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El Dorado Parks and Trails

Carley Zaragoza
Western Washington University

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COLLEGE OF THE ENVIRONMENT



Internship Title: El Dorado County Parks and Trails

Student Name: Carley Zaragoza

Internship Dates: 06/19/2022-08/31/2022

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STUDENT SIGNATURE Carley Zaragoza

DATE: 11/22/2022

Carley Zaragoza

Internship Report, Summer 2022

El Dorado County Parks and Trails

Table of Contents

Introduction -----p.3
Performing my Duties -----p.3
Conclusion -----p.11
Daily Hours Log -----p.13
References -----p.14

Introduction

This past summer I had the privilege of being an intern for El Dorado County's Parks and Trails division. Throughout the summer I built upon my knowledge of the environment and learned what it takes to manage it on a county level. I worked with the County of El Dorado's Parks Manager, Vickie Sanders, and her team as they managed and protected the parks, trails, and river in El Dorado County. My duties included: boat counts on the Coloma to Greenwood section of the river to quantify the use, assisting with documentation of the best management practice (BMPs) on the trail in the collector application, data collection on the Rubicon use and contacts on the Rubicon Trail, assisting with data collection from commercial companies and requirements of the River Management Plan such as water samples, flow information, use date private and commercial, and assisting with public education information on the River and Rubicon programs. Those were the learning objectives that were outlined at the start of my internship in which I thoroughly completed, as well as attending meetings addressing county plans.

Performing my Duties

One of my duties was boat counts on the Coloma to Greenwood section of the river to quantify use. Through counting boats, I learned the importance of a simple task. I had a log sheet in which I wrote down the time, name of the company, how many boats in a pod, and the number of passengers. The county requires river use permits for any organization or permit that falls under the commercial use definition. They use the boat count data to check if the rafting companies are complying with regulations based on how many permits they have as well as making sure the total number of boats and people are below the carrying capacity of the river. Another regulation that is checked through the boat count data is the ratio of river guides to passengers in which one

guide is required for every eight passengers. Every year a River Management Plan (RMP) is done, and boat counts are one of the elements that are crucial to checking that regulations outlined in the RMP are being met. The goal of the RMP is to outline the counties plan to manage whitewater recreation as well as protecting the natural resources of the South Fork of the American River. Goals and objectives are clearly defined as well as reporting on the previous year. I think that one of the most important aspects of the RMP is the South Fork Carrying Capacity. The carrying capacity is defined as the prescribed number of people that an area will accommodate, given the desired biophysical/cultural resources, visitor experiences, and management program. The key to the carrying capacity is the boat counts, which quantifies the daily boater totals used to identify density and river use carrying capacity threshold exceedance. The boating density or carrying capacity was not exceeded in 2021 which means that no further restrictions are required for 2022 (**Figure 1**). The density threshold is 300 boats in 2 hours. The RMP from 2021 included a graph that summarized the boat counts as well as what kind of year it was in terms of water (**Figure 2**). The data I collected this summer will be included in the 2022 RMP.

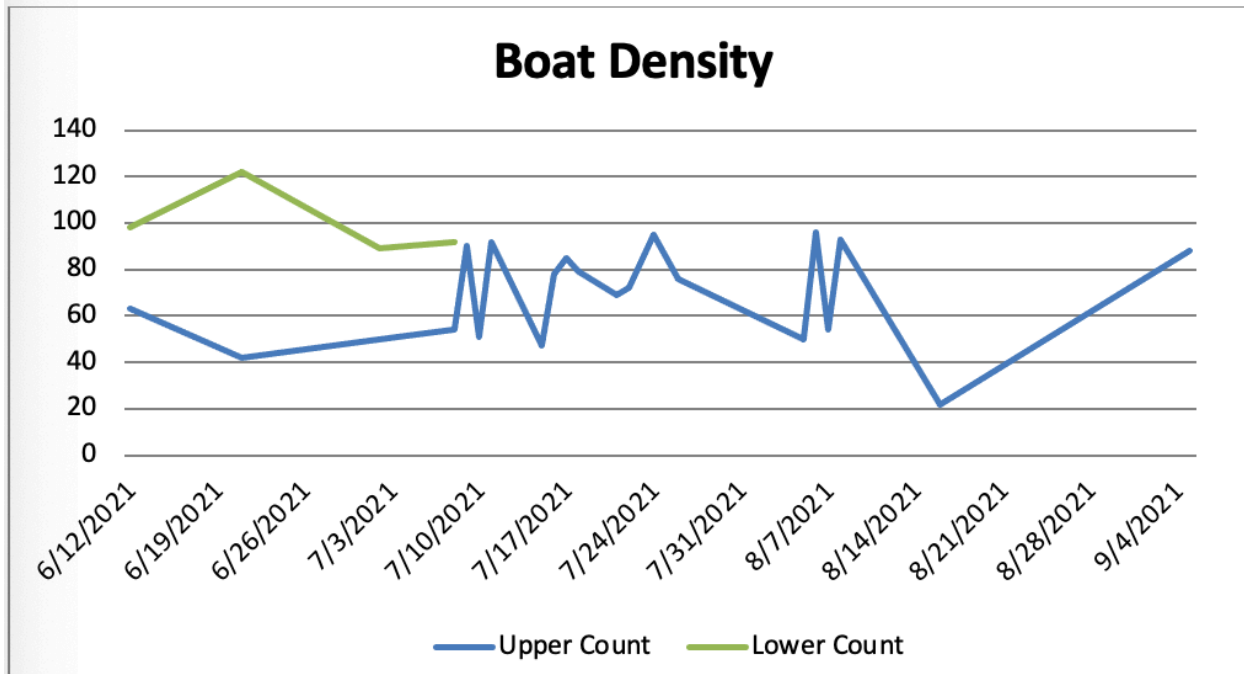


Figure 1. Boat density data from 2021 River Management Plan on the South Fork of the American River. The data displayed is from June 12th, 2021, through September 4th, 2021. The upper count refers to the upper section of the river where boats put in at Chili Bar, in Coloma, CA, and switches to the lower section at Henningson Lotus park, in Lotus, CA and stretches to the upper reaches of the Folsom Lake Reservoir. The upper and lower sections of the South Fork of the American river is a 21-mile stretch.

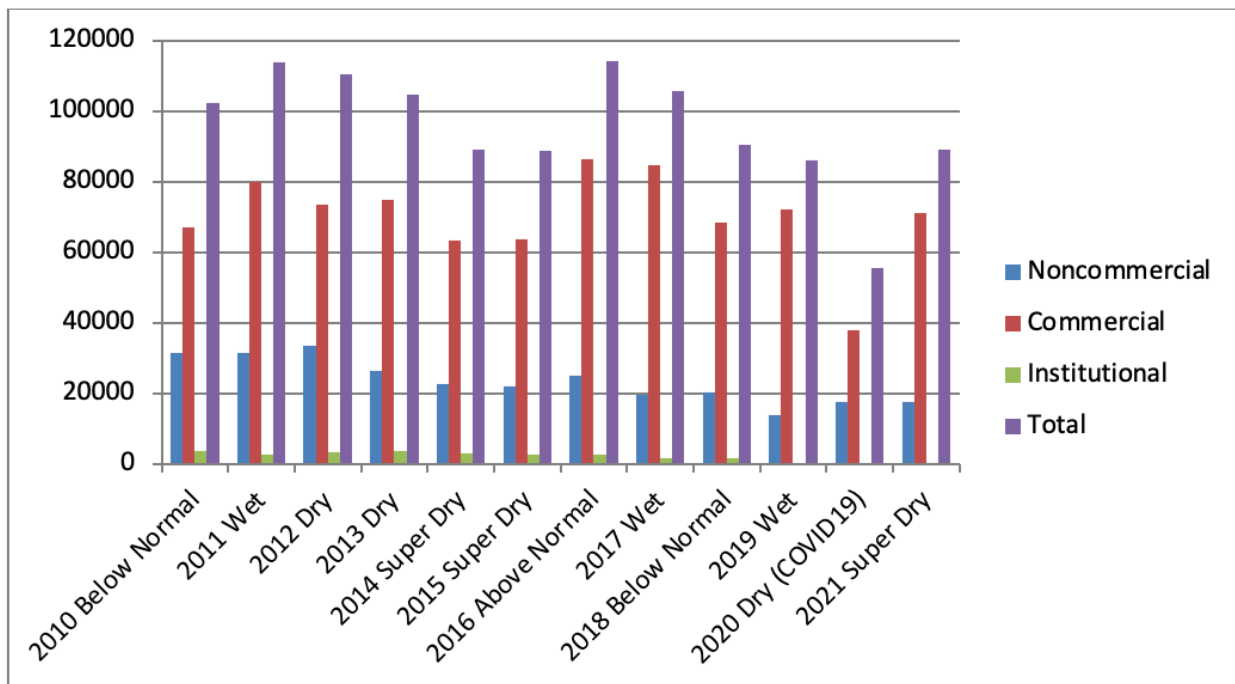


Figure 2. 2021 River Management Plan boat count summary from 2010 through 2021. This graph shows the climate descriptions of the South Fork of the American River along the x-axis

and the numbers along the y-axis indicate the number of passengers counted in respect to the color-coded key for each year.

Included in the 2021 RMP was the future goal to get tuber counts in addition to the boat counts. This summer I recorded data on how many tubers came down a specific section of the river. I observed and recorded tubers on the Coloma to Greenwood (C2G) section of the river and entered the data in a Microsoft Excel sheet to be used for the 2022 RMP to see how tubers are affecting the carrying capacity. Throughout the summer I collected data on tubers, how many had life jackets and how many people were illegally jumping from the Highway 49 bridge. A summary of the data is below in **Table 1**. Through this data collection I also had the chance to talk to the public and pass out survey cards to get locals' comments on their hopes for the parks of El Dorado County. I also was able to educate the public on the requirements of life jackets, no glass on the beach, private property, and river access information. In addition to data counts I also rafted down the river and learned more about different management practices from the parks staff and why doing boat counts were so important. While going down the river parks and trails staff educate people on quiet zones and private and public property lines. Quiet zones are sections where rafters are asked to respect homeowners near the water by abstaining from yelling. When I was not on the river collecting data, I had the privilege of working in the kiosk at Henningson Lotus Park, where I collected day use fees and engaged in more public education about river use and management.

Table 1. Data collected for tubers in C2G section of the river for 2022. The gray section of the bridge jumpers is due to no data being collected on those days.

Date	Total People	No Life Jackets	Bridge Jumpers
24-Jun	53	2	
25-Jun	244	31	
26-Jun	158	16	
2-Jul	166	32	
4-Jul	208	16	
8-Jul	52	2	2
9-Jul	86	23	7
10-Jul	155	17	16
15-Jul	65	7	4
16-Jul	201	18	7
17-Jul	170	17	7
13-Aug	49	4	3
14-Aug	62	3	2
21-Aug	43	3	2
28-Aug	48	5	2

My last duty involving the river was taking water samples to monitor the water quality. Bacterial results are used to show the *E. Coli* levels in the water and high results will result in instructing the public to stay out of the water and if the tests result in an extremely high level other more extreme actions, like closing the river, are taken. Water samples were particularly interesting to me because in spring of 2022 I took a water quality class at Western Washington University. In this class we took samples from Western Washington's Watershed and tested them throughout the quarter. Through doing water samples with the county, I saw a real-world application of best management practices. Before collecting a sample, the bottles were rinsed twice with the same water that would be taken to prime the bottle and be sure no contaminants would interfere with the results. Samples were taken from the shore as well as a transect from the middle of the river and the opposite shore. Samples were also taken in at least four locations to get a bigger overview on the overall health of the river, another best management practice because multiple

samples have a greater strength and credibility due to ruling out bias and having multiple independent samples. In 2021, *E. Coli* samples were reported in the RMP (**Figure 3**). Water Samples taken on the river were beneficial for me to see how my education with water quality could relate to a future career. The application of my experience from taking water samples from the Western Washington University's Watershed definitely carried over into taking samples on the South Fork of the American River.

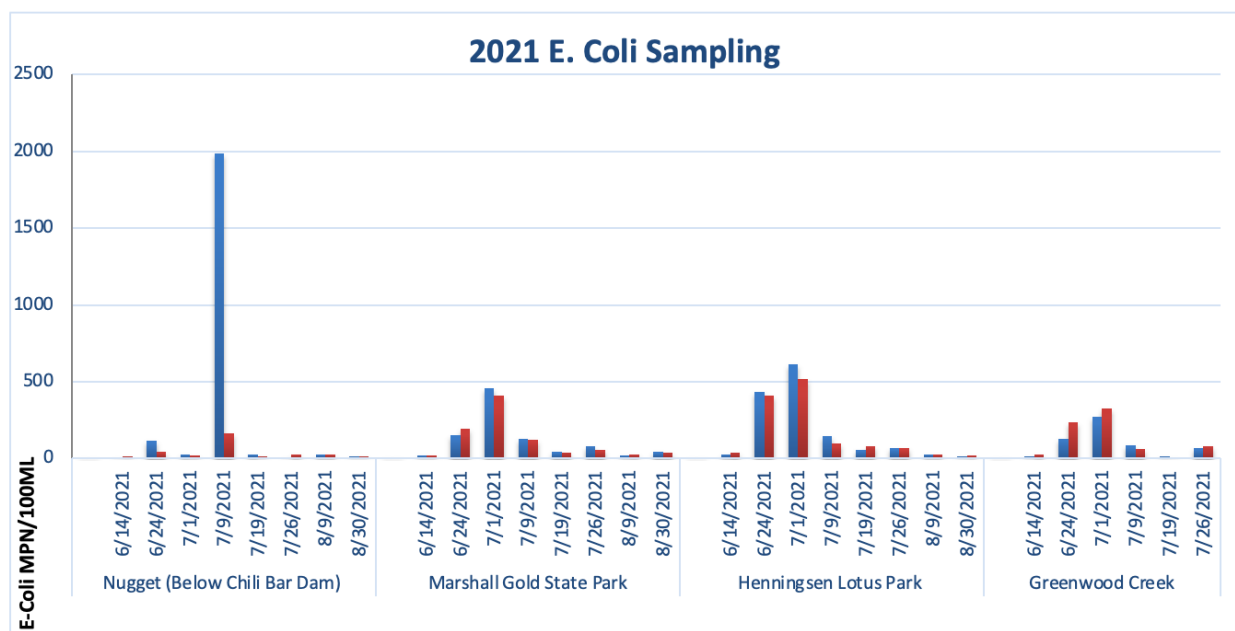


Figure 3. *E. Coli* samples taken in 2021, from June 14th through August 9th, at four different locations on the South Fork of the American River. The results presented above in bar chart form correspond to blue being the shoreline sample and red being the transect sample. The y-axis is *E. Coli* in most probable number per 100 milliliters.

The second location that I spent time learning this summer was at the Rubicon Trail known as “El Dorado County’s fine jewel”. The Rubicon Trail, about 22 miles long, is in the High Sierras and passes through El Dorado National Forest. It is a world famous 4-wheel drive trail that is also a county road, that falls under El Dorado County’s Parks and Trails team to oversee and take care of it. I have been a recreational user of the trail since I was very young, so it was eye opening to me to see what goes into keeping the trail open and how difficult it is to manage when

there are so many parties involved. Rubicon Trail passes through El Dorado National Forest, private property, and Placer County so there are a lot of opinions when it comes to managing the trail, not to mention all the clubs involved with the Rubicon. Vickie Sanders, El Dorado County's Parks and Trails Supervisor, is always busy handling issues and working to keep Rubicon Trail open and protected. The trail offers recreation for more than extreme off-roading vehicles, many hikers, backpackers, and fishers flock to Rubicon to enjoy its remote location. I believe what makes Rubicon so unique is its 4-wheel drive trail. There are too many hiking trails to count in El Dorado County, but Rubicon is the only 4-wheel drive trail that is a county road and offers the challenge and difficulty that off highway vehicle (OHV) drivers are looking for. My time at Rubicon this summer was spent at kiosk in Loon Lake at the beginning of the trail on El Dorado's side (**Figure 4**). At the kiosk I collected data by recording how many vehicles were coming in or out, how many passengers, where they were from and if they planned on a day trip or overnight. Education was an important part of my responsibilities while working the kiosk, so I also recorded what educational topic I shared with my contacts. I input several months of these data sheets into Excel to make it easier to quantify the use of the trail. While transferring and recording data I learned how far people come to use the trail. People trailering their vehicles from the East Coast was not uncommon and there were often several vehicles a day that were from Georgia or Texas or somewhere that was a significant distance away. On one of my last weekend's working Rubicon there was a group of eight vehicles from Argentina! When you have people coming from so far away education becomes more important. Often locals have been to the trails many times and know the rules of staying on the trail, what to do with oil spills and the route. So many tourists make education critical to keeping the trail safe and protected. Every vehicle that comes through is given a spill kit bag that includes a bio response kit, absorbance

sheet, wag bag, oil rag, Rubicon and leave no trace informational pamphlet. I helped put these bags together when there were no vehicles coming through. Explaining to trail users how to clean up oil spills with the kit that I gave them and the importance of not leaving even a drop of oil on the trail was usually the main topic of education as well as staying on the trail, pack it in and pack it out, and local fire restrictions. In addition to passing out the bags, I also handed out bandanas that had a message to users (**Figure 5**). Every year the county has these bandanas with a theme to focus on. Last year it was about fire restrictions and making sure that the fire was out cold and this year it was about not putting trash or anything else into the bathrooms on the trail because it makes pumping nearly impossible for the trucks that they send out weekly to pump the toilets.



Figure 4. Loon Lake kiosk, at the entrance of Rubicon for El Dorado County's side. The kiosk is used by El Dorado County Employees and various volunteers.



Figure 5. 2022 bandana given to Rubicon Trail users, provided by The County of El Dorado.

Conclusion

Throughout my education at Western Washington University, I have constantly been in classes where we talk about leaving no trace and packing it in and packing it out. This summer I got to see first-hand how important that is. There was a group of off-roaders that left a huge pile of trash way back on the trail and it took a lot of work for other good Samaritans and the county to pack out their trash. In order to keep a trail open that goes through a National Forest, packing out your trash is a necessity and left behind trash is so harmful to the wild animals and environment out there. My coursework at Western Washington University was clearly in line with the same concepts that I saw in the real world this summer. I've learned different types of data collection and different ways it must be credible and unbiased through my biostatistics class. I saw that in practice this summer and how some of the graphs that I learned how to make could be included in county reports. I definitely have learned to appreciate the value of what I am being taught in

my courses and how it can directly apply to a future career. Attending county meetings was also beneficial in this aspect as I saw how important it is to have environmental knowledge if you are going to be making decisions. The knowledge that I gained through my courses was able to be applied this summer and I was able to see why certain decisions were being made or not made. I also learned that everything is not as clear cut as it comes across in a book. I learned that sometimes the best decision is probably going to involve some compromise when you have multiple groups involved. I was impressed with how different districts in the county worked together to make decisions and everyone brought their own experience to the table. My internship with El Dorado County Parks and Trails division this summer allowed me to apply the knowledge I have previously learned through my coursework while also learning new concepts that are used in hands on situations and gaining the confidence to trust my education and see real world situations that I can make a difference in.

Working with El Dorado County Parks and Trails has been a valuable experience and I thoroughly enjoyed learning about management on a county level. This experience has taught me that I do not want to be someone that writes the rules and laws of the environment. I would like to be someone who enforces them. Working on the Rubicon Trail allowed me to talk with and learn from California Forest Service Rangers and California Fish and Wildlife Wardens.

Through learning about their careers, I have decided that I want to pursue a career as a Fish and Wildlife Warden and enforce the laws that are there to protect the environment and the wildlife that lives off the land. I am very thankful for this internship and that it opened up so many different paths that I could take, and a career as a warden is now at the top of my list.

Daily Hours Log

DATE ▼	HOURS ▼	DESCRIPTION ▼
20-Jun	5.5	office, training
22-Jun	8	meetings and HLP
24-Jun	8	data collection
25-Jun	9	data collection
26-Jun	8	data collection
27-Jun	2	data entry
28-Jun	4	parks meetings
1-Jul	6.5	rafting
2-Jul	7	data collection
3-Jul	8	data collection
4-Jul	7.5	data collection
5-Jul	7	water samples, data entry
8-Jul	7.5	data collection
9-Jul	8	data collection
10-Jul	7	data collection
11-Jul	2	data entry
12-Jul	6.5	Rubicon data entry
15-Jul	7.5	data collection
16-Jul	7.5	data collection
17-Jul	7.5	data collection
18-Jul	2	data entry
21-Jul	9.5	Rubicon
13-Aug	7	data collection
14-Aug	6.5	data collection
17-Aug	2	data entry
18-Aug	8	Rubicon
20-Aug	8.5	Rubicon
21-Aug	7	data collection
27-Aug	7	rafting
28-Aug	6	data collection
Total Hours	197.5	

Resources

“River Management.” *Annual River Use Report*, 2021,
https://www.edcgov.us/Government/River/Pages/annual_river_use_report.aspx.

“Rubicon.” *Rubicon Trail Management - El Dorado County*,
<https://www.edcgov.us/Government/Rubicon>.