



# Digital Mining Claim Density Map for Federal Lands in Oregon: 1996

by Paul C. Hyndman<sup>1</sup> and Harry W. Campbell<sup>2</sup>

Open-File Report 99-541  
Version 1.0

1999

This report is preliminary and has not been reviewed for conformity with U.S. Geological Survey editorial standards. Any use of trade, product, or firm names is for descriptive purposes only and does not imply endorsement by the U.S. Government.

This digital map, identified as "Digital Mining Claim Density Map for Federal Lands in Oregon: 1996," has been approved for release and publication by the Director of the USGS. Although the digital map has been reviewed and is substantially complete, the USGS reserves the right to revise the data pursuant to further analysis and review. The databases are released on condition that neither the USGS nor the U.S. Government may be held liable for any damages resulting from their use.

Manuscript approved November 8, 1999

**U.S. DEPARTMENT OF THE INTERIOR**  
**U.S. GEOLOGICAL SURVEY**

---

<sup>1</sup> U.S. Geological Survey, Spokane, WA 99201

<sup>2</sup> Retired, U.S. Geological Survey, Spokane, WA 99201

# TABLE OF CONTENTS

TABLE OF CONTENTS.....	2
INTRODUCTION .....	3
DATA SOURCES, PROCESSING, AND ACCURACY .....	3
Data Sources .....	3
Processing .....	4
Accuracy .....	5
MINING CLAIM DENSITY MAP CONTENTS .....	6
REFERENCES.....	7
OBTAINING DIGITAL DATA .....	7
By Anonymous FTP .....	8
By the World Wide Web.....	8
METADATA .....	9
Description of SINGLE precision coverage or_clms .....	9
Description of Arc/Info or_clms.rel relate structure .....	9
Formal metadata for the mine claim density map and associated files .....	10
Figure 1. --- Open (black) and closed (gray) status of mining claims in Oregon for 1996. ....	4
Table 1. Mining claim totals by type and status in Oregon (database linked to digital map).....	5
Table 2. Mining claim totals by type and status in Oregon (or_clms.clms database).....	5
Table 3. Field structure and descriptions of specific fields for the digital map .....	6
Table 4. Field structure and descriptions for the mine claim density database.....	7
Table 5. Files available with this Open-File Report .....	8

## INTRODUCTION

This report describes a digital map generated by the U.S. Geological Survey (USGS) to provide digital spatial mining claim density information for federal lands in Oregon as of March 1997. Mining claim data is earth science information deemed to be relevant to the assessment of historic, current, and future ecological, economic, and social systems. There is no paper map included in this Open-File report.

In accordance with the Federal Land Policy and Management Act of 1976 (FLPMA), all unpatented mining claims, mill and tunnel sites must be recorded at the appropriate Bureau of Land Management (BLM) State office. BLM maintains a cumulative computer listing of mining claims in the Mining Claim Recordation System (MCRS) database with locations given by meridian, township, range, and section. A mining claim is considered closed when the claim is relinquished or a formal BLM decision declaring the mining claim null and void has been issued and the appeal period has expired. All other mining claims filed with BLM are considered to be open and actively held. The digital map (figure 1.) with the mining claim density database available in this report are suitable for geographic information system (GIS)-based regional assessments at a scale of 1:100,000 or smaller.

## DATA SOURCES, PROCESSING, AND ACCURACY

### Data Sources

The mining claim density database of federal lands in Oregon is one of 13 statewide databases published in the U.S. Geological Survey Open-File Report 99-325. The database contains information identifying 1) the meridian, township, range, and section (MTRS) designation, a unique record identifier, 2) the number and type of claims (lode, placer, mill site, tunnel site) within each section, and 3) the status of the claims (open is held by a claimant, closed is no longer held). The original mine claim data used to create the databases in OF99-325 were acquired from the BLM in March 1997. An official quarterly release of the MCRS mine claim data for Oregon is available by specific request from the:

United States Department of the Interior  
Bureau of Land Management  
Mining Claim Recordation System Coordinator  
NI-112, Denver Federal Center  
P.O. Box 25047  
Denver, CO 80225-0047

The statewide Public Land Survey (PLS) digital map of Oregon, pls.e00, was used to create the digital mining claim density map. The digital map was in Arc/Info export format and is available on the Internet at URL <http://www.sscgis.state.or.us/data/themes.html> or by specific request from the:

State Service Center for GIS  
Department of Administrative Services  
155 Cottage St. NE  
Salem, OR 97310

## Processing

The digital file, pls.e00, was imported using Arc/Info, version 7.1.1 (Environmental Systems Research Institute, Inc., Redlands, California), a commercially available GIS software, as an Arc/Info coverage into a workspace on a Sun Ultra 1 with Solaris 2.5.1 operating software. Each section of the digital PLS was given a unique section identifier corresponding in form to the MTRS in the mining claim density database, blm\_id.dbf. The mining claim density database from OF99-325 was imported as an Info file and linked, using a relate file, with the digital PLS of Oregon. The linking process connected the data in the database to their corresponding sections in the digital map. The result was a digital mining claim density map (figure 1) with the attributes of the current database. The relate file was named or\_clms.rel and the database of Oregon from OF99-325 was renamed or\_clms.clms. The renaming allows the database and the relate file to be included in the single export file, or\_clms.e00, created when packaging the digital map for others.

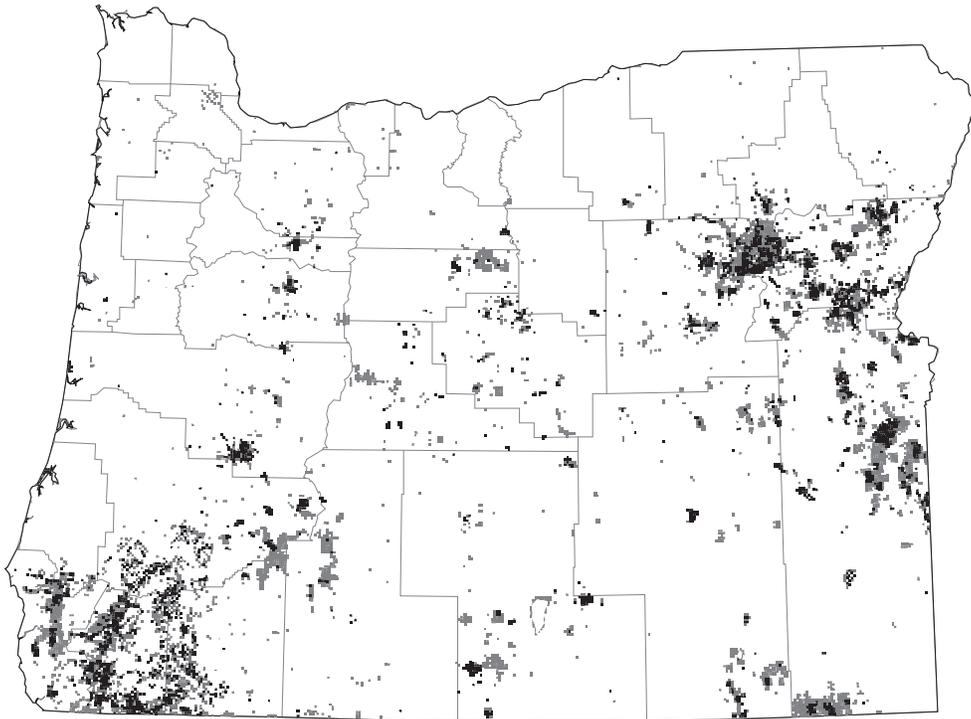


Figure 1. --- Open (black) and closed (gray) status of mining claims in Oregon for 1996.

Figure 1 displays the sections of the PLS containing claims and their status for this digital map. The map can be queried regarding its other attributes and can be used in investigating relationships with other digital data.

## Accuracy

Several factors can affect the accuracy of the mining claim density database and digital map. The original data from BLM may contain errors. Two possible sources of error in the database are 1) incorrect position of the mining claim submitted by the claimant, and 2) input errors from the data entry papers to the computer database.

The digital map of the PLS of Oregon may contain errors. Possible errors include 1) misidentified sections, 2) sections with no identifying information, and 3) sections missing from the PLS digital map. These errors would result in incorrect locations of the mining claim density data or failure of the data to be connected with the digital map.

Tables 1 and 2 summarize the number of mining claims by type and status for the digital map and the database. The total number of claims in the digital map (table 1) does not agree with the total number of claims in the mining claim density database from OF99-325 (table 2). Some contributing factors may be 1) failure of the data to find a section to combine with in the digital map, or 2) sections occurring as multiple parts due to irregular state boundaries, shorelines, or to non-PLS land surveys. The first type of error results in a decrease in the expected number of claims in the digital map. The second results in an increase. The digital map does contain sections with multiple parts. A ratio of the grand totals of all claims of Table 1 to Table 2 should show the degree of fit of the digital map totals to the original database totals. A value equal to 1 indicates a 100% fit. A value less than 1 indicates data was lost. A value greater than 1 indicates multi-part sections may be in the digital PLS map. The table shows that the digital map contains 100205 mining claims but the database contains 100207 mining claims. The ratio of the two numbers, 0.99998, indicates a very good fit.

Table 1. Mining claim totals by type and status in Oregon (database linked to digital map)

	DIGITAL MAP DATABASE CLAIM TOTALS				
Type of Claim	LODE	PLACER	MILL	TUNNEL	ALL CLAIMS
Number of Open Mining Claims	12211	5430	178	38	17857
Number of Closed Mining Claims	60615	21235	293	205	82348
Grand Totals	72826	26665	471	243	100205

Table 2. Mining claim totals by type and status in Oregon (or\_clms.clms database)

	DENSITY DATABASE CLAIM TOTALS				
Type of Claim	LODE	PLACER	MILL	TUNNEL	ALL CLAIMS
Number of Open Mining Claims	12217	5418	178	38	17851
Number of Closed Mining Claims	60524	21334	293	205	82356
Grand Totals	72741	26752	471	243	100207

Another concern regarding accuracy involves the visual representation of the data to a viewer. The digital map does not accurately represent the aerial extent of the lands covered by a mining claim because the presence of one mining claim, about 20 acres for a lode claim, will 'color in' the entire section (typically 640 acres or 1 square mile) it occurs in. The visual representation of one claim is magnified by a factor of

32 times its actual size. The best digital map resolution available at this time is to the section. Any area calculations done with the digital map for mining claims will likely be unreliable. Specific information about a particular area should be acquired from the BLM State office.

Additionally, the positional accuracy of a mining claim is generalized to one section in the PLS even if it crosses into another section. Mining claims generally follow geologic features and usually do not conform to the PLS lines. The procedure used by Campbell (1996) chooses the first section listed for a mining claim in the MCRS as the section of position. This method insures that each claim is counted only once. The digital PLS map is considered accurate enough for geographic representations for the purposes of regional assessments at a scale of 1:100,000 or smaller.

## MINING CLAIM DENSITY MAP CONTENTS

Table 3 lists the structure and descriptions of specific fields within the digital map, or\_clms. Table 4 contains the structure and descriptions of specific fields within the mining claim density database, or\_clms.clms. The italicized field in bold type, *mtrs*, is common to both the PLS and the database and is used by the relate file to link the database to the digital map.

Table 3. Field structure and descriptions of specific fields for the digital map

COLUMN	ITEM NAME	WIDTH	OUTPUT	TYPE	DEC	DESCRIPTION
1	area	4	12	Floating	3	Internal Arc/Info polygon area
5	perimeter	4	12	Floating	3	Internal Arc/Info polygon perimeter
9	or_clms#	4	5	Binary	-	Internal Arc/info polygon number
13	or_clms-id	4	5	Binary	-	User-defined polygon number
17	township	5	5	Numeric	2	Township designation
22	twp.char	1	1	Character	-	Township direction – North or South
23	range	5	5	Numeric	2	Range designation
28	rng.char	1	1	Character	-	Range direction – East or West
29	section	2	2	Integer	-	Section number
31	dlc	3	3	Integer	-	Donation land claim
34	x-coord	4	12	Floating	3	X coordinate for center of section
38	y-coord	4	12	Floating	3	Y coordinate for center of section
42	<b><i>mtrs</i></b> <sup>1</sup>	18	18	Character	-	<b>Meridian+Township+Range+Section</b>
17	loc-dlc	17	17	Character	-	Township+twp.char+range+rng.char+Dlc (redefined field)
17	tr	12	12	Character	-	Township + range (redefined field)
17	loc-info	14	14	Character	-	Township+twp.char+range+rng.char+Section (redefined field)

<sup>1</sup> For example, '33 30.0S 29.2E05' is Meridian 33, Township 30 South, Range 29 ½ East, Section 5 Oregon contains the Willamette Meridian (33).

Table 4. Field structure and descriptions for the mine claim density database

COLUMN	ITEM NAME	WIDTH	OUTPUT	TYPE	DEC	DESCRIPTION
1	<i>mtrs</i> <sup>1</sup>	18	18	Character	-	<b>Meridian+Township+Range+Section</b>
19	nolc <sup>2</sup>	4	4	Binary	-	<b>Number of Open Lode Claims<sup>2</sup></b>
23	nopc	4	4	Binary	-	<b>Number of Open Placer Claims</b>
27	nomc	4	4	Binary	-	<b>Number of Open Mill site Claims</b>
31	notc	4	4	Binary	-	<b>Number of Open Tunnel Claims</b>
35	toc	4	4	Binary	-	<b>Total number of Open Claims</b>
39	nclc	4	4	Binary	-	<b>Number of Closed Lode Claims</b>
43	ncpc	4	4	Binary	-	<b>Number of Closed Placer Claims</b>
47	ncmc	4	4	Binary	-	<b>Number of Closed Mill site Claims</b>
51	nctc	4	4	Binary	-	<b>Number of Closed Tunnel Claims</b>
55	tcc	4	4	Binary	-	<b>Total number of Closed Claims</b>
59	tc	4	4	Binary	-	<b>Total number of Claims of all kinds</b>

<sup>1</sup> For example, '33 30.0S 29.2E05' is Meridian 33, Township 30 South, Range 29 ½ East, Section 5

Oregon contains the Willamette Meridian (33).

<sup>2</sup> in a section of the PLS

## REFERENCES

Campbell, Harry W., 1996, Procedure for making a mining claim density map from BLM claim recordation digital data: U.S. Geological Survey Open-File Report 96-736, 13 p.

Hyndman, Paul C. and Harry W. Campbell, 1999, Digital databases containing mining claim density information for Arizona, California, Colorado, Idaho, Montana, Nebraska, New Mexico, Nevada, Oregon, South Dakota, Utah, Washington, and Wyoming created from the BLM Mining Claim Recordation System: 1996: U.S. Geological Survey Open-File Report 99-325, 21 p.

State Service Center for GIS, 1994, Coverage PLS -- Public Land Survey: Oregon Department of Administrative Services digital map PLS.E00.

## OBTAINING DIGITAL DATA

The digital mining claim density map of Oregon, or\_clms, is provided with this report in Arc/Info EXPORT format as or\_clms.e00. The mining claim density database, or\_clms.clms, and the relate file, or\_clms.rel, are contained in the export file. A metadata file, or\_clms.met, occurs separately. These files and this report are available from the USGS public access FTP site and the World Wide Web site on the Internet. Table 5 lists the files and their sizes.

Table 5. Files available with this Open-File Report

FILE NAME	FILE TYPE	SIZE IN KILOBYTES
of_or.pdf	PDF document	326
or_clms.e00	Arc/Info export	7,568
or_clms.met	Metadata	35

By Anonymous FTP

Do the following steps to obtain the files for OF99-541 by anonymous ftp. Windows users may need to start FTP in the MSDOS window.

STEP (type the words between the quotes)	REASON
cd to your_local_directory	Go to a directory to receive the WinZip file – you may need to make a directory first
'ftp wrgis.wr.usgs.gov'	Make ftp connection with the USGS computer, WRGIS
Name: 'anonymous'	Use 'anonymous' as your user name
Password: <i>your email address</i>	Use your email address as a password ( <a href="#">you@email address</a> )
'cd pub/open-file'	Go down to the pub/open-file directory
'cd of99-541'	Go down to the specific open file directory
'binary'	Type the word 'binary' to change the transfer type to binary mode
'get of99-541.exe'	Copy the self-extracting file across the Internet to the receiving directory on your computer
'bye'	Close the ftp connection

Extracting the files from the of99-541.exe self-extracting file is accomplished by typing the name of the file, 'of99-541', and pressing the 'Enter' key. The files will unload automatically.

By the World Wide Web

The files for this report can be obtained over the Internet at URL <http://wrgis.wr.usgs.gov/open-file/>. Do the following steps to obtain the files for OF99-541 by the World Wide Web:

STEP	REASON
Attach to the internet with your web browser	This connects you to the internet.
'http://wrgis.wr.usgs.gov/docs/northwest_region/index.html'	Make sure the internet address looks like this to connect with the USGS computer, WRGIS
Find the report in the listing and click on ' <i>Click here for digital files</i> '	This opens a page with instructions and information for downloading the report
Follow the instructions for downloading the data and this report	You should receive the report to your computer

# METADATA

Following are 1) an Arc/Info description of the digital map, or\_clms, 2) a description of the relate file, and 3) the formal metadata for the digital map and associated files.

## Description of SINGLE precision coverage or\_clms

FEATURE CLASSES					
Feature Class	Subclass	Number of Features	Attribute data (bytes)	Spatial Index?	Topology?
-----	-----	-----	-----	-----	-----
ARCS		20563			
POLYGONS		7191	60		Yes
NODES		14143			

### SECONDARY FEATURES

Tics	320
Arc Segments	26510
Polygon Labels	7011

### TOLERANCES

Fuzzy = 205.5 V

Dangle = 0.000 N

### COVERAGE BOUNDARY

Xmin = 241587.141  
Ymin = 88890.555

Xmax = 2296582.250  
Ymax = 1563227.250

### STATUS

The coverage has not been Edited since the last BUILD or CLEAN

### COORDINATE SYSTEM DESCRIPTION

Projection	LAMBERT
Datum	NAD83
Units	3.28084
Spheroid	GRS1980
Parameters:	
1 <sup>ST</sup> standard parallel	43 00 0.000
2 <sup>nd</sup> standard parallel	45 30 0.000
central meridian	-120 30 0.000
latitude of projection's origin	41 45 0.000
false easting (meters)	400000.0000
false northing (meters)	0.00000

## Description of Arc/Info or\_clms.rel relate structure

Relation = OR\_CLMS  
Table-Id = or\_clms.clms

Database = info  
Item = MTRS  
Column = mtrs  
Type = ORDERED  
Access = RO

## Formal metadata for the mine claim density map and associated files

The following metadata describes the mining claim density map:

### Identification\_Information:

#### Citation:

##### Citation\_Information:

Originator: Paul C. Hyndman  
Originator: Harry W. Campbell  
Publication\_Date: 1999  
Title:  
Digital mining claim density map and database for Federal lands  
in Oregon: 1996  
Edition: Version 1.0  
Geospatial\_Data\_Presentation\_Form: map and database

#### Description:

##### Abstract:

The mining claim density data of federal lands in Oregon are combined with the digital Oregon Public Land Survey (PLS) to create a digital map of the density of mine claims in Open-File Report 99-541.

The mining claim density data of federal lands in Oregon was one of 13 western states released in Open-File Report 99-325. The database for Oregon was converted to an Arc/Info file and connected with the PLS by an Arc/Info relate.

As stated in OF 99-325, "These mining claim density databases were created from data obtained in March 1997, from the Mining Claim Recordation System (MCRS) of the Bureau of Land Management. These databases provide mining claim density information in a tabular form. They quantify the status of mining claim activity for 1996 and include information on mining claim activity since 1976. The databases contain information identifying 1) the general location of mining claims within the Public Land Survey System (PLS), 2) the number and type of claims (lode, placer, mill site, tunnel site), and 3) the status of the claims (open is held, closed is no longer held by a claimant)".

Combining the database with a digital PLS coverage of Oregon enables a User to spatially display the mine claim data as a digital map and compare it with other spatial themes.

##### Purpose:

The digital map was developed to document mining claim activity on federal lands in Oregon and to investigate interrelationships of mining claim activity with physical and social science concerns.

This digital map is not to be considered as a legal representation of survey lines and corners or of mining claim boundaries.

##### Supplemental\_Information: This data is in Arc/Info 7.1 format

##### Data\_Set\_Part:

Part\_Type: Arc/Info export file  
Part\_Name: or\_clms.e00  
Part\_Description: This Arc/Info export file contains the coverage or\_clms, the database or\_clms.clms, and the relate or\_clms.rel. The original digital PLS export file, pls.e00, came from the State Service Center for GIS, Department of Administrative Services, State of Oregon.

##### Data\_Set\_Part:

Part\_Type: Arc/Info database  
Part\_Name: or\_clms.clms  
Part\_Description: This database contains mine claim density information

for federal lands in the state, from 1976 through 1996. It is one of several state databases from OF 99-325.

Data\_Set\_Part:

Part\_Type: Arc/Info relate

Part\_Name: or\_clms.rel

Part\_Description: This file contains the parameters needed to relate the database, or\_clms.clms to the digital map database, or\_clms.pat. The structure of the relate is:

RELATION	=	OR_CLMS
TABLE-ID	=	or_clms.clms
DATABASE	=	info
ITEM	=	MTRS
COLUMN	=	mtrs
TYPE	=	ORDERED
ACCESS	=	RO

Time\_Period\_of\_Content:

Time\_Period\_Information:

Range\_of\_Dates/Times:

Beginning\_Date: 1976

Ending\_Date: 1997

Currentness\_Reference: Release date of data by the Bureau of Land Management in March, 1997

Status:

Progress: Complete

Maintenance\_and\_Update\_Frequency: None planned

Spatial\_Domain:

Bounding\_Coordinates:

West\_Bounding\_Coordinate: -124 30 00

East\_Bounding\_Coordinate: -116 30 00

North\_Bounding\_Coordinate: 46 15 00

South\_Bounding\_Coordinate: 42 00 00

Keywords:

Theme:

Theme\_Keyword\_Thesaurus: None

Theme\_Keyword: mining claim density

Theme\_Keyword: lode

Theme\_Keyword: placer

Theme\_Keyword: mill site

Theme\_Keyword: tunnel site

Theme\_Keyword: mine claim

Place:

Place\_Keyword\_Thesaurus: None

Place\_Keyword: Oregon

Access\_Constraints: None

Use\_Constraints:

Users should contact the BLM for current data. The U.S. Geological Survey makes no warranties related to the accuracy of the data and users are required to determine suitability of use for any particular purpose. This digital map is not to be construed as a legal representation of mining claim boundaries. The PLS data is from 1:100,000 scale base maps. The map should not be used at scales larger than 1:100,000.

The user must obtain current information on mining claims from the Oregon State Office of the Bureau of Land Management for the area of interest since the mining claim density data is not current. The information in the database does not provide the legal location or status of individual mining claims.

Any hardcopies utilizing this data set shall clearly indicate their source. If the user has modified the data in any way they are obligated to describe the types of modifications they have performed on the hardcopy map. User specifically agrees not to misrepresent this data set, nor to imply that changes they made were approved by the U.S. Geological Survey.

Point\_of\_Contact:

Contact\_Information:

Contact\_Person\_Primary:

Contact\_Person: Paul Hyndman

Contact\_Organization: U.S. Geological Survey

Contact\_Position: Geologist

Contact\_Address:

Address\_Type: mailing and physical address

Address: 904 W. Riverside Ave., Rm. 202

City: Spokane

State\_or\_Province: Washington

Postal\_Code: 99201

Country: U.S.A.

Contact\_Voice\_Telephone: 509-368-3100 or 509-368-3118

Contact\_Facsimile\_Telephone: 509-368-3199

Contact\_Electronic\_Mail\_Address: phyndman@usgs.gov

Contact\_Instructions: General office phone is 509-368-3100

Data\_Set\_Credit:

Cheryl Laudенbach, Denver Service Center, BLM, provided the original mining claim data from the Mining Claim Recordation Database. The data was used to create the mining claim density databases in OF 99-325.

The digital PLS map of Oregon came from the State Service Center for GIS, Department of Administrative Services, State of Oregon

Native\_Data\_Set\_Environment: Solaris 2.5.1, Sun Ultra 1, Arc/Info 7.1.2

Data\_Quality\_Information:

Attribute\_Accuracy:

Attribute\_Accuracy\_Report:

OF 99-325 reports that the attributes of the mining claim data from BLM data, claims per section, do not represent the exact number of claims in each section. Some claims overlap into adjoining sections and/or townships. In order to count each claim only once, it was necessary to choose one section for each claim to be identified with. Therefore, the first section listed in the BLM database for a particular claim was chosen as the section the claim was counted in.

The accuracy was tested by summing each category of claim in the mining claim database and comparing the sum to those from the original BLM database. The sums for each category matched.

No attempt was made to determine the accuracy of BLM's database.

Completeness\_Report:

None of the data from BLM was omitted. The data is considered complete for the purpose of determining mining claim density in this State.

Logical\_Consistency\_Report:

The data set is a derived subset of the original BLM data. No modifications to the BLM data were made.

Positional\_Accuracy:

Horizontal\_Positional\_Accuracy:

Horizontal\_Positional\_Accuracy\_Report:

A claim may be within a section or it may straddle two, three, or four sections. In order to count each claim only once, it was necessary to choose one section for each claim to be identified with. Therefore, the first section listed in the BLM database for a particular claim was chosen as the section the claim was counted in.

Lineage:

Source\_Information:

Source\_Citation:

Citation\_Information:

Originator:

U.S. Geological Survey

Publication\_Date: 1999

Title: Digital databases containing mining claim density information for Arizona, California, Colorado, Idaho, Montana, Nebraska, New Mexico, Nevada, Oregon, South Dakota, Utah, Washington, and Wyoming created from the BLM Mining Claim Recordation System: 1996

Edition: 1

Geospatial\_Data\_Presentation\_Form: tabular database

Series\_Information:

Series\_Name: Open-File Report

Issue\_Identification: OF 99-325

Publication\_Information:

Publication\_Place: Denver, Colorado

Publisher: U.S. Geological Survey

Other\_Citation\_Details:

Original data from the Bureau of Land Management Mine Claim Recordation Database (MCRD)  
 Online\_Linkage: URL = <http://wrgis.wr.usgs.gov/open-file/of99-325>  
 Type\_of\_Source\_Media: digital file  
 Source\_Time\_Period\_of\_Content:  
 Time\_Period\_Information:  
 Range\_of\_Dates/Times:  
 Beginning\_Date: 1976  
 Ending\_Date: 199703  
 Source\_Currentness\_Reference:  
 The data were copied from BLM's MCRD database on March, 1997.  
 The data are cumulative from 1976, when the database was created.  
 Source\_Citation\_Abbreviation: USGS OF99-325  
 Source\_Contribution:  
 This database contributed the mine claim density information needed to create a spatial mine claim density map.

Process\_Step:  
 Process\_Description:  
 The mine claim density database of Oregon was released as part of the U.S. Geological Open-File Report, OF 99-325. It was imported as an Arc/Info table, or\_clms.clms, using the command, dbaseinfo. A relate, or\_clms.rel, was made to connect the database to the PLS of Oregon. This report can be found at URL:  
<http://wrgis.wr.usgs.gov/open-file/of99-541>  
 Process\_Date: 1997-1998

Data\_Quality\_Information:  
 Completeness\_Report:  
 The digital PLS of Oregon is assumed to be complete.  
 Logical\_Consistency\_Report:  
 The PLS in this report is a derived subset of the original PLS. Only those sections containing mine claim density data are included in this report.  
 Positional\_Accuracy:  
 Horizontal\_Positional\_Accuracy:  
 Horizontal\_Positional\_Accuracy\_Report:  
 No attempt was made to check the positional accuracy of the digital PLS. The PLS came from 1:100,000 scale sources.

Lineage:  
 Source\_Information:  
 Source\_Citation:  
 Citation\_Information:  
 Originator: Oregon Department of Water Resources  
 Publication\_Date: 1994  
 Title: PLS  
 Geospatial\_Data\_Presentation\_Form: map  
 Publication\_Information:  
 Publication\_Place: Salem, Oregon  
 Publisher: State Service Center for GIS, State of Oregon  
 Online\_Linkage: URL <http://www.sscgis.state.or.us/data/themes.html>  
 Type\_of\_Source\_Media: digital file  
 Source\_Time\_Period\_of\_Content:  
 Time\_Period\_Information:  
 Single\_Date/Time:  
 Calendar\_Date: 1994  
 Source\_Currentness\_Reference:  
 The PLS is assumed to be current with regard to section lines.  
 Source\_Citation\_Abbreviation: PLS.E00  
 Source\_Contribution:  
 The SSCGIS contributed the digital map needed for attaching the mine claim density data to make the digital mine claim density map.

Process\_Step:  
 Process\_Description:  
 The Oregon PLS did not contain a field, mtrs, to which the mine claim density database could be attached. The polygon attribute table, or\_pls.pat was converted with the 'infodbase' command to a dBase table. Some fields were renamed by this process and also changed from binary to floating point format. Or\_pls# was renamed or\_pls\_ and changed in format. The authors used dbase to compile the field, mtrs, from existing fields. All fields except or\_pls\_, the equivalent of or\_pls# in the original or\_pls.pat, and mtrs were then dropped from the file. The dBase file was converted back to

an info file using the 'dbaseinfo' command. A field named or\_pls#, in binary format, was added to match the structure of or\_pls# in or\_pls.pat. This field was populated with the values of or\_pls\_ which made it identical to the original or\_pls# in or\_pls.pat. The field, or\_pls\_ was then dropped from the file and only or\_pls# and mtrs remained. The mtrs field was joined to the original or\_pls.pat by using the command 'joinitem' with the common field being or\_pls#. The data from or\_clms.clms was linked through the use of a relate, or\_clms.rel. An example of commands for using the relate in ArcEdit for selecting all claims in the Total Claims (tc) field is:

```
'restore relate or_clms.rel'
'editcover or_clms'
'sel or_clms//tc > 0'
```

Process\_Date: 1997

Spatial\_Data\_Organization\_Information:

- Direct\_Spatial\_Reference\_Method: Vector
- Point\_and\_Vector\_Object\_Information:
  - SDTS\_Terms\_Description:
    - SDTS\_Point\_and\_Vector\_object\_Type: Point
    - Point\_and\_Vector\_Object\_Count: 14143
    - SDTS\_Point\_and\_Vector\_object\_Type: String
    - Point\_and\_Vector\_Object\_Count: 20563
    - SDTS\_Point\_and\_Vector\_object\_Type: GT-polygon composed of chains
    - Point\_and\_Vector\_Object\_Count: 7191

Spatial\_Reference\_Information:

- Horizontal\_Coordinate\_System\_Definition:
  - Planar:
    - Map\_Projection:
      - Map\_Projection\_Name: Lambert Conformal Conic
      - Lambert\_Conformal\_Conic:
        - Standard\_Parallel: 43.0
        - Standard\_Parallel: 45.5
        - Longitude\_of\_Central\_Meridian: -119.5
        - Latitude\_of\_Projection\_Origin: 41.75
        - False\_Easting: 400000.0000
        - False\_Northing: 0.0000
    - Planar\_Coordinate\_Information:
      - Planar\_Coordinate\_Encoding\_Method: coordinate pair
      - Planar\_Distance\_Units: meters
  - Geodetic\_Model:
    - Horizontal\_Datum\_Name: North American Datum of 1983
    - Ellipsoid\_Name: Geodetic Reference System 80

Entity\_and\_Attribute\_Information:

- Detailed\_Description:
  - Entity\_Type:
    - Entity\_Type\_Label: or\_clms.clms
    - Entity\_Type\_Definition:
      - Summary of values for number and type of mining claims in each section from OF99-325. The data is tied to an MTRS code which represents the Meridian + Township + Range + Section. This code provides a unique identifier for each Section of the PLS.
    - Entity\_Type\_Definition\_Source:
      - The Bureau of Land Management is the official source for PLS designations and surveys and for the mining claim data.
- Attribute:
  - Attribute\_Label: MTRS
  - Attribute\_Definition:
    - A concatenation of Meridian, Township, Range, and Section of the PLS
  - Attribute\_Definition\_Source: Bureau of Land Management
  - Attribute\_Domain\_Values:
    - Enumerated\_Domain:
      - Enumerated\_Domain\_Value: MMTTT.TDRRR.RESS\_\_
      - Enumerated\_Domain\_Value\_Definition:
        - MTRS is an 18-character field which is a concatenation of meridian (M), Township (T), township direction (D), range (R), range direction (E), and section (S). The form of the field is MMTTT.TDRRR.RESS\_\_. The last two spaces were included in the beginning of the study but were not utilized.

MM = the FIPS code for meridian. FIPS stands for the Federal Information Processing Standard. The code for the meridian is:

33 - Willamette Meridian

TTT.T = BLM Township designation as 'TTT.T' may include a fraction of a Township. For example, Township 1 would be '\_1.0'. Township 29.5 would be '\_29.2'. The '.2' is a 1/2 township.

D = BLM Township direction may be North (N) or South (S).

RRR.R = BLM Range designation as 'RRR.R' which may include a fraction of a Range See Township (T) for example.

E = BLM Range direction may be East (E) or West (W).

SS = BLM Section number. For example, section 1 is '\_1' and section 35 is '35'. Generally the highest section number is 36, but there are exceptions in several States.

Enumerated\_Domain\_Value\_Definition\_Source:

Hyndman and Campbell, 1999

Attribute:

Attribute\_Label: NOLC

Attribute\_Definition:

Number of Open (or recorded) Lode Claims within a section

Attribute\_Definition\_Source: Hyndman and Campbell, 1999

Attribute\_Domain\_Values:

Range\_Domain:

Range\_Domain\_Minimum: 0

Range\_Domain\_Maximum: 77

Attribute:

Attribute\_Label: NOPC

Attribute\_Definition:

Number of Open (or recorded) Placer Claims within a section

Attribute\_Definition\_Source: Hyndman and Campbell, 1999

Attribute\_Domain\_Values:

Range\_Domain:

Range\_Domain\_Minimum: 0

Range\_Domain\_Maximum: 36

Attribute:

Attribute\_Label: NOMC

Attribute\_Definition:

Number of Open (or recorded) Mill site Claims within a section

Attribute\_Definition\_Source: Hyndman and Campbell, 1999

Attribute\_Domain\_Values:

Range\_Domain:

Range\_Domain\_Minimum: 0

Range\_Domain\_Maximum: 32

Attribute:

Attribute\_Label: NOTC

Attribute\_Definition:

Number of Open (or recorded) Tunnel site Claims within a section

Attribute\_Definition\_Source: Hyndman and Campbell, 1999

Attribute\_Domain\_Values:

Range\_Domain:

Range\_Domain\_Minimum: 0

Range\_Domain\_Maximum: 5

Attribute:

Attribute\_Label: TOC

Attribute\_Definition:

Total number of Open (or recorded) Claims of all types within a section

Attribute\_Definition\_Source: Hyndman and Campbell, 1999

Attribute\_Domain\_Values:

Range\_Domain:

Range\_Domain\_Minimum: 0

Range\_Domain\_Maximum: 110

Attribute:  
Attribute\_Label: NCLC  
Attribute\_Definition:  
Number of Closed (or terminated and closed)  
Lode Claims within a section  
Attribute\_Definition\_Source: Hyndman and Campbell, 1999  
Attribute\_Domain\_Values:  
Range\_Domain:  
Range\_Domain\_Minimum: 0  
Range\_Domain\_Maximum: 148

Attribute:  
Attribute\_Label: NCPC  
Attribute\_Definition:  
Number of Closed (or terminated and closed)  
Placer Claims within a section  
Attribute\_Definition\_Source: Hyndman and Campbell, 1999  
Attribute\_Domain\_Values:  
Range\_Domain:  
Range\_Domain\_Minimum: 0  
Range\_Domain\_Maximum: 102

Attribute:  
Attribute\_Label: NCMC  
Attribute\_Definition:  
Number of Closed (or terminated and closed)  
Mill site Claims within a section  
Attribute\_Definition\_Source: Hyndman and Campbell, 1999  
Attribute\_Domain\_Values:  
Range\_Domain:  
Range\_Domain\_Minimum: 0  
Range\_Domain\_Maximum: 32

Attribute:  
Attribute\_Label: NCTC  
Attribute\_Definition:  
Number of Closed (or terminated and closed)  
Tunnel site Claims within a section  
Attribute\_Definition\_Source: Hyndman and Campbell, 1999  
Attribute\_Domain\_Values:  
Range\_Domain:  
Range\_Domain\_Minimum: 0  
Range\_Domain\_Maximum: 35

Attribute:  
Attribute\_Label: TCC  
Attribute\_Definition:  
Total number of Closed (or terminated and closed)  
Claims of all types within a section  
Attribute\_Definition\_Source: Hyndman and Campbell, 1999  
Attribute\_Domain\_Values:  
Range\_Domain:  
Range\_Domain\_Minimum: 0  
Range\_Domain\_Maximum: 226

Attribute:  
Attribute\_Label: TC  
Attribute\_Definition:  
Total number of all Claims of all types  
within a section  
Attribute\_Definition\_Source: Hyndman and Campbell, 1999  
Attribute\_Domain\_Values:  
Range\_Domain:  
Range\_Domain\_Minimum: 1  
Range\_Domain\_Maximum: 336

Detailed\_Description:  
Entity\_Type:  
Entity\_Type\_Label: or\_clms.pat  
Entity\_Type\_Definition:  
Polygon attribute table for the digital map, or\_clms. This digital map is derived from the digital map, pls, from SSCGIS. All fields are represented and one field, mtrs, was added by the authors. the mtrs field allows the mine claim density database to be linked to the digital map. The MTRS code represents the Meridian + Township + Range + Section. This code provides a unique identifier for each section of the PLS.

Entity\_Type\_Definition\_Source:  
The Bureau of Land Management is the official source for PLS designations and surveys and for the mining claim data.

Attribute:  
Attribute\_Label: area  
Attribute\_Definition:  
The area of each polygon in the coverage  
Attribute\_Definition\_Source: Arc/Info  
Attribute\_Domain\_Values:  
Range\_Domain:  
Range\_Domain\_Minimum: not determined  
Range\_Domain\_Maximum: not determined

Attribute:  
Attribute\_Label: perimeter  
Attribute\_Definition:  
Length of perimeter of each polygon in the coverage  
Attribute\_Definition\_Source: Arc/Info  
Attribute\_Domain\_Values:  
Range\_Domain:  
Range\_Domain\_Minimum: not determined  
Range\_Domain\_Maximum: not determined

Attribute:  
Attribute\_Label: or\_clms#  
Attribute\_Definition:  
Internal polygon tracking number  
Attribute\_Definition\_Source: Arc/Info  
Attribute\_Domain\_Values:  
Range\_Domain:  
Range\_Domain\_Minimum: not determined  
Range\_Domain\_Maximum: not determined

Attribute:  
Attribute\_Label: or\_clms-id  
Attribute\_Definition:  
Polygon tracking number which can be modified by user  
Attribute\_Definition\_Source: Arc/Info  
Attribute\_Domain\_Values:  
Range\_Domain:  
Range\_Domain\_Minimum: not determined  
Range\_Domain\_Maximum: not determined

Attribute:  
Attribute\_Label: township  
Attribute\_Definition: township number  
Attribute\_Definition\_Source: SSCGIS  
Attribute\_Domain\_Values:  
Range\_Domain:  
Range\_Domain\_Minimum: 0  
Range\_Domain\_Maximum: 41

Attribute:  
Attribute\_Label: twp.char  
Attribute\_Definition: direction from the principle baseline  
Attribute\_Definition\_Source: SSCGIS  
Attribute\_Domain\_Values:  
Enumerated\_Domain:  
Enumerated\_Domain\_Value: N, S  
Enumerated\_Domain\_Value\_Definition: N(orth)/S(outh)  
Enumerated\_Domain\_Value\_Definition\_Source: SSCGIS

Attribute:  
Attribute\_Label: range  
Attribute\_Definition: range number  
Attribute\_Definition\_Source: SSCGIS  
Attribute\_Domain\_Values:  
Range\_Domain:  
Range\_Domain\_Minimum: 0  
Range\_Domain\_Maximum: 51

Attribute:  
Attribute\_Label: rng.char  
Attribute\_Definition: direction from the principle meridian  
Attribute\_Definition\_Source: SSCGIS  
Attribute\_Domain\_Values:  
Enumerated\_Domain:  
Enumerated\_Domain\_Value: E, W

```

Enumerated_Domain_Value_Definition: E(ast), W(est)
Enumerated_Domain_Value_Definition_Source: SSCGIS
Attribute:
Attribute_Label: section
Attribute_Definition: section number
Attribute_Definition_Source: SSCGIS
Attribute_Domain_Values:
Range_Domain:
Range_Domain_Minimum: 1
Range_Domain_Maximum: 36
Attribute:
Attribute_Label: dlc
Attribute_Definition: donation land claim (0, 37-104, 999)
Attribute_Definition_Source: SSCGIS
Attribute_Domain_Values:
Range_Domain:
Range_Domain_Minimum: 0
Range_Domain_Maximum: 999
Attribute:
Attribute_Label: x-coord
Attribute_Definition: X-coordinate for center of each polygon
Attribute_Definition_Source: SSCGIS
Attribute_Domain_Values:
Range_Domain:
Range_Domain_Minimum: not determined
Range_Domain_Maximum: not determined
Attribute:
Attribute_Label: y-coord
Attribute_Definition: Y-coordinate for center of each polygon
Attribute_Definition_Source: SSCGIS
Attribute_Domain_Values:
Range_Domain:
Range_Domain_Minimum: not determined
Range_Domain_Maximum: not determined
Attribute:
Attribute_Label: loc-dlc
Attribute_Definition: township + twp.char + range + rng.char + dlc
Attribute_Definition_Source: SSCGIS
Attribute_Domain_Values:
Range_Domain:
Range_Domain_Minimum: not determined
Range_Domain_Maximum: not determined
Attribute:
Attribute_Label: tr
Attribute_Definition: township + range
Attribute_Definition_Source: SSCGIS
Attribute_Domain_Values:
Range_Domain:
Range_Domain_Minimum: not determined
Range_Domain_Maximum: not determined
Attribute:
Attribute_Label: loc-info
Attribute_Definition: township + twn.char + range + rng.char + section
Attribute_Definition_Source: SSCGIS
Attribute_Domain_Values:
Range_Domain:
Range_Domain_Minimum: not determined
Range_Domain_Maximum: not determined
Attribute:
Attribute_Label: MTRS
Attribute_Definition:
A concatenation of Meridian, Township, Range, and
Section of the PLS
Attribute_Definition_Source: Bureau of Land Management
Attribute_Domain_Values:
Enumerated_Domain:
Enumerated_Domain_Value: MTTT.TDRRR.RESS__
Enumerated_Domain_Value_Definition:
MTRS is an 18-character field which is a concatenation
of meridian (M), Township (T), township direction (D),
range (R), range direction (E), and section (S). The form

```

of the field is MMTT.TDRRR.RESS\_\_. The last two spaces were included in the beginning of the study but were not utilized.

MM = the FIPS code for meridian. FIPS stands for the Federal Information Processing Standard. The code for the meridian is:

33 - Willamette Meridian

TTT.T = BLM Township designation as 'TTT.T' may include a fraction of a Township. For example, Township 1 would be '\_1.0'. Township 29.5 would be '\_29.2'. The '.2' is a 1/2 township.

D = BLM Township direction may be North (N) or South (S).

RRR.R = BLM Range designation as 'RRR.R' which may include a fraction of a Range See Township (T) for example.

E = BLM Range direction may be East (E) or West (W).

SS = BLM Section number. For example, section 1 is '\_1' and section 35 is '35'. Generally the highest section number is 36, but there are exceptions in several States.

Enumerated\_Domain\_Value\_Definition\_Source:  
Hyndman and Campbell, 1999

Distribution\_Information:

Distributor:

Contact\_Information:

Contact\_Person\_Primary:

Contact\_Person: Paul Hyndman

Contact\_Organization: U.S. Geological Survey

Contact\_Position: Geologist

Contact\_Address:

Address\_Type: mailing and physical address

Address: W. 904 Riverside Avenue, Room 202

City: Spokane

State\_or\_Province: Washington

Postal\_Code: 99201

Country: USA

Contact\_Voice\_Telephone: 509-368-3118

Contact\_Facsimile\_Telephone: 509-368-3199

Contact\_Electronic\_Mail\_Address: phyndman@usgs.gov

Contact\_Instructions: Main phone number is 509-368-3100

Resource\_Description: Open-File Report 99-541

Distribution\_Liability:

The U.S. Geological Survey (USGS) provides this data "as is."

The USGS makes no guarantee or warranty concerning the accuracy of information contained in the geographic data. The USGS further makes no warranties, either expressed or implied as to any other matter whatsoever, including, without limitation, the condition of the product, or its fitness for any particular purpose. The burden for determining fitness for use lies entirely with the user. Although this data has been processed successfully on computers at the USGS, no warranty, expressed or implied, is made by the USGS regarding the use of this data on any other system, nor does the fact of distribution constitute or imply any such warranty.

In no event shall the USGS have any liability whatsoever for payment of any consequential, incidental, indirect, special, or tort damages of any kind, including, but not limited to, any loss of profits arising out of use of or reliance on the geographic data or arising out of the delivery, installation, operation, or support by the USGS.

Technical\_Prerequisites: The user should have GIS software capable of reading Arc/Info files

Distributor:

Contact\_Information:

Contact\_Organization\_Primary:

Contact\_Organization: U.S. Geological Survey Information Services

Contact\_Address:

Address\_Type: mailing and physical address

Address:

Open-File Reports

Box 2586  
City: Denver  
State\_or\_Province: CO  
Postal\_Code: 80225  
Country: USA  
Contact\_Voice\_Telephone: 1-303-202-4200  
Contact\_Facsimile\_Telephone: 1-303-202-4693  
Resource\_Description: Open-File Report 99-541

Distribution\_Liability:

The U.S. Geological Survey (USGS) provides this data "as is."  
The USGS makes no guarantee or warranty concerning the accuracy of information contained in the geographic data. The USGS further makes no warranties, either expressed or implied as to any other matter whatsoever, including, without limitation, the condition of the product, or its fitness for any particular purpose. The burden for determining fitness for use lies entirely with the user. Although this data has been processed successfully on computers at the USGS, no warranty, expressed or implied, is made by the USGS regarding the use of this data on any other system, nor does the fact of distribution constitute or imply any such warranty.

In no event shall the USGS have any liability whatsoever for payment of any consequential, incidental, indirect, special, or tort damages of any kind, including, but not limited to, any loss of profits arising out of use of or reliance on the geographic data or arising out of the delivery, installation, operation, or support by the USGS.

Technical\_Prerequisites: The user should have software GIS software capable of reading Arc/Info files.

Distributor:

Contact\_Information:

Contact\_Organization\_Primary:

Contact\_Organization: U.S.G.S. Earth Science Information Office

Contact\_Address:

Address\_Type: mailing and physical address

Address: 904 West Riverside Avenue, Rm. 135

City: Spokane

State\_or\_Province: WA

Postal\_Code: 99201

Country: USA

Contact\_Voice\_Telephone: 509-368-3130

Contact\_Facsimile\_Telephone: 509-353-2872

Contact\_Electronic\_Mail\_Address: esnfc@mailmcanl.wr.usgs.gov

Hours\_of\_Service: 8:00 a.m. - 4:30 p.m. Pacific time zone

Resource\_Description: Open-File Report 99-541

Distribution\_Liability:

The U.S. Geological Survey (USGS) provides this data "as is."  
The USGS makes no guarantee or warranty concerning the accuracy of information contained in the geographic data. The USGS further makes no warranties, either expressed or implied as to any other matter whatsoever, including, without limitation, the condition of the product, or its fitness for any particular purpose. The burden for determining fitness for use lies entirely with the user. Although this data has been processed successfully on computers at the USGS, no warranty, expressed or implied, is made by the USGS regarding the use of this data on any other system, nor does the fact of distribution constitute or imply any such warranty.

In no event shall the USGS have any liability whatsoever for payment of any consequential, incidental, indirect, special, or tort damages of any kind, including, but not limited to, any loss of profits arising out of use of or reliance on the geographic data or arising out of the delivery, installation, operation, or support by the USGS.

Technical\_Prerequisites: The user should have software GIS software capable of reading Arc/Info files.

Metadata\_Reference\_Information:

Metadata\_Date: 19990416

Metadata\_Review\_Date: 19990820

Metadata\_Contact:

Contact\_Information:

Contact\_Person\_Primary:

Contact\_Person: Paul Hyndman

Contact\_Organization: U.S. Geological Survey  
Contact\_Position: Geologist  
Contact\_Address:  
  Address\_Type: mailing and physical address  
  Address: W. 904 Riverside Avenue, Room 202  
  City: Spokane  
  State\_or\_Province: Washington  
  Postal\_Code: 99201  
  Country: USA  
Contact\_Voice\_Telephone: 509-368-3118  
Contact\_Facsimile\_Telephone: 509-368-3199  
Contact\_Electronic\_Mail\_Address: phyndman@usgs.gov  
Hours\_of\_Service: 8am to 4:30pm  
Contact\_Instructions: Main phone is 509-368-3100  
Metadata\_Standard\_Name: FGDC Content Standards for Digital  
  Geospatial Metadata  
Metadata\_Standard\_Version: FGDC-STD-001-1998  
Metadata\_Time\_Convention: local time  
Metadata\_Access\_Constraints: none  
Metadata\_Use\_Constraints: none