



Monitoring Bicycle Use on the Schoodic Loop Road, 2014



Bicyclists, August 12, 2014

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Executive Summary

We used a camera to monitor bicycle use of the Schoodic Loop Road in 2014 to document current use in anticipation of increases in such use with the future development of the Schoodic Woods campground, day use parking, and bicycle paths. Unsurprisingly, July and August saw the highest use, which is consistent with what we see in the rest of the Park. Mean daily use in July was 37.26 and in August it was 45.35 (see Table). For comparison, in August, September, and October 2013, mean daily bicycle use was 48.38, 21.7, and 6.86 respectively. We also consistently observed bicyclists going the wrong way on the one way road.

Number of Bicyclists Using the Schoodic Loop Road July – October 2014.				
Measure	July 1-31	August 1-31	September 1-30	October 1 - 20
Total Use	1155	1406	301	86
Mean Daily Use	37.26	45.35	10.03	4.30
Maximum Daily Use	80	102	48	30
Number of Days	31	31	30	20

We will continue to monitor bicycle traffic to show the effect of the Schoodic Woods developments. We have three recommendations for 2015:

1. Resume counting RVs next year to verify compliance with their prohibition on the Schoodic Loop Road;
2. Count visitors walking bicycles as bicyclists because that is their primary activity (we observed only a few people walking their bikes, so this change will not significantly alter the data); and
3. Since our object is to count bicyclists, we will count adults and children on tag-a-longs and visitors on tandem bicycles as two bicyclists, not one.

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INTRODUCTION

The Schoodic Loop Road is an easy bicycle ride with spectacular ocean scenery. Because it is a one way road, making a loop has always meant riding outside the park where the state roads have poor or nonexistent shoulders for biking. We first started monitoring bicycle use of the Schoodic Loop Road in 2013 with a camera in expectation of the changes that will occur with the development of the Schoodic Woods campground, day use parking, and bicycle paths. One of the new bicycle paths will cross the Schoodic Peninsula, closing the loop for bicyclists, eliminating the need to ride on state roads. With the creation of this cross-peninsula path and others on lands that the National Park Service (NPS) will soon manage, bicycle use of the Schoodic District is expected to increase substantially. We want to document this increase.

METHODS

We selected a Reconyx HyperFire HC500 Camera to monitor bicycle traffic along the Schoodic Loop Road. The camera has a night time infrared illuminator and a passive infrared sensor that detects motion and heat up to 100 feet away to trigger the shutter of the camera. Once motion or heat is detected, the camera shutter triggers in 0.2 seconds. We kept the camera set to most of the default settings; high sensitivity, 1 second picture interval, no quiet period, and 1080p resolution. The only setting we changed was for the camera to take 1 picture per trigger. With the fast trigger speed and picture interval, we believe very few bicyclists escaped the camera. However, we did not validate camera operation by direct observation because the low bicycle traffic would have required many hours of such observation to confirm.

The camera was set up on a tree on the east side of the entrance road facing traffic a short distance from the Schoodic Point turnoff (Figure 1). The case of the camera was designed with camouflage allowing it to be concealed against the bark of the tree, and we covered the indicator red light that flashed every time a picture was taken. We tested the camera by walking and running on both sides of the road to determine the best angle to aim it based on its field of view, detection distance, trigger speed, and picture interval. A 45 degree angle to the road seemed to work best. With the faster Reconyx, the camera's field of view did not extend as far down the road as in 2013 when we used a different, slower camera that required such a view (Figure 2). We swapped memory cards about every two weeks.

Images were downloaded and copied into folders named by date. All folders are located on the Acadia National Park server at Resource Management\Charlie\Digital Images\SchoodicBikeCounts. Then we clicked through each image looking for and counting bicyclists, bicyclists going the wrong way on the one-way road, walkers, and runners. Only people under their own power were counted, for example a bike with a tagalong was counted as one. Each time a person went by the camera they were counted, for example if a runner went by in one direction and then back they were counted twice. Because of the short camera reset time, we often got multiple pictures of the same person, but we only counted them once going in the same direction. We compiled the data by month from July 1 through October 20, 2014 and calculated the total use, mean daily use, and maximum daily use for each month.

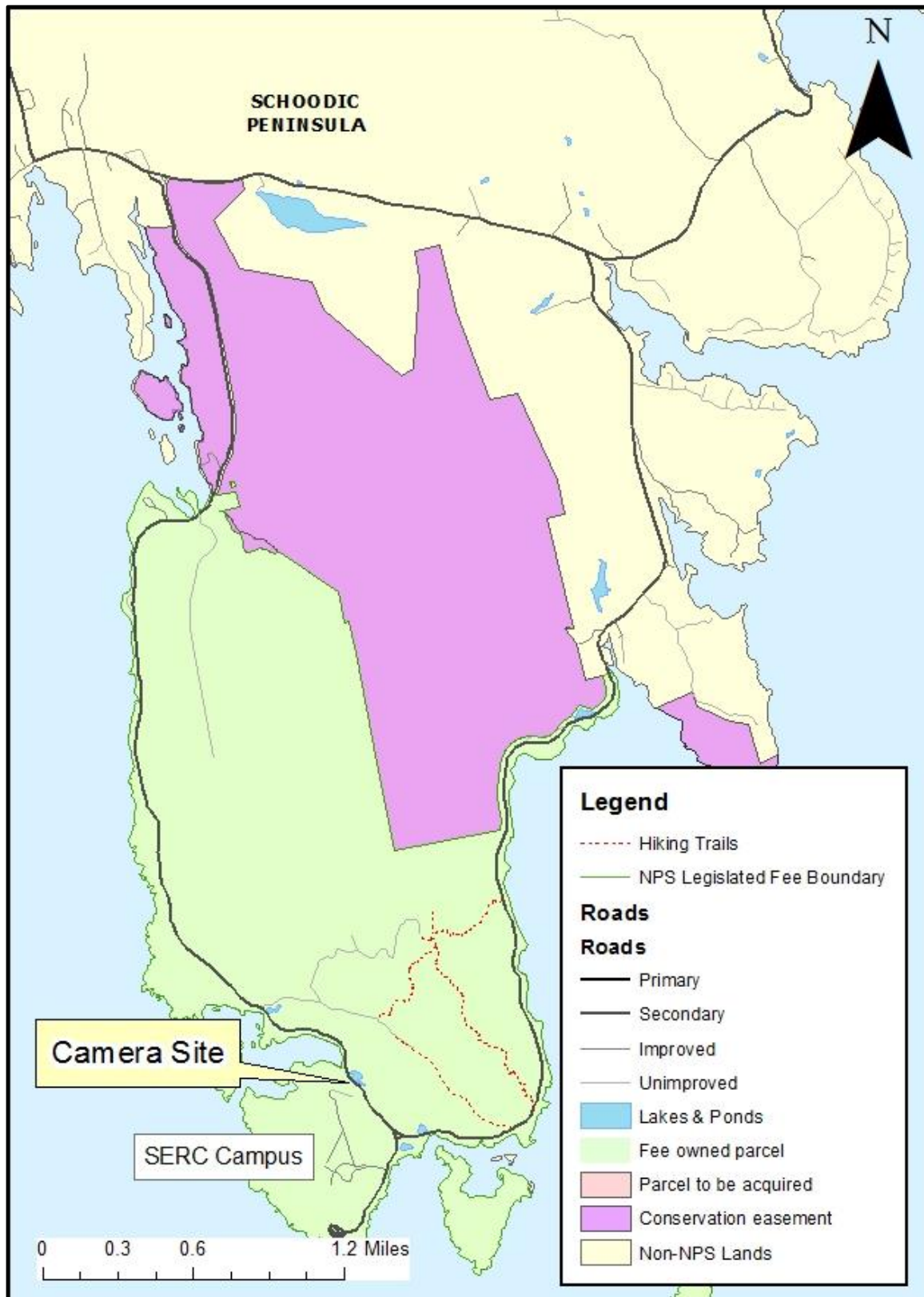


Figure 1: Schoodic Peninsula and Location of Camera.



Figure 2: Camera Fields of View for 2013 (left) and 2014 (right).

RESULTS

A summary of the 2014 bicycle count data is shown in Table 1, and the details for all measures are in Appendix 1. For comparison, in August, September, and October 2013, mean daily bicycle use was 48.38, 21.7, and 6.86 respectively. Similar to 2013, we did not see higher use on weekends in September or October except perhaps for the Columbus Day weekend on Sunday and Monday. Typically, activities throughout the park are about the same each day from mid-June to Labor Day, and weekend increases occur in the shoulder seasons. However, this does not appear to occur with the bicycle use at Schoodic.

Table 1: Number of Bicyclists Using the Schoodic Loop Road July – October 2014.				
Measure	July 1-31	August 1-31	September 1-30	October 1 - 20
Total Use	1155	1406	301	86
Mean Daily Use	37.26	45.35	10.03	4.30
Maximum Daily Use	80	102	48	30
Number of Days	31	31	30	20

We did observe bicycles going the wrong way in each month (see Appendix 1). There were 8 – 9 per month in July and August, which is consistent with what we observed in 2013. This year, without the government shutdown for the first 16 days in October 2013 (for which the Schoodic Loop Road was closed, but used by bicyclists), bicycles going the wrong way dropped substantially from two per day to 0.2 per day.

Walking and running use on the road at the camera site is shown in Tables 2 and 3. During 2014 it was generally much higher than in 2013, when all walkers and runners were combined in a pedestrian measure. For example, in August 2014, there were 436 walkers, or about 14 per day, and 114 runners, or about four per day, for about 18 people on foot per day. In 2013, there were only five walkers and runners per day in August. Our two biggest days for walkers were children's groups from Schoodic Education Research Center on programs, with the highest walker count at 137.

Table 2: Number of Walkers Using the Schoodic Loop Road July – October 2014.				
Measure	July 1-31	August 1-31	September 1-30	October 1 - 20
Total Use	164	436	164	97
Mean Daily Use	5.29	14.06	5.47	4.85
Maximum Daily Use	13	137	19	12
Number of Days	31	31	30	20

Table 3: Number of Runners Using the Schoodic Loop Road July – October 2014.				
Measure	July 1-31	August 1-31	September 1-30	October 1 - 20
Total Use	99	114	26	35
Mean Daily Use	3.19	3.68	0.87	1.75
Maximum Daily Use	22	12	5	9
Number of Days	31	31	30	20

SUMMARY AND RECOMMENDATIONS

We previously assumed the counts from the camera used in 2013 were underestimates. The 15-second reset time meant that some faster bicyclists should have been able to travel through the entire picture frame before the next reset. However, comparing this year's counts (with the more accurate, faster camera) to last year's counts, this may not have been the case. The mean daily bike use for both years in August is comparable, with about forty-eight for 2013 and about forty-five for 2014. For September and October, mean daily bike use was higher in 2013, twenty-one and seven respectively, whereas in 2014 it was ten and four respectively. It is possible that the camera used in 2013 was more accurate than previously thought.

We will continue to monitor bicycle traffic to show the impact of the Schoodic Woods development on the different visitor uses of the road at Schoodic. The numbers of bicyclists will likely increase due to the campground and the new, safer bicycle loop. It will be interesting to see the impact on the bicyclists going the wrong way. Will it drop due to its promotion as a loop or increase because of biker confusion?

We have three recommendations for monitoring in 2015:

1. Resume counting RVs next year to verify compliance with their prohibition on the Schoodic Loop Road;
2. Count visitors walking bicycles as bicyclists because that is their primary activity (we observed only a few people walking their bikes, so this change will not significantly alter the data);
3. Since our object is to count bicyclists, we will count adults and children on tag-a-longs and visitors on bicycles built for two as two bicyclists, not one.

APPENDIX 1: BICYCLES, WRONG WAY BICYCLES, WALKERS, AND RUNNERS ON THE SCHOODIC LOOP ROAD, JULY – OCTOBER 2014

Date	DOW	Bikes	Bikes Wrong Way	Walkers	Runners
1-Jul	Tuesday	38	0	8	0
2-Jul	Wednesday	25	1	3	3
3-Jul	Thursday	6	1	4	0
4-Jul	Friday	33	0	5	4
5-Jul*	Saturday	2	0	0	0
6-Jul	Sunday	60	1	4	2
7-Jul	Monday	27	0	8	2
8-Jul	Tuesday	18	0	2	2
9-Jul	Wednesday	30	0	3	2
10-Jul	Thursday	47	5	5	1
11-Jul	Friday	45	0	5	0
12-Jul	Saturday	36	0	4	2
13-Jul	Sunday	43	0	8	5
14-Jul	Monday	16	0	4	4
15-Jul	Tuesday	0	0	0	1
16-Jul	Wednesday	0	0	0	0
17-Jul	Thursday	44	0	5	2
18-Jul	Friday	52	0	6	2
19-Jul	Saturday	55	0	9	4
20-Jul	Sunday	45	0	6	1
21-Jul	Monday	78	1	5	1
22-Jul	Tuesday	52	0	10	2
23-Jul	Wednesday	35	0	4	7
24-Jul	Thursday	21	0	1	2
25-Jul	Friday	69	0	9	7
26-Jul	Saturday	20	0	5	22
27-Jul	Sunday	45	0	13	5
28-Jul	Monday	7	0	4	2
29-Jul	Tuesday	80	0	13	7
30-Jul	Wednesday	53	0	3	3
31-Jul	Thursday	73	0	8	4
Total		1155	9	164	99
Mean		37.26	0.29	5.29	3.19
Max		80	5	13	22
Count		31	31	31	31
	*Hurricane Authur				

**APPENDIX 1: BICYCLES, WRONG WAY BICYCLES, WALKERS, AND
RUNNERS ON THE SCHOODIC LOOP ROAD, JULY – OCTOBER 2014 (CONT.)**

Date	DOW	Bikes	Bikes Wrong Way	Walkers	Runners
1-Aug	Friday	45	1	11	0
2-Aug	Saturday	24	0	13	4
3-Aug	Sunday	56	1	10	4
4-Aug	Monday	55	0	15	9
5-Aug	Tuesday	79	0	2	5
6-Aug	Wednesday	29	0	6	2
7-Aug	Thursday	63	0	3	6
8-Aug	Friday	40	1	7	0
9-Aug	Saturday	62	0	8	6
10-Aug	Sunday	74	0	6	7
11-Aug	Monday	37	2	17	4
12-Aug	Tuesday	102	2	27	0
13-Aug	Wednesday	13	0	0	9
14-Aug	Thursday	16	0	7	3
15-Aug	Friday	40	0	26	10
16-Aug	Saturday	67	0	5	12
17-Aug	Sunday	10	0	11	7
18-Aug	Monday	36	0	3	2
19-Aug	Tuesday	53	0	7	1
20-Aug	Wednesday	65	0	11	0
21-Aug	Thursday	59	0	11	0
22-Aug	Friday	40	0	5	1
23-Aug	Saturday	24	0	4	0
24-Aug	Sunday	49	0	5	8
25-Aug**	Monday	46	0	13	1
26-Aug	Tuesday	46	0	16	0
27-Aug	Wednesday	27	0	8	2
28-Aug***	Thursday	45	0	137	0
29-Aug	Friday	37	0	7	0
30-Aug	Saturday	51	0	9	4
31-Aug	Sunday	16	1	26	7
Total		1406	8	436	114
Mean		45.35	0.26	14.06	3.68
Max		102	2	137	12
Count		31	31	31	31
**camera was blocked fully and then partially 11:20-11:32					
***one big group of ~49 walked out, a group of ~36 walked back, and a group of ~49 walked out (maybe school groups)					

**APPENDIX 1: BICYCLES, WRONG WAY BICYCLES, WALKERS, AND
RUNNERS ON THE SCHOODIC LOOP ROAD, JULY – OCTOBER 2014 (CONT.)**

Date	DOW	Bikes	Bikes Wrong Way	Walkers	Runners
1-Sep	Monday	21	0	6	5
2-Sep	Tuesday	6	0	9	2
3-Sep	Wednesday	18	0	6	0
4-Sep	Thursday	35	1	7	1
5-Sep	Friday	17	0	5	1
6-Sep	Saturday	7	0	3	1
7-Sep	Sunday	30	0	13	4
8-Sep	Monday	48	0	7	0
9-Sep	Tuesday	11	0	2	0
10-Sep	Wednesday	16	0	2	3
11-Sep	Thursday	0	0	2	0
12-Sep	Friday	6	0	7	1
13-Sep	Saturday	0	0	7	2
14-Sep	Sunday	14	0	6	0
15-Sep	Monday	1	0	3	0
16-Sep	Tuesday	0	0	0	0
17-Sep	Wednesday	11	0	5	0
18-Sep****	Thursday	4	0	19	0
19-Sep	Friday	1	0	2	1
20-Sep	Saturday	1	0	6	0
21-Sep	Sunday	0	0	2	0
22-Sep	Monday	0	0	2	0
23-Sep	Tuesday	9	0	2	0
24-Sep	Wednesday	19	0	5	0
25-Sep	Thursday	0	0	19	1
26-Sep	Friday	3	0	6	1
27-Sep	Saturday	11	0	3	1
28-Sep	Sunday	10	0	3	2
29-Sep	Monday	2	0	5	0
30-Sep	Tuesday	0	0	0	0
Total		301	1	164	26
Mean		10.03	0.03	5.47	0.87
Max		48	1	19	5
Count		30	30	30	30
****partially blocked 16:16-18:51,					
group of ~17 walked by (maybe a school group)					

**APPENDIX 1: BICYCLES, WRONG WAY BICYCLES, WALKERS, AND
RUNNERS ON THE SCHOODIC LOOP ROAD, JULY – OCTOBER 2014 (CONT.)**

Date	DOW	Bikes	Bikes Wrong Way	Walkers	Runners
1-Oct	Wednesday	0	0	6	2
2-Oct	Thursday	14	0	2	4
3-Oct	Friday	3	0	0	4
4-Oct	Saturday	0	0	3	0
5-Oct	Sunday	1	0	3	1
6-Oct	Monday	4	0	2	2
7-Oct	Tuesday	4	0	5	0
8-Oct	Wednesday	1	0	4	1
9-Oct	Thursday	10	0	12	4
10-Oct	Friday	6	0	9	4
11-Oct	Saturday	0	0	11	9
12-Oct	Sunday	30	2	4	3
13-Oct	Monday	13	0	4	0
14-Oct	Tuesday	0	0	6	0
15-Oct	Wednesday	0	0	9	0
16-Oct	Thursday	0	0	3	0
17-Oct	Friday	0	0	7	0
18-Oct	Saturday	0	0	5	1
19-Oct	Sunday	0	0	0	0
20-Oct	Monday	0	0	2	0
Total		86	2	97	35
Mean		4.30	0.10	4.85	1.75
Max		30	2	12	9
Count		20	20	20	20