



Earth Reflects!

Melting glaciers and the albedo effect

Background Info

Energy from the sun, or **solar radiation**, is either absorbed by the Earth's surface or reflected back into the atmosphere. The amount of solar radiation that is reflected from a surface is called **albedo**. Snow-covered surfaces, such as the polar ice caps, reflect between 80-90% of light energy away from their surface and therefore have a high albedo. Darker colored surfaces reflect less solar radiation, retain a greater amount of heat and have a lower albedo.

Albedo is an important concept to address when discussing **climate change** because of the increased rates of melting sea and land ice. At the Earth's poles vast areas that were once highly reflective have been replaced by a darker colored ocean. The dark surface then retains more heat and contributes to further melting. Scientists call this cycle a positive feedback loop because each process is encouraging the other.

Albedo can be observed on a small scale: you may have noticed how hot it feels when you wear a black shirt (lower albedo) in the sun compared to a cooler white shirt (higher albedo). In addition to the increased rates of melting caused by climate change, human activity has influenced the Earth's albedo through land use changes such as urban development, conversion of forests to farmland, and deforestation.

This satellite image of southwestern Greenland shows the drastic albedo issues between the ice sheet and surrounding ocean:

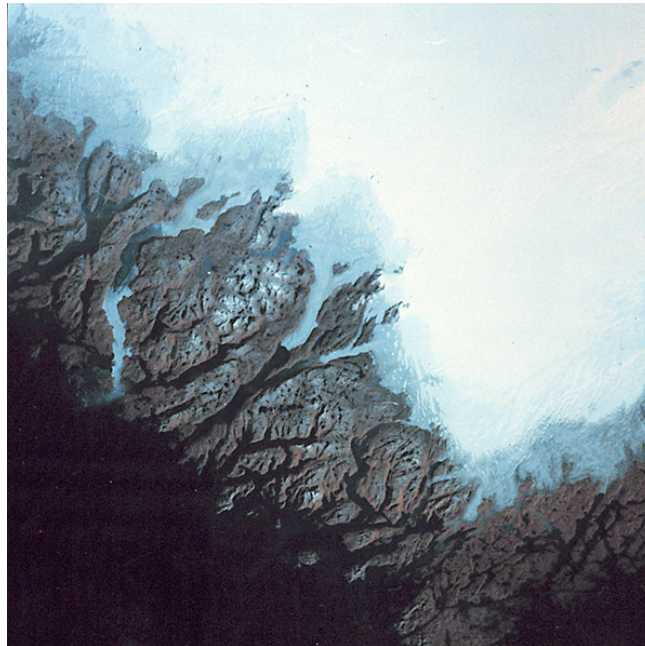


Photo by Anker Weidick, USGS Woods Hole Science Center

Credits

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