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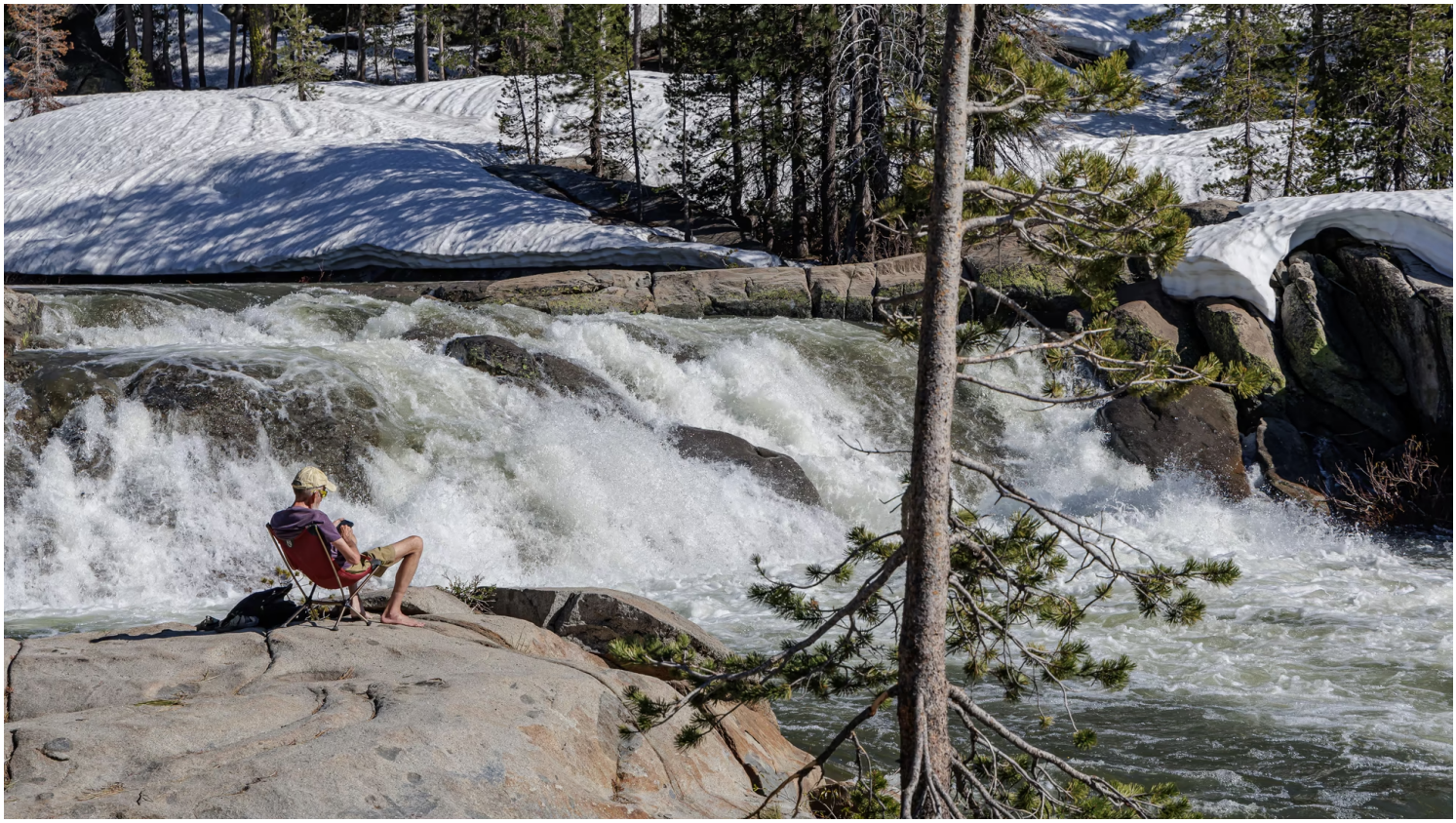
SCIENCE

The Loss of Spring Is Disastrous

Early heat can be disastrous for people, animals, and plants.

By Sarah Trent



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Around the middle of April, spring in the still chilly and wet Pacific Northwest seemed a long way off. Just two weeks later, though, Spokane hit a daily record of 84 degrees Fahrenheit; a month of historic heat ensued. During a heat wave that started around May 12, Portland's metro area beat records for consecutive May days over 80 degrees (nine) and 90 degrees (four). Coastal communities set records in the 90s too. Later in the month, Washington and eastern Oregon toppled even more records. Smoke drifted down from Canadian wildfires. Vegetable gardens wilted. It hardly rained.

May, to Northwesterners, bore all the hallmarks of summer.

Spring is notoriously fickle, but this year, the season's transition "happened faster than it almost always does," says Nick Bond, Washington's state climatologist. "It was a little bit of a whipsaw around here." Such instability—particularly during the shoulder seasons—is expected to rise because of climate change. Spring temperatures in the Northwest haven't been warming as quickly as those in other seasons, but according to Bond, they're catching up.

After the strange start to 2023, he says, the community, including climate scientists, "now appreciates, a little bit more than before, that spring matters." Without it, water supplies, ecosystems, agriculture, and more get out of whack. "We got a little bit more complete and nuanced view of how all this works," Bond says.

Here's what we learned from this year's skipped spring:

Fire and drought risk grew. In April, the Northwest's snowpack looked about average. Then it "did a disappearing act," Bond's office reported on June 8. Starting in early May, snow melted at record rates. Waterways flooded. That has big implications for the whole region, says Dan McEvoy, a climatologist at the Western Regional Climate Center whose research includes spring heat waves: "One place that will show up is in earlier fire danger." By mid-June, hundreds of acres had burned in Oregon and Washington. Another worry is drought. The National Weather Service reported that the area considered to be in drought grew in May. Much of western Washington and

northwestern Oregon is expected to follow later this year. "That hinges on summer temperatures," McEvoy says, but all signs point to a hot, dry summer too.

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Our bodies also aren't ready for such early heat. In a normal seasonal cycle, by the time temperatures peak in the summer, people's bodies—and behavior—have had months to acclimate. Health risks rise only when the temperature is higher than the local "normal." This means that in the Northwest, in May, heat in the low 90s can be dangerous, even if it wouldn't be in August. The mid-May heat wave resulted in at least 160 heat-related emergency-room visits in Oregon and Washington over four days, a rate more than 30 times higher than normal. The heat caught many people off guard—even Adelle Monteblanco, a public-health professor and extreme-heat researcher at Pacific University. Excited to test her new thermal camera, she went for a walk. "I had my hat and my water bottle, and my badge of toughness, because I had lived in the South for six years, so 90 degrees ain't that bad," she says. "I lasted 10 minutes. I had to turn around. It was so hot that it was making it really tough to breathe."

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Animals struggle too. Birds and insects are just getting started in spring. They're emerging from winter dormancy, migrating, nesting—all of which makes them especially vulnerable to sudden temperature swings and overall shifts.

When heat hits during the nesting season—March through early July—young birds "are often immobile or can't fly long distances. They can literally bake," says Joe Liebezeit, the interim statewide conservation director at Portland Audubon. He couldn't say whether that happened this May—his organization's rescue center was closed because of winter-storm damage, and he says that the smallest, most vulnerable species often go unnoticed. But the record-breaking heat wave in June 2020 caused what his colleagues called a "hawkpocalypse" of well over 100 dehydrated and injured young hawks brought there and to other centers. As early heat waves become more common, he expects that more birds will suffer. Research suggests that birds' bodies and behaviors are already changing to keep up with climate change: Some species are physically shrinking, others are nesting earlier, and some are migrating sooner. But for many, those adaptations aren't coming fast enough, Liebezeit says.

Research indicates that bugs are even less able to adapt to extreme heat—if it hits during the wrong part of their life cycle, they can go sterile or die. This May, the timing wasn't so bad, says Scott Hoffman Black, the executive director of the Xerces Society for Invertebrate Conservation. The cool April meant that most pollinators hadn't emerged yet. "But then, man, they came out in droves," he says. Now he's worried about what this summer might bring. Early heat and drought may mean bugs have fewer resources later in the year, which means less food for some bird species too.

Farmers, however, may benefit from early warming—or some crops might, at least, and some farmers, if they're able to take advantage of the lengthening season, says Mark Pavek, a potato agronomist at Washington State University. Some Northwest potato growers are adapting to warmer springs by getting potatoes in the ground

sooner, he says, but that isn't always easy—or cheap. "About 60 percent of our seed potatoes come from Montana, and there's a couple of passes on the highway between here and there," Pavek says. "If it's too cold, they can't transport the potatoes unless it's in a semi that has insulation and heaters." That adds expense. So can having more workers, earlier in the year, to plant.

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This May, in regions such as the Columbia Basin where potatoes had already started to emerge, "they really just took off growing fast," Pavek says. However, he adds, early growth also means farmers must water and fertilize their plants sooner. And overall warming trends are causing some pests to thrive, adding even more complications and costs. And big, early-season investments can be risky: Extreme heat later in the year can damage the potatoes. "Even the pros and experts are sometimes not sure what to be doing," Pavek says—as conditions get harder to predict and react to, "sometimes it's just the luck of the draw."