



The midnight sun still gleamed at 1 a.m. across the brilliant expanse of the Greenland ice sheet. Brandon Overstreet, a doctoral candidate in hydrology at the University of Wyoming, picked his way across the frozen landscape, clipped his climbing harness to an anchor in the ice and crept toward the edge of a river that rushed downstream toward an enormous sinkhole.

If he fell in, “the death rate is 100 percent,” said Mr. Overstreet’s friend and fellow researcher, Lincoln Pitcher.

But Mr. Overstreet’s task, to collect critical data from the river, is essential to understanding one of the most consequential impacts of global warming. The scientific data he and a team of six other researchers collect here could yield groundbreaking information on the rate at which the melting of Greenland ice sheet, one of the biggest and fastest-melting chunks of ice on Earth, will drive up sea levels in the coming decades. The full melting of Greenland’s ice sheet could increase sea levels by about 20 feet.

“We scientists love to sit at our computers and use climate models to make those predictions,” said Laurence C. Smith, head of the geography department at the University of California, Los Angeles, and the leader of the team that worked in Greenland this summer. “But to really know what’s happening, that kind of understanding can only come about through empirical measurements in the field.”

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