



Marylanders are on international team gathering climate change data

Polar mission

A polar bear guard (foreground) provided by the U.S. Coast Guard protects researchers working near the icebreaker Healy.

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The Arctic is warming, and the sea ice is thinner than anyone has seen before. That could spell trouble for walruses, sea ducks and a host of other species — including humans — that depend on the North to sustain them.

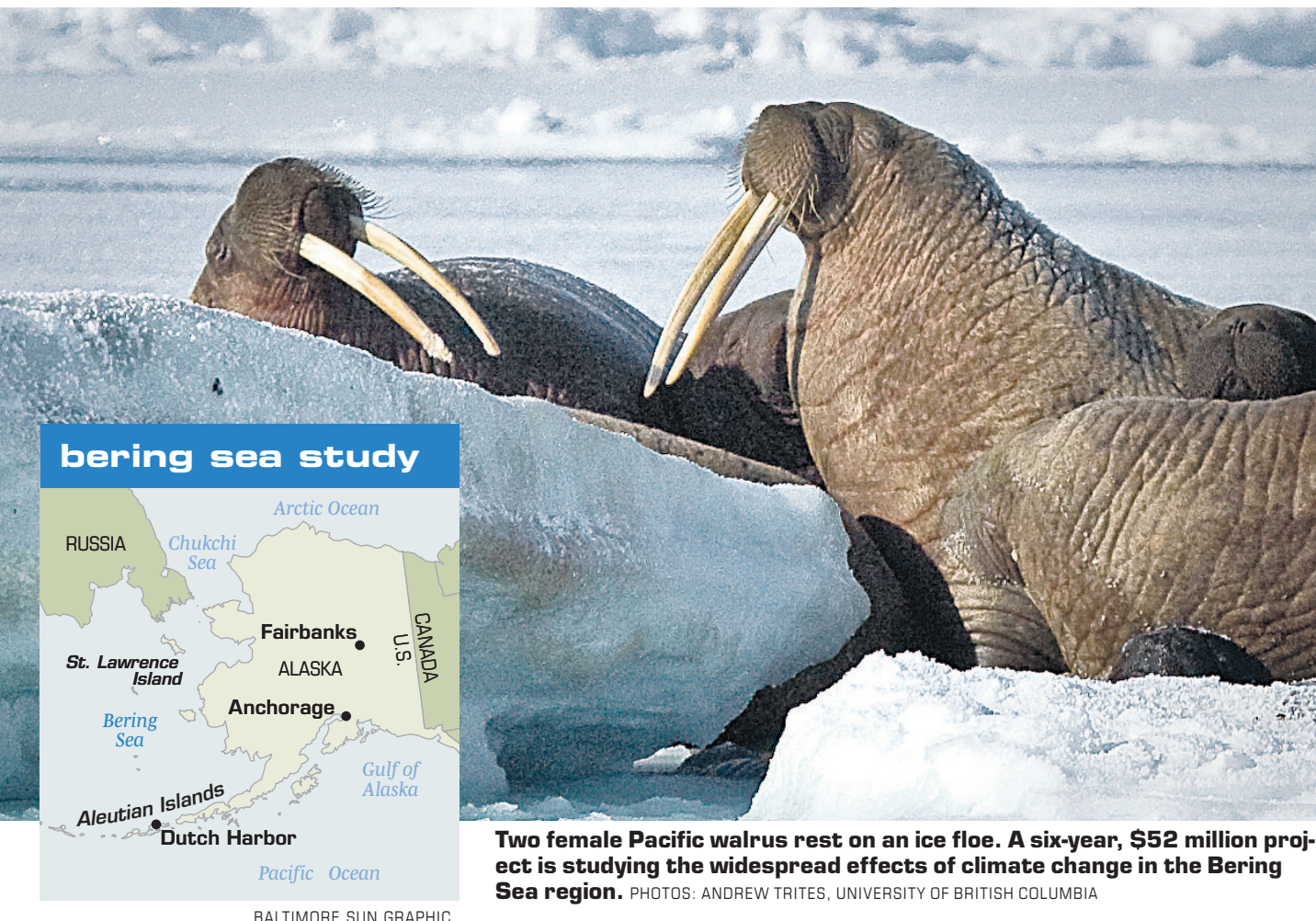
An international team of researchers, including some from Maryland, spent much of March aboard a Coast Guard icebreaker in the Bering Sea, gathering evidence that might help explain what's happening there. Enduring fierce winds and temperatures that dipped to minus 10 degrees Fahrenheit at times, they sampled the ice off the coast of Alaska, scooped up clams and other creatures from the sea bottom and scouted by helicopter across the vast white landscape to find and tag walruses.

"In some ways, it's like a three-ring circus," said Lee Cooper, chief scientist for the cruise and a research professor at the University of Maryland's Chesapeake Biological Laboratory. With nearly three dozen researchers from the United States, Canada and abroad, the icebreaker *Healy* was a hive of activity virtually around the clock.

The three-week cruise was part of a six-year, \$52 million study of the changing climate's impact on a region whose importance stretches far beyond its shores. Besides offering early signs of an ecological upheaval that could sweep across a warming planet, the Bering Sea supplies half of the seafood eaten in the United States.

"Changes here affect the entire country and seafood markets abroad," said Francis Wiese, senior scientist for the North Pacific Research Board in Anchorage, which is coordinating the study in partnership with the National Science Foundation. Those changes also threaten the way of life and possibly the existence of remote native communities such as Savoonga on St. Lawrence Island. The Yup'ik people there have traditionally subsisted by hunting walruses and other prey across the frozen sea.

About a decade ago, scientists noticed that the ice covering much of the Bering Sea in



Two female Pacific walrus rest on an ice floe. A six-year, \$52 million project is studying the widespread effects of climate change in the Bering Sea region. PHOTOS: ANDREW TRITES, UNIVERSITY OF BRITISH COLUMBIA

winter was melting earlier and faster than before. Weak or vanishing ice means the long-tusked Pacific walruses that congregate in the shallow waters off Alaska's coast have fewer places to haul out of the frigid water.

The mammals feed mainly on clams, worms and other tiny creatures on the bottom, using their sensitive whiskers to locate prey amid the sand and muck. The ice provides the animals a floating platform on which to rest between foraging dives. The females also bear their young there.

As the ice begins to melt in April, the wal-

ruses begin moving north, passing through the Bering Strait to the Chukchi Sea by summer. The Chukchi sea ice also is melting more in summer, and scientists have noticed "some very dramatic responses" there, said Chad Jay, a scientist with the U.S. Geological Survey's Alaska Science Center in Anchorage.

With no ice left in their traditional shallow-water feeding grounds, many walruses have migrated to land along the coast.

"But we might be seeing some more subtle changes in the Bering as well," Jay said.

There, the husband-wife team of Cooper

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For more on the Bering Sea mission, go to /bayblog

and Jacqueline Grebmeier, also a research professor at Maryland's Chesapeake lab, think the melting ice might be affecting more than the walruses' loafing habits. Sampling See **BERING**, page 4

An eye on earmarks: There's something in them for everyone



I think I've come up with the ultimate earmark: "BioAgroEco Infrastructure Improvements to 911 Communications, Chesapeake Oyster Protection and Endless Preparations for BRAC — Plus a Little Something for Girl Scouts, Easter Seals and Victims of Head Trauma."

Reading through the earmark wish lists that Maryland's congressional representatives have compiled, I thought of that old song about the ultimate country lyrics, covering all the bases beloved by that genre: "Well, I was drunk the day my mama got out of prison, and I went to pick her up in the rain. But before I could get to the station in a pickup truck, she got runned over by a damned old train."

So it is with the earmarks that Maryland's delegation are requesting — all the usual suspects on the state's checklist of the deserving get a nod, or five: the bay, the police, the children, the military, the medical research.

Thanks to the new transparency that Con-

gress is now supposed to be operating under when it comes to the hot topic of earmarks, House members had to make public which projects they want funded in the 2010 budget. (Senators have a later deadline to do the same.)

Earmarks, of course, became a campaign issue last year, denounced as the ultimate in government waste and pork barrel spending. Never mind that a) they represent a tiny fraction, 1 percent or 2 percent, of total federal spending and b) their loudest critics often turned out to be the same ones who requested and accepted them for their states.

Still, earmarks remain the potato chip of

politicians. They may be bad for you — some opponent is likely to find a mockable request you've made involving fruit flies or volcanoes — but they're ultimately irresistible.

For all the cheap and easy outrage you can generate by highlighting a project that seems trivial — some of the great advances in science, after all, have come from research involving fruit flies — surely earmarks have funded some worthy local projects that otherwise wouldn't have come to the attention of those who control the budget in Washington.

So the solution was not to outlaw earmarks but to make the process a more public one: See **MARBELLA**, page 5

passionate about: gardens

Behind the blooms

There’s lots to do to prepare the Ladew Gardens for the public

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With spring here, the change of season has Emily Emerick and her staff at Ladew Topiary Gardens hopping. Emerick, executive director of the historic house and gardens in Harford County, spent recent weeks prepping for the March 28 opening of the 2009 season.

At Ladew, she’s doing something she has loved since she was 4 years old. The Towson native’s earliest memories revolve around watching her mother in a denim wrapped skirt and a bandanna preparing garden beds and planting rhubarb, asparagus and strawberries.

Although Emerick, 48, majored in English at Washington College, she has never ventured too far from gardening. Today, she oversees Harvey S. Ladew’s former home, a popular tourist attraction that includes a country house and 22 acres of gardens with whimsical topiary designs.

We asked her about her career and love of gardening.

When did you know that gardening was more than a hobby, something you wanted to devote your life to?

I bought a house and realized that everyone else’s house had more thought going into it than [mine]. You see the ones that had an interest and passion in gardening. When it’s a permanent place and something that you’re going to be in for a while, it’s a lovely thing to do some work around the house and see the reward. There really is an obsessive nature to this thing. Gardeners are obsessive people, but in a good way.

How did you arrive at Ladew?

I was an amateur gardener, and I was in development work and fundraising. I came on the board about 15 years ago and have been here since.



Emily Emerick, head of the Ladew house and topiary gardens, in the greenhouse. BALTIMORE SUN PHOTO: AMY DAVIS

Describe the final preparations to get the grounds ready for the season’s opening.

The roses, which we like to leave until the very last minute because we don’t like for them to throw off new shoots when cold weather is still imminent, they were all pruned. The ponds were prepped and all filled.

The koi fish will come out of dormancy when the temperature reaches 55. We’re keeping an eye on them but not starting to feed them quite yet. We’ve cleaned up the beds, raking out any of the material that’s fallen in them over the winter. We haven’t had to mow yet because it’s been so chilly.

Is the staff energized by the opening?

It’s been great, in part, because the winter has seemed so long this year. It has been so much chillier. But it’s greening up here. We had a long, beige winter, and now it’s a bright green, which is just great. Most of the people here love gardening. What we’re about is a garden and historic home, and everybody is into those things. It’s a very positive energy around here when we’re getting ready to show Ladew’s place.

Are the bulbs on schedule?

We had that warm spell a couple of week-ends ago. I would say a lot of what we’re seeing now in terms of the bulbs that are coming up are from that spell. The forsythia is just about to bloom. The hellebores in the Woodland Garden are blooming. They are a very

early perennial. But unlike some of our really early, really warm springs, everything is holding off a little bit, which means that when it goes, it’s going to be a fantastic show. Every day that it gets warmer, we get closer to blooming.

It’s been dry so far, with rainfall levels lower than normal. Has that affected the grounds?

Not yet because it’s been so cold this spring, so a lot of things aren’t pushing yet. Now if it were really warm and very dry, and plants were really throwing out a lot of new growth and didn’t have much moisture, that’s when we’re going to start seeing possible effects. But for the time being, it’s a perfectly long, cool spring, which we rarely enjoy here.

Icebreaker becomes hive of scientific activity

BERING, *From page 1*
conducted over the past 25 years by Grebmeier and others has shown declines in the population of bottom-dwelling creatures in the eastern Bering Sea, meaning a decrease in the food supply for walruses, Cooper said.

The researchers think the drop-off in clams and worms could also stem from the changing climate, by affecting the bottom-dwellers’ food supply.

Algae, tiny plant-like organisms that are the base of the sea’s food chain, grow on the underside of the ice. In spring, lengthening daylight and warming temperatures trigger massive “blooms” of algae in the water along the receding edge of the melting pack. The mollusks and crustaceans on the bottom feed on the fallout from that burst of life in the water.

“Because the ice is starting to disappear earlier,” Cooper said, “there may not be as much food getting to the bottom anymore in such a big pulse.”

The Maryland research team spent hours outside on the stern of the 420-foot icebreaker, dredging the bottom and then screening out the clams and other creatures in the muck so they could be identified and counted.

Meanwhile, other scientists disembarked from the ship to take ice cores for analysis. As they worked, armed Coast Guard crew members kept watch across the white plain for polar bears that might see the scientists as their next meal.

Jay and his team took off from the *Healy* in a helicopter to find walruses and tagged 17 of them — from a distance, given the animals’ size. Using a crossbow, they fired transmitters with barbed heads into the animals’ blubbery hides so scientists could track their movements by satellite.



Sea ice scientist Dr. Rolf Gradinger removes an ice core from an ice auger as part of a study of warming effects. PHOTO: ANDREW TRITES, UNIVERSITY OF BRITISH COLUMBIA

Still other researchers canvassed the open waters around St. Lawrence Island for flocks of spectacled eiders, large sea ducks that winter in the eastern Bering Sea. Their numbers have plummeted since the 1970s, and they’re listed as threatened.

Suspected causes include hunting pressure, chemical contamination and changes in food supply. Like walruses, they dive to the bottom to feed on the mollusks and little crabs that have declined over that period.

Researchers aren’t sure how many Pacific walruses there are in the Bering and Chukchi seas. A 1990 aerial survey estimated 200,000, but the tally is considered soft because the animals spend most of their time in the water, where it’s hard to count them. A petition has been filed to classify them as endangered, however, because of the threats posed by changes in their icy habitat.

Their sampling done, the scientists returned to Dutch Harbor, Alaska, and flew home at the end of March, past erupting Mount Redoubt. Back in their labs, Cooper and the others now turn to analyzing, comparing and publishing findings from the data they collected in those few weeks — a process that will take months or years.

“Most of the work from this cruise is still ahead of us,” Cooper said.

This year, scientists are nearing the midpoint in the six-year Bering Sea Project. Ultimately, they hope this cruise and the rest of the study will help them identify the pattern in changes they’re seeing. They will use that knowledge to predict future conditions.

“It has huge implications, and it’s very complicated to figure out,” said Wiese, of the Pacific Research Board. “There’s a lot of changes, and the changes are occurring quickly.”

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