The "WHY" of Moose Hair and Blood Sampling

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The question is often asked of wildlife biologists, "What do you do with all those samples you take from animals?" That is certainly a valid question and one that has many answers. To select only two examples, blood and hair have been collected from moose for the past several years in an attempt to determine if a moose living in a particular environment will reflect conditions and changes in that environment. Some changes can certainly be detected by examining such samples. Blood and hair have been collected from moose for the past several years in an attempt to determine if a moose living in a particular environment will reflect conditions and changes in that environment. Some changes can certainly be detected by examining such samples. Blood and hair have been collected from moose for the past several years in an attempt to determine if a moose living in a particular environment will reflect conditions and changes in that environment. 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have in the past used hair to monitor heavy metal contamination and mineral element intake. Samples of moose hair were collected and analyses for 18 elements were done by the Trace Element Center at Cleveland Metropolitan General Hospital by Dr. Arthur Flynn. It was obvious from early results that moose hair could not replace blood analysis for certain population evaluations, but it proved most useful in other ways.

During the analysis of over 1,400 hair samples from the Research Center and other Alaskan moose populations, certain patterns developed. The mineral constituents of the hair were significantly different in various areas and for different populations. Samples from moose populations in certain areas indicated extremely low values for certain essential mineral elements when compared to samples from domestic cattle “normals.” This information was helpful but not conclusive since there were still no established hair element “normals” for moose. However, it was felt that if low hair mineral element levels could be associated with certain clinical signs of deficiency in a moose population, that would be a basis from which to begin.

Sampling moose in a certain area on the Kenai Peninsula demonstrated low hair element values throughout the year for copper, magnesium and manganese, all essential elements. Further investigation showed that the hoof overgrowth syndrome commonly called “swampfoot,” which is periodically reported in moose on the Kenai Peninsula, was associated with a copper deficiency. Thus it was found that hair element analysis did have potential as a monitor of moose population mineral metabolism.

As additional samples from throughout the state are gathered, moose hair mineral values may prove to be a useful tool in determining where an animal may have come from or, possibly, where it did not come from. With varying moose seasons and special hunts in a number of game management units the ability to identify hair on the basis of geographic origin would enhance enforcement of harvest regulations. At present hair analysis is used in enforcement work through matching moose hair from different locations, such as a kill site and the truck or garage of a suspected poacher. It is possible to determine if hair from the two sites is or is not from the same moose.

Blood and hair values also provide information supporting other research, which may be useful in the future when comparative information is desired. As laboratory capabilities improve and advance, it is possible that other meaningful information may be obtained about a moose population. For this reason both frozen blood serum and hair “bank” duplicate collections are maintained. Samples collected today may be selected for future analyses which are not possible today.

Although this article outlines uses for only two specimens from moose, the information presented does perhaps give the reader a somewhat better understanding of some of the activities of the Game Division’s research biologists.

Through research man’s knowledge of wildlife grows, and with it grows his ability to make intelligent and knowledgeable resource management decisions.