

GEOG 3100
Abstracts, Fall 2017

Colorado River Water

Kara Conn, David Asay, Morgan Young, and Jacob Gard

ABSTRACT: The Colorado River is the major supplier of water for California and the surrounding states up until recently. Due to bad management of the resource by keeping systems that are over 100 years old and would be costly to change and the effects of global warming there have been signs of irregular rain patterns and lowering of the water level. This has affected the living situation by forcing restrictions to water use on residence and economically since the river is main source of irrigation the crops and livestocks as the drought has reduced seasonal farm employment by 10,100 jobs.. While admit these frequent droughts has also been the rise of forest fires in the area slowing down timber production. The problem was caused by California's rapid growth and with it the damming of sections that would usually feed the river and it fixing the issue would have to overcome the constant lobbying opposed to alternate sources of water like for example other underground springs. The solution we believe is to restrict the use of water to any person, company, or entity and educate the locals the necessity on the possible total depletion of these resources.

The Rising Sea Levels and the Evolution of Tangier Island

Madeline Crawford, Eric Matthews, Joshua White, Elizabeth Williams

Abstract: The islands of Tangier have been severely impacted by constant erosion due to rising sea levels. In particular, the city of Tangier is becoming increasingly submerged by the waters of the Chesapeake Bay, thus causing developments on the island to be deserted or abandoned. It is predicted to be completely inundated by year 2106 and become inhabitable within the next 60 years from now (Schulte, David). As the number of houses, schools, and businesses being lost to climate change begin to increase, the citizens are becoming pressured to relocate their lives. Financial burden followed by unemployment is a real fear for the citizens of Tangier and the question of environmental justice, or "climate change refugees", begins to make its way into national as well as global politics. Due to sea level rising and the plans for management/solutions become increasingly difficult to implement in society, Tangier serves as an example of how catastrophic land loss impacts can be especially on a larger scale that ultimately deals with the millions of people living in major cities and ports along the coast.

Medical Deserts

Ashton Guenther, Nick Deines, Jose Soto, Ariana Strange

Abstract: Based off key findings, research questions, and other scholarly articles, this paper will be based off institutive research done over many years of medical deserts and how it has stressed financial issues, impacted overall health violations, and the loss of hundreds of thousands of jobs. With this ever-growing issue of medical deserts, we will be writing about the issues that they bring, what impacts they have on a social and national level in the U.S., what the government plans to do to fix this problem, and the overall significance of this problem that we can no longer ignore. How can we live in a nation who does not take care of its people's health, urban and rural wise? In this paper, we will also be going over the results of medical deserts, how frequent they are, where they are mostly located, and what happens when it is no longer needed. What actions is the government taking to prevent rural hospital closures? Similarly, we will also bring forth governmental media articles that stress this national crisis that our health should be a main priority when it concerns the population of the entire United States. In the end, we hope to achieve the understanding that medical deserts are becoming more and more frequent in areas that are in desperate need of medical attention.

Wildfires

Zach Orenstein, Sarah Shipp, Brendan Anghilante, Ethan Newman

Abstract: Our research question was: "What are the causes and effects of wildfires and how are they tracked?" Through rigorous research, we've found that wildfires are destructive disasters that cause significant damage to the natural environment as well as human developments. We've found that 90% of wildfires are caused by Human activity, contributing heavily to the creation of conditions that allow these fires to get out of control. Human activity in this case can be regarded as the refinement and cultivation of fossil fuels that let out harmful chemicals and gases which build up in the atmosphere via the greenhouse effect, thereby warming the earth's climate. This warming has led to longer and drier summers, which these fires thrive in, allowing them to grow in size and intensity with each passing year. It's a problem we've been trying to rectify for decades, and we're making great strides. But in the current day and age, it's crucial that we have effective solutions so that the least amount of people are harmed. Using GIS to track where the fires are starting and how they spread, as well as mapping routes to aid in rapid evacuation and emergency response. Emergency services and others hope to find new ways to prevent and better handle these wildfires as they become more frequent in our ever changing world.

Mountain Pine Beetle

Dirk Bitner, Hope Boring, Shane Hoya, Devin Morrow, Grace Schmidt

Abstract: Mountain pine beetle outbreaks and wildfires are the two key components of change in western North American forests, and both have increased in severity and extent in recent years. These two components interact with one another to shape the forest structure and the lives of individuals inhabiting affected regions. Mountain pine beetle outbreaks result in widespread tree mortality. The increased tree mortality rate reduces forest carbon intake, consequentially increasing the frequency and intensity of wildfires. Moreover, the fire damage to trees promotes future mountain pine beetle outbreaks and increases the mountain pine beetle population. This paper addresses the correlation between mountain pine beetle outbreaks and wildfires and how the two interact with one another to negatively impact the environmental, social, and economic dynamics of the regions experiencing an increase in mountain pine beetle outbreaks and wildfires. Given the influence these processes have on the environmental, social, and economic characteristics of a particular region, a better understanding of how mountain pine beetles and forest fires interact is needed in order to better manage and prevent mountain pine beetle outbreaks and wildfires. The data sources consists of scholarly articles, informational pamphlets, and statistical analyzes referring to the western North American region. The results showed that mountain pine beetle outbreaks increase the likelihood of rapid spreading wildfires. The results suggest that an increase in wildfires from mountain pine beetle outbreaks, increases the total acreage damaged by wildfires, generates personal, corporate, and government financial burden from property damages, and highlights the need for increased government and individual involvement in infestation prevention, disease treatment, and fire management.

Pacific Northwest

Leah Selby, Austin Lewis, Brian Pratt, Farrell Stucky, Isaac Warriner

Abstract: Urban sprawl in the Pacific northwest, specifically Seattle, Vancouver, and Portland, is leading to the introduction of new ideas to protect the environment and policy measures to implement redevelopment. This paper examines and discusses the ways different cities decide to handle their growing populations. Vancouver's biggest issue with urban growth is the highly dense traffic that comes with having a high population while Seattle's problems lie mostly with energy expenditure and needing to cut down use of unclean energy. Portland's struggle with urban sprawl centers around extreme growth because their growth rate is twice the national average. Seattle also has to deal with having very little physical space to take up because of how much water is surrounding it. A way Portland has been dealing with their rapidly growing population is passing bills to make the city more habitable and attractive. In Vancouver, the focus has been on making viable alternatives to cars allows the cars people drive to be more

efficient. While all three cities are in beautiful natural environments, not all three are growing at the same pace or able to utilize the same amount of land necessary for urban life.

Viability of Marine Aquaculture as an Increasingly Sustainable Industry

David Teague, Tyler Rollwage, Cory Scott

Abstract: Aquaculture is defined as the process of breeding and harvesting aquatic species. Globally, this is a huge industry, but conflict and controversy between economists and environmentalists have kept the growth of aquaculture at a slow crawl, especially marine aquaculture. An increase in production of the marine aquaculture industry could lend itself a boon to the seafood economy of the United States, especially in the coastal regions. In 2015, the per-capita consumption of seafood in the U.S. was estimated at 15.5 pounds, a record high. However, 90% of all consumed seafood in the U.S. was imported from eastern Asia, while 90% of domestically produced seafood was exported to other countries. An increase in production could reduce reliance on foreign imported food and create direct and indirect local jobs for many American citizens. In contrast to the bolstering of the economy, aquaculture, especially the rearing of finfish species, can pose some significant environmental concerns. Such concerns include the accumulation of waste beneath net-pen farming sites, escaped fishes into non-native habitats and the increased risk of cultivation and transference of aquatic parasites and diseases that could affect the surrounding ecosystems. However, through recent technological advances and changes in practices within the industry, many of the environmental hazards can be significantly lessened or altogether mitigated completely increasing the gap between environmental catastrophe and economic prosperity.

Dwayne Warren, Alexandra Hillesheim, Ahmed Tanimu

Impacts of Climate Change on the Midwest

Abstract: There are many impacts climate change has on the Midwest. This report will talk specifically on how climate change and environmental impacts have affected agricultural productivity and economy in the Midwest. The Midwest region consist of Arkansas, Illinois, Indiana, Iowa, Kansas, Michigan, Missouri, Nebraska, North Dakota, South Dakota, Ohio, and Wisconsin. The Midwest contains some of the most fertile farmland in the world and is the one of the most intensely farmed regions. Increased temperatures, increase in storms, rise in pest, floods being more common, and increased precipitation are negatively affecting the Midwest region and its farming. One possible solution to this issue is to decrease total carbon emission in the Midwest. Since the Midwestern region produces a large percentage of the nation's agricultural products, climate change will also affect the agricultural market and the United States economy. Therefore, the consequences of continuous emissions of greenhouse gases is dire to the nation as a whole.

Geography's Role in the Flint, Michigan Water Crisis

Garrett Buatte, Bennet Morris, Stratton Edmonds

Abstract: On April 17th, 2013 the city flint decided to switch their water source from Lake Huron to the Flint river, what followed was a national disaster. As a group we looked at the incident from a geographical point of view. Asking how does the role of geography play into the decision and outcome of the Flint water crisis? With this question in mind we researched the history of Flint Michigan along with its location to certain day to day operations of Michigan as a whole. Our findings bring up articles from when the crisis was just beginning up to present day, explaining how the effects of Flint are still taking hold. With rising cases of Legionnaires disease and elevated blood-lead levels the city of Flint was declared a state of emergency. Lastly we uncover what has been done that lead to the poor decision by Flint, and we take a look at what has been done to reverse the effects, and what still needs to be done. With Flint being a part of the wealthiest country in the world, yet it has no drinking water, it is our duty to expose what has gone wrong and explain how their location had much to do with their downfall.