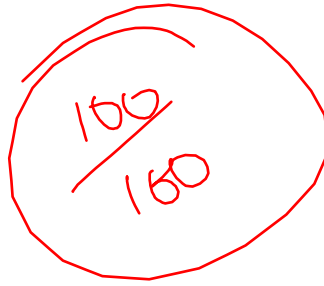


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Writing Assignment 4

1. What are the three main points of this article? Imagine you are talking to a friend who is unfamiliar with marine biology and the science of climate change. How might you summarize the findings of this study to them?

To summarize I would say that this article provides evidence of how climate change and plastic pollution are interconnected. Within the article, there are three main points, the first one talks about how plastic contributes to climate change. It shows how plastic production produces greenhouse gases that affect climate change. The next main point explains how climate change can impact the spread of plastic pollution. This is seen majorly within the marine environment, as it is polluted with plastics and leads to a global distribution around the world. As climate change causes extreme weather, the winds push around the microplastics spreading all over. The last point in the article is how the impacts of climate change and plastic pollution co-occur in the marine environment. As Plastic pollution affects climate change and climate change affects plastic pollution the cycle is never-ending. Without intervention, this can cause increasing numbers between the two which would be devastating to the marine environment.

2. What are three potential drawbacks of bio-based plastic uses?

One would be the amount of land required to plant the bio-based plastic feedstock. It would be detrimental to the biodiversity. The next drawback is that some bioplastics are still not biodegradable, and the consumer can dispose of them improperly. The consumer would have to know more information on who collects what and the type of item being disposed of. The last drawback is the management of bio-based plastics still shows various results in the release of greenhouse gasses. It all depends on a multiple of factors like how there managed and the material they are made from.

3. What are two ways that plastic pollution exacerbates the effect of global climate change?

Be as specific as possible. You may include examples given in the article or come up with your own possible examples.

The first way plastic pollution can affect climate change is through the release of greenhouse gasses into the environment. Throughout the whole process of producing plastic to it being disposed of, greenhouse gasses are released which exacerbates the effect of global climate change. Another example can be seen in one of the studies provided within the article on ocean acidification. Exposing mussels to microplastics exacerbated the conditions being mimicked by ocean acidification which led to detrimental effects to the organism. Thus, proving how plastic pollution affects the marine environment and leads to climate change.

4. Choose a figure (NOT including the graphical abstract) and summarize the findings.

Critique the figure. Why is it good/bad? What could be improved? What do you like?

For this question, I chose Figure 1 which depicts the plastics lifecycle. During this cycle, it shows the estimated amounts of greenhouse gases being released at each stage in its life. I think this is a good representation as sometimes people think plastic pollution is just being disposed of improperly when the chemicals being released are causing harm to the environment too. I enjoyed the color scheme used and how it was set up. To improve this figure they could give a representation of the amount of plastic in this model that correlates with the greenhouse emissions.