

2015 - JCR Evaluation Form

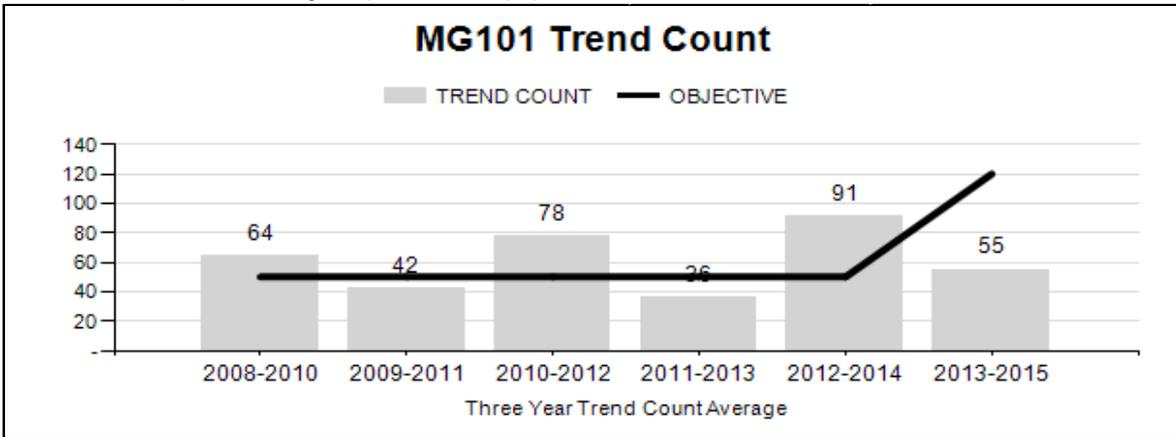
SPECIES: Mountain Goat
 HERD: MG101 - PALISADES
 HUNT AREAS: 2

PERIOD: 6/1/2015 - 5/31/2016
 PREPARED BY: GARY FRALICK

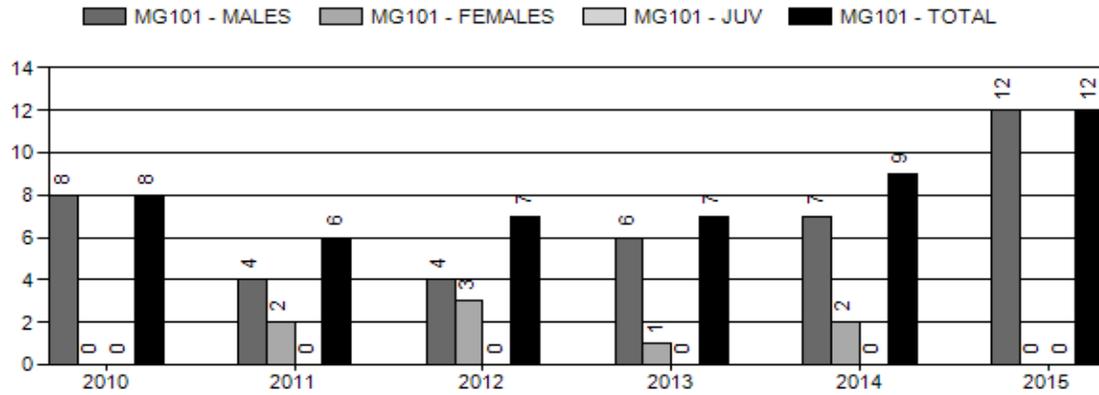
| | <u>2010 - 2014 Average</u> | <u>2015</u> | <u>2016 Proposed</u> |
|---|----------------------------|-------------|----------------------|
| Trend Count: | 80 | 0 | 145 |
| Harvest: | 7 | 12 | 12 |
| Hunters: | 8 | 12 | 12 |
| Hunter Success: | 88% | 100% | 100% |
| Active Licenses: | 8 | 12 | 12 |
| Active License Success | 88% | 100% | 100% |
| Recreation Days: | 40 | 69 | 54 |
| Days Per Animal: | 5.7 | 5.8 | 4.5 |
| Males per 100 Females: | 0 | 0 | |
| Juveniles per 100 Females | 23 | 0 | |
| Trend Based Objective ($\pm 20\%$) | | | 120 (96 - 144) |
| Management Strategy: | | | Special |
| Percent population is above (+) or (-) objective: | | | N/A% |
| Number of years population has been + or - objective in recent trend: | | | 1 |

Proposed harvest rates (percent of pre-season estimate for each sex/age group):

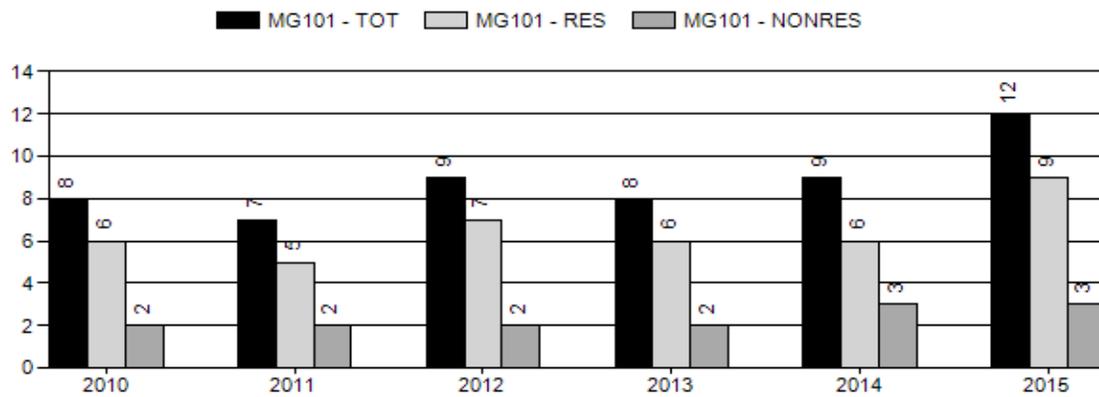
| | <u>JCR Year</u> | <u>Proposed</u> |
|--|-----------------|-----------------|
| Females ≥ 1 year old: | NA% | NA% |
| Males ≥ 1 year old: | NA% | NA% |
| Juveniles (< 1 year old): | NA% | NA% |
| Total: | NA% | NA% |
| Proposed change in post-season population: | NA% | NA% |



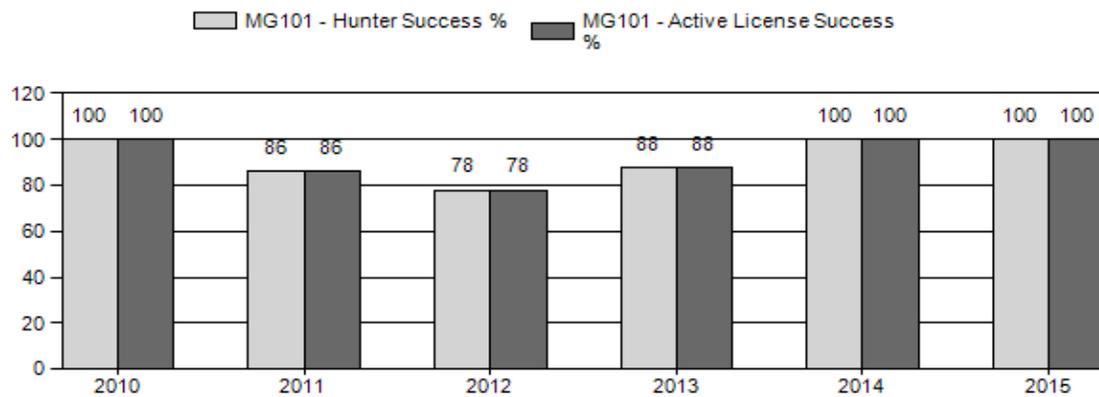
Harvest



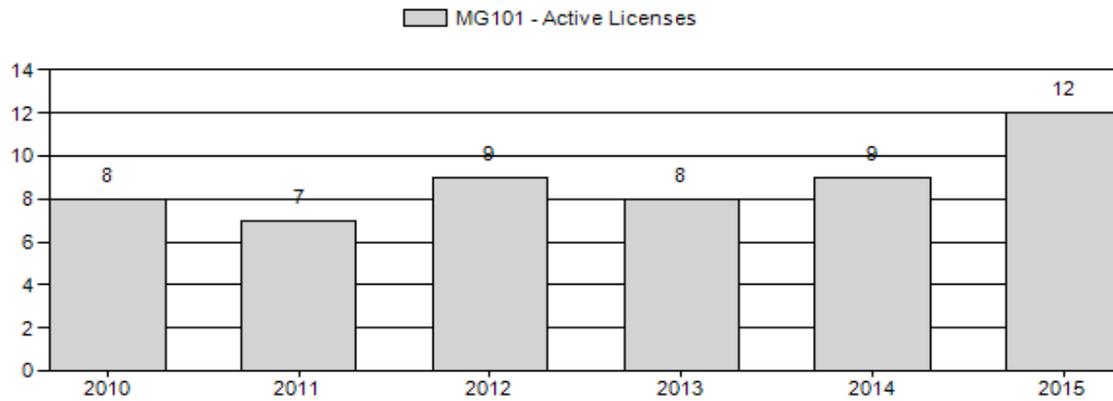
Number of Hunters



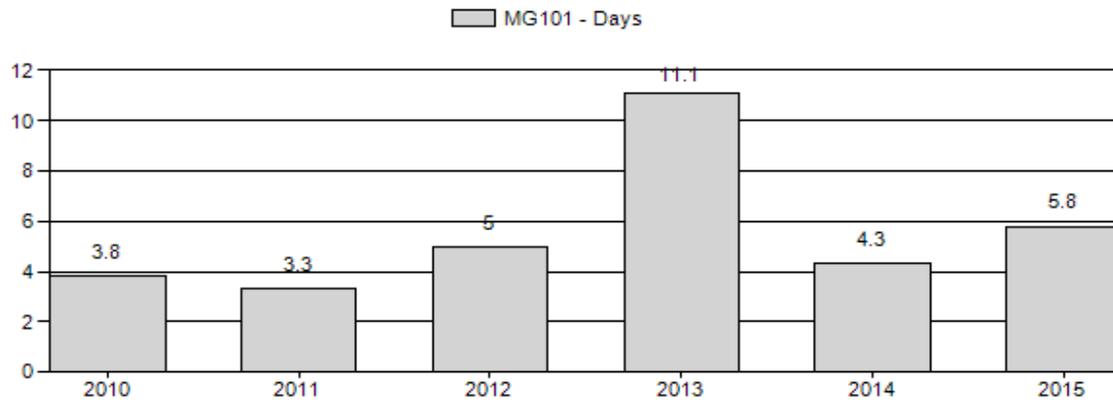
Harvest Success



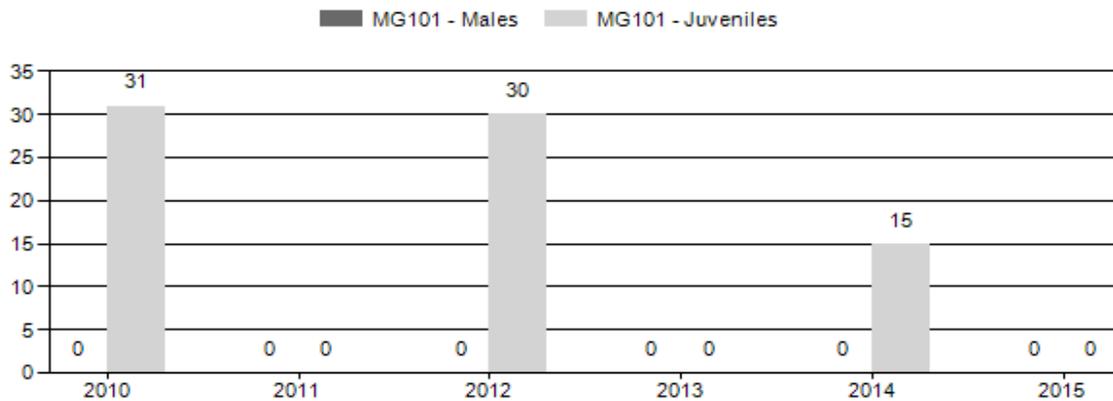
Active Licenses



Days Per Animal Harvested



Preseason Animals per 100 Females



2010 - 2015 Preseason Classification Summary

for Mountain Goat Herd MG101 - PALISADES

| Year | Pre Pop | MALES | | | | FEMALES | | JUVENILES | | Tot Cls | Cls Obj | Males to 100 Females | | | Young to | | | |
|------|---------|-------|-------|-------|----|---------|-----|-----------|-----|------------|------------|----------------------|-------|-------|-------------|------------|-------------|--------------|
| | | Ylg | Adult | Total | % | Total | % | Total | % | | | Ylng | Adult | Total | Conf Int | 100 Fem | Conf Int | 100 Adult |
| 2010 | 140 | 0 | 0 | 0 | 0% | 97 | 76% | 30 | 24% | 127 | 0 | 0 | 0 | 0 | ±0 | 31 | ±0 | 31 |
| 2011 | 130 | 0 | 0 | 0 | 0% | 0 | 0% | 0 | 0% | 0 | 0 | 0 | 0 | 0 | ±0 | 0 | ±0 | 0 |
| 2012 | 130 | 0 | 0 | 0 | 0% | 83 | 77% | 25 | 23% | 108 | 0 | 0 | 0 | 0 | ±0 | 30 | ±0 | 30 |
| 2013 | 130 | 0 | 0 | 0 | 0% | 0 | 0% | 0 | 0% | 0 | 0 | 0 | 0 | 0 | ±0 | 0 | ±0 | 0 |
| 2014 | 130 | 0 | 0 | 0 | 0% | 144 | 87% | 21 | 13% | 165 | 0 | 0 | 0 | 0 | ±0 | 15 | ±0 | 15 |
| 2015 | 0 | 0 | 0 | 0 | 0% | 0 | 0% | 0 | 0% | 0 | 0 | 0 | 0 | 0 | ±0 | 0 | ±0 | 0 |

2016 HUNTING SEASONS
PALISADES MOUNTAIN GOAT HERD (MG101)

| Hunt Area | Type | Season Dates | | Quota | License | Limitations |
|-----------|------|--------------|---------|-------|---------------|------------------------------|
| | | Opens | Closes | | | |
| 2 | 1 | Sep. 1 | Oct. 31 | 12 | Limited quota | Any mountain goat |
| | | Aug. 15 | Aug. 31 | | | Archery only – SEE SECTION 8 |

Summary of Proposed Change by License Type

| Area | License Type | Changed from 2015 |
|-----------------|--------------|-------------------|
| 2 | 1 | No Changes |
| Herd Unit Total | | |

Management Evaluation

Current Mid-Winter Trend Count Management Objective: 120

Management Strategy: Special

2014 Mid-Summer Trend Count: 165

Most Recent 3-year Running Average Trend Count: 91

The Palisades mountain goat population objective is 120 goats (± 20% of the population objective). The original population objective was established in 1999 at 50 goats. The 2014 mid-summer trend count was 165 goats. The three-year average mid-summer trend count is 91 goats. The next mid-summer trend count will be conducted in 2016. The population objective was reviewed by the Wyoming Game and Fish Commission in 2015, and the Special Management strategy was approved.

Herd Unit Issues

To ensure the long-term welfare of this population, Idaho and Wyoming have committed to a cooperative management effort that entails sharing population data, coordinating habitat management projects, and surveying the entire goat population concurrently every two years. Management goals of the Wyoming subpopulation have focused on maintaining a conservative hunting approach since 1999. This approach has resulted in a high degree of hunter satisfaction, exceptionally high hunters' success, low days/animal harvest, and trophy class males being taken in most years since the hunt was initiated in 1999. A consequent concern associated with population growth has been the one year reduction in juvenile production observed in 2014. The observed kid:adult ratio was the lowest (15 kids:100 adults) since this population has been monitored. Five of the six females captured in 2014 were not pregnant, and the sixth female pregnancy status was undetermined.

Mountain goats have dispersed north into Grand Teton National Park. In an effort to provide additional hunting opportunity the Department has expanded the area to include the west slope of the Tetons, on National Forest System Lands. This management strategy will continue in 2016. A general license hunting season structure north of Highway 22 is currently being discussed for this herd unit as a means of controlling mountain goat dispersal.

In 2013 research was started in the Palisades mountain goat herd. The Greater Yellowstone Area Mountain Ungulate Project is a collaborative research initiative to study the ecology and population dynamics of bighorn sheep and mountain goats throughout the Yellowstone ecosystem <http://gyamountainungulateproject.com/contact.html>.

Concurrent with the relatively conservative management is a lack of knowledge associated with interstate movements, distribution, reproductive success, and fecundity. Moreover, since goats in Wyoming have never been exposed to herd specific research and monitoring efforts, the opportunity to initiate a baseline herd health monitoring effort is warranted. This initial effort to assess herd health will focus on determining the presence and persistence of disease and parasites in a substantial segment of the Palisades goat herd that inhabits Wyoming.

Mountain goats have dispersed into Grand Teton National Park, and adjacent Wyoming bighorn sheep hunt areas 6, 7, 8, and 24. Mountain goat dispersal into these areas may present other management challenges in the future.

Greater Yellowstone Area Mountain Ungulate Project:

Project Objectives

Project objectives include: collecting migration information on segments of the Palisades mountain goat herd, documenting any interstate movements of collared goats, determining the presence of *Mannheimia* sp., *Mycoplasma* sp. and other pathogens that may potentially be transmitted to bighorn sheep; monitor herd health during the winter (Appendix A).

Scientific Merit/Management Relevance

Disease monitoring in mountain goat is critical, especially in those herds where little or no monitoring information has been collected. The Palisades herd is believed to be the source herd of dispersing mountain goats in western Wyoming. This population and occupies active domestic sheep allotments there is the potential that mountain goats harbor infectious diseases that are potentially lethal to bighorn sheep.

Weather

Weather conditions during the 2015 were ideal for forage production beginning in early spring and continuing through fall. By late summer the moisture regime had changed frequent precipitation scenario that persisted into the fall hunting season. Drought conditions in the early portion of the summer abated by late fall as persistent snow storms began to deposit snowpack in the Snake River Mountain Range. By mid winter snow conditions on winter ranges had changed significantly. Minimal snow had accumulated on core winter ranges. These conditions persisted throughout the remainder of the winter. By late winter 2016 snowpack in western Wyoming watersheds were estimated to be at or below normal. For additional weather and precipitation data please visit the following websites: <http://www.ncdc.noaa.gov/temp-and-precip/time-series> and <http://www.ncdc.noaa.gov/oa/climate/research/prelim/drought/pdiimage.html>.

Habitat

No habitat data has been collected on goat summer and winter ranges. There are no established vegetation transects in this herd unit. Please refer to the 2015 Annual Report Strategic Habitat Plan Accomplishments, pages 61-77 for Jackson Region habitat improvement project summaries (<http://wgfd.wyo.gov/web2011/wildlife-1000708.aspx>).

Harvest

The 2015 hunting season was the 17th year that goats were hunted in Area 2. A total of twelve (12) licenses were issued; twelve goats were harvested. All goats harvested were males. Since 1999, a total of 110 mountain goats (96 billies, 14 nannies) have been harvested in Hunt Area 2.

Population

The population trend is increasing, and remains above the desire population objective of 120 goats. The population objective was reviewed in 2015. The Wyoming Game and Fish Commission approved a population objective of 120 mountain goats. A population model has not been developed because of the small size of this population. The current season structure is warranted as a means to diminish dispersal away from the herd unit, and control account for lower than average reproductive output in 2014.

Summer aerial surveys were conducted from a helicopter. These surveys are coordinated with Idaho Department of Fish and Game to ensure this interstate population is surveyed concurrently.

Surveys are initiated every biennial. Helicopter surveys were first initiated in August 1997 (Appendix B). The highest number of goats counted in Wyoming occurred in 2014. A total of 165 goats were counted. Comprehensive winter surveys were not conducted in February 2007 - 2014.

Mountain goats have dispersed into areas beyond the hunt area boundary. It is believed the predominate individual dispersers are billies, as no reported or observed evidence of mountain goat reproduction has been observed in the Salt Range, Wyoming Range, Wind River Range, or Gros Ventre Range. However, mountain goats are successfully reproducing within the boundaries of Grand Teton National Park. In areas outside of Grand Teton National Park, dispersing individuals are currently being monitored and when sufficient numbers of goats are regularly documented to sustain a multi-year hunting season, general hunt seasons may be considered in designated mountain goat expansion areas.

Management Summary

A total of twelve (12) licenses, valid for any goat, will be issued in 2016. The season will run September 1 – October 31. The number of licenses issued will be maintained at 2015 levels in response to the high number (N=165) goats observed during the 2014 trend count, and the relatively low percentage (14%) of reproductive age nannies harvested since the hunt was initiated in 1999. The size of the hunt area was expanded in 2014 in an effort to harvest goats that have dispersed from the Palisades herd into the Teton Range. The hunt area expansion area encompasses a portion of the national forest north of U.S. Highway 22. The increased hunt area size will provide additional hunter recreation.

A total of twelve (12) goats are projected in the 2016 harvest. The anticipated harvest will likely consist of 9 billies, and three (3) nannies. Based on the projected harvest, the posthunt population estimate is projected at 145 goats.

APPENDIX A

Population characteristics, movements, and disease surveillance in the Palisades mountain goat herd, Wyoming

2015



Prepared by:

Gary L. Fralick
Wildlife Biologist
Thayne/Big Piney
Wyoming Game and Fish Dept.
P.O. Box 1022
Thayne, WY. 83127

Population characteristics, movements, and disease surveillance in the Palisades mountain goat herd, Wyoming



INTRODUCTION

Historical mountain goat distribution (*Oreamnos americanus*) has been recorded from Alaska and the Yukon southward to the Sawtooth Range of Idaho. Research by Irby and Chezgrall (1994) have reported, based on historical accounts from the 1800s, that mountain goat distribution occurred in areas south of 40 degrees N Latitude in the Colorado Rocky Mountains. In areas where goats have been extirpated or non-existent, transplants have been used successfully to reintroduce goats into former historic or unoccupied range and augment native populations.

Prior to 1987, the state of Idaho released a total of 55 mountain goats at three locations in Idaho identified as Lake Pend Oreille in northern Idaho (releases made 1960, 1968), in the Seven Devils Range of western Idaho (1962, 1974), and the Snake River Range in southeastern Idaho (1969-1971) (Hayden, 1990).

During the period between July 1969 and 1971, the Idaho Department of Fish and Game transplanted 5 female and 7 male goats into the Snake River Range (Hayden 1989). This population increased during the next 10 years to a level that wildlife managers believed could sustain a limited harvest in 1981.

Mountain goats have since dispersed into Wyoming since the initial transplant occurred in Idaho. Department personnel, hunters, and outfitters have documented goats in the Snake River Range and in other areas outside of the core area. As a result of these observations, Hunt Area 2 was created with a population objective of 50 goats in 1994 in order to address an expanding goat

population and to provide hunting opportunity in Wyoming. Summer trend counts conducted from helicopters have been the most efficient and successful method to assess population distribution and growth. The initial aerial survey was conducted in August, 1996; 24 goats were observed. The most current surveys, completed in 2010 and 2012 documented 127 and 108 goats in Wyoming, respectively.

To ensure the long-term welfare of the population Idaho and Wyoming have committed to a cooperative management effort that entails sharing population data, coordinating habitat management projects, and surveying the entire goat population concurrently every two years. Management goals of the Wyoming subpopulation have been focused on maintaining a conservative hunting approach through the annual issuance of 4 - 12 licenses valid for any goat since 1999.

Concurrent with this relatively conservative management approach is a comprehensive absence of knowledge associated with interstate movements, distribution, and reproductive success and fecundity. Moreover, since goats in Wyoming have never been exposed to herd specific research and monitoring efforts, the opportunity to initiate a baseline herd health monitoring effort is warranted. This initial effort to assess herd health will focus on determining the presence and persistence of disease and parasite loadings in a substantial segment of the Palisades goat herd that inhabits Wyoming.

Mountain goats have dispersed into Grand Teton National Park, and adjacent Wyoming bighorn sheep hunt areas 6, 7, 8, and 24. Mountain goat dispersal into these areas may present the potential to transmit diseases to bighorn sheep. This heightened potential for mountain goat to bighorn sheep disease transmission is a result of the Palisades goat population occupying areas where domestic sheep are grazed. In order for managers to assess disease transmission risk from goats to bighorn sheep initial surveillance efforts were initiated in spring 2013.

Project Objectives

Project objectives include: collecting migration information on segments of the Palisades mountain goat herd, documenting any interstate movements of collared goats, assessing juvenile production and recruitment, determining the presence of *Mannheimia* spp. and *Mycoplasma* spp. and other pathogens that may potentially be transmitted to bighorn sheep, and monitor herd health during the winter.

Project Goals and Analysis

Goals of the project include capturing up to 20 mountain goats (2+ years of age) on winter ranges in the Palisades mountain goat herd. Biological samples will be collected to determine the presence of *Mannheimia haemolytica* and *Mycoplasma ovipneumoniae*. Radio-collars and colored, alpha-numerically labeled neck bands will be placed on female goats. Migration data will be collected on collared animals and WGF D Veterinary Services personnel will collect culture samples to determine the presence of pneumonia and evaluate herd health.

Scientific Merit/Management Relevance

Disease monitoring in mountain goat is critical, especially in those herds where little or no monitoring information has been collected. The Palisades herd in Idaho and Wyoming are believed to be the source herd of dispersing mountain goats in western Wyoming. This population occupies active domestic sheep allotments. There is the potential that mountain goats harbor infectious diseases that are lethal to bighorn sheep.

Migration, interstate movements, and summer distribution data will be important for managers to document and evaluate.

MOUNTAIN GOAT DISTRIBUTION AND CAPTURE OPERATIONS



During late winter and early spring mountain goats occupy south exposures in search of emergent herbaceous vegetation in the Snake River Canyon, east of Alpine, Wyoming. These aggregations may exceed 60 mountain goats; and, often goats present themselves in relative close proximity to U.S. Highway 26/89.

Capture operations were initiated when goats were observed immediately adjacent to U.S. Highway 26/89, and when environmental conditions assured a capture event could be safely executed.



Mountain goats were typically darted at a distance of 18.3 meters (20 yards) or less under free ranging conditions, or from a vehicle if goats were present adjacent to the highway right-of-way. Mountain goats were immobilized with a dosage of 0.65 ml of thiafentanil or 0.55 ml of

Carfentanil deployed from a CO₂ Pneu-dart projector. In December two goats were captured with immobilizing darts deployed from a helicopter.

Immobilized goats were blindfolded and positioned in sternal recumbency; hollow, rubber horn sheaths were placed over the horns to protect handlers from injury during the collection of biological samples. Body temperature and breathing were monitored during anesthesia. Biological samples of blood, feces, and nasal/tonsil/ear-mite swabs were collected.



Ear-tags and VHF and GPS radio-collars were affixed to female goats; males were ear-tagged. The age of each goat was determined through replacement and eruption of lower incisors and by counting horn annuli.

Mountain goats were retained for approximately 20-25 minutes to collect biological samples. The antagonist, Naltrexone, was administered at a dosage of 6 ml. Goats were ambulatory within 2:15 minutes after administration of the antagonist.

RESULTS

Survival

A total of six mountain goats were captured in March and December 2015 (Tables 1 and 2).

Three (n=3) females and two (n=2) males were outfitted with Telonics VHF and GPS radio-collars; the yearling male goat captured in March was ear-tagged and released. The estimated ages of the female goats were 2 and 5 years old (Table 1). The ages of the male goats captured and radio-collared were 3 and 5 years old, respectively.

Table 1. A summary of mountain goat capture location, age, and pregnancy status in the Palisades mountain goat herd, 2015.

| Freq | Ear Tag | Capture Date | Capture Location | | Sex | Age | Pregnancy Status |
|---------|---------|--------------|------------------|-----------|--------|-----|------------------|
| | | | Easting | Northing | | | |
| 152.600 | 138 | 25-Mar | 501,622 | 4,780,736 | Female | 5 | NA |
| 152.690 | NA | 17-Dec | 499,499 | 4,793,192 | Female | 2 | NA |
| 152.720 | NA | 17-Dec | 502,214 | 4,788,284 | Male | 3 | |
| 152.710 | 149 | 18-Dec | 501,448 | 4,780,596 | Male | 5 | |
| 152.700 | 147 | 19-Dec | 500,416 | 4,780,512 | Female | 5 | NA |
| NA | 29 | 25-Mar | 501,355 | 4,780,797 | Male | 1.5 | |

Disease Surveillance

The biological samples collected during the 2015 captures resulted in a preliminary diagnostic assessment of disease prevalence and persistence of parasite loads for a segment of the Palisades goat population that inhabit the winter ranges in the Snake River Canyon (Table 2).

The primary disease concern is the presence of *Mannheimia haemolytica*, *Mycoplasma ovipneumoniae* and *Bibersteinia spp.* in this goat population.



Diagnostic results for PCR leukotoxin positive results for *Mannheimia haemolytica* were not available at the time of this report.

Diagnostic assays were completed in an effort to isolate PCR leukotoxin positive *Mycoplasma ovipneumoniae* in the current sample of mountain goats. Results of this assay indicate *M. ovipneumoniae* were present in two goats captured in the Snake River Canyon in December (Table 2).

Bibersteinia spp. is an important pathogen of sheep and is associated with serious infection that results in pneumonia. PCR leukotoxin positive results for *Bibersteinia spp.* were not available at the time of this report.

Table 2. A summary of disease and parasite prevalence in mountain goats in the Palisades mountain goat herd, Wyoming, 2015.

| Frequency | Ear Tag | Capture Date | Sex | Age | Presence/Absence of Disease or Parasite | | | | | | |
|-----------|---------|--------------|--------|-----|---|-----|---------------------------------|-----|--------------------------|-----|----------------------|
| | | | | | <i>Mannheimia haemolytica</i> | | <i>Mycoplasma ovipneumoniae</i> | | <i>Bibersteinia spp.</i> | | <i>Psorptic spp.</i> |
| | | | | | Culture | PCR | Culture | PCR | Culture | PCR | |
| 152.600 | 138 | 25-Mar | Female | 5 | NA | NA | NSI | - | NA | NA | - |
| 152.690 | 146 | 17-Dec | Female | 2 | NA | NA | NSI | - | NA | NA | - |
| 152.720 | 150 | 17-Dec | Male | 3 | NA | NA | NSI | - | NA | NA | - |
| 152.710 | 149 | 18-Dec | Male | 5 | NA | NA | NSI | + | NA | NA | - |
| 152.700 | 147 | 19-Dec | Female | 5 | NA | NA | NSI | + | NA | NA | - |
| NA | 29 | 25-Mar | Male | 1.5 | NA | NA | NSI | NA | NA | NA | - |

DISTRIBUTION AND MOVEMENTS

Distribution and movements of radio-collared mountain goats is provided in Appendix A. This summary reflects the movements of female mountain goat that were captured in 2013 and those that died since the initial year of the project. Female mountain goats that were captured and radio-collared moved from low elevation winter ranges in the Snake River Canyon to summer ranges associated with Ferry Peak and the South Fork of Indian Creek. One female traveled east to Wolf Creek.

FUTURE WORK

Mountain goats will be captured in spring 2016 as part of an on-going disease surveillance and population monitoring effort. A total of five mountain goats 2+-years of age will be captured and efforts will continue to collect biological samples in support of the disease surveillance.

Our work is in cooperation with Dr. Robert Garrott, Montana State University, and the Greater Yellowstone Mountain Ungulate Project (GYAMUP). The primary goal of the project is to gain a better understanding and knowledge of bighorn sheep and mountain goat ecology and the interactions between the two species.

This corroborative effort between various state and federal agencies, and private entities will result in one of the most comprehensive databases of knowledge and understanding of bighorn sheep and mountain goats in the GYA.

M149
5 - YEARS OLD
FREQUENCY: 152.710
SNAKE RIVER CANYON
CAPTURED: 18 DECEMBER 2015

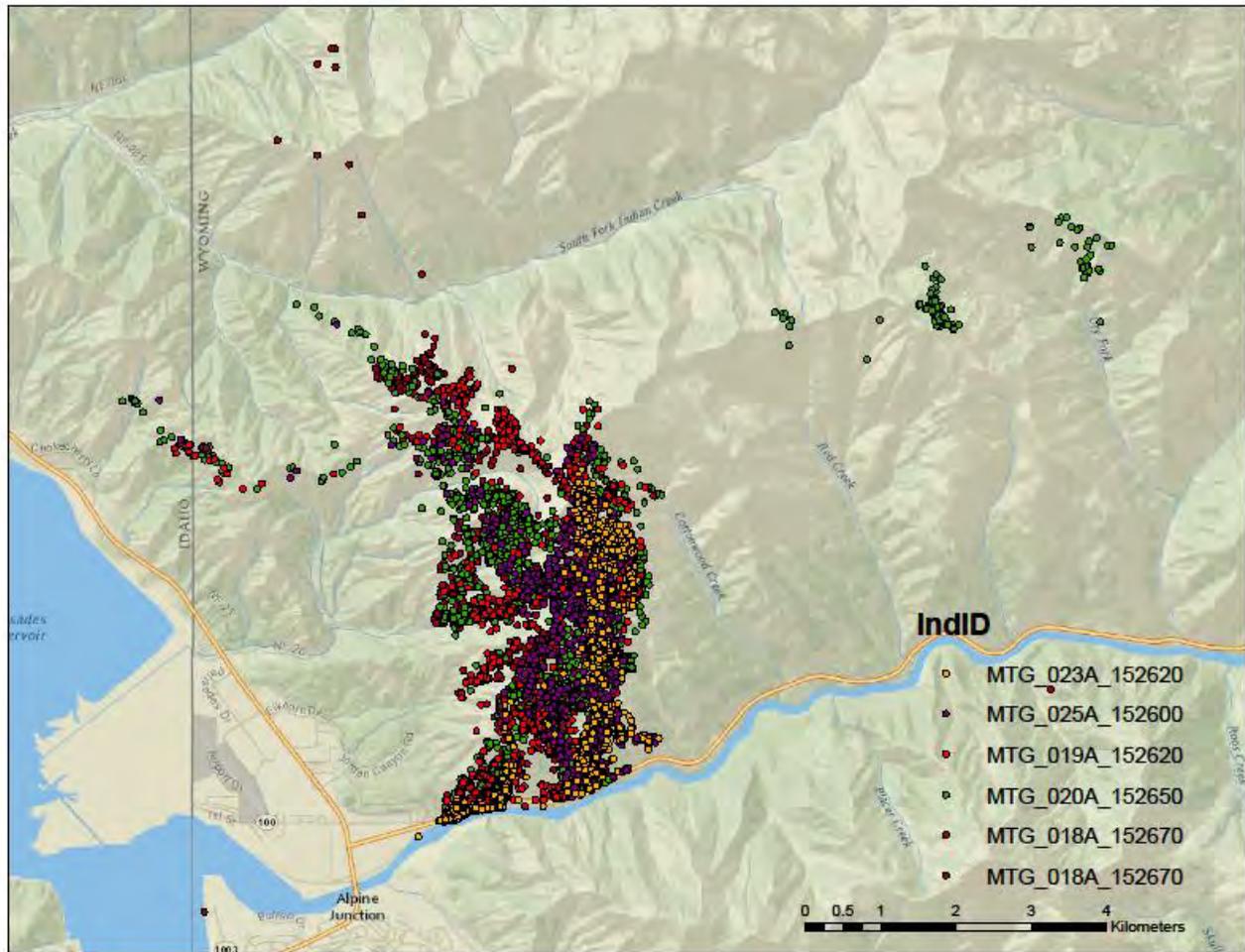


Literature Cited

- Irby, M.L. and A.F. Chappell. 1994. Review of the historical literature regarding the distribution of the Rocky Mountain goat (*Oreamnos americanus*). Pp. 75-80 in M. Pylus and B. Wishart, eds. Proc. Ninth Biennial Symp. Northern Wild Sheep and Goat Council. May 2-6, 1994. Cranbrook, British Columbia.
- Hayden, J. A. 1989. Status and population dynamics of mountain goats in the Snake River Range, Idaho. Master's Thesis. Univ. Montana, Missoula. 146pp.
- Hayden, J.A. 1990. ed. Mountain goat management plan. 1991-1995. Idaho Dept. Fish and Game. Boise. 25pp.

APPENDIX A

A summary of mountain goat distribution and movements in Wyoming, Palisades mountain goat herd, 2015.



Appendix B.
 SNAKE RIVER MOUNTAIN RANGE
 MOUNTAIN GOAT POPULATION SURVEYS
 IDAHO/WYOMING

Idaho Summary of Mountain Goat Surveys in Unit 67 South of Palisades Creek, 1982-Present (Mt. Baird area).

| Year | Hunt Area | Inclusive Location | Adults | Kids | Unknown | Total | Ratio Kid:100 Adult |
|-------------------|-----------|--------------------|--------|------|---------|-------|---------------------|
| 1982 ^a | 67-1 | South of Palisades | 33 | 13 | 0 | 46 | 39 |
| 1985 ^a | | Creek to ID./WY. | 35 | 16 | 0 | 51 | 46 |
| 1986 ^b | | Stateline | 0 | 0 | 104 | 104 | -- |
| 1986 ^a | | | 37 | 15 | 0 | 52 | 41 |
| 1988 ^b | | | 71 | 21 | 0 | 92 | 30 |
| 1990 ^b | | | 45 | 18 | 0 | 63 | 40 |
| 1993 ^b | | | 104 | 33 | 16 | 153 | 34 |
| 1994 ^a | | | 73 | 42 | 0 | 115 | 58 |
| 1996 ^a | | | 151 | 66 | 0 | 217 | 44 |
| 1998 ^a | | | 118 | 45 | 0 | 163 | 38 |
| 2000 ^a | | | 61 | 29 | 0 | 90 | 48 |
| 2002 ^a | | | 35 | 7 | 0 | 42 | 20 |
| 2004 ^a | | | 83 | 24 | 0 | 107 | 29 |
| 2006 ^a | | | 103 | 19 | 0 | 122 | 18 |
| 2008 ^a | | | 96 | 27 | 0 | 123 | 28 |
| 2010 ^a | | | 96 | 33 | 0 | 129 | 34 |
| 2012 ^a | | | 87 | 23 | 0 | 113 | 26 |
| 2014 ^a | | | | | | | |

Wyoming Summary of Mountain Goat Surveys, Hunt Area 2, Palisades Goat Herd, 1996-Present

| Year | Hunt Area | Inclusive Location | Adults | Kids | Unknown | Total | Ratio Kid:100 Adult |
|-------------------|-----------|---------------------|--------|------|---------|-------|---------------------|
| 1996 ^a | 2 | Wyoming – Palisades | 16 | 8 | 0 | 24 | 50 |
| 1997 ^a | | Goat Herd | 34 | 20 | 0 | 54 | 59 |
| 1998 ^a | | | 47 | 15 | 0 | 62 | 32 |
| 2000 ^a | | | 58 | 18 | 0 | 76 | 31 |
| 2002 ^a | | | 37 | 17 | 0 | 54 | 46 |
| 2004 ^a | | | 90 | 31 | 0 | 121 | 34 |
| 2006 ^a | | | 98 | 32 | 0 | 130 | 33 |
| 2008 ^a | | | 52 | 13 | 0 | 65 | 33 |
| 2010 ^a | | | 97 | 30 | 0 | 127 | 31 |
| 2012 ^a | | | 83 | 25 | 0 | 108 | 30 |
| 2014 ^a | | | 144 | 21 | 0 | 165 | 15 |

^a Helicopter survey (August).

^b Ground count.

HERD UNIT SEASONAL RANGE MAP

