# the weekly anthropocene

*dispatches from the wild, weird world of humanity and its biosphere*

By Sam Matey


**The 2018 Midterm Elections.** On November 6th, 2018, the voters of America conclusively rejected the Trump Administration's anti-environment and anti-public health agenda, flipping seven governorships and an estimated (some races are still uncalled) 38 House of Representatives seats to the Democratic Party. This has profound impacts for the future of climate action and environmental protection in America. Republicans losing control of the House has two major impacts. First, Democrats will be able to stop the bleeding. Since the Republicans took the House in 2010, every budget cycle has been a fight to strike anti-environmental riders from must-pass bills, a struggle made even more dangerous during the Trump Administration. Now, vital programs like the EPA and NOAA are assured funding. Second, a Democrat-led House will be able to launch anti-corruption investigations into Trump appointees Ryan Zinke at the Interior Department and Andrew Wheeler at the EPA, both of whom are known for their deep ties to the fossil fuel industry. 2018 also saw a range of new environmental champions taking contested House seats in states not normally associated with pro-environment policies, from Sharice Davids in the Third District of Kansas (pictured, above) to Joe Cunningham in the First District of South Carolina, who rightly views climate change as "the single greatest non-military threat to our nation."

The most important results of the midterms, however, were in the states. New Mexico, Illinois, Michigan, Kansas, Nevada, Wisconsin, and Maine (see article below!) replaced Republican governors with Democratic ones, and Colorado and New York consolidated Democratic control by replacing Republican-led state legislatures with Democratic ones. Many of these states are now set to be new hubs for action on climate change. Jared Polis, the incoming governor of Colorado, ran on a promise to power Colorado with 100% clean energy by 2040, one of the boldest policies in the nation, and has a Democratic state legislature to help make it happen. Michelle Lujan Grisham (pictured, above), won the governorship of New Mexico, replacing a Republican climate change denier. As Representative for New Mexico's First District, she was known as a strong advocate for renewable energy, and as governor, she plans to leverage New Mexico's astounding solar and wind energy potential to bring the state to 80% renewable energy by 2040. She also will lead the Land of Enchantment into the US Climate Alliance, a coalition of 16 states (and counting!) and Puerto Rico that have pledged to uphold America's emissions reduction commitments under the Paris Agreement. In Nevada, incoming Democratic governor Steve Sisolak

won along with Question 6, a ballot measure Sisolak supported that puts Nevada on the road to getting 50% of its energy from renewables by 2030. Incoming Democratic governors of Michigan, Wisconsin and Illinois (Gretchen Whitmer, Tony Evers and JB Pritzker respectively), also plan to add their states to the US Climate Alliance. Californians voted to keep their state's high gas tax, with the revenues to continue going to infrastructure. Finally, while Florida's Senate and Governor's races are so close that they're heading for recounts, the Sunshine State's voters conclusively passed Amendment 9, a strange "hybrid" ballot measure that banned both offshore oil and gas drilling and the use of e-cigarettes in indoor workplaces.

Election Night also saw several defeats for renewable energy and environmental protection, mostly in the arena of state ballot measures. Arizona voted against a pro-renewables ballot measure similar to Nevada's, while Colorado voted against an initiative that would have severely limit the amount of land eligible for new oil and gas drilling. Most stingingly, Washington state rejected Initiative 1631, which would have instituted a tax on carbon emissions. However, the 2018 midterm elections were, overall, an overwhelming victory for environmental protection in America. Democrats' House victory keeps vital government infrastructure in place and ensures that the Trump Administration's rapaciously pro-fossil fuels agenda will finally get some oversight. State ballot measures were a mixed bag but led to some incremental advancements. And an array of states are now led by climate champions in place of climate deniers, keeping the prospects for state-level action on climate change bright. Spectacular news!

Maine. The Pine Tree State also saw a strong pro-environment wave on November 6th. Janet Mills (pictured) was elected Maine's new governor, defeating climate change denier Shawn Moody and replacing notoriously anti-environmental Paul LePage. Democrats also flipped the Maine Senate to take total control of the state legislature. This is excellent news for environmental and climate change action in Maine. As Maine's Attorney General, Janet Mills consistently stood up to the Trump Administration's attacks on environmental protections, including suing Scott Pruitt's EPA for failing to comply with the Clean Air Act. As Governor, she has pledged to work to cut Maine's greenhouse gas emissions 80% by 2030, introduce legislation to fast-track offshore wind power development, set regulatory incentives to bolster decentralized solar power development, and increase funding for public lands protection. With a Democratic state legislature, she should be able to accomplish much of this. Maine is now set to transform from a laggard to a leader in environmental innovation. Great news!

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**Keystone XL.** In other news from the USA this week, District Court Judge Brian Morris vacated Trump's presidential permit for the Keystone XL pipeline, citing disregard for "inconvenient facts" such as its potential impact on climate change. Keystone XL is a proposed 1,179 mile-long pipeline that would carry tar sands oil from Alberta to Nebraska, threatening tribal lands and vital waterways with oil spills. President Obama put a stop to this terrible idea in 2015, Trump resurrected it in 2017, and now it's on hold again, potentially indefinitely. Great news!

**Urban Adaptation Assessment.** A new research project from the University of Notre Dame ranks 270 US cities on readiness for and risks from climate change. The Urban Adaptation Assessment uses two years of data collection on 40 different metrics to provide a picture of cities' vulnerabilities and potential adaptation strategies. Local readers will be pleased to know that Portland, Maine, is in the "Low Risk, High Readiness" category. A fascinating, valuable project! This is exactly the kind of data urban planners need in the Anthropocene. Check it out at gain-uaa.nd.edu/.

**New Research: Bionic Mushroom.** While political battles play out, American research and innovation remains strong. In a fascinating creation, engineers at the Stevens Institute of Technology in New Jersey have created a "bionic mushroom" (pictured) that generates electricity. It consists of a common white button mushroom infused with 3D-printed clusters of cyanobacteria that generate electricity and "nano-ribbons" of graphene that collect it. "With this work, we can imagine enormous opportunities for next-generation bio-hybrid applications," said Dr. Manu Mannoor, co-creator of the bionic mushroom. "For example, some bacteria can glow, while others sense toxins or produce fuel. By seamlessly integrating these microbes with nanomaterials, we could potentially realize many other amazing designer bio-hybrids for the environment, defense, healthcare and many other fields." Awesome news! For more, see goo.gl/sNnY8t.

**New Research: Electricity/Cooling Solar Device.** In a technological breakthrough, scientists at Stanford have developed a prototype solar device that both provides electricity (like regular solar cells) and cools your house-at the same time. It uses a germanium solar absorber to take in the sun's energy and a silicon nitride/vacuum radiative cooler to radiate heat out from a building. It's currently being perfected. Great work! For more, see goo.gl/Kg9SWN.