Climate report creates dilemma for Trump administration

Dr. Philip B. Duffy
President & Executive Director

A draft of a U.S. government climate science report drew wide attention recently, partly because of its contents, but mainly because it creates a political problem for the Trump administration. This may have surprised the wider world, but those of us involved in the preparation of the report anticipated and pointed out this impending dilemma even before the inauguration.

The “Climate Science Special Report” (CSSR) summarizes the latest understanding of climate change with a particular focus on the United States. As a scientific report, it does not make policy recommendations, but its findings are irreconcilable with the policies of the Trump administration. The report’s unequivocal attribution of climate change to human greenhouse gas emissions and dire assessment of ongoing and future impacts are at odds with statements by Trump and his cabinet and with their policy of promoting fossil fuel extraction and use. Hence the dilemma for Trump & Company: if they release the report, they’ll have to explain why they are ignoring the findings of their own scientists. If they delay or cancel the report, they’ll be accused of suppressing science; and if they rewrite it, that fact will be widely known because of the now-famous draft.

The CSSR is a part of the basis of the 4th National Climate Assessment (NCA4), a Congressionally-mandated quadrennial appraisal of how climate change is affecting and will affect the United States, including important human systems (agriculture, human health, water supplies, etc.). The preparation of NCA4 was set in motion by WHRC’s John Holdren in his recent White House roles as head of the Office of Science and Technology and chair of the National Science and Technology Council. The CSSR was drafted in 2016, and I had the privilege of spending the Christmas holiday reviewing it as part of a National Academy of Sciences panel. That panel strongly endorsed the main findings of the report, while suggesting relatively minor changes. It was obvious then that the report would create a problem for the incoming administration, and that day is here, as the report is now undergoing final review by the federal agencies that sponsored it.

There is no legal requirement to release the CSSR. The quadrennial National Climate Assessments are mandated by the Global Change Research Act of 1990 (signed by George H.W. Bush). When George W. Bush failed to produce one, his administration was successfully sued. Multiple groups are preparing to sue the Trump administration if they do not release the 4th National Climate Assessment on schedule next year. But the CSSR is not strictly speaking part of the Assessment—rather, it is a “foundational” document that the authors of the Assessment are supposed to use (and already are using) as they write the Assessment. The lack of a legal mandate to release the report would seem to limit options if Trump et al. choose to suppress it.

So what’s in the report? There are important new developments since the previous major summary (the IPCC 5th Assessment Report) was issued in late 2013. These include:

- Three consecutive warmest years on record
- Confirmation that the decay of Greenland and Antarctic ice sheets is accelerating

**REPORT continued on inside back page...**
WHRC Senior Advisor John Holdren was awarded the Lawrence S. Huntington Environmental Prize on July 28 during the Center's first Science Under the Stars event.

More than 240 people gathered at WHRC for the summer party, which featured tours of the Center, brief talks by scientists, dinner, a Brazilian band, and several prominent speakers, including WHRC President Dr. Phil Duffy, WHRC Board Chairman Bill Moomaw, WHRC Founder Dr. George Woodwell, and Amazon Environmental Research Institute (IPAM) President André Guimarães.

The Huntington Prize was presented to Dr. Holdren by AAAS President Dr. Rush Holt. The award recognizes leaders who advance and promote research and communication on climate change, earth sciences, and conservation. The first recipient of the Prize was former WHRC Board Chairman Lawrence S. Huntington in 2012, when the Board bestowed the honor on him and also named the prize after him. The Prize has also been awarded to Dr. Gro Harlem Brundtland, former Prime Minister of Norway (2013) and Dr. Johan Rockström, director of the Stockholm Resilience Center (2014).

Dr. Holdren served as WHRC president from 2005 until he joined the Obama Administration in January 2009. At the White House, Dr. Holdren was President Obama’s chief science and technology advisor and also the Senate-confirmed director of the White House Office of Science and Technology Policy. Speakers at the event thanked him for driving the historic U.S.-China bilateral climate agreement and also the Paris Climate Accords. In a video tribute, Alphabet Inc. Executive Chairman Eric Schmidt called Dr. Holdren “the most successful science advisor in history.”

In his acceptance speech, Dr. Holdren encouraged scientists to stay active in society and politics.

“Scientists have no less right & responsibility than any other group to ensure their voices are heard in this process,” Dr. Holdren said. “I am proud of what Woods Hole Research Center scientists have achieved over the past 32 years at the intersection of great science with sound policy and beneficial applications on the ground.”

Polaris Project wraps up 2017 season

After two weeks on the isolated Alaskan tundra, the Polaris Project returned to WHRC on July 15 to process and analyze hundreds of soil and water samples taken from the field.

The team of undergraduate and graduate students, along with their scientist advisors, traveled to the Yukon-Kuskokwim Delta in Alaska to research climate change impacts on the arctic ecosystem and permafrost. The project aims to advance scientific understanding of arctic climate impact, and also to launch the next generation of climate scientists.

The students chose their own research goals while they were in the field and the resulting projects examined the tundra vegetation, hydrology, and emissions. Once they returned to WHRC, the students spent long days in the laboratory, studying their samples.

“Being at the Woods Hole Research Center working with respected senior environmental biogeochemists for the past week and a half has also been a dream come true,” Polaris student Darcy Peter wrote in a blog post. Ms. Peter, a 2017 graduate from Ft. Lewis College in Colorado, spent her lab time analyzing carbon gas emission samples from tundra ponds and streams.

On July 27, the students held a symposium in which they presented their research findings. The students were enthusiastic about their science, and about their future paths as scientists.

Polaris student Sierra Melton, a rising senior at Colorado College, wrote that “after a couple weeks of lab work, data analysis, and synthesis at the Woods Hole Research Center, I find myself with even more questions... I am more inspired than ever to continue searching for answers.”

August public lecture at WHRC

Thursday, August 17 – 5:30 p.m. Reception – 6:00 p.m. Lecture

Professor Kira Lawrence, Associate Professor of Geology, Department Head, Lafayette College

Prof. Lawrence is a paleoceanographer/paleoclimatologist who uses sediments from deep sea cores to study past intervals of sustained warmth that can provide clues to the current warming of the Earth. She will take the audience back to the future with a glimpse into warm climate intervals of the past. Seating is limited and reservations are highly recommended. For more info and reservations, visit whrc.org/looking-back-to-the-future.
New research finds ecosystems are taking longer to recover from drought

A new study in the journal *Nature* found that ecosystems are taking longer to recover from droughts, and that incomplete drought recovery may become the new normal in some areas, possibly leading to tree death and increased emissions of greenhouse gases. ([http://go.nature.com/2w3CwTh](http://go.nature.com/2w3CwTh))

The paper was led by Dr. Christopher Schwalm of the Woods Hole Research Center, and included scientists from NASA, Northern Arizona University, and the University of Nevada. As global temperatures continue to rise, droughts are projected to become more frequent in many regions. Using remote sensing, field data, and Earth system modeling, the researchers measured recovery time following droughts in various regions of the world.

"The most important implication of our study," said Dr. Schwalm, "is that under business-as-usual emissions of greenhouse gases, time between drought events will likely become shorter than time needed for recovery."

The researchers noted, "across many regions more frequent and severe droughts are expected in the 21st century," but they found that drought recovery times in two regions of the climate system, the tropics and the northern high latitudes, were particularly lengthened.

NEWSCAST

More than 15 percent of annual greenhouse gas emissions come from deforestation, and many countries have tied their Paris Agreement goals to avoided deforestation and forest restoration.

Brazil’s new land registry – seen by many as a solution to deforestation – does not establish sufficient incentives for land owners to conserve or restore forests on their property, according to a paper published in *PNAS*.

WHRC scientist Dr. Marcia Macedo collaborated on the paper with colleagues at Amazon Environmental Research Institute (IPAM) and the Federal University of Minas Gerais. The Brazilian government’s new land registry was established under the 2012 Brazilian Forest Code.

Dr. Macedo said that the researchers studied whether the incentives had been effective, “and the answer is essentially no ... so far being registered has had little lasting effect on their choices regarding forest conservation.”

The scientists argue that recovery time is a crucial “metric for assessing ecosystem resilience, as this time scale shapes the odds of crossing a ‘tipping point.’ A shorter time between droughts combined with longer recovery time means widespread tree mortality and potential widespread degradation of the land carbon sink.

"This study demonstrates that [land registry] membership does not yet provide the full suite of financial incentives (or command-and-control disincentives) needed to prevent deforestation and ensure full compliance with Forest Code restoration requirements," the researchers wrote. "Inconsistent monitoring and enforcement and the reluctance of state and municipal managers to punish landowners ... act as a safeguard for registered producers who continue deforesting. The resulting perception of impunity severely weakens environmental policies to control deforestation."

The paper does suggest, however, that if Brazil realigns the land registry incentives it can achieve its intended outcome. The paper also suggested a trading program, which would allow landowners with forest surpluses to “trade” with landowners who have exceeded their allowed deforestation.

"In theory, [the land registry] can increase the government’s ability to monitor environmental performance, prosecute illegal deforestation, and distribute the economic benefits of compliance,” according to the paper. "In practice, this potential has not yet been realized due to incomplete implementation ... and supporting public policies.”

REPORT continued from front...

• Higher projections of sea level rise (largely as a result of the previous)
• Improved understanding of the relationship between climate change and extreme weather
• New interest in a stricter limit on warming (1.5°C instead of 2°C) as a result of the Paris climate agreement

Oh, and the report does reaffirm the dominant human role in causing climate change (sorry, Scott Pruitt). It goes on to add that "There are no alternative explanations, and no natural cycles are found in the observational record that can explain the observed changes in climate.”

It’s difficult to reconcile that with the Trump administration’s promotion of coal and other fossil fuels.

This reminds us that as we are consumed by these tangential battles, climate change continues more or less unabated. It is more important than ever for all of us to do what we can to address this challenge. Urge your elected representatives at all levels to support strong policy actions; demonstrate that you care and that you can contribute by reducing your own carbon footprint; and get involved with organizations that are working to make a difference.

Thanks as always for your interest and support.
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WHRC in the News


The perversity of the climate science kangaroo court was an op-ed by Dr. John P. Holdren in The Boston Globe. 25 July. http://bit.ly/2wyff8L


Woods Hole Research Center Awards Environmental Prize cited WHRC’s gala and award for former White House science adviser and former WHRC director, John P. Holdren. The Falmouth Enterprise. 1 August. http://bit.ly/2wMkb9o

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