



Pearl River Pollution

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Abstract

This paper addresses that the Pearl River of Mississippi contains a large amount of pollution. This research uncovers that some of the pollutants dissolve in the river, while some of it still affects the community around it. This affects the entire Pearl River Basin, and is a problem to not only humans, but to the animals that reside nearby too. The Pearl River is one of the main water supplies in Jackson county. Considering that this problem affects all citizens and animals that are using the water, pollution is a major concern. It can create new diseases and could wipe out some species. Also, the government has done almost nothing to save this important river. The Pearl River was tested for nitrate and dissolved oxygen. This research is focused on looking for high levels of nitrate and large amounts of dissolved oxygen in the Pearl River. The goal was to make sure there were no unusual levels or amounts of these compounds. During the testing of the Pearl River, its nitrate levels became a lot more concentrated in lots of the areas. In the OD test, the dissolved oxygen levels had a massive increase in the summer of 2012. In conclusion, the Pearl River is polluted to a point of concern. Citizens should help by becoming more involved in the maintenance of the river and helping organizations dedicated to helping the Pearl River. Citizens can also watch their own impact on the river and make an effort to pollute less.

Research Question

- How much pollution does the Pearl River contain?
- How does so much pollution reach the Pearl River?
- How does the pollution affect the general population?
- What is the government doing to fix the pollution problem?
- What more can be done to fix this problem?
- Why is it threatened?

Introduction

As with many places in North America, the Pearl River was inhabited for millennia before colonizers came. This river starts in Neshoba county, and according to Choctaw mythology, is a sacred site. Originally, these people and tons of wildlife thrived on the banks. However, when it was discovered by French colonizers, water travel was easier than land. The middle of Mississippi, which the Pearl River had access to, was rich with fertile soil. Therefore, as colonizers do, they swept through the banks and massacred the natives. Soon after the War of 1812, construction began to make the river more accessible. Fast forward to date, and now the river contains over 200 million pounds of pollution and flooding is a predominant problem.

Over 100 species can be found in the Pearl River. The freshwater that comes from this river provides drinking water for hundreds of thousands of people, and two federally threatened species can be found in the Pearl River. Several other endangered creatures can be found there, including the pearl darter (*Percina aurora*). Some species have not adapted at all in the river for years and are still relatively close to prehistoric ancestors.

The problem is that overflowing sewage flows into this river, putting endangered species and people who acquire fresh drinking water from the Pearl River at risk. People put garbage and sewage into the river. Along the banks, grasses that stop erosion are dying to floods before they can grow strong and do their job.

Research Methods

Planning Investigations

By using water tests to determine concerning water levels and using trusted sources, we can determine the Pearl's pollution levels.

GLOBE Data Used

- Dissolved Oxygen Test
- Salinity Protocol
- Nitrate Protocol
- interviewed Pearl River Keeper

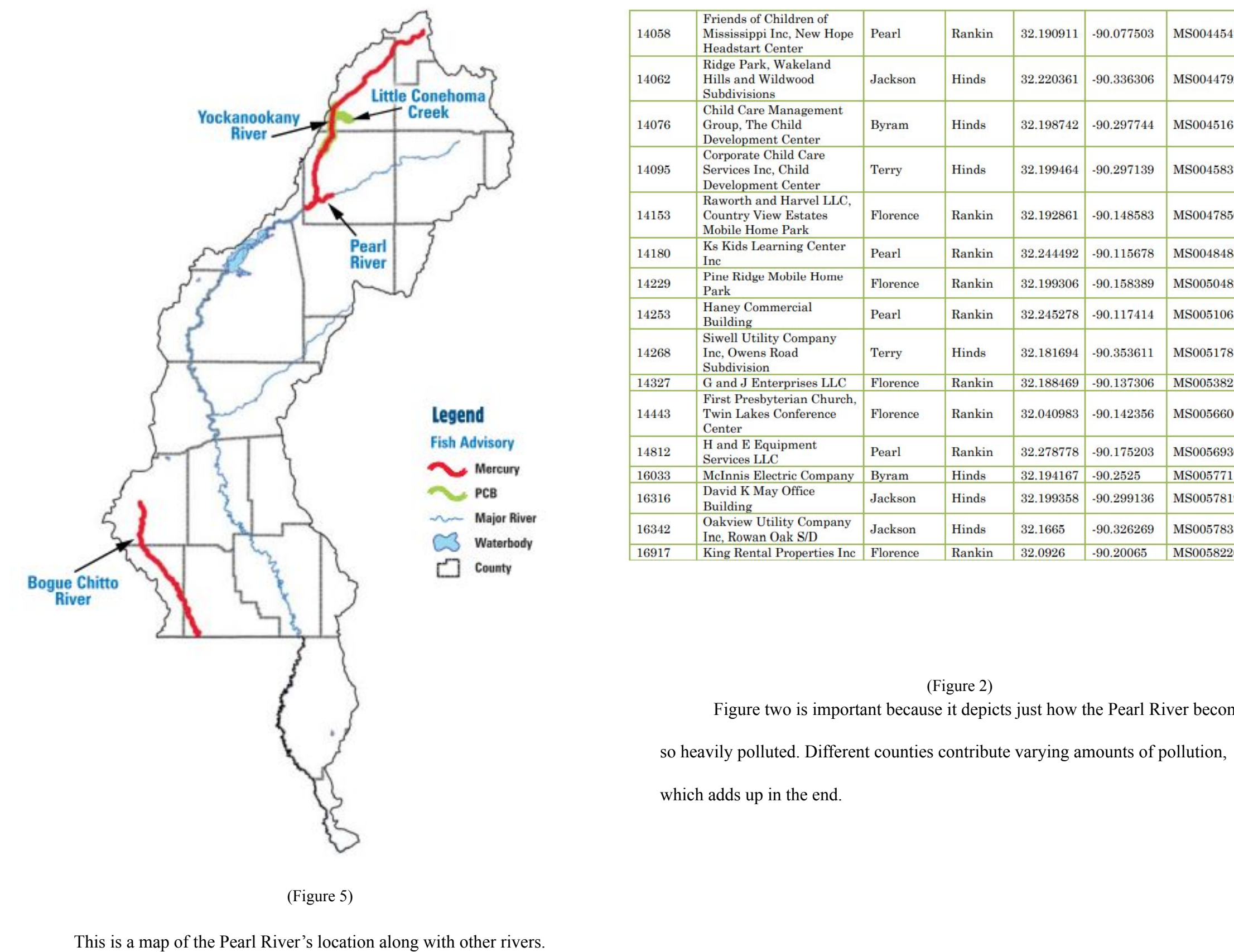
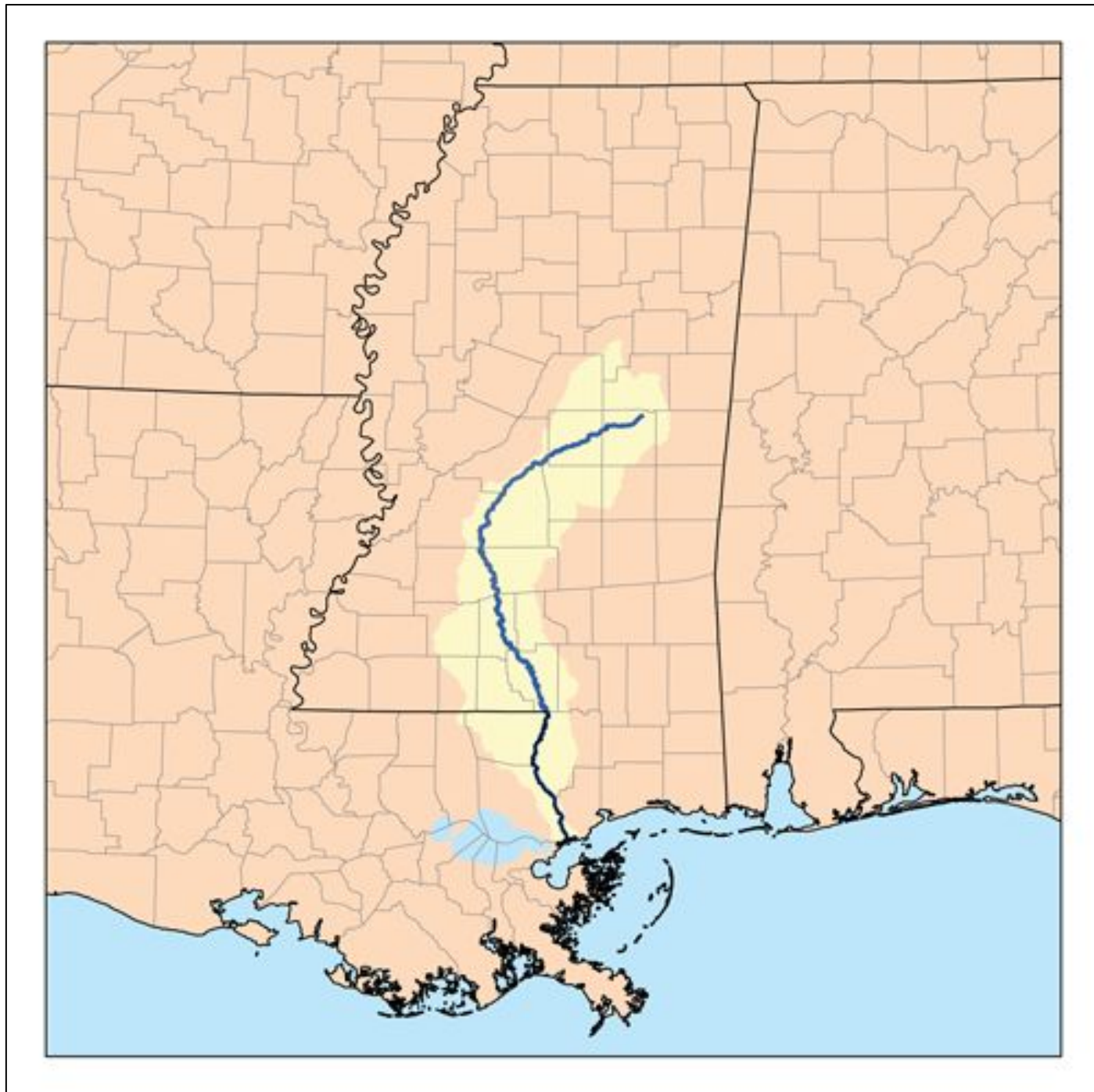


Figure two is important because it depicts just how the Pearl River becomes so heavily polluted. Different counties contribute varying amounts of pollution, which adds up in the end.

Map of the Pearl River



Results

The results show that the Pearl River is currently at stable levels, but anything at the moment can make the balance tip.

Figure #1

The blue line is the amount of dissolved oxygen that is in the Pearl River. In the summer the amount of dissolved oxygen in the Pearl River spiked by a large amount. Everything dropped on 7/11-7/31.

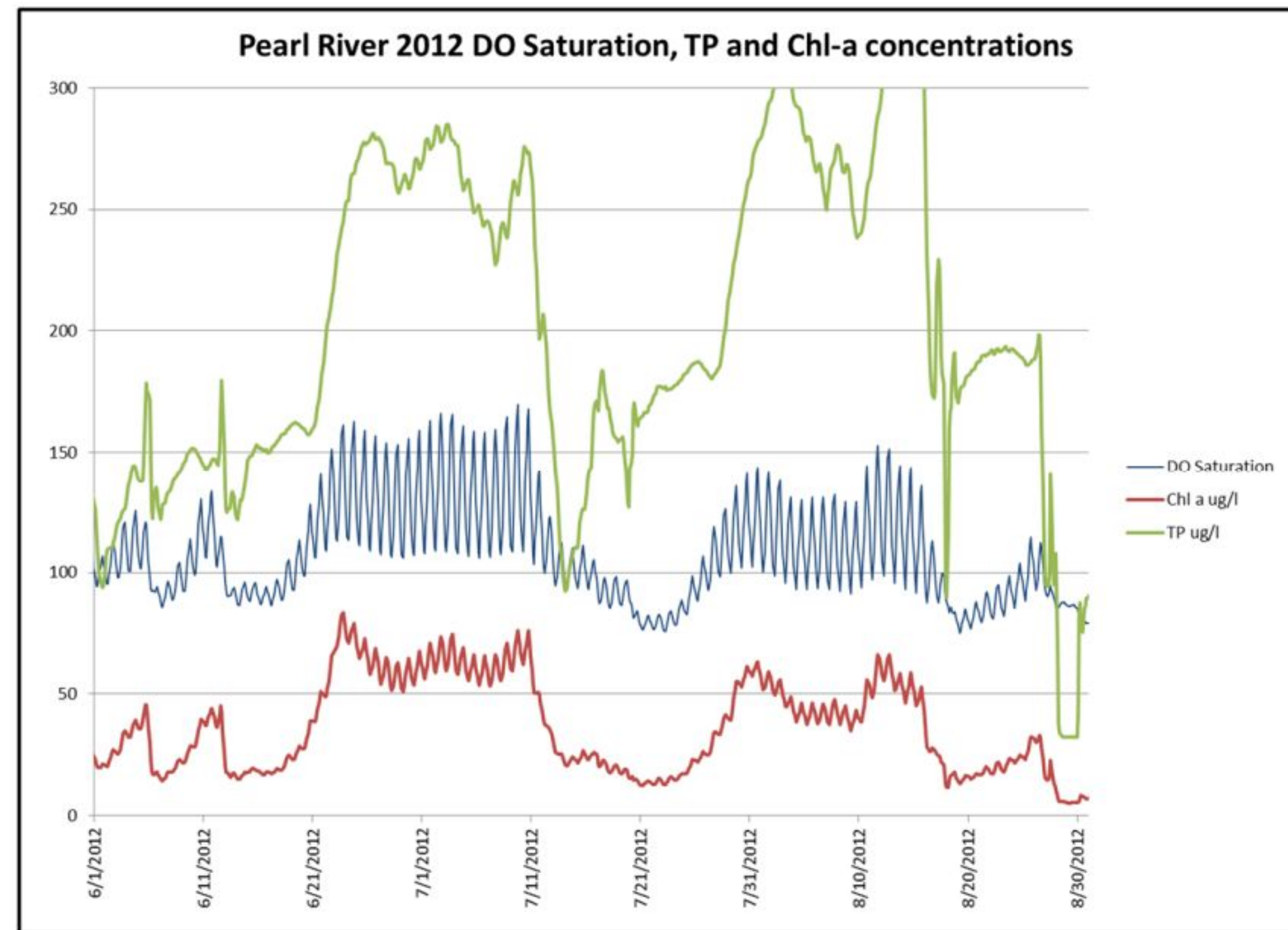
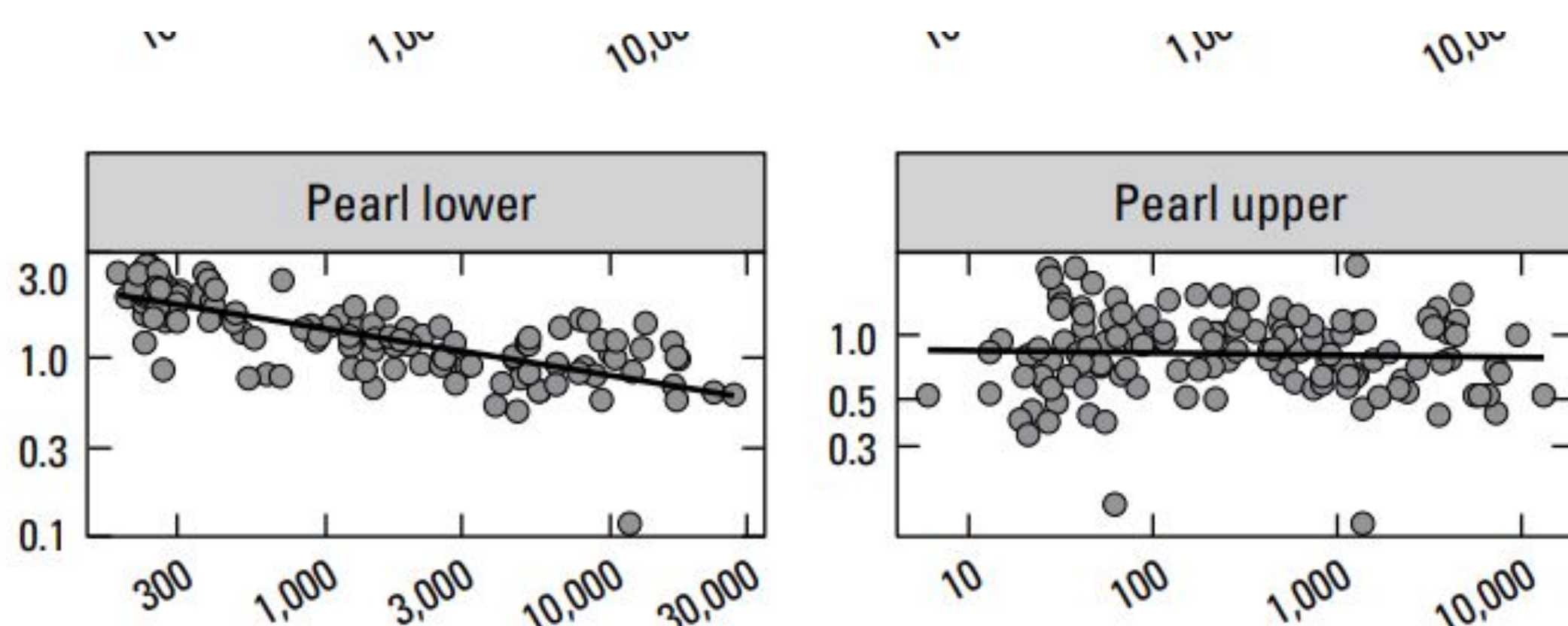


Figure 7 Calibrated Model Output Critical Cell Growing Season, 2012

Figure #2

The graph tells us that the nitrate in the lower and upper areas of the Pearl River are very high in many places in the river upper and lower regions.



Pearl River Basin

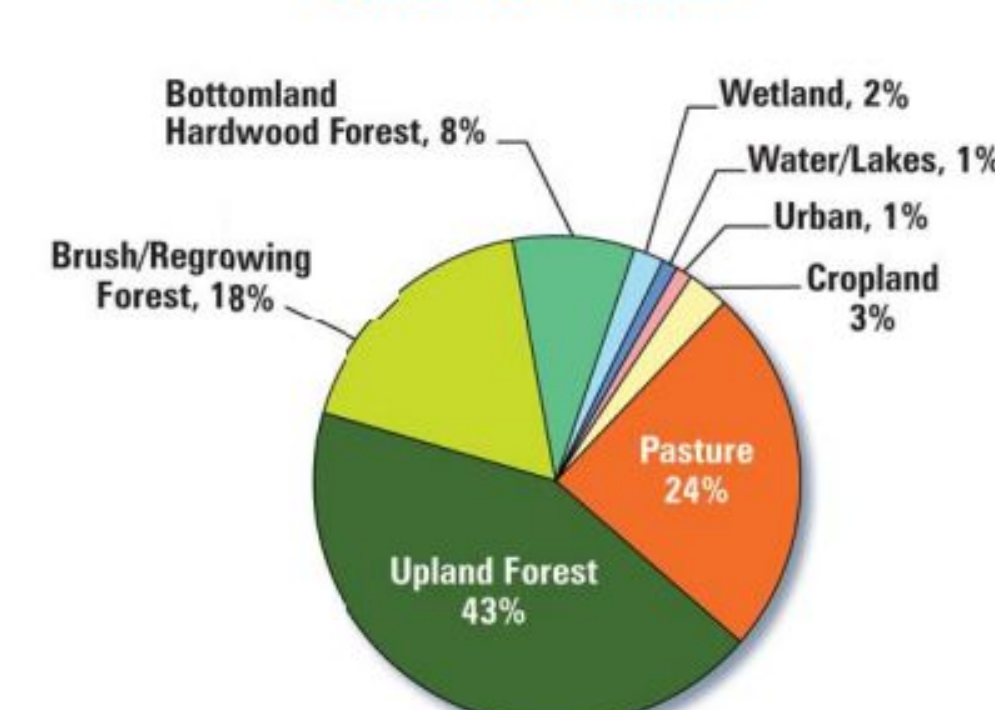


Figure # 4

The graph depicts landforms and land use in the Pearl River Basin.

Discussion

After researching, the graphs have been found. Figure four depicts the components of the Pearl River Basin. For example, 43% of the Pearl River Basin is covered by upland forest. The smaller parts of the graph represent inhabited areas, lake areas, and wetland. Figure five shows the path of the Pearl River (what it flows through and what it affects). They work together to show how it has been polluted. It also shows how grasses and trees that help combat the major flooding are being eroded by human activities.

The long-rooted grasses live at the banks and keep soil intact. Human activities such as farming and deforestation erodes the roots, which causes flooding to be intensified.

Research also recovers that despite fine after fine, the government refuses to assist with local conservation efforts. To make matters worse, they also know this is happening. The Pearl River Basin is an important part of Mississippi geography and economy. Letting this basin go to waste will surely spell disaster for the larger part of Mississippi.

As stated above, figure two matters because it shows specifically how the Pearl River became very polluted. It specifies how different counties and cities contribute to the pollution of the river.

Conclusions

In conclusion, the Pearl River is a massive reserve for wildlife that has been abused for as long as colonizers have known of its existence. The result of such abuse is a large amount of pollution and plenty of flooding every year. The flooding of the river also causes even more problems for the plants on its banks. The long rooted flora native to the banks of the Pearl River would normally prevent the soil from eroding and falling into the river, but are always young due to the flooding.

43 establishments have over 10,000 people that are proven to contribute waste and pollution to the Pearl River.

The government is completely aware of this fact, but they choose to do nothing but pay the fines.

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