Ice Caves of Lake Superior (in ITO Science Shorts)

You know what these are, right? Yeah, they’re icicles. They form each winter when water thawing and freezing makes them grow. And of course gravity causes them grow downward.

Properties in the melt water help create a glassy structure that’s unique in each formation.

I think this one has some iron or silt in it.

In some places, like the southern shore of Lake Superior, this melting and freezing happens on a grandiose scale. That means HUGE. The environment for creating these ice formations is normally in sea caves and sea arches found near an ocean.

The size of Lake Superior and the exposed rock formations here, provide a perfect mid-continent example.

Hundreds of millions of years ago, sands were washed into an ancient ocean, forming this bedded sandstone. See the layers? Later, it was “geologically uplifted” and exposed to weathering from waves and water.

When crashing waves wear away at the base of the easily eroded sandstone cliffs, a feature called a “reentrant “develops. Sea caves evolve when a number of these reentrants join behind the face of the cliff.

In some places, different amounts of erosion carve out pillars and arches. How cool.

As winter’s temperatures drop, the powerful waves and resulting waterfalls slowly begin to freeze and encrust the lakeshore with a variety of Mother Nature’s ice formations.

Inside the carved out areas, plumes of spray from waves get encased in thousands of icicles that decorate the ceilings of the caves.

The ice formations in each cave are so different. The views change from chamber to chamber and vary from the size of a toy box to a three-story building!

In some places, the caverns extend into the lakeshore the length of a football field.

Unlike most ice formations you see, these have different colors. The frozen waterfalls reveal various shades of orange from the iron and other minerals leached from the sandstone.

Or sometimes, the clear water surging past the unfrozen shoreline from Lake Superior can create blue formations that look like they came from glaciers.

The icicles at the Lake Superior ice caves can be as small as these delicate little guys… to these frozen waterfalls that dangle for more than thirty feet.

Those ice caves are only accessible during really cold winters, when Lake Superior is frozen enough to allow safe travel to the caves. So check online for conditions and safety advice, before

you go ice caving… into the outdoors.