the weekly anthropocene

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

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Colombia

On March 15th, Colombian President Iván Duque inaugurated the Future Seeds facility, a new world's-largest tropical crop seed and gene bank located in the city of Cali. The Future Seeds facility has over 67,000 distinct samples of beans, cassava, and other tropical forage crops, from over 100 countries, as well as a massive digital gene bank of the plants' sequenced DNA. It is meant to conserve crop diversity as well as spark new innovation, comparing crops' genomes and phenotypes to identify and breed new varieties that have higher yields and are more resilient to the

heatwaves, drought, and floods of the Anthropocene. The long-term goal is to help "climate-proof" agriculture across the vulnerable tropics. The facility (pictured, above) is also surrounded by fields where their seed samples can be grown into new plants to replenish the collection and examine the results of promising crop types. And the research doesn't just take place on site: Future Seeds provides genetic material samples free of charge to researchers around the world working on agricultural innovation projects, functioning as a global library of tropical crops.

Furthermore, this facility is widely supported by cutting-edge international philanthropy; the Bezos Earth Fund gave them a $17 million grant to research the use of plant roots to sequester carbon and Google gave them an experimental wheeled plant-analyzing robot (pictured) that rapidly collects data on plant traits in the facility's fields. This is a truly fascinating endeavor, a top-of-the-line facility investing in a climate-resilient future for crops that are key to Earth's food security! Great news.

Clean Energy Innovation

LM Wind Power, a subsidiary of General Electric, has created the world's first 100% recyclable wind turbine blade. The 62-meter prototype (pictured, above) was built in Spain from thermoplastic composites and high-performance glass, and every gram of it can be reused in new blades or other industries once it reaches the end of its functional life. Next, the engineers will test real-world performance, test recycling methods, and scale up!

On March 9th, Biden's EPA reinstated **California's authority under the Clean Air Act to set stricter emissions standards for cars and trucks** (revoked under Trump). That's a really helpful policy, since stricter regulations in the important market of California strongly incentivize vehicles manufacturers to just make all of their models more efficient. Furthermore, an array of other liberal-leaning states from New York to Nevada are planning to adopt California's higher standards, and car companies from Ford to GM are advertising how they plan to comply.

Across **Europe**, governments are rushing to replace Russian gas with

renewables. Here are just a few examples...

The **German** government announced that they are switching their official position to support proposed EU legislation to mandate that only zero-emission cars can be sold starting in 2035, if not earlier. Before the recent Putin crisis further underscored the inherent vulnerabilities of fossil fuels, Germany was lobbying against the 2035 EU target. The future for EVs gets brighter and brighter!

Italy fast-tracked six new wind farms on land, and is close to finally building a long-delayed new 10-turbine offshore wind farm off Taranto-the Mediterranean's first! There are also longer-term plans for a much larger, 190-turbine wind farm off the coast of Sicily, which would produce enough electricity for 3.4 million families.

The **Netherlands** set a new target of generating 21 gigawatts of power from offshore wind by 2030, and has already designated three new development areas to make it happen.

And **France** announced that it will end government subsidies for gas-powered heaters, while boosting its "MaPrimeRenov" scheme to increase the subsidy for electric heat pumps by 1,000 euros through the end of 2022.

Cambodia

In early March 2022, the Wonders of the Mekong project (funded in part by USAID) organized the release of over 1,500 captive-bred fish from threatened species into Cambodia's immense Tonle Sap lake. The fish released included hundreds of endangered striped catfish (*Pangasianodon hypophthalmus*), dozens of critically endangered giant barb (*Catlocarpio siamensis*, Cambodia's national fish), and two individuals from a unique and *extremely* critically endangered species: the Mekong giant catfish (*Pangasianodon gigas*). The released individuals, included the one pictured above were five-foot juveniles, but they could grow up to almost nine feet long and 660 pounds-the size of a grizzly bear. (One of the two released giant catfish had an interesting origin story: it was accidentally added to a commercial fish farming pond as a

The Tonle Sap is the world's largest inland fishery, and illegal fishing is a serious problem in much of its extent, but it's also home to several well-protected community and government-operated reserves, one of which served as the release site. Of course, in a lake, fish can and do move outside reserves. (Although, interestingly, a 2020 study in Thailand found that wild fish do appear to learn where reserve boundaries are and actively seek protection within them). To ensure that these endangered fish weren't just caught and eaten, all of the released fish were tagged, and local authorities publicized that fishers who caught tagged fish would be rewarded for releasing them and reporting the tag ID. Even in the few weeks since the release, this is demonstrably working; several of the released fish have already been captured by local fishers (including one of the giant barbs) recognized by their tags, and released back into the river, with the incident reported to researchers. This data is not only helpful for tracking these individual fish, it also serves as a valuable proxy for overall fishing intensity in Tonle Sap. The next step is more releases, in more locations, and with upgraded active-tracking tags. A very cool conservation project, finding ways to work within a heavily human-utilized ecosystem!

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