United States Department of Agriculture
Forest Service

Social Report

Colville National Forest Plan Revision

Draft Environmental Impact Statement

DRAFT

Prepared by:

Delilah Jaworski
TEAMS Social Scientist

Reviewed by:

Elisabeth Grinspoon, Region 6 Social Scientist

Sean Gordon, Region 6 Decision Support Specialist

October 16, 2015

In accordance with Federal civil rights law and U.S. Department of Agriculture (USDA) civil rights regulations and policies, the USDA, its Agencies, offices, and employees, and institutions participating in or administering USDA programs are prohibited from discriminating based on race, color, national origin, religion, sex, gender identity (including gender expression), sexual orientation, disability, age, marital status, family/parental status, income derived from a public assistance program, political beliefs, or reprisal or retaliation for prior civil rights activity, in any program or activity conducted or funded by USDA (not all bases apply to all programs). Remedies and complaint filing deadlines vary by program or incident.

Persons with disabilities who require alternative means of communication for program information (e.g., Braille, large print, audiotape, American Sign Language, etc.) should contact the responsible Agency or USDA's TARGET Center at (202) 720-2600 (voice and TTY) or contact USDA through the Federal Relay Service at (800) 877-8339. Additionally, program information may be made available in languages other than English.

To file a program discrimination complaint, complete the USDA Program Discrimination Complaint Form, AD-3027, found online at http://www.ascr.usda.gov/complaint_filing_cust.html and at any USDA office or write a letter addressed to USDA and provide in the letter all of the information requested in the form. To request a copy of the complaint form, call (866) 632-9992. Submit your completed form or letter to USDA by: (1) mail: U.S. Department of Agriculture, Office of the Assistant Secretary for Civil Rights, 1400 Independence Avenue, SW, Washington, D.C. 20250-9410; (2) fax: (202) 690-7442; or (3) email: program.intake@usda.gov . USDA is an equal opportunity provider, employer and lender.

Table of Contents

Introduction ... 1
Revision Topics Addressed in this Analysis ... 1
Relevant Laws, Regulations and Policy that Apply ... 2
Affected Environment ... 2
Introduction ... 2
Population Growth ... 3
Population Density ... 3
Median Age ... 5
Educational Attainment ... 5
Income and Earnings ... 6
Economic Diversity ... 7
Unemployment ... 9
Environmental Justice ... 9
Values, Beliefs, and Attitudes ... 12
Community Resilience ... 14
Defining Community Resilience ... 14
Community Resilience Indicators ... 14
Composite Community Resilience Measures ... 15
Forest Dependence ... 16
Access and Use ... 18
Visitor Use Data ... 18
Firewood ... 20
Forest Access ... 20
Wildfire and the Wildland-Urban Interface ... 21
Need for Change ... 22
Old Forest Management and Timber Production ... 22
Motorized Recreation Trails ... 22
Access ... 22
Recommended Wilderness Areas ... 22
Wildlife ... 23
Riparian and Aquatic Resource Management ... 23
Environmental Consequences ... 24
Methodology ... 24
Assumptions ... 24
Methods of analysis ... 24
Incomplete and Unavailable Information ... 24
Spatial and Temporal Context for Effects Analysis ... 24
Past, Present, and Foreseeable Activities Relevant to Cumulative Effects Analysis ... 25
Alternative 1 – No Action ... 26
Summary of Effects ... 26
Cumulative Effects ... 28
Monitoring Recommendations ... 28
Alternative 2 – Proposed Action ... 29
Summary of Effects ... 29
Cumulative Effects ... 31
Monitoring Recommendations ... 32
Alternative 3 – R Alternative ... 32
Summary of Effects ... 32

DRAFT

Cumulative Effects ... 34
Monitoring Recommendations ... 34
Alternative 4 – P Alternative ... 35
Summary of Effects ... 35
Cumulative Effects ... 37
Monitoring Recommendations ... 38
Alternative 5 – B Alternative ... 38
Summary of Effects ... 38
Cumulative Effects ... 40
Monitoring Recommendations ... 40
Alternative 6 – O Alternative ... 41
Summary of Effects ... 41
Cumulative Effects ... 43
Monitoring Recommendations ... 43
Relationship of Short-Term Uses and Long-Term Productivity ... 44
Unavoidable Adverse Impacts ... 44
Irreversible and Irretrievable Commitment of Resources ... 44
References ... 45

List of Tables

Table 1: Evaluation Criteria and Key Indicators for Social Conditions ... 1
Table 2. Current Population and Growth Trends. ... 3
Table 3. Population Density. ... 4
Table 4. Median Age. ... 5
Table 5. Educational Attainment, Percent of Persons Age 25+. ... 5
Table 6. Per Capita Income and Mean Earnings. ... 6
Table 7. Contribution of Labor and Non-labor Income to Total Personal Income. ... 7
Table 8. Poverty Rates ... 11
Table 9. Poverty by Race and Ethnicity. ... 11
Table 10. Economic Diversity Index. ... 14
Table 11. Lifestyle Diversity Ratings ... 15
Table 12. Composite Community Resilience Measures ... 16
Table 13. Forested Lands. ... 16
Table 14. Forestry and Commercial Logging Employment and Income, Percent of Total ... 17
Table 15. Activity Participation on the Colville National Forest. ... 18
Table 16. Cut and Sold Firewood, Volume and Value, FY12 ... 20
Table 17. Percentage of Households with Wood as Primary Heating Fuel ... 20
Table 18. Homes in Wildland-Urban Interface and Wildfire Risk ... 21

List of Figures

Figure 1. Employment by Industry ... 8
Figure 2. Unemployment Rate. ... 9
Figure 3. Population by Race and Ethnicity. ... 10

DRAFT

Introduction

The existing Colville Forest Plan has reached the end of its intended lifecycle (the current plan was approved in 1988). The Forest Plan is being revised in accordance with the 1982 National Forest System Land and Resource Management Planning Rule (1982 rule). This report provides social analysis in accordance with the 1982 rule (USFS 1992).

Revision Topics Addressed in this Analysis

The indicators listed for each revision topic are used to evaluate the social consequences of the various management alternatives.

Table 1: Evaluation Criteria and Key Indicators for Social Conditions

Issue	Evaluation Criteria	Key Indicator
Old Forest Management and Timber Production	Risk of wildlife in adjacent communities and the effects of commercial timber harvest	*Projected wood sale quantity (mmbf) and percentage of forest by wildfire risk level*
Motorized Recreation Trails	Distribution of motorized and non-motorized recreation opportunities	*Percent of total forest acreage for motorized and non-motorized use*
Access	Ability of users to access the forest	*Desired road density or road miles and share of motorized and non-motorized recreation opportunities*
Recommended Wilderness Areas	Non-market costs and benefits associated with wilderness	*Location and amount of recommended wilderness*

DRAFT

Relevant Laws, Regulations and Policy that Apply

Multiple statutes, regulations, and executive orders identify the general requirement for the application of social 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, 43414347) 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.

Executive Order 12898 issued in 1994 orders federal agencies to identify and address any adverse human health and environmental effects of agency programs that disproportionately impact minority and low-income populations.

The Civil Rights Act of 1964 provides for nondiscrimination in voting, public accommodations, public facilities, public education, federally assisted programs, and equal employment opportunity. Title VI of the Act, Nondiscrimination in Federally Assisted Programs, as amended (42 U.S.C. 2000d through 2000d-6) prohibits discrimination based on race, color, or national origin.

Affected Environment

Introduction

The Colville National Forest is in northeastern Washington, extending to Ferry, Pend Oreille, and Stevens counties. Towns near the Colville NF include Republic, Marcus, Kettle Falls, Colville, Northport, Metaline, Metaline Falls, Ione, Chewelah, Cusick, Springdale, and Newport.

The following analysis considers existing socioeconomic conditions, trends, and resource uses in the three-county area. In some cases, community-level data are available to document within-county conditions and trends. However, data availability and reliability decrease as the units of analysis become smaller. Therefore, most of the socioeconomic data are presented at the county-level. National and state-level socioeconomic data are presented for context.

DRAFT

Population Growth

In 2010, the population of the three-county planning area was approximately 64,000. As Table 2 reveals, county populations within the planning area vary considerably, with nearly six people in Stevens County for every one person in Ferry County. Population variation between counties highlights the importance of presenting disaggregated county-level data alongside the planning area-wide assessment. Trends in Stevens County may mask changes in smaller counties in data aggregations.

Table 2. Current Population and Growth Trends.

Location	1990 Population	2000 Population	% Change, 1990-2000	2010 Population	% Change, 2000-2010
Ferry County	6,295	7,260	15.3%	7,551	4.0%
Pend Oreille County	8,915	11,732	31.6%	13,001	10.8%
Stevens County	30,948	40,066	29.5%	43,531	8.6%
3-County Aggregate	46,158	59,058	27.9%	64,083	8.5%
Washington State	4,866,692	5,894,121	21.1%	6,724,540	14.1%
United States	248,709,873	281,421,906	13.2%	308,745,538	9.7%

Source: U.S. Census Bureau, 1990, 2000, and 2010

As Table 2 shows, the three-county region grew dramatically between 1990 and 2000 – surpassing both the state and national growth rates. However, the past decade has seen much more muted growth rates. Overall, the three-county area grew at a slower pace between 2000 and 2010 than either the state or nation.

The largest communities in the planning area (populations exceeding 1,000) are Colville (4,673), Chewelah (2,607), Newport (2,126), Kettle Falls (1,595), and Republic (1,073) (U.S. Census Bureau 2010).

Slower growth may indicate limited economic opportunities, aging populations, or a shift in location preferences. However, population growth rates do not tell a complete story. Neither high nor low growth rates can be used alone to demonstrate positive or negative changes in a county. As Grinspoon and Phillips (2007) explain, high population growth rates may lead to economic growth and diversity. However, they may also strain community capacity (e.g., physical and civic infrastructure) and lead to conflict between long-time residents and newcomers. The remaining analysis would seek to add context and clarity to trends and potential issues in these counties and the planning area as a whole.

Population Density

Population density can serve as an indicator for a number of socioeconomic factors of interest – urbanization, availability of open space, socioeconomic diversity, and civic infrastructure (Grinspoon and Phillips 2007; Horne and Haynes 1999). More densely

DRAFT

populated areas are generally more urban, diverse, and offer better access to infrastructure. In contrast, less densely populated areas provide more open space, which may offer amenity values to residents and visitors.

Table 3 gives population densities in the study area. All three counties are much less densely populated than either the state or nation. In general, Washington is a densely populated state – it is more densely populated than the nation as a whole. However, several counties in western Washington are primarily responsible for the state's high density. King and Kitsap counties in the Seattle metropolitan area and Clark County in the Portland, OR metropolitan area have more than 500 people per square mile (U.S. Census Bureau 2010).

Table 3. Population Density.

Location	People/Sq. Mile
Ferry County	3.4
Pend Oreille County	9.3
Stevens County	17.6
Washington State	94.3
United States	87.2

Source: U.S. Census Bureau 2010

Ferry and Pend Oreille counties have particularly low population densities, with fewer than 10 people per square mile. These are among the least dense counties in the state. These counties are clustered in the far northeastern area of Washington, which suggests that these counties may be particularly isolated. Residents in isolated counties generally have limited access to services, fewer economic opportunities, and face higher transportation costs.

Although population density may suggest urban or rural status in a county, it cannot indicate the concentration of urban and rural areas within a county. Wide disparities between urban and rural areas remain in terms of economic conditions, access to infrastructure and services, opportunities for socioeconomic mobility, and control over natural resources (Grinspoon and Phillips 2007). Disparities are caused by natural differences, political decisions, and social factors

The Economic Research Service classifies all counties on a rural-urban continuum using nine codes (1 is the most urban; 9 is the most rural). Pend Oreille and Stevens counties are in the Spokane metropolitan area, and are therefore classified as urban counties. However, Ferry County is classified as the entirely rural (ERS 2015). These data reaffirm the findings discussed under population density.

DRAFT

Median Age

Median age can reveal information relevant to land management decisions. Areas with a large proportion of retirees may have different needs and preferences than communities populated primarily with working age families. Table 4 provides the median age by county as well as the state and national averages.

Table 4. Median Age.

Location	Median Age
Ferry County	47.3
Pend Oreille County	47.8
Stevens County	45.0
Washington State	37.3
United States	37.2

Source: U.S. Census Bureau 2010, Table DP-1

Median age in the planning area is substantially older than the state and the nation. People living in the three counties are, on average, approximately 10 years older than the state and nation. This suggests that these counties have relatively high proportions of retirees and comparatively few young adults and families with children at home. (Note: this prediction is borne out in the labor versus non-labor income data presented below. All three counties have large shares of non-labor income.) Of the communities within 10 miles of the Colville National Forest, only Kettle Falls, Springdale, and Newport have median ages that approximate the state and national medians (U.S. Census Bureau 2010). The remaining communities have median ages that are substantially higher than the state and national medians. These data suggest that forest access for older individuals may be linked to community and household well-being.

Educational Attainment

Educational attainment, the measure of people with at least a high school diploma or bachelor's degree, is an important indicator of an area's social and economic opportunities and its ability to adapt to change. Table 5 lists the percentage of the adult population with a high school diploma and a bachelor's degree.

Table 5. Educational Attainment, Percent of Persons Age 25+.

Location	High School Graduate or Higher (%)	Bachelor's Degree or Higher (%)
Ferry County	88.6	16.7
Pend Oreille	87.7	17.9

DRAFT

Location	High School Graduate or Higher (%)	Bachelor's Degree or Higher (%)
County		
Stevens County	90.2	19.2
Washington	89.6	31.0
United States	85.0	27.9

Source: U.S. Census Bureau 2010, Table DP-02

The percentage of adults with at least a high school diploma in the planning area is similar to the state and national averages. The population with at least a bachelor's degree in the planning area, however, is low compared to the state and nation. The adult population with at least a bachelor's degree in the planning area is approximately ten percentage points lower than the national average. These data may indicate that the planning area counties provide few opportunities for highly educated workers. The presence of highly educated adults may be self-reinforcing: a highly educated population is a signal that an area provides economic and cultural opportunities, which attracts additional college educated adults to the area. This process leads to further economic development and job creation. In contrast, areas with low levels of educational attainment have lower levels of human capital, which reduces an area's ability to capitalize on economic change (Florida 2002).

Income and Earnings

Income data are key indicators of the economic well-being of a county. High per capita income and mean earnings may signal greater job opportunities, highly skilled residents, economic resilience, and well-developed infrastructure. Per capita income measures both labor income (i.e., wage and salary payments) and non-labor income (i.e., dividends, rents, and transfer payments) divided by the total number of people in a county. Mean earnings data consider only wage and salary payments to the working population in a county.

Table 6. Per Capita Income and Mean Earnings.

	Per Capita Income	Mean Earnings
Ferry County	$19,320	$48,305
Pend Oreille County	$22,647	$55,017
Stevens County	$21,928	$53,101
Washington	$30,661	$77,586
United States	$28,051	$74,373

Source: U.S. Census Bureau 2012b

DRAFT

Across all three planning area counties, both per capita income and mean earnings are considerably below the state and national figures. These data suggest that the planning area provides limited economic opportunities.

Table 7 displays the contribution of labor (i.e., wage and salary) and non-labor (i.e., rents, dividends, and transfer payments) sources of income to total personal income in the planning area counties. All three study area counties derive the majority of personal income from non-labor sources, which indicates that a large number of retirees reside in the area. In contrast, nearly two-thirds of personal income in both the state and nation come from labor earnings. These data are consistent with the finding that planning area residents are, on average, older than residents of the state and nation.

Table 7. Contribution of Labor and Non-labor Income to Total Personal Income.

	Labor %	Non-labor %
Ferry County	41.0	59.0
Pend Oreille County	45.2	54.8
Stevens County	46.5	53.5
Washington	64.7	35.3
United States	64.6	35.4

Source: U.S. Bureau of Economic Analysis 2012

Non-labor income can provide economic stability in an area, as it is not directly tied to employment. However, reliance on non-labor income also has drawbacks: first, as the latest recession illustrated, asset markets can be high risk. Dramatic changes in the value of homes and investment portfolios may significantly decrease non-labor income. Second, some forms of non-labor income, particularly transfer payments (e.g., Social Security), are contingent on government policy. Changes in policy would affect this type of income. Third, the types of goods and services bought with non-labor income would affect the economic impact. For instance, a county that has a high rate of amenity retiree part-year residents is likely to experience growth in related industries, such as tourism and recreation. Jobs in these industries are often low wage and seasonal, which may increase employment, but decrease mean earnings.

Economic Diversity

Economic diversity generally promotes stability and offers greater employment opportunities. Highly specialized economies (i.e., those that depend on very few industries for the bulk of employment and income) are more prone to cyclical fluctuations and offer more limited job opportunities. Determining the degree of specialization in an economy is important for decision-makers, particularly when the dominant industry can be significantly affected by changes in policy. For Forest Service decision-makers, this is likely to be the case where the forest products industry or the tourism and recreation industries, for instance, are reliant on the local national forest.

DRAFT

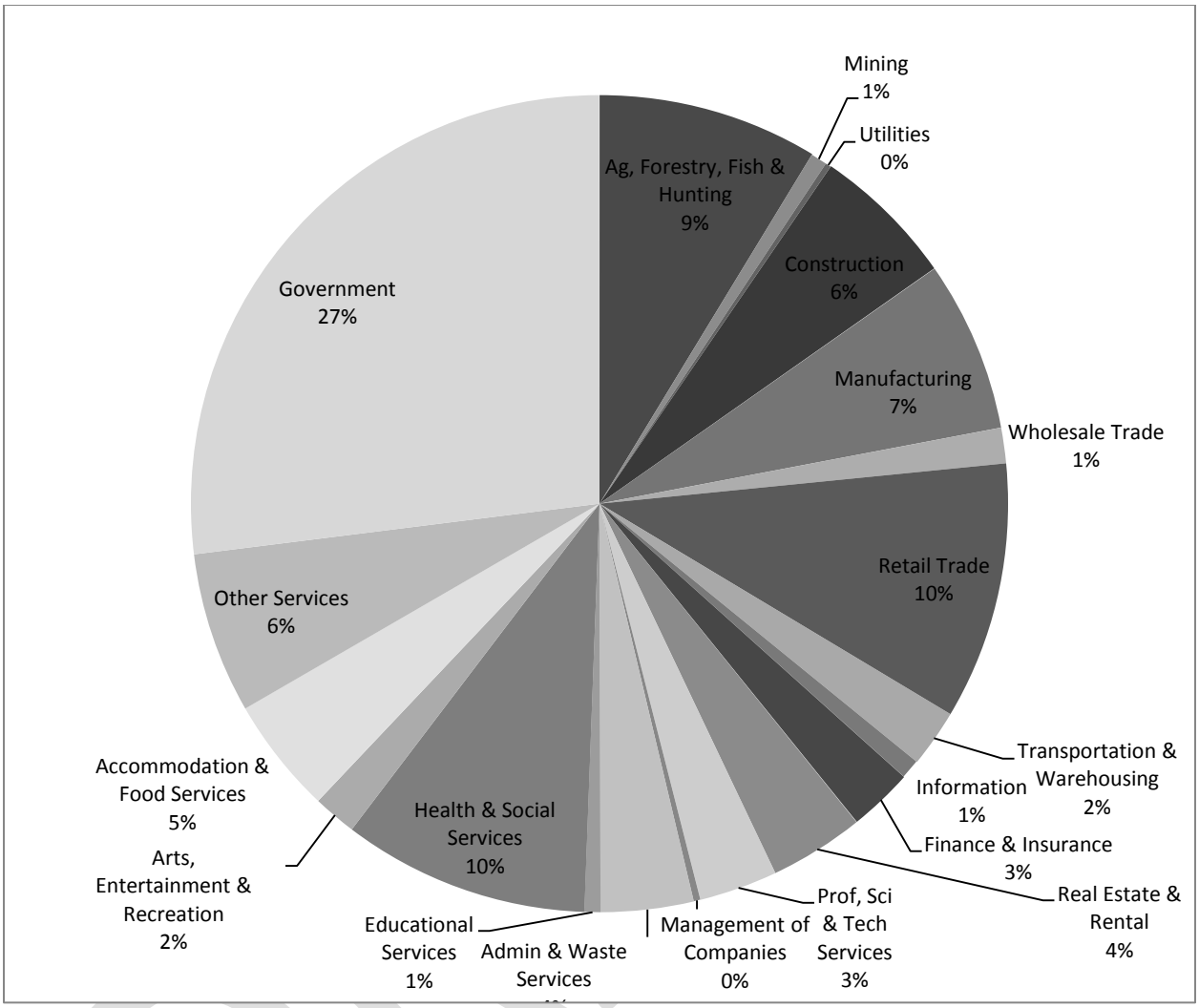


Figure 1. Employment by Industry.

Source: IMPLAN 2010

Figure 1 provides a breakdown of employment by industry in the planning area. Government is the dominant employer, accounting for more than one-quarter of planning area employment. Nationally, approximately 14 percent of employment is with the government (all levels). The planning area is also specialized in agriculture, forestry, fishing and hunting, which accounts for 9 percent of employment in the three-county area. For context, this sector is responsible for less than 2 percent of national employment (IMPLAN 2010).

Economists, borrowing from ecologists, use a diversity index (variously called the Shannon Index, Shannon-Weiner Index, and Shannon-Weaver Index) to assess the degree of economic specialization. The index ranges from zero (most specialized) to one (most diverse). The planning area scores 0.67 on this index. In contrast, Washington scores 0.74 and the US scores 0.76 (IMPLAN 2010). A low economic diversity rating may indicate lower economic resilience. This concept is discussed in more detail in the Community Resilience section.

Unemployment

The unemployment rate provides insight into the correspondence between residents' skills and employment opportunities. The "natural" rate of unemployment has been posited to be around 5 percent. This is the so-called "natural" rate because this is a level that allows for movement between jobs and industries, but does not signal broad economic distress. The national unemployment rate has stayed substantially above this rate since 2009. Figure 2 shows the unemployment trends for the nation, state, and three-county planning area since 2000.

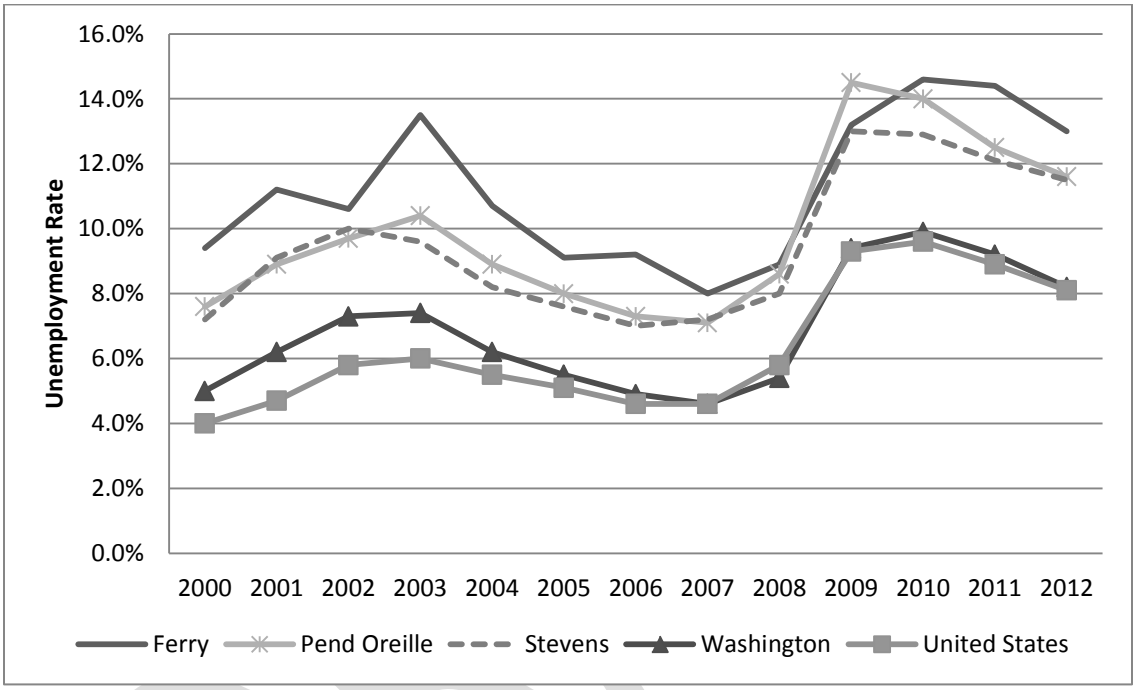


Figure 2. Unemployment Rate.

Source: U.S. Bureau of Labor Statistics 2013

Since the middle of the decade, Washington's unemployment rate has converged with the national rate. In contrast, the unemployment rate in the three-county area has consistently exceeded the national and state unemployment rates since 2000. These data suggest that the planning area may be less able to adapt to economic changes.

Environmental Justice

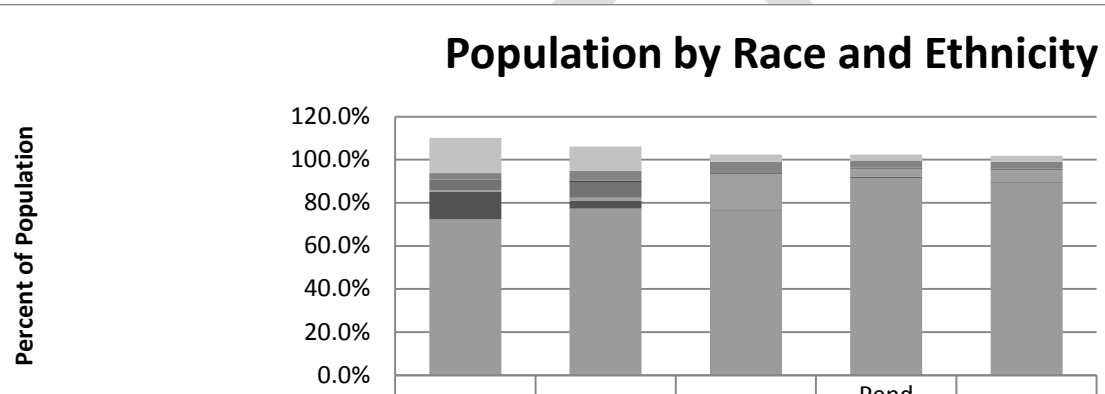
In 1994, President Clinton issued Executive Order 12898 (Office of the President 1994). This order mandates that all federal agencies analyze the potential for their actions to disproportionately affect minority and low-income populations. The Council on Environmental Quality (CEQ) issued supplemental guidance to assist agencies' compliance (CEQ 1997). The CEQ suggests the following criteria for identifying potential Environmental Justice populations:

"Minority population: Minority populations should be identified where either: (a) the minority population of the affected area exceeds 50 percent or (b) the minority population percentage of the affected area is meaningfully greater than the minority

population percentage in the general population or other appropriate unit of geographic analysis..."

"Low-income population: Low-income populations in an affected area should be identified with the annual statistical poverty thresholds from the Bureau of the Census' Current Population Reports, Series P-60 on Income and Poverty. In identifying low-income populations, agencies may consider as a community either a group of individuals living in geographic proximity to one another, or a set of individuals (such as migrant workers or Native Americans), where either type of group experiences common conditions of environmental exposure or effect."

According to the Census data reported in Figure 3 below, Native American populations meet the environmental justice criterion as a minority population meaningfully greater than the general population. Therefore, decision makers in planning area should give particular consideration to the potential impacts of management actions on Native American populations.



	United States	Washington	Ferry County	Pend Oreille County	Stevens County
Latino, Hispanic	16.3%	11.2%	3.4%	3.0%	2.7%
Two or More Races	2.9%	4.7%	4.8%	2.9%	3.3%
Native Hawaiian, Pacific Islander	0.2%	0.6%	0.1%	0.1%	0.2%
Asian	4.8%	7.2%	0.7%	0.6%	0.5%
Native American, Alaska Native	0.9%	1.5%	16.7%	3.8%	5.5%
Black, African American	12.6%	3.6%	0.3%	0.4%	0.3%
White	72.4%	77.3%	76.3%	91.6%	89.4%

Figure 3. Population by Race and Ethnicity.

Source: U.S. Census Bureau 2010, Table DP-1

Note: Hispanic and Latino individuals may be of any race, therefore, totals will not sum to 100%

More than 15 percent of Ferry County's population identifies as Native American or Alaska Native, indicating that effects on tribal uses and values should be thoroughly analyzed. Pend Oreille and Stevens counties also have large Native American/Alaska Native populations relative to Washington and the United States. Compared to the state

and nation, the planning area has fewer individuals who identify as Hispanic/Latino, Black/African American, or Asian.

Table 8 shows the share of individuals living in poverty in 2010. All three counties have poverty rates that exceed the state and national rates. The relatively high poverty rates across the planning area highlight the importance of considering potential environmental justice impacts in the decision-making process.

Table 8. Poverty Rates.

Location	% People Living in Poverty
Ferry County	20.8
Pend Oreille County	18.3
Stevens County	15.1
Washington State	12.1
United States	13.8

Source: U.S. Census Bureau 2012a

Ferry County has the highest poverty rate, with approximately one-fifth of residents living in poverty. Ferry County also has the highest percentage of minority residents in the planning area, suggesting overlap between race and poverty. Tribal land uses in Ferry County (e.g., subsistence gathering on the Forest) should would be analyzed in the context of high poverty rates.

Table 9 displays the poverty rate by race and ethnicity for each of the three counties, Washington, and the US. As the table reveals, the poverty rate often varies substantially across races and ethnicities. In all considered geographies, non-Hispanic white residents experience the lowest levels of poverty. Overall, the table indicates a strong correlation between minority status and poverty in the planning area.

Native American/Alaska Native individuals experience the highest rates of poverty in the planning area, with approximately one-quarter of these individuals living below the poverty line. Each instance of the poverty rate exceeding 25 percent is highlighted gray.

Table 9. Poverty by Race and Ethnicity.

Location	Poverty Rate, by Race and Ethnicity					
	White, Not Hispanic	Black, African American	Native American, Alaska Native	Asian	Native Hawaiian, Pacific Islander	Latino, Hispanic
Ferry County	17.2%	N/A	24.1%	N/A	N/A	N/A
Pend Oreille County	17.5%	N/A	29.0%	N/A	N/A	18.7%

Location	Poverty Rate, by Race and Ethnicity					
	White, Not Hispanic	**Black, African American**	**Native American, Alaska Native**	**Asian**	**Native Hawaiian, Pacific Islander**	**Latino, Hispanic**
Stevens County	14.7%	14.7%	25.5%	18.5%	N/A	26.5%
Washington State	8.2%	18.6%	21.1%	12.2%	13.3%	24.2%
US	7.9%	23.4%	22.3%	12.3%	15.7%	22.1%

Source: U.S. Census Bureau 2000

Note: N/A indicates that this data was not available from the Census Bureau. To protect the identity of respondents, the Census Bureau does not report data where fewer than 100 individuals compose the sample.

A low prevalence of minority residents, poverty, or both, should not be construed as evidence that environmental justice issues would not arise as a result of forest planning decisions. All decisions would be scrutinized for any potential adverse impacts on vulnerable populations, wherever they reside in the planning area.

Three federally recognized tribes are engaged in the plan revision process at varied levels: the Colville Confederated Tribes, the Spokane Tribe, and the Kalispel Tribe.

Values, Beliefs, and Attitudes

Values are "relatively general, yet enduring, conceptions of what is good or bad, right or wrong, desirable or undesirable."

Beliefs are "judgments about what is true or false – judgments about what attributes are linked to a given object. Beliefs can also link actions to effects."

Attitudes are "tendencies to react favorably or unfavorably to a situation, individual, object, or concept. They arise in part from a person's values and beliefs regarding the attitude object" (Allen et al 2009).

The James Kent Associates report, "Community Field Reports in Support of the Upcoming Land Use Planning for the Spokane District Office of the Bureau of Land Management," (JKA 2010) outlines values, beliefs, and attitudes expressed by eastern Washington residents toward public lands management. Although this report focuses on BLM management, much of the information is also relevant for Forest Service decision makers in northeastern Washington. The report divides area into "human resource units". The relevant unit for the planning area is the Colville human resource unit.

A common theme across northeastern Washington residents was an appreciation for public lands because of outdoor recreation activities, such as hiking, skiing, and OHV use. However, the local economy in the Colville human resource unit remains reliant on public land resources. Timber, agriculture, and mining are socially and economically important sectors. The varied uses of public lands have the potential to give rise to conflict between residents. The Colville human resource unit is traditionally based on cattle grazing, timber production, and mining. Despite the growth in recreation

participation in the area, some residents believe recreation to be less important to the local economy due to the perception that it "does not add directly to local government revenue the way that traditional economic sectors do" (JKA 2010, pg. 132).

Changes in outdoor recreation habits have led to conflict between users with different recreation values. Motorized and non-motorized users often express different recreation values, which can lead to conflict on the trails. Some respondents expressed a belief that all areas should be open to OHV use, which has been curtailed in many areas as a result of travel management planning. In contrast, non-motorized users expressed concern that motorized users jeopardized the safety of other users and the ecological values of the land.

A dominant trend across human resource units in the JKA report is the social and economic changes occurring across the planning area. While many of these changes benefit local residents through outdoor recreation opportunities and economic growth, many residents feel that these changes are compromising traditional values in the community. Residents who rely on public lands for a living are witnessing a shift in attitudes in their communities about how public lands should be used. Whereas commodity uses such as grazing and timber were once dominant, the growth in outdoor recreation can come into conflict with commodity values.

In addition to the JKA report, a sample of public comments related to social and economic conditions was reviewed. Sixteen interest areas were identified and used to code the comments. These include: fire and fuels management, citizen involvement, mineral extraction, economic development, wilderness designation, ecosystem services, access, livestock grazing, motorized recreation, non-motorized recreation, road and trail maintenance, multiple use management, hunting and fishing, timber and forestry, forest health, and roadless areas. These interest areas are closely aligned with the values expressed in the comments. Promotion of forest health, protection and expansion of diverse recreation opportunities, economic development, preservation of public access to NFS lands, and public involvement in agency decision-making are values that were present in one or more of the comments in the sample.

A number of public comments expressed a belief that closures and restrictions are antithetical to public lands. For these forest users, continued access for recreation and grazing - via motorized and non-motorized means – is the paramount concern. One member of the public commented, "We already don't have enough riding areas to enjoy with our families and now there is more 'take away'? When will it end?" This sentiment was common among forest users who believe that wilderness recommendations would limit access to their favorite places.

Some individuals argued that because they contribute to trail maintenance, they have a right to forest access. These users believe that they act as stewards of the forest, and efforts to limit their access do not recognize the contributions they make.

Others comments prioritized forest health over public access. These individuals expressed a belief that wilderness designation protects forests and ecosystem services for future generations. One comment claimed that there is an imbalance in the quality of the recreation experience for motorized and non-motorized users - those who value "solitude, quiet, and fresh clean air," have fewer opportunities.

Community Resilience

Defining Community Resilience

Community (or socioeconomic) resilience relates to humans' ability to adapt to social and economic changes. Quigley et al (1996) define community resilience as: "the capacity of humans to change their behavior, redefine economic relationships, and alter social institutions so that economic viability is maintained and social stresses are minimized". Numerous studies have attempted to measure community resilience in the Pacific Northwest. The Interior Columbia Basin Ecosystem Management Plan (ICBEMP) assessed the community resilience of all 100 counties in its planning area. Community resilience is a particularly salient topic for Forest Service managers in this region, where many local communities rely on forests for income, employment, and leisure. Forest-dependent communities are more likely to experience social and economic consequences due to changes in forest management.

Community Resilience Indicators

Unfortunately, the definition of community resilience does not offer tools for its measurement. Therefore, indicators are needed to serve as proxies for resilience. Ecologists have found that ecological diversity contributes to ecosystem resilience. This finding can translate to the social sciences – more diverse communities generally adapt to and integrate change more rapidly and successfully than their less diverse counterparts. Using this assumption as a starting point, social scientists have developed numerous measurable indicators to assess community resilience.

Horne and Haynes (1999) use three indicators to measure community resilience for the ICBEMP: economic resilience, lifestyle diversity, and civic infrastructure. An economic diversity index is used as a proxy for economic resilience. Scores on this index range from zero (no diversity) to one (perfect diversity). Table 10 presents the economic diversity index for counties in the planning area. Economic diversity ratings for planning area counties are determined relative to the state's diversity index. Washington scores 0.740 on the economic diversity index. "High" ratings are assigned to counties with indices at least 95% of the state's index (0.703 or higher). "Medium" ratings are given to counties with indices between 85% and 95% of the state (0.629-0.702). "Low" ratings are assigned to counties that are less than 85% as diverse as the state (below 0.629).

Table 10. Economic Diversity Index.

Location	Diversity Index	Rating
Ferry County	0.596	Low
Pend Oreille County	0.594	Low
Stevens County	0.674	Medium

Source: IMPLAN 2010

No planning area counties have high levels of economic diversity. Nevertheless, there is variation between planning area counties. Stevens County is significantly more

DRAFT

economically diverse than Ferry and Pend Oreille counties, which have low levels of economic diversity. These findings are consistent with the population data presented at the beginning of this report, which found that Ferry and Pend Oreille counties have low population densities. As described earlier, rural areas typically offer fewer economic opportunities.

Lifestyle diversity presents a greater measurement challenge. Horne and Haynes (1999) used the PRIZM market segmentation database, which is not available for this report. More recently, a Forest Service study was conducted to measure the socioeconomic resilience of Washington counties (Daniels 2004). Rather than relying on a single database, Daniels creates a composite measure of lifestyle diversity. Mobility, ethnicity, degree of urbanness, race, income, and education are used as proxies for lifestyle diversity. Daniels' findings are copied below, in Table 11, for the planning area counties.

Table 11. Lifestyle Diversity Ratings.

Location	Diversity Rating
Ferry County	Low
Pend Oreille County	Low
Stevens County	Low

Source: Daniels 2004, pg. 15

Lifestyle diversity ratings in all planning area counties are categorized as "low". These findings are consistent with the population density, educational attainment, and race and ethnicity data discussed earlier.

Civic infrastructure includes community leadership and preparedness for change. Given the difficultly of directly measuring civic infrastructure, Horne and Haynes (1999) use population density as a proxy for civic infrastructure. Daniels (2004) explains the intuition for this proxy: "the relative isolation of [low population density] counties results in a lower propensity to establish elements of civic infrastructure" (pg. 18). Density data were previously presented (in the Population Density section). All planning area counties are much less densely populated than the state. These data suggests that the planning area has low levels of civic infrastructure.

Following Daniels' (2004) method, counties with fewer than 10 people per square mile are given "lowest" ratings, which confer a zero score in the composite calculations. Two planning area counties – Ferry and Pend Oreille counties – fall in this category. Counties with population densities between 10 and 30 are given "low" ratings. Stevens County is in this category. No counties in the Colville NF planning area are in the "medium" or "high" categories.

Composite Community Resilience Measures

The three community resilience indicators – economic resilience, lifestyle diversity, and civic infrastructure – are averaged to calculate composite community resilience ratings. Counties are scored on a zero to three scale (zero is the least resilient). Table 12 presents the community resilience ratings for planning area counties.

DRAFT

Table 12. Composite Community Resilience Measures.

Location	Economic Diversity	Lifestyle Diversity	Civic Infrastructure	Composite Score
Ferry County	Low	Low	Lowest	0.67
Pend Oreille County	Low	Low	Lowest	0.67
Stevens County	Medium	Low	Low	1.33

Source: Daniels 2004; Horne and Haynes 1999

In analyzing the community resilience information, it is important to keep in mind that low resilience ratings are not synonymous with "bad," just as high resilience ratings do not confer superior status. Some residents of low resilience counties may value elements of their counties that are not captured in resilience analysis. For instance, "traditional" social and economic lifestyles may be compromised as a community moves from low to high resilience. This trend was discussed in the Values, Beliefs, and Attitudes section. Community resilience information is relevant for Forest Service managers in considering the consequences of social and economic change. Management actions that alter social or economic activities in low resilience counties are more likely to have pronounced impacts.

Ferry and Pend Oreille counties have the lowest community resilience ratings, both scoring 0.67. This indicates that these counties would be least able to successfully adapt to social and economic changes. Stevens County has a somewhat higher, though still low, community resilience rating. These findings suggest that Forest Service management actions on the Colville NF that affect social and economic conditions in the surrounding communities may be difficult to assimilate. The ability of the communities to adapt to, and benefit from, social and economic change is expected to be low.

Forest Dependence

Community resilience data, without further context, may not be particularly useful for estimating the social and economic consequences of Forest Service management actions. Assessing the degree to which planning area counties benefit from forest land is essential to understand the resilience of local communities to Forest Service actions. Counties derive income and employment from the forest products and tourism industries. Additionally, local residents use forests for recreation, spiritual and cultural activities. Frequently, forests also anchor sense of place, which contributes to social well-being. Table 13 provides the percentage of land in each county that is forested (note: this includes all forest land, not just National Forest System lands).

Table 13. Forested Lands.

Location	Forest Land Area, Percent of Total Land
Ferry County	86.78%

Location	Forest Land Area, Percent of Total Land
Pend Oreille County	75.76%
Stevens County	75.69%

Source: Daniels 2004, pg. 24

Counties of particular concern are those with low resilience ratings and high forest dependence. Ferry, Pend Oreille, and Stevens counties have very high percentages of forest land, which accounts for at least three-quarters of the land base in each county. Ferry and Pend Oreille counties also have the lowest community resilience ratings. The combination of these factors suggests that Colville NF managers should pay particular attention to how management actions would affect the social and economic conditions in these counties.

The percentage of forest land is not a complete measure of dependence on forest resources. The importance of forest-related economic sectors also provides insight into the role of forest lands in the planning area counties. Table 14 shows the contribution of the forestry and commercial logging sectors to employment and income, by county. These findings are consistent with the percentages of forest land by county. Ferry, Pend Oreille, and Stevens counties are all comparatively more reliant on timber-related employment than the state. Furthermore, the forestry and commercial logging industry is more dominant in Washington than it is in the nation as a whole (IMPLAN 2010).

Table 14. Forestry and Commercial Logging Employment and Income, Percent of Total.

Location	Forestry and Commercial Logging Employment, % of Total	Forestry and Commercial Logging Employee Compensation, % of Total
Ferry County	2.2%	2.6%
Pend Oreille County	4.3%	10.3%
Stevens County	5.8%	9.9%
Washington State	0.7%	0.9%

Source: IMPLAN 2010

However, timber is not the sole forest resource that contributes to the local economy. Recreation and wildlife-related visits are major contributors to local employment and income. Activities on the Forest, both consumptive (e.g., logging) and non-consumptive (e.g., wildlife viewing), support the local economy. Many of the communities adjacent to the Colville NF are reliant on employment in the natural resources sectors (agriculture, forestry, fishing and hunting, and mining). More than one-third of employment in Ione is in natural resources; approximately 10 percent of Kettle Falls, Republic, Metaline Falls, and Newport residents are employed in natural resource sectors (U.S. Census Bureau 2012). The economic specialist report contains an assessment of the economic contribution of Forest Service activities to the local economy.

DRAFT

Access and Use

Visitor Use Data

Table 15 presents a breakdown of visitor activities on the Colville National Forest. Activity participation is reported according to the percentage of visitors who engaged in that activity (either alone or in combination with other activities) and the percentage of visitors who reported the activity as their main use of the Forest during their visit. The most commonly reported activities are not necessarily the most frequently reported main activities. For instance, one-fifth (20.9 percent) of Forest visitors reported that they viewed wildlife during their visit. However, only approximately one-half of one percent (0.4 percent) of visitors indicated that wildlife viewing was their primary trip purpose.

The most common activities (by main activity) are downhill skiing and viewing natural features, which were each reported as the main activity by more than 10 percent of visitors. Hiking/walking, relaxing, developed camping, gathering forest products, fishing, and snowmobiling were each the main activities for more than 5 percent of visitors.

The activity participation breakdown indicates that forest users engage in a diverse range of activities. Both motorized (e.g., snowmobiling) and non-motorized activities (e.g., hiking/walking) are common. Furthermore, forest resources provide diverse types of value. Consumptive uses (e.g., fishing and gathering forest products) exist alongside non-consumptive uses (e.g., viewing natural features). This diversity makes it difficult to generalize about forest uses. The available data suggest that multiple-use management of the forests is consistent with existing use patterns.

Table 15. Activity Participation on the Colville National Forest.

Activity	% Participation	% Main Activity
Viewing Natural Features	30.7	12.0
Hiking/Walking	29.0	7.8
Relaxing	28.3	5.7
Downhill Skiing	24.0	23.3
Driving for Pleasure	21.9	2.0
Viewing Wildlife	20.9	0.4
Developed Camping	18.5	8.5
Gathering Forest Products	13.8	8.6
Fishing	13.6	5.5

DRAFT

Activity	% Participation	% Main Activity
Picnicking	13.3	0.4
Other Non-motorized	9.1	2.5
Motorized Trail Activity	8.3	4.3
Snowmobiling	7.7	7.2
OHV Use	6.6	1.4
Primitive Camping	6.0	1.7
Motorized Water Activities	6.0	2.2
Bicycling	5.1	1.0
Nature Study	4.9	0.7
Non-motorized Water	4.2	1.1
Hunting	3.6	1.6
Visiting Historic Sites	3.2	0.0
Nature Center Activities	3.1	0.0
Cross-country Skiing	2.6	1.6
Backpacking	2.5	0.4
Resort Use	2.0	0.0
Some Other Activity	1.3	0.4
Other Motorized Activity	0.8	0.7
Horseback Riding	0.7	0.1
No Activity	0.3	0.3

DRAFT

Activity	% Participation	% Main Activity
Reported		

Source: USFS 2012a

Firewood

The Colville NF provides firewood permits for personal and (limited) commercial use. Table 16 displays the volume and value of firewood cut and sold on the Forest in fiscal year 2012.

Table 16. Cut and Sold Firewood, Volume and Value, FY12.

Forest	Sold Volume (CCF)	Sold Value	Cut Volume (CCF)	Cut Value
Colville NF	10,242.50	$60,250.00	10,400.60	$61,240.00

Source: USFS 2012b

For households in the planning area, firewood from the forest may provide an affordable source of heating. Table 17 lists the percentage of households in each county that report using wood as their primary heating source. The three Colville NF counties – Ferry, Pend Oreille, and Stevens – have a substantially higher reliance on firewood compared to the state as a whole. Indeed, more than half of households in Ferry County use firewood as their primary heat source. These data suggest that changes to firewood availability on the Colville NF would have the potential to affect the well-being of households in the planning area.

Table 17. Percentage of Households with Wood as Primary Heating Fuel.

Location	% Households with Wood as Primary Heating Source
Ferry County	52.7%
Pend Oreille County	29.2%
Stevens County	32.2%
Washington State	4.5%

Source: U.S. Census Bureau 2012a

Several of the communities adjacent to the Colville NF are particularly reliant on wood as the primary home heating source. Approximately 60 percent of households in Springdale and Marcus use wood as the primary heating source. Nearly half of households in Republic and Northport rely on wood heating (U.S. Census Bureau 2012). Changes to firewood availability on the Colville NF could affect household well-being in these communities by affecting the cost of home heating.

Forest Access

NFS lands provide commercial, cultural, and leisure opportunities. Access to these lands is often a chief concern voiced by the public. Approximately 41 percent of the public comments reviewed (7 of 17 unique comments) expressed a primary interest in forest

DRAFT

access. Most of these comments addressed the desire for continued access to favorite recreation areas. Both motorized and non-motorized recreation participants expressed concerns related to forest access.

A number of access-related comments argued against recommending additional wilderness areas. One comment claimed that wilderness designation blocks use and enjoyment of the forest by the majority of people. Inventoried roadless areas and travel management planning limit the ability of motorized users to recreate on public lands without restrictions, and some motorized users commented that they feel their recreation opportunities on the forests are being eroded. However, another comment stressed the importance of regulating access so that those who desire quiet and solitude do not need to compete with motorized and mechanized recreation users. Other comments addressed the trade-off between unencumbered access and forest health.

Wildfire and the Wildland-Urban Interface

Annually, millions of dollars are spent suppressing wildfires in the United States. In 2007, there were 27 large fires in the U.S. that cost $547 million to suppress (WFLC 2010). Between 2000 and 2008, the percentage of the Forest Service budget spent on extinguishing wildfires expanded from 25 to 44 percent (WFLC 2010). Furthermore, suppression costs account for only a fraction of the total cost of wildfires. The Western Forestry Leadership Coalition estimates that total wildfire-related expenses range from two to thirty times the reported suppression costs (2010).

A principal reason for the increasing cost is the growing number of homes located in the wildland-urban interface (WUI). Suppression activities are frequently undertaken when wildfire threatens private property. A century of fire suppression has led to increased frequency of high-intensity wildfire. The spread of the WUI has increased the probability that wildfires would occur near private residences. These two factors – the growth of the WUI and the use of suppression tactics – increase the cost of wildfire. Table 18 presents the extent of the wildland-urban interface and wildfire risk in the planning area counties.

Table 18. Homes in Wildland-Urban Interface and Wildfire Risk.

Location	WUI Homes as % of Total Homes	West-Wide Rank by Existing Risk (of 413 counties)	West-Wide Rank by Potential Risk (of 413 counties)
Ferry County	21.2%	115	46
Pend Oreille County	34.8%	81	58
Stevens County	18.6%	41	10
Washington State	8.1%	--	--

Source: Gude et al 2008

WUI development is a major land use in Ferry, Pend Oreille, and Stevens counties. Wildfire and fire management activities, therefore, are likely to affect private property and quality of life in communities near the Colville NF. While the WUI is correlated with

wildfire risk, Forest Service activities, such as fuel reduction projects and old growth management, may also influence the risk and hazard of wildfire.

Need for Change

Old Forest Management and Timber Production

Some members of the public are concerned that the proposed action does not protect old forests and wildlife habitat as well as the current forest plan. Other members of the public are concerned that the proposed action does not allow enough timber production, which hurts the economy. Some are also concerned that the proposed action limits the Forest Service's ability to defend forests from insects, disease, and fire.

Motorized Recreation Trails

Public comments reflected opposing desires regarding motorized recreation opportunities, particularly the distribution and quantity of motorized trails. Some members of the public expressed concerns that the distribution and quantity of motorized trails negatively affects tourism and the local economy, while other stakeholders[1] said that they want fewer miles of motorized trails and that they do not like the resource damage, noise, and conflict associated with them.

Access

Some stakeholders expressed concern that the proposed action does not provide enough roads for recreation, grazing, fire suppression, timber harvest, and firewood collection. They commented that lack of access would have a negative impact on economic well-being. Other stakeholders expressed concern that the Forest Service does not have the capacity to maintain the current road network and that unmaintained roads damage wildlife, water, and fish.

Recommended Wilderness Areas

While forest plans may make a preliminary recommendation for additional wilderness, only Congress can designate wilderness. Some stakeholders are concerned that the proposed action recommends too much additional wilderness. They commented that more wilderness areas hurt the economy by limiting timber harvest, grazing, mountain biking, and motorized recreation. Members of the public also raised concerns about the increased cost of managing additional wilderness.

Other stakeholders said that the proposed action does not include enough additional wilderness areas; they want more. They said that they want to make sure that wilderness provides habitat connections for wildlife. Additionally, some members of the public are concerned about protecting the uniqueness of these areas, and they said that additional wilderness improves the local economy.

[1] Stakeholders are members of the public that have an interest in use and management of the Colville National Forest.

Wildlife

The public is concerned that the proposed action does not adequately protect wildlife. They said that they want more protection for federally listed species such as grizzly bear, lynx, caribou, and other wildlife species of concern such as wolverine and northern goshawk. To protect these species, stakeholders said they want connected habitats, habitats that are not disturbed by roads and trails, as well as more large trees and snags.

Other stakeholders are concerned that increasing wildlife protection decreases opportunities for recreation, timber production, and livelihoods.

Riparian and Aquatic Resource Management

Some members of the public expressed concern that the proposed action does not adequately protect riparian areas such as those adjacent to streams, lakes, wetlands, and rivers. They said that they want the Forest Service to limit the negative effects of roads, grazing, and off-highway vehicles in these areas. Other members of the public are concerned that the protection of these aquatic resources limits timber production, grazing, and recreation.

Public comments raised concerns that the proposed action does not provide watershed and aquatic resource protections that are as effective as current forest plan direction. Concerns centered on managing possible detrimental impacts of uses such as roads, livestock grazing, and motorized trails in riparian areas.

DRAFT

Environmental Consequences

Methodology

Assumptions

- Assume the budget levels would continue along current trend lines, with the possibility of the amount varying by 20 percent plus or minus.
- The identification of social values relies on the James Kent Associates report (JKA 2010), public scoping comments, and discussions with Colville NF staff.
- The effects of recommended wilderness (RW) areas are based on the assumption that these areas would be designated as wilderness by Congress.
- Higher road density improves forest access for both commercial and recreational forest users.
- Economic and leisure opportunities on the forest are utilized at levels similar to existing conditions.

Methods of analysis

The social analysis combines Forest Service data on resource use (recreation, grazing, forest products, and minerals) with information on social values to estimate how changes in forest management would affect human well-being.

The Forest Service resource data was obtained from:

- National Visitor Use Monitoring program (recreation)
- Cut and sold reports (forest products)
- Natural Resources Manager (minerals and grazing)

Information on social values, as described in the affected environment section, is based on public comments and the report on the attitudes of eastern Washington residents toward public lands (JKA 2010).

The evaluation criteria and indicators used in this analysis are described at the beginning of this document.

Incomplete and Unavailable Information

Uncertainty about future demographic change, social values and norms, and market conditions constrain the reliability of projections of the social environment in fifteen years.

Spatial and Temporal Context for Effects Analysis

The spatial context for the social effects analysis includes Ferry, Pend Oreille, and Stevens counties. Due to the programmatic nature of forest planning, site specific

DRAFT

consequences cannot typically be estimated. Therefore, the social analysis estimates effects at the regional (3-county) level.

The temporal context for the analysis extends fifteen years, which is the expected life of a forest plan.

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

The cumulative effects analysis considers actions on the Confederated Tribes of the Colville Reservation, Kalispel Tribe Reservation lands, lands administered by the Okanogan-Wenatchee and Idaho Panhandle National Forests; other federal and state land; and lands of other ownerships both within and adjacent to the Colville National Forest boundaries.

Management of adjacent federal lands may affect social values, including diverse recreation opportunities, community economic stability, public land access, provision of ecosystem services, and fire risk in the wildland-urban interface.

Increased opportunities to use and enjoy adjacent federal lands – e.g., through the development of recreation opportunities or increased opportunities to engage in commodity development – may substitute for such activities on the Colville National Forest. In contrast, fewer opportunities to use and enjoy adjacent federal lands could increase the public's desire for these opportunities on the Colville National Forest.

Private and municipal decisions may affect the development and use of adjacent private lands. Private decisions related to development in the wildland-urban interface may increase the likelihood that wildfire would adversely affect private property and human health. Private development near the forest may also affect the social acceptability of smoke emissions resulting from prescribed fire. Decreased acceptance of prescribed fire would increase the difficulty and cost of restoring the forest to desired conditions.

Population growth in communities adjacent to the forest may affect both demand for and supply of ecosystem services. For example, the conversion of private land from forest to residential development may affect the provision of water to downstream communities while population growth increases the demand for water and other ecosystem services. Forest management actions are unlikely to measurably affect demographic change, but the consequences of management actions would be influenced by demographic change.

DRAFT

Alternative 1 – No Action

This is the current Colville Forest Plan as amended. No Action means the current management direction would continue.

Summary of Effects

The No Action alternative is less likely to protect old forests and their associated social values than the Proposed Action. As a result, the flow of ecosystem services to adjacent communities may decrease while the risk of wildfire to private property and human health would increase. Access, recreational opportunities, and other forest uses that support quality of life and community resilience would not change relative to current conditions. Lower forest resilience may decrease the production of culturally-important foods, which may affect tribal interests and well-being.

Old Forest Management and Timber Production

The No Action alternative would not alter old forest management on the Colville NF. Old growth management areas and the Eastside Screens would continue to regulate forest activities to protect old forest habitat. The old forest reserves would continue to account for approximately three percent of the Colville NF. However, old forests are expected to decline due to disturbances such as fire and insects, competition for water and nutrients, and age. Wildfire risk to adjacent communities would continue, which may affect private property and human health. Climate change is expected to exacerbate tree mortality and threats to human health and property (Gaines et al 2012). Under the No Action alternative, only 23 percent of the Colville NF would be within the historic range. This alternative has the highest risk of uncharacteristic wildfire to communities adjacent to the forest.

The No Action alternative would do less to protect old forests than the Proposed Action. Forest visitors and interest groups value old forest for wildlife viewing, spiritual opportunities, and non-use values (e.g., knowing that old forests exist and may be seen by future generations). The No Action alternative would also be less likely to sustain a flow of ecosystem services related to old forests – including wildlife habitat and spiritual values – than the Proposed Action. Therefore, communities that rely on the Colville National Forest for ecosystem services may have their quality of life decline compared to management under the PA alternative.

The No Action alternative would lead to the harvest of approximately 41 million board feet annually. Wood products harvested from the Colville National Forest supports employment and income in the local economy, as described in the economics specialist report. The No Action alternative would not affect firewood harvesting. Firewood would continue to be removed from the forest, in quantities similar to current conditions. As described in the affected environment section, firewood is an important home heating source in the planning area. The No Action alternative would not change the availability of firewood in nearby communities. Therefore, no changes to quality of life or household expenditures related to home heating and firewood are expected as a result of this alternative.

DRAFT

Motorized Recreation Trails

Currently, 11 percent of the Colville NF is designated as backcountry non-motorized areas. This designation, together with the three percent of the forest in designated wilderness, does not allow roads or motorized trails. The No Action alternative would maintain the existing levels of these designations, making 15 percent of the forest off-limits to motorized recreation. Non-motorized designations may positively affect social values related to ecological health and opportunities for solitude. Such designation may adversely affect the quality of life for motorized recreation users and those with commercial interests in the forests, whose access may be inhibited by non-motorized designations. The No Action alternative would not change non-motorized designations from existing levels; therefore, no change in human well-being related to motorized recreation is expected as a result of this alternative. However, this alternative would limit the potential for future expansion of motorized backcountry recreation relative to the Proposed Action, which would inhibit the forest's ability to respond to changes in recreation demand and may reduce quality of life for visitors who value those opportunities.

Recreation activities that rely on motorized roads and trails - driving for pleasure, motorized trail activity, snowmobiling, OHV use, other motorized activity – account for 15.6 percent of individuals' main purpose for visiting the Colville NF. The overall participation in these activities is approximately 45 percent (USFS 2012a). The participation rate in motorized activities and the quality of the visit are not expected to change based on management actions under the No Action alternative.

Access

The No Action alternative would continue to follow current plan direction and policy related to road density, including limits on building roads in deer and elk winter range and the 2001 Roadless Area Conservation Rule, which prohibits building roads in inventoried roadless areas. Management actions related to road density under the No Action alternative are not expected to meaningfully affect individuals' ability to access and enjoy the Colville NF. Therefore, no changes to quality of life or community resilience are expected to occur.

Recommended Wilderness Areas

The No Action alternative would maintain current designated wilderness at 31,400 acres, which is approximately 3 percent of the Colville National Forest. The National Visitor Use Monitoring survey estimates that less than one percent of visits to the forest are to a designated wilderness area (USFS 2012a). None of the survey respondents reported overcrowding in designated wilderness during their visit. These findings suggest that current designated wilderness is adequate to satisfy recreational demand for wilderness.

The social value of designated wilderness is not limited to recreation. Wilderness designation may provide amenity values to nearby residents and landowners, support ecosystem service provision (e.g., clean water and carbon sequestration), and offer opportunities for research and environmental education. Designated wilderness may protect "non-use" values. Non-use values arise not from the consumption of goods or services provided by wilderness areas, but from the value of knowing it exists or

DRAFT

preserving the option to visit in the future. Among all the considered alternatives, the No Action alternative would do the least to support social values related to designated wilderness.

Environmental Justice

The largest minority group in all three counties of the Colville NF planning area is Native Americans. The Tribal and Treaty Resources report describes potential consequences to Native American populations in the vicinity of the Colville NF. In particular, the No Action alternative would be less likely to provide culturally significant foods, due to lower forest resilience to disease and insects.

Communities in proximity to the Colville NF have higher rates of poverty than the state and the nation. Therefore, actions that adversely affect employment, income, or the cost of participating in activities on the forest may disproportionately affect low-income individuals. The No Action alternative is not expected to change employment, income, or the cost of participating in activities on the forest relative to current conditions. Therefore, the no action alternative would not adversely and disproportionately affect low-income individuals.

Cumulative Effects

Lower forest resilience may interact with residential development on private lands adjacent to the Colville National Forest to increase risks to private property and human health from wildfire.

Disturbances on adjacent federal lands, such as disease and insects, may exacerbate threats to the provision of ecosystem services, including culturally significant foods. The cumulative effect of disturbances across jurisdictions may affect community resilience and well-being, as the availability of substitute opportunities diminishes.

Monitoring Recommendations

The Forest Service may contribute to community resilience and well-being. Monitoring of human communities should evaluate whether management actions contributing to social and economic sustainability. This may be measured along the following dimensions:

- Resource use patterns
    - Visitor use and distribution
    - Firewood collection
    - Timber harvest
    - AUMs
- Population characteristics and change
    - Population growth

DRAFT

    - Income changes
    - Educational attainment
- Employment and income from resource uses
- Revenue to states and counties
    - PILT
    - Revenue sharing
- Wildfire risk to adjacent communities
    - Total acres burned
    - Acres burned near wildland-urban interface

Alternative 2 – Proposed Action

The Proposed Action was released to the public in June 2011 and has not changed.

Summary of Effects

> *"Because of the lack of active management of timber harvest, our forest has insect infestations, disease and stand replacing wildfires…"*

The Proposed Action would improve old forest resilience. As a result, the flow of ecosystem services to adjacent communities would be sustained and the risk of wildfire to private property and human health would decrease. The Proposed Action would moderately affect access and motorized recreation opportunities, although the effect to quality of life and visitor satisfaction is expected to be low. Increased forest resilience may support the production of culturally-important foods, which may affect tribal interests and well-being.

Old Forest Management and Timber Production

The Proposed Action alternative would manage 23 percent of the forest for focused restoration and 48 percent of the forest for general restoration. Both focused and general restoration management would aim to restore ecological integrity and improve ecosystem function. Focused restoration emphasizes the protection of important fish and wildlife habitats. Restoration may improve resilience to fire, insects, and disease. Increased forest resilience to climate change and other stressors may reduce wildfire risk in adjacent communities (Gaines et al 2012). Under the Proposed Action alternative, 27 percent of the Colville NF would be within the historic range. This would lower the risk of uncharacteristic wildfire to affect communities adjacent to the forest compared to the No Action alternative. Reduced wildfire risk promotes social values related to health and safety, the protection of private property, and preservation of aesthetic quality.

Restoration would also provide commercially valuable forest products. The PA alternative would lead to the harvest of approximately 62 million board feet annually. This is an increase in harvest volume compared to the No Action alternative. The local

economic consequences of wood product harvesting are described in the economics specialist report. In addition to supporting economic activity, the landscape-level approach to old forest management would protect the flow of ecosystem services related to old forests. As discussed above, old forests provide numerous values such as recreation, spiritual fulfillment, and species viability.

The PA alternative does not retain the Eastside Screens, which may concern individuals and groups who value the protection of large-diameter trees. However, the PA alternative would protect late forest structure at a landscape level. The desired conditions for late forest structure under the PA would ameliorate social concerns related to loss of large-diameter trees.

Under the Proposed Action, the quantity of firewood harvested from the Colville NF annually would be similar to current conditions. Firewood would continue to be an important source of home heating in the planning area. No changes to quality of life or household expenditures related to home heating and firewood are expected as a result of this alternative.

Motorized Recreation Trails

The Proposed Action would expand backcountry motorized opportunities from one percent of the forest to six percent. This increase in backcountry motorized opportunities may improve quality of life for motorized recreation users who value undeveloped sites. Overall, the PA would reduce total forest acres open to summer and winter motorized recreation relative to the No Action alternative. 684,400 acres would be open to winter motorized recreation and 872,300 acres would be open to summer motorized recreation. These acreages reflect reductions of approximately 30,000 and 90,000 acres, respectively. The increase in RW would place limits on future development of motorized activities relative to the No Action alternative. On balance, the PA alternative is not expected to measurably change motorized use or visitor satisfaction relative to existing conditions.

Access

The desired road density under the Proposed Action is between two and three miles of roads per square mile. This density is somewhat lower than current conditions; therefore, management actions related to road density under the Proposed Action may affect some individuals' ability to access and enjoy the Colville NF. Reduced access may adversely affect quality of life and community resilience, due to increased costs (time and fuel) of participating in activities, such as recreation and firewood collection, on the forest.

Recommended Wilderness Areas

The Proposed Action alternative would recommend an additional 101,400 acres of wilderness, which represents approximately 9 percent of the Colville National Forest. The National Visitor Use Monitoring survey estimates that less than one percent of visits to the forest are to a designated wilderness area (USFS 2012a). None of the survey respondents reported overcrowding in designated wilderness during their visit. These findings suggest that current designated wilderness is adequate to satisfy recreational demand for wilderness.

The social value of designated wilderness is not limited to recreation. Wilderness designation may provide amenity values to nearby residents and landowners, support ecosystem service provision (e.g., clean water and carbon sequestration), and offer opportunities for research and environmental education. Designated wilderness may protect “non-use” values. Non-use values arise not from the consumption of goods or services provided by wilderness areas, but from the value of knowing it exists or preserving the option to visit in the future. The Proposed Action alternative would do more to support social values related to designated wilderness than the No Action, P, and O alternatives.

Environmental Justice

The largest minority group in all three counties of the Colville NF planning area is Native Americans. The Tribal and Treaty Resources report describes potential consequences to Native American populations in the vicinity of the Colville NF. Unlike the No Action alternative, the Proposed Action would be more likely to provide culturally significant foods, due to improved forest resilience to disease and insects. However, the Proposed Action would decrease road density and forest access relative to current conditions, which may particularly affect the ability of elders to access cultural sites, hunting and fishing grounds, and gathering areas.

Communities in proximity to the Colville NF have higher rates of poverty than the state and the nation. Therefore, actions that adversely affect employment, income, or the cost of participating in activities on the forest may disproportionately affect low-income individuals. The Proposed Action is not expected to change employment or income relative to current conditions. However, the increase in RW and reduced road density may increase the cost of accessing the forest, which may disproportionately affect low-income individuals.

The increased areas open to the harvesting of firewood could benefit low-income individuals, as they may need to spend fewer resources traveling to an area on the forest where they can harvest firewood for home heating.

Cumulative Effects

Residential development on private lands adjacent to the Colville National Forest may inhibit the use of prescribed fire as a forest restoration tool, due to social concerns about smoke emissions. Therefore, private land development could make it more difficult and costly to increase forest resilience.

Disturbances on adjacent federal lands, such as disease and insects, may affect the health of the Colville National Forest. For example, invasive vegetation on adjacent lands may spread to the Colville NF. However, other federal actions to improve forest resilience would support the provision of ecosystem services, including culturally significant foods on both the Colville NF and adjacent federal lands. The cumulative effect of disturbances across jurisdictions may affect community resilience and well-being, as the availability of substitute opportunities changes.

DRAFT

Monitoring Recommendations

The monitoring recommendations are consistent with those identified for the No Action alternative.

Alternative 3 – R Alternative

> *Many species rely on mature or old-growth forests to survive, so these types of forests must be protected and actively managed.*

Alternative R responds to public comments that support old forest protection through static late forest structure reserve land allocations and a 21-inch upper diameter limit on cutting trees. It also addresses comments advocating for increased wilderness, fewer miles of motorized trail, and additional protections for wildlife. This alternative is based on a management option developed by a coalition of conservation groups.

Summary of Effects

The R alternative would increase the acres dedicated to late forest structure, which would support social well-being related to wildlife habitat and existence values. However, the R alternative would do less than the Proposed Action to improve forest resilience, which may affect the flow of ecosystem services and the threat of uncharacteristic wildfire in adjacent communities. The R alternative would be the least supportive of commodity and other consumptive uses of the forest among all considered alternatives, due to decreased access and motorized recreation opportunities, the expansion of RW, and limitations on the collection of firewood. The R alternative would appeal to individuals who value limited human interference in the forest.

Old Forest Management and Timber Production

The R alternative would maintain the current reserve management approach to maintaining late forest structure. The R alternative would increase the late forest structure areas to approximately 44 percent of the forest. This management would promote species viability and related social values, such as recreation and spiritual fulfillment. However, high stand density in the old forest reserves may increase the potential for uncharacteristic insect outbreaks, fire, and tree mortality. Fires adjacent to communities may adversely affect private property and human health. Climate change would exacerbate these threats and reduce well-being in communities near the forest (Gaines et al 2012).

Outside the late forest structure areas, general restoration would be used to provide a resilient forest. The R alternative would manage 25 percent of the forest for general restoration, which may improve resilience to fire, insects, and disease. Increased forest resilience may reduce wildfire risk in adjacent communities. Reduced wildfire risk promotes social values related to health and safety, the protection of private property, and preservation of aesthetic quality. Under the R alternative, 27 percent of the Colville NF would be within the historic range. This is consistent with the Proposed Action.

Restoration would also provide commercially valuable forest products. The R alternative would lead to the harvest of approximately 14 million board feet annually. This is the

DRAFT

lowest average annual harvest volume among all alternatives. The local economic consequences of wood product harvesting on the Colville NF are described in the economics specialist report. The R alternative would impose more restrictions on harvesting of firewood than the Proposed Action. Approximately 3,200 ccf of firewood would be harvested annually under the R alternative, compared to 8,900 ccf under all other alternatives. These restrictions may increase the difficulty of accessing and harvesting firewood for personal use. These restrictions may increase the cost (e.g., time) of harvesting firewood from the Colville NF. These restrictions may adversely affect household well-being in communities adjacent to the forest.

Motorized Recreation Trails

The R alternative would reduce the share of the forest open to motorized recreation. Fewer motorized recreation opportunities may reduce visitor satisfaction and quality of life for motorized recreation users. The reduction in motorized opportunities may increase the pressure on available motorized roads and trails. Crowding may reduce visitor satisfaction and may result in resource damage along trails. However, non-motorized recreation users may benefit from decreased potential for interaction with motorized users, which may promote social values related to safety, solitude, and resource protection in the backcountry.

Summer and winter motorized use would be more limited under the R alternative compared to the No Action and Proposed Action alternatives. Acres open to summer and winter motorized use would be similar to the acres open under the B alternative. Approximately 836,500 acres would be open for summer motorized use and 651,300 acres would be open for winter motorized use. Individuals and groups who value motorized recreation on the Colville NF may experience reductions in quality of life under this alternative.

Access

The desired road density under the R alternative is between one and two miles per square mile, which is a reduction in density relative to current conditions. Lower road density may affect forest access, which is valuable to many individuals who recreate or engage in economic activities (e.g., firewood collection) on the forest. Lower road density may negatively affect quality of life for individuals who value the forest for motorized recreation and livelihood activities. However, reduced road density may positively affect social values related to ecological integrity and ecosystem services. Fewer roads may decrease sedimentation, habitat fragmentation, and disturbance to non-motorized forest visitors.

Recommended Wilderness Areas

The R alternative would recommend an additional 207,800 acres of wilderness, which represents approximately 19 percent of the Colville National Forest. The National Visitor Use Monitoring survey estimates that less than one percent of visits to the forest are to a designated wilderness area (USFS 2012a). None of the survey respondents reported overcrowding in designated wilderness during their visit. These findings suggest that current designated wilderness is adequate to satisfy recreational demand for wilderness.

DRAFT

The social value of designated wilderness is not limited to recreation. Wilderness designation may provide amenity values to nearby residents and landowners, support ecosystem service provision (e.g., clean water and carbon sequestration), and offer opportunities for research and environmental education. Designated wilderness may protect "non-use" values. Non-use values arise not from the consumption of goods or services provided by wilderness areas, but from the value of knowing it exists or preserving the option to visit in the future. The R alternative would do the second most (after B) to support social values related to designated wilderness.

Environmental Justice

The largest minority group in all three counties of the Colville NF planning area is Native Americans. The Tribal and Treaty Resources report describes potential consequences to Native American populations in the vicinity of the Colville NF. Similar to the No Action alternative, the R alternative would be less likely to provide culturally significant foods, due to lower forest resilience to disease and insects. Furthermore, the R alternative would decrease road density and forest access relative to current conditions, which may particularly affect the ability of elders to access cultural sites, hunting and fishing grounds, and gathering areas.

Communities in proximity to the Colville NF have higher rates of poverty than the state and the nation. Therefore, actions that adversely affect employment, income, or the cost of participating in activities on the forest may disproportionately affect low-income individuals. The R Alternative is not expected to change employment or income relative to current conditions. However, the increase in RW and reduced road density may increase the cost of accessing the forest, which may disproportionately affect low-income individuals.

The expected reductions in firewood harvest could disproportionately low-income individuals in communities adjacent to the Colville NF, as it may be more costly to access and cut firewood for home heating.

Cumulative Effects

Lower forest resilience may interact with residential development on private lands adjacent to the Colville National Forest to increase risks to private property and human health from wildfire. Additionally, disturbances on adjacent federal lands, such as disease and insects, may exacerbate threats to the provision of ecosystem services, including culturally significant foods. The cumulative effect of disturbances across jurisdictions may affect community resilience and well-being, as the availability of substitute opportunities diminishes.

The expansion of resource protections under the R alternative – particularly reduced road density and increased RW acreage– may offset social concerns about the loss of forest lands elsewhere in the three-county area, particularly related to the conversion of private forest land for residential development.

Monitoring Recommendations

The monitoring recommendations are consistent with those identified for the No Action alternative.

Alternative 4 – P Alternative

> *"[M]y perception so far is that wilderness eliminates mountain bikes, mechanical trail maintenance, forest management, fire response ability, any form of motorized shared use, and doesn't seem to play well with the cattle grazers or other land users."*

Many public comments expressed concern that wilderness designation may result in lower revenue to local economies due to reduced recreational opportunities. This alternative utilizes many plan components from the Proposed Action while also addressing economic concerns associated with wilderness.

Summary of Effects

The P alternative would improve old forests resilience. As a result, the flow of ecosystem services to adjacent communities would be sustained and the risk of wildfire to private property and human health would decrease. The P alternative would decrease road density, which may affect access, community resilience, and quality of life for individuals who rely on the forests for economic and leisure opportunities. Increased forest resilience may support the production of culturally-important foods, which may affect tribal interests and well-being.

Old Forest Management and Timber Production

The P alternative would manage 28 percent of the forest for focused restoration and 45 percent of the forest for general restoration. This distribution is similar to the PA alternative and the effects would be the same as described under for the PA alternative.

Restoration may improve resilience to fire, insects, and disease. Increased forest resilience may reduce wildfire risk in adjacent communities. Reduced wildfire risk promotes social values related to health and safety, the protection of private property, and preservation of aesthetic quality. Under the P alternative, 27 percent of the Colville NF would be within the historic range. This is consistent with the Proposed Action and R alternatives.

Focused restoration would also provide commercially valuable forest products. The P alternative would lead to the harvest of approximately 62 million board feet of wood products annually. This is similar to the PA alternative. The economics specialist report describes the local economic consequences of wood product harvest from the Colville NF. In addition to supporting economic activity, the landscape-level approach to old forest management would protect the flow of ecosystem services related to old forests. As discussed above, old forests provide numerous values such as recreation, spiritual fulfillment, and species viability.

The P alternative does not retain the Eastside Screens, which may concern individuals and groups who value the protection of large-diameter trees. However, the P alternative would protect late forest structure at a landscape level. The desired conditions for late forest structure under the P would ameliorate social concerns related to loss of large-diameter trees.

DRAFT

Under the P alternative, the quantity of firewood harvested from the Colville NF annually would be similar to current conditions. Firewood would continue to be an important source of home heating in the planning area. No changes to quality of life or household expenditures related to home heating and firewood are expected as a result of this alternative.

Motorized Recreation Trails

The P alternative would increase backcountry motorized opportunities from approximately 1 percent of the forest to 5 percent of the forest. The effects would be the same as described for the PA alternative.

The P alternative would keep the largest share of the forest open to summer and winter motorized recreation among action alternatives. 684,900 acres would be open to winter motorized recreation and 873,300 acres would be open to summer motorized recreation. Only the No Action alternative would have the potential for more motorized recreation opportunities. The P alternative would provide a variety of motorized opportunities on the forest and would support quality of life for motorized recreation users. The P alternative would do less to address concerns of individuals and group who oppose motorized recreation than the R alternative.

However, the increase in RW would place limits on future development of motorized activities relative to the No Action alternative. On balance, the P alternative is not expected to change motorized use or visitor satisfaction relative to existing conditions. Therefore, the effects would be similar to those described under the No Action alternative.

Access

The desired road density under the P alternative is between one and two miles per square mile, which is a reduction in density relative to current conditions. Lower road density may affect forest access, which is valuable to many individuals who recreate or engage in economic activities on the forest. Lower road density may negatively affect quality of life for individuals who value the forest for motorized recreation and livelihood activities. However, reduced road density may positively affect social values related to ecological integrity and ecosystem services. Fewer roads may decrease sedimentation, habitat fragmentation, and disturbance to non-motorized forest visitors.

Recommended Wilderness Areas

The P alternative would recommend an additional 68,300 acres of wilderness, which represents approximately 6 percent of the Colville National Forest. The National Visitor Use Monitoring survey estimates that less than one percent of visits to the forest are to a designated wilderness area (USFS 2012a). None of the survey respondents reported overcrowding in designated wilderness during their visit. These findings suggest that current designated wilderness is adequate to satisfy recreational demand for wilderness.

The social value of designated wilderness is not limited to recreation. Wilderness designation may provide amenity values to nearby residents and landowners, support ecosystem service provision (e.g., clean water and carbon sequestration), and offer opportunities for research and environmental education. Designated wilderness may

DRAFT

protect “non-use” values. Non-use values arise not from the consumption of goods or services provided by wilderness areas, but from the value of knowing it exists or preserving the option to visit in the future. Among all the considered alternatives, the P alternative would do less to support social values related to designated wilderness than all considered alternatives except the O alternative.

Environmental Justice

The largest minority group in all three counties of the Colville NF planning area is Native Americans. The Tribal and Treaty Resources report describes potential consequences to Native American populations in the vicinity of the Colville NF. Unlike the No Action alternative, the P alternative would be more likely to provide culturally significant foods, due to improved forest resilience to disease and insects. However, the P alternative would decrease road density and forest access relative to current conditions, which may particularly affect the ability of elders to access cultural sites, hunting and fishing grounds, and gathering areas.

Communities near the Colville NF have higher rates of poverty than the state and the nation. Therefore, actions that adversely affect employment, income, or the cost of participating in activities on the forest may disproportionately affect low-income individuals. The P alternative is not expected to change employment or income relative to current conditions. However, the increase in RW and reduced road density may increase the cost of accessing the forest, which may disproportionately affect low-income individuals.

The increased areas open to the harvesting of firewood could benefit low-income individuals, as they may need to spend fewer resources traveling to an area on the forest where they can harvest firewood for home heating.

Cumulative Effects

Residential development on private lands adjacent to the Colville National Forest may inhibit the use of prescribed fire as a forest restoration tool, due to social concerns about smoke emissions. Therefore, private land development could make it more difficult and costly to increase forest resilience.

Disturbances on adjacent federal lands, such as disease and insects, may affect the health of the Colville National Forest. For example, invasive vegetation on adjacent lands may spread to the Colville NF. However, other federal actions to improve forest resilience would support the provision of ecosystem services, including culturally significant foods on both the Colville NF and adjacent federal lands. The cumulative effect of disturbances across jurisdictions may affect community resilience and well-being, as the availability of substitute opportunities changes.

The expansion of resource protections under the P alternative – particularly reduced road density– may offset social concerns about the loss of forest lands elsewhere in the three-county area, particularly related to the conversion of private forest land for residential development.

DRAFT

Monitoring Recommendations

The monitoring recommendations are consistent with those identified for the No Action alternative.

Alternative 5 – B Alternative

This alternative combines feedback from diverse interest groups and incorporates management strategies supported by the Northeast Washington Forestry Coalition. Alternative B addresses the concerns of multiple constituencies in one alternative by designating restoration and timber management zones, recommending the highest level of wilderness designation and the least amount of area for backcountry management and backcountry motorized use.

Summary of Effects

The B alternative is less likely to protect old forests and their associated social values than the Proposed Action. As a result, the flow of ecosystem services to adjacent communities may decrease while the risk of wildfire to private property and human health would increase. Lower forest resilience may decrease the production of culturally-important foods, which may affect tribal interests and well-being. Access and roaded motorized recreation opportunities would not measurably change relative to current conditions, which would support social values related to commodity use and more developed recreation opportunities. However, backcountry motorized opportunities are the lowest among all considered alternatives, which would reduce the quality of life for visitors who value backcountry motorized opportunities. The B alternative would have the highest acreage in RW among all considered alternatives. The B alternative would support social values related to wilderness, such as research and education, solitude, and scenic views.

Old Forest Management and Timber Production

The B alternative would manage 31 percent of the forest as a restoration zone. Management actions in this area would promote social values related to ecological health and the provision of ecosystem services, such as clean water and wildlife habitat. However, increased stand density may contribute to the spread of insects, fire, and tree mortality, which may compromise some of the social values related to old forests. Fire adjacent to communities may adversely affect private property and human health. Under the B alternative, 38 percent of the Colville NF would be within the historic range. This alternative has the lowest risk of uncharacteristic wildfire among the considered alternatives. Reduced wildfire risk promotes social values related to health and safety, the protection of private property, and preservation of aesthetic quality.

Forty-three percent of the forest would be managed to provide a stable flow of timber and to improve the forest's resilience to insects, disease, and uncharacteristic fire. Management actions in this area would promote social values related to human safety and the protection of private property from wildfire and economic stability in the forest products sector. The B alternative would lead to the harvest of approximately 37 million board feet of wood products annually. This is approximately sixty percent of the volume that is expected to be harvested under the PA alternative. The economic contribution of

the B alternative to employment and income in the forest products sector is described in the economics specialist report.

The B alternative would maintain the Eastside Screen direction, which prevents the harvest of large diameter trees. This direction would protect old growth-dependent species habitat and promote both use (e.g., recreation and wildlife viewing) and non-use (e.g., knowing that it exists) values associated with the forest. However, the Eastside Screens reduce the ability to maintain or enhance late forest structure on the Colville NF if it is not present within the reserve. In contrast, the proposed action alternative adopts a landscape approach to protect late forest structure. Some individuals and groups prefer the Eastside Screen direction due to a desire to prevent the harvesting of large diameter trees. The values of these individuals and groups are reflected in the B alternative.

Under the B alternative, the quantity of firewood harvested from the Colville NF annually would be similar to current conditions. Firewood would continue to be an important source of home heating in the planning area. No changes to quality of life or household expenditures related to home heating and firewood are expected as a result of this alternative.

Motorized Recreation Trails

The B alternative would provide the fewest summer and winter motorized recreation opportunities in the backcountry. As a result, individuals who value less developed recreation opportunities would be less satisfied with their visit and experience a lower quality of life.

Summer and winter motorized use would be more limited under the B alternative compared to the No Action and Proposed Action alternatives. Acres open to summer and winter motorized use would be similar to the acres open under the R alternative. Approximately 840,000 acres would be open for summer motorized use and 653,900 acres would be open for winter motorized use. Individuals and groups who value motorized recreation on the Colville NF may experience reductions in quality of life under this alternative.

Access

The B alternative would cap existing levels of total miles of Forest Service System roads at the current level. Therefore, this alternative would require that existing roads be decommissioned if new roads are added. This action is not expected to reduce forest access relative to existing conditions. Therefore, no measurable effects to quality of life and community resilience would occur due to roads management under the B alternative.

Recommended Wilderness Areas

The B alternative would recommend an additional 220,300 acres of wilderness, which represents approximately 20 percent of the Colville National Forest. The National Visitor Use Monitoring survey estimates that less than one percent of visits to the forest are to a designated wilderness area (USFS 2012a). None of the survey respondents reported

overcrowding in designated wilderness during their visit. These findings suggest that current designated wilderness is adequate to satisfy recreational demand for wilderness.

The social value of designated wilderness is not limited to recreation. Wilderness designation may provide amenity values to nearby residents and landowners, support ecosystem service provision (e.g., clean water and carbon sequestration), and offer opportunities for research and environmental education. Designated wilderness may protect "non-use" values. Non-use values arise not from the consumption of goods or services provided by wilderness areas, but from the value of knowing it exists or preserving the option to visit in the future. Among all the considered alternatives, the B alternative would do the most to support social values related to designated wilderness among all considered alternatives.

Environmental Justice

The largest minority group in all three counties of the Colville NF planning area is Native Americans. The Tribal and Treaty Resources report describes potential consequences to Native American populations in the vicinity of the Colville NF. Similar to the No Action alternative, the B alternative would be less likely to provide culturally significant foods, due to reduced forest resilience to disease and insects. In addition, the B alternative would decrease motorized access relative to current conditions due to increased RW, which may particularly affect the ability of elders to access cultural sites, hunting and fishing grounds, and gathering areas.

Communities in proximity to the Colville NF have higher rates of poverty than the state and the nation. Therefore, actions that adversely affect employment, income, or the cost of participating in activities on the forest may disproportionately affect low-income individuals. The B alternative is not expected to change employment or income relative to current conditions. However, the increase in RW may increase the cost of accessing the forest, which may disproportionately affect low-income individuals.

Cumulative Effects

Lower forest resilience may interact with residential development on private lands adjacent to the Colville National Forest to increase risks to private property and human health from wildfire. Additionally, disturbances on adjacent federal lands, such as disease and insects, may exacerbate threats to the provision of ecosystem services, including culturally significant foods. The cumulative effect of disturbances across jurisdictions may affect community resilience and well-being, as the availability of substitute opportunities diminishes.

The expansion of resource protections under the B alternative – particularly reduced backcountry motorized recreation opportunities and increased RW acreage – may offset social concerns about the loss of forest lands elsewhere in the three-county area, particularly related to the conversion of private forest land for residential development.

Monitoring Recommendations

The monitoring recommendations are consistent with those identified for the No Action alternative.

DRAFT

Alternative 6 – O Alternative

> *"There are currently more wilderness trails available in Washington State alone than any one person could hike in a lifetime. By making trails non-motorized we only eliminate access to more tax paying citizens… Motorized trail users, for the most part, are organized and concerned citizens that are out to enjoy the wonders of our natural world just like the non-motorized users."*[2]

This alternative comes from a series of public, collaborative meetings run by the Forest Service that focused on motorized recreation, wilderness recommendations, and vegetation management and reflects areas of general agreement among participants in those meetings. The Forest Service fully developed this alternative using the proposed action to fill in the gaps not addressed in the collaborative process. The O Alternative emphasizes summer and winter motorized and non-motorized opportunities in a backcountry, unroaded setting and minimizes recommended wilderness.

Summary of Effects

The O alternative is less likely to protect old forests and their associated social values than the Proposed Action. As a result, the flow of ecosystem services to adjacent communities may decrease while the risk of wildfire to private property and human health would increase. Lower forest resilience may decrease the production of culturally-important foods, which may affect tribal interests and well-being. Access, motorized recreation opportunities, and RW would not meaningfully change relative to current conditions. Therefore, social values related to these resources and uses would not be affected.

Old Forest Management and Timber Production

The O alternative would place 34 percent of the forest in a Restoration Zone, which would focus on protecting old forest and enhancing ecological integrity. Management actions in this area would promote social values related to ecological health and the provision of ecosystem services, such as clean water and wildlife habitat. However, increased stand density may contribute to the spread of insects, fire, and tree mortality, which may compromise some of the social values related to old forests. Fire adjacent to communities may adversely affect private property and human health. Under the O alternative, 35 percent of the Colville NF would be within the historic range. This alternative lowers the risk of uncharacteristic wildfire compared to the NA, PA, P, and R alternatives. Reduced wildfire risk promotes social values related to health and safety, the protection of private property, and preservation of aesthetic quality.

Thirty-nine percent of the forest would be in a Responsible Management Area, which would emphasis a stable flow of timber to support community employment in the forest products industry. The O alternative would lead to the harvest of approximately 37 million board feet of timber annually. This is similar to the B alternative. The economic contribution of timber production from the Colville NF is described in the economics specialist report.

[2] Public comment expressed during 2011 scoping period regarding motorized recreation opportunities.

The O alternative would maintain the Eastside Screen direction, which prevents the harvest of large diameter trees. This direction would protect old growth-dependent species habitat and promote both use (e.g., recreation and wildlife viewing) and non-use (e.g., knowing that it exists) values associated with the forest. However, the Eastside Screens reduce the ability to maintain or enhance late forest structure on the Colville NF if it is not present within the reserve. In contrast, the PA alternative adopts a landscape approach to protect late forest structure. Some individuals and groups prefer the Eastside Screen direction due to a desire to prevent the harvesting of large diameter trees. The values of these individuals and groups are reflected in the O alternative.

Under the O alternative, the quantity of firewood harvested from the Colville NF annually would be similar to current conditions. Firewood would continue to be an important source of home heating in the planning area. No changes to quality of life or household expenditures related to home heating and firewood are expected as a result of this alternative.

Motorized Recreation Trails

The O alternative would increase backcountry motorized opportunities from approximately 1 percent of the forest to 5 percent of the forest. The effects would be the same as described for the PA and P alternatives.

Across the forest, the O alternative would keep open the most acres to winter motorized recreation among the action alternatives (approximately 685,500 acres). However, fewer acres would be open to winter motorized use compared to the No Action alternative. Similarly, the O alternative would also keep open the most acres to summer motorized recreation among the action alternatives (approximately 874,000 acres). This is a decrease compared to the No Action alternative.

The O alternative would only slightly increase RW, which would maintain the potential for future motorized access. On balance, the O alternative would maintain quality of life for motorized recreation users at existing conditions. Among the action alternatives the O alternative is likely to be favored by motorized recreation users.

Access

The O alternative would cap existing levels of total miles of Forest Service System roads at the current level. Therefore, this alternative would require that existing roads be decommissioned if new roads are added. This action is not expected to reduce forest access relative to existing conditions. Therefore, no measurable effects to quality of life and community resilience would occur due to roads management under the O alternative.

Recommended Wilderness Areas

The O alternative would recommend an additional 15,950 acres of wilderness, which represents approximately 1 percent of the Colville National Forest. The National Visitor Use Monitoring survey estimates that less than one percent of visits to the forest are to a designated wilderness area (USFS 2012a). None of the survey respondents reported overcrowding in designated wilderness during their visit. These findings suggest that current designated wilderness is adequate to satisfy recreational demand for wilderness.

The social value of designated wilderness is not limited to recreation. Wilderness designation may provide amenity values to nearby residents and landowners, support ecosystem service provision (e.g., clean water and carbon sequestration), and offer opportunities for research and environmental education. Designated wilderness may protect “non-use” values. Non-use values arise not from the consumption of goods or services provided by wilderness areas, but from the value of knowing it exists or preserving the option to visit in the future. Among the action alternatives, the O alternative would do the least to support social values related to designated wilderness.

Environmental Justice

The largest minority group in all three counties of the Colville NF planning area is Native Americans. The Tribal and Treaty Resources report describes potential consequences to Native American populations in the vicinity of the Colville NF. Similar to the No Action alternative, the O alternative would be less likely to provide culturally significant foods, due to reduced forest resilience to disease and insects. The O alternative would not meaningfully affect motorized access relative to current conditions, which is important for elders to access cultural sites, hunting and fishing grounds, and gathering areas.

Communities in proximity to the Colville NF have higher rates of poverty than the state and the nation. Therefore, actions that adversely affect employment, income, or the cost of participating in activities on the forest may disproportionately affect low-income individuals. The O alternative is not expected to change employment, income, or the cost of accessing the forest relative to current conditions.

Cumulative Effects

Lower forest resilience may interact with residential development on private lands adjacent to the Colville National Forest to increase risks to private property and human health from wildfire. Additionally, disturbances on adjacent federal lands, such as disease and insects, may exacerbate threats to the provision of ecosystem services, including culturally significant foods. The cumulative effect of disturbances across jurisdictions may affect community resilience and well-being, as the availability of substitute opportunities diminishes.

Disturbances on adjacent federal lands, such as disease and insects, may affect the health of the Colville National Forest. For example, invasive vegetation on adjacent lands may spread to the Colville NF. However, other federal actions to improve forest resilience would support the provision of ecosystem services, including culturally significant foods on both the Colville NF and adjacent federal lands. The cumulative effect of disturbances across jurisdictions may affect community resilience and well-being, as the availability of substitute opportunities changes.

Monitoring Recommendations

The monitoring recommendations are consistent with those identified for the No Action alternative.

DRAFT

Relationship of Short-Term Uses and Long-Term Productivity

The Colville NF is used for both personal and commercial benefit. Individuals recreate, collect firewood, and engage in traditional cultural practices on the forest. Firms use the forest for commercial timber harvesting, rights-of-way, grazing, and mineral extraction. Short-term management actions, particularly forest treatments, may temporarily limit access for the use and enjoyment of these forest resources. Conducting prescribed burns and mechanical treatments have the potential to restore the landscape and reduce the potential for permanent adverse effects from high intensity, high severity fires. In the long-term, forest resilience would secure opportunities for enjoyment of the multiple uses of the Colville NF that contribute to social well-being.

Unavoidable Adverse Impacts

The land management plan provides a programmatic framework that guides site-specific actions but does not authorize, fund, or carryout any project or activity. Before any proposed actions (not limited to ground-disturbing actions) take place, they must be authorized in a subsequent site-specific environmental analysis. Therefore none of the alternatives cause unavoidable adverse impacts. Mechanisms are in place to monitor and use adaptive management principles in order to help alleviate any unanticipated impacts that need to be addressed singularly or cumulatively.

Irreversible and Irretrievable Commitment of Resources

The land management plan provides a programmatic framework that guides site-specific actions but does not authorize, fund, or carryout any project or activity. Because the land management plan does not authorize or mandate any site-specific project or activity (not limited to ground-disturbing actions), none of the alternatives cause an irreversible or irretrievable commitment of resources.

DRAFT

References

Allen, Stewart D., Wickwar, Denise A., Clark, Fred P., Potts, Robert, & Snyder, Stephanie A. 2009. Values, Beliefs, and Attitudes Technical Guide for Forest Service Land and Resource Management, Planning, and Decisionmaking. USDA Forest Service General Technical Report, PNW-GTR-788.

Beckley, Thomas; Parkins, John; Stedman, Richard. 2002. Indicators of forest-dependent community sustainability: the evolution of research. The Forestry Chronicle. 78(5): 626-636.

Council on Environmental Quality (CEQ). 1997. "Environmental Justice: Guidance under the National Environmental Policy Act." Executive Office of the President.

Daniels, Jean M. 2004. Assessing socioeconomic resiliency in Washington counties. Gen. Tech. Rep. PNW-GTR-607. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station. 35 p.

Florida, R. 2002. The Rise of the Creative Class. New York: Basic Books.

Gaines, William L.; Peterson, David W.; Thomas, Cameron A.; Harrod, Richy J. 2012. Adaptations to climate change: Colville and Okanogan-Wenatchee National Forests. Gen. Tech. Rep. PNW-GTR-862. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station. 34 p.

Grinspoon, E. and Phillips, D. 2007. "Economic and Social Evaluation." Pacific Northwest Region. June 12, 2007.

Gude, P.H., Rasker, R., and van den Noort, J. 2008. Potential for Future Development on Fire-Prone Lands. Journal of Forestry 106(4): 198-205. Accessed June 4, 2012 from http://www.headwaterseconomics.org/tools/eps-hdt

Horne, A. and Haynes R. 1999. "Developing Measures of Socioeconomic Resiliency in the Interior Columbia Basin" USDA Forest Service General Technical Report, PNW-GTR-453. April 1999.

James Kent Associates (JKA). 2010. Community Field Reports in Support of the Upcoming Land Use Planning for the Spokane District Office of the Bureau of Land Management. Ashland, OR: JKA Group.

Minnesota IMPLAN Group (IMPLAN). 2010. IMPLAN Professional Version 3.0, 2010 Data.

Office of the President. 1994. "Executive Order 12898: Federal Actions to Address Environmental Justice in Minority Population and Low-income Populations." February 1994.

DRAFT

Quigley, T.M., R.W Haynes, and R.T. Graham. 1996. Integrated Scientific Assessment for Ecosystem Management in the Interior Colombia Basin and Portions of the Klamath and Great Basins. USDA Forest Service PNW-GTR-382. Portland, OR.

U.S. Bureau of Economic Analysis. 2012. Regional Economic Accounts, Local Area Personal Income. <http://www.bea.gov/regional/> Accessed January 15, 2014.

U.S. Bureau of Labor Statistics. 2013. Local Area Unemployment. <http://www.bls.gov/lau> Accessed January 15, 2014.

U.S. Census Bureau. 1990. Decennial Census. Accessed via American FactFinder. <factfinder.census.gov> Accessed August 9, 2010.

U.S. Census Bureau. 2000. Decennial Census. Accessed via American FactFinder. <factfinder.census.gov> Accessed August 9, 2010.

U.S. Census Bureau. 2010. Decennial Census. Accessed via American FactFinder, version 2. <factfinder2.census.gov> Accessed January 5, 2012.

U.S. Census Bureau. 2012a. American Community Survey Five-Year Estimates, 2007-2011. Accessed via American FactFinder, version 2. <factfinder2.census.gov> Accessed January 24, 2012.

U.S. Census Bureau. 2012b. American Community Survey Five-Year Estimates, 2008-2012. Accessed via American FactFinder, version 2. <factfinder2.census.gov> Accessed December 30, 2013.

USDA Economic Research Service (ERS). 2015. 2013 Rural-Urban Continuum Codes. <http://www.ers.usda.gov/data-products/rural-urban-continuum-codes.aspx> Accessed May 12, 2015.

USDA Forest Service (USFS). 1992. Forest Service Manual 1900 – Planning (FSM 1900). Amendment No. 1900-92-2. USDA Forest Service, Washington D.C. 1992.

USDA Forest Service (USFS). 2012a. National Visitor Use Monitoring Program: Colville NF Visitor Use Report. <http://www.fs.fed.us/recreation/programs/nvum/> Accessed December 3, 2013.

USDA Forest Service (USFS). 2012b. Cut and Sold Reports. <http://www.fs.fed.us/forestmanagement/products/sold-harvest/cut-sold.shtml> Accessed December 3, 2013.

DRAFT