the weekly anthropocene

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

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Spain

In the year 2002, the Iberian lynx (*Lynx pardinus*) was on the verge of extinction, with

just 94 individuals left in two isolated subpopulations. Their numbers had been devastated by hunting and habitat destruction, and a virus ravaging the populations of their rabbit prey in the 1990s seemed likely to deliver a final blow to the species. That same year, the EU's LIFE program brought together 20 organizations to start a captive breeding and reintroduction program for the species. It's been wildly successful: by 2021, there were over 1,100 Iberian lynx individuals living in five subpopulations. In some areas, the lynx have learned to live in human-dominated environments, like commercial olive groves, abandoned farms, and even residential neighborhoods. (Pictured as header: an Iberian lynx kitten at an abandoned farm. Pictured above: a radio-collared lynx leaping a fence).

Lynx underpasses have been built to allow the cats to traverse highways (pictured, in use!), landowners are offering lynx tours if there's a chance of seeing them on their property, and the IUCN has upgraded their status from "Critically Endangered" to just endangered. The next stage of the conservation project is to start reintroducing lynx to two new locations, in Granada and Murcia, to bring the total number of subpopulations to seven-and furthermore to establish 10 wildlife corridors to connect these subpopulations, ensuring gene flow. This is a spectacular example of a highly successful conservation project. Great news!

The American Southwest.

For decades, scientists have warned that the cities of America's desert Southwest

will be imperiled by water scarcity due to climate change. And in recent years, this threat has come to pass. Since 2000, the American West has been embroiled in a "megadrought." Studies of historic tree-ring data have found that 2000-2021 was the driest period in the American West since at least the year 800 (here's the PDF), and modeled that at least 42% of this drought is due to human-caused climate change. Lake Mead, the biggest reservoir in the US and the supplier of Colorado River water to seven states and Mexico, is at a record low, dropping to 35% of its capacity in August 2021.
For the 2022 water year, the federal governmentdeclared a state of shortage for the Colorado River for the first time in history, triggering mandatory water use cuts.

And yet, we are not seeing any scarcity of water for ordinary people's daily use. You don't have to pay through the nose or queue for ration tickets to take a shower in Arizona. And even better, experts on Southwest cities' water supply feel confident that they'll continue have enough in the future, with dystopian water-conflict scenarios (as dramatized in works like *The Water Knife*) looking increasingly unlikely. “We have sufficient supplies now and in the future,” said general manager Sandra Kerl of the San Diego Water Authority, interviewed by Yale Environment 360. “We recently did a stress test, and we are good until [at least] 2045.”
How is this "quiet revolution" in water supply possible?

Flying under the radar of national politics, an array of cities and water districts have just been quietly...solving the problem. From Phoenix to Las Vegas to the sprawling metropolises of southern California, water-saving initiatives from drip irrigation to replacing lawns with desert plants (aka xeriscaping) are taking hold at scale. (Pictured above: a xeriscaped yard in Los Angeles). And it's making a huge difference. Similarly to the heartening "decoupling" of carbon emissions from economic growth in many countries (yes, even if we take offshoring industries into account), many American Southwest cities have successfully decoupled population growth and water use. As one study quantified, Albuquerque, El Paso, Denver, Fresno, Austin, Flagstaff, Phoenix, Tucson, Santa Cruz, and Santa Rosa, Seattle, and San Francisco all decreased their total water use by 10% or more while growing their populations by 10% or more between 2000 and 2015. Some made massive strides: Albuquerque grew its population by 38% but decreased its total water use by 28% during this period! Los Angeles and Los Vegas had less dramatic improvements, but are also going in the right direction. (Here's the full, excellent, study).

Perhaps the poster child for this new class of drought-resistant, water-savvy cities of the Anthropocene deserts is the San Diego County Water Authority.
The San Diego region's water use fell from 81.5 billion gallons in 2007 to just 57 billion gallons in 2020, a 30% decline. And the city kept growing through that period, so the change in water use per person is even more dramatic: 135 gallons per person per day, down 45% from 235 gallons in 1990. This success is explained by a plethora of clever water-saving policies. San Diego pays homeowners $4 a square foot to tear out water-guzzling and useless lawns, a program that so far has led to the replacement of 42 million square feet with more water conservation-friendly landscaping.

San Diego also invested in lining their water canals with concrete to reduce loss to seepage, and-critically-paid farmers to switch from highly wasteful flood irrigation to ultra-efficient drip irrigation. The previously agriculture-allocated water saved by that policy now accounts for 55% of the San Diego region's water supply, driving the share from the imperiled Colorado River down to 11%. And even after all that progress, the city is developing new technologies as a decisive resource for assured water supply, with the Carlsbad Desalination Plant providing fresh water from the sea and a goal set to get 40% of its potable water supply from ultra-advanced recycling that purifies wastewater back to drinkable standards by 2035. Similar multidimensional progress has been made in an array of other Western cities. (Pictured above: the Pure Water Oceanside water recycling plant).

In sum, it looks like despite massive, unprecedented drought conditions, the cities of the American West have made and continue to make smart choices to ensure that they'll provide plenty of drinking water for their citizens long into the future. Spectacular news!

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