



Lake-Effect Snow

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Why in News?

Recently, parts of upstate New York, Pennsylvania, Ohio, and Michigan, situated along the [Great Lakes of North America](#), witnessed "lake-effect snow."

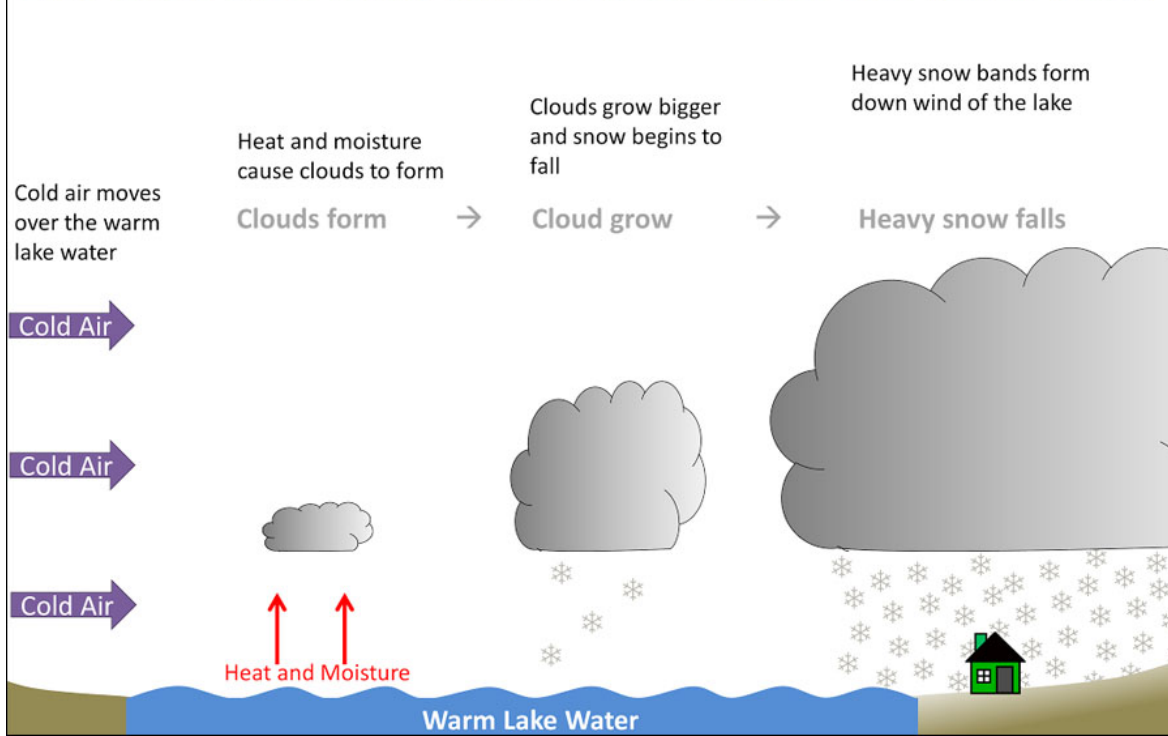
- A heavy snowstorm caused by this phenomenon near **Lake Erie in New York** has transformed homes into **ice-covered igloos**.

What is Lake-Effect Snow?

- **Definition:** Lake-effect snow is a **localized weather phenomenon** characterized by **heavy snowfall** that occurs near **large bodies of water**, such as the **Great Lakes in North America**.
 - It typically happens during colder months when cold air passes over relatively warmer lake surfaces, resulting in intense and narrow bands of snowfall.
- **Mechanism of Formation:**
 - **Cold Air Movement:** Cold air often from Canada, flows over the unfrozen, warmer waters of the Great Lakes in North America.
 - The lakes transfer heat and moisture to the cold air at the surface.
 - **Cloud Formation:** The warm, moist air **rises, cools rapidly in the colder atmosphere above, and condenses to form clouds**.
 - **Snowfall:** These clouds develop into narrow bands that produce intense snowfall, often at rates of 2-3 inches or more per hour.

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Lake effect snow forms when **cold air** moves over **warm water**



Great Lakes of North America

- The Great Lakes, consisting of **Superior, Michigan, Huron, Erie, and Ontario (from west to east)**, are among the most significant freshwater ecosystems in the world.
- **Geography and Scope:** The Great Lakes basin encompasses large parts of two nations, the United States and Canada. Except for Lake Michigan, the **Great Lakes form a natural border between Canada and the United States.**
 - The lakes connect to the **Atlantic Ocean via the Saint Lawrence River**, and to the **Mississippi River basin through the Illinois Waterway.**
- **Global Significance:** The American Great Lakes account for 21% of the Earth's surface freshwater.



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