

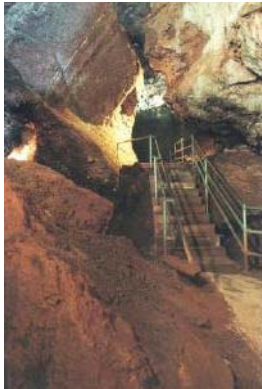
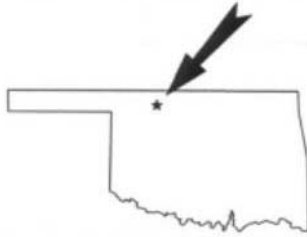
OZARK ADVENTURE

SPONSORED BY FANTASTIC CAVERNS SCIENCE RESEARCH PROGRAM

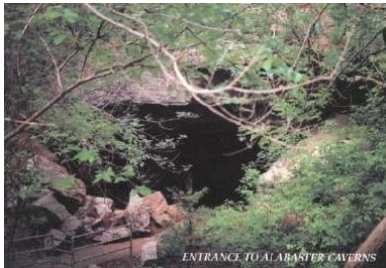
Alabaster Caverns Freedom, Oklahoma

Caves are formed in many different ways. They are formed

in different mediums, or kinds of rock. They are found in all types of terrain and all countries throughout the world. This is even true of a place once called "Indian Territory" less than a hundred years ago. I am talking about Oklahoma and its underground treasure -- **Alabaster Caverns**.

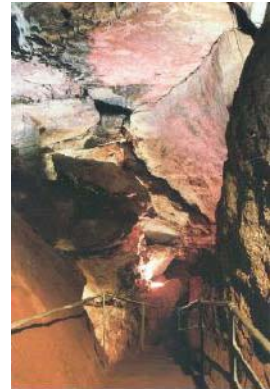


According to geologist, the caverns began forming when an ancient ocean, known as the Premian Sea, covered part of North America. Deep layers of mineral deposit were left behind as the sea receded. These layers of minerals were filled with cracks that let rain water slowly move through the rock.



This process not only carved the caves from "solid" rock, it also is responsible for the formations found inside.

Alabaster Caverns is different from other caves here in the Ozarks. It is made from gypsum instead of limestone. For example, cave formations in limestone caves form at an estimated rate of one cubic inch per 150 years. In gypsum caves, the solubility (sal-ye-bil-et-e) of the rock is different...A 1/8 inch stalactite can take about 5,000 years to form! In **Alabaster Caverns**, the tour follows almost a half mile of developed trails and there is only one stalactite visible. But remember, this little formation could easily be 40,000 years old.



The caverns, located inside **Alabaster Caverns State Park**, are home to several cave dwelling animals. These include bats, salamanders, and cave crayfish. For additional information on **Alabaster Caverns**, E-mail Park Naturalist Mike Caywood at MCaywood@OklahomaParks.com.



**ALL
NEW
FOR
2009!**



An exciting **NEW** program awaits visiting students at Fantastic Caverns in 2009. **CSI: FANTASTIC CAVERNS** takes full advantage of the cave's Underground Classroom with a very special. Visiting students will learn about some very discreet ways we can harm a cave system without even knowing it...skin oils, lint, hairs and even pollution making its way into the groundwater system.

They will also come upon a cave crime scene. Vandals have struck, and in their wake, left behind evidence that students will process, analyze and evaluate to narrow down the suspects. Vandalized cave formations, scattered evidence, evidence markers, crime-scene tape and investigators will give this very special program an authentic feel. Plus, it all takes place in the cave's Underground Classroom where it's always a warm 60° regardless of the weather outside.

CSI: FANTASTIC CAVERNS includes the all-riding tour of the caverns.

CSI: FANTASTIC CAVERNS is a special, 90-minute, "touchable" educational experience designed especially for school groups.



**Fantastic Caverns
supports science
because today's
students are
tomorrow's
community education
leaders.**

MAPPING AN UNDERGROUND RIVER

A stream often flows through the lower passageway of **Fantastic Caverns**. Many visitors sitting in the tour tram above the stream ask the same question: Where does the water come from and where does it go?

The passageway can be crawled in both directions – upstream and downstream – for some distance. But eventually it becomes too small and water-filled to continue.

Because water can move through spaces too small for people, scientist must develop ways, other than crawling, to track underground water movement. They use a technique called dye-tracing.

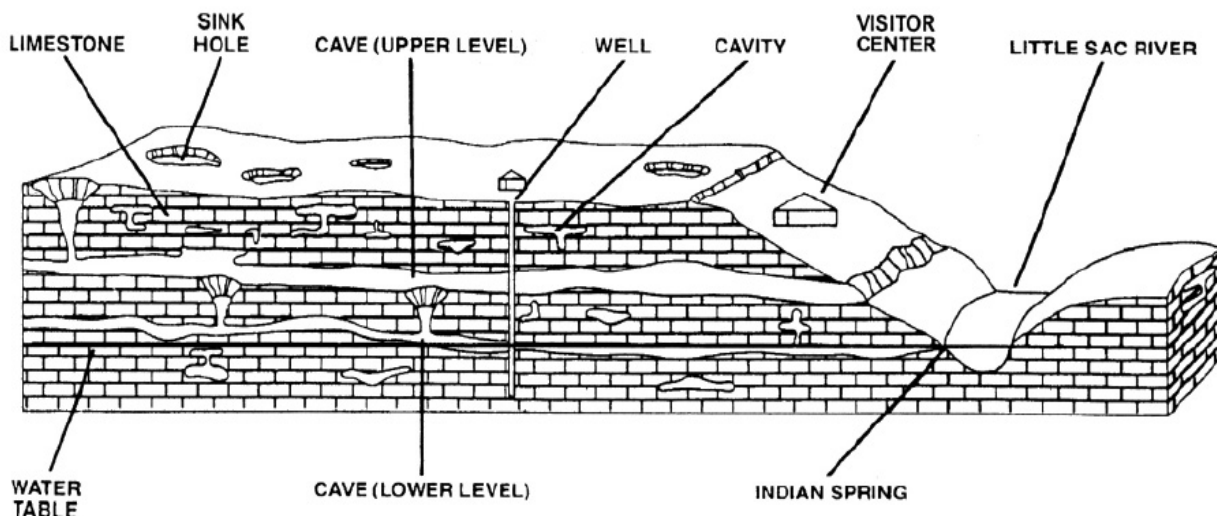
First, they look for and identify areas on the surface where water seems to disappear into the ground. One common feature here in the Ozarks is the sinkhole. Water which flows into most sinkholes simply disappears into the funnel-shaped pit. By pouring a special marking dye into this water, they can trace underground movement.

Then the scientist detects the dye with charcoal collection packets placed at area springs where water flows back out of the ground. The charcoal traps some of the dye, telling where at least some of the water has come from.

As strange as it may seem, much of the water which enters Fantastic Caverns starts out on the surface near the Springfield-Branson National Airport, about five miles away. The area around the airport is covered with sinkholes. In fact, rain falling here does not flow into the rivers. It just disappears into the ground like a giant sponge. An area of about fifteen square miles captures and moves underground water into the cave system, where it eventually returns to the surface at area springs and wells.

The area northwest of Springfield is the second most studied karst area in the United States (just behind Mammoth Cave in Kentucky.) A karst area is full of caves, springs and sinkholes. Underground, it's like Swiss cheese – full of holes!

Why all this study? In karst areas like this, three-fourths of the rain water moves underground, where it then enters cave systems. Once underground it may move great distances to flow out of springs, or even be sucked up by water wells. This water moves through caves, creates rivers and becomes our drinking water. A necessary first step in protecting our drinking water (and ourselves) from pollution is to know where the water comes from.



FALL 2008 WORD SEARCH

Find These Vocabulary Words!

P	N	Z	U	C	S	T	R	S	Y	E	M	K	G	H	R	U	N	P
N	V	O	T	P	D	P	T	V	Z	D	V	T	R	R	M	N	P	N
H	O	K	I	T	S	R	R	Y	D	G	X	S	W	K	I	D	A	H
S	C	I	N	T	E	T	L	I	M	K	T	I	P	R	N	E	L	S
T	S	Z	T	A	U	A	R	Y	N	M	V	G	W	E	E	R	I	T
A	D	L	M	A	N	L	K	E	W	G	N	O	R	T	R	G	N	A
L	T	L	A	A	M	T	L	M	A	Y	S	L	E	S	A	R	R	L
A	E	P	A	D	G	R	N	O	P	M	K	O	T	A	L	O	E	A
C	R	C	G	N	N	H	O	C	P	N	K	E	A	B	S	U	T	C
T	R	R	H	D	D	A	T	F	C	E	P	G	W	A	J	N	A	T
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R	R	P	M	A	Y	I	O	Q	M	N	B	Q	L	H	O	T	U	R
G	Y	Z	R	R	C	Y	R	A	Y	T	T	M	E	I	M	Y	O	G
G	V	K	F	S	J	S	M	L	L	D	T	A	M	F	N	M	R	G
D	S	K	S	C	E	N	E	B	Y	K	A	R	S	T	L	D	G	D
S	T	C	E	P	S	U	S	E	N	S	N	R	E	V	A	C	T	S
P	N	Z	U	C	S	T	R	S	Y	E	M	K	G	H	R	U	N	P

ALABASTER

FORMATION

OZARKS

STREAM

ANALYZE

GEOLOGIST

PIT

SUSPECTS

CAVERNS

GROUNDWATER

POLLUTION

TERRITORY

CHARCOAL

GYPSUM

SCIENCE

UNDERGROUND

CRIME

KARST

SCENE

UPSTREAM

DYE

LANDFORM

SPRINGS

VANDALS

EVIDENCE

MINERALS

STALACTITE

WATER