



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

February 9 2022

## Wildlife Conservation: Tigers, Seals, and Ferrets



[An array of leading conservation organizations](#), including WWF, IUCN, WCS, and Panthera, have launched a [joint status report](#) on progress made in tiger conservation since the last Chinese Year of the Tiger in 2010. The news is overall good, though still precarious: **wild tiger** (*Panthera tigris*) numbers have been increasing

since 2016, and have risen from an estimated 3,200 in 2010 to an estimated **4,500 today**, compared to an estimated historical norm of 100,000 in the year 1900. This progress is notably geographically uneven: in this same 12-year time period, Laos, Cambodia, and Vietnam have lost their last remaining tigers to poaching (bringing the number of tiger range countries down to 10), while India (home to the majority of wild tigers) saw [slow but steady growth](#), Amur (aka Siberian) tigers (pictured, above) [increased their numbers and range](#) in Russia and China, and [Nepal did spectacularly, doubling its tiger population](#) to 235. Great news for all who hope that Earth will be home to tigers forever.

Scientists are working on the world-first trials (in zoos, for now) of a [vaccine against a deadly elephant disease](#): elephant endotheliotropic herpes virus (EEHV). If it goes well, the vaccine will be rolled out in zoos worldwide, and possibly even to wild elephants as a preventative measure.

**New Zealand fur seals** (*Arctocephalus forsteri*) were nearly driven to extinction by the sealing industry in the early 20th century, down from an estimated historic population of 3 million to just a few thousand. Now, a century later, their numbers are booming, [having risen to 200,000](#) and leading to a classic "Anthropocene victory" scenario of humans and rebounding animal populations working towards coexistence.

Elizabeth Ann (pictured) is a very special little mammal. The world's first **cloned black-footed ferret** (*Mustela nigripes*) and the first-ever cloned member of an American endangered species, she was born in December 2020 ([see this newsletter's coverage](#)) and given her species' rapid maturation, scientists are already working to find her a mate. "We need an experienced male who has already produced offspring and who is therefore not going to be infertile – a problem that affects many black-footed ferret males today. In addition, we will select him for his gentleness," [said conservation geneticist Oliver Ryan of the San Diego Zoo](#). All other members of the critically endangered ferret species are descended from seven individuals taken for captive breeding in the 1980s-but Elizabeth Ann is the clone of an eighth who left no biological descendants, making her a vital source of new genetic diversity. Her hoped-for kits will help the species avoid inbreeding and survive to repopulate the Great Plains in the future!



## Offshore Wind: The Renewables Revolution

### U.S. states making progress in offshore wind

Offshore wind projects in gigawatts

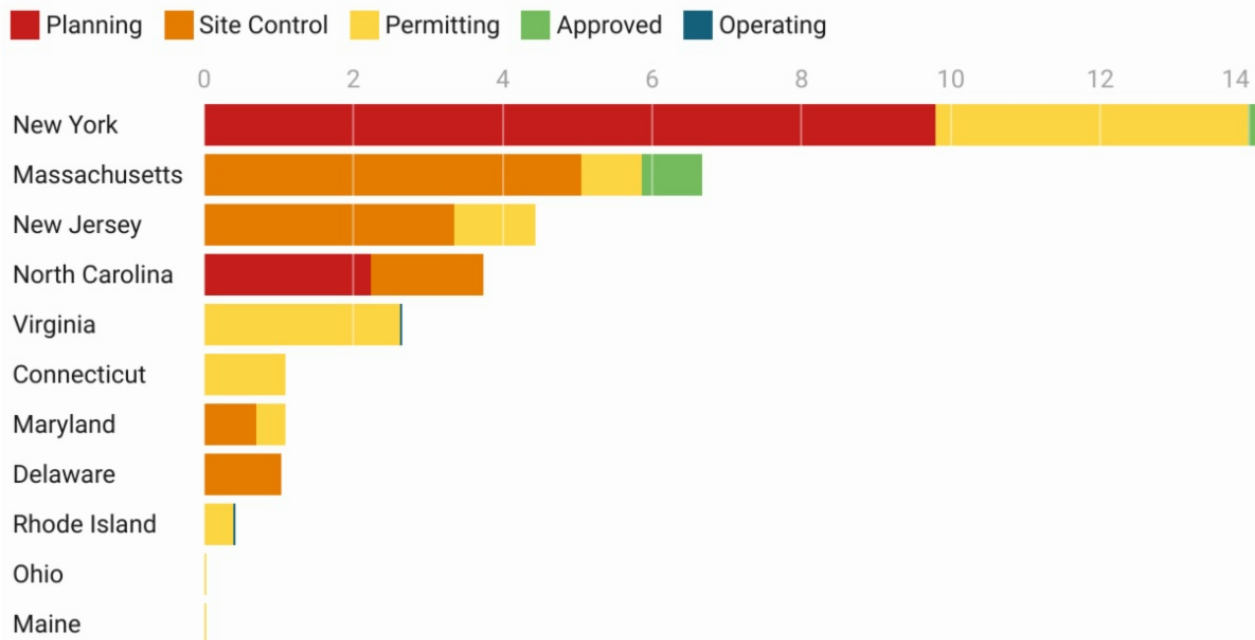
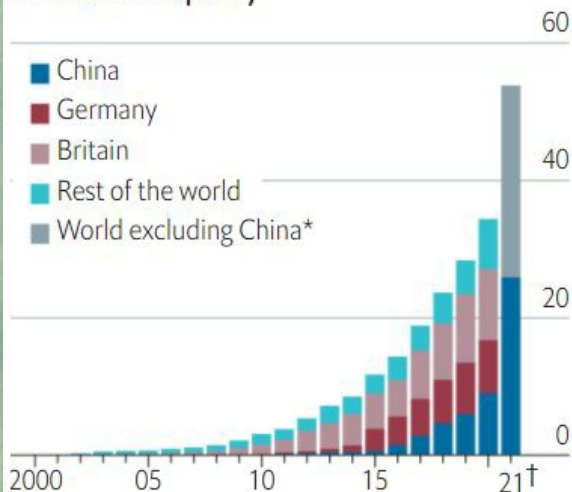


Chart: Canary Media • Source: U.S. DOE, Offshore Wind Market Report: 2021 Edition

## Winds of change

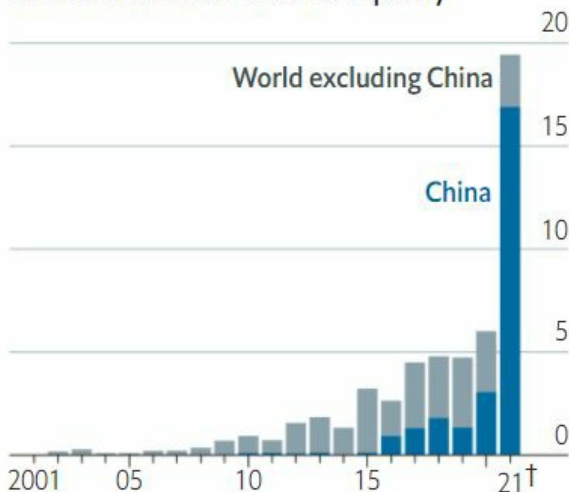
Offshore wind capacity, GW

Cumulative capacity



Sources: IRENA; IEA; National Energy Administration; analysis by Simon Evans/Carbon brief

Annual additional installed capacity



\*Country breakdown unknown

†2021 data for World excluding China is estimated

After years of relatively slow progress, offshore wind is finally taking off in America and around the world-and there's more and more potential to grow further and faster. Thanks in large part to Biden Administration leadership (as regularly chronicled in this newsletter), more than 35 gigawatts of offshore wind projects are currently in the pipeline in 11 US states (see [top chart, above, from Canary Media](#)). [New York in particular is taking the lead](#). If obstacles like supply-chain issues and obstructionist local fishers are overcome, we stand an excellent chance of meeting the President's target of 30 gigawatts of installed offshore wind by 2030! This is a massive shift from the glacial pace of US offshore wind in the past: note on the chart how the only two operating offshore wind farms in the US so far are two very small facilities, one off Virginia launched in 2021 and one off Rhode Island launched in 2016. Great news-the potential here for decarbonization (and [providing new marine life habitat](#)) is enormous!

Furthermore, China is roaring ahead, building [16.9 gigawatts of offshore wind in 2021 alone](#)-considerably more than the rest of the world combined. [See chart above, from The Economist](#)). That's part of China's 101 gigawatt increase in installed solar and wind power (onshore as well as offshore) in 2021. If this continues to accelerate, the world's biggest emitter may yet decarbonize ahead of schedule!

And furthermore, a quick vignette from Britain: when [Storm Malik](#) struck the island on January 28th and 29th, it brought wind speeds of up to 100 miles per hour to Scottish turbine farms, leading to an [all-time high in wind power generation of 19,500 megawatts](#), or more than half of all the UK's electricity needs at the time. As electricity prices rise in Europe due to fossil gas shortages-and concerns abound over Putin's control over gas flows from Russia-renewables are [clearly the right call](#) to provide the continent and the world with cheap, clean, reliable power.

Finally, while we're on the subject of renewables, this newsletter would like to cite studies debunking three pernicious anti-renewables myths. First, [electric vehicles have lower lifetime emissions than all internal combustion engine vehicles](#)-yes,

even counting battery production, and even where there's still a lot of coal in the local grid mix (though there's less of an improvement there). [Check out the full report.](#)

**Second**, there's been a lot of attention paid to the minerals needed for renewables and battery technology, from lithium to cobalt. We need to move forward with rapidly expanding production of those minerals (like with the awesome Salton Sea lithium project in California), for the sake of a habitable climate-but we should also remember that renewables and battery tech still has a [much lower rate of mineral extraction for the same amount of energy production as fossil fuels](#), given that the old ways are dependent on massive coal mines and oil and gas drilling.

[There will be way less mining in a decarbonized world](#)

**Third**, [expanding the footprint of renewables development is overall unlikely to clash with land conservation](#): a new study found that globally, the best places to develop more solar and wind power don't overlap much with endangered species' key habitats. Case in point: the already-agricultural American Midwest is perfect for wind power, where it can coexist with farms and take advantage of existing roads, while wilderness areas like the Amazon or British Columbia's rainforests would be incredibly hard to build in-and unlike with fossil fuels, we get to pick where to take advantage of the wind and sun.

In sum: roll on, renewables revolution!



## The Species Spectrum

One of this newsletter's long-standing talking points has been the inadequacy and outdatedness of the idea that species in a given area are either "native" or "invasive." This is a human-created dichotomy which makes no sense when describing the ecological reality of Earth in the Anthropocene. Today, "native" species around the globe are moving poleward or up mountains in the face of rising temperatures. And some "invasive" species are in fact critically endangered in their homeland and should be protected where they've managed to find new habitat (examples include the [red-crowned Amazon parrots declining in Mexico but thriving in Los Angeles](#), the [aoudad or "Barbary sheep" dying off in the Sahara but thriving in Texas and Spain](#), and many, *many* more). And even if not actively good, [most "invasive" species are harmless](#)-with the case against them often based less on science than on reflexive nativism and an unrealistic idea of attaining ecological "purity."

Now, a new paper in *Restoration Ecology* offers a better way of thinking about these complexities. (Note: due to the [incredibly screwed up dynamics of scientific publishing](#), the paper isn't free to read, but [the authors are more than willing to send PDFs-see this LinkedIn post](#)).

The new paper offers a

Category	Possible Common-Use Terminology	Meaning
1	Historic Native	Historically (between 10,000-500 years ago) and naturally present (arrived without human assistance)
2	Historic Introduction	Historically (between 10,000-500 years ago or at a time undetermined) and unnaturally present (arrived with human assistance)
3	Natural Migrant	Recent (<500 years), natural migrant (including species that benefit from anthropogenic conditions)
4	Assisted Migrant	Native to adjacent, non-insular (excluding recently connected) regions which are similar in climate/ecology or resemble near-future conditions
5	Prehistoric Native	Prehistorically (before 10,000 years ago) and naturally present (arrived without human assistance)
6	Substitute Introduction	Closely related and ecologically similar to an extinct native (Same genus or possibly family, subspecies should be treated as the same taxon)
7	Surrogate Introduction	Fills a similar role to an extinct native which is not closely related (No more closely related than Order)
8	Beneficial Introduction	Non-native and beneficial (ecologically, rather than socio-economically, although that is also a consideration)
9	Neutral Introduction	Non-native and benign (meaning their effects on the ecosystem are not known to be harmful or beneficial)
10	Invasive Introduction	Non-native and ecologically destructive

ten-category spectrum of descriptive terms to replace the "native" vs "invasive" paradigm, from "historic native" through "assisted migrant," "surrogate introduction," and "beneficial introduction", to the final category of "invasive introduction," calling for limiting that terminology to species where there's actual evidence of ecological destructiveness. This deserves to catch on—there are so many potential uses to describe current and near-future novel ecosystems and species interactions. "Historic introduction" covers "classic" reintroduction cases like wolves in Yellowstone, "assisted migrant" describes cases like the [oyamel fir replanting](#) covered in a recent newsletter,

"surrogate introduction" seems like a good way to describe many rewilding projects (and hopefully soon [de-extincted species](#) as well!), "neutral introduction" describes many "invasives" (like the [unfairly maligned purple loosestrife](#)), and "invasive introduction" can be reserved for the few seriously damaging cases, like the [brown tree snake in Guam](#).

In sum, this paper is a worthy addition to the emerging conservation movement working to protect the Earth as it is, not as we'd like it to be. In the Anthropocene, we need to protect endangered species and productive, diverse ecosystems wherever we find them, no matter where they're from.



The Weekly Anthropocene

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