

APPENDIX - SELECT SCIENTIFIC SOURCES

2009 ENDANGERMENT FINDING

Endangerment and Cause or Contribute Findings for Greenhouse Gases	<p>The Administrator finds that six greenhouse gases taken in combination endanger both the public health and the public welfare of current and future generations.</p>
Technical Support Document	<p>Scientific and technical information supporting the Endangerment and Cause or Contribute Findings for Greenhouse Gases Under Section 202(a) of the Clean Air Act</p>
IPCC AR4 Climate Change 2007: Synthesis Report	<p>This synthesis report is based on the assessment carried out by the three Working Groups of the Intergovernmental Panel on Climate Change (IPCC) during the AR4 cycle.</p>
IPCC AR4 Climate Change 2007: Impacts, Adaptation, and Vulnerability	<p>Scientific assessment of the impacts of climate change, the vulnerability of natural and human environments, and the potential for response through adaptation</p>
IPCC AR4 Climate Change 2007: The Physical Science Basis	<p>Comprehensive assessment of the physical science of climate change</p>
IPCC AR4 Climate Change 2007: Mitigation of Climate Change	<p>New literature on the scientific, technological, environmental, economic and social aspects of mitigation of climate change</p>
2009 USGCRP Major Assessment (Our Changing Planet: The US Climate Change Science Program for Fiscal Year 2009)	<p>A report by the Climate Change Science Program and the Subcommittee on Global Change Research / A supplement to the President's Budget for Fiscal Year 2009</p>
National Research Council Major Assessment (Science and Decisions: Advancing Risk Assessment in 2009)	<p>Practical scientific and technical recommendations to broaden the framework for risk-based decision-making</p>
IPCC Second Assessment Report (2007)	<p>The synthesis report addresses a range of broad policy-relevant questions, establishes 100-year time frame values for global warming potential</p>
NOAA Study: State of the Climate in 2008	<p>Documentation of the year's current weather and climate events from around the world. Accurate historical perspective, with a particular</p>

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	focus on unusual or anomalous events from the past year.
A synopsis of scientific findings from major assessments of the USGCRP	“This report summarizes the science of climate change and the impacts of climate change on the United States, now and in the future.”
Recent Emissions Data: US EPA (2009) Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2007	Developed by the U.S. government to meet U.S commitments under the United Nations Framework Convention on Climate Change (UNFCCC)
CCSP (2009) Coastal Sensitivity to Sea-Level Rise: A Focus on the Mid-Atlantic Region.	Part of a series of synthesis and assessment products produced by the U.S. Climate Change Science Program (CCSP) aimed at providing current assessments of climate change science to inform public debate, policy, and operational decisions.
CCSP (2008) Preliminary review of adaptation options for climate-sensitive ecosystems and resources.	Part of a series of synthesis and assessment products produced by the U.S. Climate Change Science Program (CCSP) aimed at providing current assessments of climate change science to inform public debate, policy, and operational decisions.
CCSP (2008) Analyses of the effects of global change on human health and welfare and human systems.	“This report focuses on impacts of global climate change, especially impacts on three broad dimensions of the human condition: human health, human settlements, and human welfare.” Prepared by a team of experts from academia, government, and the private sector in response to the mandate of the U.S. Climate Change Science Program’s Strategic Plan (2003).
U.S. EPA (2009) Assessment of the Impacts of Global Change on Regional U.S. Air Quality: A Synthesis of Climate Change Impacts on Ground-Level Ozone.	This report was prepared by the Global Change Research Program in EPA’s Office of Research and Development to “provide air quality managers and scientists with timely and useful information about the potential effects of climate change on air quality in the United States.”

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<p>U.S. EPA (2008) National Air Quality: Status and Trends Through 2007.</p>	<p>Summary report highlighting EPA’s most recent evaluation of the status and trends in our nation’s air quality.</p>
<p>Climate Analysis Indicators Tool of the World Resources Institute (WRI) (2007).</p>	<p>“[Climate Analysis Indicators Tool] provides a comprehensive and comparable database of greenhouse gas emissions data (including all major sources and sinks) and other climate-relevant indicators.”</p>

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<p>IPCC, 2022: Summary for Policymakers [H.-O. Pörtner, D.C. Roberts, E.S. Poloczanska, K. Mintenbeck, M. Tignor, A. Alegría, M. Craig, S. Langsdorf, S. Lösche, V. Möller, A. Okem (eds.)]. In: Climate Change 2022: Impacts, Adaptation and Vulnerability. Contribution of Working Group II to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change [H.-O. Pörtner, D.C. Roberts, M. Tignor, E.S. Poloczanska, K. Mintenbeck, A. Alegría, M. Craig, S. Landsdorf, S. Lösche, V. Möller, A. Okem, B. Rama (eds.)]. Cambridge University Press, Cambridge, UK and New York, NY, USA, pp. 3-33</p>	<p>"This report recognizes the interdependence of climate, ecosystems and biodiversity, and human societies (Figure SPM.1) and integrates knowledge more strongly across the natural, ecological, social and economic sciences than earlier IPCC assessments."</p>
<p>IPCC, 2022: Summary for Policymakers. In: Climate Change 2022: Mitigation of Climate Change. Contribution of Working Group III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change [P.R. Shukla, J. Skea, R. Slade, A. Al Khourdajie, R. van Diemen, D. McCollum, M. Pathak, S. Some, P. Vyas, R. Fradera, M. Belkacemi, A. Hasija, G. Lisboa, S. Luz, J. Malley, (eds.)].</p>	<p>"The Working Group III report provides an updated global assessment of climate change mitigation progress and pledges, and examines the sources of global emissions. It explains developments in emission reduction and mitigation efforts, assessing the impact of national climate pledges in relation to long-term emissions goals."</p>

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<p>Cambridge University Press, Cambridge, UK and New York, NY, USA.</p>	
<p>IPCC, 2021: Summary for Policymakers. In: Climate Change 2021: The Physical Science Basis. Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change [Masson-Delmotte, V., P. Zhai, A. Pirani, S. L. Connors, C. Péan, S. Berger, N. Caud, Y. Chen, L. Goldfarb, M.I. Gomis, M. Huang, K. Leitzell, E. Lonnoy, J.B.R. Matthews, T.K. Maycock, T. Waterfield, O. Yelekçi, R. Yu, and B. Zhou (eds.)]. In Press.</p>	<p>"This [Summary for Policymakers] provides a high-level summary of the understanding of the current state of the climate, including how it is changing and the role of human influence, the state of knowledge about possible climate futures, climate information relevant to regions and sectors, and limiting human-induced climate change."</p>
<p>IPCC, 2019: IPCC Special Report on the Ocean and Cryosphere in a Changing Climate [H.-O. Pörtner, D.C. Roberts, V. Masson-Delmotte, P. Zhai, M. Tignor, E. Poloczanska, K. Mintenbeck, A. Alegría, M. Nicolai, A. Okem, J. Petzold, B. Rama, N.M. Weyer (eds.)]. Cambridge University Press, Cambridge, UK and New York, NY, USA, 755 pp.</p>	<p>"This special report assesses new knowledge since the IPCC 5th Assessment Report (AR5) and the Special Report on Global Warming of 1.5°C (SR15) on how the ocean and cryosphere have and are expected to change with ongoing global warming, the risks and opportunities these changes bring to ecosystems and people, and mitigation, adaptation and governance options for reducing future risks."</p>
<p>IPCC, 2019: Climate Change and Land: an IPCC special report on climate change, desertification, land degradation, sustainable land management, food security, and greenhouse gas fluxes in terrestrial ecosystems [P.R. Shukla, J. Skea, E. Calvo Buendia, V. Masson-Delmotte, H.-O. Pörtner, D.C. Roberts, P. Zhai, R. Slade, S. Connors, R. van Diemen, M. Ferrat, E. Haughey, S. Luz, S. Neogi, M. Pathak, J. Petzold, J. Portugal Pereira, P. Vyas, E. Huntley, K. Kissick, M. Belkacemi, J. Malley, (eds.)]. In Press.</p>	<p>"An IPCC Special Report on climate change, desertification, land degradation, sustainable land management, food security, and greenhouse gas fluxes in terrestrial ecosystems."</p>

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[IPCC, 2018: Global Warming of 1.5°C. An IPCC Special Report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty \[Masson-Delmotte, V., P. Zhai, H. -O. Pörtner, D. Roberts, J. Skea, P.R. Shukla, A. Pirani, W. Moufouma-Okia, C. Péan, R. Pidcock, S. Connors, J.B.R. Matthews, Y. Chen, X. Zhou, M.I. Gomis, E. Lonnoy, T. Maycock, M. Tignor, and T. Waterfield \(eds.\)\]. Cambridge University Press, Cambridge, UK and New York, NY, USA, 616 pp.](#)

"This Report responds to the invitation for IPCC ‘... to provide a Special Report in 2018 on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways’ contained in the Decision of the 21st Conference of Parties of the United Nations Framework Convention on Climate Change to adopt the Paris Agreement"

[USGCRP, 2018: *Impacts, Risks, and Adaptation in the United States: Fourth National Climate Assessment, Volume II* \[Reidmiller, D.R., C.W. Avery, D.R. Easterling, K.E. Kunkel, K.L.M. Lewis, T.K. Maycock, and B.C. Stewart \(eds.\)\]. U.S. Global Change Research Program, Washington, DC, USA, 1515 pp.](#)

"Volume II focuses on the human welfare, societal, and environmental elements of climate change and variability for 10 regions and 18 national topics, with particular attention paid to observed and projected risks, impacts, consideration of risk reduction, and implications under different mitigation pathways."

[USGCRP, 2017: *Climate Science Special Report: Fourth National Climate Assessment, Volume I* \[Wuebbles, D.J., D.W. Fahey, K.A. Hibbard, D.J. Dokken, B.C. Stewart, and T.K. Maycock \(eds.\)\]. U.S. Global Change Research Program, Washington, DC, USA, 470 pp.](#)

"The Climate Science Special Report (CSSR) is designed to be an authoritative assessment of the science of climate change, with a focus on the United States, to serve as the foundation for efforts to assess climate-related risks and inform decision-making about responses."

[USGCRP, 2016: *The Impacts of Climate Change on Human Health in the United States: A Scientific Assessment*. Crimmins, A., J. Balbus, J.L. Gamble, C.B. Beard, J.E. Bell, D. Dodgen, R.J. Eisen, N. Fann, M.D. Hawkins, S.C.](#)

"The purpose of this assessment is to provide a comprehensive, evidence-based, and, where possible, quantitative estimation of observed and projected climate change related health impacts in the United States."

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<p>Herring, L. Jantarasami, D.M. Mills, S. Saha, M.C. Sarofim, J. Trtani, and L. Ziska, Eds. U.S. Global Change Research Program, Washington, DC, 312 pp.</p>	
<p>National Academies of Sciences, Engineering, and Medicine. 2019. Climate Change and Ecosystems. Washington, DC: The National Academies Press.</p>	<p>"The National Academies convened a forum on November 8-9, 2018 to highlight current research frontiers such as the effects of climate extremes, interactions among climate and other stressors, the timing, sequence, and clustering of climate-related events, and tipping points for abrupt change. Topics of discussion at the forum pertained to the changes ecosystems are currently undergoing, sustaining ecosystems, the impact of ecosystems on global climate change, societal adaptation to climate change, and priorities for future research. This report summarizes the presentations and discussions from the forum."</p>
<p>National Academies of Sciences, Engineering, and Medicine. 2017. Valuing Climate Damages: Updating Estimation of the Social Cost of Carbon Dioxide. Washington, DC: The National Academies Press.</p>	<p>"Valuing Climate Changes examines potential approaches [to assessing net damages from climate change], along with their relative merits and challenges, for a comprehensive update to the current methodology. This publication also recommends near- and longer-term research priorities to ensure that the SC- CO2 estimates reflect the best available science."</p>
<p>National Academies of Sciences, Engineering, and Medicine. 2016. Attribution of Extreme Weather Events in the Context of Climate Change. Washington, DC: The National Academies Press.</p>	<p>"Event attribution can answer questions about how much climate change influenced the probability or intensity of a specific type of weather event. As event attribution capabilities improve, they could help inform choices about assessing and managing risk, and in guiding climate adaptation strategies. This report examines the current state of science of extreme weather attribution, and identifies ways to move the science forward to improve attribution capabilities."</p>

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<p>NOAA National Centers for Environmental Information, State of the Climate: Global Climate Report for Annual 2020, published online January 2021</p>	<p>Includes selected significant climate anomalies and events in 2020, global temperatures (ten warmest years), regional temperatures, precipitation, ocean heat content</p>
<p>Blunden, J. and T. Boyer, Eds., 2020: "State of the Climate in 2020". Bull. Amer. Meteor. Soc., 102 (8), Si-S475</p>	<p>Special Supplement to the Bulletin of the American Meteorological Society</p>
<p>S. Po-Chedley, B.D. Santer, S. Fueglistaler, M.D. Zelinka, P.J. Cameron-Smith, J.F. Painter, & Q. Fu, Natural variability contributes to model-satellite differences in tropical tropospheric warming, Proc. Natl. Acad. Sci. U.S.A. 118(13) e2020962118</p>	<p>This research "continues to find that ' multidecadal variability can explain current model-observational differences in the rate of tropical tropospheric warming' consistent with the previous studies cited by EPA on this subject."</p>
<p>Zou, Xu, Hao, and Fu, Post-Millennium Atmospheric Temperature Trends Observed From Satellites in Stable Orbits, Geophysical Research Letters, 2021.</p>	<p>"Our finding provides new insight on trend differences among microwave sounder temperature data sets developed by different research groups, and is also helpful in reconciling trend differences between satellite observations and climate model simulations."</p>
<p>Steiner et al., Observed Temperature Changes in the Troposphere and Stratosphere from 1979 to 2018, Journal of Climate, 2020</p>	<p>"The consistency of trend results from the latest upper-air datasets will help to improve understanding of climate changes and their drivers."</p>
<p>Santer et al., Using Climate Model Simulations to Constrain Observations, Journal of Climate, 2021</p>	<p>Analysis of the differences between modeled and observed tropospheric warming trends</p>
<p>Rohde, R. A., & Hausfather, Z. (2020). The Berkeley Earth land/ocean temperature record. Earth System Science Data Discussions.</p>	<p>"The Berkeley Earth Land/Ocean surface temperature record presented here has already been used by a number of publications (e.g., Jones, 2015; Thorne et al., 2016; Sutton et al., 2015). It joins a number of existing land-ocean surface temperature products that help provide a diverse examination of the Earth's changing climate since 1850 and can be used for diverse</p>

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	applications including climate model validation, estimating transient climate response, examining changes in extreme events, and other research areas.”
Morice et al., An Updated Assessment of Near-Surface Temperature Change From 1850: The HadCRUT5 Data Set, 2020	Updates and improvements to the Met Office Hadley Centre and Climatic Research Unit global surface temperature data set for 1850–2018
National Research Council. 2010. Advancing the Science of Climate Change. Washington, DC: The National Academies Press.	"Climate change is occurring, is caused largely by human activities, and poses significant risks for--and in many cases is already affecting--a broad range of human and natural systems."
Mann, M.E. et al. (2008). Proxy-based reconstructions of hemispheric and global surface temperature variations over the past two millennia. PNAS. 105:36.	“Our results extend previous conclusions that recent Northern Hemisphere surface temperature increases are likely anomalous in a long-term context.”
Esper et al. (2010). Trends and uncertainties in Siberian indicators of 20th century warming. Global Change Biology. 16, 386–398	“Despite [] large uncertainties, instrumental and tree growth estimates for the entire 20 th century warming interval match each other, to a degree preciously not recognized, when care is taken to preserve long-term trends in the tree-ring data.”
National Oceanic and Atmospheric Administration (NOAA) (2010). State of the Climate Global Analysis Annual 2009	“The 2000-2009 decade will be the warmest on record, with its average global surface temperature about 0.54°C (0.96°F) above the 20 th century average. This will easily surpass the 1990s value of 0.36°C (0.65°F).”
Kennedy et al., 2010: How do we know the world has warmed? State of the Climate in 2009. Bulletin of the American Meteorological Society. Soc. 91 (6), S79-S82.	“Globally averaged surface temperature anomalies are shown to be robust given the close agreement between independently-derived datasets and strong corroborative evidence across a wide range of other climate variables.”
Menne, M.J., C.N. Williams, Jr., and M.A. Palecki (2010). On the reliability of the U.S. surface temperature record. Journal of Geophysical Research.	“[W]e find no evidence that the CONUS average temperature trends are inflated due to poor station siting.”

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<p>Netherlands Environmental Assessment Agency (PBL). <i>Assessing an IPCC assessment: an analysis of statements on projected regional impacts in the 2007 report.</i> (2010)</p>	<p>"Our findings do not contradict the main conclusions of the IPCC on impacts, adaptation and vulnerability related to climate change. There is ample observation evidence of natural systems being influenced by climate change on regional levels. The negative impacts under unmitigated climate change pose substantial risks to most parts of the world, with risks increasing at higher global average temperatures."</p>
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EPA REAFFIRMATIONS OF CLIMATE POLLUTION HARMS

<p>2016 EPA Finding re Greenhouse Gas Emissions from Aircraft</p>	<p>Finding That Greenhouse Gas Emissions From Aircraft Cause or Contribute to Air Pollution That May Reasonably Be Anticipated To Endanger Public Health and Welfare 81 Fed. Reg. 54422 (August 15, 2016) at 54423-424</p>
<p>2024 EPA Greenhouse Gas Emissions Standards for Heavy-Duty Vehicles-Phase 3</p>	<p><i>Public Health and Welfare Need for GHG Emissions Reductions</i> 89 Fed. Reg. 29440 (April 22, 2024) at 29474-475</p>
<p>Light-Duty Vehicle Greenhouse Gas Emissions Standards and Corporate Average Fuel Economy Standards</p>	<p>75 Fed. Reg. 25324 (May 7, 2010) at 25326-7; 25396-9; 25402; 25491; 25541-3; 25545; 25607</p>
<p>Greenhouse Gas Emissions Standards and Fuel Efficiency Standards for Medium-and Heavy-Duty Engines and Vehicles</p>	<p>77 Fed. Reg. 62624 (Oct. 15, 2012) at 62633-4; 62669-70; 62894-8; 62960-1; 62964; 63018</p>
<p>2017 and Later Model Year Light-Duty Vehicle Greenhouse Gas Emissions and Corporate Average Fuel Economy Standards</p>	<p>77 Fed. Reg. 62624 (Oct. 15, 2012) at 62633-4; 62669-70; 62894-8; 62960-1; 62964; 63018</p>
<p>Greenhouse Gas Emissions and Fuel Efficiency Standards for Medium-and</p>	<p>81 Fed. Reg. 73478 (Oct. 25, 2016) at 73486-7; 73512; 73833-4; 73858; 73963; 73966; 73968</p>

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Heavy-Duty Engines and Vehicles - Phase 2	
Final Determination on the Appropriateness of the Model Year 2022-2025 Light-Duty Vehicle Greenhouse Gas Emissions Standards under the Midterm Evaluation	EPA-420-R-17-001 January 2017 <i>Climate Change Science</i> at 15
Final Rule to Revise Existing National GHG Emissions Standards for Passenger Cars and Light Trucks Through Model Year 2026	86 Fed. Reg. 74434 (Dec. 30, 2021) at 74489
Final Rule: Multi-Pollutant Emissions Standards for Model Years 2027 and Later Light-Duty and Medium-Duty Vehicles	89 Fed. Ref. 27842 (Apr.18, 2024) at 27862-64
2022 EPA Oil and Gas Methane Proposal	86 Fed. Reg. 63110 (Nov. 15, 2021) at 63124-25; 63133; 63140-1; 63153; 63261
2023 EPA Oil and Gas Methane Supplemental Proposal	87 Fed. Reg. 74702 (Dec. 6, 2022) at 74825-6; 74845
2024 EPA Oil and Gas Methane Final Rule	89 Fed. Reg. 16820 (Mar. 8, 2024) at 16823; 16837; 16846; 16851-59; 16992; 17020-21; 17029; 17031-2
2015 EPA Oil and Gas Methane Proposal	80 Fed. Reg. 56593 (Sep. 18, 2015) at 56601-05
2016 EPA Oil & Gas Methane Final Rule	81 Fed. Reg. 35824 (Jun. 3, 2016) at 35833-37
2016 Final Standards of Performance for Municipal Solid Waste Landfills	81 Fed. Reg. 59332 (Aug. 29, 2016) at 59337-41
2023 EPA 111 Power Plant Carbon Standards Proposal	88 Fed. Reg. 33240 (May 23, 2023) at 33249
2024 EPA 111 Power Plant Carbon Standards Final Rule	89 Fed. Reg. 39798 (May 9, 2024) at 39807, 40025

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2014 EPA 111(b) Carbon Standards for New Power Plants Proposal	79 Fed. Reg. 1430 (Jan. 8, 2014) at 1437-41, 1453-55
2014 EPA 111(b) Carbon Standards for Modified & Reconstructed Power Plants Proposal	79 Fed. Reg. 34960 (Jun. 18, 2024) at 34966-67, 34978
2015 EPA 111(b) Carbon Standards for New & Reconstructed Power Plants Final Rule	80 Fed. Reg. 64510 (Oct. 23, 2015) at 64517-20, 64530-32

RECENT CLIMATE SCIENCE

2022 U.S. Billion-Dollar Weather and Climate Disasters in Historical Context	“The NOAA National Centers for Environmental Information (NCEI) has released the final update to its 2022 Billion-dollar disaster report, confirming another intense year of costly disasters and extremes throughout much of the country.”
2024 Was the World’s Warmest Year on Record	Highlights from NOAA’s 2024 annual climate report
Adapting to Climate Change: The Remarkable Decline in the US Temperature-Mortality Relationship over the Twentieth Century	Examines the temperature-mortality relationship over the course of the twentieth-century United States
Anthropogenic Contributions to the 2021 Pacific Northwest Heatwave	Bercos-Hickey, E., O’Brien, T. A., Wehner, M. F., Zhang, L., Patricola, C. M., Huang, H., & Risser, M. D. (2022). Anthropogenic contributions to the 2021 Pacific Northwest heatwave. <i>Geophysical Research Letters</i> , 49 , e2022GLO99396
Climate Change Indicators: Heat Waves	This EPA indicator describes trends in multi-day extreme heat events across the United States
Climate Change Indicators: U.S. and Global Temperature	This EPA indicator describes trends in average surface temperature for the United States and the world

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<p>Climate Change: Global Temperature</p>	<p>NOAA Global Average Surface Temperature: Yearly surface temperature from 1880-2023 compared to the 20th-century average (1901-2000)</p>
<p>Climate change threatens Chinook salmon throughout their life cycle</p>	<p>Crozier, L.G., Burke, B.J., Chasco, B.E. et al. Climate change threatens Chinook salmon throughout their life cycle. <i>Commun Biol</i> 4, 222 (2021).</p>
<p>Contribution of Historical Precipitation Change to US Flood Damages</p>	<p>F.V. Davenport, M. Burke, & N.S. Diffenbaugh, Contribution of historical precipitation change to US flood damages, <i>Proc. Natl. Sci. U.S.A.</i> 118(4) e2017524118 (2021).</p>
<p>Death Toll From Palisades & Eaton Fires Climbs to 25. What We Know About Those Killed</p>	<p>L.A. Times Published Jan. 12, 2025; Updated Jan. 14, 2025</p>
<p>Death Toll of Maui Wildfire Now at 102</p>	<p>New York Times Published Aug. 9, 2024</p>
<p>Delhi’s Hottest Day Ever: Mercury Level Reaches 52.3 Degrees Today; Record-Breaking, Highest Temperature in History</p>	<p>Times of India Published May 29, 2024</p>
<p>Atmospheric variability contributes to increasing wildfire weather but not as much as global warming</p>	<p>N.S. Diffenbaugh, A.G. Konings, & C.B. Field, Atmospheric variability contributes to increasing wildfire weather but not as much as global warming, <i>Proc. Natl. Sci. U.S.A.</i> 118(46) e2117876118 (2021).</p>
<p>INVENTORY OF U.S. GREENHOUSE GAS EMISSIONS AND SINKS: 1990-2022</p>	<p>Annual report that tracks U.S. greenhouse gas emissions and sinks by source, economic sector, and greenhouse gas going back to 1990</p>
<p>Human-caused ocean warming has intensified recent hurricanes</p>	<p>Daniel M Gilford et al 2024 <i>Environ. Res.: Climate</i> 3 045019</p>
<p>Global Carbon Budget 2024</p>	<p>“Here we describe and synthesize datasets and methodologies to quantify the five major components of the global carbon budget and</p>

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	their uncertainties.” Earth System Science Data (Preprint)
Global Climate Change Impact on Crops Expected Within 10 Years, NASA Study Finds	Jägermeyr, J., Müller, C., Ruane, A.C. <i>et al.</i> Climate impacts on global agriculture emerge earlier in new generation of climate and crop models. <i>Nat Food</i> 2 , 873-885 (2021).
Testimony of Dr. Michael Oppenheimer Princeton University at the Committee on Science, Space, and Technology US House of Representatives March 12, 2021 On Climate Change Science	“The Committee invited me to discuss the state of our understanding of the effects of climate change on processes such as ice loss, sea level rise, coastal storms, and extreme heat; recent observations of accelerating rates of ice loss and sea level rise, and extreme heat events in the U.S., and how climate change is affecting the U.S. on regional and local scales.”
Testimony of Dr. Michael Oppenheimer Princeton University At the Oversight and Reform Committee - Subcommittee on Environment US House of Representatives April 9, 2019 On Climate Change Science - a Historical Perspective	“I was asked to describe highlights in the development of climate change science by the late 1980s to illustrate how much scientists understood at that time.”
Heat Wave in Southern California and the Southwest in Early September 2024	NOAA Event Tracker Published Sept 13, 2024
Wildfire Statistics	Congressional Research Service Updated June 1, 2023 IF10244 Version 69
Trends of Heat-Related Deaths in the US, 1999-2023	Howard JT, Androne N, Alcover KC, Santos-Lozada AR. Trends of Heat-Related Deaths in the US, 1999-2023. <i>JAMA</i> . 2024;332(14):1203–1204
CLIMATE CHANGE 2023: SYNTHESIS REPORT	IPCC, 2023: <i>Climate Change 2023: Synthesis Report. Contribution of Working Groups I, II and III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change</i> [Core Writing Team, H. Lee and J. Romero (eds.)]. IPCC, Geneva, Switzerland, 184 pp.

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CLIMATE CHANGE AND LAND, SUMMARY FOR POLICYMAKERS	IPCC, 2019: <i>Summary for Policymakers. In: Climate Change and Land: an IPCC special report on climate change, desertification, land degradation, sustainable land management, food security, and greenhouse gas fluxes in terrestrial ecosystems</i> [P.R. Shukla, J. Skea, E. Calvo Buendia, V. Masson-Delmotte, H.- O. Pörtner, D. C. Roberts, P. Zhai, R. Slade, S. Connors, R. van Diemen, M. Ferrat, E. Haughey, S. Luz, S. Neogi, M. Pathak, J. Petzold, J. Portugal Pereira, P. Vyas, E. Huntley, K. Kissick, M. Belkacemi, J. Malley, (eds.)]. In press.
SIXTH ASSESSMENT, WORKING GROUP I REPORT	IPCC, 2021: <i>Climate Change 2021: The Physical Science Basis. Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change</i> [Masson-Delmotte, V., P. Zhai, A. Pirani, S.L. Connors, C. Péan, S. Berger, N. Caud, Y. Chen, L. Goldfarb, M.I. Gomis, M. Huang, K. Leitzell, E. Lonnoy, J.B.R. Matthews, T.K. Maycock, T. Waterfield, O. Yelekçi, R. Yu, and B. Zhou (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA, 2391 pp.
SIXTH ASSESSMENT, WORKING GROUP I, SUMMARY FOR POLICYMAKERS	IPCC, 2021: <i>Summary for Policymakers. In: Climate Change 2021: The Physical Science Basis. Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change</i> [Masson-Delmotte, V., P. Zhai, A. Pirani, S.L. Connors, C. Péan, S. Berger, N. Caud, Y. Chen, L. Goldfarb, M.I. Gomis, M. Huang, K. Leitzell, E. Lonnoy, J.B.R. Matthews, T.K. Maycock, T. Waterfield, O. Yelekçi, R. Yu, and B. Zhou (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA, pp. 3–32
Human Influence Has Intensified Extreme Precipitation in North America	M.C. Kirchmeier-Young, & X. Zhang, Human influence has intensified extreme precipitation in North America, <i>Proc. Natl. Acad. Sci. U.S.A.</i> 117 (24) 13308-13313, (2020).

APPENDIX - SELECT SCIENTIFIC SOURCES

RECENT CLIMATE SCIENCE

<p>Legal Mandate</p>	<p>U.S. Global Change Research Program was established by Presidential Initiative in 1989 and mandated by Congress in the Global Change Research Act (GCRA) of 1990 to develop and coordinate “a comprehensive and integrated United States research program which will assist the Nation and the world to understand, assess, predict, and respond to human-induced and natural processes of global change.”</p>
<p>Hurricane Sandy’s Flood Frequency Increasing from Year 1800 to 2100</p>	<p>Lin N, Kopp RE, Horton BP, Donnelly JP. Hurricane Sandy’s flood frequency increasing from year 1800 to 2100. <i>Proc Natl Acad Sci U S A</i>. 2016 Oct 25;113(43):12071-12075.</p>
<p>Global risk of deadly heat</p>	<p>Mora, C., Dousset, B., Caldwell, I. <i>et al.</i> Global risk of deadly heat. <i>Nature Clim Change</i> 7, 501–506 (2017).</p>
<p>A Hunter’s & Angler’s Guide to Climate Change</p>	<p>National Wildlife Federation Report Challenges, Opportunities & Solutions</p>
<p>Service Assessment August/September 2017 Hurricane Harvey</p>	<p>NOAA National Weather Service Service Assessment Report</p>
<p>Sea Level Rise and Implications for Low-Lying Islands, Coasts, and Communities (IPCC)</p>	<p>Oppenheimer, M., B.C. Glavovic , J. Hinkel, R. van de Wal, A.K. Magnan, A. Abd-Elgawad, R. Cai, M. Cifuentes-Jara, R.M. DeConto, T. Ghosh, J. Hay, F. Isla, B. Marzeion, B. Meyssignac, and Z. Sebesvari, 2019: Sea Level Rise and Implications for Low-Lying Islands, Coasts and Communities. In: <i>IPCC Special Report on the Ocean and Cryosphere in a Changing Climate</i> [H.-O. Pörtner, D.C. Roberts, V. Masson-Delmotte, P. Zhai, M. Tignor, E. Poloczanska, K. Mintenbeck, A. Alegría, M. Nicolai, A. Okem, J. Petzold, B. Rama, N.M. Weyer (eds.)]. Cambridge University Press, Cambridge, UK and New York, NY, USA, pp. 321–445</p>

APPENDIX - SELECT SCIENTIFIC SOURCES

RECENT CLIMATE SCIENCE

Climate Warming Drives Local Extinction: Evidence from Observation and Experimentation	<p>Anne Marie Panetta <i>et al.</i>, Climate warming drives local extinction: Evidence from observation and experimentation. <i>Sci. Adv.</i> 4, eaaq1819 (2018).</p>
Attribution of 2020 Hurricane Season Extreme Rainfall to Human-Induced Climate Change	<p>Reed et al., Attribution of 2020 hurricane season extreme rainfall to human-induced climate change. <i>Nature Communications</i> (2022)13:1905.</p>
Causes of Accelerated High-Tide Flooding in the U.S. Since 1950	<p>Sun et al., Causes of accelerated High-Tide Flooding in the U.S. Since 1950. <i>npj Climate and Atmospheric Science</i> (2023)6:210</p>
Hydroclimate Volatility on a Warming Earth	<p>Swain, D.L., Prein, A.F., Abatzoglou, J.T. <i>et al.</i> Hydroclimate volatility on a warming Earth. <i>Nat Rev Earth Environ</i> 6, 35-50 (2025).</p>
Wildfire Risk Management in the Era of Climate Change	<p>Costas Emmanuel Synolakis, Georgios Marios Karagiannis, Wildfire risk management in the era of climate change, <i>PNAS Nexus</i>, Volume 3, Issue 5, May 2024, page151</p>
Hurricane Harvey Links to Ocean Heat Content and Climate Change Adaptation	<p>Trenberth, K. E., Cheng, L., Jacobs, P., Zhang, Y., & Fasullo, J. (2018). Hurricane Harvey links to ocean heat content and climate change adaptation. <i>Earth's Future</i>, 6, 730–744.</p>
Climate Risk Analysis	<p>Department of Defense Climate Risk Analysis October 2021 To the National Security Council</p>
THE NATIONAL SECURITY IMPLICATIONS OF A CHANGING CLIMATE	<p>The White House Findings from Select Federal Reports May 2015</p>
Fifth National Climate Assessment	<p>“The Fifth National Climate Assessment is the US Government’s preeminent report on climate change impacts, risks, and responses. It is a congressionally mandated interagency effort that provides the scientific foundation to support informed decision-making across the United States.”</p>

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RECENT CLIMATE SCIENCE

	<p>USGCRP, 2023: <i>Fifth National Climate Assessment</i>. Crimmins, A.R., C.W. Avery, D.R. Easterling, K.E. Kunkel, B.C. Stewart, and T.K. Maycock, Eds. U.S. Global Change Research Program, Washington, DC, USA.</p>
<p>Fourth National Climate Assessment</p>	<p>USGCRP, 2018: <i>Impacts, Risks, and Adaptation in the United States: Fourth National Climate Assessment, Volume II</i>: [Reidmiller, D.R., C.W. Avery, D.R. Easterling, K.E. Kunkel, K.L.M. Lewis, T.K. Maycock, and B.C. Stewart (eds.)]. U.S. Global Change Research Program, Washington, DC, USA, 1515 pp.</p>
<p>The Burden of Heat-Related Mortality Attributable to Recent Human-Induced Climate Change</p>	<p>Vicedo-Cabrera, A.M., Scovronick, N., Sera, F. et al. The burden of heat-related mortality attributable to recent human-induced climate change. <i>Nat. Clim. Chang.</i> 11, 492–500 (2021).</p>
<p>Climate-Related Local Extinctions Are Already Widespread Among Plant and Animal Species</p>	<p>Weins JJ (2016) Climate-Related Local Extinctions Are Already Widespread among Plant and Animal Species. <i>PLOS Biology</i> 14(12):e2001104.</p>
<p>Anthropogenic Impacts on the Exceptional Precipitation of 2018 in the Mid-Atlantic United States</p>	<p>Winter, J.M., H. Huang, E.C. Osterberg, and J.S. Mankin, 2020: Anthropogenic Impacts on the Exceptional Precipitation of 2018 in the Mid-Atlantic United States. <i>Bull. Amer. Meteor. Soc.</i>, 101, S5-S10.</p>
<p>Quantifying Contributions of Natural Variability and Anthropogenic Forcings on Increased Fire Weather Risk Over the Western United States</p>	<p>Y. Zhuang, R. Fu, B.D. Santer, R.E. Dickenson, & A. Hall, Quantifying contributions of natural variability and anthropogenic forcings on increased fire weather risk over the western United States, <i>Proc. Natl. Acad. Sci. U.S.A.</i> 118(45) e2111875118, (2021).</p>