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File: *MMTP-Black Bear Bait Site*
Monitoring

Date: *July 3, 2018*

Reference: Field Survey Report – MMTP – Black Bear Bait Site Monitoring

Objective

The objective of the black bear bait site monitoring is to get an understanding of how many bears frequent the current bait sites in the area adjacent and away from the proposed final preferred route for the Manitoba Minnesota Transmission Project (MMTP).

Methods

Working with Ken Holme of KC's Outfitting, one of the local black bear outfitters in the MMTP study area, 12 trail cameras were deployed on his black bear bait sites to monitor black bear activity. Six were deployed in close vicinity of the final preferred route of MMTP (< 2.5km) and six were placed at bait sites away from the final proposed routes (>2.5 km). Cameras were deployed on May 23, 2014 and retrieved June 26, 2014. The cameras were redeployed August 17, 2014 and retrieved October 16, 2014. At each of these bait sites the amount of bait consumed during these periods was also recorded as an additional source of information. Also, any hunter that was at any of these sites was also asked to record the number of bears they witnessed at each site as part of the Outfitter Declaration Form that is submitted to Manitoba Sustainable Development. Each camera trap event was determined in one of two ways, one was when the species in the photo changed and the other was a break in activity for more than an hour (to avoid duplication). Basic statistical analysis was conducted to identify correlations between amount of bear activity (hunter observed and camera trap) and lbs of bait used, or distance from the MMTP final preferred route.

Results

All cameras deployed during this project recorded black bear activity (Table 1, Figure 1). The total amount of bait consumed at the 12 bait sites in the spring was 7,522 lbs and 11,850lbs in the fall. The spring deployment of cameras captured 966 separate events. The fall deployment of cameras recorded 885 separate events.

There was no statistically significant correlation between lbs of bait used and # of camera trap events. However there was a statistically significant correlation between # of lbs used and number of hunter observed bears (P-value = 0.08 > 0.05) (Figure 2).

There was no statically significant difference in bear activity (hunter or camera trap) between bait sites near (<2.5 km) versus far (>2.5 km) from the FPR (Figure 3 and 4).

A substantial unknown variable in this study is the rate of hunter presence at the bait sites and locations of hunter harvest.

Appendix 1 includes picture of camera trap installation and a sample camera trap event photo.

Information and Recommendations

All cameras had varying degrees of black bear activity regardless of location, and lbs of bait used. Monitoring through preconstruction, construction and post construction will help determine if black bear activity on these sites remains the consistent, decreases or increases. Black bear bait site activity monitoring was conducted in 2015, 2016, and 2017. Photo interpretation and analysis of black bear bait site activity will continue.

Table 1. Black Bear Bait Site Monitoring Project 2014
Spring Season 2014

| FPR (m) | Name of Bait | Bears Seen by hunter | Bear events on Camera | Lbs. of Bait | Started Bait | Site # |
|----------------|---------------------|-----------------------------|------------------------------|---------------------|---------------------|---------------|
| 125 | Lonesand | 27 | 6 | 1230 | 4/15/2014 | 04 |
| 2230 | Lonesand2 | 7 | 150 | 360 | 4/15/2014 | 12 |
| 5458 | River | 5 | 79 | 420 | 4/15/2014 | 08 |
| 495 | Cementary | 33 | 15 | 1450 | 4/15/2014 | 09 |
| 290 | Linda | Not hunted | 32 | 220 | 4/15/2014 | 11 |
| 1150 | Horseshoe | 18 | 53 | 520 | 4/15/2014 | 05 |
| 2120 | Tkachuk | 4 | 77 | 300 | 4/15/2014 | 01 |
| 1034 | Nudist | 19 | 145 | 960 | 4/15/2014 | 07 |
| 16360 | Badger | 9 | 142 | 640 | 4/15/2014 | 02 |
| 12500 | Pete | 8 | 114 | 440 | 4/15/2014 | 10 |
| 3720 | Piney | Not hunted | 51 | 520 | 4/15/2014 | 06 |
| 2780 | ET 2 | 14 | 102 | 660 | 4/15/2014 | 03 |

Fall Season 2014

| FPR (m) | Name of Bait | Bears Seen by Hunter | Bear events on Camera | Lbs. of Bait | Started Bait | Site # |
|----------------|---------------------|-----------------------------|------------------------------|---------------------|---------------------|---------------|
| 125 | Lonesand | Not hunted | 61 | 550 | 8/19/2014 | 04 |
| 2230 | Lonesand2 | Not hunted | 194 | 980 | 8/19/2014 | 12 |
| 5458 | River | 8 | 57 | 1140 | 8/19/2014 | 08 |
| 495 | Cementary | 4 | 21 | 940 | 8/19/2014 | 09 |
| 290 | Linda | Not hunted | 35 | 620 | 8/19/2014 | 11 |
| 1150 | Horseshoe | 8 | 126 | 980 | 8/19/2014 | 05 |
| 2120 | Tkachuk | Not hunted | 26 | 620 | 8/19/2014 | 01 |
| 1034 | Nudist | 11 | 88 | 1680 | 8/17/2014 | 07 |
| 16360 | Badger | 4 | 205 | 1140 | 8/17/2014 | 02 |
| 12500 | Pete | 3 | 36 | 920 | 8/17/2014 | 10 |
| 3720 | Piney | 2 | 21 | 1140 | 8/17/2014 | 06 |
| 2780 | ET 2 | 7 | 15 | 1140 | 8/17/2014 | 03 |

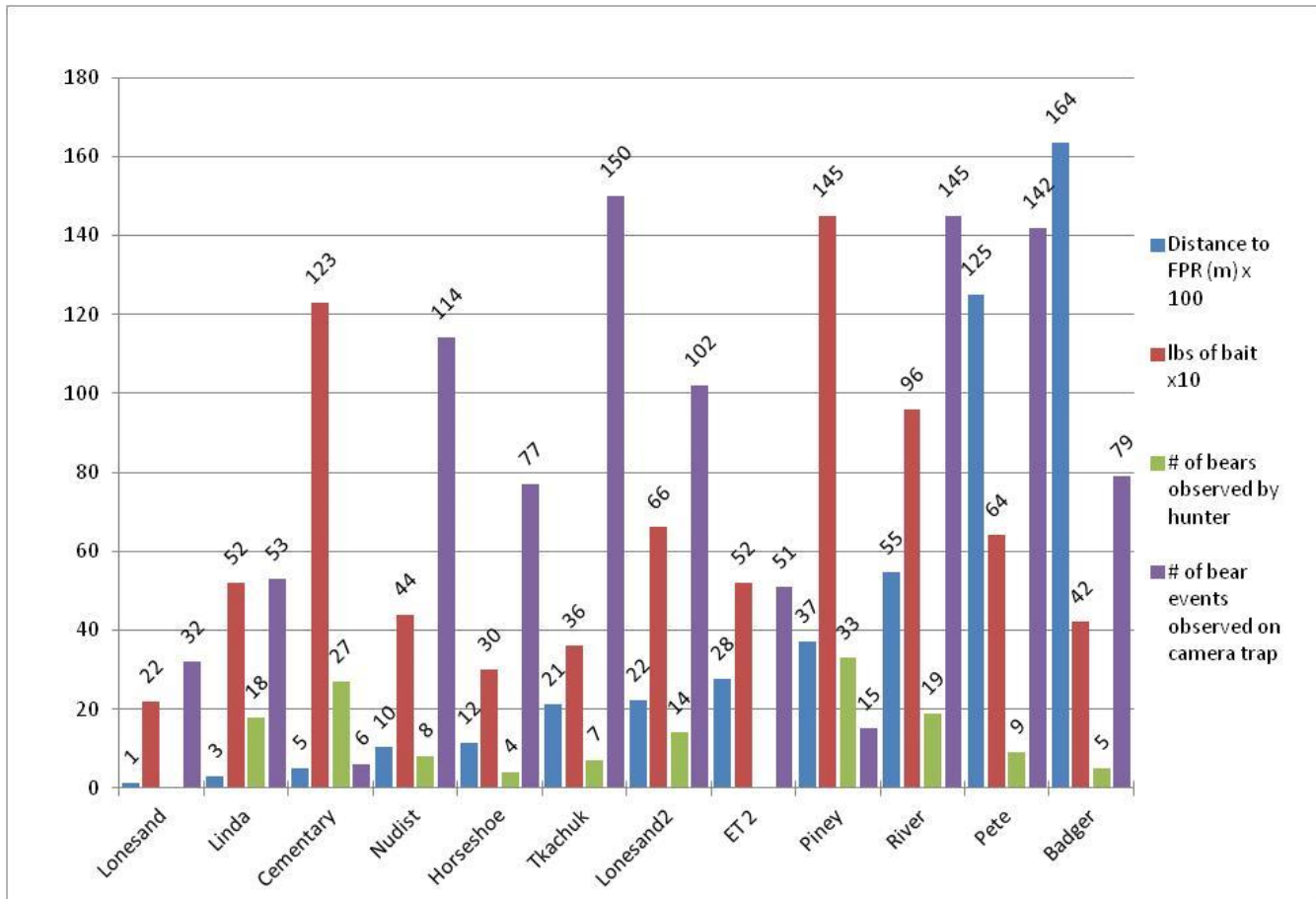


Figure 1. Black bear activity, lbs of bait used, and distance to the FPR, for 12 bait sites in spring of 2014.

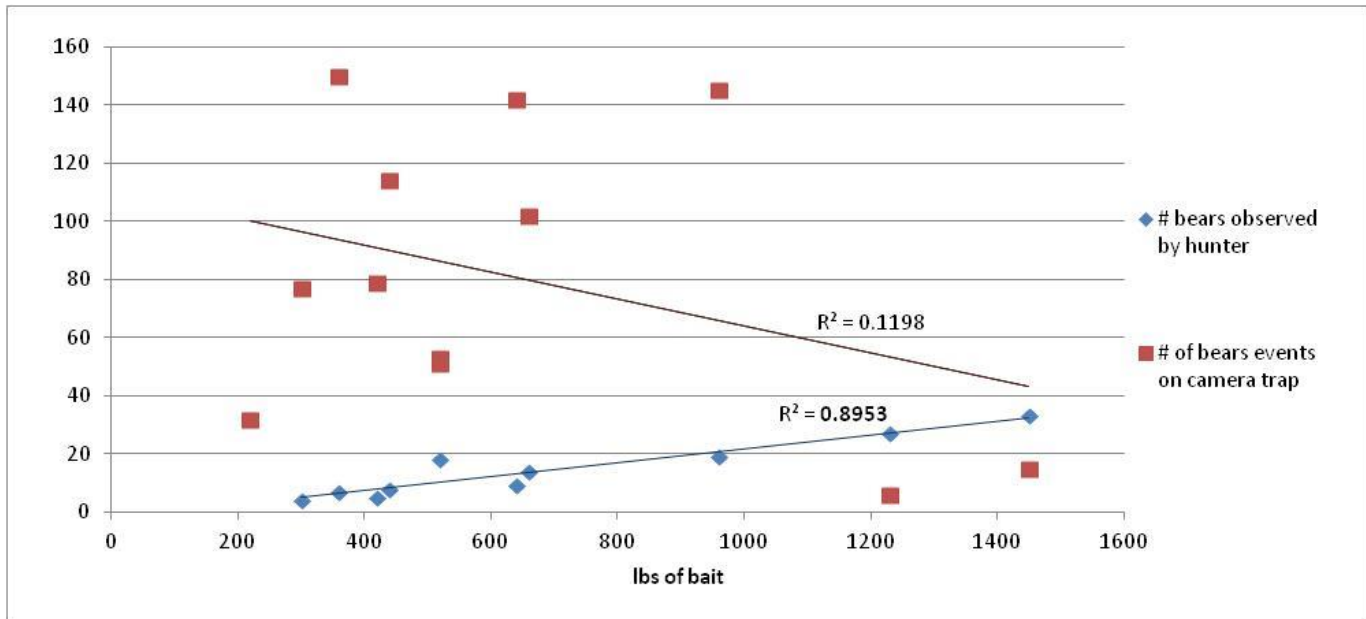


Figure 2. Number of hunter observed black bears and camera trap events, as a function of lbs of bait used, at 12 bait sites in spring 2014.

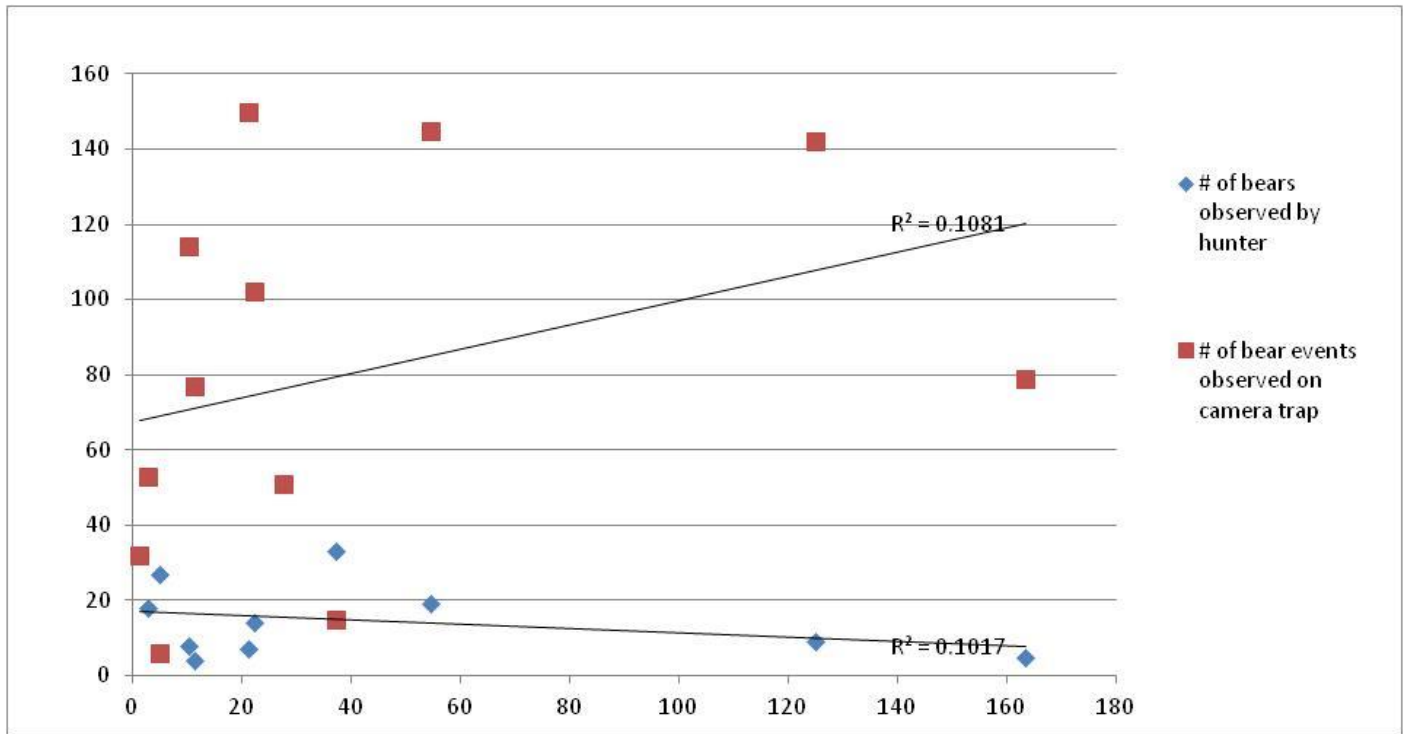


Figure 3. Number of hunter observed black bears and camera trap events, as a function of distance from FPR (m) x 100, at 12 bait sites in spring 2014.

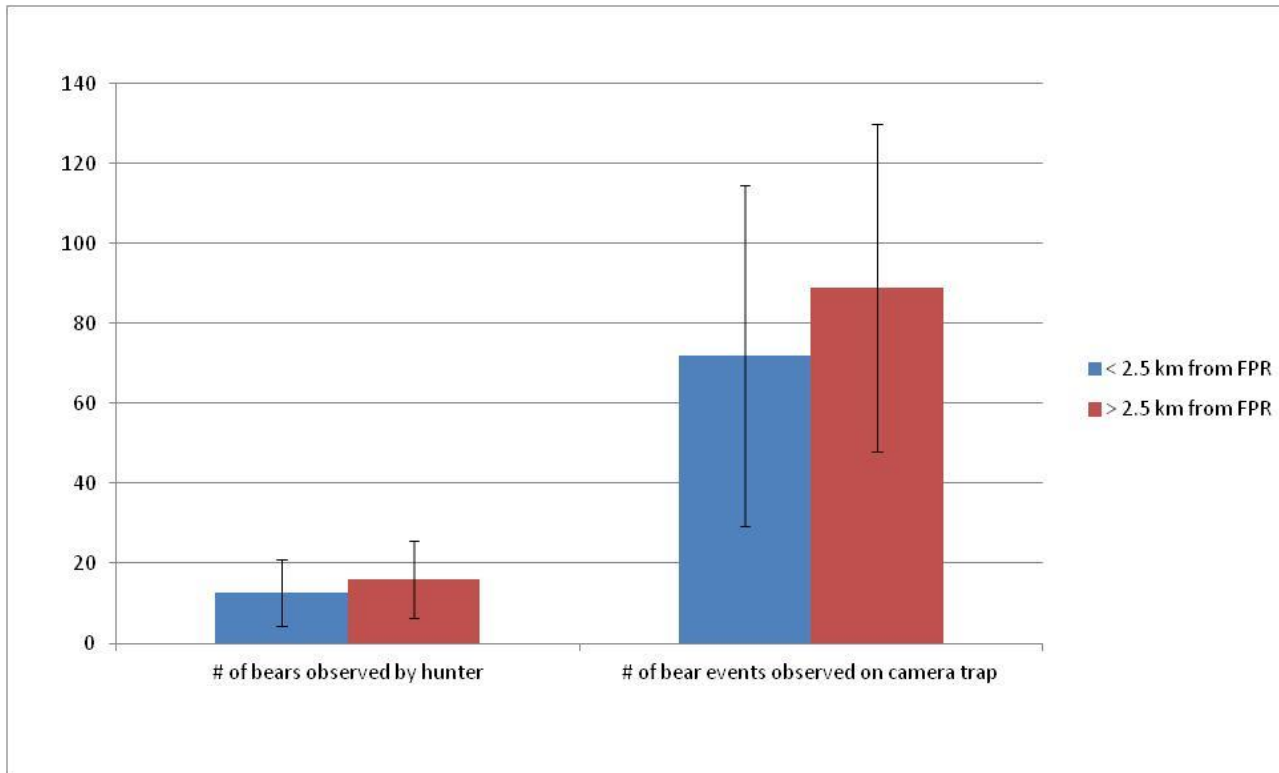


Figure 4. Number of hunter observed black bears and camera trap events, between bait sites near (< 2.5 km) and far (> 2.5 km) from the FPR in spring 2014.



Picture 1. Camera trap install.



Picture 2. Sample picture of a camera trap.