TJ Sipin

Sara N

Earth 10

10.15.19

Reading Assignment 1

The ice shelves of Antarctica are responsible for more than 75% of the perimeter of the continent, protecting the land-bound ice from ocean water. However, scientists are discovering that the wall has unforeseen weaknesses from above and below the ice. In East Antarctica, 65,000 blue lakes form across ice shelves during the summer, a number much higher than scientists realized. In West Antarctica, there are upside down rivers of warm water melting the ice shelves’ weak spots from below. With the Earth warming, both processes can contribute to the melting of the sea shelves and eventually the land-bound ice itself. The lakes, though a beautiful shade of dark blue, are serious trouble for the ice. Its dark color allows the lake to absorb more of the sun’s energy to convert to heat. To make matters worse, there are clusters of lakes in regions of fragile ice shelves prone to breaking apart, properly known as lake-induced hydrofracturing. According to Chris Stokes, a glaciologist at Durham University, we are “much closer to those kinds of densities [that can cause hydrofracturing] than we thought we were.” The upside-down rivers consist of patches of warm water that rise from deep, forming channels that crack at the ice shelves from below. Research shows that they usually form near weak points at the edges of ice shelves, carving as much as 30 feet of ice out in a single year.

<https://www.nationalgeographic.com/science/2019/10/how-antarctic-melting-above-below-ice-sheet/#close>