



Age Data IMPLEMENTATION

As you are reading this article, Boone and Crockett Club is in the process of ramping up its efforts to collect age data on all trophies entered. As the gold standard of North American big game records-keeping, it is additional information such as this, coupled with the methodology we employ in data collection that sets us apart. At a time when many outdoorsmen are becoming overly concerned with irrelevant numbers such as gross score or total inches of antler, we need to step back and remember why the records system was started, and ensure its intended purpose is being obtained.

By Justin Spring

Assistant Director of Big Game Records

Boone and Crockett traces its origin to a time when big game populations were crashing, and a massive continent-wide extinction was literally around the next bend. In an effort to develop a centralized collection of North American game to show future generations what used to exist, scoring criteria were developed in the early 1900s and solidified in the 1950s when a group of prominent taxidermists, record-keepers, and Club members hammered out the system we use today. When they developed this system, the basic premise was to reward what science showed to be the common traits on only the most mature and healthy of big game animals. These criteria were set in place to ensure that hunting could continue to take place. The effects would actually strengthen game populations by not affecting recruitment or the gene pool by taking trophies after they had passed prime breeding age and their lineage had been passed to future generations. This mentality was the birth of the hunter-conservationist. And as evidenced by the quantity and quality of trophies today, wildlife conservation has worked, and worked well.

For approximately 60 years the Boone and Crockett Club has administered the current system developed long ago, purely in the name of conservation. People today often forget we are a conservation group that keeps records, not a records-keeping group interested in conservation. The records are designed and administered for use as a record of wildlife management, highlighting successes, and in some cases, failures. The taking of a Boone and Crockett-class trophy is an achievement that many spend a lifetime of hunting in pursuit thereof—though they must keep in mind that the conditions facilitated by the efforts of those before us and today resulted in the healthy, mature trophy they have been fortunate enough to harvest.

With this in mind, we shift gears to what we have heard today from the prominent wildlife managers when we ask, “How can Boone and Crockett Club better gauge wildlife management on a continental scale?” The resounding answer is age collection. This is not a new data request for trophy entries; though while reviewing current submissions, I have identified a few issues that create problems in terms of age

assignment. These issues and overall lack of participation by trophy owners has left a major hole in the data set in terms of usefulness to wildlife professionals. B&C is undertaking a more precise technique designed to fill the gap in determining a trophy’s age. The Club is strongly encouraging and requesting participation from all trophy owners to improve data to better help wildlife managers through age identification. Our approach now will create a financial obligation to the records program, but the cost is overshadowed by the insight provided by age information. Our goal is to provide an age structure with minimal error and arbitrary interpretation resulting in a unified data set administered in the same way as our scoring system.

Undoubtedly the most common method of aging is tooth replacement and wear, a method that was developed in Michigan and quickly adapted into management practices by the state of Wisconsin in the 1960s. Scientists have

Find out more about tooth replacement from the Quality Deer Management Association [QDMA] Web site at www.qdma.com/what-we-do/articles/data-collection/aging-by-tooth-replacement.



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continually aged a large sample of harvested deer by replacement and wear since that time, and this method is widely used across the continent today. The concern for this type of age assignment is the use of age classes. For example, it doesn't really matter if the deer is four, five, or six; the goal for this aging method is that the deer falls within the necessary classification of the 4-6 age class. This is the most common method of aging we receive, yet the least accurate. This is a major issue we are trying to correct.

Animals collared at a known age and subsequently harvested results in very accurate age assignment. This is a precise and accurate technique, though many states actually discourage the harvest of collared game. Even if that is not the case, the chances of a collared animal reaching a point of Boone and Crockett minimums and then being harvested are very slim. Recording only these ages would be futile since a sample size large enough for analysis would never be obtained. We will record and include age data informa-

count rings similar to the process of aging a tree using the growth rings.

While this method is the most accurate, it is also the most costly, which the Club has committed to absorbing. This method is also the most difficult to complete due to issues with correctly removing the tooth and not doing anything to the sample that may compromise the integrity of the cementum. The processes of bleaching or boiling, which commonly takes place with trophy mounts, can render a sample useless. You will notice on the new hunter, guide, and hunt information (HGH) form that the back has been redesigned to help both Official Measurers and trophy

owners in the collection of a viable tooth sample for analysis. Official Measurers should have already received these forms, along with the new score charts, which Jack Reneau highlights in his column "Trophy Talk" in this issue.

Now that I have touched on the methods we are trying to encourage and the basic reasons, let's look at the sheep category and see what information we can assess when we attach ages to our already existing score information.

The new HGH form is available on the Club's Web site under:

BIG GAME RECORDS

- Scoring Your Trophy
- Score Chart PDFs
- Additional Forms

tion from these animals in the database, but as a stand-alone data set, it will not suffice.

The third, and by far the most useful method of age data we currently receive at a relatively high rate, is horn annuli age assignment. This method is utilized on most all mountain sheep and goats we receive since nearly all locations where these species are hunted require some form of check-in with the appropriate wildlife management authority. These age calculations do have some subjectivity, though the calculations are performed by biologists trained in age assignment through annuli counting, which levels the playing field somewhat.

The final method of aging trophy animals is the one we are trying to encourage: aging of a sectioned tooth through tooth cementum analysis. Many states, including Alaska, Pennsylvania, and Oregon, employ this method for assigning age data to harvested bears, though the turnaround generally takes significantly longer than the entry process. In most cases, this results in us not being informed of the ages on these trophies. Cementum analysis involves cross-sectioning a tooth, revealing dyed annuli. These annuli are laid down in a predictable pattern allowing the trained technician to

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For this example, we are going to look at the location with the most entries for sheep—the state of Montana. With current age data collection we have a sample size of 190 records—book sheep with age data attached. As I write this, Montana has a total of 693 accepted entries, giving it a reporting rate of just over 27 percent. This is the best sample size we have anywhere, in terms of numbers and reporting rate.

The first thing we will look at is the average age of harvested rams, broken into four-year periods. This analysis, while simplified for this example, will give us insight into whether or not we are harvesting younger or older rams and possible effects on their final scores. If we see significant patterns, it can have numerous causes; our concern is that any detectable differences are not being driven by over-harvest or over-selective harvest. A quick glance at the numbers shows a slight decrease in average age from when sheep entries began appearing in Montana, but the recent trend line shows an increase in average age with a correlating increasing score. This trend is not all that troubling from these basic numbers since no distinctive patterns are emerging after 35 years of sheep hunting in the Big Sky state. Again though, this is a very limited sample and does not allow for region-specific analysis—something we would prefer to be able to complete before ever bringing any possible effects to the attention of the wildlife managers.

The second table, and perhaps the most significant in terms of overall habitat and genetic quality evaluation, is the “score at age” table. One would expect a gradual increase in score from the low to high end, and that is what this graph generally shows, other than at the very low and very high ends of the scale. The 4.5-age class has only two samples in it, and those could just be statistical outliers. On the high end, we do see a fairly representative sample size with a decrease in score. This again could be attributed to many different causes, which require further investigation, but let’s consider a couple possibilities. First, perhaps rams are sustaining damage to the horns in a later age by an overabundance of sheep resulting in a higher rate of conflict throughout their lifetime. If this is the case, it would suggest a higher harvest rate may be warranted to reduce abundance of breeding-age rams. Another possibility would be a peak horn growth available to rams either driven by genetics or perhaps hunter harvest. If this was to blame, I would expect to see a plateau across the age-class breakdown. If hunters shoot rams at, for

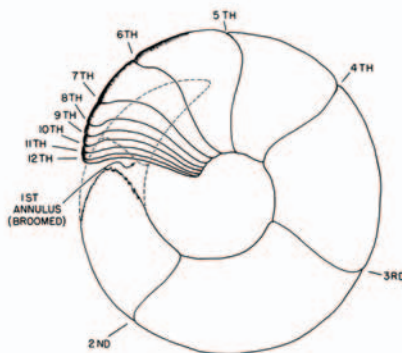
BIGHORN SHEEP ENTRIES WITH AGE DATA IN THE STATE OF MONTANA

Age date reporting rate for the state of Montana is 27%, with 190 entries including age data out of the 693 total entries.

YEARS	'77-'80	'81-'84	'85-'88	'89-'92	'93-'96	'97-'00	'00-'04	'04-'08	'09-'10
AVG. SCORE	184 4/8	184 7/8	184 6/8	185 7/8	183	184 1/8	183 6/8	183 1/8	185 7/8
AVG. AGE	8.5	7	7	7	7	7	8	7	8
TOTAL	11	12	23	27	2	44	25	22	19

AVERAGE SCORE AT AGE – MONTANA BIGHORN SHEEP

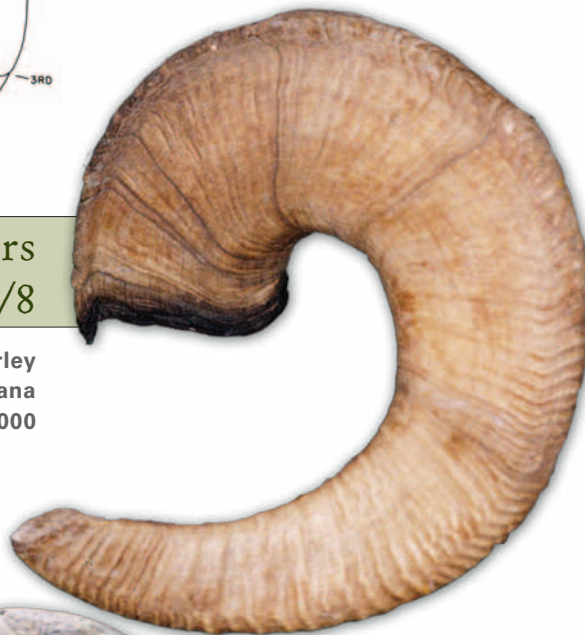
AGE	4.5	5.5	6.5	7.5	8.5	9.5	10.5	11+
AVG. SCORE	185 5/8	182 5/8	184	184	185 3/8	185 7/8	183	185 5/8



LEFT: Sheep trophies offer the opportunity to age them by counting the horn annuli (rings) left as a mark of the cessation of horn growth during each winter.

Age: 6.5 years
Score: 191-6/8

Randy C. Orley
Fergus County, Montana
2000



Age: 12.5 years
Score: 189-3/8

Norman G. Miller
Sheep Creek, Alberta
2001



BEST OF 2012



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The Boone and Crockett Club has a tradition of honoring trophies and the fair chase hunts that produce them, including photographs from the field. In keeping with this tradition, the Club, and our friends at Swarovski, thought it would be a good idea to take this one step further and celebrate some of the best examples of field photography, and share them with you in each issue of *Fair Chase*.

For the fourth year, our editors will be sifting through hundreds of field photos looking for exemplary trophy field photography. The most outstanding examples will be featured in the Spring 2013 issue with the top three being awarded prizes provided by Swarovski Optik.

NOTE: All field photographs from accepted trophies in 2012 are eligible



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THIRD PRIZE - Z3 3-9x36

example, 184, the entry rates of 184 would be spread across the board with varying ages or possibly an increase or decrease in average age being driven by hunter selection. Fortunately in this sample, I cannot detect this trend.

Don't be alarmed in the event that you attempt to overanalyze the above data. The ages and scores were rounded and simplified for analysis which could well account for very slight trends that may be inferred. This is purely to point out the management possibilities available should we be able to increase our age collection rates across the board to 50 percent or higher. The most interesting trend I have

uncovered is in Alberta, which is the second-best producer of entries and location of the current World's Record. The average age of rams is significantly higher in that province than in Montana. Alberta rams reach 200 inches but it takes them well over ten years to obtain that horn growth. Along that same vein, imagine the information that may be obtained if we can identify a location in the upper Midwest where whitetails are reaching Boone and Crockett Club records-size at age 4½ instead of 5½ or 6, which is the average age I assume now with the limited information we have. We can then analyze those conditions and perhaps suggest alterations to management strategies continent-wide to maximize the

Age Data IMPLEMENTATION

ideal conditions for whitetail deer survival and fitness.

We are all in the battle of wildlife conservation together, and from my view, every hunter should do what they can to help benefit wildlife populations for today and tomorrow. Boone and Crockett Club is willing to undertake this additional workload and expense of aging to do its part. The Boone and Crockett Records Program exists to promote conservation just like all Boone and Crockett programs. This is an opportunity to verify that the effects of hunting are negligible, and the funds put forth by hunters across the continent are going toward the best management practices to ensure wildlife for tomorrow for all those who wish to step into the field or climb the mountain.

We are asking for your help as a hunter or Official Measurer. First and foremost, enter all trophies that meet awards minimum to ensure our sample size is adequate and uniform for analysis. While a new World's Record is reason to celebrate among the conservation world, its overall value to the records program and wildlife management is on par with the 80-inch Wyoming pronghorn, 160 Buffalo County Wisconsin typical whitetail, or the 175 Montana Missouri River Breaks ram; and in the aging category, it may be even more so. As mentioned above, the Club will foot the bill for the aging of the trophy you have taken or scored if it's entered and accepted into our records program. Please refer to the back of the new GHG form to ensure the highest standards of accuracy in ascertaining the correct procedure for tooth removal, then submit the tooth of a recently taken trophy with your entry. The Club will inform you if a correct age can be determined for your particular trophy once the aging procedure has taken place. Be aware that this may be a few years, depending on response, as we need a significant sample size before submitting. If you desire an age more rapidly than that or perhaps you're curious on a trophy that doesn't quite meet our minimum entry requirements, you can submit the teeth to Matson's Lab (www.matsonslab.com) in Milltown, Montana. For a nominal fee, the lab will process your tooth and return the data on your trophy's age. Please make sure to contact the records office once you hear back so we can update our age data on your accepted trophy. ■

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