



Editor's Note

In the April EOC3 Newsletter, this editor's note shared concerns about our abysmal snowpack, a result of our unusually warm winter. Looking at the upcoming summer fire season, I mentioned that while wildland fire managers often won't predict the severity of the upcoming fire season until late June, the conventional wisdom is that a warm winter and spring usually results in a bad fire season.

Sometimes I wish conventional wisdom was wrong.

Our spring continued warm and dry, and by late June conditions were ripe for fast spreading and aggressively burning range and forest fires. From then on, our summer was day after day of unhealthy air, disrupted backcountry recreation plans, and friends and neighbors under evacuation orders.

And we got familiar with the WatchDuty app alerting us with new fire reports and updates.

As we know, weather does not equal climate. But longer-term weather trends are a result of climate; the record heat waves in Europe this year have been attributed in part to the longer term shrinking of polar ice and changing ocean temperatures and atmospheric circulation patterns.

Closer to home, the El Niño pattern is continuing and strengthening, with climatologists predicting with 90% certainty another warm and dry winter in the northwest, and a 69% chance of an El Niño stronger than any ever since records started being kept in 1950. With warm temperatures and precipitation tending to come as rain

instead of snow, this may not be the year to buy a season pass at your favorite northwest ski area.

So, what to do?

I don't know about you, but I'm not ready to give up. Yes, resilience and adaptation need to be part of the solution as we adapt to a new normal, but we are also able to influence what that new normal will look like. Through advocacy, education, and local and global actions, we can reduce our impact on our climate. Jeff's recent op-ed (reprinted in this newsletter) speaks to that idea, and Norm Cimon relates what is happening elsewhere in the world in ways that should give us hope.

Keep the faith: keep reaching out to lawmakers, keep making good choices about energy use, and keep advocating for our planet and the world we leave for future generations.

Here's to being good ancestors!

Bill Aney, Editor

This newsletter is a periodic publication of the Eastern Oregon Climate Change Coalition, intended to help members who are interested in advocacy work around climate change issues. Editor Bill Aney (aneykblj@yahoo.com) welcomes your comments, articles, corrections, ideas, and suggestions.

Understanding our Changing Climate

I recently saw a bumper sticker that read “Reality is when it happens to you.” Unfortunately, there are so many realities we are dealing with today such as affordability, housing, health care costs, and others. Underlying all these realities is the need to sustain a livable planet. Most climate scientists and others believe that slowing down the rapid increase in global warming is the most important challenge civilization will face in the 21st century.

Scientists have known for over 150 years how increased carbon dioxide in the atmosphere (from fossil fuel burning and land use change) acts like a heat-trapping blanket, causing global warming. Ninety-seven percent of climate scientists have concluded that human-caused global warming is happening. Since the mid-1800s, humans have been burning fossil fuels (coal, oil, and gas) to make electricity, heat and cool buildings, and fuel our transportation systems. Other greenhouse gases such as methane, nitrous oxide, and refrigerants are adding to the blanket. Several western cities can now claim winter 2025-26 as their warmest on record, including locations with over a century of data, like Salt Lake City, Tucson, and Rapid City, South Dakota. In addition, climate scientists are now predicting the high likelihood of a super El Niño beginning later this summer, with the potential for more disruptive weather.

The Trump Administration has taken a 180-degree turn from prior policies and international coordination in reducing greenhouse gas emissions by supporting fossil fuel industries and denying climate change. However, the climate science is sound. We regularly see examples of more extreme weather in the news, and we are personally experiencing changes.

The reality is that renewable energy is one of our best paths forward. New renewable power is consistently cheaper than new natural gas generation. For the first time, renewables surpassed natural gas in energy production in March. According to the U.S. Energy Information Administration, renewable power will account for more than 99% of new electric generation in the U.S. in 2026. As Jonathan Foley, Ph.D. Executive Director of Project Drawdown suggests, we need to take a holistic approach to reducing greenhouse gases, looking at all sectors responsible for emissions.

Strong emphasis on renewable energy coupled with technological innovation, such as thin solar films developed by researchers at the Massachusetts Institute of Technology, will help us adapt to a changing climate. Re-establishing federal research support will be critical.

Being able to sustain a livable planet underlies many of the challenging realities we are facing today. We are all in this together. Staying aware and staying engaged in our future through our actions and votes is still the best pathway to policies and plans to deal with our changing climate and sustaining our way of life for now and for generations to come.

Jeff Blackwood
Chair, Eastern Oregon Climate Change Coalition



Climate Education Update

Stefanie Holloway, board member of EOC3, traveled to Washington, D.C. this summer as part of an Oregon workgroup selected for the Smithsonian Science Education Center's Zero Barriers in STEM Education Institute. The Oregon team designed an action plan to address statewide climate literacy. The wider convening brought together fifteen teams from states and territories across the country to build action plans using the principles of Universal Design for Learning to ensure all students have access to STEM learning. For their workplan, Oregon's team will be working over the next eighteen months to address climate literacy access across the state.

The Zero Barriers in STEM Education Oregon team, in collaboration with Oregon ClimatED, will also be leading an Oregon Climate Education Teacher Cohort for the state starting in January 2027. This statewide community of practice will bring educators together to learn, collaborate, and develop classroom-ready, standards-aligned resources grounded in Oregon's ecosystems, cultures, communities, and local challenges and solutions. Participants will connect with educators across the state, receive individualized coaching, and learn alongside Tribal partners, scientists, community organizations, higher education faculty, and industry professionals. You can learn more [here](#) about this opportunity, and please share with educators in your community.

Additionally, EOC3 Board Member Saralen Campbell spoke at the Oregon ClimatED Oregon Climate Education Summit 2.0 this summer about her experiences as a student in Eastern Oregon and growing up in the Pendleton area, as well as sharing insights with attendees on what she is currently learning and working on. Saralen brings valuable perspective to the EOC3 Board and the wider Climate Education community of Oregon, as she is helping lead and connect Eastern Oregon students to climate change education opportunities and initiatives.

Finally, this work also includes [Our Future Oregon](#), a statewide and student-led environmental action network that is continuing work to connect youth in Eastern Oregon to environmental opportunities. Student [Regional](#)

[Leaders](#) are hoping to connect with their peers in Eastern Oregon. They have written a survey available in both [English](#) and in [Spanish](#) that aims to learn more about youth in Eastern Oregon, understand the environmental issues that impact Eastern Oregon communities, and gain insight into how student leaders at Our Future might be able to connect with Eastern Oregon youth. Please share this survey with any youth you know in Eastern Oregon, especially those who want to connect with other youth across Oregon on solving environmental issues.

Please see below for more opportunities from Our Future Oregon - and please share widely with educators and students you know!

- [2026-27 Our Future Regional Leader internship description](#): this paid 8-month internship position is designed for high school student leaders who are passionate about climate action and want to work with other students statewide to develop projects, events and resources for Oregon schools to participate in. Application link: [Regional Leader internship application](#)
- [September 8th Club Advisors Info Session registration link](#): this statewide virtual event is for club advisor (or any teacher/administrator wanting to support student leadership in sustainability and climate action) to learn about the free resources, events, project models, workshops, etc. that Our Future develops and co-creates with schools across Oregon. If your school doesn't yet have a Green Team/Eco Club, we can help support creating one as well!
- [Our Future central Oregon staff position announcement](#): Our Future is looking for a college student or young working professional for a part-time staff position with the Our Future program. The position is 4-6 hours per week and involves mentoring our high school Regional Leaders, connecting with community partners, and being the Our Future liaison with our partner schools. More information in the announcement--**priority application deadline is coming soon** (the position will remain open until filled), so please apply ASAP if you are interested!

Agrivoltaics—OSU Evaluates Agricultural Production Under Solar Arrays

Triggered by Oregon's renewable energy goals, there has been an explosion in the number of utility-scale solar farms in the state. Oregon now has more than 150 utility-scale solar farms, including more than 15,000 acres in Morrow County, with at least twelve more projects planned. This growth has not come without some controversy as farmland and rangeland are converted to solar panels and the associated infrastructure with a loss of wildlife habitat and agricultural production.

Research groups around the world have been engaged in a field of study known as agrivoltaics, developing and evaluating the production of both solar-generated electricity and agricultural products on the same ground.

For example, a two-year study from Oregon State University compared the production of lambs under solar arrays with that of adjacent open ground, the control. Not surprisingly, the shaded ground under solar panels produced 38% less grass forage than the unshaded control pasture.

What was surprising was that the lambs in the two pastures showed almost exactly the same weight gain. Soil moisture was greater under the panels, and researchers showed that the forage available there for lambs had more protein and was more digestible.

The lambs also used the solar panels for shade in the heat of the day, which reduced energetic demands and reduced water intake by about .75 liters/day/animal.

The bottom line was even more impressive; the dollar returns per acre from the two flocks were very comparable, *before* considering the value of the electricity produced by the solar arrays.

More information about OSU's agrivoltaics research program is available at <https://agsci.oregonstate.edu/agrivoltaics>

EOC3 Chair Provides Testimony to Governor's Data Center Advisory Committee

EOC3 Chair Jeff Blackwood represented EOC3 well by providing the following testimony to the Governor's Data Center Advisory Committee:

In our area along the Columbia River, there are numerous data centers already. One of our concerns is the impacts on air quality. Between the 30 plus data centers, corporate distribution centers, mega farms, food processing plants, and gas fired electricity plants there are a lot of greenhouse gas emissions. Our area routinely experiences winter temperature inversions and accompanying fog, sometimes lasting for several weeks. This can trap these emissions and adversely affect our health. Data center proponents need to assess the amounts and kinds of emissions their project would create, along with a credible monitoring system.

In addition, studies have shown that large data centers can increase the ambient air temperature in surrounding communities at a time we are experiencing warmer temperatures throughout the region. This can affect the health and well-being of surrounding communities.

We are concerned about the use of water in our area where water is life. How much will be needed? How will it be treated? What effect will this heavy use have on the surrounding communities? How will water use be monitored?

Electricity demands for these centers is tremendous. How will this affect normal ratepayers? Where will it come from? Will more fossil fuels-based generation be needed?

And finally, many of these agreements to site these centers are not very transparent to our citizens. Full disclosure of impacts on water, energy needs, community impacts, and emissions should be required wherever new centers are proposed. Developers then need to be held to these predictions, and credible monitoring of these impacts should be required on a regular basis.

EOC3 Is Now Enrolled in the BottleDrop Give Program

Dave Powell

Oregon is one of only two states who offer a BottleDrop program. Operated by the Oregon Beverage Recycling Cooperative, we use the program to redeem our deposit containers (plastic and glass bottles, and aluminum cans).

Here is how it works: First, find your closest BottleDrop redemption center. Pendleton's center is located at the Safeway store, and Hermiston and Milton-Freewater also have locations. Check the BottleDrop website to find towns with redemption centers. Then, if you decide to participate in the program, sign up for a free BottleDrop account.

The nice thing about BottleDrop is that you don't need to stand in front of a machine and feed it cans and bottles to get your deposit money refunded. You simply obtain a supply of green bags (they cost \$2 for a box of 10 bags) and fill a bag with your redeemable containers; all container types mixed together is fine. Once you have a full bag, you put a sticker on it (so they know which BottleDrop account to credit the money to) and drop it off at a redemption center for processing.

I've been using BottleDrop since it came to the Pendleton Safeway store and it has been easy and convenient. Safeway has a BottleDrop kiosk in the store where you can print out your membership card and the stickers to put on your green bags. You must have your account number to use the kiosk in Safeway. You can buy your green bags at the Safeway customer service counter.

The green-bag dropbox is a long yellow shipping container located behind Safeway, across from the carwash; it's where you drop off your filled bags. You scan your membership card to open one of two doors in the side of the container, and you push your green bag into the storage space. After you close the door, it locks and your dropped bags are secure. BottleDrop staff then counts your containers and credits your account.

Since Safeway hosts the BottleDrop redemption center, they will increase the value of your redemption money by 20% if you choose to take the funds as store credit (the Plus program). If the cash value of your redeemed bottles and cans is \$50, and if you choose to use that money as Safeway store credit, then you'll get a voucher for \$60. For this example, a cash voucher for \$50, or the Safeway store credit voucher for \$60 (depending on which option you choose), are printed out at the BottleDrop kiosk in the Safeway store. More information is available at <https://bottledrop.com/customer-service/>

But why am I writing this article? One reason is to let EOC3 members who live in Pendleton, or close by, know that this BottleDrop option now exists – it's fairly new to Pendleton.

Another reason is to let you know that you can now donate some of your BottleDrop account balance to EOC3 if you'd like to do so. EOC3 signed up for the BottleDrop Give program, which includes hundreds of 501c3 nonprofit organizations. After being vetted, EOC3 was recently accepted into the Give program. Here's how the donation process works:

- Go to the BottleDrop website. From the home page, click on the **For Individuals** link.
- Scroll down the page and find the **Donate From Your Balance Online** panel
- Click the link at the bottom called **Search for participating nonprofits here.**
- After clicking, a new panel opens called **Participating Nonprofit Fundraisers and Charities**. In the search box, type: Eastern Oregon Climate Change Coalition
- A new page opens specifically for the Eastern Oregon Climate Change Coalition. Click on the orange link panel that says **Learn more about Eastern Oregon Climate Change Coalition.**
- Another new page then opens; it explains what EOC3 is about (our mission/vision). And it has an orange link panel that says **Donate Now.**
- When you click on that link, the page will refresh and tell you what your current account balance is (you did remember to sign in when you went into the BottleDrop website, didn't you?), and it has a box that says **Amount to donate:**
- Enter the amount you want to donate, and it will be deducted from your account balance. You don't have to donate your whole balance—if your account has \$50 and you want to donate \$10 to EOC3, that works fine.

The title gives me a chance to reference my favorite Fleetwood Mac song (no not that Fleetwood Mac, [this one](#), your father's Fleetwood Mac!). But it's also a lead-in to how the U.S. will continue to transition over the next decade into renewable energy, and lots of it.

In a previous newsletter article, we mentioned that the U.S. is no longer at the head of the parade to a renewable future. We will get there, but right now let's ask who is at the leading edge? What can we look forward to?

Let's let Bill McKibben give us the word: **How about free? Is that affordable enough for you?**

He wrote that June 24th on his Substack, [The Crucial Years](#), because the very next week Australians across much of the country received:

...three hours of free electricity every afternoon – to charge their cars, run their dishwashers, fill up a storage battery to run the house at night.

Just about a third of Australian households, 3.2 million homes, [generate their own electricity](#) along with 13% of businesses that have solar panels on their roofs. The CO₂ offset from all that fossil-free electricity is over one and a half tons per year *for every kilowatt generated*. All that makes [Australia a world leader](#) in adopting solar energy.

Supporting the makeover from coal to renewable energy is industrial policy. Australia has created incentives such as *Small-Scale Technology Certificates* which greatly reduce installation costs. That sort of redirection of industry by government is how the U.S. [took control](#) of the development of its oil reserves. It's what we see the current administration doing with coal which is [long past its pull date](#) – requiring utilities to keep those wildly uneconomical and dirty plants running. That policy was forced on utilities even as the Inflation Reduction Act was rolled back.

That act was itself industrial policy, designed to move us even faster into the solar age by incentivizing electric vehicle manufacturers, utilities, homeowners and more. But despite the current administration's all-out attack on renewable energy, the truth is it's where [the United States is going](#), and not just because of environmental and climate concerns, but because of the economics. Solar energy with storage is now the [cheapest for new energy generation](#). No right-minded competitor will ignore that. That's not what business is about.

Australia is considered part of the so-called developed world. How's it look on the rest of the planet? It turns out lots of places are storming ahead with solar energy: Pakistan for one. Its grid has been turned upside-down almost overnight. That's due to the Pakistani people voting with their feet, [moving to solar in a big way](#), given the cost of utility generated electric power:

- *Glimmering, deep-blue solar panels carpet rooftops in Pakistan's largest cities and dot the perimeters of houses in villages across the country.*
- *Pakistan, home to more than 240 million people, is experiencing one of the most rapid solar revolutions on the planet, even as it grapples with poverty and economic instability.*

Utilities serving Pakistan are losing customers and raising their prices. This puts pressure on the grid and on those still relying on it for all their power – a transition with little planning. Solar early adopters, and there are a large number, are dragging the government, the grid, and the utilities along with them. [Worldwide](#), solar is being adopted at an increasingly dizzying pace. Africa, long a victim of colonial occupation and resource extraction, is coming into its own and [entering a decisive acceleration phase](#). Now comes the tough part, getting the grid built out to serve the 600 million people who still lack electric service. The goal is to get the 44% of new distributed solar capacity shared with as many people as possible. All that said, the continent is on its way to a renewable future.

There will be no stopping the solar revolution. It may not be televised but it will not be compromised. It's where the world is going and we will be part of it.

Administration Removes Climate Change Information from Web

Alternatives Are Available

Bill Aney

In 1990, the US Congress passed the Global Change Research Act, which in part mandated that federal scientists produce national climate assessments about every 4 years. These reports are to pull together and interpret climate science data to help lawmakers and citizens alike understand, prepare for, and respond to climate change risks.

The fifth report (Fifth National Climate Assessment, or NCA5) was produced by a group of government and non-government scientists and published on NOAA's Climate.gov website in 2023. This website was also a trove of credible climate information, interpretations, and tools to help people understand climate change and human influences and it recorded nearly 1 million visits per month.

Following the change in federal administrations after the 2024 election, the entire staff of employees at climate.gov was dismissed and the site was shut down, eliminating a source of climate science data and interpretation for the general public. A visit to the site now redirects the user to NOAA.gov/climate and a multi-page document explaining how the administration now proposes amendments to NCA5 that rely on a somewhat rosier future for global emissions of carbon. Climate change information is limited to data alone, with no information about the causes of climate change or human influences on climate. This is in direct conflict with the congressional mandate to help US citizens understand and prepare for climate change.

At the same time, the Environmental Protection Agency (EPA) website also lost an entire section relating to climate change indicators, and federal agencies like the Forest Service were directed to remove any discussion related to climate change from their environmental planning documents.

Some of the jilted NOAA scientists and contractors have formed a non-profit to build a successor to the climate.gov website. This new site, climate.us, has the entire original NCA5 report as well as tools, resources, and other information that had been removed from the climate.gov website.

Dr. Rebecca Lindsey is the director and managing editor of the climate.us website, and tells the entire saga of the loss of the NOAA site and the birth of climate.us in a recent Amanpour and Company interview (<https://www.pbs.org/video/august-14-2026-qkol0k/> PBS subscription required). Her perspective is worth hearing, as she has seen what happened with a government research agency as administrations change – she makes the point that climate.us may be able to continue to provide credible, helpful information to the public free of political influence as future administrations and philosophies change.

Her new organization also has the opportunity to explore and share information about mitigation, new technologies, adaptation, and resilience that is outside of the original mission of the NOAA research program.

Speaking of Resilience—EOC3 member Dr. Dominique Bachelet points us to a rich website focusing on ideas about adaptations to climate change. CAKE (Climate Adaptation Knowledge Exchange) aims to be the world's largest source of adaptation ideas, information, and lessons. Check it out at CAKEX.org

Book Reviews

Take to the Trees: A Story of Hope, Science, and Self-Discovery in America's Imperiled Forests by Marguerite Holloway. W.W. Norton Books. 304 pages. isbn:978-1-324-03644-9.

One of *Heatmap's* Climate Books to Read in 2025.

<https://wwnorton.com/books/9781324036449>

Review by Dave Powell

From the Publishers description: "Journalist Marguerite Holloway arrives at the Women's Tree Climbing Workshop as a climbing novice, but with a passion for trees and a deep concern about their future. Run by twin sister tree doctors Bear LeVangie and Melissa LeVangie Ingersoll, the workshop helps people—from everyday tree lovers to women arborists working in a largely male industry—develop impressive technical skills and ascend into the canopy. As Holloway tackles unfamiliar equipment and dizzying heights, she learns about the science of trees and tells the stories of charismatic species, including hemlock, aspen, Atlantic white cedar, oak, and beech. She spotlights experts who are chronicling the great dying that is underway in forests around the world as trees face simultaneous and accelerating threats from drought, heat, floods, disease, and other disruptions.

As she climbs, Holloway also comes to understand the profound significance of trees in her relationship with her late mother and brother. The book's rousing final chapter offers something new: a grander environmental and arboreal optimism, in which the story of trees and their resilience meshes with that of people working to steward the forests of the future, and of community found among fellow tree climbers. A lyrical work of memoir and reportage, *Take to the Trees* sounds the alarm about rapid arboreal decline while also offering hope about how we might care for our forests and ourselves.

Marguerite Holloway is a professor at Columbia University's Graduate School of Journalism and has written for the *New York Times* and the *New Yorker*, among other publications. She is the author of *The Measure of Manhattan*, and she lives in New York."

This is a very enjoyable book. One thing I especially like is that it has a multi-topic focus. Marguerite is a professional arborist who signs up for a tree-climbing workshop. As it turns out, she's not particularly good at technical tree climbing! But she perseveres and learns some valuable skills, along with developing some lasting friendships. Only a portion of the book focuses on the tree climbing workshop facets, but they provide some of the most compelling human aspects of the story. She also devotes a lot of time to two other passions – a deep love of trees, and improved understanding of the effects of climate change on trees and forests.

I will illustrate these aspects with a few quotes. Since EOC3 is a group focused on climate change and its impact, I selected passages centered on climate change.

"Climate change was well underway when my mother started her tree journal. But like many things we cannot outrun, its effects were not yet so explicit. Climate change is like a trauma that keeps gathering power and force because we won't look directly at it. In 1953, when my mother was writing her first entry and taping down the chestnut leaf, atmospheric carbon dioxide levels were 312 parts per million. They had been roughly 280 parts per million for ten thousand years and had begun increasing with the industrial age. By the time my mother made her last entry in 1964, a bigleaf maple from the Berkeley campus, atmospheric levels were about 320 parts per million – higher than they had been for eight hundred thousand years. They have continued to grow sharply, reaching over 420 parts per million in 2024."

"Throughout their North American range, adult aspen are dying and not being replaced by young. A 2021 assessment of the eight most common tree species in the West found that half had significantly declined in the last two decades. The loss of common species, like aspen, is often much more ecologically devastating than the loss of a rare species. The authors of the study used a word not often seen in scientific papers: 'alarming.' They noted that these observations offer a 'stark warning' about the future of temperate forests everywhere.

Book Reviews continued

Around the same time the study appeared, huge tracts of juniper, one of the trees considered the most drought hearty of them all, began dying in Utah and Arizona. The maps are coming to look like chronicles of deaths foretold. As Worrall says, "Those kind of doom and gloom projections are starting to look pretty realistic."

I'm a silviculturist, a specialty within the forestry profession focused on forest ecology. I really like Marguerite's book and one thing I especially appreciate is her reliance on peer-reviewed science. The previous quote about aspen decline, for example, mentions a 2021 scientific study and it includes a quote from Jim Worrall, a preeminent scientist with a long history of climate change and aspen research. After checking my digital library, which contains 25,200 items, I could not find a 2021 paper where Worrall was a coauthor. So I checked the back of the book and sure enough – Marguerite includes a comprehensive Selected Bibliography section. And it is extensive – with a 304-page printed book (I read the digital version on Kindle), I suspect the bibliography comprised at least 30 of those pages. That section includes the Worrall paper on aspen decline, and I plan to spend quite a bit of time with the Bibliography to find other items of interest that I may not have already seen.

And now, one more (and final) quote from *Take to the Trees* related to climate change: "Because trees are stressed and struggling, many are weakened. Climate change is impairing their ability to fend off or survive infestations of insects or pathogens that they were more readily able to combat in the past. Bark beetles that typically didn't venture into cooler areas, or that were culled during long subfreezing winters, have killed pines across millions of acres. High-elevation bristlecone pine, which can live over four thousand years, were were thought to be beyond the beetles' reach, but no more. "The bristlecone are giving up the ghost because of climate change and beetles. That just blew me out of the water," says Diana Six, an ecologist at the University of Montana.

Bristlecone "have been through utter hell, through everything the planet has thrown at them. Except for what humanity has thrown at them. Nothing can withstand humanity, including humanity."

Why am I reviewing this book? Beyond the fact that I really like it and recommend it as worth your reading time, we got in touch with Marguerite and it looks promising that she will present an EOC3 climate conversation program sometime in early 2027. I'll be looking forward to her program, particularly if it's anywhere near as interesting as her *Take to the Trees* book!

Is A River Alive, by Robert McFarlane (2025)

Reviewed by Jeff Blackwood

McFarlane is a prize-winning author who explores river systems in Ecuador, India, and Canada learning about local history and connections to the land and waters. Do rivers have rights? Does the environment have rights? How does a changing climate affect the connections we have with our natural environment? Through his elegant writing, Robert McFarlane challenges our thinking about how we look at nature.

Board Member Dave Powell has agreed to provide summaries of some climate change-related articles that have come to his attention. Many of them are new – published within the last year or two – while others are a little older. Our intent is to make these kinds of short summaries a regular feature of the EOC3 newsletter.

Weblinks are provided for all items. If an item is shown as Open Access, then Dave has noted that after the link. Open access items can be downloaded for your personal use without payment or subscription to the journal or publishing organization. If you'd like to read an item that is not Open Access, and the link won't allow you to download it without payment, then please contact Dave at info@eoc3.org and he'll help you obtain a copy.

Alari, A.; Ballester, J.; Milà, C. [et al.]. 2025. Quantifying the short-term mortality effects of wildfire smoke in Europe: a multicountry epidemiological study in 654 contiguous regions. *The Lancet Planetary Health*. 9(8): 101296. doi:10.1016/j.lanplh.2025.101296 [https://www.thelancet.com/journals/lanplh/article/PIIS2542-5196\(25\)00174-3/fulltext](https://www.thelancet.com/journals/lanplh/article/PIIS2542-5196(25)00174-3/fulltext) (Open Access)

This article concludes that fine particulate matter (PM_{2.5}) from wildfire smoke could be more harmful to human health than that from other sources. Daily mortality records for 654 contiguous subnational regions from 32 European countries, representing a population of 541 million individuals, were used for this study. This study used data for 95.3 million daily deaths for all-cause mortality, 19.5 million daily deaths for cardiovascular mortality, and 3.9 million daily deaths for respiratory mortality from Jan 1, 2004, until the latest available year in each country. The study found that associations with all-cause and cause-specific mortality were larger for fire-related compared with non-fire-related PM_{2.5}. *This means that assuming that wildfire PM_{2.5} has the same effect as total PM_{2.5} will substantially underestimate the mortality burden attributable to wildfire smoke.*

Chandanpurkar, H.A.; Famiglietti, J.S.; Gopalan, K. [et al.]. 2025. Unprecedented continental drying, shrinking freshwater availability, and increasing land contributions to sea level rise. *Science Advances*. 11(30): eadx0298. doi: 10.1126/sciadv.adx0298 <https://www.science.org/doi/10.1126/sciadv.adx0298> (Note: This article does not appear to be Open Access; none of the Science journals appear to use Open Access, unfortunately.)

From Introduction and Abstract: Climate change is driving profound changes within the Earth system, including to its water cycle. While global temperatures continue to reach record heights, with the year 2024 being the hottest year in the past 175 years, the planet is experiencing increasing extremes of flooding and drought, widespread glacial and ice sheet melt and sea level rise, and greater risk of wildfire and biodiversity loss. Changes in terrestrial water storage (TWS) are a critical indicator of freshwater availability. We use NASA data to show that the continents have undergone unprecedented TWS loss since 2002. Areas experiencing drying increased by twice the size of California annually, creating “mega-drying” regions across the Northern Hemisphere. While most of the world’s dry/wet areas continue to get drier/wetter, dry areas are now drying faster than wet areas are wetting. Changes in TWS are driven by high-latitude water losses, intense Central American/European droughts, and groundwater depletion, which accounts for 68% of TWS loss over non-glaciated continental regions. “Continental drying” is having profound global impacts. Since 2002, 75% of the population lives in 101 countries that have been losing freshwater water. Furthermore, the continents now contribute more freshwater to sea level rise than the ice sheets, and drying regions now contribute more than land glaciers and ice caps. Urgent action is required to prepare for the major impacts of results presented in this study.

Goessling, H.F.; Rackow, T.; Jung, T. 2025. Recent global temperature surge intensified by record-low planetary albedo. *Science*. 387(6729): 68–73. doi:10.1126/science.adq7280 <https://www.science.org/doi/10.1126/science.adq7280> (This article does not appear to be Open Access.)

Editor’s Summary: Why was the year 2023 so much warmer than expected? Anthropogenic forcing and El Niño have been suggested as at least part of the reason, but they cannot account for the magnitude of the temperature jump. Goessling et al. identify another cause: a record-low planetary albedo caused mainly by reduced low-cloud cover in the northern mid-latitudes and tropics. If this shift represents an excursion into a new normal, our future could not only be hotter than expected, but that outcome could occur faster than expected.

Making Your Voice Heard

We live in a representative democracy, where elected officials appoint judges and make law and policy that affect us all. These officials need to hear from us to know what is important.

You can make yourself heard. Write a letter, send an email, make a phone call – individual citizen voices do count!

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