

Coronavirus: The Latest

White House projects 100K to 240K U.S. deaths from virus

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The coronavirus shutdown is making the air cleaner around the world. What will it do for Utah?

'No one would advocate for having a pandemic as a way to implement environmental changes, but it's happening,' said Logan Mitchell of the University of Utah.

By Erica Evans | @Erica_Lee_Evans | Mar 30, 2020, 10:00pm MDT



Illustration by Alex Cochran

SALT LAKE CITY — In Venice, the water in the canals is clear. Wuhan, China, residents can hear birds singing again due to reduced traffic noise. And in Krakow, Poland, people are enjoying gazing at the Trata mountains, which are no longer obscured by the city's smog.

While the novel coronavirus is wreaking havoc on people's health, personal lives and finances, the earth is taking time to heal. With unprecedented worldwide restrictions on travel and business, emissions data shows cleaner air over nearly every major metro area in the world.

But experts like Logan Mitchell, research assistant professor with the department of atmospheric sciences at the University of Utah, are hesitant to call the environmental benefits we're seeing a 'silver-lining' in light of the destruction and mayhem being caused by COVID-19.

"No one would advocate for having a pandemic as a way to implement environmental changes, but it's happening," Mitchell said.



A man walks by Teatro Marcello in Rome, Thursday, March 12, 2020. | Andrew Medichini, Associated Press

Myths about swans and dolphins swimming in the canals of Venice have been debunked along with another story circulating on social media about elephants wandering into a village in Yunnan, China, and drinking corn wine, [National Geographic](#) reported. However, people in cities including Nara, Japan; Barcelona, Spain; San Felipe, Panama; and Oakland, California, have reported increased animal activity, according to [The Guardian](#).

While the world may continue to see how adaptations to the coronavirus affect water quality and animal life, experts agree the biggest change so far has been in the air.

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Ultimately, Mitchell says, air quality improvements could save more lives than COVID-19 claims — if we continue with habits like teleworking and choose to invest in green technology as we rebuild the economy.

“A pandemic is going to have huge health impacts and the economic downturn is going to have huge health impacts,” said Mitchell, “But there will also be health benefits from reduced air pollution.”

Cleaning up the air

According to estimates from the [World Health Organization](#), exposure to outdoor air pollution causes 4.2 million premature deaths per year. Those deaths could outweigh mortality from COVID-19, depending on the disease’s ultimate toll, Mitchell said.

During the past month, particulate matter (PM) pollution in China and Italy has declined dramatically, said Marco Percoco, an associate professor of transportation economics at Bocconi University in Milan. His research shows that after Feb. 22, when quarantine measures were first enacted, PM 10 decreased by 7% and PM 2.5 decreased by 17% in Wuhan. Similar patterns were observed in Milan, a city which typically has some of the dirtiest air in Europe, Percoco said.

Even a small decrease in the concentration of particulate matter leads to a reduction in deaths linked to health problems like asthma, heart attacks and respiratory illnesses. Percoco estimates current air quality improvements are saving up to 100 lives per month in the Milan metropolitan area, and more than 600 lives per month in Wuhan.

“Social distancing is saving lives,” said Percoco. “We are staying inside for the elders, but we are also saving lives even of children because we’re decreasing pollution.”

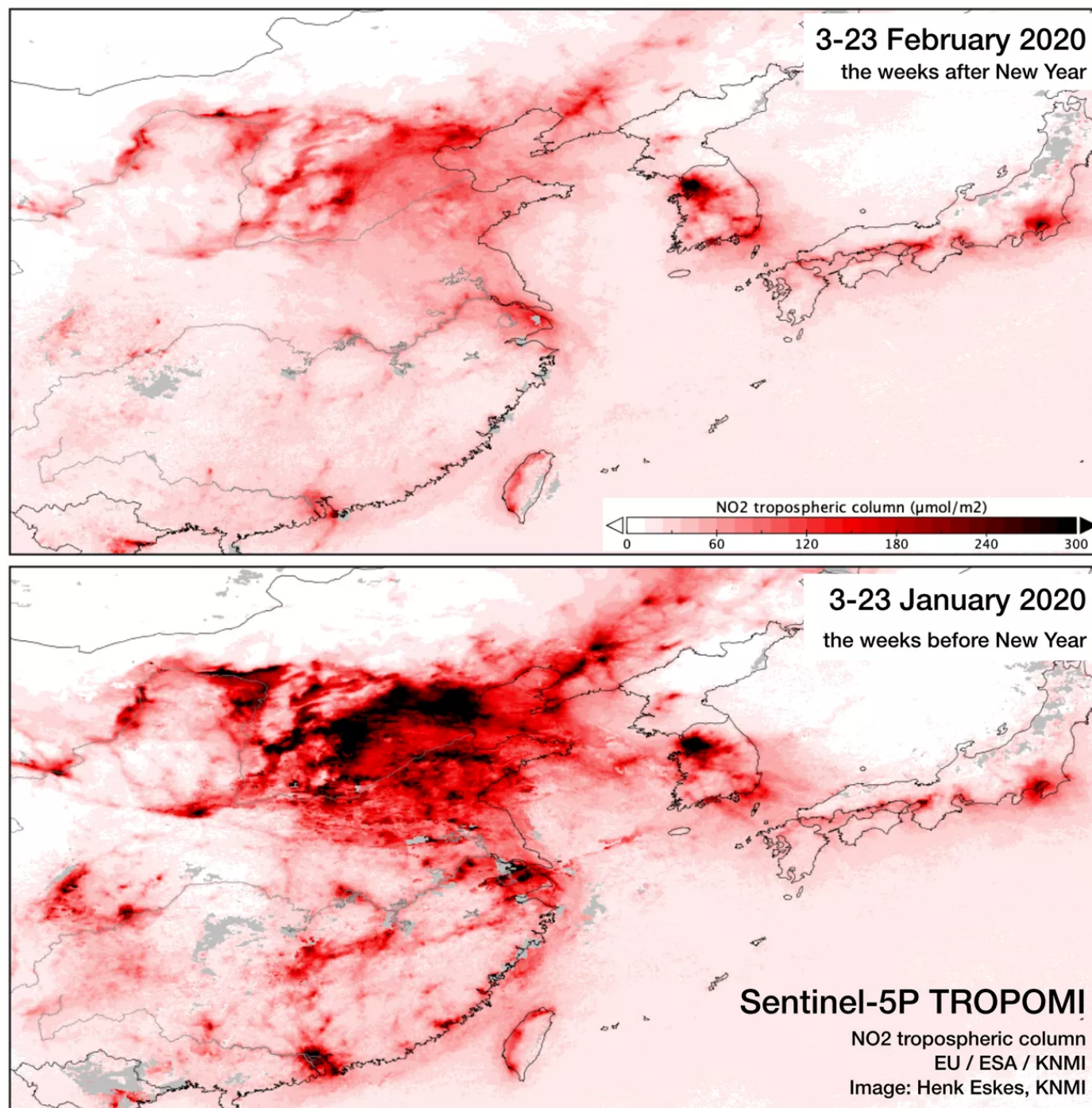
Peter DeCarlo, an associate professor of environmental health engineering at Johns Hopkins University, said air quality improvement for most cities will come from interruptions to industry and vehicle traffic.

“If you look at Google maps and try to find the fastest route — all the routes are green again,” said DeCarlo, who lives in Philadelphia. “Because there’s not traffic jams you don’t have the emissions associated with stop-and-go driving.”

With limits on international travel, pollution from airplanes will also be reduced, but that will probably only impact areas near airports, he said. Finally, emissions from electricity production may go down because large buildings in urban centers are not being used as much.

“It’s really hard for me to say this is a silver lining given the fact that people are getting sick and dying,” said DeCarlo “But it’s a window, a lens that we can use to look at what future emission scenarios might look like should we transition away from fossil fuels.”

In addition to particulate matter, Italy and China have seen profound reductions in nitrogen dioxide (NO₂), according to research by Pieter Levelt, a professor of atmospheric science at Delft University and department head of R&D for satellite observations at the Royal Netherlands Meteorological Institute.



Comparison of nitrogen dioxide concentrations above China for February 2019 and 2020. | Pieter Levelt

Her team looks at data from the European Space Agency's Copernicus Sentinel-5P satellite, which circles the earth every single day, taking 20 million measurements of the atmosphere. Levelt and her colleagues measured NO₂ levels when quarantine measures went into effect between February and March 2020 and compared those numbers to 2019. In China, on average, there was a 35% reduction in NO₂, with 50-60%

reduction over some cities. In Italy, there was a 40% reduction in NO2 above cities like Milan, the research showed.

“We’ve never seen that before, this reduction in such a short time frame in such large numbers,” said Levelt. “We can not only explain that by weather impact and seasonal changes, and attribute it to the coronavirus quarantine measures.”



The Salt Lake Valley pictured on Monday, March 30, 2020. | Ivy Ceballo, Deseret News

Utah

A preliminary look at data from around the world, shows almost every major city is experiencing improved air quality. But it may be too soon to tell for Utah.

Jordan Wildish a project director at Earth Economics, a nonprofit based in Tacoma, Washington, built an online tool for tracking air quality in cities on six continents.

“Every major city is seeing reductions,” Wildish said. While his analysis does not account for things like weather, Wildish is confident the coronavirus outbreak is the reason for this pattern.

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"The trends seem pretty consistent. So while there certainly are going to be other factors at play here, I think that the overarching trend across the nation, across the world right now, is fairly clear given what we're seeing."

Bryce Bird, the director of Utah's Division of Air Quality, said he could not detect any significant difference in the state's air quality data from 2020 compared to 2019. That's because air quality in Utah is generally clear in the spring and fall.

"March is typically a very good month for air quality," Bird said. "mixing from the weather patterns results in good air quality index values."

Thom Carter, executive director of [Utah Clean Air Partnership](#), hopes this period of clean air won't be lost on Utahns who are trying to stay home.

"All of the recommendations that we are seeing, even from states that are in shelter-in-place are encouraging people to get out and go on walks, just keep distance. On a day when you can look out the window and see a lot of blue sky, get outside!" Carter said.

Mitchell said he plans to conduct a more in-depth analysis, taking into account weather and seasonal factors, to see if Utah is experiencing any measurable air quality benefits from coronavirus restrictions.

"You'll probably still see a benefit to our local community here because even if there are low amounts of air pollution, there are still negative health effects," Mitchell said. "But it's gonna be a smaller signal than in other places like China where air quality is a much bigger problem."

Long-term impact

Carter is optimistic that changes people are making now in response to the coronavirus will lead to lasting air quality benefits for humanity. Carter said it is "tragic and scary" that everybody is being forced to work from home, but it's proving to organizations that the model works.

"The long-term benefit is people being able to see that teleworking is a viable alternative," said Carter.

In addition to teleworking — telehealth, online schooling, virtual workout classes and more are contributing to a vision of a world where we travel less.

Wildish said whether we see lasting environmental benefits following coronavirus quarantine measures will depend on reinvestment in the right technologies. He noted that there was a dip in emissions between 2008 and 2009 due to the Great Recession, but those numbers eventually rebounded along with the economy.

The real opportunity will come as we choose whether to invest in clean energy and green projects, or fossil fuels as we rebuild, Wildish said. Such changes will help not just with air quality but with climate change as well, he added.

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While we can see immediate air quality improvement, climate benefits will come more slowly because CO2 stays in the air for 100-200 years unlike other pollutants, said Levelt.

Levelt doesn't expect this current economic slowdown to have a large impact on the climate. What Levelt sees instead is a remarkable research opportunity and a chance to improve climate models.

“These are dramatic times, it's scary,” Levelt said. “On one hand, I am very unhappy with the situation but when you look at the research side, there is of course, such a dramatic decrease in air pollution that we have never seen before. That means we can do a lot of research based on that.”