



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

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Germany

For years, groups of activists have worked to file "climate justice lawsuits" in nations around the world against governments' insufficient action on climate change. As climate law is a fairly new and undefined field, most of these cases were thrown out or didn't progress. Now, in a [shocking, unexpected and historic victory](#), Germany's Federal Constitutional Court (essentially an analog to the US Supreme Court, headquarters with German name pictured) has sided with the activists, ruling that Germany's emissions reduction targets were too unambitious and requiring stricter ones. Even better, the German government looks to be complying with this ruling, with the finance and environment ministers promptly presenting [new, stricter decarbonization targets](#) (a 65% emissions reduction from 1990 levels by 2030, and net-zero emissions by 2050, compared to the previous target of a 55% reduction by 2030 and carbon neutrality by 2050). This will likely accelerate Germany's transition away from coal substantially. Great news-and hopefully a precedent for other nations!



Sunflower Sea Stars

The ecosystem of North

America's Pacific coast has been battered and bruised in the Anthropocene. First, hunters and trappers nearly exterminated the sea otter for its fur, which led to sea urchins, the otters' normal prey, experiencing a massive population boom and grazing species-rich kelp forest habitat from British Columbia to Baja California down to stubs. Conservation action and legal protection in the 20th century led to the otters'



Photo By Janna Nichols

population rebounding, and the kelp forests re-growing. Then, in the 2010s, climate change dealt a deadly blow to the sea urchins' other major predator, also necessary for keeping the population in check. The 24-armed, tube-footed sunflower sea stars (*Pycnopodia helianthoides*, pictured), once "common as a robin" off the west coast, experienced a [horrific population implosion](#) between 2013 and 2017 due to heatwaves, warming waters, and a mysterious, gruesome, and deadly new plague dubbed "Sea Star Wasting Disease." Diving surveys found that the sunflower sea star populations of California and Oregon were completely gone, 100% eradicated, while Washington State had seen a decline of 99.2%. In total, scientists estimate that 5.75 billion sunflower sea stars died in that five-year period, 91% of the total global population from Alaska to Mexico. The species was dubbed critically endangered in 2020.

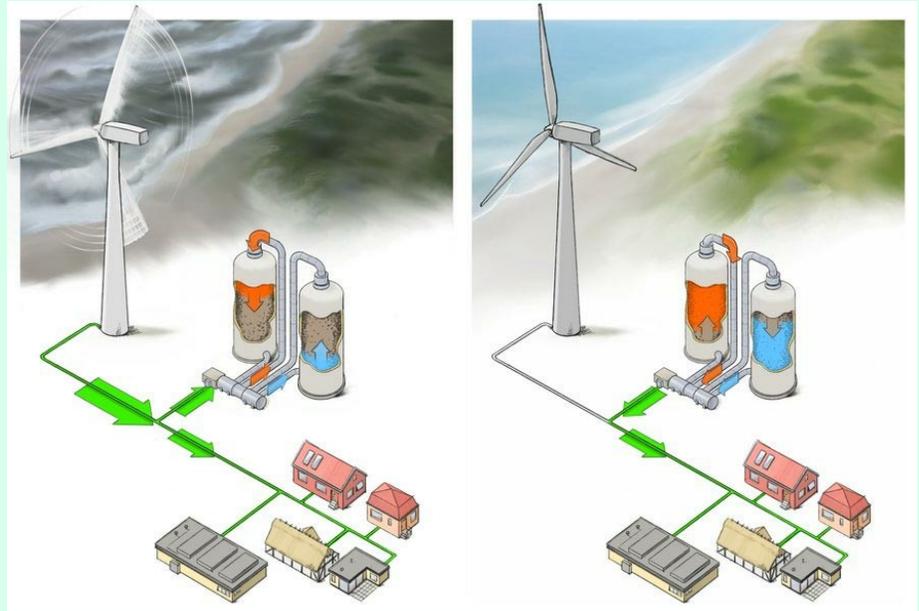
After that rapid removal of a keystone species, the recovering sea otters weren't enough to keep the urchins in check, and the kelp forests began being grazed into oblivion again: northern California has already lost 90% of its kelp coverage. Humans are affected too: the red abalone fishery has collapsed, since the mollusks rely on kelp.

Now, marine ecologists at the University of Washington are working to bring back sunflower sea stars from the brink. After taking six months in 2019 to find 30 wild adults, they brought them back to captive breeding tanks at Friday Harbor Laboratories on San Juan Island. Now, they have thousands of microscopic sea star larvae, and are learning more about how to nurture, feed, and protect them to their next stage of development as juveniles. In the future, they plan to reintroduce some into the wild. The captive breeding program will likely also make it possible to learn more about Sea Star Wasting Disease, by gaining a "clean" healthy population to compare to sick adults in the wild. There's a long way to go with this research, but one thing's for sure: the sunflower sea stars of the Pacific are down but not out!



Denmark

Around the world, renewable energy is growing [faster than even the most optimistic projections](#). Energy storage, to ensure renewables can cover non-windy and sunny days as well, is taking off in tandem, with [grid-scale battery storage surging](#) and [pumped hydro](#) (using renewable energy to pump water uphill, then having the water turn a turbine for power when needed) also scaling up.



Now, [a new project under development in Denmark](#), fittingly dubbed "GridScale" (pictured), is piloting a whole new way of storing renewable energy. This 10 megawatt-hour prototype facility stores energy using two immense insulated steel tanks (this can be scaled up to a large number of paired tanks) filled with crushed, pea-sized chunks of basalt. When there's a surplus of electricity being generated, a system of compressors and turbines pumps heat from one tank to another, resulting in one giant tank of cool stones and one of superheated stones—sometimes up to 600 degrees Celsius. Then, when demand for electricity exceeds the moment's supply, heat is allowed to flow down the gradient from the super-hot tank to the cool one, [generating electricity](#) along the way. The system can cost-effectively store power for up to a week, better than many battery systems. Yet another example of brilliant innovation in the renewables revolution! Great news.

[The Weekly Anthropocene](#)

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