



United States Department of Agriculture
Forest Service

Economic Impacts Report

Colville National Forest Plan Revision

Draft Environmental Impact Statement

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Introduction

The existing Colville Forest Plan has reached the end of its intended lifecycle (the current plan was approved in 1988). This report evaluates and discloses the potential environmental consequences on vegetation conditions that may result with the adoption of a revised land management plan. It examines, in detail, six different alternatives for revising the 1989 Colville National Forest land management plan (USDA FS 1989).

Six key issues were identified in the public input to the initial plan proposal (USDA FS 2009): 1) old forest management and timber production, 2) motorized recreation trails, 3) road access, 4) recommended wilderness areas, 5) wildlife, and 6) riparian and aquatic resource management. This report focuses on economic effects related to issues 1-4 and the additional economic category of livestock grazing. Table 1 lists the indicators for each revision topic which we have used to evaluate the economic consequences of the various management alternatives.

Table 1: Evaluation criteria and key indicators for economic conditions

Issue	Evaluation Criteria	Key Indicator
Old Forest Management and Timber Production	Effects on local economy of alternative approaches in providing old forests	Timber harvest (ccf) and employment and income contributions related to timber
Motorized Recreation Trails	Contribution of motorized recreation on the national forest to the local economy	Recreation use and employment and income contributions related to recreation
Access	Effects of road density limits on access for recreation, wildfire suppression, and commercial timber harvest	Timber harvest (ccf), recreation use, and employment and income related to timber and recreation
Recommended Wilderness Areas	Economic costs and benefits associated with wilderness	Timber (ccf) and recreation use

Relevant Laws, Regulations and Policy that Apply

Multiple statutes, regulations, and executive orders identify the general requirement for the application of economic evaluation in support of Forest Service planning and decision making. These include:

The Multiple-Use Sustained Yield Act of 1960 (74 Stat. 215; 16 USC 528-531) requires that social and economic impacts are considered when establishing management plans or decision that may affect the management of renewable forest and rangeland resources.

National Environmental Policy Act (NEPA) of 1969 (83 Stat. 852; 42 USC 4321, 4331-4335, 4341-4347) requires that economic and social impacts of Federal actions be considered through environmental analysis.

National Forest Management Act (NFMA) of 1976 (16 U.S.C. 1600) and regulations require that the social and economic impacts of decisions or plans affecting the management of renewable resources are analyzed and that economic stability of communities whose economies are dependent on materials from national forest lands are considered.

Methods

Socio-economic Impact Zones

We defined three county-level socio-economic impact zones to characterize the economic conditions and impacts of national forest management: Ferry County, Pend Oreille County, and Stevens County. We primarily considered three criteria to develop the impact zones: 1) the number of Forest Service-administered acres in each county which relates to county payments, 2) trade flows of national forest products and by-products moving to and between local processing facilities, and 3) interconnected county economies. More information about the county selection process is available from the project record (Phillips 2010).

Data Sources and Methods

Management approaches to addressing the significant issues have socio-economic consequences. Public comment identified concerns about the potential effects including those on local economies and social conditions. Economic impacts were the result of potential changes in vegetative outputs (such as firewood and commercial timber), recreation use, and grazing. These concerns along with differences in recreation access, species viability, risk of wildfire, and climate change also result in social impacts.

This report describes the potential direct, indirect, and cumulative effects of management of the Colville National Forest on economic well-being. The report focuses on how changes in management activities by alternative affect goods and services, and how those changes affect the economic contribution of the Forest on the local economies in its socio-economic impact zone. The outputs used for this analysis include estimated timber harvest volume, grazing use, and recreation use. Based on these outputs, we assess the resulting employment and income contributions. We also measure employment and income contributions from Forest Service budgets, and revenue sharing and payments to counties to provide a broader picture of the economic relationship of the Forest to its surrounding communities.

Industry level employment and income data are derived using IMPLAN 2012 model software and data at the county scale (MIG 2012). The IMPLAN data and analysis system provides a level of specificity for employment and income at a finer industry scale than data reported by the Bureau of Economic Analysis. The IMPLAN data and analysis system is also a useful tool to estimate the impacts of alternative management strategies on local economies. We provide additional information about data sources and methods as we discuss them in the following sections.

Counties are large and using data at this level often masks social and economic conditions and trends occurring at the sub-county or individual community level. We do not address these

potential sub-county changes because they are generally not quantifiable given the broad scale of forest plan decisions. We address the social and economic effects related to a national forest's management activities within its socio-economic zone and normally do not address the potential economic relationships that exist in other areas. However, since large portions of the sawlog timber harvested on the Okanogan-Wenatchee National Forest are processed within the Colville National Forest socio-economic impact zone, we identify these effects.

Assumptions

- The Forest's budget continues at current levels for all alternatives.
- Recreation uses displaced in one part of the national forest are accommodated elsewhere on the forest.

Incomplete and Unavailable Information

The levels of supply and demand for national forest goods, services and uses are difficult to predict and they vary over time. Future market conditions are also uncertain. In order to address estimation error and variability, we include the job and income impacts associated with a small increment of a good, service or use in the discussion of alternative effects. This information provides the reader an indication of how sensitive the economic impacts are to predictions of goods, services and uses, and to address potential "what if" scenarios. We also discussed additional cautions about information completeness and availability in the affected environment section.

Spatial and Temporal Context for Effects Analysis

The spatial context for the economic impacts analysis includes Ferry, Pend Oreille, and Stevens counties. Due to the programmatic nature of forest planning, we do not estimate site specific consequences. The economic impacts are identified at the broader three-county level.

The temporal context for the economic impact analysis is the life of a forest plan which is expected to be 15 years.

Past, Present, and Foreseeable Activities Relevant to Cumulative Effects Analysis

Economic impact cumulative effects are primarily associated with the management activities of adjoining land managers and community infrastructure. The supply of goods, services and uses similar to those supplied by the Colville are components of the overall economic picture. The major land ownerships that we consider in the cumulative effects analysis are the Okanogan-Wenatchee and Idaho Panhandle National Forests, the Spokane District of the BLM, tribal lands including the Confederated Tribes of the Colville Reservation, the Kalispel Tribe, and the Spokane Tribe of Indians, and privately held forest lands.

Community infrastructure is important to support national forest management activities and to process goods and services. Having local capacity for wood products processing increases the value of national forest wood fiber. Having knowledgeable local operators and equipment lowers

the cost of ecosystem restoration activities. Changes in the local infrastructure affect the amount of job and income impacts that occur in the economic impact area.

Affected Environment

National forest management affects traditions, lifestyles, and the economic livelihood of residents and communities. Those who depend on the national forests for their livelihoods and recreational pursuits are concerned that their relationship with the national forests may be compromised by other uses and restrictions. Forest Service managers depend on their relationships with local communities, people, and their institutions to help manage the national forests. Communities provide a skilled workforce, labor, manufacturing infrastructure, business support, and other services. All of these relationships are important to sustaining and restoring the ecological integrity of the national forests as well as the social and economic wellbeing of the communities.

Current Conditions

The Colville National Forest contributes to the local economy and social conditions in a variety of ways. These contributions include the supply of products, services and uses, as well as directly hiring employees and spending budgetary dollars. These activities support jobs and income in each of the Forests' socio-economic impact zones. Not all resource outputs and purchases result in local economic activity. For example, logs harvested from one national forest may be sent to processing mills outside of its socio-economic impact zone. Similarly, a national forest may purchase goods and services from businesses located outside its socio-economic impact zone. For example, we do not include restoration work contracted with non-local businesses or helicopter logging services by non-local firms as direct jobs in the local economy.

The following sections discuss the economic impacts related to recreation, range and timber uses; Forest Service expenditures; and revenue sharing and payments to counties. This analysis does not address minerals and non-timber forest products uses. The plan revision decisions are expected to minimally affect mineral production. Non-timber forest products use and production data are limited and are not in a format useful for economic impact analysis in forest planning. All dollar amounts are presented in 2012 dollars unless otherwise noted.

Recreation

Visitors to national forests have the opportunity to participate in a variety of activities in developed and dispersed settings. These activities include hiking, camping, and driving for pleasure as well as wildlife and fish use, such as hunting, fishing, and wildlife viewing. In addition to economic benefits, recreation activities contribute to social and economic well-being in the socio-economic impact zones since recreation opportunities within the national forests enhance the quality of life for nearby residents.

National Visitor Use Monitoring (NVUM) system collects and analyzes data about Forest Service recreation use. The first survey collected data between 2000 and 2003. The second round of NVUM collected data for the Colville in 2009 (USDA FS 2010). The scientists managing the NVUM survey state that comparisons of the first and second round results are not appropriate due to changes in the study protocols. Round 2 results estimated a total of 335,706 visits annually.

Recreation economic effects are based on expenditures for goods and services including shopping at convenience stores or purchasing gasoline, food, lodging, outfitter guides, and sporting goods

within 50 miles of the national forest. Expenditures are based on the procedures identified in “Estimation of national forest visitor spending averages from national visitor use monitoring: round 2” (White et al 2012). Six primary market segments and two segments for downhill skiing are used to identify key differences in spending patterns of visitors (Table 2). There are two key differences in the market segments. The first identifies local and non-local visitors to identify dollars (new money) brought into the socio-economic impact zones. The second difference identifies overnight stays either within the national forest or overnight stays outside the national forest. The classifications are important because recreation expenditures and their effects on local economies are different. Trip expenditures by local day visitors are much less than expenditures by non-local visitors staying overnight. Day use visitors do not require lodging and typically spend less on other goods and services.

Table 2: Market segments of national forest visitors (2009)

Market Segment	Annual Visits
Non-local day	48,949
Non-local overnight within the national forest	18,034
Non-local overnight outside of the national forest	12,881
Local day	152,000
Local overnight within the national forest	20,610
Local overnight outside of the national forest	5,153
Downhill skiing day	71,052
Downhill skiing overnight	7,027
Total	335,706

The Forest Service crosswalked the recreational expenditures to IMPLAN model sectors to estimate the economic effects of recreational uses. Each of the six market segments has a unique expenditure profile. The expenditure profile is combined with the amount of recreation use for each market segment to estimate the direct, indirect and induced employment and income effects (see Table 3).

Table 3: Recreation, wildlife, and fish economic impacts

Use/Impact	Average Annual Amount
Non-local recreation use	
Jobs	115
Income	\$1,986,000
Non-local wildlife recreation use	
Jobs	5
Income	\$112,000
Local recreation use	
Jobs	71
Income	\$1,368,000
Local wildlife recreation use	
Jobs	4
Income	\$90,000

Rangeland and Grazing

Livestock grazing on the Colville National Forest is an important use to the local ranching industry. Grazing on public lands contributes directly to livestock forage needs, but the total contribution is greater because it affords ranchers the opportunity to grow forage on other ranch lands for feeding livestock during winter months.

The economic analysis of grazing uses data on animal unit months (AUMs). One AUM is the amount of forage a 1,000 pound mature cow and a calf consume in a 30-day period, which is about 780 pounds of dry weight. Permitted AUMs are measures of planned capacity and are the number of AUMs specified by the grazing permit for the duration of the permit (USDA FS, n.d., section 2230.5). The permit is usually valid for 10 years (USDA FS, n.d., section 2231.03). Authorized AUMs is the amount of forage permittees pay for to use in a given year. Authorized AUMs indicate how much of the planned capacity is used. It is the authorized use amount which contributes to jobs and income.

The amount of livestock forage consumed by animals authorized to graze on Forest Service allotments is the basis of the economic activity associated with Forest Service livestock grazing. Table 4 shows the average grazing data for 2012 through 2014 for the Colville National Forest. We use this data with the direct effects of 1000 AUMs based on the revised BLM grazing impacts methodology (USDI 2012, page 201). We then combine these data with IMPLAN model multipliers to identify the indirect and induced effects for employment and income contributed by the Colville National Forest. We use the BLM methodology because it is based on the type livestock typically grazed on public lands and includes unpaid and family labor.

Table 4: Average authorized livestock grazing data for 2012 through 2014

Livestock	Animal unit months
Cattle	27,428
Sheep and Goats	0

Source: USDA FS 2014b

Table 5 displays the average annual jobs and income associated with current national forest livestock grazing. We estimated the effects based on the average authorized grazing as displayed in Table 4 and the IMPLAN 2012 model data year. The data are totals for direct, indirect, and induced effects.

Table 5: Livestock grazing economic impacts and their socio-economic impact zones

Impact	Amount
Jobs	98
Income	\$1,515,000

Forest Products

The Colville National Forest has a long history of providing timber and other forest products in support of local community and national needs. Communities throughout the socio-economic impact zones had strong economic components related to the wood products industry. However, increased environmental protection, a focus on sustaining and restoring a broader range of resources, and changing mill technology have resulted in significant declines in the timber industry and in the businesses that support the timber industry.

Annual timber volume harvested from the Colville, excluding fuelwood, has declined dramatically, from a high of almost 135 million board feet per year during the late 1980s to about 44 million board feet. Harvest on all other ownerships has also declined during the same period. Table 6 displays the 2012 through 2014 average timber harvest by product type. Non-sawtimber includes pulpwood and green biomass, such as clean chips. Fuelwood includes both personal and commercial use.

Table 6: Timber harvest volume three-year average

Timber Product	Colville (Average 2012-14)
	CCF
Sawtimber	47,237
Non-sawtimber	13,577
Poles	17
Fuelwood	7,325
Totals	68,157

CCF = hundred cubic feet

Source: USDA FS 2014a

From the late 1990s through 2007, sawmill and plywood-veneer processing capacity in Eastern Washington decreased by about 50 percent (Ehinger 2008). A recent inventory of wood products mills in the area shows little change (Loewen 2014). Processing capacity is important for several reasons. It generates value added jobs and income in addition to those jobs associated with logging. Local processing capacity increases the net value of stumpage since it costs more to ship logs to distant mills. A higher stumpage value means timber harvest projects are more likely to be economically viable.

The economic activity associated with timber harvest (Table 6) is based on the flows of logs through logging companies including transportation; primary processors, such as sawmills, veneer and plywood mills; and pulp and paper manufactures. The direct economic effect of the timber program is derived using mill survey data (Alward et al 2010). The direct job effect of timber harvest was determined by dividing the total employment in an industry, such as sawmills, by the timber volume processed or handled by that industry. The calculation provides a direct response coefficient for jobs per unit of wood volume. We then integrated the response coefficient with the IMPLAN models for each socio-economic impact zone to calculate the indirect and induced employment and income effects for the timber industries and supporting businesses that exist in the socio-economic impact zone.

Table 7 shows the amount of timber harvest from the Colville processed locally. Most of the sawtimber and all of the nonsawtimber from the Colville is currently processed within the Colville socio-economic impact zones analyzed. It is noteworthy that 20 percent of the volume harvested from the Okanogan-Wenatchee National Forest is also processed within the Colville socio-economic impact zone.

Table 7: Area where timber harvest is processed

Colville	Sawtimber	Nonsawtimber	Posts, Poles, Fuelwood
Process area: Colville	96%	100%	100%
Not processed locally	4%	0%	0%

Source: Rinke 2012

Table 8 shows the economic contributions associated with the timber harvested from the Colville in its socio-economic impact zone.

Table 8: Colville timber harvest economic impacts

Impact	Amount
Jobs	273
Income	\$15,969,000

The sawtimber and nonsawtimber volume from the Okanogan-Wenatchee processed in the Colville socio-economic zone generates an additional 62 jobs and \$3,099,000 income.

National Forest Expenditures

Forest Service employees, budgets, buildings, and other infrastructure contribute to social and economic well-being in the communities making up the Colville National Forest socio-economic

impact zone. Forest management requires a budget that is spent on employees, contractors, goods and services, and the construction and maintenance of infrastructure. In addition to the day-to-day scheduled management activities, the Forest Service sometimes spends money for unplanned activities, such as wildfire suppression. Table 9 shows the expenditures divided into salary and non-salary components and including and excluding wildfire suppression costs. The data are presented as the 2009 to 2011 average, the latest years for which the data are formatted for use with IMPLAN.

Table 9: Average annual national forest expenditures for 2009 through 2011

Expenditure	Amount
Salary excluding fire suppression	\$11,325,410
Non-salary excluding fire suppression	\$6,937,960
Salary including fire suppression	\$12,175,070
Non-salary including fire suppression	\$7,744,050

Table 10 shows the economic effects of salary and non-salary expenditures. Forest Service employees account for 225 or about 80 percent of all jobs. Non-salary expenditures and indirect and induced effects of Forest Service salary and non-salary expenditures generate the other 53 jobs. The economic impacts are estimated using the disposable income spent by Forest Service employees and the agency's expenditures spent on materials, contracts, and services. The economic impacts are calculated using budgets excluding fire suppression costs. The reason for not identifying the economic effects associated with fire suppression expenditures is because suppression activities are not predictable, and most of the fire suppression dollars are spent on resources from outside of the national forest's socio-economic impact zone. The portion spent locally is unknown.

Table 10: The economic impacts of national forest budgets

Impact	Amount
Jobs	278
Income	\$13,314,000

Excludes fire suppression activities

Revenue Sharing and Payments to Counties

Counties receive federal payments based on revenue sharing under the Payments to States Act, also known as 25-percent receipts. They also receive money under the Payments in Lieu of Taxes (PILT) program based on the percentage of federally administered land. Due to declining revenues from timber receipts, the Secure Rural Schools and Communities Self-Determination Act (SRS) was enacted to supplement the Payments to States Act. SRS money is divided into three separate parts identified as Title 1, Title 2 and Title 3. Title 1 money, about 80 percent of the total, is spent on local roads and schools based on a 50-50 split. The remaining money is spent on ecosystem management projects on NFS lands and local government projects enhancing

environmental education, public safety, and other projects. PILT money can be spent on any local government purpose.

The last payment under the original SRS was planned for 2006. An extension of the SRS payments was signed into law in 2007, and the next year, the Emergency Stabilization Act of 2008 was signed into law authorizing the SRS payments through 2011. The SRS payment was extended again for 2012 and again for 2013. Congress has reauthorized SRS payments through 2016. Because SRS payments subject to congressional approval, we provide an analysis of potential revenue sharing without the SRS adjustment.

Table 11 displays the average amounts of SRS and PILT money paid from 2012 to 2014 to the counties in the socio-economic impact zone. The PILT payment amount is based on the total Forest Service acres in each county identified in the PILT data base. The SRS payment is the total payment to each county in the socio-economic impact zone. SRS payments are calculated on proclaimed national forest acres rather than acres administered by a national forest. For example, the Colville administers portions of the Kaniksu National Forest in Pend Oreille and Stevens counties.

Table 11: Total Forest Service SRS and PILT payments to socio-economic impact zone

Payment Type	Average Payment, 2012-2014
SRS	\$1,719,580
PILT	\$1,313,300
Totals	\$3,032,880

Source: USDA FS 2014c and USDI 2014

Since it is unknown whether the SRS payments would continue into the future, we provide an estimate of payments to states based on the pre-SRS mechanism of 25-percent of the average timber receipts. The estimated payment shows a drop of about 80 percent from the Colville SRS payment.

Table 12: Reconstructed Forest Service 25-percent payments to counties

Payment Type	Amount
25-Percent (reconstructed)	\$352,230

Based on 2007–2013 average data

Source: USDA FS 2014c

SRS and PILT payments to counties are a component of local government expenditures. In order to calculate the economic contribution of the payments, the money is applied to several economic sectors using the IMPLAN model. All of the PILT payment is applied to the non-schools local government sector. We split the SRS payment four ways applying about 40 percent to highway construction and maintenance to capture the county roads portion, and 40 percent is applied to the schools sector of local government for Title 1; ten percent is applied to ecosystem management projects on NFS lands for Title 2; and 10 percent is applied to the local government sector for Title 3.

Table 13 identifies the jobs and income impacts.

Table 13: Economic impacts of Forest Service payments to counties

Impact	Amount
Jobs	36
Income	\$1,368,000

For year 2011

If the SRS payments are not extended and payments are instead based on 25-percent revenue sharing, the jobs and income contributions would be reduced. PILT and 25-percent payments would support approximately 20 jobs and \$751,000 in labor income annually.

Economic Contributions Summary

Table 14 shows the economic effects of recreation, range, timber, agency expenditures, and payments to counties combined for Colville National Forest and its socio-economic impact zone. The data for jobs and income contributed by the Forest Service are compared to the total jobs and income by industry sector in the zone to identify the relative importance of the national forest to that sector and to the socio-economic impact zone overall.

The economic relationship of the Colville National Forest to its socio-economic impact zone shows moderate economic ties. The Colville shows about a five percent overall contribution to total employment and about a six percent contribution to labor income. Seven industrial sectors show five percent or more Colville National Forest related job contributions. Highest of these is agriculture which includes logging and grazing related employment. Other important sectors are manufacturing including wood processing employment and recreation related sectors. The jobs and income supported through Forest Service management activities are important components of the socio-economic impact zone's well-being.

Table 14: Current contribution of the Colville National Forest to its socio-economic impact zone

Industry	Employment (jobs)			Labor Income (\$1000s)		
	Impact Area Totals	National Forest Related	National Forest Percent of Total	Impact Area Totals	National Forest Related	National Forest Percent of Total
Agriculture	2,108	191	9.06%	\$44,391	\$6,346	14.30%
Mining	195	3	1.71%	\$17,089	\$60	0.35%
Utilities	92	1	1.61%	\$12,022	\$187	1.56%
Construction	1,572	11	0.69%	\$38,806	\$261	0.67%
Manufacturing	1,472	107	7.26%	\$92,582	\$7,767	8.39%
Wholesale trade	293	13	4.45%	\$14,515	\$713	4.91%

Transportation and warehousing	583	14	2.34%	\$16,675	\$487	2.92%
Retail trade	2,079	46	2.20%	\$57,689	\$1,382	2.39%
Information	198	4	2.07%	\$6,295	\$144	2.29%
Finance and insurance	515	7	1.42%	\$14,930	\$327	2.19%
Real estate and rental and leasing	314	8	2.55%	\$4,244	\$173	4.08%
Professional, scientific, and technical services	641	11	1.75%	\$23,445	\$455	1.94%
Management of companies	13	1	5.53%	\$829	\$55	6.61%
Administrative, waste management, and removal services	393	10	2.60%	\$10,411	\$215	2.06%
Educational services	223	2	0.99%	\$1,990	\$29	1.48%
Health care and social assistance	1,975	24	1.23%	\$88,788	\$1,168	1.31%
Arts, entertainment, and recreation	755	58	7.75%	\$3,480	\$264	7.58%
Accommodation and food services	1,182	90	7.60%	\$17,427	\$1,273	7.30%
Other services	1,334	21	1.61%	\$35,312	\$726	2.05%
Government	5,098	259	5.08%	\$302,024	\$13,801	4.57%
Totals	21,035	883	4.20%	\$802,942	\$35,833	4.46%

Excludes fire suppression dollars

Environmental Consequences

The amount of goods, services and uses produced under each alternative drive the level of economic impacts. However, aside from timber harvests, there is little variation in the amount of the jobs and income impacts by alternative. Even though the economic impacts for many resources do not vary by alternative, there are other qualitative and quantitative differences. We address these effects in the social and other resource sections.

We have combined the alternative impacts of separate issue categories for this economic impact analysis. For example, direction to address the Recommended Wilderness issue may affect levels of timber harvest. However the primary issue category affecting timber harvest is Old Forest Management. Likewise Livestock Grazing and Road Density affect recreation; however, Motorized Recreation is the primary issue category impacting recreational opportunities. Table

22, at the end of this document, displays the economic contribution of each alternative by program area.

Forest Products

We use the projected wood sale quantity (PWSQ) to estimate the amount of economic activity for each alternative. PWSQ includes timber harvest for any purpose from all lands in the plan area. PWSQ is based on consistency with the plan components as well as the planning unit's fiscal and organizational capacity. The key components of timber harvest includes sawtimber used primarily in sawmills and in plywood and veneer manufacturing; non-sawtimber such as pulpwood and biomass used in processing pulp and paper as well as composite board; fuelwood which includes both commercial and personal use; and small amounts of posts and poles (Table 15).

Table 15: Estimated annual timber harvest (PWSQ) by alternative and by product type in CCF

Product Type	Alternative					
	NA	PA	P	R	B	O
Sawtimber	56,466	99,574	99,087	19,310	49,551	50,775
Non-sawtimber	17,365	17,365	17,365	6,308	17,365	17,365
Fuelwood	8,914	8,914	8,914	53,231	8,914	8,914
Posts and Poles	13	13	13	0	13	13
Total	82,758	125,866	125,379	28,849	75,843	77,067

CCF = hundreds of cubic feet

The harvest level by product type displayed in Table 15 is one part of determining the employment and income by alternative. The other part is the proportion of the harvest processed by wood products manufacturing sectors within the socio-economic impact zone. The distribution of forest harvest is shown in Table 7 in the affected environment section. Table 16 displays the estimated timber related economic effects.

Table 16: Estimated jobs and income supported by timber harvest

Alternative	Timber-Related Employment	Annual Timber-Related Income
NA alternative	330	\$19,335,000
PA alternative	539	\$31,224,000
P alternative	537	\$31,089,000
R alternative	114	\$6,692,000
B alternative	297	\$17,428,000
O alternative	303	\$17,765,000

The NA, B, and O alternatives would support local employment and income in the timber sector at levels similar to current conditions. These alternatives are unlikely to affect the economic well-

being of individuals employed in timber harvesting and processing firms relative to existing conditions. The PA and P alternatives would increase timber-related employment and labor income in the local economy. These alternatives may improve the economic well-being of unemployed individuals with the skills to work in forest products sectors. The R alternative would measurably decrease annual timber harvested from the Colville National Forest. The PA alternative would support nearly 5-times more timber-related employment and income than the R alternative. Households that rely on earnings from the timber industry may experience a shock to their economic well-being under the R alternative.

Congress determines Forest Service budgets annually. At times there are budget increases to produce more products and services from national forests or there are reductions to produce less. To address this variability, we provide the following data useful to analyze an incremental change. A budget amount of \$40,000 for timber harvest produces about 1,000 CCF (0.5 MMBF) of sawtimber and non-sawtimber harvest. This supports about five jobs and \$273,000 in wage income. These effects are based on the current distribution between sawtimber and non-sawtimber and where the harvested wood is processed.

Recreation Management

Although recreational opportunities vary by alternative, we do not expect current recreation uses totaling 335,700 visits including wildlife-related and local visits to the Colville National Forest to vary across alternatives. The forest-wide supply of recreational opportunities would generally meet or exceed demand during the life of the forest plan. With no changes in use, there is no estimated change to the overall level of recreation related expenditures, and no differences in the jobs and income supported by the expenditures (Table 17). However, differences in economic effects at smaller spatial scales are possible.

Use patterns and access would change on the Colville by alternative. For example, reductions in mountain bike access under the B alternative may cause distributional effects and mountain bikers relocate to other areas on and off the forest. However, the total amount of recreation-related spending attributable to activities on the forest is not expected to change. This forest-wide economic evaluation only addresses total effects across the entire socio-economic impact area. Additional recreation related impacts are addressed in the recreation and social specialist reports.

Table 17: Estimated jobs and income supported by recreation expenditures

Alternative	Employment	Annual Wage Income
All alternatives	195	\$3,556,000

Projections of recreational supply and demand are not precise. We therefore provide an estimate of the economic impacts associated with an increment of 10,000 visits, about three percent of current use. This number of visits supports about 5 jobs and \$100,000 in labor income. For this assessment, we used the current proportions of local, non-local, recreation, and fish and wildlife related recreation uses to distribute the 10,000 visit change.

Livestock Grazing and Rangeland Vegetation Management

Projections of cattle grazing are the same across all alternatives. However, the management of potential impacts of livestock grazing on riparian based recreation settings and nationally

designated trail systems may increase costs to grazing permittees. Likewise recommended wilderness, non-motorized recreation, and reduce road density management may also increase the cost of range management. Forage potentially available for domestic sheep could vary especially under the B and O alternatives. These alternatives use no risk protection measures for bighorn sheep which may modify or eliminate domestic sheep grazing. However, modification of sheep grazing numbers is made at the project planning scale rather than at the forest plan scale. Also, the Colville currently has no active sheep grazing so changes in domestic sheep grazing are not projected. Table 18 displays the projected amounts of authorized cattle and sheep grazing.

Table 18: Estimated cattle and sheep permitted animal unit months (AUM) by alternative

Alternative	Estimated Cattle authorized AUMs	Estimated Sheep authorized AUMs	Total
All alternatives	27,580	0	27,580

We estimate the economic effects of the alternatives based on authorized cattle and sheep grazing use. Table 19 displays the total jobs and wage income supported by cattle and sheep grazing for the alternatives. These totals are the direct, indirect, and induced economic impacts including estimates for unpaid or family labor contributions. Since there is no variation in AUMs by alternative, the job and income economic impacts are also the same across the alternatives.

Table 19: Estimated jobs and income supported by grazing

Alternative	Grazing Related Employment	Grazing Related Wage Income
All alternatives	98	\$1,524,000

Environmental conditions and management needs may affect grazing use. Actual use numbers may be more or less than the projected use in any year. We therefore provide data to estimate the impacts of a 1,000 AUM change in cattle use which is about three percent of current use. The amount supports about 4 full and part-time jobs and \$53,000 in wage related income.

National Forest Expenditures

Salary and non-salary expenditures comprise national forest budgets. Non-salary expenditures are the purchases of goods and services, including contracting for restoration activities, and they are for acquiring and maintaining facilities and other infrastructure. We do not project salary and non-salary expenditures to vary by alternative. The current annual budget level of \$18.3 million would continue during the plan period. This budget amount does not include expenditures for fire suppression which averaged about \$1.7 million during the years 2009 through 2011. These dollars are not included because they are not predictable, and often spent on resources from outside of the Colville National Forest socio-economic area. Table 20 displays the job and income effects of the total budget without fire suppression.

Table 20: Estimated jobs and income supported by budget expenditures

Economic Impact	All Alternatives
Employment (full and part time jobs)	278
Wage Income	\$13,314,000

Forest Service employees account for 225 or about 80 percent of all jobs. Non-salary expenditures and indirect and induced effects of Forest Service salary and non-salary expenditures generate the other 53 jobs.

Revenue Sharing and Payments to Counties

Even though there may be future variations in payments based on PILT and SRS formula requirements, these are not linked to the forest plan. We therefore do not project differences in the SRS and PILT payments.

It is unknown whether the SRS payment would continue into the future. To address this issue, we provide an estimate of the revenue sharing amount under the Payments to States Act (25-percent receipts). The reconstructed 25-percent receipts payment is \$352,228 estimated from average receipts for fiscal years 2007 through 2013. This payment would be approximately 80 percent lower than recent SRS payments.

Table 21: Estimated 25% payments

County	Average Receipts, 2007-2013	Estimated County Share of 25% Payment
Ferry County	\$446,331	\$111,583
Pend Oreille County	\$744,877	\$186,219
Stevens County	\$217,705	\$54,426
Three-County Total	\$1,408,913	\$352,228

Source: USDA FS (2014c)

The 25-percent receipts based payments could vary by alternative and support different levels of jobs and income. Alternatives producing more revenue generating outputs and uses would in turn provide larger payments to counties. The commercial wood products are the largest generator of receipts and are greatest cause of differences in payments. Therefore, the R alternative, which would support the lowest levels of commercial timber harvest, could decrease Forest Service payments to counties. Since a reversion to 25-percent payments is unforeseeable, this analysis does not estimate employment and income variation between alternatives associated with payments to states and counties.

Cumulative Economic Effects

The jobs and income supported through national forest management activities are important components of the Colville area socio-economic well-being. The Forest Service currently contributes about five percent of employment and six percent of labor income in the impact zone. National forest timber harvest, expenditures and recreation uses make up the majority of these jobs and the associated income (Table 22).

Current trends in timber harvests from non-Forest Service ownerships do not indicate a reversal from the significant decline between 2002 and 2003 and the additional declines since the recession of 2007. Recent revisions of the Idaho Panhandle National Forest plan and the potential revision to the Okanogan-Wenatchee Forest Plan are not expected to change local timber supplies either. Eastern Washington timber supply would remain near current levels.

The Colville National Forest budget would also remain at current levels, and recreation use and related expenditure would not differ. The Colville's current economic role would be the same in importance across all of the alternatives during the life of the forest plan.

Table 22: Total jobs and income supported by Colville National Forest activities and programs by alternative for the Colville socio-economic impact zone

Activity	Estimated Employment Contribution (direct, indirect, and induced)					
	NA Alternative	PA Alternative	P Alternative	R Alternative	B Alternative	O Alternative
Recreation	195	195	195	195	195	195
Range	98	98	98	98	98	98
Timber	330	539	537	114	297	303
Expenditures	278	278	278	278	278	278
County payments	36	36	36	36	36	36
Totals	937	1,146	1,144	721	904	910

Activity	Estimated Wage Income Contribution (\$1,000s) (direct, indirect, and induced)					
	NA Alternative	PA Alternative	P Alternative	R Alternative	B Alternative	O Alternative
Recreation	\$3,556	\$3,556	\$3,556	\$3,556	\$3,556	\$3,556
Range	\$1,524	\$1,524	\$1,524	\$1,524	\$1,524	\$1,524
Timber	\$19,335	\$31,224	\$31,089	\$6,692	\$17,428	\$17,765
Expenditures	\$13,383	\$13,383	\$13,383	\$13,383	\$13,383	\$13,383
County payments	\$1,368	\$1,368	\$1,368	\$1,368	\$1,368	\$1,368
Totals	\$39,166	\$51,055	\$50,920	\$26,523	\$37,259	\$37,596

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Glossary

Direct economic effects—Direct effects occur in the immediately affected industry. For example, public land forage directly contributes to employment, income, and output in the cattle ranching sector.

Indirect economic effects—Indirect effects result from directly affected individuals and firms buying goods and services to support their business. Ranchers buying hardware to repair a fence is an example of an indirect effect.

Induced economic effects—Induced effects result from employees of the directly and indirectly affected sectors spending household income in the regional economy (e.g., on housing).

Stumpage value—Average prices paid for standing timber.