2018 MOOSE DAY REPORT

Photo credit: Gigi Halloran

Summary

It was windy day with off-and-on light snow and pretty good visibility. We had 74 Moose Day volunteers on 33 teams covering 53 different areas. Unfortunately, 14 teams struck in that they observed zero moose while covering their survey territories. This is always disappointing to the hardy observers, but "0" is important data, as well. We can get a feel for where the moose do not go regularly over the years or the variability of their movements.

So where did the moose show up? Wilson once again had a high proportion: about 27 in different clusters and pairs. Grand Teton National Park from Kelly, a bit north and west over through the Solitude development had approximately 25 moose seen. Another eight were seen in the Jackson Hole Golf and Tennis area, including three spotted by Bryan, a guest staying with Jackson Hole Wildlife Foundation's trusty fence volunteer Randy Reedy. Bryan was getting into his car while Randy was out scouting. Volunteer time: five minutes! Jason Wilmot of the U.S.

Forest Service and partner saw 15 moose snowmobiling out to the end of the Gros Ventre Road. Last year this same team saw a remarkable high of 57 moose. Biologists Sarah Dewey and Steve Kilpatrick saw five moose in the Buffalo Valley area versus 20 last year, and an overall low for that territory. The north and southern extremes of our count area had no moose. The total number of moose for the count was 77. This number is slightly below average – 87 is the average count, excluding two high years (2011 – 124 moose; 2017 – 172 moose; both years with a lot of snow).

The most observed moose was one browsing and then sleeping along a row of willows just west of Stilson in Wilson. Over eight people reported seeing it there. However, we only counted this particular individual once.

All moose observations were entered into the Nature Mapping Jackson Hole online database. Only live moose were recorded while deceased moose, tracks and other signs were omitted.

Table 1: Total moose observed during Moose Day from 2009-2018.

Year	Date	Total Moose Observed
2009	April 18	95
2010	February 27	86
2011	February 27	124
2012	February 25	94
2013	February 23	67
2014	March 1	74
2015	February 28	97
2016	February 27	99
2017	February 25	172
2018	**February 24**	**77**

Table 2: Moose observations in 2018 by sex and age

Sex/Age	Adult	Juvenile	Unknown	Yearling	TOTAL
Female	34	4			**38**
Male	16		1	1	**18**
Unknown	4	7	10		**21**
TOTAL	**54**	**11**	**11**	**1**	**77**

In 2018, 74 individual people (33 people units) spent 248.75 total hours volunteering for a total effort of 258.5 hours (174.5 hours by car, 10 hours by snowmobile, 5 hours by foot and 60.5

hours by skis and 8.5 by snowshoe) (Table 3). Volunteer numbers are well over our 65-person average.

Table 3. Numbers of people, hours volunteered and search effort on Moose Day from 2009-2018

Year	People	People Units [a]	Total Hours Volunteered [b]	Total Effort [c]
2009	57			
2010	47			
2011	46	31	137.5	88.8
2012	70	49	177.3	103.5
2013	80	40	291.45	132.45
2014	71	36	240.5	115.5
2015	71	39	214	108
2016	73	38	259	100.5
2017	84	33	294.50	246.5
2018	**74**	**33**	**248.75**	**258.50**

[a] **People Units** represent the unit traveling together. For example, two people in one car represent one people unit and three people in one car also equate to one people unit.

[b] **Total Hours Volunteered** is the sum of each team's number of people multiplied by the number of hours spent searching.

[c] **Total Effort** represents the sum of each team's people units multiplied by the number of hours spent searching.

Note: Search effort was not recorded in 2009 or 2010. Search efforts for 2011 and 2012 were calculated based on the 2012 method. A more streamlined effort calculation was used in 2012 than in the 2011 report. This 2012 method more accurately represents the volunteers' effort covering the search areas rather than purely the hours volunteered. The 2012 method used "people units" rather than just the raw number of people.

Weather:

Conditions were overcast with light snowfall and a steady wind averaging 15 mph (a temperature high of 19'F and a low temperature of 16'F). The Snake River Basin was at 117% of the 30-year average of snow water equivalent as of February 24, 2018 (NRCS Snotel precipitation update found at: http://www.wrds.uwyo.edu/wrds/nrcs/snowprec/historical/20180224.html) (Table 4). The Natural Resources Conservation Service (NRCS) installs, operates, and maintains an extensive,

automated system to collect snowpack and related climatic data in the Western United States called SNOTEL (for SNOwpack TELemetry). Snow Water Equivalent (SWE) is a common snowpack measurement. It is the amount of water contained within the snowpack. It can be thought of as the depth of water that would theoretically result if you melted the entire snowpack instantaneously. In relation to our annual survey, higher snow water equivalents indicate a deeper, denser snowpack and lower ones indicate a shallower, less dense snowpack. In general, a deeper and denser snowpack causes moose to become more concentrated on valley bottoms and closer to roads, leading to higher observability on Moose Day.

Table 4. Snow water equivalent measurements and observer visibility scores from 2010-2018.

Year	Date of Average	Snow Water Equivalent	Observer Visibility
2010	n/a	55%	good
2011	3/16/2011	111%	excellent
2012	3/29/2012	88%	poor
2013	3/10/2013	89%	poor
2014	3/10/2014	142%	poor
2015	3/1/2015	99%	good
2016	3/1/2016	93%	good
2017	2/27/2017	155%	good
2018	**2/24/2018**	**117%**	**good**

Other notes:

- Several observers saw Bald Eagles in courtship. One pair of adult Bald Eagles where the male bird was about 75% smaller than the female – this is an extreme example of a typical size difference in raptors females and males.

- Townsend's Solitaire and Snow Buntings were also sighted on a count territory south of Jackson. Teton Conservation District's Morgan Graham took a picture of a Northern Shrike down in the same vicinity. Trumpeter Swans, Barrow's Goldeneyes, Mallards and mergansers were observational treats along the creeks and rivers.

- Two groups of 15-16 elk were seen in different corners of Wilson. Pine Grosbeaks, European Starlings, woodpeckers, Great Blue Herons and coyotes also delighted Nature Mappers, especially those who did not see moose!

- About 20 volunteers gathered for lunch at E.Leaven after the counting was complete to exchange stories and report in their observation numbers.

- Prior to Moose Day we held a “Moose ID clinic” on February 15, 2018 from 5:30 – 7:30pm at the Jackson Hole & Greater Yellowstone Visitor Center. We will continue to hold these trainings every year in advance of our annual count since it increases the participants ability to properly sex and age moose.

- The 11th annual Moose Day will take place on Saturday, February 23, 2019.

Figure 1: Total of 77 individual moose were observed during the 10th annual Moose Day 2018