[Name of the Writer]

[Name of Instructor]

[Subject]

[Date]

Biology and Life Sciences

 Climate change is the most dangerous threat facing mankind in the twenty-first century and the primary driver of climate change is the carbon concentration in the atmosphere. Carbon emissions contribute to increasing the temperature of the Earth and affect health of individuals. However, there is a mildly positive aspect to climate change as well: photosynthesis in plants increases as a result of the higher concentration of carbon in the atmosphere. Although, this report will shed light on how this leads to further climate change and starts a vicious cycle of increased warming.

 Carbon dioxide is one of the primary ingredients of photosynthesis in plants. So, increased carbon concentration in the atmosphere results in greater photosynthesis as the supply of raw materials increases. This leads to quicker growth of plants as carbon concentration increases in the atmosphere. This fact may be interpreted as an additional benefit of climate change but it serves to further climate change. There are two ways in which carbon emissions affect the environment: radioactively and physiologically. The latter effect is especially pertinent to plants as the evapotranspiration is significantly affected. Evidence collected over time has proved that increased carbon concentration decreases evapotranspiration over land. This results in reduced rainfall and contributes to dry atmosphere. The drier the atmosphere gets, the warmer the surface becomes. Another effect of decreased evapotranspiration is that relative humidity over land decreases. These effects combined contribute to further warming of the atmosphere, enhancing the disastrous effects of climate change.

 To sum it up, the increasing concentration of carbon in the atmosphere results in decreased transpiration from plants and this affects humidity. The end result is the enhanced temperature that is a result of carbon emissions and the carbon emissions further contribute to warming through physiological forcing. This forms a cycle of warming of the Earth’s surface that worsens the already dire situation due to climate change.

Works Cited

Cao, Long, et al. "Importance of carbon dioxide physiological forcing to future climate change." *Proceedings of the National Academy of Sciences* 107.21 (2010): 9513-9518.

Boucher, Olivier, Andy Jones, and Richard A. Betts. "Climate response to the physiological impact of carbon dioxide on plants in the Met Office Unified Model HadCM3." *Climate Dynamics* 32.2-3 (2009): 237-249.