Lake Leatherwood Bike Trail Hazards

Environmental Geology
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EMPACTS

Introduction

According to nwatrials.org there are over 200 miles of hard and soft surface trails in Northwest Arkansas. The trails at Leatherwood cost around $400,000 to build and $40,000 per year to maintain. Most of the required maintenance on the trails is due to water damage, and the most notable hazards are standing water. As people use these trails they start to carve ruts into the trail where water gets caught causing hazard to the bikers and further damage to the path. Herman Owens of the Eureka Springs Parks and Recreation Department says that drain placements and slope pitch degrees are the most important aspects to maintain the trails. With the help of Mr. Owens, and the OnX Hunt app, our researchers in the field were able to develop three maps detailing the locations of notable hazards.

Community

With these maps we hope to provide adequate information about water and slope hazards on the mountain bike trails of Lake Leatherwood. It will serve the maintenance volunteer teams, trailbuilders and mountain bikers with info on areas of caution or in need of repair.

Curriculum

- Relating geologic principles to environmental issues.
- Assessing slope stability, soil erosion, and the added water runoff associated with those hazards.
- Assessing how to mitigate those hazards.

Technology

OnX Hunt app was used to track trails and drop points of interest pins.

Methodology

To complete this project like intended we needed to gather field work together as well as meet with experienced trailbuilders. Info gathered was from hiking the trails on foot and recording points of hazards. Due to covid-19 meeting together and the use of parks were put on hold because of social distancing and the recommendations of staying at home. We were only able to meet once outside of class before the guidelines went into effect. We utilized text communications the most.

February 23- met with Herman Owens of Eureka Springs Park and Rec and Field work

March 11- met with Mrs.phillips

March 16-classes suspended

April 23/26 -FIeld work

COVID-19 Effects

While everyone is home social distancing, many people are encouraged to spend time on trails and at public parks to get out of the house. This high traffic will cause more wear on the trails in short periods of time than is usually measured.

COVID-19 Effects

To the left is Tanyard Creeks normal parking as well as their overflow parking. Both lots were full on a Thursday around 1pm.

Leatherwood Trail Parking lot

Project results

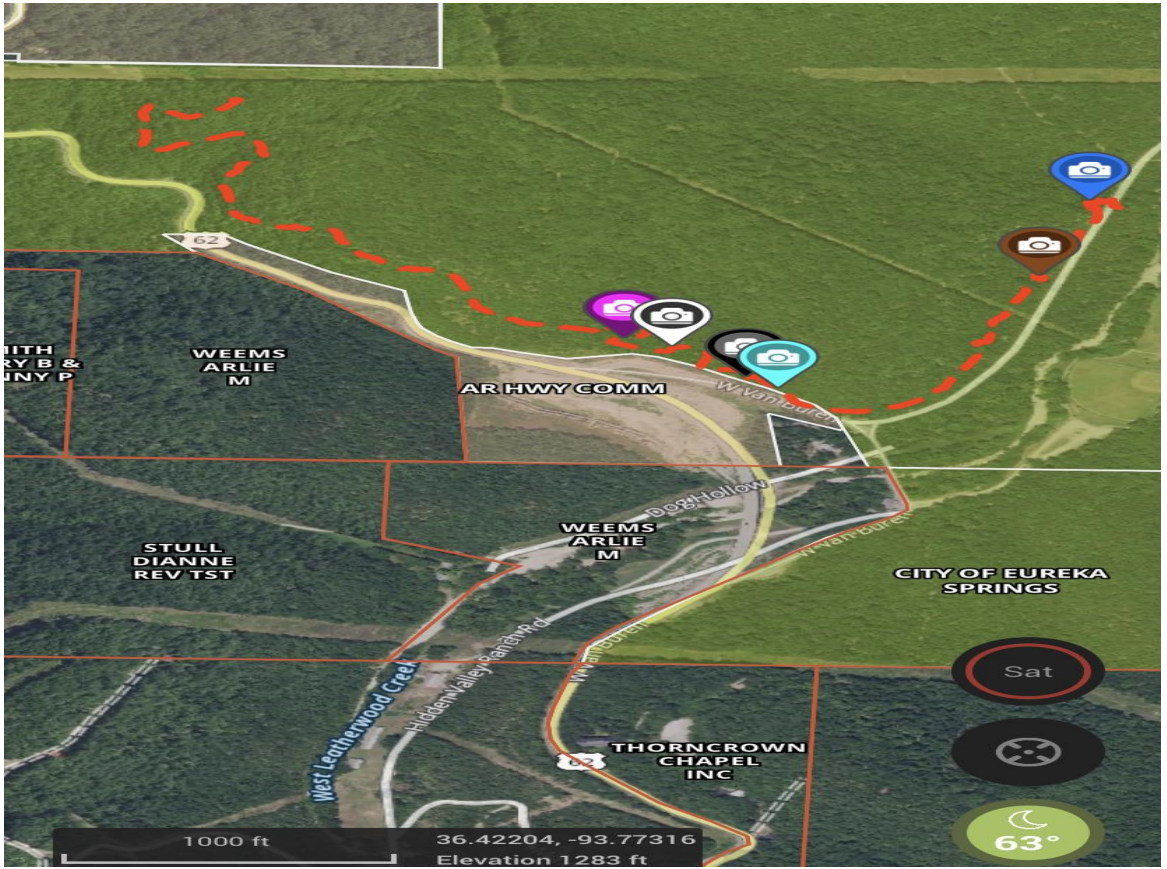
With the info acquired and circumstances the world is in, we were able to make an interactive map of 3 mountain bike trails within Lake Leatherwood trail system. We did this by tracking our hikes of the trails and using “dropped” pinpoints of hazards accompanied by pictures and descriptions. We acquired skills to recognize where a pitch needed degree adjustments or where a drain needed to be added. We also learned how to adjust to the COVID-19 circumstances to be able to finish our project by utilizing text communications and solo field work to maintain social distancing.

Acknowledgement

Herman Owens -City of Eureka Parks and Rec, formerly of Progressive Trail Design.

We had intended to meet with other trailbuilders but due to social distancing and the suggestion to stay at home we were unable to meet with anyone else to take us out on the trails.

Downhill Trail 1



Downhill Trail 1 Key

Dark Blue- standing water- needs to be drained- coordinates (36.42616-93.76803)

Brown- slope wash out- slope needs to be reinforced- coordinates (36.42479-93.76854)

Light Blue- standing water- needs to be drained- coordinates (36.42273-93.77119)

Black- standing water- slope wash out- needs to be drained and stabilized- coordinates (36.42293-93.77151)

White- standing water- needs to be drained- coordinates (36.42348-93.77225)

Pink- standing water and debris- needs to be drained and debris removed- coordinates (36.42364-93.77273)

Downhill Trail 2

Downhill Trail 2 Key

Brown- standing water and slope wash out- needs a drain and slope reinforced- coordinates (36.42584-93.7747)

Dark Blue- standing water and debris- needs a drain and debris removed- coordinates (36.42634-93.77131)

Light Blue- standing water- needs a drain and new pitch- coordinates (36.42656-93.77165)

Black- sink hole in close proximity to trail- potential hazard- monitor- coordinates (36.42639-93.77252)

White- standing water- needs new pitch- coordinates (36.42653-93.77263)

Pink- standing water - needs a drain- coordinates (36.42662-93.77277)

Downhill Trail 3

Downhill Trail 3 Key

Dark Blue- standing water- needs drain-coordinates (36.42759-93.77147)

Light Blue- standing water- needs drain-coordinates(36.42741-93.77196)

White- Standing water- needs drain and new pitch-coordinates(36.42774-93.77219)

Brown- Slope washout- slope needs reinforced- coordinates(36.42796-93.77270)

Pink- Standing water- needs drain- coordinates (36.42822-93.77270)

Red- Standing water- needs drain- coordinates (36.42829-93.77338)

Orange- Standing water- needs drain and new pitch-coordinates (36.42866-93.7748)