The glaciers also impacted the Escarpment by burying it in places, eroding it in others, changing the appearance of the cliff face, and scratching and polishing the top of the ledge. Water from melting glaciers flowed into fractures in the rock, creating caves.

Cold air moving through fractured rock in the Escarpment produces unique microclimates that allow highly specialized animals and plants, some remnants of the ice age, to live there. Because of this, the portion of the Escarpment in Canada has been named a World Biosphere Reserve. Some of the world's oldest cedar trees grow on the Escarpment in Wisconsin.

Native Americans were attracted to the Escarpment thousands of years ago. Their tools, campsites, symbols, and effigy mounds remain along the top of the ledge in Wisconsin.

When European settlers arrived in Wisconsin in the mid-1800s, they quarried rock from the Escarpment and burned it in kilns to make lime, which was used mostly for mortar in building construction, and kiln ruins can be seen in many places. Iron ore was mined from the Escarpment in Dodge County. Rock is still quarried for building stone and aggregate for road building. The limy soil on top of the Escarpment made for good farmland. More recently, the Escarpment has become the site of wind farms, parks, vineyards, and subdivisions.

The Escarpment is a source of fresh water, and is important for groundwater recharge. Springs commonly flow from the contact between the dolomite and shale. However, pollutants can easily contaminate drinking water from the Escarpment because overlying soil is especially thin.

Wisconsin has proclaimed 2010 the Year of the Niagara Escarpment, in recognition of its many benefits to the State. Rock seems commonplace and indestructible, but the Escarpment is actually a unique, fragile environment. It provides us with wildlife, water, resources, recreation and respite. If we protect and preserve it, future generations will be able to enjoy the Niagara Escarpment for years to come.

The Niagara Escarpment ancient "backbone" of North America

Joanne Kluessendorf
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Menasha

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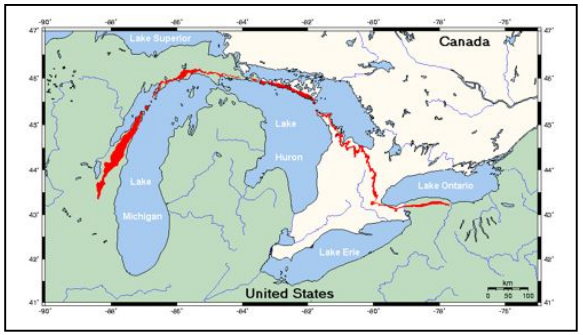
What is the Niagara Escarpment

The Niagara Escarpment is a prominent rock ridge that stretches nearly 1,000 miles in an arc across the Great Lakes region of North America. From eastern Wisconsin, the escarpment continues its discontinuous route north and east into the Upper Peninsula of Michigan, through southern Ontario and on to western New York State, where Niagara Falls cascades over it.



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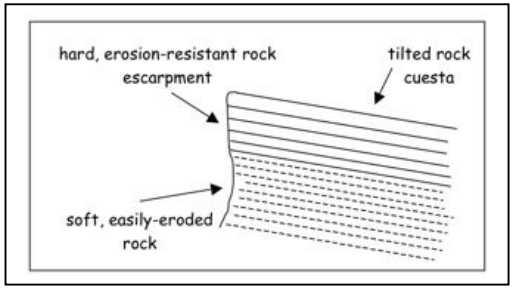
The red line on this map shows the path of the Niagara Escarpment.

In Wisconsin, the Niagara Escarpment extends 250 miles, from Waukesha County north to Rock Island at the tip of Door County. Locally, the Escarpment in Wisconsin is called "The Ledge." It is a much-beloved part of the landscape, offering spectacular views, inviting scenery, and opportunities for reflection and recreation.

At its tallest, in Ontario, the Niagara Escarpment is more than 1100 feet high.

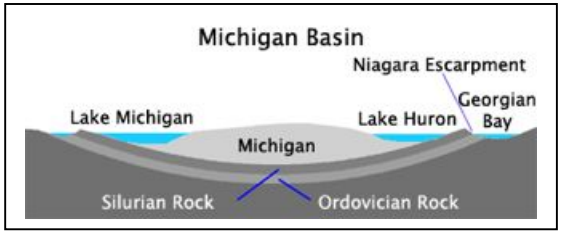
In Wisconsin, the Escarpment is highest along the western edge of Door County, where it reaches a height of about 250 feet.

An escarpment is the steep cliff edge of a cuesta, which is a sloping ridge formed from slightly tilted layers of sedimentary rocks.

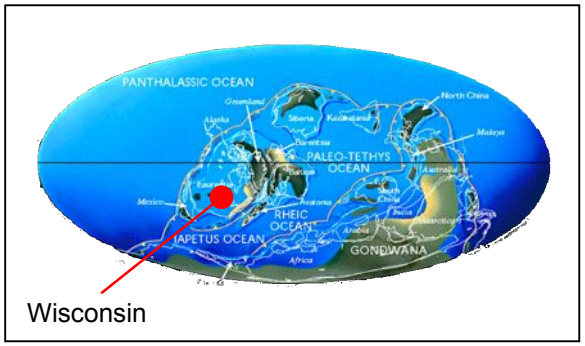


The steep cliff face is created when soft, easily eroded rocks, such as shale, undercut hard, erosion-resistant rocks like limestone or dolomite.

The rocks of the Niagara cuesta were tilted when movement in the Earth's crust caused rock layers beneath the Lower Peninsula of Michigan to sag, forming a bowl-shaped depression. The Niagara Escarpment is the exposed, outer edge of this feature. It is not a giant reef as it is sometimes described.



The rocks in the Niagara Escarpment were deposited during the Ordovician and Silurian periods of Earth's history, about 450 to 430 million years ago. At that time, this part of North America was located about 20 degrees south of the equator and covered by shallow tropical seas. The now-solid rocks were once soft mud on the seafloor. Fossils of marine creatures that lived in these seas can be found in the rocks today.



Following millions of years of weathering and erosion, the harder Silurian dolomite (magnesium-rich limestone) was left behind as the steep cliff face above the soft Ordovician shale. Although there are Silurian and Ordovician rocks present in surrounding areas of the U.S. and Canada, they are not part of the Niagara Escarpment.

This high, hard Niagara Escarpment helped to create some prominent features of the landscape in eastern Wisconsin. About 30,000 years ago, during the last ice age, it caused the vast glacier moving south from Canada to split into two lobes, creating Green Bay, Lake Winnebago, and Lake Michigan.