



Dispatches From The Wild, Weird World Of Humanity And Its Biosphere

July 21 2021

American Bats



Since 2006, America's multitude of bat species have been devastated by a deadly plague: [white nose syndrome](#), a fungus that grows on the skin of hibernating bats. Millions of individual bats have been killed by this new disease, and the populations of little brown bats ([pictured](#)), northern long-eared bats, and tricolored bats have [declined by over 90%](#) across eastern North America. This is a serious ecological problem; besides the massive animal suffering and possible extinction, consider that bats are [worth an estimated \\$3.7 billion to US agriculture](#) due to eating lots of pest insects.

Now, at long last, we're seeing some rays of hope for American bats. Researchers have found that some little brown bat populations [appear to be evolving a degree of resistance](#) to white-nose syndrome. Ongoing research projects are still working on developing [sprayable fungicides](#) and [new vaccines](#) to protect the bats.

And a wildlife biologist in Pennsylvania is pioneering a highly successful new approach: transforming bat caves into safe havens through temperature modification. The fungus grows best in warmer caves, between 12 and 16 degrees Celsius, but bats are fine to hibernate at anything above freezing (0 degrees C). So Greg Turner of the Pennsylvania Game Commission decided to cool some marginal bat habitat, like small, warm caves and abandoned mines, to see what would happen. Using techniques ranging from the simple (digging a new ventilation shaft)

to the elaborate (building insulated concrete walls), Turner and his research team modified six sites, cooling them by an average of 2.1 degrees C. A newly published study finds that [this appears to be successfully creating safe havens](#) (aka "hibernacula") for hibernating bats: in the first of the small caves modified, bat numbers went from 11 bats of one species before the alterations to 82 bats of 4 species afterwards. Michigan and Wisconsin officials are now interested in spreading the technique, and in the old mine-pocked landscape of Pennsylvania, there is immense scope to spread this technique. This is an amazing story-yet another great example of how proactive human kindness can work to save species in the Anthropocene!



Climate Impacts

In the wake of an unprecedented heatwave across western North America, central Europe has been hit with another insanely extreme climate disaster: [massive flooding in western Germany](#). The Rhine basin saw rainfall records shattered, and tens of thousands of homes flooded. The rainfall was so extreme that it [shocked even climate scientists](#): some areas in Germany saw [148 liters of rain per](#)



square meter within a 48-hour period. Areas of Belgium, the Netherlands, Switzerland, and Luxembourg have also been hit, with [over 120 people killed and hundreds more missing](#) due to the floods in Western Europe overall. (Pictured: firefighters' rescue efforts in Trier, Germany). As outgoing German Chancellor [Angela Merkel said](#), "The German language knows hardly any words for this devastation...We have to hurry to fight climate change."

[A new study](#) based on nine years' worth of data from planes sampling the air column above the Amazon Rainforest has found disturbing news. Due to deforestation [and fires](#), many of which are set on purpose to clear land for agriculture, the area of the world's largest rainforest is now a [net source of carbon dioxide](#) rather than a sink, with the less-disturbed western Amazon still absorbing CO₂ but the eastern Amazon losing its carbon to the flame. This underscores the importance of protecting the Amazon. "The Amazon is a carbon source. No doubt," Luciana Gatti, a researcher at Brazil's National Institute for Space Research (INPE) and lead author of the study, [said in an interview with conservation news site](#)

[Mongabay](#). “By now we can say that the budget for the Amazon is 0.3 billion tons of carbon per year [released] into the atmosphere. It’s a horrible message... the Amazon is a source because of biomass burning.”

And the US is [facing massive wildfires in 12 Western states](#). Again. The [Bootleg Fire](#) in southern Oregon has [torched an area larger than New York City](#) and officials estimate it won't be fully contained until November. The burning of the West has become a new normal-and it's likely only going to get worse.



United States



Senate Democrats have announced [preliminary agreement](#) on a plan to pass a 3.5 trillion budget reconciliation bill (the kind that only needs 50 senators to vote for it, meaning it doesn't require Republican support) with a focus on a wide array of climate policies, potentially including a Civilian Climate Corps, a clean energy

standard, incentives for electric vehicles, [and more](#). ([Pictured](#): President Biden with Democratic Senate Majority Leader Chuck Schumer in the background). There will likely be [lots of political horse-trading](#) around this for the next few months, and it's unlikely to finally pass any sooner than September or October, but the potential here is extraordinary. As Democratic Senator Brian Schatz of Hawaii [said](#), "We're probably still only about a fifth of the way through this process, but one of the most important thresholds was what's the top line and what's the commitment to climate?...And I feel very good."

Beyond fighting climate change, passing this bill could have immense societal impacts: a [new study calculated](#) that if Biden's target of getting the American grid to 80% clean energy by 2030 is met, 317,500 lives would be saved due to the reduction in air pollution, and \$1.13 trillion in healthcare costs would be avoided. Notably, White House National Climate Advisor [Gina McCarthy](#) said that a renewable energy standard targeting 80% by 2030 was a "non-negotiable" to be definitely included in the new infrastructure package. If this passes, 2021 will be the greatest year for climate action in history-and America will be transformed!

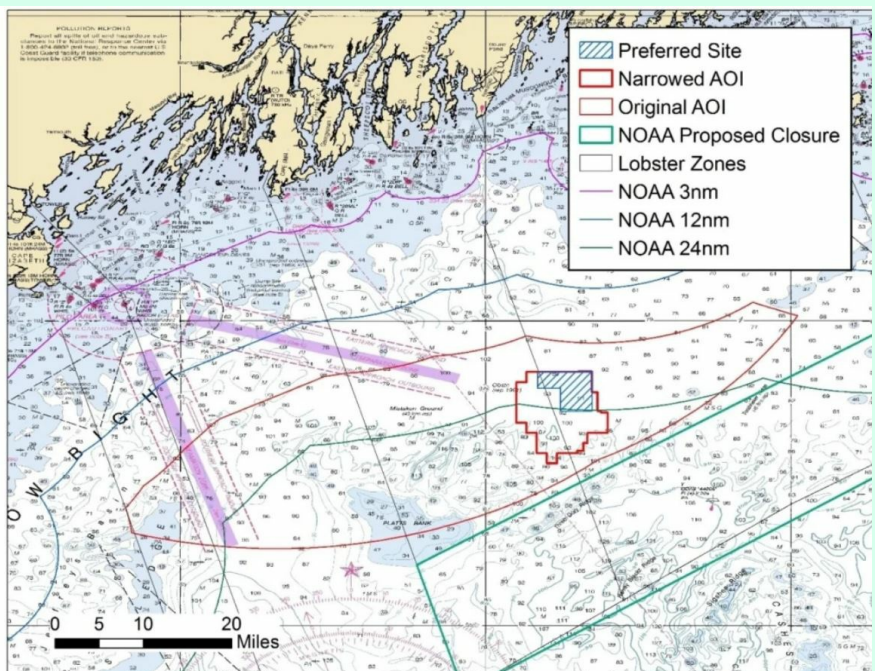
The great [Tongass National Forest](#) is America's largest temperate rainforest, covering most of the Alaska Panhandle and home to wolves, bears, salmon, and carbon-sequestering old-growth trees. Trump tried to weaken its legal protections

and sell big chunks of it off for logging, and [now](#) Biden is [reversing that decision](#) and [adding even more protections](#). Great news!

On July 9th, President Biden signed a [massive, far-reaching executive order](#) aimed at promoting competition in the American economy, including 72 distinct sub-initiatives directing a wide range of government agencies to write new regulations targeting various predatory corporate practices. This is a big deal for a lot of reasons, with possible new price disclosure and anti-gouging rules [potentially making everything from airline tickets to hearing aids to Internet plans cheaper for consumers](#) and an appeal to start the regulatory process to limit [worker-hobbling non-compete agreements](#). On the environmental side, the relevant part of the order is a [request](#) for the Federal Trade Commission to write new rules enshrining the "[right to repair](#)," allowing consumers and independent repair shops to [make their own modifications](#) and fixes to products ranging from tractors to iPhones. ([As it is](#), major electronics manufacturers mostly stop maintaining old models to encourage the purchase of new ones, and have included in purchase contracts a clause making it illegal to repair them on your own or have someone else do it. This is why you can get your car fixed up or modified at any mechanic's shop, but you can't get your iPhone fixed or modified anywhere but an Apple store.). If this works out, it's a big deal for the ideal of a circular economy, will reduce e-waste, and [opens the possibility](#) of breaking free from the "consume/throw away/buy new model" cycle by repairing and upgrading the same device for years or decades on end. A fascinating possibility!

New Jersey [approved](#) the state's second planned offshore wind project: 2,658 megawatts worth of turbines that will create 7,000 jobs and produce enough electricity for 1.15 million homes. This is the biggest approved offshore wind project in the US to date, and [like the many others planned](#) in New York, Massachusetts, and New Jersey, will [likely become operational later](#) in the 2020s. Thanks to the Biden Administration's support, we're finally getting a US offshore wind boom!

Maine [settled on a site for its next offshore wind project](#): a 16-square mile area of federal waters about 30 miles east-southeast of Cape Elizabeth (pictured), set to contain 12 turbines. Governor Janet Mills also signed into law a bill that kickstarts a first-in-the-nation [extended producer responsibility](#) program in Maine, [requiring the companies that create packaging materials, from cardboard to Styrofoam, to pay for some of the costs of landfilling or recycling them.](#)



To achieve a global transition away from fossil fuels, we'll need lots more batteries, for uses ranging from EVs to grid-scale storage. This means we'll [need a lot more lithium](#), the element powering widely used lithium-ion batteries; thanks to decarbonization efforts, global demand for lithium is estimated to rise tenfold by 2030. And over the past few years, researchers and engineers have found that there are [vast deposits of lithium](#) dissolved in the underground brines beneath California's **Salton Sea**, potentially enough to supply 40% of global demand. Now, **General Motors** has announced a collaboration with a company called Controlled Thermal Resources (CTR) to [build a lithium extraction facility in the Salton Sea area](#), with a new, lower-impact process eschewing traditional open pit-type mines and instead pumping up the brines, filtering out the lithium, and pumping the brine back down. CTR has stated that [the entire process will be powered by renewable energy](#), and the first lithium should be made available as soon as 2024, with [General Motors' electric vehicle batteries](#) the first use case.

This is a fascinating new chapter in the story of an environmentally devastated region. The [Salton Sea](#) is not a naturally occurring inland sea: it was formed by an accidental overspill from an irrigation canal from the Colorado River in 1905, was briefly a resort spot in the 1950s, and experienced catastrophic environmental collapse in the 80s and 90s, with fertilizer runoff, algal blooms, and botulism leading to mass bird and fish die-offs, toxic dust causing high asthma cases in surrounding towns, and a famously foul stench. It is arguably one of the best possible places in the world to put a new lithium extraction facility, with extremely low ecological value to be damaged and the potential to supply a huge slice of human civilization's need for an element critical to decarbonization. Not to mention, of course, the potential for massive economic benefits to the region, potentially creating a "[Lithium Valley](#)" akin to Silicon Valley. Great news-let's hope this project goes forward, succeeds, and expands!

The Weekly Anthropocene

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