Assessing Dall's Sheep Horn Morphometrics as a Management Tool

BRAD WENDLING, *Alaska Department of Fish and Game, 1300 College Road, Fairbanks, AK, USA 99701*

JOE WANT, *Alaska Department of Fish and Game, 1300 College Road, Fairbanks, AK, USA 99701*

CHRIS BROCKMAN, *Alaska Department of Fish and Game,1800 Glenn Highway, Palmer, AK, USA 99645*

ABSTRACT: Dall's sheep (*Ovis dalli*) are a coveted big game species pursued by a relatively small but passionate group of hunters across 8 mountain ranges in Alaska. The Alaska Board of Game determines state harvest regulations and has recently been inundated with public proposals aimed at altering sheep management. Proposals are directed at reducing a perceived level of competition between resident and non-resident hunters, and to address a possible lack of legal rams available for harvest. Specifically, many hunters believe that all legal rams are harvested each year and want to increase their availability by reducing the hunting opportunities available to non-residents. Alaska hunting regulations are complex, but generally, most sheep hunting is managed under a full-curl harvest strategy. Full-curl is defined as: the tip of one horn has grown through a 360˚ circle described by the outer surface of the horn when viewed from the side, or both horn tips are broken, or the sheep is 8+ years old. Since 2004, successful hunters are required to seal sheep horns at Alaska Department of Fish and Game offices. In 2016, we began a study to evaluate horn morphometrics as a tool to inform management decisions. We measured and photographed ~60% of harvested rams in 2016 (474 of 783), and 2017 (483 of 798). For each horn, we quantified age, total horn length, total degree of curl, distance between consecutive annuli, and degree of curl by annulus segments. In 2016, the mean age at which rams achieved 360˚ curl was 8.5 years (range 5 to 12 years). In 2016, 19% of harvested rams were legally taken on criteria other than 360˚ of curl, while 28% of rams were harvested in the first year they became legal based on degree of curl. On the other hand, 53% of harvested rams were available for harvest during at least one previous hunting season after their horns grew through 360˚ curl. Our preliminary analyses indicate that hunters are only removing approximately half of all legal rams each year statewide. Using horn morphometric data to estimate ram escapement each hunting season will inform policy decisions.

Biennial Symposium of the Northern Wild Sheep and Goat Council 21:38; 2018

KEYWORDS Dall's sheep; *Ovis dalli;* horn morphometrics; hunting regulations; ram escapement; Alaska.