

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

**Digital mining claim density map for Federal lands in the Pacific Northwest**

**by**

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**Open-File Report 96-737**

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**1996**

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## **ACKNOWLEDGEMENTS**

We gratefully acknowledge Cheryl Laudenbach, Denver Service Center, U.S. Bureau of Land Management (BLM) for providing assistance in obtaining digital mining claim recordation data and digital data codes for the BLM Mining Claim Recordation System database.

## **INTRODUCTION**

This report provides a digital map and data files generated by the U.S. Geological Survey (USGS) to provide digital spatial mining claim information for Federal lands in the Pacific Northwest. Mining claim data is earth science information deemed to be relevant to the assessment of historic, current, and future ecological, economic, and social systems. The digital maps and data files that are available in this report are suitable for geographic information system (GIS)-based regional assessments.

Open-File Report OFR 96-736 summarizes the methodology and GIS techniques that were used to produce the mining claim density map of the Pacific Northwest. Appendix A. of this report lists the attribute data for the ARC/INFO mining claim density GIS coverage. Appendix B. provides the formal GIS metadata.

### **Extent and scope**

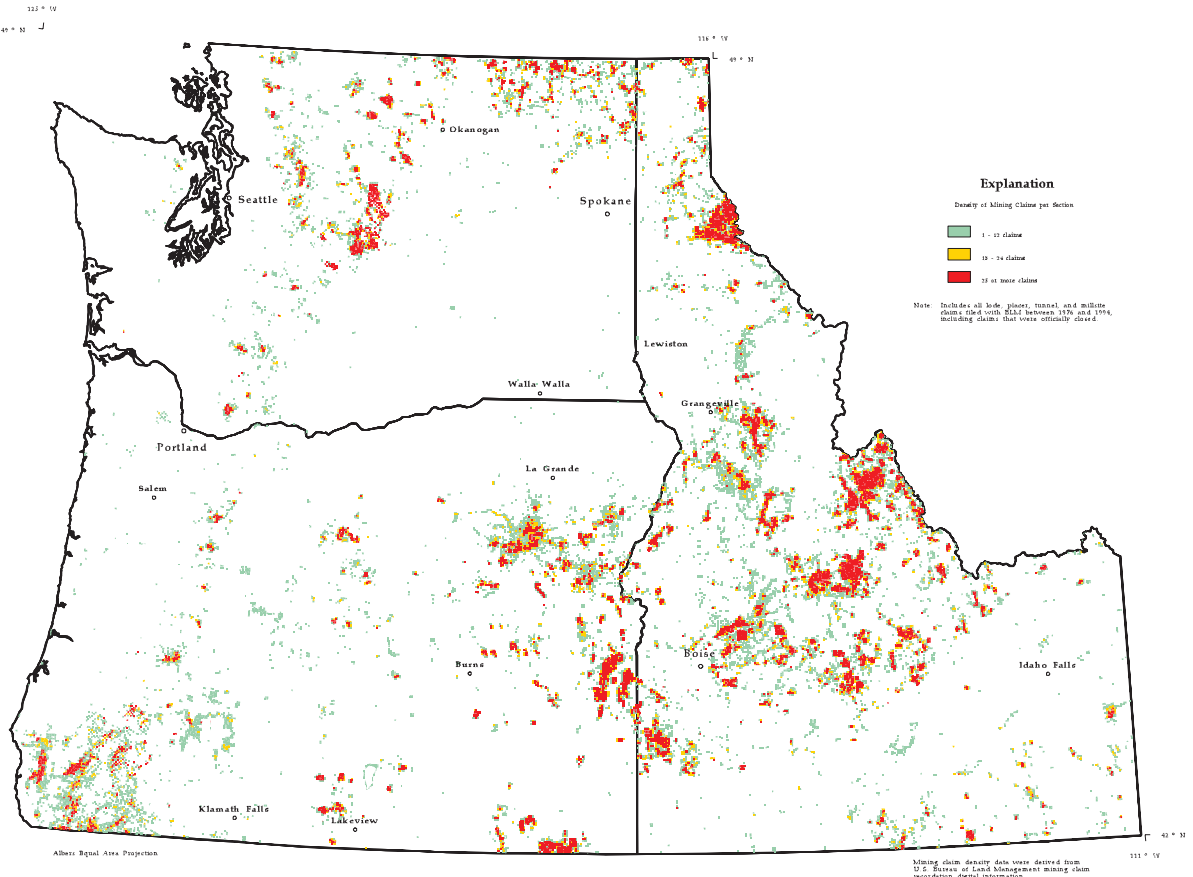
Digital mining claim data in this report are available for Federal lands in the States of Idaho, Oregon, and Washington. Mining claim data were obtained from the BLM Mining Claim Recordation System (MCRS) database. In accordance with the Federal Land Policy and Management Act of 1976 (FLPMA), all unpatented mining claims, mill, and tunnel sites are required to be recorded in the appropriate BLM state office. BLM maintains a cumulative computer listing of mining claims in the MCRS database with locations given by township, range, and section. The digital mining claim data used to prepare this report were acquired from BLM in September 1994. Data are presented on a base that is suitable for compilation at a scale of 1:100,000 or smaller. Additional potentially useful information is available in the BLM digital mining claim database, but is not included in the digital products presently being released.

### **U.S. Geological Survey involvement**

As a result of the cessation of funding of the U.S. Bureau of Mines (USBM) by the Congress effective the first quarter of 1996, certain functions and data were transferred to the USGS. This report releases mining and mineral-related data collected by USBM geologists before the USBM closure. The authors of this report processed the data for this mining claim density map as USBM geologists and are presently employees of the U.S. Geological Survey.

## **DATA SOURCES, PROCESSING, AND ACCURACY**

The starting points for the mining claim density map of the Pacific Northwest were state-wide ARC/INFO Public Land Survey System (PLSS) digital files for Idaho, Oregon, and Washington that were digitized from 1:100,000-scale or larger topographic maps. Mining claim data were obtained as ASCII text files from the BLM Denver Service Center on 9-track magnetic tapes. Mining claims were totaled for each section (square mile) by using computer procedures



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developed specifically for this purpose (See Campbell, 1996). Mining claim totals per section were imported from ASCII files to dBASE and then attached as attributes to corresponding section records in the appropriate state ARC/INFO PLSS digital files. The map was processed with ARC/INFO GIS version 7.0.2 on a Sun Sparc workstation using SUN OS 4.1.3. Data are considered accurate for geographic representations of the original map for the purposes of regional assessments at a scale of 1:100,000 or smaller.

### **Obtaining Digital Data**

The digital files which were used to make the mining claim density map are available as ARC/INFO GIS export format and associated data files. All data files and map images are maintained in the Albers Equal Area projection to facilitate use (See Appendix B). Copies of the digital data can be downloaded as digital files from the USGS public access World Wide Web site on the Internet:

**URL = <http://pubs.usgs.gov/of/1996/of96-737/>**

These Internet sites contain the mining claim density for the Pacific Northwest in a GIS coverage in ARC/INFO export file format as well as the associated data files and ARC/INFO macro program that was used to plot the map. Use of these data requires a GIS that is capable of reading ARC/INFO export formatted files and a computer capable of reading UNIX ASCII files. To use these files on a DOS computer, they must be put through a UNIX-to-DOS filter.

### **Obtaining Paper Maps**

Paper copies of this map are not available from the USGS at this time. However, a 1:1,750,000-scale paper copy of the map can be made as follows:

1. Download the digital version of the complete map from the USGS public access World Wide Web site on the Internet. The URL is:

**<http://pubs.usgs.gov/of/1996/of96-737/>**

These Internet sites contain a file, **nw\_mincl.hp**, which is in HPGL2 graphics language.

2. This file can be plotted by any large-format graphics plotter which can interpret the HPGL2 language. The finished plot is 26 by 30 inches.

Paper copies of the map can also be created by obtaining one of the versions of the digital files as described above, and then creating a plot file in a GIS.

## **CONCLUDING REMARKS**

The mining claim density map presented here was produced from digital mining claim recordation files obtained from BLM sources that were used to attribute digital versions of existing state PLSS maps. Descriptions of the mining claim attributes used to produce the mining claim density maps are presented in tabular form in Appendix A . A GIS may be used to make other claim density maps by selecting different attributes, for example density of only "placer" claims or density of "open lode" claims. This and other new maps constructed by this method are derivative maps that can be used to answer focused questions. Derivative maps produced from state scale mining claim density maps are an appropriate first step to providing a regional context for land management decisions. Mining claim density information is a potential tool to focus further mineral studies and should be part of the basis for land management decisions.

## **REFERENCES CITED**

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

## APPENDIX A: GIS Map Attributes

The mining claim density GIS coverage "nw\_mc.e00" contains the polygon attributes listed in the following table:

<b>ITEM NAME</b>	<b>START COLUMN</b>	<b>ITEM LENGTH</b>	<b>ATTRIBUTE DESCRIPTION</b>
<b>STATE</b>	17	2	<b>State</b>
<b>MTRS</b>	19	18	<b>Meridian, Township, Range, Section</b>
<b>MER</b>	37	3	<b>Meridian</b>
<b>TNP</b>	40	5	<b>Township</b>
<b>NS</b>	45	1	<b>North or South of base line</b>
<b>RNG</b>	46	5	<b>Range</b>
<b>EW</b>	51	1	<b>East or West of base line</b>
<b>SEC</b>	52	3	<b>Section</b>
<b>NOLC</b>	55	4	<b>Number of Open Lode Claims</b>
<b>NOPC</b>	59	4	<b>Number of Open Placer Claims</b>
<b>NOMC</b>	63	4	<b>Number of Open Mill site Claims</b>
<b>NOTC</b>	67	4	<b>Number of Open Tunnel Claims</b>
<b>TOC</b>	71	4	<b>Total number of Open Claims in a section</b>
<b>NCLC</b>	75	4	<b>Number of Closed Lode Claims</b>
<b>NCPC</b>	79	4	<b>Number of Closed Placer Claims</b>
<b>NCMC</b>	83	4	<b>Number of Closed Mill site Claims</b>
<b>NCTC</b>	87	4	<b>Number of Closed Tunnel Claims</b>
<b>TCC</b>	91	4	<b>Total number of Closed Claims in a section</b>
<b>TC</b>	95	4	<b>Total number of Claims of all kinds</b>

The plate accompanying this report was produced by selecting and plotting the polygon attribute labeled "TC" in the table above. A mining claim is considered to be 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.

## APPENDIX B: Detailed Metadata

Metadata for mining claim density GIS coverage "nw\_mc.e00" with base scale of 1:100,000 from State PLSS maps is as follows:

### IDENTIFICATION INFORMATION:

#### CITATION

**Originator:** U.S. Bureau of Mines (data were transferred to U.S. Geological Survey in February 1996)

**Publication Date:** 1996

**Title:** Mining claim density for Federal lands in the Pacific Northwest.

**Geospatial Data Presentation Form:** map

### PUBLICATION INFORMATION:

**Publisher:** U.S. Geological Survey

**Online Linkage:** <http://pubs.usgs.gov/of/1996/of96-737/>

### DESCRIPTION

**Abstract:** Mining claim density on Federal lands in the Pacific Northwest; includes the States of Idaho, Oregon, and Washington.

**Purpose:** Display and analysis of digital mining claim density data for the Pacific Northwest.

### TIME PERIOD OF CONTENT

#### Time Period Information

##### Range of Dates and Times

**Beginning Date:** 01/01/1976

**Ending Date:** 09/01/1994

#### Status

**Progress:** Complete

**Maintenance and Update Frequency:** Unknown

### KEY WORDS:

#### Theme

**Theme Keyword:** Mining claim density

#### Place

**Place Keyword:** Pacific Northwest

**Place Keyword:** Washington

**Place Keyword:** Idaho

**Place Keyword:** Oregon

**Place Keyword:** US

### ACCESS CONSTRAINTS: None

**Use Constraints:** Not for use at scales larger than 1:100,000. Not for accurate determination of section corner or property line locations.

**Native Data Set Environment:** ARC/INFO version 7.0.2, SunOS version 4.1.3

### DATA QUALITY INFORMATION:

**Attribute Accuracy Report:** No errors in claim density numbers were found when they were spot-checked for selected individual sections, but not every section was checked.

**Completeness Report:** Data set is complete for Federal lands in the States of Idaho, Oregon, and Washington.

**Horizontal Positional Accuracy Report:** Approximate horizontal accuracy is about 50 meters, assuming source data meets National Map Accuracy Standards.

**Vertical Positional Accuracy Report:** NONE (not applicable)

## LINEAGE

### SOURCE INFORMATION

**Originator:** U.S. Geological Survey 1:100,00-scale topographic maps; mining claim data from

U.S. Bureau of Land Management

**Publication Date:** 01/01/1976 and later

**Title:** BLM Mineral Claim Recordation System database (cumulative)

### PUBLICATION INFORMATION

**Publication Place:** Denver, CO

**Publisher:** U.S. Bureau of Land Management

**Source Scale Denominator:** N/A

**Type of Source Media:** 9-track digital magnetic tape

### SOURCE TIME PERIOD OF CONTENT

**Beginning Date:** 01/01/1975

**Ending Date:** 09/01/1994

**Source Citation Abbreviation:** mining claim density

**Source Contribution:** All of the coordinates were collected from these maps.

## SPATIAL DATA ORGANIZATION INFORMATION

### SPATIAL DOMAIN

#### Bounding Coordinates

**West Bounding Coordinate:** -125.00000°

**East Bounding Coordinate:** -111.00000°

**North Bounding Coordinate:** 49.00000°

**South Bounding Coordinate:** 42.00000°

**Direct Spatial Reference Method:** Vector

### POINT AND VECTOR OBJECT INFORMATION

**Number of Arcs:** 69,038

**Number of Polygons:** 23,436

**Number of Nodes:** 47,690

**Number of Tics:** 141

**Number of Arc Segments:** 78,736

**Number of Polygon Labels:** 22,966

## SPATIAL REFERENCE INFORMATION

### HORIZONTAL COORDINATE SYSTEM DEFINITION

**Map Projection Name:** Albers Equal Area

**First Standard Parallel:** 43° 00' 00"

**Second Standard Parallel:** 48° 00' 00"

**Longitude of Central Meridian:** -117° 00' 00"

**Latitude of Projection Origin:** 41° 00' 00"

**False Easting:** 700000

**False Northing:** 0.0

**Planar Distance Units:** meters

### GEODETTIC MODEL

**Horizontal Datum Name:** Clarke 1866 spheroid

## ENTITY AND ATTRIBUTE INFORMATION:

**Entity Type Definition:** Polygon Attribute Table

**Attribute Label:** STATE

**Attribute Definition:** State code

**ENUMERATED DOMAIN VALUE DEFINITION**

-----  
ID Idaho  
OR Oregon  
WA Washington

**Beginning Date of Attribute Values:** 03/24/1996

**Attribute Label:** MTRS

**Attribute Definition:** Meridian, Township, Range, Section composite from PLSS grid.

This is a redefined item to create a unique ID for each section. Examples:

"020 37.0N 31.0W 3" is Meridian 020 Township 37 North, Range 31 West, section 3.

**Unrepresentable Domain:** Character field

**Beginning Date of Attribute Values:** 03/24/1996

**Attribute Label:** TNP

**Attribute Definition:** Township Number of PLSS grid

**Range Domain**

**Range Domain Minimum:** 1

**Range Domain Maximum:** 96

**Beginning Date of Attribute Values:** 03/24/1996

**Attribute Label:** NS

**Attribute Definition:** Township North or South designation

**ENUMERATED DOMAIN VALUE DEFINITION**

-----  
N Township North of the Base Line  
S Township South of the Base Line

**Beginning Date of Attribute Values:** 03/24/1996

**Attribute Label:** RNG

**Attribute Definition:** Range Number of PLSS grid

**Range Domain**

**Range Domain Minimum:** 1

**Range Domain Maximum:** 107

**Beginning Date of Attribute Values:** 03/24/1996

**Attribute Label:** EW

**Attribute Definition:** Range East or West Designation

**ENUMERATED DOMAIN VALUE DEFINITION**

-----  
E Range East of the given meridian  
W Range West of the given meridian

**Beginning Date of Attribute Values:** 03/24/1996

**Attribute Label:** SEC

**Attribute Definition:** Section Number of PLSS grid

**Range Domain**

**Range Domain Minimum:** 1

**Range Domain Maximum:** 36

**Beginning Date of Attribute Values:** 03/24/1996

**DISTRIBUTION INFORMATION**

**Metadata Reference Information:**

**Metadata Date:** 1996

**Metadata Contact:** Doug Causey  
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