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INTRODUCTION

Wetlands are essential ecosystems that provide several environmental services. Wetlands provide a home to many beings, as well carbon sinks that act as a filter within a watershed. Wetlands are essential ecosystems and should not be considered expendable. The Wakarusa Wetlands is Sacred land to the Kaw, Potawatomie, Osage and earlier tribes. The Kansas Department of Transportation constructed the South Lawrence Trafficway (SLT) through the wetlands in 2016, negatively impacting biodiversity in the wetlands. The construction of the SLT bisected the wetlands into two distinct habitats (Haskell and Baker), contributing to habitat fragmentation and inhibiting species movement. My project focuses on how the SLT impacts beaver population within the Wakarusa Wetlands.

RESEARCH QUESTION: How does the SLT impact beaver population in the Wakarusa Wetlands?

METHODS

A Geographic Positional System device was used to collect waypoints of known beaver dam areas and look for activity in the Wakarusa Wetlands. The researcher searched dam markers from 2008, prior to road construction in both Haskell and Baker Wetlands and photographed evidence of activity/inactivity.

BEAVERS AND WETLAND DIVERSITY

Beavers have the ability to mitigate or control floods and aid in biodiversity in wetlands. Studies showing “before beaver floods” and “during beaver floods” which increases waterbird species in wetland patches. (Nummi and Holopainen2014).

BEAVERS AS ECOSYSTEM ENGINEERS

- reduce environmental stress
- promote resource renewal
- modify foraging substrates
- Modify habitat structure (Dickman 2012).



Figure 1: Beaver 2017 Baker U.



Figure 2: Beaver dam under bridge, Kaleb Proctor 2019

I'll be Dammed

South Lawrence Trafficway impacts on beaver populations in the Wakarusa Wetlands



Figure 3: Algae blooms in Haskell Wetlands Google Earth 9/21/2018

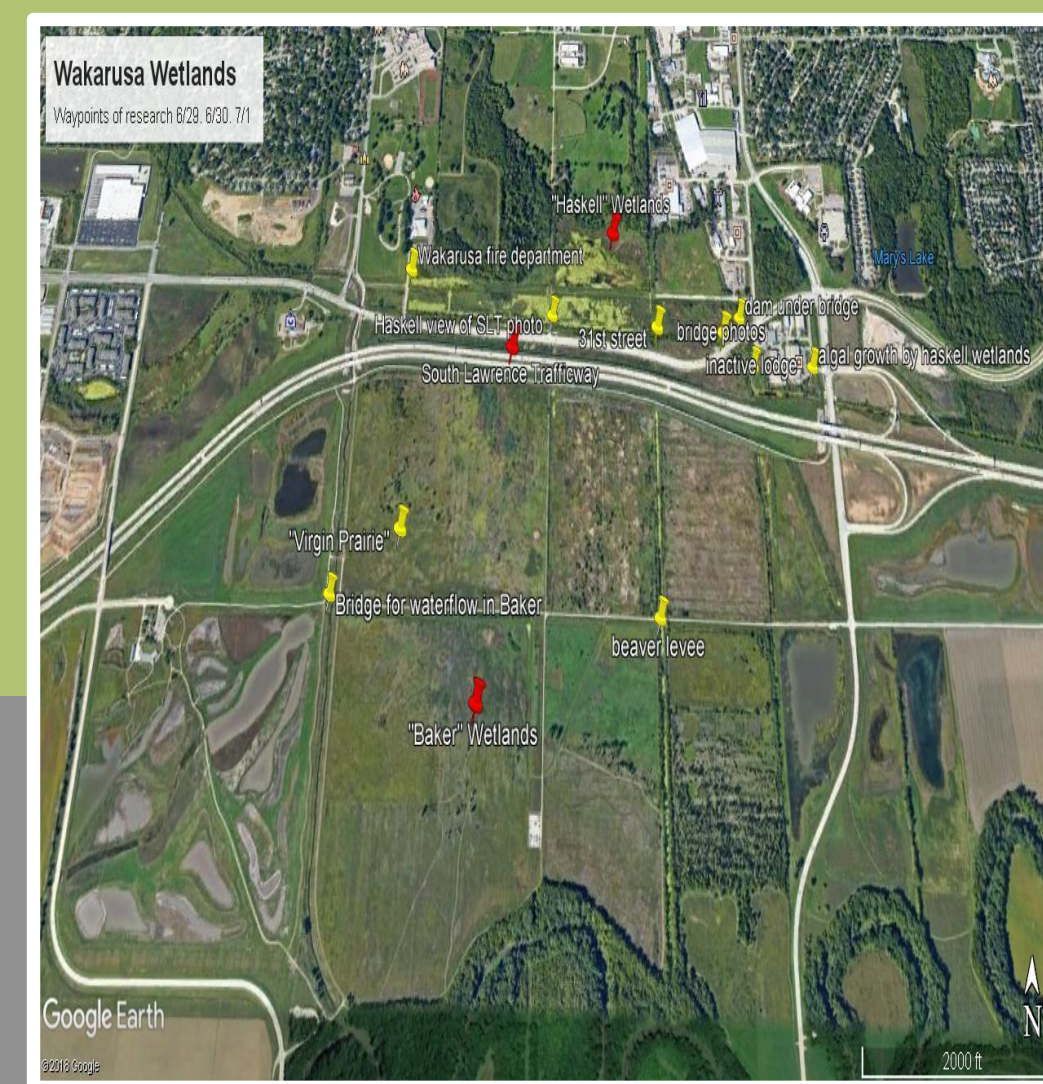


Figure 5: Overview of Wakarusa Wetlands with research waypoints Google Earth 2019



Figure 6: Baker Wetlands free of algae blooms Google Earth 9/21/2018



Figure 4: Haskell wetlands from Wakarusa Fire Department, Kaleb Proctor 2019

Conclusion: There is less beaver activity on the Haskell side of the Wakarusa Wetlands after the construction of the South Lawrence Trafficway.



Figure 7: Beaver activity at Baker wetlands, Kaleb Proctor 2019

DISCUSSION

Beavers are a keystone species in maintaining the health of wetlands. Beavers are referred to as ecosystem engineers and their actions impact entire ecosystems and communities (Nummi and Holopainen 2014). Beavers create channels that direct and maintain water towards wetlands that would be otherwise isolated (Hood and Larsen 2015). The beavers' habits help to contribute to the biodiversity in wetlands and aid in riparian management (McKinstry, Caffrey, and Anderson 2001). All beings have a responsibility to maintain balance and harmony in the community. Beavers do their part by continuing their habits and provide homes for many other beings.

ANALYSIS

The South Lawrence Trafficway has created a noisy and dangerous environment beavers avoid as demonstrated by their lack of activity within the Haskell portion of the Wakarusa Wetlands. The beaver populations appear to have located in remote areas in the wetlands to avoid automobile impacts. Less dams were seen at Baker but still had dams built in Baker levees. The South Lawrence Trafficway hinders the movement of water and beavers from one side of the Wakarusa Wetlands to the other and possibly isolated the population into remote areas.



Figure 8: Haskell Wetlands, Josh Meisel 2008



Figure 9: View of SLT from Haskell Wetlands Kaleb Proctor 2019

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