



## **Santa Catalina Bighorn Sheep Reintroduction Project**

*September 24 – October 7, 2015*

### **BRIEFING**

The following is a summary of bighorn sheep reintroduction activities on the Coronado National Forest from September 24 – October 7, 2015.

### **DISEASE**

In the last update, it was reported that ewe ID 37442 died on September 20. Laboratory results indicate that this animal tested positive for *Mycoplasma ovipneumoniae*, a bacterial agent of pneumonia, also detected in three of four previous mortalities during the past two months. Contagious pneumonia is one of many common diseases naturally occurring in bighorn sheep populations.

### **SURVEY RESULTS**

On October 1, the Department conducted helicopter surveys for bighorn sheep in the Catalinas. In order to conduct an unbiased survey, observers did not look at the GPS collar website and did not conduct any radio telemetry for over a week leading up to the survey. A total of 27 sheep were observed during the survey, including 3 rams, 16 ewes, 7 lambs, and 1 yearling. The metric the Department uses for measuring lamb recruitment is the number of lambs per 100 ewes. Survey results equate to 44 lambs per 100 ewes, which is well above the 20-30 lambs per 100 ewes ratio that is typical of desert bighorn populations statewide. Eleven collared ewes and five collared rams were undetected on the survey, so it is likely there are also more lambs in this population. Observations of 19 of 35 collared sheep during the survey resulted in a 54% observation rate. The Department will continue to gather these data over the next few years to determine if an observation rate of roughly 50% is representative of the habitat in the Catalinas.

Each year, the Arizona Game and Fish Department (Department) conducts aerial surveys for big game species in areas within each game management unit in the state. Helicopter surveys are conducted every three years for established bighorn populations, but newly established or augmented bighorn populations can be flown more frequently, as the Department has done in the Catalinas. During these flights, biologists record herd demographics which include metrics like group size, gender, and age class. These data are used to quantify how many animals were recruited into the population and how many individuals are in each cohort. This information helps biologists determine whether a population is growing, stable or declining.

During surveys, a number of factors can influence one's ability to observe animals from the air including weather, flight speed and altitude, vegetation type, topography, and herd size. In southwestern Arizona where the majority of bighorn occur, the Department has conducted a number of mark-recapture studies over the last few decades in which a subset of animals was marked, typically with collars and/or ear tags.

The populations including these marked sheep were then surveyed by helicopter in a standardized fashion to determine how many animals were observed, how many were missed, and what their respective group sizes were. Data collected from the mark-recapture studies have allowed the Department to calculate an overall observation rate for aerial surveys. Using these data, the Department has developed a model that extrapolates from numbers of bighorn sheep observed to predict the total population size for an area with similar habitat.

However, vegetation types are different in bighorn sheep habitat in central and southern Arizona, potentially leading to differences in the ability to detect animals during surveys. The model developed in western Arizona may therefore be less accurate when applied to results of surveys flown in the Catalina Mountains. Because the Catalina adult bighorn sheep are currently all collared, and the true population size is known, the Department had a unique opportunity to evaluate the effectiveness of the existing model in these mountains. By comparing aerial survey sightings to known numbers of collared sheep on the ground, the Department can determine the observation rate and compare it with the model developed in southwestern Arizona. The data being gathered in the Catalinas will help the Department identify a model best suited for the Catalinas and other similar habitat types.

### **RESEARCH UPDATE**

As part of the Department's ongoing research on bighorn sheep habitat selection and factors which may influence bighorn sheep mortality, Department researchers observed 34 of 36 collared animals during the month of September. Field observations on group composition indicated an overall lamb:ewe ratio of 45 lambs per 100 ewes, which is similar to the ratio observed during the October 1 aerial survey. Bighorn sheep all appeared to be healthy during these observations, with males engaged in rutting behavior and some animals taking advantage of leaved-out ocotillo plants by standing on their hind legs to reach tender new leaves.

### **RELATED NEWS**

In 2006, voters in Pima County approved a sales tax increase to fund transportation projects, including dedicated funds for wildlife linkages in order to ameliorate the effects of roads as barriers to wildlife movements and reduce wildlife-vehicle collisions. In 2009, the Pima County Regional Transportation Authority approved funding for two wildlife crossing structures on Oracle Road/Highway 77 as part of a road-widening project from Tangerine Road to the Pinal County line. Construction began on the underpass and overpass structures for wildlife this summer. Target species for the Oracle Road wildlife crossings include a variety of species such as badger, black bear, bobcat, javelina, kit fox, mountain lion, mule deer, gila monster, and desert tortoise. However, the new population of bighorn sheep in the Catalina Mountains may also benefit from these structures that provide increased connectivity between neighboring populations of desert bighorn sheep to the west, such as those found in the Silver Bell and Waterman mountains.

### **CURRENT POPULATION STATUS**

As of October 7, 2015, 35 collared sheep are known to be alive.

## **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](http://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](http://www.facebook.com/CatalinaBighorns), the Arizona Desert Bighorn Sheep Society webpage at [www.adbss.org](http://www.adbss.org), or by visiting the Catalina Bighorn Advisory Committee webpage at [www.catalinabighornrestoration.org](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 [ldesouza@azgfd.gov](mailto:ldesouza@azgfd.gov).

## **COMMUNICATION AND COORDINATION**

The next written briefing will be provided on October 23, 2015.

## **CONTACT**

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