



Guide Outfitters  
Association of British Columbia  
*Wildlife Stewardship is our Priority*

# GOABC WILDLIFE STEWARDSHIP

**SERIES I**



Stone's Sheep - Preparing for the Future  
An Action Plan for Stone's Sheep

**MARCH 2007**



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## Stone's Sheep - Preparing for the Future An Action Plan for Stone's Sheep



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*“Our thanks to our funding partners”*



GRAND SLAM CLUB



## Executive Summary

In November of 2006, the Guide Outfitters Association of British Columbia, together with our partners the Foundation for North American Wild Sheep (FNAWS), Grand Slam Club Ovis and the Wild Sheep Society of British Columbia, hosted a workshop at the Coast Inn of the North in Prince George. The intent of the workshop was to bring together people of various backgrounds who are knowledgeable and passionate about Stone's Sheep (*Ovis dalli stonei*) who would then propose and discuss strategies to address the future needs of Stone's Sheep in British Columbia. Attendees at the workshop included our own members, government officials from Region and Headquarters, recreational sheep hunters, members of the naturalist community and consultants. We engaged the services of a professional facilitator to assist the attendees in focusing their recommendations to those that were feasible and would ultimately be to the benefit of Stone's Sheep.

There is some disagreement on whether there should be great concern over populations of Stone's Sheep at the current time. However, there have been documented disappearances of sheep on certain ranges throughout the North. There is also reason to be concerned about the increasing industrial development within sheep range from both the energy and mineral sectors, as well as from forestry. Since British Columbia is home to 85% of the world's population of Stone's Sheep, we all have a special responsibility to ensure that this species, iconic of the rugged northern landscape, are not at risk from human encroachment. We believe there are ways to manage the landscape for energy and other resources that we all value while maintaining Stone's Sheep for our own and future generations.

This document contains 15 recommendations to assist in ensuring the continued sustainability of Stone's Sheep in light of changing uses and diverse values on the northern landscape. These recommendations cover such issues as mapping critical ranges for use by industry, managing recreation, agricultural practices, changes in forage competition and forest dynamics, and predation. The recommendations were developed during the workshop in Prince George by working groups dealing with specific issues and threats to Stone's Sheep<sup>1</sup>.

## Background

The current global range of Stone's Sheep (*Ovis dalli stonei*) includes the northern Rocky Mountains to the east, west to the Skeena region including areas of the north Stikine River watershed and north past Atlin and into Alaska and the Yukon. British Columbia is home to 85% of all the Stone's Sheep in the world. Included in this proportion is nearly all core Stone's Sheep range in the world. Recent years have seen apparent population declines in Stone's Sheep in northern British Columbia. Previously occupied ranges in the south including the Sikanni River and areas west of Fort St. John are no longer occupied although there is some evidence of localised recovery. If we do not implement appropriate management for Stone's Sheep populations and habitat that ensure the continued persistence of Stone's Sheep in British Columbia, the repercussions could be severe. The global population of Stone's Sheep would be relictual and the chance of continued persistence will be greatly decreased. Therefore British Columbians have a unique duty to ensure that the continued persistence of Stone's Sheep is not threatened by human induced changes to their habitat or ecology. Failure to ensure the survival of Stone's Sheep would represent a serious blemish on British Columbia's global reputation as a competent jurisdiction in which wildlife management is taken seriously. Because of this, and that his iconic species of the north is of great importance not only to our members but to resident hunters, First Nations and society at large, the GOABC board of directors decided it would be helpful to bring together a workshop to discuss the issue. The diverse attendance at the workshop, held at the Coast Inn of the North in Prince George November 28 and 29 2006, included guide outfitters, resident hunters, government officials and people with non-consumptive recreational interests. We specifically invited people who were both knowledgeable and passionate about Stone's Sheep. What follows includes some proceedings of the event itself, but the bulk of this document contains recommendations provided by working groups that deal with specific threats to the continued sustainability of Stone's Sheep throughout their

range in British Columbia. Action is necessary if we are to provide the public of British Columbia, industry as well as resident and non-resident sportsmen with continued excellence in wildlife management.

GOABC could have chosen any one of a number of species for the inaugural workshop in the Wildlife Stewardship Series as there are concerns inherent in all wildlife management. We chose Stone's Sheep for this first annual workshop because there are actions that can and must be taken immediately to address imminent risks to the continued sustainability of Stone's Sheep.

## **The Recommendations** -----

This document contains 15 recommendations that were developed during the workshop<sup>1</sup>. During the first day of the workshop, we identified broad areas of concern and areas where significant knowledge gaps existed. During the second day we formed working groups that were tasked with developing recommendations that would address these concerns. The recommendations are specific, measurable, time-bound, relevant and we believe achievable. In this document we have not provided scientific justification for these recommendations. Furthermore these recommendations do not comprise merely a wish list of various guide outfitters or other interests, but represent the expert opinion of the attendees<sup>2</sup>. This document is being forwarded to government ministers responsible for land use actions and their departments.

Recommendations are strategic in nature in that they are not site specific. We do not make recommendations that apply to certain management units or sheep ranges. Rather, we indicate that where a particular problem is identified, a certain strategy might be implemented. In addition, we do not believe that lengthy scientific documentation of a problem is always necessary to identify it. There are many cases in which government biologists, in conjunction with user groups, would agree that it is likely that a particular limiting factor is at play within sheep habitat. In these cases action could be taken that is tailored for the perceived situation while taking into consideration other alternatives and being aware of the unknown factors.

## **Conceptual Model of Stone's Sheep Ecology**<sup>3</sup> -----

Stone's Sheep rely on critical habitat features and range for food, cover and predator avoidance. By nature, these features are not ubiquitous on the landscape and core range is limited to a patchy but widespread distribution. Sheep must compete for forage with other ungulates and avoid predators within the range. In some areas, primarily in the northwest, this range has become somewhat degraded due to forest encroachment and fire suppression. There appears to have been an increase in other ungulate populations, particularly cervids, within core ranges in the northeast. These species are associated both with increased competition and predator populations. This increase in predators subsequently predate more often on sheep than historical levels.

In recent times we have seen abandonment of historical ranges. In a land use context, there have been changes to habitat due to other uses including recreation, agriculture, forestry and other heavy industry. These often competing land uses result in difficulty with creating and maintaining historical sheep range. In general we propose to maximise the population of sheep on suitable range and recreate range that was once suitable and remains capable of maintaining sheep populations.

<sup>1</sup> BC Nature has asked that we include the following note regarding the recommendations: "Although BC Nature (Federation of BC Naturalists) was represented at the workshop and welcomes the initiative and the workshop's general aims, it asks it to be noted that it is uncomfortable with a number of the recommendations in the Action Plan, particularly those relating to predator management, and therefore wishes that its name not be associated with this Plan. BC Nature's priorities, which were reflected by many workshop participants, are protection of Stone's Sheep habitat from fragmentation and loss, and prevention of disturbance to sheep, from human activities such as industrial development, helicopter use, and motorized recreation. Population inventory and habitat mapping are critical first steps to achieving these goals".

<sup>2</sup> While this document collates and discusses actions recommended by the attendees, GOABC is wholly responsible for the content and structure.

<sup>3</sup> We stipulate that this is not a complete 'conceptual model', but represents the results of a discussion on the subject at the workshop.

## **Population and Habitat Management/Inventory -----**

### **Problem**

- There is a serious lack of inventory data from all Stone's Sheep ranges. This problem is somewhat less evident in the Skeena region but it exists nonetheless. Currently in the northeast, survey data points are more than 20 years apart.
- Habitat mapping has not been conducted on a range-wide scale.
- Habitat mapping is lacking

### **Objectives**

- Utilize existing data sources including harvest data and extra-government sources to develop a population model for Stone's Sheep.
- Develop a systematic management and inventory strategy.

### **Strategies**

#### ***Population Inventory***

***Recommendation #1- Every sheep population should be surveyed every 5 years on a rotating schedule.*** Stakeholder and traditional knowledge should be given due consideration in determining population estimates. As this report goes to press we note that the Ministry of Environment has just completed inventory in a significant portion of Stone's Sheep range within Region 7b.

#### ***Habitat Mapping***

***Recommendation #2 - We recommend that a 1:250,000 mapping project currently underway be completed within the fiscal year.*** This will allow for the prioritisation of habitats in relation to anticipated industry and recreational developments and enable the completion of larger scale (1:50,000). The current project needs sufficient funding for completion and is being undertaken by EcoDomain Consulting.

***Recommendation #3 - That an interagency committee be created for the northwest Stone's Sheep on the model of the Science Advisory Committee in the northeast.*** These two committees should have common oversight and be mandated to raise funds and direct research into knowledge gaps while depoliticising Stone's Sheep management.

## **Forest Ecosystem Dynamics and Range Quality -----**

The quality of sheep range is certainly linked to the issues mentioned above. However the groups felt it warranted a separate treatment because there are recommendations specific to regeneration of range quality. This working group also dealt with ungulate increases and those recommendations have been collated with recommendations from the group discussed above.

### **Problem**

- Forest encroachment on sheep range.

### **Objective**

- To restore or enhance biomass by 25% of current levels in 10 years.

### **Strategies**

***Recommendation # 4 - Prescribed burns should be targeted to areas directly adjacent to other critical habitat features within sheep range.*** These burns should be small in scale and developed under long term planning within the Ministry of Environment regional office. Large scale or broadcast burning may

be having the effect of increasing range available to Elk and Bison which then compete with Stone's Sheep as indicated above.

## **Predation and Forage Competition -----**

### **Problem**

- Predation by wolves, wolverine, grizzly bears, coyotes and eagles are likely limiting population growth within suitable sheep range.
- Predation may currently be greater than historical levels due to increases in other ungulate population and their associated predators. This is likely due at least in part to broadcast burning which has created elk and bison range adjacent to and within sheep range.
- Other ungulates, in particular elk and bison, have increased in number resulting in increased competition for forage and range properties necessary for continued existence of Stone's Sheep.

### **Objective**

- To implement predator management strategies where evidence indicates sheep populations are declining due to predation.
- To sustain sheep populations at 60% or greater of their historical population levels in all ranges.
- To restore populations to 75% of historical populations within 10 years.
- To reduce elk and bison populations by 50% on critical sheep ranges over the next 5 years where competition is causing declines in Stone's Sheep.

### **Strategies**

The recommendations in this section are designed to incrementally increase predator management efforts to achieve the objectives noted. This would be done in sheep ranges where predation is identified as a major limiting factor in the growth rates of sheep populations.

### **Predators**

Wolverines are notoriously difficult to enumerate as they are reclusive and range over very large areas. While we suspect wolverines are responsible for a significant degree of predation on sheep, the effects are scientifically not well documented.

***Recommendation #5 - Lengthen hunting and trapping seasons on wolverine to overlap with sheep hunting seasons.*** This would allow for hunters to discriminately take wolverine given the opportunity, and for targeted wolverine trapping in core fall and winter sheep habitats. This step is precautionary both to sheep and wolverine populations and would simply give licensed hunters and trappers additional flexibility in addressing specific wolverine problems within sheep range.

Grizzly Bears are known to predate on sheep in all demographics during times of the year when terrestrial-meat eating bears are preying on ungulates. Given that grizzly bears are sensitive to harvest and a species of particular interest to all user groups and the general public, recommended actions must be cognizant of this fact while addressing the issue of undue predation on sheep.

***Recommendation #6 - Harvest of grizzly bears should be targeted within areas where predation is likely to occur.*** This could include LEH and quota zonation on an elevation basis. For instance, where it is the case that grizzly bears are predating on sheep to a significant degree, we should be targeting harvest within sheep range, i.e. at high elevation, rather than in the valley bottoms where bears are predating on other

ungulates. We are not suggesting that an increase in the harvest rate of Grizzly Bears is necessary at this stage, merely that harvest could be redirected to areas that overlap sheep populations.

Golden Eagles and perhaps other avian predators are thought to be significant predators of lambs, and the effects on recruitment could be considerable. The workshop attendees specifically made no recommendation to target avian predators in recognition of the serious political consequences this might have. However, there may be strategies that could be used to limit lamb predation in cases in which avian predation is identified as a significant contributor to recruitment deficiencies.

***Recommendation #7 - That research might be conducted into the feasibility and efficacy of strategies to prevent aerial predation of Stone's Sheep lambs on critical lambing grounds and early spring movement corridors.*** Concepts such as aerial netting are similar in nature to maternity penning to prevent land-based predation by providing a physical barrier between aerial predators and sheep lambs. Any option must only be considered in the context of maintaining the wilderness quality of British Columbia's backcountry. This might be accomplished by using strictly temporary structures and timing the efforts to minimize temporal overlap with recreational and commercial users of the landscape.

***Recommendation #8 – Increasing incentives for the trapping of predators should continue and expand within sheep range with the support of government and industry.*** Increasing incentives for trapping of predators is an option currently being undertaken by many GOABC members and local affiliations.

Direct removal of predators by aerial hunting is incrementally more complex than the options above. The workshop group recognises not only that aerial killing programs are not always socially acceptable, but that they are effective only as a short term solution.

***Recommendation #9 - Only when a sheep population is in dire need should the option of direct removal of predators by aerial hunting be considered – i.e. where predation is generally agreed to be the major limiting factor and other options have not succeeded.*** This would be the first option when a population of sheep is in imminent risk due to predation. In cases where this option is employed, full disclosure with the users and the public is required regarding the nature of the threat and what is at stake if predator management is not undertaken. Any broad scale predator management system must be undertaken with extreme caution as there is a risk of subsequently increasing the cervid populations thus exacerbating the problem of competition.

## **Competition**

Elk can be reduced through increased harvest, and in particular harvest of cows, in the short term. However over the long term habitat requirements of elk will have to be eliminated from areas where elk currently overlap with Stone's Sheep.

***Recommendation #10 - Liberalise elk harvest regulations immediately wherever sheep are present in northern BC, while continuously reviewing burn plans in sheep range.*** Prescribed burns within sheep range should be targeted at reducing conifer encroachment immediately adjacent to other critical habitat features while larger scale burning should be conducted in a manner that creates a spatial separation between elk habitat and sheep habitat.

***Recommendation # 11 - Bison numbers in sheep range should be reduced by 50% within 5 years with increased harvest opportunity.*** The effects of Bison on sheep range are likely similar to those of Elk. A separation between Bison and Stone's Sheep range will be an excellent step in increasing available habitat for Stone's Sheep.

## Industry and Development/Agriculture-----

### Problem

- Industrial development can have serious negative impacts on sheep populations.
- Sheep habitat is highly specialised so that sheep are unlikely to be able to avoid development areas.
- There is no mapping of critical seasonal habitat areas on a scale useful to industry making it difficult for developers to avoid such ranges.
- Agricultural land uses, in particular domestic animal grazing, pose serious threats to the safety and health of wild sheep populations.

### Objective

- To undertake a mapping project to cover all Stone's Sheep range identifying critical seasonal habitat that could be available to crown land users including recreationalists by the end of 2007.

### Strategies

#### Industry

**Recommendation #12 - Begin collecting and collating traditional and community knowledge of sheep habitat nearly immediately.** The Stone's Sheep Science Advisory Committee is currently planning to undertake a traditional knowledge component in their research and this should be supported. In other areas of the province not currently under examination by the committee, work should begin in a similar fashion to develop a knowledge base of traditional information on sheep ranges and critical habitats.

**Recommendation #13 - Meet with industry representatives to discuss funding and industry needs for such a mapping project. FrontCounter BC is an obvious avenue for distribution of the product.** Guidelines for actions around the identified critical areas could mimic those developed for caribou by biologist Daryll Hebert for access management and aerial activity. This should occur in the very near term to facilitate development of a map before the end of 2007.

#### Recreation

**Recommendation #14 - We recommend an awareness program regarding the introduction of introduced species through horse feed and tracking for recreational users on crown land.** These could be included in the Hunting and Trapping regulations synopsis as early as 2008/09. Horse feed can be a significant source of weed seeds.

#### Agriculture

**Recommendation #15 - In order to reduce the threat of introducing domestic livestock diseases to wild sheep, we recommend adapting the guidelines and restrictions developed by the South Okanagan Domestic Sheep Separation Program to all sheep range in British Columbia.** Initial steps should be to discuss the project and possible expansion with Helen Schwantje and Daryl Stepaniuk of that program. This system should be expanded to cover camelids.







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