

fifth national climate assessment

Fifth National Climate Assessment: Understanding the Latest Insights on Climate Change in the U.S.

fifth national climate assessment offers an essential and comprehensive overview of how climate change is affecting the United States. Released by the U.S. Global Change Research Program, this report synthesizes the latest science on climate impacts, risks, and adaptation strategies across the country. For anyone interested in understanding the current and projected effects of climate change on American communities, ecosystems, and economies, the fifth national climate assessment is a critical resource.

What Is the Fifth National Climate Assessment?

The fifth national climate assessment (NCA5) is a detailed scientific report mandated by the Global Change Research Act of 1990. It builds upon previous assessments to provide updated, region-specific information about climate change impacts in the United States. The report is produced by a team of hundreds of experts from federal agencies, academia, and the private sector, ensuring that the findings are both credible and relevant.

Unlike earlier assessments, NCA5 places a stronger emphasis on regional impacts, resilience, and adaptation, addressing how climate change affects different areas uniquely. This approach helps policymakers, businesses, and communities make informed decisions tailored to their specific vulnerabilities and opportunities.

Key Findings from the Fifth National Climate Assessment

The insights from the fifth national climate assessment paint a clear picture: climate change is not a distant threat but a pressing reality with widespread consequences. Here are some of the major takeaways:

Rising Temperatures and Extreme Weather

The report confirms that average temperatures across the U.S. have increased significantly, contributing to more frequent and intense heatwaves. This warming trend exacerbates droughts, wildfires, and storms, creating cascading effects on human health, infrastructure, and natural ecosystems.

Regional Variations in Climate Impacts

One of the strengths of the fifth national climate assessment is its detailed regional analyses. For

example:

- **Coastal areas** face rising sea levels and increased flooding risks.
- **Midwestern states** are experiencing more heavy rainfall events, increasing flood risks and affecting agriculture.
- **Southern states** endure intensified heat and drought, challenging water availability.
- **Western regions** grapple with prolonged wildfires and shrinking snowpack.

These regional perspectives help communities understand their unique vulnerabilities and prioritize adaptive responses.

Impact on Ecosystems and Biodiversity

The assessment highlights how shifting climate patterns disrupt habitats and threaten the survival of many species. From coral reefs suffering from ocean warming and acidification to forests facing increased pests and disease outbreaks, ecosystems are under unprecedented stress. This loss of biodiversity not only affects the environment but also undermines services like pollination, water purification, and carbon sequestration.

Economic and Health Consequences

Climate change is already imposing significant economic costs through damaged infrastructure, lost productivity, and increased emergency response needs. Public health is also at risk, with heat-related illnesses, respiratory problems from wildfire smoke, and the spread of vector-borne diseases becoming more common.

Why the Fifth National Climate Assessment Matters

The importance of the fifth national climate assessment extends beyond scientific circles. It serves as a foundational document for climate policy, planning, and public awareness in the United States.

Guiding Climate Policy and Action

Federal, state, and local governments rely on the NCA5 to craft effective climate strategies. By providing robust data and projections, the assessment informs regulations on emissions reductions, infrastructure resilience, and emergency preparedness. It also helps identify sectors that require urgent attention, such as energy, agriculture, and health care.

Empowering Communities and Stakeholders

Beyond policymakers, the assessment offers valuable insights for businesses, nonprofits, and community leaders. Understanding climate risks enables these groups to develop adaptation plans, invest in sustainable practices, and build resilience against future shocks.

Raising Public Awareness and Engagement

The clear, accessible presentation of climate science in the fifth national climate assessment helps bridge the gap between complex research and everyday understanding. This transparency fosters informed public discourse and encourages individual and collective action on climate change.

How the Fifth National Climate Assessment Was Developed

The process behind the fifth national climate assessment is as rigorous as its findings. It involved extensive collaboration among scientists, stakeholders, and federal agencies over several years.

Scientific Review and Transparency

Drafts of the report underwent multiple rounds of peer review and public comment. This ensured that the content was scientifically sound and addressed concerns from diverse perspectives. The open review process reflects a commitment to transparency and credibility.

Integration of Latest Climate Science

NCA5 incorporates cutting-edge climate modeling, observational data, and social science research. It also considers emerging issues such as climate justice, resilience frameworks, and the interplay between climate change and societal factors.

What the Fifth National Climate Assessment Means for the Future

Looking ahead, the insights from the fifth national climate assessment underscore the urgency of both mitigation and adaptation efforts. While reducing greenhouse gas emissions remains critical, preparing for the inevitable impacts of climate change is equally vital.

Communities that invest in climate resilience—through improved infrastructure, ecosystem restoration, and emergency planning—will be better positioned to thrive despite changing conditions.

Moreover, fostering collaboration across sectors and regions can amplify the effectiveness of climate responses.

Opportunities for Innovation and Leadership

The challenges outlined in the assessment also open doors for innovation. Clean energy technologies, sustainable agriculture, and green infrastructure are areas ripe for growth and investment. By leading on climate action, the U.S. can create jobs, boost economic competitiveness, and protect public health.

Individual and Collective Responsibility

Finally, the fifth national climate assessment reminds us that everyone has a role to play. From reducing personal carbon footprints to advocating for climate-friendly policies, individual actions contribute to broader societal change.

By staying informed through resources like the fifth national climate assessment, citizens can engage meaningfully in shaping a resilient and sustainable future.

The fifth national climate assessment is more than a report—it's a call to action grounded in science and a roadmap for navigating the evolving climate landscape in the United States. As climate impacts continue to unfold, the knowledge and guidance it provides will be indispensable for building a healthier, safer, and more equitable nation.

Frequently Asked Questions

What is the Fifth National Climate Assessment?

The Fifth National Climate Assessment (NCA5) is a comprehensive report that evaluates the impacts of climate change on the United States, providing scientific information to inform policy and decision-making.

When was the Fifth National Climate Assessment released?

The Fifth National Climate Assessment was released in multiple volumes between 2023 and 2024, with the final synthesis report expected in 2024.

What are the key findings of the Fifth National Climate Assessment?

Key findings include that climate change is intensifying extreme weather events, impacting ecosystems, public health, infrastructure, and the economy across the U.S., and that urgent

mitigation and adaptation efforts are needed.

How does the Fifth National Climate Assessment differ from previous assessments?

The Fifth Assessment incorporates the latest climate science, includes more regional analyses, focuses on impacts, risks, and adaptation strategies, and emphasizes equity and environmental justice more than previous reports.

Who produces the Fifth National Climate Assessment?

The NCA5 is produced by the U.S. Global Change Research Program (USGCRP), involving federal agencies, scientists, and stakeholders across the country.

Why is the Fifth National Climate Assessment important?

It provides policymakers, businesses, and communities with authoritative, science-based information on climate risks and opportunities, guiding effective responses to climate change in the U.S.

What topics are covered in the Fifth National Climate Assessment?

The assessment covers climate science, impacts on human health, infrastructure, energy, agriculture, ecosystems, water resources, and regional climate impacts, among other topics.

How can the public access the Fifth National Climate Assessment?

The Fifth National Climate Assessment is publicly available online through the USGCRP website and related government portals in various formats including reports, summaries, and interactive tools.

What role does the Fifth National Climate Assessment play in U.S. climate policy?

The assessment informs federal, state, and local climate policies by providing evidence-based insights into climate risks and adaptation strategies, supporting climate resilience and mitigation efforts.

How does the Fifth National Climate Assessment address climate justice?

NCA5 highlights the disproportionate impacts of climate change on vulnerable communities and emphasizes the need for equitable solutions that address social, economic, and environmental justice issues.

Additional Resources

Fifth National Climate Assessment: Unveiling the Latest Insights on Climate Change in the United States

fifth national climate assessment stands as a pivotal document in the United States' ongoing effort to understand and communicate the multifaceted impacts of climate change. Released by the U.S. Global Change Research Program (USGCRP), this comprehensive report synthesizes the latest scientific research, offering policymakers, stakeholders, and the public a detailed analysis of climate trends, vulnerabilities, and projections across the nation. As the fifth installment in a series, the assessment builds upon decades of data, reflecting evolving climate realities and the urgent need for informed decision-making.

Understanding the Fifth National Climate Assessment

The fifth national climate assessment (NCA5) is an authoritative evaluation that encapsulates current climate science and its implications for the United States. Unlike previous reports, NCA5 emphasizes regional specificity and sectoral impacts, providing a granular view of how climate change affects diverse communities, ecosystems, and economic activities. The assessment integrates findings from numerous scientific disciplines, including atmospheric science, ecology, economics, and social sciences, making it a multidisciplinary resource for comprehensive climate understanding.

One of the distinguishing features of NCA5 is its collaborative approach. Scientists from federal agencies, academic institutions, and private organizations contributed to the report, ensuring a broad spectrum of expertise and perspectives. This collaboration enhances both the scientific rigor and policy relevance of the assessment, positioning it as a critical tool for climate adaptation and mitigation strategies.

Key Findings and Climate Trends Highlighted in NCA5

The fifth national climate assessment presents sobering evidence of accelerated warming trends and intensifying climate-related hazards. Key highlights include:

- **Temperature Increases:** Nationwide average temperatures have risen significantly since the late 19th century, with recent decades experiencing more frequent heatwaves and record-breaking temperatures.
- **Sea Level Rise:** Coastal regions face increased risks from rising sea levels, driven by melting ice sheets and thermal expansion of oceans, threatening infrastructure and ecosystems.
- **Extreme Weather Events:** The frequency and severity of hurricanes, wildfires, droughts, and heavy precipitation events have escalated, impacting public health, agriculture, and economic stability.
- **Ecosystem Disruptions:** Altered precipitation patterns and temperature shifts have led to habitat loss, species migration, and biodiversity declines across multiple biomes.

These findings underscore the urgency of addressing climate change impacts through targeted adaptation and mitigation efforts.

Regional and Sectoral Analysis in the Assessment

The fifth national climate assessment delves into region-specific impacts, recognizing that climate change does not affect all parts of the country uniformly. For example, the Southwest is projected to experience more severe droughts and water scarcity, while the Northeast faces increased flooding and urban heat challenges. This regional breakdown aids local governments in tailoring resilience initiatives and resource allocation.

Sectoral evaluations further enrich the report by examining how climate change influences agriculture, public health, energy, transportation, and national security. For instance, agricultural productivity is threatened by changing precipitation regimes and heat stress, whereas public health concerns range from heat-related illnesses to vector-borne diseases. NCA5's sector-focused lens provides a roadmap for stakeholders to anticipate vulnerabilities and develop adaptive capacities.

Comparative Insights: Fifth National Climate Assessment versus Previous Reports

Comparing NCA5 to earlier national climate assessments reveals an evolution in both scientific understanding and communicative clarity. The first four assessments laid foundational knowledge by establishing the reality of human-induced climate change and highlighting broad impacts. NCA5 advances this by integrating more refined climate models, updated socioeconomic scenarios, and an expanded focus on solutions.

Notably, the fifth assessment places greater emphasis on equity and justice, recognizing that climate impacts disproportionately affect marginalized communities. This perspective marks a progressive shift toward inclusive climate policy discussions, advocating for environmental justice as a core component of climate action.

Furthermore, NCA5 incorporates advances in climate attribution science, enabling clearer connections between specific extreme weather events and climate change influences. This aids in public comprehension and strengthens the basis for policy responses.

Strengths and Limitations of the Fifth National Climate Assessment

While the fifth national climate assessment is an invaluable resource, it is important to critically evaluate its strengths and limitations:

- **Strengths:**

- Comprehensive integration of multidisciplinary research provides a holistic climate picture.
- Enhanced regional and sectoral detail improves relevance for diverse stakeholders.
- Collaborative authorship ensures scientific credibility and policy applicability.
- Focus on climate justice broadens the social scope of climate discourse.

• **Limitations:**

- Despite extensive data, predictive uncertainties remain, especially regarding long-term projections.
- Implementation gaps exist between assessment recommendations and actual policy actions.
- The report's complexity can pose challenges for accessibility among non-expert audiences.
- Periodic updates are necessary to keep pace with rapidly evolving climate science.

Acknowledging these factors enables a balanced understanding of the report's role in climate governance.

Implications for Policy and Public Engagement

The fifth national climate assessment serves as a foundational document guiding federal, state, and local climate policy development. By providing evidence-based insights, it aids lawmakers in crafting regulations that reduce greenhouse gas emissions and bolster resilience against climate hazards.

Moreover, NCA5's detailed analysis supports the formulation of adaptation strategies tailored to specific regions and sectors, from enhancing flood defenses in coastal cities to advancing drought-resistant agriculture in arid zones. This targeted approach maximizes resource efficiency and effectiveness.

Public engagement also benefits from the assessment's transparent presentation of climate risks and opportunities. Educators, media professionals, and advocacy groups utilize the report to raise awareness and foster informed dialogue around climate change challenges and solutions.

Looking Ahead: The Role of Future Climate Assessments

As climate science advances and societal dynamics evolve, future national climate assessments will continue to play a critical role in shaping the United States' response to climate change. Building on the foundation laid by the fifth national climate assessment, subsequent reports are expected to incorporate emerging technologies such as artificial intelligence for climate modeling, deepen the integration of indigenous knowledge systems, and further refine approaches to environmental justice.

In this context, maintaining robust scientific integrity and enhancing communication strategies will be essential for ensuring that these assessments effectively inform policy and empower communities to navigate a changing climate landscape.

By chronicling the latest climate realities and projecting future scenarios, the fifth national climate assessment remains a cornerstone document—illuminating the path toward a more resilient and sustainable America.

Fifth National Climate Assessment

fifth national climate assessment: Review of the Draft Fifth National Climate Assessment National Academies of Sciences Engineering and Medicine, Division of Behavioral and Social Sciences and Education, Division on Earth and Life Studies, Board on Environmental Change and Society, Board on Atmospheric Sciences and Climate, Committee to Review the Draft Fifth National Climate Assessment, 2023-12-20 Roughly every four years, the U.S. Global Change Research Program produces a congressionally mandated assessment of global change science and the impacts, adaptation, and mitigation of climate change in the United States. The draft Fifth National Climate Assessment (NCA5), released publicly in November 2022, covers a wide range of U.S. impacts, from human health and community well-being to the built environment, businesses and economies, and ecosystems and water resources. NCA5 had the largest scale of collaboration to date in the series, with input from hundreds of experts from all levels of governments, academia, non-government organizations, the private sector, and the public. The National Academies report provides an independent, comprehensive review and makes recommendations to strengthen the accuracy, credibility, and accessibility of the draft NCA5 report. The National Academies' review of the draft NCA5 report finds that it successfully meets the requirements of the federal mandate, provides accurate information, and effectively communicates climate science to the public, decision makers, and other stakeholders. The review makes recommendations for ways the draft NCA5 report could be strengthened, including: adopting more clear and consistent structure for key messages and figures across the report; resolving inconsistencies between chapters in how terms and topics are discussed, for example the use of scenarios and projections; intentionally applying an equity and justice lens across chapters; and increasing emphasis on certain topical areas.

fifth national climate assessment: *Climate Security Intelligence* Adrian Wolfberg, 2025-05-24 Climate security intelligence is the capacity to warn national and sub-national security organizations of the physical effects of climate change that can have a negative societal effect on nations, governments, and their populations. This book discusses the uniqueness of climate security intelligence, the maturity of its development as a knowledge domain, and its possible future. Written by an intelligence analyst with over forty years of experience, this book centers upon the challenges that organizations may face when analysts, their managers, and their organizations are given the task of warning policymakers and decision-makers about threats to climate security. Taking a

necessarily transdisciplinary approach, this book will be of interest to a wide audience of students, researchers, practitioners, and policy-makers concerned with how the impacts of climate change affect the social, cultural, political, and economic stability of national interests.

fifth national climate assessment: American Apocalypse Rena Steinzor, 2024-07-09 A thorough analysis of the right-wing interests contributing to the downfall of American democracy. The war on American democracy is at a fever pitch. Such a corrosive state of affairs did not arise spontaneously up from the people but instead was pushed, top-down, by six private sector special interest groups—big business, the House Freedom Caucus, the Federalist Society, Fox News, white evangelicals, and armed militias. In *American Apocalypse* Rena Steinzor argues that these groups are nothing more than well-financed armies fighting a battle of attrition against the national government, with power, money, and fame as their central motivations. The book begins at the end of Lyndon Johnson's presidency, when the modern regulatory state was born. Agencies like the Environmental Protection Agency and the Food and Drug Administration ensured that everything from our air to our medicine was safe. But efforts to thwart this big government agenda began swiftly, albeit in the shadows. Business leaders built a multi-billion dollar presence in the Capitol, and the rest of the six interest groups soon followed. While the groups do not coordinate their attacks, and sometimes their short-term goals even conflict, their priorities fall within a surprisingly tight bullseye: the size and power of the administrative state. In the near-term, their campaigns will bring the crucial functions of government to a halt, which will lead to immediate suffering by the working classes, and a rapid deterioration of race relations. Over the long-term, as the prevalence of global pandemics and climate crises increase, an incapacitated national government will usher in unimaginable harm. This book is the first to conceptualize these groups together, as one deconstructive and awe-inspiring force. Steinzor delves into each of their histories, mapping the strategies, tactics, and characteristics that make them so powerful. She offers the most comprehensive story available about the downfall of American democracy, reminding us that only by recognizing what we are up against can we hope to bring about change.

fifth national climate assessment: Große Versprechen Detlef Pollack, 2025-02-20 *Jenseits der Empörung. Ein Beitrag zum Verständnis der Gegenwart* Woher kommt das Unbehagen in der modernen Kultur? Warum suchen immer mehr Menschen nach Alternativen zum politischen und ökonomischen System des Westens? Detlef Pollack zeigt, wie die Moderne an ihren eigenen großen Versprechen von Freiheit, Wohlstand und Frieden irre wird, zumal angesichts von Kriegen und Krisen, die zu Verlusten, Wut und Enttäuschung führen. Sein Buch ist ein engagiertes Plädoyer dafür, trotz allem an der Moderne und ihren Erwartungen festzuhalten. Nach 1789 fragten die Gebildeten in Europa, ob die Französische Revolution, die sie zunächst gefeiert hatten, wirklich Freiheit oder nicht vielmehr Terror, Despotie und Entfremdung gebracht habe. Doch bald schon wurde anerkannt, dass die Gattung auf keine andere Art hätte Fortschritte machen können (Schiller). Detlef Pollack zeigt in seiner kurzen Theorie der Moderne in a nutshell, dass der Moderne die Fähigkeit zu Selbstkritik und Selbstkorrektur von Anfang an eingeschrieben ist. Die großen Krisen der Gegenwart – neue militärische Bedrohungen, Klimakrise, Migrationsbewegungen und Rechtspopulismus – untergraben das Vertrauen in Freiheit und Demokratie. Die Sehnsucht nach neuer alter Einfachheit ist groß. Wir sollten ihr widerstehen. Denn die Moderne, so das erhellende Buch, ist mit ihrer Fähigkeit zur Selbstkorrektur noch längst nicht am Ende. Die großen Erwartungen, mit denen die westliche Moderne gestartet ist, lassen sich durch die eingetretenen Enttäuschungen nicht austreiben. Detlef Pollack Freiheit, Frieden, Fairness, Wohlstand: Warum wir trotz Krisen und Enttäuschungen an den Versprechen der Moderne festhalten sollten Eine scharfsinnige Analyse gegen den Abgesang auf die westliche Demokratie

fifth national climate assessment: The Climate Action Handbook Heidi Roop, 2023-03-21 "What can I do, personally, about the climate crisis? . . . Ask yourself, what are you passionate about? Using this passion may motivate you to help shape the future of your community." —The New York Times Climate Forward newsletter This must-have book shows us WHY we need to take action now to combat climate change and then, critically, HOW, through easy-to-understand language and

fascinating infographics that offer each of us varied and doable solutions to the many challenges facing our planet. As more focus is put on climate science, there is a need for each of us to learn how we can change our habits in our home, communities, and government to save our planet. Enter The Climate Action Handbook. A visually stunning guide, it does what no other climate change book manages to do: it's approachable, digestible, and offers the average person ideas, options, and a roadmap for action. It also offers hope—often overlooked in climate change conversations. Climate actions can create near-instantaneous improvements in air quality and can offer ways to address societal inequities, green our communities, save money, and build local economies. From food and fashion choices, rethinking travel, greening up our homes and gardens, to civic engagement and championing community climate planning, Dr. Heidi Roop shares 100 wide-ranging ways that readers from all walks of life can help move the needle in the right direction. Actions include: • Cutting down on food waste • Reducing your driving speed • Voting in every election • Using the cold-water cycle on your washing machine • Supporting healthy soils in your gardens and community green spaces • Engaging in local climate action planning • Preparing an emergency kit for your home • Deleting unused emails and online accounts • Swapping out milk for nondairy alternatives like oat milk • Opting for slower shipping whenever possible • Regularly maintaining and clean your heating and cooling systems • Engaging in climate conversations at work and at home And many more! Return to this invaluable resource again and again to discover a roadmap for action and much-needed hope. What will your climate journey look like?

fifth national climate assessment: Hydrometeorology Kevin Sene, 2024-07-05 An award-winning text introducing the latest operational hydrometeorological forecasting and warning techniques for flood, drought, reservoir, hydropower, irrigation, water supply and water pollution applications. Hydrometeorology: Forecasting and Applications is the latest edition of this award-winning book intended for practicing engineers and scientists. It also provides useful background for undergraduate and postgraduate courses in engineering, earth sciences, environmental sciences, geography, meteorology and hydrology. Operational examples include applications from the USA, UK, the Netherlands, Bangladesh and Nepal. Throughout, there is a focus on end-to-end warning systems, forecast uncertainty and risk-based and impact-based approaches. Hydrological forecasting topics include rainfall-runoff, flow routing, data assimilation, forecast verification and ensemble techniques. There are also updates to the text on weather radar, satellite precipitation estimates, hydrometry, low cost monitoring, numerical weather prediction, demand forecasting and dissemination of warnings, including the role of social media and citizen science. Applications include national and community based flood warning systems, flash flood guidance, famine and drought early warning systems, reservoir operations, and surface water, debris flow, ice jam, bathing water and harmful algal bloom alerts. Seasonal forecasting, land surface and global hydrological models are now discussed in more detail, including the opportunities from 'Big Data' and artificial intelligence, and a new chapter discusses approaches to predicting the hydrological impacts of climate change. The extensive sets of references have been revised and updated. "There are few books that have ever attempted to discuss all aspects of hydrometeorology in one volume. This one does so." From a review of the 1st edition in the Bulletin of the American Meteorological Society. Kevin Sene FRGS, FRMetS, CEng (MICE) is a scientist and writer with wide experience in flood risk management, water resources and hydrometeorology. His previous publications include books on flood warning, forecasting and emergency response and flash flood forecasting and warning (Springer, 2008, 2013).

fifth national climate assessment: Commerce, Justice, Science, and Related Agencies Appropriations for 2017 United States. Congress. House. Committee on Appropriations. Subcommittee on Commerce, Justice, Science, and Related Agencies, 2016

fifth national climate assessment: Fifth National Climate Assessment U.S. Global Change Research Program, 2023

fifth national climate assessment: Assessing Risk to the National Critical Functions as a Result of Climate Change Michelle E. Miro, Andrew LauLand, Rahim Ali, Edward W. Chan, Richard

H. Donohue, Ecola, Timothy R. Gulden, Liam Regan, Karen M. Sudkamp, Tobias Sytsma, Michael T. Wilson, Chandler Sachs, 2022-04-05 National Critical Functions (NCFs) are government and private-sector functions so vital that their disruption would debilitate security, the economy, public health, or safety. Researchers developed a risk management framework to assess and manage the risk that climate change poses to the NCFs and use the framework to assess 27 priority NCFs. This report details the risk assessment portions of the framework.

fifth national climate assessment: Disasters Kathleen Tierney, 2025-04-24 Disasters kill, maim, and generate increasingly large economic losses. But they do not wreak their damage equally across nations and populations. Every disaster has social forces at its very core. This important book sheds light on the social conditions and the global, national, and local processes that produce environmental degradation and disaster. Topics covered include the social roots of disaster vulnerability, exposure to natural hazards as a form of environmental injustice, and emerging threats. Written by a leading expert in the field, the book provides the necessary frameworks for understanding hazards and disasters, as it explores the contributions of various social science disciplines to disaster research and how these ideas have evolved over time. Bringing the social aspects of disasters to the forefront, Tierney discusses the challenge of conducting research in the aftermath of a disaster and critiques the concept of disaster resilience, which has come to be seen as a key to disaster risk reduction. This second edition places greater emphasis on climate-related disasters and offers new reflections on the impacts of Covid-19, additional material on the legacies of colonialism, and refreshed case studies. Peppered with research findings and insights from a wide range of disciplines, this rich introduction is an invaluable resource for students and scholars interested in both the social nature of disasters and their relation to broader social forces.

fifth national climate assessment: *Unsettled (Updated and Expanded Edition)* Steven E. Koonin, 2024-06-11 In this updated and expanded edition of climate scientist Steven Koonin's groundbreaking book, go behind the headlines to discover the latest eye-opening data about climate change—with unbiased facts and realistic steps for the future. Greenland's ice loss is accelerating. Extreme temperatures are causing more fatalities. Rapid 'climate action' is essential to avoid a future climate disaster. You've heard all this presented as fact. But according to science, all of these statements are profoundly misleading. With the new edition of *Unsettled*, Steven Koonin draws on decades of experience—including as a top science advisor to the Obama administration—to clear away the fog and explain what science really says (and doesn't say). With a new introduction, this edition now features reflections on an additional three years of eye-opening data, alternatives to unrealistic "net zero" solutions, global energy inequalities, and the energy crisis arising from the war in Ukraine. When it comes to climate change, the media, politicians, and other prominent voices have declared that "the science is settled." In reality, the climate is changing, but the why and how aren't as clear as you've probably been led to believe. Koonin takes readers behind the headlines, dispels popular myths, and unveils little-known truths: Despite rising greenhouse gas emissions, global temperatures decreased from 1940 to 1970. Models currently used to predict the future do not accurately describe the climate of the past, and modelers themselves strongly doubt their regional predictions. There is no compelling evidence that hurricanes are becoming more frequent—or that predictions of rapid sea level rise have any validity. *Unsettled* is a reality check buoyed by hope, offering the truth about climate science—what we know, what we don't, and what it all means for our future.

fifth national climate assessment: *Hydrocarbon Biofuels* Great C. Umenweke, Eduardo Santillan-Jimenez, 2024-11-21 Hydrocarbon biofuels are renewable fuels that are chemically similar to petroleum-based fuels that can be made from biomass sources like vegetable oils, wood, and animal fats. This primer, *Hydrocarbon Biofuels*, presents an overview of the production, chemistry, and properties of renewable diesel and sustainable aviation fuel derived from biological resources in general and oleaginous biomass in the form of fats, oils, and greases in particular. The primer provides a summary of the information found in the literature regarding biofuels: their importance, potential, uses, and current methods of production. The three to four-hour read provides an

excellent introduction to the topic and a gateway to relevant scientific literature that provides more in-depth information.

fifth national climate assessment: Resolving the Climate Crisis Kristin Haltinner, Dilshani Sarathchandra, 2024-06-28 This book brings together a team of renowned social scientists to ask not why climate change is happening, but how we might learn from its human dimensions to raise public and political will to fight against the climate crisis. Despite efforts for mitigation, global emission levels continue to increase annually and the world's wealthiest nations, including all of the G20 countries, have failed to meet their Paris Climate Goals. In the absence of political will, many have called for individuals to act on climate change by mitigating their own carbon footprint through having fewer children, driving less, using LED lightbulbs, or by becoming vegetarians. While compelling, individual lifestyle changes on this scale are unlikely to prevent climate disaster. *Resolving the Climate Crisis* presents informed solutions for social change that center human behavior and emotions, political systems, and societal structures. Across a series of concise and accessible chapters, authors explore potential solutions to climate change, addressing topics including Indigenous ecologies, LGBTQ+ community engagement, renewable energy technologies, and climate justice. Their expert engagement with the social and behavioural sciences makes this book not only an essential handbook of climate change solutions but also an innovative model for public-facing social science scholarship. *Resolving the Climate Crisis* will be an essential resource for students and researchers of climate change, as well as policy makers working to develop meaningful strategies for combatting the climate crisis.

fifth national climate assessment: Power Lines Sanya Carley, David Konisky, 2025-10-13 On American energy and its persisting power to destroy. In the United States, the promise of a green-energy future is complicated by its realities. The country's legacy energy systems are decrepit; the rollout of new technologies is unequal and piecemeal; households find themselves increasingly without reliable or affordable access; and Americans are excluded from the decisions that shape their energy futures. Having power in America has become an exercise in race, class, and wealth—in more ways than one. *Power Lines* is a sweeping portrait of American energy in the twenty-first century, rendered in terms of its increasing—and inevitable—human costs. Coal miners in West Virginia lose their livelihoods as energy markets change; historically marginalized households cannot easily access new technologies; children in “sacrifice zones” adjacent to mineral-mining sites suffer health problems and limited resources; and cities and towns are burdened from the production of alternative energies. Sanya Carley and David Konisky show current challenges and an uncertain future of America's greatest policy imperative. The result is not only sobering but also essential for planning and pursuing a clean-energy transition that improves on the errors of the past.

fifth national climate assessment: Sink or Swim Susannah Fisher, 2025-08-14 The world needs to adapt to climate change – but how? What are the key problems and hard choices that lie ahead for the global community? This book reveals all. Heatwaves, wildfires, hurricanes and flooding caused by climate change are already impacting people and nature. Adaptation until now has been incremental with governments and institutions tinkering around the edges of current systems. This will not be enough. *Sink or Swim* explores the hard choices that lie ahead concerning how people earn a living, the way governments manage relationships between countries, and how communities accommodate the movement of people. Should people be encouraged to move away from the coast? How can global food supplies be managed when parts of the world are hit by simultaneous droughts? How can conflict be handled when there isn't enough water? Drawing on cutting edge research, interviews with experts, and practical examples from across the world, Susannah Fisher tells the story of the tough choices on adaptation that lie ahead, and looks at ways we can still have a liveable planet later in this century and beyond. Will we choose to sink or swim?

fifth national climate assessment: Public Health Law and Ethics Lindsay F. Wiley, Lawrence O. Gostin, 2025-02-25 In this bold fourth edition, Lindsay F. Wiley builds on the foundation laid by Lawrence O. Gostin to define public health law and ethics for a new generation of leaders

and scholars. Their examination of the scope and limits of governmental powers and duties to protect the public's health takes on new urgency in light of the devastation caused by the 2020 coronavirus pandemic and the stark inequities it revealed. Their insistence that social justice must be prioritized as a core value of public health ethics animates their analysis of communicable disease control strategies, chronic disease prevention programs, the opioid overdose and gun violence crises, and more. They elucidate what is at stake for the public in legal debates regarding the regulatory powers of administrative agencies, erosion of local government autonomy by state legislatures, and tensions between federal and state officials over safety-net programs. They focus particularly on the role of the courts in striking down popular laws and policies, boosting religious liberty and gun rights, and eroding protections for fundamental rights to sexual and reproductive freedom and racial and gender equality. The book creates an intellectual framework for ensuring that public health interventions are evidence-based and consistent with ethical values. Its incisive analysis of challenging trade-offs between individual rights and collective needs reveals complex answers to the essential question of what fellow community members owe each other when it comes to health--

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