



WSF Thinhorn Sheep Summit

Synthesis & Summary

April 9<sup>th</sup>-10<sup>th</sup>, 2014

Delta Vancouver Airport Hotel

Richmond, British Columbia

## EXECUTIVE SUMMARY

Nearly 70 people interested in Dall's and Stone's sheep conservation and management participated in the first-ever multi-jurisdictional thimhorn sheep (THS) summit near Vancouver, British Columbia in April 2014. Our goal was to assemble diverse stakeholders responsible for, dependent on, and interested in THS in Alaska, British Columbia, Yukon, and the Northwest Territories. A further goal was to advance the level of communication, cooperation, and commitment of diverse stakeholders, to benefit THS conservation. Discussions and interactions over the two-day summit strengthened collaboration and provided tangible action items and strategies to enhance conservation of THS.

Objectives of this summit were to:

- 1) Identify ecological and human-footprint challenges faced by THS sheep;
- 2) Identify data needs and opportunities to enhance THS sheep distribution, habitats, and populations;
- 3) Identify and prioritize resources needed for THS sheep conservation and management;
- 4) Develop suggestions, strategies and timetables for obtaining needed resources; and
- 5) Discuss harvest regulations/strategies, resident/non-resident hunting opportunities and harvest allocation.

A Survey Monkey (on-line) questionnaire was developed on the current status and management of Dall's and Stone's sheep. Sixty-nine people responded to the questionnaire prior to the summit. Results of the survey and discussions at this THS summit identified several challenges facing THS managers:

- 1) THS landscapes are huge, and sheep can be widely distributed. Lack of funds to complete frequent population surveys and accurate distribution maps limit their quality and make it difficult to estimate population numbers and determine harvest allocation.
- 2) Some jurisdictions have various land ownership which creates very complicated state/federal overlapping responsibilities with complex statues and regulations.
- 3) Population estimates indicate in some areas, THS numbers have decreased significantly over the last 20 years. Many survey responses indicated distribution had also gotten smaller.
- 4) Predation and weather were identified as very important factors affecting THS populations, but their management has limitations.
- 5) Motorized access by automobiles, ATV's, helicopters, and airplanes are increasing and may adversely affect sheep populations and distribution. There is a lack of support for access restrictions by the public in many areas. Obtaining funds for enforcement is challenging.
- 6) The disease issue between domestic sheep/goats and wild sheep is currently low in most areas, but can be important on a local level. A proactive approach is needed. There is a lack of awareness on this disease issue with local citizens, particularly in more isolated, back-country areas.
- 7) Hunter opportunity has declined for some jurisdictions over the last 20 years, resulting in concerns with harvest allocation.

During the summit, individuals were separated into small working groups, by jurisdiction. These breakout groups identified priority action items for 1) population distribution and trend, 2) habitat mapping and

connectivity, 3) co-management, 4) human footprint challenges, 5) ecological challenges, and 6) enhancing hunter opportunity and harvest allocation. Breakout groups then reported their results back to the entire group. A synthesis and summary of priority action items identified by jurisdiction follows. This is our initial strategic plan for THS.

### **ALASKA PRIORITY ACTION ITEMS**

- 1) Obtain more accurate population estimates by seeking additional funds to conduct more surveys and develop consistent sampling procedures and techniques. Increase participation of all user groups in surveys.
- 2) Identify potential sensitive or crucial habitat areas. Refine current GIS layers for distribution of wild sheep habitat. Partner with other agencies and consult with all stakeholders on refining habitat maps. Use habitat data to identify potential prescribed burns.
- 3) Encourage sharing of all survey and habitat data with other agencies and all stakeholders. Better define co-management roles and responsibilities.
- 4) Target specific areas we have issues with motorized access and insure their protection through travel management/travel restrictions. Cooperate with other agencies and the public to develop access management plans.
- 5) Increase mitigation strategies for bad weather years by having flexible harvest strategies.
- 6) Identify important populations depressed by specific predators and determine when factors would trigger predator management.
- 7) Develop regulatory actions such as Legislation to prevent disease transmission from domestic sheep/goats to wild sheep.
- 8) Investigate increasing hunting opportunity on Federal lands. Complete a legal review of Federal policies and acts.
- 9) Create a Dall's sheep working group that will reach consensus on issues and develop proposals to enhance populations and habitat.
- 10) Investigate transplanting sheep.
- 11) Review management objectives with respect to policy.
- 12) Develop a harvest allocation strategy.
- 13) Assess the "Want Methodology" in age-structure analysis.

### **BRITISH COLUMBIA PRIORITY ACTION ITEMS**

- 1) Develop an overall sheep management plan.
- 2) Improve and refine inventory of populations by increasing funds to complete surveys. This will require consistency in survey methodologies and specific sampling areas.
- 3) Develop regulatory actions such as Legislation to prevent disease transmission from domestic sheep/goats to wild sheep. Improve communications with all stakeholders on the domestic sheep/goat and wild sheep disease issue.

- 4) Improve communication and education with all stakeholders on all aspects of sheep management. Engage all NGO partnerships with sheep management activities at both regional and provincial levels. Set up advisory groups to assist with this effort.
- 5) Identify crucial habitats and protect them from development. Use habitat data to identify burn enhancement areas. Evaluate effectiveness of past burns for improved forage enhancement and increased use by wild sheep.
- 6) Develop access management plans and enforce them for all motorized use.
- 7) Establish regulatory permit conditions to protect wild sheep habitats (particularly winter range) and include them in all state and federal actions. Improve restoration requirements and mitigation standards for actions that have heavily impacted wild sheep habitat.
- 8) Develop a large carnivore policy. Determine which predators are having an impact on sheep, identify thresholds that trigger management actions, and identify different methods of predator control. Increase the population of sheep by managing predators.
- 9) Acquire funding for wildlife by combining funding sources, leveraging matching funds, create and make available more premier tags, and have private citizens help fund predator management. Move 100% of license sales to wildlife conservation work.

#### **YUKON PRIORITY ACTION ITEMS**

- 1) Obtain funding to increase population and distribution surveys. Use observation forms from outfitters to better refine mapping, particularly in northern and eastern Yukon. Maps should include winter, lambing, and travel corridors, and should be shared with all stakeholders.
- 2) Complete an ongoing genetic evaluation to identify THS sub-herds.
- 3) Develop regulatory actions such as Legislation to prevent disease transmission from domestic sheep/goats to wild sheep.
- 4) Develop seasonal access restrictions, especially in winter and lambing range. Improve communication with industry and the general public on sensitive areas. Regulate mining and gas/oil flights through permits and contracts. Promote letters of support for access management restrictions by multiple user groups.
- 5) Holistically manage all predator populations
- 6) Continue work on a roadside noxious weed control program. Complete more public meetings on noxious weeds.
- 7) Promote development of a strategic prescribed burning program to enhance wild sheep habitat.
- 8) Lobby for increased harvest, particularly in the Richardson Mountains.

#### **NORTHWEST TERRITORY PRIORITY ACTION ITEMS**

- 1) Maintain “status quo”. A good working relationship and trust currently exists between the land management agencies, GNWT, and outfitters. Average age of harvested rams is above ten years, and has been consistent for decades. Maintain outfitter and hunter observation forms and share them with other organizations in NWT and beyond.

- 2) Habitat range maps for sheep will be updated. Outfitters have agreed to assist biologists with refining density and distribution maps in a generic (not specific) manner.
- 3) Encourage completion and submission of more native, resident, and non-resident hunter forms, to improve information on sheep harvest.
- 4) Develop a regulation with the help of Co-management Boards and Land Use Planning to prevent use of domestic sheep, goats, llamas, and alpacas west of the Mackenzie River to the Yukon border. Add the same regulation to the tourism license, which would restrict anyone from starting up a business such as a pack goat operation in sheep habitat. Try to get our Yukon neighbors to approve a similar regulation.
- 5) Develop an ATV travel plan for “off-corridor” use.
- 6) Maintain seasonal restrictions on helicopter use near important lambing and winter habitat. Inform all pilots to read and review the “Flying Low” pamphlet.

### **ALL JURISDICTION PRIORITY ACTION ITEMS**

After each breakout group reported their above listed results, the whole group developed 8 priority action items common to all jurisdictions:

- 1) Develop a comprehensive management plan, where needed
- 2) Develop Legislation/restrictions/regulations to prevent contact between domestic sheep and goats and THS, to avoid risk of disease transmission.
- 3) Develop access management plans for motorized use (i.e., ATV, OHV, helicopter, etc.), develop and enforce regulations on access/travel management.
- 4) Build trust, partnerships, and awareness with all user groups to improve communication and collaboration.
- 5) Refine THS habitat maps by increasing population surveys. Outfitters and observation forms will be of great value in this effort.
- 6) Holistically manage all predator populations. Determine which predators are having an impact on sheep, identify thresholds that trigger management actions, and identify different methods of control.
- 7) Protect critical habitats such as migration corridors, lambing and winter range.
- 8) Promote development of strategic prescribed burning and/or noxious weed programs to enhance wild sheep habitat.

### **The first 3 action items above were identified as top priority for implementation!**

To implement this work, the following jurisdictions responded to developing a management plan: Alaska already has a management plan for sheep, but it is 40 years old. The new AK Dall’s sheep working group will evaluate the need to revise the existing management plan. BC is very committed to completing their sheep management plan. The April 30, 2014 date for a meeting with political leaders has been set. Yukon does not feel a management plan is their best approach; instead, they want to focus on the disease issue and access management first. NWT does not need a management plan; maintain “status quo”. AK and BC indicated external funds for travel and public involvement would be very helpful. Those costs will need to be determined.

For the domestic sheep and goat/wild sheep disease issue: Currently NWT has the least problem with domestic livestock of any jurisdiction and should have the least resistance. NWT's effort may be useful as a springboard for other jurisdictions. Yukon believes their situation is much more complicated than NWT and will require its own Legislative approach. It was agreed that each jurisdiction could support one another with legislative efforts. Consensus was this issue is not going to cost a lot of additional funding, but will take a lot of time and effort. All jurisdictions responded that work on the disease issue will begin within the next two months.

"Point of Contact" individuals have been identified to enhance better communications on all issues and distribute information across jurisdictions and WSF, and are as follows: WSF – Kevin Hurley, Alaska – Kevin Kehoe, BC – Mari Wood, Yukon – Kevin Olmstead, and NWT – Richard Popko. For the domestic sheep/goat and wild sheep disease issue only, the primary "Point of Contact" will be WSF – Kevin Hurley, Alaska – Wayne Heimer, BC – Jeremy Ayotte, Yukon – Dan Reynolds, and NWT – Nic Larter.

## TABLE OF CONTENTS

EXECUTIVE SUMMARY	Page 2
INTRODUCTION	Page 8
RESULTS OF THE SURVEY MONKEY QUESTIONNAIRE	Page 10
COMMENTS AND QUESTIONS ON THE SURVEY MONKEY QUESTIONNAIRE	Page 13
SURVEY RESULTS CONTINUED	Page 15
OPEN DISCUSSION ON ECOLOGICAL AND HUMAN FOOTPRINT CHALLENGES	Page 16
TOP 5 PRIORITY ACTIONS TO ENHANCE THS MANAGEMENT BY JURISDICTION	Page 20
IDENTIFICATION OF COMMON PRIORITY ACTION ITEMS	Page 23
QUESTIONS AND COMMENTS ON 8 PRIORITY ACTIONS	Page 24
VOTING RESULTS ON TOP 3 PRIORITY ACTION ITEMS	Page 25
SURVEY RESULTS CONTINUED	Page 25
QUESTIONS AND COMMENTS ON THE SURVEY MONKEY QUESTIONNAIRE	Page 27
TOP 5 PRIORITY ACTIONS TO ENHANCE HARVEST OPPORTUNITY	Page 29
COMMON THEMES FOR INCREASING HUNTER OPPORTUNITY/ALLOCATION	Page 31
FUNDING	Page 33
CLOSING COMMENTS AND QUESTIONS	Page 35
SUMMARY OF ACTION ITEMS	Page 36

## INTRODUCTION

### **Jack Atcheson Jr.: WSF Past Chairman and Conservation Committee Chair**

On behalf of the Wild Sheep Foundation and our Board, Staff, and Members, it is our great pleasure to welcome you to the WSF 2014 Thinhorn Sheep (THS) Summit. A lot of time, energy, and talent have gone into developing and arranging this two-day summit. I want to thank everyone for traveling here, some coming great distances. We tried to invite everyone interested in THS sheep.

Conservation is not a spectator sport. Keeping and maintaining wild sheep on the mountain takes a lot of continuous work. I am looking for a new, higher-level of conservation for THS sheep. What we have here today is the making of a THS team. We have had a bighorn team for many years. This bighorn team has moved over 20,000 bighorns to new areas that have brought bighorns back from the brink of extinction.

THS are such an important wildlife resource to all of us present. We owe it to ourselves and the sheep to do our best effort over the next two days. Our goal for this summit was to assemble diverse stakeholders responsible for Dall's and Stone's sheep in Alaska, British Columbia, Yukon, and the Northwest Territories. We feel we have accomplished that, and appreciate your time and effort in providing responses to our on-line questionnaire. WSF is here to help.

While the current THS sheep distribution is generally similar to Sheldon's THS distribution map of 100 years ago, there are ecological and man-made changes occurring in many portions of THS range. Population trends in some areas have declined and are a concern to varied stakeholders. Harvest allocation and hunting opportunities are under continued pressure in some areas, and often put resident and non-resident hunters in adversary roles. THS range occurs in large landscapes, while many agency budgets continue to be restricted, sometimes leading to reduced emphasis for sheep programs.

I want everyone to look at the next two days with the perspective of: How do we keep sheep on the mountain? This is going to take a long-term emphasis. Think about what the THS map of populations and distribution will look like in the next 100 years. There is, and will be, funding available to help with this work. WSF has raised and helped direct nearly \$95 million over the last 40 years, mainly on bighorn recovery. That is a lot of money. WSF may be a small group, but when we pool our resources with others interested in wild sheep management, we can get a lot of work done for sheep. It is now time to put some real emphasis on THS sheep. We need to develop a strategic plan for THS sheep.

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- 5) Discuss harvest regulations/strategies, resident/non-resident hunting opportunities and harvest allocation.



## **Gray Thornton: WSF President & CEO**

A sincere welcome and thanks to all of you that have taken the time to be here. Jack had described his vision for this summit over 2 years ago. This summit has been a marathon to put together, and has required a long process. It has required building a team. We now have identified about 175 interested individuals. Next, we developed a survey questionnaire on the status and management of Dall's and Stone's sheep. This survey was completed prior to this summit, so we did not have to spend valuable time getting that background information here. We had 62 people RSVP for this summit, with a final tally of about 70 here today. [General Introductions by each participant occurred (see attached list of attendees)]. Gray stated those in attendance represented the best and brightest stakeholders from THS range.

Estimated budget for the summit was about \$28,000. Summit sponsors generously covered the costs for the summit. Tim Schommer, retired U.S. Forest Service biologist will be documenting the proceedings from this summit, and synthesizing/writing a final report. We have contracted with Alex Grzybowski (and his team of Robyn and Sarah) from Pacific Resolutions in Sidney, BC to facilitate this summit. We have a real diverse group of stakeholders that sponsored this summit, providing in excess of \$44,750. That is a large amount; all funds exceeding our costs will be available to help fund work for THS sheep identified here. We sincerely express our thanks to the many individuals, groups, associations, industries, and organizations that helped sponsor this summit. Please take a look at our sponsor posters arrayed around the room, and the back cover of your bound report to see who these sponsors are. We cannot thank them enough, and we hope you thank them individually, as well.

Facilitator Alex Grzybowski was introduced by Gray. Alex quickly went over the agenda for the next two days and how breakout groups would be handled by jurisdiction.

Gray mentioned that the survey questionnaire had 5 categories, and our goal was to prioritize action items under these categories, by jurisdiction. We then want to come together as a group and prioritize one set of priorities (across all jurisdictions) for the ecological challenges, and one set of priorities for hunting opportunities and harvest allocation.

Gray indicated the bottom-line for him at this summit was to develop a strategic plan for the future that will require action items, with timelines. WSF wants to be the catalyst for future thimhorn conservation, management, and hunting opportunities.

## **Kevin Hurley: WSF Conservation Director**

Kevin mentioned that the two-day agenda was broken down into 4 sessions:

- 1) Identify the top 3-5 priority actions to enhance THS management, by jurisdiction, through breakout groups;
- 2) Summarize the top 3-5 priority actions to enhance THS management, for all jurisdictions, by the entire group;
- 3) Identify the top 3-5 priority actions to enhance THS hunting opportunity/harvest allocation, by jurisdiction, through breakout groups; and

- 4) Summarize the top 3-5 priority actions to enhance THS hunting opportunity/harvest allocation, for all jurisdictions, by the entire group.

## RESULTS OF THE SURVEY MONKEY QUESTIONNAIRE

Kevin indicated all individuals should have received the survey results (Individual + Summary responses, for each jurisdiction) through email, and hopefully will have already reviewed most of it, prior to this meeting. Kevin quickly went over results from the survey questionnaire “Summary Responses for All Jurisdictions”. Sixty-nine people responded to the questionnaire.

(Q1) Which jurisdiction are you most familiar with? About half of the responses were from Alaska, about 21 from BC, 5 from Yukon, 6 from NWT, and about 6 did not specify where they were located.

(Q2) Whom do you represent? There were responses from a good representation of different groups: about 19% from wildlife agencies, 22% from outfitting individuals, 6% from outfitter associations, 14% from chapter affiliates, 20% from interested sportspersons, and 9% from others.

(Q3): Does your jurisdiction have a current management plan for THS in place? About half of the responses said they had a current management plan in place, 39% said no, and 13% said they don’t know. The “don’t know” responses suggest a communication gap, or folks simply don’t know.

(Q4) If you have a management plan in place, where is it? We did not get a lot of responses to this. Existing management plans for all wild sheep can be located from the website of WAFWA (Western Association of Fish and Wildlife Agencies) Wild Sheep Working Group by clicking on “Management Plans”. WAFWA represents 21 western states and provinces.

(Q5) Describe current co-management strategies for THS population management and/or ram harvest in your jurisdiction. There were various responses to co-management. The responses are in your program binder, and you can review them yourselves. A couple of examples are: Coordination in AK is very challenging. There are very complicated state/federal overlapping responsibilities with unclear statutes and regulations. There is a general trend toward increasing federal over-reach into traditional state authority in AK. State and Federal managers have different philosophies and are usually at odds. WSF noted an absence of Federal managers from AK were present at this summit.

(Q6) Has the current distribution of THS in your jurisdiction changed significantly? About 42% said yes. This indicates that distribution may have changed significantly in many areas. About 42% said no, and 16% said they don’t know. This is interesting, since 1911 historic distribution maps vs. current maps don’t show much change.

(Q7) If you answered yes to Q6, how has THS distribution changed? The majority of responses (85%) indicate distribution has gotten smaller or more fragmented. That is very significant. Only about 3% of the responses said distribution had gotten larger. Kevin showed a distribution map from BC that was very useful for delineating distribution and density of Dall's and Stone's sheep.

(Q8) How long ago did distribution change? There are some responses from people that have been around for a long time, but most respondents have been around for less than 20 years. The majority of responses indicate the distribution change occurred about 20 years ago. About 31% indicated the distribution change occurred in the last 10 years. Only 6% believed it happened 50 years ago. Again, if you look at the historic vs. current maps, they don't show much distribution change. Consequently, these responses are very interesting.

(Q9) For agency biologists, do you know if the THS distribution maps in your jurisdiction are considered current? About equal numbers said yes or don't know, with 20% saying no.

(Q10) For non-agency respondents, do you know if the THS distribution maps are considered accurate? More responded with a "don't know" than a yes, and 22% responded no. The "don't know" response represents an information gap that needs to be improved.

(Q11) What entity is responsible for creating and updating distribution maps in your jurisdiction? Almost all of the responses indicated state, provincial, territorial wildlife departments were responsible.

(Q12) Does your jurisdiction identify/designate important seasonal habitats for THS? Some herds are migratory and some non-migratory. The majority of responses indicate they don't know, while 35% said yes, and 20% said no.

(Q13) If you answered yes to Q12, what are those seasonal habitat designations, and who identifies/designates them? There were a variety of responses here. Seasonal habitat was usually designated by the state, provincial, territorial jurisdictions. Some designations were by federal land agencies.

(Q14) Please describe connectivity between seasonal ranges? Seventy-one percent of the people described connectivity as being intact and functional; this is a very good thing. One-sixth said connectivity was at risk or impaired, which is a red flag.

(Q15) Is your perception that THS population size in your jurisdiction is increasing? Decreasing? Stable? Unknown? Or, you don't have an opinion? There were no responses that indicated the population size is increasing. The majority said it was stable, while 34% said it was decreasing. About 12% said they do not know or they don't have an opinion.

(Q16) If you perceive population size to be increasing or decreasing, specify your estimated % change over the past 20 years? About a third said no change, about a quarter said less than 25%, and one-fifth said less than 50%. The take home message is no change or not increasing characterizes most populations.

(Q17) What is the current estimated population size in your jurisdiction (For agency biologists)? Responses varied widely. About 40% indicate population size was between 10,000 and 20,000, while 30% indicated between 5,000 and 10,000. Kevin qualified that Q17 was not worded as clearly as he would have liked, in hindsight; some respondents no doubt answered about their biologist district or outfitter concession, rather than their entire state/province/territory. Kevin added a slide from the WAFWA Wild Sheep Working Group that he is maintaining (with data provided by the agencies) that provides estimates of Dall's and Stone's sheep from 1990 to 2013. Dall's sheep numbers are estimated between 76,000 and 96,000 for all jurisdictions combined. Stone's sheep are estimated to be 15,500 for all jurisdictions combined.

(Q18) What is the current estimated population size in your jurisdiction (For non-agency respondents)? We got responses that were quite variable. Most probably did not know population sizes for their jurisdiction.

(Q19) How are surveys conducted in your jurisdiction? Most people indicated the majority of surveys were done by fixed-wing or helicopter aerial surveys. Only 23% said surveys were done on the ground.

(Q20) How frequently are those surveys conducted in your jurisdiction? The frequency of surveys varied a lot, from once a year to every five years. Thirty-eight percent said they did not know. The reason they vary so much is because they are budget-driven. We realize these are very large areas, and the costs of flying can be expensive.

(Q21) What time of year are those surveys conducted? Most surveys were conducted in summer, with a fair amount being done in winter and spring.

(Q22) Once surveys are conducted, how are survey results factored into population estimates? Some areas are using a Sightability Correction Factor (SCF), others are using trend information. There is no one approach, and it varies by agency or outfitter.

(Q23) What methods are utilized by your agency for deriving population estimates? Clearly, sightability and trend surveys are the methods most used by agencies.

(Q24) For non-agency respondents: Do you know how the agencies derive population estimates? About 40% said yes, 33% said no, and 25% did not know.

(Q25) For non-agency respondents: Do you feel these estimates are accurate? About 25% said yes, 33% said no, and 40% said they did not know.

(Q26) For non-agency respondents: Do you know how agency population estimates are utilized for management of THS? Equal amounts of respondents indicated yes, no, and don't know.

(Q27) How are population estimates utilized in THS management? Various responses, but mostly have been used to set harvest levels, subsistence allocation, hunting regulations, and season dates and bag limits.

ACTION ITEM: WSF will send a final pdf version (via email) of this entire PowerPoint presentation after this summit to the THS team. [DONE 4/22/2014]

A couple of references to note: Status report for thinhorn in BC was completed about 10 years ago (Demarchi & Hartwig 2004), and a few copies are available in the back. GOABC put together an 8-page summary report in 2007 for GOABC's Stone's sheep workshop in BC, and it is also available.

#### COMMENTS AND QUESTIONS ON THE SURVEY MONKEY QUESTIONNAIRE

Alex Grzybowski led a discussion: on what level do the survey results reflect your jurisdiction's population and distribution estimates?

#### **BC Responses (Gerry Kuzyk):**

The BC Director signed off on their provincial management plan. The responses on the questionnaire depend on how you define a management plan. BC does not have individual plans for different herds, but they could be done in the near future. Individual plans could be used as a building block for a more accurate and useful regional or provincial management plan.

Updated distribution maps are now needed, from the local level to the regional level. What we have for distribution maps varies in quality throughout BC. There are inconsistencies from northern to southern BC. We have a good habitat mapping project complete. All mapping goes into a provincial wild sheep mapping registry. Genetic investigations are currently being worked on to distinguish sub-herds; this will help us with distribution maps in the future.

We are always challenged on our population estimates. Survey methods are by aerial surveys and hunter harvest reports. We are not always able to do enough aerial surveys. We are updating population estimates every 3 to 5 years, depending on budgets. We have current estimates in 2007 and 2012 for most of the Stone's sheep range. There are often large differences in results from summer and winter surveys. Thus, our confidence levels are not always good over the entire province.

Mining and gas/oil explorations and resource developments are creating problems for wild sheep.

There was discussion on what really is a management plan? Just shooting old rams? BC responded by saying they did not have a current, province-wide management plan for species being hunted, so they used a template from a management plan for Species at Risk. The mountain goat management plan has goals, objectives, recommendations, and action items. This document provides science-based advice to help the BC government make decisions on hunting regulations. So, what we did to implement it was to develop a mountain goat harvest procedure and have it reviewed by their hunting and trapping advisory team to determine how much harvest will occur. They harvest 3-4% of the mountain goat population per year. It was sure good to have the science to back up their decisions on harvest.

### **AK Responses (Tony Kavalok):**

We really don't have the resources to complete population surveys and accurate distribution maps across AK. Some areas have good population surveys, while others do not. We have not communicated with other agencies and organizations for population and distribution information to the level we should.

Four of the five regions have wild sheep. The highest levels of wild sheep occur in the Alaska Range, Wrangell Mountains, and interior ranges near Fairbanks. The bottom line is, we have different levels of management, based on budgets and accessibility.

As far as the answers in the questionnaire are concerned, mapping is about as cloudy as we expected it to be. We tried to have one cohesive answer, but responses were quite varied. There were different answers on mapping by Federal agencies. Thus, there are a variety of specific responses in your booklet.

AK is so large and divided by land ownership that it is very difficult to get a handle on populations of wild sheep. Population dynamics can vary by mountain ranges and within mountain ranges. We do have management reports that describe what we know from our surveys (about every 3 years). We have an effort currently taking place that is trying to further refine the mapping boundaries for wild sheep. Reality is, we have done very few radio collaring projects in AK. Therefore, how do we map sheep habitat where they are only seen occasionally? We do not honestly know where the seasonal habitats are, especially in low-density areas. Some areas have never been surveyed in the last 40 years by anyone.

The state continues to rely on outfitter surveys of sheep in many areas. However, it does not always come in a format that is consistent and useful. For example, outfitters like to concentrate on high-density ram areas instead of methodically surveying the entire sheep range. Some outfitters do not want to survey the entire sheep habitat. Also, there is often a negative image by resident hunters of outfitters spending large amounts of time flying sheep habitat in the fall. When it comes to official population estimates, they like to rely on state-conducted surveys due to outfitter/resident conflicts.

Data sharing can be a large political issue. You need to know what the government is going to do with the information. Sharing among state and federal agencies can also lead to conflicts.

It is very hard to make a management plan for large remote areas. For THS, any plan would be less than a traditional plan usually made in the lower 48 states. Think about what a management plan would do to keep sheep on the mountain when gathering and sharing information.

### **Yukon Responses (Troy Hegel):**

The answers that we saw for the Yukon pretty much reflect what is occurring for wild sheep. Some of our mapping of sheep habitat is accurate and some is not. The Yukon is so large that we have to prioritize surveys, due to budgets. We are in a process of updating our Stone's sheep distribution (from the genetic study), and it will be more refined in the future. We have several areas that have never been surveyed, so there are some levels of uncertainty for population density and distribution. Yukon is currently planning on a higher-level of wild sheep surveys just to establish a good baseline of population information. Priorities will be in areas with

increased industrial developments and accessibility. It is a real challenge trying to assess impacts from a development when you don't even know where and how the sheep use their habitat.

We do have to rely on outfitter information for several areas, due to low budgets. The outfitters often-times know more about the wild sheep population than the government does. When outfitters release numbers of wild sheep to the government, they become public information. This puts conflict between the agency and outfitters because of increased pressure from resident hunters. For hunting purposes, it is best to keep the numbers to yourself. Outfitters are being paid for their knowledge, and it does cost them a lot to obtain that information. Neighboring outfitters don't usually share information either. It was suggested to not give specific locations for public information, just general areas. Another suggestion was to buffer all mineral lick locations by a large area, so the information does not disclose a specific location.

### **NWT Responses (Richard Popko):**

Thinhorn sheep are a low priority in NWT. We only have 8 total outfitters and they are really the sheep managers. Their outfitter areas are very large and they have exclusive rights to hunt them. NWT does some surveys, but relies heavily on outfitter information, due to funding. Pooled information is put in management reports and used to estimate populations and trends. Trends and recruitment rates are the most important for hunting regulations.

The relationship between outfitters and government is fairly good, but could be improved. Outfitters do manage the sheep harvest very carefully, because it is in their best interest to do so. The outfitters do provide a lot of meat to the local communities. Every sheep hunter fills out a questionnaire, which comes with their license on what they see for wildlife. The government gets about 400 responses per year. It is free data, and you can notice trends. No exact locations (only zones) are put in the government database. So, when the information gets released to the public, it is only general zone trend data. NWT does not have a large number of resident hunters; they only harvest about 7 sheep per year. NWT harvest of sheep is about 200 sheep/year, with no more than 10 sheep harvested by residents. There is almost no access except by flying.

### SURVEY RESULTS CONTINUED

(Q28) Rank the following ecological challenges faced by THS in your jurisdiction. The survey questionnaire inverted the ranking, so bar graphs with the highest numbers are indeed the highest ranked. The bar graphs are the weighted average for all 69 responses. Predation was far and away the most important ecological challenge. Weather and climate change was the second highest priority. Disease and vegetation succession also scored rather high. On down the list: wildfire/burning, noxious weeds, competition with livestock and other wildlife played a smaller role. Note the specific comments in your booklet for Q29 and Q30.

(Q31) Rank the following human footprint challenges faced by THS in your jurisdiction. Roads/access/ATV management ranked the highest human footprint challenge for all jurisdictions. Communication towers, timber management, hard rock mining, oil and gas, and recreational impacts (such as helicopter-skiing) all ranked fairly high. All of these create access or travel management problems for sheep. Dams and reservoirs, domestic livestock, and subdivisions ranked low. Items categorized as "other" were like military bases and

their training operations. In AK there is an increasing desire for motorized access to get into the backcountry; this creates issues for sheep. Backcountry desires and all hunting impacts were put into the recreational impact category.

The issue of domestic sheep and goats ranked low, mainly because they are not yet widespread. As you know, this is a huge issue in the lower 48 states. Whatever you do, please do not let domestic sheep and goats in THS habitats! Your threat is not so much large sheep allotments, but small sheep and goat hobby farms. There are several documents that can help inform you as to why it's important to keep them out of THS habitat. WSF developed a disease brochure in 2007, and recently updated it. The brochure is a short, concise, effective tool for educating people on the wild sheep/domestic sheep disease issue. They are available on the back table, and additional bulk copies can be obtained from WSF. Another useful document was completed by Elena Garde et al. in 2005; it examines the risk of disease transmission between Dall's sheep and domestic sheep and goats, and is an excellent summary of pertinent disease literature. Another document is a position paper written by the Alaska Chapter of The Wildlife Society a couple of years ago. It talks about reducing risks to wild sheep from pack or farm goats. The WAFWA Wild Sheep Working Group has a 2012 document on management recommendations for domestic sheep and goats in wild sheep habitat; check the WAFWA WSWG website for a link.

A question was asked about whether the responses were for current impacts or future impacts. Kevin responded that current impacts were foremost, with future impacts being considered in a longer look.

#### OPEN DISCUSSION ON ECOLOGICAL AND HUMAN FOOTPRINT CHALLENGES

NWT suggested the best way to restrict domestic sheep and goats is through land use planning. Mapping of critical lambing and winter ranges is essential to land use restrictions. They would also like to see Best Management Practices for all human footprint activities.

BC indicated they have been very fortunate to not have a disease outbreak in Stone's sheep habitat. They are currently working on Forestry Legislation to keep effective separation between wild sheep and domestic sheep and goats. There is a huge lack of education on this issue with locals, particularly in the back-country areas. The use of the documents WSF just mentioned can be very helpful. The disease brochure from WSF is short and concise and of great value for educating the public. Everyone should be using these. The BC legislation will include llama and alpaca's.

Kevin mentioned that four of five ranger districts on the Shoshone NF in Wyoming banned private, recreational pack goats two years ago. Recently, a legal objection by the North American Pack Goat Association was filed on the Shoshone NF. This indicates there are still a lot of non-believers, and you will continue to get pushback. This issue is real! If there is anything WSF can do to help, please let us know!



AK had a success story years ago concerning removing domestic sheep near Dall's sheep from a religious communal group. Alaska F&G was able to talk them out of having domestic sheep due to potential disease transmission.

NWT was able to avoid helicopter flight impacts to sheep from mining operations by getting them to fly around critical lambing habitat. A little communication between outfitters, government, and mining operators can go a long way in reducing or eliminating impacts to sheep.

AK is trying to get ahead of a growing issue concerning the use of flying drones to herd or locate Dall's sheep, particularly for hunting. We want to ban their use altogether through legislation. The Boone and Crockett Club recently banned any entries into their record books where hunting has been assisted by the use of drones.

Yukon outfitters have been working with the Chamber of Mines on developing best management practices. Unfortunately, they are not enforceable. They need to be labeled as "will" instead of "should". They need to be accountable and enforceable.

Noxious weed invasion is a concern in some areas in northwest BC. We are doing some control, particularly along roads and alpine areas. Weed-free hay is being required in some areas. Mitigation is being required for mining operations.

Yukon: There needs to be an increased awareness of issues with flying around sheep with aircraft during mining operations. We developed 2 brochures to reduce the impacts of flying operations near sheep habitat. It is a best management practices approach and is very useful. The government is primarily responsible to improve this awareness. All mitigations for flying should be included in the mining permits. The best information available on impacts of flying helicopters in sheep habitat should come from outfitters in the NWT, since they do this regularly. The outfitters responded by saying the biggest impact is in the winter and on areas that receive repeated irregular flights.

WSF mentioned the Northern Wild Sheep and Goat Council (NWSGC) came out with a position statement on helicopter-supported recreational flying in mountain goat habitat about 10 years ago. It should be helpful to you.

ACTION ITEM: WSF will send out the NWSGC position statement on helicopter-supported recreational flying in mountain goat habitat to THS team.

AK has guidelines for flying in sheep habitat, but they are not a regulation. There is a real lack of documentation of impacts from flying near sheep. Any impacts need to be published, don't sit on it. There are no regulations for helicopter-skiing on state lands, but there are on federal lands.

The Wildlife Conservation Society from the Yukon has published some guidelines for flying in critical sheep habitats. For a copy, contact Don Reid (867-456-7556) in Whitehorse, YK.

More research on the impacts of flying on sheep needs to be conducted. This is an extremely complicated issue. Sheep can adapt to flying if it is non-threatening and consistent. Irregular flying in critical habitats where sheep are being pursued is the biggest impact.

BC wrote a mountain goat management plan and based helicopter restrictions on published science. Their regulations require a distance buffer from helicopters to goats of 2 kilometers. Published multi-year research from the Bell-2 area showed that as little as 1 hour of flying per month impacted radio-collared mountain goat habitat use. This research has led to the development of best management practices that now have been included in several helicopter permits. In northern BC, there can be 200 helicopter skiing trips per day. In some areas, goats appear to be adapting to these flights.

State lands in AK have seen an increase in helicopter use for recreation purposes. An example is a recreation camp established on a glacier to give dog-sledding tours to the public. Fish and Game strongly objected to it, but DNR allowed it anyway. We noticed the mountain goats moved completely out of the area.

Yukon: The biggest impact from flying helicopters is during sensitive times, such as lambing or winter. Impact is big when irregular and in critical habitats and lowest when on the same flight path during non-critical times. The height of the flights is big, and we recommend a minimum of 500 meters. Helicopters in some areas have not hurt their populations.

WSF asked the question, are roads and access being managed or is it pretty much un-regulated?

In BC, they already have an access management plan, but it is not enforceable. Consequently, violations by ATV use are commonplace. The general public is not buying into these restrictions. It has really increased in the last 5 years. ATV trails move out from the roads like a spider-web. Mineral exploration from helicopters has had a huge impact on sheep habitat use. Our government is not doing enough to enforce these restrictions. The Conservation Officers need to do the enforcement, but they do not have the budget to do what is necessary. It was suggested that management plans need strong regulations on flying and access management through legislative action.

Alaska indicates that access restrictions have worked in some areas and not in others. It is complicated by different state and federal access regulations. Travel management will become more complicated in the future, as recreation increases. Alaska has the largest number of personal aircraft of anywhere in THS habitat. Flying by private planes before the hunting season is a huge impact for sheep. It is very difficult to get restrictions on this use.

There is a need for long-term research that identifies and evaluates the potential impact on wild sheep demographics from aircraft. I personally believe there is an impact and it needs to be quantified.

WSF: In the lower 48 states, we brought a NGO user group (called Tread Lightly) into the equation of reducing impacts by ATV's. They have developed guidelines for reducing ATV impacts. They have become part of the solution, instead of the problem. It was suggested something similar to this could be of use in Canada and Alaska.

BC is having trouble with ATV's displacing bison during hunting seasons up into high- elevation elk areas. Each hunter feels that to compete with other hunters, they have to hunt with ATV's and keep going further into backcountry areas. Violations are commonplace and very difficult to enforce. BC is starting to go in the right direction, they recently approved legislation on the use of ATV's and motorcycles.

AK indicated that sheep are more adaptable than you think. After 25 years of net gunning, capturing, drawing blood, etc. sheep numbers remained pretty good. Their biggest impact is predation and winter weather. As long as you don't change the habitat, they will adapt.

Yukon: Fish and Wildlife Branch has no land ownership. Consequently, they have no ability to regulate access, and it is up to the land management agencies.

WSF: Montana restricts access and all human presence in the most critical areas, which is winter range. It really helps the populations get through winter and is generally accepted by the public. Restrictions are usually from December 1 through May 15. Can something similar be implemented in Alaska and Canada?

In the Yukon, there is so much winter range scattered over such a vast area that doing something similar to Montana is not feasible.

In Alaska, access in winter range is really not an issue (except snowmobiles). The impact is in the hunting season and would be a big political issue.

BC has 2 pieces of legislation that apply to access management: the Forestry Practices Act and Lands Act. These acts allow for identification of specific areas needing protection. Typical areas with restrictions are winter ranges. Industry was heavily involved with developing these restrictions, so there is some level of support. So, we have limited protection in BC.

In Alaska, glaciers have been steadily receding due to climate change. This has allowed snowmobile use to expand into winter range for sheep and goats. Snowmobiles are starting to have an impact on use of winter range by sheep and goats. Administrators have not been willing to restrict snowmobile access at this time, since they don't feel it is a big problem. This reactive approach instead of proactive is the wrong approach.

WSF: Predator management has occurred in the past. Has it been successful?

Outfitters feel that control of wolves makes a huge difference in maintaining or increasing sheep populations. Alaska indicates that hunting of wolves is a big issue with hunters. Some researchers have assessed

populations of caribou, moose, and sheep. They have reported wolf control has been successful in some areas, in other areas it has not. This issue is very complex and variable by area and the demographics of predators and prey. More research on this issue is needed. Biologists have seen wolf predation on sheep having a big impact in some areas, particularly in habitat containing low amounts of escape habitat. In one area, they reduced the wolf population by 50%, and have seen no increase in sheep numbers. A wolf management plan that identifies when control would take place is needed.

## TOP 5 PRIORITY ACTIONS TO ENHANCE THE MANAGEMENT BY JURISDICTION

During the summit, individuals were separated into small working groups by jurisdiction. These breakout groups identified priority action items for 1) population distribution and trend, 2) habitat mapping and connectivity, 3) co-management, 4) human foot challenges, 5) ecological challenges, and 6) enhancing hunter opportunity and harvest allocation. Breakout groups then reported their results back to the whole group. A summary of priority action items identified by jurisdiction follows:

### **Alaska Priority Action Items:**

All of the following action items would come under the umbrella of developing a comprehensive management plan. Specific aspects of the management plan are listed below:

#### Population Distribution and Trend

- 1) Need more accurate population estimates.
- 2) Need to develop consistent sampling procedures and techniques.
- 3) Seek funds to conduct the surveys and leverage funding with other organizations.

#### Mapping and Habitat Connectivity

- 1) Refine current GIS layers for distribution of wild sheep habitat. Identify crucial or sensitive habitats.
- 2) Partner with other agencies and consult with all stakeholders.
- 3) Identify potential sensitive or crucial areas.
- 4) Use habitat data to identify areas for potential burns to enhance habitat.

#### Co-Management

- 1) Increase participation of all user groups in surveys and habitat mapping.
- 2) Encourage sharing of data among other agencies and all stakeholders.
- 3) Better define co-management roles and responsibilities.

#### Human Footprint Challenges

- 1) Cooperate with other agencies to develop access management plans while involving the public.
- 2) Target specific areas we have access issues with.
- 3) Identify crucial sheep habitat and insure their protection through travel restrictions.

## Ecological Challenges

- 1) Increase strategies for mitigating effects of bad weather years by having flexible harvest.
- 2) Identify important populations depressed by specific predators, and determine when factors would trigger consideration of predator management.
- 3) Develop regulatory actions to prevent disease transmission from domestic sheep or goats. Proactive approach is needed through Legislation.

## **BC Priority Action Items:**

### Population Distribution and Trend

- 1) Develop an overall sheep management plan.
- 2) Improve and refine inventory of populations in order to define trends. This will require consistency in survey methodologies and specific sampling areas.
- 3) Improve communication and education with the public on all aspects of sheep management.

### Mapping and Habitat Connectivity

- 1) Identify crucial habitats and protect them from development.
- 2) Use habitat data to identify burn enhancement areas.
- 3) Evaluate effectiveness of past burns for improved forage enhancement and increased use by wild sheep.

### Co-Management

- 1) Engage all NGO partnerships with sheep management activities at both regional and provincial levels. Set up advisory groups to assist with this effort.
- 2) Improve communication with the public, First Nations, and other agency groups on the wild/domestic sheep disease issue.

### Human Footprint Challenges

- 1) Develop access management plans and enforce them for all motorized use.
- 2) Establish permit conditions to protect wild sheep and see that they are included in all state and federal agency actions.
- 3) Improve restoration requirements and mitigation standards for actions that have been heavily impacted.

## Ecological Challenges

- 1) Determine which predators are having an impact on sheep, identify thresholds that trigger management actions, and identify different methods of control.
- 2) Develop regulations ensuring separation of domestic sheep and goats from wild sheep.
- 3) Develop burn plans to enhance habitat.

Protect crucial habitats such as winter range through mitigation measures.

## **Yukon Priority Action Items:**

### **Population Distribution and Trend**

- 1) We don't have a lot of information on population and trends, so we need better information through surveys and observation forms. This information needs shared with all stakeholders.

### **Mapping and Habitat Connectivity**

- 1) Need generic mapping of distribution of THS, particularly in northern and eastern Yukon. It should include winter and lambing areas, and travel corridors. Outfitters will play a big part in this effort. Funding needs to be acquired. Requiring additional funds from mining companies for flying is an option. Maps need to be shared with exploration companies, governments, and sheep advocacy groups.
- 2) Complete an ongoing genetic evaluation to identify THS sub-herds.

### **Co-Management – None Identified**

### **Human Footprint Challenges**

- 1) Seasonal access closures are a high priority, especially in winter ranges.
- 2) Domestic sheep and goat restrictions need to be obtained through legislation. We need to be proactive.
- 3) Regulate flying for mining and gas/oil companies through permits and contracts.
- 4) Improve communication with industry and the general public on THS sensitive areas.
- 5) ORV restrictions on access are currently being addressed with ORV policies and changing regulations. The need will increase in the future.

### **Ecological Challenges**

- 1) Holistically manage all predator populations. It is a very complex issue.
- 2) Roadside noxious weed control program. Continue current work on this. Need more public meetings on noxious weeds.
- 3) Promote development of a strategic burning program.

## **NWT Priority Action Items:**

### **Population Distribution and Trend**

- 1) Maintain "status quo". They have a good working relationship and trust between the land agencies, GNWT, and outfitters. The average age of ram harvest is above ten years, and has been consistent for decades.
- 2) Maintain outfitter and hunter observation forms – free data. Very helpful in estimating populations and trends. We have received forms from non-hunters too.
- 3) Share forms with other organizations in NWT and beyond. Good trust builder.

### **Habitat Mapping and Connectivity**

- 1) Habitat range maps for sheep need updating. Outfitters have agreed to meet with Fish & Wildlife biologists and do some generic THS seasonal range maps.
- 2) Outfitters will also use their knowledge to refine THS density and distribution maps.

#### Co-Management

- 1) Encourage completion and submission of more native, resident, and non-resident hunter forms, so we have a better picture of sheep harvest.

#### Human Footprint Challenges

- 1) Develop a regulation with the help of Co-management Board and Land Use Planning to prevent the use of domestic sheep, goats, llamas, and alpacas, etc. west of the Mackenzie River to the Yukon border.
- 2) Add the same regulation to the tourism license, which would restrict anyone from starting up a business such as, a pack goat operation in wild sheep habitat.
- 3) With our Yukon neighbors, we will try to get them to approve a similar regulation.
- 4) Maintain seasonal restrictions on helicopter use near important lambing and winter habitat.
- 5) Inform all pilots to read and review the "Flying Low" pamphlet.
- 6) Develop an ATV travel plan for "off-corridor" use. This is currently not a big problem, but could be in the future.

#### Ecological Challenges – None Identified

### IDENTIFICATION OF COMMON PRIORITY ACTION ITEMS

After each breakout group reported their above listed results, the whole group developed 8 priority action items common to all jurisdictions:

- 1) Develop a management plan, where needed. This involves a comprehensive approach that leads to conservation of the species and enhancement of habitats. This can be completed at the management-area level, regional level, or state, provincial, or territorial level. A management plan is really an umbrella document for all of the priority action items that we just listed. What the public wants from the resource is a very important aspect of any management plan. A one-size management plan does not fit all jurisdictions.
- 2) Develop Legislation/restrictions/regulations to prevent disease transmission from domestic sheep and goats to /wild sheep. Maintaining separation is the key.
- 3) Build access management plans, and develop and enforce regulations.
- 4) Build trust, partnerships, and awareness with all user groups to improve communication and collaboration.
- 5) Develop the best maps possible. They may be very specific or rather general, but they need to be accurate, especially in crucial sheep habitats. Emphasize data-sharing.
- 6) Predator Management. Determine which predators are having an impact on sheep, identify thresholds that trigger management actions, and identify different methods of control.
- 7) Protecting Crucial Habitats. Establish some protective measures (best management practices) for these areas.

8) Habitat Enhancement. Burning and noxious weed treatment.

QUESTIONS AND COMMENTS ON THE 8 PRIORITY ACTIONS

Alex: We have identified 8 priority actions that are common for most or all jurisdictions. What can we collectively do about each of these issues? We will be trying to answer that question tomorrow. What do the WSF organizers feel about these actions?

WSF: All jurisdictions identified the domestic sheep and goat/wild sheep disease issue as needing to be addressed. There are several publications (through WSF, WAFWA, or literature summaries) that are available to help with this effort. A 9<sup>th</sup> Circuit Court judge just upheld a U.S. Forest Service decision document in Idaho and it took 8 years to complete the Environmental Impact Statement and lawsuit. The decision removed almost all domestic sheep and goat threat of disease transmission for a very large area. This issue is tangible.

For management plans, it is very compelling to see it as a shared priority. These plans are huge undertakings. Every jurisdiction will need to determine what items the plan will contain, and work on it at their timelines.

Question: Is the intent of WSF to develop a conservation guide for THS that each jurisdiction can use, as needed?

WSF: We believe it is, but we are not prescribing how it should be done. With all of our efforts at this TH Summit so far, we are surely going to have a good record of all issues and their potential resolution, by category and by jurisdiction. The action items we prioritize at this session are going to allow us, 6 months from now, to evaluate what progress has occurred.

WSF: Over the last 30 years in the lower 48 states, we have developed many documents, guidelines, brochures, pamphlets, management plans, etc. to assist with wild sheep issues. These issues are very similar to the 8 action items we just identified. There are many examples available for you to use up North. There is no reason to reinvent the wheel.

Question: Is there one source that we can go to for these publications? It was suggested that WSF create one web site that has most of the resources listed above.

ACTION ITEM: WSF believes they can create some type of portal or database on their website that is a hub for that information.

WSF: We have this list of 8 items; can we agree on the top 3 items, and then determine the resources needed to accomplish them? What can we realistically get done?

Alex: That is easy. I will let everyone have 2 votes on the top priorities. The general conclusions for Day 2 are the 8 priority action items we just listed. Now, each jurisdiction will have their own set of priority actions from this list that they will work on.



Question: Isn't each of the items listed really part of a management plan? The group answered yes. So, why doesn't WSF encourage each jurisdiction to develop a management plan? That is what WSF is advocating, however we recognize that one size does not fit all, and some jurisdictions, like NWT, really don't need one.

WAFWA WSWG has been working on a publication "Bighorn Sheep Conservation Challenges and Management Strategies for the 21<sup>st</sup> Century" that will be coming out soon. The target audience is the general public and WAFWA Directors. We believe it can be of benefit to the THS Team.

## DAY 2

### VOTING RESULTS ON 3 PRIORITY ACTION ITEMS

Alex: Yesterday, we put together 8 action item priorities and last night we voted on them. The 3 top priorities are:

- 1) Develop Legislation/restrictions/regulations to prevent transmission of diseases from domestic sheep and goats to wild sheep.
- 2) Develop a management plan (including holistic predator management).
- 3) Build access management plans, develop, and enforce regulations.

Two questions for each of you, as we go through the day. What is each of you going to do with these priorities? Who is going to take the lead on these priorities? Now, do you have any thoughts from your formal discussions last night?

AK: Any governmental policy will regulate the contents of a management plan.

WSF: From this group, we are going to have to pick a point person to develop that line of communication between WSF and the THS team for your jurisdiction. The work we identified yesterday will be like climbing a mountain; one step at a time, and consistently working on the priority action items. Pick the easiest action item to complete, get it accomplished and then move on to the next item. WSF is willing to be a conduit for lines of communication with each jurisdictional point of contact.

### SURVEY RESULTS CONTINUED (Kevin)

(Q34) Describe the current hunting opportunity/harvest allocation policy for your jurisdiction. You can see the responses in your booklet. Most of the responses were on regulations or limitations not policy.

(Q35) In your jurisdiction, how is hunting opportunity/harvest allocation policy determined? Again, most of the responses focused on regulations, instead of policy.

(Q36) In your jurisdiction, how often is hunting opportunity/harvest allocation policy modified? Most responses focused on regulations, instead of policy. The changes to policy are a difficult task to take on, so they are not changed very often.

(Q37) In your jurisdiction, are there plans underway to modify current hunting opportunity/harvest allocation policy? There were various responses to this question. Most responses indicate there are not any plans to modify existing policies.

(Q38) For non-agency respondents, share your comments on current hunting opportunity/harvest allocation policy in the jurisdiction you are most familiar with. Many good comments, you can read them yourself. There were lots of comments on cycles and limitations on regulations, not so much on policy.

(Q39) Describe the current limitations in place for ram harvest in your jurisdiction. Full-curl was the most common limitation, followed by minimum age and double-broomed horn tips. The lowest minimum age restriction was 8. A few areas had three-quarter curl or any ram.

(Q40) Describe the current costs for a THS ram hunting license in your jurisdiction by resident, non-resident, non-resident alien, subsistence, or other. Here are some examples of those responses: For AK, residents pay \$25 for a license, \$0 for a tag, and \$5 for a permit application. Non-residents pay \$85 for a license, \$425 for a tag, and \$5 for a permit application. Canadian residents pay \$32 for a license and \$60 for a sheep tag. Non-resident alien's pay \$180 for a hunting license, and a non-resident sheep license is \$620. Today, we will have a discussion on these costs, how to increase hunting opportunity, and how to make the pie bigger for all of us.

(Q41) Provide data on THS ram harvest in your jurisdiction (over the last 30 years) by resident, non-resident, non-resident alien, subsistence, or other. WSF developed and presented some graphs for each jurisdiction.

For AK, from 1985 to 2003, ram (and some ewe) harvest for non-residents was stable. Resident harvest has declined. Similarly, a graph of hunter numbers show non-resident numbers stable, while resident numbers have declined. Hunter success for non-residents was between 60 and 70%, while residents were between 20 and 30%. Hunter success rates have been stable since 1985.

Over the last 35 years in BC, Stone's sheep harvest peaked in the late 1980s at over 500 per year. In the last decade, annual harvest has been about 300 rams. Dall's sheep harvest in BC has ranged between 6 and 12 rams per year. License sales are for any subspecies of sheep, and the graph shown is for resident and non-residents hunters. License sales have averaged about 379 over the years, with a significant drop over the last decade by residents. Why such a drop has occurred needs to be discussed today.

License sales and harvest by non-resident hunters over the last 20 years has been fairly stable for NWT, ranging between 170 and 200. Resident harvest has been less than 10 per year.

Over the last 30 years, Yukon resident harvest has been growing slowly. Non-resident harvest peaked in the late 1980s and declined thereafter, particularly over the last 7 years.

A graph from WAFWA WSWG for all jurisdictions indicated total annual harvest of Dall's rams peaked in 1990 at 1,944, and declined to 1,144 rams by 2012. Stone's sheep harvest has dropped from 466 to 334 between 1990 and 2013. These downward trends are substantial and a concern to all of us. Why are these trends occurring?

(Q42) Based on THS population estimates for your jurisdiction, compared to estimated ram harvest, provide the % “off-take” of rams, out of the entire THS population. Some example responses are: “varies, but generally 1 to 3% depending on a variety of factors, some areas within GMUs get very little pressure due to access challenges”. “Age structure of harvested ram’s show we take about 50% of each cohort as it becomes legal at 8 years. We take the remaining 50% during the next 4 years”. The off-take is based on population estimates, not actual population numbers.

Why was this question asked? In the Wildlife Professional’s meeting at the 2007 WSF convention in Salt Lake City, we had a 4-hour session to determine the rate of off-take, by jurisdiction. That information was published in the 2008 NWSGC Proceedings. We got some response from THS areas, but largely it was for bighorn sheep. We concluded 1.5-4% off-take for the total population is sustainable through time. So, ignoring the end points, we concluded between 2-3.5% off-take should be sustainable over time. That publication is in Volume 16, pages 92-98 on the NWSGC Proceedings website.

(Q43) Does your jurisdiction require compulsory inspection or plugging of harvested rams? Almost all jurisdictions require some type of plugging and have been doing it for a long time. BC outsources their plugging to private contractors while AK, YK, and NWT still do their own at their F&G or DNR offices.

(Q44) Describe the known or suspected illegal take of rams in your jurisdiction. Nobody has good data on illegal take of THS. It appears from the responses that it is not a major component (maybe localized) of mortality, and is likely not meaningful in the larger picture.

(Q45) Describe the estimated \$-value or contribution of THS hunting in your jurisdiction. You can see the responses, and most of them indicate the dollar value of hunting THS is huge. There is a brand new economic assessment of hunting in AK for Dall’s sheep compiled for APHA that puts the total value of outfitted hunting at \$78 Million. This is big business! There are undoubtedly similar examples for Canadian jurisdictions.

(Q46) Offer any additional comments on other topics relative to your jurisdictions. This question was aimed to document any other comments not specifically addressed earlier.

#### QUESTIONS AND COMMENTS ON THE SURVEY MONKEY QUESTIONNAIRE

For Q42, what was your definition of sustainability?

WSF: We did not try to define sustainability. For each jurisdiction, we tried to get their opinion of sustainable harvest, according to whatever metrics they used. Throughout the West, there may be more opportunity for ram hunting than is currently taking place. Let me give you an example. In Montana, about 50% of the rams harvested every year make the record books. Consequently, a lot of potential sheep hunters will never draw a limited-entry sheep tag in Montana. The State of Montana could increase their harvest of rams substantially, but that is the bar they have chosen. However, Montana is also the only jurisdiction in the lower 48 states that allows over-the-counter, general license BHS hunting. In Wyoming, we try to maintain average hunter success of 75% to 80%, average age of rams harvested between 6 and 8 years old, and an average of 10 to 12 days required to harvest a ram. Wyoming has sustained those harvest parameters, for decades. Wyoming’s off-take has been 3.3-3.5 % of the total estimated population.

In AK, we are not stuck in the 1.5-4% off-take rate. On the age structure business, you can calculate the percentage of harvest any way you want, based on what you have already harvested. Models in AK showed a sustainable rate of harvest when our success rate was 50%.

In NWT the target for sustainability is average age of rams harvested. They have been able to sustain average age of rams harvested at about 10, for decades.

Question: What do other jurisdictions have for ram harvest parameters identified? What are we trying to manage for?

AK: Sustainability is perhaps the wrong word to start this conversation. We need to start with, what do the people want to see from these sheep populations? The public needs to continue to be engaged in these conversations. Harvesting with a full-curl regulation is pretty conservative. One of our populations is managed for maximum opportunity and for taking a very high percentage of full-curl rams. The area is heavily hunted by residents, and the majority of full-curl rams are harvested each year. Currently, the off-take is about 6.5% of the total estimated ram population and 1.8% of the total population. Right now, everyone likes this strategy in that area. Management objectives, such as ram harvest, are maintained by mountain ranges.

WSF: On our website, we present the total number of sheep in North America and total number of rams harvested, by jurisdiction. These numbers are provided by WAFWA WSWG. The average is only 1.4% off-take of the total populations, across the landscape. If we doubled that harvest to 2.8%, we could increase rams harvested from 1,800 to 3,600 per year. This is a way to increase opportunity and broaden our base of funding. How do outfitters weigh in on this discussion?

AK: There is a very high interest in sheep hunting in AK. There are outfitters, special interest groups, and local advisors that weigh in to off-take amounts and are mostly conservative in their approach. These groups pretty much influence ram harvest regulations. The policy in AK is for maximum recreation opportunity, so long as it does not negatively affect the populations. The Board of Game (BOG) process is really to serve special-interest groups and may not follow policy.

AK outfitter: Anyone can have input on harvest rates and make proposed changes to the BOG for approval every 2 years. On State lands, there is no restriction on the number of guides. On Federal lands, there is a restriction on the number of outfitter permits. The BOG policy for draw areas is to take the ten-year average of non-resident participation and apply that for the area. For example, if non-resident participation averaged 20% over the last decade, then they would be allocated 20% of the permits. In one draw area, Fish and Game went to an "any ram" harvest regulation, and it has led to an overharvest of rams. Out of 17 rams harvested, only 3 were full-curl. The purpose of this regulation change was to take some of the pressure off of the older rams, but it has not been accomplished. They are taking so many younger rams that they never get to full-curl.

BC: We are currently developing a THS harvest procedure at the provincial level. We are involving our user groups and talking about a 3% "off-take" harvest rate from the total population. There are metrics like average age of harvested rams, minimum population sizes before hunting, % of rams in the population, and how accurate your population estimates are. Harvest targets are based on surveys and sightability correction factors for estimating populations. Stakeholders have a lot of input on harvest numbers at the regional level.

Harvest levels are adjusted up or down, based on the average age of rams harvested the previous year. As the provincial harvest procedure gets more defined, local biologists and user groups will become more involved.

YK: The policy is more shaped around maintaining a more natural range of ram ages. The public input is similar to BC, where we have a Yukon F&W Management Board at the highest level and resource councils at the local levels. Any citizen can give input at two-year intervals, and it could go through a public review process, board recommendations, and approval by the Ministry.

NWT: The number one priority is to maintain First Nations harvest. The second priority is to maintain resident harvest opportunity. Through local boards, the public gives input on harvest, and any change is reviewed by regional boards and approved by the Ministry. We are currently working on a new Wildlife Act that will set a template for changing any wildlife regulations.

BC Comment: You will notice in the graphs that there is a spike in sheep harvested in about 1970 and again in 1990. There were a lot of factors to this increase in populations: predator control, good weather, and burns. Can anyone explain why we had the highest populations and lowest age of our sheep during those periods?

In the Stone's sheep world, there are half the number of sheep there was around 1990. It is felt that predator control, mainly for wolves, was the biggest contributor to those sheep population increases. Others indicated there were many factors related to this change, such as predator management, changes in harvest regulations, burning, and weather. WSF indicated that there was a very bad winter in 1990 that killed a lot of THS; some areas lost 40-60% of their sheep populations.

Alex: In our breakout groups, you each need to answer the following questions:

- 1) What are the top 5 priority items to enhance hunter opportunity and harvest allocation?
- 2) What kinds of actions are you going to take for your jurisdiction?
- 3) Who will be your point of contact for your jurisdiction?

#### TOP 5 PRIORITY ACTIONS TO ENHANCE HARVEST OPPORTUNITY/ALLOCATION

##### **AK Priority Action Items:**

##### **Increase Hunter Opportunities and Harvest Allocation**

- 1) Investigate increasing hunting opportunity on Federal lands. There are more than 12,000 sheep in national parks alone that could sustain some level of harvest.
- 2) Investigate trans-locating sheep.
- 3) Review management objectives with respect to policy.
- 4) Develop a harvest allocation strategy.
- 5) Assess the "Want Methodology" in age-structure analysis.
- 6) Limit the means by which we differentiate user groups.
- 7) Define the problem, and consider whether the system is broken.

##### **Actions you are going to take**

- 1) Legal review of federal policies and Legislation.
- 2) Introduce legislation to restrict domestic sheep and goats near wild sheep habitats.
- 3) Create a Dall's sheep working group that would have a wide range of interested stakeholders, reach consensus on issues, develop proposals, and focus on low-hanging fruit. Kevin Kehoe has offered to head this group. WSF will assist with this effort and keep you informed on progress.

Point of Contact: Kevin Kehoe

**BC Priority Action Items:**

**Increase Hunter Opportunities and Harvest Allocation**

- 1) Increase the population by managing predators and improving habitat.

**Actions you are going to take**

- 1) Develop a management plan. The restriction of domestic sheep and goats near wild sheep to eliminate disease transmission would be included in this plan. GOABC and WSSBC will initiate action by the government and Provincial Hunting & Trapping Advisory Team (PHTAT) by April 30. Don't put limitations on harvest rates or ourselves.
- 2) Develop a communication plan. Facilitate and collaborate among stakeholders.

**ACTION ITEM:** WSF will take a lead in assisting development of a communication plan for BC.

- 3) Develop a large carnivore policy.
- 4) Acquire funding for wildlife by combining funding sources, leveraging matching funds, have more premier tags available, and have private citizens funding predator management. Move 100% of license sales to wildlife conservation work.

Point of Contact: Mari Wood on behalf of the WSSBC

**Yukon Priority Action Items:**

**Increase Hunter Opportunities and Harvest Allocation**

In the Yukon, there is not currently any limitation on current hunting opportunity, so we have to increase the population of sheep. The best way to do that is:

- 1) Improve habitat through prescribed burning
- 2) Promote holistic predator management.
- 3) Protect THS from transmission of diseases from domestic sheep and goats.
- 4) Protect migration corridors, lambing, and winter habitat. Use seasonal restrictions to do so.

**Actions you are going to take**

- 1) Lobby for increased harvest, particularly in the Richardson Mountains.
- 2) Lobby for legislation to restrict domestic sheep and goats near wild sheep.

- 3) Encourage a diversity of user groups to submit letters that support access restrictions.
- 4) Lobby agencies to develop an active prescribed burning plan.

Point of Contact: Kevin Olmstead

**NWT Priority Action Items:**

Increase Hunter Opportunities and Harvest Allocation

NWT has very little opportunity to increase harvest and no limitations on current hunting.

Actions you are going to take

- 1) Lobby for legislation to restrict domestic sheep, goats, llamas, alpacas, etc. between the Mackenzie River and the Yukon border.
- 2) Develop accurate habitat maps.

Point of Contact: Richard Popko

COMMON THEMES FOR INCREASING HUNTER OPPORTUNITY

- 1) Lobby for legislation to restrict presence of domestic sheep and goats near wild sheep.
- 2) Develop a communication plan to put a positive image on hunting. Hunters are conservationists, not just trophy hunters. Consequently, the management plan and predator management would be more acceptable to the general public. First Nations will communicate their holistic approach (hunting, trapping, predator control, land-based self-healing) to managing land and wildlife. Collaboration between First Nations and non-First Nations will facilitate awareness of their approach.
- 3) Develop a management plan, or at least parts of it. It could include every item on the list, plus predator management and the harvest allocation issue.

Question: How do you plan to implement the disease work?

ACTION ITEM: WSF (Kevin H.) will take the coordination role on the domestic sheep and goat/wild sheep disease issue with all of the jurisdictions. WSF will send some of the publications on the domestic sheep and goat/wild sheep disease issue to the point of contact for each jurisdiction.

We identified contact points on this topic for each jurisdiction. For the Yukon, that was Kevin Olmstead. However, Dan Reynolds has been involved with this issue for the last 6 years. We are looking at a different contact group for this domestic sheep and goat/wild sheep issue. So for Yukon, it would be Dan Reynolds, NWT Nic Larter, BC Jeremy Ayotte, and AK Wayne Heimer. We believe we can bring some additional resources from WAFWA WSWG and WSF PRAB representatives, as well.

Once legislation on this issue gets drafted, awareness from the livestock industry will be heightened. Currently the problem is very small in NWT, and should have the least resistance. NWT would be the best jurisdiction to start with legislation, and then be a spring-board for other jurisdictions. WSF is willing to work closely with Nic Larter, AMMO, etc., on the NWT legislation effort.

Yukon believes this issue is unique to each jurisdiction. Yukon already has domestics and will have to use a political approach. One-size does not fit all jurisdictions. We will have to work with our Agriculture Department. The goal is to achieve effective separation. The agricultural industry will probably support Legislation when there is the least amount of restrictions to achieve separation.

It was suggested each jurisdiction support one another with the legislation effort. For example, Wild Sheep Society of BC could write a letter of support to NWT Government.

Question: How do you plan to implement the development of a management plan?

BC is very committed to completing their management plan. The April 30 date for meeting with political leaders is firm.

Yukon does not plan on completing a management plan in the near future. It will not be a quick process, maybe 3-4 years. A management plan may even hinder our progress. Instead, we would like to take the issues on one at a time. Right now, we plan on solving the domestic sheep and goat/ wild sheep disease issue and access management issue first. We plan on a bite-size portion approach.

AK already has a management plan that is already 40 years old. The new AK working group will evaluate the need to revise the existing management plan.

NWT does not need a management plan. Maintain status quo!

WSF: We have basically outlined 8 actions items as our summit conclusions. Maybe this is our wish list, maybe our goals. This group is a team, and each jurisdiction will move forward on 2 to 3 items on this list. Periodically, we will revisit this list of action items. We should use this list as a template of concerns for THS. Each member of the THS team can use this template to leverage their agency, organization, and others to implement this important work.

Question: What is missing from the summit conclusions?

AK: The allocation issue is not within the 8 action items, but is still very important to AK. They will work on an allocation strategy in preparation for a March 2015 meeting with BOG. BOG has asked for information on allocation. BOG does not really know yet what path they will take on this issue. Currently, residents draw about 90% of the sheep permits, while non-residents draw 10%. Average resident sheep hunter success per year for draw permits is closer to 60%.

How has BC solved the allocation issue? In BC, allocation is a big issue and is very detailed. The focus should be on population numbers first. Current harvest is about 60% residents, 40% non-residents, in general open seasons (GOS). Allocation is split by regions and outfitter areas. The emphasis from many residents is to place guides under a permit/quota system.

ACTION ITEM: Clay Brewer of WAFWA WSWG will share information on harvest allocation policies and strategies that were developed for bighorns in the western states and southern BC and AB.



Harvest allocation should be resolved under the foundation of the 8 priority action items. Always put stewardship of sheep first in any considerations for allocation. Allocation is a social issue, and it is not appropriate for this group to determine allocation rates at this summit. WSF is not trying to solve this issue, but share information. Allocation is a public policy issue and needs to be resolved at the local level.

How are we going to share information? WSF feels that one of the big goals of this conference is to form a team and to have better communications. When we started WAFWA WSWG, most participants did not know who the other players were. Now, after several years, participants have no hesitation to contact other WAFWA WSWG members. That is what we are trying to do here: form the THS team, and foster better communication on all issues, across jurisdictions. WSF will leave all 175 persons on this TH Summit e-mail group list. Let Kevin H. know if there are any corrections or additions to this email group, or if you want the team segregated by jurisdiction.

One of the conclusions at this summit is to work more collaboratively in a coordinated way.

### FUNDING

WSF presented the following graph of jurisdictional WSF funding over the last 30 years. GIA is WSF Grant-In-Aid program, and PERMITS is \$ from the auction tags returned to the jurisdictions by WSF when their respective permits are auctioned.

<u>AGENCY</u>	<u>GIA \$</u>	<u>PERMIT \$</u>	<u>TOTAL \$</u>
AK	642 K	750 K	1.4 M
BC	847 K	1.85 M	2.72 M
NWT	138 K	0	138 K
YK	181 K	738 K*	964 K
TOTAL	1.81 M	3.38 M	5.22 M

\*Permit \$ returned to Kluane First Nation

This table indicates WSF has help raise a lot of funds for wild sheep projects in the past for the 4 jurisdictions. So, where is the money going to come from for future work? WSF can obviously help raise money, but WSF will need help from all of you to raise funds for THS conservation.

So what are other ideas to support funding?

- 1) Once a good project has been proposed, reviewed, and written up, we can market the project by obtaining additional dollars with sponsors, such as Cabela's. There is always money available for a good project.
- 2) We are not just talking about projects, we are talking about programs. Jurisdiction-wide programs such as access management are hard to fund through project funding. Access management needs to be addressed at the highest levels. In the U.S., there are Pittman-Robertson Act funds (P-R) available to do work,

including access management. Canada should consider developing a funding source similar to P-R funds. In BC, they already have Habitat Conservation Trust Fund (HCTF) from license tags and royalties that are used mostly for projects. That money could be used for sheep programs as well. There have been about \$150 million collected in this program since 1981.

In the U.S., about 70% of the money from license and tag sales comes back to the wildlife programs. What percent of these funds in your jurisdiction come back for use in THS management?

BC auction sheep permit funds go right in the general fund, and most of these funds then get sent out as project money.

In the YK, auction permit dollars have gone directly to Kluane First Nation.

NWT funding has been from a transfer of funds from the government. Funds from organizations like WSF are earmarked for specific sheep projects. This year, new funds will be coming from land-use permits and will be available for sheep projects.

For the number one priority action, the domestic sheep and goat-wild sheep disease issue, what amount of funding will this take and where are you going to get it?

WSF: Consensus was that this issue is not going to cost a lot of money, but it will take a lot of time and effort. AK estimated it will take about \$5,000 for coordination and travel, and they don't know where the money will come from. YK will not need additional money for the disease issue; everything is already set in motion. BC and NWT also will not need extra money, just time.

WSF: For the communication plan, costs will depend on where we take the plan. WSF will use their funds to get the plan started. A real extensive communication plan could take several million dollars to do a first-class job.

Is there a lack of funds to create jurisdictional management plans where needed?

BC: The Ministry will fund most of the biologists and any contractors working on the management plan. External funds would help with the public education and review process, which will have to be determined.

AK: There will be costs associated with travel and public involvement, but we have to determine those costs.

WSF: We can help raise funds to get management plans or parts of them completed, but you have to give us something to market.

ACTION ITEM: Each jurisdiction will use these identified priority action items as a basis for acquiring funds from all resources (agency, sponsors, and outfitters, WSF) to support implementation of their planning efforts.

WSF: Approximately \$20,000 from excess TH Summit sponsorship contributions will be available to implement work identified as a priority at this THS summit.

ACTION ITEM: Each jurisdiction will determine the amount of additional funds that will be required to complete these priorities, and let WSF know what those are.

## CLOSING COMMENTS AND QUESTIONS

There are plenty of publications on the domestic sheep and goat-wild sheep disease issue available. Many are available on our website, such as the best management guidelines compiled by WAFWA WSWG.

WSF: We now have a THS team together, and we have identified some priority action items. Think of an action plan as a business. These are the items that we have identified as important for THS, and these items are our product line. Find out what the costs are, and pursue funding as a team.

Alex: Our goals of this conference have been to 1) Assemble a diverse array of stakeholders responsible for, dependent on and interested in management and conservation of THS; and 2) Advance the level of communication, cooperation, and commitment of those stakeholders to benefit THS. Have we achieved those goals? The group believed we did.

Have we enough clarity on timelines? The group believed we did not.

A draft final summary and synthesis of this THS summit will be completed within the next 2 weeks, with a final summary/synthesis targeted for distribution within 30 days of adjourning here. WSF will send out a final summary/synthesis to the THS team via the 175 names in the e-mail group.

For the domestic sheep and goat-wild sheep issue, when will you do this work? NWT will contact their wildlife veterinarian and Resources Board within the next two months to initiate some action on this issue. Yukon has set a timeline of 30 days to begin working on this issue. AK will start action on this issue within the next 2 months, and would like to have legislation completed by January 2015. BC already has a meeting set up on May 15 with the Ministry and their Department of Agriculture to start formally working on this issue.

How often does this THS team want to meet? The WSF has a Chapter and Affiliates meeting scheduled in June of 2014 in Arizona and one in BC in 2015. It may make sense to have another THS team meeting in BC in 2015 in Kelowna. At the next WSF Chapter and Affiliates meeting in Arizona, we will discuss project needs for THS.

(Gray) In closing, WSF believes this has been a very worthwhile and productive THS Summit. We especially want to thank our sponsors again, for we could not do it without their support. We want to thank everyone for their willingness to come, hard work, and efforts to identify and move these action items forward. We owe Jack a big thank you, for this summit was his vision, to Kevin for organizing this summit, and Alex, Robyn, and Sara for keeping us focused. Thank you all!

#### SUMMARY OF ACTION ITEMS

- 1) ACTION ITEM: WSF will send a final pdf version (via email) of the entire PowerPoint presentation for this TH Summit to the THS team. [DONE 4/22/2014]
- 2) ACTION ITEM: WSF will send out the NWSGC 2004 position statement on helicopter-supported recreational flying in mountain goat habitat to THS team.
- 3) ACTION ITEM: WSF will attempt to create some type of portal or database on their website that is a hub for resource information.
- 4) ACTION ITEM: WSF will take a lead in assisting development of a communication plan for BC.
- 5) ACTION ITEM: WSF will take a coordination role on the domestic sheep and goat-wild sheep disease issue with all of the jurisdictions. WSF will send some of the publications on the domestic sheep and goat-wild sheep disease issue to the point of contacts for each jurisdiction.
- 6) ACTION ITEM: WAFWA WSWG (Clay Brewer) will share information on harvest allocation policies and strategies for bighorns in the western states and southern BC and AB.
- 7) ACTION ITEM: Each jurisdiction will use these priority action items as a basis for acquiring funds from all resources (agency, sponsors, outfitter, WSF) to support their implementation.
- 8) ACTION ITEM: Each jurisdiction will determine which additional funds will be required to complete priority items and let WSF know what those are.