Proposal To Establish Riparian Buffer Zones Adjacent to the Allegheny River

Abstract

This proposal seeks to decrease the frequency and severity of flooding along the Allegheny River by establishing riparian buffer zones. Specifically, this plan will address flooding by utilizing green infrastructure; riparian buffer zones are made up of various forms of vegetation that will prevent an excess of water from entering the stream. This project will benefit the city of Pittsburgh, which has a lengthy history of flooding, and the people that live along the Allegheny River; riparian buffers also have numerous benefits for their surrounding environment. The first phase of this project involves utilizing land-surveying technology to locate areas lacking riparian buffer zones, or heavily degraded riparian buffer zones. The second phase includes the creation of riparian buffer zones in the needed areas.

Introduction

Flooding has been on the mind of Pittsburgh citizens since the turn of the century. Despite efforts to alleviate flooding during the New Deal, floods still persist in Pittsburgh. In fact, floods threaten to worsen with the increase of climate change. Climate change causes more extreme weather patterns, which makes floods more likely to occur (UNEP). It is imperative that the Pennsylvanian government prioritizes decreasing flooding in Pittsburgh, before climate change drastically accelerates the occurrence of floods.

While Pittsburgh has previously used dams to decrease flooding, creating more dams along these river-systems is damaging to people and the environment. Damming requires land, which causes the displacement of people. Historically, the people displaced by the creation of

dams are BIPOC. For example, the creation of the Kinzua Dam displaced the Native American tribe of Senecans. Additionally, dams harm the environment. Dams not only stop water, but also the nutrients and animals inside the dam. Through this, dams disrupt the life cycles of aquatic species, disrupt the food web, and promote the spread of deadly algae and parasites (Otten). These effects have caused several aquatic species to go extinct. While dams do work to reduce flooding, they actively harm the environment.

The state of Pennsylvania can help protect its Pittsburgh population against flooding by increasing riparian buffers along the Allegheny River. Riparian buffers are areas along streams that consist of vegetation, like trees, shrubs, and other perennial plants.

Project Description

This project aims to create riparian buffer zones along the Allegheny River to decrease flooding in Pittsburgh. These zones have numerous benefits, such as protecting communities downstream from flood damage, filtering nutrients, pesticides, and animal runoff, stabilizing eroding banks, filtering sediment from surface water runoff, providing habitat for terrestrial organisms, and providing shade, shelter, and food for aquatic organisms (USDA).

Riparian buffers absorb excess water that causes flooding events to occur. By not allowing excess water to enter streams, they prevent pollutants from entering a stream. Usage of riparian buffer zones will result in improved stream quality of the three rivers of Pittsburgh and a decrease in flooding events.

Rationale

This project will decrease the instances of flooding in Pittsburgh. Through decreasing the occurrence and severity of flooding, riparian buffers can help keep the costs of floods low. Riparian buffers also provide benefits to the environment, such as decreasing pollutants that

enter the water, stabilizing stream banks, decreasing excess sediments from entering the stream, and many others. Riparian buffers are a natural solution to decrease flooding, and benefit the surrounding environment. Despite all the benefits of riparian buffers, it is estimated that over one-third of rivers and streams in Pennsylvania have had their riparian buffers degraded or altered (WeConservePA).

Task Breakdown

Task One: Identifying land needing a buffer zone

A group of environmentalists will use land-surveying technology and identify land next to the Allegheny River that lacks a riparian buffer zone.

Task Two: Establishing Riparian Buffer Zones

Riparian buffer zones will be established by employing people to plant vegetation along the Allegheny, Ohio, and Monongahela rivers. The vegetation used in these buffers will be native to the state of Pennsylvania, and will include a diversity of species. This project will follow the guidelines in the USDA's guidebook, *Conservation Buffers: Design Guidelines for Buffers, Corridors, Greenways.* The process of establishing these zones will take place over a ten year span.

Conclusion

Riparian buffers are critical to decreasing the severity and frequency of flooding in Pittsburgh .Establishing and maintaining buffer zones will benefit the city for years to come. Not only do these zones prevent flooding, but also decrease the amount of pollution that enters the stream. Riparian buffers will benefit Pittsburgh, areas surrounding the river, people who live along the river, and the environment as a whole.

Works Cited

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