



## Rio Hondo (13060008) HUC-8 Backgrounder

### Introduction

The Rio Hondo sub-basin covers approximately 1,661.87 square miles. The Rio Hondo sub-basin is home to approximately 71,301 people who live in or near the Pecos River floodplain. Just over half of the land belongs to private citizens. Of the 3 counties and 1 tribal entity within the sub-basin, all 3 of the counties participate in the National Flood Insurance Program (NFIP) but the Mescalero Apache do not. The City of Roswell, New Mexico is the only NFIP Community in the watershed that participates in the Community Rating System (CRS). Roswell is a Class 9 CRS Community. As of February 2, 2014 there were approximately 808 NFIP policies within the sub-basin with 110 claims and 2 repetitive loss/severe repetitive loss properties. All 3 counties have DFIRMs but the Mescalero Apache have never been mapped.

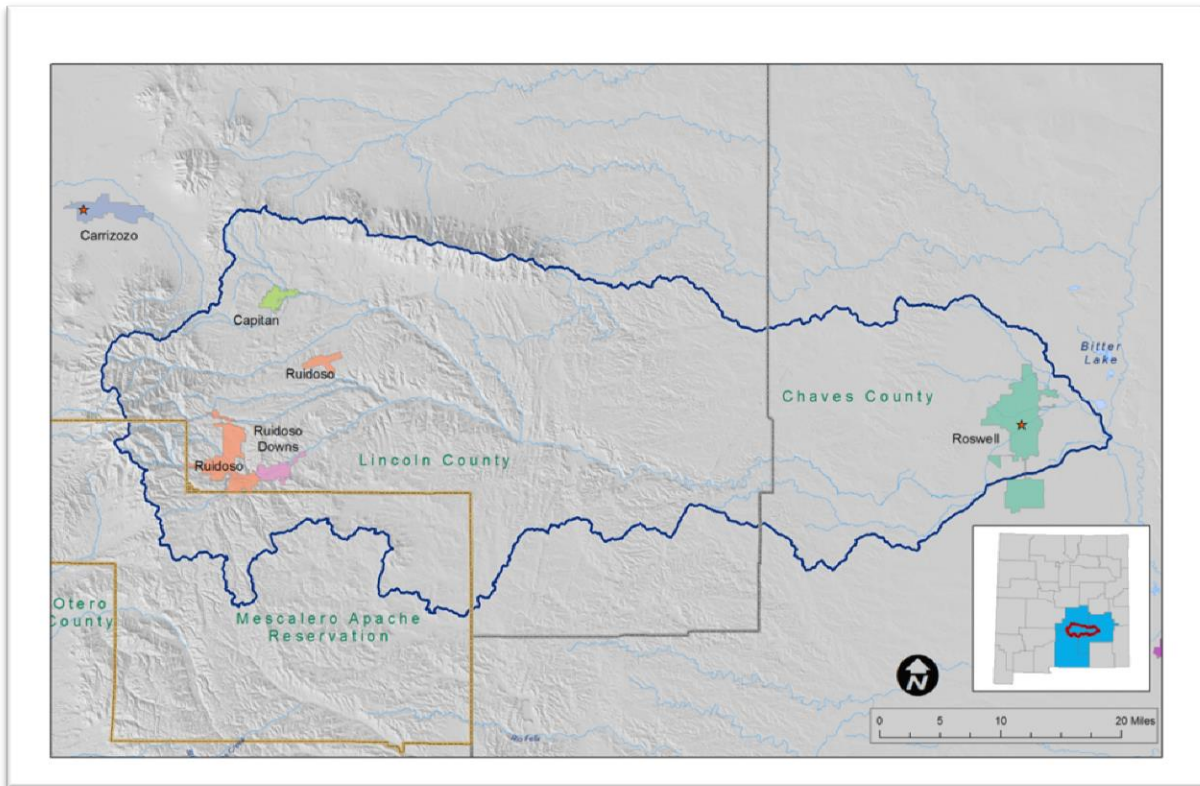


Figure 1 - Rio Hondo Watershed Locator Map

### **What is the risk?**

The Rio Hondo sub-basin has recently been affected by severe flooding and was included in Federal Disaster Declaration DR-4152 on October 29, 2013. In addition to this specific event, the 3 counties within the sub-basin have been in flood related federal disaster declarations 15 times. The Rio Hondo sub-basin has been affected by 20 wildfires between 2000 and 2013 and was included in Federal Fire Management Assistance Grants FM-2979, FM-2935, FM-2518, and FM-2880. The 3 counties have been involved in 10 federal disasters not related to fires or floods. There are 2 flood control dams known as the Two Rivers Dam, along the Rio Hondo and Rocky Arroyo. The Rio Hondo also contains Bonito Lake which is a water source for the City of Alamogordo (not within the Rio Hondo). Parts of the Lake have been closed since the Little Bear fire in 2012.

### **LiDAR data availability**

LiDAR data is available along sections of the Rio Bonito and Eagle Creek in the western end of the sub-basin. LiDAR is also available for the Two Rivers Dam area southwest of Roswell. The available LiDAR data covers approximately 3.57 percent of the total area of the sub-basin.

### **Potential Strategies**

Record monsoonal storm events in September 2013 tested the flood control reservoirs along the Rio Hondo and its tributaries. While the Two Rivers Dam worked as intended during the rain event, extensive flooding still occurred throughout the sub-basin. In spring 2014, extensive flooding occurred in the Roswell area flooding numerous homes and causing damage within a cemetery. By June of 2014, several severe weather events had taken place including tornadoes that destroyed two homes in Lincoln County. With ongoing drought conditions throughout the State of New Mexico, monsoonal flood impacts may continue to represent a threat to the Rio Hondo sub-basin, especially with the Lincoln National Forest's history of wildfires. For instance, The USACE calculated increases in peak runoff due to the Little Bear Fire between 1.2 and 2.8 times the pre-burn 100 year event, depending on the stream reach. All of the counties and communities within the sub-basin, except for Roswell, could be invited to participate in the CRS and the Mescalero Apache could be invited to join the NFIP. Additionally, since the Mescalero have never been mapped, there is an opportunity for new mapping within the sub-basin. One obstacle to map creation or revision is the lack of LiDAR data within the sub-basin.

See below for more detailed data.

## Demographics and Socioeconomic Data

Table 1 - Rio Hondo Counties and Tribal Data

Name	CID	Total Pop	% Pop >=65	% Latino Pop	% Speak a Language Other Than English at Home	% with HS Degree	% of Individuals Below Poverty Level	Housing Units	Area (miles <sup>2</sup> )
<b>Chaves County</b>	350125	65,645	14.1	52.0	20.5	77.9	20.6	26,693	6,075
<b>Lincoln County</b>	350122	20,497	22.0	29.8	23.5	86.2	14.7	17,519	4,831
<b>Mescalero Apache</b>	350041	1,338	5.8	10.7	32.3	76.6	50.9	435	719
<b>Otero County</b>	350044	63,797	14.9	34.7	27.7	83.7	20.7	30,946	6,627

Table 2 - Rio Hondo Populated Places Data

Name	CID	Total Pop	% Pop >=65	% Latino Pop	% Speak a Language Other Than English at Home	% with HS Degree	% of Individuals Below Poverty Level	Housing Units	Area (miles <sup>2</sup> )
<b>Roswell</b>	350006	48,366	14.4	53.4	36.8	79.6	22.3	19,839	29
<b>Capitan</b>	350098	1,489	19.9	36.9	21.5	89.7	13.0	940	3.2
<b>Ruidoso</b>	350033	8,029	25.2	27.1	18.5	86.5	13.6	8,674	14
<b>Ruidoso Downs</b>	350034	2,815	13.1	50.1	41.7	76.0	28.7	1,361	2.1

## Hydrology and Topography

### Precipitation

- 12-16 inches annually except in the high elevation areas which can average 30+ inches of precipitation annually.

### Major Rivers (from West to East)

- Rio Bonito
- Rio Ruidoso
- Rio Hondo
- Rocky Arroyo
- Spring River
- Berrendo River
- Rio Puerco

### Major Dams

- Alto Lake Dam
- Bonito Dam
- Eagle Creek No. 1 Dam
- Grindstone Canyon Dam
- Lake Mescalero Dam
- Two Rivers Dam, USACE (7,825 feet in length, 168,000 acre feet capacity)
  - Diamond A Earth Filled Dam (on the Rio Hondo)
  - Rocky Earth Filled Dam (on the Rocky Arroyo)
- Upper Rio Hondo Site No. 1 Dam

### Major Reservoirs

- Alto Reservoir
- Big Flying H Lake
- Bonito Lake
- Burro Lake
- Cherry Lake
- Circle Diamond Lake
- Deadman Lake
- Deep Lake
- Dry Eagle Lakes
- Eagle Lake
- Eagle Lake No. 2

- Galla Lakes
- Little Lake
- Mare Lake
- Mescalero Lake
- Pothole Lake
- Red Lake
- Ruidoso Reservoir
- Seeping Springs Lakes
- Twin Lakes
- Wire Lake
- Zamora Lake

#### Topographic Features

- The Capitan Mountains on the northern border of the watershed
- The Vera Cruz Mountains on the northwestern border of the watershed
- The Sierra Blanca Mountains on the western border of the watershed

#### Geography

- 1,662 square miles
- Elevations range from 11,920 feet in the west to 3,445 feet in the east

## NFIP Statistics

Table 3 - County NFIP Statistics

Name	CID#	NFIP Status	CRS Rating	FHBM Identified	Current Effective Map Date	FIRM	DFIRM
Chaves	350125	Yes	N/A	6/13/1978	9/25/2009	Yes	Yes
Lincoln	350122	Yes	N/A	3/28/1978	11/16/2011	Yes	Yes
Otero	350044	Yes	N/A	8/9/1974	12/17/2010	Yes	Yes

Table 4 - Community NFIP Statistics

Name	CID#	NFIP Status	CRS Rating	FHBM Identified	Current Effective Map Date	FIRM	DFIRM
Capitan, Village of	350098	Yes	N/A	6/25/1976	11/16/2011	Yes	Yes
Roswell, City of	350006	Yes	9	6/14/1974	9/25/2009	Yes	Yes
Ruidoso, Village of	350033	Yes	N/A	6/7/1974	11/16/2011	Yes	Yes
Ruidoso Downs, City of	350034	Yes	N/A	5/31/1974	11/16/2011	Yes	Yes

Table 5 - Tribal NFIP Statistics

Name	CID#	NFIP Status	CRS Rating	FHBM Identified	Current Effective Map Date	FIRM	DFIRM
Mescalero Apache	350041	No	N/A	N/A	N/A	No	No

Table 6 – Repetitive Loss/Severe Repetitive Loss Statistics, as of February 2, 2014

		Total		
HUC-8	Name	NFIP Policies	NFIP Claims	Repetitive Loss/Severe Repetitive Loss
13060008	Rio Hondo	808	110	2

## NVUE Statistics

Table 7 - NVUE and NHD Statistics

HUC8	Name		NHDPER (miles)	NHDINT (miles)	NHDTOTAL (miles)
<b>13060008</b>	Rio Hondo		185.38	3566.98	3752.36
		<b>NVUE Valid</b>	<b>NVUE Unknown</b>	<b>NVUE Unverified</b>	<b>NVUE Total</b>
		366.75	115.27	5.50	487.52

## Hazard Mitigation Plan

Table 8 - HMP Status

	Has Plan	Working on New Plan	No Plan
<b>Chaves</b>		x	
<b>Lincoln</b>	x		
<b>Otero</b>	x		

## Disasters

### Disaster Declarations

There have been 28 federally declared disasters in the three counties that comprise the Rio Hondo Watershed since 1965. The majority of those disaster declarations are related to flooding.

Table 9 - Federal Disaster Declarations by County

County	Total Disasters	Fire Disasters	Flooding Disasters
<b>Chaves</b>	4	1	2
<b>Lincoln</b>	15	1	9
<b>Otero</b>	9	1	4

### Wildfires

There have been 20 fires within the Rio Hondo Watershed since 2000 totaling over 313 square miles.

Table 10 - Wildfires by Year

Year	No. of Fires	Acreage
<b>2000</b>	3	6,765.4
<b>2002</b>	1	13,815.9
<b>2004</b>	1	23,938.7
<b>2005*</b>	1	1,346.5
<b>2006</b>	1	4,022.8
<b>2008</b>	1	1,659.4
<b>2009</b>	3	17,548.6
<b>2010</b>	2	3,269.7
<b>2011</b>	5	83,265.3
<b>2012</b>	2	44,845.7
<b>Total</b>	20	200,478.1

\*Prescribed Burn



## Critical Infrastructure

The Community Anchor Site Assessment (CASA) data is maintained through the New Mexico Broadband mapping program and consists of an inventory of local and state public institutions. The following data is from the Community Anchor Site Assessment Version 2, Accessed June 6, 2014

- 1 of 32 K-12 Schools are within the SFHA
- 0 of 3 Institutes of Higher Education within the SFHA
- 3 of 27 Government offices within the SFHA
- 0 of 8 Health Centers within the SFHA
- 1 of 8 Medical facilities within the SFHA
- 0 of 4 Libraries within the SFHA
- 0 of 3 Non-Governmental offices within the SFHA
- 0 of 13 Law Enforcement stations within the SFHA
- 3 of 24 Fire Stations within the SFHA
- 0 of 3 Emergency Operations Centers within the SFHA

See table below for details on each facility within the SFHA

Table 11 - Facilities within the SFHA

Category	Name	Address	City	County	State	Zip	Latitude	Longitude	Phone
<b>K-12</b>	Missouri Avenue Elementary	700 South Missouri Ave.	Roswell	Chaves	NM	88201	33.399867	-104.530442	575-637-3450
<b>Government Community Resources</b>	Roswell Adult Center	807 N Missouri	Roswell	NM	NM	88201	33.401429	-104.530317	575-624-6718
	New Mexico Human Services Department - Income Support Division	1701 S Sunset Ave	Roswell	NM	NM	88203	33.371349	-104.541075	575-625-3000
	New Mexico Motor Vehicle Division - Capitan	114 Lincoln	Capitan	NM	NM	88316	33.545394	-105.57301	575-354-2247
<b>Medical</b>	Sunset Villa Care Center	1515 South Sunset Avenue	Roswell	Chaves	NM	88203	33.37473	-104.540507	575-623-7097
<b>Fire Stations</b>	Ruidoso Fire Department Station 2	606 White Mountain Drive	Ruidoso	Lincoln	NM	88345	33.367651	-105.660946	575-258-3482
	Bonito Volunteer Fire Department - Copper Canyon Station	State Highway 48	Capitan	Lincoln	NM	88316	33.447418	-105.660559	575-336-4308
	Bonito Volunteer Fire Department - Angus Canyon Station	State Highway 37	Capitan	Lincoln	NM	88316	33.448385	-105.663988	575-336-4308

# NM Rio Hondo Watershed, HUC8 13060008

## LiDAR Coverage

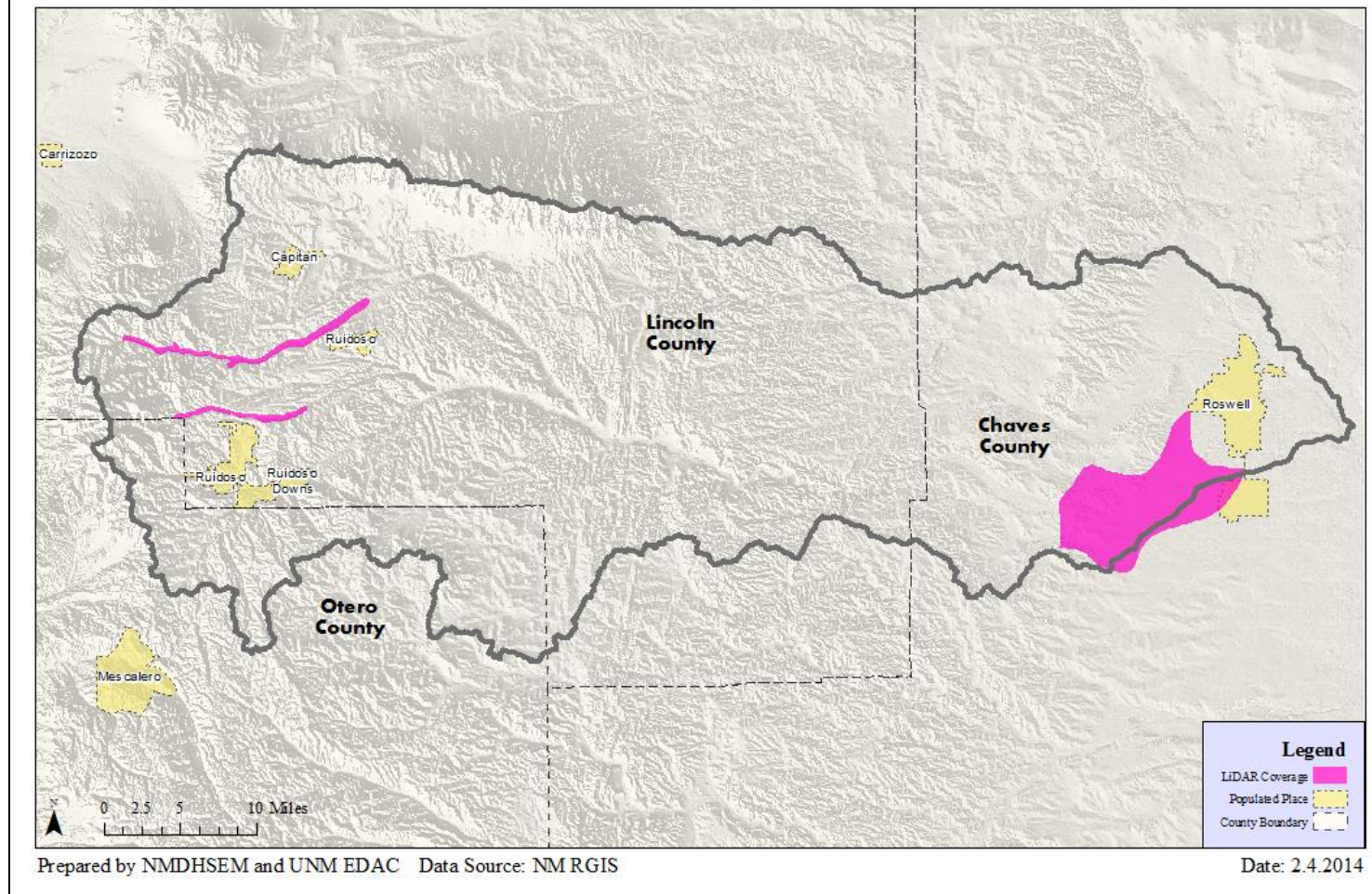


Figure 2- Lidar Coverage

# NM Rio Hondo Watershed, HUC8 13060008

## Land Ownership

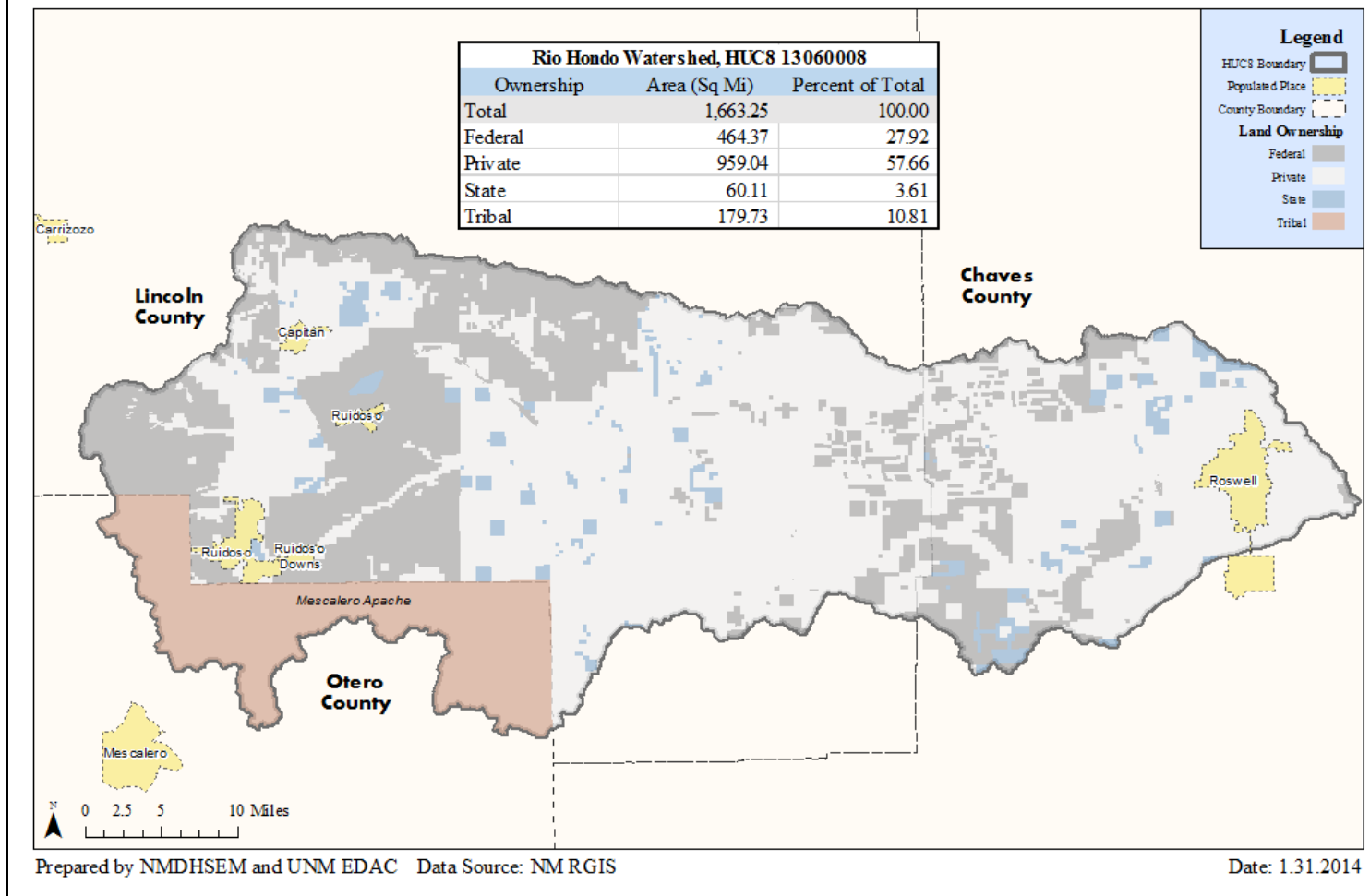


Figure 3 - Land Ownership

# NM Rio Hondo Watershed, HUC8 13060008

Wildfires 2008–2013

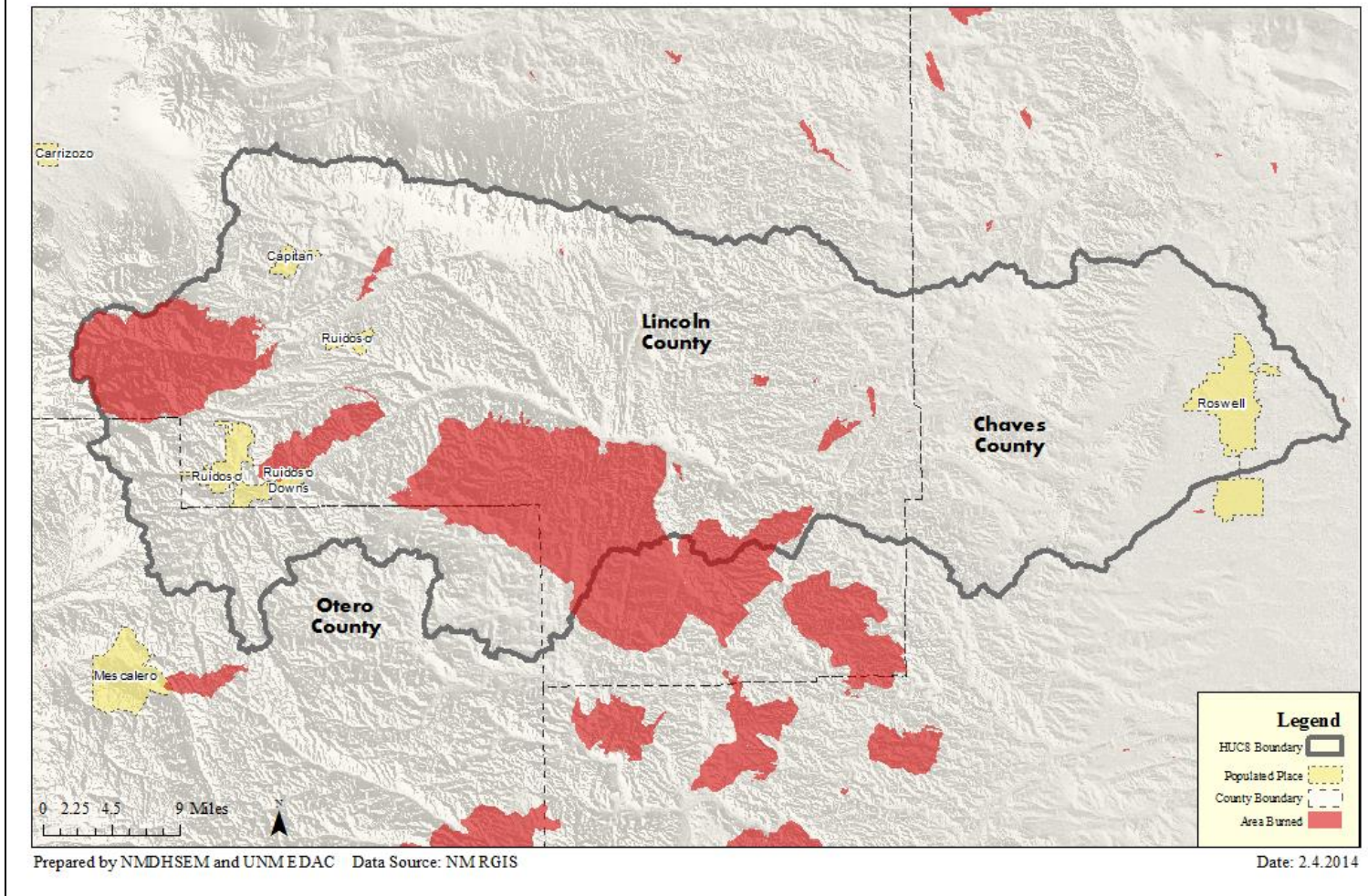


Figure 4 - Wildfire Boundaries, 2008-2013