

## *Glacial Lakes around Michigan* FLIP BOOK construction tips

### Materials you will need:

- The flip-book page, printed out
- Crayons, markers, or colored pencils
- Scissors (you may need help with this)
- Stapler (you may need help with this)

### Here's what to do:

- Color in the drawings. It is easier to color the sheet before you cut the pictures out.
- Cut out the six pictures by cutting along the solid lines. Make sure the paper is straight across the bottom.
- Stack the pages, face up, in numerical order. The figure numbers are from MI DEQ GSD Bulletin 4 Glacial Lakes around Michigan – for the more info go to <http://www.deq.state.mi.us/gsd/freepaga.html>
- Staple the stack of pictures together with one staple at the very top.
- Hold at the top and flip the pages from back to front.

Watch as the glaciers move over Michigan!

### Some questions to consider

- What happens when you stack the pictures in ascending order (from 6 to 11)?
- What happens when you stack the pictures in descending order (from 11 to 6)?

Figure 6: The retreating ice front halted and built the Valparaiso-Charlotte-Ft. Wayne Moraine. As the ice left this position the first known lakes began to form. (about 14,500 years ago)

Figure 7: Advancing temporarily, the glacier almost forced Early Lake Chicago out of its basin. The Lake Border Moraine was built at this time. (about 14,000 years ago)

Figure 8: After making one last strong re-advance, the ice front halted and built the most prominent topographic feature in the region, the Port Huron Moraine. (about 13,000 years ago)

Figure 9: Lake Algonquin stage was initiated when the Trent valley outlet was dammed by a local readvance. (about 11,000 years ago)

Figure 10: The lakes were drained down to extreme low levels when the retreating ice front uncovered a sea level outlet at North Bay. (about 9,500 years ago)

Figure 11: With the ice burden gone, the earth's crust in the northern part of the region began to rise. When the North Bay outlet rose to the same level as the Port Huron and Chicago outlets, the Nipissing Great Lakes were born. (about 6,000 to 4,000 years ago)


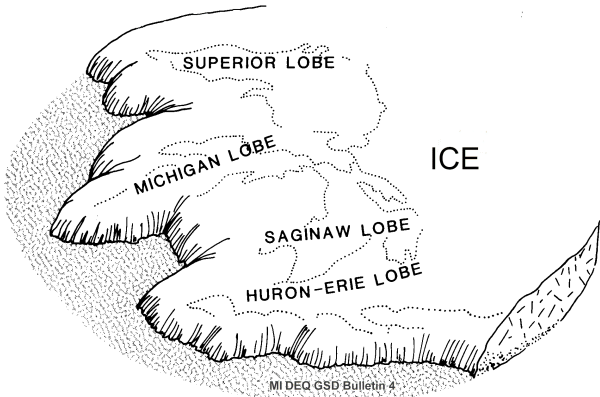
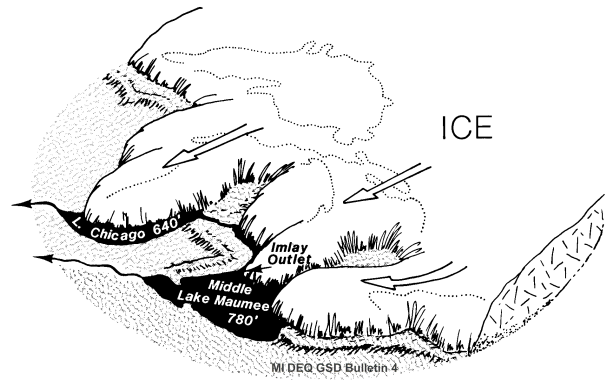
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Figure 6: About 14,500 years ago.



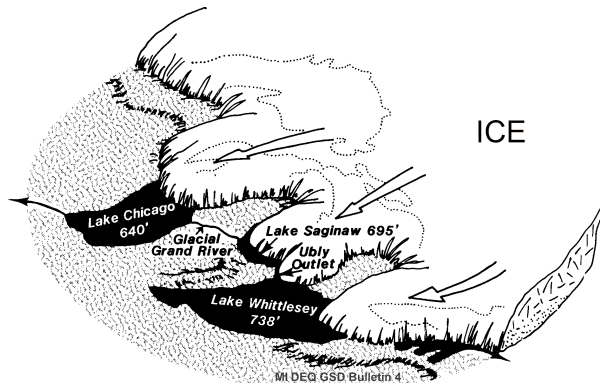
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Figure 7: About 14,000 years ago.



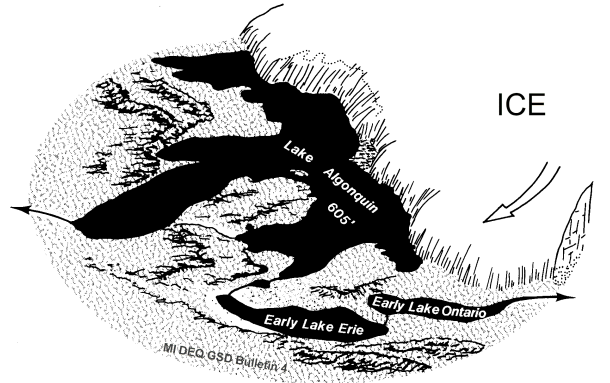
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Figure 8: About 13,000 years ago.



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Figure 9: About 11,000 years ago.



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Figure 10: About 9,500 years ago.



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Figure 11: About 6,000 to 4,000 years ago.



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