

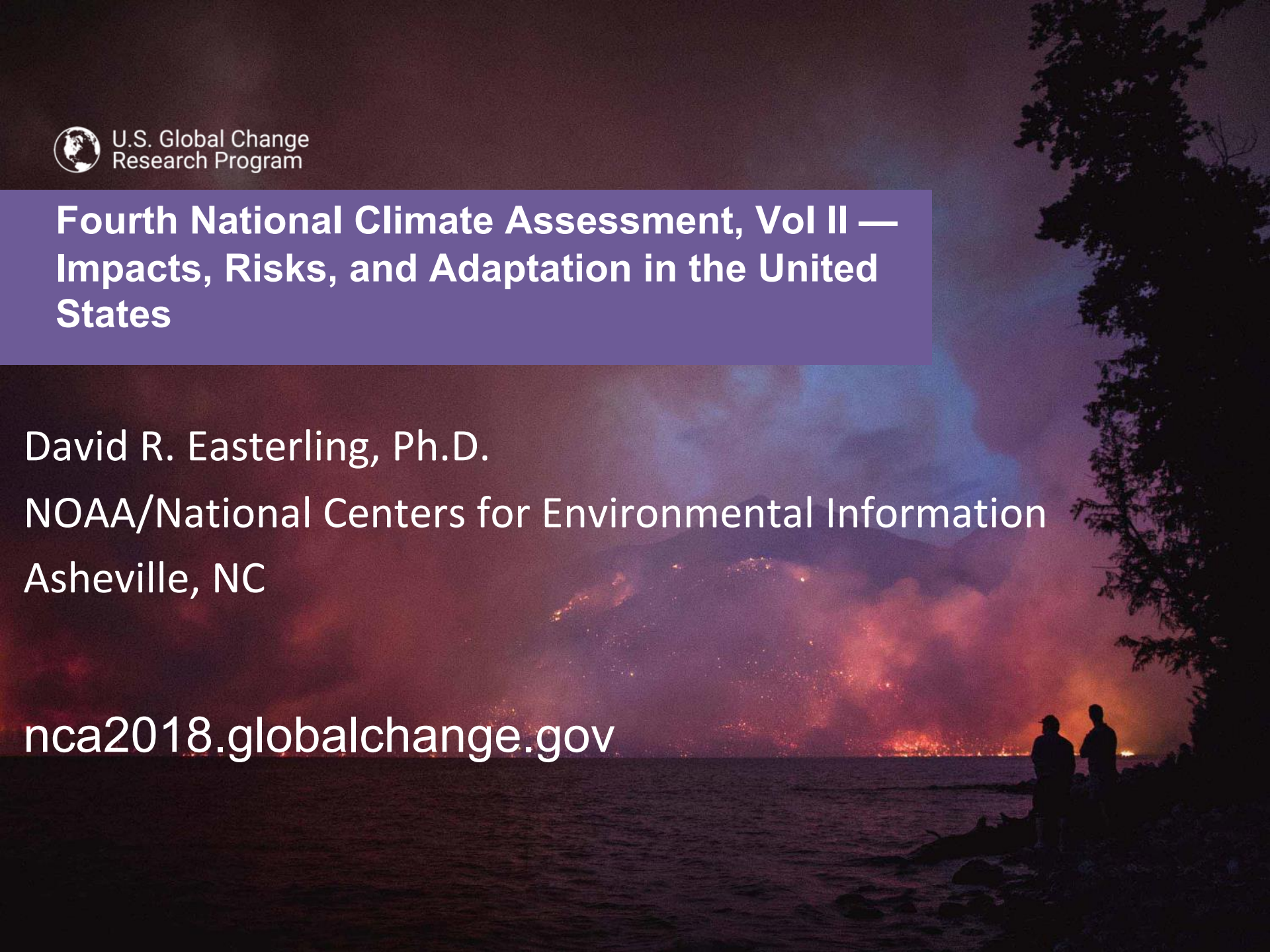
Fourth National Climate Assessment, Vol II — Impacts, Risks, and Adaptation in the United States

David R. Easterling, Ph.D.

NOAA/National Centers for Environmental Information

Asheville, NC

nca2018.globalchange.gov



Climate Science Special Report

Fourth National Climate Assessment (NCA4), Volume I

This report is an authoritative assessment of the science of climate change, with a focus on the United States. It represents the first of two volumes of the Fourth National Climate Assessment, mandated by the Global Change Research Act of 1990.

Recommended Citation



Executive Summary



Ch. 1: Our Globally Changing Climate



Ch. 2: Physical Drivers of Climate Change



Ch. 3: Detection and Attribution of Climate Change



Ch. 4: Climate Models, Scenarios, and Projections



Ch. 5: Large-Scale Circulation and Climate Variability



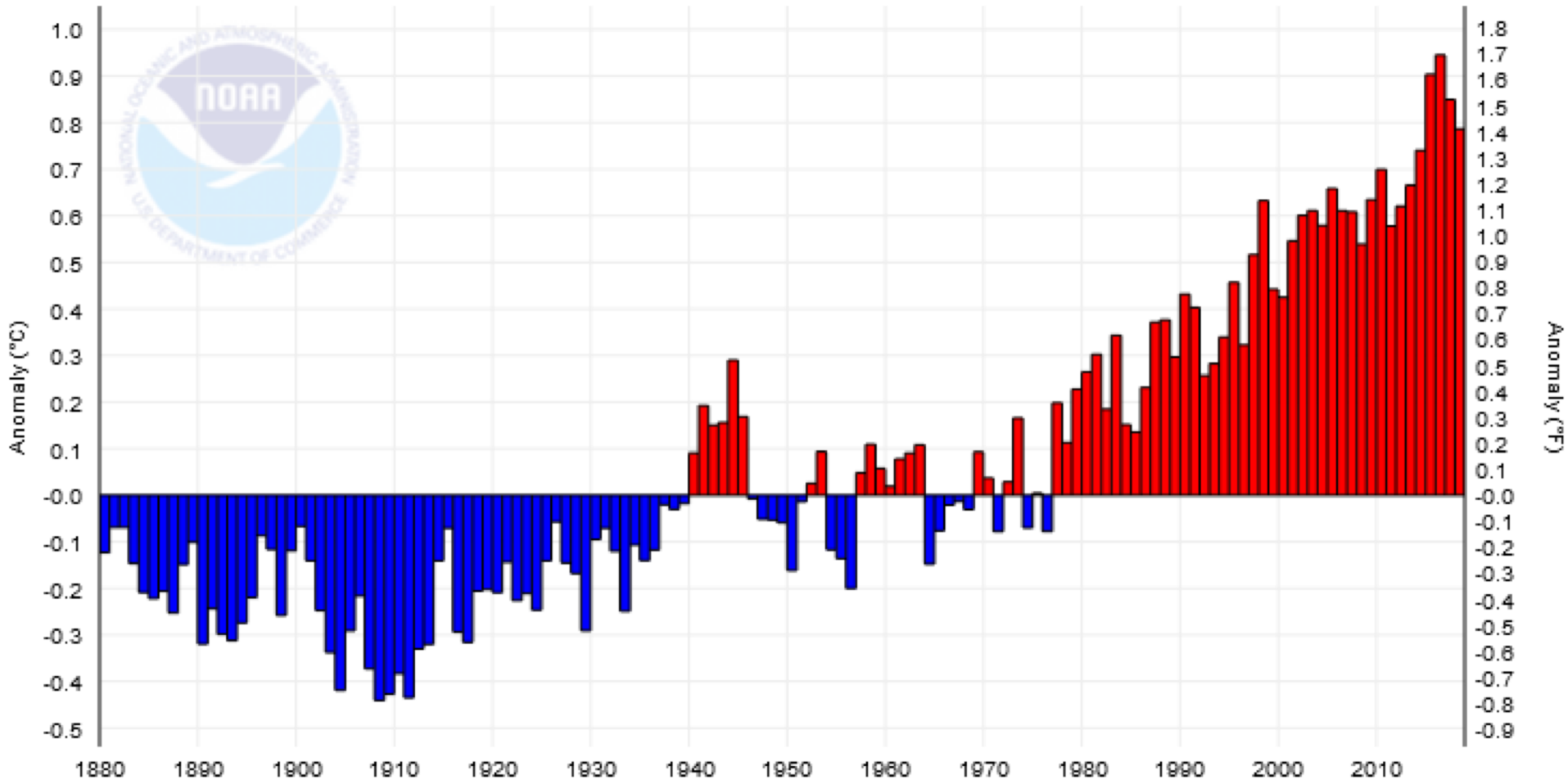
Ch. 6: Temperature Changes in the United States



- Volume 1 is the most comprehensive and up-to-date assessment of the state of climate science today. 12 federal agencies, 50 authors, almost 500 pages* It was subject to public review, two agency reviews, and a National Academy review, released in 2017
- Volume II is the most comprehensive and up-to-date assessment of how climate change is affecting the U.S. and how we are responding. 12 federal agencies, 350 authors, over 1600 pages, also subject to public, multiple agency and National Academy reviews. Released in 2018

2018 Was 4th Warmest Year on Record

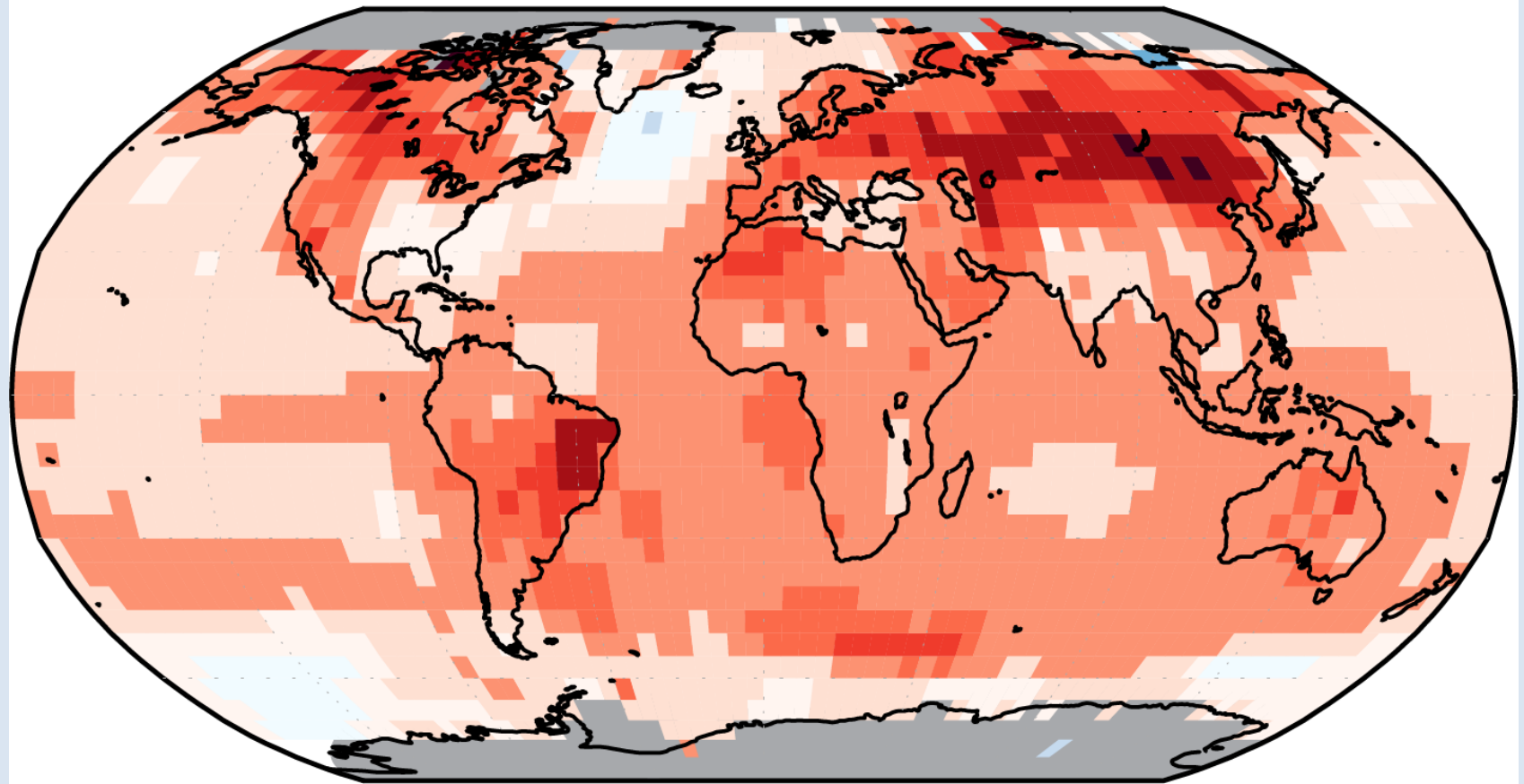
Global Land and Ocean Temperature Anomalies, January-December



Where Has It Warmed?

Annual Temperature Change Since 1901

Surface Temperature Change

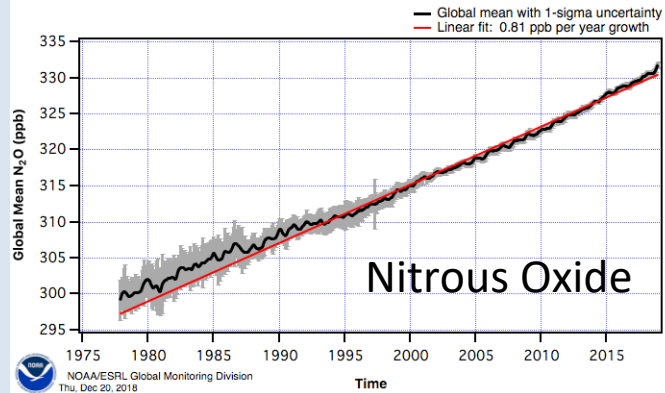
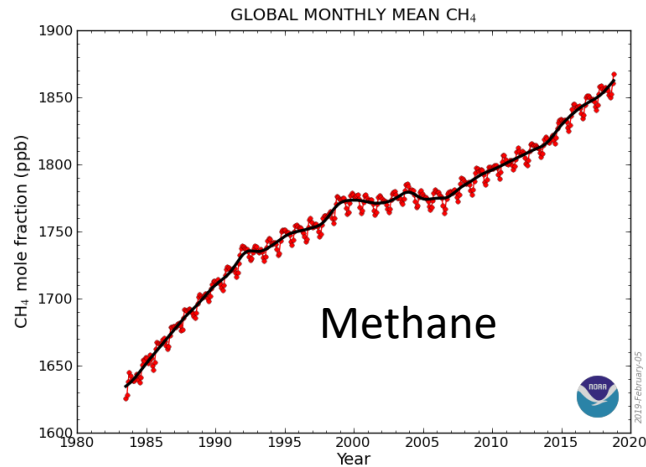


Change in Temperature (°F)

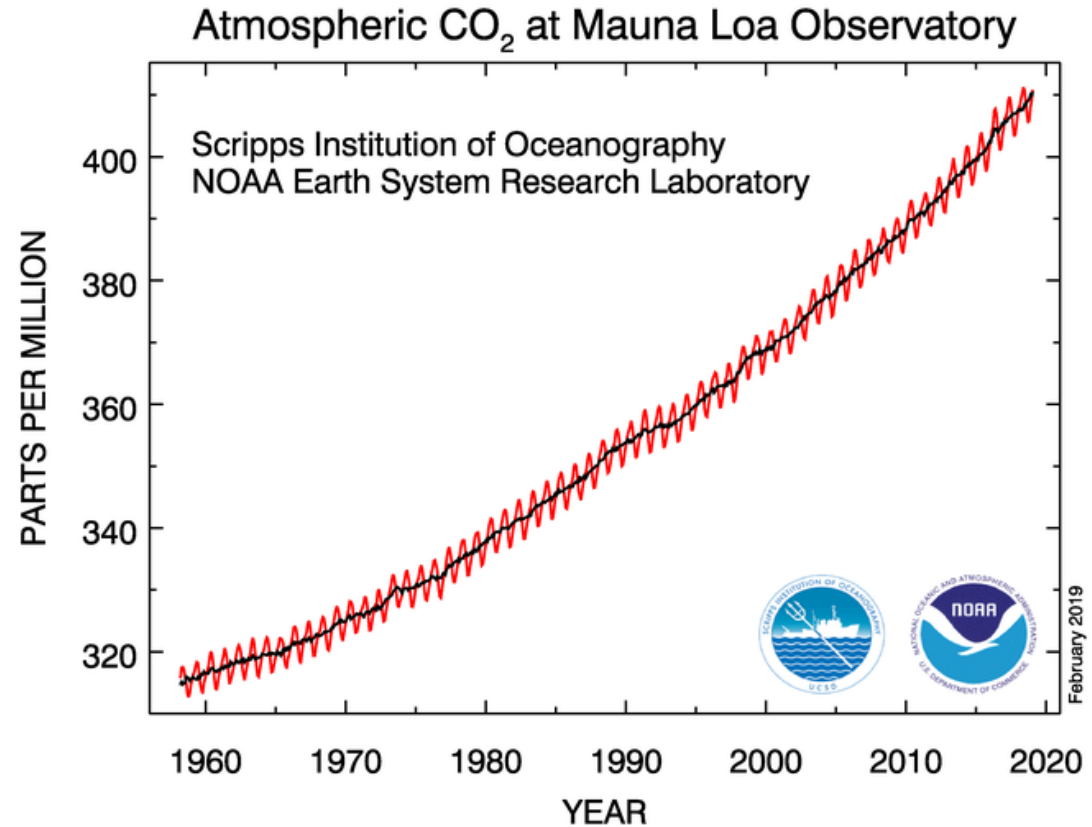


-1.5 -1.0 -0.5 0.0 0.5 1.0 1.5 2.0 2.5 3.0

Recent Greenhouse Gas Trends

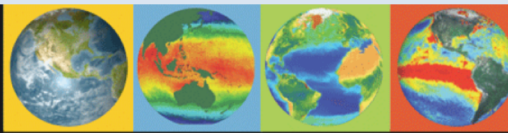


CO₂ is now over 411 PPM



Most major greenhouse gases are

- Carbon dioxide (CO₂)
- Methane (CH₄)
- Nitrous Oxide (N₂O)



The CLEAN Collection of Climate and Energy Educational Resources

A collection of 700+ free, ready-to-use learning resources rigorously reviewed by educators and scientists suitable for secondary through higher education classrooms.

Ways to Search »

Browse the Collection »

Browse by NGSS »

"I appreciate how you've linked climate and energy education to NGSS, and have provided good searching tools - a valuable resource for teachers!"

- CLEAN
- Collection of Educational Resources
- Guidance in Teaching Climate and Energy
- CLEAN Network
- Get Involved
- About the Project

News

- CLEAN has a new [Climate Literacy Quiz](#) to match our [Energy Literacy Quiz](#)
- CLEAN was [featured in the news](#)
- Register for the [CLEAN Webinar Series](#)
- Teachers, [design your own climate and energy units](#)
- CLEAN was awarded the [2017 Friend of the Planet award](#)
- The CLEAN Collection is [aligned with NGSS](#)



Guidance in Teaching Climate and Energy Science

Essential knowledge, instructional support, and links to relevant resources in the CLEAN collection.



CLEAN Network

A community of professionals committed to improving climate and energy literacy.

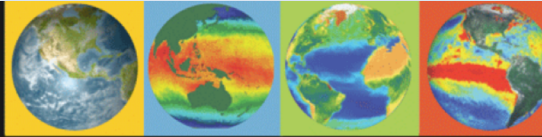
About the CLEAN Project

CLEAN Review Process



Teaching Guidance

CLEAN



CLIMATE LITERACY & ENERGY AWARENESS NETWORK

CLEAN > Guidance in Teaching Climate and Energy



CLEAN

Climate and Energy Educational Resources

Teaching Climate and Energy

Teaching Climate

Teaching Energy

Tools for Educators

CLEAN Network

Get Involved

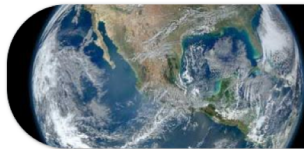
About this Project

Guidance in Teaching About Climate and Energy

Climate and energy are complex topics, with rapidly developing science and technology.

These pages offer easy-to-read explanations of science and policy, designed to step students through the key principles of climate and energy. Each page is illustrated with examples to bring these topics alive in your classroom.

- A summary of each of the climate and energy science principles
- Ideas to support learners
- Suggested teaching approaches, selected for various grade levels
- Relevant resources from the CLEAN collection



Teaching Climate

Walk students through key components of the climate system: the Sun, the atmosphere, life on Earth, human impacts, how scientists study climate, and actions humans can take.



Teaching Energy

Trace the story of energy in our lives, beginning with the physics of energy and how energy flows throughout the earth system. Explore energy's influence on human society, sources of energy, the ways we use energy, how we make decisions about energy, and the impacts of energy use.

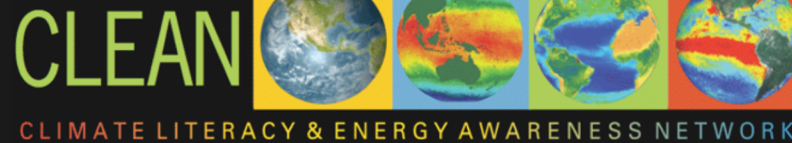


Check out the Educator Toolbox to find more teaching resources

Explore tools for teaching about climate and energy science, including pedagogical approaches, activities, and instructional ideas:

- Creating Your Own Climate and Energy Units
- Earth Systems Investigations
- NCA Teaching Resources
- Newsletters
- Webinars
- Workshops

Teaching Guidance



CLEAN > Teaching Climate and Energy > Teaching Climate > 6. Humans Affect Climate

Share Like 41

- CLEAN
- Climate and Energy Educational Resources
- Teaching Climate and Energy
 - Teaching Climate
 - 1. The Sun Provides Energy
 - 2. Climate is Complex
 - 3. Climate and Life
 - 4. Climate is Variable
 - 5. Understanding Climate
 - 6. Humans Affect Climate
 - 7. Climate Change has Consequences
 - GP. Humans can Take Action
 - Climate Literacy Quiz
- Teaching Energy
- Tools for Educators
- CLEAN Network
- Get Involved
- About this Project



Human activities are impacting the climate system.

Climate Literacy Principle 6

Jump down to: [Teaching these ideas](#) [Find activities](#)

Teaching about the human impacts on climate is supported by five key concepts:

Teaching this principle is supported by five key concepts: a. The overwhelming consensus of scientific studies on climate indicates that most of the observed increase in global average temperatures since the latter part of the 20th century is very likely due to human activities, primarily from increases in greenhouse gas concentrations resulting from the burning of fossil fuels.

► [There are 4 more fundamental concepts. See them all...](#)

Check out and register for the 25 March 2019 CLEAN webinar featuring this Principle »

These key ideas relate to the causes and effects of human-induced climate change.

The potential for human activities to increase the temperature of the Earth through greenhouse gas emissions has been described and calculated for over a century. Volumes of scientific research across multiple scientific disciplines agree that humans are warming the climate, and the 2013 [IPCC Fourth Assessment Report](#) states, "Human influence on the climate system is clear. This is evident from the increasing greenhouse gas concentrations in the atmosphere, positive radiative forcing, observed warming, and understanding of the climate system." (From the IPCC AR5, [FAQ brochure](#))

There is overwhelming evidence that human activities, especially burning fossil fuels, are leading to increased levels of carbon dioxide and other greenhouse gases in the atmosphere, which in turn amplify the natural greenhouse effect, causing the temperature of the Earth's atmosphere, ocean, and land surface to increase. That greenhouse gases "trap" infrared heat is well established through laboratory experiments going back to the mid 1850s when Sir John Tyndall first measured the effect.

Find activities and visuals for teaching this topic

Search by grade level: [middle school](#) [high school](#) [intro college](#) [upper college](#) [search all grade levels](#)

CLEAN Collection

- Curated
- Community reviewed
- Expert scientist reviewed
- Classroom ready
- Online, free resources
- Aligned with NGSS, Literacy Framework
- Filter search options

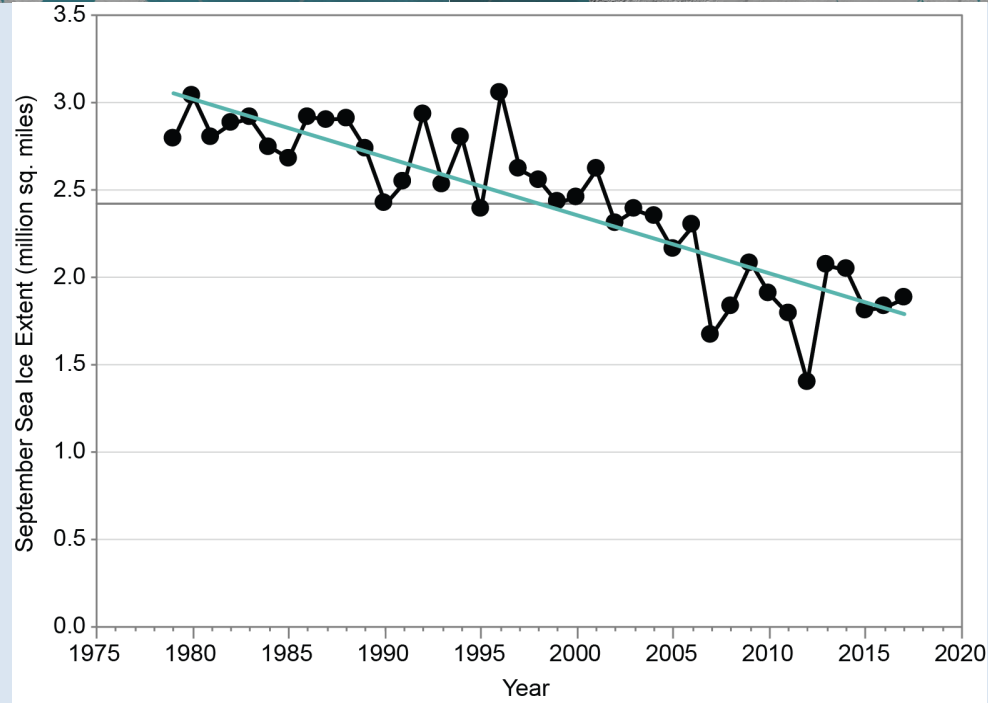
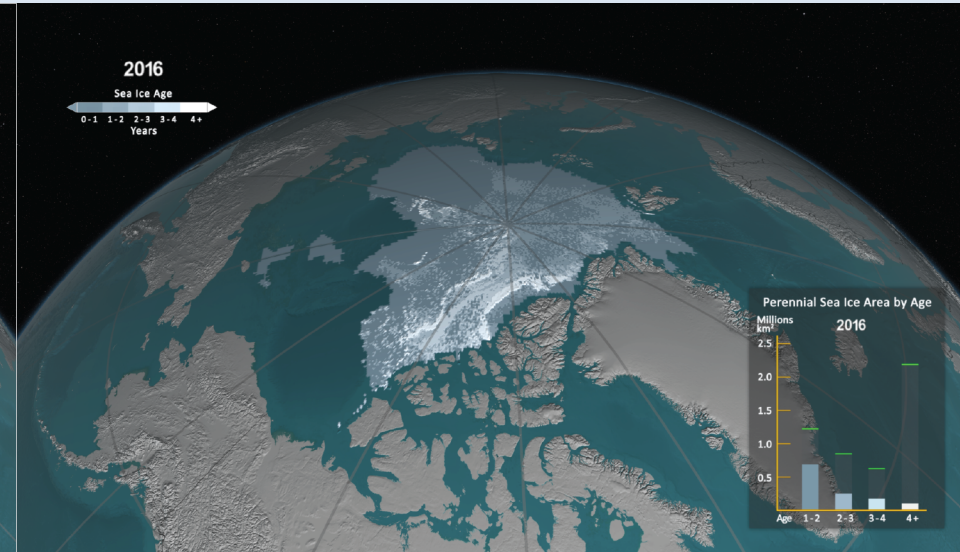
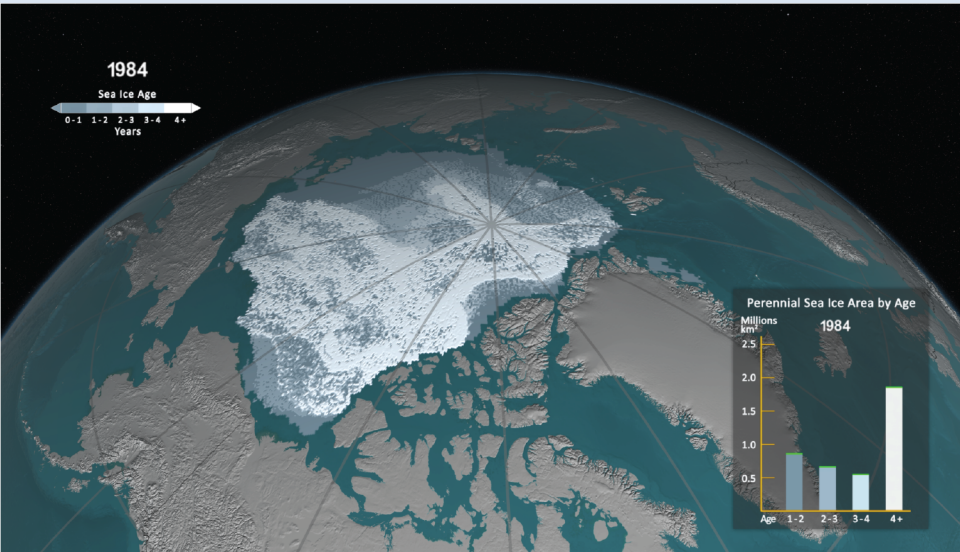


Other Indicators of Climate Change

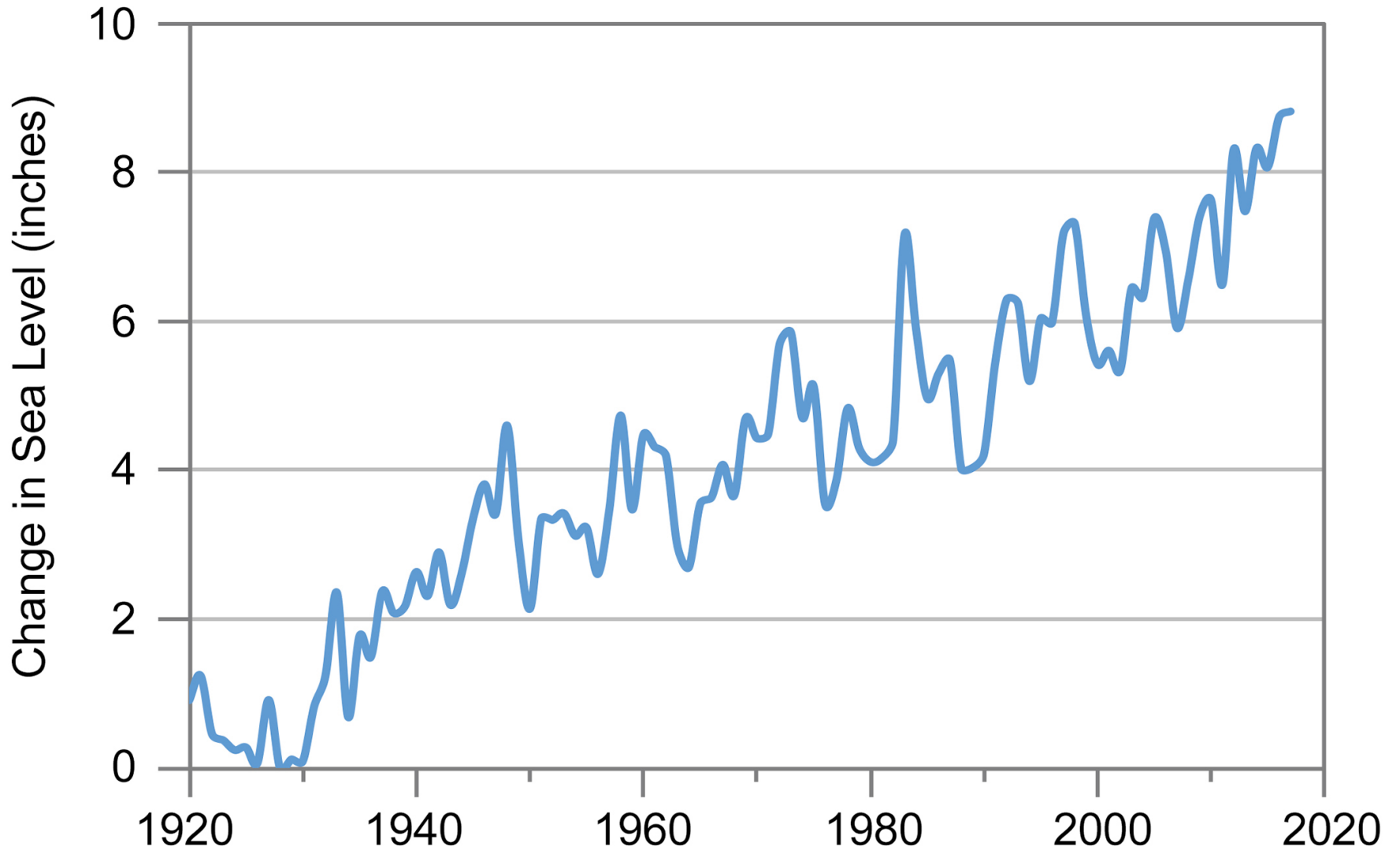
Arctic Sea Ice Decline

1984

2016



U.S. Sea Level

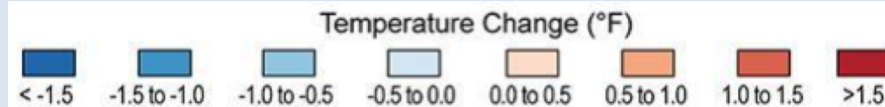
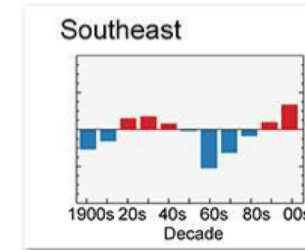
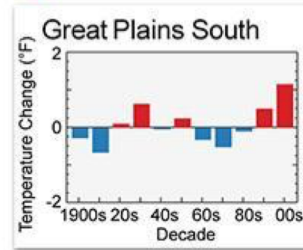
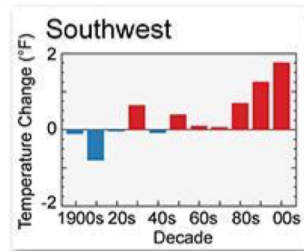
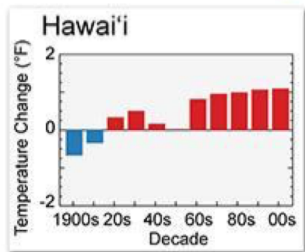
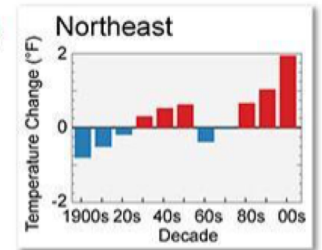
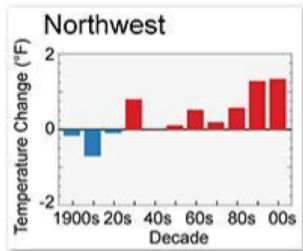
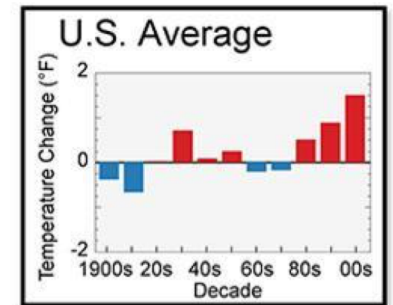
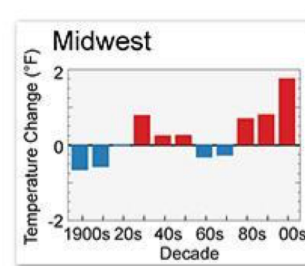
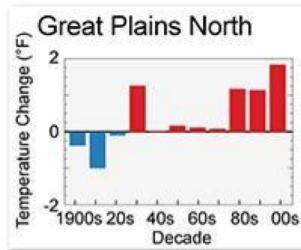
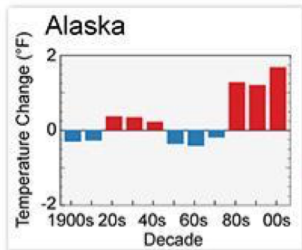


Tidal Flooding in Charleston, SC

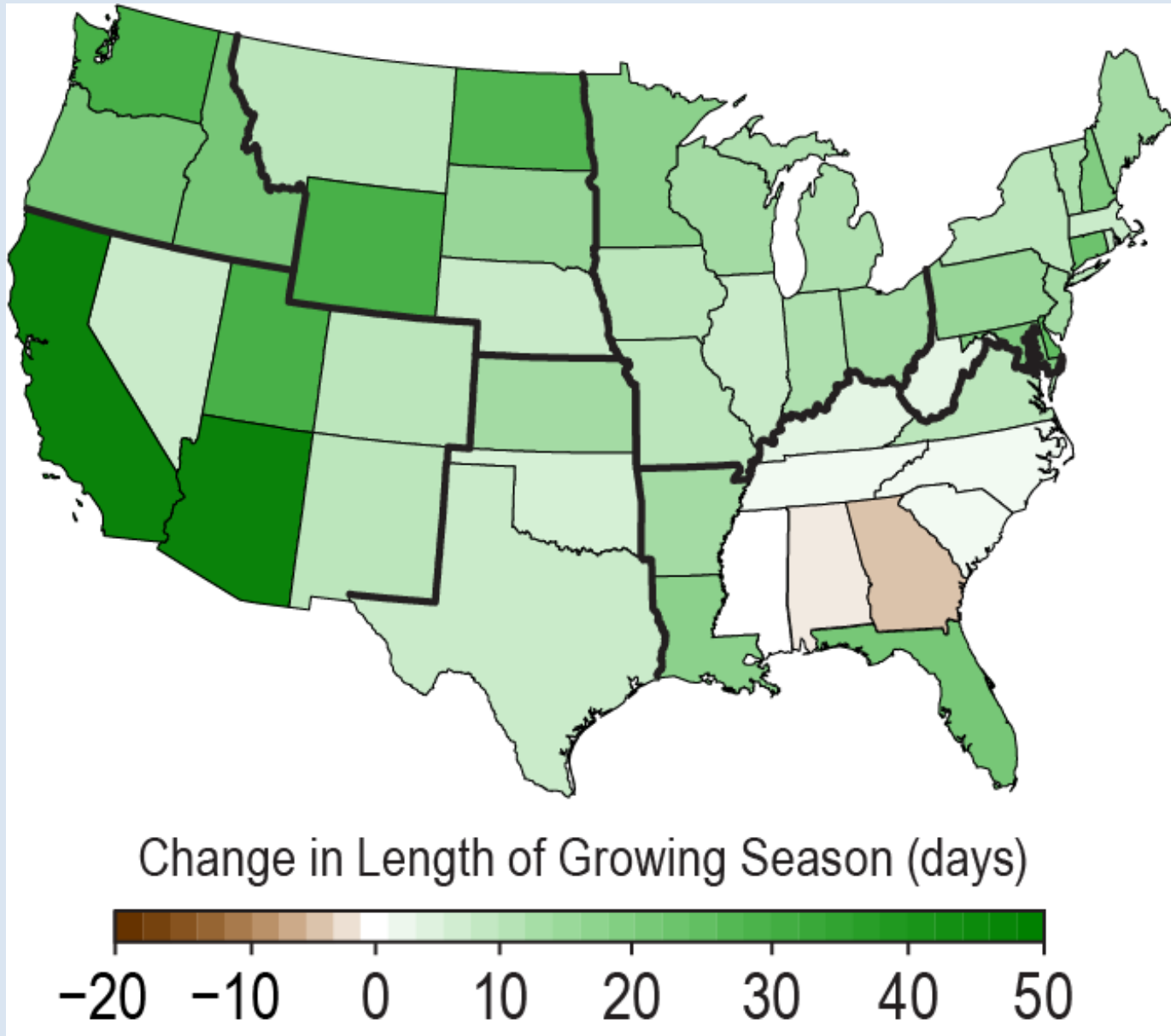
As sea levels have risen, the number of tidal floods each year that cause minor impacts (also called “nuisance floods”) have increased 5- to 10-fold since the 1960s in several U.S. coastal cities.



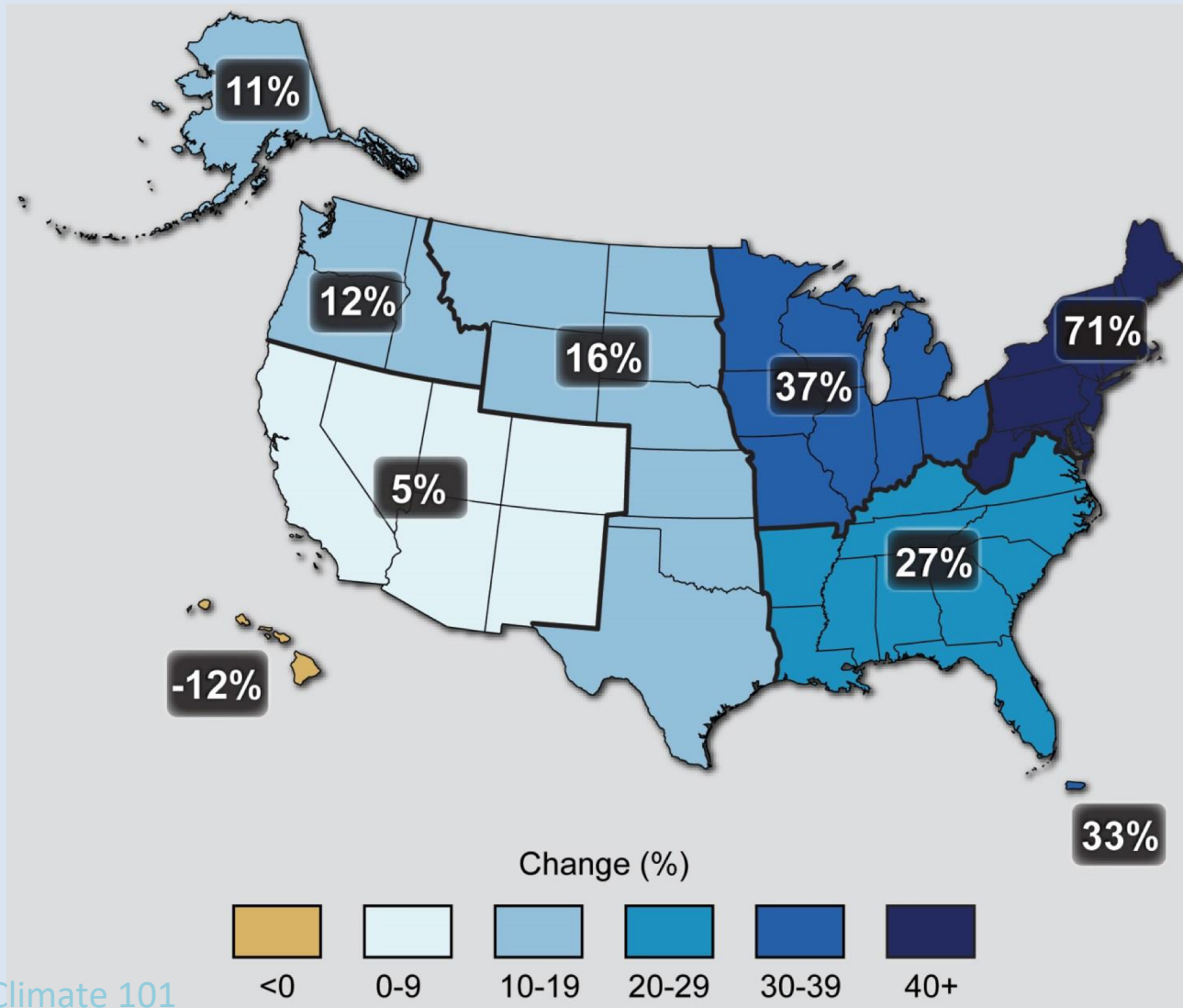
Observed US Temperature Change, 1901-2015



Change in Growing Season Length Since 1895



Observed Change in Very Heavy Precipitation

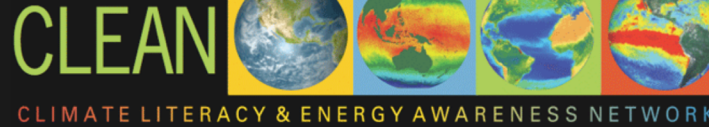


Hurricane Harvey Flooding, Houston, 2017

Some Areas Received Almost 50 Inches of Rain Over Four Days



Teaching Guidance



CLEAN > Teaching Climate and Energy > Teaching Climate > 7. Climate Change has Consequences

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Climate and Energy Educational Resources

Teaching Climate and Energy

Teaching Climate

1. The Sun Provides Energy
2. Climate is Complex
3. Climate and Life
4. Climate is Variable
5. Understanding Climate
6. Humans Affect Climate

7. Climate Change has Consequences

GP. Humans can Take Action

Climate Literacy Quiz

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About this Project



Climate change has consequences for the Earth system and human lives.

Climate Literacy Principle /

Jump down to: [Teaching these ideas](#) [Find activities](#)

Teaching the impacts of climate change is supported by six key concepts:

a. Melting of ice sheets and glaciers, combined with the thermal expansion of seawater as the oceans warm, is causing sea level to rise. Seawater is beginning to move onto low-lying land, contaminating coastal fresh water sources, and gradually submerging coastal facilities and barrier islands. Sea-level rise increases the risk of damage to homes and buildings from storm surges such as those that accompany hurricanes.

► There are 5 more fundamental concepts. See them all...

These ideas relate to the current and predicted consequences of climate change.

Most people are aware of the increasing frequency of extreme weather events, which is what climate scientists predicted for a warming world. The impacts of climate change on humans and environmental systems have become a focus for resource managers, medical professionals, emergency managers, insurance companies, and military planners. A great challenge of the 21st century will be to prepare communities to adapt to climate change while reducing human impacts on the climate system (known as mitigation). Additional factors such as poverty, a lack of resources, the absence of political will, and the necessity for nations to work together add further complexity to this challenge. Many jobs and industries will be affected by the changes that are happening or are anticipated for the future.

Explore the Collection

[Help](#)

Current Search Limits:

✕ Text Search

sea level rise

✕ Grade Level

High School (9-12)

✕ Dataset Use

Students Use Scientific Dataset

✕ Climate Literacy Principles

Climate change has consequences

Results 11 - 16 of 16 matches

Refine the Results ↓

Resource Type

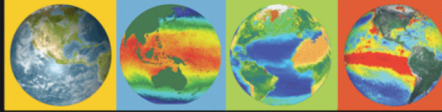
Activity [11 matches](#)

Curricula [1 match](#)

Visualization [5 matches](#)

Example CLEAN Activities

CLEAN



CLIMATE LITERACY & ENERGY AWARENESS NETWORK

<https://cleanet.org/resources/42338.html>

Collection of Climate and Energy Educational Resources

Sea Ice Index--Sea Ice Animation Tool

http://nsidc.org/data/seaice_index/archives/image_select
National Snow and Ice Data Center

Jump to this Simulation/Interactive »



This visualization tool shows sea ice data from 1978 to the present. Selected data can be animated to show changes in sea ice extent over time. Data is added by the National Snow and Ice Data Center as it becomes available.

[Learn more about Teaching Climate Literacy and Energy Awareness»](#)



See how this Simulation/Interactive supports the Next Generation Science Standards»

Middle School: 1 Disciplinary Core Idea, 1 Cross Cutting Concept, 2 Science and Engineering Practices
High School: 1 Disciplinary Core Idea, 1 Cross Cutting Concept, 4 Science and Engineering Practices

Notes From Our Reviewers The CLEAN collection is hand-picked and rigorously reviewed for scientific accuracy and classroom effectiveness. Read what our review team had to say about this resource below or learn more about how [CLEAN reviews teaching materials](#)

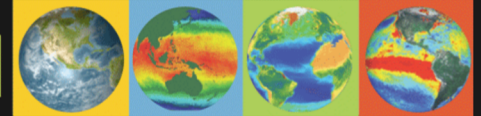
Notes From Our Reviewers The CLEAN collection is hand-picked and rigorously reviewed for scientific accuracy and classroom effectiveness. Read what our review team had to say about this resource below or learn more about how [CLEAN reviews teaching materials](#)

[Teaching Tips](#) | [Science](#) | [Pedagogy](#) | [Technical Details](#)

Teaching Tips

- Educators should examine the site in advance and look at different ranges of data.
- Instead of just watching the animation, have students take data over a one-year period and also over a 20 year time interval. Then, have students construct graphs of their data and have a class discussion about their results.
- Integrating a tool like this into a curriculum is a great way to get students involved in long-term data sets as they interact with the tool to observe changes.
- Use this tool along with the resource “Graphing the Extent of Sea Ice in the Arctic and Antarctic” from Windows to the Universe <https://cleanet.org/resources/41790.html>, for “Compare Images of Arctic Sea Ice Extent Side-by-Side” http://www.windows2universe.org/earth/polar/sea_ice/sea_ice_compare.html and “Compare Images of Antarctic Sea Ice Extent Side-by-Side” http://www.windows2universe.org/earth/polar/sea_ice/sea_ice_compare_south.html.

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CLIMATE LITERACY & ENERGY AWARENESS NETWORK

Graphing the Extent of Sea Ice in the Arctic and Antarctic

http://www.windows2universe.org/teacher_resources/graphs/teach_sea_ice_extent.html
Randy Russell, Windows to the Universe

Jump to this Activity »



In this activity, students learn about sea ice extent in both polar regions (Arctic and Antarctic). They start out by forming a hypothesis on the variability of sea ice, testing the hypothesis by graphing real data from a recent 3-year period to learn about seasonal variations and over a 25-year period to learn about longer-term trends, and finish with a discussion of their results and predictions.

Activity takes about 30-45 minutes.

[Learn more about Teaching Climate Literacy and Energy Awareness»](#)



See how this Activity supports the Next Generation Science Standards»

Middle School: 1 Disciplinary Core Idea, 4 Cross Cutting Concepts, 4 Science and Engineering Practices
High School: 1 Disciplinary Core Idea, 7 Cross Cutting Concepts, 4 Science and Engineering Practices

<https://cleanet.org/resources/41790.html>

Example CLEAN Activity

CLEAN



CLIMATE LITERACY & ENERGY AWARENESS NETWORK

Collection of Climate and Energy Educational Resources

Water, Water, Everywhere

https://www.weather.gov/jetstream/ll_water
National Weather Service

Jump to this Activity »



This classroom demonstration illustrates the amount of water stored in various parts of the Earth system in a straightforward manner. Students estimate the proportions of water in the oceans, icecaps and glaciers, groundwater, freshwater lakes, inland seas, soil moisture, atmosphere, and rivers. Then they fill beakers with the actual proportion and discuss what elements of the activity were surprising to them. Information on flash floods and flood preparedness and safety are included.

This learning activity takes approximately 20 min.

[Learn more about Teaching Climate Literacy and Energy Awareness»](#)

 **See how this Activity supports the Next Generation Science Standards»**

Middle School: 1 Cross Cutting Concept, 1 Science and Engineering Practice
High School: 1 Science and Engineering Practice

Notes From Our Reviewers

The CLEAN collection is hand-picked and rigorously reviewed for scientific accuracy and classroom effectiveness. Read what our review team had to say about this resource below or learn more about how [CLEAN reviews teaching materials](#)

[Teaching Tips](#) | [Science](#) | [Pedagogy](#) | [Technical Details](#)

Teaching Tips

- This teacher-based demonstration could be flipped around into a student-driven investigation.
- The 'fast facts' in the sidebar are quantitative and thought-provoking. Did you know the 48 contiguous United States have a total area of 3,800,000 square miles (9,800,000 square kilometers) and a population of 310 million people?

Topics

Melting Ice and Permafrost
See more on this topic.

Availability of Water Resources
See more on this topic.

Grade Level
Middle (6–8)

<https://cleanet.org/resources/56079.html>

Example CLEAN Activity



CLIMATE LITERACY & ENERGY AWARENESS NETWORK

Collection of Climate and Energy Educational Resources

Climate Change and Human Health

<https://www.niehs.nih.gov/health/topics/agents/climate-change/index.cfm>
Dana Brown Haine, National Institute of Environmental Health Sciences

[Jump to this Activity »](#)



In this activity, students investigate the impacts of changing climatic conditions on human health and consider the benefits of climate mitigation and adaptation to human health.

This learning activity takes about two 50-minute class periods.

[Learn more about Teaching Climate Literacy and Energy Awareness»](#)



[See how this Activity supports the Next Generation Science Standards»](#)
High School: 4 Performance Expectations, 6 Disciplinary Core Ideas, 1 Cross Cutting Concept, 3 Science and Engineering Practices

Notes From Our Reviewers

The CLEAN collection is hand-picked and rigorously reviewed for scientific accuracy and classroom effectiveness. Read what our review team had to say about this resource below or learn more about how [CLEAN reviews teaching materials](#)

[Teaching Tips](#) | [Science](#) | [Pedagogy](#) | [Technical Details](#)

Teaching Tips

- This activity is very robust in the content it presents and warrants taking the time to implement it in full.

Topics

Ecosystem Changes
See more on this topic.

Public Health
See more on this topic.

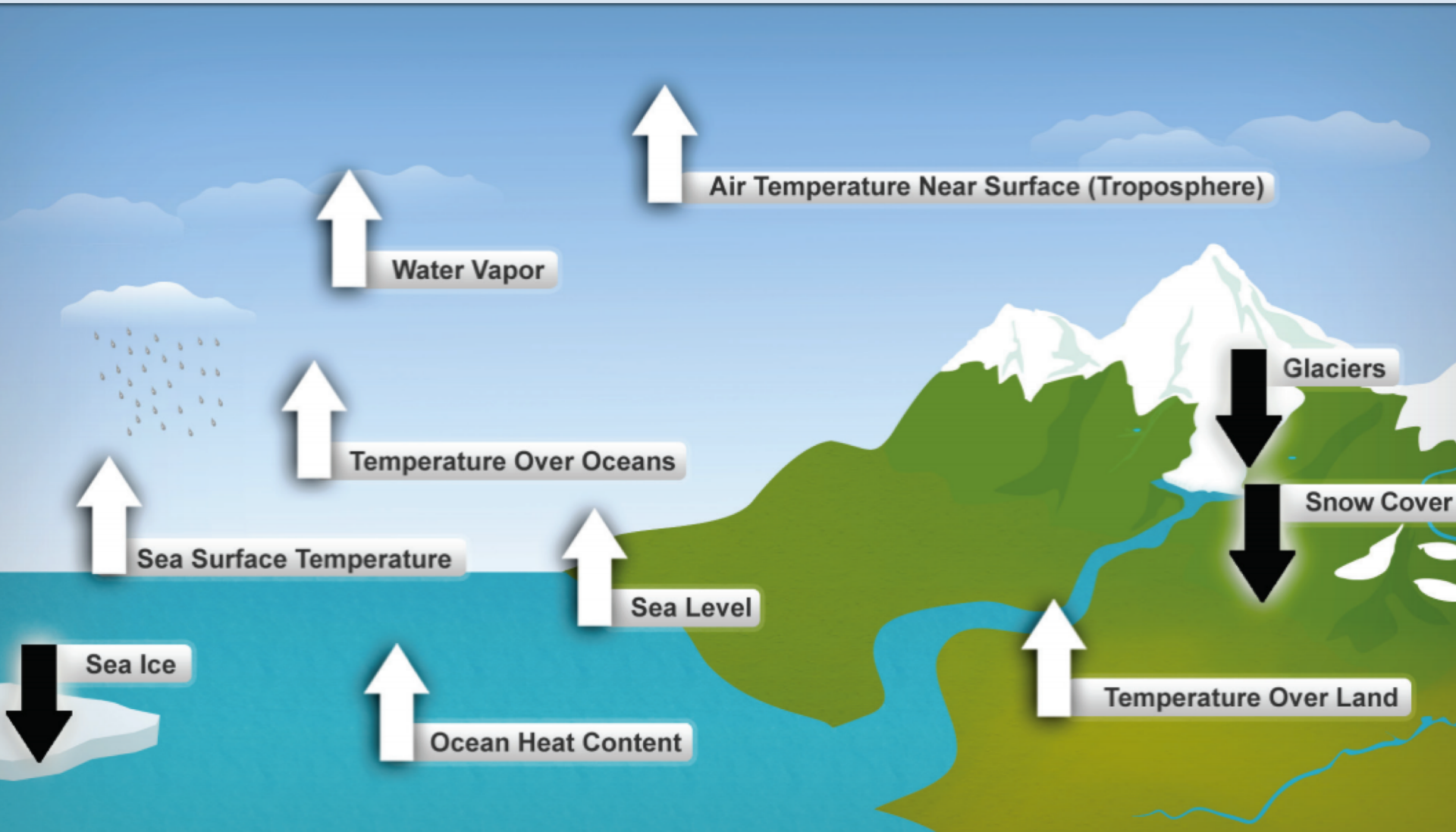
Climate Impacts
See more on this topic.

Risk Management
See more on this topic.

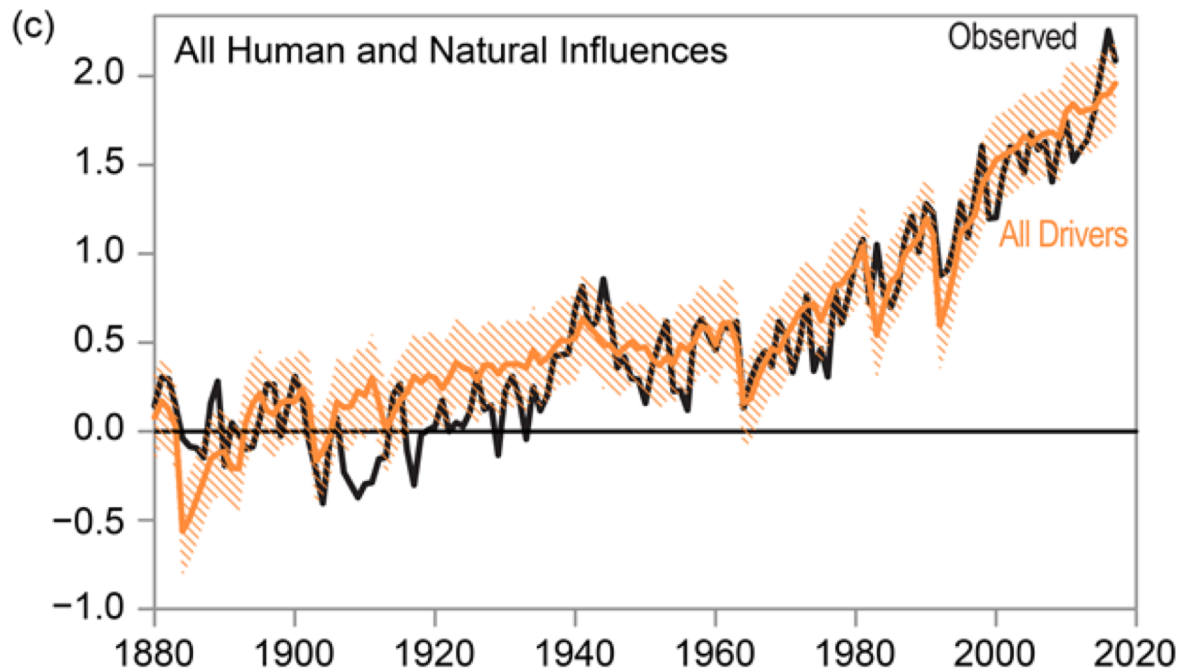
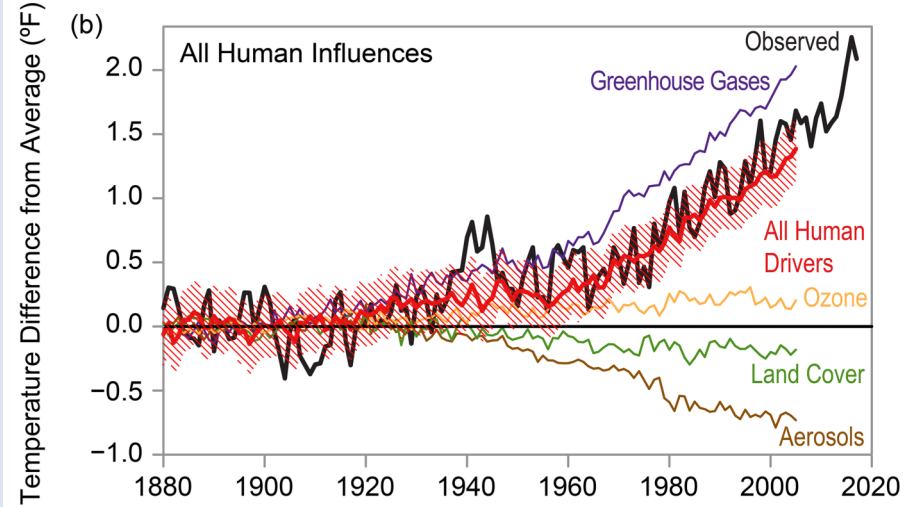
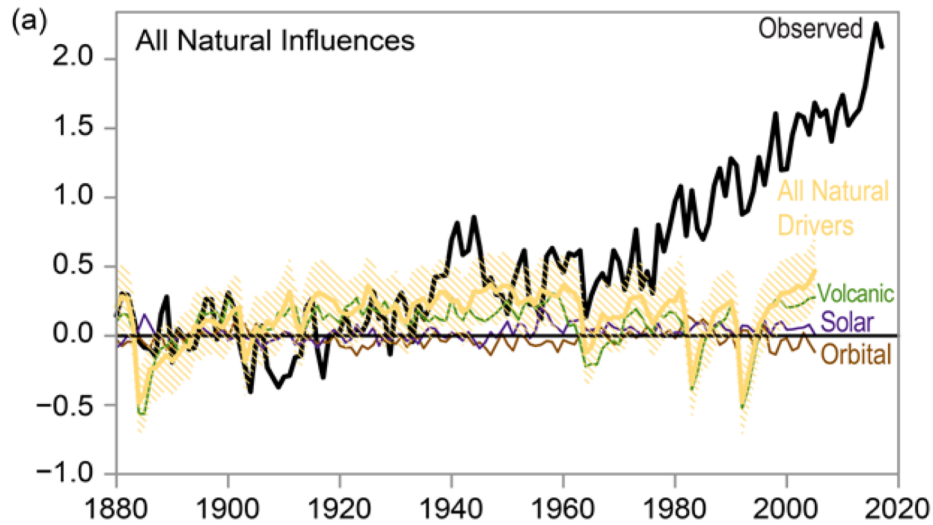
<https://cleanet.org/resources/51251.html>

Why Are We Confident That Human Emissions of Greenhouse Gases Is The Dominant Cause of Warming?

All indicators expected to **increase** in a warming world are **increasing** and those expected to **decrease** are **decreasing**



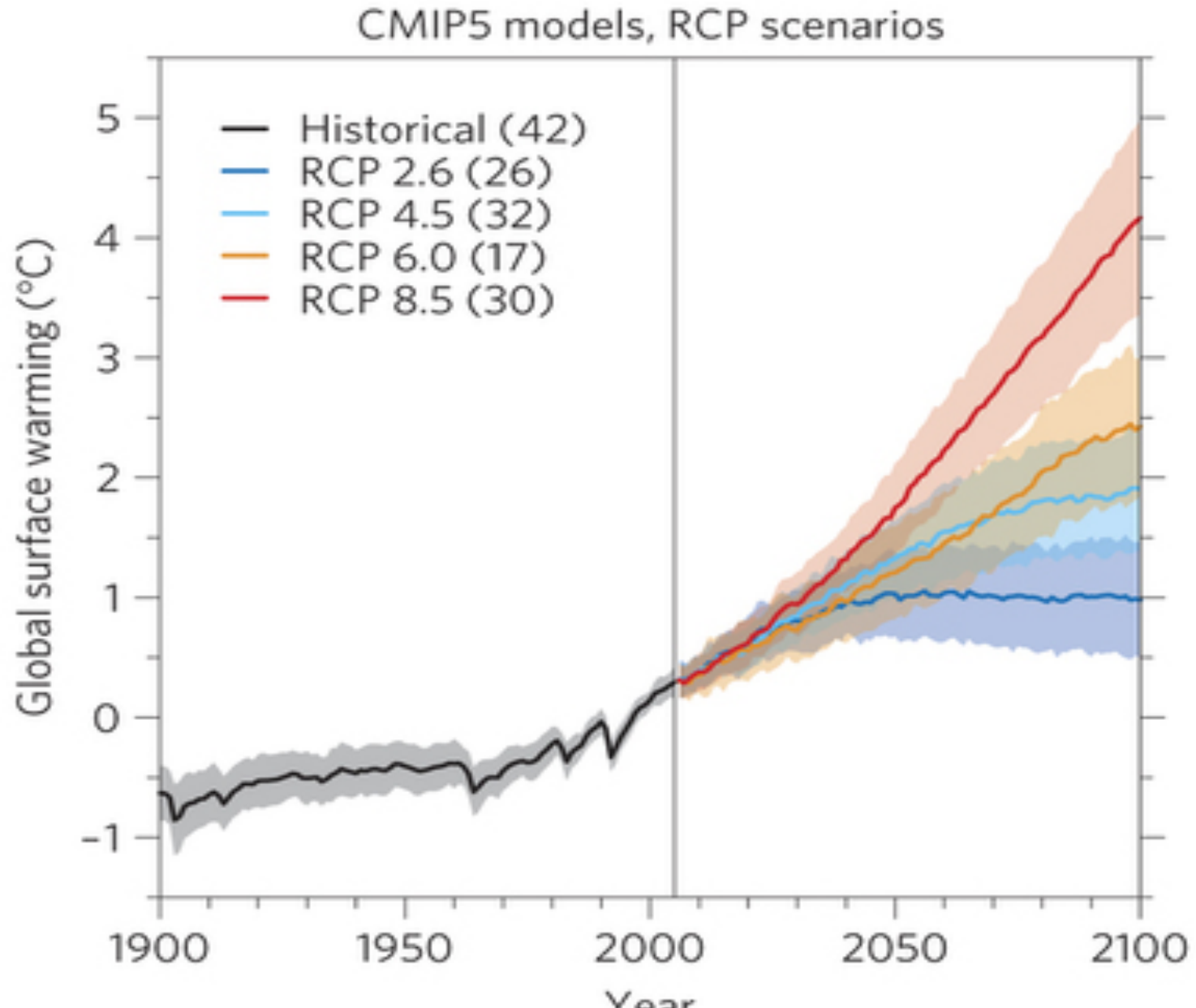
The only way to get a climate model to simulate the observed global temperature change is to include observed increases in GHGs.



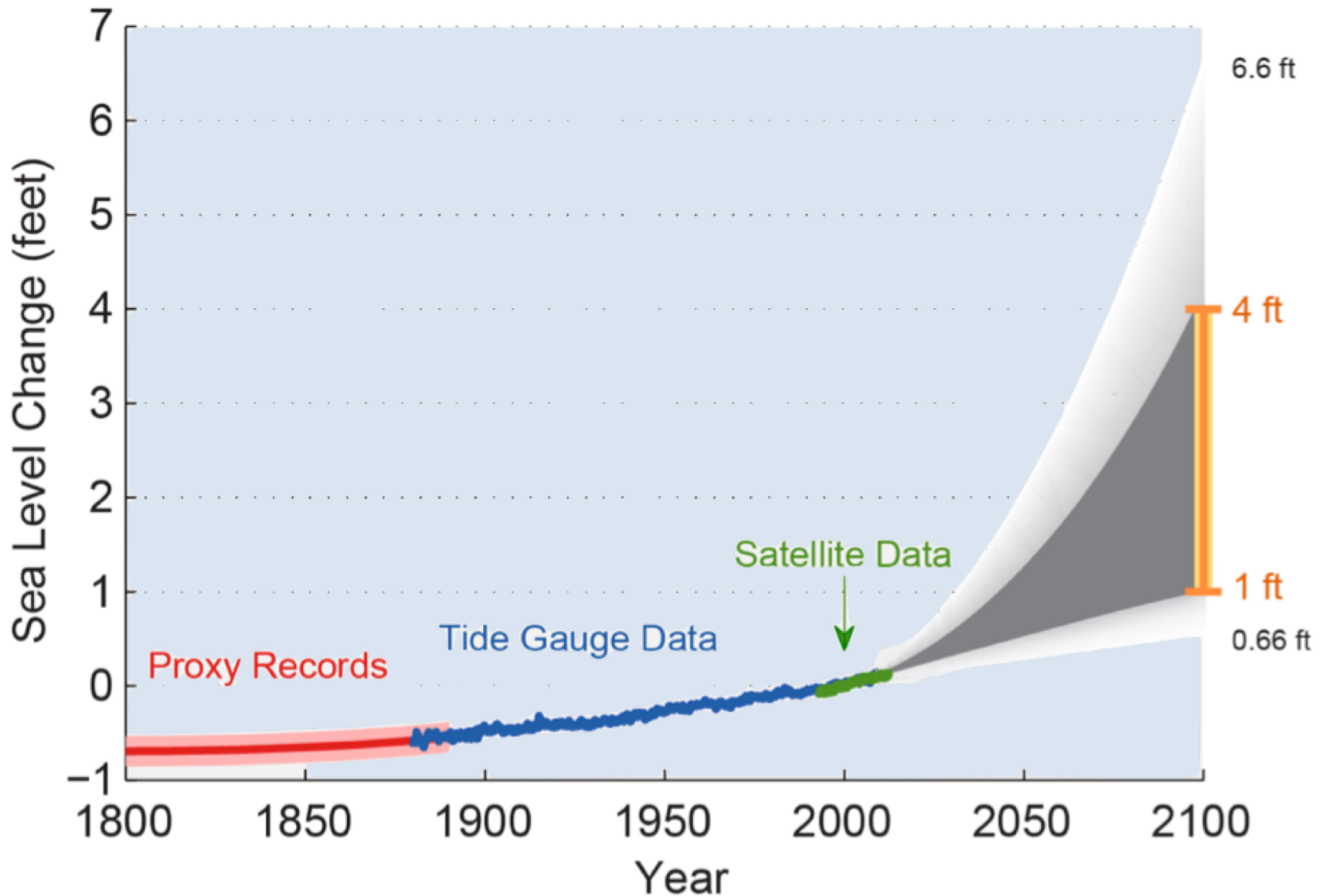
How do we project future climate conditions?

Global Climate Models: large (hundreds of thousands of lines of code) computer programs that solve various equations (e.g. differential equations of fluid dynamics, chemistry) at thousands of individual locations covering the globe and layers in the atmosphere and ocean.

Projected Global Surface Temperature Change

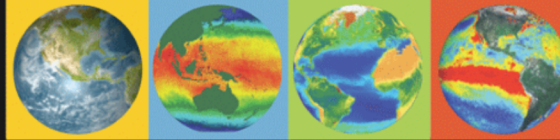


Projected Changes Global Sea Level



Example CLEAN Activity

CLEAN



CLIMATE LITERACY & ENERGY AWARENESS NETWORK



Collection of Climate and Energy Educational Resources

Envisioning Climate Change Using a Global Climate Model

<https://serc.carleton.edu/eet/envisioningclimatechange/index.html>

Jump to this Activity »

Betsy Youngman, and team of scientists and educators, Earth Exploration Toolbook Chapter from TERC



This long classroom activity introduces students to a climate modeling software. Students visualize how temperature and snow coverage might change over the next 100 years. They run a 'climate simulation' to establish a baseline for comparison, do a 'experimental' simulation and compare the results. Students will then choose a region of their own interest to explore and compare the results with those documented in the IPCC impact reports. Students will gain a greater understanding and appreciation of the process and power of climate modeling.

Activity takes a solid week to complete in a class (4–5) 50-minute periods. Computer access is necessary.

[Learn more about Teaching Climate Literacy and Energy Awareness»](#)



[See how this Activity supports the Next Generation Science Standards»](#)

High School: 1 Performance Expectation, 3 Disciplinary Core Ideas, 7 Cross Cutting Concepts, 7 Science and Engineering Practices

Notes From Our Reviewers The CLEAN collection is hand-picked and rigorously reviewed for scientific accuracy and classroom effectiveness. Read what our review team had to say about this resource below or learn more about how [CLEAN reviews teaching materials](#)
[Teaching Tips](#) | [Science](#) | [Pedagogy](#) | [Technical Details](#)

Teaching Tips

- Each one of the six sections should have some kind of assessment or wrap-up discussion, a place for students to reflect and analyze findings before they go on to the next section.

Topics

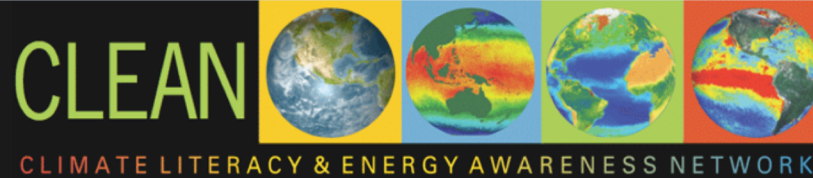
Climate Projections
See more on this topic.

Scenario Development
See more on this topic.

Grade Level
High School (9–12)

<https://cleanet.org/resources/41851.html>

Example CLEAN Activity



Collection of Climate and Energy Educational Resources

Supercomputing the Climate

<http://svs.gsfc.nasa.gov/vis/a010000/a010500/a010563/index.html>

NASA Goddard Space Flight Center

[Jump to this Video »](#)



This video provides an overview of how computer models work. It explains the process of data assimilation, which is necessary to ensure that models are tied to reality. The video includes a discussion of weather models using the Goddard Earth Observing System (GEOS-5) model and climate models using the MERRA (Modern Era Retrospective Analysis for Research and Applications) technique.

Video length 5:30 minutes.

[Learn more about Teaching Climate Literacy and Energy Awareness»](#)



[See how this Video supports the Next Generation Science Standards»](#)

High School: 5 Disciplinary Core Ideas, 3 Cross Cutting Concepts

Notes From Our Reviewers The CLEAN collection is hand-picked and rigorously reviewed for scientific accuracy and classroom effectiveness. Read what our review team had to say about this resource below or learn more about how [CLEAN reviews teaching materials](#)
[Teaching Tips](#) | [Science](#) | [Pedagogy](#) | [Technical Details](#)

Teaching Tips

- The contemporary "nature of science" involves the union of science, mathematics, and technology where computer-coded equations are solved to help understand satellite and ground observations and predict future conditions.
- This video can be used to introduce the roles of data, scientists, and computer models in predicting

Topics

Climate Data

See more on this topic.

Global Climate Modeling

See more on this topic.

Measuring and Modeling Climate

See more on this topic.

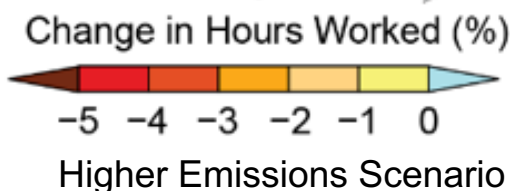
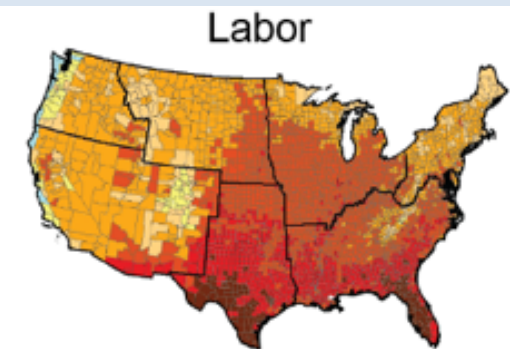
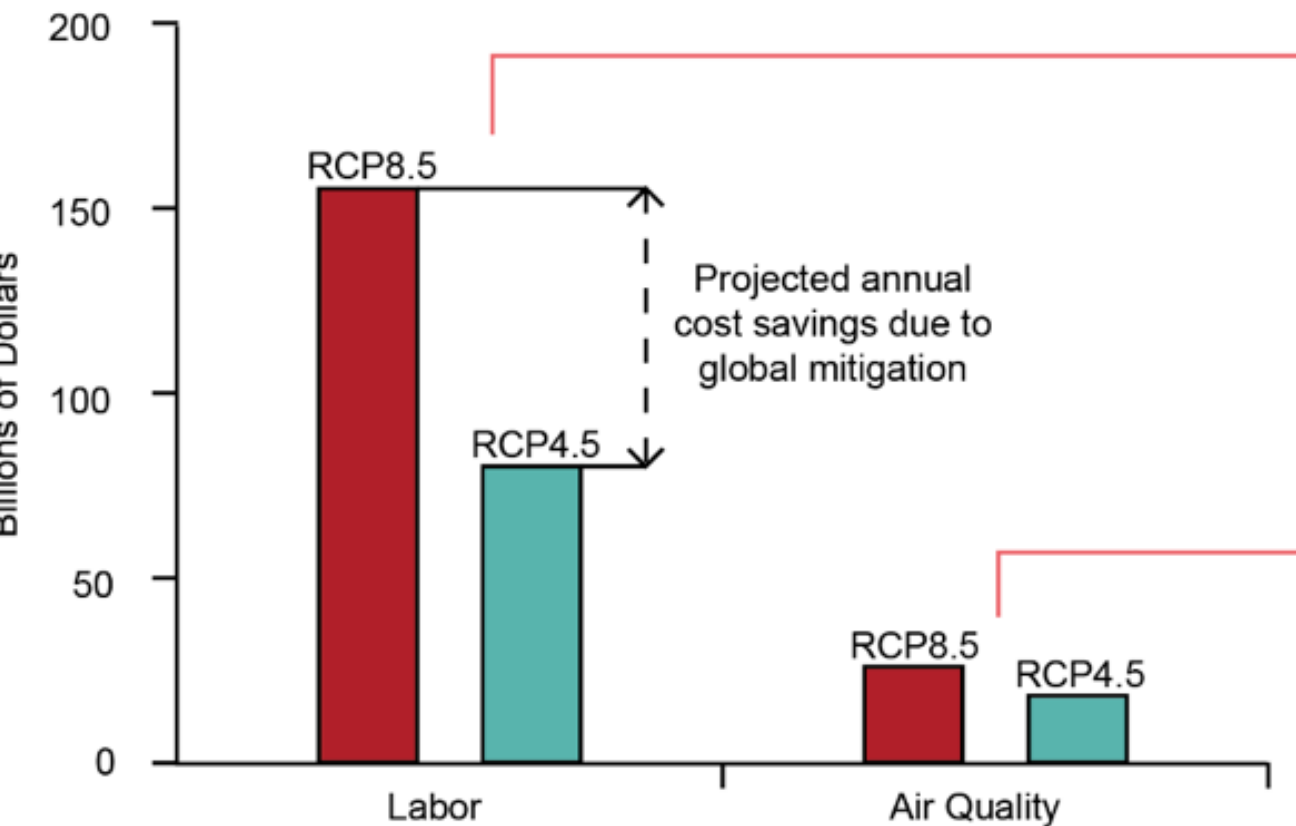
Nature of Climate Science

See more on this topic.

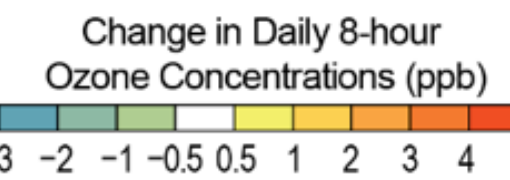
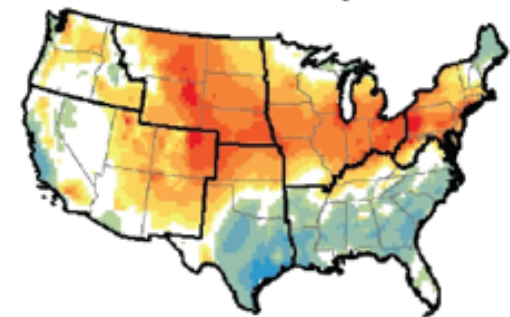
<https://cleanet.org/resources/43136.html>

How will climate change impact our world and what can be done about it?

Annual Economic Damages in 2090

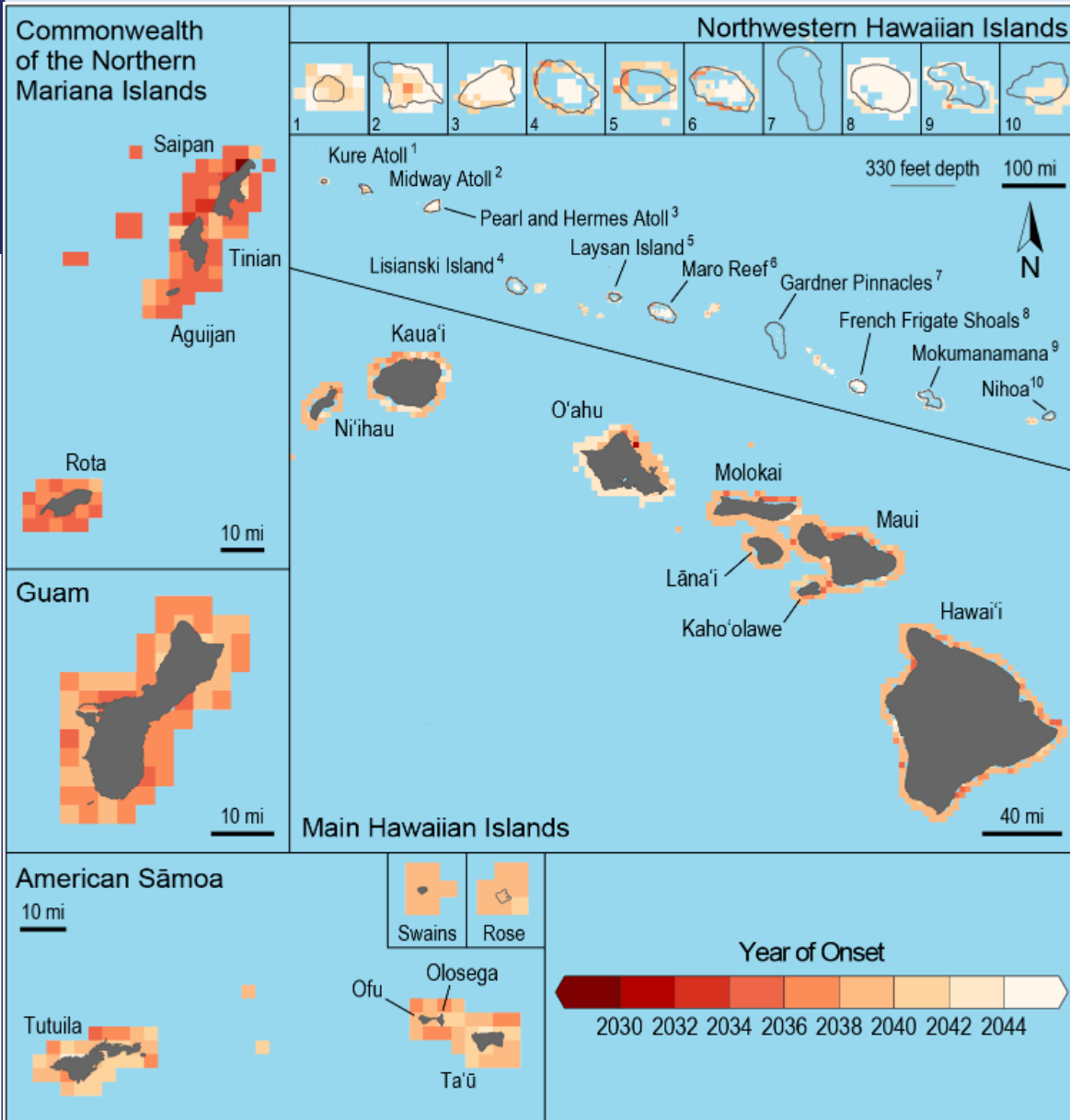


Higher Emissions Scenario



Severe Coral Bleaching Projected for Hawai'i and the U.S.-Affiliated Pacific Islands

The figure shows the years when severe coral bleaching is projected to occur annually in the Hawai'i and U.S.-Affiliated Pacific Islands region under a higher scenario (RCP8.5). Darker colors indicate earlier projected onset of coral bleaching. Under projected warming of approximately 0.5°F per decade, all nearshore coral reefs in the region will experience annual bleaching before 2050.





Community Relocation – Isle de Jean Charles, Louisiana

(left) A federal grant is being used to relocate the tribal community of Isle de Jean Charles, Louisiana, in response to severe land loss, sea level rise, and coastal flooding.

(right) As part of the resettlement of the tribal community of Isle de Jean Charles, residents are working with the Lowlander Center and the State of Louisiana to finalize a plan that reflects the desires of the community.

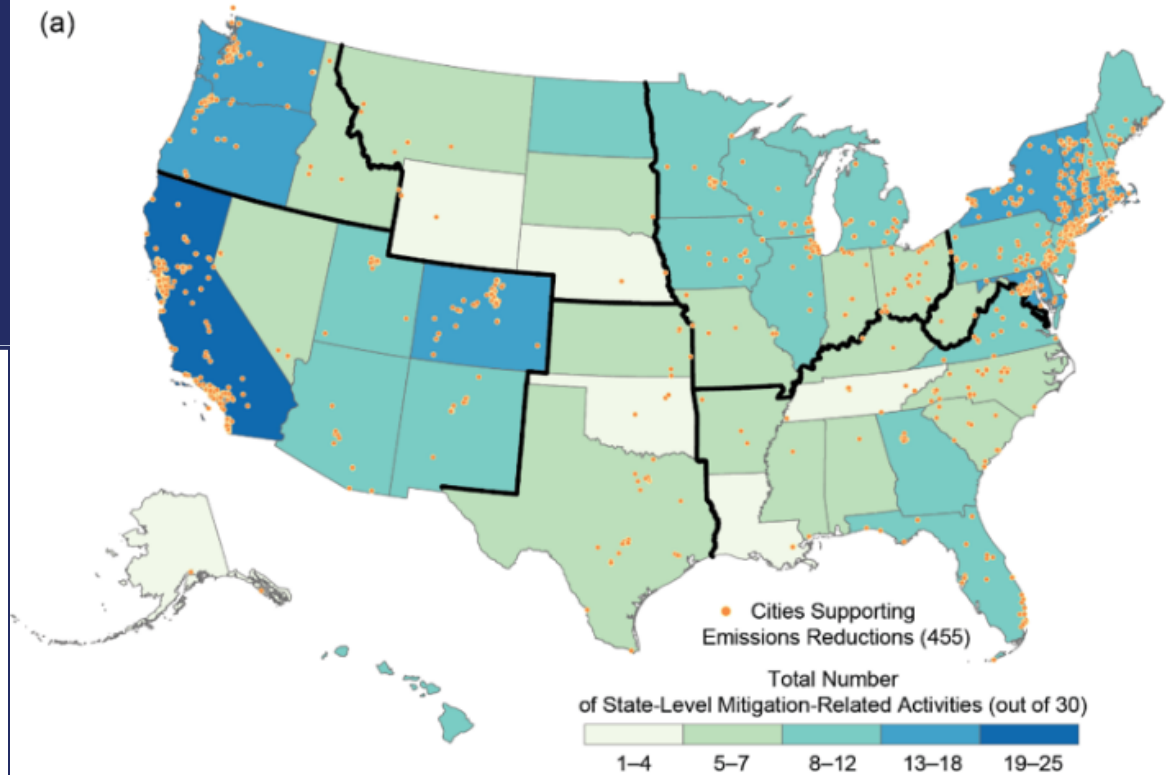
Adaptation Measures in Kivalina, Alaska

A rock revetment was installed in the Alaska Native Village of Kivalina in 2010 to reduce increasing risks from erosion. A new rock revetment wall has a projected lifespan of 15 to 20 years.

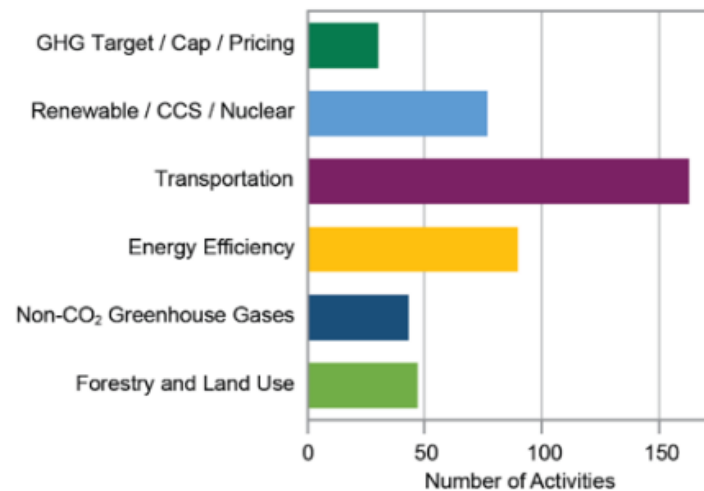


Mitigation-Related Activities at State and Local Levels

(top) The map shows the number of mitigation-related activities at the state level (out of 30 illustrative activities) as well as cities supporting emissions reductions; **(bottom)** the chart depicts the type and number of activities by state



(b) Total State-Level Mitigation-Related Activities by Type



Concluding Thoughts

- There are both positive and negative impacts to global warming
- Overall, the net impacts are likely to be negative
- Ecosystems have evolved and human systems are adapted to the current climate



CLIMATE SUMMIT

WHAT IF IT'S A BIG HOAX AND WE CREATE A BETTER WORLD FOR NOTHING?

- ENERGY INDEPENDENCE
- PRESERVE RAINFORESTS
- SUSTAINABILITY
- GREEN JOBS
- LIVABLE CITIES
- RENEWABLES
- CLEAN WATER, AIR
- HEALTHY CHILDREN
- etc. etc.



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NCA Teaching Resources

- CLEAN NCA Page

- <https://cleanet.org/clean/literacy/tools/nca.html>

- Climate Generation NCA resources

- <https://www.climategen.org/take-action/teach-climate-change/curriculum/next-generation-climate-for-grades-6-8/worksheets/>
- <https://curriculum.climategen.org/2017/NGC/NGC2017-3-3-National-Climate-Assessment-Scavenger-Hunt.pdf>

- NOAA NCA resources

- <https://www.climate.gov/teaching/national-climate-assessment-resources-educators/2014-national-climate-assessment-resources>
- <https://www.climate.gov/teaching/national-climate-assessment-and-next-generation-science-standards>

- Climate Explorer Tool

- <https://crt-climate-explorer.nemac.org/>
- https://nca2018.globalchange.gov/img/figure/figure25_10.png
- <https://noaa.maps.arcgis.com/apps/MapJournal/index.html?appid=92260a6bcf154d72bab62e50231e64c8§ion=10>

The image shows two screenshots of educational resources. The top screenshot is the 'National Climate Assessment (NCA) Teaching Resources' page from the CLEAN network. It features a navigation menu on the left with categories like 'CLEAN Climate and Energy Educational Resources', 'Tools for Educators', and 'National Climate Assessment (NCA) Teaching Resources'. The main content area includes a 'Report Findings' section with a map of the United States divided into regions: Northwest, Northern Great Plains, Midwest, Northeast, Southwest, Southern Great Plains, and Southeast. Below the map is a 'Climate.gov' navigation bar with links for 'News & Features', 'Maps & Data', 'Teaching Climate', 'About', 'Contact', 'FAQs', 'Site Map', and 'What's New?'. The bottom screenshot is the 'U.S. Climate Resilience Toolkit' interface for 'THE CLIMATE EXPLORER'. It features a large title, a search bar, and buttons for 'Select a location', 'View by variable', 'Weather & Tidal Stations', and 'New here? Take the tour'. The background is a topographic map of the United States.