



Press Information



Under the patronage of



Celebration of the: **INTERNATIONAL YEAR OF CAVES AND KARST 2021** "Explore, Understand and Protect"

Monday, 13 September 2021
from 9.30 a.m. to 1 p.m.
UNESCO House, Room XI: 7 place de Fontenoy, Paris 7

The International Union of Speleology-UIS, in partnership with 56 member countries and over 230 institutions and organizations around the world, has proclaimed an International Year of Caves and Karst 2021 ("IYCK 2021"; see below). An event to present the IYCK 2021 is organized under the patronage of the UNESCO Director-General by the UIS in partnership with the Permanent Delegation of the Republic of Slovenia to UNESCO. The event will take place on 13 September from 9.30 to 13.00 at the UNESCO Headquarters in Paris (see program below).

IYCK 2021 is organized by the International Union of Speleology - UIS, the international organization for the exploration, study, and protection of caves and karst. <https://uis-speleo.org/>

The UIS International Year of Caves and Karst - **IYCK 2021** is a worldwide project to teach everyone about these critically important and widespread natural resources. Although awareness of the sensitivity of karst is increasing, it continues to be threatened by human activities in many parts of our planet. In fact, many of the world's unique hydrological, ecological, and culturally important cave and karst landscapes are being damaged or threatened daily. <http://iyck2021.org/>

Karst is a type of landscape that covers an estimated 20% of the world's land surface. Karst is a special type of landscape that is most common in carbonate rocks and the majority of the world's caves are in these rocks. **Caves** are natural, humanly enterable underground voids. Some carbonate rocks have surface karst but no caves. Some other rocks, especially evaporites, have surface karst landforms but caves are less common. Caves are also found in non-karst rocks, especially lava caves and caves in coastal settings. On the surface karst takes many forms, which makes it difficult for the average person to recognize. Some are dramatic and scenic. Much of karst landscapes are also hidden from view in caves.

Caves and karst are priceless resources. Karst aquifers provide an estimated 16% of the world's drinking water, and include the largest wells and springs on Earth. Caves and karst are home to many of the planet's most diverse, important, and rare ecosystems, supporting ecological diversity above and below the ground. The world's most significant cultural and archaeological sites often are found in karst and non-karst caves. Hundreds of caves are open to tourism around world, many in World Heritage sites. About 150 million tourists visit caves each year, providing vital support to many

national economies. While caves and karst benefit all societies, they also present some unique challenges.

The caves and related conduits of karst aquifers offer essentially no filtration of pollutants. Karst aquifers are the most complex, least understood, most difficult to model, and most easy to contaminate water supplies. They are often able to rapidly transmit pathogens and chemicals tens of kilometers undetected to vital human and ecological water sources. As often hidden features and landscapes, caves and karst are generally poorly understood. Few scientists and natural resource managers are adequately trained to properly study or manage them. Many governments do not recognize caves and karst at all, or fail to recognize their importance.

- Flyer International Year of Caves and Karst
(attached)
- Flyer international Cave Animal of the Year 2021
(attached)

“Dear Friends in the Media,

As the world faces unprecedented environmental challenges from climate change, water shortages, sanitation crises, food supply uncertainties, and their many associated economic struggles, the International Year of Caves and Karst stands against that destructive trend. Caves and karst touch all the above and many other aspects of life around the world, but most people are unaware of them or their importance. I ask you to cover this story about the Year’s celebration at UNESCO, and be our most important partner in sharing the knowledge from the celebration to truly educate the world.

Thank you.”

Dr. George Veni
President
International Union of Speleology

The program, September 13, Celebration of the UIS International Year of Caves and Karst 2021: UNESCO Protected Areas and UN Agenda 2030

Moderator of the event: Dr. Alik Ismail-Zadeh, Secretary - Governing Board Officer, International Science Council

09:30-10:00. Coffee for participants.

10:00-10:15. IYCK 2021 video.

10:15-10:45. Welcome address by the

- M Ernesto Ottone, Assistant Director-General for Culture,
- H.E.Ms Metka Ipavic, Ambassador Permanent-Delegate of Slovenia, and
- Dr. George Veni, President of UIS

10:45-11:15. Keynote presentation by Prof. Dr. Nadja Zupan Hajna: A World of Karst, Caves and People

11:15-11:30: Break

11:30-13:00. Discussion panel, presentations by:

- Prof. Dr. Fadi H. Nader: Safe and sustainable use of karst resources
- Emeritus Prof. Dr. John Gunn: Caves and karst in UNESCO protected areas
- Clayton F. Lino: Conserving caves and karst in biosphere reserves: The Cave MAB network
- Dr. Paul A. Griffiths: Karst and UN Agenda 2030

Discussion and questions from the audience.

During this celebration, the UIS will:

- 1) Encourage UNESCO to develop inventories of all caves, karst features, and their contents in UNESCO protected areas.
- 2) Suggest that UNESCO evaluate protected areas for adequacy of cave and karst protection, and expand protection as needed.
- 3) Invite UNESCO to join the UIS to develop an international ban in the trade of cave materials (speleothems, animals, sediments, and rocks).

International Union of Speleology Representative, Keynote speaker and Panelists:

Dr. George Veni, Executive Director of National Cave and Karst Research Institute (NCKRI), and President of UIS; gveni@nckri.org

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Prof. Dr. Nadja Zupan Hajna, ZRC SAZU Karst Research Institute Slovenia, and UNESCO Chair on Karst Education, and UIS Treasurer; zupan@zrc-sazu.si

A World of Karst, Caves and People. This talk is about caves, karst, and their forms and their relationship to people. Karst is a special type of landscape most commonly found in carbonate rocks, especially limestone. But caves and solutional surface forms also exist in gypsum and salt, as well as in non-karst rocks. Karst areas are important because of their outstanding natural heritage (physical and biological) and their role in the rise of civilizations, which often began at their large and reliable springs. Throughout history, karst areas have never been densely populated because of the lack of water and soil. However, with a growing population, people are increasingly causing problems for the karst and its subsurface. The most common threats to the karst underground, waters, caves, and specialized fauna are urbanization and industry, agriculture, logging, quarrying, water exploitation, excessive groundwater pumping, mass tourism, and recreation. The basis for all karst protection and sustainable management activities is knowledge and understanding.



Prof. Dr. Fadi H. Nader, IFP Energies nouvelles – Geosciences, and Department of Earth Sciences at Utrecht University, and UIS General Secretary; fadi-henri.nader@ifpen.fr

Safe and Sustainable Use of Karst Resources – Beyond groundwater and quarrying for building materials, and tunnels for transportation, carbonate and evaporite rocks that are often karstified and termed as ‘karst’ host significant amount of resources, that have been essential for societal developments since centuries. Today, the world is going through an energy transition phasing out further exploration and production of fossil fuel and moving into new forms of subsurface exploitations. These new forms, especially in karst (subsurface and surface), need to be safe and sustainable. The technical knowledge and the existing structures of the hydrocarbon industry may be used to store CO₂, other fluids and energy in the subsurface, assuring an efficient, less expensive transition. We could also learn from today’s active hydrothermal karst for planning geothermal energy project in underground karstified reservoirs. To do so, in a safe and sustainable manner, we still need (1) to better understand the processes associated to

karstification, (2) to improve worldwide mapping of the subsurface karst, and (3) to be able to quantify and predict the impacts of societal use of the subsurface on karst.



Emeritus Prof. Dr. John Gunn, School of Geography, and Earth & Environmental Sciences University of Birmingham, and IUCN/WCPA Caves and Karst Working Group; J.Gunn.1@bham.ac.uk

Caves and karst in UNESCO protected areas. This talk will provide a first estimate of those UNESCO protected areas (Biosphere Reserves, Ramsar Sites, Global Geoparks and World Heritage Properties) in which there are karst landforms or caves. In these protected areas there is a need to develop inventories of all karst features, caves and their contents. Caves and Karst are valuable resources for recreation and tourism as well as containing deposits that are of great scientific interest and provide information relevant to discussions of global climate change. The talk will also discuss Guidelines for the protection of these resources that are applicable to all UNESCO protected areas.



Clayton F. Lino, President of Mata Atlantica Biosphere Reserve (Brazil), Former President of The Brazilian Society of Speleology and Member of International Advisory Committee for Biosphere Reserves/UNESCO

claytonflino@gmail.com

Conserving caves and karst in biosphere reserves: The Cave MAB network. This talk will focus on the importance of synergy between the studies and actions of speleological entities and the MAB program, highlighting the actions of the CAVEMAB Network, created in 2018 and integrated by BR that have caves and karst in their territories. More than 150 Biosphere Reserves contain Caves and karst regions in their territories. The Cave MAB network has as central objectives the connection between these Reserves to promote the knowledge, conservation and sustainable use of caves and karst in them. The CaveMAB Network also intends to integrate their efforts with other UNESCO Protected Areas such as WHS, Geoparks and Ramsar Sites. These actions gain special importance in this Year of 2021, when the international Year of Caves and Karst and the 50 years of the MAB/UNESCO Program are celebrated.



Dr. Paul A. Griffiths, Honorary Research Associate, Vancouver Island University, and member of ISO/Technical Committee 319 Karst; pgriff@shaw.ca

Karst and UN Agenda 2030. Not unlike karst itself, the UN's Agenda 2030 and its 17 Sustainable Development Goals (SDGs) have been called an "integrated package" – complex and interwoven. This talk will consider a few of the SDGs bearing on karst. Achieving SDGs in all karst regions will require a concerted global effort that cannot rely upon UNESCO protected areas alone. Much of the karst known on Earth lies elsewhere, where fragile karst environments are often overlooked or not adequately protected by local laws or policies. UNESCO international programs and actions have contributed in many ways to advancing knowledge, understanding, and encouraging sound science-based conservation measures for karst. UNESCO can positively influence actions member countries take toward achieving karst-relevant Agenda 2030 goals and targets.

PICTURES



Flooded collapse sinkholes, Nahanni NP, Canada; D. Ford



Salt layers, Kuh-e-Namak (Dashti), Iran; M. Audy



Les yeux bleus de Marie-Jeanne, Haïti; J.F. Fabriol



Lake in Križna jama, Slovenia; P. Gedei



Karen on glaciated marble pavement, Mt Owen, New Zealand; N. Silverwood



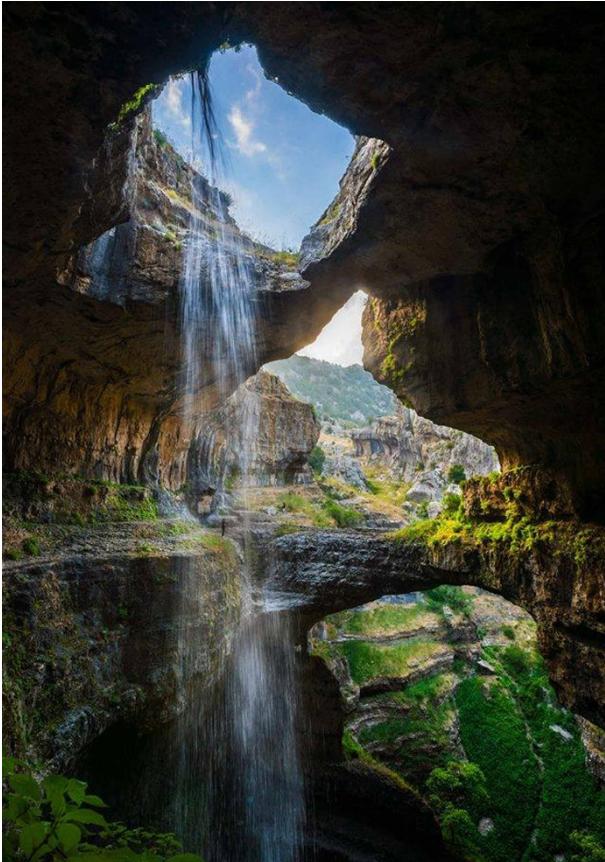
Tower karst, Lijiang River, China; C. Mayaud



Stefans hellir lava tube, Iceland; M. Audy



Cave diving, K'oox Baal Cave, Mexico; R. Husak



Natural bridges, Balaa Pothole, Lebanon; M. Garašić



Chauvet Cave 2, UNESCO WHS, France; G. Veni



Salt crystal in a cave, Iran; P. Crochet



Škocjanske jame, UNESCO WHS, Slovenia; B. Lozej



Karst spring, Cetina, Croatia; U. Stepišnik



Open fissures in epikarst, BIH; N. Zupan Hajna



Caves cleaning, Slovenia; M. Prelovšek



The International Year of Caves and Karst (IYCK) is an initiative of the International Union of Speleology (UIS). The UIS is a non-profit organization, headquartered in Slovenia, dedicated to the exploration, study, and proper management of caves through international cooperation. The UIS is comprised of 54 member nations which support the International Year of Caves and Karst.

The UIS hosts an International Congress of Speleology every four years, which is the world's most significant gathering of cave and karst scientists, managers, educators, and explorers. The 18th International Congress of Speleology will be held in Savoie-Technolac, Le Bourget du Lac, Savoie, France 2021, and will be expanded into the major international event that will celebrate the International Year of Caves and Karst. Many other scientific and educational events for the International Year will be organized. The long and growing list of events is at:

www.iyck2021.org

In addition to the work of the UIS member nations, the International Year of Caves and Karst is supported by dozens of international and national organizations. All supporting organizations are also listed on www.iyck2021.org

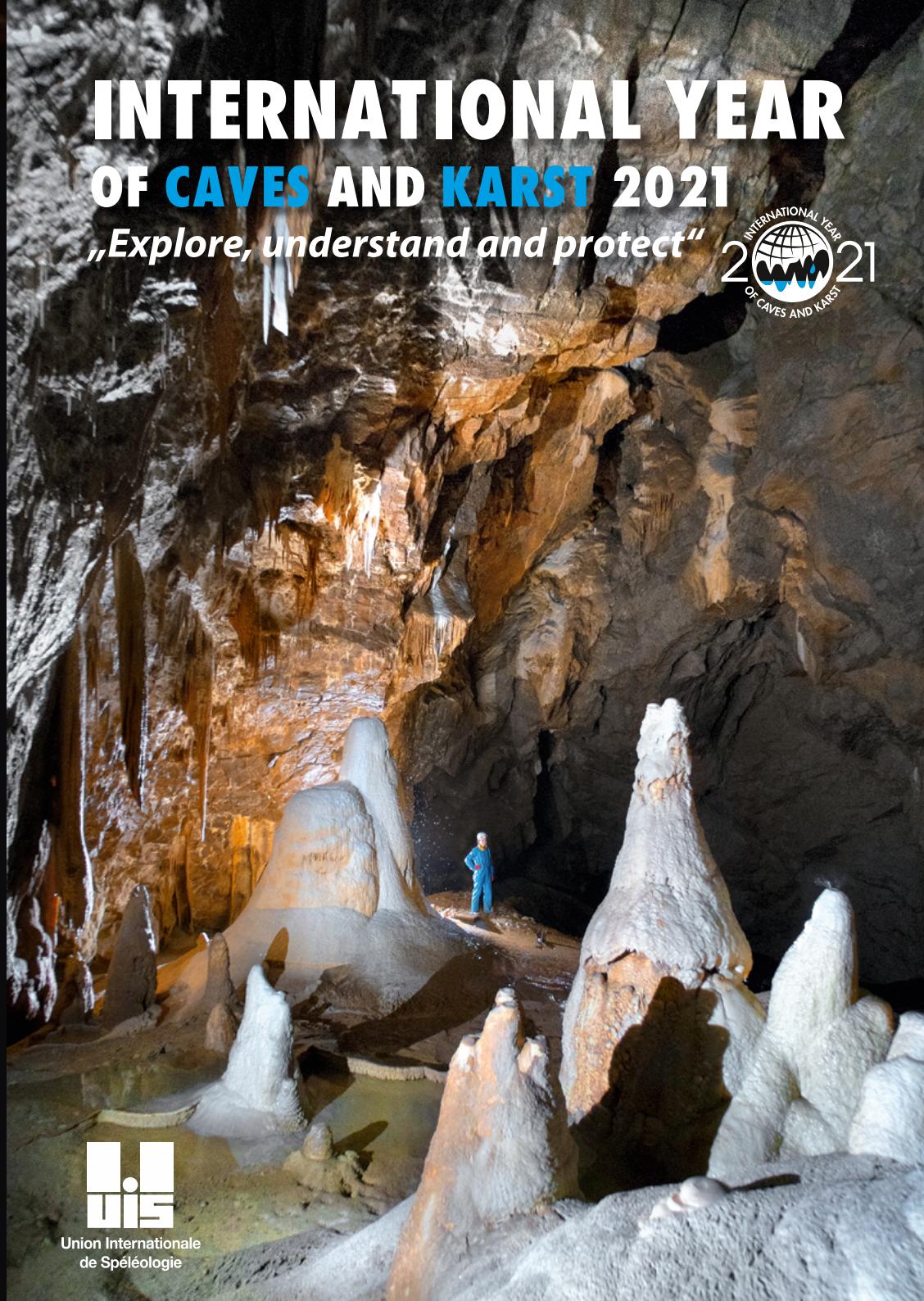
The complete and most current information about the International Year of Caves and Karst is on the official IYCK website:

www.iyck2021.org



INTERNATIONAL YEAR OF CAVES AND KARST 2021

„Explore, understand and protect“



Union Internationale
de Spéléologie

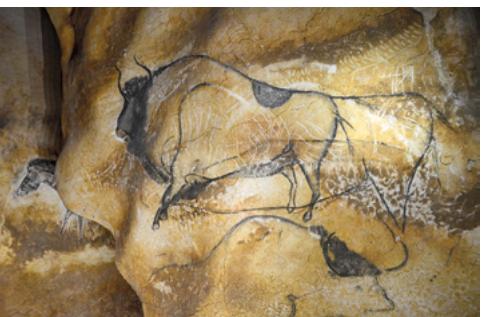


Karst is a type of landscape that covers an estimated 20% of the world's land surface. Karst is created by dissolution of bedrock. On the surface it takes many forms, which makes it difficult for the average person to recognize. Some are dramatic and scenic. Much of karst landscapes are also hidden from view in caves.

Caves and karst are priceless resources. Hundreds of caves are open to tourism around the world, many in World Heritage sites. About 150 million tourists visit caves each year, providing vital support to many national economies. Karst aquifers provide an estimated 20% of the world's drinking water, and include the largest wells and springs on Earth.

Caves and karst are home to many of the planet's most diverse, important, and rare ecosystems, supporting ecological diversity above and below the ground. The world's most significant cultural and archaeological sites often are found in karstic and non-karstic caves. While caves and karst benefit all societies, they also present some unique challenges.

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“EXPLORE, UNDERSTAND AND PROTECT”

is the main goal of the International Year of Caves and Karst.
With your help, we seek to:

- **improve** public understanding of how caves and karst touch the daily lives of billions of people
- **promote** the importance of caves and karst through sustainable development, particularly in water quality and quantity, agriculture, geotourism/ecotourism, and natural/cultural heritage
- **demonstrate** how the study and proper management of caves and karst is critical to global economic and environmental health
- **build** worldwide educational capacity through activities targeted on cave and karst science
- **promote** awareness of the interdisciplinary nature of cave and karst science and management, and emphasize how interactions between different areas of science and management will be needed increasingly in future research, education, and environmental protection
- **establish** durable partnerships to ensure that these activities, goals and achievements continue in the future beyond the International Year of Caves and Karst.



INTERNATIONAL CAVE ANIMAL of the Year 2021

cave beetles

The International Cave Animal of the Year raises attention for the little-known zoological diversity in subterranean habitats in general and with an international focus, thus contributing to global awareness of cave protection.

It is part of the International Year of Caves and Karst (IYCK) and an initiative of the International Union of Speleology (UIS). The UIS is comprised of 54 member nations which support the International Year of Caves and Karst.

The UIS hosts the International Congress of Speleology which will be held in Savoie-Technolac, Le Bourget du Lac, Savoie, France in July 2021. It will be expanded into the major international event that will celebrate the International Year of Caves and Karst.

<https://uis2021.speleos.fr/>

The IUCN Species Survival Commission Cave Invertebrate Specialist Group supplies information on endangered cave animals.

www.iucn.org

Different species around the world will be declared as national cave animals of the year for 2021. To learn about them, the cave beetles on this flyer, and for more information about the International Year of Caves and Karst, visit:

www.iyck2021.org



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Cave Beetles – First International Cave Animal of the Year

Beetles are the most diverse animals in our planet with approximately 400,000 species described.

They are insects, have six legs, a pair of antennae and two pairs of wings. Their forewings (elytra) are hardened, cover part of the body, and together with their hard exoskeleton offer good protection from predators. Beetles can live on land or in water.

The Slenderneck Beetle *Leptodirus hochenwartii* was the first cave insect described. It was first discovered in September 1831 by a cave guide who picked it up while exploring a part of the Postojna cave system in southwest Slovenia. The blind beetle's discovery was published in 1832 by the entomologist Ferdinand J. Schmidt. It lives in cold and usually large caves in South Europe's Dinaric Mountains.

Aquatic cave beetles live in springs and groundwater, are predominately from the family Dytiscidae and are predatory in both their larval and adult forms. They require air to breathe and must access the water surface every 30 minutes to 1 hour. The greatest diversity of stygobiotic dytsicids in the world are within calcrete aquifers in arid Western Australia.

Cave animals can be ecologically classified into three main groups:

Occasionally cave visitors, use caves typically for shelter during certain times of the year, but must return to the surface for food, to reproduce, or some other important need.

Cave loving animals can spend their entire lives in caves, but also in surface habitats like in the earth, under stones or the bark of trees. They are even able to reproduce in caves, and form permanent populations but have no specific adaptations to life in caves.

The "true" cave animals have adapted their complete life history to the subterranean habitat, they lack of eyes, are depigmented, have elongated bodies and appendages, and slower metabolisms than their surface relatives. The famous Slenderneck Beetle *Leptodirus hochenwartii* belongs to this group.

To learn more about cave beetles of the world see www.iyck2021.org



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