

Marion County Lake

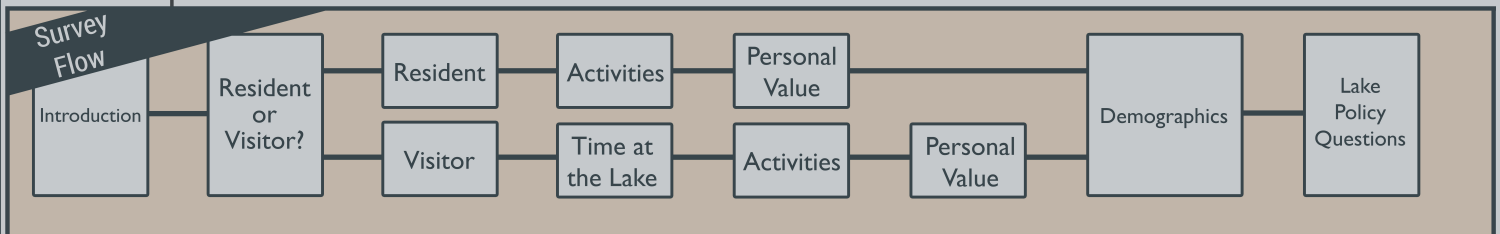
Visitor Use Survey



By Amber Kelly, Cara Gunzelman, Cody Thompson, & Maridee Weber

Purpose of the Survey

The purpose of this project was to create a survey to collect data for use by Marion County Park and Lake. This data, with analysis, would provide information for the development of a lake management plan, which the Lake does not currently have. The primary objectives of the survey are to collect data on visitor and resident demographics, trip itinerary, and opinions on what the park and lake offer.



Lake Data

Coding

Code was used to develop our graphs and maps taken from spreadsheets created by lake superintendent Isaac Hett. Records were taken on paper and we have created a system to visualize the data in a digital format.

```

#all count column
camp$counts <- 1 #assigning a value of 1 to counts
camp_total <- aggregate(counts ~ date, data=camp, sum) #creating a dataframe with counts per date

#for loop to create counts of visitors per night camping
nights <- camp$date[!is.na(camp$date)] #removes NA values
nextnight <- camp[camp$Nights > 1, c("Nights", "date")] #removes observations where Nights = 1
nextnight <- nextnight[!is.na(nextnight$Nights),] #removes NA values
nightbase <- nights #reassigns dataframe with all Night values, including Nights = 1 but not NA

for(i in 1:nrow(nextnight)){
  for(j in 1:(nextnight$Nights[i] - 1)){
    extranights <- nextnight$date[i + j]
    nightbase <- c(nightbase,extranights)
  }
}
  
```

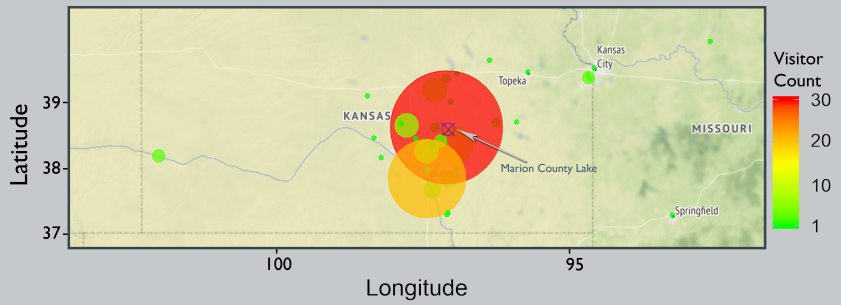
```

#Histogram of money spent visiting
ggplot(data=camp, aes(camp$total.cost)) +
  geom_histogram(breaks=c(0, max(camp$total.cost)/30), #scaling geom_histogram, axis from 0-100
  col="black", #color next lines are black
  aes(fill=count)) #fill will be determined by count
theme_minimal() #removes unnecessary elements
scale_fill_gradientn("Count", low="gray80", high="darkorchid4") #scale fill by "count" column
labs(title = "Total Amount Spent by Paying Visitors", x = "Dollars Spent", y = "Visitors")
ggsave("total_cost.png") #saving the image

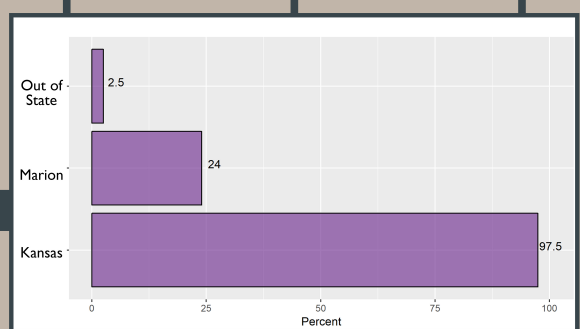
#Scatterplot of nights spent camping vs. Total Cost
ggplot(data=camp, aes(camp$Nights, camp$total.cost)) +
  geom_point(aes(colour = "darkorchid4", size = 4, shape = 1)) #making geom_point to make a scatterplot
labs(title = "Cost of Camping vs. Number of Nights Camping", x = "Number of Nights", y = "Total Cost")
ggsave("camping_nights_cost.png") #saving the image

#Bar graph of percentage of people who have boat storage, rentals, electricity vs plain, cable vs no house
house <- round(use=camp$count[is.na(camp$shelter.house)]/sum(camp$count)*100,1) #calculating percent
hall <- round(use=camp$count[is.na(camp$hall)]/sum(camp$count)*100,1) #calculating percent
boat <- round(use=camp$count[is.na(camp$boat)]/sum(camp$count)*100,1) #calculating percent
cable <- round(use=camp$count[is.na(camp$cable)]/sum(camp$count)*100,1) #calculating percent
electric <- round(use=camp$count[is.na(camp$electric)]/sum(camp$count)*100,1) #calculating percent
share <- data.frame(house = c("Shelter House", "Hall Rental", "Boat Storage", "Cable", "Electricity"), ordering = data.frame(
  percent = c(house, hall, boat, cable, electric)) #second column using values found above
)
bar <- ggplot(share, aes(x=share, y=percent)) #creating a bar plot, ordered in descending order of intensity
  
```

Home Location of All Paying Visitors



Where visitors are from



How long are visitors staying for and how much are they spending?

