

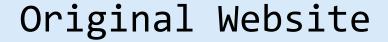
University of Arkansas - CSCE Department Capstone II - Final Presentation - Spring 2021

Ozark Creek Gauges

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Purpose

- Redesign: We redesigned the layout of the website to make it more readable for new users
- Who did it benefit?
 - Arkansas Canoe Club members and local paddlers
- Additions:
 - Modernized table and key
 - Map View
 - Submission process for new rivers and locations





Ozark Creek Information Summary

Last Page Update: 04/21 14:12

<u>Name</u>	Rating	Size	Level	Ref. Gauge	<u>Time</u>	<u>C.Q.</u>	Photos
Adkins Cr.	III-V	vs	x →	<u>USGS: Buffalo at Boxley</u> 2.49 [7, 8.5, 11]	04/21 13:30 (0.7 hr)	B+	
Archey Cr.	II+	M	x →	<u>USGS: Big Piney Cr at Hwy 164 nr</u> <u>Dover</u> <u>2.02</u> [4, 5.5, 8]	04/21 13:45 (0.4 hr)	С	
Baker Cr.	II-IV	S	x →	USGS: Cossatot R. at Vandervoort 2.74 [5, 6, 8]	04/21 13:45 (0.4 hr)	В	
Bear Cr.	III-V	vs	x →	USGS: Richland Cr. at Witts Springs 2.16 [6, 7, 8.5]	04/21 13:30 (0.7 hr)	C+	
Beech Cr.	III-V	vs	x →	<u>USGS: Buffalo at Boxley</u> <u>2.49</u> [6.5, 8.5, 10]	04/21 13:30 (0.7 hr)	B+	
Ben Doodle Cr.	IV-V	xs	x →	USGS: Lee Cr. at Short, OK 3.28 [14, 18, 24]	04/21 13:15 (0.9 hr)	C+	
Big Devils Fork Cr.	III-V	vs	x →	USGS: Richland Cr. at Witts Springs 2.16 [6, 7, 8.5]	04/21 13:30 (0.7 hr)	B+	
Big Piney Cr (abv Longpool)	II+	L	L→	USGS: Big Piney Cr at Hwy 164 nr Dover 2.02 [2.0, 3.0, 5.0]	04/21 13:45 (0.4 hr)	A	
Big Piney Cr (blw Longpool)	I-II	L	o →	USGS: Big Piney Cr at Hwy 164 nr <u>Dover</u> 2.02 [1.2, 2.0, 5.0]	04/21 13:45 (0.4 hr)	A	

Key

Name: Name of the river/creek/run. Linked to a detailed description.

Class: International classification/rating for the creek at optimal levels. At higher levels, the creek may be more difficult than this rating indicates!

Size: approximate stream/watershed size. Refer to the chart below for details:

Size	Width (ft)	Watershed (sq mi)	Rain Rate (in/hr)	Window
XS	< 20	< 1	1.5	3-6 hrs
VS	20-30	1-4	1.0	6-12 hrs
S	30-40	4-10	0.75	1 day
M	40-75	10-25	0.5	1-2 days
L	> 75	> 25	0.2	2-5 days
H	> 150	> 75	0.1	5+ days
DC	N/A	N/A	N/A	Dam Controlled - Check Schedule!
Α	N/A	N/A	N/A	Always Runs

Note: Window is the typical time to reach "too low" levels without further precipitation.

Level: current stream level and trend. Refer to the chart below for details:

Color/Code	Level	Description	
X	Too Low	Creek is too low for fun paddling.	
L	Low	Creek is low but paddlable. May have to drag/portage in places.	
О	Optimal	Creek is perfect for paddling. The ratings listed are for this range.	
Н	High/Flood	Creek is high and potentially very dangerous. Many more hazards are present in this range and ratings typically are tougher than what is listed.	

Note: Trend arrows indicate whether the creek is falling or rising.

Web Scraping



- Stream Level changes over time
- USGS Water Services REST Api
 - Pass Stream ID #
 - Returns latest observation results in XML format
- Extract Level and Time
- Limitation
 - Very slow: Approx. 30 seconds
 - Put on separate thread.
 - Begins every index call

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Mapbox and Stream Labeling

- Created Georeferenced Datasets
 - Referenced the old website for Exact location
 - Traced Streamline
 - Placed Markers for Put in/Take Out
- Import datasets into Map Style
 - What the user actually sees
 - Color palette (Background/streamline)
 - Shapes of Markers
- Used the access token provided by Mapbox to integrate into our website



User Experience

Color Coding

Levels denoted by color and symbol (for accessibility purposes)

Table Refresh

- Accommodates the latency between page rendering and value extraction
- Ensures the table has the most updated info

Sort Function

- Sorts via each attribute
- Allows the user to find the stream most relevant to them

User Submissions

- Form that sends email to creek gauges gmail
- Users can suggest new creeks to be added to the site



Submission type:		
Choose		•
Name: *		
Enter your name		
Contact Info: *		
Enter your email		
River Name: *		
Enter river name		
Message: *		
Enter your message		
		.//
	Submit	

Demo



Future Work:

- Allow users to physically draw rivers onto our map
 - We were unable to implement it with Mapbox
 - Would have to implement verification features to ensure accurate submissions
- Allow user specific customization of the table
 - Exp: a more experienced paddler may have different opinions on what is to high or low for specific rivers
- Allow users to submit their pictures of a river
 - In the original website, users submitted pictures by emailing the webmaster