

National Elk Refuge News

Forage Production and Sampling – January 7, 2016



Biologist look at snow density and available forage as part of the winter sampling program.

Biologists from the National Elk Refuge and Wyoming Game & Fish Department have been closely monitoring forage over the past few weeks to measure the amount of plant material available to wintering elk and bison. Forage availability is a key factor in the refuge's winter management program, as well as a consideration in determining if supplemental feeding may be necessary.

Forage measurements are taken at different times of the year and used for several purposes. After the growing season has ended in the fall, refuge staff

calculates and records the amount of forage that has been produced during the spring and summer. The information can be used to note seasonal environmental conditions, measure the effects of irrigation, and predict possible winter management operations. Consistent methods of gathering data have been used on the refuge since 1998.

This past fall, 62 monitoring sites were assessed, with 33 plant community types included in the sampling. Both irrigated and non-irrigated areas were included in the selection of monitoring

locations. Estimated refuge-wide production for the 2015 growing season showed herbaceous (non-woody) forage at 17,750 tons, 7.5% higher than in 2014 and 22% above the long-term (1998–2015) average. Total refuge forage production (both herbaceous and woody plants) was at 20,800 tons, or 3% higher than in 2014.

Beginning in December, biologists shift from measuring summer forage production to estimating the amount of remaining plant material. They also note snow conditions such as depth, icing, or crusting that could make it difficult



Summer sampling takes place at the end of the growing season, in September and October.

for animals to paw through the ground cover to reach remaining vegetation.

In addition to production, cumulative forage consumption by elk and bison is an important factor in determining the need for winter supplemental feed. Because the number of bison and elk occupying the refuge this past fall was well below average, forage consumption from the end of the growing season through December was correspondingly below average.

The most recent winter forage survey was conducted on Wednesday, January 6 at four key index sites in areas that represent the highest quality forage on the southern end of the refuge. Biologists measure the amount of forage by calculating the number of pounds per acre at the sampling locations. Supplemental feeding is often recommended when available forage decreases to below 300 pounds per acre. Though the threshold still represents adequate forage levels to sustain groups of

elk and bison, it marks the point when elk have often been observed leaving the refuge for private lands in Spring Gulch.

After this week's assessment, field staff calculated the average remaining accessible forage to be roughly 870 pounds per acre, which is significantly above the threshold

for recommending the initiation of the supplemental feeding program. Snow depth at the index sites averaged 7.2 inches; snow conditions were powdery enough that remaining forage was easily accessible and not a barrier to foraging activities. Despite the cold temperatures in the valley during the last week of December, the refuge had more than enough vegetation to sustain the herds that were wintering here.

Since 1995, the average start date for initiating supplemental feeding has been January 28. The start date, ranging from December 31 to February 28, varies widely depending on winter severity and available forage. The refuge's management strategy includes limiting how long elk and bison are on supplemental feed in order to minimize the time they are concentrated and thus reduce the potential for disease transmission.

Another forage assessment is scheduled for next week.



A driver with the refuge's contracted sleigh ride program transported two biologists to a monitoring site within the sleigh ride area, then used the vehicle as a visual barrier to keep nearby animals from bolting at the sight of humans on foot.