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Geography 40: Race, Space, and Nature

Current Events Report: Montreal Protocol In The Modern Age

Primary Articles:
Joselow, Maxine. “A loophole in the Montreal Protocol lets U.S. facilities pollute.” *The Washington Post*, 10 October 2023, https://www.washingtonpost.com/climate-environment/2023/10/10/montreal-protocol-ozone-climate/. Accessed 27 January 2024.
McKenna, Phil. “Watchdog Finds a US Chemical Plant Isn't Reporting Emissions of Climate Super-Pollutants and Ozone-Depleting Substances to Federal Regulators.” *Inside Climate News*, 16 October 2023, https://insideclimatenews.org/news/16102023/watchdog-us-chemical-plant-isnt-reporting-climate-super-pollutants/. Accessed 27 January 2024.

Current Events Report:

Introduction to the Montreal Protocol:

The Montreal Protocol on Substances that Deplete the Ozone Layer is an agreement that regulates the production and consumption of nearly 100 artificial ozone-depleting substances (UN Environment Programme). Upon entering the atmosphere, ozone-depleting substances react with ozone molecules in the air to erode the ozone layer in our atmosphere, which protects both humans and the natural environment from the sun’s harmful ultraviolet radiation. The Montreal Protocol is the first treaty in the history of the United Nations to receive universal ratification, signed by all 197 countries on 16th September 1987. The Montreal Protocol on Substances that Deplete the Ozone Layer is also notable for being one of the most successful policies implemented as humanity has gradually been able to repair the ozone hole above Antarctica, caused by dangerously low levels of atmospheric ozone due to the use of CFCs (chlorofluorocarbons) and other ozone-depleting substances. The Montreal Protocol is successful because of the phasing out of CFC consumption and production on different timescales for developing and developed countries (UN Environment Programme).

Contextual details of The Washington Post and Inside Climate News articles:

Despite the success of the Montreal Protocol, a report by a watchdog group, the Environmental Investigation Agency (EIA), detected the emission of three types of CFCs banned globally from a Honeywell plant in Baton Rouge, Louisiana, and emissions of hydro fluoro olefin 1234yf (HFO-1234yf), a synthetic refrigerant classified as a per- and poly-fluoroalkyl substances (PFAS), at a Chemours chemical plant in Corpus Christi, Texas) late last year with the help of infrared spectroscopic gas detection technology (Joselow). Although the emissions of HFOs are not yet illegal, PFAS are known as “forever chemicals” because they break down very slowly in the environment and could potentially be carcinogenic with elevated exposures. Due to their high environmental impact, countries around the globe have begun to implement policies that start phasing out PFAs in 2025 (McKenna). However, the emissions of the three types of CFCs by the Honeywell plant are also not illegal because of a loophole in the Montreal Protocol. Production of these CFCs is legal when used by companies to produce other chemicals with lower environmental impacts. Policymakers assumed chemical plants would use all CFCs

manufactured to produce other chemicals. This assumption has not proven to be the case (McKenna).

Compare and contrast the two articles:

Both The Washington Post and Inside Climate News articles convey the same message, but their contextual references and overall tone vary greatly. The two articles I have selected from The Washington Post and Inside Climate News offer different perspectives on this report and the implications of these CFC emissions for humanity and the environment. While The Washington Post reports the issue with a general context, Inside Climate News specifies the reported gasses (CFC-113, CFC-114, and CFC-13) and how their environmental impact compares to carbon dioxide. This comparison to carbon dioxide in the Inside Climate news report would help readers contextualize the details because of the readers' previous exposure to numerous reports on the global warming-related effects of carbon dioxide. The different approaches are justifiable because The Washington Post is a general news organization, while Inside Climate News focuses solely on climate-related news and events. This difference gives Inside Climate News the liberty to use technical terms and reference outside reports to offer their readers a more accurate representation of the events that have taken place. As a result, the Inside Climate News article takes on a darker tone than The Washington Post article by connecting the EIA report with external information sources and explicitly showing the EIA report's implications. Although both The Washington Post and Inside Climate News articles answer the how aspect of this issue's importance in an environmentally conscious society, the Inside Climate News article also provokes the reader to ask why this issue was allowed to continue without the public's awareness. Details like the rise in atmospheric concentrations of five different CFCs that are banned by the Montreal Protocol, except for feedstock use, and that companies are not required to report emissions of pollutants to the Environmental Protection Agency (EPA) if they do not cross certain thresholds are left out of The Washington Post article but emphasized by Inside Climate News.

Explicit vs. implicit arguments:

Although both the Inside Climate News and The Washington Post articles explicitly argue that the presence of banned pollutants in the emissions from Honeywell and Chemour is detrimental to the environment, they implicitly motivate the reader to question the credibility of these companies' emissions reports and the overall systems in place by the EPA to combat pollution in the United States. Both articles mention that "EIA also detected CFC-13, a chemical that Honeywell had not reported to the EPA as having emitted since 2018. The group also detected two hydrofluorocarbons (HFCs), potent greenhouse gases that the company did not report to the EPA …, including in 2022 when EIA detected the chemicals in the air outside the facility (McKenna)." By pointing out this omission of CFCs from emission reports, the Inside Climate News and The Washington Post articles lead the reader to question the credibility of previous emission reports from Honeywell. This credibility issue raises questions about the enforcement of environmental policies and regulations by the EPA. Some questions publishers want the readers to think about after reading this news report are, "How does the EPA ensure companies do not tamper with or forge emission data used in reports? After companies report emissions, does the EPA conduct site checks to validate these reports?" By making the readers question the credibility of 'the most successful environmental policy,' both The Washington Post and Inside Climate News articles make us think critically about other deals and policies made by

governments and companies/organizations globally for environmental preservation. Once the public begins scrutinizing and critically analyzing the nature of various climate-change-related deals, we can hold corporations accountable for their actions and ensure they follow up on previous pledges and agreements. Increasing transparency of processes like emissions reporting and getting the public actively involved in various ventures and corporate meetings can also increase the public's trust in environmental protection policies and corporate strategy execution.

Connections between the articles and broader context/class readings:

Despite criticism of humanity's efforts to slow climate change, we must remember Jen Rose Smith's words about the danger of dismissing all our efforts by categorizing them all as failures in connection to The Washington Post and Inside Climate News articles. We must not "group all of humanity [and its efforts] into one homogeneous unit" of whether our efforts are successful (Smith 166). Although Jen Rose Smith uses this quote when talking about the Bering Land Bridge Theory, the quote applies to the binary classification of humanity's efforts to curb the impacts of climate change because all of our efforts are part of a grander learning process. We have reduced the use of CFCs and fossil fuels after analyzing existing technologies and processes and developing more energy-efficient ones. The Montreal Protocol has allowed the ozone layer to recover, reducing the ozone hole to the smallest it has ever been since its discovery (UN Environment Programme). As we become more aware of the full extent of the damaging effects of pollution, we can sustainably develop better technology to fulfill humanity's needs and clean up existing pollutants. Another danger of grouping all humans into one homogenous unit is that "it ignores most of human history, where the majority of human beings have not caused global environmental destruction and climate collapse (Anti-Creep Climate Initiative 16)." Taking the EIA report as an example, we see that not every manufacturing plant emits CFCs. Instead, there is a small subset that does. As a result, this causes environmental damage that impacts everyone but affects the poorer sections of society the most because of their financial restrictions on the healthcare they can afford. For these reasons, we must approach our analysis of solutions to combat climate climate change with a detail-oriented perspective. We can then identify individual areas of solutions that need improvement instead of grouping all the different aspects of it into a binary outcome. This approach also allows us to direct resources efficiently to communities with the greatest need or solutions with the highest potential.

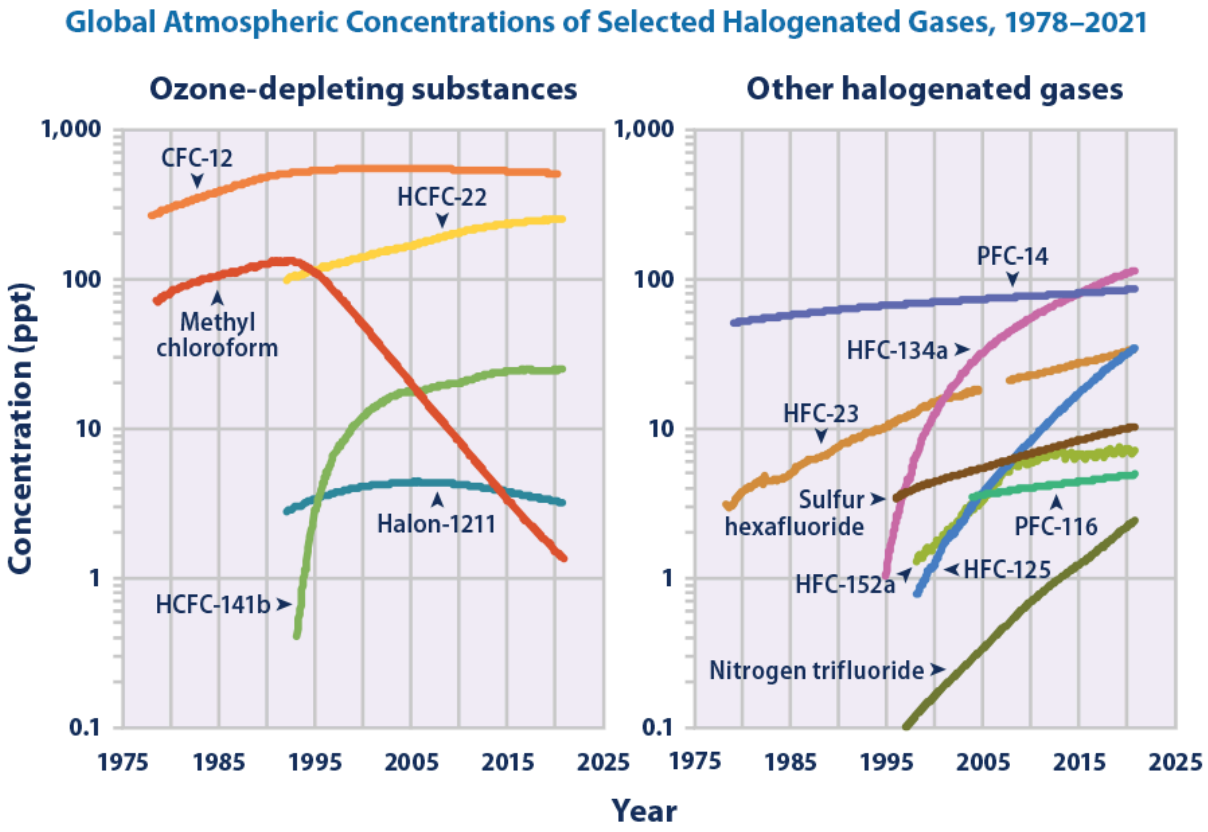
Conclusion and next steps:

In conclusion, the implications of this report from the EIA are immense, given all the effects of climate change that humanity has suffered over the past few decades. Despite the drawbacks suffered in protecting the ozone layer, highlighted through the EIA report, we can use this as an opportunity to examine existing frameworks for environmental protection and improve them. Data from 2022 indicates that the net consumption of ozone-depleting substances among the European Union countries was -3,623 metric tons, meaning that more ozone-depleting substances were destroyed or exported by the European Union than consumed or imported (European Environment Agency). This statistic implies that by making the technology used by the Europeans more accessible and learning from and implementing different versions of their methodologies, other countries too could begin to have net zero or lower emissions of ozone-depleting substances. As we lower global atmospheric concentrations of ozone-depleting substances, we can also start cleaning our atmosphere to remove existing PFAs and repair the

damage caused by human activities on the environment since the start of the Industrial Revolution.

Visualizations:

The graphs below put the EIA report into perspective by showing the rise in ozone-depleting substances and the gradual decrease in ozone levels (Environmental Protection Agency (EPA)).

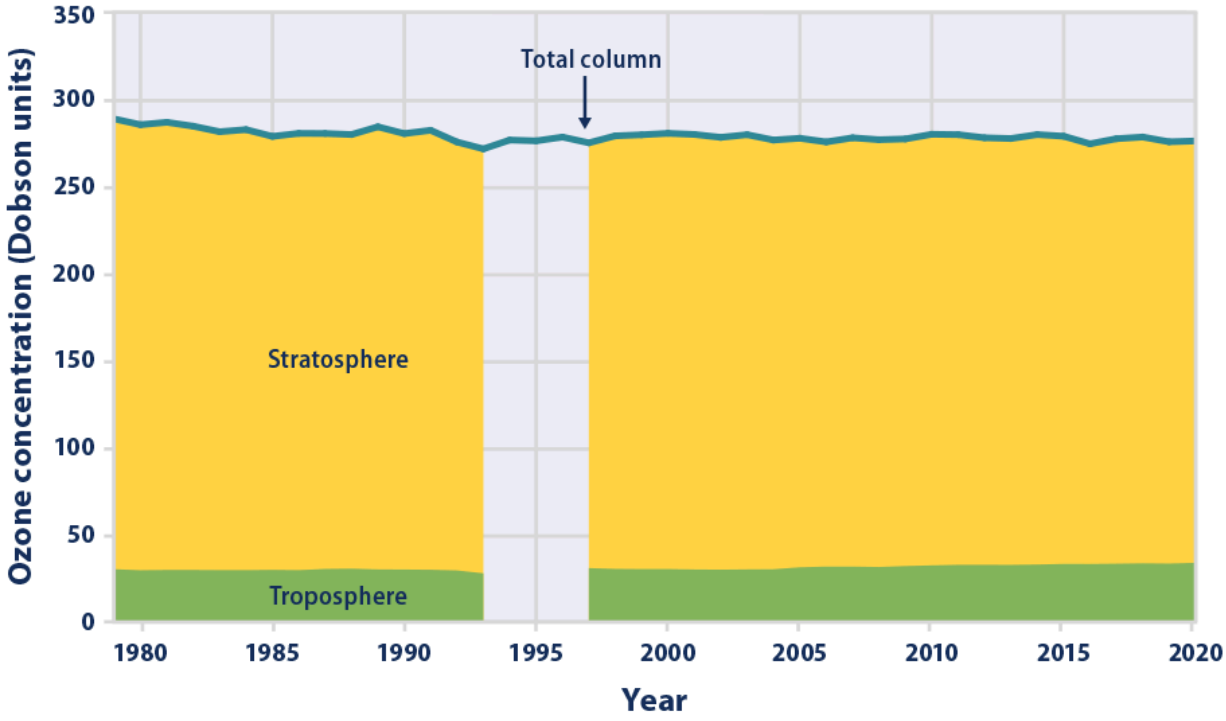


Data sources:

- AGAGE (Advanced Global Atmospheric Gases Experiment). 2022. ALE/GAGE/AGAGE database. Updated June 14, 2022. Accessed July 2022. https://agage2.eas.gatech.edu/data_archive/global_mean.
- NOAA (National Oceanic and Atmospheric Administration). 2019. Halocarbons and Other Atmospheric Trace Species group (HATS). Updated October 2019. Accessed January 2021. https://gml.noaa.gov/aftp/data/hats/Total_Cl_Br.
- Rigby, M. 2017 update to data originally published in: Arnold, T., C.M. Harth, J. Mühle, A.J. Manning, P.K. Salameh, J. Kim, D.J. Ivy, L.P. Steele, V.V. Petrenko, J.P. Severinghaus, D. Baggenstos, and R.F. Weiss. 2013. Nitrogen trifluoride global emissions estimated from updated atmospheric measurements. P. Natl. Acad. Sci. USA 110(6):2029–2034. Data updated December 2017.

For more information, visit U.S. EPA's "Climate Change Indicators in the United States" at www.epa.gov/climate-indicators.

Global Atmospheric Concentrations of Ozone, 1979–2020



Data sources:

- NASA (National Aeronautics and Space Administration). 2013. Data—TOMS/SBUV TOR data products. Accessed November 2013. https://science-data.larc.nasa.gov/TOR/data.html.
- NASA (National Aeronautics and Space Administration). 2021. Tropospheric ozone data from AURA OMI/MLS. Accessed May 2022. https://acdb-ext.gsfc.nasa.gov/Data_services/cloud_slice/new_data.html.
- NASA (National Aeronautics and Space Administration). 2022. SBUV merged ozone data set (MOD). Version 8.7. Updated May 21, 2022. Accessed May 2022. https://acdb-ext.gsfc.nasa.gov/Data_services/merged/index.html.

For more information, visit U.S. EPA's "Climate Change Indicators in the United States" at www.epa.gov/climate-indicators.

Works Cited

Anti-Creep Climate Initiative. *Against the Ecofascist Creep Debunking Ecofascist Myths*. 2022. *Canvas*, https://canvas.dartmouth.edu/courses/63601/files/folder/Week%201?preview=11932150. Accessed 28 January 2023.

Environmental Protection Agency (EPA). "Climate Change Indicators: Atmospheric Concentrations of Greenhouse Gases | US EPA." Environmental Protection Agency (EPA), 1 November 2023, https://www.epa.gov/climate-indicators/climate-change-indicators-atmospheric-concentrations-greenhouse-gases. Accessed 27 January 2024.

European Environment Agency. "EU continues phasing out use of chemicals that harm the ozone layer." European Environment Agency, 15 September 2023, https://www.eea.europa.eu/en/newsroom/news/eu-continues-phasing-out. Accessed 27 January 2024.

Joselow, Maxine. "A loophole in the Montreal Protocol lets U.S. facilities pollute." *The Washington Post*, 10 October 2023, https://www.washingtonpost.com/climate-environment/2023/10/10/montreal-protocol-ozone-climate/. Accessed 27 January 2024.

McKenna, Phil. "Watchdog Finds a US Chemical Plant Isn't Reporting Emissions of Climate Super-Pollutants and Ozone-Depleting Substances to Federal Regulators." *Inside Climate News*, 16 October 2023, https://insideclimatenews.org/news/16102023/watchdog-us-chemical-plant-isnt-reporting-climate-super-pollutants/. Accessed 27 January 2024.

Ozone Secretariat. "Thirty-Fifth Meeting of the Parties | Ozone Secretariat." Ozone Secretariat, https://ozone.unep.org/meetings/thirty-fifth-meeting-parties. Accessed 27 January 2024.

Smith, Jen R. ""Exceeding Beringia": Upending universal human events and wayward transits in Arctic spaces." *Environment and Planning D: Society and Space*, vol. 39, no. 1, 2021, pp. 158-175. *Sage Journals*, https://journals.sagepub.com/doi/10.1177/0263775820950745. Accessed 28 January 2023.

UN Environment Programme. "About Montreal Protocol." UN Environment Programme, https://www.unep.org/ozonaction/who-we-are/about-montreal-protocol. Accessed 26 January 2024.

UN Environment Programme. "Thirty years on, what is the Montreal Protocol doing to protect the ozone?" UN Environment Programme, 15 November 2019, https://www.unep.org/news-and-stories/story/thirty-years-what-montreal-protocol-doing-protect-ozone. Accessed 27 January 2024.