# 1.0 INTRODUCTION

The Powder River Basin (PRB) of Wyoming and Montana is a major energy development area with diverse environmental values. The PRB is the largest coal-producing region in the United States (U.S.); PRB coal is used to generate electricity both within and outside the region. The PRB also has and continues to produce large quantities of oil and natural gas resources. Within the last decade, this region has experienced nationally significant development of natural gas from coal seams.

This PRB Coal Review is a regional technical study to assess cumulative impacts associated with past, present, and reasonably foreseeable development (RFD) in the PRB. For purposes of this study, the Wyoming portion of the PRB study area (**Figure 1-1**) comprises all of Campbell County, all of Sheridan and Johnson counties less the Bighorn National Forest lands to the west of the PRB, and the northern portion of Converse County. It includes all of the area administered by the Bureau of Land Management (BLM) Buffalo Field Office, a portion of the area administered by the BLM Casper Field Office, and a portion of the Thunder Basin National Grasslands (TBNG), which is administered by the U.S. Department of Agriculture, Forest Service (FS) (**Figure 1-2**). The Montana portion of the PRB study area (**Figure 1-1**) comprises the area of relevant coal mines and the air quality study area and includes the lands administered by the BLM Miles City Field Office (**Figure 1-2**). State and privately owned lands also are included in the PRB study area (**Figure 1-3**).

As shown in **Figure 1-3**, the majority of the surface ownership in the PRB study area is private. Conversely, the majority of the mineral ownership in the study area is federal (**Figure 1-4**). Federal mineral ownership may include all minerals in some locations and only specific minerals (e.g., coal or oil and gas) in other locations. As a result, split-estates (where the surface ownership is different than the mineral ownership) exist in a large portion of the PRB.

The Task 2 component of the PRB Coal Review defines the past and present development actions in the study area that have contributed to the current environmental and socioeconomic conditions in the PRB study area. This report also defines the projected RFD scenarios in the Wyoming and Montana PRB for years 2010, 2015, and 2020. For the Wyoming PRB, the past and present development and RFD scenarios include coal mine development as well as coal-related activities (e.g., railroads and coal-fired power plants) and non-coal-related activities (e.g., other minerals, coal bed natural gas [CBNG], and conventional oil and gas). Coal mine development and coal-related activities in the Montana PRB study area are included in this study to facilitate the concurrent development of the Miles City Resource Management Plan (RMP). The past and present activities identified in this report are based on the most recent data available at the end of 2003 and provide the basis for the resource-specific descriptions of current conditions presented in the PRB Coal Review Task 1 reports.

The RFD scenarios presented in this report provide the basis for the analysis of potential cumulative impacts in the Task 3 component of the study. The accuracy of any projected cumulative impact analysis is dependent on the adequacy and accuracy of information regarding potential future development activities in the affected area. While it is impossible to identify all potential future activities over the next 15 years, it is possible and desirable to identify RFDs based on current industry announcements, agency plans, economic trends, and technological advances affecting major industry sectors. Information regarding potential new development is constantly changing;

however, to facilitate development of the information in this study, the RFDs identified in this report reflect information available through the end of 2004.

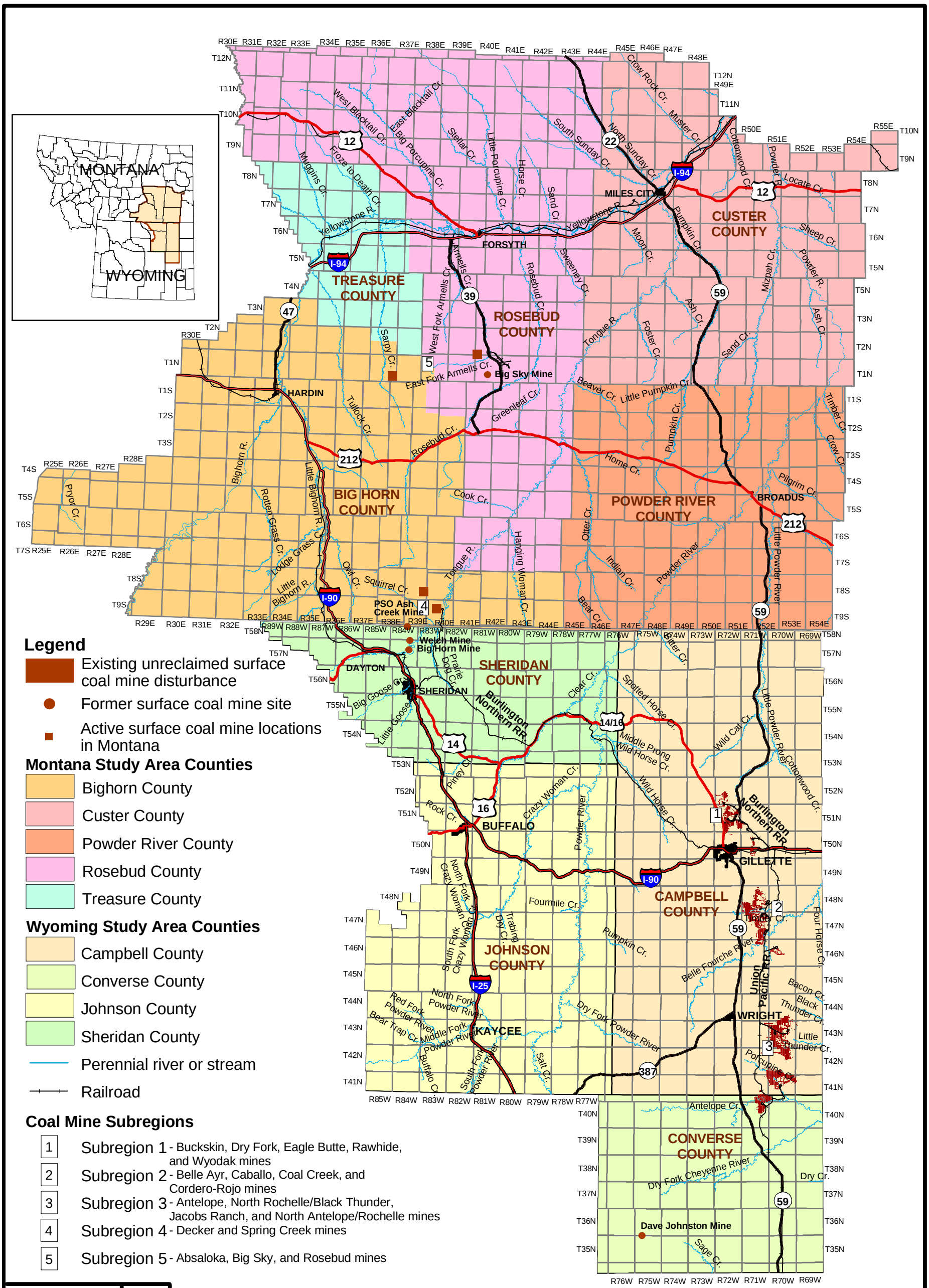
The past and present actions in this report were identified based on information in existing National Environmental Policy Act (NEPA) documents on file with federal and state agencies, and the Coal Development Status Check (BLM 1996). The RFD scenarios in this report were developed based on recent information that identifies proposed and anticipated development in the PRB, including NEPA documents; various other technical reports and studies; federal, state, and local (county) agency management plans; and permit applications. The specific development scenarios and development activities identified in these sources were assessed as to their current status prior to inclusion in the RFD scenarios for the PRB Coal Review. In addition, potential additional projects were identified through interviews with agency and industry representatives, review of published news articles and trade publications, and discussions with community leaders.

The identified RFD activities subsequently were evaluated as to their probability for occurrence. Due to the lack of detailed information for many developments beyond the next few years, the degree of uncertainty associated with the predicted developments and trends increases as the timeframe extends further into the future.

For each of the past and present and RFD projects and activities, project-specific impact-causing parameters (e.g., disturbance acreage, emission levels, employment levels, etc.) have been compiled from the sources identified above. Where specific information was unavailable, assumptions were developed and included based on typical industry-specific standards, permit criteria for similar existing industries, and professional judgment.

In order to account for the variables associated with future coal production, two detailed coal production scenarios (reflecting upper and lower production estimates) were projected for this study to bracket the most likely foreseeable regional coal production level and to provide a basis for quantification of related impact-causing parameters. These future production levels were derived from the analysis of historic production levels and current PRB coal market forecasts, public and private information sources, and input from individual PRB coal operators.

The methodology used to define the past and present and RFD activities is summarized in Chapter 2.0. Information specific to the past and present and RFD activities identified for this study is summarized in Chapter 3.0. The summary of the associated impact-causing parameters is provided in Appendices A through D of this report.




Note: Existing unreclaimed coal mine disturbance footprints were not available for the Montana mine sites.

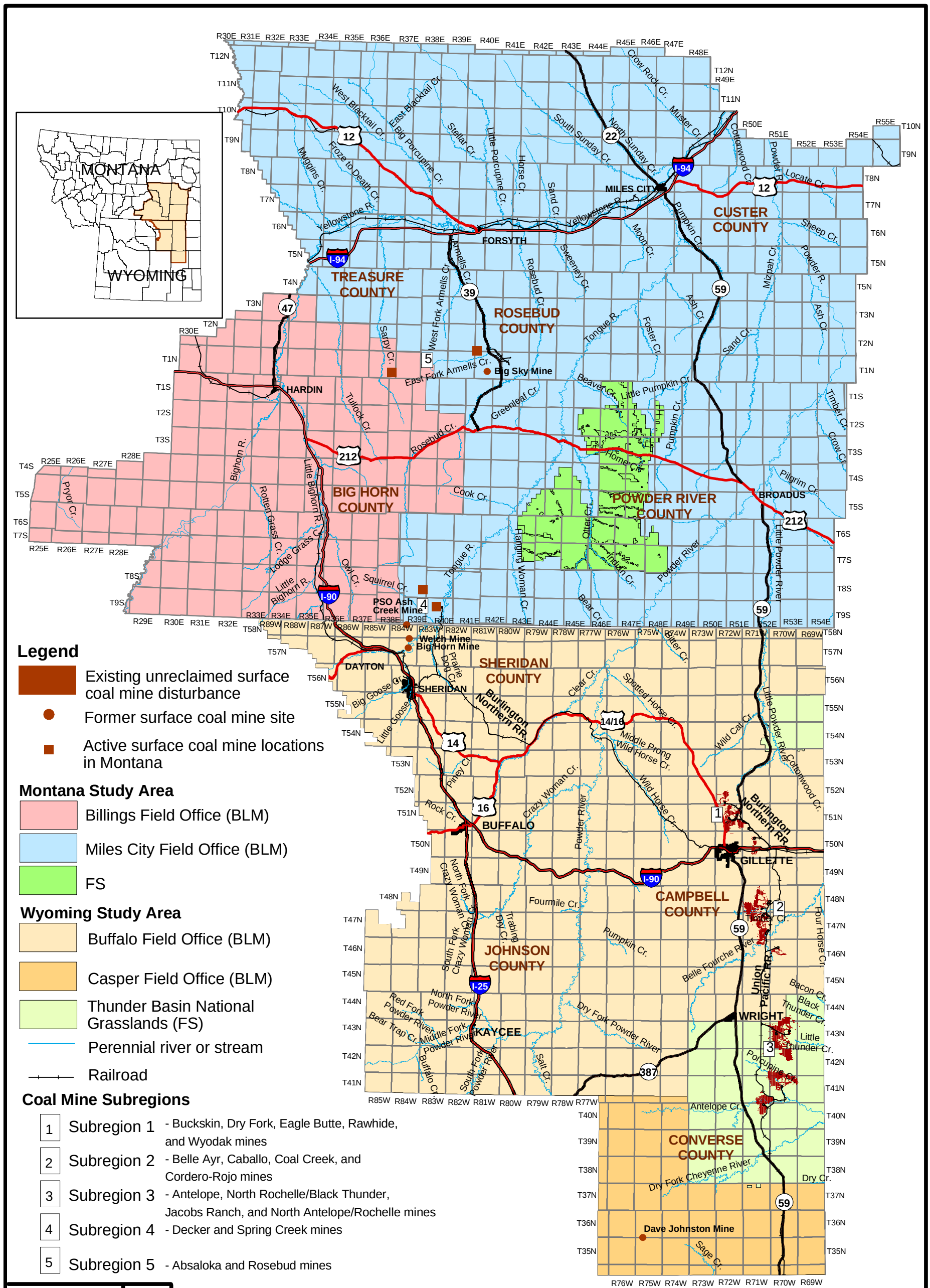
Source: BLM 2003, 2004; Thunder Basin Coal Company, 2003; http://nris.state.mt.us/gis/gisdatalib.

**Powder River Basin Coal Review**

Figure 1-1

Montana and Wyoming Study Area

10/20/05




Note: Existing unreclaimed coal mine disturbance footprints were not available for the Montana mine sites.

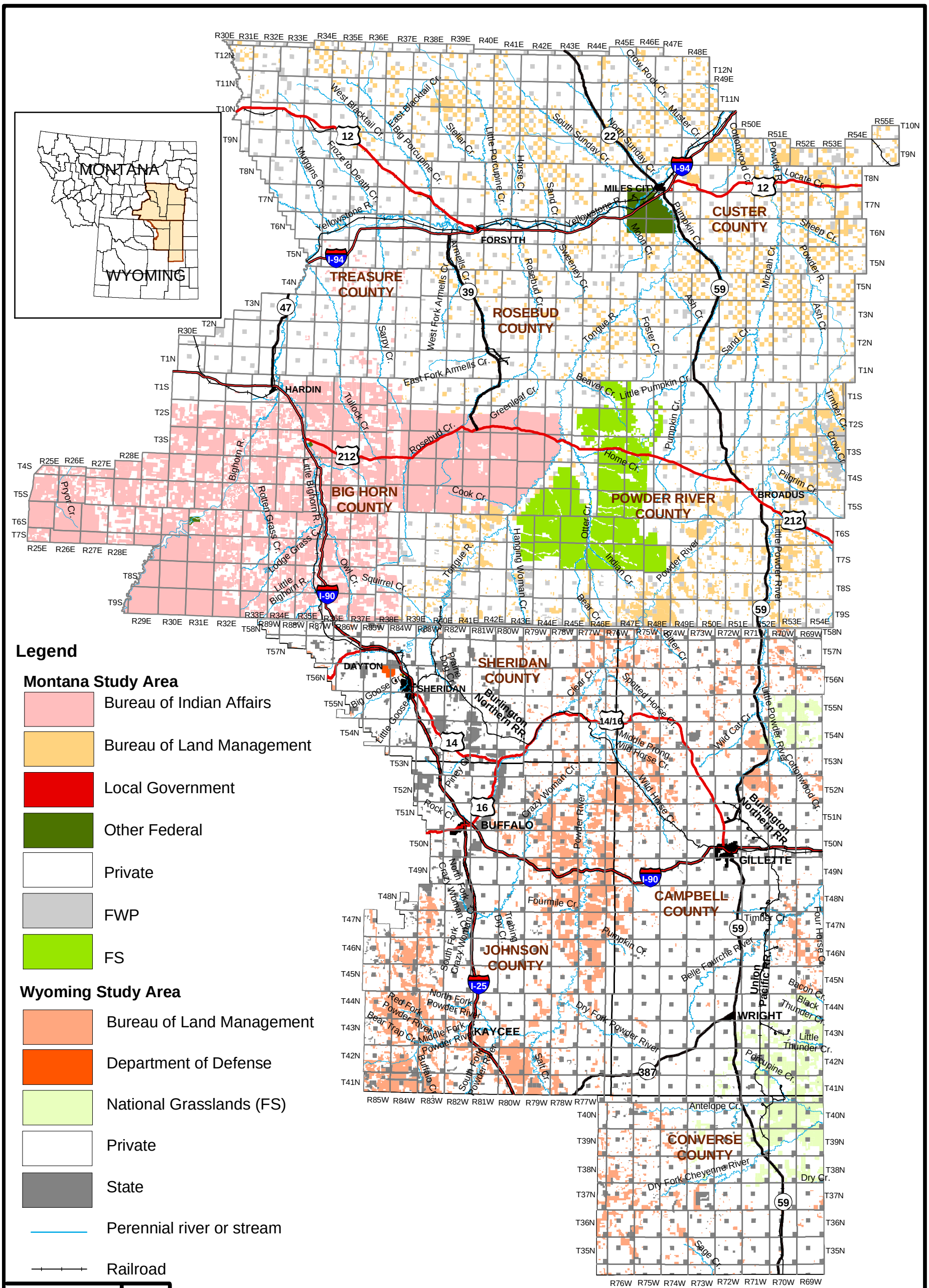
Source: BLM 2003, 2004; Thunder Basin Coal Company, 2003; http://nris.state.mt.us/gis/gisdatalib.

**Powder River Basin Coal Review**

Figure 1-2

Federal Land Management

10/20/05



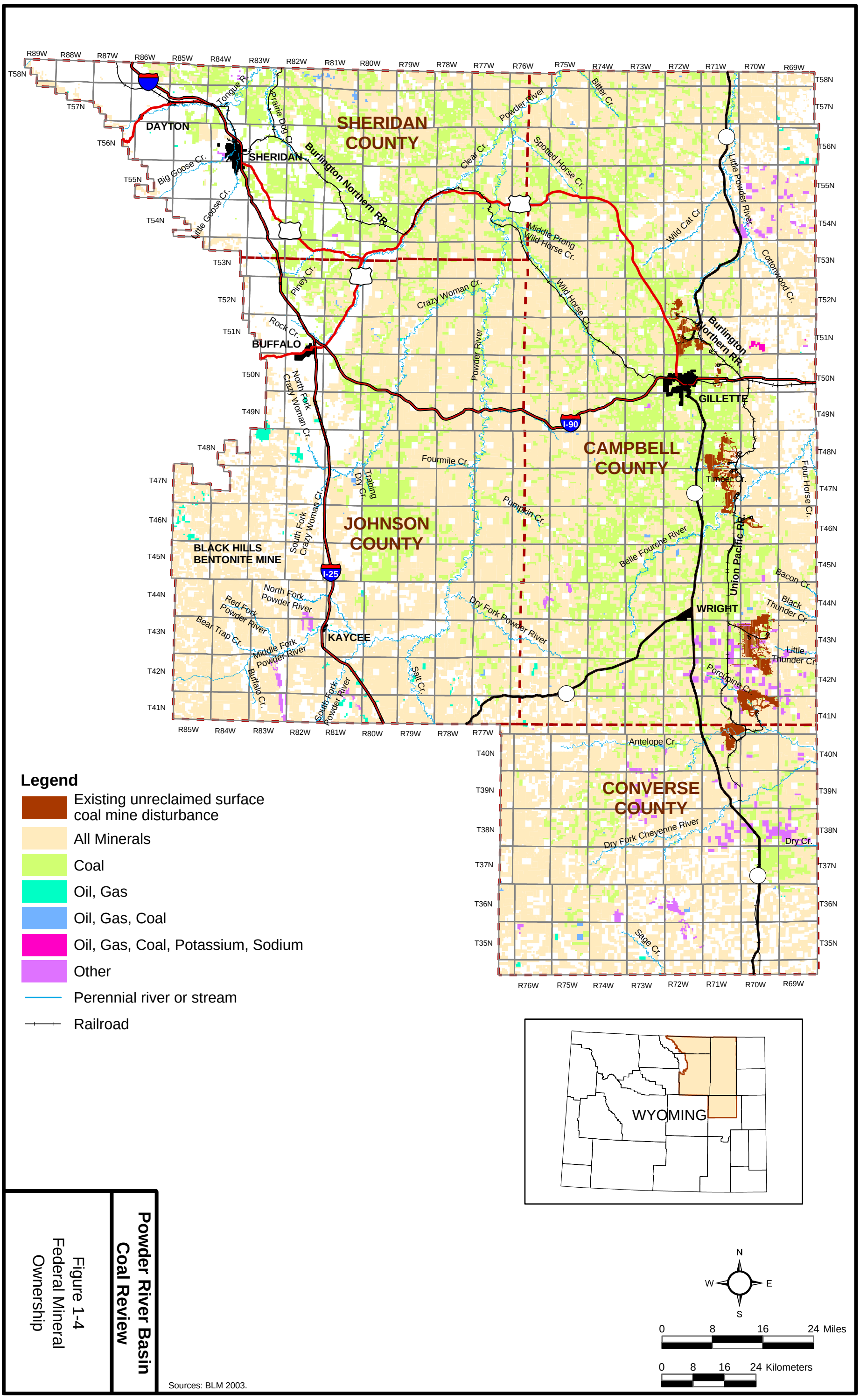

Source: BLM 2003, 2004; Thunder Basin Coal Company, 2003; http://nris.state.mt.us/gis/gisdatalib.

**Powder River Basin Coal Review**

Figure 1-3

Surface Ownership

10/20/05




Sources: BLM 2003.

**Powder River Basin Coal Review**

Figure 1-4
Federal Mineral Ownership

07/20/05