

Federal Lands in the West: Liability or Asset?

Methods, Definitions, and Data Sources

February 2017 - *Update*



Methods and Data Sources

This document describes the data sources and methods used to conduct the analysis for [“Federal Lands in the West: Liability or Asset?”](#) In addition to reporting on all federal lands, this document provides results for protected federal lands, which show similar patterns. This paper also presents time series graphs of the data to show inter-annual variability between 1970 and 2015 for the two different types of counties.

This updates research released in 2016 with the latest economic and land ownership data.

Geographic Scope

Methods: The study reviews the 276 non-metro counties in the 11 contiguous Western states: Arizona, California, Colorado, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming. Non-metro counties include all counties that were not designated as metro by the U.S. Census Bureau. The Census Bureau defines metro counties as, “Counties that have at least one urbanized area of 50,000 or more population, plus adjacent territory that has a high degree of social and economic integration with the core as measured by commuting ties.”

Cibola County, New Mexico and La Paz County, Arizona were omitted from the analysis because they were incorporated in 1981 and 1983, respectively.

Data Source: U.S. Department of Commerce. 2016. Census Bureau, Systems Support Division, Washington, D.C.

Land Ownership Data

Methods: The proportions of county lands that are federal and protected federal were calculated for all non-metro counties in the western U.S. The following table summarizes the distribution of the proportion of county lands under federal or protected federal ownership.

	Mean	Median	Bottom 25 th percentile	Top 25 th percentile
% Federal Land	42.1%	44.7%	15.8%	65.5%
% Protected Federal Land	8.9%	3.2%	0.4%	10.9%

Protected federal land is defined as lands with more permanent management restrictions such as National Parks, Wilderness, National Conservation Areas, National Monuments, and National Wildlife Refuges.

Any county with its proportion of federal land less than or equal to the bottom 25th percentile threshold (15.8%) was classified as having a low proportion of federal land (likewise for the share of protected federal land). Similarly, any county with its proportion of federal land greater than the top 25th percentile threshold (65.5%) was classified as having a high proportion of federal land (and likewise for the share of protected federal land).

Data Source: U.S. Geological Survey, Gap Analysis Program. 2016. Protected Areas Database of the United States (PADUS) version 1.4.

Economic Data

Methods: We obtained county-level data on population, employment, personal income, and per capita income for years 1970 through 2015 (latest available). We then calculated the county-level average for each variable between 1971-1975 and between 2011-2015. We calculated growth by dividing a county's 2011-2015 average by its 1971-1975 average.

Values reported are the average across the quartile grouping of the percent change between 1971-1975 and 2011-2015 for each variable. Income data were adjusted for inflation using the consumer price index.

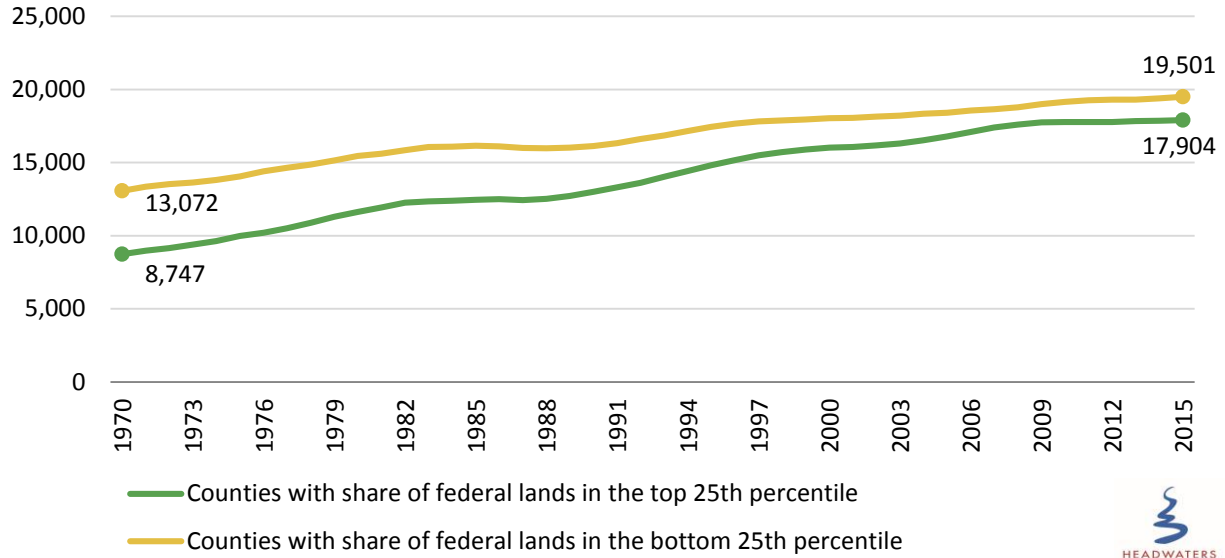
Data Source: U.S. Department of Commerce. 2016. Bureau of Economic Analysis, Regional Economic Accounts, Washington, D.C., Table CA30.

Graphing Changes over Time

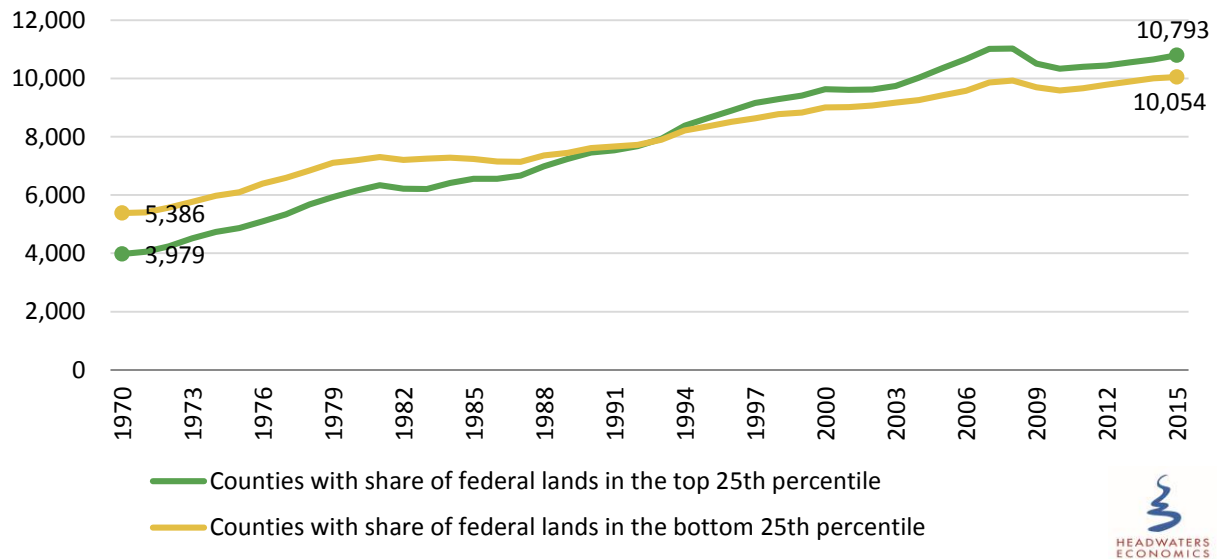
In addition to the summary bar charts found on the web post of [this analysis](#). Headwaters Economics created the following time series graphs to show average values for each of the four economic variables—population, employment, real personal income, and per capita income—from 1970 through 2015 by the high and low federal land percentiles.

Economic Performance, by Proportion of Federal Land

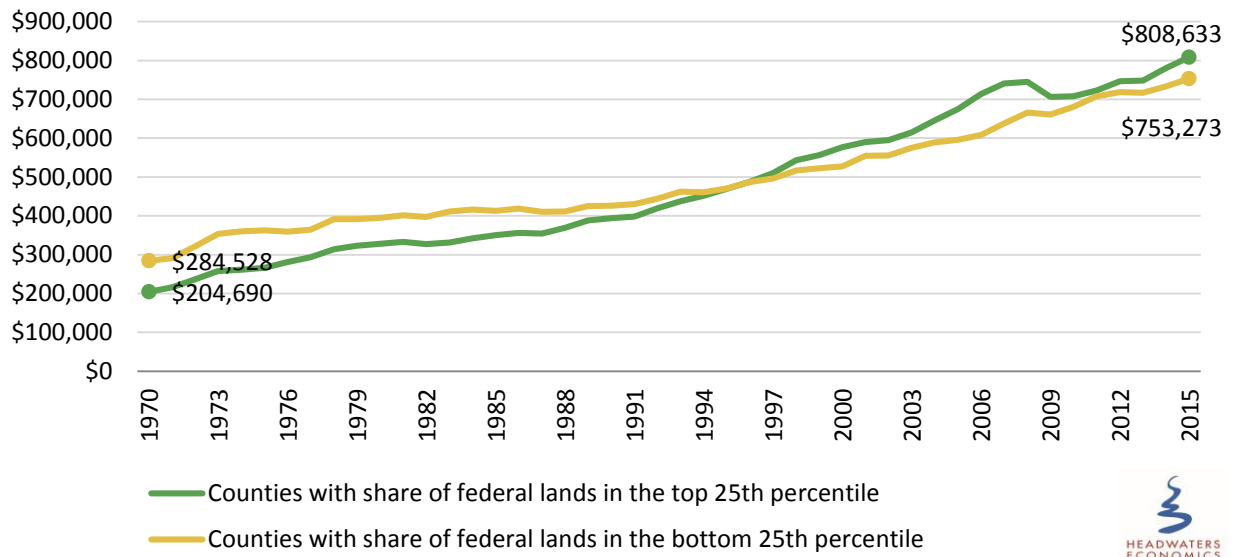
Average POPULATION in non-metro counties in the top 25th and bottom 25th percentiles of proportion of FEDERAL LAND, 1970-2015



Average EMPLOYMENT in non-metro counties in the top 25th and bottom 25th percentiles of proportion of FEDERAL LAND, 1970-2015

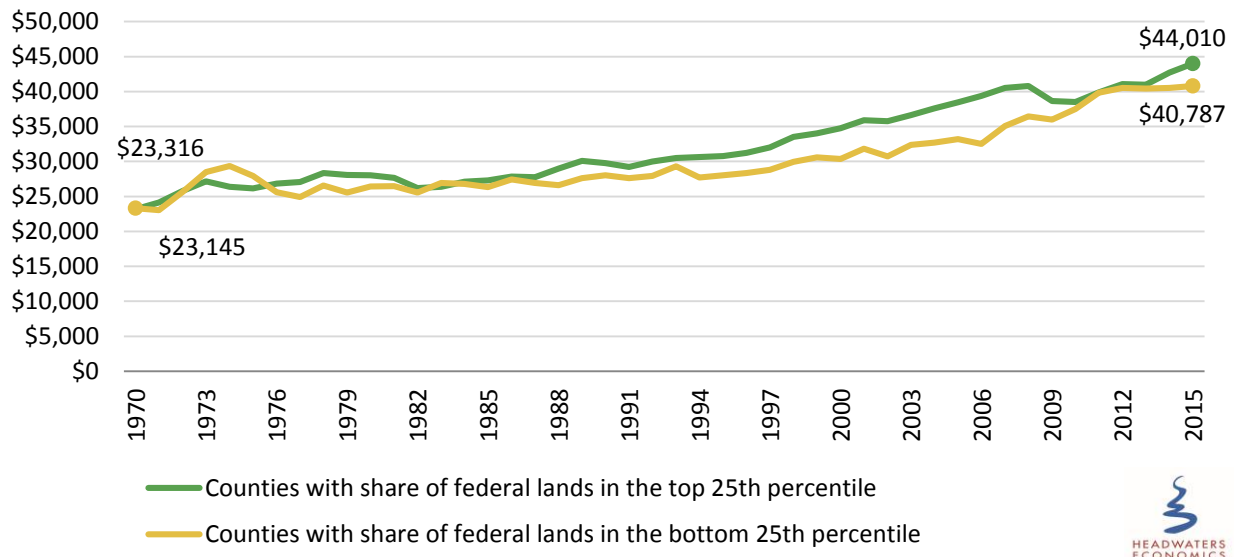


Average PERSONAL INCOME in non-metro counties in the top 25th and bottom 25th percentiles of proportion of FEDERAL LAND, 1970-2015 (thousands of dollars)



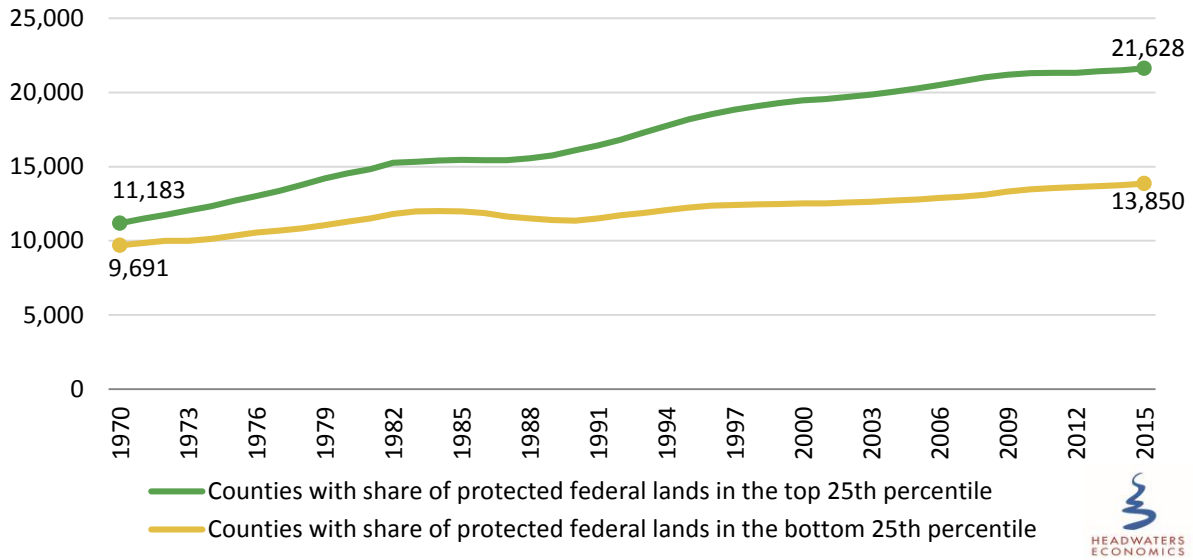
**All income figures in this analysis are adjusted for inflation.*

Average PER CAPITA INCOME in non-metro counties in the top 25th and bottom 25th percentiles of proportion of FEDERAL LAND, 1970-2015

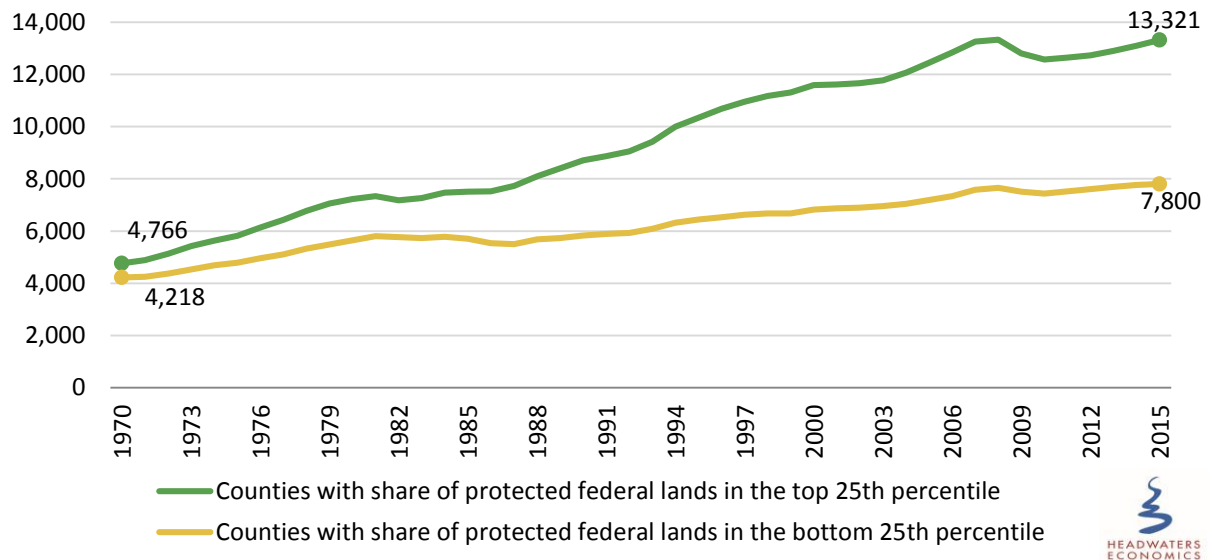


Economic Performance, by Proportion of Protected Federal Land

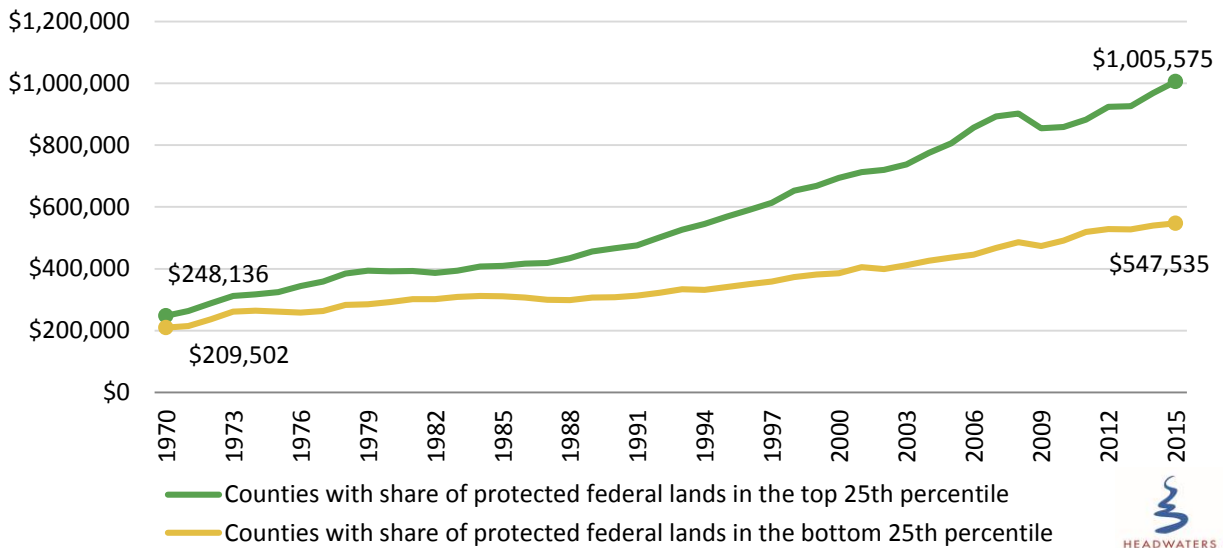
Average POPULATION in non-metro counties in the top 25th and bottom 25th percentiles of proportion of PROTECTED FEDERAL LAND, 1970-2015



Average EMPLOYMENT in non-metro counties in the top 25th and bottom 25th percentiles of proportion of PROTECTED FEDERAL LAND, 1970-2015

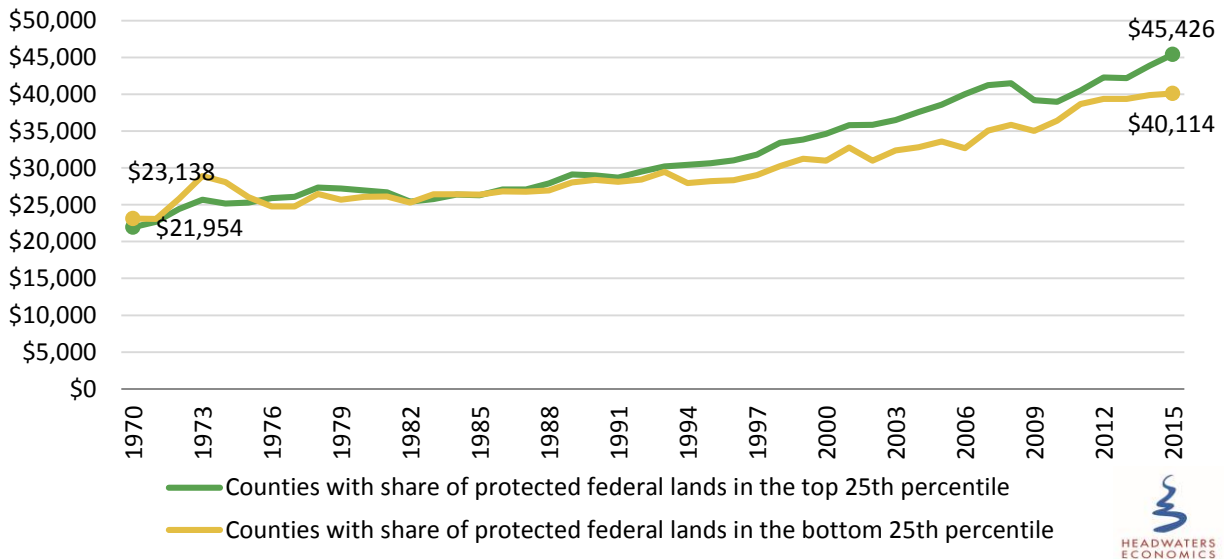


Average PERSONAL INCOME in non-metro counties in the top 25th and bottom 25th percentiles of proportion of PROTECTED FEDERAL LAND, 1970-2015 (thousands of dollars)



**All income figures in this analysis are adjusted for inflation.*

Average PER CAPITA INCOME in non-metro counties in the top 25th and bottom 25th percentiles of proportion of PROTECTED FEDERAL LAND, 1970-2015



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ABOUT HEADWATERS ECONOMICS

Headwaters Economics is an independent, nonprofit research group whose mission is to improve community development and land management decisions in the West,
<https://headwaterseconomics.org/>.