



TOPIC:

Implications and causes of shrinking arctic ice extent

PROJECT PERSONNEL:

Stephanie Pfirman, Barnard College

Krista Hoff, Barnard College

GENERAL BACKGROUND INFORMATION ON THE SUBJECT:

Arctic sea ice melts and freezes with the seasons. Arctic ice extent has been decreasing since monitoring began in 1979. The summer of 2007 saw a dramatic decline in ice extent, which models did not predict.

TERMS YOU SHOULD KNOW (VOCABULARY):

arctic - (from Greek arktikos which means northern) northern polar region of the earth which includes almost the whole area of the Arctic Ocean and adjacent areas of Eurasian and North American continents.

albedo - a measure of how well a surface reflects solar energy

drift ice/pack ice – sea ice that moves from winds, currents, or other forces.

first-year ice - floating sea ice of no more than one year's growth

multiyear ice - ice that has survived at least one melt season; it is typically 2 to 4 meters (6.6 to 13.1 feet) thick and thickens as more ice grows on its underside.

sea ice - any form of ice found at sea which has originated from the freezing of sea water.

WHY ARE WE STUDYING THIS IN THE POLAR REGIONS?

Sea ice is an important component of regulating global climate. Bright white ice reflects a lot of incoming solar radiation, while dark waters absorb this heat. Melting and freezing of ice also affects the way water moves throughout the oceans. As sea water freezes, the salt excluded from the crystals makes the ocean water dense. Cold dense water moves southward while warmer water moves northward. Changes in sea ice can alter this global ocean “conveyor belt”. Also, many animals rely on Arctic sea ice for feeding, breeding and raising young and many people who live in Arctic depend on these animals for their livelihood.

HOW DOES THIS AFFECT US HERE IN THE UNITED STATES?

Arctic warming will disrupt Earth’s natural air conditioner, leading to warming around the rest of the globe.

TO LEARN MORE ABOUT THIS TOPIC:

<http://nsidc.org/seaice/>

<http://www.nrdc.org/globalWarming/qthinice.asp>