

Modoc National Forest: Jobs and Income Economic Contributions in 2016

In 2016, the Modoc National Forest supported:

- An estimated 1,030 jobs (annual average of part time, full time, temporary and seasonal), and
- Around \$41,196,000 of labor income in local communities.

How do National Forests and Grasslands Contribute to Economies?

National Forests and Grasslands provide multiple benefits to the American people and to local communities. They provide clean air and water, preserve cultural resources, and conserve lands for the enjoyment of present and future generations.

They also support local economies through recreation, timber, energy, minerals, and livestock grazing. In addition, counties with national forests or grasslands receive funds to support schools, road maintenance, and stewardship projects. The Forest Service (FS) also invests in such things as the construction and maintenance of infrastructure, environmental restoration, and forest health. In 2016, the sum of these activities on the Modoc National Forest supported approximately 1,030 local jobs and \$41,196,000 in local labor income.

Why Report Jobs and Income?

Residents and local government officials in surrounding communities have interest in how management of the National Forests and Grasslands affects local economies.

For More Information:

Economics for planning website ([Economics for Planning](#))

Analysis Methods: How a contribution analysis is constructed

- A software and data package called IMPLAN ([IMPLAN](#)) is used to characterize the structure of the local economy and how the different pieces of the economy interact (an “Input-Output” model).
- Forest Service data for Program outputs from the Modoc National Forest is added to the model: recreation (including fish and wildlife related), livestock grazing, forest products, energy, minerals, payments to states, and the Forest Service budget.
- The model then estimates the economic links between natural resource management on the Modoc National Forest and local jobs and income.

Resource Management Outputs from Forest Service Lands

National Forests and Grasslands are managed for multiple uses. Table 1 shows the Forest Service Resource Outputs by Program for the Modoc National Forest during 2016 (for data sources, see page 7) which were used to estimate the tie between management actions and economic activity in communities around the Modoc National Forest.

Table 1: Modoc National Forest Outputs by Program

Program	Activity	Units of Measure	Output in 2016
Wildlife and Fish Recreation	Local residents	Visits	15,286
Wildlife and Fish Recreation	Local residents	Expenditures (Thousands of \$2016)	\$312
Wildlife and Fish Recreation	Non-residents	Visits	17,238
Wildlife and Fish Recreation	Non-residents	Expenditures (Thousands of \$2016)	\$2,001
Downhill Ski Recreation	Local residents	Visits	4,238
Downhill Ski Recreation	Local residents	Expenditures (Thousands of \$2016)	\$123
Downhill Ski Recreation	Non-residents	Visits	6,629
Downhill Ski Recreation	Non-residents	Expenditures (Thousands of \$2016)	\$1,293
All Other Recreation Activities	Local residents	Visits	72,494
All Other Recreation Activities	Local residents	Expenditures (Thousands of \$2016)	\$1,956
All Other Recreation Activities	Non-residents	Visits	34,115
All Other Recreation Activities	Non-residents	Expenditures (Thousands of \$2016)	\$3,346
Grazing	Cattle, Horses, Sheep, Goats	AUMs	133,964
Timber	Sawtimber	CCF	4,667
Timber	Fuelwood	CCF	18,525
Timber	Pulp, Poles, All Other	CCF	34
Value of Energy Produced	Energy (coal, oil, gas, geothermal)	(Thousands of \$2016)	\$0
Value of Minerals Produced	Minerals	(Thousands of \$2016)	\$0
Payments to States/Counties	25% fund, Secure Rural Schools, Royalties.	(Thousands of \$2016)	\$2,254
Payments to States/Counties	Payments in Lieu of [property] Taxes	(Thousands of \$2016)	\$755

Economic Area of Influence

Economic areas of influence oftentimes differ by the resource under investigation, surrounding geography, and overall analysis objectives. The estimates in this report are generated for the area around the Modoc National Forest where direct Forest Service related expenditures occur. Other objectives, i.e. for forest planning, NEPA project analysis, etc. often focus on a different geography. The map below shows where Forest Service related direct expenditures occur, including: recreation and wildlife visitor spending, the location of grazing permit holders, the location of logging and restoration firms, mills processing Forest Service wood products, the counties receiving returns to states funds and payments in lieu of taxes, the location of Forest Service budget expenditures, and the salary spending by Forest Service employees.

The counties selected to form a National Forest or Grassland's economic area of influence are chosen based on where Forest Service management decisions have a direct effect on economic activity. This group of counties is also referred to as the "study area" or "impact area." The contributions of natural resource management on the National Forests and Grasslands ripple through the local economy, supporting jobs and income in many different sectors of the economy.

To avoid double counting, the results for the individual forests and grasslands in an area cannot be simply summed together to get together to get meaningful regional or state contribution results.

Note: The presentation of data by Program (recreation, timber, etc.) provides a convenient way of displaying the economic contributions of Forest Service activities. It does not mean that the economic contributions can be fully attributed to individual program areas, nor that economic contributions can be compared across programs. Joint cost and joint production complicate programmatic comparisons. For example, an increase in timber harvest would support an increase in local economic contributions from logging and the forest products industry. However, there are associated effects such as fire mitigation, wildlife habitat restoration, recreation access, and so on that share production costs and are not individually captured in the calculation of economic contributions.

The values presented in this report are the best estimates to date, however they are subject to change as new data become available. The estimates for 2016 were last revised in June, 2018.

Job Contributions by Program

Jobs supported by the National Forests and Grasslands are often in small, rural communities and are therefore an important contribution to economic and social sustainability. Employment is the estimate of average annual full-time, part-time, temporary, and seasonal jobs. In 2016, the Modoc National Forest supported an estimated 1,030 jobs in the local area. Direct job contributions come from economic activity associated with a Forest Service Program. Secondary job contributions are the ripples of economic activity stimulated by the direct economic activity. Total job contributions are the sum of direct and secondary contributions.

The estimates for Recreation (including wildlife related), Minerals & Energy, Forest Products, and Livestock Grazing estimates include the jobs supported by these programs in the private sector. Non-local recreation visitors bring new money into the economy. Local recreationists spend money that is already counted in the economic statistics for the area so they are tracked independently.

Forest Service Resource Management Investments capture the spending of the National Forest or Grassland's budget on such things as infrastructure construction and maintenance, ecosystem restoration, fuels treatments, salaries, etc.

The Payments to States/Counties estimates the jobs supported by local government investment in such things as roads and schools via funding from programs like the 25% Fund, Payments in Lieu of Taxes and minerals royalties.

Note: What is a “job”? One “job” does not always equal one person. The job estimates reported here represent the average annual SUM of portions of jobs - part time, full time, seasonal and temporary – that are supported by management of the Modoc National Forest.

Table 2: Jobs supported by the Modoc National Forest

Program (2016)	Direct Jobs (Avg Annual)	Total Jobs (Avg Annual)
Recreation by Local Visitors	20	30
Recreation by Non-Local Visitors	60	80
Minerals and Energy	0	0
Forest Products	50	80
Livestock Grazing	170	460
FS Resource Mgt Investments	240	330
Payments to States/Counties	30	50

Labor Income Contributions by Major Program

Labor income is the value of wages, salaries and benefits for wage earners plus income to local business owners. In 2016 Modoc National Forest contributed an estimated \$41,196,000 in labor income to the local area, with 83% going to wages and benefits for local wage earners and 17% going to local business proprietors and partnerships.

Labor Income is directly associated with local jobs and business owners. Other measures of income such as Household Income and Total Income include things like investments, rents, and transfer payments that are not tied to Forest Service management decisions so they are not reported here.

As direct and secondary contributions ripple through the economy, Labor Income is supported in a wide variety of sectors not directly affected by resource management decisions.

Table 3: Direct and Total Labor Income supported by the Modoc National Forest

Program	Direct Labor Income (Annual, 1,000 \$2016)	Total Labor Income (Annual, 1,000 \$2016)
Recreation by Local Visitors	\$574	\$877
Recreation by Non-Local Visitors	\$1,660	\$2,588
Minerals and Energy	\$0	\$0
Forest Products	\$2,490	\$4,307
Livestock Grazing	\$936	\$12,418
FS Resource Mgt Investments	\$14,404	\$18,388
Payments to States/Counties	\$1,955	\$2,618

Job and Labor Income Contributions by Major Economic Sector

Jobs and labor income supported by the National Forests and Grasslands are spread across many local economic sectors. Note that sectors that have the highest employment may not generate the highest labor income and vice versa. Jobs and income are important, but there is a range of other benefits from the national forests and grasslands.

Table 4: Total Jobs and Labor Income supported by the Modoc National Forest

Major Economic Sector	FS Supported Jobs (2016) (Avg. annual)	FS Supported Labor Income (1,000 \$2016)	Area of Influence Jobs (2016) (Avg. annual)	Area of Influence Labor Income (1,000 \$2016)
Total	1,030	\$41,196	728,271	\$34,944,762
FS Percent of Area of Influence	0.1%	0.1%		
Accommodation & Food Servs	90	\$2,279	63,678	\$1,576,200
Admin, Waste Mgt & Rem Servs	30	\$833	41,357	\$1,285,811
Agriculture	350	\$7,664	28,952	\$987,399
Arts, Entertainment, and Rec	20	\$291	19,380	\$646,797
Construction	10	\$605	41,855	\$2,230,857
Private Educational Services	10	\$188	7,955	\$220,276
Finance & Insurance	20	\$1,058	28,384	\$1,358,748
Health Care & Social Assistance	50	\$3,075	88,328	\$5,208,839
Information	0	\$284	7,589	\$470,237
Local, State, & National Gov't	230	\$14,937	94,621	\$7,245,378
Manufacturing	10	\$538	37,810	\$2,282,425
Mining	0	\$17	6,198	\$342,686
Mgt of Companies	0	\$377	6,478	\$713,900
Other Services	30	\$1,265	42,870	\$1,769,735
Prof, Scientific, & Tech Services	40	\$1,712	43,843	\$2,482,935
Real Estate & Rental & Leasing	30	\$111	37,648	\$255,475
Retail Trade	60	\$2,013	27,028	\$1,511,859
Transportation & Warehousing	30	\$1,885	78,339	\$2,619,669
Utilities	0	\$175	2,161	\$383,251
Wholesale Trade	30	\$1,889	23,798	\$1,352,285

Additional Information

Contact Us:

- For general inquiries, email the Washington Office EMC social scientists and economists: ([Washington Office EMC social scientists and economists](#)).
- For local inquiries, please see the list of ([regional social science and economics contacts](#)).

Useful Links:

- Additional information on economic contributions and benefits to people is available on the ([Economics for planning website](#)).
 - General information about the use of economics in the Forest Service.
 - At a Glance reports and Story Maps for all national forests and grasslands covering Jobs and Income and Benefits to People.
 - Frequently Asked Questions and a Glossary are also available.
- The National Visitor Use Monitoring Program has detailed information on recreation visitation ([Visitor Use Monitoring Program](#)).
- The “Headwaters Economics” website ([Headwaters Economics](#)) maintains several useful reports including ([National Forest Socioeconomic Indicators](#)) - area profiles that can be consulted for a deeper dive into the social and economic characteristics of the area. There are also reports which include important information for consideration of outreach and effects to Environmental Justice populations.

Data Sources:

- Recreation data are from the ([National Visitor Use Monitoring Survey](#)), Round 4.
- Grazing Animal Unit Months (AUM) data are found in the Rangeland Management Reports ([Grazing Animal Unit Months](#))
- Timber Harvest data are found in the Forest Service Forest Management Cut and Sold Reports ([Timber Harvest data](#))
- Minerals and Energy Revenues are reported by the ([Office of Natural Resources Revenue](#))
- Federal Revenues which are returned to the States and Counties are found on the ([Payments to States website](#)) and ([Payments in Lieu of Taxes website](#))