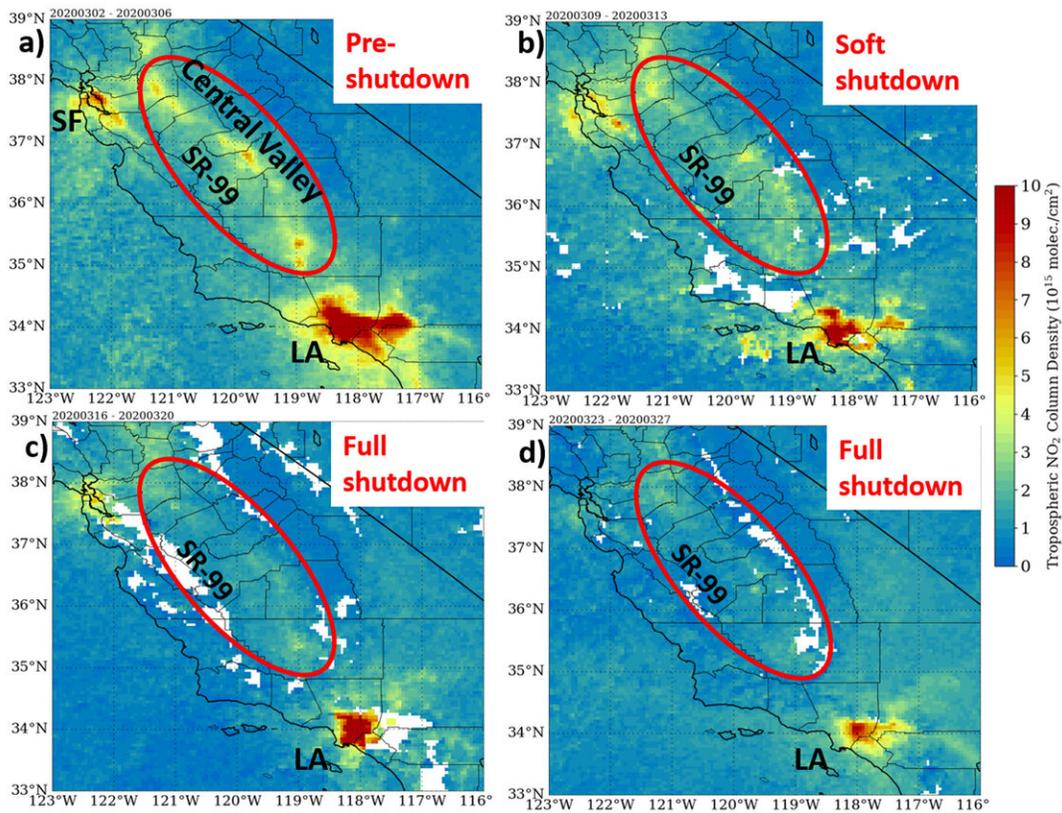


# As people stay home, Earth turns wilder and cleaner

April 22 2020, by Seth Borenstein



These maps made available by NASA show nitrogen dioxide levels over California during March 2-6, 2020, pre-shutdown against the COVID-19 coronavirus; March 9-13 during soft shutdown measures, March 16-20 when "shelter in place" orders were announced, and March 23-27 during a full period of "shelter in place" orders. NO<sub>2</sub> is a noxious gas emitted by motor vehicles, power plants, and industrial facilities. (NASA/European Space Agency via AP)

An unplanned grand experiment is changing Earth.

As people across the globe stay home to stop the spread of the new coronavirus, the air has cleaned up, albeit temporarily. Smog stopped choking New Delhi, one of the most polluted cities in the world, and India's getting views of sights not visible in decades. Nitrogen dioxide pollution in the northeastern United States is down 30%. Rome air pollution levels from mid-March to mid-April were down 49% from a year ago. Stars seem more visible at night.

People are also noticing animals in places and at times they don't usually. Coyotes have meandered along downtown Chicago's Michigan Avenue and near San Francisco's Golden Gate Bridge. A puma roamed the streets of Santiago, Chile. Goats took over a town in Wales. In India, already daring wildlife has become bolder with hungry monkeys entering homes and opening refrigerators to look for food.

When people stay home, Earth becomes cleaner and wilder.

"It is giving us this quite extraordinary insight into just how much of a mess we humans are making of our beautiful planet," says conservation scientist Stuart Pimm of Duke University. "This is giving us an opportunity to magically see how much better it can be."



This combination of Friday, Nov. 1, 2019, top, and Monday, April 20, 2020 photos shows New Delhi's skyline. India's air quality improved drastically during a nationwide lockdown to curb the COVID-19 coronavirus. (AP Photo/Manish Swarup)

Chris Field, director of the Stanford Woods Institute for the Environment, assembled scientists to assess the ecological changes happening with so much of humanity housebound. Scientists, stuck at home like the rest of us, say they are eager to explore unexpected changes in weeds, insects, weather patterns, noise and light pollution. Italy's government is working on an ocean expedition to explore sea changes from the lack of people.

"In many ways we kind of whacked the Earth system with a sledgehammer and now we see what Earth's response is," Field says.

Researchers are tracking dramatic drops in traditional air pollutants, such as nitrogen dioxide, smog and tiny particles. These types of pollution kill up to 7 million people a year worldwide, according to Health Effects Institute president Dan Greenbaum.



In this Saturday, April 11, 2020 file photo, a pack of jackals eats dog food that was left for them by a woman at Hayarkon Park in Tel Aviv, Israel. With a lockdown against the coronavirus crisis, the sprawling park is practically empty. This has cleared the way for packs of jackals to take over this urban oasis in the heart of the city as they search for food. (AP Photo/Oded Balilty)

The air from Boston to Washington is its cleanest since a NASA satellite started measuring nitrogen dioxide, in 2005, says NASA atmospheric scientist Barry Lefer. Largely caused by burning of fossil fuels, this pollution is short-lived, so the air gets cleaner quickly.

Compared to the previous five years, March air pollution is down 46% in Paris, 35% in Bengaluru, India, 38% in Sydney, 29% in Los Angeles, 26% in Rio de Janeiro and 9% in Durban, South Africa, NASA

measurements show.

"We're getting a glimpse of what might happen if we start switching to non-polluting cars," Lefer says.

Cleaner air has been most noticeable in India and China. On April 3, residents of Jalandhar, a city in north India's Punjab, woke up to a view not seen for decades: snow-capped Himalayan peaks more than 100 miles away.

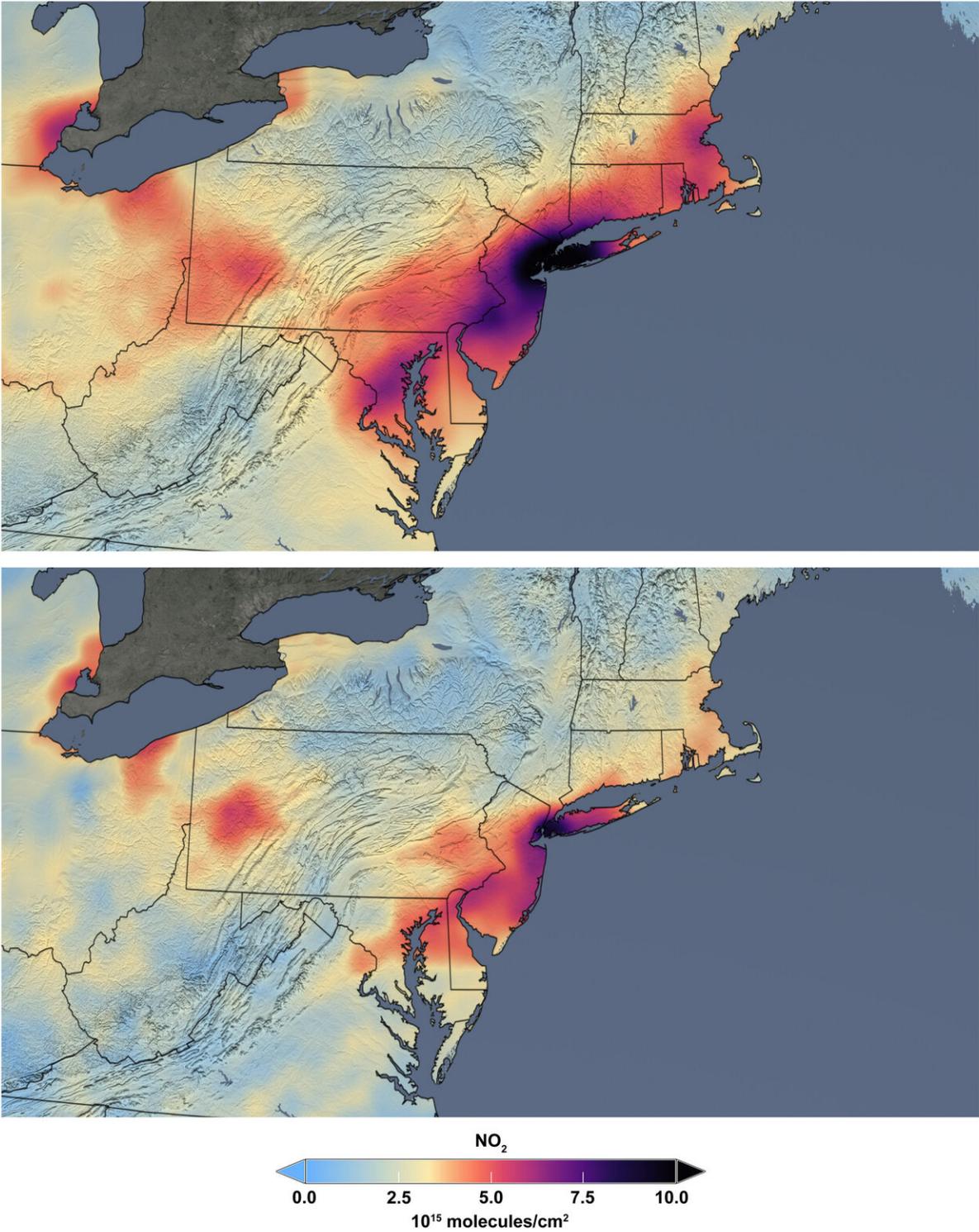


This combination of Monday, Oct. 28, 2019, top, and Monday, April 20, 2020 photos shows India Gate in New Delhi. India's air quality improved drastically during a nationwide lockdown to curb the COVID-19 coronavirus. (AP Photo/Manish Swarup)

Cleaner air means stronger lungs for asthmatics, especially children, says Dr. Mary Prunicki, director of air pollution and health research at the Stanford University School of Medicine. And she notes early studies also link coronavirus severity to people with bad lungs and those in more polluted areas, though it's too early to tell which factor is stronger.

The greenhouse gases that trap heat and cause climate change stay in the atmosphere for 100 years or more, so the pandemic shutdown is unlikely to affect global warming, says Breakthrough Institute climate scientist Zeke Hausfather. Carbon dioxide levels are still rising, but not as fast as last year.

Aerosol pollution, which doesn't stay airborne long, is also dropping. But aerosols cool the planet so NASA climate scientist Gavin Schmidt is investigating whether their falling levels may be warming local temperatures for now.



These maps made available by NASA shows the average concentration of nitrogen dioxide in March 2015-19, top, and in March 2020 as people stay home

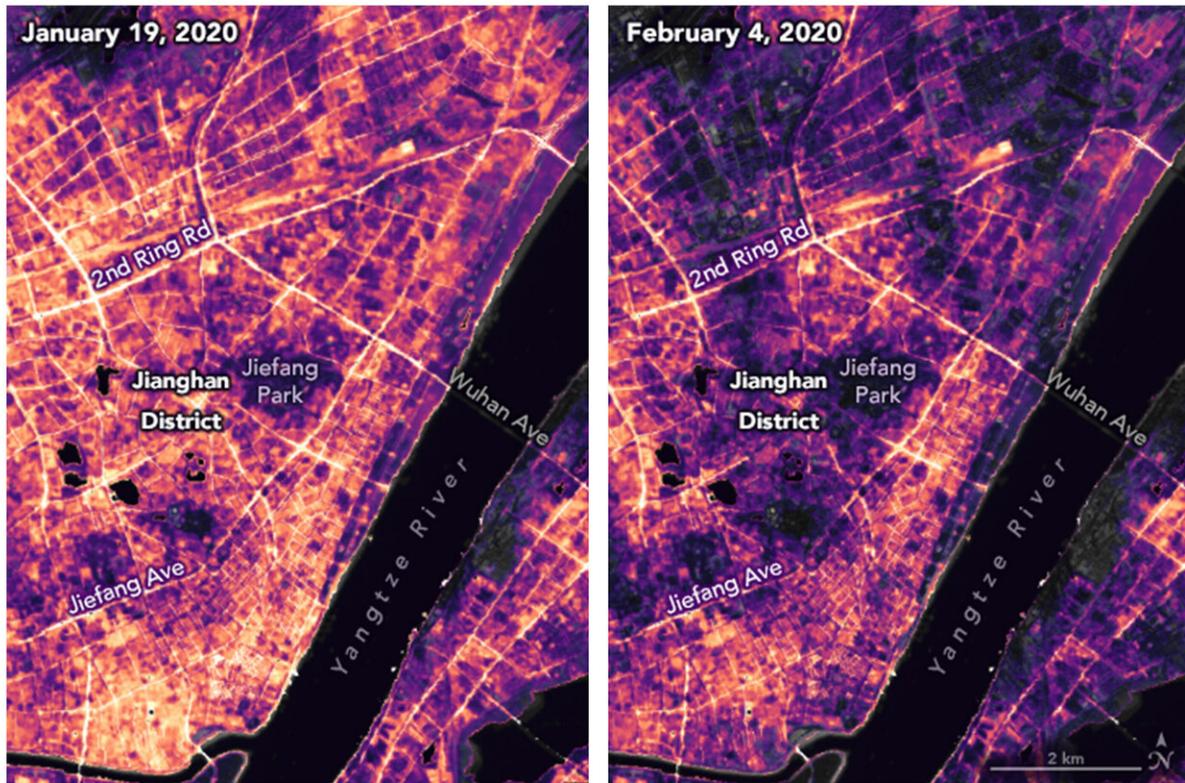
against the COVID-19 coronavirus. NO<sub>2</sub> is a noxious gas emitted by motor vehicles, power plants, and industrial facilities. (NASA via AP)

Stanford's Field says he's most intrigued by increased urban sightings of coyotes, pumas and other wildlife that are becoming video social media staples. Boar-like javelinas congregated outside of a Arizona shopping center. Even New York City birds seem hungrier and bolder.

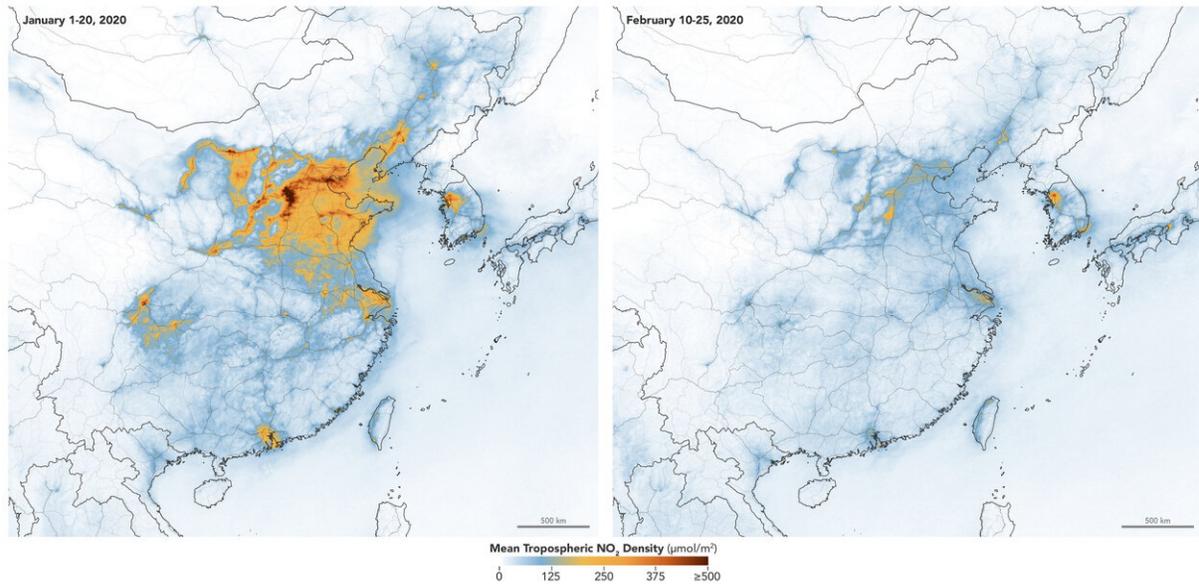
In Adelaide, Australia, police shared a video of a kangaroo hopping around a mostly empty downtown, and a pack of jackals occupied an urban park in Tel Aviv, Israel.

We're not being invaded. The wildlife has always been there, but many animals are shy, Duke's Pimm says. They come out when humans stay home.

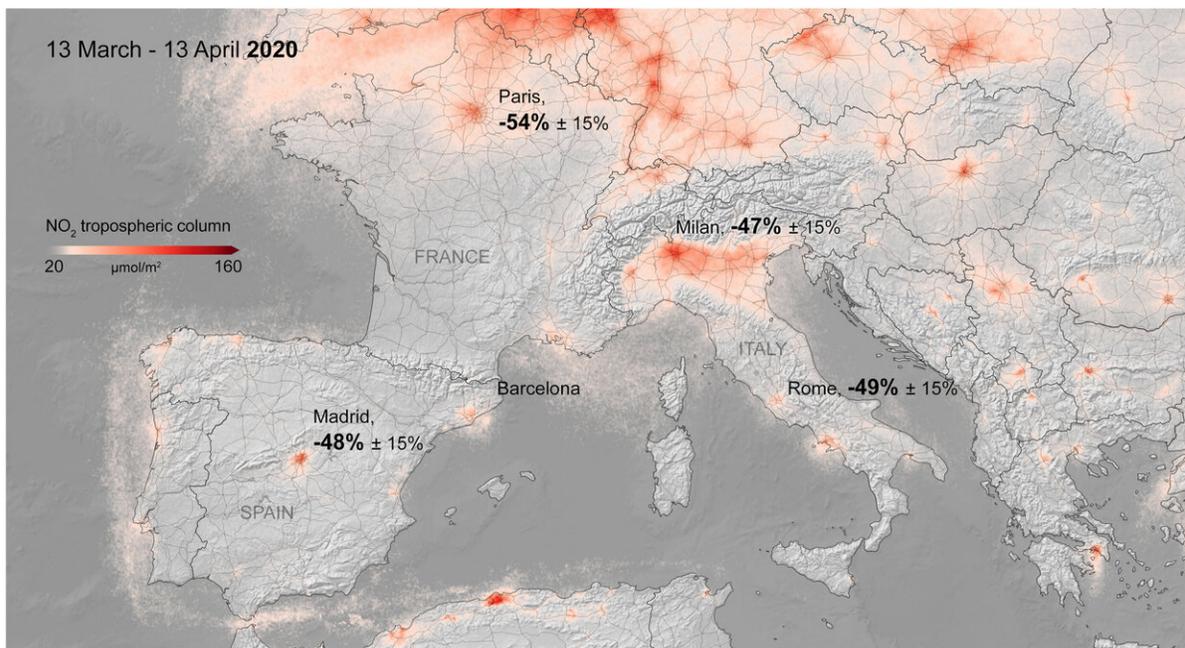
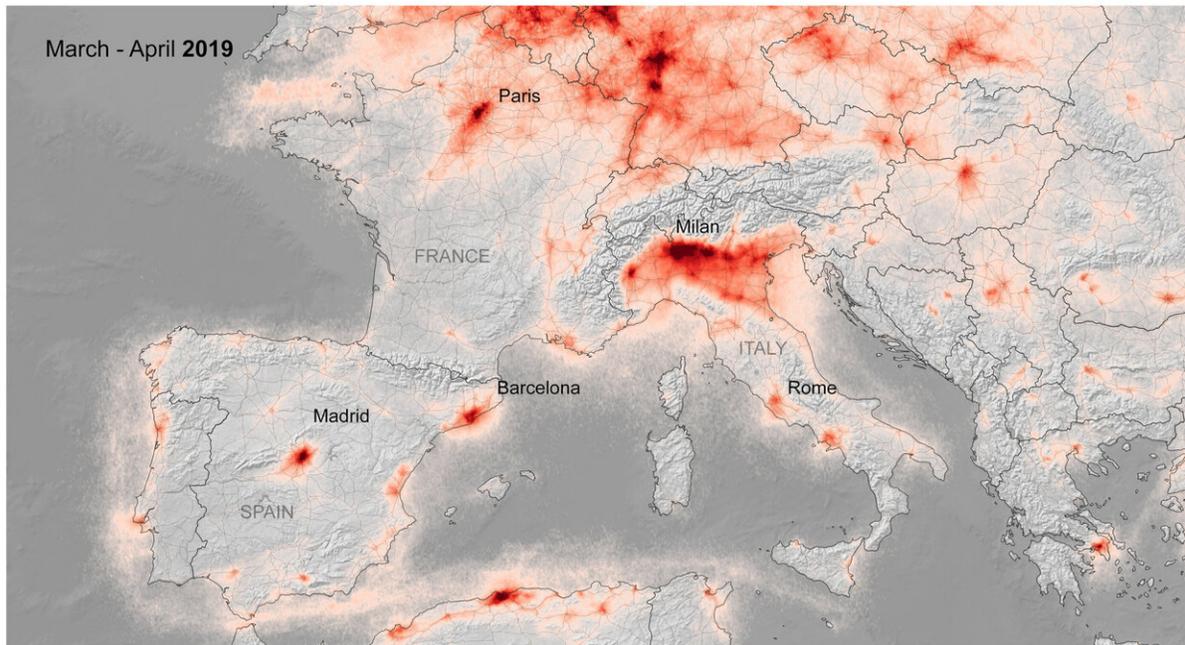
For sea turtles across the globe, humans have made it difficult to nest on sandy beaches. The turtles need to be undisturbed and emerging hatchlings get confused by beachfront lights, says David Godfrey, executive director of the Sea Turtle Conservancy.



These satellite images made available by NASA show lighting changes in Jiangnan District, a commercial area of Wuhan, China and nearby residential areas on Jan. 19, 2020, before the COVID-19 quarantine, and Feb. 4, 2020, during the quarantine. (Joshua Stevens, Ranjay Shrestha/NASA, Suomi National Polar-orbiting Partnership, U.S. Geological Survey via AP)



These maps made available by NASA show concentrations of nitrogen dioxide across China from January 1-20, 2020, before the quarantine against the COVID-19 coronavirus, and February 10-25, during the quarantine. NO<sub>2</sub> is a noxious gas emitted by motor vehicles, power plants, and industrial facilities. (Joshua Stevens/NASA Earth Observatory, European Space Agency via AP)



These maps made available by the Royal Netherlands Meteorological Institute and European Space agency show the average nitrogen dioxide concentrations over Europe in March - April 2019, top, and from March 13 - April 13, 2020 during a lockdown against the COVID-19 coronavirus. NO<sub>2</sub> is a noxious gas emitted by motor vehicles, power plants, and industrial facilities. (KNMI/ESA via AP)

But with lights and people away, this year's sea turtle nesting so far seems much better from India to Costa Rica to Florida, Godfrey says.

"There's some silver lining for wildlife in what otherwise is a fairly catastrophic time for humans," he says.

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