ARIZONA DESERT BIGHORN SHEEP SOCIETY
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www.adbss.

3/30/2018

To: AZSFWC Grant Committee
PO Box 12590
Glendale, AZ 85318-2590

From: Charlie Kelly, 2018 ADBSS Vice President

Re: 2015 Catalina Grant Followup Report

Dear AZSFWC Grant Committee,

We recently realized a followup report had not been filed for the grant given by the AZSFWC grant program to the Santa Catalina Bighorn Sheep Reintroduction Project. Please accept this report as a followup and we apologize for the delay in forwarding it.

The funds were used in the general operation of the project during 2015. This project has included four translocations to date, the collaring and monitoring of newly released sheep, and a very organized predator plan. Now that the herd is somewhat established the removal of mountain lions has been suspended per the agreed upon thresholds.

Both the Arizona Game and Fish Department, as well as the Catalina Restoration project have done a very comprehensive job of providing updates to the participating partners, sponsors and the general public, featured on their respective sites:
www.azgfd.com/Wildlife/GameManagement/BigHornSheep/

and www.catalinabighornrestoration.org/.

The Santa Catalina Bighorn Sheep Reintroduction Project report from April 9th through 22nd, 2015 is attached. In it on page two, the AZSFWC is recognized for their contribution along with their logo. Ben Brochu, the Wildlife manager at the time from Region 5, also compiled a Special Performance Report covering July 1st, 2014 through June 30th, 2015. In it on page 4, he recognizes under "funding" the AZSFWC. At the 2015 ADBSS annual fundraising banquet, Jim Unmacht presented a copy of the $10,000. check to Ben Brochu for the grant payable to the Arizona Game and Fish Department, which I've enclosed a copy of.

Also enclosed is a picture ADBSS Past President Joe Sheehey took in 1977 of the then healthy Catalina sheep herd before their disappearance. Many photographs have been published of the project since it's inception, including a few in the attached briefing for the period of October 27, 2016 – November 30, 2016. The pictures include the relase of newly translocated sheep as well as sheep on Pusch Ridge.

The board of directors of the ADBSS sincerely thanks the AZSFWC for their financial support of this very worthwhile and successful reintroduction project.

Sincerely,

Charlie Kelly

Charlie Kelly
2018 ADBSS Vice President

Santa Catalina Bighorn Sheep Reintroduction Project

April 9 through 22, 2015

BRIEFING

The following is a summary of bighorn sheep reintroduction activities on the Coronado National Forest from April 9-22, 2015.

LAMBS

There are no updates on lambs for this reporting period.

MORTALITIES

There were no known mortalities of collared sheep during this reporting period. The last known mortality was on December 23, 2014.

CURRENT POPULATION STATUS

As of April 8, 2015, 40 collared sheep are known to be alive.

RESEARCH FIELD NOTES

There are no research updates.

VOLUNTEER EFFORTS

This project benefits from the phenomenal efforts of a core group of volunteers who ensure that VHF telemetry checks of collared sheep are conducted every day of the week. We would like to recognize Ron and Karen Yee, Doug Dalby, Joe and Lindy Sheehey, and Danielle Parrish for their dedication to the success of this project. These six people have completed daily VHF checks for the past 15 months, volunteering over 2,700 hours of time to the project thus far!

The Ram Rangers, comprised of 80 members of the Santa Catalina Volunteer Patrol, have contributed to the critical human dynamic of this project. Approximately 200 times per month, these volunteers can be found on major trails in the bighorn sheep management area educating recreationists about trail restrictions to benefit the sheep, in addition to explaining the reasons for the restrictions and providing some background on this project.

Yet another cadre of 17 volunteers spent January through March hiking in much of the challenging terrain in the Pusch Ridge Wilderness, visiting a sample of sites where the bighorn sheep have spent time as well

as random points in order to characterize habitat and gather data on which factors might influence the risk of mortality for individual sheep.

Projects of this scale simply cannot be successful through the efforts of staff alone; we rely on the generous contributions of numerous volunteers in our community who continue to donate thousands of hours of their precious time in order to see bighorn sheep restored to the Catalinas. Thank you!

PROJECT SPONSORS

We would like to recognize the following groups as major funding partners for the project: Arizona Sportsmen for Wildlife Conservation, Arizona Chapter of Safari Club International, Safari Club International Foundation, Wild Sheep Foundation, and the Arizona Desert Bighorn Sheep Society.

LINKS

For project background and previously-reported information on project events, including photos and videos, as well as meeting notes and minutes please visit www.azgfd.gov/catalinabighorn.

Additional project information can be obtained by visiting the Arizona Game and Fish Department Facebook page at www.facebook.com/CatalinaBighorns, the Arizona Game and Fish Department webpage at www.azgfd.gov/catalinabighorn, the Arizona Desert Bighorn Sheep Society webpage at www.adbss.org or by visiting the Catalina Bighorn Advisory Committee webpage at www.catalinabighornrestoration.org. This update is a public document and information in it can be used for any purpose.

TO SUBSCRIBE

If you would like to receive project updates as they are published please send your email address to ldesouza@azgfd.gov.

COMMUNICATION AND COORDINATION

The next written briefing will be provided on May 8, 2015.

CONTACT

Mark Hart is the Public Information Officer for this project and can be reached at (520) 628-5376.

Special Performance Report
Project W-53-65
SPECIES: Bighorn Sheep
PERIOD COVERED: July 1, 2014 – June 30, 2015
EAC: M13-0925082702

OBJECTIVE: Establish populations of game animals in areas of potential habitat in Arizona and evaluate post-release success of reintroduced populations - Unit 33 (Santa Catalina Mountains), desert bighorn sheep reintroduction and post-release monitoring.

1. Evaluate areas known to have supported wildlife populations in the past; site evaluations will be done in conformance with established guidelines.
2. Negotiate contracts or agreements with other agencies for the purpose of obtaining wildlife of subspecies suitable for relocation to Arizona.
3. Capture and transport wildlife from populations within and outside Arizona to candidate sites in Arizona.
4. Determine post-release size, distribution, and sex-age characteristics of reintroduced populations.
5. Compile and analyze data and prepare job progress and/or final reports.

SUMMARY OF PROGRESS

Objective 1: See the Unit 33 Santa Catalina Mountains Special Performance Report for the period of July 1, 2013 – June 30, 2014 for the historical presence of bighorn and habitat evaluation information for the Santa Catalina Mountains (Catalina's).

Objective 2: To date, two releases of bighorn have occurred into the Catalina Mountains. Below are the details for each:

- 2013 – 31 bighorn were captured in the Trigo and Plomosa mountain ranges (Units 43B and 44B respectively) and released at the mouth of Montrose Canyon in Catalina State Park.
- 2014 – 30 bighorn were captured near Canyon Lake and from the Plomosa mountains (Units 22/24B and 44B respectively) and released at the base of Pusch Ridge near La Quache.

Objective 3: On November 19 and 20, 2014, the Department, in cooperation with the Arizona Desert Bighorn Sheep Society, Bureau of Land Management, Coronado and Tonto National Forests, and the Catalina Advisory Committee augmented the 12 surviving adult bighorn in the Catalina's with 30 additional sheep (20 adult females, three yearling females, four adult rams, two yearling males and one juvenile male) from the Plomosa Mountains and Canyon Lake areas. All 30 sheep were fitted with Lotek GPS collars (24 Iridium and six Globalstar) to facilitate the monitoring of their locations and survival status. Sheep were fitted with pink or yellow plastic ear-tags (numbers ranged from one to 55) in their left ear. Tissue samples (blood, nose, and throat) were collected from all sheep and sent to a lab for disease testing. All sheep received injections of antibiotics and fluids as needed. A summary of November 2014 transplant effort including survivorship and lamb productivity is provided in Table 1.

Table 1. Summary Data for Bighorn Sheep Transplanted into the Catalina Mountains, Arizona (excluding mortalities from the 2013 release)

Collar Number	Transplant Year	Ear Tag Number	Ear & Tag Color	Sex	Age	Mountain Range	Other Comments
No collar	2013	39	R-Blue	M	Juv	Plomosa	Status unknown, presumed dead
34635	2013	21	R-Blue	F	A	Trigo	
34639	2013	29	R-Blue	F	A	Trigo	2014 lamb, unsuccessful
34640	2013	25	R-Blue	F	A	Trigo	
34641	2013	44	R-Blue	M	4	Plomosa	Sole 2013 ram, successfully bred ewes
34643	2013	38	R-Blue	F	A	Plomosa	Mortality November 11, 2014-Liver Issue
34644	2013	46	R-Blue	F	A	Plomosa	2014 Lamb - Successful (ewe)
34653	2013	22	R-Blue	F	A	Trigo	
34654	2013	48	R-Blue	F	A	Plomosa	2014 lamb, unsuccessful
34655	2013	45	R-Blue	F	Y	Plomosa	2014 lamb, unsuccessful, 2015 lamb
34656	2013	24	R-Blue	F	A	Trigo	2014 Lambing possible; unmarked yearling observed with this animal on 1/22/2015
34660	2013	37	R-Blue	F	A	Plomosa	2014 lamb, unsuccessful
34662	2013	34	R-Blue	F	A	Trigo	
34663	2013	31	R-Blue	F	A	Trigo	
37430	2014	5	L-Pink	F	A	22/24B	2015 lamb
37431	2014	6	L-Pink	F	A	22/24B	2015 lamb
37432	2014	23	L-Pink	F	A	Plomosa	2015 lamb
37433	2014	9	L-Pink	F	A	22/24B	
37434	2014	38	L-Yellow	F	A	Plomosa	2015 lamb
37435	2014	15	L-Pink	F	Y	Plomosa	Mortality December 7, 2014 – lion kill
37436	2014	11	L-Pink	F	A	22/24B	2015 lamb
37437	2014	4	L-Pink	F	A	22/24B	2015 lamb
37438	2014	18	L-Pink	F	A	Plomosa	
37439	2014	12	L-Pink	F	A	22/24B	2015 lamb
37440	2014	17	L-Pink	F	A	Plomosa	2015 lamb
37441	2014	29	L-Yellow	F	A	Plomosa	
37442	2014	8	L-Pink	F	A	22/24B	2015 lamb
37443	2014	16	L-Pink	F	A	Plomosa	2015 lamb
37444	2014	7	L-Pink	F	A	22/24B	2015 lamb
37445	2014	25	L-Pink	F	A	Plomosa	2015 lamb
37446	2014	24	L-Pink	F	A	Plomosa	
37447	2014	20	L-Pink	F	A	Plomosa	Mortality December 11, 2014 – lion kill
37448	2014	14	L-Pink	F	A	22/24B	
37449	2014	3	L-Pink	F	Y	22/24B	2015 lamb
37450	2014	10	L-Pink	M	A	22/24B	
37451	2014	22	L-Pink	M	A	Plomosa	
37452	2014	2	L-Pink	M	Y	22/24B	
37453	2014	41	L-Yellow	M	A	Plomosa	
GS-37454	2014	21	L-Pink	F	A	Plomosa	2015 lamb
GS-37455	2014	1	L-Pink	M	Y	22/24B	
GS-37456	2014	13	L-Pink	F	A	22/24B	
GS-37457	2014	19	L-Pink	F	A	Plomosa	2015 lamb
GS-37458	2014	55	L-Yellow	M	A	Plomosa	
GS-37459	2014	40	L-Yellow	M	A	Plomosa	

Objective 4:

Overall Summary

To date, 61 bighorn have been released into the Catalina's, 60 of which were collared with satellite GPS collars. There have been a total of 20 mortalities, 17 from predation by mountain lions, one from capture myopathy, one from liver failure and one from predation by an unknown felid, likely a bobcat. To date, three mid-aged male mountain lions have been removed pursuant to the Adaptive Mountain Lion Management Plan developed for the project.

A different release site was used for the 2014 release which is located at the base of Pusch Ridge and referred to as La Quache. We believe the high mortality rates associated with the 2013 release was due in part to using a poor release site and this may have predisposed bighorn to predation by mountain lions. The decrease in mountain lion caused mortalities for the 2014 release may be attributable to several factors including; a change in release location in 2014, the acquired experience of the 2013 release group, and/or the fact that many of the 2014 release group were translocated from area with habitat characteristics and predator densities very similar to those that exist within the Catalinas and that these animals were more adept at avoiding mountain lion predation. It is also possible that the administrative removal of three mountain lions in year 1 may have contributed to the reduction in lion predation experienced thus far in year 2. Table 2 contains additional details for each of the bighorn releases.

Table 2. Summarized information to date by release year

	2013 Release Summary	2014 Release Summary
Total BHS released	31	30
Release Site	Montrose Canyon	La Quache
Number collared	30	30
Number Lost	18	2
Predation by lions	15	2
Capture myopathy	1	
Predation by other felid (bobcat)	1	
Natural mortality	1 (liver failure)	
Number of lions removed	3	0
Males	3	
Females		
Lambs born	5	16
Lambs survived	1	TBD

Movements: Since the releases in both 2013 and 2014, the transplanted sheep continue to remain in Unit 33. After initially dispersing into low quality habitat at upper elevations of the Catalina Mountains where many sheep succumbed to predation, the surviving 2013 sheep ended up in higher quality habitats centered on Pusch Ridge. Since their release in November of 2014, the 2014 sheep have joined with the surviving 2013 animals and generally remained within higher quality habitat on the western and southern portions of the Catalina Mountains.

Helicopter Survey: On December 3, 2014 AGFD personnel surveyed approximately 45 square miles of bighorn habitat in Unit 33 over about 5 hours. Sixteen bighorn were observed (15 of 42 collars) for a known observation rate of 36%. We saw one group of three sheep, two groups of four sheep and one group of five sheep (Table 3). Using the Kofa estimator, the population is estimated at 32 sheep with an estimated observation rate of 66%. Our known population at the time of the survey was 43 sheep and they all appeared to be within and available to be surveyed when the survey was conducted.

This further confirms that bighorn population estimates derived from helicopter surveys are conservative, at least in central Arizona in similar habitats to Unit 33. Habitat in the Catalina's is similar to that found in the Minerals, Aravaipa/Galiuros, Mazatzals, Superstitions and possibly some of the units containing populations of Rocky Mountain bighorn. Surveys will continue to be flown every year until 2018 (five years total), then it will follow the triennial survey period used statewide for bighorn populations unless there is a need to survey more frequently.

Table 3. Catalina Bighorn Helicopter Survey Data

Unit 33 - Catalina Bighorn Helicopter Survey Data													
Year	C1	C2	C3	C4	Ewes	Lambs	Yrl Ram	Yrl Ewe	Total	L:100E	Y:100E	Groups	Survey Time
2014	0	0	0	0	14	1	1	0	16	7	7	4	5

Volunteer Monitoring: Bighorn sheep are monitored by AGFD personnel with assistance from a dedicated group of volunteers on a daily basis. Volunteers have spent an estimated 4392 hours over the course of the project to date (1472 and 2920 hours in 2013 and 2014, respectively). This volunteer effort has been indispensable to the success of the project.

Funding: This is the second year of the five year project. Support for this project continues through the Pittman-Robertson funding, State Tag Funds and Private Grants/Donations. We wish to thank the Wild Sheep Foundation, Safari Club International Foundation, Arizona Desert Bighorn Sheep Society, Arizona Chapter of Safari Club International Foundation, Arizona Sportsmen for Wildlife Conservation, and the private donors who have financially supported the project. (Figures 1-3).

Figure 1 - Predicted Total Project Expenses (Itemized)

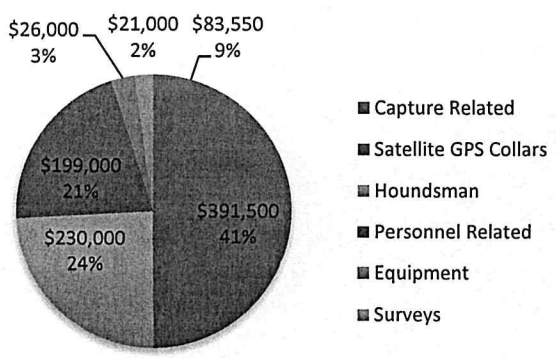
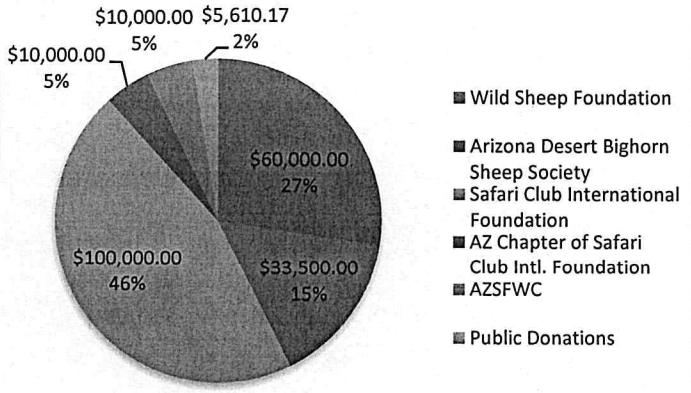
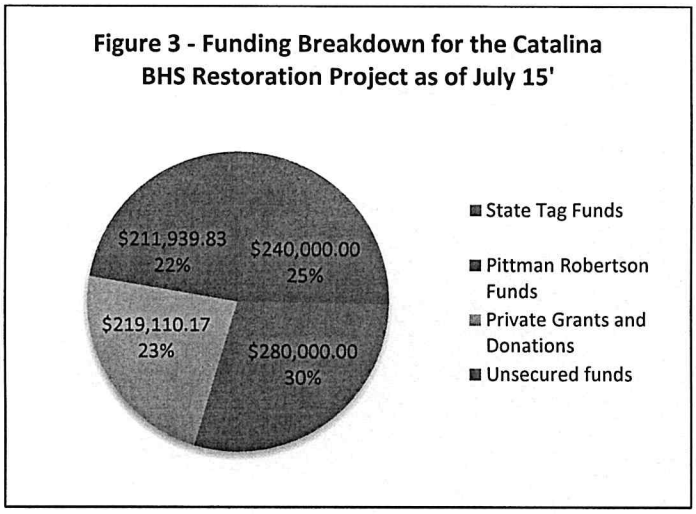


Figure 2 - Itemized Private Grants and Donations Received as of July 15'





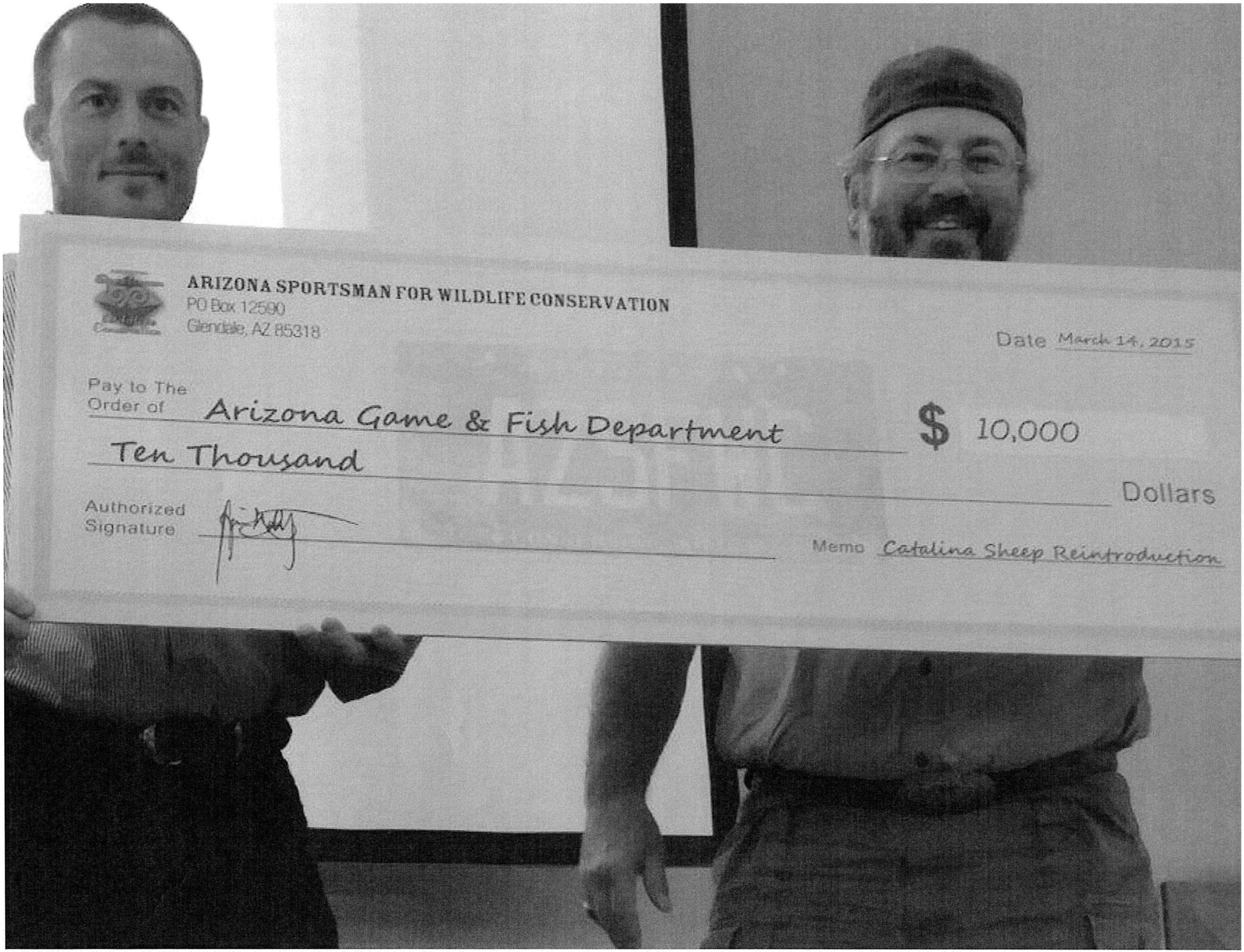
CONCLUSIONS, EVALUATIONS, AND RECOMMENDATIONS

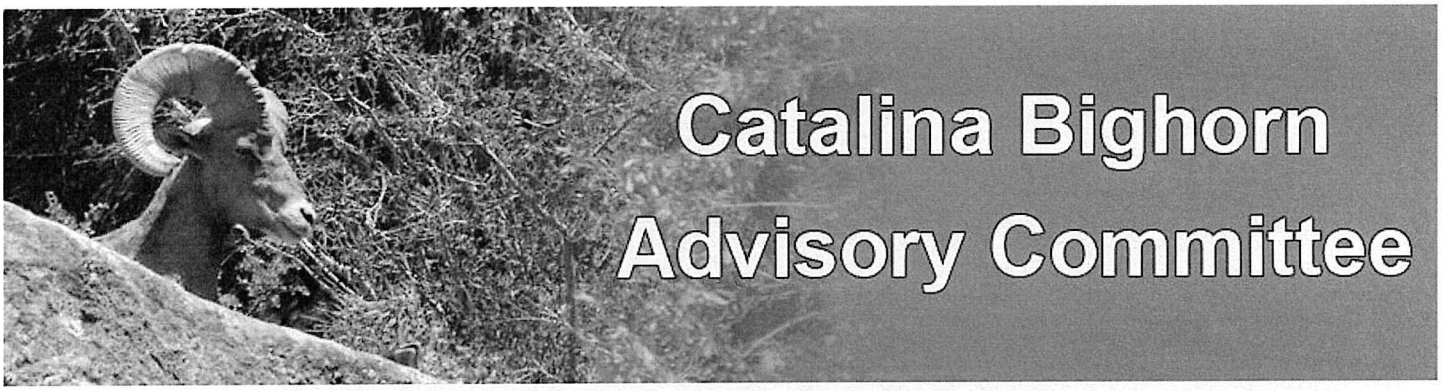
A third release of 30 bighorn is currently being planned for November of 2015. Source populations may be units 37A, 22, 24B, 43B and 44B or a mix of these. A final decision in regards to the source population(s) has not been made as of writing this. All translocated bighorn sheep will again be outfitted with satellite GPS collars to facilitate monitoring efforts. The Pusch Ridge – La Quache release site will be used again to maximize the likelihood of the released sheep joining up with the 2013 and 2014 sheep thereby maximizing their survivorship.

Helicopter surveys will be conducted in October to establish survey blocks, observation rates and to survey released bighorn. Results on disease testing can be found on file in Game Branch titled 2014 BHS Capture Report.

Submitted by: Ben Brochu
Wildlife Manager, Region 5

Approved by: Al Eiden
Acting Game Branch Chief


ARIZONA SPORTSMAN FOR WILDLIFE CONSERVATION
PO Box 12590
Glendale, AZ 85318
Date March 14, 2015
Pay to The Order of Arizona Game & Fish Department
$ 10,000
Ten Thousand
Dollars
Authorized Signature
Memo Catalina Sheep Reintroduction



Get the Project Status Updates here

Read the Advisory Committee's op-ed in the *Arizona Daily Star*, December 2016 here

photo: Desert bighorn sheep in Dead Horse Canyon, Santa Catalina Mountains, 1977. (credit: Joe Sheehey)

1977

Welcome. This is the site for the Catalina Bighorn Advisory Committee (CBAC), a cooperative effort to restore a healthy, viable and self-sustaining population of desert bighorn sheep to the Santa Catalina Mountains, outside Tucson, Arizona.

Santa Catalina Bighorn Sheep Reintroduction Project

October 27, 2016 – November 30, 2016

BRIEFING

The following is a summary of bighorn sheep reintroduction activities on the Coronado National Forest from October 27 through November 30, 2016.

FOURTH TRANSLOCATION

On November 22, the Arizona Game and Fish Department (Department) accomplished the fourth translocation of this reintroduction effort when 20 bighorn sheep were released into the Santa Catalina Mountains. The group included 15 ewes and five rams that were captured the previous day in the Plomosa Mountains near Quartzsite, Arizona. The animals ranged in age from one to older than five years. Six of the animals, one ram and five ewes, were fitted with GPS collars. This is different from the previous three releases in the Catalinas in which nearly every animal was collared. There is no longer a need to have this population of bighorn sheep collared because the field research is coming to an end. It is standard practice for the Department to collar 30 percent of translocated animals.

Bighorn sheep jump from their transport trailer and bound off into their new home. Photo by Mark Hart/ AZGFD

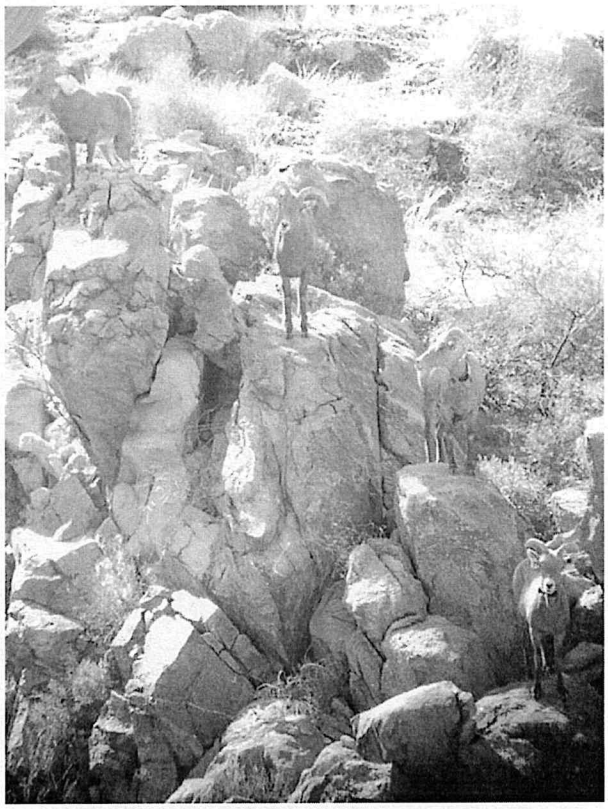
END OF ACTIVE MANAGEMENT

The goal of this reintroduction project was to establish a self-sustaining population of bighorn sheep in the Catalina Mountains that coexists with an equally healthy native predator population in a naturally functioning ecosystem. Predation by mountain lions has been shown to be a limiting factor in restoration efforts of bighorn sheep, so until now, mountain lions that have preyed on bighorn sheep have been pursued, and on some occasions removed. With the population of desert bighorn sheep in the Catalinas now at a level that has historically been sustainable, active predator management has ended. While the predator management plan was originally conceived to be a four-year undertaking, the success of the reintroduction program overall has allowed the curtailment of predator management early.

RESEARCH NOTES

Research biologists observed a lot of mixed groups (rams and ewes) over the last month. The groups were fairly large with an average of six individuals, and the largest observed was 12 animals. At least one lamb was seen in four different groups, and at least one uncollared/untagged sheep was observed in four different groups. Biologists will continue to collect behavioral observations through January and will conduct habitat measurements through June 2017. Project data will then be analyzed to examine the various factors that increase risk of mortality to sheep. Some factors considered will be lion predation, habitat characteristics, and sheep group dynamics. Additional detailed analyses should help to identify important habitat characteristics and inform habitat requirements for bighorn sheep in the Catalinas and across their desert range.

Four ewes observed last week in stair-step formation, including two born in the Catalinas. Photo by Andrew Jones/AZGFD



MORTALITIES

There have been no mortalities of collared sheep since October 21, 2016.

CURRENT POPULATION STATUS

As of November 30, 2016, 39 collared sheep are known to be alive, and there are approximately 85 animals that make up this population in the Catalina Mountains.

LINKS

For project background and previously-reported information on project events, including photos and videos, as well as meeting notes and minutes please visit www.azgfd.gov and click on "Wildlife", then "Catalina Bighorn Sheep" under the heading "Additional Wildlife Information".

Additional project information can be obtained by visiting the Arizona Game and Fish Department Facebook page at www.facebook.com/CatalinaBighorns, the Arizona Desert Bighorn Sheep Society webpage at www.adbss.org, or by visiting the Catalina Bighorn Advisory Committee webpage at www.catalinabighornrestoration.org. This update is a public document and information in it can be used for any purpose.

COMMUNICATION AND COORDINATION

The Department's initial objectives have been met, and there is a healthy population of bighorn sheep in the Catalinas. The diminishing number of collars makes it impractical to closely track this population. The Department will no longer be sending monthly updates or posting recent events related to this project. All past updates can still be found online by following the link to the Arizona Game and Fish website above.

CONTACT

Mark Hart is the Public Information Officer for this project and can be reached at (520) 628-5376.