any money left, you will receive it. You are expected to organize your travel to Slovenia and back & to pay for it. Think of cheap Flix bus, train ... connections.

### **ECTS points:**

We submitted the application to get the right of awarding **3 ECTS** points to participating Master's students. We expect a favourable response. Participants will receive certificates documenting their participation in the school.