

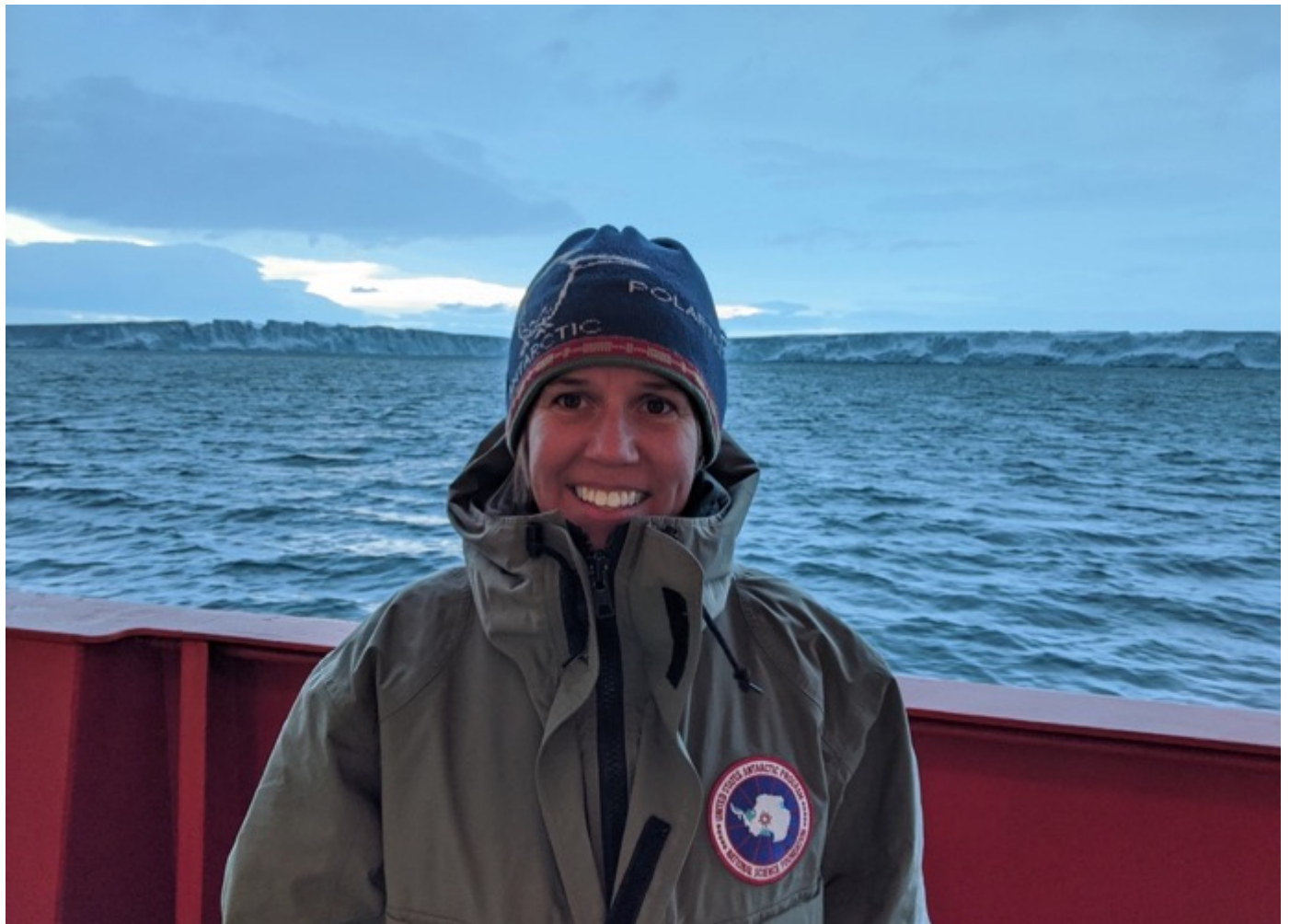


CONSERVATION

STUDENTS AND NATURE

# The Gravity of Our Climate Situation

NWF GUEST BLOGGER SARAH SLACK | MARCH 3, 2020



Montauk School teacher Sarah Slack in front of the Thwaites Glacier at the southwest edge of Antarctica. Photo by Sarah Slack (PolarTREC 2020), Courtesy of ARCUS.

[RiSC teachers](#) are passionate about climate and resilience education. One particular example is middle school STEM teacher Sarah Slack of Brooklyn, who joined the RiSC program in 2019.

January 2020, Slack traveled to the southwest coast of Antarctica on a National Science Foundation icebreaking vessel as a [PolarTREC](#) selected teacher, to study the Thwaites Glacier.

Often referred to as “The Doomsday Glacier,” Thwaites is roughly the size of Florida and is melting rapidly due to record high air temperatures (65 degrees Fahrenheit on February 6) and incursions of warm water from below. If Thwaites melts, it will add approximately two feet to global sea level and open the door to a cascading series of changes to the West Antarctic Shelf and to coastal communities around the world.

Understanding how and why this glacier is changing is of vital importance—which Slack is working to communicate to her students through [daily blog posts](#) on the PolarTREC website. “Everything I have learned in Antarctica has reinforced the need for students, educators, scientists, public servants—really, everyone—to pursue improving the resilience of our communities with great urgency,” writes Slack. “The ice is melting. You’re seeing it in the real world there. Scientists are seeing it in their data and in reality here.”

In various posts, Sarah describes some of [the technology used to collect information on Thwaites](#), [how the amazing abilities of seals make them essential members of the data collection team](#), and [what the changes to Thwaites mean to RiSC students and their communities in New York](#).

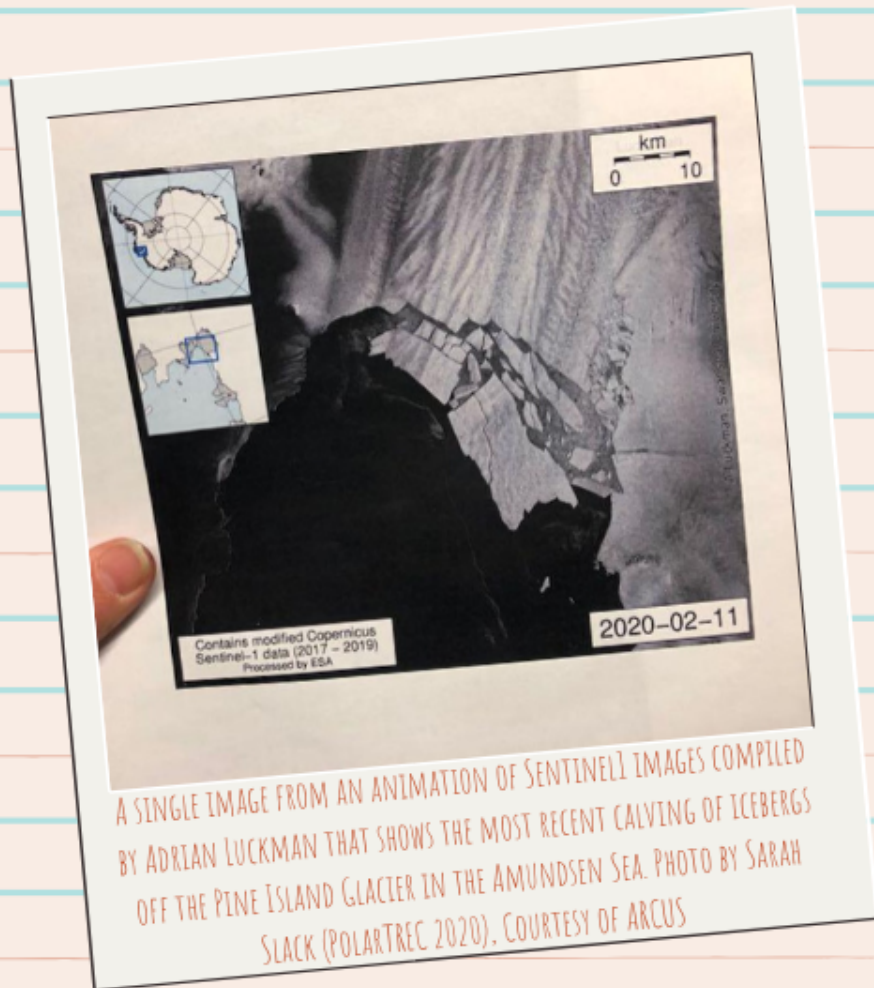
An excerpt from Sarah’s first-person account of her expedition to study Thwaites is below. All of her journal posts can be found at [www.polartrec.com/expeditions/thwaites-offshore-research](http://www.polartrec.com/expeditions/thwaites-offshore-research).

# THE GRAVITY OF OUR SITUATION

By NWF guest blogger Sarah Slack

Thwaites Glacier isn't really all that big in an Antarctica-level scheme of things—but this relatively tiny glacier is now accounting for about 4% of sea level rise each year. If all of Thwaites melted, it would raise global sea levels by as much as two feet. My RiSC students are starting to understand what that could mean for people in New York City, not just in terms of day-to-day changes in the high tide line but also for the severity of and damage created by flooding during major storms. I remember well the sensation of the whole city holding its breath, waiting for Superstorm Sandy to strike in 2012 and the way we were reeling in its aftermath. Schools closed for a week when the storm had passed as the city struggled to regain its equilibrium. Events like Sandy will happen more often and in more places and the consequences will be more dramatic.

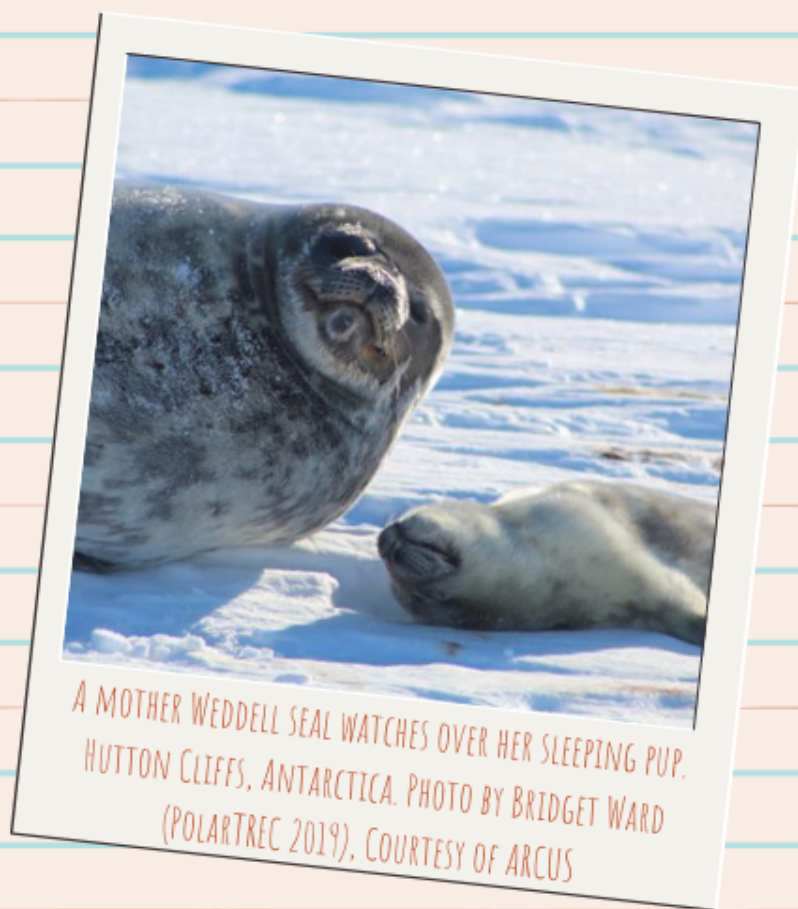
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Oddly enough, as the ice in Antarctica melts, sea level here is expected to decrease. More than 70% of the Earth's fresh water is held in Antarctica's glaciers, with ice more than a mile thick across most of the continent. All of that ice has a lot of mass—no seriously, A LOT of mass. Enough to increase the gravitational pull of the southern pole so that the water in Earth's oceans is actually drawn towards Antarctica and the land under the ice is literally squished down by all the weight on top of it.

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As the ice melts, Antarctica will be freed and the earth will bounce back up, increasing the height of the land above sea level. At the same time, the ocean's water will not be as gravitationally attracted to Antarctica, so it will shift and rise in other places—like New York City. The loss of ice here will have multiplying consequences that'll be felt the most in low-lying cities in the Northern Hemisphere. Keep up the good hard work, RiSC students. We're going to need your help.



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*Conservation, Students and Nature*