



the weekly anthropocene



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

By Sam Matey, May 8 2019

A Brave New World: UN Extinction Report. After 3 years of work by 145 expert authors and 310 contributing authors, the UN biodiversity working group IPBES (Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services) has released its first-ever Global Assessment Report on Biodiversity and Ecosystem Services. Quickly dubbed



the “UN Extinction Report” by the media, this document outlines the profound ways human influence is changing the world, and the vast numbers of species potentially imperiled by threats such as overexploitation, land use change, pollution, and climate change. The report’s headline conclusion is that approximately 1 million out of the 8 million estimated species of plants and animals on earth are threatened with extinction. The report also lists the five most impactful trends changing the natural world: changes in land and sea use, direct exploitation of organisms (e.g. fishing, poaching), climate change, pollution, and invasive alien species. Other notable points in the array of data proffered by the report include the fact that 47% of land-based flightless mammals may have already seen their habitat range shift due to climate change, 75% of Earth’s land and 66% of Earth’s oceans have already been “severely altered” by human civilization. Joyce Msuya, acting head of UN Environment, stated that “Nature makes human development possible but our relentless demand for the earth’s resources is accelerating extinction rates and devastating the world’s ecosystems. [The IPBES report] highlights the critical need to integrate biodiversity considerations in global decision-making on any sector or challenge, whether its water or agriculture, infrastructure or business.” This report offers more data on the unprecedented level at which humanity is shaping the destinies of all other life-forms on Earth.

After the release of a report like this, it’s easy to give in to despair-headlines about the report often skewed towards a “the world is burning” perspective. However, simple shock and fear at the scale of the problem is counterproductive and fails to take into account the historical context. Strange though this may seem, in many arenas, the outlook for threatened species used to be much worse. Since the painful lessons of the early 20th century, which saw the extinction of the passenger pigeon, the marsupial lion, and more, humans have become quite good at pulling species back from the brink and carving out places for them to live in our society. The IPBES report notes that the extinction risk for mammals, birds, and amphibian species would have been 20% greater without the last decade’s conservation action. The case studies bear this out: both white-tailed deer and wild turkeys were once threatened with extinction due to overhunting, but have rebounded, becoming a common feature of “severely altered” suburban environments. Furthermore, numbers of both tigers and black rhinos and tigers in the world are growing due to tireless conservation efforts, even in the teeth ever-increasing poaching pressures. In sum, this report should be interpreted as a call to action, not a prophesy of doom. For more on the IPBES report, see tinyurl.com/y4qv72ud. For more on tiger recovery, see tinyurl.com/y2wsup4o.



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A Brave New World: 2020 Elections. As is well known, the current American governing party remains willfully ignorant of the reality of the threat of climate change. However, nearly all of the multitude of candidates for the Democratic Party nomination for President are proposing bold action on climate change to a degree unprecedented in American political history. Representative Beto O'Rourke has proposed a mammoth \$5 trillion fund to invest in responding to climate change, including



investment in renewable energy infrastructure, R&D for new technologies, and public health, transportation, and housing initiatives to improve community resilience. Senator Elizabeth Warren (pictured, above) has unveiled a revolutionary plan for American public lands, pledging to use an executive order on her first day in office to ban all new fossil fuel drilling on public lands (a huge and much-needed step) and generate 10% of the nation's electricity from renewables situated either offshore or on public lands. Finally, Governor Jay Inslee, the self-proclaimed "climate candidate," has outlined a detailed plan to eliminate all fossil fuel use in federal buildings by 2023, move to retire all US coal plants, require utilities to move to carbon-neutral energy by 2030, mandate 100% emissions-free new vehicles by 2030, and reach 100% clean energy for electricity generation by 2035. Furthermore, although many have yet to develop their own comprehensive climate policies, every single Democratic presidential candidate (and there are 21 and counting!) has committed to rejoining the Paris Agreement, a powerful symbol of US reintegration with international effects to reduce greenhouse gas emissions. All of this comes as 5 US states (Hawaii, California, New Mexico, Washington, and Nevada) and over 100 cities (including Chicago, Atlanta, St. Louis, and San Francisco) have enacted laws requiring a move to 100% clean energy. This is absolutely spectacular news-climate change has been practically a nonfactor in the last few presidential elections, and now it's dominating the conversation. It is to be hoped-and it seems very likely-that the eventual Democratic nominee will support a synthesis of all of these excellent initiatives, ensuring that the next US president will finally be taking action on the greatest threat facing the nation and the world.

For renowned climate activist Bill McKibben's take, see tinyurl.com/y5baq4qv. For a breakdown of candidates' climate policies, see tinyurl.com/y2nenghz. For Representative O'Rourke's plan, see betoorourke.com/climate-change/. For Senator Warren's plan, see medium.com/@teamwarren/my-plan-for-public-lands-e4be1d88a01c. For Governor Inslee's plan, see www.jayinslee.com/issues/100clean.



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Lake Victoria. A fascinating new study has found that hippo excrement is vital for sustaining the aquatic ecosystem of the largest lake in Africa. Researchers have found that the health of Lake Victoria, nestled between Uganda, Kenya, and Tanzania, depends substantially on silicon inputs from hippo poop. Hippos eat grass, which absorbs a substantial amount of silicon from groundwater in order to protect itself from disease and grazers. Unlike most big grazing herbivores, hippos also spend a lot of time



in the water (pictured), meaning a lot of their silicon-laden poop ends up in Lake Victoria. The researchers found that in the Mara River of Kenya (which feeds into the lake), this hippo pathway accounted for 76% of all silicon transported into the water. Silicon is vital for a certain type of algae called diatoms, which use it to build their microscopic silica “shells.” Diatoms are both vital oxygen producers and the base of the lake food chain. Thus, without the hippos running their feces-based biogeochemical silicon cycle, all life in Lake Victoria would be at risk. This is a truly astounding example of the interconnectivity and complexity of the natural world! For more, see tinyurl.com/yydvzbzl.

Myanmar. In the mangrove forests of Myanmar, a bold new startup has just received proof that their innovative new reforestation efforts have been successful. BioCarbon Engineering restores degraded ecosystems with drones (pictured), first mapping the landscape and soil conditions to determine optimal planting patterns and then firing



biodegradable pods filled with a customizable mixture of seeds from different species. The drone method of reforestation also has the not inconsiderable positive side effect of giving its practitioners transferable and valuable skills. “We train local people to be drone pilots,” said Ms. Irina Fedorenko, founder of BioCarbon Engineering. “And they want that. They want to be in IT. They want to process data, they want to fly drones, they want to do agroforestry, they want to do regenerative agriculture, they want to create vertical farms . . . they want to do all this cool stuff. It’s not the ambition to be a seedling planter for \$1 a day.” In September 2018, the drones planted a field of mangrove seedlings in southern Myanmar. Now, they’re 20 inches tall—firm proof that this bold new approach pays dividend! In the future, BioCarbon Engineering estimates that two operators running 10 drones simultaneously could plant 400,000 trees per day. This is a spectacular new method of quickly and efficiently restoring ecosystems and fighting climate change! For the full story, see tinyurl.com/y35pjhdv and visit bioengineering.com.