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WestFAST News

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U.S. saw its 4th-warmest year on record, fueled by a record-warm December Nation struck with 20 separate billion-dollar disasters in 2021

NOAA 1/10/22

On September 4, 2021, the Joint Base Lewis-McChord Soldiers and the Bureau of Land Management-California's Folsom Lake Veterans Hand Crew constructed a handline, cleared brush, and dealt with hot spots north of Lake Davis and Portola during the largest wildfire of 2021–California's Dixie Fire. The western wildfires of 2021 were one of 20 separate billion-dollar disasters that struck the United States last year. (Joe Bradshaw/Bureau of Land Management)

The year 2021 was marked by extremes across the U.S., including exceptional warmth, devastating severe weather and the second-highest number of billion-dollar weather and climate disasters on record.

The nation also saw an active wildfire year across the West as the north Atlantic Basin stayed busy with its third most-active Atlantic hurricane season on record, according to scientists from NOAA's National Centers for Environmental Information. Here's a recap of the climate and extreme weather events across the U.S. in 2021:

Climate by the numbers
December 2021 | Full year 2021
The December contiguous U.S. temperature was 39.3 degrees F, 6.7 degrees above average, making it the warmest December on record and exceeding the previous warmest December in 2015.
Ten states — Alabama, Arkansas, Kansas, Louisiana, Mississippi, Missouri, Nebraska, New Mexico, Oklahoma and Texas — also had their warmest Decembers on record.

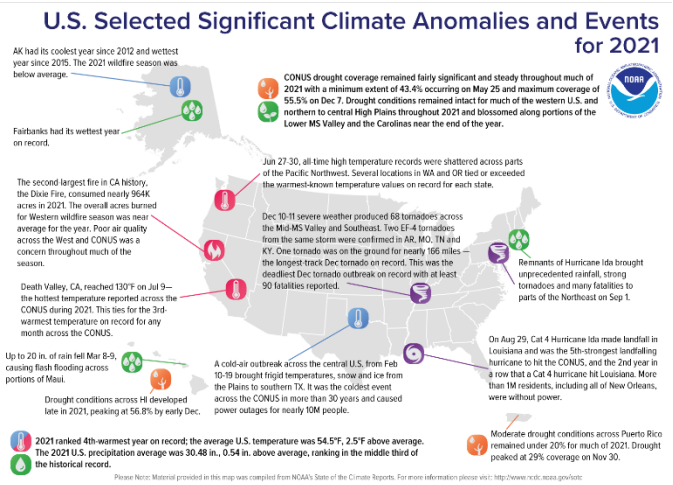
For 2021, the average contiguous U.S. temperature was 54.5 degrees F, 2.5 degrees above the 20th-century average and ranked as the fourth-warmest year in the 127-year period of record. The six warmest years on record have all occurred since 2012.

Maine and New Hampshire had their second-warmest year on record with 19 additional states across the Northeast, Great Lakes, Plains and West experiencing a top-five warmest year. Meanwhile, Alaska's average annual temperature was 26.4 degrees F, 0.4 of a degree above the long-term average and the coldest year since 2012.

Precipitation across the contiguous U.S. totaled 30.48 inches (0.54 of an inch above average), which placed 2021 in the middle third of the climate record. Massachusetts had its ninth-wettest year on

record, while Montana ranked ninth driest on record for 2021.

According to the U.S. Drought Monitor, drought coverage remained fairly significant and steady throughout much of 2021, with a minimum extent of 43.4% occurring on May 25 and maximum coverage of 55.5% on December 7.



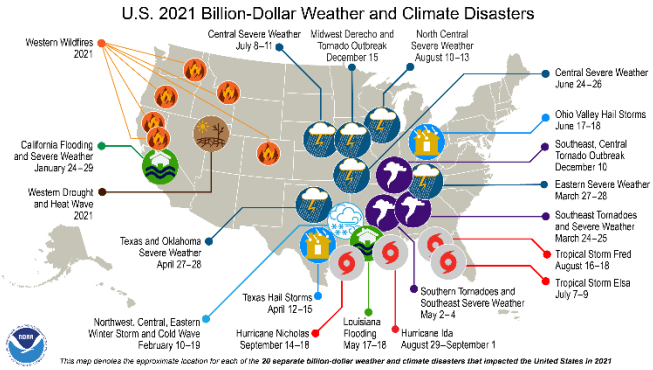
A map of the United States plotted with significant climate events that occurred throughout 2021. Please see the full climate report highlights at http://bit.ly/USClimate202112 offsite link. (NOAA NCEI)

Billion-dollar disasters in 2021

Last year, the U.S. experienced 20 separate billion-dollar weather and climate disasters that killed at least 688 people — the most disaster-related fatalities for the contiguous U.S. since 2011 and more than double last year's number of 262. The following 20 events, each exceeding $1 billion, put 2021 in second place for the highest number of disasters recorded in a calendar year, behind the record 22 separate billion-dollar events in 2020:

- 1 winter storm/cold wave event (focused across the deep south and Texas).
- 1 wildfire event (western wildfires across Arizona, California, Colorado, Idaho, Montana, Oregon and Washington).
- 1 drought and heat wave event (summer/fall across western U.S.).
- 2 flood events (in California and Louisiana).
- 3 tornado outbreaks (including the December tornado outbreaks).
- 4 tropical cyclones (Elsa, Fred, Ida and Nicholas).
- 8 severe weather events (across many parts of the country, including the December Midwest derecho).

Damages from these disasters totaled approximately $145 billion for all 20 events. This exceeds the total damage of $102 billion from the 22 events in 2020.



Map of the U.S. plotted with 20 separate billion dollar disasters that occurred in 2021. For more, go to https://www.ncdc.noaa.gov/billions/.

Hurricane Ida was the most costly event of 2021 at $75 billion and ranks among the top-five most costly hurricanes on record (since 1980) for the U.S. The combined cost of the four tropical systems was approximately $78.5 billion, more than 54% of the total U.S. billion-dollar disaster price tag in 2021. The historic mid-February winter storm/cold wave was the costliest winter storm on record ($24 billion), more than double the previous record winter storm event — the Storm of the Century in March 1993. The total cost over the last five years of these disasters (2017-2021) exceeds $742 billion — averaging $148 billion a year. These five-year and annual average costs both set record highs.

Other notable climate and weather events in 2021

The Atlantic hurricane season was busy: During 2021, 21 named storms formed in the North Atlantic Basin. This was the third most active Atlantic hurricane season on record. Category 4 Hurricane Sam was the most intense Atlantic hurricane of the season, while Category 4 Hurricane Ida was the strongest landfalling and most destructive hurricane of the season. This was the sixth year in a row with above-average tropical activity across the Atlantic Basin.

Numerous wildfires scorched the West: More than 7.1 million acres were burned across the western U.S. last year, which was 96% of the 10-year average. The second-largest fire in California history, the Dixie Fire, consumed nearly 964,000 acres in 2021. Smoke from several large fires

created air quality and health concerns throughout much of the season.

An active tornado year: The tornado count for 2021 was above average across the contiguous U.S., with 1,376 tornadoes reported. By early January 2022, 193 tornadoes were confirmed in December alone — the greatest number of tornadoes for any December on record and nearly double the previous record of 97 in 2002.

The most notable events during the year were two outbreaks on March 17 and March 25 across the South, with a combined total of about 100 tornadoes, including an EF-4 tornado, an outbreak in Iowa on July 14, the December 10-11 Mid-Mississippi River Valley Tornado event that spawned two EF-4 tornadoes and the December 15 Midwest derecho event that produced more than 60 tornadoes across Nebraska and Iowa.

More: Find NOAA's climate reports and download the images from the NCEI climate monitoring website.

Secretary Vilsack Announces New 10 Year Strategy to Confront the Wildfire Crisis

USFS 1/18/22

Agriculture Secretary Tom Vilsack and Forest Service Chief Randy Moore will today launch a comprehensive response to the nation's growing wildfire crisis – "Confronting the Wildfire Crisis: A Strategy for Protecting Communities and Improving Resilience in America's Forests." The strategy outlines the need to significantly increase fuels and forest health treatments to address the escalating crisis of wildfire danger that threatens millions of acres and numerous communities across the United States.

The Forest Service will work with other federal agencies, including the Department of the Interior, and with Tribes, states, local communities, private landowners, and other partners to focus fuels and forest health treatments more strategically and at the scale of the problem, based on the best available science.

The strategy highlights new research on what Forest Service scientists identified as high risk "firesheds" – large, forested landscapes with a high likelihood that an ignition could expose homes, communities, infrastructure and natural resources to wildfire. Firesheds, typically about 250,000 acres in size, are mapped to match the scale of community exposure to wildfire.

The Forest Service will use this risk-based information to engage with partners and create shared priorities for landscape scale work, to equitably and meaningfully change the trajectory of risk for people, communities and natural resources, including areas important for water, carbon and wildlife.

The groundwork in this new strategy will begin in areas identified as being at the highest risk, based on community exposure. Additional high risk areas for water and other values are being identified. Some of the highest risk areas based on community exposure include the Pacific Northwest, the Sierra Nevada Range in California, the front range in Colorado, and the Southwest.

The strategy calls for the Forest Service to treat up to an additional 20 million acres on national forests and grasslands and support treatment of up to an additional 30 million acres of other federal, state, Tribal, private and family lands. Fuels and forest health treatments, including the use of prescribed fire and thinning to reduce hazardous fuels, will be complemented by investments in fire-adapted communities and work to address post-fire risks, recovery and reforestation.

The Bipartisan Infrastructure Law provides nearly $3 billion to reduce hazardous fuels and restore America's forests and grasslands, along with investments in fire-adapted communities and post fire reforestation. Funds will be used to begin implementing this critical work.

In 2020, 2017, and 2015, more than 10 million acres burned nationwide, an area more than six times the size of Delaware. In the past 20 years, many states have had record catastrophic wildfires, harming people, communities and natural resources and causing billions of dollars in damage. In 2020, Coloradans saw all three of their largest fires on record. The running 5-year average number of structures destroyed by wildfires each year rose from 2,873 in 2014 to 12,255 in 2020 – a fourfold increase in just six years.

"The negative impacts of today's largest wildfires far outpace the scale of efforts to protect homes, communities and natural resources," said Vilsack. "Our experts expect the trend will only worsen with the effects of a changing climate, so working together toward common goals across boundaries and jurisdictions is essential to the future of these landscapes and the people who live there."

"We already have the tools, the knowledge and the partnerships in place to begin this work in many of our national forests and grasslands, and now we have funding that will allow us to build on the research and the lessons learned to address this wildfire crisis facing many of our communities," said Moore. "We want to thank Congress, the President and the American people for entrusting us to do this important work."

The Forest Service remains committed to sustaining the health, diversity and productivity of all of America's forests. Visit the Forest Service website to read the full strategy document. If you would like to partner with the Forest Service, visit the National Partnership Office website at www.fs.usda.gov/working-with-us/partnerships.

EPA Announces Action Plan to Accelerate Cyber-Resilience for the Water Sector

EPA 1/27/22


Water utility operator monitoring computerized systems

Today the U.S. Environmental Protection Agency (EPA) and its federal partners announced the *Industrial Control Systems Cybersecurity Initiative – Water and Wastewater Sector Action Plan* to help protect water systems from cyberattacks. The Action Plan focuses on high-impact activities that can be surged within 100 days to safeguard water resources by improving cybersecurity across the water sector.

The Action Plan is part of President Biden's Industrial Control Systems (ICS) Initiative, which

he established pursuant to National Security Memorandum 5, Improving Cybersecurity for Critical Infrastructure Control Systems. The ICS Initiative is a collaborative effort between the federal government and critical infrastructure community to facilitate the deployment of technologies that provide cyber-related threat visibility, indicators, detections, and warnings.

"Cyberattacks represent an increasing threat to water systems and thereby the safety and security of our communities," said **EPA Administrator Michael S. Regan**. "As cyber-threats become more sophisticated, we need a more coordinated and modernized approach to protecting the water systems that support access to clean and safe water in America. EPA is committed to working with our federal partners and using our authorities to support the water sector in detecting, responding to, and recovering from cyber-incidents."

The *Water and Wastewater Sector Action Plan* focuses on promoting and supporting the water sector's adoption of strategies for the early detection of cyber-threats and allow for the rapid sharing of cyber-threat data across the government in order to expedite analysis and action. Actions include:

- Establishing a task force of water sector leaders.
- Implementing pilot projects to demonstrate and accelerate adoption of incident monitoring.
- Improving information sharing and data analysis.
- Providing technical support to water systems.

The Initiative's goals are outlined in the Action Plan which was developed by the EPA, the National Security Council (NSC), the Department of Homeland Security's Cybersecurity and Infrastructure Security Agency (CISA), and the Water Sector Coordinating Council and Water Government Coordinating Council (WSCC/GCC).

"American lives depend on protecting the Nation's critical infrastructure from evolving cybersecurity threats," said **Secretary of Homeland Security Alejandro N. Mayorkas**. "The Department's Cybersecurity and Infrastructure Security Agency and the Environmental Protection Agency will continue to work with the water and wastewater sectors to provide guidance, technology, and direct support as they improve their cybersecurity resilience. Public-private sector collaboration like this initiative is central to protecting the American public and their ability to safely access critical services."

"Securing our Nation's critical infrastructure is a top priority for President Biden and his Administration. In the past year, the Administration has worked closely across the U.S. government and critical infrastructure partners to ensure they have our full support in shoring up their cyber defenses," **said Deputy National Security Advisor for Cyber and Emerging Technology Anne Neuberger**. "The action plans for the electric grid and pipelines have already resulted in over 150 electricity utilities serving over 90 million residential customers and multiple critical natural gas pipelines deploying additional cybersecurity technologies. This plan will build on this work and is another example of our focus and determination to use every tool at our disposal to modernize the nation's cyber defenses, in partnership with private sector owners and operators of critical infrastructure"

"The expansion of the President's ICS Cybersecurity Initiative to the Water Sector is an important step forward in securing our nation's water utilities from malicious cyber activity. The water sector action plan will provide owners and operators of water utilities a roadmap for high-impact actions they can take to improve the cybersecurity of their operations," **said National Cyber Director Chris Inglis**. "I commend the Water Sector Coordinating Council and their Federal partners for their continuing efforts to improve the present and future resilience of water utilities on which each American depends."

"Over the past year we've seen cyber threats affecting the critical infrastructure that underpins our communities and the services we all rely on, including safe and clean water," **said CISA Director Jen Easterly.** "To reduce the likelihood and impact of damaging cybersecurity intrusions to the water sector, we're teaming up with our EPA partners to provide guidance, technology, and direct support to the sector. The action plan announced today will help us better understand and reduce the

risks across the water and wastewater sector both in the near and long term, and keep the American people safe."

"The Water Sector Coordinating Council appreciates the partnership with the Environmental Protection Agency and the National Security Council to advance and mature cybersecurity across the Water and Wastewater Systems Sector. This plan represents a key step towards achieving that goal, and we look forward to continued engagement to support the sector vision of secure and resilient drinking water and wastewater infrastructure," **said Nicholas Santillo Jr., Chair of the Water Sector Coordinating Council.**

EPA and its federal partners intend to work with water sector stakeholders to encourage, incentivize, and assist in the rapid deployment of ICS cybersecurity monitoring technologies. By implementing this Action Plan, partners across the government will lay the foundation for supporting enhanced ICS cybersecurity across water systems of all sizes—ensuring improved cyber-preparedness.

Reclamation approves $20.5 million to build drought resiliency in five states

USBR 1/28/22

A western river running through the forested hills. Rivers like this provide water to communities throughout the West.

WASHINGTON – The Bureau of Reclamation is making its initial 2022 selection of 13 projects for $20.5 million in grants to build long-term drought resiliency. These projects will leverage more than $66.7 million in non-federal funding to complete projects in five states.

"Climate change presents growing challenges to our communities across the West and the natural systems that we all depend on," said **Assistant Secretary for Water and Science Tanya Trujillo**. "The Department of the Interior will continue to work with our partners to develop innovative solutions that address the challenges we face." Reclamation will fund the projects through supplemental appropriations included in the first fiscal year 2022 continuing resolution. Reclamation may select additional drought resiliency projects once the regular fiscal year 2022 appropriations have been received. Applicants are being notified of project funding on a rolling basis.

"The Western United States is experiencing unprecedented dryness and drought," said **Chief Engineer David Raff**. "This WaterSMART funding will help communities be more resilient and diversify their water supplies as climate change makes droughts worse."

Reclamation's Drought Response Program is part of WaterSMART. It supports a proactive approach to drought by providing water managers assistance to implement projects to build long-term resiliency to drought and climate change while supporting President Biden's Executive Order on Tackling the Climate Crisis at Home and Abroad.

The 13 selected projects are:

- Bear River Water Conservancy District (Utah), $2 million
- Bella Vista Water District (California), $2 million
- Casitas Municipal Water District (California), $2 million
- City of Fresno (California), $293,450
- City of Gallup (New Mexico), $2 million
- City of Grand Junction (Colorado), $300,000
- Delano-Earlimart Irrigation District (California), $2 million
- Deschutes Irrigation District (Oregon), $1,370,473
- North Kern Water Storage District (California), $500,000
- Rancho California Water District (California), $2 million

- San Bernardino Valley Municipal Water District (California), $2 million
- South Coast Water District (California), $2 million
- South San Joaquin Municipal Utility District (California), $2 million

Please visit the Drought Response Program website for project descriptions and information on the program.

Through WaterSMART, Reclamation works cooperatively with states, tribes, and local entities to plan for and implement actions to increase water supply reliability through investments to modernize existing infrastructure and attention to local water conflicts. Visit www.usbr.gov/watersmart to learn more.

Reclamation's efforts will be boosted by Bipartisan Infrastructure Law's investments in water efficiency and recycling programs, water storage, rural water projects, watershed projects, dam safety and other projects that will ensure that western communities have the opportunity to leverage federal funding for their benefit.

Drought Response Program
WaterSMART Program

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Upcoming Meetings and Webinars

WestFAST Webinars: WestFAST is hosting a series of webinars to discuss the importance of water resources related to wildfire prevention, reduction, recovery, and rehabilitation:

March 2, 2022 10:00 am MT - **Does Community Driven Strategic Planning Reduce Impact of Large Wildfires?**

2022 WSWC Spring (198th) Meetings and Washington Roundtable
April 5-7, 2022 – Crystal City, VA

Other Federal News

DOI 1/3/22. Biden-Harris Administration Invites Public Comment on Development of New Conservation and Stewardship Tool

FWS 1/4/22. U.S. Fish and Wildlife Service Acquires Nearly 5,000 Acres of Coastal Bottomlands Forest on the Texas Coast

DOI 1/4/22. Service Announces New Process for Notifying the Public of Draft Recovery Plans Available for Review and Comment

NRCS 1/10/22. USDA Offers Expanded Conservation Program Opportunities to Support Climate Smart Agriculture in 2022

NRCS 1/10/22. USDA Invests $50 Million in Partnerships to Improve Equity in Conservation Programs, Address Climate Change

NRCS 1/13/22. USDA to Invest up to $225 Million in Partner-Driven Conservation on Agricultural and Forest Land

NOAA 1/13/22. 2021 was world's 6th-warmest year on record

USBR 1/14/22. Reclamation releases blueprint for implementation of Bipartisan Infrastructure Law in 2022

DOI 1/14/22. Interior Department Announces Infrastructure Investments for Desalination, Water Reclamation and Reuse Projects

EPA 1/19/22. EPA Announces New WIFIA Loans Totaling $688 Million, Highlights More than $5 Billion in Water Infrastructure Investments Towards Building a Better America

ACOE 1/19/22. Army Civil Works Studies, Projects and Programs to Be Accomplished with Bipartisan Infrastructure Law Funding

NRCS 1/20/22. Biden-Harris Administration Announces Over $1 Billion in Disaster Relief Funds for Post-Wildfire and Hurricane Recovery

USBR 1/21/22. Reclamation invests $1.6 million in nine technologies that focus on improving water desalination and treatment

USBR 1/21/22. Reclamation announces Notice of Funding Opportunity for agricultural water conservation and efficiency projects

NOAA 1/24/22. NOAA Secretary of Commerce issues multiple fishery disaster determinations for Alaska

BLM 1/25/22. Readout summary: BLM Orphaned/Abandoned Wells Webinar

USGS 1/28/22. A Catalog of USGS Water-Data Web APIs

People

NPS 1/5/22. National Park Service selects Frank Lands as regional director

USFS 1/12/22. USDA Forest Service Welcomes New National Director of Fire and Aviation Management