

Continued Nevada Bull Elk Aging Study

During the 2002 hunting season, the Nevada Department of Wildlife (NDOW) continued its effort to age harvested bull elk. Due to limited staff and funding, only hunters who harvested bulls from Unit Group 111 – 115, 221, 222 were asked to submit elk teeth. This management effort is designed to learn more about the age structure of bulls in each herd and better determine the age at which a bull attains a certain antler mass or Boone and Crockett (B&C) score. This information will help pinpoint the bull harvest rate that accommodates antler size expectations of bull elk hunters in Nevada.

Each hunter was asked to extract two incisors from their harvested bull. NDOW submitted the teeth to a laboratory in Milltown, Montana that specializes in aging wild animals. At the lab, each tooth is sectioned and the cementum annuli is read (similar to how a tree is aged by reading the growth rings on its trunk) to determine the age of the animal. A total of 159 hunters, out of the 236 successful bull hunters in 2002, returned elk teeth to NDOW. A total of 150 samples were usable for age analysis.

Figure 1 displays the number bulls in each age class harvested in Unit Group 111 – 115, 221, 222. Though the graph includes only 64% of the harvested bulls, the sample was found to be representative of all bulls harvested (not biased toward young or old-aged bulls).

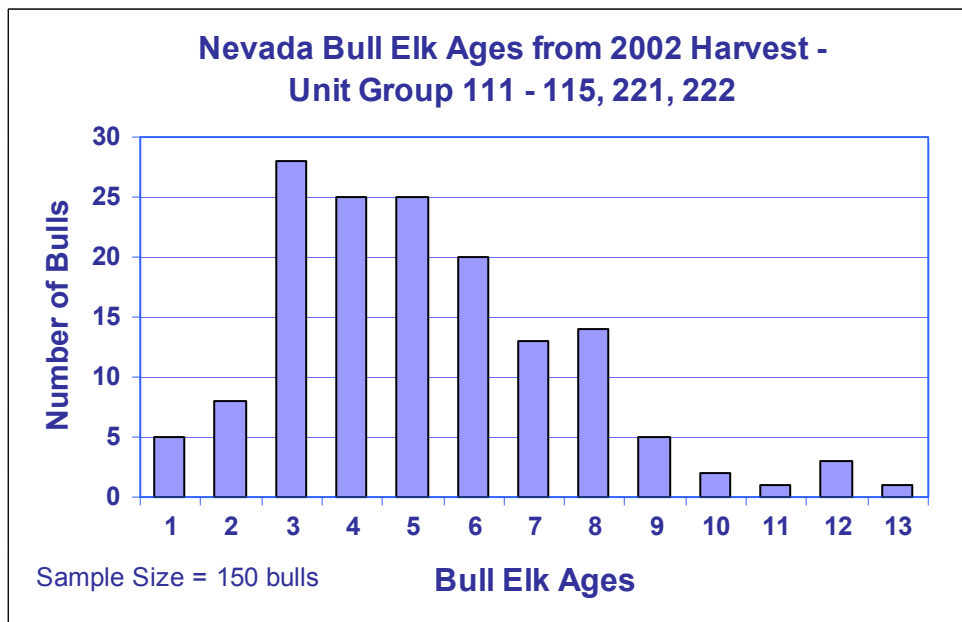


Figure 1

Figure 2 compares the ages of bulls harvested in 2001 and 2002 only for Unit Group 111 –115, 221, and 222. Though there were a few differences overall, we continued to see a fair number of old-age bulls in the harvest. After the 2003 harvest, NDOW biologists will be able to better determine if the large increase in tags issued in 2002, compared to 2001, impacted the availability of mature bulls in the future. The large jump in 8-year olds harvested in 2002 indicates that there certainly were plenty of mature bulls in the herd. It may also indicate that older bulls are more vulnerable to the increased hunter pressure. An increase also occurred in 3- and 4-year-old bulls harvested in 2002. This may indicate a particular trend in hunter satisfaction or even availability of older bulls. At this time, there is simply not enough yearly data to say for certain.

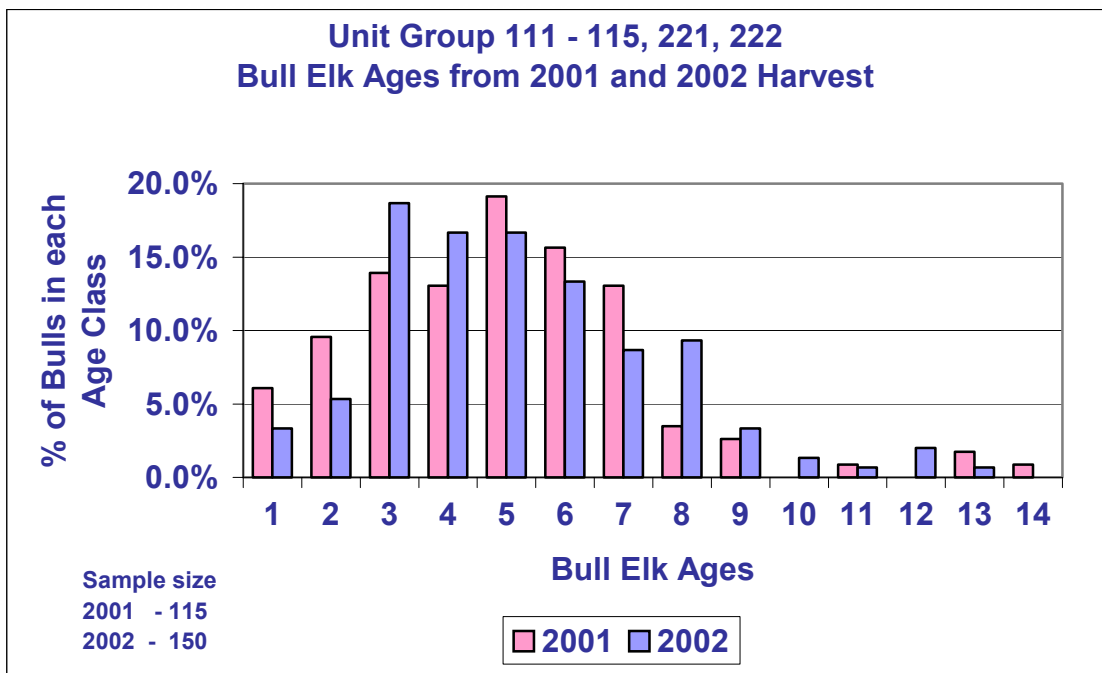


Figure 2

Figure 3 shows the relationship between a bull's age and his B&C Score. This was based on the known-aged and known-scored bulls harvested statewide over the last two years. The blue-green band represents the relationship or "model" based on the majority of the bulls harvested and accounts for the natural variability in B&C scores from bull to bull. So for example, the model predicts that for a "normal" 4-year-old bull, its B&C score could be as low as 270, average 300, or be as high as 320 points. The score is dependent on the bull's genetics and the environmental conditions that existed prior to, and during, antler growth.

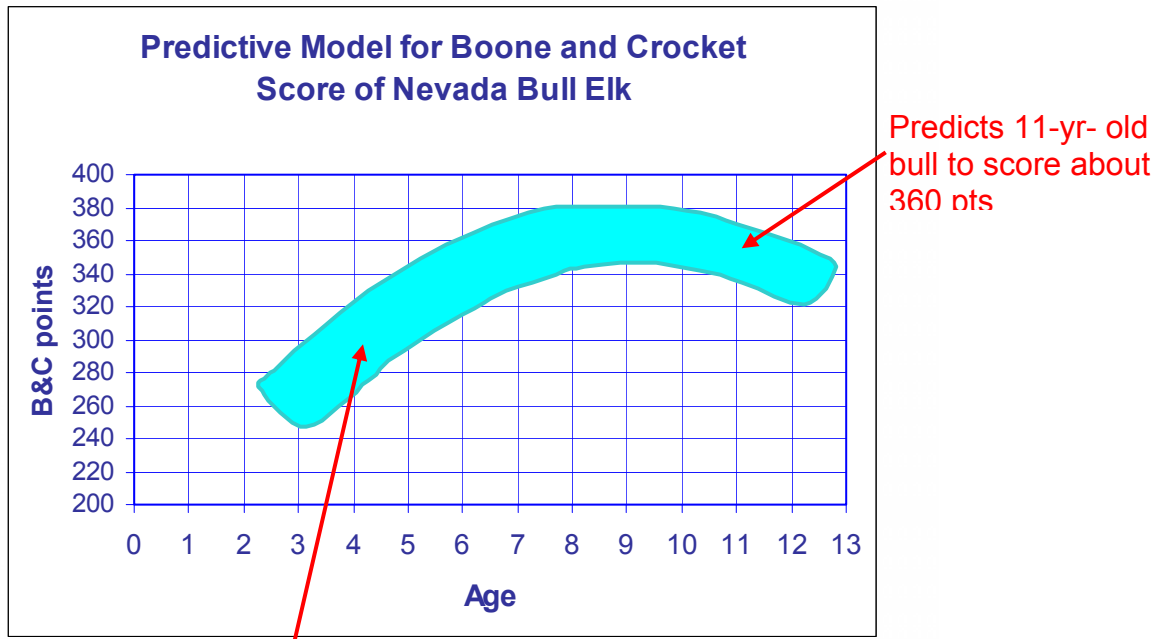


Figure 3 Predicts 4-yr- old bull to score about 300 nts

Predicts 11-yr- old bull to score about 360 nts

Figure 4 shows there are a few “abnormal” bulls that have much different antler growth than most bulls that are predicted within the blue-green band. “Underachiever” bulls are shown in yellow. For example, the bull that was 9-years old only scored 270 B&C points. There are a lot of reasons for this from an injury to inferior genes that control antler growth. Conversely, the 5-year old “Freak” that scored 375 B&C points is a very rare bull that had superior genes for antler growth and was living a good life.

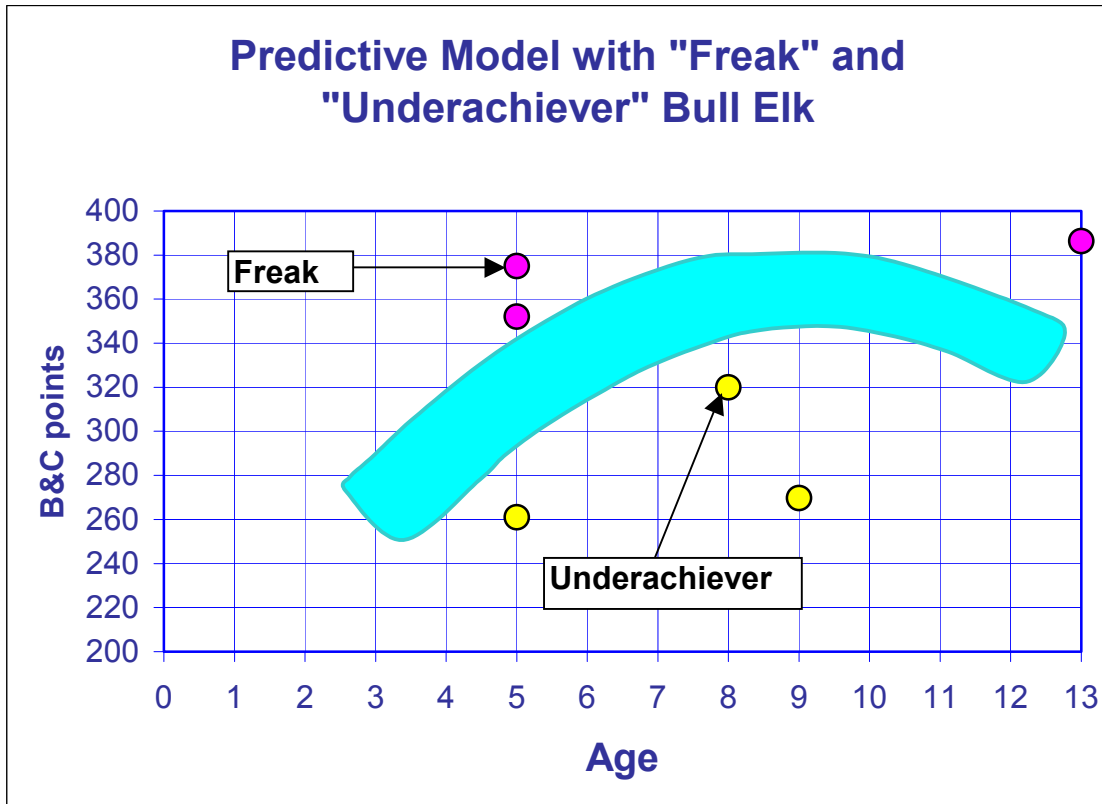


Figure 4

The type of data represented above can help biologists determine how many bulls can be safely harvested to meet hunter expectations for a particular size of antlers and B&C score.

It is very important that Nevada bull elk hunters have realistic expectations about the size of bull they are seeking during their hunt. “Freak” bulls with a younger age and a high B&C score WILL continue to exist. However, the likelihood of harvesting one, even under extremely conservative harvest quotas, is virtually slim to none.

NDOW will continue to collect bull elk teeth to evaluate bull elk ages and antler size relationships. Hunter participation of submitting elk teeth is a key component of this type of evaluation, and NDOW greatly appreciates continued hunter support.