FINAL INTERIM REPORT

Ecological Site Inventory
2003-BLM-344-P

Bureau of Land Management
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CLARK COUNTY DESERT
CONSERVATION PROGRAM

Title: Ecological Site Inventory

Project Number: 2003-BLM-344-P

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INTRODUCTION

The Bureau of Land Management (BLM) and U.S. Forest Service (USFS) partnered to conduct a condition assessment of the Spring Mountain area so that resource objectives may be met across administrative boundaries within the joint area. The study area surrounding the Spring Mountains encompasses 933,000 acres. Administratively, the area is comprised of 330,000 acres managed by the USFS and 603,000 managed by the BLM. The joint project, Spring Mountains Ecological Site Inventory (ESI), was funded through the Clark County Desert Conservation Program.

The area of concern has been affected by increasing anthropogenic activities since the arrival of Spanish settlers. The population influxes since the end of World War II have dramatically impacted the condition of habitat in the Spring Mountain area. Stressors to the area include cattle grazing, wild horse and burro grazing, grazing by introduced elk, recreational activities, invasive non-native plants, and fire. These factors have been amplified by changes in weather patterns and rainfall.

Synthesized results of soils, integrated vegetation, and production plot data should provide consistent baseline information to interpret ecological condition, environmental impacts, and the data and information upon which to improve ecological condition by cohesive management across administrative boundaries. With this in mind the agencies have collected data to support the Terrestrial Ecological Unit Inventory (TEIU) and ESI analysis of the Spring Mountains area. The US Department of Agriculture Natural Resources Conservation Service (NRCS) completed and 'Order 3' soil survey and assisted in the field with ecological site identification in support of this effort.

The following are some of the objectives were outlined in the Initial Proposal and Scope of Work:

- Complete a baseline ecological inventory of uplands and springs in the Spring Mountains and Red Rock Canyon areas, using integrated methodology developed jointly by the US Forest Service (USFS) and Bureau of Land Management (BLM).

- Determine the potential vegetation of landscape units by integrating information from landscape "drivers", including soils, vegetation, geomorphology, slope, and elevation.

- Determine the productivity and ecological condition (including seral state) in landscape units to use as baseline for determining key areas for long term monitoring.

- Standardize the baseline information between BLM and USFS, including data reporting; in order to manage grazing herds across both administrative boundaries.

- Complete an 'Order 3' soil survey on Forest Service land. Revisit and confirm problematic areas on the BLM 'Order 3' soil survey.

- Maintain a digital data base for all inventory data collected and cooperate with other participants in establishing and maintaining a repository for digital biological data.

All records and data are available to Clark County upon request.

METHODOLOGY

The 'Order 3' soil maps developed by NRCS were used as the framework for field site selection. 'Order 3' soil surveys are fairly broad in terms of soils classification, with a maximum of 85 percent included in the major component and a minimum of 15 percent as a minor component. Inclusions (less than 15 percent) are not mapped, but are described in the mapping unit. Mapping units are documented by soil pedon (aka soil pit) locations. Field sites were selected to be representative of the soil map unit, but also to characterize unique ecosystems (i.e., springs, seeps, avalanche cutes). Thus, site selection was stratified to reflect the diversity of the mapping unit. Each soil mapping unit is characterized by one or more ecological sites. An ecological site is land with potential for a specific plant community based on the environmental features of the area, including soil, precipitation, geology, and elevation. Each field site was matched to the corresponding ecological site. In spite of the differences between agency methodologies, the ecological site was the common thread weaving the analysis and deriving condition of the landscape.

The USFS and BLM have different, but similar, methodologies for collecting baseline information to evaluate ecological condition. The USFS utilizes "Terrestrial Ecological Unit Inventory" (TEUI), while BLM uses Ecological Site Inventory (ESI). Both

methodologies use soil, vegetation, slope, aspect, and elevation to determine potential natural vegetation. Differences in the methods involve the scale of the mapping unit, vegetation production estimates (BLM), and whether existing vegetation rather than a defined NRCS ecological site description is used (USFS).

For the purposes of this project, the methods have been merged to derive uniform information enabling both agencies to compare trends across administrative boundaries. For this study, the BLM and USFS integrated the vegetation data with soil information gathered by NRCS to assist in developing new ecological sites on USFS lands and determining the potential vegetation of the ecological map units. Plant species-of-concern data collected during the project will likely help in refining the locations of the populations of those species, linking those populations to ecological map units, and improving the understanding of their existing and potential habitats.

Due to contracting requirements by the USFS, the BLM developed an interagency agreement whereby the project management and field work would be conducted by the USFS. BLM was solely responsible for the selection of the BLM field sites, data entry of the BLM production data, and determination of total biomass by species (for BLM sites). USFS contracted the collection of vegetation and forage information for the entire project area. This agency was responsible for data entry of the general site description forms, ocular vegetation, and vegetation cover data. Both agencies worked together for data synthesis and geospatial data.

As stated above, the agency specialists selected the field sites based on the soil maps and ecological sites. The agency specialist developed a General Site Description for each site that included plot name, plot type, mapping unit name, ecological site name, geospatial coordinates, landform, slope, aspect, and directions. Afterward, this information was given to the contractors to collect the field data. The BLM and USFS experimented with several vegetation plot sizes to maximize species diversity and capture the heterogeneity of the landscape. The BLM found that an average of two 100-meter by 1-meter plots best captured the vegetation information in the sparse desert environment. Similarly, the USFS tried several plot sizes and found that 20-meter by 20-meter plots best captured the vegetation information within a forested landscape. Regardless of the plot shapes, the final area of each plot remained the same at 0.1 acres.

Training for field crews began with a presentation displaying rare and sensitive plants of the Spring Mountains NRA. The presentation consisted of a slide show and herbarium display, led by Dr. Patrick Leary, a Botany Professor at the Community College of Southern Nevada. Following the presentation, field crews began collecting and identifying plants from the previous season's study sites under the supervision of Project Manager and Senior Botanists.

USFS and BLM personnel provided project-specific training for field crews during the first week of the field survey season. The first day of training was used to review project data forms and to discuss data collection methodology and job hazard analysis. Following the meeting, field crews met with USFS and BLM personnel over the course of three days to review survey techniques. During these meetings, staff conducted four training surveys (3 USFS and 1 BLM) under agency supervision, learning methods specific to USFS and BLM plots.

BLM Survey Methodology

Upon arrival at a survey site (staked previously by agency botanists), field crews established two 100-meter by 1-meter transect lines, using a compass and tape measure. The established plots were 0.1-acre in size. Boundaries were located to maximize species diversity and to represent the typical vegetation density of the surrounding area. Occasionally the plot dimensions, but not area, were changed in order to remain upon a particular landform or to avoid disturbance, such as an old road. Soil pedons were excluded from the plots in order to avoid disturbance from soil surveys.

Once plot boundaries were established, crews collected site data including: standard tree stand measurements, slope, aspect, elevation, photographs, GPS data file, a comprehensive species list, sketch of the plot, ground surface cover (point-line intercept), canopy cover data (continuous-line intercept), and/or ocular methods to determine ground surface cover, percent vegetation cover by layer and species, and percent canopy cover by life form.

Production data entailed destructive sampling (clipping above-ground biomass) and therefore was always done last. A total of 20 pin flags were delineated and 1-meter by 1-meter production estimates were made for the current year's production by species. After estimates were completed, 6 quadrats with the highest species diversity were chosen for clipping. All samples were bagged, labeled, weighed, and delivered to BLM. The purpose of the clipping is to calibrate the production estimate with the actual clipped value. The difference between estimated and actual is used to adjust the production (i.e. If we consistently underestimated the production of Species A by 15%, we would adjust the estimated weight to account for this).

USFS Survey Methodology

USFS plots were 20-meters by 20-meters, unless disturbances or changing landforms dictated a different shape. In such cases the dimensions, but not the area of the plot were changed. After the plot was created crews typically conducted surveys using ocular estimates. Point-line intercept surveys were completed approximately once per week in order to calibrate ocular estimates.

Plots surveyed by point-line intercept (calibration) had five 20-meter transects set up 5-meters apart using a compass and tape measure. Using a laser pointer and densitometer, crews recorded ground cover and vegetation data at 1-meter intervals along each transect. The data collected from the point-line intercept survey was used to calculate ground cover and canopy cover by layer and species.

Production data was collected from the most species-rich transect available within the plot. For ocular surveys crews identified the most species rich area of the plot and ran a straight 20-meter transect through the plot, parallel with plot boundaries. For point-line intercept surveys, the most diverse of the five 20-meter transects was used.

Quadrats measuring one square meter were placed along the most diverse transect at every other meter, such that one transect yielded ten quadrats. Crews conducted ocular plant weight estimates on each of the ten quadrats, recording the estimated amount (in grams) of each species. After estimates were completed, crews chose two to four quadrats to clip. Crews were directed by USFS to sample the minimum number of quadrats in order to collect representative samples for all species present. All samples were bagged, labeled, weighed, and provided to USFS personnel.

DATA FORMS

Five different data collection forms were used during this project. The completed data forms for each site surveyed can be found in Appendix B. The General Site Data Form and Vegetation Composition and Structure Form were used at all USFS and BLM sites. Different versions of the Point-Line Intercept Form were used at USFS and BLM sites to account for varying transect lengths. The Continuous Line Intercept Form was only used on BLM sites. Different versions of the plant production form were used at USFS and BLM sites to reflect the number of quadrats sampled.

General Site Data Form

Data fields for the General Site Data Form include ground surface cover, morphometry, disturbance, slope, and aspect. When available, NRCS soil and morphometry data was transferred to the General Site Data Form for integrated vegetation and soil survey plots. Ground surface cover was calculated using point-line intercept data for all BLM plots and USFS calibration plots. Ground surface cover was determined by ocular estimates on USFS plots not chosen for calibration.

Vegetation Composition and Structure Form

This form records the currant vegetation structure group and the composition over a 100 meter plot.

Percent Canopy Cover by Life Form

Percent canopy cover by life form is determined using data from the percent canopy cover and structure data by layer and species section, and represents percent canopy cover after canopy overlap is accounted for. Project protocol instructed crews to include all vascular plants in the "All Veg" (Total Vegetation Cover) percentage figure, which would lump cacti, yucca, herbs, shrubs, and trees together. However, early feedback from the USFS stated that the total vegetation figure should only reflect the sum of trees and shrubs ("vegetation visible from aerial photographs"). After subsequent discussions with USFS it was decided that herbs would be included in total vegetation cover when it represented a dominant life form on the plot.

Percent Canopy Cover and Structure Data by Layer and Species:

Percent canopy cover and structure data by layer and species was calculated from point-line intercept data. When point-line intercept data was not collected on USFS sites, percent canopy cover and structure data was determined by making a complete species list and conducting ocular estimates. Based on training with USFS and discussions regarding data feedback, these data reflect canopy cover before accounting for overlap.

Point-Line Intercept Forms (USFS and BLM)

The BLM Point-Line Intercept Form was used at every BLM plot. This form was used to collect data from 200 points. The USFS Point-Line Intercept Form was used approximately once a week throughout the field season as a method of calibration for ocular estimates. This form was used to collect data from 100 points. Data from these forms were used to calculate ground surface cover, percent canopy cover by life form, and percent canopy cover and structure data by layer.

Continuous Line Intercept Form (BLM)

The Continuous Line Intercept Form was used for every BLM site surveyed. This form was used to record the species and amount (in meters) of vegetation beneath two 100-meter lines, excluding forbs and annual grasses. This form was used to calculate absolute cover for the recorded species. No continuous line data was recorded for USFS sites.

Plant Production Forms (USFS and BLM)

Different plant production forms were used for USFS and BLM plots. These forms were similar, except that BLM forms provided data fields for estimating twenty quadrats, and USFS forms provided data fields for estimating ten quadrats. For consistency the USFS forms were used. BLM data was recorded on two forms per sites to meet data requirements. The balance of the data required by the USFS fits into the BLM rangeland health protocol, field teams were able to collect useful information using one training protocol. This reduced errors and confusion in the field and reduce the forms carried by the crews.

Plant production data was collected using a double-weight sampling method in accordance with instructions provided on the production worksheet. A percentage air-dry weight conversion table provided by the USFS was used to determine the dry weight production correction factor (column 8 on the plant production forms) for the production estimate portion of the surveys. A copy of this table can be found in Appendix A. Harvested plant material was weighed and then delivered to the USFS and BLM for drying and subsequent re-weighing. Plant production data was entered electronically and average yield, standard measure, and species composition values were calculated.

TRACE VALUES

A trace value represents a quantity of plant material that is either immeasurable or negligible; however, the value of a trace will differ according to the category of data collected (i.e. weight or canopy cover). A numerical value was assigned to all traces depending upon the category of data and the form for which the data was collected.

Canopy Cover

Canopy cover trace values were not discussed in USFS protocols provided as attachments to the project contract. Values for survey purposes were determined based upon discussions and meetings with USFS. Trace values for the Vegetation Composition and Structure Form differed depending upon the vegetation life form. Trace shrub species were assigned a value of 0.1%, while trace forbs and grasses were assigned a value of 0.01%.

Production

Production weight trace values were not discussed in protocols. Values for this survey were determined based upon the caliber of the scales provided by the BLM. Any recognizable plant weighing less than 0.5 grams was considered trace and represented by a written value of 0.1-gram. This value was determined based upon discussions and meetings with USFS.

Ground Surface Cover

This value was taken from the General Site Data Form Instructions under the Ground Surface Cover Standard section. According to this protocol, when a ground cover type was "present, but clearly comprised less than 1% of the plot" it was assigned a value of 0.1%. It is possible to determine 0.5% ground surface area using point-line intercept data on BLM plot surveys because data is collected for 200 points. Therefore, for BLM plots, ground surface areas of 0.1% and 0.5% were differentiated.

Summary of BLM Data

To date, the vegetation crew has completed 114 plots for the BLM plots (100%). The data forms have been transferred to the BLM and are currently being entered into the data base. A summary of available data is in the table at the end of this report. Originally work estimates called for 150 ranges site for the BLM, 50 of which would be integrated site. The total number of BLM sites actually inventoried was less (114) due to the follow factors: (1) great amount of homogeneity of the landscape reduced the number of sites needed to represent the landscape; (2) a large number of proposed sites (18 sites) were found to be not representative (e.g., were transition areas between 2 mapping units) of the ecological site and were not evaluated; (3) burned areas were not evaluated because they were not representative of the ecological sites; and (4) sites that were not impacted by grazing or human use (escarpments, limy mountains, etc.). All of the BLM sites were reviewed and checked by a soils scientist from the NRCS or BLM to insure quality control. The BLM has included copies of all available completed data that is available. Maps and environmental site condition evaluations will be reported as soon as they become available. The BLM is coordinating with the USFS to integrate all of the collected data for the partnering agencies to access for information. This database will provide an accurate baseline that will improve coordination of management strategies across administrative boundaries.

Dates	Sites #	Condition Score	Condition rating	Range site Identification Number/Name	soils series	comments	Integrated	Vegetation
10/1/2003	BLM 1			030XB102 Gravelly Loam 5-7	314			Vegetation
10/23/2003	BLM 2			030XB029 shallow gravelly loam 5-7	731			Vegetation
10/22/2003	BLM 3			030XB029 shallow gravelly loam 5-7	731		950411II-4	
	BLM 4					Site Not Representative		
12/15/2003	BLM 5			030XB029 shallow gravelly loam 5-7	731			Vegetation
	BLM 6					Site Not Representative		
	BLM 7					Site Not Representative		
	BLM 8					Site Not Representative		
	BLM 9					Site Not Representative		
4/29/2003	BLM 10			030XB005 Limy 5-7" P.Z..		Site Not Representative		
4/29/2003	BLM 11			030XY046 Outwash plain	723			Vegetation
	BLM 12					Site Not Representative		
9/29/2003	BLM 13			030XB102 Gravelly Loam 5-7	314			Vegetation
9/29/2003	BLM 14			030XB102 Gravelly Loam 5-7	314			Vegetation
	BLM 15					Site Not Representative		
9/30/2003	BLM 16			030XB029 shallow gravelly loam 5-7	731			Vegetation
9/8/2003	BLM 17			030XB102 Gravelly Loam 5-7	314			Vegetation
9/8/2003	BLM 18			030XB029 shallow gravelly loam 5-7	731			Vegetation
	BLM 19					Site Not Representative		
10/16/2003	BLM 20			030XB102 Gravelly Loam 5-7	314			Vegetation
	BLM 21					Site Not Representative		
10/16/2003	BLM 22			030XB029 shallow gravelly loam 5-7	871			Vegetation
	BLM 23					Site Not Representative		

10/7/2003	BLM 24			030XB029 shallow gravelly loam 5-7	871			Vegetation
10/7/2003	BLM 25			030XB102 Gravelly Loam 5-7	314			Vegetation
4/7/2003	BLM 26			030XB102 Gravelly Loam 5-7	871			Vegetation
4/7/2003	BLM 27			030XB029 shallow gravelly loam 5-7	731	burned		Vegetation
4/7/2003	BLM 28			030XB102 Gravelly Loam 5-7	871			Vegetation
4/7/2003	BLM 29			030XB029 shallow gravelly loam 5-7	731			Vegetation
4/7/2003	BLM 30			030XB102 Gravelly Loam 5-7	871	50% hyri		Vegetation
4/7/2003	BLM 31			030XB102 Gravelly Loam 5-7	313			Vegetation
4/9/2003	BLM 32			029XY077 Shallow Gravelly Loam 8-10" P.Z..	731		950403II-2	
4/9/2003	BLM 33			029XY127 Shallow Limestone Slope 8-10"	342	9410614II-1		Vegetation
4/9/2003	BLM 34			030XB029 shallow gravelly loam 5-7	870			Vegetation
4/9/2003	BLM 35			029XY127 Shallow Limestone Slope 8-10"	411			Vegetation
4/9/2003	BLM 36			030XB029 shallow gravelly loam 5-7	411		950606II-1	
4/9/2003	BLM 37					Site Not Representative		
4/29/2003	BLM 38			030XA066	581		950516II-3	
4/29/2003	BLM 39			030XB102 Gravelly Loam 5-7	314			Vegetation
8/25/2003	BLM 40			029XY077 Shallow Gravelly Loam 8-10" P.Z..	731			Vegetation
4/29/2003	BLM 41			029XY077 Shallow Gravelly Loam 8-10" P.Z..	731		940614II-1	
4/30/2003	BLM 42			030XB030 Shallow Limestone Slope 5-7"	342			Vegetation
4/30/2003	BLM 43			030XB029 shallow gravelly loam 5-7	871		930922II-1	
5/1/2003	BLM 44			030XB102 Gravelly Loam 5-7	871			Vegetation
4/29/2003	BLM 45			030XY077Steep South Slope	732			Vegetation
	BLM 46					Site Not Representative		
5/9/2003	BLM 47			030XB102 Gravelly Loam 5-7	314			Vegetation
5/9/2003	BLM 48			030XB102 Gravelly Loam 5-7	314			Vegetation
5/9/2003	BLM 49			030XB102 Gravelly Loam 5-7	314			Vegetation
5/9/2003	BLM 50			030XB102 Gravelly Loam 5-7	314			Vegetation
5/19/2003	BLM 51			030XB102 Gravelly Loam 5-7	314			Vegetation

5/19/2003	BLM 52			030XB102 Gravelly Loam 5-7	581			Vegetation
7/9/2003	BLM 53			030XB102 Gravelly Loam 5-7	314			Vegetation
8/22/2003	BLM 54			030XB102 Gravelly Loam 5-7	581			Vegetation
12/15/2003	BLM 55			030XB029 shallow gravelly loam 5-7				Vegetation
12/15/2003	BLM 56			030XB029 shallow gravelly loam 5-7	731			Vegetation
1/22/2004	BLM 57			Not Recorded\Data available				Vegetation
4/22/2004	BLM 58					Site Not Representative		
4/22/2004	BLM 59					Site Not Representative		
4/222004	BLM 60			030XB029 shallow gravelly loam 5-7	731			Vegetation
4/29/2004	BLM 61			030XB134 Quartzite Outwash	2222			Vegetation
4/29/2004	BLM 62			030XA093 Quartzite Fan 5-7" P.Z..	2140			Vegetation
4/29/2004	BLM 63			030XA093 Quartzite Fan 5-7" P.Z..	2140			Vegetation
4/30/2003	BLM 64					Site Not Representative		
4/30/2004	BLM 65			0303XB093 Volcanic Hill 7-9" P.Z..	2140			Vegetation
	BLM 66					Site Not Representative		
4/30/2004	BLM 67			030XB076 Shallow Gravelly Slope 5-7" P.Z..	2436			Vegetation
4/30/2004	BLM 68			030XB076 Shallow Gravelly Slope 5-7" P.Z..	2436			Vegetation
4/30/2004	BLM 69			030XA073 Limy 3-5" P.Z..	2054			Vegetation
5/3/2004	BLM 70			030XB005 Limy 5-7" P.Z..	2055			Vegetation
5/3/2004	BLM 71			030XA047 Alluvial Plain	2040			Vegetation
5/3/2004	BLM 72			030XA047 Alluvial Plain	2040			Vegetation
5/3/2004	BLM 73			030XB075 Gravelly Fan 5-7" P.Z..	2055			Vegetation
5/3/2004	BLM 74			030XB075 Gravelly Fan 5-7" P.Z..	2055			Vegetation
5/3/2004	BLM 75			030XB005 Limey 5-7	2052			Vegetation
5/4/2004	BLM 76			030XB001 Limey hill 5-7	2304			Vegetation
5/4/2004	BLM 77			030XB001 Limey hill 5-7	2304			Vegetation
5/4/2004	BLM 78			030XB017 Limey hill 3-5 rock outcrop	2005			Vegetation

5/4/2004	BLM 79			030XB005 Limy 5-7" P.Z..	2052			Vegetation
5/4/2004	BLM 80			030XB017 Limey hill 3-5 rock outcrop	2005			Vegetation
5/4/2004	BLM 81			030XB017 Limey hill 3-5 rock outcrop	2005			Vegetation
5/4/2004	BLM 82			030XB001 Limey hill 5-7	2304			Vegetation
5/5/2004	BLM 83			030XB134 Quartzite Outwash	2064			Vegetation
5/5/2004	BLM 84			030XB076 shallow gravelly slope	2436			Vegetation
5/5/2004	BLM 85			030XB076 shallow gravelly slope	2436			Vegetation
5/5/2004	BLM 86			030XA058 Limey 5-7	2054			Vegetation
5/5/2004	BLM 87			030XB005 Limey 5-7	2810			Vegetation
5/5/2004	BLM 88			030XA058 Limey 5-7	2810			Vegetation
5/5/2004	BLM 89			030XB076 shallow gravelly slope 5-7	2064			Vegetation
5/5/2004	BLM 90			030XB076 Shallow Gravelly Slope 5-7" P.Z..	2436			Vegetation
5/5/2004	BLM 91					Site Not Representative		
5/13/2004	BLM 92			030XB134 Quartzite Outwash				Vegetation
6/7/2004	BLM 93			029XY077 shallow gravelly loam 8-10	322			Vegetation
6/7/2004	BLM 94			030XB029 shallow gravelly loam 5-7	870			Vegetation
6/7/2004	BLM 95			029XY077 shallow gravelly loam 8-10	731			Vegetation
6/9/2004	BLM 96			030XA058 Limey 5-7	1315			Vegetation
6/9/2004	BLM 97			0303XA007 Limey 5-7	1315			Vegetation
6/9/2004	BLM 98			030XA058 Limey 5-7	1317			Vegetation
6/9/2004	BLM 99			030XA058 Limey 5-7	1315			Vegetation
6/9/2004	BLM 100			030XA094 Shallow Gravelly Loam 7-9" P.Z..	1316			Vegetation
6/9/2004	BLM 101			030XA058 Limey 5-7	1317			Vegetation
6/9/2004	BLM 102			030XA058 Limey 5-7	1317			Vegetation
6/9/2004	BLM 103			030XA058 Limey 5-7	1315			Vegetation
6/9/2004	BLM 104			030XA094 Shallow Gravelly Loam 7-9" P.Z..	1316			Vegetation
6/10/2004	BLM 105			030XB076 Shallow Gravelly Slope 5-7" P.Z..	2064			Vegetation
6/10/2004	BLM 106			030XB134 Quartzite Outwash	2064			Vegetation

6/10/2004	BLM 107			030XB029 shallow gravelly loam 5-7	2064			Vegetation
6/10/2004	BLM 108			030XB134 Quartzite Outwash	2064			Vegetation
6/10/2004	BLM 109			030XB076 Shallow Gravelly Slope 5-7" P.Z..	2436			Vegetation
5/17/2005	BLM 110			030XB077 Steep South Slope	342			Vegetation
4/25/2006	BLM 111			030XA058 limy 5-7	1317			Vegetation
4/25/2006	BLM 112			030XA090 Gravelly Fan 7-9" P.Z..	1340			Vegetation
4/25/2006	BLM 113			030XB076 Shallow Gravelly Slope 5-7" P.Z..	2064			Vegetation
4/25/2006	BLM 114			030XB076 Shallow Gravelly Slope 5-7" P.Z..	2064			Vegetation
4/25/2006	BLM 115			030XB134 Quartzite Outwash	2064			Vegetation
4/25/2006	BLM 116			030XB076 Shallow Gravelly Slope 5-7" P.Z..	2436			Vegetation
4/25/2006	BLM 117			030XB134 Quartzite Outwash	2222			Vegetation
4/25/2006	BLM 118			rock out crop	2436			Vegetation
5/26/2006	BLM 119			030XB005 limy 5-7	2058		810501/16	
5/26/2006	BLM 120			030XB005 limy 5-7	2058		810801/17	
5/26/2006	BLM 121			030XB019 Limy 3-5" P.Z..	2058		810901/18	
6/22/2006	BLM 122			030XB005 limy 5-7	2058		811002/15	
7/25/2006	BLM 123			030XB134 Quartzite Outwash	2222			Vegetation
7/25/2006	BLM 124			030XB102 Gravelly Loam 5-7	314			Vegetation
7/26/2006	BLM 125			030XB134 Quartzite Outwash	2222			Vegetation