

FIELD TREATMENT OF BIGHORNS DURING PNEUMONA DIE-OFFS

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Abstract. Experience in the Lostine River, Oregon die-offs of 1986-87 and Hells Canyon die-offs of 1995-96 indicates field treatment of bighorns showing signs of respiratory disease with antibiotics and other drugs can improve herd survival. Survival rates of treated Lostine bighorns was 94% and Lower Hills Canyon 66%. A bighorn sheep emergency response team is proposed to address future disease outbreaks. Additional field testing with different drug combinations, as well as evaluation of survival rates of treated versus nontreated animals is needed.

INTRODUCTION

The purpose of this project is to rapidly respond to bighorn disease outbreaks to improve survival. Experience in the Lostine die-off of 1986-87 and the Hells Canyon die-off of 1995-96 indicates field treatment of bighorns showing signs of respiratory disease with antibiotics and other drugs can improve herd survival. Lostine bighorns were captured in a corral trap and given antibiotics and other drugs and released back on their range. The survival rate was 94% in animals receiving treatment. During the Hells Canyon die-off, 72 bighorns were captured using a helicopter and netgun and treated with antibiotics and other drugs. They were then trucked to holding facilities at the Idaho wildlife Health Lab in Caldwell. No animals died the first 16 days even though at capture time some were so sick they were unable to stand. Unfortunately, disease eventually killed 64 animals in the holding pens. We believe survival would have been better if they had been released back into the wild immediately after treatment. In Lower Hells Canyon, Oregon, 6 bighorns were captured using a helicopter and netgun; treated with antibiotics; radio collared and released. Four of six bighorns are alive at this writing. Two animals died two months and four months post treatment. Non-treated collared bighorns (transplants) in the area died and mortality rates exceeded 80% in the rest of the herd. This management practice appears to improve survival of bighorns in pneumonia outbreaks. However, additional field testing with different drug combinations, as well as evaluation of survival rates of treated versus non-treated animals is needed,

Capture Team

This should be a professional netgun crew unless animals are acclimated to corral traps. A back up system of Wildlife Department netgunners and local experienced helicopter pilots should be in place since rapid response is essential.

Treatment and Handling Team

This should be made up of veterinarians and biologists with experience capturing, handling and treating bighorns. They need to be able to respond to a request for help rapidly. The team should have ready access to drugs and equipment needed to treat a minimum of 30 sheep.

Area Covered

The response team would have primary responsibility in the Idaho, Oregon and Washington area but could be requested by other agencies. This technique will not be feasible in some remote herds. Land classification (wilderness designation) may preclude the use of helicopters for capture without federal land manager's approval.

Drug and Testing Protocol

Antibiotics, Ivermectin and other drugs will be used to treat sick bighorns captured as recommended by qualified veterinarians. A statistically valid sample of untreated sheep will be used as the control. Radio collars or ear tags will be put on all animals capture if funding is available (Appendix II).

Disease testing will include blood samples, pharyngeal swabs, fecal and scabies samples (Appendix II).

Monitoring

Test bighorns will be located weekly for the first 3 months after capture and treatment to determine survival rates. Mortalities will be located as soon as possible to determine the cause of death. Collared bighorns should be located as needed through the first year following capture and treatment. Lamb survival to 3 months of age should be determined for treated versus untreated animals if possible. Results will be summarized in a completion report and published.

Table 1. Estimated cost of capturing 30 bighorn sheep.

Costs	Per Bighorn	Total Cost*
Helicopter capture	\$400	\$12,000
Drugs for treatment	\$23	\$690
Test kits & lab costs	\$109	\$3,270
Radio collars	\$250	\$7,500
Aircraft rental	\$100/hour 20 hrs. month (3)	\$6,000
Aircraft rental	\$100/hour 10 hrs. month (9)	\$9,000
Seasonal personnel	6 mos/includes vehicle & operations	\$17,000
Miscellaneous supplies		\$300
TOTAL	\$1,860	\$55,800

*For budget purposes it is assumed 30 bighorns will be captured.

Regular personnel salaries should be provided by agencies, but if local veterinarians are used there may be additional costs. Also, jet boat rental may be needed if disease outbreak occurs along the Snake River. Seasonal personnel will also be needed for monitoring.

Media

Once a disease outbreak has been documented, the Hells Canyon Bighorn Sheep Restoration Committee should be contacted to identify capture, treatment and handling teams, staffing resources, helicopter availability and financial resources. The state where the outbreak is occurring should take the lead in identifying someone to handle media contacts to avoid the distribution of misinformation. All media contacts would be referred to the one designated person. If this disease outbreak involves more than one state then the designated media personnel need to communicate frequently to ensure a consistent flow of information.

Appendix I

Lostine Bighorn Disease Outbreak 1986-87

1. Thirty-two bighorns were treated with antibiotics via Palmer capture dart (5), corral trap (21) or both (6) with antibiotics in the capture dart given first to free ranging animals.
2. Ninety-four percent of animals treated with antibiotics survived. All 3 mortalities were bighorns in poor condition that received antibiotics (LA200) via capture dart. No sheep captured in the corral trap and treated died.
3. Thirty-four bighorns (20ewes, 2 lambs, 12 rams) of an estimated 100 sheep survived (40 dead bighorns were found).
4. All but 5 survivors were treated at least once with antibiotics Clocillin (7) or L. A. 200 (27), some received both drugs when captured multiple times.
5. Of the 5 untreated bighorns, two adult ewes were with the herd during the outbreak, had disease symptoms but survived. The other ewe and a ram were first seen with the herd in May 1987 after the sheep had recovered. The other animal, a ram, came to the Lostine Range the following winter.
6. Eight surviving animals received L. A. 200 from a Palmer capture dart (usually their first antibiotics).

7. Average dosage given:

Yearling rams/adult ewes	8 cc LA200 1.5 cc Ivermectin 10 cc Gentamyacin 1.5 cc Banamine
Lambs	4 cc LA200 0.5 cc Ivermectin 5 cc Gentamyacin 1 cc Banamine
Rams (2-1/2 & older)	10 cc LA200 2 cc Ivermectin 11 cc Gentamyacin 1.5 cc Banamine

Appendix II

Biological samples to be taken from bighorn sheep captured for disease treatment.

Type of Sample	Amount	Purpose	Disposition
Bacterial	1 pharyngeal swab	<u>Pasturella</u> classification	Caine Veterinary Research & Training Center
Blood	2 red-tops (20 cc) 1 green top (10 cc) 1 blue top (7 cc)	Antibody evaluation, serology, serum banking DNA selenium	Idaho Dept of Ag. Lab Wildlife Health Lab Ag Canada/U of I
Fecal	10+ pellets	parasitology	Washington State University
Ear swabs	1	parasitology (scabies)	Washington State University

Appendix III

Recommended Drug Dosages (Dr. Dave hunter):

Adult Ewes and Yearling	8 cc LA 200/2 sites (6 cc if given by dart gun)
Rams	2 ½ cc Ivermectin (Ivomec Merck Co) 2 cc Bose

Lambs	4 cc LA 200 (4 cc if given by dart gun) 1 cc Ivermectin 1 cc Bose
Rams (2 ½ years)	10 cc LA 200 – 2 sites (6 cc LA 200 if given by dart gun) 3 cc Ivermectin 3 cc Bose

Vendors providing animal capture services

1. Idaho Helicopters, Inc
2471 Commerce Avenue
Boise ID 83705
(208) 344-4361 (office)
2. Valley Helicopter Service LLC
Jim Pope
POB 54
Clarkston WA 99403
(509) 758-1900 (office)
(509) 243-444 (home)
3. "Doc" Sutherland
(403) 352-9689
4. Gary Beck
Cheney WA
(509) 448-9705
5. Wildlife Management Services
James Innes
(801) 766-0721

Treatment and handling team

Tim Schommer/Kevin Martin
Vic Coggins/Pat Matthews
Pat Fowler
Francis Cassirer