



**UNITED STATES
DEPARTMENT OF
AGRICULTURE**

**ANIMAL AND PLANT
HEALTH INSPECTION
SERVICE**

WILDLIFE SERVICES

in cooperation
with

**NEVADA
DEPARTMENT OF
AGRICULTURE**

**DIVISION OF
RESOURCE
PROTECTION**

NEVADA

NEVADA USDA/WILDLIFE SERVICES

RESOURCE PROTECTION

2005 REPORT

WILDLIFE RESOURCE PROTECTION

WORK PROVIDED FOR

THE NEVADA

DEPARTMENT OF WILDLIFE



Report compiled by Jack Spencer Jr.
Supervisory Wildlife Biologist
Project reports also provided by Kevin Lansford and Peter
Coates

July, 2005

OVERVIEW

In January 2000, the Nevada Board of Wildlife Commission voted to have the U.S. Department of Agriculture, Animal and Plant Health Inspection Service, Wildlife Services Program (WS) conduct wildlife damage management activities for the benefit of Nevada's wildlife. Responding to the Commission's directive, the Nevada Department of Wildlife (NDOW) requested WS to work on four separate projects during the State biennium (Fiscal Years 2000-01). The four projects WS was requested to initiate included the protection of resident Sage Grouse (*Centrocercus urophasianus*) in northern Washoe County, protection of transplanted Sharp-tailed Grouse (*Tympanuchus phasianellus*) in Elko County, and protection of two herds of transplanted antelope (*Antilocapra americana*) in Nye County. The primary predators of concern for the Sharp-tail grouse protection in 2000 were Common Ravens (*Corvus corax*), badgers (*Taxidea taxus*), coyotes (*Canis latrans*), and bobcats (*Lynx rufus*). The primary predator of concern for the sage grouse was ravens and the primary predator of concern for the antelope was coyotes.

In May 2000, NDOW requested that resident herds of antelope be protected in Washoe County and relocated antelope in Lyon and Nye County. Coyotes were the only species targeted for removal in these areas. WS conducted wildlife damage management activities in this area from late May through mid-July, 2000. However, in 2001, WS conducted both aerial and ground activities to protect antelope during the fawning period March through mid-July. Protection efforts were also initiated for a sage grouse and sharp-tail protection area in Washoe and Elko County.

In October 2001, NDOW requested two additional projects aimed at protecting desert bighorn sheep (*Ovis canadensis*) populations from mt. lion predation. WS agreed to provide personnel to monitor predator/BHS activities and to remove any mt. lions found in the immediate area of the relocated bighorn sheep. The only species targeted on the two protection areas were mt. lions.

In February 2002, NDOW requested that WS provide protection for nesting upland game birds and waterfowl from nest raiding ravens within the Moapa Valley and Key-Pittman Wildlife Management areas in addition to the previous year's approved ongoing sage grouse, bighorn sheep and antelope protection efforts.

On August 10th, 2002, the Board of Wildlife Commissioners approved the Fiscal Year 2003 Predator Management Plan (PMP). The FY 03 PMP is the first year of action taken under A.B. 291 funding. In August 2002, NDOW requested WS to provide protection for the following approved projects: nesting waterfowl (emphasis on Canada geese) within in the Key Pittman Wildlife Management Area, protection for relocated bighorn sheep on the East Range, monitoring for mt. lions on the Mormon Mountains, monitoring for mt. lions and coyotes in the Mt. Wilson area (hunt unit 231).

In August 2003, the Board of Wildlife Commissioners approved the Fiscal Year 2004 Predator Management Plan (PMP). The FY 03 PMP is the second year of action taken under A.B. 291

funding. In August 2003, NDOW requested WS to continue to provide ongoing protection efforts for sage grouse, antelope and bighorn sheep from the previous year's projects. NDOW also requested that protection efforts and monitoring be conducted on the following approved projects: nesting waterfowl (emphasis on Canada geese) within in the Key Pittman Wildlife Management Area, protection for relocated bighorn sheep on the East Range, monitoring for mt. lions in the Mormon Mountains, coyote removal in the Mt. Wilson area (hunt unit 231).

In August 2004, the Board of Wildlife Commissioners approved the Fiscal Year 2005 PMP. The FY 05 PMP is the third year of action taken under A.B. 291 funding. In August 2004, NDOW requested WS to provide protection for the following approved projects: protection of sage grouse in Elko County, mule deer in Washoe County, Elko County, and Lincoln County, elk in Elko County and bighorn sheep in Lincoln County.

BACKGROUND:

WS is the federal side of the cooperative federal/state entity, the Nevada Animal Damage Control Program (NADCP). The NADCP is comprised of federal, state, local municipalities and private entities working together toward the mutual goal of protecting Nevada's resources. The state side of the cooperative program is the Division of Resource Protection, Nevada Department of Agriculture. NADCP is managed and supervised by WS.

The mission of WS, as stated in the WS Final Environmental Impact Statement (FEIS) of 1995, is to provide leadership in wildlife damage control to protect America's agricultural, industrial, and natural resources and to safeguard public health and safety. WS is committed to environmental sensitivity, cooperator participation, service delivery, professionalism in the practice of wildlife management, and scientific, technical, and managerial excellence. WS focuses on the protection of agriculture, including livestock, crops, forests, and rangelands. Additionally, WS provides wildlife damage protection for property and public health and safety through the control of, wildlife-borne diseases, threatening wildlife, and wildlife hazards to aircraft. WS assists other federal and state agencies in natural resource protection, including wildlife species of special concern, such as the sage grouse.

WS is authorized to protect wildlife and other resources from damage associated with wildlife. WS activities are conducted in cooperation with other federal, state, and local agencies, as well as private organizations and individuals. WS is authorized by Congress to provide direct assistance to resource owners who are experiencing loss or eminent loss in wildlife damage situations. Additionally, WS field activities are conducted within authorizations received from cooperating federal and state regulatory agencies. To implement a wildlife damage management programs on Bureau of Land Management (BLM) or U. S. Forest Service (USFS) lands, WS and two land management agencies cooperate to develop an Annual Work Plans that fulfills WS' mission and conforms to BLM's and USFS' land use plans. These Annual Work Plans include protection of wildlife species.

The primary statutory authority for WS is the Animal Damage Control Act of March 2, 1931, as amended (7 U.S.C.426-426c; 46 Stat. 1468). Additional statutory authority is provided by the

Rural Development, Agriculture, and Related Agencies Appropriations Act of 1988 (Public Law 100-202, Dec. 22, 1987, Stat. 1329-1331 (7 U.S. C. 426c)).

BIGHORN SHEEP PROTECTION

Mountain lions are a primary predator of bighorn sheep (BHS). Transplanted bighorn sheep are particularly at risk from predators because they tend to be unfamiliar with the area they are released into. The civil value of bighorn sheep range from \$1,100 to \$1,500 each and relocated animals may reach a value of \$5,000 each. During public auctions a single Nevada BHS tag has sold for more than \$50,000. In some states, BHS tags have sold for well over \$100,000!

PROJECT 6A

DELAMAR BIGHORN SHEEP PROJECT

Reported by Kevin Lansford

OBJECTIVE: The primary objective is to provide WDM activities to protect relocated bighorn sheep. In 2001, NDOW released a total of 26 bighorn sheep into the Delamar Bighorn Sheep Unit. A total of five desert bighorn sheep were equipped with special satellite-transmitter collars. In October 2003, 25 additional bighorn sheep were released into the unit and seven were equipped with special ear-radio tags. The collars and ear tags allow the animals to be monitored for location and also emit a mortality signal if the animal dies. WS was included in the monitoring loop, so that information concerning the welfare of the sheep could be funneled to the field specialist in a timely manner.

It is important that the WS Mt. Lion Specialist be informed of mortality in as timely a manner as possible, so that the specialist can examine the carcass while it and any other important “sign” is still “fresh”. The Mt. Lion Specialist examines the dead sheep to determine what predator (if any) caused its death. If it was determined that a lion had killed the sheep, then the Mt. Lion Specialist would pursue the offending mt. lion(s). The methods used by WS to remove offending mt. lions would be the use of trailing hounds, trail set snares, and foot snares. Mules are used by the WS Mt. Lion Specialist to check equipment and follow dogs through the largely roadless country.

LOCATION: The area of concern agreed upon by WS and NDOW to conduct WDM work was expanded in 2004, to include the following mt. ranges: Delemars, Meadow Valley, Pahrocs and a portion of the Hiko’s.

RESULTS 2004: WDM activities have been ongoing on this unit. Mt. lion numbers are extremely low in this project area, but due to the resource species’ vulnerability, any mt. lion associating with the herd is a threat. One 130lb adult male mt. lion was removed during WDM activities in 2005. The lion was discovered within the work area and in and out of close proximity to sheep habitat.

RECOMMENDATIONS 2006: WS recommends WDM work continues to protect this herd of bighorn sheep until the population can sustain normal mt. lion predation rates. The protection area in the surrounding mountain ranges (Meadow Valley Mountains, Pahrocs, and possibly the Hiko Range) was extended in 2004, as this should allow for better protection of bighorn sheep. It has been confirmed that bighorn sheep released on the protection unit have moved to these aforementioned mountain ranges.

PROJECT 14

WILSON CREEK RANGE MULE DEER PROJECT

OBJECTIVE: Provide protection for juvenile mule deer on the Wilson Creek Unit (hunt unit 231) in Lincoln County. The only animal targeted for removal as directed by NDOW, is the coyote. This project provides for year around protection of juvenile mule deer in the Wilson Creek area. A full-time WS Specialist is currently located onsite at the Wilson Creek Unit. The WS Specialist is protecting juvenile mule deer from coyote predation, using a wide variety of wildlife damage management tools including: soft-catch leghold traps, trail snares, calling, shooting, decoy dogs and denning. The Wildlife Specialist also has access to an aerial hunting crew to conduct aerial hunting activities around the mule deer fawning grounds.

LOCATION: The Wilson Creek Unit is located in northeastern Lincoln County. This area encompasses NDOW’s hunt unit 231.

RESULTS 2005: WDM activities on this project area are ongoing, since last September 2004, providing full-time mule deer protection efforts. WS conducted aerial and ground control activities in the unit. A total of 148 coyotes were removed by various methods from the entire Wilson Creek project (Table 1).

Table 1. Coyote Take by Method on the Wilson Creek Project from September 2004 thru June 2005 (10 mo.)		
METHOD	# COYOTES (Sept 04-June 05)	Total
Aircraft	69	69
Denning	3	3
Decoy Dogs	2	2
Calling/Shoot	7	7
Snare	24	24
Trap (Leghold)	43	43
TOTAL		148

*These numbers do not include coyotes removed protecting livestock within the protection area.

Blood samples were collected from coyotes in the Mt. Wilson area and tested for the presence of plague (several coyotes tested positive for plague). WS’ also collected a coyote canine tooth

from removed coyotes and sent them to NDOW for age analysis. Fawn counts will be conducted by NDOW's flights to accurately measure the fawn survival on the mule deer project.

Results 2003-2004

In July 2003, a Wildlife Biologist inspected the Wilson Creek area and concentrated inspections around known mule deer fawning grounds for the presence of coyotes. Coyote howling surveys were done at night, at one to two mile intervals depending on terrain. On the first night 16 coyotes responded near the known fawning grounds and on the second night 23 coyotes responded. It appears that coyotes are inhabiting the mule deer fawning grounds in a moderate density, however, because these coyotes responded readily to voice howls, WS feels that the coyotes on the fawning grounds are of old age (this theory proved true with a verified 13 year old coyote collected in 2004). Older, territorial coyotes are thought to be more familiar with the area (water holes and travel corridors) and more effective at killing sub-adult mule deer.

In 2004, a Wildlife Biologist once again, conducted another coyote howling survey on the fawning grounds and located 7 and 12 coyotes. It appears there has been an overall reduction on resident coyotes in this area. A total of 138 coyotes were removed by various methods from the entire Wilson Creek Unit in 2004.

A canine tooth from the lower mandibles of collected coyotes was given to NDOW for age structure analysis as requested in the 2003 Wildlife Damage Management Commissioners plan. In 2004, blood samples were collected from 72 coyotes in the Mt. Wilson area and tested for the presence of plague. (Several samples were found to be positive). Fawn counts will be conducted by NDOW's flights to accurately measure the fawn survival on the project.

RECOMMENDATIONS 2006: WS recommends that WDM activities continue in this area for the protection of juvenile mule deer. A full-time Wildlife Specialist is currently on the unit protecting juvenile mule deer.

PROJECT 15

HORSE AND CATTLE CAMP LOOP MULE DEER PROJECT

OBJECTIVE: Provide protection for juvenile mule deer in the Schell Creek Range in Lincoln County from January thru August. The Wildlife Specialist is protecting juvenile mule deer from coyote predation, using a wide variety of wildlife damage management tools including: soft-catch leghold traps, trail snares, calling, shooting, decoy dogs and denning. The Wildlife Specialist will also have access to an aerial hunting crew to conduct aerial hunting activities around the spring mule deer fawning grounds. The only animal targeted for removal as directed by NDOW, is the coyote.

LOCATION: The Horse and Cattle Camp Loop Unit is located in northwestern Lincoln County. This area encompasses NDOW's hunt unit 222.

RESULTS 2005: WDM activities began in January 2005, when a full-time Wildlife Specialist was located on the unit in a camp trailer. WS conducted aerial and ground control activities on the project area. A total of 84 coyotes were removed from the Schell Creek Range with an emphasis on known mule deer fawning areas (Table 2).

Table 2. Coyote Take by Method in the Horse & Cattle Camp Loop Project from January 2005 thru June 2005 (6 mo.)		
METHOD	# COYOTES (Jan. 05-June 05)	
Aircraft	45	45
Denning	4	4
Decoy Dogs	0	0
Calling/Shoot	7	7
Snare	17	17
Trap (Leghold)	11	11
TOTAL		84

*These numbers do not include coyotes removed protecting livestock within the protection area.

RESULTS 2004: WDM activities began in January 2004, when a full-time Wildlife Specialist was located on the unit in a camp trailer. WS conducted aerial and ground control activities in the unit. A total of 76 coyotes were removed from the Schell Creek Range In 2004, with an emphasis on known mule deer fawning areas.

Blood samples were collected from coyotes in the Mt. Wilson area and tested for the presence of plague. Several of the coyotes tested positive for plague. WS' also collected a coyote canine tooth from removed coyotes and sent them to NDOW for age analysis. Fawn counts will be conducted by NDOW's flights to accurately measure the progress for fawn survival on the unit.

RECOMMENDATIONS 2006: WS recommends that WDM activities continue in this area for the protection of juvenile mule deer. It is also recommended that a full-time Wildlife Specialist be on the unit in a camp trailer from January 2006 to August 2006.

PROJECT 16

ELKO COUNTY SAGE GROUSE PROJECT **Peter Coates PhD project**

This project was originally initiated as a sharp-tail grouse protection project in previous years, however, this project has evolved into a sage grouse protection project.

OBJECTIVE: Provide wildlife damage management activities for the protection of nesting sage grouse in northern Elko County. The only species targeted for removal was the common raven as agreed upon by NDOW.

LOCATION: The north border of the sage grouse unit is located 10 miles south of Contact and extends south to Wilkins. The eastern border of the sage grouse Unit is highway 93 and extends west to the Snake Mountains.

RESULTS 2005: The Wildlife Specialist located on the sage grouse unit placed out pre-bait, DRC-1339 treated egg baits, and removed ravens by method of shooting. Prior to initiating sage grouse protection efforts, the Wildlife Specialist conducted three breeding bird surveys to establish an index for the raven population. A separate bird survey will be completed in the end of July after the completion of the project. The PhD student used miniature video cameras' on the sage grouse nests and recorded ravens "pecking" sage grouse hens off the nests and consuming sage grouse eggs. The miniature cameras also recorded ravens killing and eating small grouse chicks. Both of these recorded examples of predation were previously theorized by WS' prior to initiating WDM activities.

The breeding bird surveys conducted by WS documented population levels of one primary avian species that could impact nesting sage grouse production (Table 3). This potentially problematic species was the common raven, with indices of 13.5, 8.5, 3.5, and 7, 4.3, and 1.7, birds/10 km², respectively for April through June.

From April through late June, 2005, WS removed an estimated 217 ravens using DRC-1339 eggs and 17 ravens by method of shooting (Table 4). No blood samples were collected from ravens in 2005.

	MAR	APR	MAY	JUN	JUL	MAR	APR	MAY	JUN	JUL
Species	Birds Seen at 34 Stations					Birds/10 km ²				
Ravens	N/A	13.5	8.5	3.5	N/A	N/A	7	4.3	1.7	N/A

SPECIES	METHOD	# Mar 05-July 05	Total
Common Raven	DRC-1339 Eggs	217	217
	Shooting	17	17
			234

RESULTS 2004: The Wildlife Specialist located on the sage grouse unit placed out pre-bait, DRC-1339 treated egg baits, and removed ravens by method of shooting. Prior to initiating

raven removal, the Wildlife Specialist conducted three breeding bird surveys to establish an index for the raven population. A separate bird survey will be completed in the end of July after the completion of the project.

The breeding bird surveys conducted by WS documented population levels of one primary avian species that could impact nesting sage grouse production. This potentially problematic species was the common raven, with indices of 7, 6, 2, and 2.3, 2.0, and 2.3, birds/10 mi.2, respectively for March through June.

From March through late June, 2004, WS removed an estimated 189 ravens using DRC-1339 eggs and three ravens by method of shooting.

Blood samples were collected from four ravens and tested for the West Nile Virus (no positives).

RECOMMENDATIONS 2006: This five year project has been completed. The PhD student has completed protection efforts and has submitted research papers to peer reviewed scientific journals for publication. This project has had some real positive results for both sage grouse and sharp-tail grouse and in the next several months, there will be papers documenting the effects of raven removal aimed to protect sage grouse. It appears that wildlife damage management activities can help protect nesting sage grouse.

This is the final year for the sage grouse protection work in Nevada as the United States Fish and Wildlife Service (USFWS) will no longer allow raven removal to protect upland game birds or waterfowl species. The USFWS, however, will continue to allow raven removal for livestock, property, threatened and endangered species.

PROJECT 17

ELKO COUNTY DEER AND ELK PROJECT

Reported by Kevin Lansford

OBJECTIVE: The projects primary goal is to provide protection through predation management for deer herd fawning grounds and summer range in Game Management Unit (GMU) 101, and winter range protection in GMU 105 and 107 for deer. Additionally, provide protection in GMU 105 for a small struggling elk herd that utilize the habitat for calving and summer range. The ultimate goal is to increase fawn and calf survival rates and to provide winter range protection to further increase survival for recruitment into the population. The target species are coyotes and mountain lions.

According to the proposal for the project (August 2004 Nevada Pred. Mngmt Plan) population growth within the East Humbolt Range deer herd (GMU 101, 105, 107) continues to be less than expected. This is despite the fact that good fawning ratios have been observed within the East

Humbolt deer herd. Additionally, the elk herd in GMU 105 has had an objective of 340 head but currently stands at less than 200 head. It is believed production is adequate but recruitment is poor. Elk have been radio-tagged within GMU 105 and have seen a 50% loss rate indicating mortality higher than expected. Wildlife Services will attempt to assist in discovering the reason calves are not surviving to recruitment in GMU 105.

LOCATION: The hunt units are well defined in the Nevada Department of Wildlife Boundary Unit Description. The units are 101, 105 and 107 and are all located in south/southeastern Elko County.

RESULTS 2005: The project was initiated in December 2004 with aerial hunting activities. In February 2005 a seasonal employee was hired to work the project on the ground providing ground crew for the aerial hunting operations, scouting for lions and implementing coyote control equipment.

The project removed a total of 416 coyotes. The results are broken down by method in Table 5. Four dens of coyote pups were also removed ranging in numbers from 5-9 pups. Many of the coyotes removed either by trapping or the aircraft had necropsies performed for stomach contents and/or status of the females including placental scars. Placental scars are used to determine the number of pups delivered by the female but does not indicate how many survived shortly after birth. Stomach contents included: several contained antelope fawn hair, adult deer and fawn hair, livestock hair, egg fragments, one coyote had four sage grouse chicks, rabbits, crickets, and assorted vegetative matter. GPS readings were taken for all the ground captured coyotes locations and a large majority of the aerial coyotes removed for future mapping.

Funding for the project was exhausted at the end of the State Fiscal year, however mountain lion work has continued to present. No additional lions have been removed. Two of the lions were removed from the Spruce Mountain area (GMU 105). No new lion sign has been seen on the mountain through the bi-monthly scouting trips by the lion hunters working on the project. Lion hunting in the East Humbolts (GMU 101) has also been slow through the summer months. Sign has been old to non-existent. It has been surmised that the long winter and abundant water sources has lion numbers scattered more than usual. Lion work will continue throughout the summer.

The use of a lion "call-box" has been implemented by the lion hunters to assist in located and capturing lions. The call-box can be used in conjunction with neck snares or used as a locator so lion hunters can pick the trail up on lions investigating the box. We expect the box to be successful in the future.

Table 5. Coyote and Mountain Lion Take by Method on Project 17.		
METHOD	Coyotes	Mntn. Lions
Aircraft	351	
Denning	4	
Decoy Dogs	2	
Call/shoot	8	
Trapping	41	
Neck Snares	7	
Tracking/Trailing Hounds		*3
TOTALS	416	3

*Two of the three were taken using snowmobiles.

RECOMMENDATIONS: It is generally accepted as fact that the Ruby Mountain deer herd is the most prolific in the State and its' importance to northeastern Nevada is indisputable. It is the general consensus of Wildlife Services and the Elko Office of the Nevada Department of Wildlife that the project needs to be expanded. Aerial hunting has been very successful. The lion hunting effort required for the large project exceeded expectations. The project currently supports a seasonal employee for under six months. The original budget was based on available funding, and while these projects will always be based on available funding, this particular project warrants expansion and the benefit of any funds that may come available.

The impact that an additional 30 hours of flying would produce would be invaluable. The necessity for the seasonal employee to not only concentrate on coyotes but to assist with the mountain lion surveillance is also paramount. This project could be very successful with a full-time employee or at least greatly expand his current duty as to be able to work through the summer months. February to September, at least, would be exponentially more effective. The purpose is to give this project the effort it needs to truly evaluate its' effectiveness on arguably the most important core population of deer in Nevada.

PROJECT 18

WASHOE COUNTY MULE DEER PROJECT

OBJECTIVE: Provide protection for juvenile and adult mule deer on Granite Mountain range (hunt unit 014) in northern Washoe County. The only animals targeted for removal as directed by NDOW, was coyotes and mt. lions located in the mule deer protection area. Research in other portions of the Nation indicate that coyotes are an effective predator of juvenile mule deer and mt. lions readily consume ungulate species such as juvenile and adult mule deer. This project provides nearly year round protection for juvenile and adult mule deer in the Granite Mountain

range area. A full-time WS Specialist, a part-time Wildlife Specialist and a Mt. Lion Specialist, have all provided mule deer protection efforts at various times of the year in this area.

Wildlife Specialist(s) protected juvenile mule deer from coyote predation, using a wide variety of wildlife damage management tools including: soft-catch leghold traps, trail snares, calling, shooting, decoy dogs and denning. The Wildlife Specialist(s) also had access to an aerial hunting crew that conducted aerial hunting activities primarily around the spring mule deer fawning grounds. Trailing hounds and trail snares were used to target mt. lions located on the project area.

LOCATION: The Washoe County Mule Deer Project is located in northern Washoe County. This protection area encompasses NDOW’s hunt unit (014).

RESULTS 2005: WDM activities began in September 2004, when a full-time Wildlife Specialist initiated wildlife damage management work on the Washoe County Mule Deer Project from September 2004 until January 2005. The Wildlife Specialist then transferred work efforts to mule deer project 15. A seasonal Wildlife Specialist was hired in February to continue protection work around the spring mule deer fawning grounds. WS conducted aerial and ground control activities in the project area. Severe weather (fog) cancelled several scheduled aerial hunting flights this spring, but hopefully next year WS will have more favorable weather conditions. A total of 145 coyotes were removed by various methods from the entire Washoe County Mule Deer Project (Table 6).

METHOD	# COYOTES (Sept.04-June 05) 10 mo.	Mt. lions
Aircraft	71	
Denning	2	
Decoy Dogs	2	
Calling/Shoot	15	
Trail Snare	30	2
Trap (Leghold)	25	
TOTAL	145	2

*These numbers do not include coyotes removed protecting livestock within the protection area.

A canine tooth from the lower mandibles of collected coyotes was given to NDOW for age structure analysis as discussed at the 2004 Wildlife Damage Management Commissioners meeting.

Blood samples were collected from coyotes in the Mt. Granite area and tested for the presence of plague. (Two coyotes tested positive for plague). Fawn counts will be conducted by NDOW’s spring flights to accurately measure the fawn survival on the project.

MT. LION TAKE 2005:

WS used Specialist(s), trailing hounds, and trail snares on the project area for the removal of mt. lions. A Mt. lion Specialist rode a horse with trailing hounds for 26 days through the project area

several times in the fall, winter and spring months, but very little mt. lion sign was observed. The mule deer population in the Granite Mt. area is not a large population, and it is hard to anchor a mt. lion(s) to one location for long periods of time with low food availability. In March 2005, two adult male mt. lions simultaneously moved into the west side of the protection area. The Wildlife Specialist had placed trail snares in the area a few months prior with no recent mt. lion sign. On March 14th, a 180 pound male mt. lion was removed by method of trail snare. On March 22nd, a large male mt. lion in excess of 200 pounds was removed by method of trail snare near the location of the previously mentioned mt. lion. These two mt. lions were removed shortly after entering the protection area. Both of these mt. lions appeared to be much older than the average four year old sport harvested mt. lions.

On June 28th, the WS aerial hunting crew observed two mt. lions about four miles away from the protection unit near a dead mule deer. It is likely that these mt. lions will be entering the protection area in the near future.

The overall success of this project is not measured by the number of predators removed, but by the outcome of a population increase for mule deer in the protection area. WS has observed a good number of mule deer fawns while conducting aerial hunting activities in June. NDOW has mule deer collared on the unit and to date; it appears protection efforts have protected these adult mule deer from predation because all the collared mule deer are still alive. Other species such as antelope, resident bighorn sheep and recently relocated bighorn sheep will probably have a positive result from coyote and mt. lion removal in this area. NDOW will conduct a fall flight surveys to more accurately measure the overall mule deer survival on the project.

RECOMMENDATIONS 2006: WS recommends that WDM activities continue in this area for the protection of juvenile and adult mule deer. It is also recommended that a full-time Wildlife Specialist be located on the unit most of the year protecting mule deer. WS Also recommends that a Mt. Lions Specialist conduct periodic visits to check for mt. lion activity.