



the weekly anthropocene



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

By Sam Matey, October 30 2019

Trump's Dereliction of Duty, Part 1:

Attack on the Tongass. The Tongass

National Forest consists of 16.7 million acres spread across much of the Alaska Panhandle, a patchwork of islands and coastline covered in old-growth Pacific temperate rainforest and home to wolves, brown and black bears, five species of salmon, ravens, mountain goats, sea otters, and bald eagles. It's also a vital asset in the age of climate change, as its century-old trees together sequester at least 8% of all the carbon sequestered by America's national forests. So, of course, President Trump's administration wants to open it to logging, announcing on October 15th that, due to a direct presidential order, it would attempt to repeal the Clinton-era Roadless Rule as



SOURCE: EarthJustice.org

InsideClimate News

it applies to the Tongass. This would strip protections from 9.2 million acres of roadless wilderness, and immediately recategorize 165,000 acres of old-growth forest as "suitable timber lands." On nearly every level, this is a terrible idea, and should never even have been considered given the environmentally unstable conditions of the Anthropocene. Fortunately, the Tongass is likely to be successfully defended in court by environmental groups (George W. Bush also tried to repeal the Roadless Rule, but didn't succeed). To help the defenders, sign the petition sending public comments to the Forest Service, available at www.seacc.org/usfs_comment! For more, see tinyurl.com/y6p9y7nu.

Trump's Dereliction of Duty, Part 2: Air Pollution on the Rise.

A new study from the National Bureau of Economic Research has found that average annual fine particulate matter (PM 2.5) in America's air, after declining by 24.2% from 2009 to 2016 (the Obama Administration), has increased by 5.5% from 2016 to 2018. PM 2.5 describes fine inhalable particles with diameters of 2.5 micrometers or smaller, often emitted from smokestacks or wildfires or formed in the atmosphere from the reaction of other pollutants like sulfur dioxide and nitrogen oxide, themselves emitted from fossil fuel power plants and automobiles. PM 2.5 particles are a serious health threat, as they are small enough to enter



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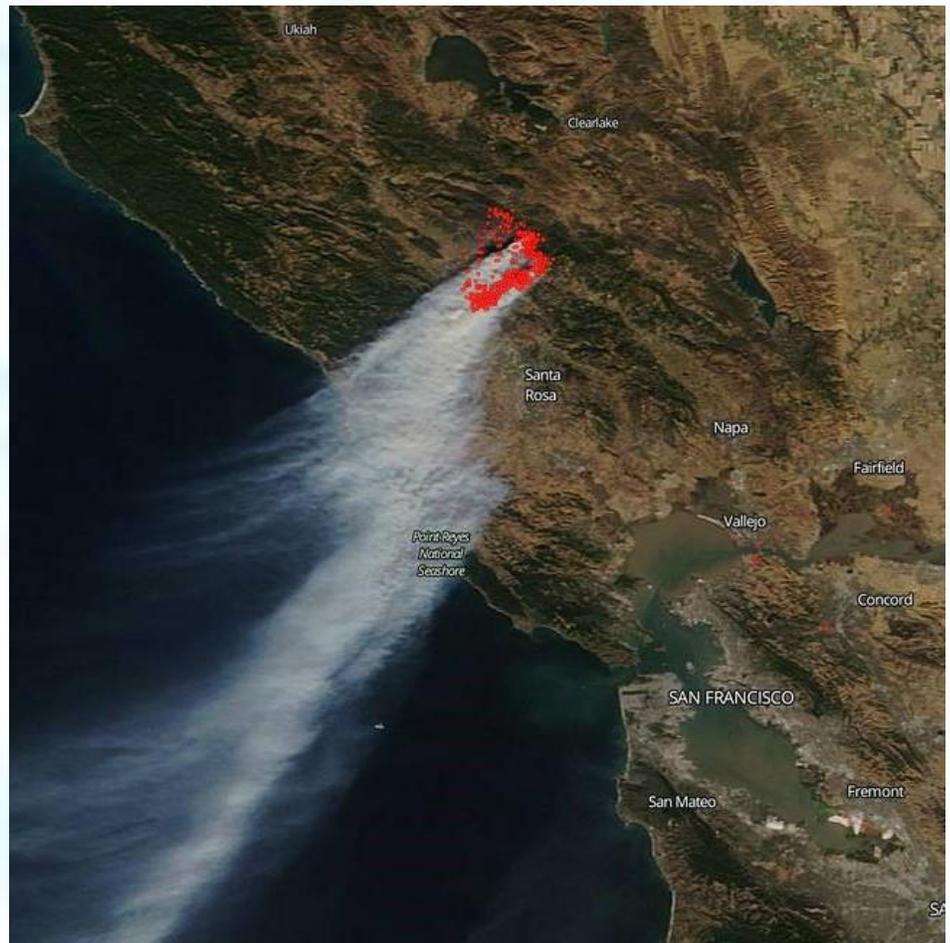


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the lungs and even the bloodstream, and can cause bronchitis, asthma, and heart attacks while aggravating existing heart and lung diseases. They've been strictly regulated since the 70s under the Clean Air Act, and their decline has been one of that Act's major successes. The NBER found that the current increase is due to three major factors: an increase in driving (old-style internal combustion engines emit PM 2.5), an increase in wildfires, and, crucially, a decrease in enforcement of the Clean Air Act, directly attributable to Trump's repeated appointment of fossil fuel industry lobbyists to lead the Environmental Protection Agency. The NBER also calculated that the increase in PM 2.5 since 2016 has directly led to 9,700 additional premature deaths in the year 2018. This is a particularly shocking piece of evidence, setting forth in objective undeniable terms the deadly human costs of Trump's anti-science and kakistocratic agenda. In addition to rampant duplicity, corruption, and criminality, Trump is displaying a level of kowtowing to extractive industries that is putting Americans' lives at risk and turning away from years of progress towards cleaner air. For more, see <https://tinyurl.com/y4mt3lhl>. For the paper, see www.nber.org/papers/w26381.

Trump's Dereliction of Duty, Part 3: A Cowardly Vendetta against California. California is currently being ravaged by wildfires, as it has been for the few years. The Kincade Fire broke out on the night of Wednesday, October 23rd, in Sonoma County, burned 20,000 acres in less than 48 hours, and led to the evacuation of 180,000 people in Sonoma County (!!!) and the declaration of a state of emergency on Sunday. (Pictured: NASA satellite image/map of the Kincade Fire as of October 29th). California's dominant power company, PG&E (known for a history of mismanagement) has cut





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power to over 2 million people in the fear that their outdated) equipment would spark more fires. As of October 28th, the Kincadee fire was still only 5% contained, 4,100 people were fighting it, and California firefighters had put out 330 other, smaller fires in the last 24 hours. California's new yearly experience of out-of-control wildfires is unquestionably due to climate change: summertime air temperatures in California have warmed by over 3.5 degrees Fahrenheit since the 1880s, the fire season has lengthened by 75 days over the past few decades, and as a result the area burned by wildfires during the summer is eight times higher today than it was as recently as the 1970s.

However, California's not just working hard to protect itself from the new, fiery threats of the Anthropocene: it's a world leader in endeavoring to reestablish a stable climate. California currently gets 34% of its energy from renewables, and in 2018 set pioneering legally mandated goals of reaching 60% renewable energy by 2030 and 100% carbon-free energy by 2045. On January 1, 2020, a new California regulation requiring all new homes (up to three stories) to be built with solar panels on the roof will come into effect. And since 2013, California's landmark cap-and-trade system has used the power of the free market to reduce greenhouse gas emissions. (Cap-and-trade systems set a legally enforced cap on emissions, and allow companies to trade any unused space below the cap, creating a financial incentive to reduce emissions). Now, shamefully, while the people and government of the Golden State strive mightily to protect themselves from climate change while reducing their contribution to it, the Trump Administration has decided to attack one of their most successful emissions reduction efforts, apparently for no reason beyond a selfish and petty dislike of a Democratic Party-led state. On October 23rd, the very day the Kincadee Fire started, Trump's notoriously corrupt Department of Justice filed a lawsuit against California, saying that their efforts to work together with the Canadian province of Quebec to establish a collaborative cap-and-trade market infringe on the president's foreign-policy authority. (A highly legally dubious argument). "California's landmark cap-and-trade program has inspired the creation of dozens of businesses, is a model for similar policies around the world and puts California well ahead of the pack as we prepare for a low-carbon future," responded California Governor Gavin Newsom. "This latest attack shows that the White House has its head in the sand when it comes to climate change and serves no purpose other than continued political retribution." Newsom has been emerging as a responsible, compassionate leader in this crisis, mobilizing all resources possible to support evacuees and firefighters, setting up a \$75 million fund to help communities dealing with power cuts, meeting with evacuees, calling out PG&E's irresponsible track record, and setting up resource.ca.gov as a one-stop shop for Californians looking for help, warnings, and advice. Stay strong, California. For National Geographic's in-depth look at how climate change is causing California wildfires, see tinyurl.com/y23v3h5o. For Trump's new politically motivated attack on climate action, see tinyurl.com/y62yvte2. For real-time updates on the Kincadee Fire, see tinyurl.com/y6orlbyr. For NASA's take, see tinyurl.com/y3v22bu6.

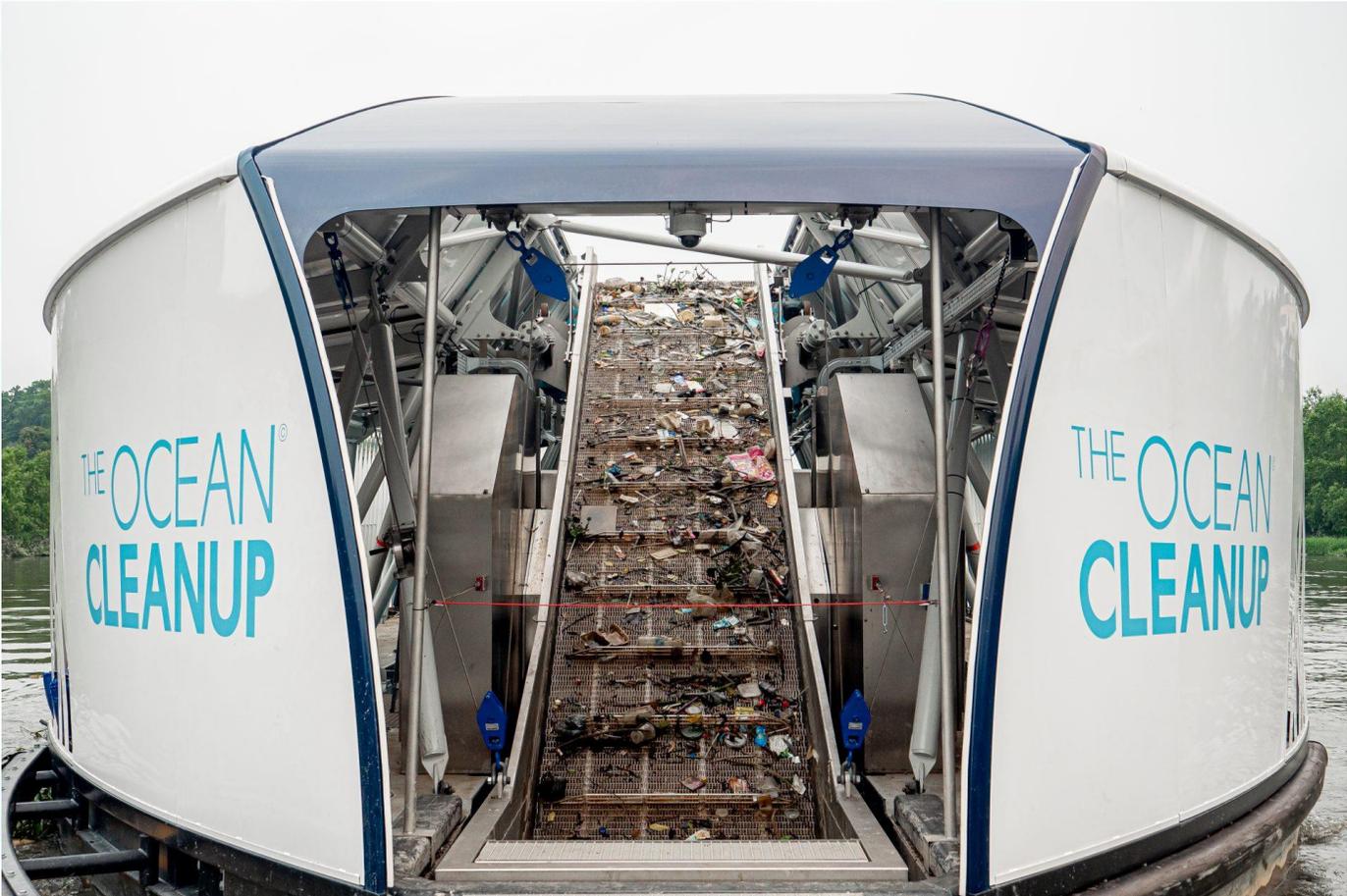


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New Solutions: The Ocean Cleanup's Interceptor. The Ocean Cleanup wowed the world last week when it announced that its System 001/B had successfully begun removing plastic pollution from the Great Pacific Garbage Patch. Now, Dutch inventor Boyan Slat, the brains behind The Ocean Cleanup, announced a new secret project that been gestating for years: the Interceptor, a system which cleans up plastic pollution in rivers before it can reach the ocean. Interceptors skim floating plastic off the top of rivers, channel the trash to a conveyor belt, and distributes it equally between 6 internal dumpsters. Interceptors are 100% solar-powered, work completely autonomously (texting their operators when they need to be emptied) and can clean up 50,000 kilograms of plastic per day in optimal conditions. Amazingly, The Ocean Cleanup has already built two of these wonder machines, and deployed them in highly plastic- polluted rivers in Indonesia and Malaysia. (Pictured: Interceptor 002 on the job in the Klang River, Malaysia). A third Interceptor is already in Vietnam, ready to work at Can Tho in the Mekong Delta. The next target rivers are located in the Dominican Republic, Thailand, Los Angeles in the USA, and El Salvador. Long-term, The Ocean Cleanup wants to deploy Interceptors in the world's 1,000 most plastic-polluted rivers by 2025. This is absolutely wonderful news! For more, see tinyurl.com/y4r7ezlq nd theoceancleanup.com/rivers/.



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New Solutions: #TeamTrees. In an admirable example of celebrities using their public profiles for good, an alliance of popular YouTube vloggers dubbed “#TeamTrees” have started an internet fundraising effort to raise \$20 million for the Arbor Day Foundation by January 1, 2020. All money raised goes straight to the Arbor Day Foundation’s world-leading reforestation efforts (which include providing some funding for MBP’s work in Kianjavato, where this writer worked for three months!). The Foundation has pledged to plant one tree for each dollar raised, to be planted in high-need forests on every continent except Antarctica over a three-year period from January 2020 through 2022. #TeamTrees was started by famed YouTuber Jimmy “Mr. Beast” Donaldson and has now been shared and endorsed by a plethora of the world’s most influential YouTubers, as well as Elon Musk. The challenge quickly went viral, and as of October 29th, #TeamTrees had raised \$6.3 million in just a few days! Here’s hoping that this starts a trend of leaders from all fields stepping up to take action to combat climate change! Spectacular work. For more, see teamtrees.org.

New Solutions: Voskian’s Marvelous Electrochemical Device. Sahag Voskian, a research chemist at the Massachusetts Institute of Technology, has invented a truly extraordinary device, a battery-like system that can remove carbon dioxide from the atmosphere at currently present concentrations. Voskian’s marvelous device is an electrochemical cell that uses layers of thin electrode plates composed of a composite of polyanthroquinone and carbon nanotubes. CO₂ is captured from air pumped in between the plates via the carboxylation of reduced quinone groups. When the battery is discharged, the reverse reaction takes place, which releases a stream of pure carbon dioxide (a product usable for the carbonation of drinks and for plants in greenhouses). All this needs to work is a source of electricity, and the component electrodes can be manufactured with readily available lab processes, with the potential for scaled-up production in a printing-like system. The potential utility of this technology, in a world where the levels of climate change-causing carbon dioxide in the atmosphere have risen from about 330 ppm in 1975 to 407 ppm in 2018 (see climate.gov), is immediately apparent. What makes this really, truly an incredible step forward, an improvement even on pioneering CO₂ removal companies like Carbon Engineering and Climeworks, is that Voskian’s process can take place at normal temperatures and pressures, with no special inputs required. Voskian and his faculty advisor, T. Alan Hatton, have set up a company called Verdox to commercialize their revolutionary new technology and are working to develop a pilot-scale plant in the next few years. If this becomes a fully mature, widely deployed technology, it could someday become a vital new “adjustable dial” for humanity to bring down carbon dioxide levels, to the point where we could once again reach a stable climate. This writer can’t wait to see what happens next! Truly superb news. For more, see tinyurl.com/yyj9bc5s.