

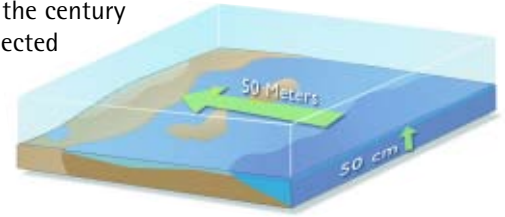


# FACTS

## Increased Warming, Melting Glaciers and Sea Ice

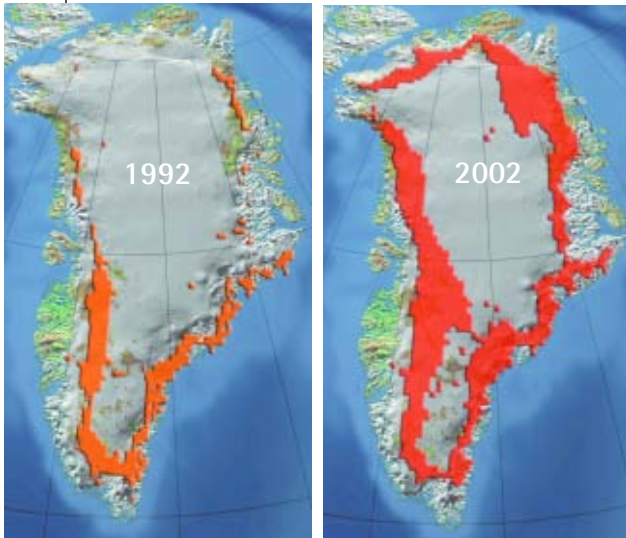
*Much larger changes are projected,  
consequences have worldwide implications*

At least half the summer sea ice in the Arctic is projected to melt by the end of the century along with a significant portion of the Greenland Ice Sheet, as the region is projected to warm an additional 7 to 13 degrees F (4 to 7 degrees C). These changes could in turn have a significant impact on the world's climate, according to the final report of the Arctic Climate Impact Assessment (ACIA). More than 300 scientists participated in the study commissioned by the Arctic Council, a ministerial intergovernmental forum comprised of eight nations, including the United States, and six Indigenous Peoples federations.



A 50-cm (about 1.5 feet) rise in sea level will typically cause a shoreward retreat of coastline of 50 meters (about 150 feet) if the land is relatively flat (like most coastal plains), causing substantial economic, social, and environmental impacts.

### Greenland Ice Sheet Melt Extent

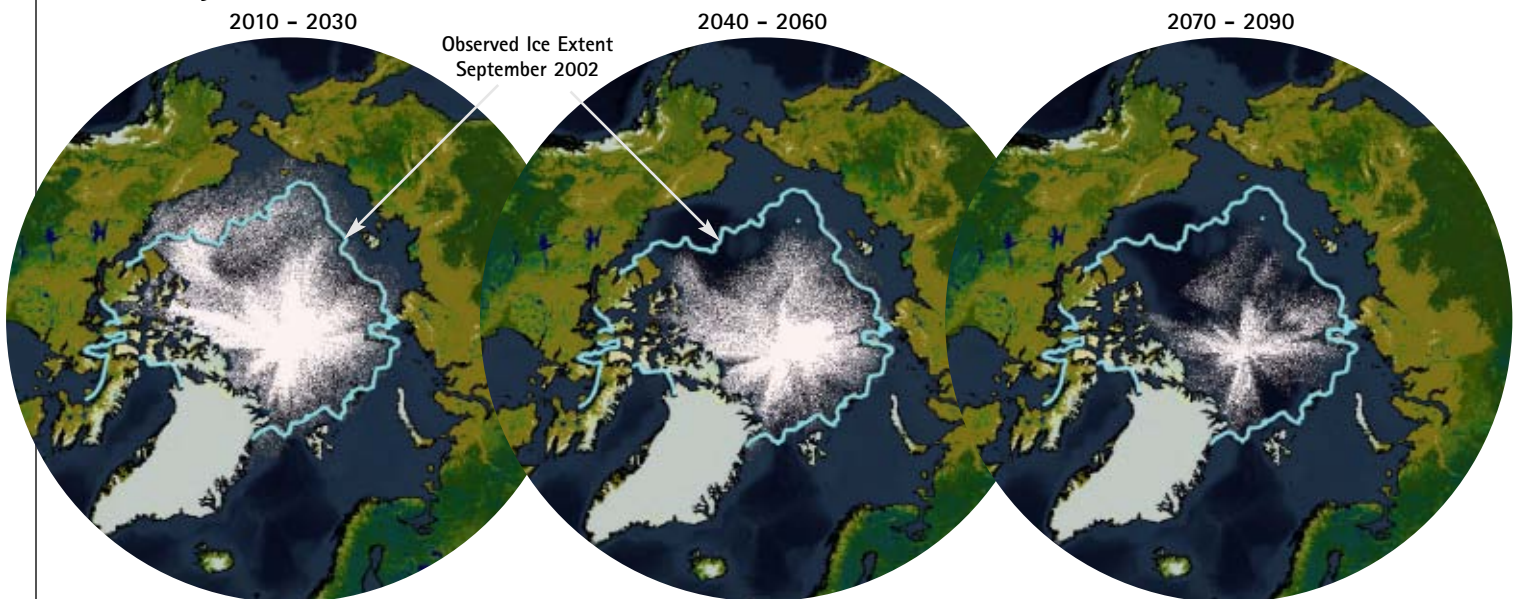


Seasonal melt extent on the surface of the Greenland Ice Sheet has been observed by satellite since 1979 and shows an increasing trend. The melt zone, where summer warmth turns snow and ice around the edges of the ice sheet into slush and ponds of meltwater, has been expanding inland and to record high elevations in recent years. When the meltwater seeps down through cracks in the ice sheet, it may accelerate melting and, in some areas, allow the ice to slide more easily over the bedrock below, speeding its movement to the sea. In addition to contributing to global sea-level rise, this process adds freshwater to the ocean, with potential impacts on ocean circulation and thus regional climate.

### Areas in Florida Subject to Inundation with 100 Centimeter (3.3 ft) Sea Level Rise



### Projected Sea Ice Extent



September sea-ice extent, already declining markedly, is projected to decline even more rapidly in the future. The three images above show the average of the projections from five climate models for three future time periods. As the century progresses, sea ice moves further and further from the coasts of arctic land masses, retreating to the central Arctic Ocean. Some models project the nearly complete loss of summer sea ice in this century.