



UNIVERSITY OF
ARKANSAS.

**University of Arkansas - CSCE Department
Capstone I - Final Presentation- Fall 2020**


Ozark Creek Gauges

Karen Alas, Mira Cary, Dakota Dale, Kruz Higginbotham, Morgan Maness

Problem

Ozark Creek Information Summary

Last Page Update: 11/12 11:38

Name	Rating	Size	Level	Ref. Gauge	Time	C.Q.	Photos
Fisher's Ford	PLAY	A	L →	USGS: Illinois R. nr Siloam Springs 2.87 [2.1, 3.7, 5]	11/12 11:15 (0.3 hr)	A	
Dragover (Ouachita R.)	I-II	L	L →	USGS: Ouachita River nr Mount Ida 2.99 [2.75, 3.5, 6.5]	11/12 10:45 (0.8 hr)	A	
Saint Francis R. (MO)	II-IV	L	L →	USGS: St. Francis River near Roselle 3.23 [3, 4, 8]	07:08 09:30 (3051.1 hr)	A	
Cadron Cr.	I-II+	L	L →	USGS: Cadron Cr. nr Gay 1.52 [1.5, 2.0, 6]	11/12 11:00 (0.6 hr)	A	

1. The current website is outdated
2. All information is displayed in a flat chart that is difficult to interpret
 - a. New paddlers may not understand the different gauges
 - b. No insight into how to choose an optimal river
3. Current website is not interactive
4. Users may misinterpret the data and choose an unsafe river
 - a. Lacks guidance to avoid low water levels or to be careful of white water rapids in high water levels



Who Are We Working For?

1. Arkansas Canoe Club

- a. Established in 1975 by around 20 members in NW Arkansas
- b. Currently 2000 members in 9 chapters across the state
- c. Primary purpose is to promote paddlesport as well as three major principles - recreation, conservation, and paddlesport education

2. Bill Herring

- a. Original creator of the Ozark Creek Gauges, which he made in 1992 at the start of his career.

Objective

1. Redesign: We plan to redesign the layout of the website to make it more readable for new users
2. Additions: We also plan to add new functionality to the website
 - a. Map View
 - b. Database to store past gauge levels
 - c. Add new creeks via User Input
3. Preserve: The website has run with minimal maintenance for the past 20 years. Thus, we would like to keep as much of the current code base as possible.

The Redesign:

1. Update information to make the page more accurate to the current state of optimal water levels for the rivers
2. Create digestible key for new users to be able to read the information accurately
 - a. Will scroll down with user for ease of use

Home Page

The sketch shows a website layout for 'Ozark Creek Gauges'. At the top left is the Arkansas Game and Inland Fisheries logo. The title 'Ozark Creek Gauges' is centered. Below the title are two tabs: 'Gauges' and 'Map'. A callout box points to the 'Map' tab with the text 'These are the different tabs on the website.' Below the tabs is a table with six columns: Name, Class, Size, Current Level, USGS Gauge, and Water Levels. The first row of the table contains descriptive text for each column. Below the table are three horizontal bars representing content sections. To the right of the table is a 'Key:' section with the text 'Info and definitions for the chart'. A callout box points to the 'Key:' section with the text 'The key will scroll down with the user as they go down the page.'

Ozark Creek Gauges

Gauges Map

These are the different tabs on the website.

Name	Class	Size	Current Level	USGS Gauge	Water Levels
Name of the rivers	Class of the river	Size of the river	The current water level that the river is at	Link to the USGS site we are pulling the information from	The high, optimal, and low water levels for the river

Key:
Info and definitions for the chart

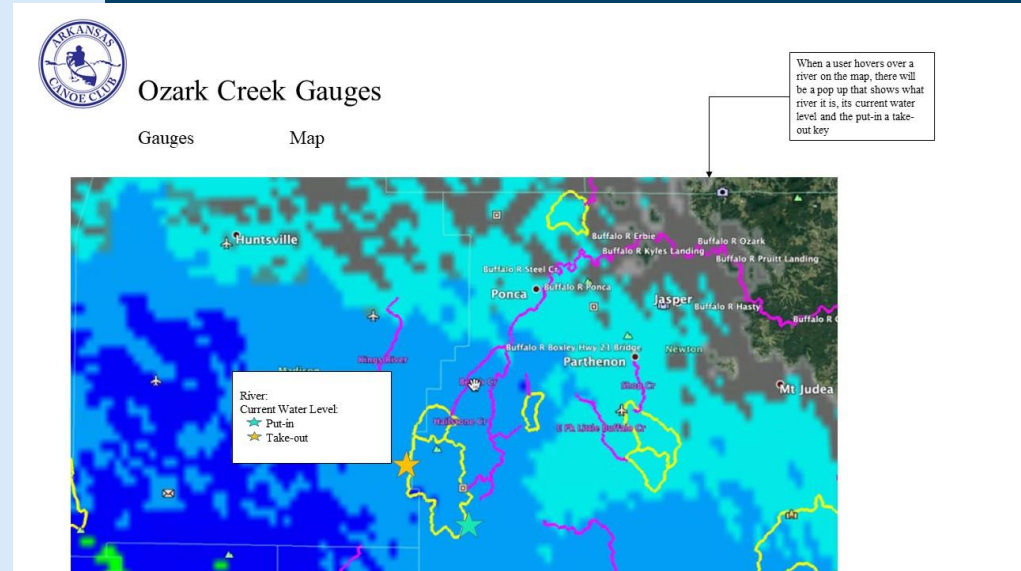
The key will scroll down with the user as they go down the page.

Sketch of what our home page will look

The Redesign: Page

1. Implementing Google Maps on the page
 - a. Show polygons of rivers
 - b. Markers of the rivers put-ins, take-outs, and rapids
 - c. When user hovers over river, it will show the gauge level and key for that river
2. Users have option to sketch out their own stream lines of rivers that have not been input yet
 - a. Report button for false information

River Map



Sketch of what our river map page will look

Timeline

Tasks	Dates
1. Research	11/16-11/30
2. Final Report/Team Website	11/16-12/10
3. Retrieve and review starter code	1/13-1/22
4. Create database for water trends	1/23-2/10
5. Redesign Website formatting	2/10-2/24
6. Implement Website Design	2/24-3/10
7. Design Google Earth Interface	3/10-3/24
8. Integrate Google Earth	3/24-4/18
9. Final Presentation/Documentation	4/19-4/29

Why Is It Important?

1. Gives important information to boaters
 - a. Keeping it reliable and up to date will ensure boaters have the information to keep themselves as safe as possible
 - b. Can reveal waterways that were previously not known to most boaters
2. Similar sites exist, but none are as comprehensive
 - a. Gives constantly updating information about waterways
 - b. Will have more detailed maps because the streams can be added by users

Technologies



1. Python/Perl

- a. The original site was written in Perl.
- b. Python will allow us to integrate with Google Earth



2. Google Earth API

- a. Maps Interface
- b. Visualize USGS Data



3. MySQL

- a. Database Management System for maintaining stream data



Deliverables

1. Design Document -
Contains UI drawings
 2. Database Schema with
initial Data
 3. Python/Perl Code for
Website
 4. Final Report
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