

## Port Aransas teachers at the forefront of arctic research

By Mark Collette

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PORT ARANSAS — Two teachers from the Texas coast are headed for the arctic coast this summer in a rare opportunity to study one of the planet's remote and rapidly changing ecosystems while giving students back home a taste of the adventure.

Andrea Skloss and Jill Smith of the Port Aransas school district spent last week in Fairbanks, Alaska, preparing themselves for separate journeys that will take them even farther north this summer. Their students will travel with them vicariously through journals, photos, videos and live Web chats that also are accessible to the public.

They are among 15 U.S. teachers chosen for the federally-funded PolarTREC program, which matches teachers with polar researchers who share similar interests. Professor Ken Dunton of the University of Texas Marine Science Institute is leading the expedition.

The research is part of a broad and urgent effort to understand the forces at work in the arctic ecosystem. It will give scientists and industry a better understanding of what biological hot spots should be avoided in future oil and gas exploration, such as highly active walrus feeding grounds, Dunton said.

And it will provide a baseline of data that will help scientists determine how human activities and climate change are reshaping the arctic.

Both teachers say the chance to do original field research fulfills a longtime dream.

“What better way to get students engaged in science than by someone they know firsthand going out there and doing real science?” Skloss said.

Smith, a science teacher at Port Aransas High School, will see the cultural significance of the research as she witnesses preparation before the annual hunt for bowhead whales at Kaktovik, a village of about 240 Inupiat Eskimos on the Arctic Ocean inside the Arctic National Wildlife Refuge. The town subsists entirely on summer fishing and hunting for food, including caribou, seals and whales, stored and consumed year round.

Smith will be on a team based in Kaktovik, using a 27-foot boat to scoot between 12

field sites on the coast of the Beaufort Sea. They will look at how land runoff influences coastal lagoons, a big foundation for sea life, like estuaries on the Texas coast.

Students in Kaktovik will connect directly with their Texas coast counterparts via video links, Dunton said — one old fishing village to another.

Skloss, of Brundrett Middle School, will spend several weeks with a team working from the U.S. Coast Guard Icebreaker Healy studying food webs in the Chukchi Sea off northwest Alaska. The vessel will carry a few dozen scientists from institutions across the country in multiple marine science disciplines: biology, chemistry, the physics of ocean currents.

The Port Aransas students have been abuzz with questions about polar bears, whales and cold unimaginable in these latitudes. Average lows and highs on the Northern Slope of Alaska are in the 30s and 40s in the summer, with record lows reaching single digits in Barrow.

But both Skloss's seventh graders and Smith's high school students are understanding a bigger picture: That what happens in the arctic is linked to their island town — especially the retreat of sea ice and corresponding sea level rise, Skloss said.

"It affects us on a barrier island," she said. "Only one place on the island is 20 feet above sea level."

Both teachers have classes that make regular trips to the beach. They collect water and sediment samples, measure the salinity and temperature.

"I hope to bring home a lot of really genuine stories about an entirely different climate and ecosystem," Smith said. "You know, it could hardly get any more different for two marine environments."

And yet, some similarities are startling. Just as researchers are trying to understand and predict how warmer oceans may spawn more frequent and intense storms here, Kaktovik already is under pressure.

Stronger storms out of the arctic northeast and bigger waves have barreled down on fishing expeditions, caused fatalities and produced storm surges that prompted the village to move its airport inland.

"There is unprecedented winter ice loss in the Beaufort Sea right now," said Dunton, who has researched there since 1977. "Levels of open water that we just have not seen before. Things are changing very, very rapidly in the arctic and we are literally racing to understand the system before it approaches the new arctic — something that's much different than what we've been studying the last three decades."

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