Mining Claim Activity on Federal Land in the Contiguous United States, 1976 through 2004

By J. Douglas Causey and David G. Frank

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Abstract

Statistical compilations of mining claim activity on Federal Land derived from the Bureau of Land Management's LR2000 database have been published by the U.S Geological Survey. This report updates Causey (2005) by adding statistics for an additional year of mining claim records, incorporating any corrections in older data done by BLM, adding a Public Land Survey spatial database for South Dakota, and improving correlation of the statistics to spatial databases in Washington and Nevada.

The statistics compiled from the LR2000 database are counts of number of active mining claims in a section each year from 1976 to 2004 for all states within the contiguous United States. Claims are broken down by lode and placer types and a dataset is provided summarizing all claims including millsite and tunnel-site claims. One table presents data by case type, case status, and number of claims in a section. This report includes a spatial database for each state in which mining claims were recorded. A field is present in both datasets that allows the statistical data to be joined to the spatial databases so that spatial displays and analysis can be done using appropriate software.

The data show how mining claim activity has changed in intensity, space, and time. Variations can be examined on a state, as well as a national level. The data are tied to a section of land, approximately 640 acres, which allows it to be used at regional, as well as local scale. It is restricted in that it only encompasses Federal land.

Introduction

Federal land management agencies need to predict trends in activity on land they manage in order to design mechanisms to minimize conflicts created by competing uses. By examining where mining claims have been located and changes brought about by technical, economic, and political factors, it is possible to construct predictive models for areas of future activity. This set of data provides the user with a view of the intensity and spatial and temporal variations of mining claim activity on public land over the past 29 years and in conjunction with other data can be used to predict future mineral activity.

Mining claim activity on Federal land has been recorded with the U.S. Bureau of Land Management (BLM) since it was required by law in 1976. Within the conterminous United States, mining claims have been located in Arkansas, Arizona, California, Colorado, Florida, Idaho, Montana, Nebraska, New Mexico, Nevada, North Dakota, Oregon, South Dakota, Utah, Washington, and Wyoming. Causey (2005) provided the first set of statistics that included all these states, although earlier analyses using different methodologies and only including the Western States was done by Campbell (1996), Campbell and Hyndman (1996), and Hyndman and Campbell (1999).

The data provided with this report updates Causey adding an additional year of mining claim records and a spatial database for South Dakota. A complete new extraction of data from the BLM's LR2000 (http://www.blm.gov/lr2000/, last accessed Nov. 8, 2006) database in 2005 was used to generate these statistics. Data stored in the LR2000 database are still undergoing some

corrections (Carolyn Abeyta, BLM, oral commun., 2005). The automated population procedure used by BLM for some fields based on Public Land Survey (PLS) locations has resulted in some incorrect data. The problem is caused by some township numbers that are duplicated within a state or in adjoining states.

Minor improvements were made in some of the base PLS spatial databases to improve the join between statistical and spatial data provided with this report. No spatial database for North Dakota has been acquired at this time. Figure 1 shows the PLS sections in which at least part of a mining claim was listed as being active by BLM in 2004 for all the other states.

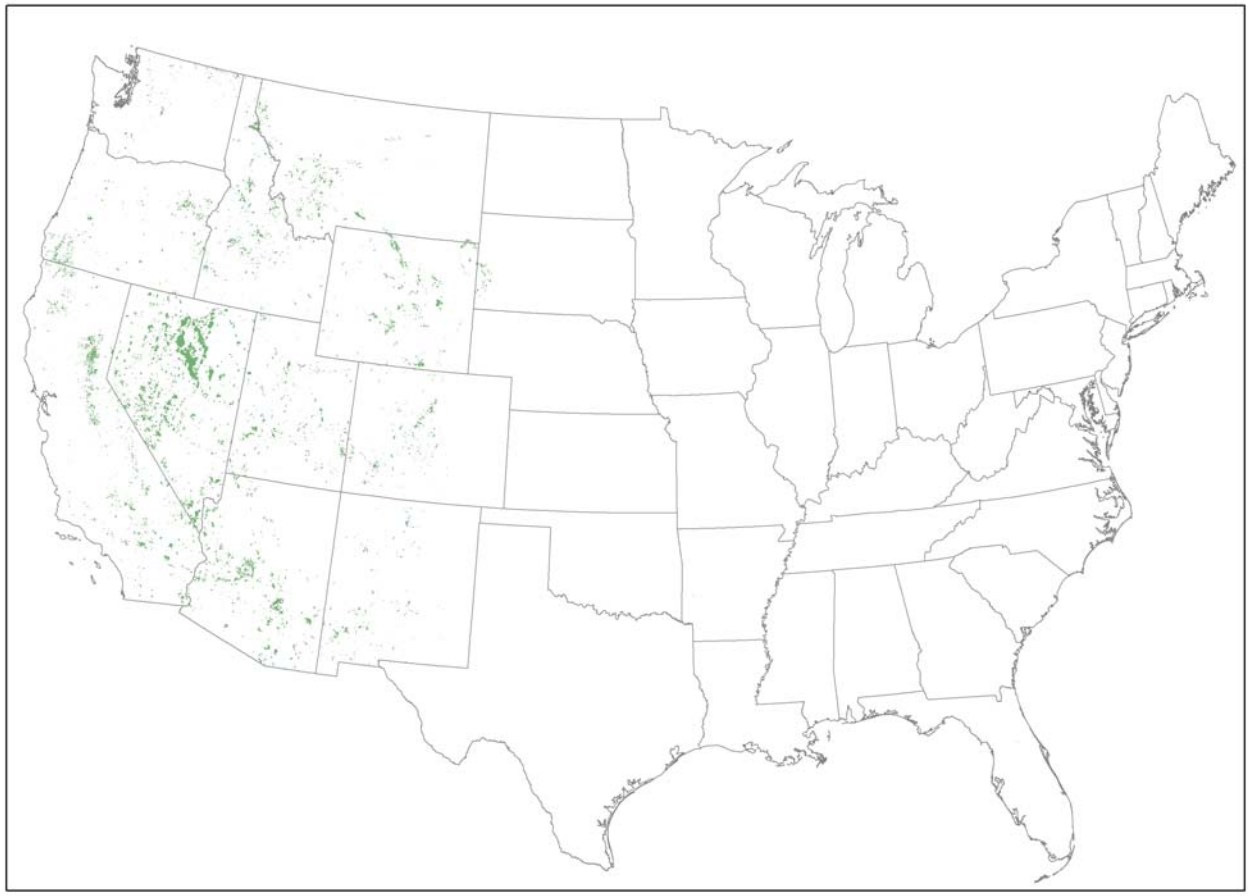

Figure 1. Public Land Survey sections (shown in green) that contained an active claim in 2004.

Acknowledgments

We would like to thank Carolyn Abeyta, Cheryl Laudenbach, and Leslie Cone, BLM, for providing the LR2000 data. Kathy Ferguson, BLM, supplied definitions of LR2000 database fields. We also thank Art Bookstrom and Robert Miller for their technical review of the report and Lorre Moyer for spatial data review.

Overview of Data Files

The data for mining claim activity are provided in several files organized by state that are listed and briefly described in table 1. The dBASE (.dbf) and ASCII (.txt) files provide two

versions of the same statistical summary data in a proprietary and nonproprietary format, respectively.

The summary nonspatial data files include:

- Number of all claims (sum of lode, placer, tunnel site, and mill site) in each PLS section, by year (for example, files az_claim.dbf, az_claim.txt),
- Number of lode claims in each PLS section, by year (for example, files az_lode.dbf, az_lode.txt),
- Number of placer claims in each PLS section, by year (for example, files az_placr.dbf, az_placr.txt), and
- Total number of claims in each PLS section by status (active or closed) at end of 2004 and type (lode, placer, mill site, tunnel site) (for example, files az_total.dbf, az_total.txt).

Although the data were processed using Microsoft Access, neither the original data nor the Access databases used for this analysis are supplied with this report. There are two practical reasons to not include the source data. First, the data are time stamped. It is a snapshot of the BLM LR2000 database that is only valid for May 26, 2005, when it was extracted. Another extraction of data will produce different statistics. Second, the data are massive. The files provided by BLM are about 750 MB (megabytes), compressed. The Access databases created from this data total 4.3 gigabytes (GB) in size, the largest, Nevada, being 1.3 GB.

State spatial databases provide PLS section polygons to which a user can attach data from the summary tables. The spatial databases are in shapefile format. Federal Geographic Data Committee (http://fgdc.gov, last accessed Nov. 8, 2006) compliant metadata provides information about the spatial databases and includes information about data sources, data quality, projection, and how to obtain the data on the World Wide Web, in addition to providing a data dictionary (metadata) for the information in the database tables. All spatial databases contain metadata that can be read in ESRI's (http://www.esri.com, last accessed Nov. 8, 2006) ArcCatalog module (ArcGIS, ver. 9).

Table 1. List of digital files provided with report this data release.

File Name	File Description
Spatial Databases Shapefile filenames are listed as they are displayed and viewed in ArcCatalog (for example, az_pls_04.shp) ESRI shapefiles consist of a collection of files with the extensions dbf, prj, sbn, sbx, shp, shp.xml, and shx. ArcCatalog only displays the shp extension (and hides all the others) in a directory listing, whereas the operating system directory listings will show the complete collection of files.	
ar_pls_04.shp	Public Land Survey System sections in which mining claims have been recorded with BLM in Arkansas (ESRI shapefile format)
az_pls_04.shp	Public Land Survey System sections in which mining claims have been recorded with BLM in Arizona (ESRI shapefile format)
ca_pls_04.shp	Public Land Survey System sections in which mining claims have been recorded with BLM in California (ESRI shapefile format)
co_pls_04.shp	Public Land Survey System section in which mining claims have been recorded with BLM in Colorado (ESRI shapefile format)
fl_pls_04.shp	Public Land Survey System sections in which mining claims have been recorded with BLM in Florida (ESRI shapefile format)
id_pls_04.shp	Public Land Survey System sections in which mining claims have been recorded with BLM in Idaho (ESRI shapefile format)
mt_pls_04.shp	Public Land Survey System sections in which mining claims have been recorded with BLM in Montana (ESRI shapefile format)
ne_pls_04.shp	Public Land Survey System sections in which mining claims have been recorded with BLM in Nebraska (ESRI shapefile format)

nm_pls_04.shp	Public Land Survey System sections in which mining claims have been recorded with BLM in New Mexico (ESRI shapefile format)
nv_pls_04.shp	Public Land Survey System sections in which mining claims have been recorded with BLM in Nevada (ESRI shapefile format)
or_pls_04.shp	Public Land Survey System sections in which mining claims have been recorded with BLM in Oregon (ESRI shapefile format)
sd_pls_04.shp	Public Land Survey System sections in which mining claims have been recorded with BLM in South Dakota (ESRI shapefile format)
ut_pls_04.shp	Public Land Survey System sections in which mining claims have been recorded with BLM in Utah (ESRI shapefile format)
wa_pls_04.shp	Public Land Survey System sections in which mining claims have been recorded with BLM in Washington (ESRI shapefile format)
wy_pls_04.shp	Public Land Survey System sections in which mining claims have been recorded with BLM in Wyoming (ESRI shapefile format)
Metadata and Images State-specific metadata files are provided in XML format (file with .shp.xml filename extension in Spatial directories). Images are provided in PDF (Portable Document Format) format.	
Metadata.txt	General description of information in the spatial mining claim databases (shapefiles) in an FGDC compliant, parseable ASCII text format. (Information specific to each state's spatial data base is provided in separate metadata files for each state.)
ar_pls_04.shp.xml	Description of information specific to the Arkansas spatial database (ar_pls_04.shp).
az_pls_04.shp.xml	Description of information specific to the Arizona spatial database (az_pls_04.shp).
ar_claims.pdf	Graphic image, created in ArcGIS, showing sections in Arkansas where claims have been active between 1976 and 2004.
ca_pls_04.shp.xml	Description of information specific to the California spatial database (ca_pls_04.shp).
ca_claims.pdf	Graphic image, created in ArcGIS, showing sections in California where claims have been active between 1976 and 2004.
co_pls_04.shp.xml	Description of information specific to the Colorado spatial database (az_pls_04.shp).
co_claims.pdf	Graphic image, created in ArcGIS, showing sections in Colorado where claims have been active between 1976 and 2004.
fl_pls_04.shp.xml	Description of information specific to the Florida spatial database (fl_pls_04.shp).
fl_claims.pdf	Graphic image, created in ArcGIS, showing sections in Florida where claims have been active between 1976 and 2004.
id_pls_04.shp.xml	Description of information specific to the Idaho spatial database (id_pls_04.shp).
id_claims.pdf	Graphic image, created in ArcGIS, showing sections in Idaho where claims have been active between 1976 and 2004.
mt_pls_04.shp.xml	Description of information specific to the Montana spatial database (mt_pls_04.shp).
mt_claims.pdf	Graphic image, created in ArcGIS, showing sections in Montana where claims have been active between 1976 and 2004.
ne_pls_04.shp.xml	Description of information specific to the Nebraska spatial database (ne_pls_04.shp).
ne_claims.pdf	Graphic image, created in ArcGIS, showing sections in Nebraska where claims have been active between 1976 and 2004.
nm_pls_04.shp.xml	Description of information specific to the New Mexico spatial database (nm_pls_04.shp).
nm_claims.pdf	Graphic image, created in ArcGIS, showing sections in New Mexico where claims have been active between 1976 and 2004.
nv_pls_04.shp.xml	Description of information specific to the Nevada spatial database (nv_pls_04.shp).
nv_claims.pdf	Graphic image, created in ArcGIS, showing sections in Nevada where claims have been active between 1976 and 2004.
or_pls_04.shp.xml	Description of information specific to the Oregon spatial database (or_pls_04.shp).
or_claims.pdf	Graphic image, created in ArcGIS, showing sections in Oregon where claims have been active between 1976 and 2004.
sd_pls_04.shp.xml	Description of information specific to the South Dakota spatial database (sd_pls_04.shp).
sd_claims.pdf	Graphic image, created in ArcGIS, showing sections in South Dakota where claims have been active between 1976 and 2004.
ut_pls_04.shp.xml	Description of information specific to the Utah spatial database (ut_pls_04.shp).

ut_claims.pdf	Graphic image, created in ArcGIS, showing sections in Utah where claims have been active between 1976 and 2004.
wa_pls_04.shp.xml	Description of information specific to the Washington spatial database (wa_pls_04.shp).
wa_claims.pdf	Graphic image, created in ArcGIS, showing sections in Washington where claims have been active between 1976 and 2004.
wy_pls_04.shp.xml	Description of information specific to the Wyoming spatial database (wy_pls_04.shp).
wy_claims.pdf	Graphic image, created in ArcGIS, showing sections in Wyoming where claims have been active between 1976 and 2004.
Non-Spatial Data Files Each database is provided in two different file formats: dBASE format (.dbf file name extension) and ASCII text format (.txt file name extension).	
ar_claim.dbf, ar_claim.txt	Database of mining claim intensity: total for all claim types (lode, placer, tunnel site, and mill site), by PLS section and year for Arkansas, 1976-2004.
ar_lode.dbf, ar_lode.txt	Database of mining claim intensity totaled for lode claims, by PLS section and year for Arkansas, 1976-2004.
ar_placr.dbf, ar_placr.txt	Database of mining claim intensity totaled for placer claims, by PLS section and year for Arkansas, 1976-2004.
ar_total.dbf, ar_total.txt	Database of all mining claims for the period 1976-2004; by PLS section, claim type (lode, placer, mill site, tunnel site), and claims status (Active or Closed) at end of 2004 for Arkansas.
az_claim.dbf, az_claim.txt	Database of mining claim intensity: total for all claim types (lode, placer, tunnel site, and mill site), by PLS section and year for Arizona, 1976-2004.
az_lode.dbf, az_lode.txt	Database of mining claim intensity totaled for lode claims, by PLS section and year for Arizona, 1976-2004.
az_placr.dbf, az_placr.txt	Database of mining claim intensity totaled for placer claims, by PLS section and year for Arizona, 1976-2004.
az_total.dbf, az_total.txt	Database of all mining claims for the period 1976-2004; by PLS section, claim type (lode, placer, mill site, tunnel site), and claims status (Active or Closed) at end of 2004 for Arizona.
ca_claim.dbf, ca_claim.txt	Database of mining claim intensity: total for all claim types (lode, placer, tunnel site, and mill site), by PLS section and year for California, 1976-2004.
ca_lode.dbf, ca_lode.txt	Database of mining claim intensity totaled for lode claims, by PLS section and year for California, 1976-2004.
ca_placr.dbf, ca_placr.txt	Database of mining claim intensity totaled for placer claims, by PLS section and year for California, 1976-2004.
ca_total.dbf, ca_total.txt	Database of all mining claims for the period 1976-2004; by PLS section, claim type (lode, placer, tunnel site, and mill site), and claims status (Active or Closed) at end of 2004 for California.
co_claim.dbf, co_claim.txt	Database of mining claim intensity: total for all claim types (lode, placer, tunnel site, and mill site), by PLS section and year for Colorado, 1976-2004.
co_lode.dbf, co_lode.txt	Database of mining claim intensity totaled for lode claims, by PLS section and year for Colorado, 1976-2004.
co_placr.dbf, co_placr.txt	Database of mining claim intensity totaled for placer claims, by PLS section and year for Colorado, 1976-2004.
co_total.dbf, co_total.txt	Database of all mining claims for the period 1976-2004; by PLS section, claim type (lode, placer, tunnel site, and mill site), and claims status (Active or Closed) at end of 2004 for Colorado.
fl_claim.dbf, fl_claim.txt	Database of mining claim intensity: total for all claim types (lode, placer, tunnel site, and mill site), by PLS section and year for Florida, 1976-2004.
fl_lode.dbf, fl_lode.txt	Database of mining claim intensity totaled for lode claims, by PLS section and year for Florida, 1976-2004.
fl_placr.dbf, fl_placr.txt	Database of mining claim intensity totaled for placer claims, by PLS section and year for Florida, 1976-2004.

fl_total.dbf, fl_total.txt	Database of all mining claims for the period 1976-2004; by PLS section, claim type (lode, placer, tunnel site, and mill site), and claims status (Active or Closed) at end of 2004 for Florida.
id_claim.dbf, id_claim.txt	Database of mining claim intensity: total for all claim types (lode, placer, tunnel site, and mill site), by PLS section and year for Idaho, 1976-2004.
id_lode.dbf, id_lode.txt	Database of mining claim intensity totaled for lode claims, by PLS section and year for Idaho, 1976-2004.
id_placr.dbf, id_placr.txt	Database of mining claim intensity totaled for placer claims, by PLS section and year for Idaho, 1976-2004.
id_total.dbf, id_total.txt	Database of all mining claims for the period 1976-2004; by PLS section, claim type (lode, placer, tunnel site, and mill site), and claims status (Active or Closed) at end of 2004 for Idaho.
mt_claim.dbf, mt_claim.txt	Database of mining claim intensity: total for all claim types (lode, placer, tunnel site, and mill site), by PLS section and year for Montana, 1976-2004.
mt_lode.dbf, mt_lode.txt	Database of mining claim intensity totaled for lode claims, by PLS section and year for Montana, 1976-2004.
mt_placr.dbf, mt_placr.txt	Database of mining claim intensity totaled for placer claims, by PLS section and year for Montana, 1976-2004.
mt_total.dbf, mt_total.txt	Database of all mining claims for the period 1976-2004; by PLS section, claim type (lode, placer, tunnel site, and mill site), and claims status (Active or Closed) at end of 2004 for Montana.
ne_claim.dbf, ne_claim.txt	Database of mining claim intensity: total for all claim types (lode, placer, tunnel site, and mill site), by PLS section and year for Nebraska, 1976-2004.
ne_lode.dbf, ne_lode.txt	Database of mining claim intensity totaled for lode claims, by PLS section and year for Nebraska, 1976-2004.
ne_placr.dbf, ne_placr.txt	Database of mining claim intensity totaled for placer claims, by PLS section and year for Nebraska, 1976-2004.
ne_total.dbf, ne_total.txt	Database of all mining claims for the period 1976-2004; by PLS section, claim type (lode, placer, tunnel site, and mill site), and claims status (Active or Closed) at end of 2004 for Nebraska.
nm_claim.dbf, nm_claim.txt	Database of mining claim intensity: total for all claim types (lode, placer, tunnel site, and mill site), by PLS section and year for New Mexico, 1976-2004.
nm_lode.dbf, nm_lode.txt	Database of mining claim intensity totaled for lode claims, by PLS section and year for New Mexico, 1976-2004.
nm_placr.dbf, nm_placr.txt	Database of mining claim intensity totaled for placer claims, by PLS section and year for New Mexico, 1976-2004.
nm_total.dbf, nm_total.txt	Database of all mining claims for the period 1976-2004; by PLS section, claim type (lode, placer, tunnel site, and mill site), and claims status (Active or Closed) at end of 2004 for New Mexico.
nv_claim.dbf, nv_claim.txt	Database of mining claim intensity: total for all claim types (lode, placer, tunnel site, and mill site), by PLS section and year for Nevada, 1976-2004.
nv_lode.dbf, nv_lode.txt	Database of mining claim intensity totaled for lode claims, by PLS section and year for Nevada, 1976-2004.
nv_placr.dbf, nv_placr.txt	Database of mining claim intensity totaled for placer claims, by PLS section and year for Nevada, 1976-2004.
nv_total.dbf, nv_total.txt	Database of all mining claims for the period 1976-2004; by PLS section, claim type (lode, placer, tunnel site, and mill site), and claims status (Active or Closed) at end of 2004 for Nevada.
or_claim.dbf, or_claim.txt	Database of mining claim intensity: total for all claim types (lode, placer, tunnel site, and mill site), by PLS section and year for Oregon, 1976-2004.

or_lode.dbf, or_lode.txt	Database of mining claim intensity totaled for lode claims, by PLS section and year for Oregon, 1976-2004.
or_placr.dbf, or_placr.txt	Database of mining claim intensity totaled for placer claims, by PLS section and year for Oregon, 1976-2004.
or_total.dbf, or_total.txt	Database of all mining claims for the period 1976-2004; by PLS section, claim type (lode, placer, tunnel site, and mill site), and claims status (Active or Closed) at end of 2004 for Oregon.
sd_claim.dbf, sd_claim.txt	Database of mining claim intensity: total for all claim types (lode, placer, tunnel site, and mill site), by PLS section and year for South Dakota, 1976-2004.
sd_lode.dbf, sd_lode.txt	Database of mining claim intensity totaled for lode claims, by PLS section and year for South Dakota, 1976-2004.
sd_placr.dbf, sd_placr.txt	Database of mining claim intensity totaled for placer claims, by PLS section and year for South Dakota, 1976-2004.
sd_total.dbf, sd_total.txt	Database of all mining claims for the period 1976-2004; by PLS section, claim type (lode, placer, tunnel site, and mill site), and claims status (Active or Closed) at end of 2004 for South Dakota.
ut_claim.dbf, ut_claim.txt	Database of mining claim intensity: total for all claim types (lode, placer, tunnel site, and mill site), by PLS section and year for Utah, 1976-2004.
ut_lode.dbf, ut_lode.txt	Database of mining claim intensity totaled for lode claims, by PLS section and year for Utah, 1976-2004.
ut_placr.dbf, ut_placr.txt	Database of mining claim intensity totaled for placer claims, by PLS section and year for Utah, 1976-2004.
ut_total.dbf, ut_total.txt	Database of all mining claims for the period 1976-2004; by PLS section, claim type (lode, placer, tunnel site, and mill site), and claims status (Active or Closed) at end of 2004 for Utah.
wa_claim.dbf, wa_claim.txt	Database of mining claim intensity: total for all claim types (lode, placer, tunnel site, and mill site), by PLS section and year for Washington, 1976-2004.
wa_lode.dbf, wa_lode.txt	Database of mining claim intensity totaled for lode claims, by PLS section and year for Washington, 1976-2004.
wa_placr.dbf, wa_placr.txt	Database of mining claim intensity totaled for placer claims, by PLS section and year for Washington, 1976-2004.
wa_total.dbf, wa_total.txt	Database of all mining claims for the period 1976-2004; by PLS section, claim type (lode, placer, tunnel site, and mill site), and claims status (Active or Closed) at end of 2004 for Washington.
wy_claim.dbf, wy_claim.txt	Database of mining claim intensity: total for all claim types (lode, placer, tunnel site, and mill site), by PLS section and year for Wyoming, 1976-2004.
wy_lode.dbf, wy_lode.txt	Database of mining claim intensity totaled for lode claims, by PLS section and year for Wyoming, 1976-2004.
wy_placr.dbf, wy_placr.txt	Database of mining claim intensity totaled for placer claims, by PLS section and year for Wyoming, 1976-2004.
wy_total.dbf, wy_total.txt	Database of all mining claims for the period 1976-2004; by PLS section, claim type (lode, placer, tunnel site, and mill site), and claims status (Active or Closed) at end of 2004 for Wyoming.

Data Sources and Processing

Data Sources

There are two kinds of data provided with this report – (1) statistics derived from BLM mining claim records in two formats (dBASE III and ASCII) and (2) selected polygons and attributes from spatial databases of Public Land Surveys in shapefile format. The PLS databases

were obtained from a variety of sources, which are documented in the metadata provided with each of the shapefiles. The statistical data for the years 1976 through 2004 were produced from an analysis of BLM records of mining claims located on Federal Lands in the United States as of May 26, 2005.

Mine Claim Data

Mining claim data were extracted from the BLM's LR2000 Oracle® database on May 26, 2005. The extracted data were in ASCII format with | (pipe) delimiters between fields. The SQL (Structured Query Language) statements that BLM used to create tables, from which the mining claim statistics were generated, are included in appendix A. One set of files was extracted from LR2000 for each of BLM's 11 administrative areas (Arizona, California, Colorado, Eastern States, Idaho, Montana, New Mexico, Nevada, Oregon, Utah, and Wyoming). These administrative areas include 16 states in which mining claims have been recorded (Arizona, Arkansas, California, Colorado, Florida, Idaho, Montana, Nebraska, New Mexico, Nevada, North Dakota, Oregon, South Dakota, Utah, Washington, and Wyoming). Arkansas and Florida data are included in the Eastern States administrative area, Nebraska in the Wyoming administrative area, North and South Dakota in the Montana administrative area, and Washington in the Oregon administrative area.

At the time the data were extracted from LR2000, there were 3,165,470 claim records in the database. The number of records for each state and the change from Causey (2005) is shown in table 2. The numbers for each state may not be entirely correct because there are errors in the *geo_state* field (CASE_LAND table), which was used in most cases to determine in which geographic state a claim was located. However, a correction to the number of sections with claims in Wyoming and Nebraska was made. The *geo_state* field in the LR2000 data for Wyoming listed only 18 records in Nebraska. In fact, 58 records (assuming the PLS locations are correct) are in Nebraska. This situation was noted in Causey (2005) and has not yet been modified in the LR2000 database.

Table 2. Number of mining claim records in each state on January 15, 2004 (Causey, 2005), and May 26, 2005.

State	Number of Mining Claim records, Jan. 15, 2004	Number of Mining Claim Records, May 26, 2005	Change	Percent Change
Arizona	358,438	364,995	6,557	1.8
Arkansas[1]	11,571	11,571	0	0.0
California	280,494	280,677	183	0.0
Colorado	251,486	253,315	1,829	0.7
Florida	439	439	0	0.0
Idaho	184,673	186,138	1,465	0.8
Montana	167,213	168,424	1,211	0.7
Nebraska	787[2]	787	0	0.0
Nevada	852,463	891,625	39,162	4.6
New Mexico	168,678	169,950	1,272	0.8
North Dakota	2	2	0	0.0
Oregon	104,946	106,057	1,111	1.1
South Dakota	40,730	40,838	108	0.3
Utah	369,430	374,398	4,968	1.3
Washington	52,581	53,108	527	1.0
Wyoming	258,506	263,146	4,640	1.8
TOTAL	3,102,438	3,165,470	63,032	2.0

[1] Even though 8 new claims were recorded in U.S. Bureau of Land Management's Eastern States management area, they are not included in these statistics because they do not have a Public Land Survey location and all but one does not have a state named.
[2] Incorrectly reported in Causey, 2005 as 788.

There are 36 mining claim records that do not have a location in the data supplied by BLM and consequently are not represented in the statistics in table 2. These are an insignificant part of the total claim record. Thirteen of these are new claims in Nevada and the Eastern States administrative areas. Table 3 shows the change in number of claims without a location from Causey (2005). (These data are listed in Table 3 by BLM administrative area because some of the claims are in administrative areas that include multiple states and the records do not identify which state the claim is in.)

Table 3. Comparison of number of claim records in LR2000 database on January 15, 2004, and May 26, 2005 that do not have a location.

Bureau of Land Management Administrative Area	Number of claims in LR2000 without a location in Causey (2005)	Number of claims in LR2000 without a location in this report
Arizona	5	1
California	2	3
Colorado	8	8
Eastern States	1	9
Idaho	0	0
Montana	2	2
Nevada	5	10
New Mexico	1	1
Oregon	1	0
Utah	1	0
Wyoming	2	1
TOTAL	28	36

It should be noted that not all claims in the data supplied by BLM are used in creating the statistics in this report. Because the statistics represent a complete year, any claims located or dropped in 2005 are not used because the data only includes part of the year.

Spatial Data

Spatial datasets were obtained from a variety of sources, which are described in the associated metadata. All fields except the required spatial data attributes and a meridian-township-range-section code field (*mtrs*) were stripped out of the spatial data supplied with this report and all polygons that do not have claims were deleted.

Processing Procedures

Mine Claim Data

Procedures used to process the LR2000 mining record data used in this analysis were documented in Causey (2005), available on the Internet at http://pubs.usgs.gov/ds/124/ (last accessed Nov. 8, 2006).

Public Land Surveys

There is a lack of quality PLS spatial databases in the public domain for the contiguous United States. BLM is developing these databases, but has not completed any states at this time. The spatial PLS databases used for this report are those of Causey (2005). Minor corrections to *mtrs* values were made in the Washington and Nevada PLS databases. This made it possible to improve the join between the statistical and spatial data sets for these two states (table 4). No improvements were made to any of the other PLS spatial databases.

Table 4. Discrepancies in claim locations between U.S Bureau of Land Management claim records and Public Land Survey spatial databases.

State	Number of sections containing claims, May 26, 2005 LR2000	Number of matching sections in PLS spatial database	Number of claim sections not in PLS spatial database	Percent of claim sections without polygons
Arizona	19,475	19,449	26	0.13
Arkansas	537	439	98	17.10
California	23,267	21,955	1,312	5.63
Colorado	14,990	14,983	7	0.05
Florida	22	22	0	0.00
Idaho	12,271	12,271	0	0.00
Montana	9,668	9,660	8	0.08
Nebraska	58	48	10	17.24
Nevada	35,642	35,577	65	0.18
New Mexico	9,223	8,887	336	3.64
North Dakota	1	NA	NA	NA
Oregon	7,799	7,727	72	0.92
South Dakota	1,638	1,544	94	5.74
Utah	20,211	18,606	1,605	7.94
Washington	3,743	3,742	1	0.03
Wyoming	13,745	13,645	101	0.73
TOTAL	172,290	168,547	3,743	2.17*

* Calculated from TOTAL minus North Dakota.

Sections with the same Meridian, township, and range located along the California-Nevada border make it not practical to combine statistical and spatial data for all the states. There are also duplicate townships within some states. No solution to providing one-to-one relationships is possible until the LR2000 database provides unique designators for all sections as is being done by the Cadastral Survey in their spatial databases.

A partial PLS data set for some western sections of South Dakota is included in this report. Most of the mining claims in South Dakota are within the boundaries of the PLS that was obtained. North Dakota only had two placer claims, which are no longer active. No spatial or statistical data is provided for North Dakota.

Discrepancies between the LR2000 data and state PLS files are due to several factors:

1. Errors and omissions in the spatial databases: For example, some townships in the New Mexico spatial database are not subdivided into sections, and some National Forest lands in California were not gridded with PLS section polygons. The PLS databases for Arkansas and South Dakota only cover a small portion of those states, probably accounting for most of the unmatched data.
2. Data entry errors in the BLM records: For example, the *mtrs* values for 3 claims in Nevada did not include a section number, and the range direction for those claims was incorrect.
3. Location errors by the mining claimants: Many parts of the National Forests are not surveyed and no sections lines are shown on USGS topographic maps so claimants have to guess what the township, range, and section might be. Claimants are required to enter a PLS value, which may have been based on a projection they made that might not correspond to a Cadastral Survey projection.

Note: shapefiles included with this report are only for use with the associated statistical data. BLM data are continually being updated and claims may be located in areas where BLM did

not previously have a record of activity. New shapefiles must be created for any analysis involving another extraction of mining claim data from BLM's LR2000 database.

User Procedures

In order to use the data in a spatial context, the statistical data should be joined to the spatial databases in a geographic information system (GIS). There are two ways to connect the databases — join or relate/link. Data can be joined or relate/linked, using either the dBASE format or ASCII (text) format files, to the appropriate spatial database on the common field (*mtrs*) (generally text format is processed much slower than dBASE format in spatial database software). All of the files with names like XX_claim, XX_lode, and XX_placr should be connected using a join. The files XX_total should be connected in a geographic information system using link or relate, as they have a one-to-many relationship. The relationship between the statistics tables and the spatial database feature attribute table are shown in figure 2.

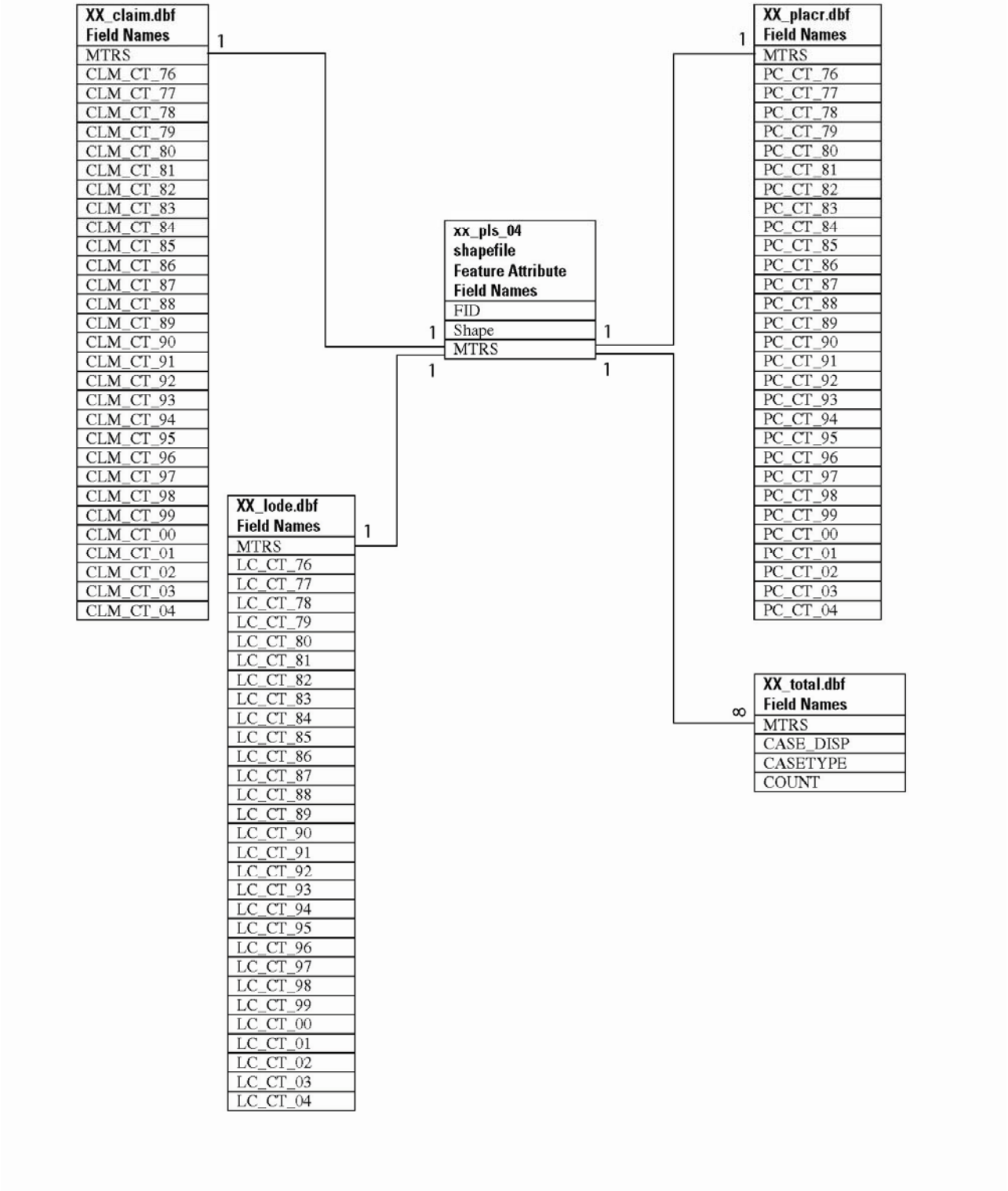

Figure 2. Relationships between mining claim statistical tables (XX_claim, XX_lode, XX_placr, and XX_total) and Public Land Survey (PLS) polygon attribute tables (xx_pls_04).

Each statistics field in the XX_claim, XX_lode, and XX_placr represents data for a single year with the two digit suffix indicating the year (for example, LC_CT_81 is count of lode claims in 1981 and PC_CT_02 is count of placer claims in 2002). The three fields in XX_total are *CASE_DISP* (disposition of the case – A = Active, C = Closed, or P=Pending), *CASETYPE* (type of mining claim – LODE CLAIM, LODE CLAIM-NP, PLACER CLAIM, PLACER CLAIM-NP, TUNNEL SITE, TUNNEL SITE-NP, MILLSITE), and *COUNT* (number of claims in a section meeting the *CASE_DISP* and *CASETYPE* criteria).

Data Discussion

There has been a general decline in the total number of active claims each year for more than 10 years, but that has not precluded staking new claims. In 2004, there were more than 45,000 new claims located in the conterminous United States, more than 60 percent of which were in Nevada (table 5). Arizona followed by Wyoming and Utah were next in number of new claims staked. Much of this new activity may have been stimulated by a significant increase in metal prices in 2004 (U.S. Geological Survey, 2005, Cameco, 2006).

Table 5. Number of new mining claims, by state, in 2004.

State	Number of new claims in 2004
Arizona	4,525
Arkansas	0[1]
California	1,437
Colorado	453
Florida	0
Idaho	1,304
Nebraska	0
Montana	1,021
Nevada	28,131
New Mexico	984
North Dakota	0
Oregon	517
South Dakota	102
Utah	2,997
Washington	227
Wyoming	3,544
Total	45,242

[1] There were 4 new claims located in 2004 in the Eastern States region, but state information had not been entered for those records. (oral discussion with U.S. Bureau of Land Management staff indicated that the claims probably are in Arkansas.)

Overall, the number of sections in which there were active claims in 2004 is significantly less than the number of sections in which claims have been recorded during the past 29 years. Table 6 shows this relationship. Only 18.3 percent of sections in which claims were recorded since 1976 have active claims in 2004.

Table 6. Number of Public Land Survey sections containing claims in each state.

State	Number of PLS sections in which a claim has been located since 1976	Number of PLS sections in which there was an active claim in 2004
Arizona	19,475	3,723
Arkansas	537	4
California	23,267	4,348
Colorado	14,990	1,189
Florida	22	4
Idaho	12,271	2,260
Nebraska	58	1
Montana	9,668	1,742
Nevada	35,642	10,810
New Mexico	9,223	1,054
North Dakota	1	0
Oregon	7,799	1,662
South Dakota	1,638	222
Utah	20,211	1,963
Washington	3,743	481
Wyoming	13,745	2,070
Total	172,290	31,533

Since 1979, the number of claims staked and dropped in any year was fairly constant with the exception of 1992 (fig. 3). Although BLM started collecting mining claim records in 1976, it was not until 1979 that all mining claims were required to be recorded by law. In 1992, a very large number of claims were dropped.

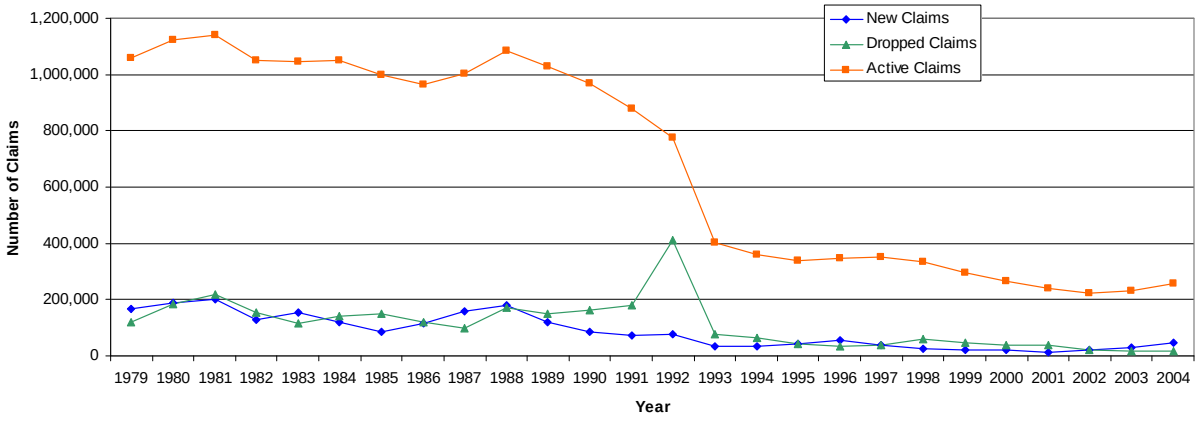

Figure 3. Number of new and dropped claims each year from 1979 to 2004 in the conterminous United States.

The pattern of claim activity in individual states often varies from that of the United States as a whole. Figure 4*A*, an example from Utah, shows an almost constant decline in the number of active claims between 1979 and 1994, while the U.S. active claim total was relatively stable for

most of that period. There were also a lot more claims dropped than added in 1981 and 1988, a distinct difference from the U.S. totals.

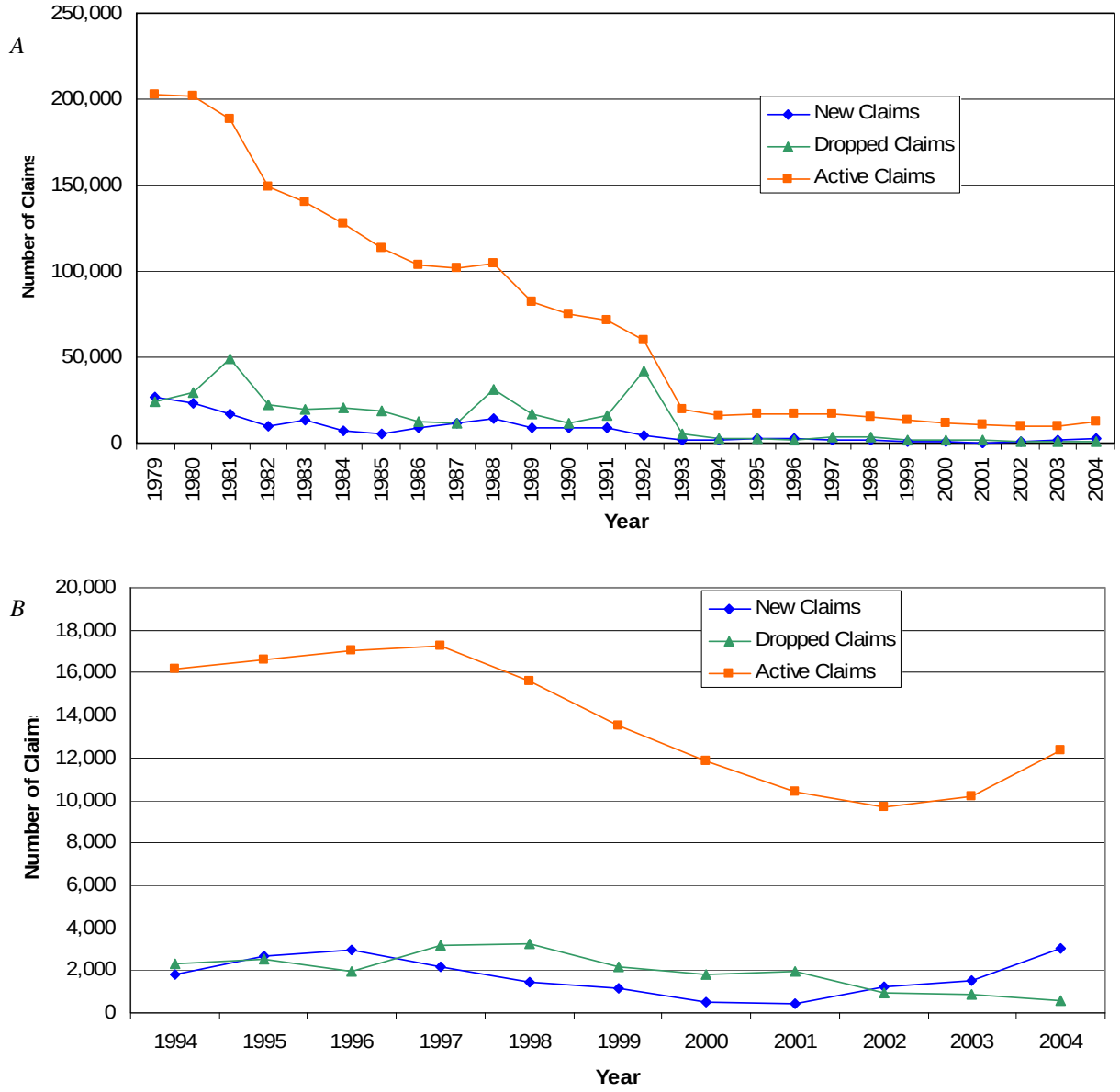

Figure 4*A*. Number of new and dropped claims in each year from 1979 to 2004 in Utah. *B*. Enlargement of figure 4A covering period from 1994 to 2004 in Utah.

Of particular note is the increasing number of new claims since 2002. Figure 4*B* shows that there has been a significant increase in the number of new versus dropped claims in Utah, with the trend of activity increasing through 2004. This activity has been noted by BLM geologists (Dave Boleneus, BLM Utah State Office, written commun., 2005) and is mostly linked to rising uranium

prices due to a perceived shortage in the near future. Since Utah contains uranium deposits, increased claim staking activity is an expected outcome.

Because staking mining claims is one aspect of exploration, one possible explanation for the general consistency in rate of claims being added and dropped might be that available capital from the individual mining companies remained constant, while the focus of exploration changed due to the uneven distribution of mineral deposit types between the various states. In 1992, the cost of maintaining large blocks of claims became significant and, although not the only factor, probably contributed to the spike in number of claims dropped that year.

Assuming no major impact, such as a change in the mining law, the pattern of the last decade of a small, but subequal, number of claims located and dropped in any year would normally be expected to continue. Therefore, we expect commodity prices will most likely be the driving force in determining whether staking or dropping claims is more dominant in any given year in the short term.

Obtaining Digital Data

The spatial databases are available in shapefile format with associated data files. The spatial data are maintained in:

Projection: Geographic

Units: Decimal Degrees

Datum: NAD27

Spheroid: Clarke1866

To obtain copies of the digital data download from the USGS World Wide Web site: URL = http://pubs.usgs.gov/ds/2006/228/ .

Note that the uncompressed files take more than 400 MB of space.

The Internet site contains the spatial data, associated .dbf and .txt format tables, and metadata for the state PLS spatial databases (see list of files in table 1). Formatted metadata (Federal Geographic Data Committee-compliant) is included with each spatial database.

To manipulate the spatial databases, you must have software that is capable of reading shapefile format.

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Appendix A. – Table Design SQL (Structured Query Language)

BLM provided the information used in this report based on a custom query they have developed that outputs all mining claim related data. In addition to the two tables used in this report, the custom query includes information from 10 other tables in LR2000. The data is only available in this format through a written request to BLM.

The following Oracle® SQL statement provided by BLM shows the fields and structure of the two tables used in this report, case_tbl and case_land, as of May 26, 2005. This information is provided to show the design of LR2000 mining claim tables. It can be used to construct a similar data structure in other database programs in order to import files provided by BLM. (Note that although there are fields for many types of information in these tables, some have little data, such as the *commodity* field.)

```
create table case_tbl
(
    case_id                 DECIMAL(16)          not null,
    system_id               CHAR(2)                      ,
    serial_nr_full          CHAR(17)                     ,
    serial_nr_prefix        CHAR(4)                      ,
    number_prefix           CHAR(1)                      ,
    serial_nr               CHAR(6)                      ,
    serial_nr_num_part      INTEGER                      ,
    serial_nr_suf           CHAR(2)                      ,
    st_case_part            CHAR(2)                      ,
    admin_state             CHAR(2)                      ,
    geo_state               CHAR(2)                      ,
    last_assess_yr          CHAR(4)                      ,
    last_assess_cd          CHAR(3)                      ,
    ttl_case_acres          DECIMAL(12,3)                ,
    commodity               CHAR(3)                      ,
    commodity_txt           VARCHAR(25)                  ,
    case_disp               CHAR(1)                      ,
    case_disp_txt           VARCHAR(25)                  ,
    case_disp_gp            VARCHAR(25)                  ,
    disp_act_cd             CHAR(3)                      ,
    disp_act_txt            VARCHAR(25)                  ,
    disp_dt                 TIMESTAMP                    ,
    case_modif_dt           TIMESTAMP                    ,
    casetype                CHAR(6)                      ,
    casetype_txt            VARCHAR(25)                  ,
    last_action_cd          CHAR(3)                      ,
    last_action_txt         VARCHAR(25)                  ,
    last_action_dt          TIMESTAMP                    ,
    mc_claim_nm             VARCHAR(20)                  ,
    cr_legal_ref            VARCHAR(40)                  ,
    mc_lead_case_ser_nr     VARCHAR(17)                  ,
    mc_county_bk_pg         VARCHAR(30)                  ,
    mc_loc_dt               TIMESTAMP                    ,
    mc_cert_issue_dt        TIMESTAMP                    ,
    mc_cert_canc_dt         TIMESTAMP                    ,
    chargeable_acres_flg    CHAR(1)                      ,
    case_group              CHAR(2)                      ,
    lease_auth_dt           TIMESTAMP                    ,
    action_669_flg          CHAR(1)                      ,
    reinstatement_flg       CHAR(1)                      ,
```

```
    hi_reference_nr           CHAR(25)                    ,
    hi_kind_of_entry          CHAR(50)                    ,
    loadts_dt                 TIMESTAMP
);
create table case_land
(
    case_id                   DECIMAL(16)          not null,
    blm_adm_st                CHAR(2)              not null,
    geo_state                 CHAR(2)                     ,
    land_id                   DECIMAL(16)          not null,
    cty_dist_ra_id            DECIMAL(16)          not null,
    system_id                 CHAR(2)                     ,
    ser_nr_full               CHAR(17)                    ,
    withdrawal_flg            CHAR(1)                     ,
    meridian_cd               CHAR(2)                     ,
    meridian_txt              VARCHAR(25)                 ,
    mer_twp_rng               CHAR(14)                    ,
    township                  CHAR(5)                     ,
    range                     CHAR(5)                     ,
    twp_rng_dir               CHAR(2)                     ,
    entire_twp_flg            CHAR(1)                     ,
    st_entire_twp_exc_flg     CHAR(1)                     ,
    st_indemn_lands_flg       CHAR(1)                     ,
    st_twp_loc_unkn_flg       CHAR(1)                     ,
    section                   CHAR(3)                     ,
    entire_sec_flg            CHAR(1)                     ,
    st_sec_loc_unkn_flg       CHAR(1)                     ,
    mtrs                      CHAR(18)                    ,
    geost_county_cd           CHAR(5)                     ,
    county_txt                VARCHAR(25)                 ,
    admst_dist_ra_cd          CHAR(6)                     ,
    district_txt              VARCHAR(25)                 ,
    ra_txt                    VARCHAR(25)                 ,
    adm_agency                CHAR(8)                     ,
    adm_agency_txt            VARCHAR(25)                 ,
    aliquot_part              CHAR(25)                    ,
    cong_dist                 CHAR(4)                     ,
    ls_inc                    CHAR(1)                     ,
    sur_nr                    CHAR(5)                     ,
    sur_suffix                CHAR(2)                     ,
    survey_type               CHAR(1)                     ,
    sur_type_txt              VARCHAR(25)                 ,
    sur_sort                  CHAR(2)                     ,
    case_land_acres           DECIMAL(8,3)                ,
    st_sur_note               CHAR(1)                     ,
    es_pol_twnshp             VARCHAR(2)                  ,
    es_map_ref                VARCHAR(6)                  ,
    es_quad                   VARCHAR(4)                  ,
    es_set_id                 smallint                    ,
    es_sortkey                smallint
);
```

Appendix B. – Access 2000 Table Design

ASCII text files supplied by BLM were imported into a Microsoft Access 2000 database. Using the names and data types provided in the table creation SQL supplied by BLM (appendix A), a similar data design was created in Access. Additional fields necessary for statistical processing were also added to the design. The Access table design is provided in tables B-1 and B-2. BLM provided definitions for most of the LR2000 fields. No definitions of the abbreviations used in the description columns of tables B-1 and B-2 were provided. It is noted in the tables where a definition was not supplied or the definition is from this report (non-BLM field). Questions concerning metadata and definitions for the tables and fields in LR2000 should be directed to BLM (http://www.blm.gov/lr2000/).

The following tables can be used to reconstruct the Access 2000 database used to create the information provided with this report. Because BLM is constantly updating their data and correcting errors in older data, new downloads of the database may provide slightly different yearly results from those included in this data release.

Table B-1. CASE_TBL table structure.

Field Name	Type	Size	Description
Case_id	Number	Long Integer	A numeric Id assigned to each case
System_id	Text	2	The system that the data element is referenced by. Case system IDs = MCR, CR, ST.
Serial_nr_full	Text	17	The entire serial number including suffix and case part for Status.
Serial_nr_prefix	Text	4	The second 4 character string of a serial number (land office).
Number_prefix	Text	1	The preceding zero portion of the serial number.
Serial_nr	Text	6	BLM field, no definitions supplied.
Serial_nr_num_part	Number	Long Integer	The number portion of the serial number that is currently only populated for MCR and is used in MCR reports to sort numbers.
Serial_nr_suf	Text	2	suffix portion of the serial number use in CR and Status only.
St_case_part	Text	2	BLM field, no definitions supplied.
Admin_state	Text	2	The administrative state code.
Geo_state	Text	2	The two character geo state code portion of the serial number.
Last_assess_yr	Text	4	The last assessment year for a mining claim. (MCR only).
Last_assess_cd	Text	3	The latest maintenance fee or waiver action code on a mining claim (MCR only).
Ttl_case_acres	Number	Double	Shows the total case acres in a case. (CR only).
Commodity	Text	3	3 digit commodity code used in (CR and MCR only).
Commodity_txt	Text	25	The text description of the commodity code.
Case_disp	Text	1	1 character code field indicating the disposition of a MCR or CR case. For CR the codes are 1 - Void, 2 = Pending, 3 = Rejected, 4 = withdrawn, 5 = authorized, 6 = cancelled, 7 = expired, 8 = Relinquished, 9 = Closed. For MCR the codes are A = Active, C = Closed, and V = Void.
Case_disp_txt	Text	25	The text value of the code (void, expired) CR & MCR only.
Case_disp_gp	Text	25	Same as the Case Disp Txt.
Disp_act_cd	Text	3	The action code that set the case disposition.

Disp_act_txt	Text	25	The textual description of the action code that set the case disposition.
Disp_dt	Text	25	The date of the action code that set the case disposition.
Case_modif_dt	Text	25	The last date that anything concerning the case was updated.
Casetype	Text	6	The coded value for a specific casetype.
Casetype_txt	Text	25	The textual description for a casetype.
Last_action_cd	Text	3	The most recent action taken on a case.
Last_action_txt	Text	25	The textual description of the last action code.
Last_action_dt	Text	25	The date of the most recent action on a case.
Mc_claim_nm	Text	20	The mining claim name. (MCR only)
Cr_legal_ref	Text	40	For CR system only: Some casetypes have legal information that must appear on the top of the report.
Mc_lead_case_ser_nr	Text	17	The lead case serial number for a mining claim and is generated from the action remarks field for action codes 500 or 501. (MCR only)
Mc_county_bk_pg	Text	30	This field contains the county documentation reference information, book and page, for a mining claim. This information was retrieved from the action remarks field for action code 404. (MCR only).
Mc_loc_dt	Text	25	This field contains the location date for the mining claim. This information was retrieved from the action remarks field for action code 403. (MCR only).
Mc_cert_issue_dt	Text	25	This is the date that the certification was issued regarding the mining claim, Action codes 630 or 212. This data is used to determine if the yearly assessment is missing for the mining claim. If a certification has been issued, the assessment is not missing. (MCR only).
Mc_cert_canc_dt	Text	25	The date that the certification was canceled regarding the mining claim, Action code 359. This data is used to determine if the yearly assessment is missing for the mining claim. If a certification has been issued, the assessment is not missing; but if the certification was canceled, the assessment is missing if other criteria such as payment of maintenance fee was not met. (MCR only).
Chargeable_acres_flg	Text	1	This field is used for acreage hold reporting for oil and gas leases. A "Y" in the field means the acres are chargeable. (CR only).
Case_group	Text	2	This field contains the first pair of digits in the casetype field. For example 27 is Land Sales.
Lease_auth_dt	Text	25	The date that a lease was authorized, action_dt for action code 237 in the action table. Only applicable for case rec cases of certain casetypes.
Action_669_flg	Text	1	This is a flag associated with action code 669 (Land Status Checked). A Y value indicates the land status has been checked. Use only for MCR.
Reinstatement_flg	Text	1	This field applies only to CR cases, with casetypes 312011, 311111, 311211, 312012, 311112, 311212, 322000, or 321000. If there is an action date (action.act_dt) with an attached action code (action.act_cd) of 666 or 970 or 199 or 234 or 244 or 310 and that same record has an action code of 282 with an action date greater than the action date of the action codes previously mentioned, then this reinstatement flag is set to "Y". Otherwise this field is NULL.
Hi_reference_nr	Text	25	BLM field, no definitions supplied.
Hi_kind_of_entry	Text	50	BLM field, no definitions supplied.

load_dt	Text	25	BLM field, no definitions supplied.
location_yr	Number	Integer	Year (four-digit form) mining claim was located (non-BLM field)
disposal_yr	Number	Integer	Last year (four-digit form) mining claim was active (non-BLM field)
no_sec	Number	Integer	Number of sections in which the claim is situated. (non-BLM field)
fraction	Number	Double	1/no_sec (non-BLM field)

Table B-2. CASE_LAND tables structure.

Field Name	Type	Size	Description
Case_id	Number	Long Integer	A numeric Id assigned to each case
Blm_adm_state	Text	2	The administrative state code.
Geo_state	Text	2	The geographic state where the land in the case is located.
Land_id	Number	16	A numeric Id assigned to each piece of land within a case.
Cty_dist_ra_id	Number	16	A numeric Id assigned to the county/district/resource area codes attached to the land description.
System_id	Text	2	The system that the data element is referenced by. Case system Id's = MCR, CR, ST.
Ser_nr_full	Text	15	The entire serial number including suffix and case part for Status.
Withdrawal_flg	Text	1	Currently (as of 8/23/99) set to null; originally intended to indicate that the land specified was withdrawn, which is usually indicated with a "7" in the first digit of the section field, in the CR system.
Meridian_cd	Text	2	The two digit meridian code used for land descriptions.
Meridian_txt	Text	25	The textual description of the meridian code.
Mer_twp_rng	Text	14	The concatenation of the meridian, township and range fields, in that order. Used for easy selection for reporting.
Township	Text	5	Contains township data (number and direction).
Range	Text	5	Contains range data (number and direction).
Twp_rng_dir	Text	2	The direction component from both the township and range fields. Example: SW, NE.
Entire_twp_flg	Text	1	A field that was created to indicate that the land description is for the entire township. This flag has not been populated and is currently not used.
St_entire_twp_exc_flg	Text	1	A field that was created to indicate that the land description is for an entire township, excluding certain descriptions. This flag has not been populated and is currently not used.
St_indemn_lands_flg	Text	1	Indemnity lands indicate an acreage assigned to that township for purposes of computing acreage to determine the lands owed to the state under various grants. This flag applies only to data from the Status system. This information is also stored as section 888.
St_twp_loc_unkn_flg	Text	1	A field that was created to indicate that the location in the township is unknown. This flag has not been populated and the lands are currently identified with the number of 777 in the section field.
Section	Text	1	The field where section number is stored.

Entire_sec_flg	Text	3	A field that was created to indicate that all the land descriptions with a section are included.
St_sec_loc_unkn_flg	Text	1	This flag applies only to data from the Status system, and is not used in CR or MC. It indicates that the section's exact location is unknown. It was not populated for LR20000.
Mtrs	Text	18	The concatenation of the meridian, township, range, and section fields, in that order. Used for easy selection for reporting.
Geostate_county_cd	Text	5	The concatenation of the geographic state (2 characters) with the county code.
County_txt	Text	25	The decoded textual description/name of the county code. It does not include the geostate name.
Admst_dist_ra_cd	Text	6	The concatenation of the blm_admin_state field with BLM district and BLM Resource Area codes.
District_txt	Text	25	The textual description of the BLM District Office or Field Office.
Ra_txt	Text	25	The textual description of the BLM Resource Area Office.
Adm_agency	Text	8	The code of the administrative agency for the land.
Adm_agency_txt	Text	25	The textual description of the administrative agency.
Aliquot_part	Text	25	The aliquot part (portion) of the land description (NE, NE, etc.).
Cong_dist	Text	4	Status data only and is the congressional district where the land is located.
Ls_inc	Text	1	Incomplete indicator; calculated by the system, not directly entered. Brought over from CR only.
Sur_nr	Text	5	The survey number field from case_land table.
Sur_suffix	Text	2	The survey suffix field from case_land table.
Survey_type	Text	1	The survey type field from case_land table.
Sur_type_txt	Text	25	The textual description of the survey type.
Sur_sort	Number	2	Case rec report Location Index sorts based on this; COBOL program pads it with another character, so we will do this in the transforms.
Case_land_acres	Number	Double	This field is populated for status cases only, and its source is st_acreage in the ltp_case_land table. It is the number of acres for this parcel represented in the case_land table row.
St_sur_note	Text	1	BLM field, no definitions supplied.
Es_pol_twnshp	Text	2	BLM field, no definitions supplied.
Es_map_ref	Text	6	BLM field, no definitions supplied.
Es_quad	Text	4	BLM field, no definitions supplied.
Es_set_id	Number	Integer	BLM field, no definitions supplied.
Es_sortkey	Number	Integer	BLM field, no definitions supplied.