Communicating Science: Analyzing NASA's *The Effects of Climate Change*

"The effects of human-caused global warming are happening now, are irreversible for people alive today, and will worsen as long as humans add greenhouse gases to the atmosphere."

The Effects of Climate Change published by the National Aeronautics and Space Administration (NASA) immediately outlines the threat of climate change to humans before the article even begins. This article (found at https://science.nasa.gov/climate-change/effects/) is an accessible web-based article containing visuals and statistics to explain the current and long term effects of climate change on our world with a particular emphasis on how these will impact the United States. NASA is a federal science agency known for its research and historically trusted as a reputable source. This article uses powerful and accurate language to describe the climate crisis as profound and irreversible.

While the article begins with a global overview of the effects of climate change, the second half of the article focuses on direct ways Americans will be impacted such as sea level rise, an increase in hurricane intensity, heat waves, and more. This article does an excellent job of focusing on the U.S. Regional Effects to more specifically target the American people. By concentrating on more personal climate change threats such as threats to humans and the economy, this article feels more urgent and relevant to those who may not be interested in saving biodiversity and other environmental degradation as a result of climate change. Additionally, this article does not go into extreme depth about these effects therefore this would be an appropriate article for someone who has little knowledge on climate change.

The importance of science communication has been highlighted in our course and throughout our recent readings. The article *Why should we promote the public understanding of science?* examined nine arguments in favor of science communication, this particular NASA article fits the narrative of benefits to science and benefits to democratic government. Since climate change is something every American will feel and experience in their back yard in the near future, it is crucial that Americans understand what led us to this point and to understand what threats are to come (Thomas,G & Durant,J, 1987). Thomas makes the case that the public understanding of science may be able to promote more democratic decision-making by encouraging people to exercise their democratic rights. As stated in the article, ""wider understanding of the scientific aspects of a given issue will not automatically lead to a consensus about the best answer, but it will at least lead to informed, and therefore better, decision-making." I agree with this statement and that our society could benefit from understanding the NASA article on the effects of climate change.

This article communicates the science of climate change in accessible terms while still retaining scientific accuracy. The author conveys a sense of urgency not only with the choice of words but with the images chosen as well. These images of floods, hurricanes, and wildfires evoke

emotion instead of complex graphs that may otherwise require more scientific literacy. Instead, important data and statistics are shared beside pictures that show the issue. This combination of imagery and narrative help the reader fully grasp the reality and urgency of climate change.

This article reflects the idea that audiences need science to have relevance to their lives for it to become important, as Lupia (2013) argues in the article *Communicating Science in Politicized Environments.* Lupia argues that effective science communication needs to connect to what people care about, their loved ones, their daily lives, homes etc. NASA accomplishes this by tunneling global climate science to regional United States specific risks. This changes the idea of climate change from being distant to something that will directly impact American lives, businesses, homes, health and economics. Bringing science to an individual level increases the chances that the American people will care about this issue.

This topic is politicized, and during this time public trust in government science agencies has decreased. Research from the article *Communicating Science in Politicized Environments* emphasizes the importance of source credibility and messenger trust having an impact on how an audience perceives information. NASA navigates the challenge of a politicized topic by avoiding mentioning a particular party or politician when discussing climate change, the statistics and data are just stated.

While I believe this article does a good job overall with science communication, there are a few things that could be improved. Overall the article only discusses the negatives of climate change effects and offers no way for readers to learn about any positive work being done in the climate science world. Additionally, to further connect to readers, having photos that include people would help increase the amount of trust with readers. Showing farmers disappointed with their growing season evokes more emotion than just a photo of a field. Bridging the gap between public trust and scientists is key for climate change understanding and mitigation.

References

Lupia, Communicating science in politicized environments, Proc. Natl. Acad. Sci. U.S.A. 110 (supplement_3) 14048-14054, https://doi.org/10.1073/pnas.1212726110 (2013). Link

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Thomas, G., & Durant, J. (1987). *Why should we promote the public understanding of science?* Scientific literacy papers, 1, 1-14. Link