

Wild Sheep Ram Hunting Permit Process for Western States and Provinces

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ABSTRACT: A questionnaire was completed in early 2018 by 18 of the 20 wild sheep program managers in the western U.S states and Canadian provinces on their ram hunting permit/tag process and season structure and limited hunt results. A similar review of west-wide ram harvest strategies was conducted 10 years ago. The goal of the questionnaire was to: review the demographic information collected and guidelines and criteria used in setting ram hunting permit/tag numbers; compare season structure and harvest metrics; and challenge jurisdictions to use the best available science and consider more ram hunting opportunities without sacrificing ram horn quality. Most agencies' primary objective of their aerial or ground surveys is animal composition to evaluate lamb ratios and ram age structure with 25% also wanting minimum count or detection of marked individuals for mark-resight estimate. Ten agencies classify rams based primarily on Geist's ram categories with Class IV rams as 8+ years of age, with others using a modified classification. Nine agencies use a model to estimate hunt unit population size, with 6 that correct for sightability bias on some herds, and only 1 that generates confidence intervals for their estimate. Alberta is exploring PopR Integrated modeling software. Most agencies use a guideline of the percent of the estimated population size, total rams, or mature rams to determine ram hunting permit numbers. One agency has no standard guideline. Agencies have a wide range of metrics and values for guiding ram permit numbers: 2.5 - 4% of total population - 3 (BC, CO, YK); 4.5% of all rams – 1 (CO); 7 – 10% of all rams – 6 (BC-bighorn, AZ, ND, NV, SD, NM); 10% of $\frac{3}{4}$ curl + rams – 2 (TX, MT); 15 – 25% of $\frac{3}{4}$ curl + rams – 7 (ND, CA, AB, MT, WA, AZ, NM); 20 - 30% of observed Class III & IV rams – 2 (ID, UT); 6 – 8 yr-old avg. age ram harvest previous year – WY; and 7% of previous year ram harvest 40"+ horn length – AK. The range of average ram harvest age by subspecies were: 7.8 – 9.3 for Dall/Stone; 6.5 – 7.0 for California; 6.4 – 10 for Rocky Mountain; and 6.4 – 9.0 for Deserts. Most jurisdictions have a similar hierarchical decision/approval process of: field/regional review of wild sheep data and information and suggest/submit recommendations; program lead and Bureau/Division heads provide oversight and support; wide array of stakeholder involvement; and final Board/Commission review and approval. Many agencies follow guidance provided by their wild sheep management plan. One state has a single committee that sets permit numbers with no public process. One jurisdiction is moving to a formal "Structured Decision Making" (SDM) process to better engage stakeholders, provide transparency, account for uncertainty and values/opinions, while incorporating science and following management objectives.

Biennial Symposium of the Northern Wild Sheep and Goat Council 21:8; 2018

KEYWORDS Bighorn sheep; *Ovis canadensis*; hunting; permit/ tag allocation; monitoring; western North America.