

**ENVIRONMENTAL ASSESSMENT OF THE CRITERIA AND  
IMPACTS OF GRANTING EXCEPTIONS TO THE SEASONAL  
CLOSURE PERIODS IN DESIGNATED WILDLIFE AREAS**

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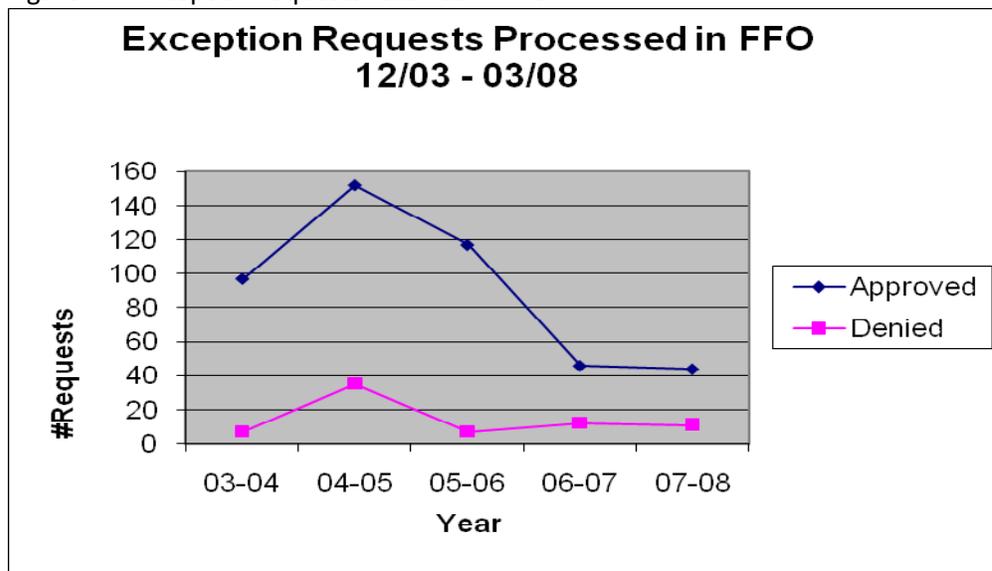
## I. Introduction

**1a. Need for the Proposed Action** - In December of 2003 the Farmington Field Office of the Bureau of Land Management issued a revised Resource Management Plan (RMP) with Record of Decision (ROD). This plan established new, long-term guidance for management of public lands within the Farmington Field Office area. Periodic reviews of the RMP/ROD were planned to ensure that the decisions made in these documents are being implemented and the intended objectives achieved. Page 15 of the Farmington Proposed Resource Management Plan and Final Environmental Impact Statement issued in September, 2003 stipulated the following:

“BLM will monitor the plan to track implementation of land use decisions and to document progress toward accomplishment of decisions. An annual report will be prepared by the FFO that will review plan decisions to determine compliance and the effectiveness and validity of decisions.”

In keeping with this mandate the BLM is currently reviewing the effectiveness of the criteria used to process requests for exceptions to the seasonal restrictions on conducting certain types of oil and gas development activities in wildlife Specially Designated Areas (SDAs). The impetus for conducting this review stems (in large part) from the concern that this issue has generated among various interest groups and media sources. Figure 1 below depicts the volume of exception requests approved and denied during the period December, 2003 through March, 2008.

Figure 1 – Exception requests received in FFO



While the number of overall requests has declined significantly from the early beginning of the exception program the public interest and concern for wildlife resources has not. Table 1 provides a summary of the types of oil and gas related activities that require an exception to the seasonal closures and those that don't. Emergency repairs would be exempt from requiring an exception, they would include: any repair needed to ensure human safety, prevent environmental contamination or to sustain the productive capability of a well (page 2-239 Farmington Proposed RMP/Final EIS). With respect to the “productive capability of a well” this is intended to mean the

“long term capability or a permanent loss of reserves”. A decline in production that isn’t permanently lost but can be recovered by repairs after the closure period has expired will require an exception.

Table 1 – \*Summary of oil and gas related actions requiring an exception versus those that don’t.

Exception Required	No Exception needed	Emergency Situations
Building a new well pad	Routine daily operations	Repairs needed to ensure human safety or prevent environmental contamination are permissible without an exception, however, BLM must be notified either prior to or during the repair process.
Drilling a well	Road maintenance	
Pipeline construction	Routine pipeline maintenance	
Plugging & abandonment (unless required to prevent environmental damage)	Changing out an “existing” compressor or installing new rods on an existing pump.	
Seismic exploration		
Workovers or any activity requiring a drilling rig, unless required to prevent environmental damage, or permanent loss of reserves. Prior approval must be obtained before beginning this type of work.		
Installation of “new” compressors if requires more than 3 days to complete. A new compressor is a well that has never had a compressor before.		
Power line construction		
Road construction/road improvement		
Surfacing of roads		
Plugging and Abandonment		

\*Page 2-239 Farmington Proposed RMP/Final EIS.

In light of the apparent controversy associated with the exception criteria and the process for granting exceptions to the seasonal closures, the BLM has decided to prepare an environmental analysis (EA) specific to this issue. Preparation of this EA is consistent with the guidance contained in the Federal Land Policy and Management Act of 1976 and the National Environmental Policy Act of 1969 (as amended).

**Ib. Conformance with the Land Use Plan** – Implementation of the exception criteria and the policy to allow industry to request an exception to seasonal wildlife closures was identified on page 5 of

the Farmington Resource Management Plan with Record of Decision which was approved in December, 2003. Further, page 11 of the Farmington Proposed Resource Management Plan and Final Environmental Impact Statement dated September, 2003 discusses the implications of adhering to the federal agency mandates contained in the Energy Policy and Conservation Act (EPCA) and Executive Order 13212 when selecting a preferred alternative. Essentially, these directives require federal land managing agencies to expedite the production of oil and gas where federal minerals are involved. The culmination of these directives was the inclusion of the exception criteria in the Farmington RMP/ROD.

**Ic. Relationship to statutes, Regulations or other Plans** - At this point in time, the BLM has had five years to assess the effectiveness of the exception criteria. Review and/or minor modification of the exception criteria policy within the framework of the RMP is consistent with Title 43 of the Code of Federal Regulations, Subpart 1610.5-4; Maintenance.

## **II. Proposed Action and Alternatives**

Ila. Proposed Action – The Proposed Action will be a combination of certain aspects of the “Modified Criteria” and “No Exception” alternatives as defined in the scoping letter of July 14, 2008. The conditions of approval (or denial) of an exception request will hinge largely on the exception criteria, and if the exception is approved, the mitigation measures that may be applied (See IVg – Mitigation Measures).

In terms of incorporating some of the rationale behind the “No Exception Alternative” there will be specific critical wildlife use areas (within existing SDAs) that, due to animal density, degraded habitat conditions and extensive habitat fragmentation exceptions will not be allowed unless an emergency situation exists (See Table 1) or where work was begun well before the closure deadline but due to unforeseen circumstances an exception of a few days may be needed to complete unfinished work. Specifically, this area will include all of the Carracas Mesa (See Figure 6) and Ensenada Mesa (See Figure 17) SDAs and that portion of the Rosa Mesa SDA north of the LaJara Wash (See Figure 27 and discussion in Section IV – Environmental Impacts).

Ilb. No Action Alternative – Maintain the existing exception criteria as they apply to the specific oil/gas field activities identified in the Farmington Draft Environmental Impact Statement, i.e., drilling of new oil or gas wells, construction of cross country pipelines, seismic exploration, construction of new roads or well pads, or any type of significant construction activity. Significant construction activity is defined as work lasting more than three days whether it is confined to an existing well location or elsewhere. Requests to cavitate a well will also require an exception. Activities that would be permissible during a seasonal closure would include daily operations, road maintenance and routine pipeline maintenance. All of the Wildlife and Recreation/Wildlife SDAs would be subject to exception requests (See Table 1).

Ilc. No Exception Alternative – The No Exception Alternative (to not have a process to request or grant an exception to a seasonal closure) for drilling of new oil or gas wells, construction of cross country pipeline, seismic exploration, construction of new roads or well pads, or any type of significant construction activity does not appear to be a totally viable option for a couple of reasons. One, there are several mandates by which the BLM must operate, they are;

- (1) The Energy Policy and Conservation Act (EPCA) Reauthorization of 2000 directed the Department of the Interior to produce a scientific inventory of oil and gas resources and reserves underlying federal lands. It also directed the Department of the Interior to identify the extent and nature of any restrictions to their development."
- (2) Executive Order (EO) 13212 which states that "...agencies shall expedite their review of permits or take other actions necessary to accelerate the completion of [energy-related projects] while maintaining safety, public health and environmental protections. The agencies shall take such actions to the extent permitted by law and regulation and where appropriate."
- (3) As a result of the congressional act and executive order noted above, the guidance therein was promulgated as Instruction Memorandum 2003-233 dated July 28, 2003 and issued by the BLM's Washington Office to all BLM state directors. Page two of this memorandum under Policy/Action states in part: "The President's National Energy Policy directed the EPCA inventory be expedited, and constraints to Federal oil and gas leasing be reassessed and modified "where appropriate opportunities exist (consistent with the law, good environmental practice, and balanced use of other resources)." This goal does not mean all existing resource-related constraints or closures will be eliminated. As a result of this direction, in some areas the need for additional constraints may be identified." As noted above, (See Proposed Action) BLM has exercised this option.  
Two, while it is apparent that all of the SDAs have been heavily impacted by oil and gas development it (See discussion to follow) is not entirely clear to what extent this has affected big game. Based on several cautionary indicators such as static deer numbers, extensive habitat fragmentation and poor to fair forage conditions BLM has identified several areas where exceptions for other than emergency situations will not be entertained.

The Farmington BLM's interpretation of this guidance is that under all but the most sensitive ecological situations (See Proposed Action) the BLM is obligated to provide a mechanism for industry to request an exception to a seasonal closure stipulation. Therefore, until such time as the BLM receives additional guidance that would supersede the guidance noted above, it is BLM's position that the No Exceptions Alternative cannot be adopted in its entirety.

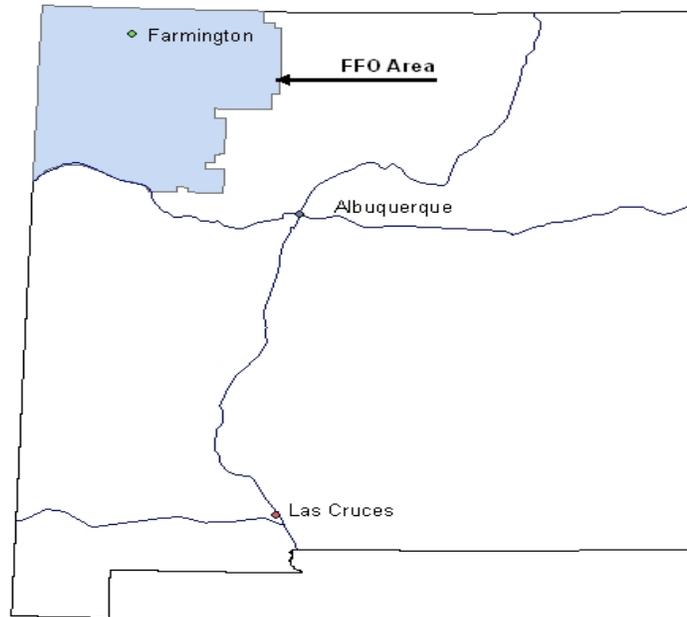
### **III. Affected Environment**

IIIa. General Setting – The Farmington Field Office area is located in northwest New Mexico (See Figure 2 below). It encompasses approximately 1,415,300 acres of public surface and 3,020, 693 acres of federal subsurface minerals. Oil and gas wells are common with approximately 20,000 wells in existence today. The road and pipeline network to service these wells is also extensive with approximately 6,400 miles of secondary roads located on BLM lands.

The vegetation and topography of the area varies from gently rolling hills and small mesas in the southwestern portion of the field office area to deep, rocky canyons and mesas on the remainder. Wyoming big sagebrush with an understory of mostly perennial grasses dominates

much of the rolling hills and mesas. One seed juniper with lesser amounts of pinyon pine also

Figure 2 – Farmington Field Office location



occurs on this landscape in small patches and stringers. Conversely, in the rougher terrain that encompasses most of the rest of the field office area, deep canyons and mesas prevail. Pinyon pine, Utah juniper, Gambel’s oak, ponderosa pine and Douglas fir can be found here in varying combinations depending upon the aspect and elevation. Soil texture throughout the area is heavily influenced by sand and clay which results in soils that are often highly erosive.

IIIb. Affected Resources – Prior to amending the Farmington RMP in 2003 there were approximately 100,000 acres designated as critical big game winter habitat. As part of the RMP revision process it was proposed and approved to significantly expand the critical habitat designation (SDAs) for big game. The total number of public land acres within these SDAs is 392,753. As of June 2008 there were approximately 5,392 gas and oil wells and 1,647 miles of roads located on the public lands within these SDAs. This level of development has taken place over approximately the past 60 years. It represents the combined efforts of many companies drilling into numerous natural gas and oil formations. The scope of this analysis is directed at the impacts to wildlife as a result of allowing certain oil and gas related activities to take place during the seasonal closure period. As such, the only resource to be described under this section will be the nine Wildlife and two Recreation/Wildlife Specially Designated Area (SDA) site descriptions and those game species identified within them (See Figure 3). The focus of the description will be on three of the five evaluation criteria listed in the “Procedures for requesting an exception to seasonal drilling restrictions.” These criteria are essentially a description of key aspects of the affected SDAs as they pertain to big game. The five criteria are:

**1. Animal Density:** The basis of these criteria will likely be somewhat subjective and based upon field observations. Data collection methods such as helicopter surveys would be impractical for

each request or series of requests due to the cost involved and the lack of probable expediency in processing the request. In general, if it can be said that big game distribution is commonly evident and somewhat pervasive in the proposed project area as evidenced by tracks, droppings, and live sightings on a daily basis, then the area would be considered as having a moderate to high density of animals. Conversely, infrequent live sightings and few or sporadic tracks and pellet groups would suggest a low density. Moderate to high densities would generally be incompatible with increased human activity during the winter.

**2. Severity of the winter:** Mackie (1994) reported that 6 to 12 inches of snow will cause major migrations or shifts in habitat use by mule deer. Mackie also found that a deer's comfort range (in the presence of suitable thermal cover) varied from 15 to 45 degrees F. At 15 degrees F. deer may seek a warmer, more sheltered position on the landscape. Dasman (1981) reported that at temperatures below 40 degrees F. deer begin to lose weight with this loss becoming more rapid if the temperature falls below 30 degrees F. regardless of the quantity or quality of forage available. Mautz et al. (1985) found that at temperatures below 7 degrees F. deer altered their behavior to conserve energy and body heat. During these periods deer were observed to spend 25-40 percent less time standing and chose instead to lie with their legs folded under them and head curled back and nose tucked into their flank. Based on these observations a severe winter will be defined as 6-12 inches of snow (on any position on the landscape) and temperatures averaging 20 degrees F. (or less) over a 24 hour period. Conversely, a light to moderate winter will be defined as a general absence of snow or depths not exceeding 2-3 inches with temperatures over a 24 hour period averaging 35-45 degrees. Severe winter conditions would generally be incompatible with increased human activity.

**3. Length of the proposed operation:** Exceptions where the proposed activity will be of a shorter duration will be more favorably viewed than one of a longer period. The reasoning behind this is that weather conditions are subject to change dramatically over a 2-3 week period. Therefore, exceptions for activities such as drill and cap a well within 3 weeks, with the completion being done after the closure period, will be viewed more favorably than drill and complete the well entirely within the closure period, which may take 6-8 weeks. Similarly, requests for exceptions where the proposed activity will take place on existing well pads and/or off of existing roads or roads built outside of the closure period would be more favorably viewed than proposals requiring extensive excavation during the closure period.

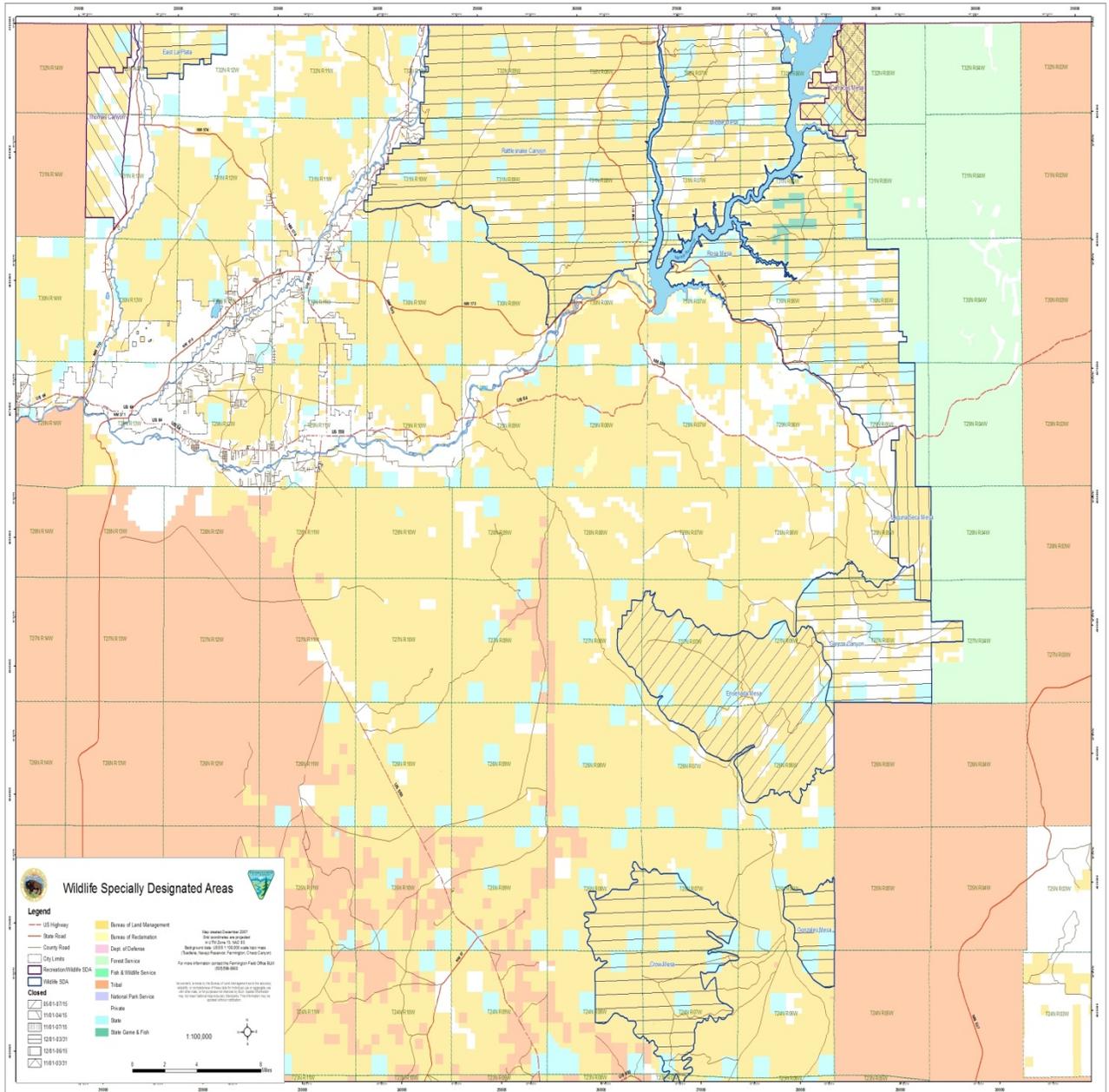
**4. Condition of the surrounding habitat:** Requests for exceptions in areas where there is abundant forage and thermal/escape cover will be viewed more favorably than areas with inadequate cover and forage.

**5. Amount of existing disturbance:** Areas with a lesser amount of disturbance such as roads, wells, and compressor facilities will be viewed more favorably than an area that is highly disturbed. The reasoning behind this is that animals displaced or disturbed by increased human activity may have alternate habitat available to use in a less fragmented area as opposed to a highly fragmented location. Thus, requests where the proposed activities would be localized or clustered would be viewed more favorably

than if the activities are spread over a broad area. This would be especially true in areas that are highly fragmented due to existing roads and wells.

The criteria that can be described at this point in time are animal density, condition of the surrounding habitat and amount of existing disturbance. Severity of the winter and

Figure 3 – SDA locations in FFO



length of the proposed operation are obviously unknowns at this point in time. Even animal density, as presented here, is merely a summation of past survey data collected over a number of years. The actual numbers of animals in a given area at the time of the exception request will be influenced by the weather conditions at that time.

- (1) Animal Density – to the extent data is available this element will be described on the basis of past helicopter surveys conducted by the New Mexico Department of Game and Fish. In the absence of helicopter survey data, estimates based upon field observations, will be provided.
- (2) Condition of the surrounding habitat – BLM has established 106 browse studies throughout the FFO area. These studies consist of a modified Cole browse transect that records the degree of hedging, age of the plant, and availability to wildlife of the first 50 plants encountered along a specific azimuth bearing. Co-located with this transect is a belt pellet group transect. To the extent possible these studies are read every three years. In other words about one-third of the total transects are read every year.
- (3) Amount of existing disturbance – the FFO area has extensive habitat fragmentation due to oil and gas development. The impact this fragmentation has on wildlife is contingent (in part) upon its magnitude and the available cover. Other factors such as forage quality, weather and the amount of human activity also play a role in determining the impacts to wildlife due to granting an exception for additional oil and gas related work. However, excessive habitat fragmentation potentially reduces the buffer between animals and humans. For the purposes of this analysis, habitat fragmentation within individual SDAs will be presented quantitatively in two different ways.

One, the area of each SDA will be divided into Thiessen polygons. Using a GIS, a polygon is drawn around each well within the SDA so that each well is equidistant from the next well. This method of analysis allows for the influence of a known point (oil or gas well) to be expressed in a quantitative manner. For each SDA the mean polygon size will be given.

Two, each SDA also contains a network of roads to each of the wells. The volume of traffic varies on these roads depending upon the time of day and year. An extensive network of natural gas and produced water pipelines are also present. However, in many instances these lines parallel roads and will not be considered as a separate perturbation.

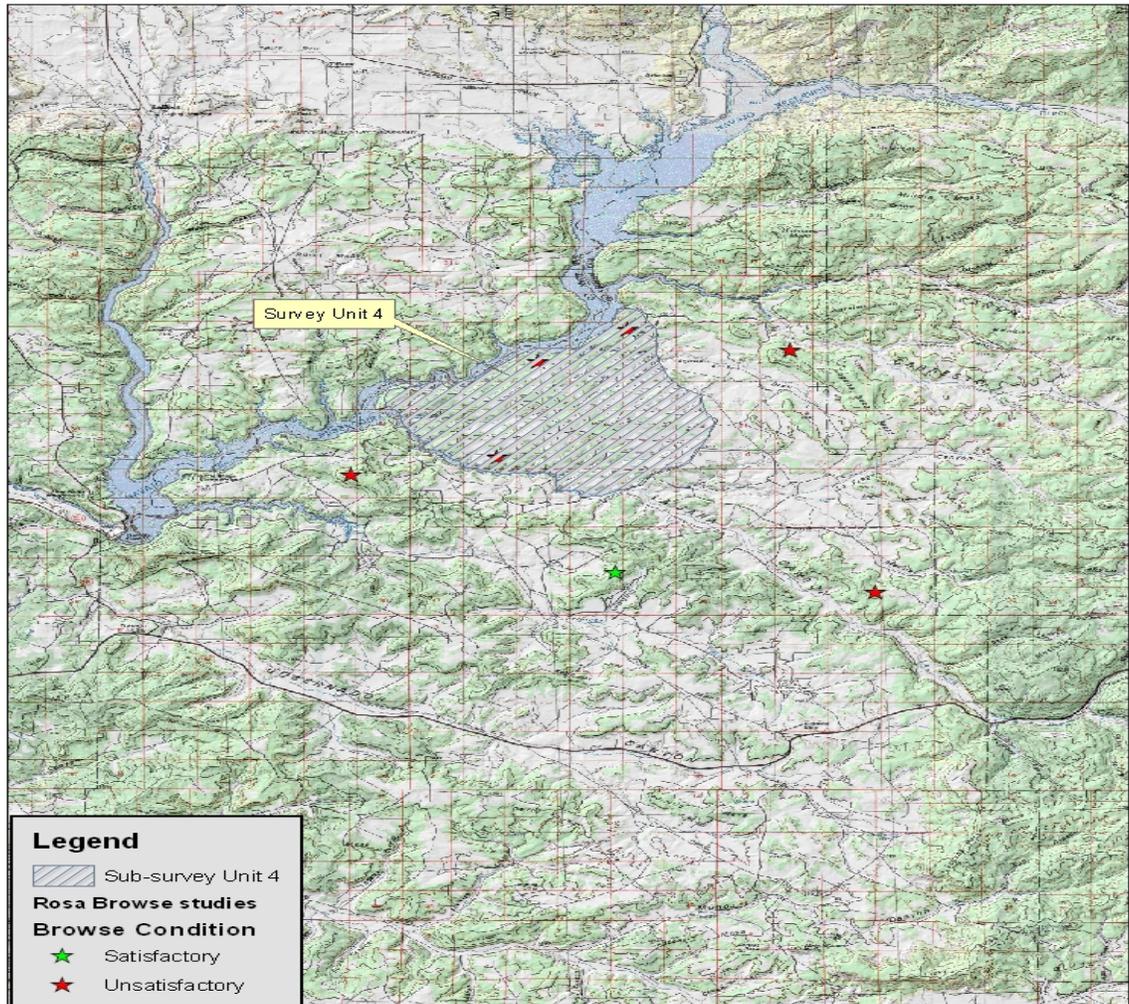
The “Procedures for Requesting an Exception to Seasonal Drilling Restrictions” lists the SDAs by priority; high, moderate or low. The information to follow will be provided by SDA in order of priority.

NOTE: The seasonal closure pertains to activities such as drilling of new oil or gas wells, construction of cross country pipelines, seismic exploration, construction of new roads or well pads, or any type of significant construction activity. Cavitation of wells is considered non-routine and would only be allowed under emergency conditions.

## Rosa Mesa – High Priority – Closure period: 12/01 – 03/31

**Animal Density:** The Rosa Mesa SDA contains 69,773 acres and 1,111 wells. It is located immediately east of Navajo Reservoir (See Figure 4) and it is extremely important to wintering mule deer but it is also located in one of the more productive coal gas regions in the FFO area. The Farmington RMP calls for a seasonal closure of December 1 through March 31 each year. The number of wintering deer in portions of the Rosa SDA has been counted by the New Mexico Department of Game and Fish from a helicopter each year since 1994.

Figure 4 – Browse Study Condition/Helicopter Survey Unit 4



In some areas of the Rosa trend surveys are flown each year in the same area while the in the remainder of the SDA surveys are flown as funding will allow. This generally means that much of the Rosa is not flown for several years at a time. In addition, a different survey protocol called “sight ability” has been used in recent years. This method takes into consideration factors which can influence the detection of an animal

from the air such as snow, light conditions and vegetation. These attributes are recorded for each observation and the information is entered into a computer program as a means to generate the probable total numbers of animals in the area surveyed. The trend surveys are simply a record of every animal observed, classified to age and sex in the same area year after year. Listed below are the survey data (See Table 2) for sub-survey unit 4 (See Figure 4) for the years 2003 through 2008.

Table 2 – Helicopter survey data for sub-survey unit 4 (deer only).\*

Buck	Doe	Fawn	Unknown	Total	Ratio:B/D/F	Year
25	247	112		382	10/100/45	2003
10	99	68		177	10/100/69	2004
38	163	121	109	431	23/100/74	2005
75	243	147	47	522	31/100/60	2006
62	208	102	0	372	30/100/49	2007
34	142	98	NA	274	24/100/69	2008

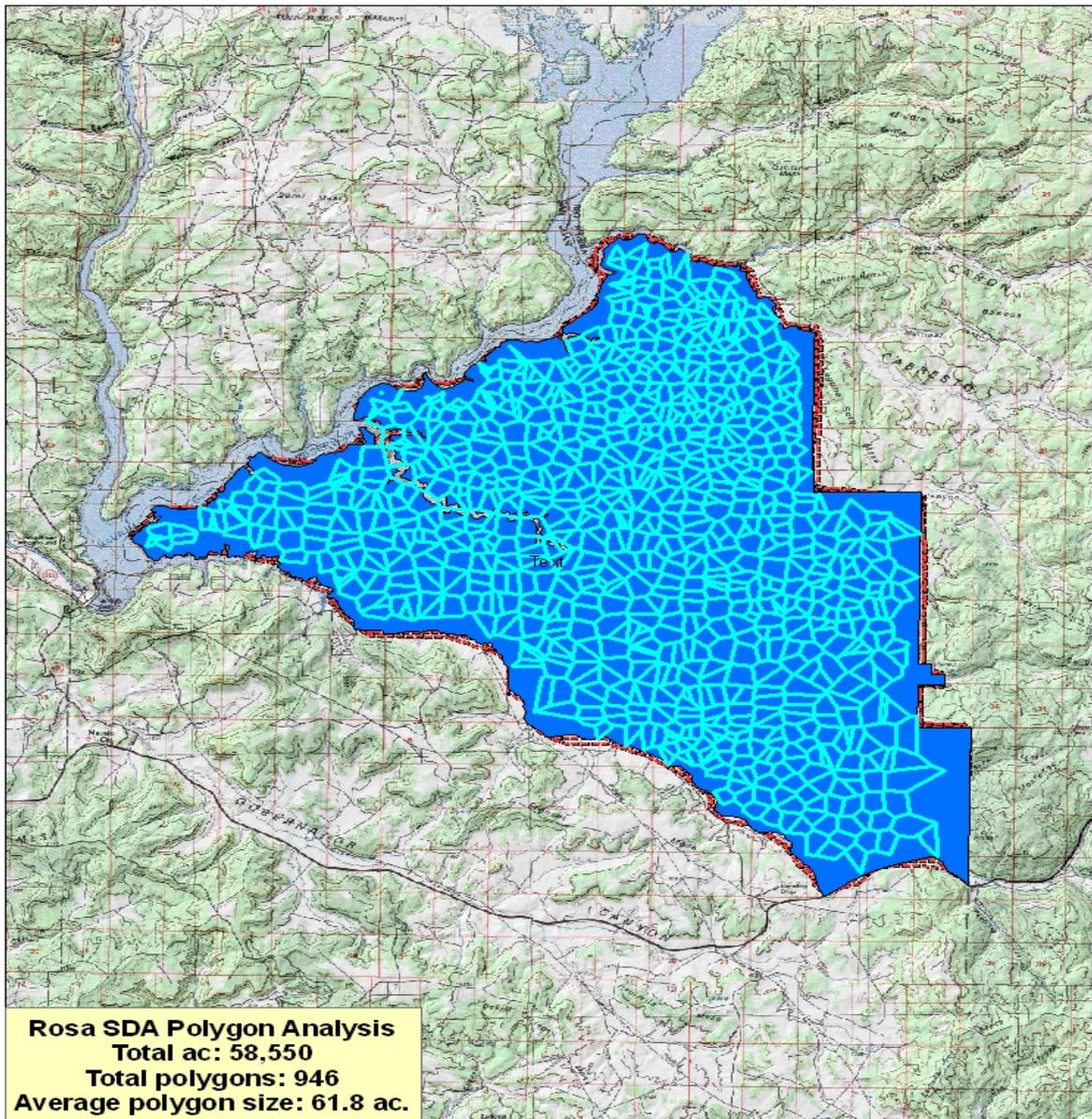
\*No elk were observed in this unit.

As noted above, helicopter survey data can vary considerably from year to year. There are a number of factors that can influence this but overall weather is probably the single most important one. With respect to the data shown above, the fawn to doe ratios in 2003 and 2007 were both down significantly from the 04-06 average (68:100). An average of all year's numbers resulted in an age/sex ratio of 22:100:59.

**Condition of surrounding habitat:** Figure 4 above also depicts the browse studies that were established in the Rosa SDA in 1995. The condition of the browse (true mountain mahogany and antelope bitterbrush) has fluctuated very little over the years. Initially two of the seven transects rated satisfactory. However, at present only one of the seven transects is now rated as satisfactory. With 0 to 40 being suitable and 41 to 100 being unsuitable, the average rating of all browse transects in the Rosa is 64. In some areas utilization of Wyoming big sage, pinyon pine and Utah juniper by deer has caused some of these plants to die. Probable causes for this are excessive forage demands by deer, drought and browse lost to roads, pipelines and well locations.

**Amount of existing disturbance:** The degree of habitat fragmentation in the Rosa SDA is depicted in Figure 5 below. This map shows the Rosa SDA divided into Thiessen polygons. This form of habitat fragmentation analysis relies on a GIS to construct polygons around known points of disturbance. The sides of the polygon are equidistant from the surrounding points of disturbance. In this instance, the points of disturbance are gas wells. For all of the 946 polygons that were contained within the Rosa SDA the average size was 61.8 acres. In addition to the effects of the wells there are also approximately 2.8 miles of road per square mile.

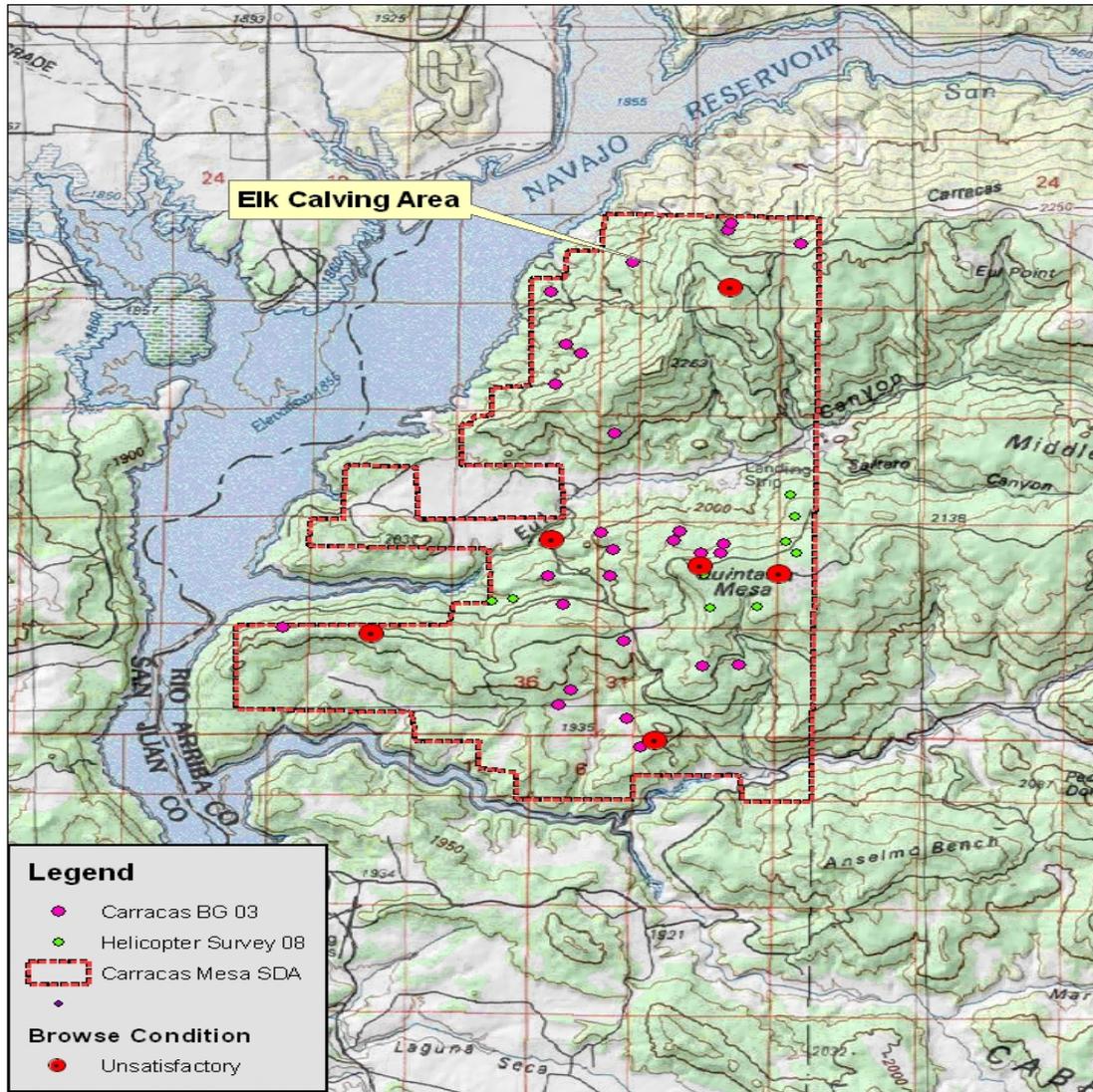
Figure 5 – Thiessen Polygon Analysis of Rosa SDA



**Carracas Mesa SDA – High Priority – Closure period: 11/01 -03/31 & 04/01-07/15**

**Animal Density:** The Carracas Mesa SDA is located immediately east of Navajo Reservoir and north of the Rosa SDA (See Figure 6). It contains 8,679 acres and approximately 76 wells. This area is very important to wintering deer and it also contains designated elk calving habitat. The seasonal begins a month earlier than in the Rosa and runs from November 1 through March 31 for the area in general, and April 1 through July 15 for that portion designated as elk calving. The reason for the earlier closure is

Figure 6 – Browse Study Location/helicopter Survey Sub-Survey Unit 9



this area is higher elevation and closer to the Colorado state line. As a consequence, this is one of the first places that migratory deer from Colorado encounter. Because of the reservoir to the west the deer are concentrated in the Carracas Mesa and Eul Canyon area for a longer period of time than other portions of the Rosa SDA to the south. The rationale for the closure during the elk calving period is to reduce the potential for disturbance to cow elk and their young until the calves are strong enough to keep up with their mothers and be more capable of avoiding predators. Helicopter survey data for the Carracas SDA was available only for the years 2003 and 2008. These data are shown in Table 3 below. A total of 158 deer were observed in 2003 with a ratio of 16 bucks and 45 fawns per 100 does. The number of deer observed in 2008 was inadequate to calculate an age/sex ratio.

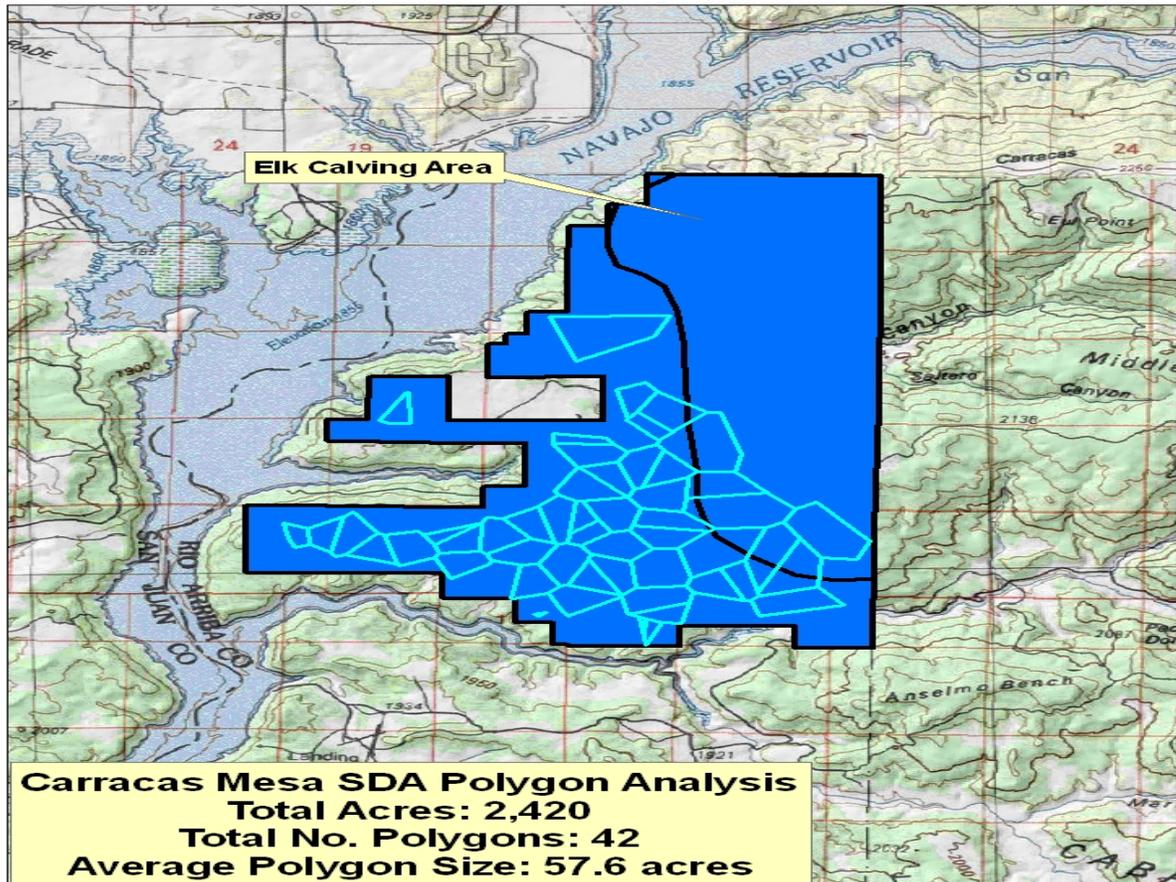
Table 3 – Helicopter survey data for Carracas Mesa SDA.

Year	Species	Adult Males	Adult Does	Juveniles	Total	Age/Sex Ratio
2003	Deer	16	98	44	158	16:100:45
2008	Deer	6	22	11	39	NA

**Condition of the surrounding habitat:** The condition of the browse in the Carracas SDA is generally poor. As noted earlier, a modified Cole browse method of assessing the condition of key species such as antelope bitterbrush and true mountain mahogany is used. Under this methodology, negative attributes such as heavy use, decadent plants and plants that are unavailable for use by deer or elk are assigned points. A score of 0 to 40 rates as suitable while a score of 41 or more rates as unsuitable habitat. The average score for the six transects located in the Carracas SDA is 89. Much of the browse has been severely hedged. In some areas non-traditional species such as pinyon pine and Utah juniper have been high-lined while secondary browse such as Wyoming big sage has been used heavily, in some instances to the point it has been killed. To be fair, however, drought has played a significant role in the demise of sage and other browse species. It should be noted also that all livestock grazing in the Carracas SDA was retired in 2003.

**Amount of existing disturbance:** In the southwest portion of the Carracas SDA habitat fragmentation is significant (See Figure 7 below). There are approximately 76 gas wells within the SDA and about 1.81

Figure 7 – Carracas SDA /Thiessen Polygon Analysis

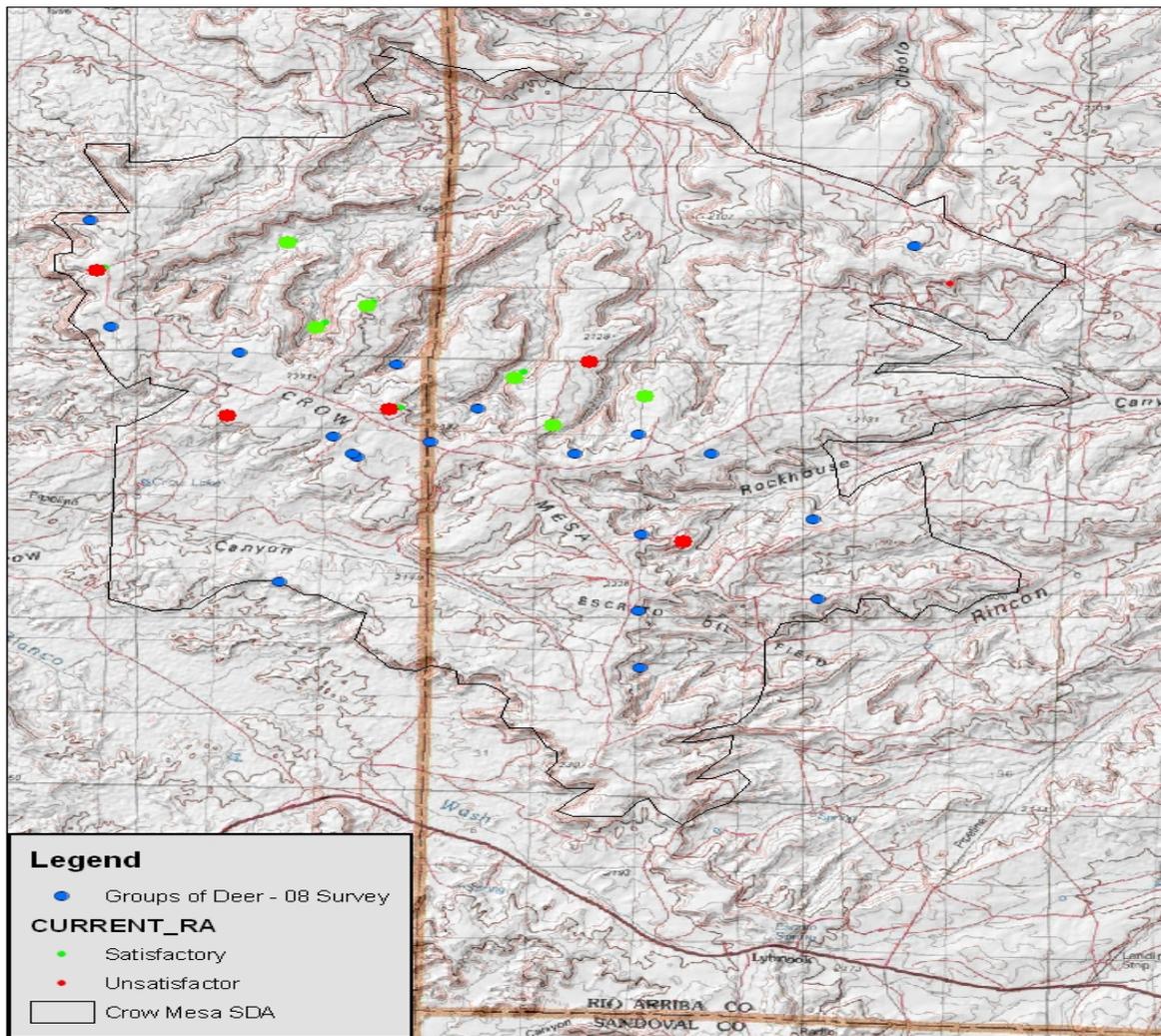


miles of road per square mile. Thiessen polygon analysis of the developed portion of the SDA indicates there are 42 total polygons with an average polygon size of 58.6 acres. Conversely, much of Carracas Mesa and Eul Canyon is devoid of active wells.

### Crow Mesa SDA – High Priority – Closure period:12/01 – 03/31

**Animal Density:** The Crow Mesa SDA is located approximately two miles north of Lybrook, New Mexico (See Figure 8). It encompasses 37,728 acres and has approximately 200 oil and gas wells located within its boundaries. Comprehensive surveys that covered the entire SDA had not been flown prior to the

Figure 8 – Browse study locations/Helicopter survey in Crow Mesa SDA



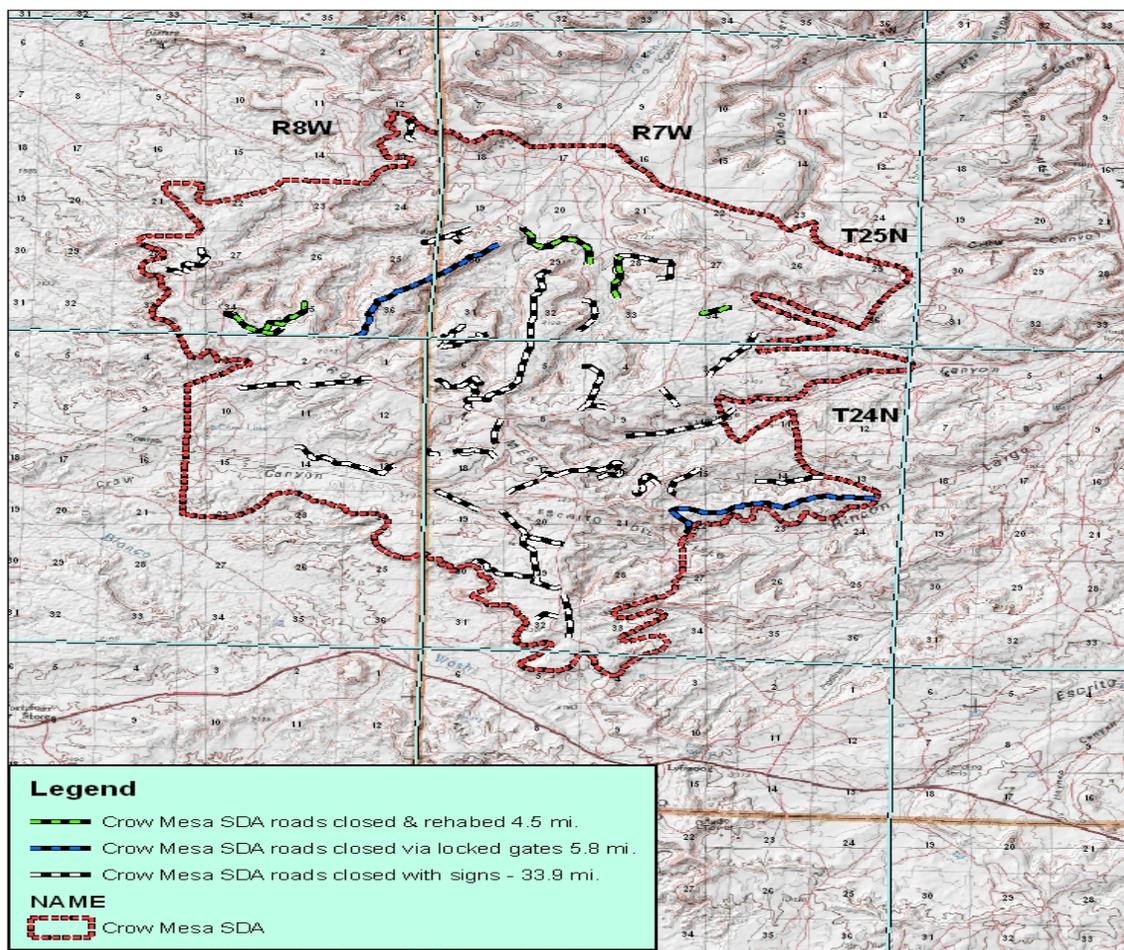
winter of 2008. In January of 2008 there were a total of 77 deer observed (See Figure 8) within the boundaries of the SDA. A breakdown of this number is as follows: 22 bucks, 37 does and 18 fawns. A minimum of 100 does in 25 groups has been established by the New Mexico Department of Game and Fish as the number of animals needed to constitute a statistically valid sample. Therefore, an age/sex ratio is not possible. Formal observation of elk where their locations and numbers were recorded was

not done during the deer survey of 2008. However, recent ground observations incidental to other work being done by BLM personnel in Crow Mesa during the month of July would put the number of elk residing in the SDA at approximately 30 to 50 animals.

**Condition of the surrounding habitat:** There are a total of 12 browse studies in the Crow Mesa SDA (See Figure 8). Five of these studies found the browse to be in satisfactory condition while seven of them were in unsatisfactory condition. The average rating of all transects was 43. Extensive forage enhancement projects designed to increase the amount of early spring/summer herbaceous vegetation as well as browse were begun in the fall of 2007. It is anticipated that approximately 3,000 acres will be treated in the Crow Mesa SDA by the end of 2010. At present, approximately 800 acres have been treated since November of 2007. In addition, approximately 11,000 acres of the SDA, primarily in the Palluche Canyon area, has been permanently retired from livestock grazing thereby eliminating any competition for forage or water between wildlife and livestock.

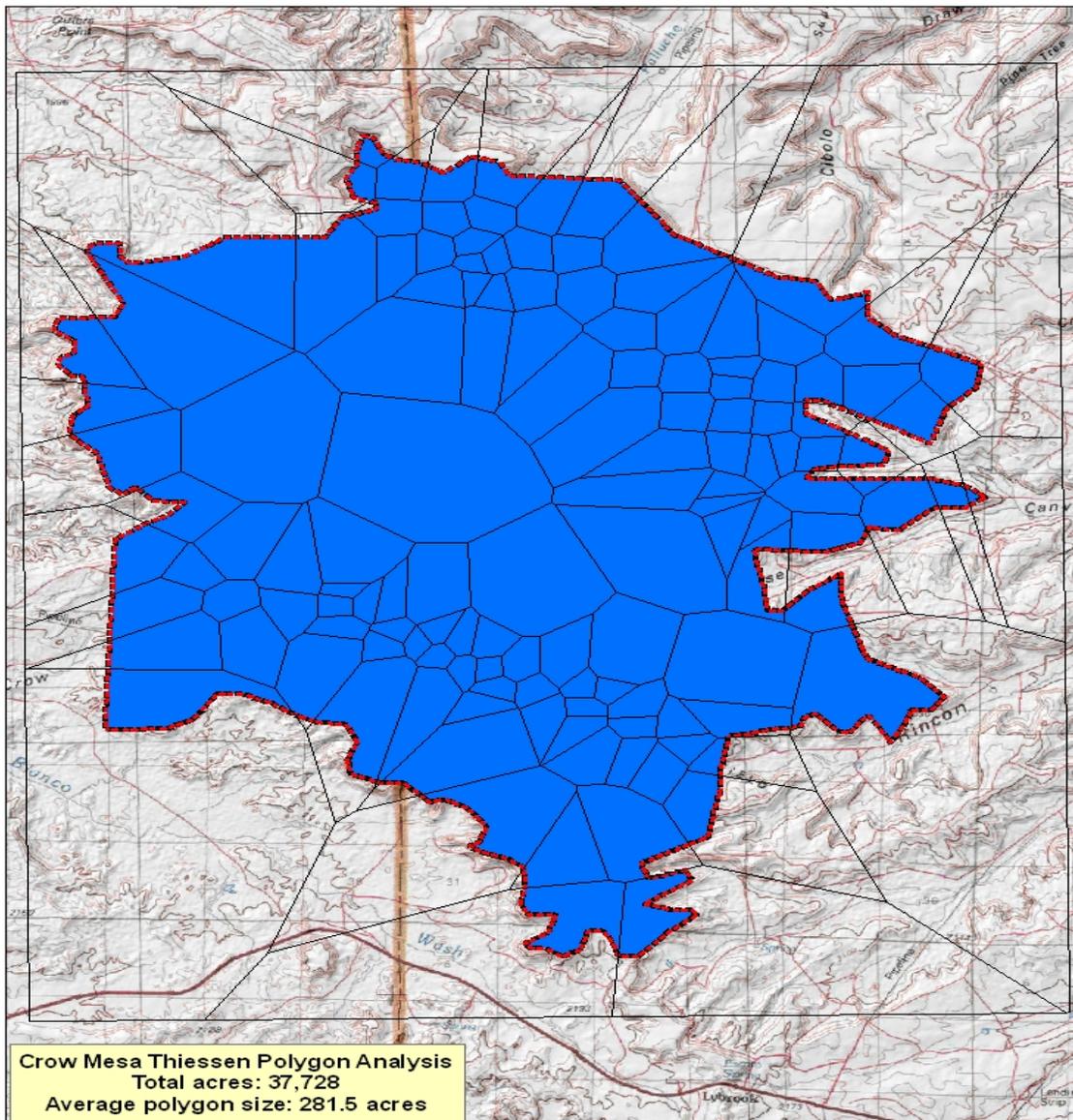
**Amount of existing disturbance:** The Crow Mesa SDA has about 200 oil and gas wells (as noted above) and a road infrastructure to service these wells. In addition, there are a considerable number of two-track roads that have been created over the years by wood cutters and hunters.

Figure 9 – Crow Mesa SDA Road Closures



This road network has led to extensive vehicle access throughout much of the SDA. However, BLM has attempted to close a number of these roads in this area through signing, ripping and berming and most recently gating (See Figure 9). This has helped to create some roadless areas where wildlife are relatively secure. Conversely, in those portions of the SDA with active oil and gas wells a Thiessen polygon analysis has found that the average size polygon is 281.5 acres (See Figure 10). It is BLM's intent to close as many of the roads currently closed with only a sign by ripping and rehabbing. This will be actively worked on over the next two to three years.

Figure 10 – Crow Mesa Thiessen Polygon Analysis



**Thomas Canyon SDA – High Priority – Closure period: 12/01 – 04/15**

**Animal Density:** The Thomas Canyon SDA is located approximately one mile west of La Plata, New Mexico and extends to the Colorado/New Mexico state line. It contains approximately 15,774 acres and

66 gas wells. It provides critical winter range for migratory deer from Colorado and it also serves as yearlong habitat for a much smaller number of deer and elk. This SDA is part of big game survey unit 1, which is a sub-survey unit of game management unit 2A. Table 4 below lists the animals observed within the Thomas Canyon SDA portion of sub-survey unit 1 during helicopter surveys conducted during the winter of the years 2003-2007. Survey data were available only for the years flown. Total deer numbers observed, solely within the Thomas Canyon SDA during the years when surveys were flown, were insufficient to calculate age/sex ratios. Figure 11 (shown below) depicts the groups of deer

Table 4 – Helicopter survey results Thomas Canyon SDA, 2003-07: Deer

YEAR	Buck	Doe	Fawn	Total	Age/Sex ratio
2003	18	52	29	99	NA
2004	14	51	19	84	NA
2007	8	22	20	46	NA
Average	13.3	41.7	22.7	76.3	NA

observed from the helicopter during the years listed in Table 3. For those familiar with the Thomas Canyon SDA two things are apparent. One, the deer appear to prefer the northern portion of the SDA where motorized vehicle travel is excluded and two the deer rely heavily on the benches dominated by Wyoming big sage for winter forage.

**Condition of the surrounding habitat:** The Thomas Canyon SDA is characterized by rocky upland benches that are dominated vegetatively by pinyon and juniper while the lower lying country gives way to Wyoming sage parks with stringers or patches of pinyon and juniper. Two browse studies are located in the SDA. These studies (See Figure 11) are located in the lower edges of the pinyon/juniper habitat type and are intended to assess the condition of true mountain mahogany and antelope bitterbrush. At present, the browse at both of these locations is in unsatisfactory condition with an average score of 68. Some thinning of pinyon and juniper has been done (about 200 acres) on the upper slopes. In addition, a guzzler has been installed and 27 ponds have been built, all on the northern portion of the SDA. It should be noted also that livestock have not grazed on the northern portion of the SDA since 1992.

**Amount of existing disturbance:** The Thomas Canyon SDA contains approximately 15,774 acres and a total of 66 natural gas wells. The northern portion of the SDA (See Figure 11) is the original SDA before it was expanded as a result of the RMP revision in 2003. The entire SDA has been discretionarily closed to new leasing of oil and gas development (See page C-130, Farmington RMP - 2003 ). The southern or expanded portion of the SDA contains the most oil and gas activity. There is only one active well in the original SDA and it lies just inside the boundary of the original SDA in the southwest corner. A Thiessen polygon analysis reveals a total of 43 polygons with an average size of 526.9 acres (See Figure 12). There are 2.0 miles of open road per square mile. Nearly all of this open road lies in the southern portion of the SDA.

Figure 11 – Browse study locations/Helicopter survey data in Thomas Canyon SDA.

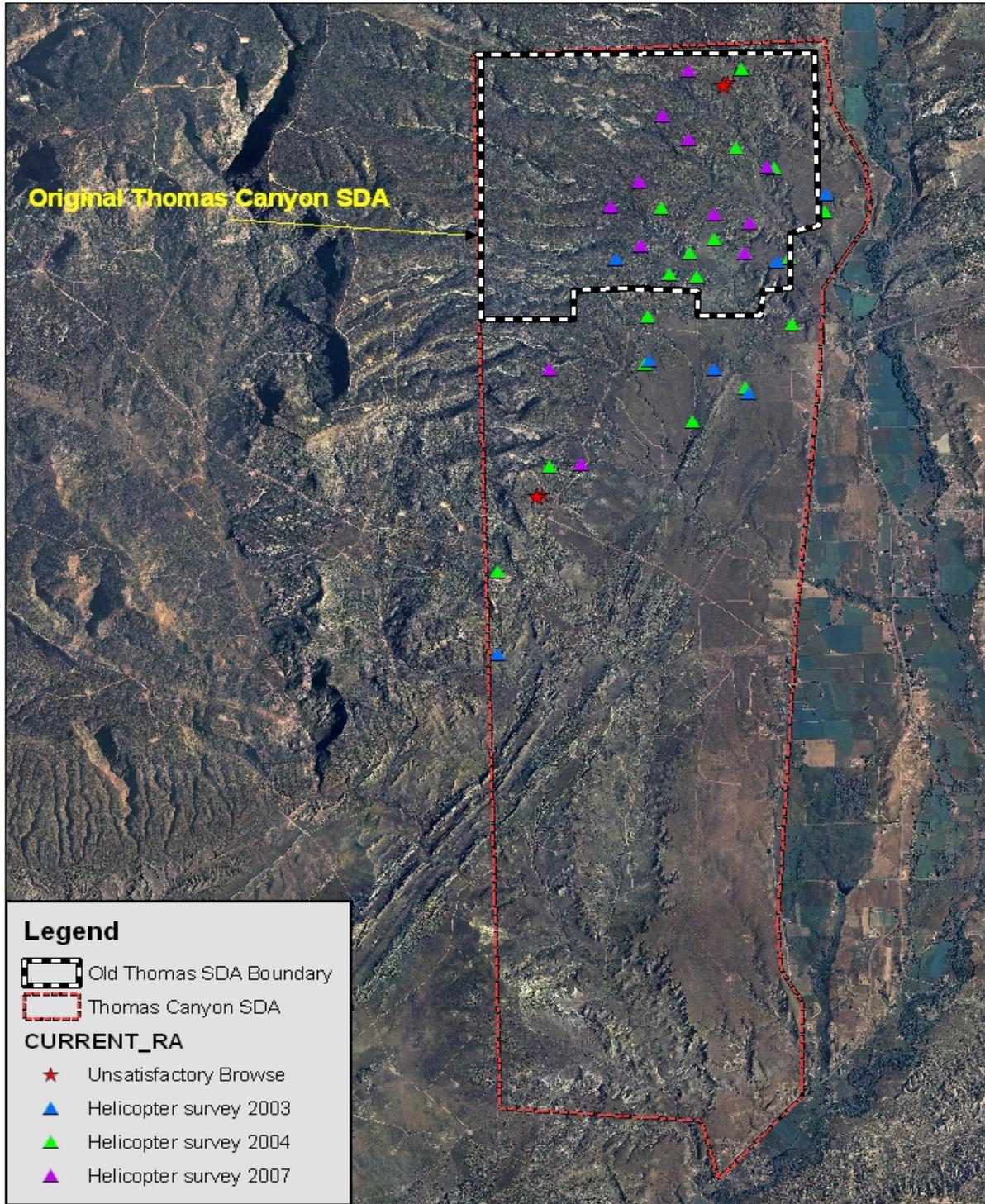
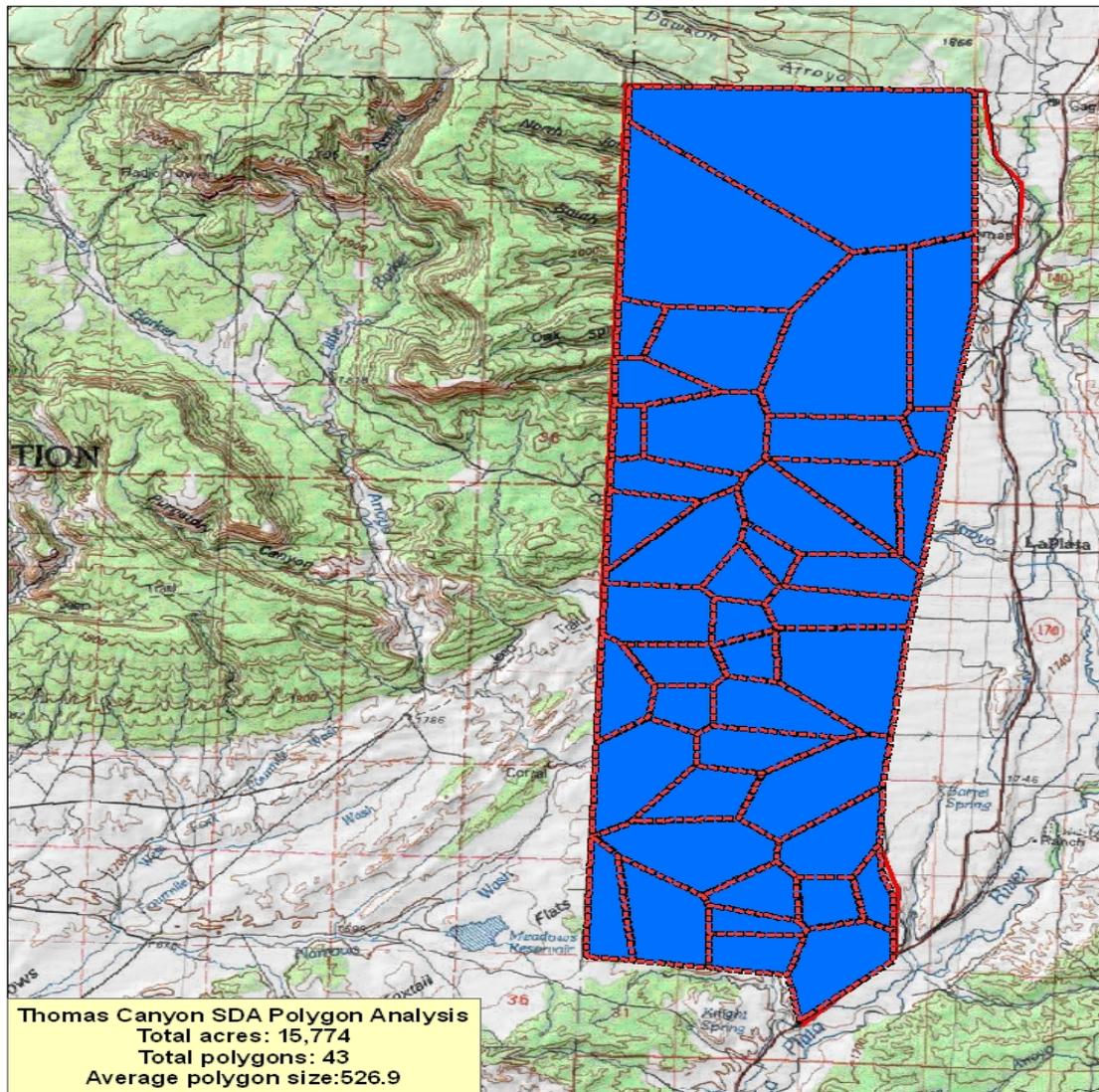


Figure 12 – Thomas Canyon Thiessen polygon analysis.



### East La Plata SDA – Moderate Priority – Closure period: 12/01 – 03/31

**Animal Density:** The East La Plata SDA is located approximately 15 miles north of Farmington adjacent to the Colorado/New Mexico state line. It contains approximately 7,025 acres and a total of 56 gas wells. Also within its boundaries is the La Plata open pit coal mine which covers approximately 2,375 acres. However, mining operations have been completed and the mine is in the reclamation phase. The primary value of the East La Plata SDA is as winter range for deer migrating from southern Colorado. Use by resident deer and elk is fairly minimal with probably no more than 5 to 10 deer and elk use being transient in nature. Table 5 below shows the number of deer observed during helicopter surveys conducted in early January from 2003 – 2008. Figure 13 below depicts the locations of the groups of deer observed during the surveys. Data for the years 2004-2006 and 2008 are not available due to

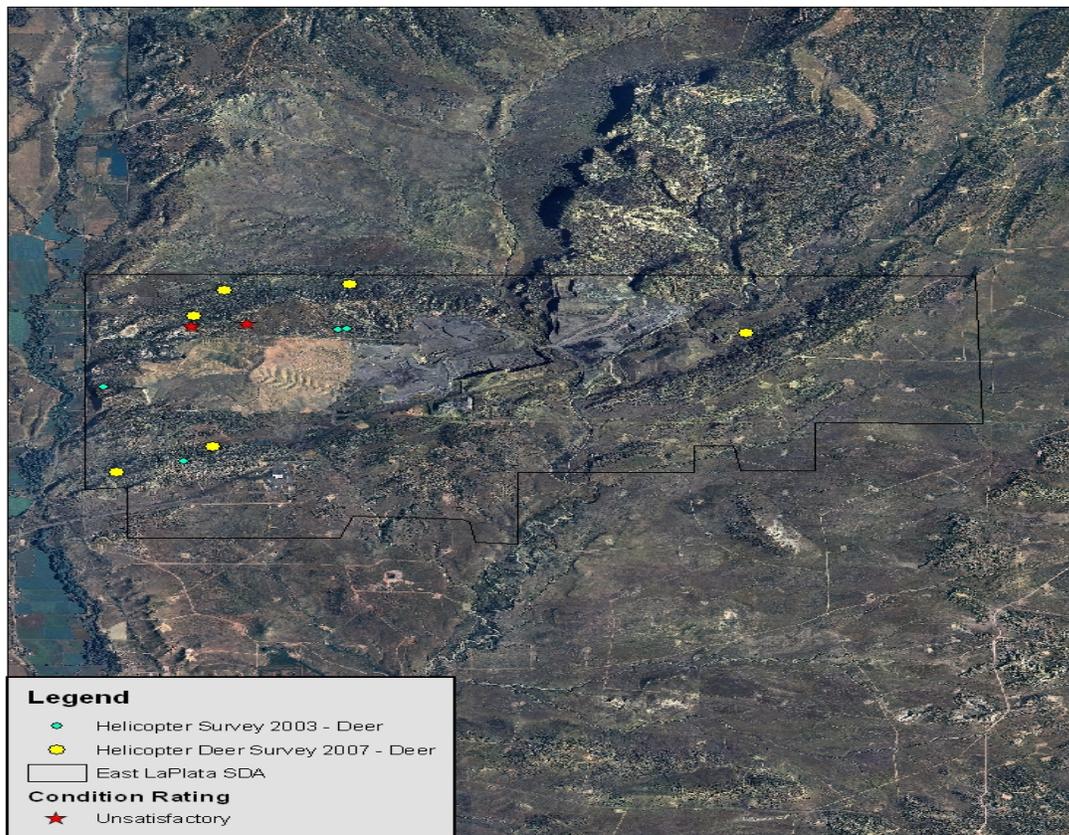
either the unit was not flown (2005, 2007 and 2008) or no animals were observed (2004) within the East La Plata SDA. It is anticipated that as the reclamation is completed on the LaPlata mine that more winter deer use will occur here.

Table 5 - Helicopter survey results East La Plata SDA, 2003-08: Deer

YEAR	Buck	Doe	Fawn	Total	Age/Sex ratio
2003	8	9	7	24	NA
2004	0	0	0	0	NA
2007	3	10	7	20	NA
2008	No Survey	NA	NA	NA	NA
Average	3.7	6.3	4.7	14.7	NA

**Condition of the surrounding habitat:** The western half of the East La Plata SDA is dominated by the La Plata open pit coal mine, haul road, office and shop facilities, and the paved road leading into the administrative site. The area adjacent to the mine facility is occupied by scattered pinyon/juniper, Wyoming big sage, antelope bitterbrush and true mountain mahogany. The post mining reclamation plan calls for a mix of browse, forbs, grasses and some trees to be planted. Two browse studies are located on the north side of the mine lease (See Figure 13 below). The most recent evaluation of these

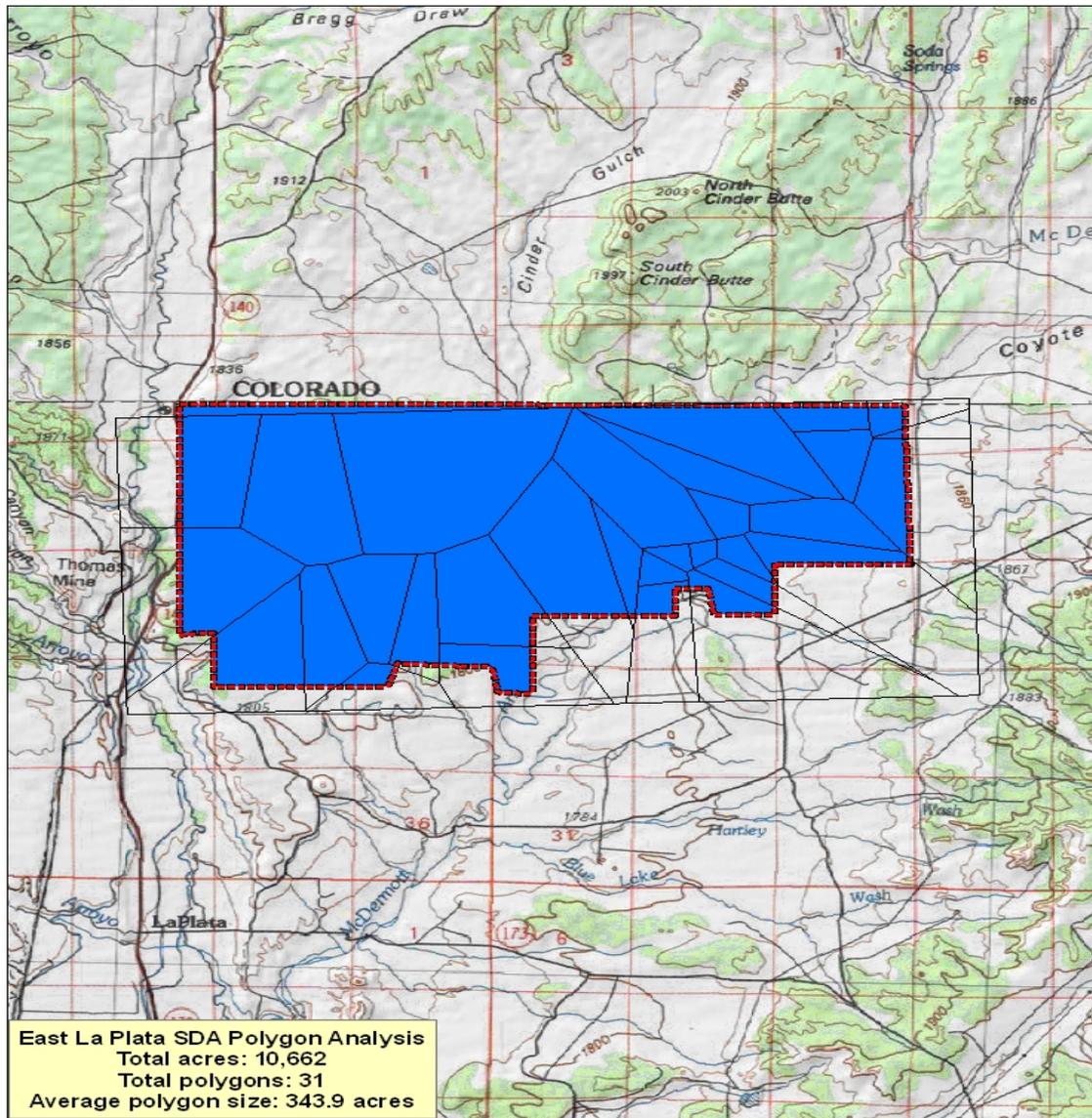
Figure 13 - Browse study locations/Helicopter deer survey data in the East La Plata SDA.



transects resulted in scores of 48 and 81 for an average of 64.5. This average rating is typical of much of the browse (antelope bitterbrush and true mountain mahogany) within a five mile radius.

**Amount of Existing Disturbance:** As noted above, the East La Plata SDA perturbations in the form of an open pit coal mine, haul road, paved road, approximately 56 gas wells and approximately 35 miles of road overall. It is relatively open country with only scattered woodland cover. Rolling hills provide some topographic relief and security to deer. A Thiessen polygon analysis found a total of 31 polygons with an average size of 343.9 acres (See Figure 14). However, these results may be somewhat skewed as the analysis is based solely on the occurrence of gas wells; other perturbations such as the mine facility were not considered.

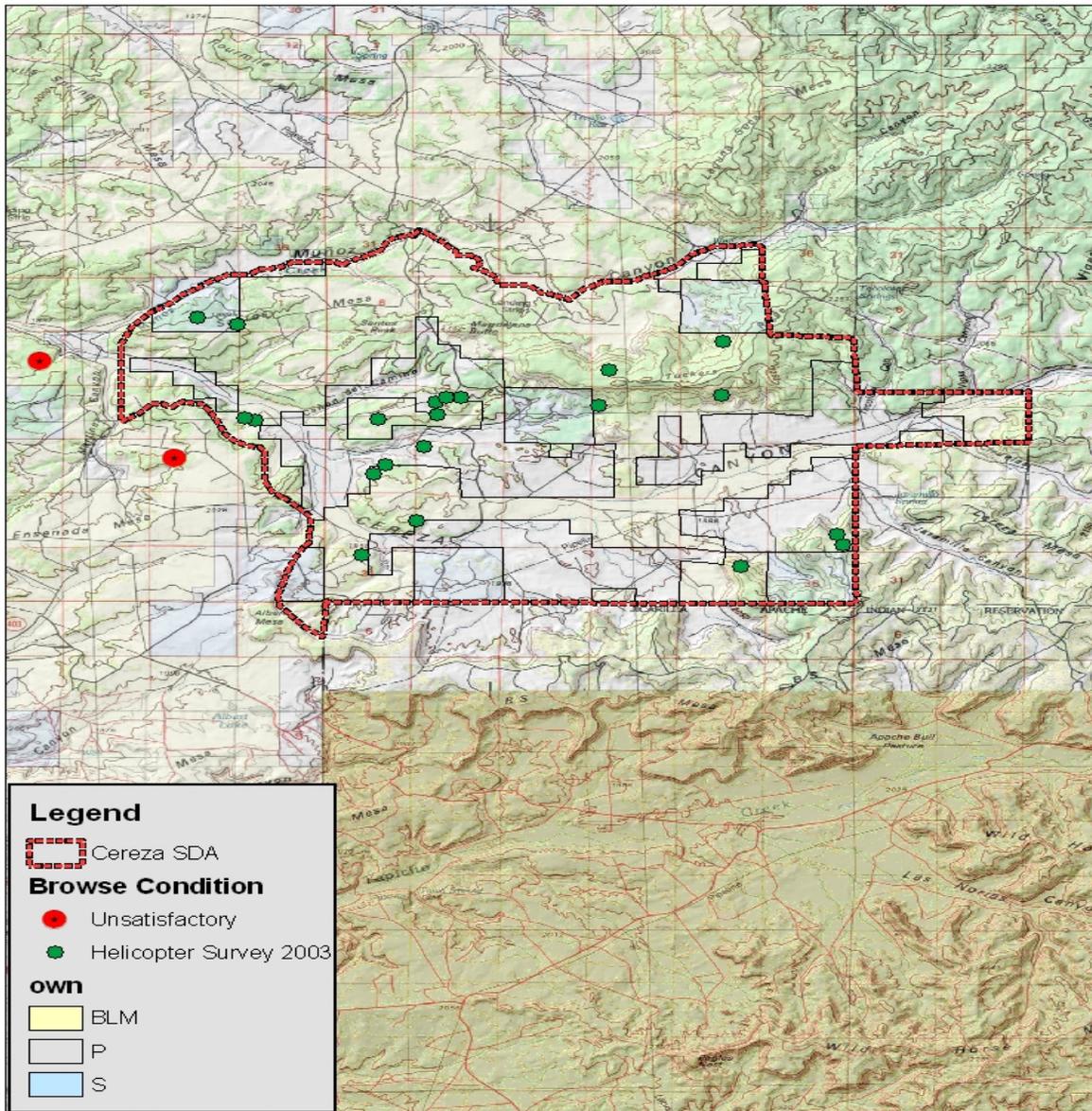
Figure 14 – East La Plata SDA Polygon Analysis.



## Cereza Canyon SDA – Moderate Priority – Closure period: 12/01 – 03/31

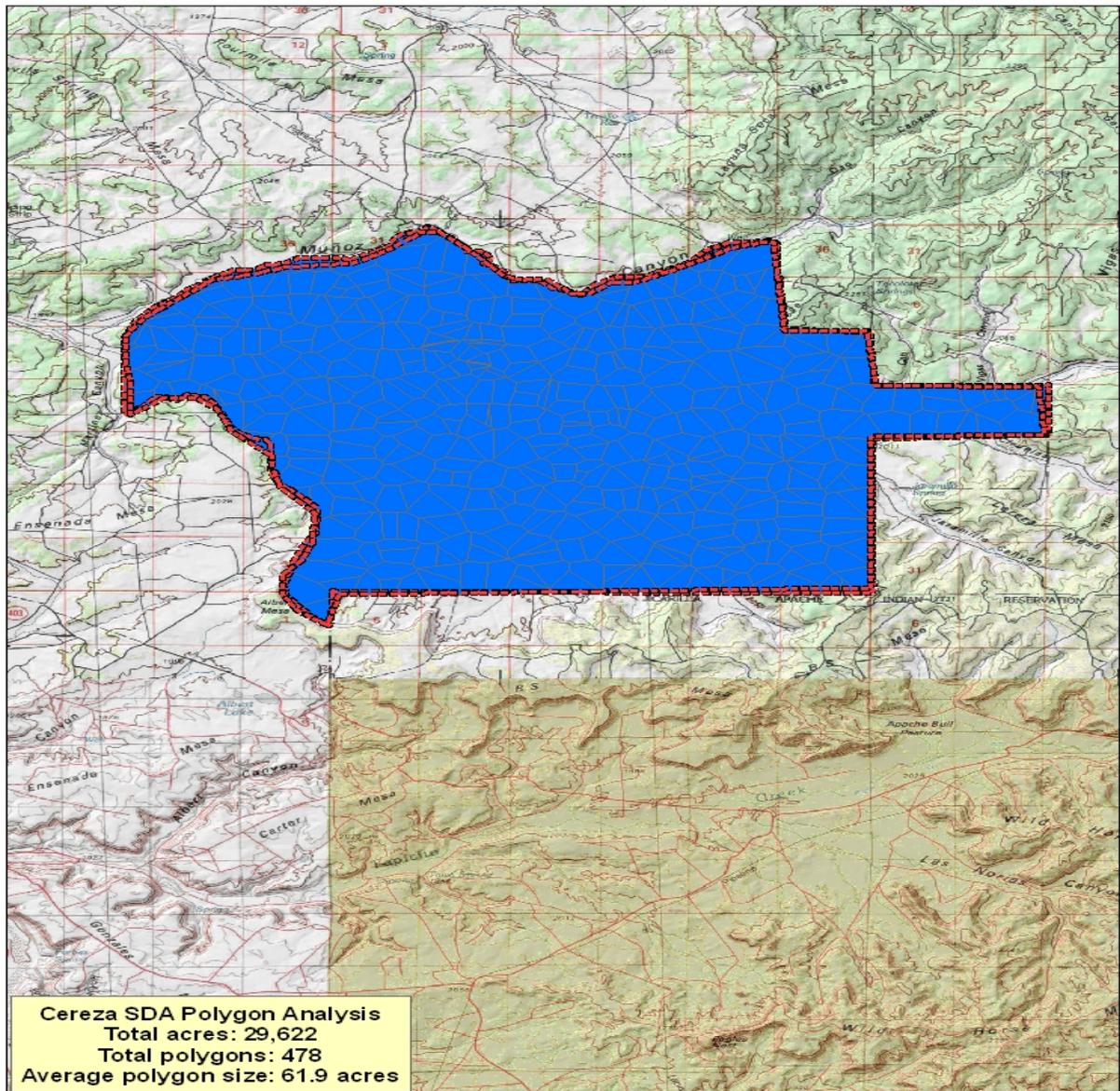
**Animal Density:** The Cereza Canyon SDA is located about 55 miles southeast of Farmington. It contains approximately 29,484 acres of public lands and 482 gas wells. It should be noted also that this SDA contains a significant amount of private (9,955 acres or 34%) and state land (3,278 acres or 11%) where BLM winter closure stipulations are not applied (See Figure 15). The Cereza Canyon SDA provides yearlong habitat for deer and elk with upward fluctuations of these numbers observed during the winter. Figure 15 below shows the locations of deer and elk groups observed during a

Figure 15 – Browse Study locations/Big Game Survey 2003/Land Status in Cereza SDA.



helicopter survey flown in January of 2003. The total number of deer observed was 89; their composition was as follows: 7 bucks, 57 does and 25 fawns. Elk were also very evident in this area with a total of 63 detected; their composition was as follows: 8 bulls, 13 cows, 4 calves and 38 head which were unclassified. An age sex ratio was not calculated for either of these species as the total number of adult females observed was insufficient to arrive at a statistically valid result. Survey data are shown only for the year 2003. BLM records indicate that surveys for the years 2004 – 2007 were either not flown, or the search pattern was considerably less comprehensive than what was done in 2003. As a consequence it does not appear that these numbers would be a meaningful or valid comparison with the 2003 data.

Figure 16 – Thiessen polygon analysis of the Cereza Canyon SDA



**Condition of the surrounding habitat:** The Cereza SDA is characterized by rolling hills, relatively shallow canyons and several sandy washes. The vegetation is primarily scattered pinyon pine/Utah juniper with Wyoming sagebrush parks. Much of the sagebrush has been treated with herbicide allowing for a profusion of perennial grasses. Traditional browse species such as true mountain mahogany and antelope bitterbrush occupy the interspaces within the pinyon and juniper plant community. However, the density of these browse species is not great; given this, and the amount of private land within this SDA browse studies have not been established in this SDA. The closest available studies for comparison are located to the west immediately adjacent to the Cereza SDA in the Ensenada Mesa SDA (See Figure 15). There are two studies located on the northeast end of Ensenada Mesa, both are in unsatisfactory condition with an average rating of 86.

**Amount of Existing disturbance:** The Cereza SDA is relatively open in the vicinity of the Cereza Wash. As of June 2008 there were 482 gas wells and approximately 145.6 miles of road infrastructure, primarily in support of these wells. A Thiessen polygon analysis of the Cereza SDA revealed a total of 478 polygons with an average size of 61.9 acres (See Figure 16 above).

**Ensenada Mesa SDA – Moderate Priority – Closure period: 05/01 - 07/15**

**Animal Density:** The Ensenada Mesa SDA is located approximately 25 air miles southeast of Bloomfield, New Mexico. It contains 51,303 acres and about 906 gas wells as of June 2008. This SDA provides yearlong habitat for a small population of pronghorn antelope. The current antelope population is the result of releases totaling 127 animals conducted during the years of 1989 and 1990. Since that time this population has declined possibly due to predators, drought and habitat deficiencies relative to forb production. In addition to antelope, the Ensenada Mesa SDA provides habitat for a small number of resident deer and elk with some winters seeing these numbers increase moderately due to migratory animals from the Jicarilla Apache Reservation to the east. Helicopter surveys were conducted in January of 2005, 2006 and 2007 in Game Management Unit 2C. The numbers of deer, elk and antelope counted in the Ensenada Mesa SDA during these flights is shown in Table 6 below. The variability in numbers

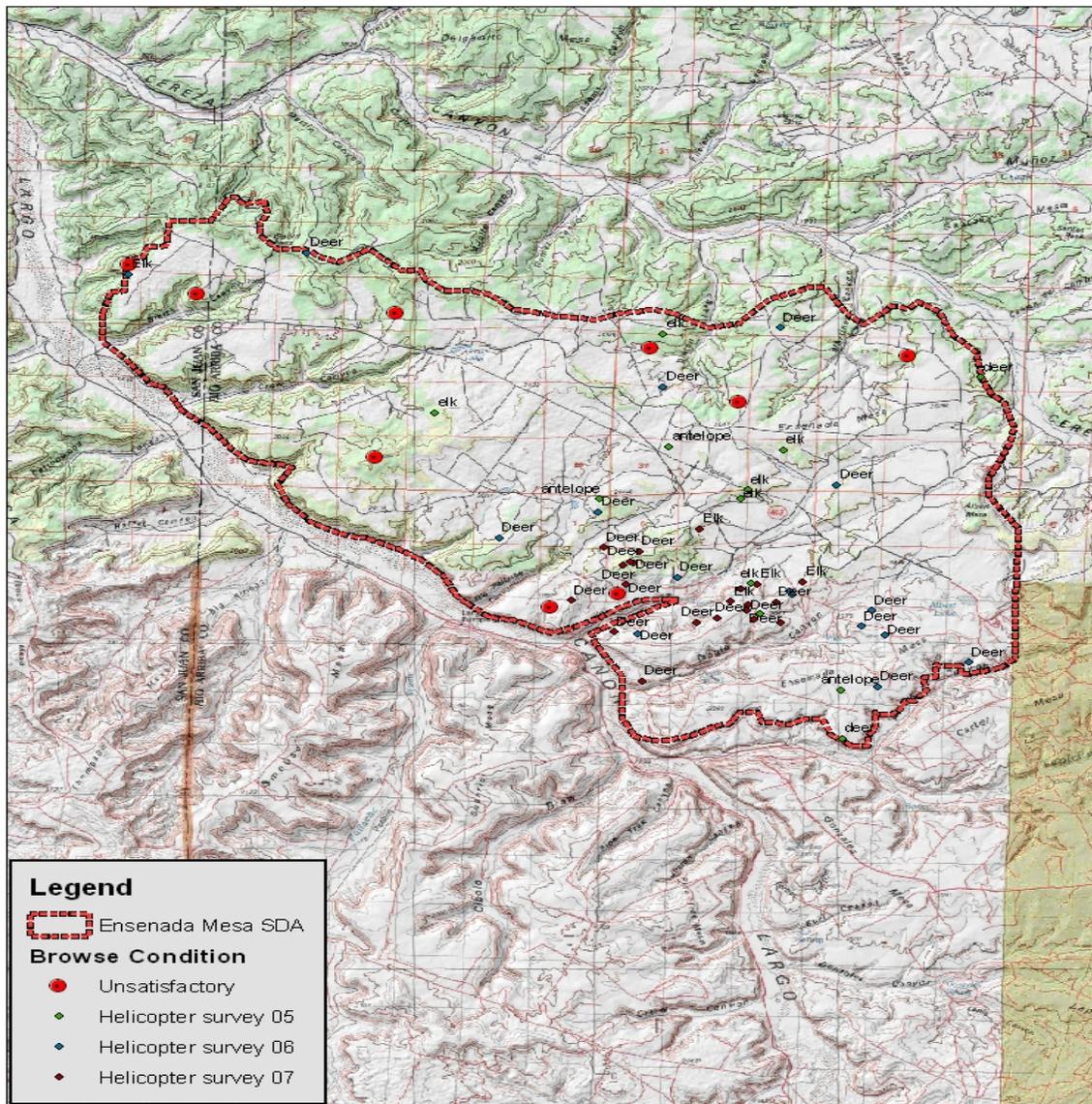
Table 6 – Helicopter survey data for Ensenada Mesa SDA 2005-2007.

Year	Species	Adult Male	Adult Female	Juvenile	Total	Sex Ratio
2005	Deer	2	4	3	9	NA
2006	Deer	24	106	42	172	23:100:40
2007	Deer	24	28	8	60	NA
2005	Antelope	23	49	3	75	NA
2006	Antelope	No Survey				NA
2006	Antelope	No Survey				NA
2005	Elk	5	15	10	30	NA
2006	Elk	2	17	9	28	NA
2007	Elk	2	4	2	8	NA

Is due to a variety of factors e.g., changing priorities, funding, weather and different survey protocol. Figure 17 below shows the locations of the animals observed.

**Condition of the surrounding habitat:** The Ensenada Mesa SDA is characterized by undulating terrain atop a long mesa with rugged canyons interspersing the edges. Much of the mesa is open country sagebrush country with small wooded hills and canyons. Much of the sagebrush has been treated with herbicide resulting in considerable herbaceous forage. The antelope on Ensenada Mesa spend the preponderance of their time in the treatment areas but conversely rely heavily on the untreated sage areas for forage and fawning habitat at certain times of the year (Hansen, 2005). Elk and deer utilize the edges of the treatment areas in typical crepuscular fashion while seeking cover and browse in the pinyon/juniper areas during the day. The primary browse species, antelope bitterbrush and true mountain mahogany, are the most limited of the plant species assemblage used by deer, elk and antelope on Ensenada Mesa. There are a total of nine browse studies on the Ensenada Mesa SDA (See Figure 17). At the present time, the browse at all of these study locations is in unsatisfactory

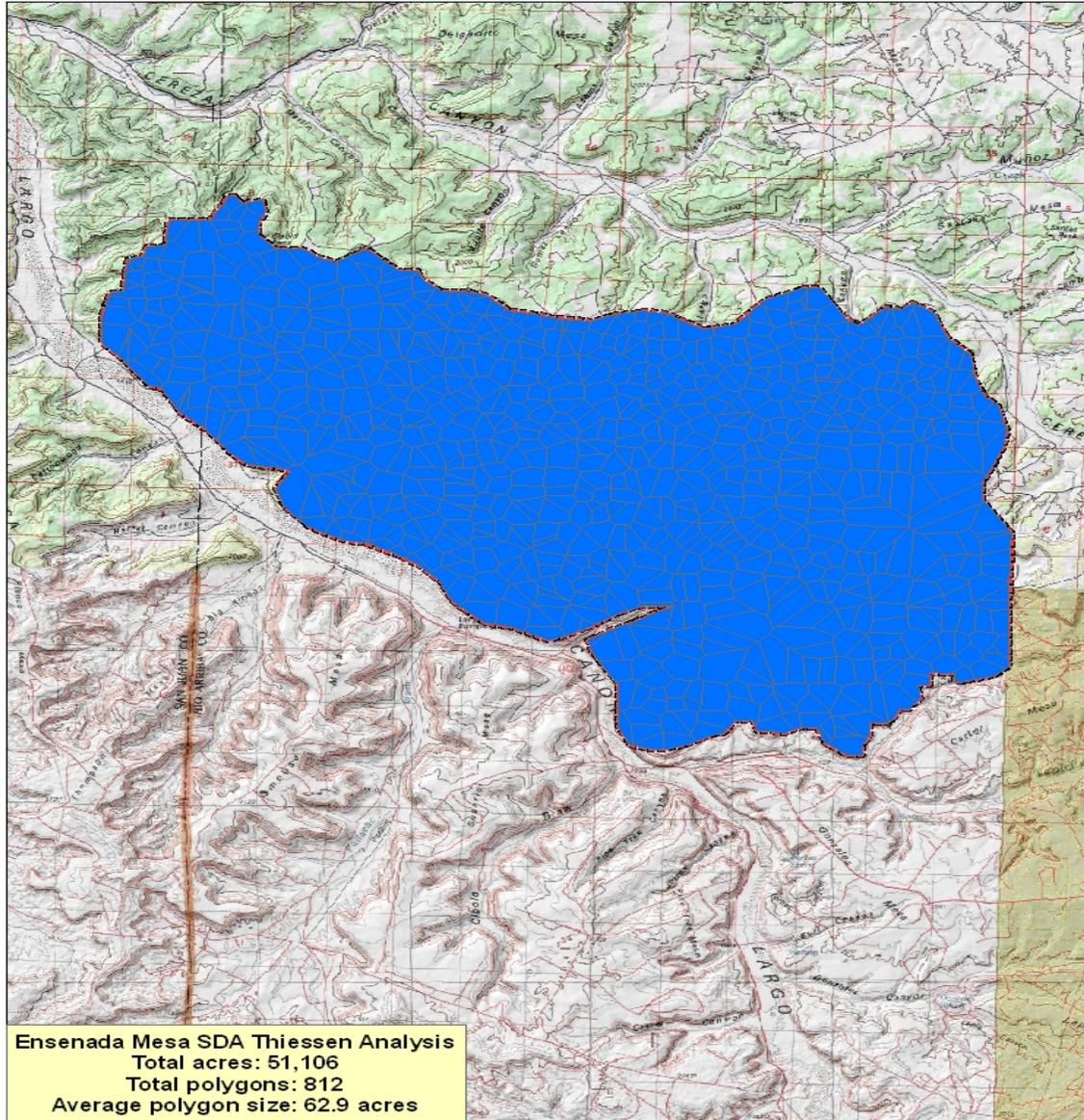
Figure 17 – Ensenada SDA Helicopter Survey 2005-07/Browse Condition



condition with an average score of 79. Much of this is attributable to extended drought.

**Amount of existing disturbance:** As noted above, the Ensenada Mesa SDA has about 906 gas wells and 265 miles of roads. This equates to approximately 3.3 miles of road per square mile of land. A Thiessen polygon analysis of this SDA found a total of 812 polygons with an average size of 62.9 acres. This analysis is depicted in Figure 18 below.

Figure 18 – Thiessen polygon analysis of Ensenada Mesa SDA.



### Laguna Seca Mesa SDA – Moderate Priority – Closure period: 12/01-06/15

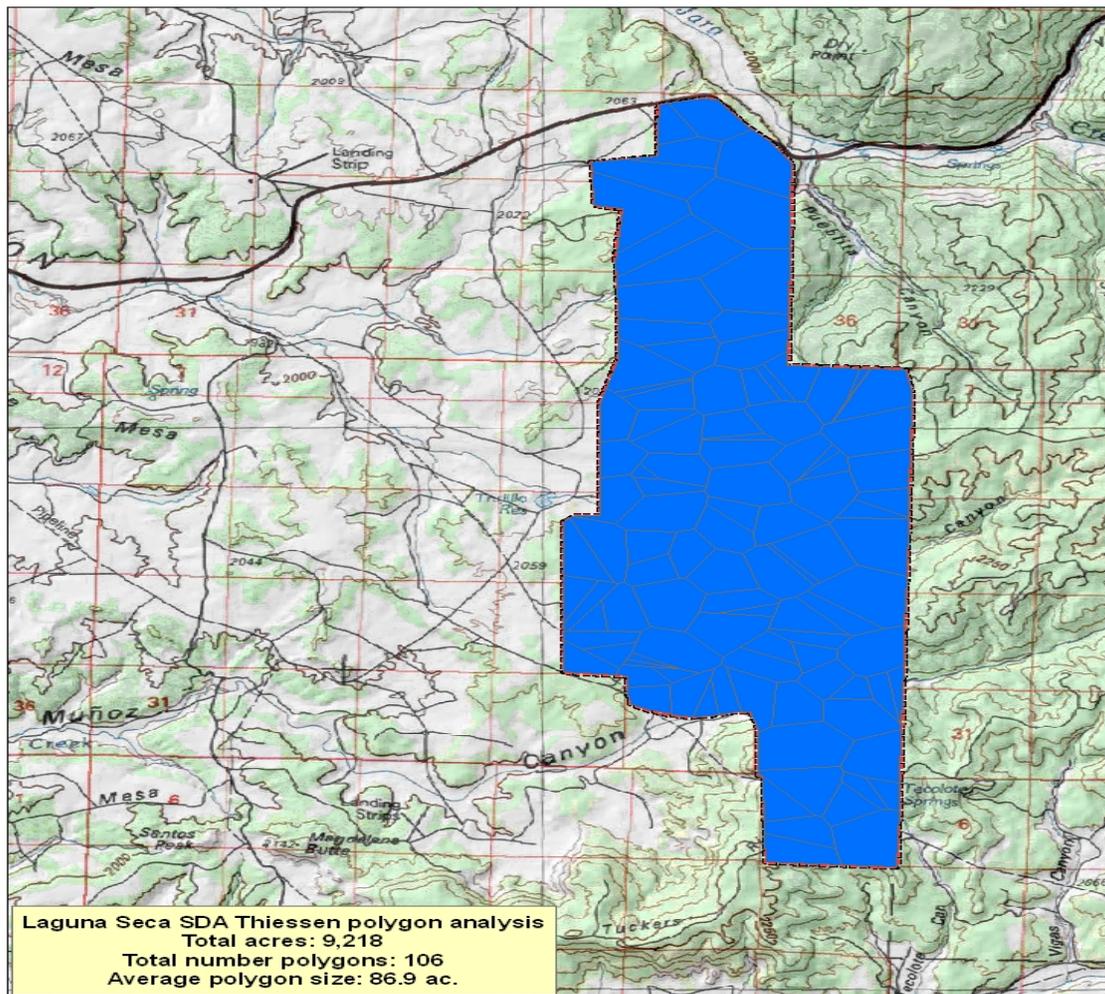
**Animal Density:** The Laguna Seca Mesa SDA is located approximately 35 miles east of Bloomfield, New Mexico. It encompasses 9,193 acres with approximately 93 operating gas wells. It provides habitat for



Douglas fir/true mountain mahogany/serviceberry. There are no formal established browse studies in the Laguna Seca SDA. However, the condition of the browse there is similar to the lower lying country where much of the browse is in unsatisfactory condition. Long term drought and heavy use are probably the biggest factors contributing to this situation. The combined effects of these two factors greatly impact a plant's ability to reproduce. Over time, the plant community becomes dominated by mature plants and a near total absence of seedling and young plants. Woodland thinning and prescribed fire projects have been conducted in the past and are currently underway to improve the vegetative understory.

**Amount of existing disturbance:** There are 33.8 miles of road within the Laguna Seca SDA or approximately 2.35 miles of road per square mile of land. The primary purpose of most of these roads is to access gas wells. A Thiessen polygon analysis of the gas wells in this SDA found a total of 106 polygons with an average size of 86.9 acres (See Figure 20). This degree of fragmentation is comparable to most of the other wildlife SDAs in the Farmington Field Office area. However, the Laguna Seca SDA is probably one of the most heavily wooded and variable in topography of the 11 wildlife SDAs in the FFO.

Figure 20 – Thiessen polygon analysis of gas wells in Laguna Seca SDA.



## Middle Mesa SDA – Moderate Priority – Closure period: 12/01 – 03/31

**Animal Density:** The Middle Mesa SDA is located approximately 21 air miles northeast of Aztec, New Mexico. It contains 46,067 acres with 693 gas wells as of June 2008. This SDA provides yearlong habitat for deer and elk with increases of the resident populations during the winter. Helicopter survey data for the Middle Mesa SDA was available only for the year 1999 (See Table 8 and Figure 21). In January of that year the following was observed:

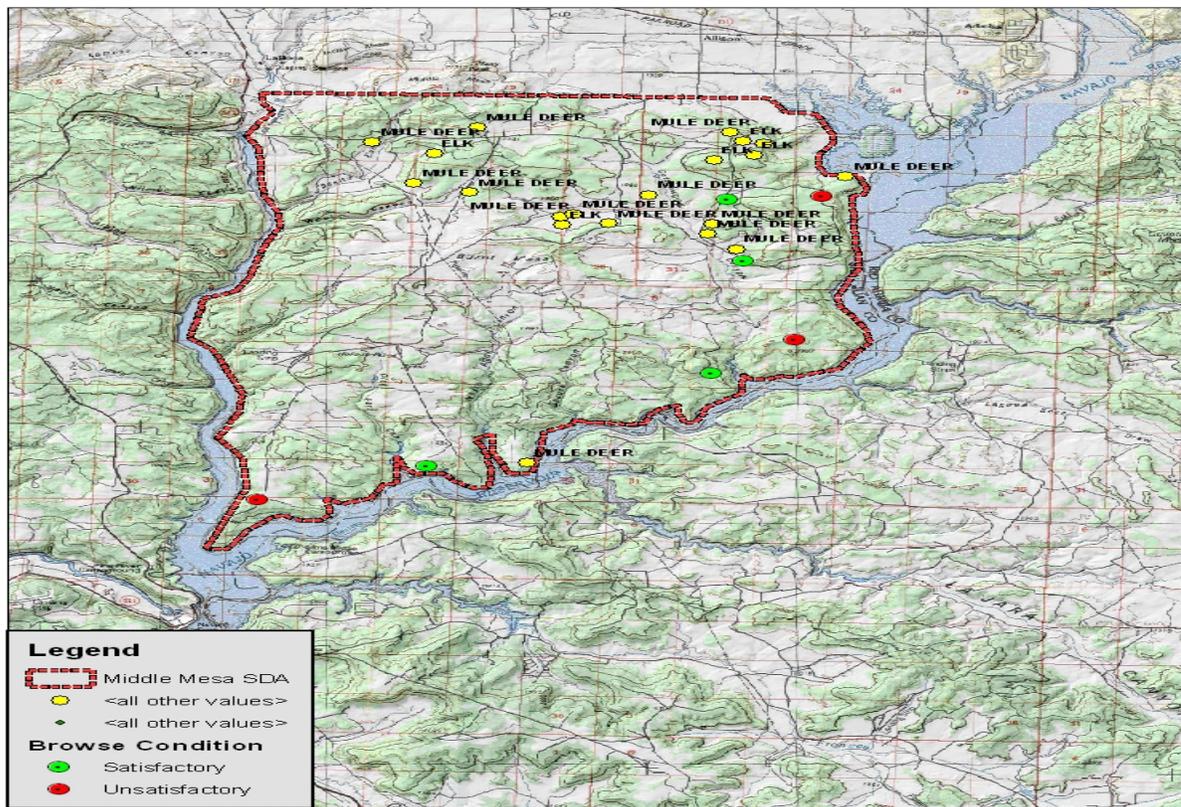
Table 8 – Helicopter survey data for the Middle Mesa SDA/January 1999.

Species	Adult Males	Adult Females	Juveniles
Elk	7	36	14
Deer	6	34	23

Due to funding constraints and other priorities the Middle Mesa SDA has not been re-surveyed since 1999.

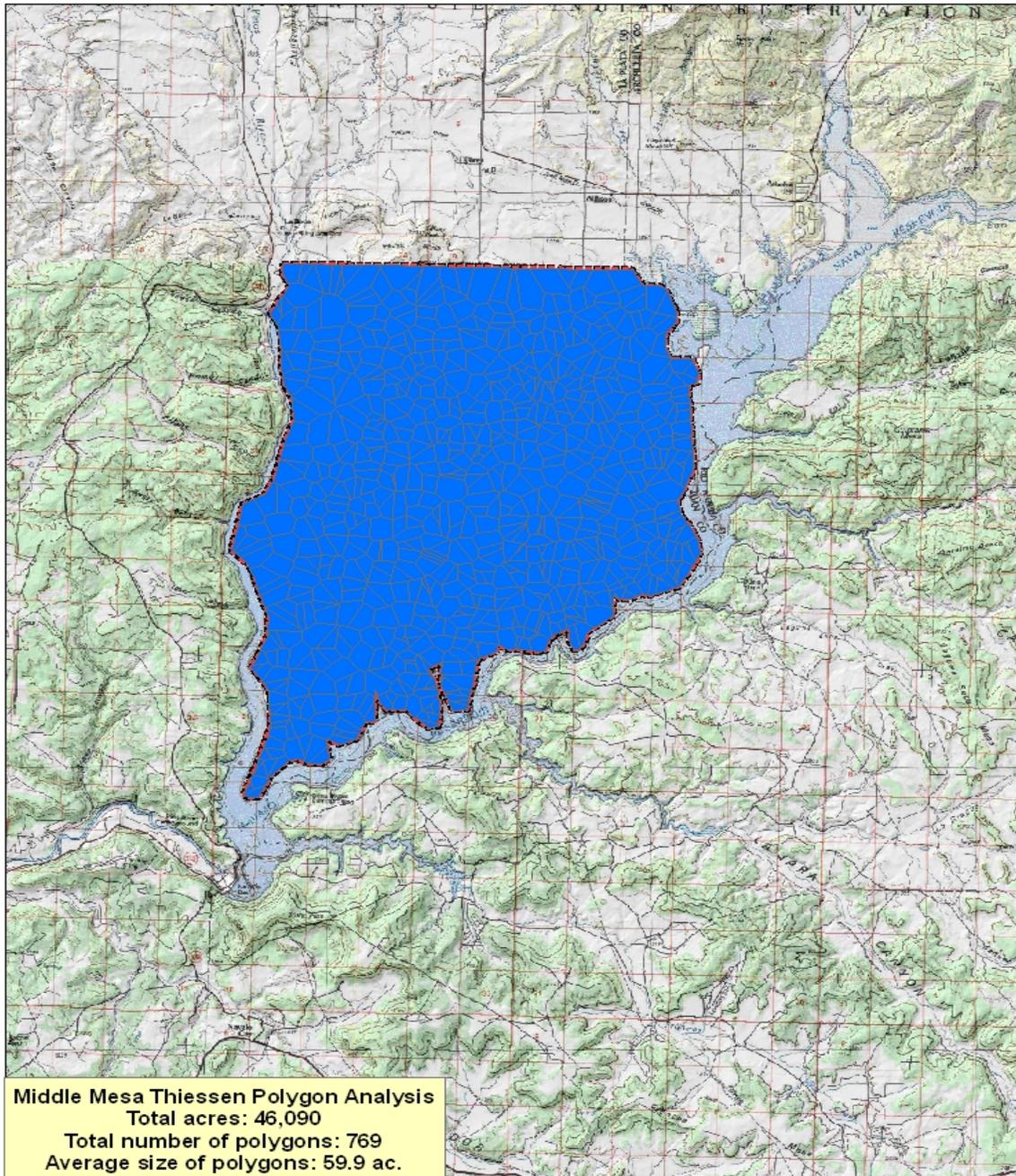
**Condition of the surrounding habitat:** There are 7 browse studies in the Middle Mesa SDA; four of them are in satisfactory condition while three of them are unsatisfactory (See Figure 21). The average score of all of the studies is 34.3. The dominant habitat types in the Middle mesa SDA are the pinyon/juniper and Wyoming big sage/perennial grass. In the late 1960s there were extensive anchor chaining treatments conducted in pinyon/juniper stands as a means to promote the growth of grasses, forbs and browse. In more recent years, prescribed fire and herbicide have been used to increase herbaceous production.

Figure 21 – Middle Mesa SDA Browse condition/Helicopter survey data 1999.



**Amount of existing disturbance:** There were 2.29 miles of road per square mile of land in the Middle Mesa SDA as of June 2008. This equates to 164.8 miles of road within the entire SDA which ranks among some of the most heavily fragmented habitat in the Farmington Field Office area. A Thiessen polygon analysis of the Middle Mesa SDA found 769 total polygons with an average size of 59.9 acres (See Figure 22 below).

**Figure 22 – Thiessen polygon analysis of gas wells in the Middle Mesa SDA.**



## Rattlesnake Canyon SDA – Moderate Priority – Closure period: 12/01 – 03/31

**Animal Density:** The Rattlesnake Canyon SDA is the largest of the SDAs in the FFO with 110,230 acres. It is located approximately three miles northeast of Aztec, New Mexico. As of June 2008 it contained 1,683 gas wells. The Rattlesnake Canyon SDA supports a very diverse assemblage of wildlife. Some of the principle species are: mule deer, elk, black bear, mountain lion, coyote, gray fox, Merriam’s turkey and bobcat. Helicopter survey data for this area is minimal due to funding constraints and other priorities. Data is available for the years 2001 and 2003 and is depicted in Table 8 below. However, different portions of the SDA were flown during each survey resulting in unequal efforts; therefore, comparison of the data from the two years is not valid. Figure 23 (See below) provides a graphic portrayal of where the various groups of animals were observed in the different years.

Table 9 – Helicopter survey data for the Rattlesnake Canyon SDA.

Year	Species	Adult Male	Adult Female	Juveniles	Total	Sex Ratio
2001	Deer	25	62	28	115	40:100:45*
2001	Elk	1	17	7	25	NA
2004	Deer	3	14	4	21	NA
2004	Elk	2	1	0	3	NA

\*Ratio is questionable due to sample size.

**Condition of the surrounding habitat:** The Rattlesnake Canyon SDA is largely a woodland habitat type with interspersions of big sagebrush parks. The woodlands are comprised mostly of pinyon pine and Utah juniper on the drier aspects while the deep canyons and higher elevations (6,800+) have stringers of ponderosa pine and Douglas fir with Gambel’s oak in the understory. There are a total of 34 browse studies in the Rattlesnake Canyon SDA, of these 76 percent are in satisfactory condition with the balance (24 percent) being unsatisfactory (See Figure 23). The average rating of all the studies is 27.1, which makes the forage condition in this SDA some of the best in the FFO area.

**Amount of existing disturbance:** There were 2.64 miles of road and 9.77 gas wells per square mile in the Rattlesnake Canyon SDA as of June 2008. Extensive woodland cover and topographic variability tend to ameliorate the impacts of this fragmentation somewhat. A Thiessen polygon analysis of the Rattlesnake Canyon SDA revealed 1,447 total polygons with an average size of 75.9 acres (See Figure 24 below).

## Gonzales Mesa SDA – Low Priority – Closure period: 12/01 – 03/31

**Animal Density:** The Gonzales Mesa SDA is located about eight air miles northeast of Lybrook, New Mexico. It contains approximately 7,447 acres and as of June 2008 108 gas wells. Resident deer and elk numbers in this SDA are relatively minimal with the preponderance of use occurring during the winter as deer and elk from the Jicarilla Apache Reservation move into the area. Helicopter survey data are available for the years 2005 and 2008. Data from these surveys are depicted in Table 9 below. A graphic portrayal of these results is shown in Figure 25.

Table 10 – Gonzales Mesa helicopter survey results from 2005 and 2008.

Year	Species	Adult Male	Adult Female	Juvenile	Total
2005	Deer	2	0	0	2
	Elk	3	0	0	3
2008	Deer	16	24	14	54
	Elk	0	0	0	0

Figure 23 – Helicopter survey data/browse study locations Rattlesnake Canyon SDA.

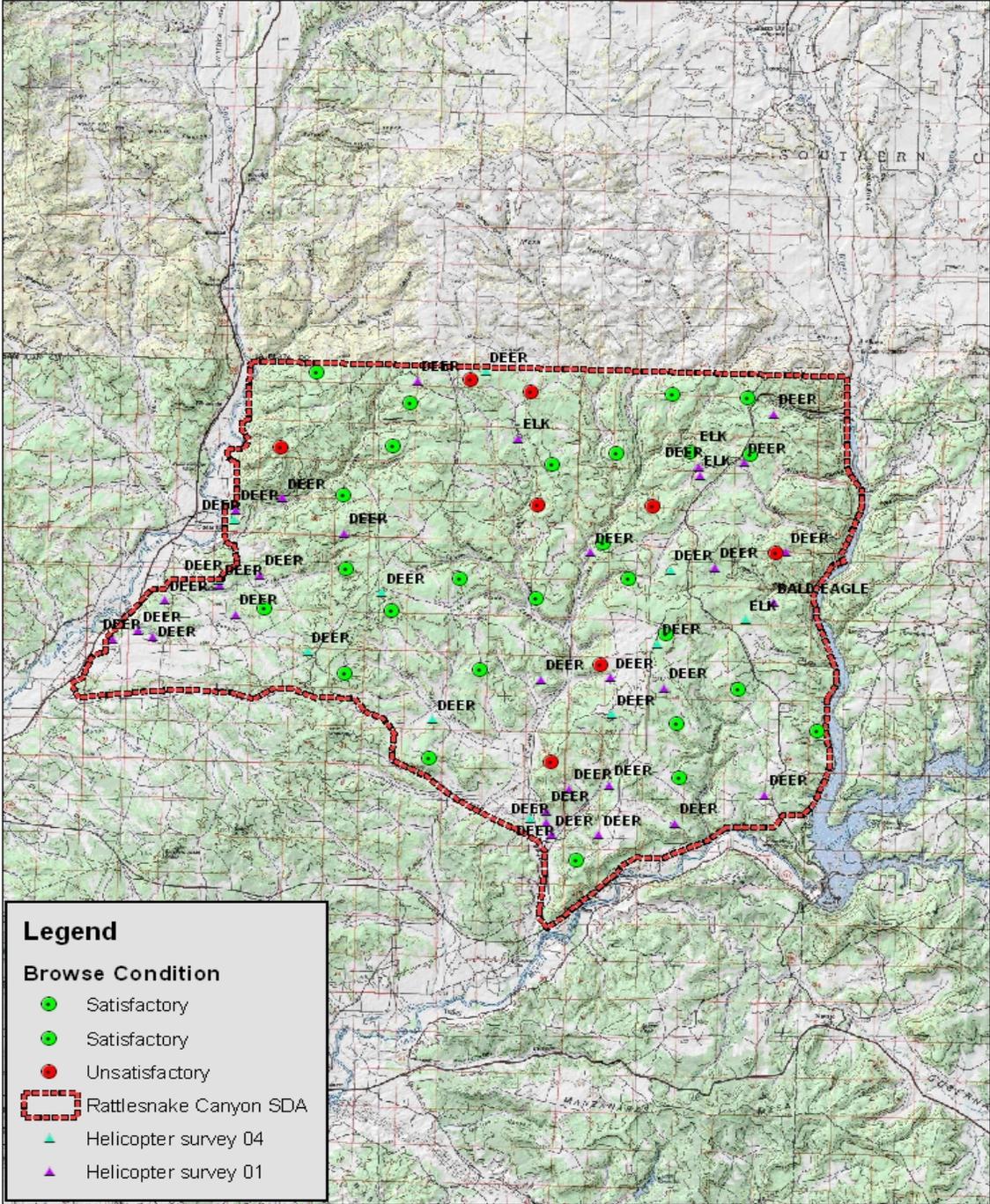
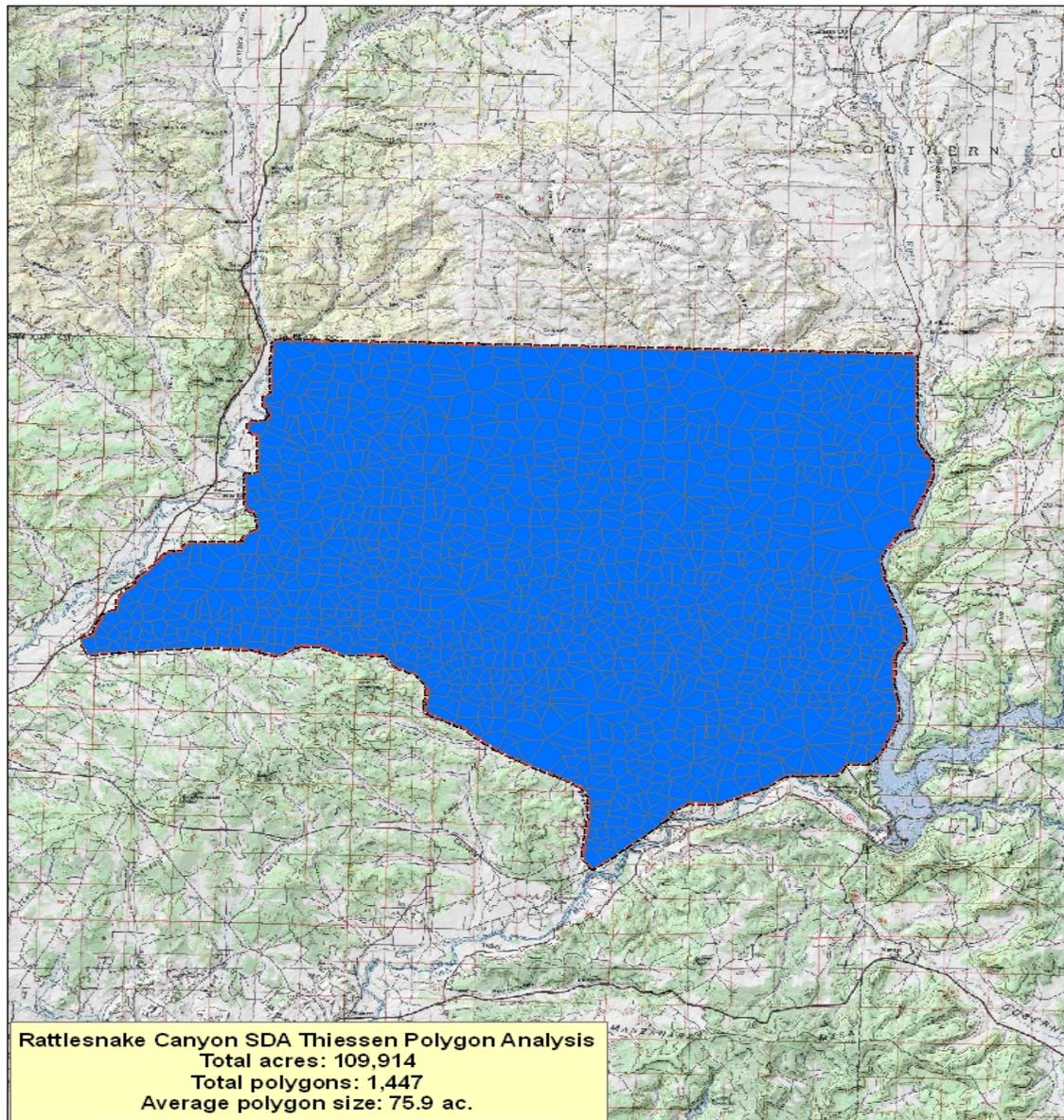
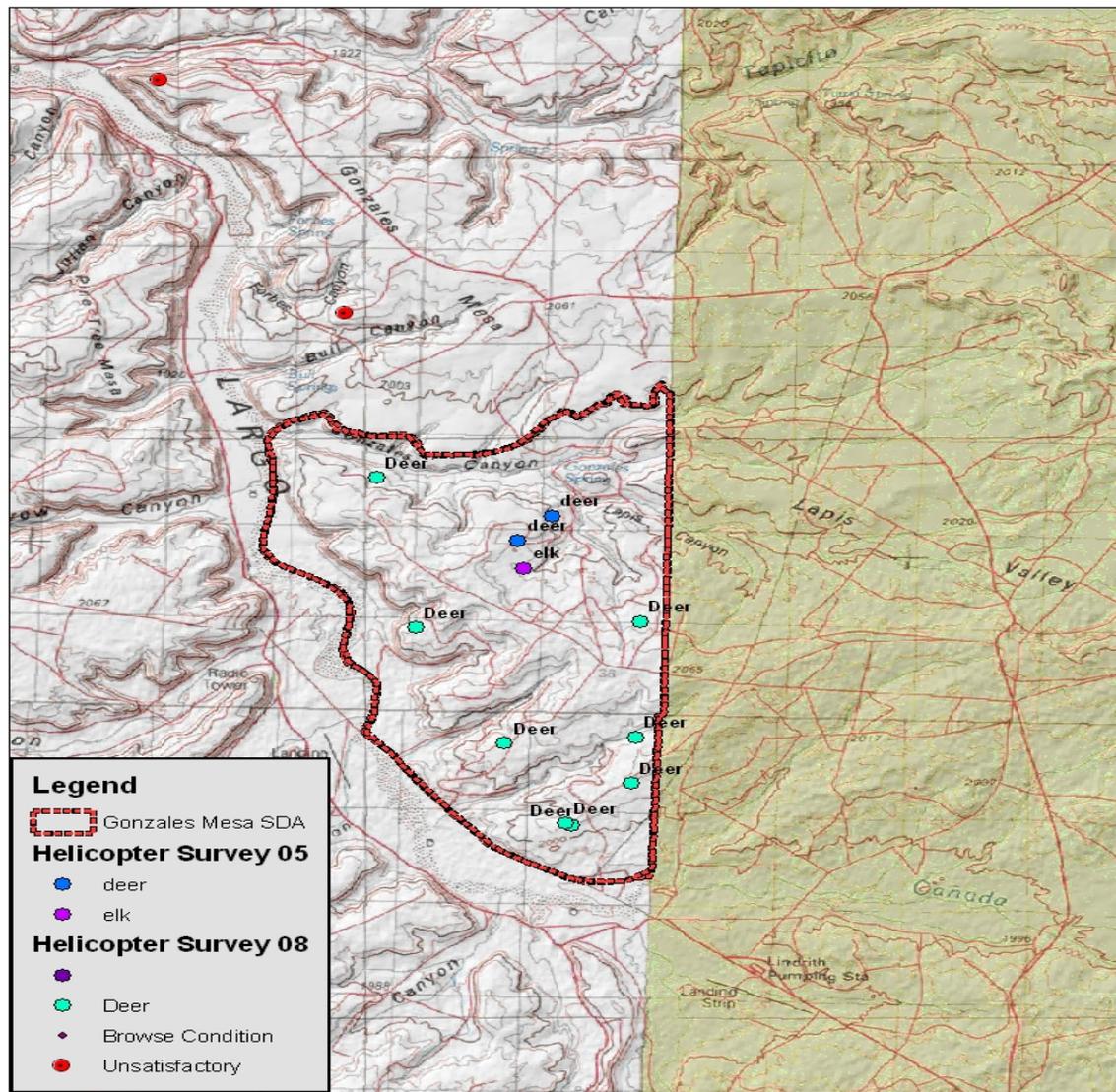


Figure 24 – Thiessen polygon analysis of gas wells in Rattlesnake Canyon SDA



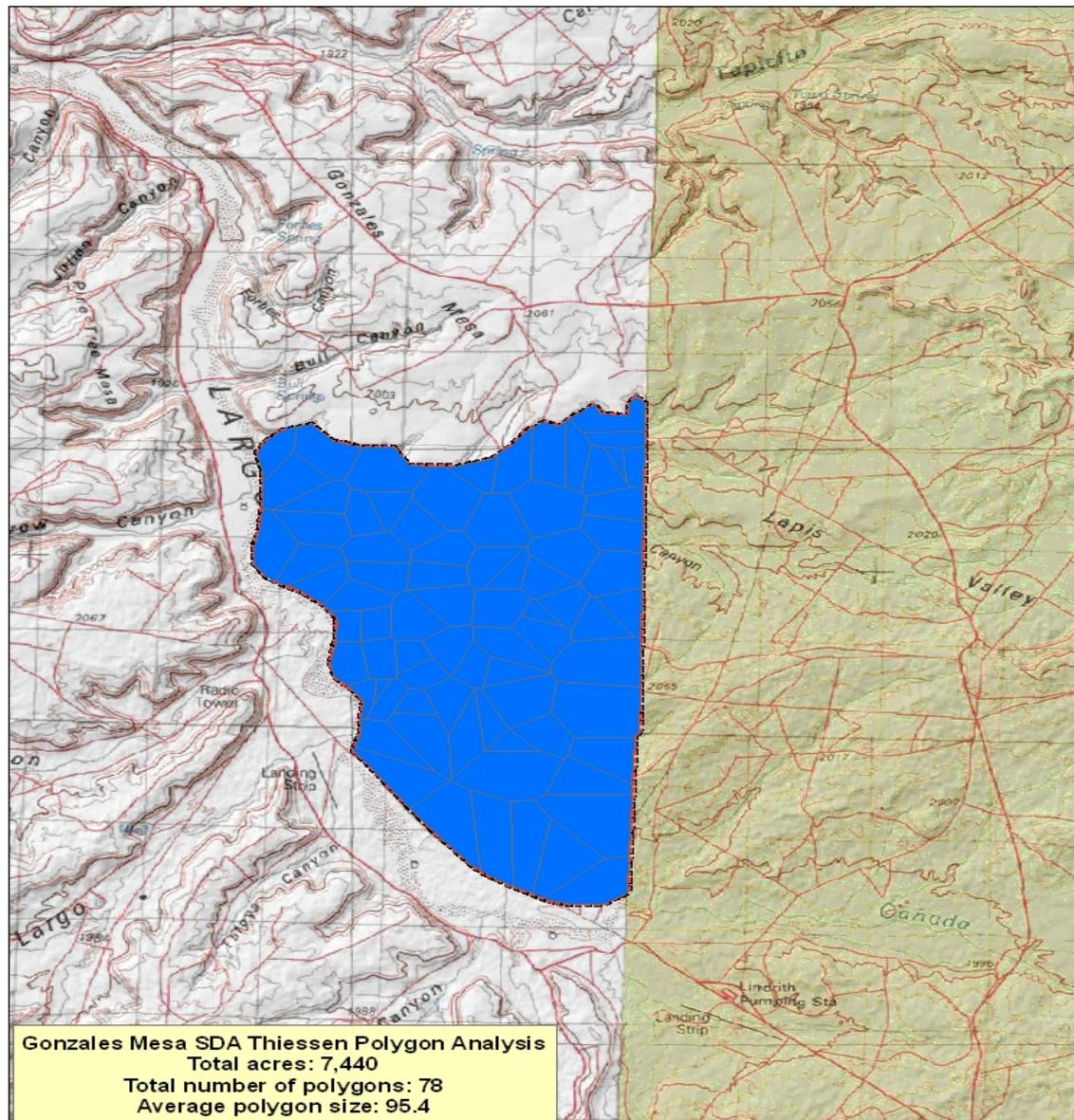
**Condition of surrounding habitat:** There are no established browse studies within the Gonzales Mesa SDA. The nearest browse studies are depicted on Figure 25 below. Both of these studies rate as unsatisfactory with an average score of 84.5. The majority of the Gonzales Mesa SDA is dominated by Wyoming big sagebrush, some areas of greasewood, and relatively open stands of pinyon/juniper. Gully erosion is also a problem in the vicinity of Lapis Canyon.

Figure 25 – Helicopter survey data/browse data for Gonzales Mesa SDA.



**Amount of existing disturbance:** The Gonzales Mesa SDA is among the most extensively fragmented wildlife areas in the Farmington District. There are approximately 9.28 wells and 3.4 miles of road per square mile of land. A Thiessen polygon analysis of the Gonzales Mesa SDA found a total of 78 polygons with an average size of 95.4 acres (See Figure 26 below).

Figure 26 – Thiessen polygon analysis of gas wells within the Gonzales Mesa SDA.



**IIIc. Habitat Condition Summary** - A summary of the browse condition and existing disturbance is provided in Table 10 below. The numbers of deer, elk and antelope have been omitted from this table due to the disparity in survey methodology and extent from year to year. Because of this disparity no meaningful comparison of these data can be made. It should be noted, however, that the helicopter survey in most all cases either extended beyond the boundaries of individual SDA's or covered only a portion of an SDA. These data when viewed from an overall perspective, i.e. Game Management Unit 2A, 2B or 2C generally show (with the exception of GMU 2C) favorable doe to fawn ratios, e.g. 60+ fawns per 100 does. But, in keeping with the intent of this document, which is to analyze the impact of exceptions for oil and gas related activity on big game within wildlife SDA's only those animals counted within an SDA were included in the data presented above.

Table 11 – Summary of the browse condition and amounts of existing disturbance (fragmentation) in the wildlife SDAs in the Farmington Field Office area.

SDA	Total acres	Mi. Rd. Sq. mi.	Total Polygons	Average Polygon size	Browse Average Rating
<b>HIGH PRIORITY</b>					
Rosa	69,773	2.8	946	61.8	64
Carracas	8,679	1.81	42	58.6	89
Crow Mesa	37,778	2.26	71	281.5	43
Thomas Canyon	15,774	2.0	43	526.9	68
<b>Sub-Total</b>	<b>132,004</b>	<b>Ave. = 2.2</b>	<b>275.5</b>	<b>Ave.= 232.2</b>	<b>Ave. = 66</b>
<b>MODERATE PRIORITY</b>					
East LaPlata	7,025	3.16	31	343.9	64.5
Cereza Canyon	29,484	3.16	478	61.9	86
Ensenada Mesa	51,303	3.3	812	62.9	79
Laguna Seca	9,193	2.35	106	86.9	NA
Middle Mesa	46,067	2.64	769	59.9	34.3
Rattlesnake Canyon	110,230	2.64	1,447	75.9	27.1
<b>Sub-Total</b>	<b>253,302</b>	<b>Ave.=2.88</b>	<b>607.2</b>	<b>Ave.=115.2</b>	<b>Ave.=58.2</b>
<b>LOW PRIORITY</b>					
Gonzales Mesa	7,447	3.4	237	95.4	84.5
<b>All total</b>	<b>392,753</b>	<b>Ave.=2.68</b>	<b>Ave.=373.2</b>	<b>Ave.=155.9</b>	<b>72.5</b>

#### IV. Environmental Impacts

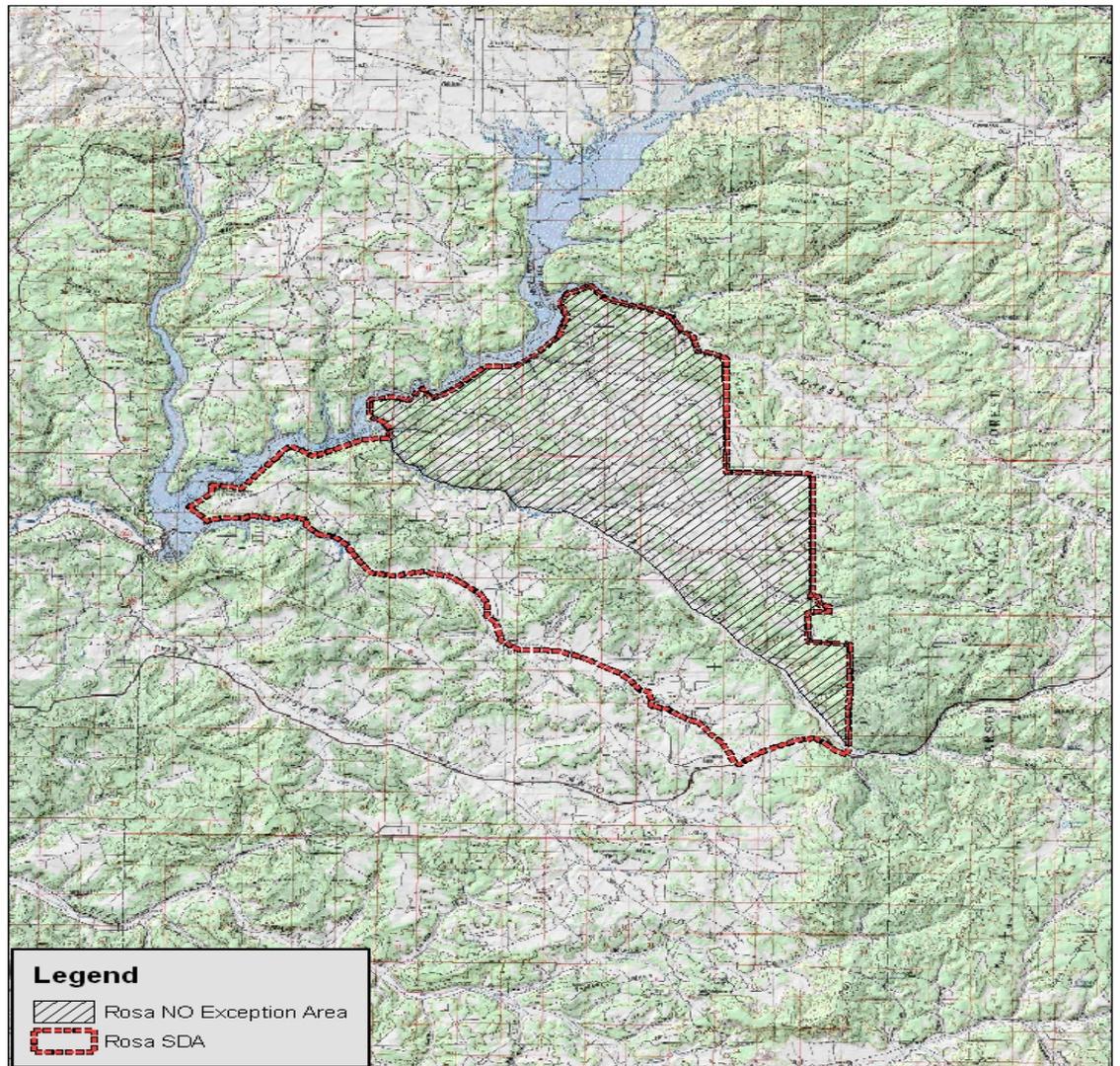
**IVa. Oil and gas related activities (introduction)** – It is necessary for the oil and gas industry to perform a variety of activities associated with the development and production of oil and natural gas reserves in the San Juan Basin. Inherent with these activities is the potential to displace wildlife either directly through habitat destruction or indirectly due to human activity affecting the overall suitability of the habitat. Common to most of these activities whether it's building a well location, drilling a well, cavitating a well, changing out a compressor or installing a new pump is a road that vehicles must travel over. The volume of traffic associated with each type of work activity may vary as can the time of day. Overlay these variables with weather conditions, the type and amount of vegetative cover or topographic variation adjacent to the road, as well as the locations of desirable feeding areas and sources of water, and the task of quantifying the impacts of anthropogenic activity on big game animals becomes even further complicated. Other activities such as seismic exploration which place people, lots of wire and sensors over hundreds of acres of the landscape, and a helicopter carrying sling loads undoubtedly have a more pervasive displacement of wildlife but

fairly short term. Pipelines constructed cross country would also fall into this category. Intuitively, one would expect these types of activities to have some degree of stressful impact upon deer, elk and antelope. And too, this intuition can be supported in theory by empirical data as reported in the scientific literature. Conversely, there are examples in the literature of where large ungulates, as well as other types of wildlife, have habituated to perturbations such as busy highways and other urban manifestations. It is because of this conundrum and the concern expressed by various interest groups relative to the exception criteria that BLM has developed a new Proposed Action.

**IVb. Alternatives (Revised)** – The BLM received approximately 200 comments in response to the scoping letter that it sent out on July 14, 2008. The vast majority of the comments were in favor of the “No Exceptions” alternative while others who are more directly impacted preferred the “No Action” or status quo and still others opted for the “Modified Criteria” alternative with consideration given to the potential for cumulative effects on wildlife. And there was one entity that felt the issue of “exception criteria” was deserving of an EIS. Given the broad range and sincerity of the comments BLM revisited the alternatives to see if there was some common ground that could meet the needs of wildlife and our constituents. The Proposed Action is the result of that review.

**IVc. Impacts of the Proposed Action** – The Proposed Action will be a combination of certain aspects of the “Modified Criteria” and “No Exception” alternatives as defined in the scoping letter of July 14, 2008. The conditions of approval (or denial) of an exception request will hinge largely on the exception criteria, and if the exception is approved, the mitigation measures that may be applied (See IVg Mitigation Measures). The mitigation measures may be in the form of only conducting operations during daylight hours, erecting sound barriers around the noise source, workers transported in one multi-passenger vehicle so as to reduce traffic, etc. Certain weather parameters concerning snow depth and temperature may also be applied as a condition of approval. Currently, the exception criteria require a waiver for building new roads, well pads, drilling new wells, seismic exploration, or extensive construction such as pipelines or large compressor facilities. This designation will continue under the Proposed Action as these activities are not routine in nature or short term. Other activities such as changing out an existing compressor or replacing pump rods are considered maintenance and do not require an exception. Conversely, an exception will be required in situations where a new compressor is being installed on a well that has never had a compressor on it and where it is anticipated that the work will require more than three days to complete. Activities that will be permissible during the seasonal closure period and do not require an exception are daily operations, road maintenance and routine pipeline maintenance. Maintenance of roads and pipelines is intended to mean the work will be confined to a specific location, e.g. a pipeline leak or valve repair, not replacing a half mile of pipe or hauling a few loads of fill to repair a few hundred yards of road or replacing a culvert, not beginning the surfacing of five miles of road. Activities that can be conducted in less than three days on an existing location but are broad in scope entailing numerous locations and are of a discretionary nature will require an exception due to their cumulative effects. Emergency repairs in situations such as a losing all production permanently will not require an exception. In terms of incorporating some of the rationale behind the “No Exception Alternative” there will be specific critical wildlife use areas (within existing SDAs) that, due to animal density or vegetation and topographic attributes exceptions will not be allowed (except in emergency situations) during the currently identified seasonal closure periods. Specifically, this area will include all of the Carracas Mesa (See Figure 6) and Ensenada Mesa (See Figure 17) SDAs and that portion of the Rosa Mesa SDA north of the LaJara Wash (See Figure 27, discussion in Section IV – Environmental Impacts and Table 12).

Figure 27 – Rosa SDA NO Exception Area



Impacts to Wildlife - As noted earlier, it is difficult to quantify the effects of these actions on big game animals. The Affected Environment section of this document has quantified the overall habitat condition of the various SDAs with respect to browse condition, animal density and habitat fragmentation (See Table 10). Much of these data, especially with respect to habitat fragmentation, when viewed from the perspective of the scientific literature raises serious concerns as to the suitability of the habitat for big game. Hebblewhite (2008) in a review of the literature found that big game avoided (in varying degrees) the area within 1,000 meters of a road or well. Rowland and others (2005) found in a comprehensive literature review that: "In areas of higher road density, elk exhibit higher levels of stress and increased movement rates." These findings, while substantiated in their respective study locations, appear to be inconsistent with anecdotal reports from various people working in the San Juan Basin gas field who report deer or elk utilizing forage on well locations or pipeline rights of ways. These assertions, taken at face value, suggest some degree of habituation by deer and elk to the oil and gas infrastructure irrespective of the time of day, quality of forage, type or amount of adjacent escape/hiding cover, weather conditions or amount of human activity. Conversely, Sawyer and others

(2006) in a study conducted in the Pinedale Anticline Project Area in western Wyoming, found during three years of tracking radio collared mule deer that the deer, in a newly developed gas field exhibited no behavior suggesting that they were acclimating to the natural gas infrastructure. In fact, just the opposite was observed; as the gas field disturbance expanded the deer retreated to areas without wells or roads. Often times, the habitat the deer moved to was inferior to what they were displaced from. Watkins and others (2007) categorized impact thresholds of moderate, high and extreme based upon the number of well locations and the total amount of disturbance per square mile. Their definition of a high impact threshold is: “5-16 wells and 20-80 acres disturbance per section.” A review of the information in Table 10 indicates that all three of the SDAs being proposed for “No Exceptions” fall into this category. Exclusive of pipeline rights of ways and large compressor facilities and assuming a 40 foot right of way for roads and 2.5 acres per well location the fragmentation in these SDAs equates to approximately the following: Rosa Mesa – 8.7 wells and 35.2 acres of disturbance per square mile; Carracas Mesa – 5.6 wells and 22.8 acres of disturbance per square mile; Ensenada Mesa – 11.3 wells per square mile and 44.3 acres per square mile of road. This level of disturbance may relegate wintering deer to steep slopes and rugged terrain where wells may not be typically located. Bishop and others (2005) found that deer fawn mortality due to predators increased in situations where the fawns were using steep slopes, where presumably, their mobility was impaired as opposed to when they were on more gentle terrain.

With respect to the San Juan Basin, elk seem to have habituated (to some degree), to the fragmented habitat and relatively ubiquitous human activity. In 1985 there were 950 elk licenses issued in Game Management Unit 2 (San Juan Basin) (Weybright, 2008). The total harvest was 132 animals. In 2008 there were 665 elk licenses issued (NMDGF, 2008). After experiencing a significant increase over the 1970s numbers, elk appeared to have peaked in the late 1990s. It is possible that this increase can be attributed in part to extensive habitat improvements, i.e. sagebrush control and water development by the BLM. However, it should be noted also that this phenomenon isn’t unique to the Farmington Field Office as other western states have also experienced significant increases in elk numbers. Conversely, the reduction in elk licenses in GMU 2 stems from a decline in elk numbers over the past several years (Mckim, 2008).

During this same timeframe deer numbers in GMU 2 appear to have remained somewhat static. In 1982 deer licenses in GMU 2 were unlimited and approximately 6,000 were sold. The projected harvest that year was approximately 800 (Weybright, 2008). In 2008 deer licenses in GMU 2 were issued on a limited entry basis with a total of 2,726 licenses. In 2007 there were 2,487 licenses issued with a total of 948 deer harvested (Hale, 2008). It should be noted that many of the deer harvested in GMU2 are migrants from southern Colorado. Therefore, fluctuations in the numbers of deer observed on their winter range or the number of deer harvested may not be entirely attributable to habitat conditions in GMU2. Again, however, there appears to be a trend throughout the western United States of mule deer populations declining. In the Colorado Plateau shrubland and forest ecoregion, of which the San Juan Basin is part of; “Deer populations generally rebounded during the 1980s but experienced another decline during the 1990s...” (Unsworth et al. 1999, Gill et al. 2001, Heffelfinger and Messmer 2003). A variety of decimating factors have probably contributed to this decline, e.g. the banning of the poison 1080, designating mountain lions as a game species, catastrophic wildfires burning up winter range, fire suppression, disease, road kill, poaching, legal harvest (in particular, hunts held during the winter) and drought. In addition, it is also very plausible that the extensive habitat fragmentation in the San Juan Basin has exacerbated the impacts of some of these factors such as poaching, road kill, legal harvest and inhibiting the natural role of fire. Habitat fragmentation due to roads, gas and oil wells and compression facilities can have both direct and indirect impacts to big game animals. This infrastructure, as described

in the Section III - Affected Environment portion of this document has resulted in certain levels of disturbance. Table 10 above quantifies this disturbance. Essentially, however, the perturbations and forage conditions enumerated within this document represent a cautionary “red flag” that big game in the Carracas, Rosa and Ensenada Mesa SDAs are at risk of a population decline should they experience any other negative impacts such as a hard winter, drought or a loss of summer habitat. The rationale in further reducing these animals stress by not allowing any excepted activity during the closure periods stems from a desire to not exacerbate the situation. An estimate of the exception requests expected during the period December 2008 through 2010 by SDA priority and alternative is depicted in Table 12.

Impacts to industry – An assessment of the number of days of “excepted work activity” in the Rosa, Carracas and Ensenada Mesa SDAs over the last two years revealed there were approximately 778 days. Had this work not taken place, there is the possibility that some individuals may not have been employed to the extent that they were, and secondly, there may have been some reduction in the daily volume of natural gas production. It is BLM’s contention that the reduced daily volume of gas produced is not gas lost but rather production that is simply deferred until the seasonal closure has expired. BLM recognizes there may be some financial hardship to some individuals and some short term reduction in cash flow to the companies. However, it is also BLM’s position that through proper planning these shortfalls may be offset. In the Carracas, Rosa, and Ensenada mesa no exception areas, there are five principal operators: Energen, Williams, Conocophillips, Chevron and XTO. Encompassed in these areas are 1,754 active wells which comprise 6.5 percent of the total active wells in the San Juan Basin. Most of the aforementioned operators have leases throughout the basin where they can redeploy equipment and manpower during the winter closures. The exception is Williams whose federal leasehold is wholly contained within the winter closure area. Historically, Williams has moved their contract drilling rigs onto the Jicarilla Apache Reservation during winter months. However, recent commercial developments and lack of drilling permits has limited the available drill locations on the reservation. Williams as operator of the Rosa Unit will be most impacted by these newly declared No Exception Areas. In the Rosa Mesa No Exception Area, Williams operates 254 wells with six approved drilling permits and two wells currently drilling and/or yet to be completed. If the company fails to drill or complete their wells, there will be a revenue deferral until the spring months. Chevron operates the Rincon Unit which lies mostly within the Ensenada Mesa No Exception Area. The company operates 453 wells in the unit with 6 approved drilling permits and no wells currently drilling. Ensenada Mesa is closed for antelope fawning in late spring-early summer (two and one half months). Chevron has few other properties in the San Juan Basin where they can redeploy equipment and manpower. However, the Rincon Unit is nearly fully developed and a majority of the work consists of routine maintenance. Therefore, although there may be impacts to Chevron, they should be relatively minor since most maintenance functions are allowed.

**IVd. Impacts of the No Action Alternative** – Under this alternative the exception criteria would remain as they are currently defined. It would be incumbent upon industry to plan their work so as to avoid (to the extent possible) having to request an exception to a seasonal closure. In the event that an exception request was necessary all of the SDAs would be open to a request (See table 13).

Impacts to Wildlife - During the period October 1, 2007 through June 2008 there were a total of 129 exception requests received by the Farmington BLM, of these, 103 were approved. The total number of days of “excepted work activity” was 778; of these, 122 occurred within the Carracas Mesa, 240 on Rosa Mesa and 1 on Ensenada Mesa SDAs (See Table 11). Similarly, during the period January 1, 2004 through June 1, 2008 there were 72 wells drilled within wildlife SDAs in the FFO area. Assuming an average of 20 days to complete a conventional gas well and 34 days for a coal gas well (Jordan, 2008),

there have been 1,440 to 2,448 days of excepted work activity associated with these wells. Conversely, there were 735 wells drilled (from 1/1/04-6/1/08) within wildlife SDAs but drilled outside of the seasonal closure period due to the expansion of the wildlife SDAs and the modification to the Farmington RMP. The deferment of the 735 wells to a non-critical time for wildlife equates to 14,700 to 24,990 days of drilling activity depending upon if the wells were conventional or coal gas. It should be noted also that this activity was in the newly established SDAs and not the previous, much smaller critical big area. If one uses the high end of the range of activity days required to drill a well there has been a reduction of about 90 percent during the seasonal closure period in the wildlife SDAs. However, while the oil and gas related activities that fall into the “exception category” have been significantly reduced during the winter closure period there is still considerable “routine” activity that is authorized. This type of activity, e.g. water trucks, individuals in pickups checking wells and routine maintenance at various well locations is inevitable. Its’ impact on big game (as noted above) is difficult to determine. In addition, this activity is anticipated to increase as more wells are drilled in the Rosa and Carracas

Table 12 – Exception requests by SDA 2007-2008/days of excepted activity.

Year	SDA	Requests Received	Approved	Denied	Tot. Excepted Activity Days
2008	Carracas Mesa	10	6	4	52
	Rosa Mesa	21	21	0	117
	Rattlesnake Canyon	14	8	6	67
	Ensenada Mesa	1	0	1	0
	Thomas Canyon	1	1	0	21
	Carrizo Canyon	0	0	0	0
	Middle Mesa	8	6	2	33
	<b>Totals:</b>	<b>55*</b>	<b>41</b>	<b>12</b>	<b>290*</b>
2007	Carracas Mesa	6	6	0	70
	Rosa Mesa	24	13	11	123
	Rattlesnake Canyon	25	24	1	122
	Ensenada Mesa	1	1	0	1
	Thomas Canyon	2	2	0	28
	Carrizo Canyon	3	3	0	13
	Middle Mesa	13	13	0	131
	<b>Totals:</b>	<b>74*</b>	<b>62*</b>	<b>12</b>	<b>488*</b>

\*Totals do not include request by ConocoPhillips to install end devices on hundreds of wells as part of an electronic monitoring program which would reduce vehicle travel to these wells. These devices required less than 72 hours to install (generally 1 day) and were confined to an existing location. Precise locations of each installation were not required by the BLM but an exception was approved due to the potential to eliminate additional vehicle travel in wildlife areas.

Mesa SDAs. It should be noted that this activity (routine daily operations) is authorized to occur on a yearlong basis in areas where the Thiessen polygon analysis found that the average area of influence of

each well in the Carracas and Rosa SDAs was 58.6 and 61.8 acres respectively. The size of these polygons will undoubtedly shrink as more wells are drilled and more roads are built. In turn the resulting proximity of anthropogenic activity to big game will be increased; this phenomenon is irrespective of any exception request activity. Under the No Action Alternative it is estimated that the number of exception requests that would be received in future years (See Table 12) is likely to decline through 2009 and then increase in 2010 onward. This prediction is based upon current gas prices and numbers of applications for permits to drill (APDs) received by the BLM. In 2007 the Farmington BLM received 630 APDs but through September 2008 only 455 have been received. If this trend continues it is likely that the number of “excepted work activity days” will go down. However, as gas prices recover it is assumed that drilling activity will increase. This activity combined with the routine activity and the increased fragmentation due to more wells being drilled, roads built and pipelines constructed would undoubtedly increase the stress to wintering wildlife.

Table 13 – Summary of anticipated exceptions for the period 12/08 – 12/10.

SDA Priority	Ave. 07 & 08 Exception Requests	Anticipated Requests - Proposed Action	Anticipated Requests - No Action Alternative
High	32	5	20
Moderate	33	20	20
Low	0	0	0

Impacts to Industry – Since the revision of the Farmington RMP in December 2003, industry has had to adjust their operations to accommodate the seasonal closures. Their ability to do this is evidenced somewhat by the dramatic decline in exception requests as depicted in Figure 1, page 1. Advance planning in conjunction with the BLM has contributed greatly to this accomplishment. Work has had to be deferred until after the seasonal closure periods; undoubtedly this has resulted in some inconvenience, delayed revenue and possibly some additional costs. Some companies whose leases are primarily in wildlife SDAs are impacted more heavily than others who have leases outside of the SDAs that they can go to during the seasonal closure period. However, it is BLM’s contention that with continued advance planning in anticipation of the seasonal closure period that negative impacts to industry can be further minimized as time goes on.

**IVe. Impacts of the No Exceptions Alternative** – Under the No Exceptions Alternative there would be no exceptions to the seasonal closures allowed except in an extreme emergency. There are several possible consequences to adopting this alternative that are driven by the Executive and Legislative Branches.

One, Executive Order 13212 signed by President George W. Bush on May 18, 2001 under Section 1. Policy states in part:” .... (agencies) shall take appropriate actions, to the extent consistent with applicable law, to expedite projects that will increase the production, transmission, or conservation of energy.”

Two, under the Energy Policy and Conservation Act Amendment of 2000 (EPCA), Section 604 it was mandated that “the extent and nature of any restrictions or impediments to the development of such resources” (oil and gas) be identified through inventory of all onshore Federal lands.

Three, as a result of the congressional act and executive order noted above, the guidance therein was promulgated as Instruction Memorandum 2003-233 dated July 28, 2003 and issued

by the BLM’s Washington Office to all BLM state directors. Page two of this memorandum under Policy/Action states in part: “The President’s National Energy Policy directed the EPCA inventory be expedited, and constraints to Federal oil and gas leasing be reassessed and modified “where appropriate opportunities exist (consistent with the law, good environmental practice, and balanced use of other resources).” This goal does not mean all existing resource-related constraints or closures will be eliminated. As a result of this direction, in some areas the need for additional constraints may be identified.”

The Farmington BLM’s interpretation of this guidance is that under all but the most sensitive ecological situations (See Proposed Action) the BLM is obligated to provide a mechanism for industry to request an exception to a seasonal closure stipulation. Therefore, until such time as the BLM receives additional guidance that would supersede the guidance noted above, it is BLM’s position that the No Exceptions Alternative cannot be adopted in its entirety.

Table 14 – Summary of Alternatives, SDAs, Activities

<b>SDA Name</b>	<b>Proposed Action</b>	<b>No Action</b>	<b>No Exceptions</b>
<b>High Priority</b>			
Thomas Canyon 12/01-04/15	Exceptions allowed	Exceptions allowed	No exceptions allowed
Crow Canyon 12/01-03/31	Exceptions allowed	Exceptions allowed	No exceptions allowed
Rosa Mesa 12/01-03/31	No exceptions north of LaJara Wash except emergencies; south of Lajara Wash exceptions allowed	Exceptions allowed	No exceptions allowed
Carracas Mesa 11/01-03/31 & elk calving area 04/01-04/15	No exceptions except emergencies	Exceptions allowed	No exceptions allowed
<b>Moderate Priority</b>			
Rattlesnake Canyon 12/01-03/31	Exceptions allowed	Exceptions allowed	No exceptions allowed
Middle Mesa 12/01-03/31	Exceptions allowed	Exceptions allowed	No exceptions allowed
East La Plata 12/01-03/31	Exceptions allowed	Exceptions allowed	No exceptions allowed
Cereza Canyon 12/01-03/31	Exceptions allowed	Exceptions allowed	No exceptions allowed
Ensenada Mesa 05/01-07/15	No exceptions except emergencies	Exceptions allowed	No exceptions allowed
Laguna Seca Mesa 12/01-06/15	Exceptions allowed	Exceptions allowed	No exceptions allowed
<b>Low Priority</b>			
Gonzales Mesa 12/01-03/31	Exceptions allowed	Exceptions allowed	No exceptions allowed

Impacts to wildlife – In the absence of exception activity there would be less disturbance to big game, and in turn less stress, which potentially could affect survival and reproduction (Geist, 1971). While it can be safely assumed (based upon findings in the scientific literature) that the effects of reduced disturbance would be positive to big game it is very difficult to quantify these impacts due to the numerous variables involved. Moreover, the trend in big game populations and the complexity of management issues does not suggest all wildlife SDAs would be considered as most sensitive ecological situations.

Impacts to Industry – A total ban on exceptions of any kind could result in revenue above and beyond what was indicated under the Proposed Action being deferred. Emergency work would still be permissible so as to safeguard human health and prevent environmental contamination. No exceptions allowed could cause some decrease in employment, at least in the local area.

**V. Monitoring** – A number of measures are planned to more closely monitor the deer populations in several SDAs. It is hoped that the results of these efforts will be useful to the BLM in managing oil and gas related activities on public lands. To the extent that funding and personnel are available the following actions will be undertaken, they are:

- (1) Comprehensive helicopter surveys of the Carracas, Rosa and Rattlesnake Canyon SDAs will be conducted in the winter of 2008-2009.
- (2) Mortality surveys will be conducted in early March 2009 in the Carracas/Rosa area to assess the losses during the winter. All deer and elk carcass locations will be recorded with a GPS as well as the age/sex (if possible) of the animal, the probable cause of death (in particular vehicle kill or a kill facilitated by the proximity of the road, and starvation) and the vegetation type. If possible, teeth samples will be taken from each animal for cross-sectioning and aging. All carcass locations will be downloaded into a GIS along with well, road, vegetation and topographic data.
- (3) A fecal analysis project will be initiated in December of 2008 in the Rosa, Carracas and Crow Mesa SDAs to assess the composition and nutritional adequacy of the deer's diet. The diet composition will be determined to species for primary shrubs and grasses and to genus for lesser plant species. The nutritional component will focus on the fecal nitrogen, crude protein and the amount of diaminopimelic acid present.

#### **VI. Mitigation Measures -**

- (1) Habitat improvement projects with an emphasis on improving winter/spring forage for deer and elk will continue. In particular, the Rosa, Carracas, Crow and Ensenada Mesa as well as the Rattlesnake Canyon SDAs will receive attention. Specific actions may include: Dixie Harrowing, hydromowing, thinning with saws, burning and seeding, ripping, berming and seeding roads to close them, planting browse seedlings and water developments.
- (2) In accordance with the Farmington Resource Management Plan with Record of Decision, mitigation measures (see page 2-7) will be emphasized as a means to minimize the amount of further habitat fragmentation.

(3) With respect to exception requests granted with conditions, mitigation measures may also be in the form of only conducting operations during daylight hours, erecting sound barriers around the noise source, workers transported in one multi-passenger vehicle so as to reduce traffic, etc. Certain weather parameters concerning snow depth and temperature may also be applied as a condition of approval. Currently, the exception criteria require a waiver for building new roads, well pads, drilling new wells, seismic exploration, or extensive construction such as pipelines or large compressor facilities. This designation will continue under the Proposed Action and No Action Alternatives as these activities are not routine in nature or short term. Other activities such as installing a new compressor where the work is anticipated to require more than three days will require an exception. Changing out an existing compressor or replacing pump rods is considered necessary maintenance. Activities that will be permissible during the seasonal closure period and do not require an exception are daily operations, road maintenance and routine pipeline maintenance. Activities that can be conducted in less than three days on an existing location but are broad in scope entailing numerous locations and are of a discretionary nature will require an exception due to their cumulative effects.

V. **Consultation/Coordination-** the following individuals/entities were consulted in the preparation of this document.

Kathy Mckim	Farmington Dist. Wildlife Manager	New Mexico Dept. Game & Fish
Barry Hale	Deer Program Manager	New Mexico Dept. Game & Fish
Matt Anthony	Largo District Officer	New Mexico Dept. Game & Fish
Darrell Weybright	Big Game Program Supervisor	New Mexico Dept. Game & Fish
Robert Jordan	Drilling/Production Foreman	Devon Energy
Jim Lovato	Petroleum Engineer	Farmington BLM
Dave Mankiewicz	Asst. Field Manager – Minerals	Farmington BLM

Prepared by: John Hansen Date: 10/1/08

Approved by: Dale L Wirtz Date: 10/1/08

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## FINDING OF NO SIGNIFICANT IMPACT/DECISION RECORD

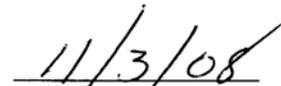
**Decision:** It is my decision to adopt the Proposed Action in its entirety. Key provisions of this action include the elimination of exceptions to the seasonal closures in the Carracas, Ensenada and that portion of the Rosa Mesa SDA north of Lajara Wash. Exceptions in cases involving human safety or environmental contamination would be allowed. Exception requests would also be entertained for all other wildlife SDAs and processed in accordance with the criteria identified in this document.

**Finding of No Significant Impact:** Based on the analysis of potential environmental impacts contained in the attached environmental assessment, I have determined that the impacts to the oil and gas industry and to the wildlife resources as a result of adopting the Proposed Action are not expected to be significant and an environmental impact statement is not needed.

**Rationale for my decision:** The basis for my decision stems from a review of site specific data as well as citations from the scientific literature. These data sources reaffirm BLM's concern for the potential impacts to wintering big game due to allowing excessive human disturbance to occur during the seasonal closure periods. Two issues were paramount in arriving at this decision: (1) The condition of the browse habitat in the Carracas and Rosa SDAs is very poor. During a hard winter of cold temperatures and deep snow this could result in increased mortality. (2) The amount of fragmentation due to roads and wells in all of the SDAs but especially the Ensenada, Rosa and Carracas provides an infrastructure that contributes to the daily stress of animals. Given these environmental conditions it does not seem prudent to exacerbate the situation by allowing unnecessary human activity during a time of increased energy demands for big game. In the case of the Ensenada Mesa SDA the seasonal closure is intended to reduce the potential to disturb does during the fawning season.

**Compliance and Monitoring:** Additional biological data is scheduled for collection beginning this fall. This information will be used to assess the future effects of energy development in key wildlife SDAs and to the extent possible oil and gas related activity authorized under an exception. The data collection projects identified thus far, are listed under V. Monitoring on page 44 of the EA.

  
District Manager

  
Date

Appendix I: BLM responses to comments received

## **Appendix I. BLM responses to comments received concerning the EA:**

Integral to the decision process was input from various stakeholders; these included oil and gas producers, environmental groups, private citizens and the New Mexico Department of Game and Fish. A scoping period of 30 days preceded preparation of the environmental assessment. During this time the public was invited to provide comments on the proposed alternatives and issues. This process resulted in the development of a new Proposed Action. Following this the environmental assessment was written and made available to the public for a 15 day review and comment period. Comments were received from four different entities; a summary of their comments and the BLM's response is given below.

### **New Mexico Department of Game & Fish:**

- The Proposed Action fails to consider the cumulative effects of multiple, simultaneous exceptions in proximity to each other.

BLM response: see page 37 of the EA concerning the granting of exceptions for numerous locations.

- "The EA document should be revised to accurately reflect the reasons for selecting the proposed Action."

BLM response: BLM stands by its determination to exclude only that portion of the Rosa SDA north of Lajara Wash from being eligible for an exception request. The rationale to not include the remainder of the Rosa SDA south of the Lajara Wash is based somewhat on professional judgment with respect to lower numbers of wintering deer and significant blocks of private land where BLM has no jurisdiction. Helicopter survey data is presented for survey unit 4 in Figure 4 on page 9 of the EA that provides a graphic portrayal of the area in which the numbers of deer presented in Table 2 on page 10 were observed. Helicopter survey data for the area south of the Lajara Wash within the Rosa SDA are not available. However, BLM is confident in their assessment of the deer numbers being significantly lower in this area than to the north of Lajara Wash.

- Recommends that drilling pits within SDAs left open during the closure season be covered with netting to exclude wildlife access or have escape ramps for wildlife.

BLM response: For all locations where BLM has jurisdiction current policy calls for the reserve pit to be closed within 90 days. Generally within 30 days, fluids as a result of the drilling operation are removed. At this point, BLM has no plans to require the netting of reserve pits during the seasonal closure period in SDAs. However, BLM will continue its policy of requiring reserve pits to be fenced. In addition, BLM will encourage industry to close out reserve pits prior to the seasonal closure period so as to avoid having to request an exception.

### **Energen Resources:**

- The EA does not "show that the granting of well screened exception requests in the past created any problems with the big game animals that the seasonal closures are in place to protect."

BLM response: BLM's perception of the current situation is that big game animals in the SDAs face a variety of decimating factors apart from the relatively ubiquitous human activity. The scientific literature is fairly clear on the potentially deleterious effects of habitat fragmentation and anthropogenic activity to wildlife in realizing their population potential. Several "red flags" including poor browse condition and pervasive habitat fragmentation have been identified in the Rosa and Carracas SDAs. Conversely, an analysis of the existing data suggests a somewhat static situation with respect to deer in the Rosa and Carracas SDAs while other SDAs such as Rattlesnake Canyon and Middle Mesa appear to be greatly under-populated with respect to deer and elk (See pages 29 and 31 of the EA). While these population levels are probably due to a variety of factors BLM cannot ignore the probable influence of natural gas production on the ability of big game to conduct their normal life processes. Under the Proposed Action activities resulting in significant human disturbance such as road and pad construction, well drilling, seismic exploration, pipeline construction and well cavitations will require an exception or in the case of the Carracas and Rosa SDAs (north of LaJara Wash) an exception will not be granted. Daily operations and routine maintenance to include changing out "existing" compressors and pump rods is permissible. Given this, it is BLM's position that with proper advance planning the inconvenience or financial hardship to industry will be minimal under the Proposed Action. Therefore, BLM has opted to adopt a position that does not exacerbate the environmental hazards that big game has to deal with.

- The EA makes no attempt to evaluate the positive impacts of the RMP over the past five years.

BLM response: See pages 40-41 of the EA.

- Energen cannot repair an existing down-hole pump or replace a broken rod in our horizontal wells in the Carracas area within 3 days.

BLM response: See page 37 of the EA. Replacing pump rods is considered routine maintenance under the Proposed Action.

- Challenges the determination that the level of disturbance in the Carracas Mesa SDA would fall into the "high impact" category that the disturbance at each well location is closer to one acre rather than the 2.5 acre figure that BLM used to make this determination.

BLM response: BLM maintains that the average size of well locations in the San Juan Basin is about 2.5 acres. It does recognize, as Energen has pointed out, that a portion of this area will be re-vegetated. However, it is BLM's contention that the entire location must be considered as disturbance as the potential for vehicles, humans and noisy equipment on the location to serve as a deterrent to wildlife using the one acre that is re-vegetated is significant. BLM does recognize that deer and elk will use vegetation on locations at times but because of the human activity they do not have free will to do this. Even more, depending upon the level of activity at a particular well and the type and amount of cover adjacent to the well, wildlife may avoid the well and the area surrounding it entirely for long periods.

- "...the EA does not show that exceptions to the three day extension has made any impact to the wildlife in the area."

BLM response: Quantifying the impacts to wildlife of various types of exception activity would be difficult. The rationale behind BLM's designation of a three day limit on construction activity is based primarily on professional judgment. The three day designation provides a reasonable amount of time to complete certain types of routine work without requesting an exception. In making this determination it is BLM's judgment that we are still meeting the intent of the mandate to provide a mechanism for requesting an exception to the seasonal closure and we are also safeguarding the wildlife resource.

**Devon Energy:**

- Helicopter surveys were not generally performed in the winter, the season covered by the closures to protect wildlife.

BLM response: This assertion by Devon is incorrect. All of the referenced helicopter survey data was collected in either December or January of the year in question. For example see pages 24 and 29 of the EA.

- "Obviously, there are a number of uses that may equally impact habitat and it would be an unfair strategy to single out oil and gas activity for a disproportionate level of restrictions."

BLM response: There are a number of variables that can impact the well being of big game, e.g. drought, disease, cold temperatures and deep snow, fire, predators, poaching, legal hunting, forage quality and loss of habitat. Some of these variables are interrelated, i.e. drought and forage quality or fire and loss of habitat, etc. These environmental constraints represent a formidable challenge; add to this extensive habitat fragmentation and human activity due to oil and gas development and the energy demands to wildlife are likely to increase considerably. It is BLM's contention that this increased energy expenditure during a stressful period such as winter can ultimately result in increased mortality. Because of the complexity of the variables involved it is difficult to quantify precisely the role that each plays in the overall health of a wildlife population. However, it is BLM's position that industry's sacrifice (in terms of work deferred) under the Proposed Action is not disproportionate or unreasonable. As noted above, with proper planning it is our contention that the restrictions during the seasonal closure period can be accommodated with relatively little hardship.

- "Elk numbers have increased dramatically – more than doubling – since the late 1980s."

BLM response: While BLM does not dispute the assertion that elk numbers have increased it is our contention that this has been possible due to extensive forage and water development in GMU 2 by both the BLM and Forest Service. In addition, some of the elk observed during helicopter surveys conducted in the late 1990s may have migrated from the Jicarilla Apache Reservation. The increase in elk numbers can be attributed in part to their versatility in terms of their diet, i.e. being able to do well on either grass or browse during the winter as opposed to deer which require primarily browse. It is BLM's contention that in the face of continued habitat fragmentation that elk should also be afforded the relief of reduced human activity during the winter closure period.

**Wild Earth Guardians:**

- “...BLM believes it may be legally bound to reject the no exceptions alternative. We firmly disagree.”

BLM response: BLM stands by its position as stated on pages 3 and 4 of the EA.

- The EA does not adequately assess whether exceptions to wildlife safeguards are appropriate.

BLM response: It is BLM’s position that it has been mandated to provide a mechanism for industry to obtain an exception to seasonal closures under certain circumstances. However, it is also BLM’s understanding that under certain environmental conditions it can exclude an area from the exception process. An analysis of the data available to BLM at this point does not warrant a complete ban on exceptions. BLM, in conjunction with the New Mexico Department of Game and Fish, will continue to monitor wildlife numbers and habitat conditions in the various SDAs (see page 43-44 of the EA).

- “...the current criteria are extremely subjective and written in such a way as to fail to provide any boundaries or specific definition of when exceptions are inappropriate or appropriate.”

BLM response: The landscape in the various wildlife SDAs is highly variable. The exception criteria are written to reflect this variability. Assigning specific values for variables such as percent of woodland canopy cover or the number of deer or elk per square mile may be difficult to determine accurately. Conversely, the number of wells or miles of roads per square mile can be easily determined using a GIS. Weather conditions, which are one of the most important variables, must be assessed at the time of the request and what is predicted to occur during the requested activity. With respect to providing specific boundaries or thresholds that cannot be exceeded it is BLM’s position that all of these variables are inter-related. If any one of them is to be singled out for its importance and as a potential barrier to granting an exception it is weather. Page 6 of the EA provides the text for criteria 2 – severity of the winter. This narrative is detailed and it is something that can be accurately and easily measured by anyone who is at the proposed project site. Conversely, animal density and habitat condition are conditions that may be readily disputed. It is BLM’s contention that the current criteria have allowed BLM to render sound decisions in a timely manner.

- “The EA fails to address the cumulative impact of climate change.”

BLM response: The assessment of green house gas emissions and climate change is in its formative phase. It is currently not feasible to know with certainty the net impacts from the proposed action on climate. The inconsistency in results of scientific models used to predict climate change at the global scale coupled with the lack of scientific models designed to predict climate change on regional or local scales, limits the ability to quantify potential future impacts of decisions made at this level. When further information on the impacts to climate change is known, such information would be incorporated into the BLM’s planning and NEPA documents as appropriate. BLM recognizes the potential impacts to the flora and fauna due to global warming. However, quantifying these impacts in a precise manner as they pertain to big game in the Farmington Field Office at this point in time would be extremely difficult. In general terms, much of the western United States has experienced significant periods of drought over the past 20 to 30 years. BLM recognizes that Northwest New Mexico has been no exception in this regard but we have noted also there have been some years with above normal

precipitation. Nonetheless we are cognizant of the impacts to the vegetation and water sources during the periods of drought and the resulting decline in the survival of the young of deer, elk and antelope. Climate change is yet another variable that influences forage quality and abundance, or in other words, habitat condition which we have referenced in our exception criteria in the EA (See page 6 – item 4 and page 8 item 2).

- “Requests for exceptions in areas where there is abundant forage and thermal/escape cover will be viewed more favorably than areas with inadequate cover and forage.” “...the criterion is clear that exceptions could be granted even in areas where there is scarce forage and thermal/escape cover.”

BLM response: BLM’s intent in wording this exception criteria (#4 – Condition of the surrounding habitat) was to imply that an exception request in an area with little escape cover is less likely to be granted an exception than a request in an area with abundant cover and forage.

- “... any exception to seasonal restrictions on oil and gas drilling activities in the Laguna Seca Mesa therefore may affect the Mexican spotted owl, requiring consultation with the U.S. Fish and Wildlife Service pursuant to section 7 of the Endangered Species Act.”

BLM response: This assertion is incorrect. There are 9,211 acres in the Laguna Seca SDA of this 2,758 acres are within the Mexican Spotted Owl ACEC. Therefore, it is obvious that with 70 percent of the SDA being outside of the MSO ACEC it is likely that most of the exception requests would fall outside of the ACEC.

- A number of alternative evaluation criteria were offered in lieu of those that BLM currently uses in processing exception requests. A summary of these recommendations includes:

- (1) Consider the compliance history of the company and not grant a request to any company that has violated BLM standards in the past.
- (2) Consult with New Mexico Game and Fish and not grant an exception if they do not agree.
- (3) Consider weather forecasts before granting any exception.
- (4) No exceptions should be granted because of company scheduling issues, such as drill rig schedules.
- (5) If precipitation is below normal or the region is otherwise facing or is experiencing a drought, the BLM should not grant exceptions.
- (6) If there is any habitat fragmentation, such as from roads, habitat degradation, or other corridors, within an SDA, the BLM should not grant an exception.

BLM response:

- (1) BLM considers each exception request on its individual merits.
- (2) BLM began consulting with NMGF on exception requests in 2008. However, BLM reserves the final call on whether to grant an exception or not.
- (3) BLM has always considered weather forecasts in its decision process.
- (4) A company may present as part of their justification for wanting an exception the need to keep a drill rig busy. However, from BLM’s perspective if there isn’t a legitimate reason based upon the exception criteria, e.g. a well has lost all production or experienced a dramatic decline and the total loss of production is eminent, an exception will not be granted simply on the basis of a company needing to keep a drill rig busy.

- (5) Drought conditions and its impact upon vegetation and water sources are considered (if they apply) in terms of the habitat conditions.
  - (6) This recommendation is not realistic from the standpoint of habitat fragmentation. All of the SDAs have some degree of fragmentation as described in the EA. If this recommendation were adopted there would be no need for exception criteria.
- “...if the BLM moves to adopt criteria to allow exceptions to timing restrictions in SDAs, the BLM must prepare an SEIS and cannot rely solely on an EA/FONSI to justify the proposed changes to the implementation of the RMP, and FEIS and ROD.

BLM response: It is BLM’s position that implementation of the exception criteria within the environmental constraints identified does not constitute a significant impact to wildlife resources. The environmental assessment prepared to analyze the impacts of the exception criteria is intended to be a supplement to the Farmington EIS/RMP.

