



the weekly anthropocene



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

By Sam Matey, June 3, 2020

Bumblebees. A new study has found an incredible new bumblebee behavior. After several laboratory and outdoor experiments, a research team from ETH Zurich has found that bumblebees use their mandibles to pinch and pierce the leaves of plants that haven't flowered yet (pictured, from ETH Zurich), which stimulates the production of new flowers, giving the bumblebees more pollen. "The bee damage had a dramatic influence on the flowering of the plants -- one that has never been described before,"



said ETH Professor Consuelo De Moraes. Once the researchers were looking for this behavior, wild bumblebees not part of their experimental group were found to do the same thing-although other pollinators, like honeybees, did not. The researchers haven't yet worked out how to perfectly replicate the effect with artificial means, perhaps indicating that there's some chemical cue the bumblebees are passing on in addition to a physical stimulus. Furthermore, bumblebees bit at the plant leaves much more when they were kept in a low-pollen environment, and reduced the behavior when more pollen-rich flowers. This seems to indicate that they're not just doing this randomly: on some level, perhaps instinctual, they know that this practice will lead to more available pollen, and isn't necessary if there's plenty of pollen already. It's even possible this could help bumblebees adapt to the disruptions of climate change, helping them adjust the local pollen supply to their liking even while temperature changes make flowers bloom at different times. What a truly fascinating thing-a tiny insect engineering its ecosystem! For more, see tinyurl.com/IngeniousBumblebees.

Gulf of Maine. The lobster fishery is vital to the economy and culture of the Gulf of Maine. However, in recent years, entanglements with lobster fishing gear, especially trap lines, has become a deadly threat to the critically endangered northern right whale, *Eubalaena glacialis*. During peak lobster season, the whales have to navigate through over 900,000 lines, and disturbingly often become entangled and die. Now, a new study from the renowned Woods Hole Oceanographic Institution has identified a win-win scenario for lobster fishers and northern right whales. The researchers noted that a recent drop in the number of traps in the water in Maine has coincided with record catches, a three-month fishing closure increased catches in Massachusetts in 2015, and that Canadian fishers catch roughly the same amount of lobster as Americans despite far fewer traps and a short six-month season. It appears that if there's less gear in the water for less time, there will be more lobsters, lobster fishers will make more money, and whales will be safer. While it's counterintuitive and might be hard to sell, that seems like the nucleus of a great policy prescription for a safe, multi-species Gulf of Maine in the Anthropocene! For more, see tinyurl.com/MaineLobsterFishery.



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European Union. On May 27, President of the European Commission Ursula van der Leyen (pictured) unveiled an unprecedented recovery fund plan along with the EU budget, which if fully enacted would make the union a world leader in fighting climate change and building back better from COVID-19. Under the plan, the EU's 1 trillion-euro seven-year budget proposal and its special new 750 billion-euro COVID-19 response fund will both reserve 25% of their funding for climate-action investments like renewable energy. This is both good for the world and good economic policy: a recent survey of 230 leading economists found that climate-smart investment would likely offer better returns than normal stimulus packages (see tinyurl.com/230Economists). In addition to spending more of this money on developing better energy and agricultural systems, paying for it would also bring benefits: the new EU funds' proposed fundraising instruments include a carbon tax based on the existing EU



emissions-trading framework and a tax on non-recyclable plastic. "I commend President von der Leyen and her Commission for their 21st-century leadership and foresight," said Sandrine Dixon-Declève, co-president of renowned international think tank The Club of Rome. "They have listened to calls from economists, scientists, and NGOs to not go back to business as usual...Make no mistake this will strengthen our economy, not weaken it. Europe has truly opted for a 'just transition', new jobs, and innovation over a 'business as usual' economic model that was broken." While it's important to remember that this budget proposal still needs to be unanimously ratified by the 27 EU member states, and will likely be watered down in the process (coal-heavy Poland will likely be hard to convince, as will fiscally conservative states like Austria and the Netherlands) it's a magnificent blueprint for positive structural change, and even if partially enacted will be a great victory. America could have world-leading plans like this too, if the Democrats win in November! For more, see (tinyurl.com/EUGreenRecovery).

Bangladesh. While the world's attention is held by the ongoing COVID-19 crisis and Trump's fanning of the flames of turmoil in the US, Bangladesh was just slammed by the devastating Super Cyclone Amphan. Good evacuation plans kept the death toll low, but the Sundarbans wetland region was inundated with a surge of saltwater, likely crippling agriculture in the area, and the overall damage from the storm is estimated to be in the billions. For more, see tinyurl.com/AmphanDamage.