

Dear members of the Planning Board,

July 10, 2018

The proposal for a gravel and granite mining project in Barrington is up for review. I would like to take a moment of your time to inform you that the town voted in an ordinance that defined what they were/are willing to accept as land use in their town. You may say that this is not enforceable, however you have a responsibility to uphold the ordinances that the towns people of Barrington voted in. You have an obligation to respect their wishes and abide by it.

If you don't feel that the majority of the people's voting wishes are important then may you would care to educate yourself on the fragility of the freshwater wetlands that our Barrington has so much of.

There were people that thought the earth was flat, but they learned differently, then there were people who believed that we couldn't possibly pollute the vast oceans, but they have learned differently, now there are those who think that the exploitation of freshwater wetland resources within their own town isn't going to matter, but it does. In fact what you trying to get through is severely damaging the freshwater wetlands which the entire health of the planet relies on. Please, read these two pages which I borrowed from an exhaustive study by the World Wildlife Fund that addresses the destruction of the freshwater wetlands. You will see just how what you are trying to get approved is only going to contribute to the accumulative destruction of the freshwater wetlands. I feel that if one finds themselves living in an area such as where we are, you, by proximity, have a very serious responsibility to use your energy and intelligence to protect the area.

Please, for all of our sakes and, believe it or not, the sake of our planet, read this and act on it for everyone's sake.

Most sincerely,

James F. Conley
President
B.W.P.C.
978-621-7333

LAND USE OFFICE

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RECEIVED

Protecting Freshwater Ecosystems in the Face of Global Climate Change

Stacey Combes, Ph.D.

Department of Biology, University of Washington

FRESHWATER ECOSYSTEMS HAVE BEEN critical to sustaining life and establishing civilizations throughout history. Humans rely on freshwater systems not only for drinking water, but also for agriculture, transportation, energy production, industrial processes, waste disposal, and the extraction of fish and other products. As a result of this dependence, human settlements worldwide are concentrated near freshwater ecosystems, with over half of the world's population living within 20 km of a permanent river (Small and Cohen, 1999).

In addition to humans, an enormous array of plants, animals, and microorganisms depend on freshwater ecosystems for their survival. Although freshwater ecosystems contain only 0.01% of the Earth's water and cover a small fraction of the planet's surface, rivers, lakes and wetlands harbor a disproportionately high fraction of the Earth's biodiversity. Freshwater fishes alone account for over one-fourth of all living vertebrate species. (McAllister et al., 1997).

Because freshwater ecosystems continuously channel precipitation from the surrounding landscape through the interconnected lakes, rivers, and wetlands that lie below, they can be surprisingly sensitive to distant activities. Increasing human water needs and extensive land alteration has contributed to the decline of countless freshwater species.

Freshwater biodiversity is now more threatened than terrestrial biodiversity, and the projected mean future extinction rate of North American freshwater animals is about five times higher than for terrestrial animals, and comparable to predicted extinction rates for tropical rainforest communities (Ricciardi and Rasmussen, 1999).

The long-term protection of freshwater species is largely dependent upon identifying the underlying physical processes of freshwater systems that are most vulnerable to change, and determining how changes in these physical features might affect the resident

flora and fauna. For this purpose, it is useful to divide freshwater ecosystems into rivers, lakes, and wetlands. In this chapter, rivers and streams are considered to be channelized bodies of water that generally display continuous flow, and lakes are relatively still bodies of water that can be either connected (through rivers, streams, etc.) or isolated from other bodies of water. Wetlands (also known as marshes, swamps, fens, bogs,

floodplains, or depressions) are areas where the water table is at or near the surface, and vegetation is submerged for at least part of the year. Many, although not all, wetlands are connected to or interact strongly with lakes and rivers.

Because freshwater ecosystems are sensitive not only to water temperature, volume, and flow, but also to variability in these factors, rivers, lakes and wetlands are expected to display a wide variety of changes in response to global climate change. The purpose of this chapter is to provide information and strategies for designing and managing reserves that will allow freshwater ecosystems to withstand and/or adapt to climate change. The chapter begins with a review of current threats to freshwater ecosystems and some of the observed and predicted effects of global climate change on these systems. Next, general suggestions are presented for designing and managing freshwater reserves to increase resistance and resilience to climate change. The chapter concludes with a discussion of methods for selecting and implementing specific adaptation strategies to accommodate global climate change in freshwater ecosystems.

Current Threats to Freshwater Ecosystems

Because freshwater ecosystems depend strongly on physical features such as water quantity, quality and flow, many of the threats to these ecosystems involve activities that alter fundamental physical characteristics. Freshwater ecosystems throughout the world are threatened by human activities that directly alter system hydrology, such as construction of physical barriers to flow, water extraction, and filling or draining of shallow habitats. Pollution of waterways with toxic substances and excessive nutrients, as well as destructive land use practices in areas surrounding freshwater ecosystems, lead to reductions in water quality. While the above threats directly affect physical features of freshwater ecosystems, the introduction of exotic species primarily affects native biota. The invasion of freshwater ecosystems by non-native species is rapidly becoming one of the most serious threats to freshwater communities. Overexploitation of animals associated with freshwater ecosystems, particularly freshwater fishes, is also a continuing problem. Finally, penetration of harmful UV-B radiation into water bodies is increasing in many areas due to interactions between a number of anthropogenic factors, and a range of negative impacts on freshwater communities may result.

Alteration of hydrology

PHYSICAL BARRIERS TO FLOW

Humans have constructed a variety of physical barriers, including dams, levees and dikes, to prevent flooding, generate power, supply water for irrigation or municipal water supplies, and provide recreational opportunities. Dams have been built on every continent except Antarctica; they are prevalent in developed countries and their rate of construction is increasing rapidly in developing nations. Dams have traditionally been viewed as an environmentally-friendly and sustainable means of ensuring water supply, controlling floods, and generating power without polluting the environment. However, retaining water and altering its natural flow can lead to large changes in aquatic and terrestrial habitats, both above and below dams.