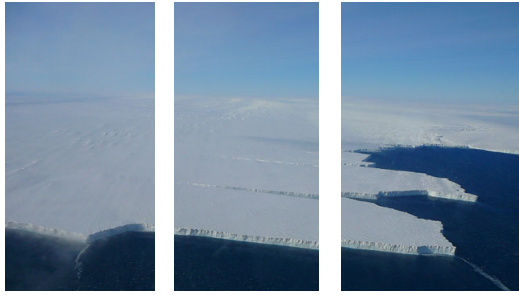


**POLAR I.C.E. (Interactive Climate Education)
PINE ISLAND GLACIER (P.I.G.)
FAST FACTS FOR STUDENTS**



Pine Island Glacier Ice Shelf, West Antarctica & the Amundsen Sea - Photo M. Wolovick

- **Glaciers Are:** Large areas of snow compressed into ice over hundreds of thousands of years
- **Glaciers Move:** When a glacier thickens the pressure of the ice above causes it to soften and it flows under its own weight, slowly like a **very** thick honey
- **Glaciers Form:** in cold temperatures, which often also means at higher elevations.
- **Glaciers change size and shape:**
 - They grow when the amount of new snow > the amount of snow melt
 - They shrink when the amount of new snow < the amount of snow melt
 - They stay the same size when the amount of new snow = the amount of snow melt
- **Glacier Terms:**
 - Accumulation – on a glacier this refers to adding new snow
 - Ablation – on a glacier this refers to losing snow
- **Ice Shelves Are:** Extensions of the ice sheet that reach out over the water forming a shelf of ice at the front edge of ocean-ending glaciers. They work like a gate or barrier holding back the ice on the land as it moves toward the ocean.
- **Melting Ice Shelves Happen:** When warming ocean water melts away at the edges and underneath the ice shelves. When sections of ice shelves melt or break away it is like opening a gate allowing the ice to surge forward from the land to the ocean.
- **Glacier Speed:** Glaciers move at different speeds! The speed and movement of a glacier depends on many different factors including: where they are; what they are moving over; and where they terminate (end). Some move only 1 meter a year, others are faster, and a few are really fast. To race some of the fastest glaciers on Earth try the “**Engagement Activity**”.
- **Why do we care about polar glaciers?** The poles are connected to us through:
 - The atmosphere that carries winds, weather masses, and small particulates from the mid-latitudes to the polar-regions and from the polar-regions back to mid-latitudes.
 - The ocean water circulation that carries warm water to the poles and cold water back to the mid-latitudes.
 - The ice in the polar regions that helps to cool the Earth’s temperature
 - Sea Level–As climate changes water moves from land glaciers to the oceans and back to glaciers. Ice in the polar regions formed during the last ice age. As the Earth warms polar ice melts, bringing water back into the oceans causing sea level to rise.
- **How can we tell if glaciers are changing?** Three separate sets of evidence. They are (1) moving faster (accelerating); (2) losing height (surface elevation); (3) losing weight (shrinking in mass).
- **IceSat:** Satellite launched into space to measure ice surface elevation changes. IceSat operated from 2003-2009 measuring ice surface with an accuracy of 15 cm (~ 6 inches!)
- **Pine Island Glacier (P.I.G.):** A glacier on the West Antarctic Peninsula that flows into the Amundsen Sea. P.I.G. is currently the fastest moving Antarctic glacier, pushing more ice into the ocean than any other Antarctic glacier.

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