



# **HWY32 USE PATTERNS**

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**Overview:** Park Rangers made 262 observations at the highway 32 disc golf site between March 21<sup>st</sup>, 2009 and November 8<sup>th</sup> 2009. In total they counted 1125 vehicles during their observations. Rangers also made note of the date, time, number of cars at the site, status of the course (open or closed), weather conditions, and took other notes related to use or misuse.

Anecdotally, the use patterns match what should be expected. Use is highest on weekends, in the afternoons, and during times when the weather is good. This information may be used to identify the number of rounds of disc golf played annually. It may also be used to identify visitation patterns. Examples of how this information could be applied include targeting law enforcement during high use times/days. These high use periods also identify the best times to distribute information to these park users.

Annual rounds of disc golf: ~18,000 to 36,000

Most popular days: Thursday-Sunday make up 73% of use, weekends make up 46%

Most popular times: 2PM-7PM make up 66% of use

Open-Closed usage: 2% of vehicles present occurred during closed conditions

**Notes:** Rangers made note of weather conditions, but these notes were not coded. It might be useful to indicate weather using a generic term like “good”, “fair”, and “poor”. We added these codes for this document. Identifying vehicles by course proximity (short vs. long) could also be useful, but is not necessary. It is possible for the Outsiders to use online surveys to fill in some user demographics over time. For example, identifying how often people play, whether they carpool, and which courses they play would be possible.

**Overall Use – Annual rounds of disc golf played:** Park Rangers noted the number of cars present during their visits. The average number of vehicles observed during a 24 hour period was 47. There are some factors that should be mentioned in using this number to determine disc golf “rounds played”.

Two factors stand out as possibly decreasing the estimated annual use of the disc golf course. The first is the fact that not all cars present are there for disc golf. It’s not possible to identify the percentage, but it is reasonable to assume some numbers of visitors are there to hike or take in the view. The second is that the observations taken to date have had few wet weather closures. In the wet months ahead we could expect the average use to decline.

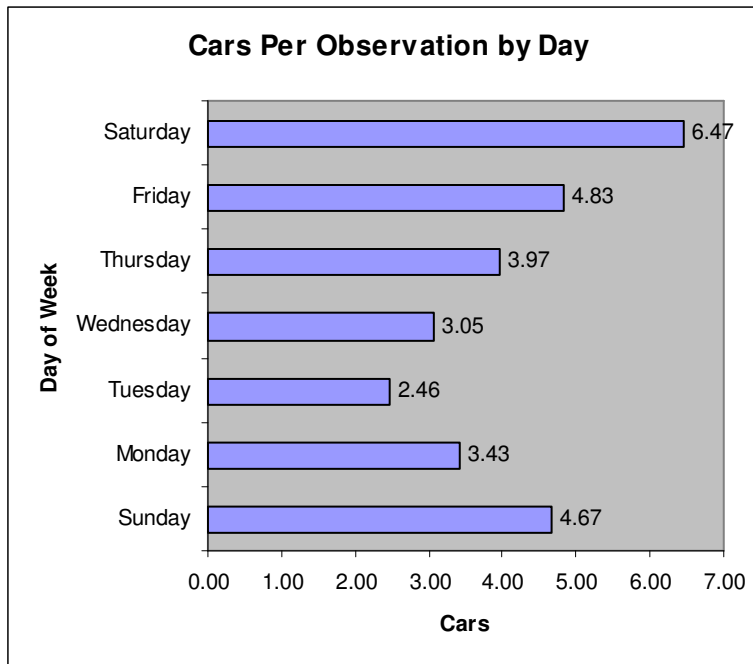
However, there are some factors that might act to increase the estimated annual use. First, we have no idea how many people arrived in each car. The minimum is 1. Groups playing the short course tend to be large, and arrive together, while those playing the long course are smaller and more likely to arrive singly. Second, is that it’s not clear if the Rangers counted cars parked on the shoulder of highway 32. If these cars are not counted, there could be a 10-25% increase in vehicles.

Recognizing these factors, it seems reasonable to estimate the number of rounds of disc golf played to be between 1 and 2 per car present per day. This gives a fairly broad range of use, but the number should be within an appropriate magnitude for estimating.

The estimate of annual usage is 17,155 to 34,310 ( $47 \times 1 \times 365$  to  $47 \times 2 \times 365$ ) rounds of disc golf played annually. Using an estimate of 50 cars per day is also an adequate estimate.

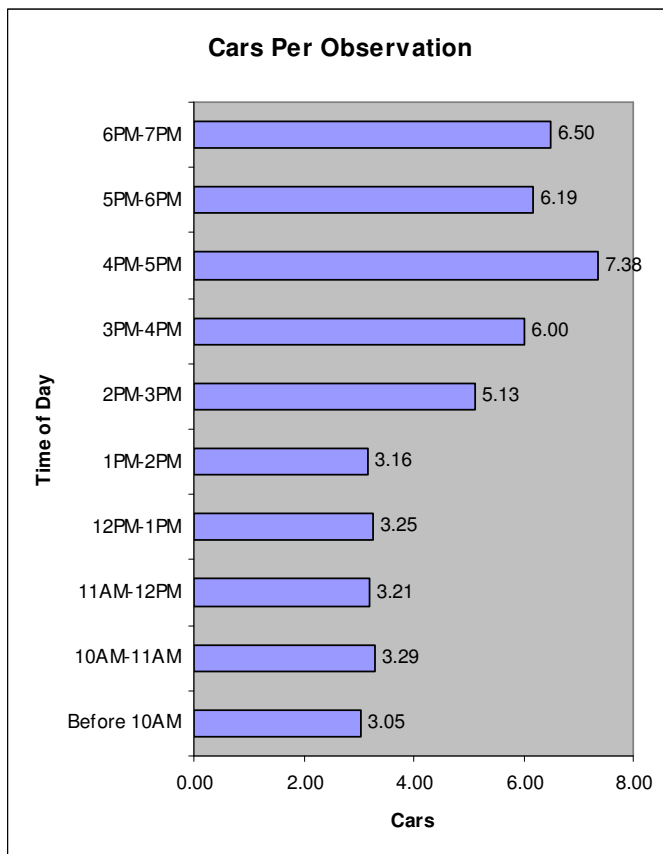
**Use By Day:** The Ranger observation dates were converted to day-of-the-week to produce a chart showing weekly use patterns. Thursday, Friday, Saturday, and Sunday receive the most use. These four days represented roughly 73% of use during observations. The weekend days alone accounted for 45% of observed vehicles. We calculated the total number of cars observed by day and then created an average based on the number of observations on specific days.

Day of Week	Total Cars	Observations by day	Avg. Cars Per Obs.	Percentage
Sunday	238	51	4.67	21.16%
Monday	120	35	3.43	10.67%
Tuesday	59	24	2.46	5.24%
Wednesday	113	37	3.05	10.04%
Thursday	143	36	3.97	12.71%
Friday	174	36	4.83	15.47%
Saturday	278	43	6.47	24.71%

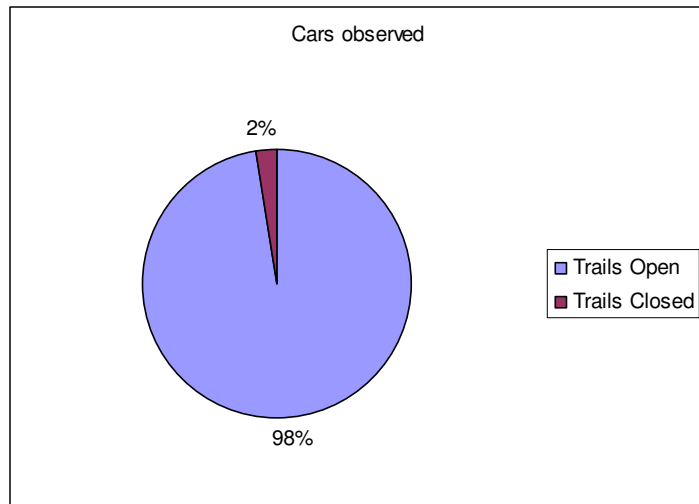


**Use By Hour:** Rangers identified the times they visited the disc golf site. We used the times to calculate the number of vehicles by hour of the day. Times before 10AM and after 7PM were grouped together. We calculated the total number of cars observed during a time frame, and then the number of observations made during that time frame. This gave us an average number of vehicles during a time period, and an average number of vehicles per day.

Time	Cars Observed	Number observations	Cars per observation	Percentage
Before 10AM	61	20	3.05	6.47%
10AM-11AM	69	21	3.29	6.97%
11AM-12PM	61	19	3.21	6.81%
12PM-1PM	166	51	3.25	6.90%
1PM-2PM	174	55	3.16	6.71%
2PM-3PM	41	8	5.13	10.87%
3PM-4PM	66	11	6.00	12.72%
4PM-5PM	177	24	7.38	15.64%
5PM-6PM	198	32	6.19	13.12%
6PM-7PM	78	12	6.50	13.79%
After 7PM	34	7	4.86	10.30%
		Total:	47.1522789	



**Usage by Weather:** Park Rangers made note of the weather conditions during their observations. These observations were categorized as poor, fair, or good. These categories are subjective, but were based on the comments the Rangers provided. For example, if the Ranger described the weather as nice, or warm we categorized it as “good”. If the weather was above 90 degrees F or below 60 degrees F we considered it “fair”. Anything that was unknown or not descriptive, such as “overcast” was considered “fair”. Rain, drizzle, cold or other descriptions indicating winter-like weather were considered “poor”.



Poor weather tended to coincide with closed courses. 28 vehicles were observed on the site during closed conditions, with 22 of those vehicles observed during May. In total, 2% of all vehicles were observed during the course closures, and 98% during periods when the courses were open.

As would be expected, the highest use occurs during good weather. The courses really have not been closed enough to indicate whether or not people are aware, or will adhere, to the new wet weather policy. However, as indicated by these numbers people are more likely to play during nice weather.

<b>Trails</b>	<b>Cars observed</b>	<b>Percentage</b>	<b>Number of obs.</b>	<b>Average</b>
Trails Open	1097	97.51%	248	4.423387097
Trails Closed	28	2.49%	14	2
<b>Weather</b>	<b>Total Cars</b>	<b>Observations by day</b>	<b>Avg. Cars Per Obs.</b>	<b>Percentage</b>
Poor	23	9	2.56	2.04%
Fair	319	87	3.67	28.36%
Good	783	166	4.72	69.60%