



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

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Virginia



In October 2020, Dominion Energy constructed two large offshore wind turbines off the coast of Virginia, the test cases for a hopeful 180 offshore wind turbines by 2026. Now, [Virginian local media reports](#) that in just a year, the wind turbines have transformed the local marine ecosystem, with life-forms from algae to mussels to seabass to mahi to sea turtles flocking to the site-and making it a new destination for local small-scale fishers (see video).

What makes the wind turbines so attractive is simply the presence of a physical surface in waters where the seabed is too deep for much light to reach, giving sessile organisms like shellfish and algae something to glom onto and filter-feed from. This in turn attracts more invertebrates, then fish, than larger wildlife!

The Virginia case is just a single, small-scale example, but it's indicative of a broader trend that could seriously help marine wildlife around the world. Wind turbines' benefits to marine life have been [already observed on a much larger scale in the North Sea](#), where seals have begun to migrate to fish-rich turbine sites. This makes offshore wind turbines' [ongoing rapid growth, set to escalate much faster in years to come](#) great news for marine wildlife as well as for renewable energy!



Selected Stories

After decades of strong conservation measures, the West African island nation of **Cape Verde** is [seeing a boom in sea turtle nesting](#), with 200,000 sea turtle nests in 2020 vs. just over 10,000 in 2015. However, rather disturbingly, an overwhelming majority of the new sea turtles born were female due to global heating, as a quirk of sea turtle biology means [hatchlings' sex is determined by the ambient temperature around the egg](#).

Major rental car company **Hertz** [placed an order for 100,000 electric cars](#) from **Tesla**, to be delivered by the end of 2022. Hertz will also build "thousands" of new charging stations. This deal is the largest single purchase of EVs in history!

An Italian family (pictured) has successfully started the [world's northernmost coffee plantation](#), in **Sicily**, as climate change "tropicalizes" the island's climate and farmers scramble to replace traditional water-intense crops like citrus trees.



Governor Roy Cooper of **North Carolina** [signed into law](#) a strong emissions reduction law mandating that carbon emissions from the North Carolina electric sector be reduced 70% by 2030 and 100% by 2050, with [an array of interim steps](#). The particularly exciting thing here is that unlike other states that have passed strong climate legislation, from California to New York to Maine, Republicans control North Carolina's state legislature, hopefully making this a harbinger of future bipartisan state-level progress.

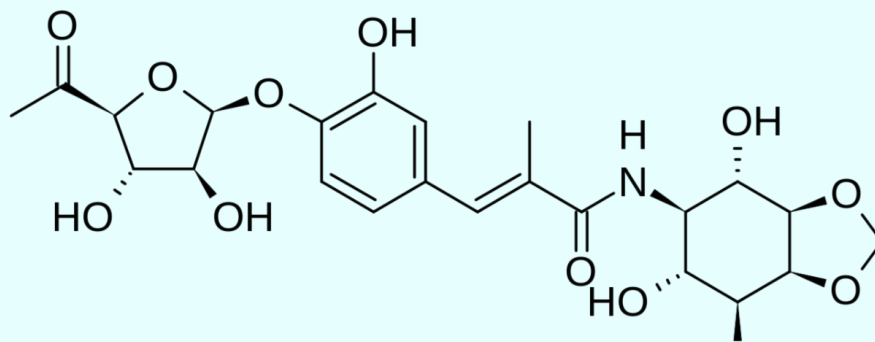


Lyme Disease

[Lyme disease](#) is a vector-borne illness, caused by *Borrelia* genus bacteria and spread by the bite of *Ixodes* genus ticks (which in turn often survive and spread due to mammals like deer and mice), that causes rashes, fever, fatigue, and in a minority of cases, disabling neurological and cardiological symptoms. It's rarely fatal, but is common across the Northern Hemisphere, and extremely common in the northeastern United States. Personally, this writer has known many people afflicted by Lyme. The [CDC estimates](#) that at least 30,000 and probably around 476,000 people contract Lyme in the United States every year (it's hard to tell exactly because a majority of cases aren't formally reported). In an absurdist side note, a vaccine for Lyme was developed in the 1990s, and is currently available for pets, but [isn't approved for humans due to poor sales and the fallout from an early](#)

[anti-vaxxer panic.](#)

Now, a research team based out of Northeastern University has found that hygromycin A ([molecular structure pictured](#)), a compound secreted by common soil bacteria, is [incredibly effective](#) against Lyme disease. Trials in mice [found](#) that it



completely cured Lyme disease infections without harming to the gut microbiome, as many existing anti-Lyme antibiotics have done. However, the applications go beyond curing Lyme infections after the fact. The research team also found that placing hygromycin A-laced baits in the wild still completely cures Lyme infections in mice. This opens up the attractive possibility of eliminating Lyme disease from the entire ecosystem simply by spreading hygromycin-laced nibbles, without hurting any mice or even ticks. The researchers are [already moving forward](#) to human trials and mass production. ([Here's the full paper](#)).

You may well wonder: since Lyme disease is caused by bacteria, why haven't we already considered placing antibiotics into forests, or just using plain old antibiotics? What makes this news? The answer touches on another complex global problem: [antibiotic-resistant bacteria](#), where overuse of antibiotics, in human bodies, agriculture, or ecosystems, results in the rapid evolution of super-bacteria that can cause lethal and harder-to-stop infections. What's so special about hygromycin A is its selectivity: it's ineffective against most bacteria, leaving gut microbiomes and other soil microbes alone (that's also the reason it's been ignored for so long by medical researchers), but it's *really* effective against Lyme disease-causing bacteria. Fascinating news!



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