Jobs and Income

Economic Contributions in 2016
At A Glance

Arapaho-Roosevelt NF & Pawnee Natl Grassland

In 2016, the Arapaho-Roosevelt NF & Pawnee Natl Grassland supported:

- An estimated **3,720 jobs** (annual average of part time, full time, temporary and seasonal), and
- Around **$156,755,000** of **labor income** in local communities.

For More Information:

Economics for Planning website (https://www.fs.fed.us/emc/economics/index.shtml)

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.

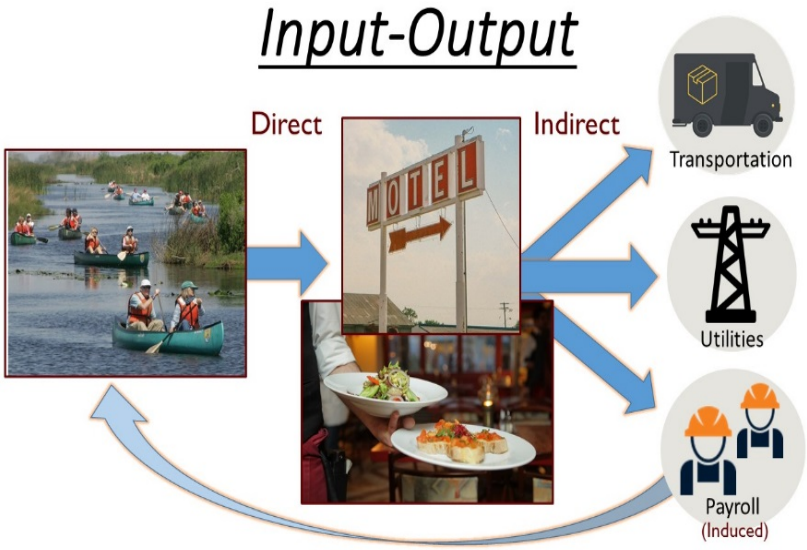
They also support local economies through recreation, timber, energy, minerals, and livestock grazing. In addition, counties with national forests or grasslands receive funds to support schools, road maintenance, and stewardship projects. The Forest Service also invests in such things as the construction and maintenance of infrastructure, environmental restoration, and forest health. In 2016, the sum of these activities on the Arapaho-Roosevelt NF & Pawnee Natl Grassland supported approximately 3,720 local jobs and $156,755,000 in local labor income.

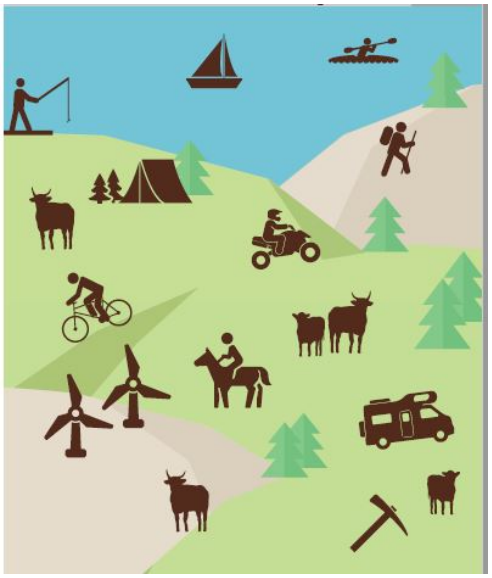
Why Report Jobs and Income?

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

Analysis Methods: How a contribution analysis is constructed

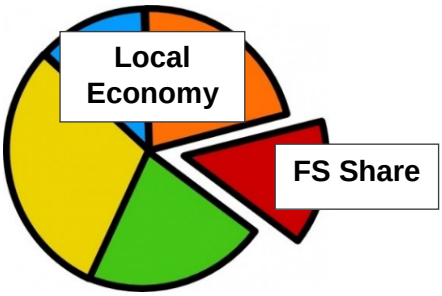
1 A software and data package called IMPLAN (www.implan.com) is used to characterize the structure of the local economy and how the different pieces of the economy interact (an "Input-Output" model).





2 Forest Service data for Program outputs from the Arapaho-Roosevelt NF & Pawnee Natl Grassland 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.

3 The model then estimates the economic links between natural resource management on the Arapaho-Roosevelt NF & Pawnee Natl Grassland and local jobs and income.



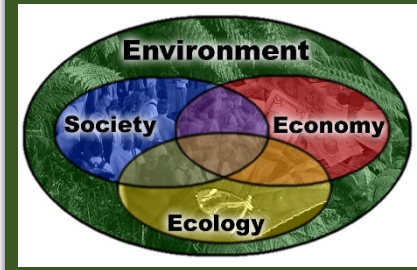
Resource Management Outputs from Forest Service Lands

National Forests and Grasslands are managed for multiple uses. Table 1 shows the Program outputs which were used to estimate the tie between management actions and economic activity in communities around the Arapaho-Roosevelt NF & Pawnee Natl Grassland.

***Table 1*: Forest Service Resource Outputs by Program for the Arapaho-Roosevelt NF & Pawnee Natl Grassland during 2016 (for data sources, see page 8).**

Program	Activity	Units of Measure	Output in 2016
Recreation	Wildlife and Fish - Locals	Visits	417,245
		Expenditures (Thousands of $2016)	$10,016
	Non-residents	Visits	170,424
		Expenditures (Thousands of $2016)	$17,018
	Downhill ski/snowboarding - Locals	Visits	714,796
		Expenditures (Thousands of $2016)	$20,657
	Non-residents	Visits	476,531
		Expenditures (Thousands of $2016)	$38,047
	All Other Rec Activities - Locals	Visits	1,876,703
		Expenditures (Thousands of $2016)	$35,098
	Non-residents	Visits	804,301
		Expenditures (Thousands of $2016)	$77,352
Grazing	Cattle, Horses, Sheep, Goats	AUMs	64,920
Timber	Sawtimber	CCF	7,350
	Fuelwood	CCF	1,496
	Pulp, Poles, All Other	CCF	4,462
Value of Minerals & Energy Produced	Energy (coal, oil, gas, geothermal)	(Thousands of $2016)	$12,144
	Minerals	(Thousands of $2016)	$0
Payments to States/Counties	25% fund, Secure Rural Schools, Royalties.	(Thousands of $2016)	$487
	Payments in Lieu of [property] Taxes	(Thousands of $2016)	$3,031

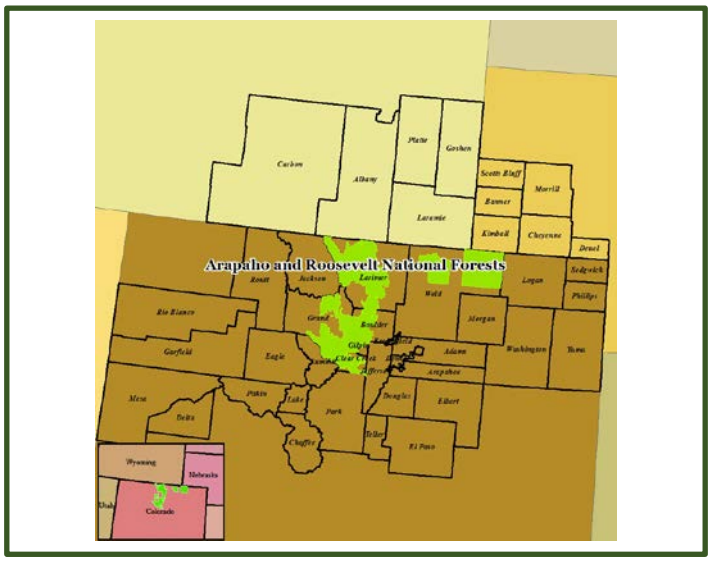
The counties selected to form a National Forest or Grassland's economic area of influence are chosen based on where FS management decisions have a direct effect on economic activity. This group of counties is also referred to as the "study area" or "impact area." The contributions of natural resource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



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 September, 2018.

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 Arapaho-Roosevelt NF & Pawnee Natl Grassland 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 FS 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.



Note: To avoid double counting, the results for individual forests and grasslands in an area cannot simply be summed together to get meaningful regional or state contribution results because of overlapping economic areas of influence.

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.

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 Arapaho-Roosevelt NF & Pawnee Natl Grassland supported an estimated 3,720 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.

Table 2: **Direct and Total jobs supported by the Arapaho-Roosevelt NF & Pawnee Natl Grassland in 2016.**

Program	Direct Jobs (Avg Annual)	Total Jobs (Avg Annual)
Recreation by Local Visitors	550	850
Recreation by Non-Local Visitors	1,250	1,890
Minerals and Energy	20	60
Forest Products	60	130
Livestock Grazing	60	170
FS Resource Mgt Investments	340	500
Payments to States/Counties	80	120

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 Arapaho-Roosevelt NF & Pawnee Natl Grassland.

Keeping the Focus Local

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.

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 Arapaho-Roosevelt NF & Pawnee Natl Grassland contributed an estimated $156,755,000 in labor income to the local area, with 84% going to wages and benefits for local wage earners and 16% going to local business proprietors and partnerships.

***Table 3*: Direct and Total Labor Income supported by the Arapaho-Roosevelt NF & Pawnee Natl Grassland in 2016.**

Program	Direct Labor Income (Annual, 1,000 $2016)	Total Labor Income (Annual, 1,000 $2016)
Recreation by Local Visitors	$17,005	$33,664
Recreation by Non-Local Visitors	$36,484	$70,514
Minerals and Energy	$4,797	$7,181
Forest Products	$2,368	$6,623
Livestock Grazing	$697	$4,615
FS Resource Mgt Investments	$19,479	$27,313
Payments to States/Counties	$4,499	$6,846

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 Arapaho-Roosevelt NF & Pawnee Natl Grassland in 2016 with local economic area of influence totals for context.**

Major Economic Sector	FS Supported Jobs (Avg. annual)	FS Supported Labor Income (1,000 $2016)	Area of Influence Jobs (Avg. annual)	Area of Influence Labor Income (1,000 $2016)
Total	3,720	$156,755	3,500,224	$204,327,638
FS Percent of Area of Influence	0.1%	0.1%		
Accommodation & Food Servs	1,210	$30,569	286,256	$6,965,551
Admin, Waste Mgt & Rem Servs	120	$4,730	203,931	$8,197,590
Agriculture	180	$4,789	46,351	$1,566,148
Arts, Entertainment, and Rec	300	$7,608	90,862	$2,713,624
Construction	30	$1,889	227,894	$13,194,978
Private Educational Services	100	$2,808	66,504	$2,149,512
Finance & Insurance	100	$6,493	198,687	$12,433,360
Health Care & Social Assistance	140	$8,006	312,877	$18,014,629
Information	40	$2,953	85,461	$7,817,068
Local, State, & National Gov't	340	$20,948	451,867	$32,079,706
Manufacturing	50	$3,196	152,533	$12,050,100
Mining	60	$11,565	50,465	$8,942,559
Mgt of Companies	30	$3,556	40,837	$5,467,040
Other Services	120	$5,560	216,723	$9,417,136
Prof, Scientific, & Tech Services	150	$10,100	340,405	$28,143,900
Real Estate & Rental & Leasing	130	$2,948	197,226	$4,257,716
Retail Trade	430	$13,512	97,943	$9,338,314
Transportation & Warehousing	80	$5,601	306,963	$9,876,963
Utilities	10	$1,193	8,172	$1,439,935
Wholesale Trade	100	$8,732	118,268	$10,261,807

Additional Information

Contact Us:

For general inquiries, contact the Washington Office EMC social scientists and economists: (socioeconomics@fs.fed.us).

For local inquiries, please see the list of regional social science and economics contacts (https://www.fs.fed.us/emc/economics/contactus.shtml).

Useful Links:

Additional information on economic contributions and benefits to people is available on the Economics for Planning website (http://www.fs.fed.us/emc/economics/index.shtml).

- 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 (https://www.fs.fed.us/recreation/programs/nvum/).

The "Headwaters Economics" website (http://www.headwaterseconomics.org/) maintains several useful reports including National Forest Socioeconomic Indicators (www.headwaterseconomics.org/tools/forest-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 (https://www.fs.fed.us/recreation/programs/nvum/), Round 4.
- Grazing Animal Unit Months (AUM) data are found in the Rangeland Management Reports (https://www.fs.fed.us/rangeland-management/reports/index.shtml)
- Timber Harvest data are found in the Forest Service Forest Management Cut and Sold Reports (https://www.fs.fed.us/forestmanagement/products/cut-sold/index.shtml)
- Minerals and Energy Revenues are reported by the Office of Natural Resources Revenue (https://www.onrr.gov/)
- Federal Revenues which are returned to the States and Counties are found on the Payments to States website (https://www.fs.usda.gov/pts) and Payments in Lieu of Taxes website (https://www.doi.gov/pilt/)