

Shelf Ice on Lake Michigan

By Caroline Jones, Indiana Dunes State Park

The number of visitors to Indiana Dunes State Park drops steadily as the weather gets colder. The beach attracts many people in the summer, but far fewer in the winter. Those visitors that do come to the park in the snow often ask about the sign at the front entrance. The sign warns "Shelf ice dangerous / stay off / death can occur". It is a strongly worded sign, but for good reason.

Shelf ice is just what it sounds like - a shelf of ice over the water. The formation of the shelf begins with a frozen beach. After the beach freezes, a small ridge, or icefoot, usually forms near the water's edge.

Ice that is floating on Lake Michigan gets blown against the shoreline. The strong winter winds and waves push the pieces of ice against the icefoot, creating piles of ice. The piles freeze together, forming abstract sculptures along the shore. The shelf sometimes extends hundreds of feet offshore.

Though the shelf of ice looks solid, it is not. Air pockets and unfrozen areas make the ice unstable and unsafe to walk on. When the shelf ice is covered with snow, it is even more deceiving. The snow cover gives the appearance of a uniform surface.

The water under the ice is, of course, extremely cold. Depending on the thickness and snow cover, very little light may penetrate the ice. A person walking on the shelf ice could fall through a thin spot. If this happened, they may have difficulty finding the spot they fell through, and be unable to resurface.

That is why the warning sign at the entrance is so strongly worded. Shelf ice can be beautiful to look at, but deadly to walk on.

