

From the Karst of the World to Deep in the Karst of Texas

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Karst, the World, and NCKRI

NCKRI Mandates:

- **Further the science of speleology**
- **Centralize and standardize speleological information**
- **Foster interdisciplinary cooperation in cave and karst research programs**
- **Promote public education**
- **Promote national and international cooperation in protecting the environment for the benefit of cave and karst landforms**
- **Promote and develop environmentally sound and sustainable resource management practices**

Chen et al., 2017

What is the International Year of Cave and Karst?

**Organized by the UIS
to educate:**

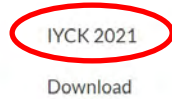
- the public
- policymakers
- land managers
- educators
- students
- scientists
- the world!

about the importance
and challenges of caves
and karst



Explore, Understand, Protect

What is the International Year of Cave and Karst?



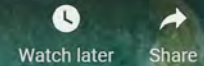
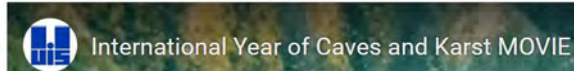
Caves

Karst hydrology

Surface phenomena

Events

Partners



Watch on YouTube



www.iyck2021.org

www.nckri.org

A Resource for Cave and Karst information



IYCK 2021

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Surface phenomena

Karst rock formations on the surface are formed through **dissolution** during direct contact between rainwater and the rock on the surface or the rock buried under soil. The intensity of dissolution is influenced mainly by the amount of rainfall, available carbon dioxide, and rock characteristics. The amount of rainfall is key: the more water that is available, the faster the rock will dissolve (the largest amount of rainfall is in the tropics, at around 2,500 mm/year). Lack of water (arid areas such as deserts and the Arctic with less than about 7 mm/year), means little or no dissolution. As rainfall dissolves the land surface, the height of the area decreases over thousands of years in a process called karst denudation.

The karst features that form on a rock surface depend on the amount of water that falls or flows over the rock, the type of rock, the presence or absence of soil and vegetation, as well as the steepness of the slope. The specific conditions determine if small corroding groves (rills, meanders, karren) are created, or larger features (dolines or hums). Surface karst features mostly reflect recent climates. Modern arid climates may have few and small karst features, but some may have large caves below formed hypogenically during wetter past climates.

Land surfaces in karst areas can vary greatly. Many karst areas have few or thin soils, creating rocky surfaces that are impossible for agriculture and are even difficult to cross. In such areas, any thick soils are concentrated at the bottom of dolines and wide fractures. In some climates and rock types, such as dolomite, the rock surfaces are smoother, dells and other traces of a surface water drainage occur, soils are thicker, and cultivation is common. In most karst areas, there is usually no water on the surface because it enters the ground easily through crevices, dolines, caves, and related features.



A Resource for Cave and Karst information



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Event announcements

The following events are supporting our cause. To add your event, send your announcement in the format below to webmaster@uis-speleo.org.



Date: due to COVID-19 pandemic **POSTPONED** to 24-31 July 2022

Location: Le Bourget-du-Lac, Savoie, France

Event name: 18th International Congress of Speleology

Event description: 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. This year the congress will be expanded into the major international event that will celebrate the International Year of Caves and Karst.

For more information: <https://uis2021.speleos.fr>



Date: all year

Location: online event

Event name: Meet the Hypogenic Caves

Event description: On the occasion of the International Year of Caves, the Hypogenic Caves 2021 project is created to help identify hypogenic caves through images on social networks Facebook, Instagram, Twitter and a website dedicated to them. During 52 weeks of the 2021 an image of a cavity will be published weekly describing the morphologies, speleoforms or their relationship with the hypogenic caves.

For more information: <http://www.hypogenic-caves.com/>



Date: all year

Location: online and possibly in person in Italy

Event name: Italian National Days of Speleology (Giornate Nazionali della Speleologia)

Event description: A year-long series of events to safeguard caves and teach the importance of caves.

How to Get Involved



IYCK 2021

Caves

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Planning Guides

INTERNATIONAL YEAR OF CAVES AND KARST 2021
 国際洞窟・カルスト年 2021
 "Explore, understand and protect"
 探査、理解、保護
www.iyck2021.org
 Union Internationale de Spéléologie
計画ガイド
PLANNING GUIDE
 by Dr. George Veni - UIS President

Leaflet

"EXPLORE, CONHEÇA E PROTEJA"
 é o principal objetivo do Ano Internacional das Cavernas e do Carste.
 Com sua ajuda, nós procuramos:

- **melhorar** a compreensão pública de como as cavernas e o carste tocam a vida cotidiana de bilhões de pessoas.
- **promover** a importância das cavernas e do carste através do desenvolvimento sustentável, particularmente no que diz respeito a qualidade e quantidade de água, agricultura, geo e ecoturismo e patrimônios naturais e culturais.
- **demonstrar** como o estudo e o correto manejo das cavernas e do carste é fundamental para a saúde econômica e ambiental do planeta.
- **desenvolver** capacidade educacional mundial por meio de atividades direcionadas à ciência das cavernas e do carste.
- **promover** a conscientização sobre a natureza interdisciplinar da ciência e manejo de cavernas e do carste e enfatizar como as interações entre diferentes áreas da ciência e do gerenciamento serão cada vez mais necessárias em educação, proteção ambiental e pesquisas futuras.
- **estabelecer** parcerias duradouras para garantir que essas atividades, metas e realizações continuem no futuro além do Ano Internacional das Cavernas e do Carste.

Posters

INTERNATIONAL YEAR OF CAVES AND KARST 2021
 „Explore, understand and protect“
 Organized by the International Union of Speleology

KARST is a type of landscape that covers about 20% of the world's land surface, with special surface, hydrological and underground features and phenomena.

CAVES are the best-known type of karst feature, but many other features exist - karren, dolines, poljes, blind valleys, intermittent lakes, sinking streams, large springs, subterranean rivers.

SPELEOLOGY is the scientific study and exploration of caves. They contain exceptional geological, biological, and cultural value, but are highly vulnerable to damage.

The Blue sites on the map show the world karst. www.iyck2021.org

Karst requires a complex understanding of the environment in which we live. Cave maps and studies let us see the hidden side of the earth. Karst and caves present new, exciting challenges. We must search to ensure the best possible future for protection and public appreciation, and for the best benefit to society.

Caves have always played an important role in the development of human culture. The presence of caves and karst features have shaped the way we live, the way we think, and the way we work. Cultural and archaeological sites often are found in karst areas and caves.

Caves and karst are home to many of the world's most diverse, important, and endangered forms. Cave ecosystems and geological features are extremely sensitive to human activities and visits. Change is their nemesis. If possible, it is usually of local, expensive, and long-term nature.

The International Year of Caves and Karst (IYCK) is an extension of the International Union of Speleology's efforts to the management of caves through international cooperation www.iyck2021.org

www.iyck2021.org



www.iyck2021.org

www.nckri.org

What is the Current Status?

As of 4 September 2021:

- 236 partners from 50 countries
- 289 events completed
- 80 events planned
- 39 planned events are multiple events
- 4 government proclamations
- and more keep rolling in daily

Contacts: over 30 million!



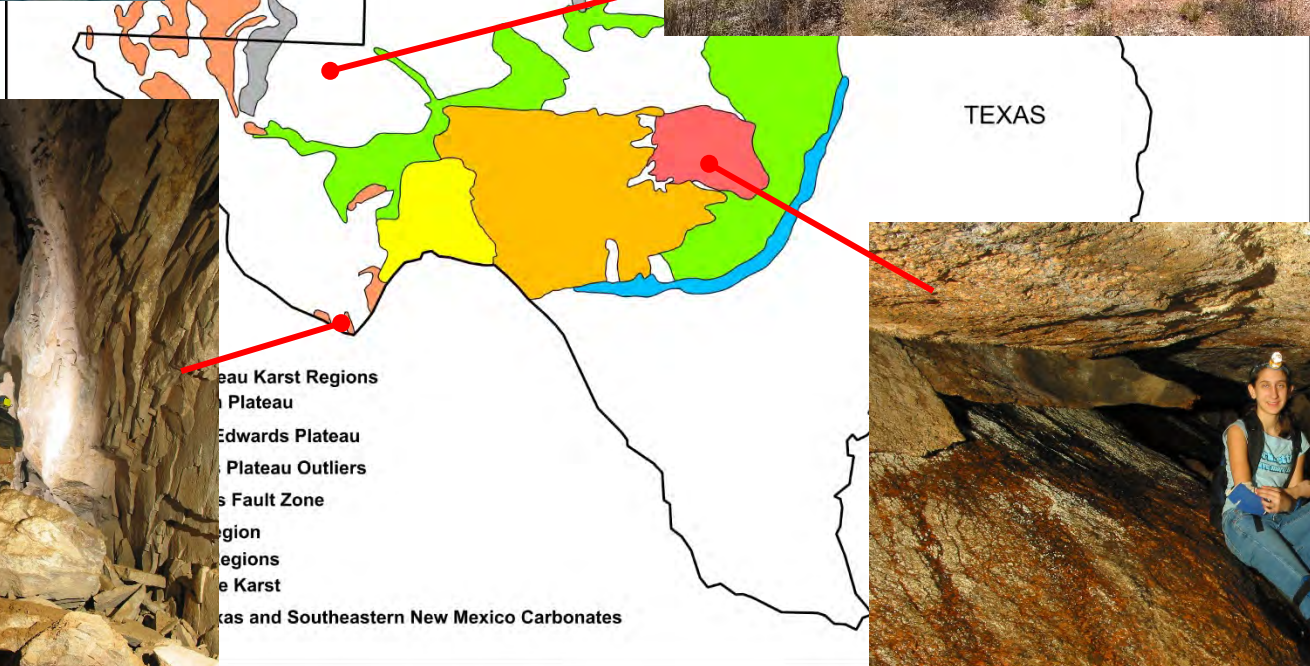
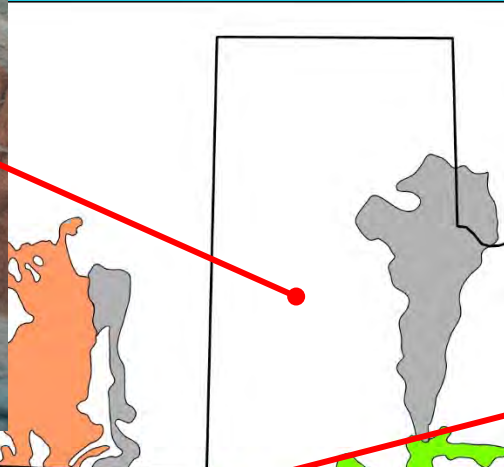
What's Coming Up?

Celebration at UNESCO Headquarters on 13 September 2021!

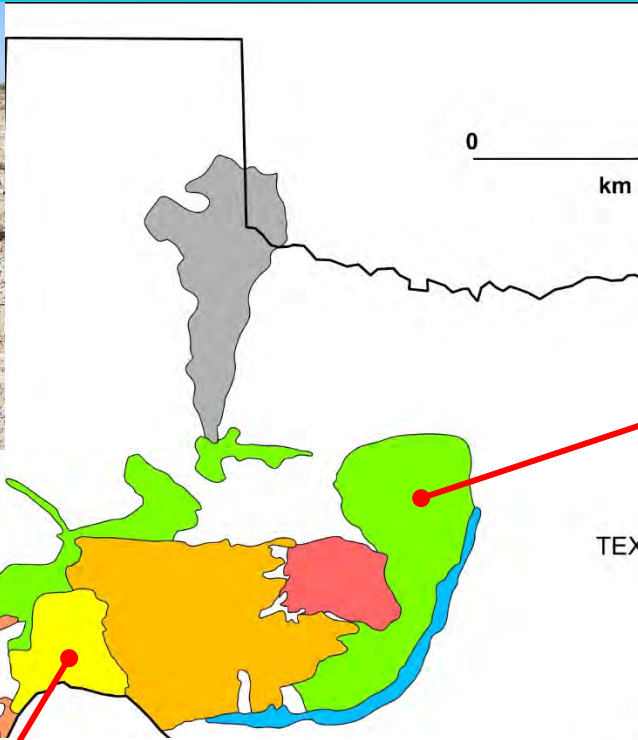


From: <https://en.unesco.org/about-us/unesco-house> (2021)

Caves and Karst of Texas

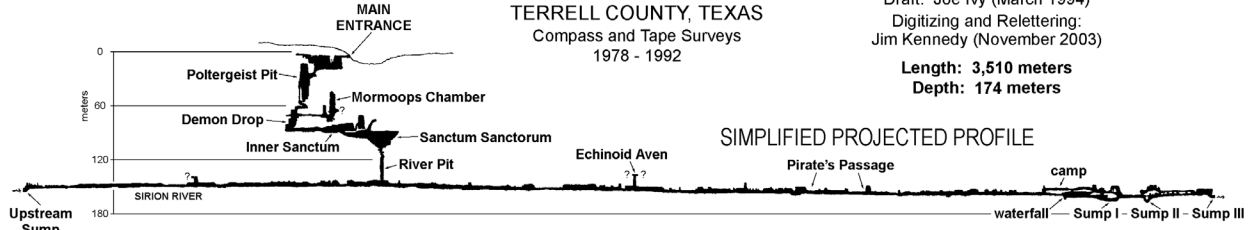


Caves and Karst of Texas

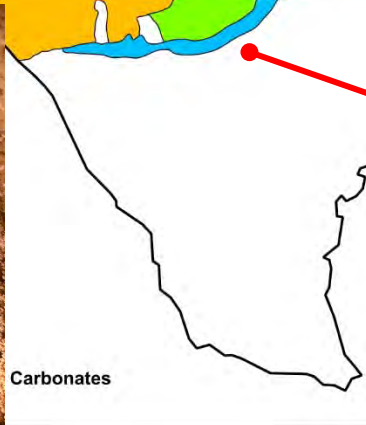
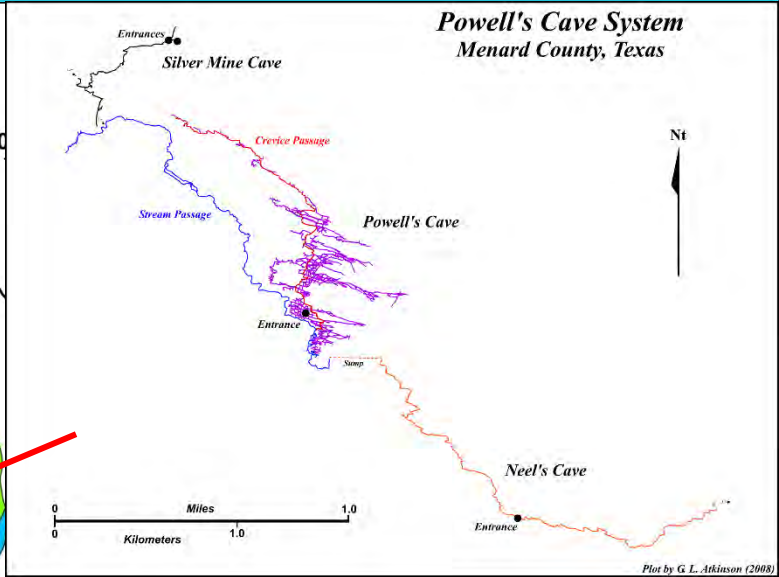
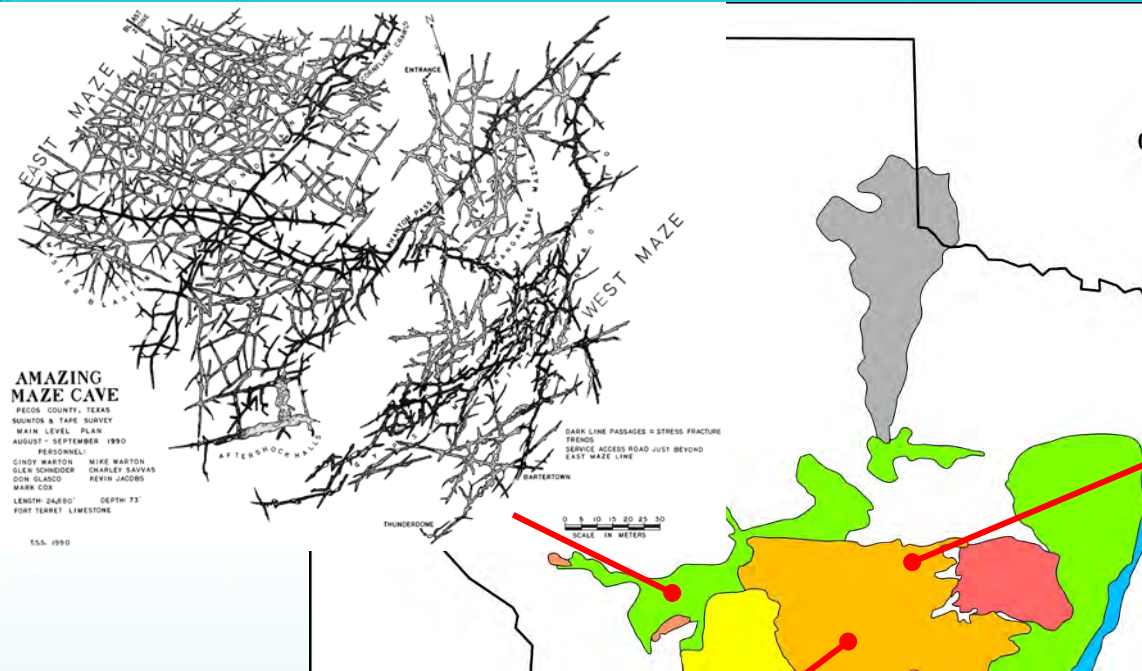


Sorcerer's Cave
 TERRELL COUNTY, TEXAS
 Compass and Tape Surveys
 1978 - 1992

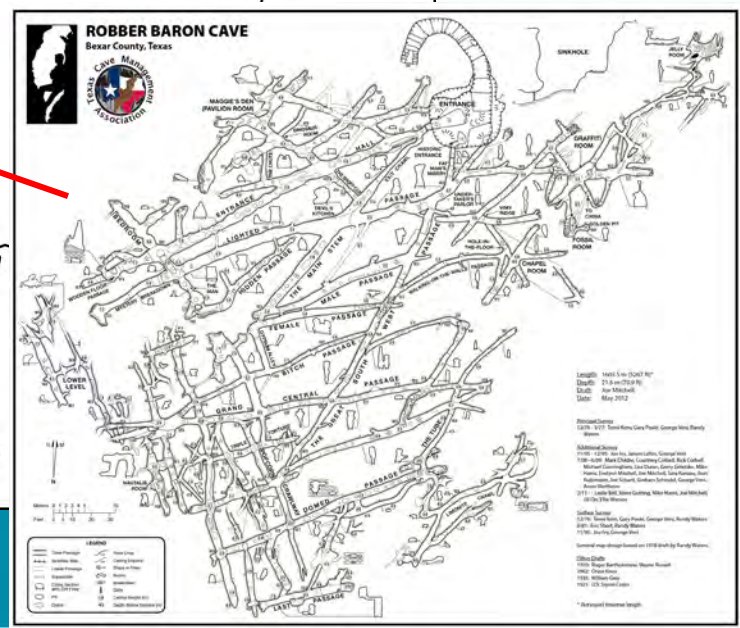
Plot and Sketch: George Veni
 Draft: Joe Ivy (March 1994)
 Digitizing and Relettering:
 Jim Kennedy (November 2003)
Length: 3,510 meters
Depth: 174 meters



Caves and Karst of Texas



Carbonates



Caves and Karst of Texas

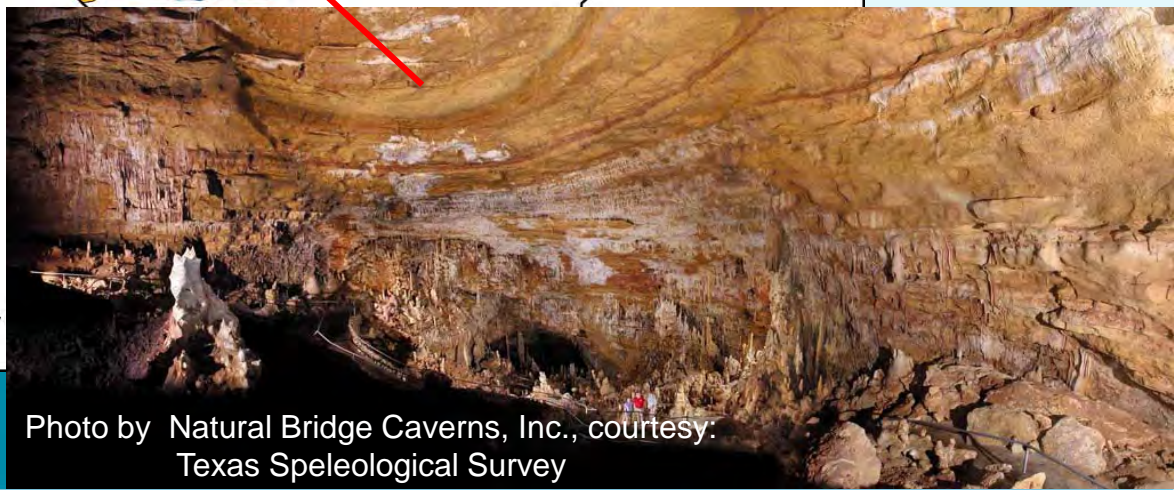
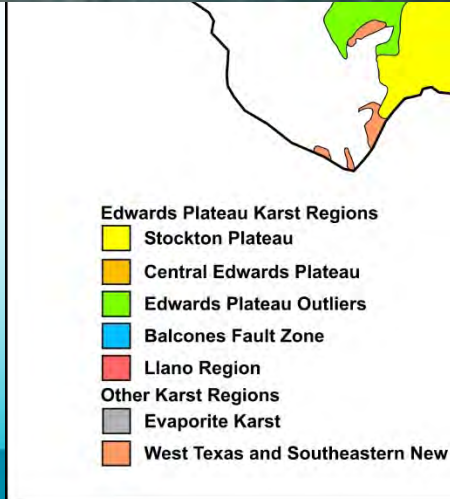
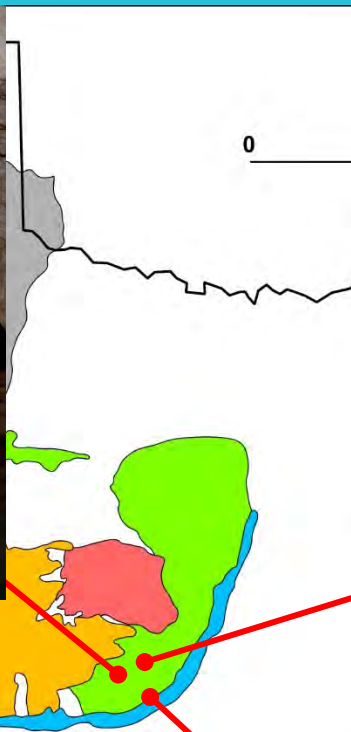


Photo by Natural Bridge Caverns, Inc., courtesy: Texas Speleological Survey

Texas Caves and Karst and the International Year

Explore, Understand, Protect:

- Keep exploring
- Continue the research
- Continue events and promotions
- Follow-up with decisionmakers and others of influence
- Don't forget tomorrow's explorers, scientists, and leaders!

