
# *UNIVERSITY OF THE PEOPLE*

***ENVS 1301-01 INTRODUCTION TO ENVIRONMENTAL SCIENCES - AY2024-T2***

***LEARNING JOURNAL UNIT 6***

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1. List two of the myths that you found most intriguing and write the reasons why you find them interesting. Outline the myth using your own words and explain the scientific fact about the issue.

The myth that climate change is "not urgent" stems from a lack of awareness of its long-term impacts. Many wrongly believe the effects are distant, when in fact, most consequences are delayed. We must act now to avoid future harm, as postponing action will allow irreversible damage to manifest.

Some claim that "animals and plants will adapt" to climate change, but experts warn this is overly optimistic. While species can adapt to adversity, the rapid pace of human-caused climate change outpaces natural adaptation. The resulting biodiversity loss could be devastating, potentially causing extinction for species unable to quickly evolve coping mechanisms. Climate change poses a severe adaptation crisis for much of the natural world.

The myths downplay climate change urgency and overstate natural resilience. Science makes clear immediate mitigation and adaptation efforts are imperative to avoid catastrophic and irreversible harm to ecosystems and human communities. We cannot delay action based on false optimism or uncertainty - the risks are too high.

2. Which substances cause ozone depletion? Please explain and discuss their effect on climate change. Use sources/citations to support your work.

The ozone layer envelops the Earth in the upper atmosphere, primarily composed of ozone molecules that filter out the Sun’s ultraviolet radiation. This protective barrier shields life by blocking harmful UV rays, which can otherwise cause health issues like skin cancer or suppress immune function and inhibit plant growth (National Geographic, 2023). Human activity has

exacerbated ozone depletion over time by releasing ozone-disrupting chemicals into the air, such as through intensive agriculture's methane and nitrous oxide emissions. These compounds drive climate change by trapping heat (Shankman, 2019). A weakened ozone layer leads to dangerous UV exposure, carrying risks of rising skin cancer rates, damaged crops, and disrupted ecosystems. Maintaining the intact ozone layer is crucial, but continued emissions of depleting substances threaten to erode this atmospheric sunscreen that is vital to public and environmental health. Concerted action to curb emissions can help restore stratospheric ozone concentrations to safe levels.

3. Compare the environmental impacts of waste in rural and urban settings.

The environmental impact of waste often correlates with the volume generated in each area. Densely populated urban zones tend to produce more waste per capita than less populated rural ones. With greater numbers of people and economic activity concentrated in cities, there is higher consumption of packaged goods and use of plastic services creating an abundance of trash. The outsized waste output stresses municipal management systems, increases pollution from landfill off gassing or plastic waste escaping into waterways and green spaces, and amplifies the urban heat island effect from organic decomposition. So, while waste negatively impacts sustainability regardless of where it originates, the sheer quantity and concentration of trash generated in urban settings yields an outsized environmental footprint. Addressing production, usage, and disposal at the source across product lifecycles could help mitigate growing waste issues, especially in the mushrooming metropoles expected to amass even larger populations in coming decades.

References:

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Shankman, S. (2019). What Is Nitrous Oxide and Why Is It a Climate Threat? Inside Climate News. https://insideclimatenews.org/news/11092019/nitrous-oxide-climate-pollutant-explainer-greenhouse-gas-agriculture-livestock/#:~:text=Like%20other%20greenhouse%20gases%2C%20nitrous,middle%20ground%20of%20super%20pollutants.

Word count: 450