

To: Kristin Bail[kbail@blm.gov]
From: Roberson, Edwin
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Subject: GSENM Cursory Minerals Report
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Cursory Review of the Mineral Potential Occurrence within the Bears Ears NM.pdf

Kristin, This is what our SO minerals staff pulled together so far. ed

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United States Department of the Interior

BUREAU OF LAND MANAGEMENT

Utah State Office
440 West 200 South, Suite 500
Salt Lake City, UT 84101
<https://www.blm.gov/utah>



IN REPLY REFER TO:
(UT-9223-LG)

INFORMATION MEMO

TITLE: Cursory Review of the Mineral Potential/Occurrence within the Bears Ears NM
AUTHOR: Larry Garahana, Geologist (Certified Mineral Examiner 0147)
DATE: January 31, 2017

INTRODUCTION

The information within this memo gives an initial view through a series of maps showing mineral potential and occurrence within the newly designated Bears Ears National Monument, located within the Canyon Country District, Monticello Field Office, in San Juan County, Utah.

MEMO INFORMATION

The maps that were created for this memo are ones that show past or present mineral history, mineral potential or minerals that may be prospectively valuable within and around the new designation.

Some of the attached maps include information taken from the USGS Mineral Resource Data System (MRDS). MRDS describes metallic and nonmetallic mineral resources throughout the world. Included in the MRDS are deposit name, location, commodity, deposit description, geologic characteristics, production, reserves, resources, and references. Their interactive map (<https://mrdata.usgs.gov/mineral-resources/mrds-us.html>) has information on more than 180 commodities and this memo depicts a static representation of those commodities, past and present near and within the new designation. Although there was no prospect or production information near or within the monument for lithium, a lithium map was included for informational purposes due to the thousands of newly staked unpatented mining claims that were located north northeast of the monument. The information on the remaining maps was gathered from the most current BLM GIS data and it depicts potential and prospectively valuable mineral information on specific solid, fluid and leasable minerals within the subject area.

Illustration 3
(.34)

3031 - ENERGY AND MINERAL RESOURCE ASSESSMENT

Mineral Potential Classification System*

I. Level of Potential

- O. The geologic environment, the inferred geologic processes, and the lack of mineral occurrences do not indicate potential for accumulation of mineral resources.
- L. The geologic environment and the inferred geologic processes indicate low potential for accumulation of mineral resources.
- M. The geologic environment, the inferred geologic processes, and the reported mineral occurrences or valid geochemical/geophysical anomaly indicate moderate potential for accumulation of mineral resources.
- H. The geologic environment, the inferred geologic processes, the reported mineral occurrences and/or valid geochemical/geophysical anomaly, and the known mines or deposits indicate high potential for accumulation of mineral resources. The "known mines and deposits" do not have to be within the area that is being classified, but have to be within the same type of geologic environment.
- ND. Mineral(s) potential not determined due to lack of useful data. This notation does not require a level-of-certainty qualifier.

II. Level of Certainty

- A. The available data are insufficient and/or cannot be considered as direct or indirect evidence to support or refute the possible existence of mineral resources within the respective area.
- B. The available data provide indirect evidence to support or refute the possible existence of mineral resources.
- C. The available data provide direct evidence but are quantitatively minimal to support or refute the possible existence of mineral resources.
- D. The available data provide abundant direct and indirect evidence to support or refute the possible existence of mineral resources.

For the determination of No Potential use O/D. This class shall be seldom used, and when used it should be for a specific commodity only. For example, if the available data show that the surface and subsurface types of rock in the respective area is batholithic (igneous intrusive), one can conclude, with reasonable certainty, that the area does not have potential for coal.

* As used in this classification, potential refers to potential for the presence (occurrence) of a concentration of one or more energy and/or mineral resources. It does not refer to or imply potential for development and/or extraction of the mineral resource(s). It does not imply that the potential concentration is or may be economic, that is, ~~could~~ be extracted profitably.

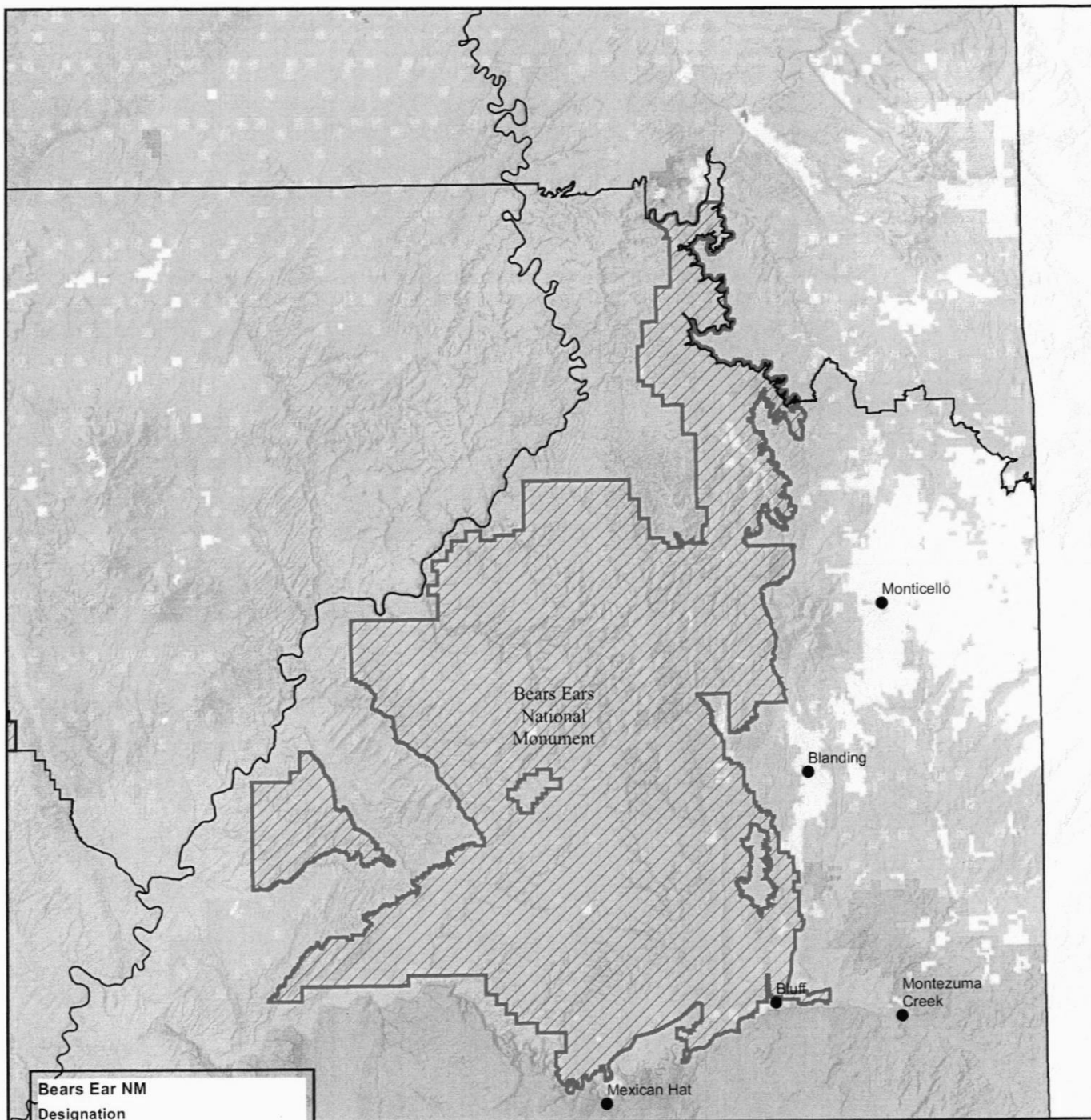
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BEARS EAR NATIONAL MONUMENT

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Bears Ear NM

Designation

National Monument

Land Status

Bureau of Land Management (BLM)

Indian Reservation (IR)

National Park Service (NPS)

Other Federal

Private

State

State Parks and Recreation

State Wildlife Reserve/Management Area

US Forest Service (USFS)

USFS Wilderness Area



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Miles



March 2, 2017

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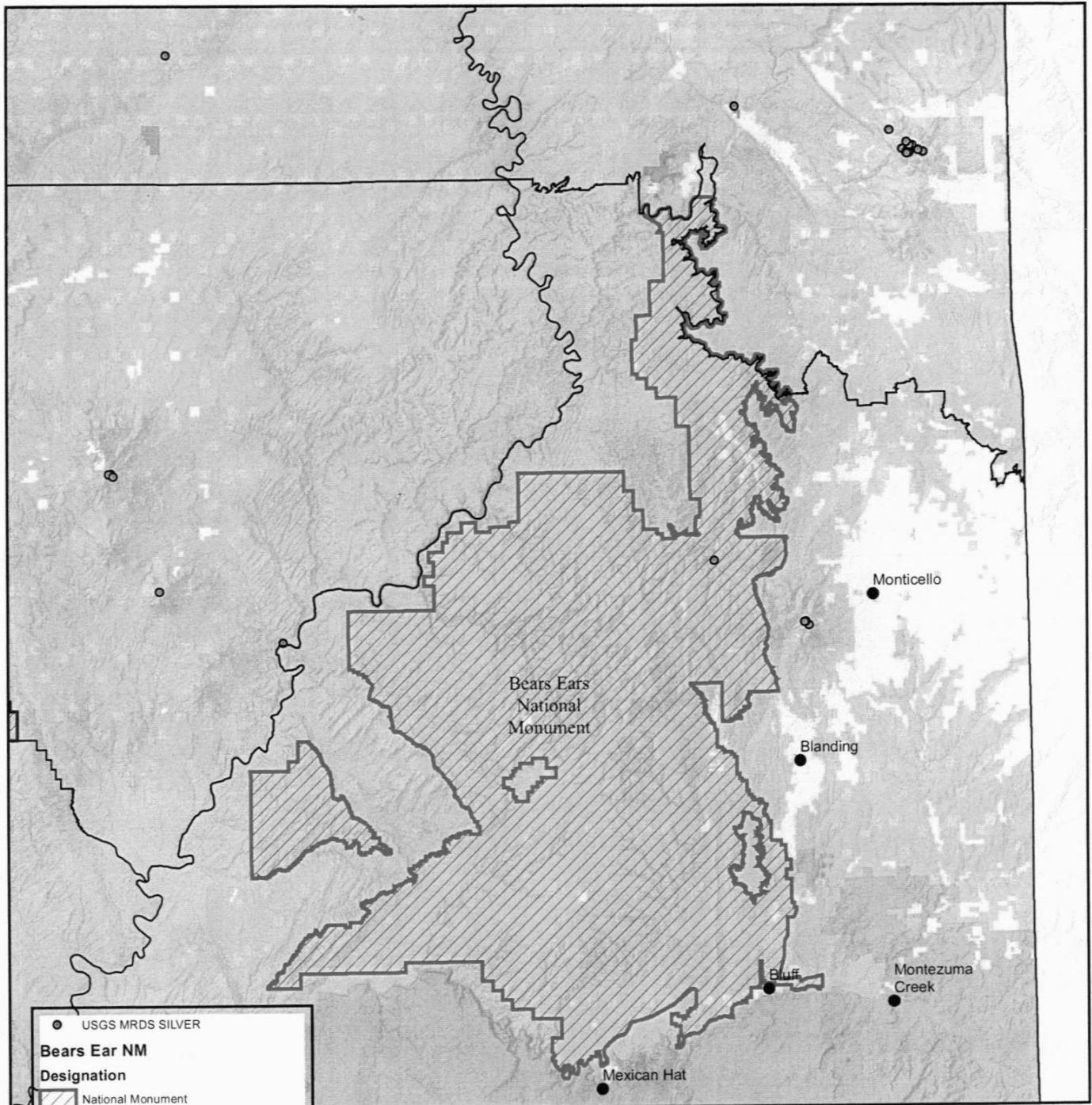
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USGS MINERAL RESOURCE DATA SYSTEM SILVER

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● USGS MRDS SILVER

Bears Ear NM

Designation

▨ National Monument

▭ Field Office Boundary

Land Status

■ Bureau of Land Management (BLM)

■ Indian Reservation (IR)

■ National Park Service (NPS)

■ Other Federal

□ Private

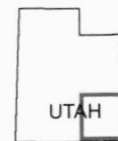
■ State

■ State Parks and Recreation

■ State Wildlife Reserve/Management Area

■ US Forest Service (USFS)

■ USFS Wilderness Area



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March 2, 2017

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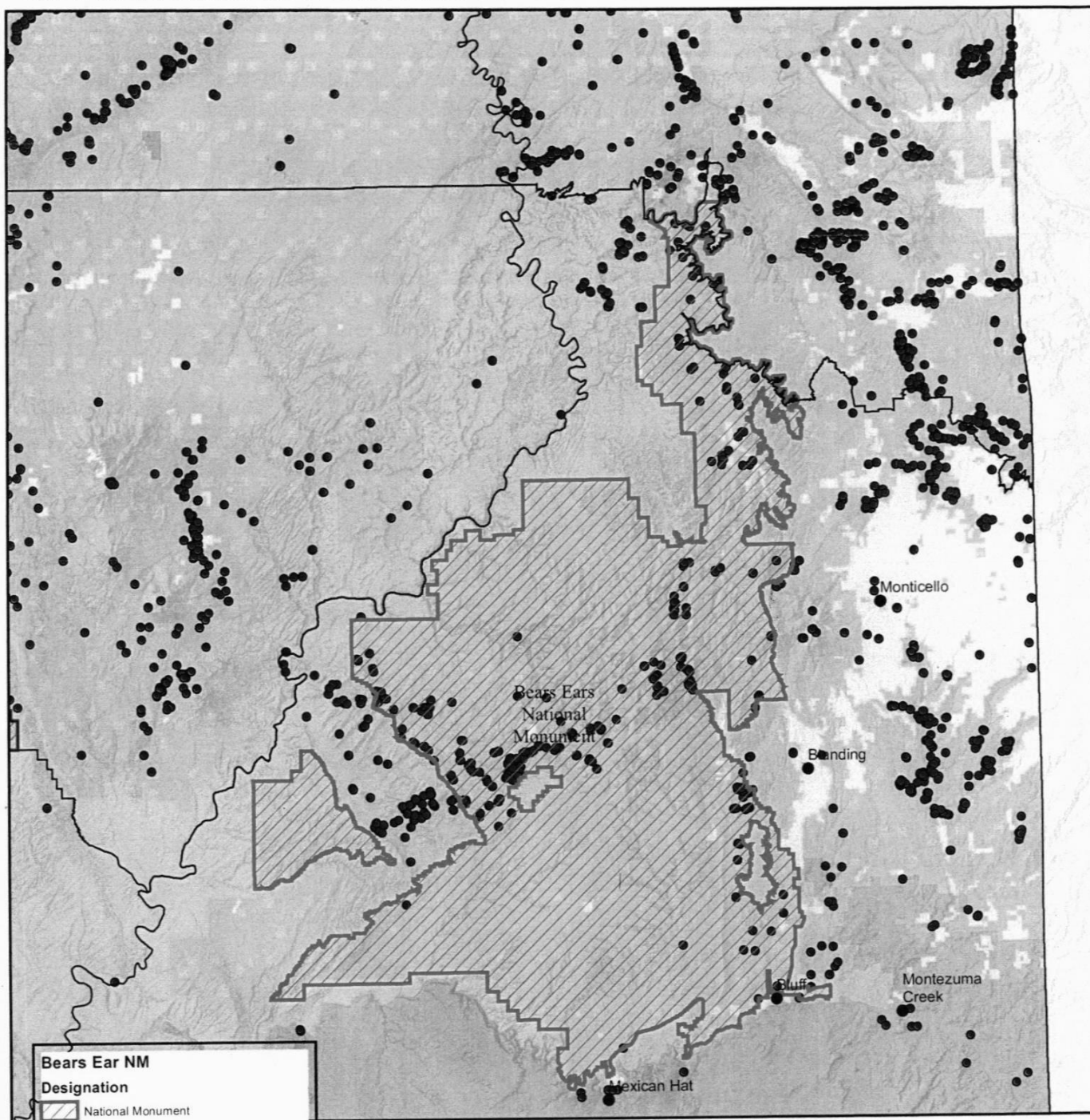


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POTENTIAL AML FEATURES

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Bears Ear NM

Designation

- National Monument
- Potential AML Features

Land Status

- Bureau of Land Management (BLM)
- Indian Reservation (IR)
- National Park Service (NPS)
- Other Federal
- Private
- State
- State Parks and Recreation
- State Wildlife Reserve/Management Area
- US Forest Service (USFS)
- USFS Wilderness Area



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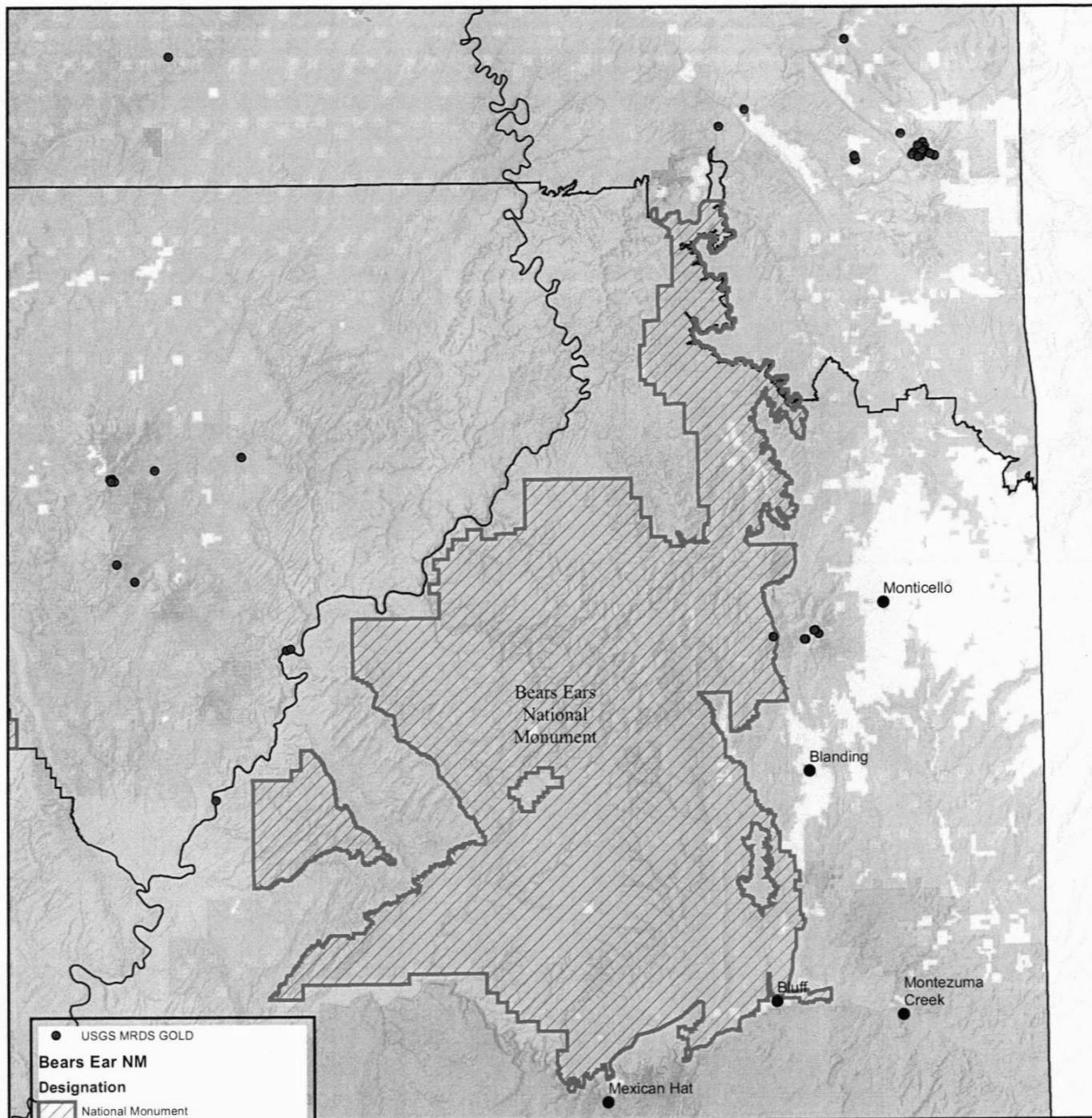


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USGS MINERAL RESOURCE DATA SYSTEM GOLD

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- USGS MRDS GOLD
- Bears Ears NM**
- Designation**
- ▨ National Monument
 - ▭ Field Office Boundary
- Land Status**
- Bureau of Land Management (BLM)
 - Indian Reservation (IR)
 - National Park Service (NPS)
 - Other Federal
 - Private
 - State
 - State Parks and Recreation
 - State Wildlife Reserve/Management Area
 - US Forest Service (USFS)
 - USFS Wilderness Area



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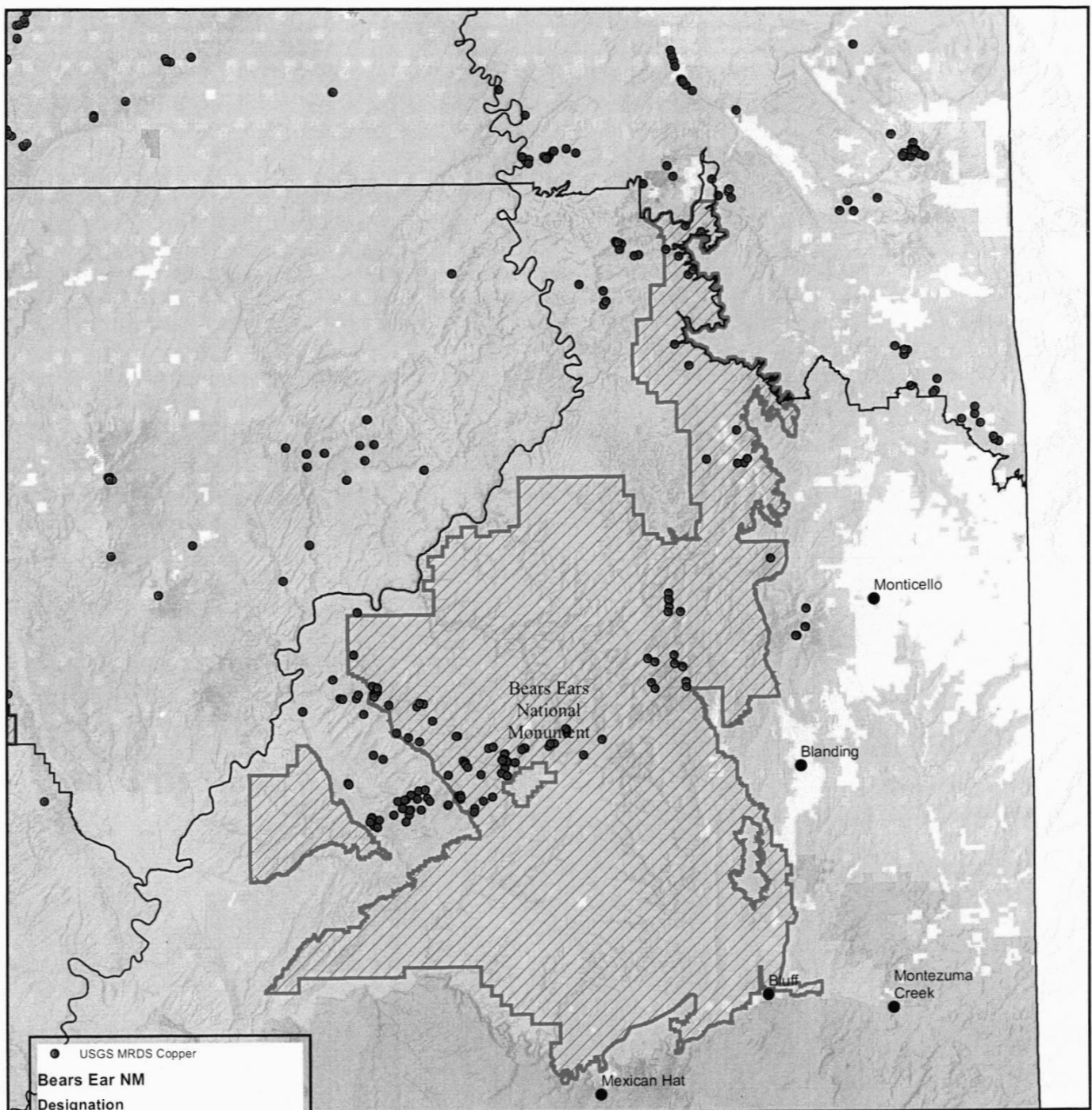
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USGS MINERAL RESOURCE DATA SYSTEM COPPER

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- USGS MRDS Copper
- Bears Ear NM**
- Designation**
- ▨ National Monument
- Land Status**
- Bureau of Land Management (BLM)
- Indian Reservation (IR)
- National Park Service (NPS)
- Other Federal
- Private
- State
- State Parks and Recreation
- State Wildlife Reserve/Management Area
- US Forest Service (USFS)
- USFS Wilderness Area



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Miles



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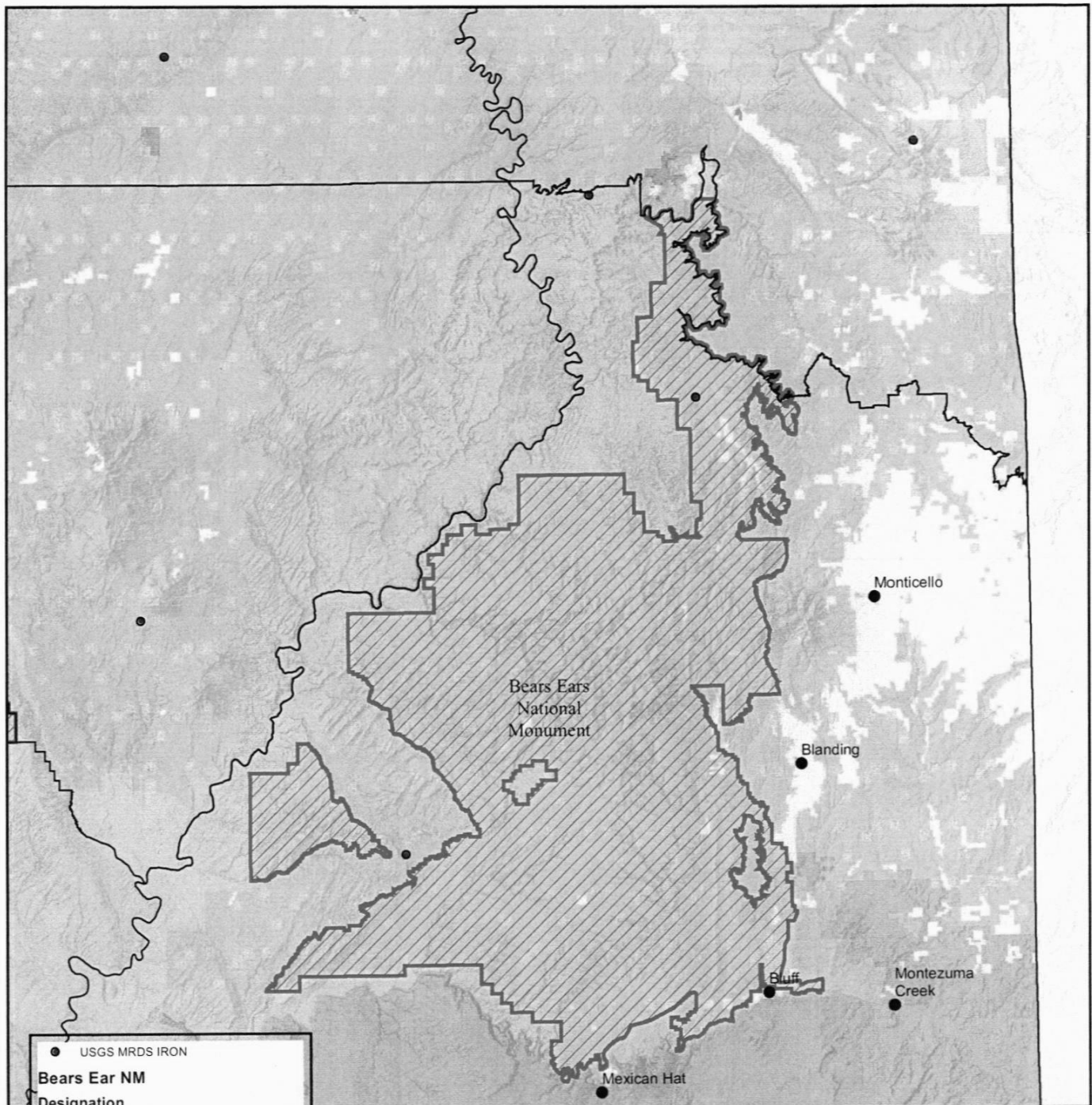
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USGS MINERAL RESOURCE DATA SYSTEM IRON

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● USGS MRDS IRON

Bears Ear NM

Designation

▨ National Monument

Land Status

■ Bureau of Land Management (BLM)

■ Indian Reservation (IR)

■ National Park Service (NPS)

■ Other Federal

■ Private

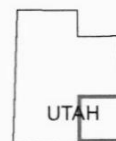
■ State

■ State Parks and Recreation

■ State Wildlife Reserve/Management Area

■ US Forest Service (USFS)

■ USFS Wilderness Area



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March 2, 2017

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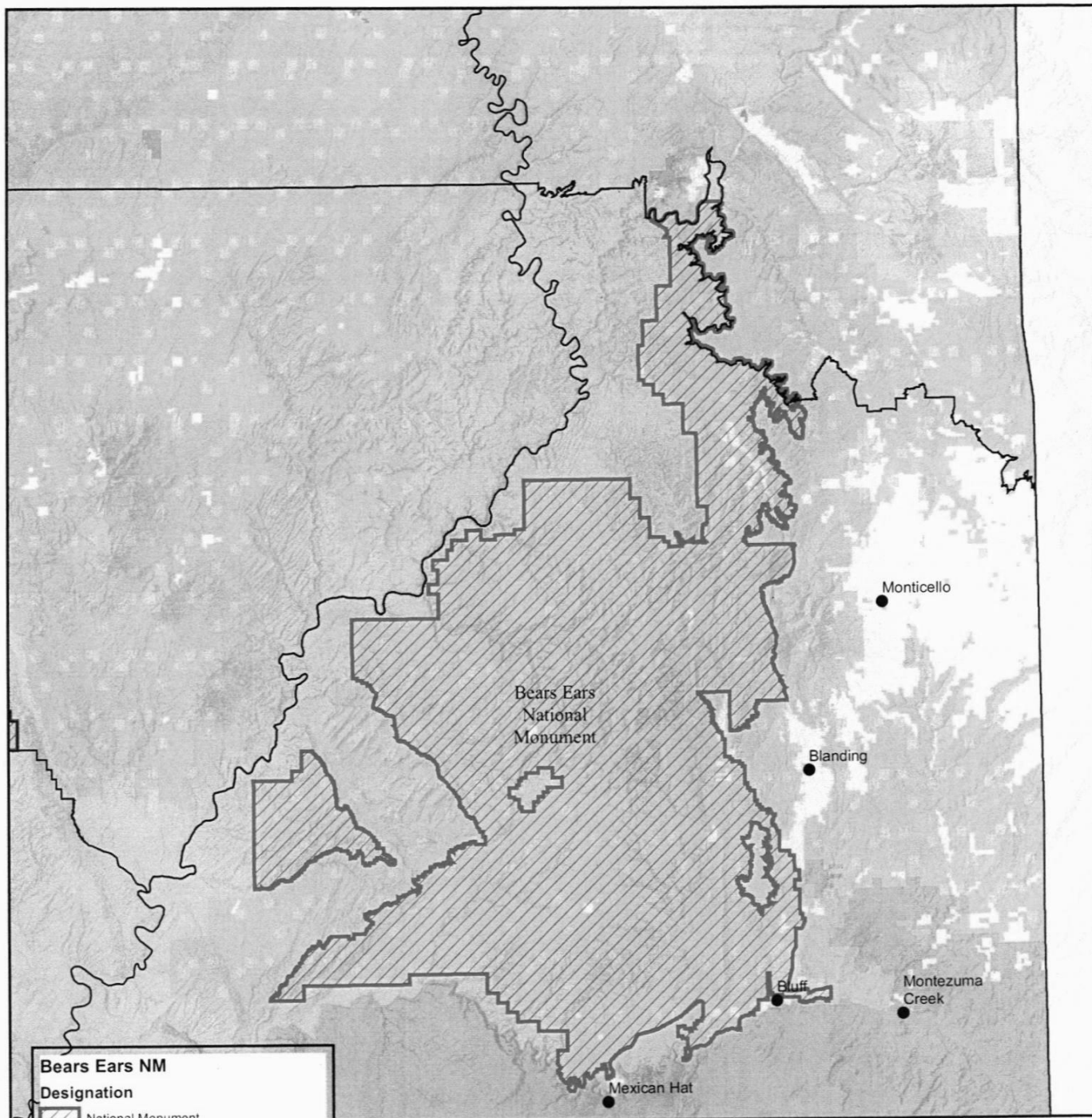


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USGS MINERAL RESOURCE DATA SYSTEM LITHIUM

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Bears Ears NM

Designation

National Monument

Land Status

Bureau of Land Management (BLM)

Indian Reservation (IR)

National Park Service (NPS)

Other Federal

Private

State

State Parks and Recreation

State Wildlife Reserve/Management Area

US Forest Service (USFS)

USFS Wilderness Area



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March 2, 2017

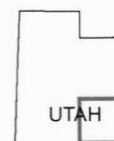
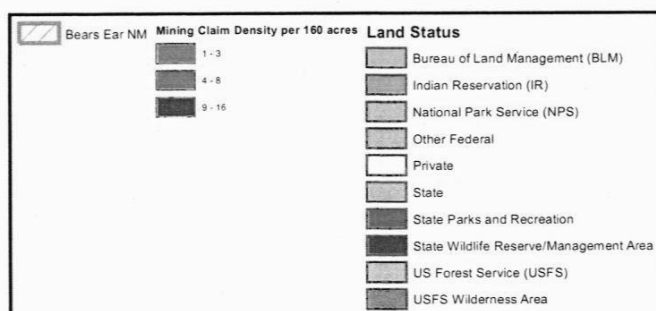
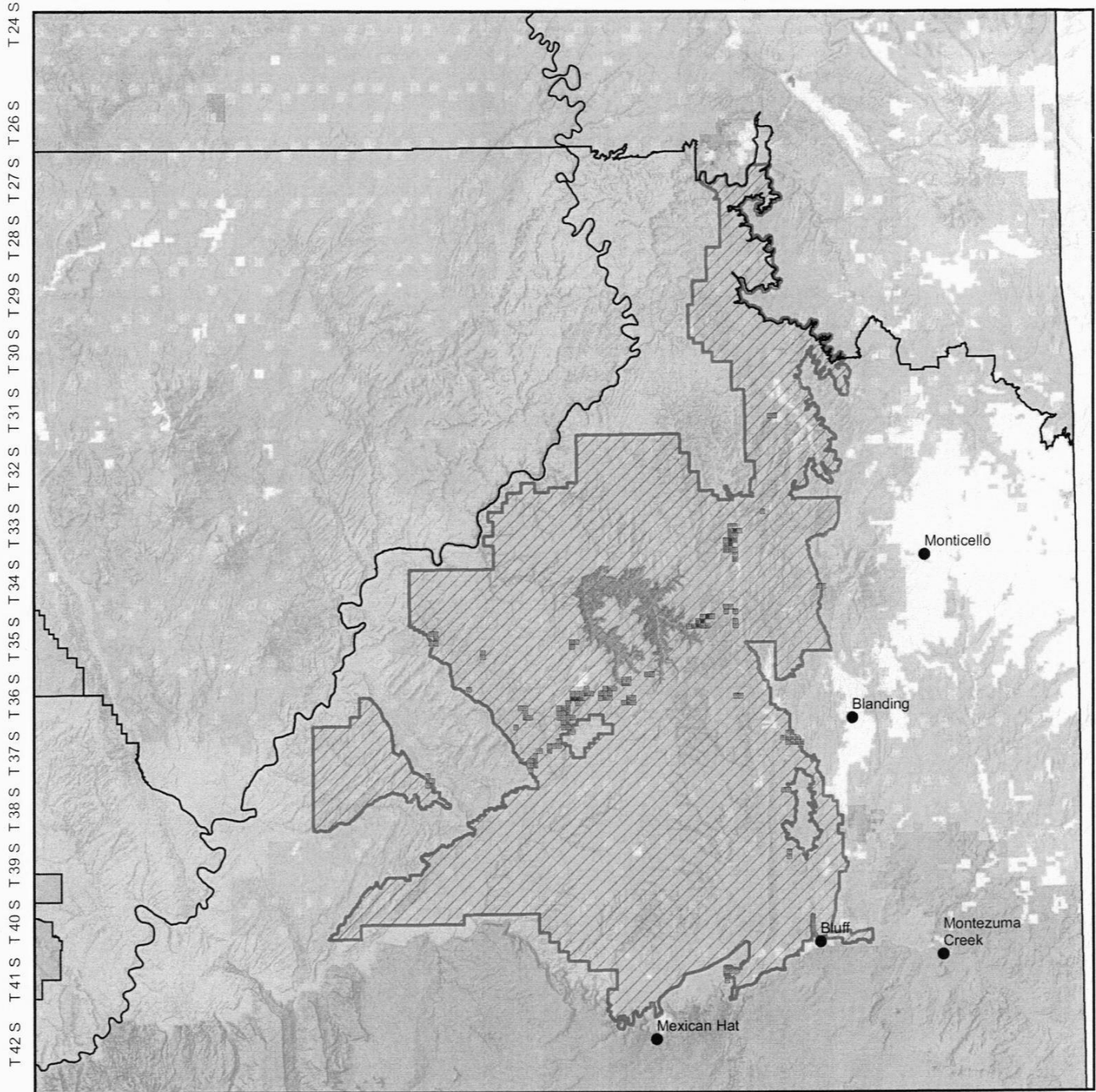
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MINING CLAIMS WITHIN THE BEARS EARS NM AS OF SEPTEMBER 2016

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February 22, 2017

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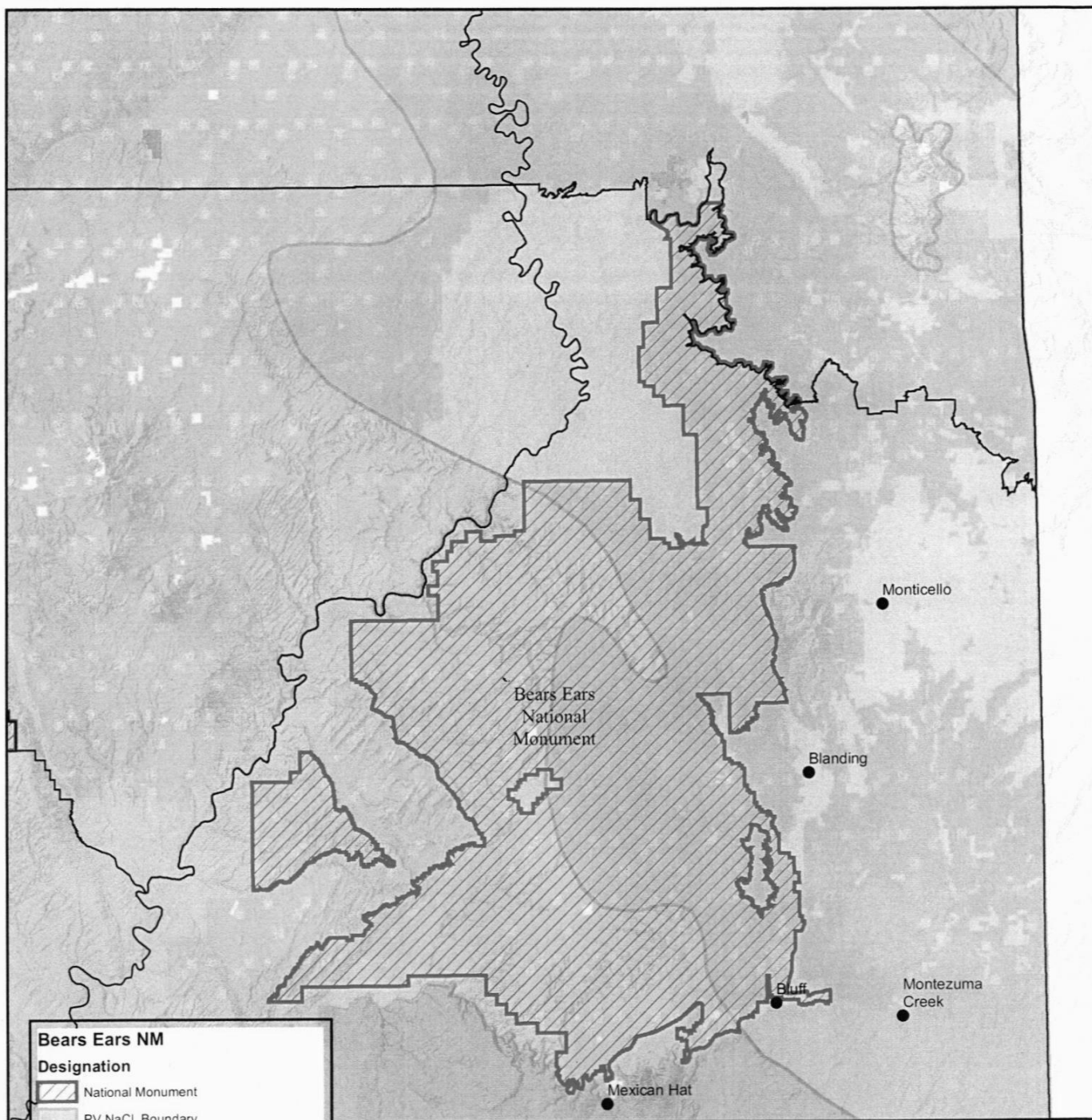
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PROSPECTIVELY VALUABLE FOR SODIUM CHLORIDE

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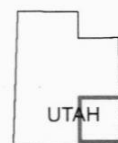
Bears Ears NM

Designation

- National Monument
- PV NaCl Boundary

Land Status

- Bureau of Land Management (BLM)
- Indian Reservation (IR)
- National Park Service (NPS)
- Other Federal
- Private
- State
- State Parks and Recreation
- State Wildlife Reserve/Management Area
- US Forest Service (USFS)
- USFS Wilderness Area



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March 2, 2017

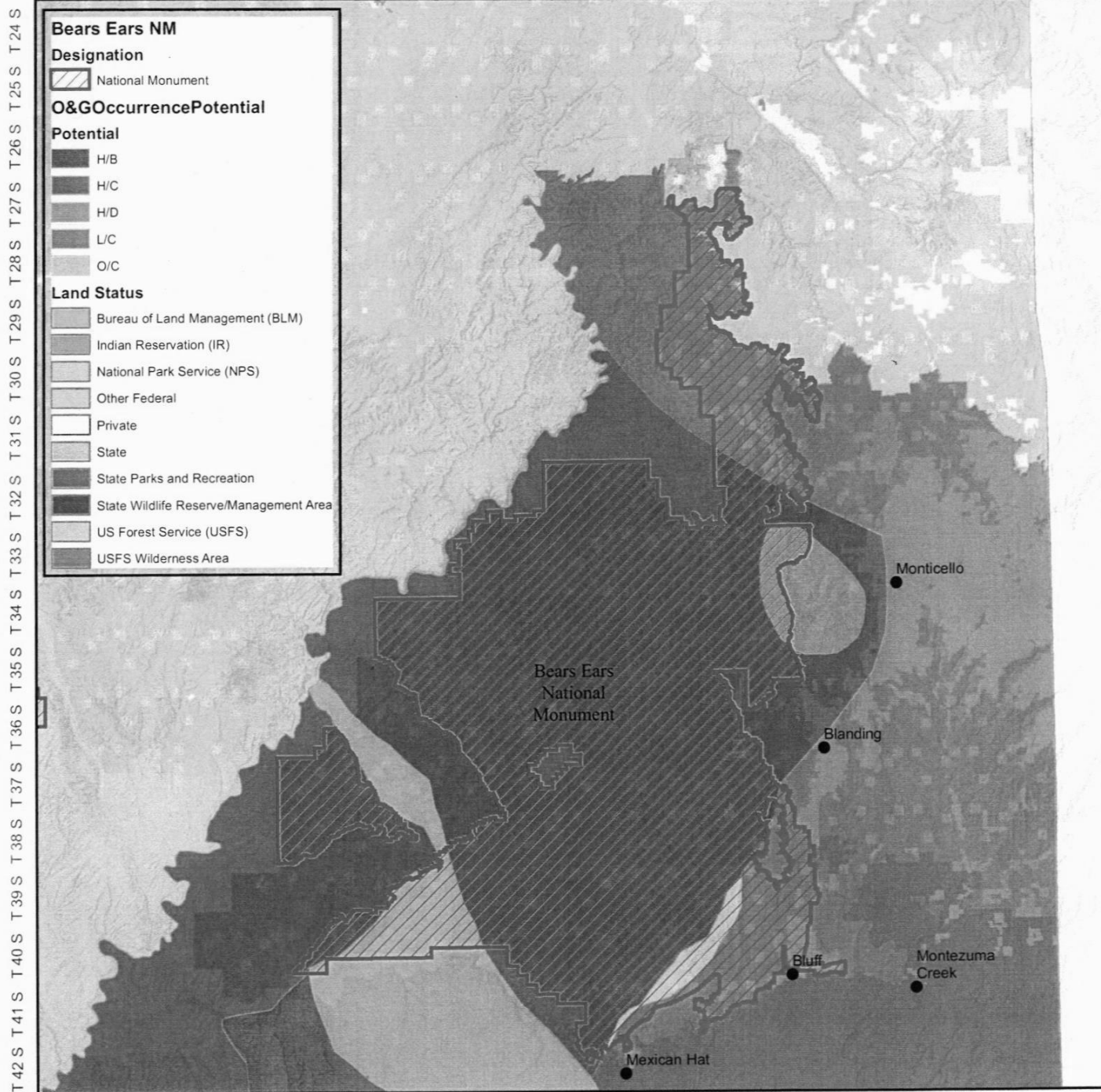
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OIL AND GAS POTENTIAL

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March 2, 2017

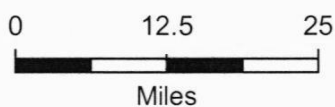
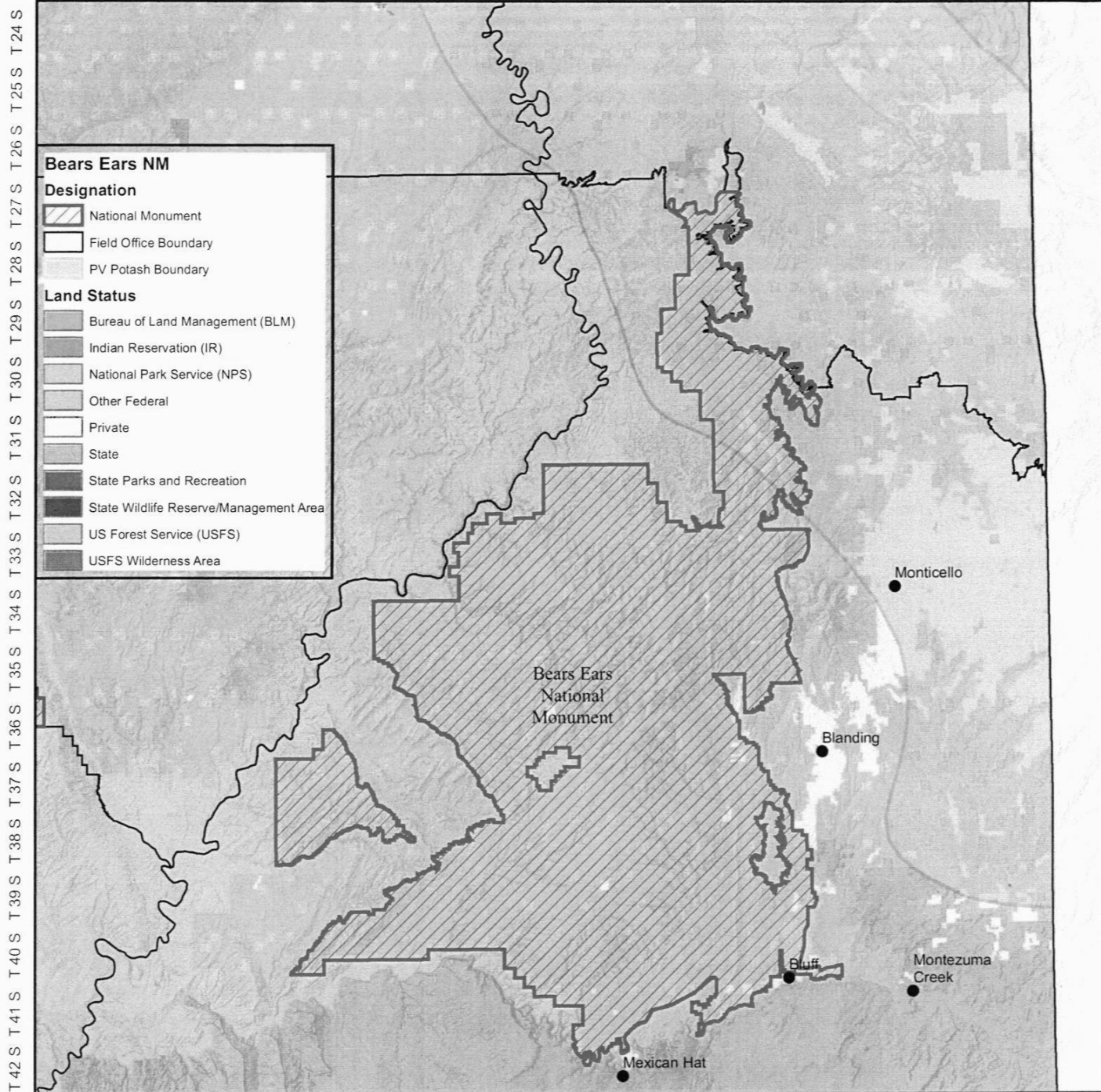
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March 2, 2017

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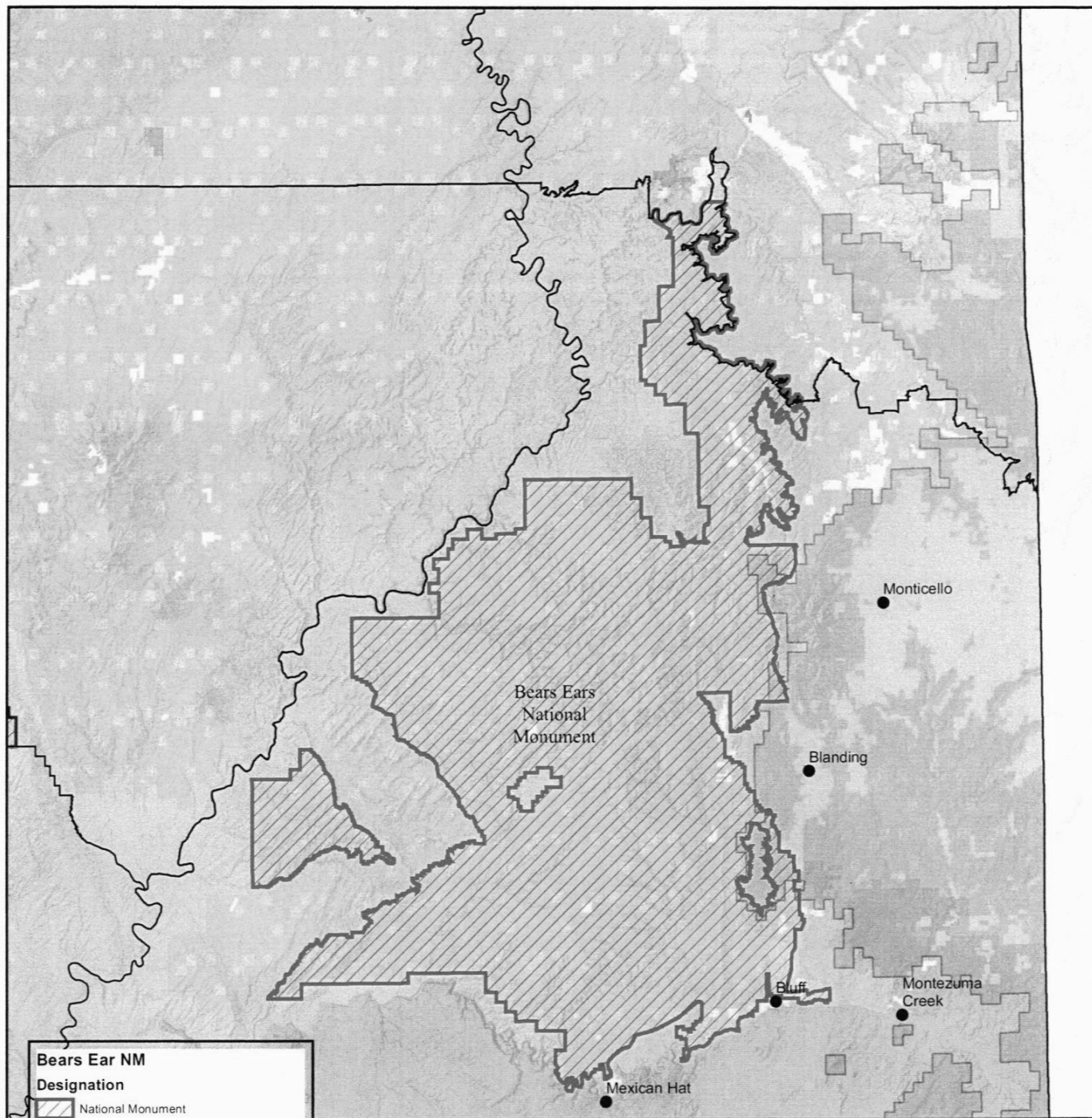


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PROSPECTIVELY VALUABLE FOR COAL

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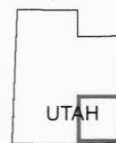


Bears Ear NM Designation

- National Monument
- PV Coal Boundary

Land Status

- Bureau of Land Management (BLM)
- Indian Reservation (IR)
- National Park Service (NPS)
- Other Federal
- Private
- State
- State Parks and Recreation
- State Wildlife Reserve/Management Area
- US Forest Service (USFS)
- USFS Wilderness Area



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Miles



March 2, 2017

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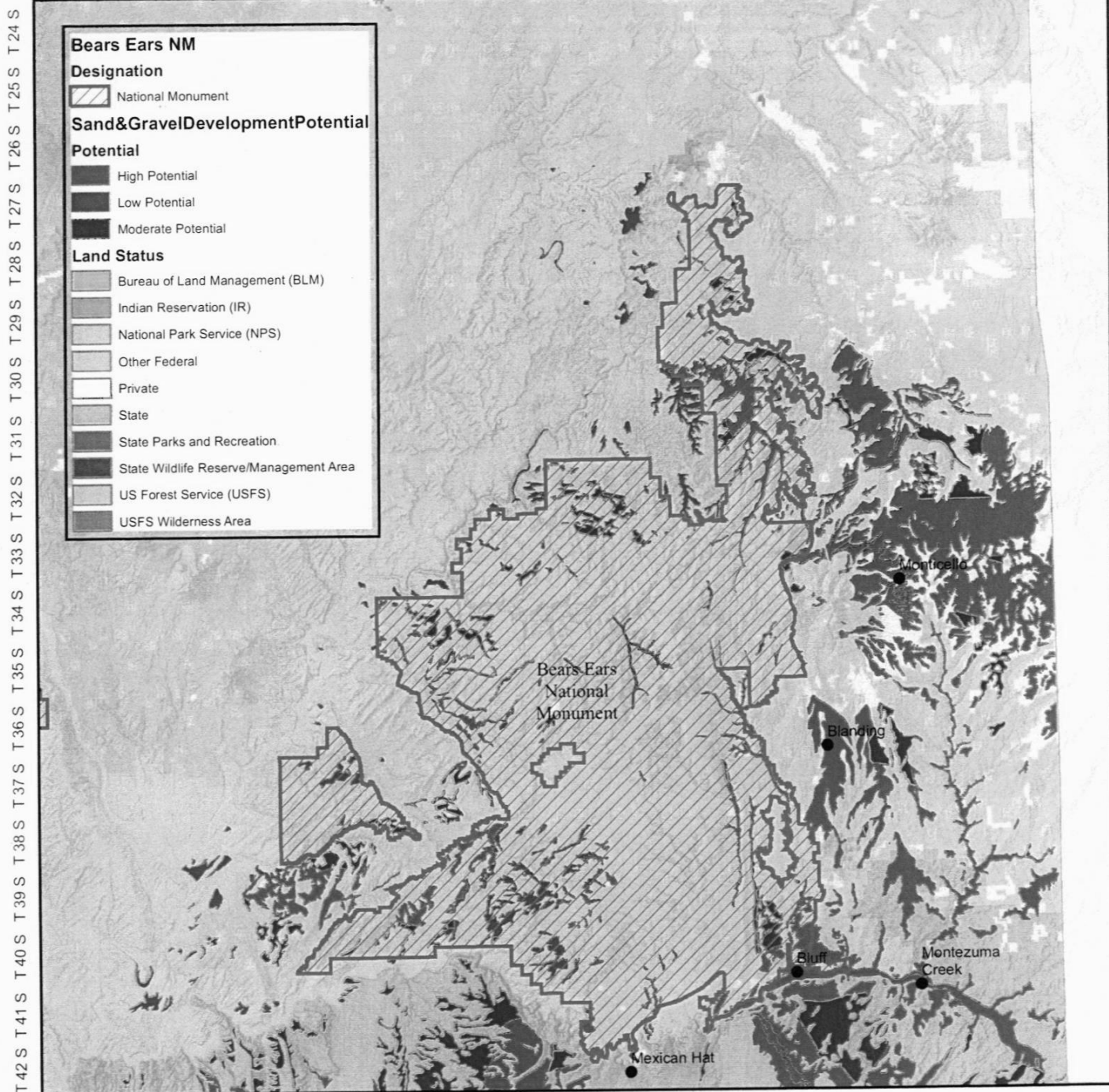
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MINERAL POTENTIAL FOR SAND AND GRAVEL

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Miles



March 2, 2017

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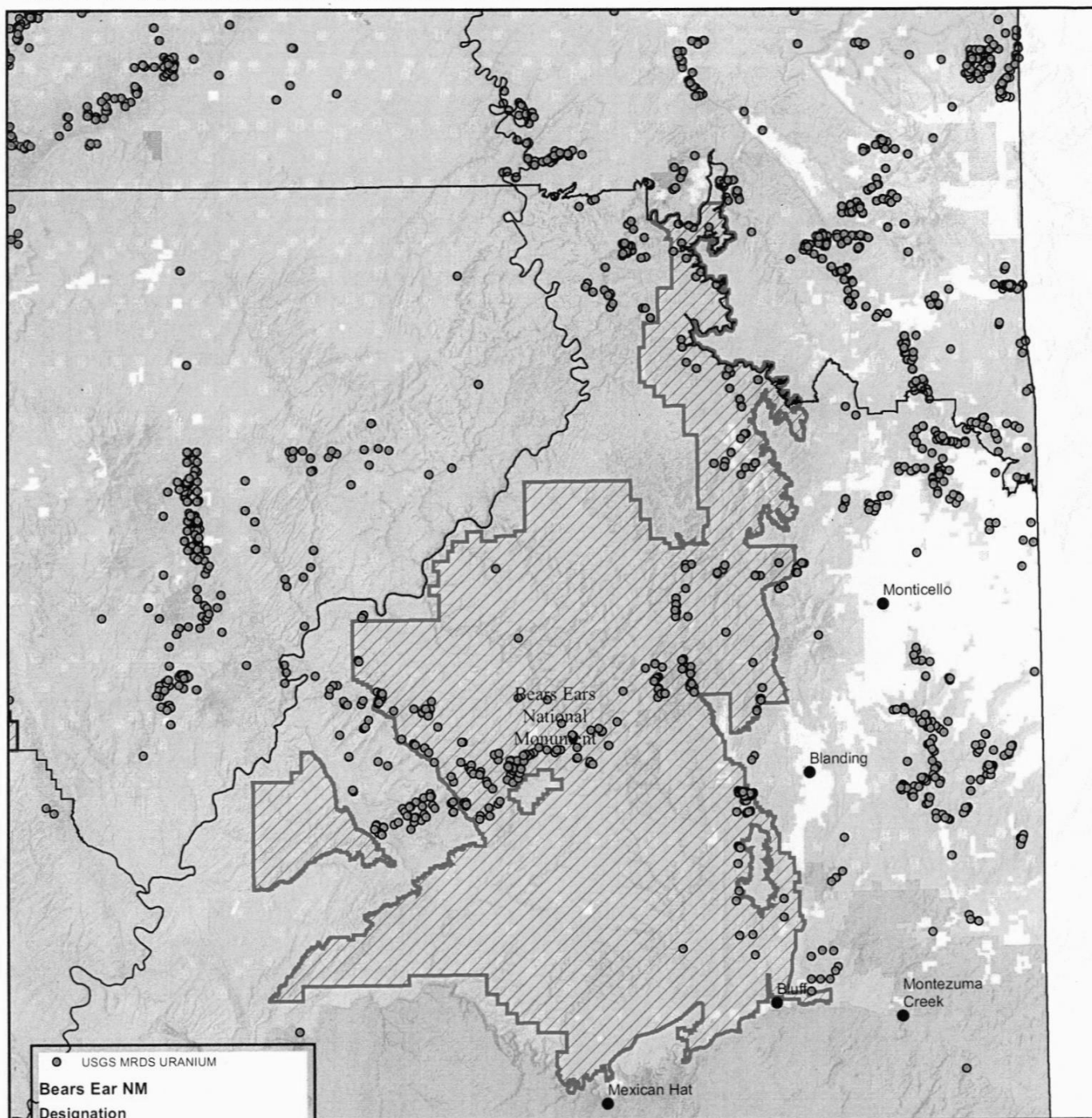
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USGS MINERAL RESOURCE DATA SYSTEM URANIUM

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● USGS MRDS URANIUM

Bears Ear NM

Designation

▨ National Monument

Land Status

■ Bureau of Land Management (BLM)

■ Indian Reservation (IR)

■ National Park Service (NPS)

■ Other Federal

■ Private

■ State

■ State Parks and Recreation

■ State Wildlife Reserve/Management Area

■ US Forest Service (USFS)

■ USFS Wilderness Area



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Miles



March 2, 2017

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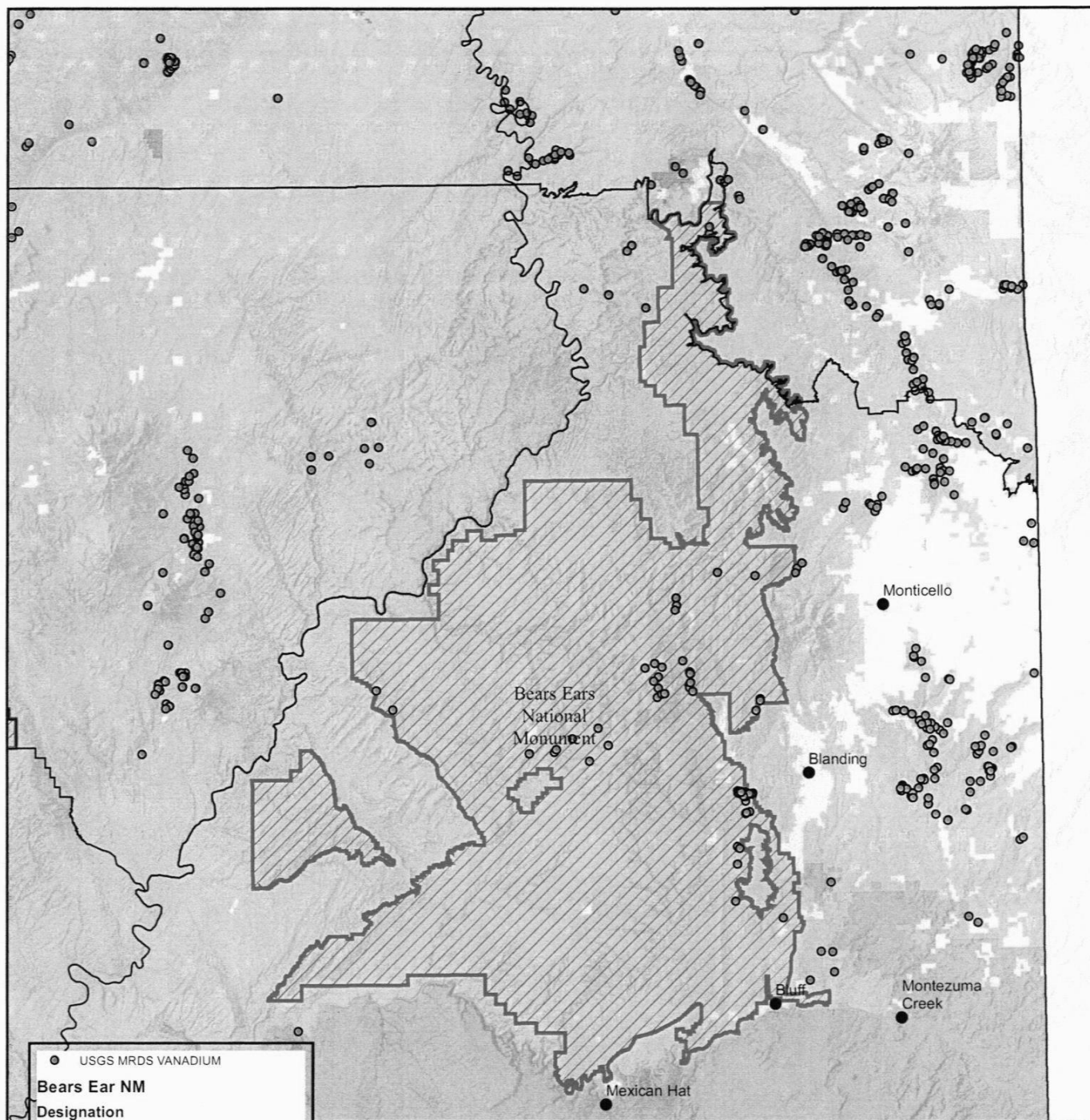
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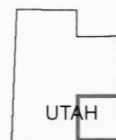
USGS MINERAL RESOURCE DATA SYSTEM VANADIUM

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- USGS MRDS VANADIUM
- Bears Ear NM**
- Designation**
- ▨ National Monument
- Land Status**
- Bureau of Land Management (BLM)
 - Indian Reservation (IR)
 - National Park Service (NPS)
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0 5 10
Miles



March 2, 2017

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