

**Ocean Gazing Script**  
**Episode 16**  
**Antarctica melting**

<fade up intro music>

**Ari:** Hi there. This is Ocean Gazing, the podcast where we're admirers of our seas. I'm Ari Daniel Shapiro. This episode is a departure from the usual format.  
<transition into reverberating intro music> This fall, COSEE NOW will be releasing Antarctica Melting, a series of four audio slideshows about climate change in the Antarctic. Just so you know, an audio slideshow is an audio track accompanied by a series of photographs. Each audio slideshow will be about 4 or 5 minutes, and will have a curriculum companion piece to go along with it.

On this episode of Ocean Gazing, you'll get a sneak preview of the audio of the second slideshow in the series. It features Debbie Steinberg, a biological oceanographer at the Virginia Institute of Marine Science. She'll do all of the talking, but I'll come find you when it's over to wrap things up.

As for our last sonic stumper, it's the intro music to Debbie's slideshow. And it was composed by Evan Sanders, the same fellow who wrote the intro and outro music for this podcast. Okay. Onto the sneak preview.

<intro music for slideshow>

**Debbie:** I study zooplankton, the small drifting animals in the sea that are at the mercy of the currents. Being able to study zooplankton in the Antarctic is a bit like being a child in a candy store because they're beautiful. They come in so many different shapes and sizes and colors. Things like krill, which are shrimp-like looking organisms. They are very large: they're as big as a shrimp you might eat for dinner. In the Antarctic, they're the main feeder or grazer on the phytoplankton, the microscopic plants, but they're also the main food source for all these penguins and the baleen whales and the albatross and many of the seals. So they are a crucial link in the food web.

The climate in the Western Antarctic peninsula is changing, more rapidly than other places on Earth. And there's been a warming of the waters there. Because the ice cover has been decreasing, we're finding that there have been changes in the zooplankton community. One of the changes is there's been a decrease in the amount of krill. The juvenile or larval krill feed on ice algae that actually live on the underside of the ice. In the wintertime, there is no sun. It's dark all the time. When there are no other food sources, these larvae actually come up to the underside of the ice and scrape the ice algae, then feed on it. This is what gets them through the long, Antarctic winter. So as the ice goes away, then there's less food for these larvae. So fewer of the larvae end up growing into adult krill.

But what also seems to be happening is an increase in salps. These gelatinous zooplankton – they look like little clear barrels. Salps do much better in warmer waters, waters that are ice free. The salps are expanding their range southward because the water is warming. Krill are much more nutritious food than salps. They have much higher protein and fat content. Salps are basically bags of water. If there continues to be a decline in krill populations, then that could lead to the decline of seals or whales or some of these other predators that are dependent on them for food.

My older son in particular – he's 10 – he very much wants to come on a research cruise with me when he's old enough. And I would love for that to happen. If he becomes an oceanographer and is working down there 30 years from now, I don't know what it's going to look like to tell you the truth. I think it's going to probably look very, very different. But of course, the Earth is going through a big experiment right now and we don't know what the result is going to be.

<outro music for slideshow>

**Ari:** That's our episode for today. Look for all four of these audio slideshows sometime this fall, and their associated curriculum guides.

Here's our sonic stumper for the next episode.

<fade up sonic stumper>

Send us your guess for the stumper on Facebook. Just search for Ocean Gazing. Or go to our website: [www.coseenow.net/category/ocean](http://www.coseenow.net/category/ocean). We get funding for this podcast from the National Science Foundation, and it's a product of the Centers for Ocean Sciences Education Excellence. Special thanks to Peter Solomon, Oscar Schofield, Janice McDonnell, Jim Yoder and Sage Lichtenwalner. Our music's by Evan Sanders. See you next time.