The COVID-19 Pandemic: Environmental Restoration

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The impacts of the COVID-19 pandemic were devastating and far-reaching. The United States Census Bureau reports that more than one-third of U.S. households worked from home during the pandemic[1]. A national study found that up to 65% of traffic was cut[2]. Over 3.9 billion people were asked- at some point -to stay in isolation by their governments[3]. All of this information exhibits how human behavior changed massively while quarantining, with nearly everyone at home. So much changed during this time period, especially the environment. To best remedy the negative effects of stay-at-home work and school mandates, society must implement the lessons that lockdown presents to better the environment.

Around the world, a decrease in air pollutants during the pandemic was significant. Although results did vary between countries, the basic conclusion was the same: being in lockdown temporarily revived the environment. Isolation was very harmful and depressing for many, but this discovery can lead to innovation in society's journey towards a greener future. In a multi-city study of Spain for the Elsevier Journal of Environmental Studies, researchers found that in every city tested, except for one, there was a significant decrease in NO2 levels[4]. The study results also showed an improvement in CO, SO 2, and PM 10 in some cities. The main takeaway from this evidence is that, when fewer people weren't using regular forms of transportation and staying inside, emissions did go down. In addition to it's experienced and decorated authors, the City Council of Valencia and multiple Spanish Universities have endorsed these findings. This study supports the idea that our climate was influenced by the stay-at-home work mandates and furthers the idea that lifestyle changes could lead to a decline in emissions. In Egypt, a study for the Journal of Environmental Management monitored pollution levels in a different part of the world. Researchers found that NO2, O3, AAI, CO, and GHG emissions all decreased during the lockdown period.[5] The study also concluded that 75%

1 Joey Marshall, Charlynn Burd, and Michael Burrows, "Working"

2 Jianhe Du, "System Delay"

3 Alasdair Sanford, "Humanity"

4 Briz-Redon, Belenguer-Sapina, and Serrano-Aroca, "Changes"

5 Mostafa, "Indicators"

of environmental noise was reduced during the pandemic. Like the last study, data showed that human behavior has a direct impact on pollution. Much of the quantitative data is substantiated by government bodies in Egypt. The authors of the article argued that these impacts are not long-lasting and rather that habitual changes will greatly help curb pollution. A majority of the data covering this topic originated from studies conducted in India, where many researchers went in-depth. Krishna Prasad Vadrevu and his team of scientists recorded the spatial and temporal variations of air pollution in forty-one different cities across India during the lockdown. This experiment focused specifically on NO2 emissions and found that the decline in emissions was consistent across the board, with coastal cities varying slightly lower.[6] The extensive scale of this research suggests validity. The consistency of global results exhibits a strong connection between daily human behavior and pollution.

Staying away from work and school prompted many to go outside and take advantage of nature. This led to a realization that the environment wasn't only changing in terms of pollution. Edward Blair, Timbo Stillinger, Karl Rittger, and McKenzie Skiles published an article in the Proceedings of the National Academy of Sciences of the United States of America. It addressed the changing levels of pollution on snow and ice in the Indus River Basin. The Indus River in South Asia is a significant source of water and resource for over 300 million people. Throughout the year, dust and black carbon within the air pollute this supply of water and impact the people who rely on it. The results revealed that 2020 had the least polluted surfaces on record for the past two decades[7]. Last year, they found, there was a 30% reduction in light-absorbing particles, which darkened the surfaces and changed the runoff time. They reason that the reduction of air pollution will impact the timing of water supply for billions of people. The authors' affiliations include; the Earth Research Institute, the Institute for Arctic and Alpine Research, and the Department of Geography. When reflecting on the isolation of lockdown, it's important to note

6 Vadrevu, "Spatial"

7 Bair, "Indus River"

that these discoveries could impact how we conserve and protect our environment in the future. Authors Jo Hockenhull, Keith Squibb, and Amelia Cameron published an article in the academic journal, Animals. It regards an online study done in the U.K. asking citizens to reflect on their interactions with wildlife and domestic animals during the lockdown. They reasoned that exercising in the natural world would become more common after the lockdown, as people realized how valuable the outdoors are[8]. This research was approved by the University of Bristol Faculty of Health Research Ethics Committee. Putting more effort towards conservation after this discovery will be important in the future. Hopefully, this heightened appreciation will make an impact. Also in the publication, *Animals,* Rafal Lopucki, Ignancy Kitowski, Daniel Klich, Matthew Crowther, and Mandy Patterson released an article about the pandemic's impact on wildlife. They recorded that hedgehog roadkills dropped 50% during the pandemic, due to a lack of transportation and travel[9]. The researchers concluded that tens of thousands of animals were likely saved because of this. The authors state that many species were influenced similarly and that this should bring awareness to conservation efforts and the previously declining hedgehog population in Europe. The data is supported by the Department of Animal Genetics and Conservation, Warsaw University. Decreases in transportation not only helped fix pollution rates (temporarily) but also led to lower mortality in wildlife. In an article for the Christian Science Monitor, writer Simon Montlake argues that the lockdown showed society that, when in the face of an emergency, society can make drastic lifestyle changes. The author uses excerpts from the citizen's panel of the Climate Assembly in the U.K. to further his claim that using policies introduced during the pandemic, there may be a way to reach net-zero sooner than we thought. The panel responded that citizens would be willing to keep some of the habits developed during the lockdown to help the environment. Montlake also utilizes a quote from climate researcher Lorraine Whitmarsh who said that behavior and lifestyle implications would be the most

8 Hockenhull, "Countryside"

9 Lopucki, "Hedgehogs"

impactful approach to reaching net-zero emissions. However, through this survey, the public expressed that they would commit to new habits and behaviors if it would help prevent climate change[10]. This evidence shows that members of society can and will adjust their lifestyle after learning about the advancement that occurred during isolation. In an article written by Michael Marshall, the influences of coronavirus measures on conservation are debated. This piece was published in New Scientists very recently. The author focuses on some of the ways that animal species thrived. A decrease in noise pollution is helping the humpback whale population in Alaska and bee populations have been increased due to cleaner air[11]. Marshall, who has a BA and MPhil from the University of Cambridge, claims that species like whales and bees were undoubtedly influenced by the change in human behavior that occurred during the pandemic. Marshall too, wants society to adapt from the experiences of isolation and set new goals for conservation.

To best remedy the effects of stay-at-home work mandates, society must establish new daily behaviors derived from the environmental discoveries made during the lockdown. The significant global decrease in air pollution exhibits the impact that transportation and other forms of emissions have on the planet. With much of the public living in isolation; water became clearer, wildlife was better appreciated, and roadkill was reduced. The pandemic proved that everyone can make an impact, if they care enough to change...and they do. While the pandemic was a painful time, the best way to move forward is by evolving from this unprecedented event. Unfortunately, many researchers found that Ozone levels did not decrease during lockdown. Seeing as though Ozone is arguably the most substantial emissions issue, this is discouraging. However, as the effects of climate change become more prominent, more people will care. Legitimate change must be made to overcome this issue, and the pandemic revealed that society is prepared to make substantial adjustments in the face of an emergency.

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10 Montlake, “Activists”

11 Marshal, “Crisis”

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