Laurie Rule (ISB # 6863)
Elizabeth Hunter Potter (OSB # 105482), *pro hac vice pending*
ADVOCATES FOR THE WEST
P.O. Box 1612
Boise, Idaho 83701
(208) 342-7024
(208) 342-8286 (fax)
lrule@advocateswest.org
epotter@advocateswest.org

Attorneys for Plaintiffs

UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF IDAHO

WESTERN WATERSHEDS PROJECT, and WILDEARTH GUARDIANS,

Plaintiffs,

v.

U.S. FOREST SERVICE,

Defendant.

DECLARATION OF AMY HAAK

I, Amy Haak, hereby declare as follows:

1. My name is Amy Haak and I reside in Boise, Idaho.

2. This declaration is submitted on behalf of the Plaintiffs regarding the threat to a population of Rocky Mountain Bighorn Sheep from the grazing of domestic sheep in the Snakey Canyon and Kelly Canyon domestic sheep allotments at the southern extent of the Beaverhead Mountains in Clark County, Idaho.

Summary of Work Performed

3. I was asked by the Plaintiffs to review the seasonal movements of three radio-collared Bighorn Sheep within a herd located at the southern extent of the Beaverhead Mountains west of the Snakey Canyon and Kelly Canyon allotments. The purpose of my analysis was to examine seasonal habitat occupancy by all of the Bighorn Sheep observed in the area and to evaluate the distance traveled by individuals.

Qualifications and Experience

4. I have over 30 years of professional experience in the application of geospatial technologies to environmental characterization and natural resource modeling. Presently, I am the Executive Director of Conservation Geography, a non-profit corporation that provides analytical support to non-profit conservation organizations. Previously I served as the assistant director of Trout Unlimited's National Science Program.

5. I hold a Bachelors of Arts degree in Geography from Dartmouth College (1980), a Master of Science degree in Geography (specializing in Land Management) from the University of Idaho (1984), and a PhD in Geography with an emphasis in conservation biology from the University of Idaho (2004).

Analysis of Bighorn Sheep Seasonal Movements

6. Plaintiff Western Watersheds Project ("WWP") provided me with GIS files containing telemetry data for three recently radio-collared Bighorn Sheep (8,241 points) as well as other observations of Bighorn Sheep in the area dating back to 2002 (1,930 other observations). The data was provided to the Plaintiff in May 2017 by the U.S Forest Service Region 4 in response to a Freedom of Information Act Request submitted in January 2017.

7. The database contained information on the date of each observation. This was used to divide the original data into two separate data layers based on season: October through March observations were classified as winter and April through September were classified as summer.

8. In order to quantify the seasonal overlap in habitat occupancy I applied a 100-meter buffer to each of the summer points (5,284 locations) based on the assumption that the habitat footprint of an individual animal will likely be at least that much as it moves around over the course of a day. I then overlaid the points for winter occupancy (4,887) and found that 87% (4,242) of these sightings fell within the summer use areas.

9. Exhibit 1 shows the results of this analysis. The summer use areas are shown in pink while the winter observations are shown as red for overlapping points and blue for those points that fall outside of the summer use areas. It should be noted that the largest concentration of distant winter observations (100 points) are found to the southeast of the summer use area in closer proximity to the Snakey Canyon and Kelly Canyon allotments. All three of the radio-collared individuals were found in this region at various times during the winter months.

10. Exhibit 1 also shows telemetry points for Ram #14668 for the period of November 17-20, 2015 (green points). WWP requested the telemetry data set for this Ram but

the Idaho Department of Fish and Game was unable to provide it in a digital format in a timely manner and instead provided maps of the data points. I conducted a visual review of the maps provided and found that the majority of the points recorded overlapped with the same habitat use areas as the other observations. However, as with the other radio-collared individuals, Ram #14668 also moved away from the core area towards the southeast for a period of time, coming in very close proximity to the Snakey Canyon and Kelly Canyon allotments. Given the isolated nature of these points, I was able to manually capture them within the project GIS for representation purposes.

11. In order to more closely assess the travel distance of individuals, I reviewed the daily locations for radio-collared Bighorn Sheep #30230. Exhibit 2 shows the 291 telemetry points recorded for this individual by month from January – March 2014. Because #30230 traveled the greatest distances in March, this month was further broken down into 10-day periods to provide a more detailed assessment of his travel distances. I have labeled some of the points with the specific date of the recording. From March 9 – 13, I measured a cumulative straight-line travel distance between points of over 10 miles. Given the rugged terrain the bighorn traversed, it can be assumed that the actual distance covered during this time period was significantly more.

I declare under penalty of perjury pursuant to the laws of the United States that the foregoing is true and correct.

Executed this 12th day of October, 2017 at Boise, Idaho.

Amy Haak