

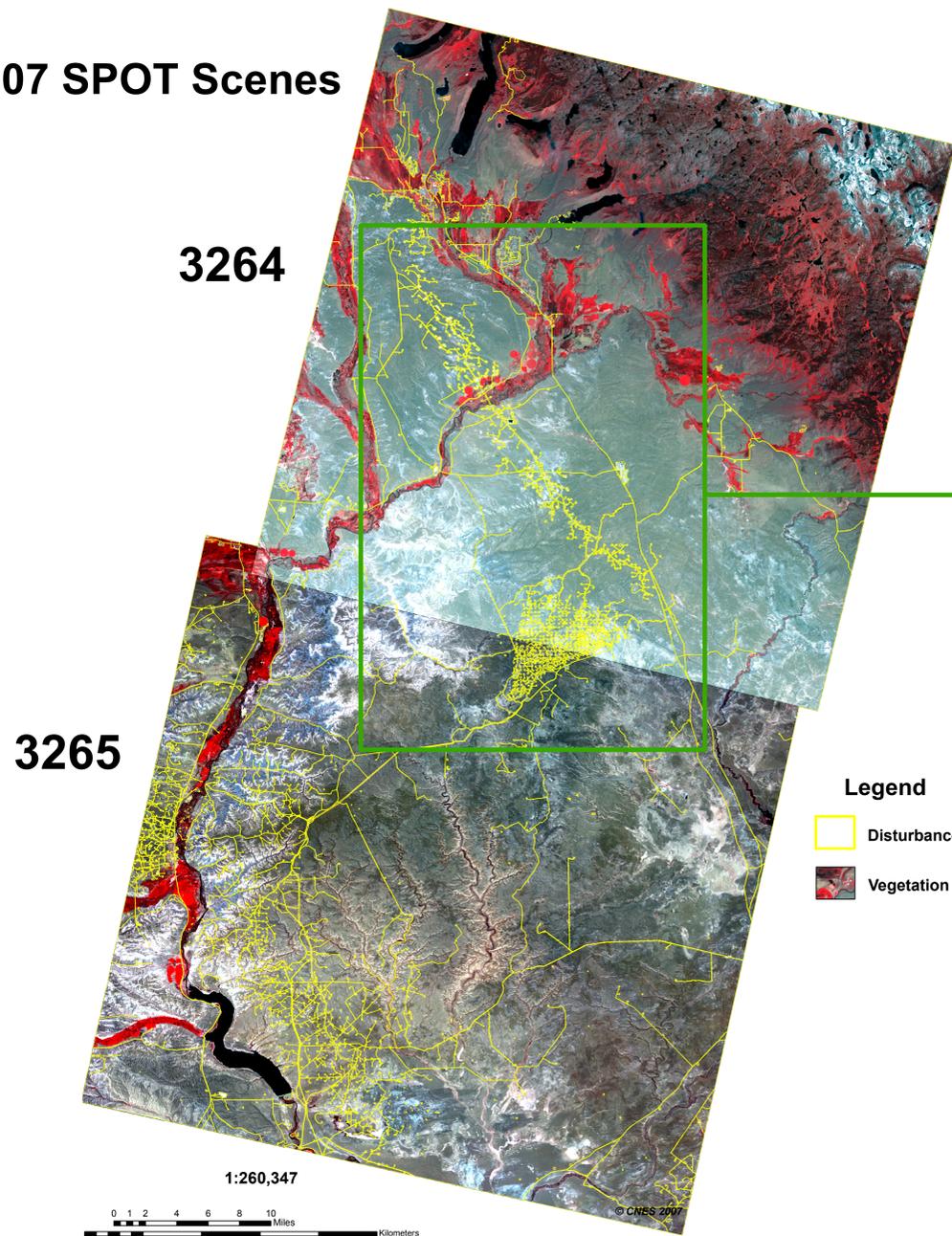
Surface Disturbance Comparison from 1994 to 2007

Jonah/Pinedale Region, Wyoming



Lori Baer, Jamie McBeth, Jay Diffendorfer and Mark Bauer

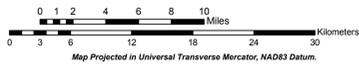
2007 SPOT Scenes



3265

3264

1:260,347



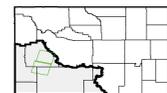
The Wyoming Landscape Conservation Initiative (WLCI) is a long-term, science based, collaborative effort to ensure Wyoming's wildlife and their habitats are fully considered and addressed in the face of increasing land use pressures and activities in Wyoming. The Rocky Mountain Geographic Science Center (RMGSC) has been exploring the use of remotely sensed data for the development of medium and large scale energy infrastructure mapping to support ecosystems mapping in the WLCI. After researching feature extraction methodologies, RMGSC chose Visual Learning Systems' Feature Analyst software for identifying and extracting total disturbed surface features related to oil and gas development. Feature Analyst is a 'user-assisted, Automated Feature Extraction application' that uses spectral and spatial information to identify features of interest. To date, two SPOT scenes have been completed and two others are in progress. This poster details the temporal change in total disturbed surface between 1994 and 2007 for a portion of the two completed SPOT scenes. For the area defined by the blue box above, the total disturbed surface increased from 2,682 acres to 8,485 acres.

U.S. Department of the Interior
U.S. Geological Survey

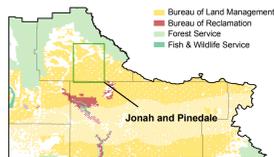
Legend

- Disturbance
- Vegetation

Wyoming, USA

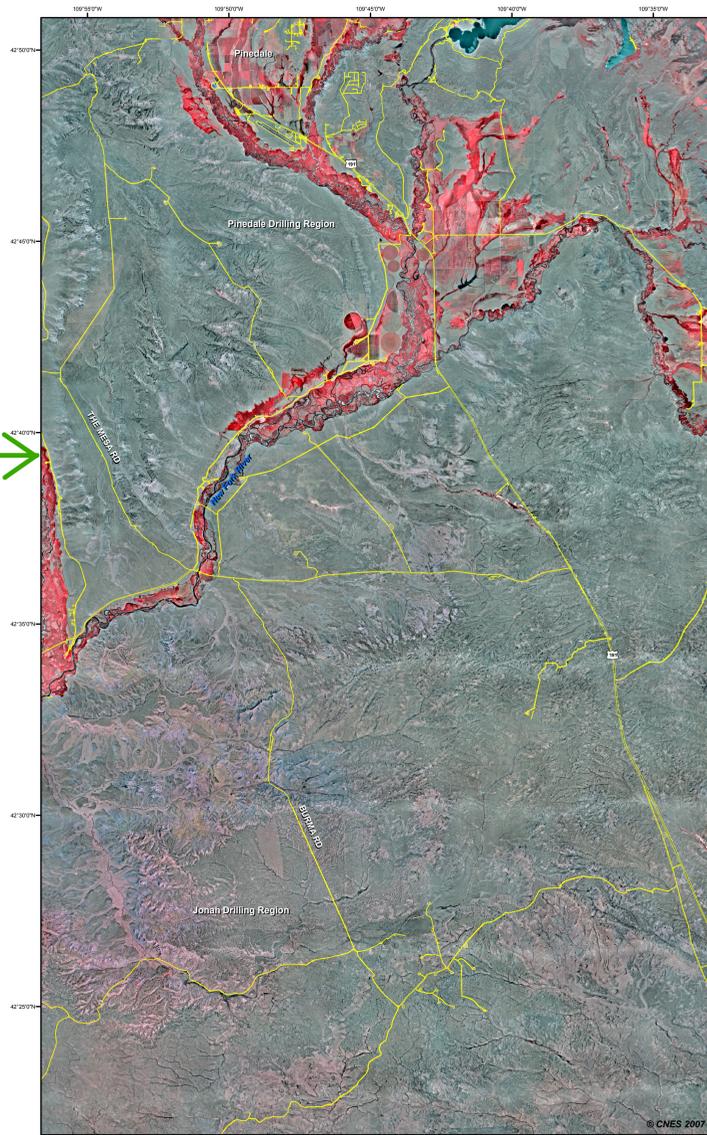


WLCI Boundary



WLCI - Federal Land Ownership

1994



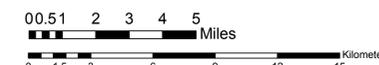
1994 and 1988 Imagery Blend

The above image is a blended product combining a USGS digital orthophoto taken in 1994, with Landsat 5 Thematic Mapper, False Color Composite from 1988 (bands 4,3,2). Healthy vegetation displays as bright red pixels with this band combination, and water displays as black or dark blue pixels.

Estimated disturbance for the Jonah and Pinedale region (as defined by this map extent) during 1994 was 10,854,412 sq meters or 2,682 acres.



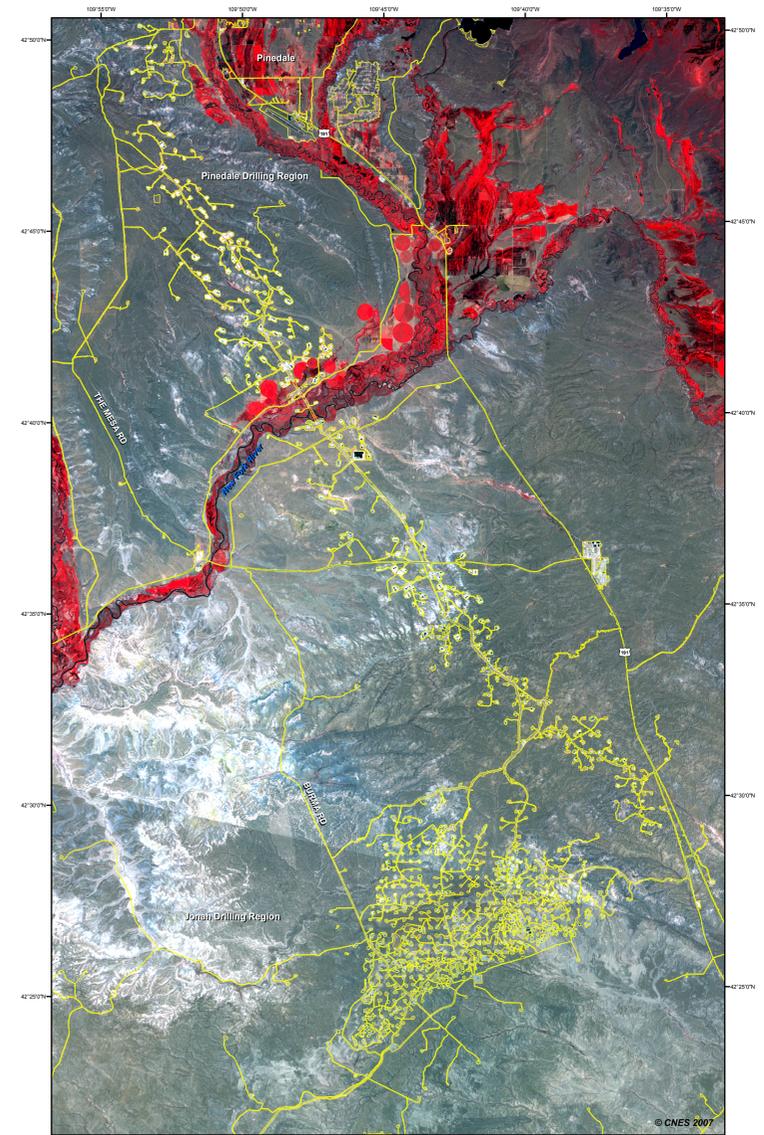
1:127,851



Map Projected in Universal Transverse Mercator, NAD83 Datum.

U.S. Geological Survey - Rocky Mountain Geographic Science Center

2007



2007 SPOT

The 2007 image is SPOT multispectral imagery, displayed as a False Color Composite using bands 4,3,2. Extraction results illustrate the increase in energy development in the Jonah and Pinedale area between 1994 and 2007. Extensive drilling occurred in 2006.

Estimated disturbance for the Jonah and Pinedale region (as defined in this map extent) in 2007 was 34,340,480 sq meters or 8,485 acres.

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