

Chilling

Port Aransas teachers get Arctic experience

By Taryn Walker

Reporter



Skloss traveled on the Healy, a U.S. Coast Guard ship built to operate in temperatures as low as minus 50 degrees Fahrenheit. The ship crunched through four feet of ice at a time while on the Chukchi Sea, off the coast of Alaska. Courtesy photo

When two Port Aransas teachers set off to study ecosystems in the Arctic this summer, their intentions weren't just to research. This trip also was about passing along several messages to their students:

A message to be kind to the planet.

A message that science is everywhere; including outside the classroom.

And a message to inspire continual learning, even when it is during summer break.

Brundrett Middle School's seventh and eighth grade science teacher Andrea Skloss and Port Aransas High School's science teacher Jill Smith made sure to enjoy themselves while working with University of Texas Marine Science Institute oceanographer Ken Dunton and his team. The two teachers worked to collaborate as scientists and journalists with Polar TREC (Teachers and Researchers Exploring and Collaborating).



Smith, pictured at top left, works on a lab with a science class at Harold Kaveolook High School in Kaktovic, AK. Courtesy photo

Whether it was watching polar bears get too close, sifting through trawls of sea life or envisioning icebergs shaped like elephants, Skloss and Smith took it all in.

Skloss on the Chukchi Sea

Skloss worked on the first of three studies with Dunton's team and set sail on a United States Coast Guard icebreaker ship named the Healy on July 29 from Dutch Harbor, Alaska.

More than 50 scientists, 83 crewmembers and Dunton's team of eight from UTMSI traveled to the Chukchi Sea and as far as 73 degrees north latitude, just a chilling 17 degrees from the North Pole.

The Chukchi Sea is on the northwest coast of Alaska and has a northern shelf that is filled with diverse organic matter, including sources of nutrients from benthic (bottom of the sea) organisms.

The sea serves as a desirable place to study - not only in hopes of preserving its pristine nature, but also to research the impact of man in the area, Skloss said.

She first heard about the opportunity with Polar TREC years ago while at the University of Massachusetts. When Skloss initially applied to take part in the study, she wasn't accepted, but after a lot of hard work writing material and with Dunton's help, she was approved.

It's a once-in-a-lifetime opportunity, she said. About 250 apply to fill about 15 slots, and the research groups represent scientists from around the world.

The Healy can operate at below 50 degrees Fahrenheit and is designed to break up to four feet of ice at a time. The crunching sound was remarkable, Skloss said. It's a sound she won't forget.

To most, it seems like it was bitterly cold, but Skloss was nice and toasty in what she liked to call her "Gumby" suit.

Skloss and her team were responsible for running stations every day. They'd take CTD (conductivity, temperature and depth) water readings, use nets to catch both phytoplankton (microscopic plant-life) and zooplankton (animal life) and take grabs of sediment and surface mud, among many other tasks.

She was amazed by the variety of sea stars - purple ones, red ones and even ones that looked like little lemon cookies, she said.

"There was one that I called a shape shifter: One time he had his rays curled up and he looked like a cinnamon roll; another time, he had them out and he looked like a mustache," Skloss said.

Skloss said physical science is something she has to dive a little deeper into. On a personal level, this trip was a way to study in the Arctic, something she hadn't done.

“I learned so much: I mean, I saw a ribbon seal - that’s just one example, but there were so many little small things that I didn’t know even existed there,” Skloss said.

As for her students, she wanted to set an example. It’s important to go out and learn things you wouldn’t be able to learn just anywhere, she said.

On a broader note, she did it for sustainability.

“If you want certain parts of the world to stay the way they are, or to make them better, you need to study them. You also need to see, is man affecting the area, or is he not?”

While on the Chukchi Sea, from looking at previous data she could see that the ice formations were not as big as they were before, she said.

“We can do something to better our environment, whether you accept the data or not, there’s nothing wrong with being kind to your planet,” Skloss said.

Her favorite part of the trip was just being out there to see nature’s beauty, Skloss said softly as she cracked a wide smile. It’s therapeutic, she said.

“The sky, the ice, the clouds; it all looked like a silk dome. The sky would hit the water and it looked like rope lights illuminating from below. For me, looking at the ice was like looking at clouds, I came up with all my own shapes,” Skloss said.

She plans to incorporate her experience and knowledge into several lesson plans, she said.

Skloss highly recommends that other teachers go out and do studies if they have the chance.

“It adds fuel to the fire, that keeps your embers glowing and keeps science alive,” she said.

Skloss is celebrating her 25th year anniversary with Port Aransas Independent School District and she’s now teaching children of former students, she said.

Smith in Kaktovic

Smith left for the small Alaskan town of 300, named Kaktovic on Aug. 7 and returned just before school started here on Aug. 26. They had to leave ahead of time because of bad weather conditions.

One of the biggest struggles Smith and her team faced while researching was fog, snow and choppy seas, she said .

The fairly young town of Kaktovic, located not far from the Canadian border, was incorporated in 1971 and although it’s on an island, there are no ferry systems, bridges,

highways or paved streets. The best way in and out is by airplane, and they don't even have boat ramps or docks, Smith said.

Working in the last wave of Dunton's studies, Smith had to adapt to a lifestyle of not only being a scientist, journalist, housekeeper, cook and roommate, but also a teacher to a very, very small community.

"The classes are very small; they make Port Aransas' classes look big. The graduating class at the high school is typically smaller than five," Smith said. (PAHS graduated 49 seniors in May 2013).

Harold Kaveolook High School has only two science classes, one for the freshmen and sophomores, and one for the juniors and seniors, and is filled with mostly native students.

Smith was able to teach through Polar TREC's K-12 outreach program, a luxury Kaktovic's village council is enthusiastic about.

After showing a Powerpoint presentation on how she works with her kids in Port Aransas, the students in Kaktovic were excited to get to know Smith.

She and the class did an oil spill clean-up simulation lab in which they used booms made out of ropes, sponges, diapers, cotton balls, paper towels and dispersants such as detergent to contain the oil.

"They were totally into that lab; they did such a great job. I was impressed with how creative they were, they totally thought out of the box," Smith said.

Smith said she felt so comfortable there with the students; it was like being home with her own kids.

She has a newfound respect for the teachers in Kaktovic, she said.

"It certainly gives you a perspective to your own situation, I learned a lot about what I do, just from working there. You know the teachers in Port Aransas teach a lot, but these teachers teach six, seven, eight, 9, 10, 11, 12 different subjects in the course of one day. It's just a totally different dynamic," she said.

Not only did she teach, Smith was in charge of gathering data to help aide in the process of distributing it to specialized researchers at universities.

Just like Skolss' team, the scientists Smith worked with would go out on a 29-foot Boston whaler (weather permitting) and collect readings, measurements and samples from the ecosystems.

The main objective of studying in Kaktovic was to find out what the nutrient sources are for the organisms living in the water, she said.

“They do a stable isotope profile, so basically they can determine that this animal has been eating stuff that washed off from the land, or this animal is getting its food from the marine environment from which it lives,” Smith said.

Her favorite experience was seeing a polar bear in its natural habitat for the first time and, of course, she didn’t have her camera, she said. She did get her chance to photograph one later.

The first-time experience of seeing a polar bear was right in town, in the lagoon, and it was not even 50 yards away, just frolicking around, she said. Locals scared it away, into the water, and it just swam away, she said.

“In the wee hours of dawn, we would hear this rapid fire, like, pow, pow, pow. It’s so funny; you know you are really acclimated to the environment, when your roommate goes, ‘Oh, I think it’s someone chasing a polar bear out of town,’ and you just kind of roll over and go back to sleep,” Smith said.

The locals would fire guns into the air to scare away the bears, she said.

The Brooks Mountain Range left an impression on her too, she said. For so long, she didn’t even believe they were there because of the fog, but then all of a sudden, after the fog lifted, they were just there, she said - completely white, covered in snow from bottom to top.

Smith believes the experiences of her trip are something she can share with her classes at PAHS all year long, she said.

“A rich experience benefits anyone, but a teacher in particular can come back, and she already has a built-in audience. I can share my whole experience with them and integrate it into my classroom, integrate it into my lessons and topics. I can do it all year long; it’s not like we have to have only a unit on polar science for a week,” Smith said.

She has ideas floating in her head for lesson plans in the future, she said. Her first lesson plan stems from her Polar TREC training in Fairbanks, AK, when her eyebrows turned to ice. She plans to work in a math calculation with her class to determine how much thermal energy was lost in her breath to condensate her eyebrows, so they would freeze, she said.

As for the future, Smith said she’ll always be interested in polar science because there’s a lot more to it than most people know. She said she’ll always remember the time when Dunton came in and talked to one of her classes about it, and it summed it up quite nicely.

“He said, ‘What’s the big deal if the temperature goes up in Port Aransas two degrees? Well, we complain a little bit and turn down the air conditioning. But, if it changes in Kaktovic, a polar region, from minus one degree Celsius to positive one degree Celsius, it’s the change from frozen to liquid water.’ It’s a big deal. If it goes from ice to water, it no longer reflects, so then it absorbs even more energy and continues to warm and change,” Smith said.

Both Smith and Skloss said they always will be interested in what's going on near the polar region and will continue to study it.

The teachers' journeys with Polar TREC, including journals and photos, may be viewed on their blogs at polartrec.com/expeditions.