

Denali Road Capacity Study

Denali National Park and Preserve

National Park Service
U.S. Department of the Interior



2007 Denali park road traffic counter summaries

As part of the Denali road capacity study, researchers are using traffic counters to monitor the number of vehicles driving sections of the park road. Five traffic counters are placed at intervals along the length of the road. Counters are tallying vehicle numbers by hour, 24 hours a day over the entire summer season. In 2007, daily traffic (5 am to 11 pm) on the park road was highest at Savage (mile 15) with an average of 287.11 ± 10.08 vehicles counted per day. The lowest daily average occurred at the Grassy counter (mile 62.9) with a mean of 71.13 ± 1.82 vehicles per day. Traffic at the three counters between Savage and Grassy decreased with increasing distance on the road (Table 1 and Figure 1).



Traffic on the park road at night (11pm to 5 am) did not follow the daily traffic pattern. The TekGate (mile 30.5) counter reported the highest nightly average traffic counts (24.74 ± 2.4 vehicles), followed by Tek28 (mile 28.5, 24.69 ± 2.45 vehicles).

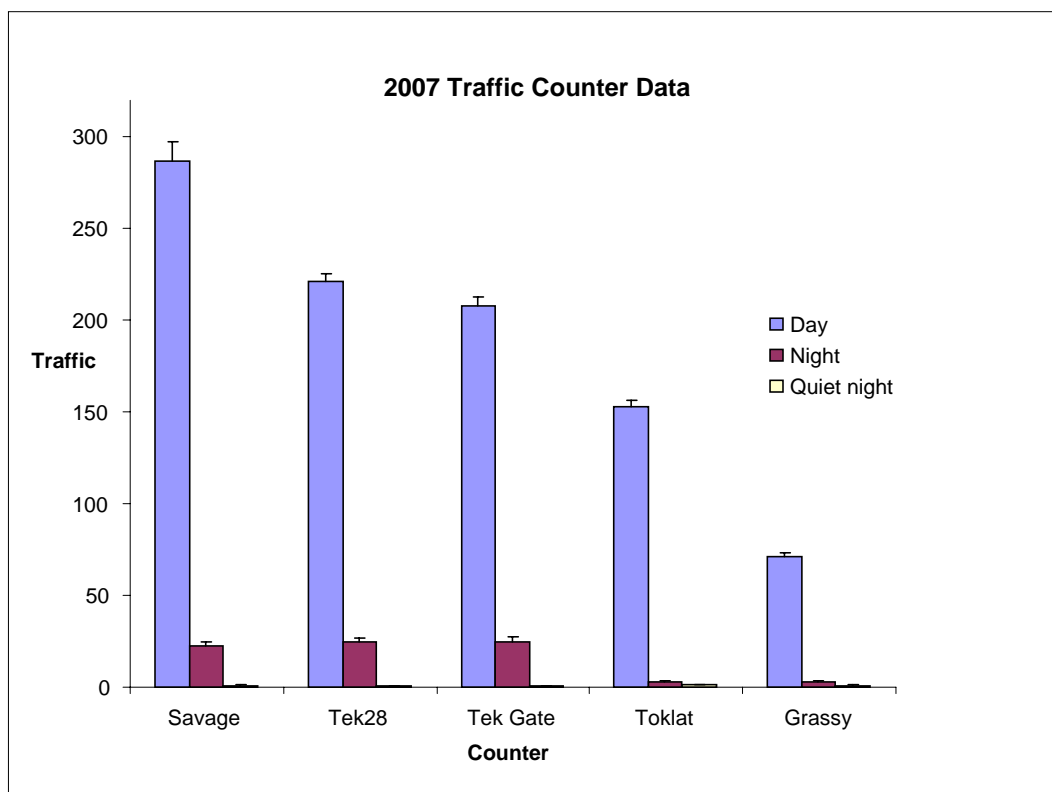


Figure 1. Average number of vehicles on the Denali park road during, summer 2007.

Savage showed the third highest nightly average (22.41 ± 2.37 vehicles) with Toklat (mile 53.5, 3.11 ± 0.24 vehicles) and Grassy (2.87 ± 0.46 vehicles) showing much lower numbers (Table 1).

Nightly traffic averages in 2007 were significantly different than 2006 for the Savage, ($t_{104,152} = 6.73, P < 0.005$), Tek28 ($t_{103,155} = 8.61, P < 0.005$), TekGate ($t_{101,136} = 8.84, P < 0.005$), and Toklat counters ($t_{71,157} = -2.83, P < 0.005$), but not for the Grassy counter ($t_{115,148} = -1.14, P = 0.25$). In 2007 nightly traffic increased at Savage, Tek28, and TekGate, but decreased at Toklat compared to 2006 data. The increased nightly traffic in 2007 from Savage to TekGate was probably due to traffic related to a construction project in Igloo canyon.

In 2006-2007, the National Park Service requested all road permit holders to assist in the implementation of a "quiet night" of minimal traffic on the park road between the Savage River check station and Wonder Lake on Sunday nights throughout the summer. This "Quiet Night" will help researchers evaluate the behavior of collared wildlife in relationship to road traffic levels. Movements of collared animals on "quiet nights" with little or no traffic will be compared to movements on nights of unrestricted traffic. On Sunday nights at 11pm until Monday morning at 5am, traffic on the park road was voluntarily restricted to emergency traffic only. On these "quiet nights" in 2007, average traffic levels were highest at the Toklat (1.18 ± 0.32 vehicles) counter followed by Savage (0.87 ± 0.32 vehicles) and Grassy (0.8 ± 0.33 vehicles). Tek28 (0.76 ± 2.8 vehicles) and TekGate counters (0.71 ± 0.31 vehicles) had less quiet night traffic (Table 1).

	Savage (mean \pm SE)	Tek28 (mean \pm SE)	TekGate (mean \pm SE)	Toklat (mean \pm SE)	Grassy (mean \pm SE)
Day (5am – 11pm)	287.12 ± 10.08	221.16 ± 4.54	207.88 ± 4.93	153.19 ± 3.48	71.14 ± 1.82
Night (11pm – 5am)	22.41 ± 2.37	24.69 ± 2.45	24.74 ± 2.40	3.11 ± 0.24	2.87 ± 0.46
Quiet (11pm – 5am, Sunday)	0.87 ± 0.32	0.76 ± 0.28	0.71 ± 0.31	1.18 ± 0.32	0.8 ± 0.33

Table 1. Average number of vehicles counted by traffic counters on the Denali park road, summer 2007.

Traffic levels were significantly lower on "quiet" nights than on "normal" nights at all counters along the park road in 2007 ($P < 0.005$ for all counters).

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*Note: Only traffic counter data from 5/19/07 - 9/13/07 and 6/13/06 - 9/14/06 were included in this analysis. Outliers (resulting from software or hardware malfunction) from the 2007 data were omitted. All means are presented with standard error.