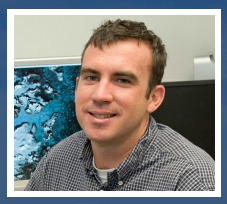
A Global Picture of Glaciers



Ian Howat
Associate Professor, Earth Sciences

CURRENT RESEARCH

Advanced Satellite Imagery and Supercomputers Help Thwart Future Catastrophe

As the Greenland and Antarctic ice sheets melt into the ocean, sea levels rise. The rate of melt has dramatically increased over the past twenty years, and continues to accelerate, potentially affecting the hundreds of millions of people living near sea level, and trillions of dollars' worth of infrastructure.

Even though a small increase in sea level rise could have disastrous consequences, scientists don't yet understand enough about how ice sheets work to accurately predict how fast sea level rise will happen. Dr. Ian Howat of Ohio State University, in collaboration with other universities and government labs, is taking advantage of new satellites and advanced supercomputing to tackle this problem head on. He knows that rapid glacier melt and sea level rise occurred in the ancient past but believes that the current changes are unprecedented and due to human induced warming.

- Dr. Howat's team is among the only groups that fuse observations and large-scale computer models, so that their observations go directly into improving predictions of ice sheet change. They have developed the most advanced tools for applying observations from the latest generation of satellite imagers.
- By building the input datasets required to constrain very powerful computer models of the Earth system, Dr. Howat's team will provide estimates of ice sheet changes at a break-through level of confidence.
- Using software that his team developed, Dr. Howat is constructing very high resolution digital elevation models of areas of the Earth important for sea level rise, including the ice sheets and coastal zones. These models will allow the team to detect glacier changes with unprecedented detail....

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AFFILIATION

Ohio State University

EDUCATION

- Ph.D., in Earth Sciences, 2006 , University of California, Santa Cruz
- B.A., in Geology, 1999 , Hamilton College

AWARDS

- Cryosphere Young Investigator Award
- Presidential Early Career Award for Scientists and Engineers

RESEARCH AREAS

Environment, Oceanic, Natural Disasters / Emergency, Clean Energy

FUNDING REQUEST

The ice sheets are big and remote, and it takes a huge amount of logistics to do even the most basic work there. Your donations will cover travel costs to weather stations and maintenance of these stations. Your funds would also pay for more researchers who can help Dr. Howat process the huge amount of data involved in the studies. With the increased pace of research, they hope to have a complete model of the Greenland Ice Sheet within a year.