



Changes in Aquatic Lives Due to Changes in Environments

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Currently, the world environment is changing more rapidly than at any other time. These changes have immense effects on aquatic life forms, from microscopic plankton to large fish (1). Some of the relevant stressors, amongst many, are temperature, salinity, and water pH, all of which are variables that directly impact living organisms present in the concerned aquatic environments (2). Scientists have found a correlation with physiological, morphological, and molecular changes in living organisms due to environmental fluctuations. In any aquatic ecosystem, photosynthetic primary producers are the basis of other life forms, and it is now established that environmental change has many detrimental effects on these primary producers; thus aquatic ecosystems. For example, increasing temperatures can reduce the productivity, cell size, and overall growth of many aquatic organisms, also a significant cause for coral bleaching (3,4).

Ocean acidification and increasing salinity are the other important factors accountable for the slow reproduction of ocean fish and other organisms (4). Recently, findings showed that pH and salinity fluctuations are responsible for phytoplankton altering community structure by slowing growth rates, and changing cell morphologies in freshwater ecosystems (3). Moreover, it is predicted that the increasing water temperature will result in immense problems for many aquatic animals dependent on dissolved oxygen. This is due to the influences of higher water temperature on dissolved oxygen availability, thus responsible for water quality hazardous that might be the main cause of ecosystem loss in the future (5,6).

Anthropogenic activities have *directly* influenced the increase of greenhouse gasses, particularly carbon dioxide emissions, which have risen immensely, contributing to global warming. The amount of greenhouse gas emissions is predicted to double that of the pre-industrial period within the next century. This is aside from the other stressors, which will surely create unaccounted negative impacts on aquatic life forms.

In conclusion, change is an inevitable process and it is not so easy to prevent these usual processes from taking place; however, we can make progress in our understanding of how to manage life forms in order to sustain the combating of changes in aquatic environments.

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