Science, not politics, must guide America’s climate policies

Dr. Philip B. Duffy
President & Executive Director

Climate change is here, bringing extreme heat, extreme precipitation, flooding, wildfire, drought, more powerful storms, and more. These and other manifestations of climate change, past and future, as well as their societal consequences, are described in the latest National Climate Assessment. This was produced starting in the Obama administration and released by the Trump Administration in two volumes, in 2017 and 2018.

The Assessment begins “Earth’s climate is now changing faster than at any point in the history of modern civilization, primarily as a result of human activities.” From the point of view of the Trump administration, this is an “inconvenient truth,” because it contradicts their political messaging and undercuts their efforts to undo federal climate policies. Beyond this, the Assessment could potentially be used to support litigation opposing the Administration’s climate policies.

These concerns triggered a round of false criticisms of the Assessment: EPA spokesman James Hewitt told the New York Times recently that the National Climate Assessment “focuses on worst-case emissions scenarios [of future climate], that does not reflect real-world conditions.” This is wrong on two counts: first, the Assessment considered a range of scenarios, including one requiring such rapid reduction in greenhouse gas emissions that it may no longer be possible to achieve. Second, the Assessment itself shows that actual global emissions of greenhouse gases have closely tracked the worst-case scenario considered in the Assessment.

Polaris team finds extreme heat, thawing permafrost on Alaskan tundra

by Miles Grant

A team of WHRC scientists and students returned this month from the 2019 Polaris Project expedition to research climate change impacts on Alaskan tundra and they reported experiencing many of the same climate-worsened problems that have made national headlines over the last week—extreme heat, strong lightning storms, and wildfire smoke.

WHRC scientists have been traveling to Alaska’s Yukon Delta National Wildlife Refuge for the last five years. The region’s permafrost is on the brink of thawing, and will be thawed by the end of the century—if not much sooner.

Polaris students, guided by WHRC scientists, spend two weeks investigating these impacts in Alaska’s Yukon-Kuskokwim Delta, working to understand how global carbon pollution, permafrost thaw, and wildfires interact in the carbon cycle.

The team’s journey took them through Anchorage, to Bethel, and finally to the camp site about 50 miles from Bethel on the Alaskan tundra. The weather was cool and damp at the beginning of the expedition, but it soon turned hot, with temperatures hitting 90°F and continuing Bethel’s record-breaking year. Every month this year has been at least 5°F above the

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WHRC is an independent research organization where scientists study climate change and how to solve it, from the Amazon to the Arctic. Learn more at www.whrc.org.
Trump Administration officials have also said that the Assessment was not peer-reviewed. This is also wrong: there were eight layers of review, including peer reviews, public comment, and finally a review by the National Academy of Sciences, which was itself reviewed.

In addition, it has been widely reported that the administration is convening an effort through the National Security Council to rebut the Assessment. This apparently will be staffed by a hand-picked group of climate change deniers who have legitimate academic credentials (a small and dwindling group).

Finally, the Administration appears to be beginning to meddle in the process for producing the next Assessment, due to be released in 2021 or 2022. Recently, for example, the head of the US Geological Survey mandated that USGS scientists may look no farther than 2040 in studies of climate change. This, of course, will make the consequences of climate change seem relatively mild. If applied to the Assessment as a whole this restriction would also be illegal, since the Global Change Research Act of 1990, which mandates that an assessment be produced every four years, also specifies that these assessments must look as far as 100 years into the future.

Beyond this, the administration is being urged by conservative “think tanks” to consider only very optimistic scenarios for future climate, which involve very strict restrictions on greenhouse gas emissions. This of course is ironic, since the administration’s policies make it unlikely if not impossible that such scenarios can be realized.

One thing that has always differentiated the United States from totalitarian countries is that in those countries everyone rightly assumes that the government falsifies data about its economy, harvest, military capabilities, and so on, in order to support the ruling party’s political agenda. The administration’s attempts to cook the books on climate science generally and the next National Climate Assessment specifically is a step in that direction for the United States. A watered-down National Climate Assessment would do real and practical harm. The purpose of the Assessments is to help Americans prepare for climate change. Deposing them of the information they need to do this will result in avoidable loss of life and property. If you doubt this, ask residents of Houston, New Orleans, or Puerto Rico.

Willful ignorance has consequences. We need climate policies informed by science, not wishful thinking or political expediency. Our future safety, security and prosperity depend on it.
The Woods Hole Partnership Education Program (PEP) recently hosted a 10th anniversary homecoming, celebrating a decade of connecting a diverse group of college juniors and seniors with Woods Hole-area research institutions. Former WHRC PEP student Erica Valdez and current WHRC PEP student Juan Ramos were among those taking part.

Part of the Woods Hole Diversity Initiative, PEP is a 10-week program designed for students majoring in the natural sciences, engineering, mathematics or the social sciences who have had some course work in oceanography, biology, or environmental science.

Erica Valdez was WHRC’s first PEP student in 2015. During her time at WHRC, her attention was drawn to issues related to climate change and its impact on human health. "If I hadn’t taken part in PEP, my interest might not have been sparked in the connection between climate change and health," Valdez said. She plans to attend medical school and continue working on that intersection.

WHRC Research Associate Kathleen Savage, has helped organize and participate as a mentor in PEP since its start. "It was great seeing past PEP students and hearing about their accomplishments over the last decade," Savage said.

The program consists of a four-week course and a six-week research project. Thanks to the generosity of the program’s sponsors, room, board and tuition are free and students receive a stipend and a travel allowance. In addition to WHRC, participating institutions include NOAA’s National Marine Fisheries Service; Woods Hole Oceanographic Institution, U. S. Geological Survey; Sea Education Association, and Marine Biological Laboratory.

PEP gives students an introduction to the Woods Hole science community, one of the most vibrant environmental research communities in the world. PEP students study, conduct research, and receive training in their areas of interest, working in labs with leading researchers in marine and environmental sciences. PEP provides a first-hand introduction to emerging issues and real-world training in the research skills students need to advance in science, either as graduate students or bachelors-level working scientists. They are required to participate in seminars, workshops, field trips, and career development activities including informal interviews. In August, students present results from their research in a 15-minute public presentation during a day-long PEP Symposium.

To learn more about PEP, and how you can support it, and other Woods Hole Diversity Initiative programs, visit WoodsHoleDiversity.org.

The challenges of permafrost photography
by Miles Grant

Photographer Chris Linder, whose pictures will be featured in the upcoming WHRC book The Big Thaw: Modern Science, Ancient Carbon, and a Race to Save the World, recently spoke at WHRC about his travels around the world’s tundra taking photos that show the impact of climate change and the beauty of the places at risk.

Linder is a professional science and natural history photographer. A former naval officer and oceanographer, Linder now focuses on communicating the stories of scientists working in extreme environments. He’s documented more than fifty scientific expeditions in all, from the Congo to Siberia, and has spent over two years of his life exploring the polar regions. Linder’s images have appeared in museums, books, calendars, and magazines.

Dr. Robert Max Holmes, WHRC deputy director and a co-author of The Big Thaw, introduced Linder and spoke about how Linder’s compelling pictures can help educate the public about climate science. “I found that when I was giving talks, if I put up slides of Chris’ photography behind me, people were suddenly more interested in what I had to say,” Holmes said.

Linder detailed how the remote and extreme polar environments pose enormous challenges to getting the shot just right. “In 2009, I was prodding the bottom of a Siberian lake to get pictures of greenhouses gases bubbling up from thawing permafrost, but it was hard to show in the murky water. I tried getting in the water, but I quickly lost feeling in every part of my body. The next year, I came back with a wetsuit and spent hours taking thousands of pictures of little but muddy water - until I took this one,” said Kinder, revealing a dramatic picture of bubbles bursting through the surface.

After Linder’s presentation, a panel of WHRC scientists and Polaris Project students talked about the life-changing impact of their firsthand experiences on the tundra. The Big Thaw, authored by WHRC scientists Dr. Holmes, Dr. Susan Natali and Dr. John Schade, is set to be released later this year and will be available for purchase through WHRC.
In the news: highlights


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Stop Building a Spaceship to Mars and Just Plant Some Damn Trees. Mother Jones quotes Richard Houghton. July 4


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Extreme Temperatures Are Melting The Arctic. CleanTechnica quotes Jennifer Francis. June 18