

Climate change hits national parks harder than rest of US

By COURTNEY FLATT
Oregon Public Broadcasting

Climate change is heating up national parks much faster than the rest of the U.S. That's according to a first-of-its-kind study that looked at 417 national parks, including those in the Pacific Northwest.

The study found that national parks are especially hard hit by climate change, in part, because of their locations at high elevations, in arid deserts or Arctic zones, said Patrick Gonzalez, study co-author and climate change scientist at the University of California, Berkeley.

"National parks aren't a random sample — they are remarkable places and many happen to be in extreme environments," Gonzalez said in a news release. "Many are in places that are inherently more exposed to human-caused climate change."

The researchers found that, historically, temperatures in

national parks increased at double the rate of the rest of the country. They also found participation decreased more rapidly in many national parks than other parts of the U.S.

"We found that human-caused climate change has caused impacts in places where we found significant historical temperature increases," Gonzalez said. "Glaciers melting in Glacier Bay National Park in Alaska. Bark beetles killing trees in Yellowstone National Park. Vegetation shifting upslope in Yosemite National Park in California."

Looking forward, if emissions stay the way they are now, that could mean average temperatures in the most vulnerable national parks could increase by 16 degrees Fahrenheit by 2100, according to the study.

The study was published in the journal Environmental Research Letters.

In the Northwest, the two parks that have historically

seen the biggest average temperature increases are Washington's North Cascades National Park and the Oregon Caves National Monument and Preserve, Gonzalez said. Both have seen average temperature increases of about 2.9 degrees Fahrenheit per century.

And that can dramatically change the temperatures at high elevations.

"It's the equivalent of (lowering) a mountain two times the height of the Washington Monument, from cooler areas at high elevations to warmer areas down lower," Gonzalez said.

The North Cascades are already seeing dramatic effects of a warming climate, said Jon Riedel, a geologist at the park. For the last 25 years, he's monitored glaciers at the North Cascades, Mount Rainier and Olympic national parks.

"I've witnessed quite a bit of change in that time — measured quite a bit of change," Riedel said.

Over the past 100 years, Riedel said, the area in the North Cascades covered by glaciers has shrunk by more than 50 percent.

He's looked at what that means for the surrounding ecosystem. He found that the recession of glaciers has impacted the summer melt into the Skagit watershed. Over 30 years, the lost ice added up to around 800 billion gallons of water, or three cubic kilometers.

"That was pretty staggering to see how much ice has been lost," Riedel said.

That impacts summer streamflow in the Skagit River. (All of the glaciers in the Skagit watershed contribute about 10 percent of the summer streamflow right now, Riedel said.)

He said the North Cascades have also seen flood regimes change, especially in colder parts of the park — near the Stehekin Valley. Floods used to happen in the spring when



National Park Service

The River Styx could become the nation's first underground Wild and Scenic river with a proposed expansion of the Oregon Caves National Monument.

snow melted. Now, the area is more often flooding in the fall, as precipitation changes.

All that can lead to other broad ecosystem changes, Riedel said: trees invading meadows, changes in water temperature and quality, loss of habitat for species like glacier worms, which are prey for birds like rosy finches.

"So a pretty big ripple effect through the landscape with the loss of glaciers," Riedel said.

Nationally, the study Gonzalez worked on predicts parks in Alaska will be the most vulnerable to temperature increases. Parks in the U.S. Virgin Islands may see the most decreases in rainfall.

No other study had previously looked at the severity of climate change across all the

country's national parks.

In the future, these predictions could spell trouble for many national parks. More wildfire in Yellowstone, the death of Joshua trees, the possible disappearance of pikas in Lassen Volcanic National Park in California, Gonzalez said. The researchers have provided information to the national parks, Gonzalez said, to help with management decisions.

But the future isn't all dire, he said.

"Our actions — reducing carbon pollution from cars, power plants, and other human sources — can save parks from the most heat," Gonzalez said.

Reducing emissions could reduce temperature increase by half to two-thirds by the end of the century, he said.

Oregon bans tree-killing herbicide amid sweeping state investigation

Forest Service to log dying trees

By EMILY CURETON
Oregon Public Broadcasting

The herbicide is called aminocyclopyrachlor. You might not be able to say it, but it was once a common weed killer used by the Oregon Department of Transportation and other public entities. Then, last week, Oregon became the first state in the U.S. to temporarily ban it from rights of way.

The Oregon Department of Agriculture is investigating potentially widespread tree damage because of the chemical.

"What we're trying to get



Ryan Brennecke/The Bulletin

Dead and dying ponderosa pines line Highway 20 near Sisters.

a handle on is, is this occurring in other areas? We are starting to hear about a situation in Eastern Washington," said Rose Kachadoorian, pesticide program manager with the agriculture department.

In Central Oregon, she said

trees were poisoned in at least four locations. The Department of Agriculture has prohibited the use of products with aminocyclopyrachlor until April, and lasting regulation could be established.

Meanwhile, Kachadoorian

said the agency will examine paperwork behind years of spraying in the state.

"And that will give us an opportunity to have an investigator go back to some of those areas and take a look — maybe they used it three years ago, are we seeing decline at this point?" Kachadoorian said.

Plans for this in-depth investigation come more than three years since a massive tree die off in Deschutes National Forest was first linked to the transportation department spraying. Nearly 1,500 ponderosa pines near Sisters are standing dead or dying. Some are hundreds of years old. The Forest Service plans to log those trees, rather than risk a dead tree falling on Highway 20.

Debate: Brown, Buehler to face off again Thursday

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Brown said she wants to make sure schools have funding for counselors, specifically ones who mirror the backgrounds and experiences of the students they serve. She wants to enforce state policy meant to keep students safe from bullying and continue meeting with school superintendents regularly to make sure the policy is implemented.

Buehler said the governor can stand on a soapbox and let the public know bullying isn't right. He said he would implement a hotline to report bullying directly to the Governor's Office so the state's leader would know firsthand how big of an issue it is.

Starnes answered as well, noting his time in schools and then told Lawrence, "I would hire you."

After the hour-long televised debate, Lawrence said she took exception to Buehler's responses to her. She said it seemed like Buehler was unprepared for the question, and it made her wonder how seriously he took her concern.

"Buehler did not even use the term LGBT," she said.

The scene — lasting several minutes — was a change in tone from an otherwise relatively cordial political debate. Brown, Buehler and Starnes sat on stools side by side under stage lights at the north Portland high school.

The students picked from across the state for the debate stepped to the lectern one at a time. The candidates each had a minute to answer — a time cut in half near the end to

squeeze in more questions. The debate was organized by Children First For Oregon, KOIN 6, and the Pamplin Media Group.

The youthful questioners peppered the candidates with carefully scripted and forcefully presented questions. Many touched campaign hot topics: homelessness, health care, education, gun control.

Genesis Gomez, 12, of Portland, asked how the candidates would protect farm workers like those in her family from being exposed to harmful chemicals. Brown answered in part by declaring again her opposition to repealing the state's sanctuary law, Measure 105. Her statement drew the only crowd applause of the night to an answer.

Dazon Sigo, 17, asked why schools like his in Pendleton don't do a better job of teaching about native history and culture.

Throughout, the candidates largely answered the questions without bickering, though Buehler several times blamed state problems on Brown's leadership. Brown largely ignored the jibes, but did fire back at one point that action means more than words.

A few times, the two were afforded rebuttals to address direct attacks.

While addressing gun control, Buehler said he would support a ban on bump stocks, raising the minimum age to purchase a firearm to 21, and requiring a three-day waiting period to buy a handgun.

Brown asked for a rebuttal to point out Buehler's opposition to the "red flag" legis-

lation, which allows authorities to take guns from people who could be harmful to themselves or others. The law also bars them from buying a gun.

Buehler said the legislation was flawed because it didn't mandate health care for would-be purchasers or allow them to defend their Second Amendment right in court.

While answering Sigo's question about Native American education, Buehler said Brown was to blame for any gaps because she can't stand up to special interest groups.

Brown shot back, touting an increase in funding and a modest hike in graduation rates, while admitting there was more work to be done.

The students had the opportunity to address the field of candidates, or narrow it

to Brown and Buehler. But Starnes would not be deterred, and got in a short, and often innovative, answer nearly every time.

When asked how the candidates would address climate change, he said he would work to build an electric highway to charge vehicles as they drive. He said he would impose a tax on vacant development to fund mental health. He said he would also tax advertising to get money for mental health.

Brown and Buehler will face off again at a debate scheduled for Thursday night in Medford and then next week in Portland. Starnes has been excluded from those events.

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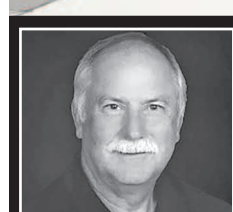
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Q: Muscle spasms can be a thing of the past.

A: Charlie horses in the leg, facial tics and back spasms are all deficiency symptoms — muscles are irritated and working too hard — they don't have the nutrients they need. Muscles need calcium, magnesium and Vitamin D taken together. Seventy-six percent of Americans are deficient in those nutrients. People may be OK until an injury when the increased activity in the hurt area causes the deficiency symptoms. It is easy and quick to correct. Time of day and dosage are important and need to be adjusted until the spasms stop. If you need help figuring this out, call Dr. Sears.



Steve Putman

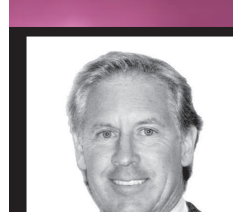
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Q: What is a medicare supplement policy, is it the same as a Medigap policy?

A: A Medicare Supplement policy is often referred to as Medicare Gap Insurance. This is a separate insurance policy provided by private insurance companies. It can pay some or all of Original Medicare Deductibles and Co-Insurance. It is different from a Medicare Part C (Advantage) Plan and does not include coverage for most prescriptions. To find out more about your different options call.



JEFFREY M. LEINASSAR
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Q: I can't afford regular dental care. Are there some resources available to me?

A: We have third-party financial groups that we work with, including Care Credit, Springstone, or your personal bank may offer low-interest loans. Dentistry itself is not necessarily expensive, but neglect and abuse are. Call to consult with us on your options.



LEO FINZI

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Q: What is a self-service maintenance activity I can do?

A: Annually blow out dust from your computer using short bursts of air. Remove the side of your desktop. Stabilize the fan fins & using a can of compressed air or garage compressor, point the nozzle at the radiator fins under the fan on the circuit board. Also, blow out dust from the power supply, located where the power cord connects to the computer. For laptops, point the nozzle to any vents on the sides and bottom of the computer.

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