Oceanic acidification argumentative essay examples

Environment, Water

Many scientists argue that oceanic acidification, which is said to arise from dissolving of artificial carbon dioxide emissions, has serious impacts to both the land and sea life. Besides, scientists equate oceanic acidification to the evils of global warming. However, in this essay, we argue that oceanic acidification does not pose much threat to either land or sea life, and it should not be such a significant environmental concern.

Oceanic acidification, from artificial carbon dioxide emissions, is said to cause a decrease in PH level of the ocean, thus interfering with marine life. However, I refute this point because a decrease in the pH level of the ocean is not necessary caused by artificial carbon dioxide emissions. The fact is that levels of alkalinity and acidity differ naturally between sections of the ocean and at different phases of a day, month or year (Hofmann et al. n. p). Hofmann et al. explains that even the most steady ocean places experience changes in pH more times than the yearly rate of acidification both on a monthly and a yearly scale (n. p). However, due to lack of suitable instruments to gauge ocean pH, this difference has been disregarded. The PH deference between sunset and dawn, over coral reefs, is approximately half as much as the difference in average pH projected over the coming 100 years (Hofmann et al. n. p). A different recent study by Gattuso and Hansson reveal that marine and freshwater collections have always encountered uneven pH conditions and that in most freshwater lakes, pH alterations that are orders of scale higher than those expected in oceans during 2100 years, can take place over durations of hours.

Another concern is that a low PH level will make it difficult for corals and other calcifiers to make shells and skeletons using calcium carbonate. Those who support this fact claim that oceans are packed with organisms that rely on outer skeletons and protective shells to subsist. They suppose that when the oceans take in carbon dioxide carbonic acid gets formed, and this acid dissolves shells, making organisms, in the ocean, susceptible (Dawson 259). The claim goes on that most of these organisms form a fundamental part of the marine food web, which, sequentially, supports life on earth. This implies that breakdown of phytoplankton and other organisms in the oceans cause trouble to both land and sea life. However, this concern seems to be overstated. Studies indicate that calcifiers still survive at the Italian island of Ischia and the Off Papua New Guinea, where the sea is less alkaline due to natural carbon dioxide emissions from volcanic vents (). Besides, calcifiers survive at the Yucatan, where seawater becomes acidic (as far as pH 7. 8) due to submarine springs (). A different study demonstrates that when mollusks and corals get transplanted to lesser pH sites, they tend to calcify and develop at rates that are higher than normal rates. This study exposed mollusks and corals to the high amounts of carbon dioxide emissions that may be anticipated in the coming 300 years. Besides, freshwater mussels, in Scottish rivers, blossom despite their low PH level of 5 (Gattuso Jeff and Hansson 24). In past eras, extending from million of years, levels of atmospheric carbon dioxide levels have differed, extremely, at times attaining concentrations far beyond those present and those anticipated, in the next 100 years (Royal Society 12). However, calciferous sea organisms continued to flourish even during these times of varying carbon dioxide concentration (Bosnich n. p.). While it is true that corals and other calciferous sea organisms have experienced soaring and looming phases, the soaring and looming events do not compare with the amount of carbon dioxide in the atmosphere (Bosnich n. p.). Besides, these events have no association with temperature. Regular with these past observations are the documented experimental studies that confirm that calciferous marine organisms become much more resistant to the impacts of ocean acidification than most scientists think (Royal Society 12).

These experiments, moreover, point out that most organisms are apt to survive or adapt even in some of the intense projections of ocean acidification. Hence, we should note that coral shells, as well as, shells of other organisms that contain calciferous exoskeletons do not get made impulsively by the overturn of reaction (Bosnich n. p.). Rather, the biomineralization process is accountable for the laying down of the calcium carbonate of their skeletons. These organisms use energy actively and lay down the calcium carbonate in a certain way, in this process. In fact, almost 95% of spiral shells are right-handed, which is a morphological demonstration of the process of biomineralization (Bosnich n. p.). If the calcium carbonate became laid down, impulsively, there could be equal amounts of right and left handed shells. Hence, it is plausible that the biomineralization course could oppose any decomposition that may occur by a placid acid like carbonic.

Another concern is that a low PH level will make it difficult for the existence of marine life. However, I refute this claim because most laboratory experiments demonstrate that a great number of marine organisms flourish than endure when the level of Carbon dioxide is as low as pH 7. 8 (Jeff and Lenard 112). This can be attributed to the fact that carbon dioxide dissolves mostly as bicarbonate, which acts as a raw material, for carbonate, for many calcifiers. This supports the notion that the concerns of ocean acidification are mere exaggerations, since the ocean is alkaline and in no risk of emerging acidic. In Case, the average pH of the ocean declines from 8. 1 to 7. 8 from 8. 1, as predicted by the next century, the PH will still be above 7, which is the neutral point separating alkalinity and acidity (Dawson 259). Concerns have recently been expressed that higher than natural emissions of carbon and sulphur dioxide during pre-industrial years is also contributing to oceanic acidification (Abbasi 20).

In conclusion, oceanic acidification does not pose much threat to either land or sea life, and it should not be such a serious environmental concern. This is because, first, levels of alkalinity and acidity differ naturally between sections of the ocean and at different phases of a day, month or year. In fact, the PH deference between sunset and dawn, over coral reefs, is approximately half as much as the difference in average pH projected over the coming 100 years. Hence, PH Variance in the ocean is a normal phenomenon that can not pose any risk to both human and other micro organisms. Second, most organisms are apt to survive or adapt even in some of the intense projections of ocean acidification. Hence, ocean acidification can not prevent corals and other calcifiers to make shells and skeletons using calcium carbonate. Lastly, a great number of marine organisms flourish when the level of Carbon dioxide is as low as pH 7. 8, which is close to the projected PH in the 22nd century.

Works Cited

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