



Catalina Bighorn Sheep Reintroduction Project July 7, 2014 – July 20, 2014

BRIEFING

The following is a summary of Catalina Bighorn Sheep Reintroduction activities on the Coronado National Forest. This project status update covers the period from July 7 – 20, 2014. For project background and previously-reported information on project events, including photos and videos, please visit www.azgfd.gov/catalinabighorn.

Additional project information can be obtained by visiting the Arizona Game and Fish Department Facebook page at <https://www.facebook.com/azgafd#!/CatalinaBighorns>, the Arizona Game and Fish Department webpage at <http://www.azgfd.gov/catalinabighorn>, the Arizona Desert Bighorn Sheep Society webpage at <http://www.adbss.org> or by visiting the Catalina Bighorn Advisory Committee webpage at <http://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 jsacco@azgfd.gov.

CURRENT POPULATION STATUS

Including this reporting period, it has been over four months since a sheep mortality. The original release of 31 sheep consisted of 21 adult females or ewes, three yearling/juvenile ewes, five adult males or rams, and two yearling/juvenile rams. Thirty of the released sheep were outfitted with satellite GPS collars to provide managers with up-to-date information to help make adaptive, data-driven decisions. As of July 20, 2014, 13 of the remaining 14 collared sheep are known to be alive; one of the collars may be malfunctioning.

LAMBS

Biologists continue to monitor the population and check on the lambs born earlier this year. To date five lambs have been observed during this season and all indications are that they continue to thrive. GPS collar data suggests that the ewes that had lambs are all doing well. Although visual observations of the ewes and their lambs are sporadic, we assume the continued survival of the ewes is correlated to lamb survival. However, visual observation is the only way to confirm lamb survival since the lambs do not have tracking collars. Both Research Branch observations of individual sheep and formal aerial survey efforts in the fall will help to determine the actual lamb survival rate. At last observation 4-6 weeks ago, the lambs were doing well and appeared healthy. The continued development of the lambs is a source of cautious optimism as the project moves forward and there is video of two of the lambs interacting available on the website. Because females with lambs are especially sensitive to disturbance, there are

trail restrictions in place inside the Bighorn Sheep Management Area to minimize any negative impacts from human disturbance on the sheep. Both trailhead notices and volunteers on the trail have been reminding hikers of the potential adverse impacts to the sheep caused by dogs (a year round restriction) or by people hiking more than 400 feet off-trail (restricted January 1 through April 30) within the bighorn sheep recovery area. For additional information, please visit the U.S. Forest Service webpage at www.fs.usda.gov/coronado/.

COMMUNICATION AND COORDINATION

The next written briefing will be provided on August 8, 2014.

CONTACT

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

RESEARCH PROJECT FIELD NOTES

One of the primary objectives of the Research Branch study on the Catalina bighorn sheep is to identify and evaluate the relative influence of various behavioral, demographic, and habitat attributes on the landscape or in sheep ecology that put a bighorn sheep at risk of mortality. To evaluate these risk factors, we'll be using a model known as the Cox proportional hazards (PH) model to look at the time it takes for a sheep mortality to occur and what variables most likely predict its occurrence over a given time period or "interval of risk". The Cox PH is a familiar model in human medicine and disease studies, for example, in considering the risk factors contributing to heart disease, but it can also be applied in wildlife survival analyses.

We'll be measuring the different risk factors for sheep via ground-based techniques or through remote-sensing methods. One critical variable we'll record is the amount of horizontal visibility present at sheep locations on the landscape. Visibility is an especially important factor for determining the risk of cougar predation on sheep because mountain lion hunting strategies rely on visual obstruction in order to stalk close to prey, and sheep rely on the ability to visually detect danger at a distance and retreat to safer terrain when threatened. Therefore, bighorn sheep may be at higher risk of predation in areas where horizontal visibility is obscured. Through some fairly simple measurements we'll make on the ground at sheep locations that the GPS collars provide us, we can estimate just how much a sheep might see as it stands in a spot and how much the view might be obstructed by things like boulders, topography, or vegetation. For instance, even cactus may help protect a sheep or hinder its' ability to see a lion stalking nearby! While the methods for measuring this important habitat characteristic are pretty straightforward, the challenge for our research team will be reaching all the necessary locations, so we may be calling for volunteers to help us in the near future! So if you like to hike in the Catalinas and want to follow in the footsteps of a bighorn sheep or two, there may soon be an opportunity to be involved in our ongoing research!

OTHER REMARKS

Monitoring bighorn sheep can be difficult and costly due to the nature and accessibility of the terrain in which they live. This project benefits from GPS collars, which provide essentially real-time locations and mortality alerts when sheep exhibit little or no movement over a predetermined number of hours. In addition to satellite communication, the collars transmit a Very High Frequency (VHF) radio signal that can be used to locate sheep and is also equipped with a redundant mortality mode that changes the VHF signal transmitted when it's activated. We often use this additional feature to determine the validity of a GPS-reported mortality event. Volunteers on this project make daily field checks to ensure that the VHF signals are transmitting normally and not in mortality mode. Coupled with the GPS data, this unobtrusive VHF monitoring provides critical information that biologist use daily to evaluate the status of collared sheep and the lambs accompanying them.