File: 20590-01/Consultation

September 19, 2011

Northern Secwepmec communities
NSTQ
BCWF
BC Resident Hunters Association
GOABC
Guide Outfitters in GMZ 5B

Re: Information Respecting a Biological Assessment of Moose Harvest Management Options in Game Management Zone 5B (Management Units 5-01 and 5-02)

A commitment was made to the BC Wildlife Federation by the Cariboo Region and the Director of Fish, Wildlife and Habitat Management that an assessment of moose harvest management options would be carried out for Game Management Zone 5B, which encompasses Management Units 5-01 and 5-02.

The assessment was originally to be delivered during 2010. In order that the assessment be supported by current information on the status of the moose population, a new moose population survey was required. However, the winter conditions of early 2010 (low and scattered snowpack, warm temperatures) were not appropriate for a standard population assessment. A stratified random block population survey was completed in early 2011. The final report describing results of the survey was delivered to the Cariboo Region during the spring. As the results of the population survey were being compiled, staff designed the required modelling format, and collated the technical information used to estimate the outcome of several different moose harvest management options, including the Omineca Model.

Staff designed and implemented solutions for some interesting technical challenges, in order that the assessment could provide reasonable estimation of population size and harvest opportunity outcomes for each of the harvest management alternatives. For example, the team needed to develop a means of estimating spike fork bull moose harvest during an open season considering habitat conditions typical of GMZ 5B. The initial results of the assessment were delivered in late July, 2011, with a draft summary report delivered to the Regional Director of Resource Management in early August, 2011. The first draft of a detailed technical report on the assessment is currently subject to internal review. A number of editorial comments are leading to further work to draw out technical details that will be important for all stakeholders to consider.

The Cariboo Region has started the sharing of information from this assessment with the Northern Secwepmec First Nation communities and stakeholder representative groups. Please

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find enclosed a copy of a draft briefing note prepared by regional staff that summarizes the assessment results. A final summary document and a copy of the complete technical report will be circulated to all stakeholder representative groups upon completion of the internal review process, likely before mid October.

The Cariboo Region intends to invite First Nations communities and stakeholder representatives to an exercise in review of the technical details of the assessment results, and examination of the implications of each harvest management option in terms of conservation, protection of aboriginal rights, and hunter harvest opportunity. The Cariboo Region proposes that collaborative review of the assessment results be carried out under a Structured Evaluation initiative. This initiative would engage First Nations and stakeholders in assisting the ministry to evaluate each of the assessed harvest management options. The evaluation would be set against objectives that would be set by the ministry in collaboration with those parties choosing to participate in the initiative. The results of this initiative will be compiled and submitted for consideration by the government decision makers responsible for hunting regulations. Please contact our Section Head, Mike Ramsay to confirm interest in participating in this Structured Evaluation initiative.

Narrative Summary of Assessment Results

To assist in the interpretation of information set out in the attached Briefing Note, a narrative summary of the assessment results for each option is set out for reference.

1. The Management Unit 5-02C moose population survey.
    - The area over which the moose population survey was carried out was Management Unit 5-02C.
    - The estimated moose population in MU 5-02C was 1619 moose, down 16.7% from the 1943 moose estimated in 2001. This difference is not considered to be statistically significant.
    - The current population in MU 5-02C is comprised of an estimated 43 bulls/100 cows and 35 calves /100 cows, with the moose density of 0.51 moose per square kilometre.
    - The previous population survey, carried out in 2006 in MU 5-02B, indicated a population comprised of 29 bulls/100 cows, 18.4 calves/100 cows, at a density of 0.39 moose per square kilometre.
    - The cow moose component of the population has decreased 23.8%, and the number of calves has decreased 40.1%, both of which are statistically significant reductions.
    - The number of bulls has increased 58.5 % which is a statistically significant increase.

2. The GMZ 5B moose population estimate.
    - The results of the 2011 population survey in Management Unit MU 5-02C were extrapolated across GMZ 5B to develop a moose population estimate for the game management zone.

- The moose population in GMZ 5B is estimated to be 6265 moose, which is down 6.9% from the 2008 population estimate of 6727 moose.
    - The likelihood that there is an actual decline in the population is supported by hunter harvest data:
        - Hunter success in GMZ 5B has declined over the past decade,
        - The average number of hunter days required to harvest a moose has increased by 10 days per kill over that same time period. We are undertaking statistical analysis to determine if this increase is significant.

3. Estimated consequences of applying alternative harvest management options.
   Table 1 of the attached Briefing Note lists the estimated outcomes for each of 12 different moose harvest management options.
    - Columns 1 and 2 of Table 1 characterises each of the harvest management options.
    - Column 3 sets out what the estimated total annual moose harvest would be for each option. The total annual harvest includes moose estimated to be taken by First Nations, resident hunters and clients of guide outfitters.

   Columns 4 through 7 provide a relative evaluation of the risks[1] associated with each option, relative to 3 different population objectives and the expected population growth rate. With respect to the 3 population objectives, the higher the percentage the greater the level of risk. As risk increases, there is increased potential that the option would cause a material adverse impact on the abundance and distribution of moose in GMZ 5B.
    - Column 4 estimates the chance that an option will deliver an outcome where the bull/cow ratio falls below 30 bulls per 100 cows.
    - Column 5 estimates the chance that the density of the moose population will fall below 40 moose per 100 square kilometres (or 0.40 moose per square km).
    - Column 6 estimates the chance that the population, after 5 years of applying the option, would be less than 80% of the current population.
    - Column 7 estimated the average annual growth rate of the population. The farther that lambda falls below 1.00, the greater the risk that the population is in decline.

Option 1 estimates the outcomes of maintaining the current Limited Entry Hunting (LEH) regime, and keeping the current Annual Allowable Harvest (AAH), while providing for an estimated First Nations harvest of 200 moose. The risk of not meeting population objectives varies between 41% (probability that the final population would be < 80% of the starting population) to 62% (probability that the density would be < 40/100 km2), with a 51% probability that the bull/cow ratio is <30/100.

[1] The risks reported in Table 1 are based on population modelling that considers the uncertainty in the data, and the amount by which some population statistics are expected to vary each year. As the modelling required some assumptions, these risks may not be the absolute level of risk, but are still considered to be the best estimates of risk and are relative, i.e. a risk of 60% versus 30% likely has 2x the level of risk.

Options 2 and 3 estimate the outcomes associated with maintaining LEH hunting and increasing the AAH by 10 and 20 % respectively. An increase in AAH of 20% leads to higher risk of negative outcomes for the moose population.

Options 4 and 5 estimate the outcomes associated with maintaining LEH hunting but decreasing the AAH by 10 and 20% respectively. In both cases, the risk of negative outcomes is comparatively lower.

Option 6 addresses the Omineca Model as it is applied in the Omineca Region. While the resulting harvest of moose of all ages and sexes increases significantly, the risk of negative outcomes is comparatively high. The same higher level of risk is evident for Option 7 which is a variation on the Omineca Model in which there is no antlerless LEH.

Options 8 through 10 explores variations on a spike fork open season regime. The risks for Options 8 and 9 are similar to Option 1, as in essence, these options simply shift the target of applied moose hunting effort from all bull moose, toward a greater proportion of young bulls, with the AAH remaining the same in order to reduce impact on bull recruitment to the population.

Option 10 would eliminate harvesting of mature bulls, all moose hunting taking place by way of a spike fork open season. Risk of negative outcomes is comparatively much lower for the bull/cow ratio, and is also lower for population density and decline; as considerably fewer moose are expected to be harvested under this option. Overall, the population is expected to be stable.

Option 11 adds a calf open season to the spike fork open season, shifting the target of applied hunting effort to all young moose, and away from the mature cows and bulls. The risk of negative outcomes for the moose population is comparatively moderate, with a low risk for the bull/cow ratio.

Option 12 was run to test the outcomes of no hunting other than what is estimated to meet constitutional obligations to First Nations.

This biological assessment of how we expect the moose population to respond to different harvest strategies has been an interesting challenge for staff. Its completion is only one step on the pathway toward government's decision respecting potential alteration of the moose hunting regulations in Management Units 5-01 and 5-02 (GMZ 5B), as we must also consider our legal obligations, social and economic objectives. We look forward to broad acceptance of our invitation to engage in structured evaluation of the various options in a joint effort to inform government's eventual decision.

Yours truly,

Rodger Stewart
Director, Resource Management

Natural Resource Operations

Enclosure

RWS:dm