

# Great Lakes Are Seriously Freezing Over This Winter

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Michigan, Huron, Erie, and Ontario. Of course, it helps to be familiar with the sitcom – as Sam Malone was a retired pitcher for the Boston Red Sox - for this to make any sense, but I still remember it, AND USE IT, after all of these years.

The Great Lakes formed due to repeated glaciations across the area during the Pleistocene, which goes back in time about 2 million years. The last glaciation was at its maximum extent about 18,000 years ago, and the current Great Lakes region was under a massive sheet of ice that was miles thick. This ice basically froze to the surface in the region and ripped out the softer rocks when the glacier would move (Figure 2). When the ice eventually receded, it left behind huge depressions in the earth, which were filled with water as the ice sheet melted.

Today, water depths in the Lakes are as deep as 1,332 feet – in Lake Superior, which averages 483 feet deep across the entire Lake. For comparison, our very own Lake Pontchartrain averages about 13 feet deep. Lake Erie is the shallowest Great Lake averaging 62 feet deep, and the deepest spot in the lake is 210 feet. The Lakes in their totality hold 5,430 cubic miles of water. If all of this water were spread evenly

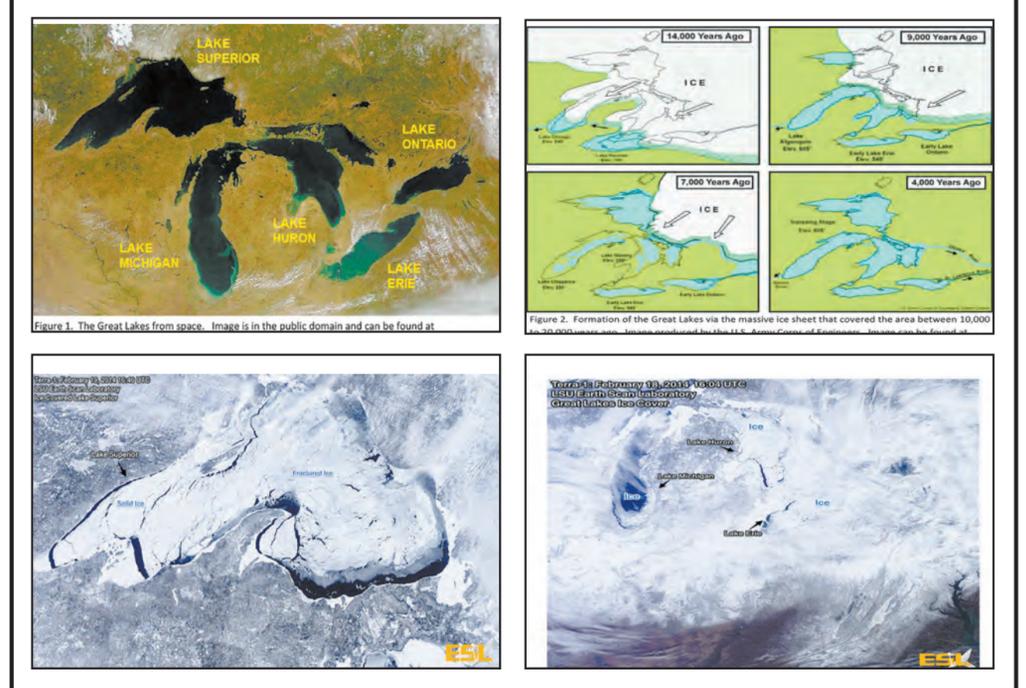
across North America, the water depth would be five feet deep. If all the water in Lake Pontchartrain were spread evenly across North America...well, I don't think anyone would notice.

The maps in Figures 3 and 4 show the state of the Lakes as of February 18, 2014. These images are from the Terra-1 satellite, which is operated by NASA and provided to me by the Earth Scan Lab at LSU. As shown, a significant proportion of the Great Lakes

surface is now frozen. NOAA's Great Lakes Environmental Research Laboratory indicates that the Great Lakes ice cover is currently (Feb. 19) at 80 percent, with Lakes Superior, Huron, and Erie almost completely frozen over. Lakes Michigan and Ontario still have large portions of their surfaces as open water.

This provides additional evidence as to how cold this winter has been. For comparison, the maximum extent

of ice coverage for Lake Superior last winter was about 40 percent, while Lake Huron was 46 percent, and 84 percent for Lake Erie. Despite how cold our Louisiana winter has been this year, we can still rejoice in the fact that our Great Lakes – Pontchartrain, Maurepaus, Lery, Borgne, and Salvador – are all unfrozen and await Louisiana's fishermen. Please contact me with any questions or complaints at keim@lsu.edu.



Over the past week, I had a colleague, Jordan Pino, provide me two recent satellite images of the Great Lakes. The images were astonishing, and I decided to share them with Da Parish. So, I will give a brief history of the Great Lakes and share some fun facts.

A quick geography of the Great Lakes is shown in Figure 1. I always remember them in order based on a mnemonic devised nearly 30 years ago by Chalmette's own Greg Dutruch. We were roommates at the time, and we were studying something involving the Lakes, and after watching several episodes of the sitcom "Cheers," he devised this for remembering the order of the Lakes: "Sam Malone Hates Every Out." The first letters of each word – SMHEO – are the order of the Great Lakes from west to east: Superior,

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