

## REVIEWS OF NEW CONFERENCES AND BOOKS

## PRIKAZI NOVIH KONFERENCIJA I KNJIGA

**BORNA FUERST-BJELIŠ, JELENA MRGIĆ, HRVOJE PETRIĆ, MATIJA ZORN AND ŽIGA ZWITTER, EDS. ENVIRONMENTAL HISTORIES OF THE DINARIC KARST. CHAM: SPRINGER INTERNATIONAL PUBLISHING, 2024, 466 PAGES.**

The 2024 volume *Environmental Histories of the Dinaric Karst* was published as part of the Springer book series *Environmental History*. By applying different methodological approaches, this inter- and multidisciplinary volume offers novel environmental history research on the Dinaric Karst, ranging from prehistory to contemporary history. The volume consists of sixteen chapters, divided into five sections, written by thirty-one authors and editors who straddle the humanities and natural sciences. By implementing modern environmental history approaches, this monograph ties in with several classic research topics that examine the interactions between human society and the rest of nature in karst environments.

The focus is on the Dinaric Karst, “an environmental and transpolitical region”, as described by the editors. as the editors describe it. The opening chapter introduces the concepts of environmental history and karst, followed by an overview of the environmental microregion covered and a selection of groundbreaking examples of the early intellectual history of karst research in the Dinaric Karst, from the Carniolan nobleman and polymath Johann Weichard Valvasor (1641–1693) to the geomorphologist and protagonist of karstology Albrecht Pencka (1858–1945) and the geographer Jovan Cvijić (1865–1927). The chapter also provides an overview of the individual contributions to the volume.

This brings us to the first section, entitled *Cultural Landscape*, which deals with some of the most important aspects of the holistic transformations in the cultural landscapes of the northern and western Dinaric Karst over time. The first contribution in this part was written by palynologist Maja Andrič and Dirk Nikolaus Karger, a researcher at the interface of biology and climatology. The chapter contains an analysis of palynological data at different study sites in southern Slovenia and northwestern Croatia, which leads to a better understanding of the way in which vegetation has been significantly shaped by climate variability and human influences. The aim of the chapter is to investigate how and when climatic variations or human activities have influenced the vegetation of the Dinaric Karst over the last 10,000 years. In addition, the article provides an overview of previous palynological research in order to identify the similarities and differences between the regions of the northern Dinaric Karst and to better understand the mechanisms of environmental change. From the first traces of human influence, which appear in the Neolithic period from about 6000 cal. BP and more intense agro-pastoral activities in the Bronze Age, the emergence of a more open landscape (similar to the present one) is located between the Bronze Age (3200 cal. BP) and the Iron Age (2800 cal. BP).

In the third paper, archaeobalanists Tjaša Tolar and archaeologists Philip Mason and Bine Kramberger present a detailed, novel archaeological and archaeobotanical analysis of fruit/seed and wood (charcoal) remains from the Late Bronze Age, Early Roman period and Late Middle Ages. Through diverse numbers of samples and preserved plant macroremains from different occupations and burial deposits of the multi-period site at the international border crossing Obrežje between Slovenia and Croatia, the data interpretation is focusing primarily on land and forest use. Representative results are given regarding the vegetation composition and the utilisation of forest resources over time. In addition, the remains are a valuable tool for the reconstruction of past vegetation and its use by the (pre)historical populations.

In chapter 4, the archaeologists Dimitrij Mlekuž Vrhovnik and Tomaž Fabec present new approaches to the long historical process of the formation of the Kras landscape. By considering the Kras landscape as the result and medium of a long and complex interplay of history, social and economic development

and ecological dynamics, the authors provide a groundbreaking long-term study of the transformations and changes of the Kras landscape from prehistory to the present. Moreover, the history of landscape transformations is not a uniform and uninterrupted development, but is characterised by qualitative transformations and rearrangements. In this context, the authors focus on two major episodes of change – the second and third millennia BC as a period of large-scale clearing and formation of the first landscape pattern and the early modern reorganisation of the landscape, which forms the traditional Kras cultural landscape. After 2500 BC, the period of intensive landscape change began, followed by a slower accumulation of predominantly aeolian sediments indicating a more open landscape, accompanied by the formation of the first open cultural landscape. After 1500 AD, the next major restructuring of dolines occurred, which can be linked to the historically documented process of the formation of the modern Kras cultural landscape. In conclusion, the authors state that the Kras landscape with its historical roots is an artefact that has been culturally shaped and transformed to a certain extent.

This is followed by a contribution by geographers Ivan Tekić, Borina Fuerst-Bjeliš, Anamarija Durbešić, Petra Radeljak Kaufmann and Marin Cvitanović on the complex relationship between landscape change and fire risk. The trend towards abandonment of traditional land uses in combination with the documented climate changes and the change in vegetation structure led to an increased fire risk, especially in the Croatian Dinaric Karst, one of the Mediterranean areas. With this chapter, the authors contribute to the understanding of the historical connections between the socio-economic, demographic and landscape changes that took place over the course of two centuries in three Dinaric socio-environmental zones: the islands, the littoral and the hinterland. Depopulation, land abandonment and ecological succession, as observed in Croatia and other parts of the Mediterranean, together with littoralization and the abandonment of pastoralism, are identified as factors contributing to the increase in forest fire risk and changes in fire regime and behavior. The authors also examine how these landscapes can be managed and protected in the future.

The next chapter, written by geographers Ante Blaće, Marin Cvitanović, Anica Čuka and Josip Faričić, also deals with long-term changes in land cover and human use of the land (land use/land cover changes) in the nineteenth and twentieth centuries. The focus is on the eastern Adriatic Dinaric Karst islands as areas of traditional Mediterranean agriculture, with the author concentrating on the main factors that influenced land use change and landscape development in the twentieth century. The authors investigate the dynamics of land use/land cover changes on three Croatian islands and identify the factors influencing landscape changes. The results indicate that agricultural activities and land use peaked at the turn of the twentieth century due to population growth and a conjuncture in wine production. However, the population decline that began in the 1920s led to land abandonment and secondary succession. The second half of the twentieth century was then characterised by major socio-economic changes and, especially after 2012, the greatest change in land cover was associated with forest degradation as a result of forest fires.

This brings us to the second part of the book, which deals with the histories of woodland and forests. The first contribution in this section was written by historians Filip Pavelić, Hrvoje Petrić and Mislav Radošević and deals with the ubiquitous deforestation of the coastal Dinaric Karst in the eighteenth and the first half of the nineteenth century as a result of increasing pressure on the forests from the local population and the Habsburg authorities on the one hand and the harsh environmental conditions and their effects on the other. Attempts at reforestation followed in the second half of the nineteenth century. In the chosen period, the Dinaric Karst, as the dominant landscape of the eastern Adriatic coast, was under the administration of the Habsburg Military Frontier, and so the article focuses on the interplay between the natural environment of the Dinaric Karst, the local population and the Habsburg Military Frontier's administration in relation to forestry.

This is followed by a chapter on a afforestation project and the creation of monocultural forest stands of non-native black pine (*Pinus nigra*) on the Kras Plateau and in the Vipava Valley since the nineteenth century, written by historian Meta Remec. The various environmental impacts and long-term structural consequences caused by the afforestation of the Kras with the non-native black pine are outlined, while

the focus of the work is on the spread of non-native tree pests and the environmental consequences of the use of pesticides to control the non-native pine processionary moth. In addition, the author discusses how the removal of black pine has become an essential part of the strategy to save endangered species, preserve the cultural landscape and perhaps even revitalise agriculture in these areas in recent years. However, it is clear that the plan to restore a largely natural environment has failed, as the black pine remains an integral part of the karst landscape and its identity, and the results of the afforestation project, which has proven to be a profound and extensive human intervention, have an impact on the entire ecosystem and society.

The third and final chapter in this section is the result of an interdisciplinary collaboration between the historian Ivan Laković and forestry scientist Jelena Lazarević. They are researching transhumance or nomadic pastoralism – one of the most widespread and long-lasting practices in the coastal regions of the Mediterranean, the Mediterranean mountains and their continental hinterland. It is a form of pastoralism that involves the seasonal herding of livestock and has helped shape local and regional economies, societies, livestock and ecosystems. The migrations, which involved almost all family members, led to a complete displacement of all activities from the villages to the katuns. Based on a case study of the Žijevo mountain massif in the Dinaric Karst of Montenegro, the specific and dynamic traditional ecological knowledge and the perception of the forests and their resources by the local population are presented. Attention is also paid to protection against wolves. As the authors point out, there has always been a direct correlation and causality between the availability of quality forests and the successful development of the respective katun. The forests were seen as crucial to the sustainability of this specific way of life, as they provided shelter and refuge as well as wood, fruit and berries. However, they were also understood as areas where dangers lurked that had to be averted by an appropriate system of measures.

The third part of the volume on the histories of water and climate begins with a contribution by the historian Andrej Studen, who deals with the question of the vulnerability of farm economies in the northern Dinaric Karst to natural hazards at the time when the railway connection was put into operation. The chapter places the unusually rainy and cold weather of 1864 and the exceptional winter of 1864/65 in a macro-regional context and focuses on the interplay between the environment and the socio-economic dimensions of the vulnerability of the farm economy in the Senožče district and its surroundings. It also emphasises the great micro-ecological diversity in the northern Dinaric Karst and the diversity of the local farm economies. Furthermore, the author points out the ambiguous role of the railway in the local economy in the 1860s in terms of vulnerability to natural hazards.

In chapter eleven, the historian Aneja Rože Kravanja deals with the state and development of the water infrastructure on the Kras Plateau in the nineteenth century. Using two micro-regions - Dutovlje and Lokev - the author looks at traditional water management, the differences and similarities in the type and use of water infrastructure and the changes to the water supply infrastructure in modern period. The growing role of the state in supplying people and their livestock with drinking water is also described. The author also collected traditional knowledge about water management through field research and interviews.

Geographers Mauro Hrvatinić and Matija Zorn study the socio-natural sites of rivers in the Slovenian Dinaric Karst between 1961 and 2020. Their research provides new insights into the trends in average annual temperature, annual precipitation, days with precipitation above 0.1 mm, days with snow cover, minimum annual discharge, as well as discharge regimes and flood hazard in the selected area. The authors conclude that the most significant changes in the discharge regime can be observed in the rivers that used to be characterised by a strong snow retention in late autumn and winter. In addition, a greater flood hazard can be indicated by the increase in the absolute maximum annual discharge on some rivers, the increasing discharge variability and the increase in the fall discharge despite a decrease in the total water volume.

With the rise of the wood impregnation industry and its important role in the imperial endeavors of Austria-Hungary, such as in Bosnia and Herzegovina, we come to the next section of the book on the histories of environmental degradation. The first chapter of this section, which deals with the aforemen-

tioned wood impregnation industry and its long-term effects on human health and the environment, was written by historian Martin Meiske. Using the Austrian company Guido Rütgers KG, which impregnated railway sleepers with a highly toxic material – creosote - the author examines issues of (post-)colonialism, power and empire, the exploitation of natural resources and labor, occupational health and the pollution of rivers, soil and groundwater. In doing so, he shows that the environmental impacts of the wood impregnation company can be seen in a variety of aspects.

In the following chapter, environmental engineer Daniela Ribeiro and geographer Matej Simčič analyse the impact of humans on the karst landscape in the Bela Krajina region in south-eastern Slovenia since the beginning of the twentieth century. Among the major environmental pressures to which the Bela Krajina landscapes were exposed in the twentieth century, the authors include the management of litter-raking forests, illegal deposition of condensation waste, the improvement of agricultural land and the use of fertilisers. In the twenty-first century, the negative impacts or major disturbances are the spreading of manure on agricultural land and the levelling of dolines. Finally, it is emphasised that some of the mentioned human activities, despite their impact on the environment (especially on the fragile karst ecosystem), contribute to the preservation of the cultural landscape of Bela Krajina.

The last article in this section was written by the historian Klemen Kocjančič and deals with the Dinaric Karst during the Second World War and under the occupation of the Third Reich. The author presents a specific wartime karst aspect, namely the Third Reich's exploration of the northern Dinaric Karst in the Operational Zone of the Adriatic Littoral as the main subject of this article. With the analysis of the establishment and use of units specialised in karst topography and institutions of applied military-geography research, an example of the "misuses of science for war crimes" is presented. This military use of the Dinaric Karst and the warfare on both sides led to the region's environmental degradation.

The entire volume is concluded in Part V, which also contains a further long-term and socio-economic history contextualization of the environmental history data from the previous chapters of the book. A critical reflection on the narratives of degradation and amelioration in the environmental history of the Dinaric Karst are also the subject of this chapter, which ends with a selection of fundamental research desiderata.

Sara ŠIFRAR KRAJNIK

**LIDIJA KELEMEN (AUTORICA IZLOŽBE), ČOVJEK I PRIRODA. HRVATSKO ZAGORJE U NOVOM VIJEKU, MUZEJI HRVATSKOG ZAGORJA, MUZEJ SELJAČKIH BUNA, MUZEJ "STARO SELO" KUMROVEC, 2024., 80.**

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Plan for reinforcing the banks of the Savinja in the district of Novo Celje, 1832.

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