



# the weekly anthropocene



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

By Sam Matey, April 29, 2020

**Insects of Earth.** The hundreds of thousands (possibly millions) of diverse species of insects on Earth do many incredibly valuable things, from pollinating flowers and crops to aiding in decomposition of carrion and feces. (Pictured: a sampling of insects, including a moth, a weevil, an assassin bug, a wasp, a mole cricket, and a dance fly). However, over the last few years, several disturbing studies have been published that found substantial declines of insect numbers-and species diversity-at sites ranging from Germany to Puerto Rico. Some worried that this was a harbinger of a catastrophic planetwide “insect apocalypse,” perhaps due to climate change or pesticide use. Now, the most comprehensive meta-analysis of



insect data ever has been undertaken, and its results provide reasons for both reassurance and concern. To quote from the study’s abstract: “We compiled data from 166 long-term surveys of insect assemblages across 1676 sites to investigate trends in insect abundances over time. Overall, we found considerable variation in trends even among adjacent sites but an average decline of terrestrial insect abundance by ~9% per decade and an increase of freshwater insect abundance by ~11% per decade. Both patterns were largely driven by strong trends in North America and some European regions.” (The regions which saw the sharpest declines, incidentally, were the American West and Midwest and Europe, particularly Germany). Other notable takeaways are that flying and grass-living terrestrial insects, from butterflies to grasshoppers, have declined substantially, while species living in tree canopies have stayed relatively unchanged. The highly encouraging finding that aquatic insects (including species like mayflies, caddisflies, and dragonflies, as their larvae are aquatic) are increasing is likely due to protections such as the redoubtable Clean Water Act. Overall, what the findings of this meta-analysis mean is that the decline of insect populations is much more nuanced and dependent on local factors than previously thought. It’s not a planet-wide “insect apocalypse” due to some big common factor affecting all insects everywhere. Individuals’ contribution to the insect-friendliness of their neighborhoods could make a substantial difference-you personally could eschew pesticides on lawns or fill free time during the coronavirus by planting a milkweed-rich butterfly garden. For more, see [tinyurl.com/GlobalInsectAnalysis](https://tinyurl.com/GlobalInsectAnalysis).



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**Clean Water Act.** On April 23<sup>rd</sup>, the US Supreme Court issued their decision in the case of *County of Maui v. Hawaii Wildlife Fund*. At issue was whether the County of Maui's wastewater injection wells were regulated by the Clean Water Act. The wells were technically injecting the wastewater into the ground, not directly into "waters of the United States," but scientific studies found that over 60% of the wastewater was percolating through groundwater into the ocean. Trump's coal lobbyist-led EPA had earlier attempted to weaken the Clean Water Act by stating that they would not regulate any pollution that flows through groundwater on its way to surface water. The Supreme Court struck down that flagrant loophole, with a 6-3 majority (Roberts and Kavanaugh joined the four progressive justices) clarifying that pollutants that were a "functional equivalent" of a direct-to-waterways discharge were covered by the Clean Water Act. David Henkin, an Earthjustice attorney who argued the case before the Supreme Court (Earthjustice was representing Hawaii Wildlife Fund and other environmental groups), said "This decision is a huge victory for clean water. The Supreme Court has rejected the Trump administration's effort to blow a big hole in the Clean Water Act's protections for rivers, lakes, and oceans." This is a solid win for public health and the aquatic environments of America, and a further strengthening of perhaps the mightiest environmental protection law in American history—the great Clean Water Act! This case may soon be used to fight other sources of pollution that seep through groundwater to surface waters, like coal ash ponds. Superb news! For more, see [tinyurl.com/CleanWaterRuling](https://tinyurl.com/CleanWaterRuling) and [tinyurl.com/CleanWaterCase](https://tinyurl.com/CleanWaterCase).

**World Energy Systems.** As the COVID-19 pandemic ravages the world, one critical system is demonstrating great resilience. The transition to clean, renewable energy, vital to stave off catastrophic climate change impacts, seems to be proceeding fairly well! In the same week this April, both Austria and Sweden closed their last coal-fired power plants. This moved the number of EU countries burning no coal for electricity from one (Belgium) to three at a stroke. At least ten more European countries, including big ones like France, Italy, and the UK, are set phase out coal power by 2030 or earlier. Spectacular news! (For more, see <https://tinyurl.com/CoalFreeEurope>). And two major investment banks in Japan, Mizuho Financial Group and Sumitomo Mitsui Financial Group (SMFG), have made major commitments within days of each other to limit their funding of coal plants and coal mining. There's a lot of caveats: Mizuho will stop financing new coal projects this year but plans to take until 2050 to totally divest from all the existing coal projects it's funding, while SMFG will stop financing new coal plants this year but hasn't released longer term plans. This sounds esoteric, until you learn that both of these companies are among the top funders of the coal industry in the world—not in Japan, in the entire world. It's a big win. For more, see [tinyurl.com/JapanBanksCoal](https://tinyurl.com/JapanBanksCoal). Finally, for a broader overview of how major clean energy projects are successfully weathering COVID-19, see [tinyurl.com/CleanEnergyResilience](https://tinyurl.com/CleanEnergyResilience).