

Water Policies Concerning Florida's Red Tide

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A recent crisis in Florida has been significantly worse than ever previously recorded in the state's history: Red Tide. This algal bloom is categorized by a high concentration of *Karenia brevis*, a highly toxic marine algae (Red Tide FAQ). The algae can cause death in various fish and marine vertebrates, as it negatively affects their central nervous system. *Karenia brevis* can also be carried by the wind and cause serious respiratory problems and illness in individuals with compromised immune systems or asthma (Red Tide FAQ). Thus, Red Tide not only affects the health of aquatic species, but also that of humans near the coast.

The issue of Red Tide has undergone much debate in Florida's scientific and political communities. An abundance of scientists claim that nutrients from Lake Okeechobee are making their way into the Gulf and that they are definitively contributing to inshore algal bloom growth (Red Tide FAQ). However, some scientists are claiming that Red Tide sees a large accumulation inshore due to other factors. These scientists claim that "blooms tend to concentrate along a rapid change in water density such as temperature and salinity fronts that mark the boundary between two distinct water masses" (Alcock, 2007). Whether Red Tide is primarily caused by humans or is not influenced by them at all, it is still a massive issue that has led to the demise of various populations, respiratory issues in a multitude of individuals, and even decreased tourism for Southwest Florida.

Thankfully, there are a plethora of regulations to help combat Florida's Red Tide issue at all levels of government. The Coastal Zone Management Act is a federal regulation that prompts coastal states to make water management plans (Alcock, 2007). This has resulted in a

federal-state dynamic that encourages states to take issues such as Red Tide more seriously and develop plans to ensure that they are prepared in advance. The Florida Department of Environmental Protection has administered the National Pollution Discharge elimination System (NPDeS), which evaluates the state's waterways and institutes water quality standards for regions found to be impaired (Alcock, 2007). The NPDeS is very important as it involves the accumulation of data that may be used by other organizations like the Florida Fish and Wildlife Commission to create warnings for humans so they are aware of algal levels within the waters and can determine if they are to visit or avoid coastal areas.

These policies and regulations have been extremely helpful in combating Florida's Red Tide issue and have resulted in more government ordinance over the water. The prevailing controversy at hand is which level of government should be responsible for the issue and what level of action they should take. There could certainly be more effective policies to help deter human contribution to Red Tide. Considering the crisis had placed Florida in a state of emergency, politicians will hopefully begin realizing the direness of this issue and implement policies that will reflect this.

References

- Alcock, F. (2007). An Assessment of florida red tide: Causes, Consequences and Management Strategies. *Mote Marine Laboratory*, 1-40. Retrieved November 3, 2018, from https://mote.org/media/uploads/files/MPI_RedTideAssessment-2007-Final.pdf.
- Red Tide FAQ. (n.d.). Retrieved November 2, 2018, from <http://myfwc.com/research/redtide/faq/>

Career Objectives/METRA Mission Statement

Ultimately, I hope to work as a climatologist and aid in making climate statistics/trends more accessible and understandable to politicians. Climate change is arguably one of the most pressing, all-encompassing environmental issues that we must face; there is a very limited time before a multitude of irreversible effects transpire. The METRA Mission is extremely important to myself, as I believe that environmental compliance training is necessary in ensuring that companies are following the regulations and laws that our government has created. An array of ecological communities exist in Central Florida that must be protected at all costs.