Bleats and Blats

Official Newsletter of the
Desert Bighorn Council
July 2014

Inside:

Hello DBC members and friends,

I have to apologize for once again being delayed in compiling this newsletter and getting it out. Part of the delay is work related with the other part being little response to my request for content (which I suspect is workload related). So, we will all keep plugging along and doing the best we can to keep our heads above water.

Speaking of water, I was able to take another short dive vacation this past February. My husband and I went to Saint Croix for this first time. The diving is absolutely beautiful and the winter weather there is very nice. It is great sitting on the beach in the middle of winter. I look forward to going back – I must find a frog fish.

My goal is to do better and get the next newsletter out in early October; please send me any updates, relevant literature citations, or announcements to include. I hope to hear from you! For more information about the Desert Bighorn Council or to download a membership form, please visit our website at www.desertbighorncouncil.com.

All the best to you,
Amber Munig (DBC Secretary)

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2015 DBC Meeting Announcement

Ben Gonzales and Coordinating Committee

We are looking forward to hosting the 2015 Desert Bighorn Council Meeting in Borrego Springs, California. The venue is the Borrego Springs Resort http://www.borregospringsresort.com which will provide excellent conference lodging and meeting rooms in a beautiful Sonoran Desert setting.

Respiratory disease in bighorn sheep is a serious concern of biologists and veterinarians with major implications for bighorn management. While it has been a significant problem in Rocky Mountain bighorn sheep in the northern states for several years, more recent disease outbreaks in desert bighorn have raised concerns in the southwestern states. Nevada and California have both experienced severe disease mortality events very recently. An important theme of the 2015 DBC conference will be respiratory disease in bighorn. We will also solicit presentations on desert burros in sheep habitat as well as general papers on bighorn sheep management.

Tuesday, April 14 – travel day; Tech Staff meeting; evening Meet and Greet at the Borrego Springs Resort.
Wednesday, April 15 – presentations with papers involving respiratory disease in the morning and opening up for burro and general bighorn management papers in the afternoon. We are working on a Wednesday evening event at the UC Irvine Anza Borrego Research Center in Borrego Springs; details will follow.
Thursday, April 16 – state status reports and general bighorn management papers; DBC Business meeting. The awards banquet will take place on Thursday evening at the Borrego Springs Resort.
Friday, April 17 – optional field activities; these activities will be scheduled so those interested will be able to do either one or both of the following:

1. A three mile round trip hike into Borrego Palm Canyon with the likelihood of seeing bighorn.
2. A short hike up a rocky ridge near Yaqui Pass to view a Native American bighorn hunting blind complex, a significant archeological site.

There will be more to come as plans are solidified.

Call for Awards Nominations

The Awards Committee is requesting nominees to be considered for recognition by the Desert Bighorn Council at our meeting in Borrego Springs during April 2015. Names of nominees to be considered for the Council's Ram Award or Honor Plaque should be sent to Vern Bleich, Awards Committee Chair (vcbleich@gmail.com) by December 31, 2014. Please be sure to include a list of meaningful accomplishments and justifications for each nominee.

Research in Arizona – Peoples Canyon

Larisa Harding, Arizona Game and Fish Department

Forty bighorn sheep were released near Peoples Canyon, north of Wickenburg, AZ, in November 2013. Half of the sheep were equipped with Globalstar GPS collars, while the other half were not collared. Of the 20 collared sheep, four have died in the past seven months (2 rams and 2 ewes) with 3 preyed on by mountain lions and 1 from undetermined causes. We regularly locate and observe sheep to document group size, composition, and lamb:ewe ratios. The remaining sheep, both collared and uncollared, appear to be adjusting well to their new environment, and many of the females have given birth to lambs this spring. Lambs first appeared on scene in

January 2014, and lamb to ewe ratios have been relatively high with multiple collared and uncollared ewes now accompanied by lambs.

The GPS technology has allowed us to observe several interesting movements. For example, the ewes have primarily stayed together in small groups of 2 or 3 individuals; although, larger bands (up to 8 or 9 adults) have also formed temporarily. The rams have generally remained near each other in an area away from most of the females, but they have recently been moving closer to females. Sheep locations have also indicated ewes were leaving groups for a few days to wander off alone; most of the solitary ewes later rejoined bands accompanied by young lambs. We also observed 1 ram that went 20-30 miles north of any of our known sheep. After spending several weeks north of the core sheep area, he was recently killed by a mountain lion as he was returning towards Peoples Canyon.

Another aspect of the ongoing research in Peoples Canyon involves snaring and collaring mountain lions in the area in effort to identify and collar resident individuals. To date, we have 3 collared lions in the study area, 2 females and 1 male. We collared another tom, but he left the study area soon after he was trapped. We have begun to investigate clustered lion locations to document kill or feeding sites so that we can see what types of prey lions are eating and to document how often lions feed on bighorn sheep. Using lion GPS locations, we have also observed a few incidents that suggest lion-lion encounters or mating activities, and as part of the research project, we hope to observe additional social interactions between lions.

Catalina Mountains Desert Bighorn Sheep Update - Arizona

Watch for this in the next newsletter.

Recovery Progressing For Sierra Nevada Bighorn Sheep

By Tom Stephenson and Alexandra Few, California Department of Fish and Wildlife

The potential for recovery continues to become more of a reality for Sierra Nevada bighorn sheep. Sierra bighorn are federally endangered and are endemic to California's highest mountain range. Recovery goals recommend 305 adult and yearling females distributed among 12 herd units that represent historic range for this genetically distinct subspecies. There are currently more than 250 females with a total population that exceeds 500 animals. Only 2 of the required herd units remain unoccupied following the successful reintroduction of bighorn sheep into the heart of Sequoia National Park in March 2014 by the California Department of Fish and Wildlife. The creation of the Olancha Peak herd in March 2013 represented the first reintroduction of Sierra bighorn to historical habitat in 25 years.

The reintroduction into the Big Arroyo herd unit in Sequoia National Park posed significant hurdles when compared to previous translocations in the Sierra Nevada. The release site along the Kern River is 25 miles from the nearest trailhead in a road-less wilderness area. The capture sites for the 10 ewes and 4 rams that were moved were in the Wheeler Ridge and Mt. Baxter herd units that lie northwest of the Park. Following capture, the bighorn selected for translocation were crated and transported 30 to 70 miles south by truck; the crates were then flown 25 miles by helicopter to the release site.

As Sierra bighorn populations increase in abundance and distribution, the risk that contact with domestic sheep in one portion of the range could result in a Sierra-wide disease outbreak increases. Bighorn sheep in the Big Arroyo herd now serve as an important reservoir that is more isolated from the increasingly connected populations along the crest of the Sierra Nevada and further from domestic sheep that pose disease risk.

The bighorn that were reintroduced to the Big Arroyo are wearing GPS collars that transmit daily locations and VHF collars that will remain on the animals following the drop-off of GPS collars in 2 years. The demography

and behavior of these bighorn will be monitored using the collars to assess the success of the reintroduction. An additional 4 ewes also were translocated to the Olancha Peak herd in March to augment the initial animals released last year. A minimum of 10 and 6 additional ewes will be augmented to Big Arroyo and Olancha, respectively, during the next several years. This will ensure genetic diversity and herd sizes are sufficient to maximize the potential for long-term persistence and recovery.

The California Department of Fish and Wildlife funds the majority of the recovery effort with assistance from the U.S. Fish and Wildlife Service, National Park Service, U. S. Forest Service, and Bureau of Land Management. The reintroductions this spring would not have been possible without additional financial support from the Sierra Nevada Bighorn Sheep Foundation and the Wild Sheep Foundation. For additional information on the Recovery Program, check out our website at: www.dfg.ca.gov/snbs

A ram arriving at the processing site at the base of the Mt. Baxter herd in preparation for translocation to the Big Arroyo herd unit and a helicopter transports bighorn sheep in a crate for reintroduction to the Big Arroyo herd unit, Sequoia National Park.

Bighorn sheep are released from crates near the Kern River in the Big Arroyo Herd Unit, Sequoia National Park.

NDOW Explanation of Recommended 2014 Bighorn Ewe Hunts and Associated Bighorn Herd Management Strategies

Nevada's Wildlife Commission approved, on May 10, 85 tags in 3 desert bighorn units and 15 tags for a California bighorn unit up north for this fall. First ever ewe hunts in Nevada.

NDOW in partnership with non-governmental organizations (NGO's) that support bighorn conservation and public land managers have been highly successful in restoring bighorn sheep. When the first bighorn release occurred in 1968, it was estimated that only 3,000 bighorn existed in Nevada. That number has grown to 11,000 in 2014! This aggressive bighorn restoration program has primarily used animals from herds nearing their habitat carrying capacity as the source stock for creating new herds. The regular removal of sheep for these capture and translocation efforts, has to date alleviated the need for any other population management tool such as ewe hunts.

Researchers and bighorn managers have recognized high bighorn densities and population numbers are not sustainable. Bighorn are nomadic, seeking optimal habitat conditions and herd densities. However, today, herds are often restricted to a single mountain range or section of a mountain range due to man-made infrastructures and habitat fragmentation. This has reduced the ability of growing herds to disperse. Increased concentration of animals leads to a greater risk of disease and severe habitat resource limitations (i.e., lack of adequate water during the summer). Drought conditions, overgrazing by domestic and feral animals and high population growth rates have all contributed to several bighorn herds exceeding their sustainable management levels.

The growth of Nevada's bighorn population over the last decade has been remarkable as the graph below illustrates. This extreme rate of increase has made it challenging to manage herd populations solely through capture and translocation. Each year available release sites are fewer due to successful bighorn release efforts.

In addition, bighorn translocation guidelines are now more restrictive as greater awareness and data support the likelihood of disease transmission and the resulting negative impacts to bighorn herds. Efforts are needed, working together with NGO's, public land managers, private landowners, and public land domestic sheep operators, to create more low risk release sites to accommodate future bighorn population growth through capture and transplants.

NDOW continues to accommodate other western states in providing animals for their bighorn restoration programs. For California bighorn sheep, there are no states or tribal nations that have expressed interest in receiving animals from Nevada. For desert bighorn, Nevada continues to provide source stock for Utah Division of Wildlife Resources (UDWR) bighorn sheep restoration program. Other states like Arizona and California have been offered Nevada's bighorn sheep for transplant stock but have yet to make a formal request.

NDOW develops a big game release plan every 2 years that is approved by the Board of Wildlife Commissioners. The current plan covers release opportunities through June 2015. For both California and desert bighorn, there are herd augmentations identified. But with recent confirmation of herds exposed to, carrying, and shedding *Mycoplasma ovipneumoniae,* augmentations will not be conducted into these herds for the forseeable future. *M. ovipneumoniae* is a bacteria, which has been recognized west wide and in Nevada, as playing a significant role in the bighorn sheep pneumonia complex that typically causes high summer lamb mortality and often contributes to long-term poor lamb recruitment.

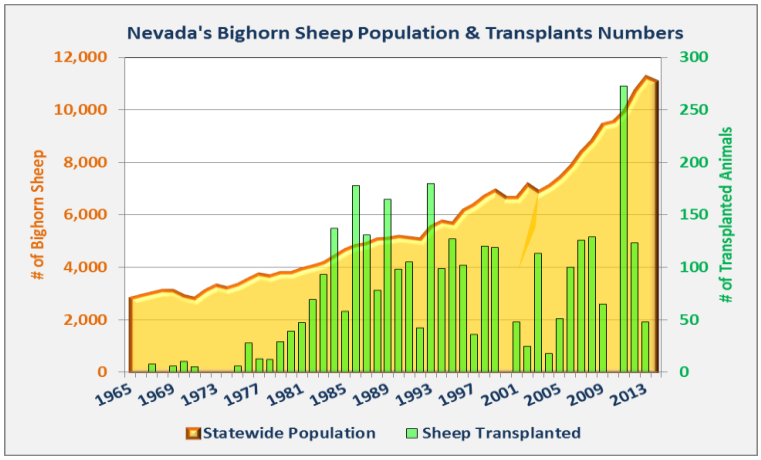
For 2014, with limited release site opportunities within Nevada and in other states and over 500 animals above sustainable management levels for several herds, NDOW is recommending ewe hunts in 4 of the 60 bighorn hunt units. The recommended ewe quota for Unit 068, the Sheep Creek Range, is intended to use a combination of harvest and removal for transplant stock to reduce the herd to a sustainable level. The goal is to remove 30

bighorn by this winter due to deplorable range conditions that have placed this herd in peril of experiencing high mortality in the short term.

For desert bighorn sheep, the Unit 212 (Lone Mountain) ewe hunt is based on the highest ever recorded population (430). *M. ovipneumoniae* was detected in the Lone Mountain herd in 2014 with sampled animals showing signs of pneumonia, eliminating it as an option for transplant stock. The population is 150 or more above its desired sustainable level. The 2014 recommended quota reflects the approach of taking multiple years to reach its sustainable level.

Unit 213, Monte Cristo Range herd has also exceeded its sustainable management level by 80 animals. This herd is too close to some of the identified release sites to use as source stock. Additionally, known movement with Lone Mountain may have already spread pneumonic pathogens to the Monte Cristos. The recommended ewe quota will help reduce the herd closer to its sustainable level. NDOW will still consider the herd for 2014 captures if a release site can be identified and sampling doesn't detect *M. ovipneumoniae*.

The Unit 268, Muddy Mountain herd which is managed with the Black Mountains is estimated at over 900 bighorn (record high). This is 200 above its sustainable management level. Recent coordination with UDWR staff has identified 50-75 as the target goal for capture and removal from the Muddys for relocation to Utah. Recent concerns of in-state releases involving habitat degradation, lack of separation with domestic sheep, and inability to benefit herds based on past releases, have caused some release sites to no longer be considered. Also, until alternate capture timing can be accommodated, Muddy Mountains will not be considered for more northerly releases. Over 200 bighorn have been removed from the Muddys over the last 7 years and the population is still increasing. The recommended ewe quota in concert with removals for the state of Utah may result in 1/3 of the necessary population reduction to reach its sustainable level. Continued drought conditions are so severe in the Muddys, that temporary water stations are planned for summer 2014 prior to fall removals.



Tri-State Meeting of the Minds
Disease Concerns for Desert Bighorn Populations

Pneumonia outbreaks in northern sheep caused by M. ovi have by comparison been well studied – but there is little known about M. ovi in deserts and actually not many well studied and documented disease events either. With all the testing and strain typing back, we now know that AZ and NV share a strain of M. ovi and CA and NV share a strain of M. ovi. AZ, CA and NV have documented sick sheep and poor lamb recruitment. It appears there may be a regional disease event happening.

A meeting with Arizona, California, and Nevada was convened to discuss regional disease concerns and to begin outlining a multi-state plan that addresses what we know, what we don't know and what we are going to do about it.

Desert Bighorn Sheep – Regional Stakeholders Meeting to Discuss Pneumonia Events

The meeting was held May 19, 2014 in Laughlin, NV

Notes from this meeting will be included in the next newsletter.

Objective: To summarize what we know about desert bighorn sheep pneumonia outbreaks and to prioritize future surveillance, monitoring and research needs and explore management options in the region (CA/NV/AZ).

Agenda

- Welcome and introductions, objectives of the meeting (Peri Wolff / Mike Cox)
- Locations and data (Ben Gonzales / Peri Wolff moderators):
  - 30 minute State of the State summary: Include primary herds of interest (incorporating relevant disease/outbreak data and herd or population demographics) This allows 20 minutes for presentation and 10 minutes for questions from the group)
    - Arizona including Grand Canyon
    - California
    - Nevada
- 30 min overview of connectivity data for regional populations (Clint Epps/John Wehausen)
- Identify Key Questions for surveillance, monitoring and research (Clint Epps moderator)
  - Review of Sierra bighorn sheep surveillance program
  - Group discussion
- Establish priorities, resources, timelines for Identified Key Questions (Tom Stephenson moderator)
- Short and long-term management options (Mike Cox moderator)
  - Update from Hell's Canyon – experimental management of pneumonia in bighorn sheep (Frances Cassirer, IDFG)
  - Group discussion
- Wrap up next steps – product preparation (Peri Wolff / Mike Cox)

DBC Officers and Technical Staff Members

The Council officers and Technical Staff members are as follows:

Council Chair:	Ben Gonzales
Vice-chair:	Steve Torres
Secretary:	Amber Munig
Treasurer:	Kathy Longshore
Transactions Editor:	Brian Wakeling
Tech Staff Chair:	Clay Brewer
Tech Staff:	Ray Lee, Elise Goldstein, Mark Jorgensen, Mara Weisenberger, Brian Wakeling, and Patrick Cummings

Interested in the Desert Bighorn Council?
Questions about our organization or any of our projects?
Please contact us – we'll be happy to answer your questions.

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