29 November 2017 National Elk Refuge Biological Update: A summary of 2017 forage production estimates, and summary of historic elk summer range trends

Technical Report · November 2017

DOI: 10.13140/RG.2.2.27012.01922

CITATIONS
0

READS
26

1 author:

Eric K Cole
U.S. Fish and Wildlife Service
40 PUBLICATIONS **230** CITATIONS

SEE PROFILE

29 November 2017 National Elk Refuge Biological Update

2017 National Elk Refuge Forage Production Estimate and Implications for the Supplemental Feeding Season

Estimated refuge-wide herbaceous forage for NER during the 2017 growing season was 13,925 tons (4% below the 1998-2016 average of 14,475 tons). Refuge-wide forage production is strongly correlated with May through June precipitation. Although 2017 May precipitation was well above average, June precipitation was well below average, which accounts for the net effect of near-average forage production this season. Although the amount of forage produced on NER is one of the factors that influence when supplemental feeding is initiated, snow conditions and the number of elk and bison occupying NER during the fall and early winter period are typically more important than the amount of forage produced. Starting in mid-December, NER and WGFD staff will begin monitoring snow conditions and forage availability to determine when supplemental feeding is necessary. On average, Refuge supplemental feeding begins by late January each season.

Elk Movements and Harvest to date

Although there have been significant elk movements to and through NER to surrounding National Forest land since 6 November, the average number of elk counted on NER since that time has been only 60 animals. For the most part, elk that have migrated to NER have not been remaining on the Refuge due to disturbance associated with the NER hunting season. This is an intentional strategy designed to help achieve the objective of 5,000 elk wintering on NER and also to prevent elk from consuming forage on the Refuge when it is still available in other areas. Based on harvest reports turned in by hunters, at least 45 elk have been taken so far during the NER hunting season, with most harvest occurring since 14 November 2017.

Other Refuge Ungulate Activity

-There has been no significant bison activity on NER since early May 2017.
-The peak number of pronghorn in 2017 was 105 observed on 23 October, with an average of 30 pronghorn observed during November.
-Significant numbers of bighorn sheep began arriving on Miller Butte in early November with a peak of 49 observed on 18 November.

Elk Summer Range Trends

During the winters of 2016 and 2017, the National Elk Refuge and the Jackson Hole Cooperative Elk Studies Group have deployed GPS collars on 63 random adult cow elk on NER feedgrounds. This is part of ongoing monitoring to map elk migration routes and movement patterns, evaluate disease risk, and evaluate elk habitat use. The latest round of elk collaring was one of 4 discreet collaring efforts on the Refuge: (1978-1982; 1994-1998; 2006-2011; and 2016-2017). Among other things, elk radio collar data can be used to assess where elk that winter on NER spend the summer, and whether these summering patterns have changed over time. This information is very valuable to inform management of the Jackson Elk Herd. Notable summer range trends over the past 40 years include:

-A large increase in the number of Short Distance Migrants: These are elk that summer in the area between the town of Wilson, WY and Beaver Creek in southern Grand Teton National Park including Hunt Area 78. (percentage of collars shown in red on attached pie charts) These elk went from 2% of the elk collared on NER in the late 1970's to around 36% by 2011. For more detail see Cole et al. 2015, which suggests that the increase in elk summering in this area was due to high calf recruitment. 2016-2017 collar data suggests that this segment has stabilized to slightly declined in recent years, but at 29% it is still the 2nd largest summering segment based on collar proportion.

-A large decrease in the number of elk that summer in Yellowstone National Park (percentage of collars shown in purple on the attached pie charts). These elk represented 28% of the elk collared on NER in the late 1970's but now represent only 2%. Findings in Cole et al. 2015 suggests that this is primarily due to low calf recruitment in this segment of the population.

-Relatively stable to slightly decreasing percentage of elk that summer in Grand Teton National Park. These are elk that summer north of Beaver Creek including the central valley, eastern GTNP, and the areas west of Jackson Lake in GTNP. (percentage of collars shown in dark blue on the attached pie charts). Although stable to declining, this segment of the herd still represents 37% of the elk that have been collared on NER during 2016-2017, and based on this information is the largest summering segment of elk that winter on the Refuge.

-Recent increase in the number of elk that summer in the Gros Ventre drainage and parts of the Bridger Teton National Forest other than Teton Wilderness. This also includes areas such as the upper Flat Creek drainage, and elk that summer outside of the Jackson Elk Herd Unit such as the Wind River and Upper Green River drainage. (percentage of collars shown in light blue on the attached pie charts). These elk represented 10-12% of elk collared on NER from 1978-2011, but since 2016 these represent about 22% of the elk collared on NER. This increase coincides with a shift in winter elk distribution from the Gros Ventre to the Refuge in recent years, and probably explains why 83% of the Jackson Elk Herd wintered on NER in 2017 (the highest percentage of the overall herd ever recorded on the Refuge).

If current elk distribution trends continue it will be difficult to achieve the 5,000 elk objective on NER and still maintain 11,000 elk in the Jackson Elk Herd.

Literature Cited

Cole, E. K., A. M. Foley, J. M. Warren, B. L. Smith, S. R. Dewey, D. G. Brimeyer, W. S. Fairbanks,
H. Sawyer, and P. C. Cross, 2015. Changing migratory patterns in the Jackson elk herd. Journal
of Wildlife Management 79:877–886.

Eric Cole
Refuge Biologist
U.S. Fish & Wildlife Service, National Elk Refuge
Jackson, WY
307.201.5432