



## Catalina Bighorn Sheep Reintroduction Project September 29 – October 12, 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 September 29 – October 12, 2014. For project background and previously-reported information on project events, including photos and videos, please visit [www.azgfd.gov/catalinabighorn](http://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](mailto:jsacco@azgfd.gov).

### **CURRENT POPULATION STATUS**

Including this reporting period, it has been over six 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 October 12, 2014, 13 of the remaining 14 collared sheep are known to be alive; one of the collars may be malfunctioning.

### **COMMUNICATION AND COORDINATION**

The next written briefing will be provided on October 31, 2014.

### **CONTACT**

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

### **RESEARCH PROJECT FIELD NOTES**

A central part of our research project on the Catalina bighorn sheep is to understand how the sheep use their environment over space and time. Ecologists have long thought that animal use of environments

was dictated primarily by the distribution of resources and the presence of predators. To test these assumptions, we will use the sheep location data being collected via satellite collars to quantify an “intensity of space use” for each sheep by constructing a utilization distribution (UD). Each UD depicts the probability of an animal using a particular location within its home range, and the approach has many beneficial aspects. For example, where most analyses using GPS location data focus solely on individual sampling points, the UD allows us to consider the entire distribution of animal movements, thus providing a more holistic and landscape perspective. The construction of a UD also allows us to essentially stack multiple layers of information in one place and then sample that information all at once by ‘drilling’ down through it at any one spot on the UD, and in turn, the combination of variables underneath the UD surface helps to explain the height of that spot on the UD. Several variables will be included in the UDs to help quantify differential use of habitats by the sheep. We will incorporate information on the spatial distribution of habitats, several habitat characteristics (collected with the aid of our stalwart volunteers!!), distance to water, roads, development, and recreation, as well as topography (including slope, aspect, and a measure of how rugged an area is) and burn history. As we also wish to examine whether the sheep select habitat consistent with presumed predator avoidance strategies, we will also include other measures, such as horizontal visibility (i.e., how far or how much a sheep sees in any given habitat, given the vegetation and topography, as measured in the field). Once the data is in place, we’ll use a statistical framework to relate the relative intensity of use, as determined by the height of a UD, to measured habitat attributes. This will allow us to evaluate the relative importance of multiple habitat attributes to bighorn sheep habitat selection patterns. We’ll be building UDs for each sheep in each of two seasons—the warmer months typified from mid-April to mid-October, and the colder months from mid-October to mid-April. Our volunteers will be assisting greatly in collecting much of the habitat data from the field, and in the end, we anticipate the UDs will reveal some intriguing spatial patterns.