

Congress of the United States
House of Representatives

COMMITTEE ON SCIENCE, SPACE, AND TECHNOLOGY

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September 3, 2024

The Honorable Richard W. Spinrad, Ph.D.
Administrator
National Oceanic and Atmospheric Administration
1401 Constitution Ave. N.W.
Washington, D.C. 20230

Dear Administrator Spinrad:

As the principal agency charged with forecasting the weather and monitoring oceanic and atmospheric conditions, the National Oceanic and Atmospheric Administration (NOAA) must strive to achieve the highest standards of scientific integrity.¹ Recently, however, the Committee has learned that NOAA could be releasing misleading data in its annual publication of weather-related disasters that exceed one billion dollars (“reports”).² NOAA’s reports are broadly cited and used to justify policy decisions on climate change.³ Therefore, it’s critical that the information endorsed by NOAA is accurate and trustworthy. As Administrator, you have made scientific integrity a priority, stating to the Committee in 2021: “We must stay vigilant to ensure its principles - to promote a continuing culture of scientific excellence and integrity, and ensure that management and policy decisions are based on sound, transparent, and reliable scientific activities - are upheld.”⁴ To ensure NOAA is meeting your standards of scientific integrity and information quality, including transparency, traceability, and reproducibility of its research by experts,⁵ we request that NOAA make public all data and methods used in the production of these reports. Additionally, we request that NOAA provide a briefing to Committee staff and answer the questions below.

¹ See NAT’L OCEANIC AND ATMOSPHERIC ADMIN., NOA 202-735D-3, SCIENTIFIC INTEGRITY (2024), [HTTPS://WWW.NOAA.GOV/SITES/DEFAULT/FILES/LEGACY/DOCUMENT/2021/FEB/202-735-D.PDF](https://www.noaa.gov/sites/default/files/legacy/document/2021/FEB/202-735-D.PDF).

² See, e.g., Roger Pielke, Jr., *Scientific Integrity and U.S. “Billion Dollar Disasters”*, 1 NPJ NAT. HAZARDS 1 (2024), <https://doi.org/10.1038/s44304-024-00011-0>; Roger Pielke, *Billion Dollar Disasters on Steroids*, AEI (Jul 17, 2024), <https://www.aei.org/articles/billion-dollar-disasters-on-steroids/>.

³ See Pielke [*Scientific Integrity*], *supra* note 2 at 1.

⁴ Advancing Earth System Science and Stewardship at NOAA Before the Subcomm. on Environment, H. Comm on Sci, Space, & Tech, 117th Cong. <https://republicans-science.house.gov/cache/files/b/a/ba56fdcb-80cd-4509-908d-41dc6398cb54/230D602C037900CCA6FFB4D23A81E8DA.2021-09-23-testimony-spinrad.pdf>.

⁵ See NOAA SCIENTIFIC INTEGRITY, *supra* note 1 at § 5.

Since the 1990s, NOAA has published annual reports showing the number of disasters that have cost more than a billion dollars in damages.⁶ Debate around the validity of the reports' methodologies has resulted in NOAA making incremental but important changes.⁷ Since 2011, the reports' cost estimates of all past disasters in the dataset have been updated annually to account for inflation in today's dollars.⁸ However, despite adjustments for inflation, the reports have not been adjusted for increases in population or wealth in the same capacity.⁹ Due to these increases in population and wealth, even mild storms can sometimes appear to cause greater damage today.¹⁰ The lack of updated, comprehensive data in these models raises considerable concern given that these reports have been cited by both Congress and the President as the justification for different federal government actions concerning climate change.¹¹ Therefore, these reports should be held to NOAA's applicable information quality and scientific integrity standards.¹²

A professor at the University of Colorado at Boulder recently published a peer-reviewed article ("article") alleging NOAA lacks transparency in the data it uses to calculate costs associated with weather-related disasters.¹³ For example, in the case of Florida's Hurricane Idalia, NOAA estimated a cost of \$3.6 billion.¹⁴ Yet according to statistics from the state itself, the total insured losses amounted to approximately \$310 million.¹⁵ Even accounting for losses on uninsured property, it is unclear how NOAA could arrive at a figure that is nearly twelve times the insured losses. Furthermore, the article highlighted that the general public and greater scientific community are unable to replicate NOAA's calculations because NOAA does not make public its

⁶ *Billion-Dollar Weather and Climate Disasters*, NAT'L OCEANIC AND ATMOSPHERIC ADMIN., <https://www.ncei.noaa.gov/access/billions/> (last visited May 21, 2024).

⁷ See Jason Samenow, *2011 billion dollar weather disaster record: legit or bad economics?*, N.Y. TIMES (Jan. 12, 2012), https://www.washingtonpost.com/blogs/capital-weather-gang/post/2011-billion-dollar-weather-disaster-record-legit-or-bad-economics/2012/01/12/gIQADocziP_blog.html.

⁸ See Pielke [*Scientific Integrity*], *supra* note 2 at 1.

⁹ See *id.* at 4-5.

¹⁰ See Ronald Bailey, *NOAA Billion-Dollar Weather Disasters Are Not Evidence of Climate Change*, REASON (Apr. 25, 2024), <https://reason.com/2024/04/25/noaa-billion-dollar-weather-disasters-are-not-evidence-of-climate-change/> ("'[t]he most appropriate data for investigation detection and attribution of changes in climate variables will always be climate data, and not economic data,' concludes Pielke."). For example, the average U.S. home sale price in 2004 was \$274,500 compared to \$457,498 in 2024.¹⁰ Similarly, the state of Florida, which often finds itself in the path of major storms, had a population of approximately 16 million in the year 2000 compared to 21.5 million in 2020.¹⁰

¹¹ See, e.g., Earth Act to Stop Climate Pollution by 2030, H.R. 598, 118th Cong. § 2(7) (2023) ("Congress finds the following: ... [t]he total cost of United States billion-dollar disasters over the years 2016 to 2020 exceeds \$600,000,000,000, with a 5-year annual cost average of \$121,300,000,000"); Press Release, *FACT SHEET: Biden-Harris Administration Releases Fifth National Climate Assessment and Announces More Than \$6 Billion to Strengthen Climate Resilience*, THE WHITE HOUSE (Nov. 14, 2023), <https://www.whitehouse.gov/briefing-room/statements-releases/2023/11/14/fact-sheet-biden-harris-administration-releases-fifth-national-climate-assessment-and-announces-more-than-6-billion-to-strengthen-climate-resilience-across-the-country/> ("[e]xtreme [weather] events cost the United States close to \$150 billion each year ... [t]his year set a record for the number of climate disasters that cost the United States over \$1 billion. The United States now experiences a billion-dollar disaster approximately every three weeks on average").

¹² See Pielke [*Scientific Integrity*], *supra* note 2 at 1 (defining "influential information" as that having a clear and substantial impact on public policy or private business decisions); NOAA SCIENTIFIC INTEGRITY, *supra* note 1 at § 5; *Information Policy*, THE WHITE HOUSE (Aug. 21, 2024), <https://www.whitehouse.gov/omb/information-regulatory-affairs/information-policy/>; *Information Quality Guidelines*, NOAA (Aug. 21, 2024), <https://www.noaa.gov/organization/information-technology/policy-oversight/information-quality/information-quality-guidelines>.

¹³ See *supra* note 2.

¹⁴ *Hurricane Costs*, NAT'L OCEANIC AND ATMOSPHERIC ADMIN., <https://coast.noaa.gov/states/fast-facts/hurricane-costs.html> (last visited July 1, 2024).

¹⁵ See *OIR Hurricane Idalia Information*, FLA. OFF. OF INS. REGUL., <https://www.floir.com/home/idalia> (Dec. 16, 2023).

“sources, input data, and methodologies employed,” in these reports.¹⁶ As a result, the keystones of the scientific method, independent verification and analyses, are currently impossible.

There are other flaws in NOAA’s figures. First, previous “billion-dollar disasters” have suddenly appeared and disappeared from the dataset.¹⁷ For example, between December 2022 and July 2023, ten weather events appeared and three disappeared without any documented justification or passing explanation.¹⁸ This sporadic, unexplained change in the data misleads other agencies and citizens that use and consume the dataset.

Second, the dataset’s application of the Consumer Price Index (CPI) to adjust for inflation is inconsistent. According to the article, most weather events between 2022 and 2023 were adjusted with inflation rates between 4.5% and 6%.¹⁹ At the same time, nine events in the same time frame were adjusted from 6.6% to 145%, while one event was reduced by about 75%.²⁰ Given that CPI is used as a proxy for annual inflation rates, adjustments for CPI should be consistent across all weather events.²¹

Consequently, NOAA’s figures, as they stand, appear to violate its own Scientific Integrity and Information Quality policies.²² These policies, which apply to “fundamental research communications” and “influential information,”²³ mandate that data have utility and objectivity.²⁴ The Information Quality Policy’s requirement of objectivity instructs that information be reliable and presented in an accurate, clear, and complete manner.²⁵ The Scientific Integrity Policy states that “[t]ransparency, traceability, and integrity at all levels are required for NOAA to achieve its strategic vision.”²⁶ Specifically, the policy points out that “[t]ransparency ensures that all relevant data and information used to inform a decision made or action taken is visible, accessible, and consumable by affected or interested parties, to the extent allowable by law.”²⁷ Given the inability to independently verify NOAA’s reports, there is reason to believe the report’s figures lack transparency, traceability, and utility.

These potential data quality and scientific integrity issues are especially concerning considering how broadly these reports are cited by policymakers and the media as an indication of climate change.²⁸ For example, President Biden, in November 2023, claimed that “[t]his year set a record for the number of climate disasters that cost the United States over \$1 billion,” declaring that “[e]very degree of global warming we avoid matters, because each increment of warming is

¹⁶ See Pielke [*Scientific Integrity*], *supra* note 2 at 2.

¹⁷ *Id.* at 3.

¹⁸ *Id.*

¹⁹ *Id.*

²⁰ *Id.*

²¹ *Id.*

²² See *id.* at 1, 6; NOAA SCIENTIFIC INTEGRITY, *supra* note 1 at § 5; See *Information Quality Guidelines*, *supra* note 12.

²³ See Pielke [*Scientific Integrity*], *supra* note 2 at 2 (“The billion dollar disaster dataset is ... what the Office of Management and Budget defines as ‘Influential Scientific Information.’”).

²⁴ See *Information Quality Guidelines*, *supra* note 12.

²⁵ See *Information Quality Guidelines*, *supra* note 12.

²⁶ See NOAA SCIENTIFIC INTEGRITY, *supra* note 1 at § 5.

²⁷ *Id.* at § 3.

²⁸ See *id.*; Aliza Chasan, *U.S. sets record for billion-dollar weather and climate disasters in 2023*, CBS NEWS (Sept. 11, 2023), <https://www.cbsnews.com/news/us-sets-record-for-billion-dollar-natural-disasters-climate-catastrophes-in-2023/>.

expected to lead to more damage and greater economic losses in the United States.”²⁹ The cost of natural disasters on the nation over time is an important metric worth tracking. However, financial damages on their own are not a reliable indicator of the severity of climate change.³⁰ Nominal and small storms can hit weakened or aging infrastructure causing large cities to be flooded, resulting in billions of dollars in damage.³¹ In contrast, a series of record breaking and unseasonal storms could hit a relatively unpopulated shoreline or wetlands in succession and cause little to no damage.³²

As the nation’s leading weather reporting agency, the public must be able to trust the scientific data NOAA produces, particularly as it relates to the measurements of extreme weather events. Full transparency is necessary to build that trust. To better understand the methods behind how data are selected, as well as the methods for developing models for processing and producing the datasets used in these reports, we request that you publish all data and methodologies used for these reports and respond to the following requests no later than September 17, 2024.

1. Does more than one version of the report dataset exist? If so, how many other versions of the dataset exist? Please provide all versions of the dataset to the Committee.
2. Please explain the variation in inflation adjustments for some weather events and how these numbers appear to be far larger than actual inflation rates. Please provide all data that supports this decision.
3. Please explain the decision not to account for changes in GDP or population.
 - a. Please provide documents and evidence explaining why the data does not need to take into account changes in a growing population and richer, more sprawling urban areas.
4. Please explain the methodology that NOAA uses to attribute increases in billion-dollar disasters to human-caused climate change.

²⁹ *FACT SHEET: Biden-Harris Administration Releases Fifth National Climate Assessment*, THE WHITE HOUSE, <https://www.whitehouse.gov/briefing-room/statements-releases/2023/11/14/fact-sheet-biden-harris-administration-releases-fifth-national-climate-assessment-and-announces-more-than-6-billion-to-strengthen-climate-resilience-across-the-country/> (May 24, 2024).

³⁰ See Pielke [*Scientific Integrity*], *supra* note 2 at 6.

³¹ See *Hurricane Katrina – August 2005*, NAT’L OCEANIC AND ATMOSPHERIC ADMIN. (Aug. 2005), <https://www.weather.gov/mob/katrina> (categorizing Katrina as making landfall as a Category 3 hurricane but attributing its \$108 billion in damage to New Orleans’s wealth, population, and broken levees); Sarah Pruitt, *How Levee Failures Made Hurricane Katrina a Bigger Disaster*, HISTORY CHANNEL (Aug. 25, 2023), <https://www.history.com/news/hurricane-katrina-levee-failures>.

³² See *Hurricane Michael 2018*, NAT’L OCEANIC AND ATMOSPHERIC ADMIN. (Oct. 10, 2018), <https://www.weather.gov/tac/HurricaneMichael2018> (categorizing Michael as a Category 5 hurricane, passing over Florida’s Panama City Beach and Mexico Beach, which have a combined population of 20,000); the dataset fails to take into account changes in gross domestic product (GDP). The article explains that, “[o]ver time, population and wealth have increased dramatically . . . , meaning that when an extreme climate or weather event occurs, there is more to be damaged and invariably, more damage occurs even if there is no underlying trend in the frequency or intensity of extreme weather.”³² This essentially means that when extreme weather events are normalized for GDP, the average price of these events has actually **decreased over time** by about 80%.

5. Please provide all quantitative analyses and their basis in the peer-reviewed literature.
6. Multiple members of the Biden Administration have alluded to a connection between the report and accelerated human-induced climate change including a White House press release stating: “This year set a record for the number of climate disasters that cost the United States over \$1 billion. The United States now experiences a billion-dollar disaster approximately every three weeks on average, compared to once every four months during the 1980s. Every degree of global warming we avoid matters, because each increment of warming is expected to lead to more damage and greater economic losses in the United States. Each climate action taken to reduce and avoid warming reduces those risks and harmful impacts.”³³ Please provide documents and supporting evidence that demonstrate why the report is indicative of accelerated human-induced climate change.
7. Please provide documents detailing the compliance of these reports with NOAA Information Quality Act guidelines, specifically, the pre-dissemination review process.³⁴
8. Please provide the Committee with the processes and procedures that NOAA implements to make their cost calculations.

³³ Press Release, The White House, FACT SHEET: Biden-Harris Administration Releases Fifth National Climate Assessment and Announces More Than \$6 Billion to Strengthen Climate Resilience Across the Country (Nov. 14, 2023), <https://www.whitehouse.gov/briefing-room/statements-releases/2023/11/14/fact-sheet-biden-harris-administration-releases-fifth-national-climate-assessment-and-announces-more-than-6-billion-to-strengthen-climate-resilience-across-the-country/>; see also Press Release, NOAA, NOAA, Reinsurance Association of America sign collaborative agreement to improve risk communication (July 15, 2024), <https://www.noaa.gov/news-release/noaa-reinsurance-association-of-america-sign-collaborative-agreement-to-improve-risk-communication/>; Press Release, NOAA, U.S. struck with historic number of billion-dollar disasters in 2023 (Jan 9, 2024), <https://www.noaa.gov/news/us-struck-with-historic-number-of-billion-dollar-disasters-in-2023/>; Press Release, The White House, WHAT THEY ARE SAYING: Biden-Harris Administration Announces Historic \$20 Billion in Awards to Expand Access to Clean Energy and Climate Solutions and Lower Energy Costs for Communities Across the Nation (Apr. 5, 2023), <https://www.whitehouse.gov/briefing-room/statements-releases/2024/04/05/what-they-are-saying-biden-harris-administration-announces-historic-20-billion-in-awards-to-expand-access-to-clean-energy-and-climate-solutions-and-lower-energy-costs-for-communities-across-the-nati/>

³⁴ See *Information Quality Guidelines*, *supra* note 12.

Pursuant to Rule X of the U.S. House of Representatives, the Committee on Science, Space, and Technology is delegated oversight jurisdiction over all laws, programs, and Government activities relating to nonmilitary research and development.³⁵ If you have any questions or concerns please contact Daniel Boatright at (202) 225-0222. Thank you for your attention to this important matter.

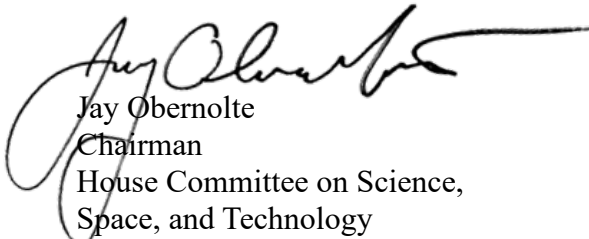
Sincerely,



Frank Lucas
Chairman
House Committee on Science,
Space, and Technology



Max Miller
Chairman
House Committee on Science,
Space, and Technology
Subcommittee on Environment



Jay Obernolte
Chairman
House Committee on Science,
Space, and Technology
Subcommittee on
Investigations and Oversight

cc: Zoe Lofgren, Ranking Member House Committee on Science, Space, and Technology

³⁵ Rule X, Organization of Committees, U.S. House of Representatives.