

DOI: 10.36648/2581-804X.5.3.14

Causes of Oxygen Depletion in an Aquatic Environment

Keywords: Eutrophication; Hypoxia; Oxygen depletion

Received: May 05, 2021; **Accepted:** May 20, 2021; **Published:** May 27, 2021

When oxygen levels within the water are depleted, generally safe aerobic microorganisms die and anaerobic microorganisms start to thrive. A few anaerobic microorganisms are destructive to individuals, animals and the environment, as they create harmful poisons such as ammonia and sulphides. Oxygen depletion could be a phenomenon that happens in oceanic situations as dissolved oxygen gets to be decreased in concentration to a point where it becomes inconvenient to aquatic organisms living within the system.

Hypoxia leads to impaired propagation of remaining fish through endocrine disturbance [1]. Hypoxia can happen throughout the water column and also at high altitudes as well as close sediments on the bottom. As these blooms are broken down by microscopic organisms and other taxa, oxygen is depleted by the chemicals of these life forms [2]. Oxygen radicals cannot be utilized within the environment, and are harmful in high presence within the environment [3]. The breakdown of phytoplankton within the environment depends on the presence of oxygen, and once oxygen is now not within the bodies of water, ligninperoxidases cannot proceed to break down the lignin.

This depletes the oxygen even more within the environment, further making hypoxic zones in higher amounts. As more minerals such as phosphorus and nitrogen are displaced into these aquatic systems, the development of phytoplankton greatly increases, and after their death, hypoxic zones are formed [4]. Algal blooms and rotting natural matter: Algal blooms are one of the essential causes of oxygen depletion and can happen in masse, warm waters; in fact this combination of components may be a more likely cause than expanded supplements – commonly a result of high phosphorus levels. Oxygen enters a stream from the climate and from groundwater release.

A polluting spill, such as plant manure, cause expanded

Alaia Scott*

Department of Aquatic Biology,
University of California, Santa
Barbara, USA

***Corresponding author:** Alaia Scott

✉ alaias@scu.edu

Department of Aquatic Biology,
University of California, Santa
Barbara, USA

Citation: Scott A (2021) Causes of Oxygen Depletion in an Aquatic Environment. J Aquat Pollut Toxicol. Vol. 5 No. 3: 14.

nutrient levels and thus algae and Other dangerous fluids such as drain, can moreover be extremely harming. Photosynthesis is the essential process influencing the dissolved-oxygen/temperature relation; water clarity and quality and length of sunlight, in turn, influence the rate of photosynthesis.

To combat hypoxia, it is necessary to decrease the amount of land-derived nutrients coming to rivers in runoff. This could be done by progressing sewage treatment and by decreasing the amount of fertilizers leaching into the streams. Alternately, this may be done by reestablishing normal situations along a waterway; marshes are especially viable in decreasing the amount of phosphorus and nitrogen in water.

References

1. Wu R. (2003). Aquatic Hypoxia Is an Endocrine Disruptor and Impairs Fish Reproduction
2. Gubernatorova T. N, Dolgonosov B. M. (2010). "Modeling the biodegradation of multicomponent organic matter in an aquatic environment: 3. Analysis of lignin degradation mechanisms". Water Resources. 37: 332–346.
3. Betteridge, D. John. (2000). "What is oxidative stress?". Metabolism. 49: 3–8.
4. Daniel J C, Hans P W, Robert H W, Donald B F, Sybil S P, et al. (2009). "Controlling Eutrophication: Nitrogen and Phosphorus". Science. 323: 1014–15.