Blue Mountains Forest Plan Revision

Socioeconomic Assessment Report in Support of the Umatilla National Forest Assessment

DRAFT

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Social, Cultural, and Economic Assessment Report

Introduction

The 1.4 million-acre Umatilla National Forest is located in the Blue Mountains of southeast Washington and northeast Oregon with a diverse landscape and elevations reaching up to 8,000 feet above sea level. The Forest encompasses three wilderness areas, natural and man-made lakes, habitat for herds of Rocky Mountain Elk and big horn sheep, miles of streams and rivers, deep canyons and timbered cliffs, streams and wilderness. The Forest lies within portions of Asotin, Columbia, Garfield, and Walla Walla counties in Washington and Baker, Grant, Morrow, Union, Wallowa, and Wheeler counties in Oregon, and is part of the economies, tourism and recreational aspects of the region. Management of this landscape supports clean water, recreational opportunities, wildlife habitat and opportunities as a working forest for timber, and grazing. This multitude of forest benefits[1] is important to people and communities locally, regionally and nationally.

This socioeconomics technical report provides the data and information that can be used to develop a forest assessment that considers conditions and trends in the social, cultural, and economic conditions regarding:

1. *The social, cultural, and economic conditions in the area(s) of influence,*
2. *The important social, cultural, and economic influences affecting the plan area, and*
3. *How the plan area influences social, economic, and cultural conditions in the area of influence and the broader landscape.*[2]

This technical report follows direction outlined in FSH 1909.12 Land Management Planning Handbook, Chapter 10 – The Assessment; Section 13.2 – Assessing Social, Cultural and Economic Conditions (01/30/2015). It is important to note that all resource specialists are currently collecting data for development of the forest assessment. Socioeconomics has an important link to just about every resource through the sustainability of the forest benefits that each resource supports. Therefore, separate information obtained from these other key resources such as tribal, recreation, water, range, species, and forest infrastructure will also be important to consider and should be used in conjunction with the information that is provided in this report.

A recent Blues Intergovernmental Council (BIC) socioeconomic report is also available that provides additional information on county socioeconomic conditions and trends (Blues Intergovernmental Council 2022). The BIC report highlights the unique socioeconomic nature of this area and reinforces the information that is provided in this current technical report. A key to understanding the socioeconomic conditions and trends in the Blue Mountains area is recognizing that socioeconomic conditions differ widely by county and therefore identification of potential effects of changes in land management need to

[1] The term forest benefits is used in Northwest Forest Plan Modernization to represent all of the ways that the forests contribute to improving people's lives. This includes the more familiar monetary contributions from the commodities generated through forest products, water, grazing and mining as well as the benefits that are more difficult to put a monetary value on such as cultural and historical sites, healthier communities from improved air quality, and the personal enjoyment of recreational access and opportunity. Forest benefits capture all of these various ways forests can contribute to people and communities both economically and socially. Another term often used to refer to forest benefits is 'ecosystem services'.

[2] Source: FSH 1909.12, Chapter 10 The Assessment, Section 13.2 – Assessing Social, Cultural, and Economic Conditions; 1/30/2015

be addressed at a county level. These differences in each county's ability to respond to socioeconomic changes are reported in the Community Resiliency section below.

Information Sources and Gaps

Measuring the human relationship with the ecological environment requires two types of indicators: those that help to understand social and economic conditions in communities near the Umatilla National Forest and those that measure human uses of the forest's lands and resources. Relevant indicators to understand social and economic conditions include population size, age structure, racial and ethnic composition, income and poverty, and economic diversity.

Relevant indicators to measure human uses and values of the Umatilla National Forest's land and resources include recreation visits, timber cut and sold, mineral removal, authorized AUMs, payments to states and counties, and Forest Service expenditures.

Baseline demographic and economic data are drawn from federal sources, such as the U.S. Census Bureau and the Bureau of Labor Statistics. The Forest Service collects resource use data, such as recreation visits and grazing forage consumed. The economic contribution analysis combines baseline economic data with Forest Service resource data to estimate employment and labor income associated with Forest Service programs, resources, and uses. The data presented below disclose the source.

Existing Forest Plan Direction and Scale of Analysis (Area of Influence)

How the Umatilla National Forest lands are managed and its impact on local economies was recognized as an issue in the development of the *1990 Land and Resource Management Plan*. Biological and administrative designations on the forest (for example, watersheds or forest boundaries) do not necessarily correspond with economically meaningful units. Therefore, the appropriate scale for addressing the social and economic environment will differ from the scales used to address other resources and topics in the assessment. Reliable demographic and economic data are available at the county-level. Sub-county (for example, towns and cities) data are more limited and can have large margins of error, particularly in rural areas. Functional economic areas are the primary scale for the social and economic analysis. Typically, these areas are a group of counties.

Management of the plan area contributes to socioeconomic sustainability by contributing to social, cultural, and economic conditions in the area of influence (AOI) that include Asotin, Columbia, Garfield, and Walla Walla counties in Washington and Baker, Grant, Morrow, Umatilla, Union, Wallowa, and Wheeler counties in Oregon and Nez Perce County, Idaho for a total of twelve counties (Table 1). This area of influence is used to report and discuss trends throughout the baseline demographic and economic sections in this report. Management of the plan area contributes to social, cultural, and economic conditions. Typically, these are felt most significantly in the counties that are neighboring the plan area where communities have established strong social and economic ties to the land. However, geographical proximity does not guarantee these strong ties and therefore is not the only criterion that should be used. For example, these 12 counties represent where the forest would:

- spend project funds that support local businesses (e.g., spending on fuel and materials as well as payments to local contractors);
- support businesses that benefit from project activities (e.g., harvesting, sawmills, veneer, poles, log furniture, firewood, bioenergy and construction);

- contribute to communities that act as important local entry points/gateways to the forest and therefore rely on forest visitors to sustain significant portions of the local economy (e.g., spending on food, lodging, equipment, guiding, packing and other types of businesses that support forest recreational activities);
- support ranching operations that utilize the forest for grazing.

This twelve-county area of influence is used to report and discuss trends throughout the baseline demographic and economic sections in this report.

Table 1. Twelve counties in the social and economic area of influence

Oregon Counties	Washington Counties	Idaho Counties
Baker	Asotin	Nez Perce
Grant	Columbia	
Morrow	Garfield	
Umatilla	Walla Walla	
Union		
Wallowa		
Wheeler		

The economic contribution analysis, which estimates employment and labor income attributable to the Umatilla National Forest management areas (see the Forest Specific Economic Contributions section below), uses modeling of a larger economic region that encompasses a larger county area (U.S. Forest Service 2023). This larger area was selected to account for direct Forest Service expenditures and the contribution of resources to these counties. This existing analysis is the best available and most closely representative of our twelve-county study area and is presented in this report. New modeling focusing on the twelve-county study area detailed above will be conducted for the NEPA analysis of the plan alternatives, future steps of plan revision.

The final section of this report presents an analysis of Environmental Justice communities. For this technical report a zone of influence of 25 miles from the forest administrative boundary is specified for populations potentially affected by revising the Umatilla National Forest land management plan. The Environmental Justice section presents a high-level overview of general locations within 25 miles of the Umatilla National Forest where racial/ethnic minorities and low-income households are most prevalent.

Social, Cultural, and Economic Conditions in the Areas of Influence

The following sections will examine trends and current conditions related to the social and economic environment within these counties, including population and demographic changes, potential environmental justice populations, and employment and income conditions. Where relevant, state and national trends are presented to give context to county-level data.

Demographics

Population Dynamics

Population is an important consideration in managing natural resources. Population structure (size, composition, density) and population dynamics (how the structure changes over time) are essential to describing the consequences of changes to the forest on the social environment (Seesholtz et al., 2006).

The twelve-county area of influence was home to 282,819 people as of the 2021 American Community Survey (U.S. Census Bureau, 2021; Table 2). The counties range from small metropolitan areas to rural (Table 2) according to the US Department of Agriculture's Economic Research Service developed Rural-Urban Continuum Codes. These codes form a classification scheme that distinguishes metropolitan counties by the population size of their metro area, and nonmetropolitan counties by degree of urbanization and adjacency to a metro area. A '1' represents the most highly populated metropolitan areas while a '9' represents very rural areas. In the twelve-county area of influence there are two counties classified as a 3, which means it is a metropolitan county, but has fewer than 250,000 people. The remaining counties get consistently more rural with several counties, scoring a 9 on the scale, meaning that there is a population of less than 2,500 people and is completely rural.

Population growth can be an indicator of a region's desirability to live and work. The nation and all three states the AOI intersects saw population increases between 2010 and 2021. However, between counties in the growth varied widely. Walla Walla County, Washington, Nez Perce County, Idaho, and Morrow County, Oregon grew the most by 8% respectively from 2010 to 2021, rates below the Oregon, Washington, and Idaho state averages. Most other counties grew even more modestly—between 2-6 percent. Grant County, Oregon saw a population decline over this recent 11 year period. Population declines can signal challenges in economic opportunities (McGranahan 1999) or aging populations (see section on *Age* below) among other reasons.

Population growth is at or below regional and country averages. Higher populations in the surrounding areas may mean increased visitation to the forests and forest management can expect to be tasked with maintaining the quality of visitors' experiences while providing forest products and cultural and recreational experiences to a potential greater number of people and maintaining a good relationship with the surrounding community.

Table 2. Population and population change, 2010-2021

	Rural-Urban Code	Population 2021	Population 2010	Population Change 2010-2021	Percent Change 2010-2021
Baker County, OR	7	16,539	16,150	389	2%
Grant County, OR	9	7,225	7,349	-124	-2%
Morrow County, OR	6	11,964	11,112	852	8%
Umatilla County, OR	4	79,509	74,804	4,705	6%
Union County, OR	7	26,255	25,373	882	3%
Wallowa County, OR	9	7,330	6,919	411	6%
Wheeler County, OR	9	1,477	1,443	34	2%
Asotin County, WA	3	22,285	21,363	922	4%
Columbia County, WA	3	3,969	3,957	12	0%
Garfield County, WA	8	2,278	2,240	38	2%
Walla Walla County, WA	3	62,168	57,585	4,583	8%
Nez Perce County, ID	3	41,820	38,886	2,934	8%
Twelve-county AOI	N/A	282,819	267,181	15,638	6%
Oregon	N/A	4,207,177	3,761,925	445,252	12%
Washington	N/A	7,617,364	6,561,297	1,056,067	16%
Idaho	N/A	1,811,617	1,526,797	284,820	19%
United States	N/A	329,725,481	303,965,272	25,760,209	8%

Note: Rural-Urban Codes 1-3 are metropolitan counties. Codes 4-9 are nonmetropolitan counties. 1 = Counties in metro areas of 1 million population or more ; 2 = Counties in metro areas of 250,000 to 1 million population ; 3= Counties in metro areas of fewer than 250,000 population ; 4 = Urban population of 20,000 or more, adjacent to a metro area ;5 = Urban population of 20,000 or more, not adjacent to a metro area ; 6 = Urban population of 2,500 to 19,999, adjacent to a metro area; 7 = Urban population of 2,500 to 19,999, not adjacent to a metro area ; 8= Completely rural or less than 2,500 urban population, adjacent to a metro area; 9 = Completely rural or less than 2,500 urban population, not adjacent to a metro area (ERS 2020).
Source: U.S. Census Bureau 2010 and 2021; and ERS 2020.

Age

The age of the population surrounding the Umatilla National Forest is germane since age may affect community values, attitudes and uses of public lands. Across the areas of influence the population ages has, since 2010, grown older (see Table 3) which is also true for the US over this same time period. In general, the United States is growing older. Though many aging American's spend their retirement years in the homes and communities where they've raised families and worked, trends indicate that a sizable share of Americans 65 years and older have been moving to amenity rich places which are characterized as having warmer average temperatures and lower rates of crime and taxes (Clark and Davies 1990, Conway and Houtenville 1998, McGranahan 1999). In the twelve-county area of influence Grant County, Oregon and Asotin and Columbia counties in Washington were categorized as "retirement destinations" by the U.S. Department of Agriculture's Economic Research Service due to an increase in people of retirement age resulting from a net migration between 2000 and 2010 (ERS, 2017).

Considering recreation needs, a younger than average population can indicate the need for family-friendly activities and uses, such as a trail system with ranging degrees of difficulty, while an older than average population might increase the demand for easily accessible trailheads and camping. That said, the under 18 population decreased by 1.1% and the 18-34 category increased modestly, by 0.2%.

A population's age can also help inform how to interpret population changes and economic conditions. An area with a large percentage of retirees earns income primarily from investments and transfer payments (for example, dividends and Social Security), rather than salaries and wages and therefore this population may be less sensitive to changes in Forest management which impact jobs and salaries than other age groups. These counties may experience an in-migration effect of older individuals, but age may have the opposite effect on natural population growth**.**

Table 3. Age Distribution in combined twelve-county area of influence, 2010 - 2021

	% of Total, 2010	% of Total, 2021	Study Area Percent Change 2010-2021
Under 18	24%	22%	-1.1%
18-34	21%	22%	0.2%
35-44	12%	12%	0.1%
45-64	27%	24%	-2.7%
65 and over	16%	20%	3.5%

Source: U.S. Census Bureau, 2010 and 2021

Education

Educational attainment, a measure of the highest level of formal education, can be an important indicator of economic success and well-being. Historically, communities with a more educated workforce tend to have higher incomes, have faster growth rates, and are better able to withstand economic downturns and

recessions. In addition, rural counties with higher levels of average education were found to have seen faster job growth following recessions (Marre, 2014). Understanding the differences in education levels can highlight whether certain people in geographic areas might be more or less sensitive to changes in national forest management. Education is often highly correlated with income and, as discussed below, for planning, lower income populations may be more vulnerable to any adverse effects that result from changes to forest plans and management (see

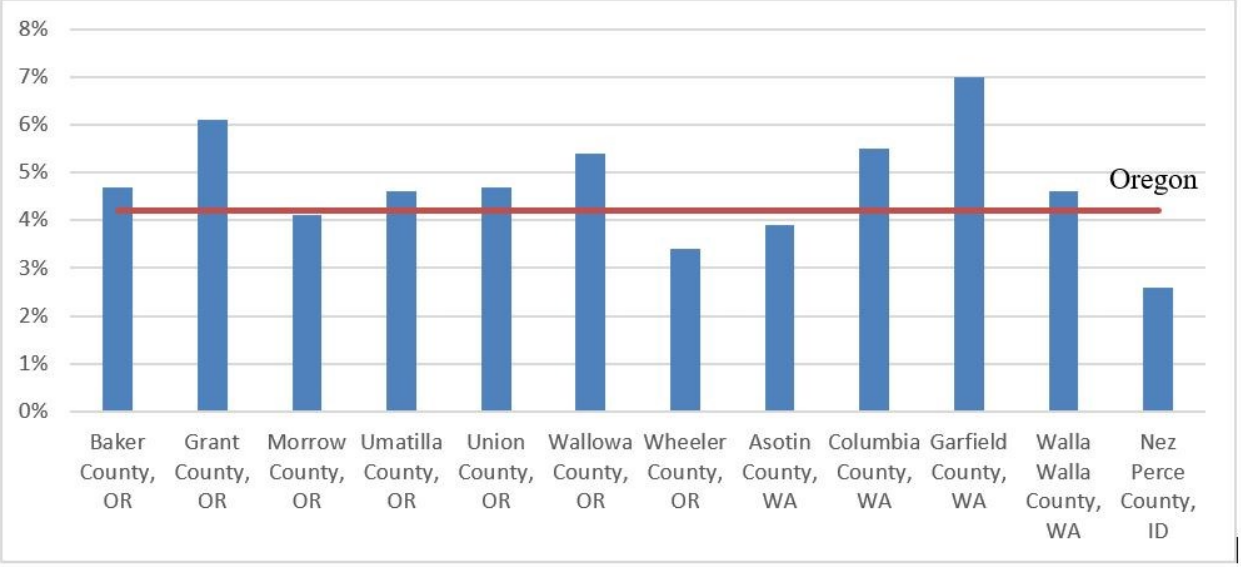


Figure 1. Unemployment rate, by county, 2022
Source: Bureau of Labor Statistics, 2023

Income section below).

Educational attainment in the counties of influence was roughly equivalent to the U.S. population: 88 percent of the population 25 years or older hold a high school diploma (or equivalent). This graduation rate is lower than the state-wide averages (Table 4). A lower portion of the area of influence have a Bachelor's degree or higher compared to U.S. residents and state-level averages (Table 4).

Table 4. Percent of persons 25 years and educational attainment, 2021

	No high school degree	High school graduate	Associates degree	Bachelor's degree or higher	Graduate or professional
Baker County, OR	9%	91%	10%	24%	7%
Grant County, OR	9%	91%	7%	17%	5%
Morrow County, OR	23%	77%	7%	10%	3%
Umatilla County, OR	17%	83%	11%	18%	6%
Union County, OR	7%	93%	9%	24%	7%
Wallowa County, OR	6%	94%	9%	28%	10%
Wheeler County, OR	10%	90%	11%	20%	7%
Asotin County, WA	8%	92%	13%	24%	8%
Columbia County, WA	9%	91%	12%	27%	11%
Garfield County, WA	6%	94%	14%	25%	10%
Walla Walla County, WA	12%	88%	12%	28%	12%
Nez Perce County, ID	7%	93%	11%	25%	7%

Twelve-County Average	12%	88%	11%	23%	8%
Oregon	9%	91%	9%	35%	13%
Washington	8%	92%	10%	37%	14%
Idaho	9%	91%	10%	29%	10%
United States	11%	89%	9%	34%	13%

Source: U.S. Census Bureau, 2021.

This pattern of average high school graduation rates and below average college and postgraduate rates is a nationally occurring distinction between urban and rural areas and the gap in rates of college educated adults between urban and rural areas has only grown over time (ERS 2016). This disparity may be a result of rural communities generally offering fewer opportunities for occupational advancement, so they often struggle to retain and attract educated and highly skilled individuals. Frequently residents interested in pursuing advanced education move from these rural communities to more economically advanced areas which support greater educational opportunities and resulting employment opportunities.

Race and Ethnicity

Overall, the twelve-county area of influence is less racially or ethnically diverse than Oregon and Washington overall. Table 5 displays the share of the population in each racial/ethnic group. All twelve counties in the area of influence have a larger share of white residents than the Oregon, Washington and Idaho averages. Umatilla County, Oregon and Nez Perce County, Idaho have a higher percentage of Americans Indians than either of the Oregon and Idaho averages, and the national average. In Nez Perce County 5 percent of the population is American Indian, while the national average is less than one percent. Several counties in the Umatilla National Forest area of influence have a higher share of Hispanic or Latino residents than either of the states or national averages. Morrow, Umatilla and counties in Oregon and Walla Walla County Washington. All had above average share of Hispanic or Latino residents. Due to the small population sizes of nonwhite races and small sampling sizes, data on nonwhite populations are often not statistically significant within these counties, there is medium to low reliability in the estimates of non-white populations and should be interpreted with caution.

Table 5. Race and ethnicity, twelve-county area of influence, 2021

Race/Ethnicity	White	Black or African American	American Indian and Alaska Native	Asian	Native Hawaiian and Other Pacific Islander	Some other race	Two or more races	Hispanic or Latino (of any race)
Baker County, OR	91%	1%	1%	0%	0%	2%	3%	5%
Grant County, OR	93%	0%	1%	1%	0%	1%	4%	4%
Morrow County, OR	76%	1%	1%	1%	0%	8%	14%	38%
Umatilla County, OR	79%	1%	3%	1%	0%	7%	8%	28%
Union County, OR	91%	1%	1%	1%	1%	1%	4%	5%
Wallowa County, OR	93%	1%	1%	0%	0%	2%	4%	4%

Wheeler County, OR	88%	0%	0%	1%	0%	3%	8%	10%
Asotin County, WA	91%	1%	1%	1%	0%	1%	4%	5%
Columbia County, WA	85%	1%	0%	0%	0%	4%	10%	8%
Garfield County, WA	93%	0%	0%	3%	0%	0%	4%	2%
Walla Walla County, WA	80%	2%	1%	2%	0%	8%	7%	22%
Nez Perce County, ID	89%	0%	5%	1%	0%	1%	4%	4%
Combined Counties	84%	1%	2%	1%	0%	5%	6%	16%
Oregon	81%	2%	1%	4%	0%	4%	8%	14%
Washington	72%	4%	1%	9%	1%	5%	9%	13%
Idaho	87%	1%	1%	1%	0%	4%	6%	13%
United States	68%	13%	1%	6%	0%	6%	7%	18%

Source: U.S. Census Bureau 2021

The U.S. Forest Service's National Visitor Use Monitoring Survey (NVUM) also offers a quantitative look at recreational visitors to the Umatilla National Forest providing insight into the demographics of those who recreate on national forests and grasslands. The race/ethnicity distribution of national forests visitors on the Umatilla National Forest (see Table 6) does not mirror that of people within the twelve-county area of influence, as those identifying as white are over-represented in the visitors to the National Forest.

Table 6. Umatilla National Forest visitors, by race/ethnicity

Race	National Forest Visits (%)
American Indian / Alaska Native	0.4
Asian	0.4
Black / African American	0.7
Hawaiian / Pacific Islander	0.2
White	98.6
Ethnicity	**National Forest Visits (%)**
Hispanic / Latino	5.5

Note: Respondents could choose more than one race therefore total maybe greater than 100%.
Source: U.S. Forest Service, 2019

Economy

This section highlights economic trends in the twelve-county area of influence. Income and unemployment are two important considerations to understanding local economic conditions and therefore how Federal land management impacts local economies.

Unemployment

The unemployment rate is a commonly cited indicator of local and national economic conditions. The unemployment rate is the percentage of the labor force that is unemployed. Though it may seem full employment is often the goal, structural unemployment (mismatch between labor skills and available jobs within a region) and frictional unemployment (people moving or transitioning employment) cause rates to remain above zero even in times of economic prosperity. The existence of structural and frictional unemployment implies that there is an inherent "natural" rate of unemployment. The natural rate of unemployment is believed to fall somewhere between 5 and 6 percent and allows workers to move between jobs and industries without signaling broad economic distress.

The unemployment rate varied across the counties within the areas of influence. In 2022, Garfield County, Washington counties had the highest rates of unemployment (Figure 1). Nez Perce County had the lowest rate.

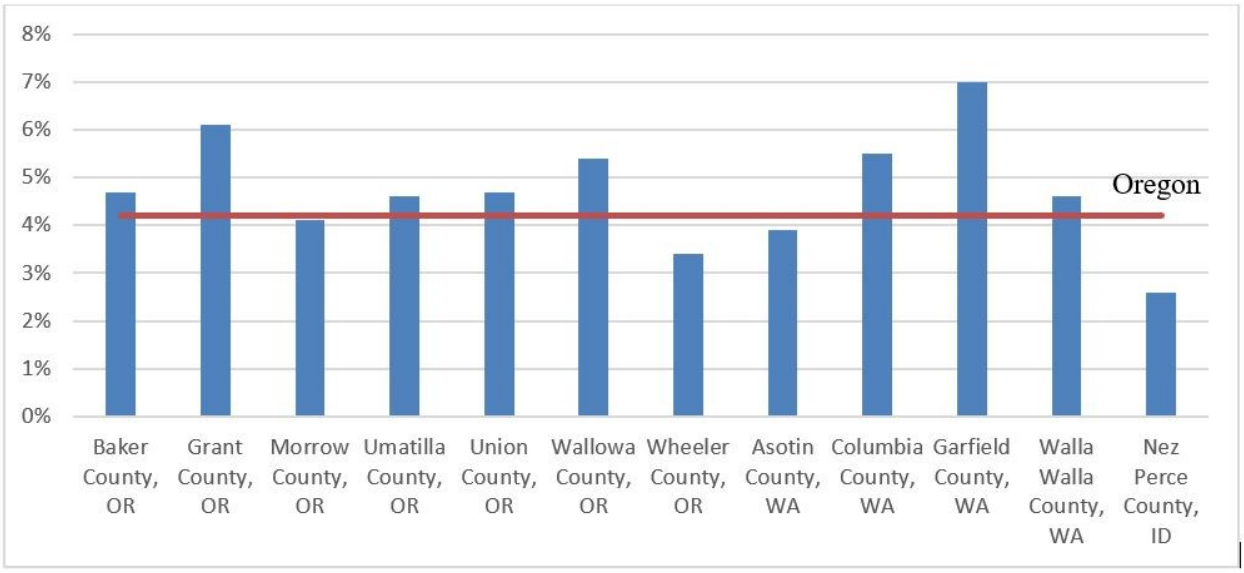


Figure 1. Unemployment rate, by county, 2022
Source: Bureau of Labor Statistics, 2023

Income

Median household income is an indicator of economic well-being. For planning, income is an important consideration because low-income populations may be more vulnerable to any adverse effects that result from changes to forest plans and management. For example, if people must travel farther to access recreation sites this increases the cost to use these recreation sites and this may have a disproportionate effect on low-income households. Table 7 provides median household income and the percent of the population below poverty levels for the twelve-county area of influence. For reference, state and national data is also listed.

Oregon's median household income, $70,084, is higher than the national median, however, all the counties in the areas of influence have median incomes below the Oregon and national median. Washington and Idaho have lower median incomes. The counties range from $5,300 to $23,400 less than the Oregon median (Table 7). Similarly, in many counties the portion of the population below the poverty level is higher than state or national averages. These values suggest that nearly all of the planning area counties are facing economic hardships greater than the average U.S. population.

Table 7. Median household income and population poverty levels, 2021

Location	Median Household Income	Percent of population below poverty level
Baker County, OR	$46,922	14%
Grant County, OR	$51,100	15%
Morrow County, OR	$61,659	15%
Umatilla County, OR	$63,123	13%
Union County, OR	$55,227	14%
Wheeler County, OR	$46,648	14%
Wallowa County, OR	$57,891	9%
Asotin County, WA	$57,263	13%
Columbia County, WA	$64,688	9%
Garfield County, WA	$50,625	9%
Walla Walla County, WA	$63,686	11%
Nez Perce County, ID	$61,810	15%
Twelve-County Average	NA	13%
Oregon	70,084	12%
Washington	63,377	10%
Idaho	63,377	11%
United States	69,021	13%

Source: U.S. Census Bureau, 2021

Payments to States and Counties

The Umatilla National Forest make payments to states and local governments through two programs. These are Federal Payments In-Lieu of Taxes (PILT) and Forest Service county payments--the Secure Rural Schools Act (SRS) or the Federal 25 Percent Fund.

Forest Service County Payments.

Traditionally counties have received revenue sharing payments from commercial activities on Federal lands, such as livestock grazing, and timber harvesting. For National Forests, beginning in 1908 the payment was 25-percent of the moneys received annually. Since 2008 the payments are based on 25-percent of the 7-year rolling average annual receipts. These payments are commonly called 25-percent payments. However, in 2000, the Secure Rural Schools and Community Self-determination Act was passed which offered a guaranteed source of payments that was not tied to annual commercial revenue on National Forests. The 10 of the 11 counties with Umatilla National Forest lands elected to receive the Secure Rural Schools Act State Payment, not the 25-percent payments. Counties with less Umatilla National Forest land area will receive lower payments than counties with a higher portion of the National Forests lands. The average payment during those five years to all the counties was $1.7 million annually.

In 2016 the Secure Rural Schools Act was not reauthorized by Congress. Without reauthorization these payments reverted to 25 percent payments. In many cases, these payments are significantly smaller than the Secure Rural Schools Act payments. Secure Rural School program funding is determined by Congress. Lapses or declines in funding will have a larger impact on more rural counties which depend, to a greater degree, on these payments for school, road, and bridge funding.

Table 8. Umatilla National Forest Secure Rural Schools (SRS) Act or 25-percent payments, 2018-2022

Location	2018	2019	2020	2021	2022
Baker County, OR	$54	$56	$53	$60	$64
Grant County, OR	$638,961	$727,903	$719,585	$778,607	$794,135
Morrow County, OR	$183,902	$230,458	$154,136	$141,435	$211,760
Umatilla County, OR	$100,666	$110,558	$106,831	$103,300	$94,362
Union County, OR	$125,663	$126,425	$123,431	$139,706	$133,130
Wallowa County, OR	$100,181	$110,766	$109,835	$122,474	$128,658
Wheeler County, OR	$129,344	$125,213	$115,223	$138,908	$152,508
Asotin County, WA	$55,096	$60,953	$59,541	$76,644	$70,299
Columbia County, WA	$154,988	$159,061	$154,478	$167,422	$128,482
Garfield County, WA	$102,291	$120,527	$83,555	$97,772	$118,808
Walla Walla County, WA	$3,031	$2,727	$2,558	$2,981	$3,214

Note: Umatilla County elected to receive the 25-percent payments.
Source: U.S. Forest Service, 2023b

Payments In-Lieu of Taxes (PILT)

PILT are Federal payments to local governments that help counties offset losses in property taxes associated with nontaxable Federal land located within a county's boundary. PILT payments are distributed by the Department of the Interior for tax-exempt Federal land administered by the Bureau of Land Management (BLM), the Forest Service, the National Park Service, U.S. Fish and Wildlife Service, and for Federal water projects and some military installations (Department of Interior 2023). These payments are designed to supplement other Federal land receipt-sharing payments that local governments may receive, including timber, grazing fee and, mineral material sales receipts from National Forests and Grasslands as reflected in Secure Rural Schools or 25 Percent Fund payments. PILT payments traditionally helped balance the uneven distribution of Federal 25 Percent Fund payments between counties with Forest Service land and counties with other types of Federal land that do not generate revenues. PILT has historically been a more stable and dependable revenue source than Federal 25 Percent Fund payments because it is a flat per-acre payment that is not tied to levels of revenue generated by Forest Service land.

Table 9 shows total payments made to the counties from fiscal year 2018 to 2022 for all PILT-eligible lands. The table also shows the percentage of the PILT acres administered by the Forest Service. Many counties have lands in different National Forests.

Table 9. Payments In-lieu of Taxes, 2018-2022

County	2018	2019	2020	2021	2022	Percent of PILT Acres Administered by Forest Service
Baker County, OR	$1,627,967	$1,656,951	$1,184,773	$1,239,404	$1,346,145	64%
Grant County, OR	$923,833	$924,601	$706,203	$723,344	$741,014	90%
Morrow County, OR	$376,464	$384,555	$287,250	$280,068	$346,800	96%
Umatilla County, OR	$1,057,363	$1,074,251	$1,108,877	$1,116,280	$1,151,490	96%
Union County, OR	$1,603,772	$1,628,872	$1,195,520	$1,262,865	$1,348,143	99%

Wallowa County, OR	$1,053,433	$1,074,053	$474,519	$534,955	$605,002	98%
Wheeler County, OR	$213,405	$215,244	$120,613	$123,630	$124,877	57%
Asotin County, WA	$187,837	$168,566	$174,550	$179,073	$186,150	76%
Columbia County, WA	$427,801	$385,583	$386,318	$402,766	$419,913	97%
Garfield County, WA	$265,507	$234,090	$236,352	$243,353	$267,136	94%
Walla Walla County, WA	$30,705	$29,891	$30,489	$31,168	$31,937	20%

Source: Department of the Interior, 2023

Payments to states and local government support public services in communities near the Umatilla National Forest and contribute to employment and labor income in the counties that surround the forest. Some of the least affluent areas--for example, Baker, Grant and Union counties--receive the largest payments. Federal payments to local governments in sparsely populated and low-income areas are likely to be particularly meaningful, since these areas typically get less revenue from property, sales, and income taxes to fund local government operations.

The employment and labor income contributions of PILT and SRS payments are included in the *Forest-Specific Economic Contributions*

section of this report.

Land Ownership and the Wildland Urban Interface

In the twelve-county area of influence, the Forest Service is the largest federal landowner in each of the counties (Table 10). For many of these counties, there are other national forests represented in addition to the Umatilla National Forest.

Table 10. Land Ownership Patterns in the Area of Influence, as a Percent of Total

Location	Private Lands	Federal Lands	Federal Lands: Forest Service	Federal Lands: BLM	Federal Lands: National Park Service	Federal Lands: Other Federal	State Lands	Tribal Lands	City, County, Other Lands
Baker County, OR	48%	51%	33%	18%	0%	0%	0%	0%	0%
Grant County, OR	38%	61%	55%	6%	0%	0%	1%	0%	0%
Morrow County, OR	84%	16%	11%	0%	0%	5%	0%	0%	0%
Umatilla County, OR	64%	21%	19%	1%	0%	1%	1%	14%	0%
Union County, OR	51%	48%	47%	0%	0%	0%	1%	0%	0%
Wallowa County, OR	41%	58%	57%	1%	0%	0%	1%	0%	0%

Wheeler County, OR	71%	29%	15%	13%	0%	0%	0%	0%	0%
Asotin County, WA	78%	16%	13%	3%	0%	0%	2%	0%	0%
Columbia County, WA	70%	29%	28%	0%	0%	0%	0%	0%	0%
Garfield County, WA	77%	21%	21%	0%	0%	0%	0%	0%	0%
Walla Walla County, WA	96%	2%	0%	0%	0%	2%	0%	0%	0%
Nez Perce County, ID	30%	6%	1%	5%	0%	0%	14%	48%	0%
Combined Counties	57%	38%	33%	5%	0%	1%	1%	4%	0%
Oregon	43%	52%	25%	25%	0%	1%	2%	2%	0%

Source: USGS, 2018

The wildland urban interface (WUI) is the area where houses and wildland vegetation meet, and where wildland fire presents the most concern for lives and houses. The Wildland-Urban Interface is defined as the area where houses are in or near wildland vegetation (Radeloff et al, 2018). Since wildfire is a natural disturbance in these forests, creating a potential risk to adjacent private lands and requires management attention. Table 11 shows the total number of homes at risk from wildfire in the WUI areas of the twelve-county area of influence. Though the WUI areas are a relatively small percentage of the total area, the homes in the WUI make up a large percentage of total homes in many of the counties.

Table 11. Wildland Urban Interface, 2020

County	Housing Units in WUI	Housing Units in WUI as % of Total Housing Units	WUI as % of land area
Nez Perce County, ID	3,340	18.2%	3%
Baker County, OR	6,800	79.0%	1%
Grant County, OR	2,877	70.0%	<1%
Morrow County, OR	3,726	79.6%	1%
Umatilla County, OR	6,229	20.0%	1%
Union County, OR	9,019	77.4%	1%
Wallowa County, OR	3,231	74.7%	1%
Wheeler County, OR	480	51.3%	<1%
Asotin County, WA	6,508	64.9%	3%
Columbia County, WA	208	9.5%	<1%

Garfield County, WA	761	63.7%	<1%
Walla Walla County, WA	482	1.9%	<1%

Source: Radeloff et al., 2018; Radeloff et al., 2023

Community Resiliency

The county-based Risk/Opportunity Index (ROI) presented in this report is a measure of a county's relative susceptibility to socioeconomic damage or benefit resulting from changes in planning on the national forestland of the Blue Mountains area (Blues Intergovernmental Council 2022; Maille 2023). This ROI was specifically developed to account for the socioeconomic differences between counties in the Blue Mountains region because differences in socioeconomic conditions across counties will result in different potential effects from changes in land management actions.[3] These differences between counties need to be recognized in plan revision. The ROI has two parts[4].

The first part is a measure of a county's economic "resilience". For the purposes of this effort resilience is the ability of a county to withstand or recover from an outside disruption to its economy. Resilience is modeled as a function of the natural, monetary, and human/social capital a county has, as well as the ability of the county to convert its capital into economic resilience.

- The second part of the index, "exposure", estimates a county's economic ties to the national forests of the Blue Mountains. The idea here is that a location may be deemed "resilient" but have close ties to Forest Service lands or forest-based industries, and thus still be somewhat vulnerable economically to changes in forest planning. Alternatively, a location that is resilient but not closely tied to activities in the national forests may be less vulnerable to such shifts.

The final ROI for each county in the Blue Mountain area is presented in Table 12 below. Note that the ROI can take on a negative value when, as in the case of Walla Walla, a county has a high resilience index, and low exposure. Complementing the ROI presented in Figure 2 is the scatter plot of resilience versus exposure for the 15 counties in the Blue Mountains area. The lower left-hand quadrant of this figure, Quadrant III, represents the high resilience and low exposure locations (low RO index), and the upper right-hand quadrant (Quadrant I) represents low resilience/high exposure counties—locations where the risk is highest, and where there is the greatest opportunity for current Forest Service activities to support local livelihoods.

Table 12. Risk/Opportunity Index

Element	Asotin, WA	Baker, OR	Columbia, WA	Crook, OR	Garfield, WA	Grant, OR	Harney, OR	Malheur, OR	Morrow, OR	Nez Pierce, ID	Umatilla, OR	Union, OR	Walla Walla, WA	Wallowa, OR	Wheeler, OR
Resilience	0.01	-0.09	0.11	-0.15	0.22	0.30	0.27	-0.19	0.00	-0.27	-0.38	-0.19	-0.23	0.22	0.36
Exposure	0.40	1.35	0.86	1.27	0.84	2.40	1.01	0.21	0.72	0.22	0.85	1.49	0.078	1.75	1.54
RO index[1]	0.41	1.27	0.97	1.12	1.06	2.70	1.29	0.02	0.72	-0.04	0.47	1.30	-0.15	1.97	1.89

[1]Calculated as (1-resilience index) + exposure index

[3] The study area for the ROI is larger than the AOI for the forest. This captures the entire Blue Mountain area to provide a broader comparison across counties in the region.

[4] The BIC report contains all the details as to the specific data used to measure resilience and exposure (Blues Intergovernmental Council 2022).

Figure 2 is helpful in that it provides information on the constraints and opportunities of counties with a similar ROI, for example Harney and Union Counties, but with quite different levels of exposure and resilience. This sort of interpretation has been described as vulnerability versus resilience where in our case and county would be deemed vulnerable if it is highly exposed to Forest Service activities, and resilient where resilience is higher than average. The three ovals in the figure outline three natural clusters of counties—low, intermediate, and high ROI counties.

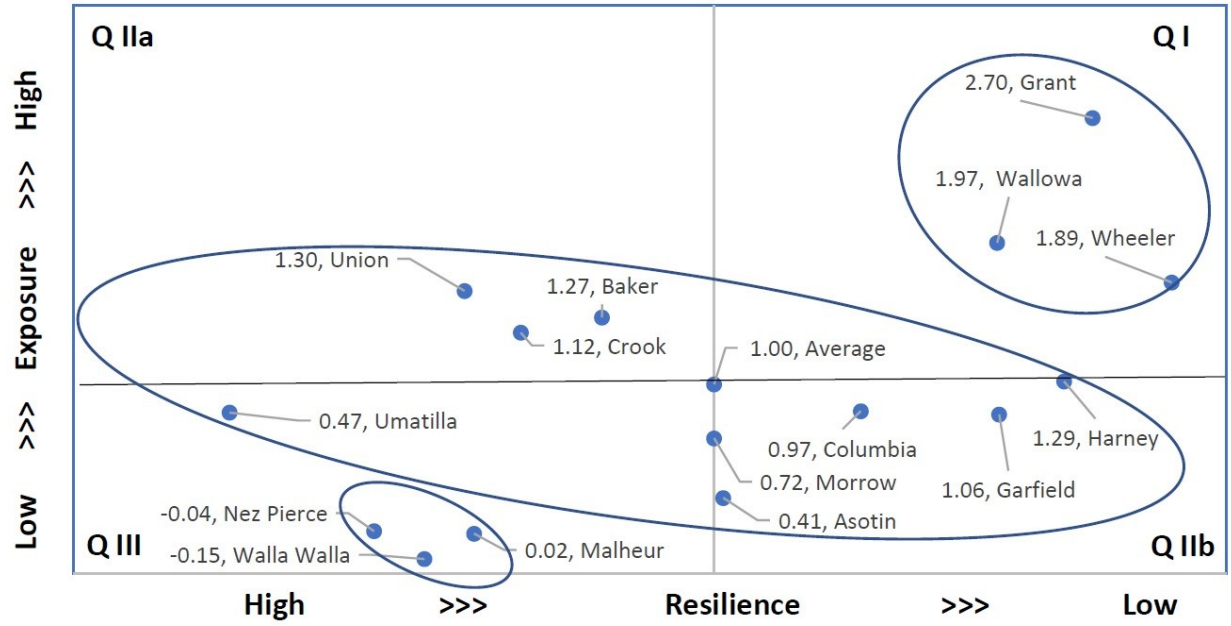


Figure 2. Risk/Opportunity Index Results

With this type of comparison in mind, the quadrants of Figure 2 are interpreted in Table 13. These types of differences in county conditions should be considered as forest plan revision alternatives are examined. Counties in the different quadrants face different challenges resulting from changes in forest management.

Table 13. A mapping of risks and opportunities

Quadrant	General Risk / Opportunity Profile
I	Risk: Least economically resilience and therefore, most likely to suffer negative consequences to economy given shifts in Forest Service activities that reduce economic benefits. Opportunity: Already high exposure so opportunity to generate additional benefits via increasing exposure is lowest. Opportunity of boosting benefits to economy is highest with respect to restructuring of current Forest Service activities.
IIa	Risk: Given relatively high resilience, risk of negative consequences to economy from shifts in Forest Service activities that reduce benefits to economy is less than average. Opportunity: Currently high exposure so opportunity is low with respect to additional benefits from an increase in exposure. Opportunity of boosting benefits to economy is relatively high with respect to reorienting/restructuring of current Forest Service activities.

IIb	Risk: Relatively low resilience, therefore, more likely to suffer negative consequences to economy given shifts in Forest Service activities that reduce benefits to economy. Opportunity: Given low exposure, opportunity to generate significant economic benefits via additional exposure is high. Opportunity of boosting benefits to economy by restructuring of current Forest Service activities is relatively low given current low exposure.
III	Risk: Given relatively high economic resilience, least likely to suffer negative consequences to economy given shifts in Forest Service activities that reduce support or increase cost related to Forest Service activities activities. Opportunity: Given low current exposure, there is limited opportunity to restructure current Forest Service exposure to boost economic benefits. Conversely, the greater opportunity to boost benefits to economy lie in increasing Forest Service exposure.

Benefits to People (including multiple uses, other forest benefits, operations and infrastructure)

Forest Operations and Infrastructure

Umatilla National Forest operations and infrastructure include personnel, program activities, roads, and facilities that contribute to the use and enjoyment of the forest.

The Umatilla National Forest's annual budget (including expenditures and salaries) averaged approximately $17 million in fiscal years 2015 through 2020 when excluding fire expenditures. Including fire related expenditures increases this 6-year average to $25 million. Fire-related expenditures have averaged about 30% of annual expenditures over this time period (see Table 14).

An average of 65 percent of the non-fire budget was spent on salaries in fiscal years 2015 through 2020. The remaining 35 percent was spent on equipment and other non-salary expenditures that contribute to forest management. The Umatilla National Forest's operational expenditures contribute to economic activity in the communities that surround the forest. Forest Service employees live in these communities and spend their income on housing, food, and a variety of other local goods and services. The forest's non-salary expenditures generate economic activity in businesses that supply goods and services to support Forest Service programs. The economic contributions of the Umatilla National Forest's expenditures are captured in the *Forest-Specific Economic Contributions*

section of this report.

These expenditures support programs that contribute to recreation opportunities, providing and maintaining wildlife habitat, and ecosystem restoration projects, to name a few. These programs also include activities to restore the forest to improve fire resiliency near communities. Managing these wildland-urban interface areas in a condition that prevents the spread of unwanted fire into adjacent lands and communities is a key contribution of the forest to local communities. Prescribed fire along with mechanical treatments is used as a tool within the national forest to reduce hazardous fuels and achieve other desired conditions.

While prescribed fire is important to the maintenance of the forest and safety of nearby communities, it can also have a negative effect on human health, as well as having the potential to temporarily restrict or displace recreation use or other activities.

Table 14. Annual budget with and without fire expenditures

Year	Total Budget, including fire	Budget, non-fire	Salary as percentage of total Non-fire expenditures	Fire expenditure as percentage of total
2015	$34,400,000	$19,600,000	66%	43%
2016	$29,200,000	$19,100,000	70%	34%
2017	$21,100,000	$18,300,000	68%	14%
2018	$17,600,000	$15,900,000	59%	10%
2019	$21,300,000	$16,100,000	63%	24%
2020	$25,500,000	$13,400,000	73%	48%

Fire expenditures are wildland fire expenditure (WFSU) program area as classified in the FMMI financial database.
Source: U.S. Forest Service 2021

Infrastructure on the Umatilla National Forest includes National Forest System roads, trails, bridges, public utilities, private infrastructure, recreation facilities, drinking water systems, dams, and administrative facilities. Forest infrastructure is an essential input in economic activity in the region. Recreational use of the Umatilla National Forest relies on accessible roads, trails, and developed sites. Households and industries rely on cellular towers, water developments, pipelines, and transmission lines to conduct their business. Like water, forest infrastructure is not a separate category in the economic contribution analysis because it is embedded in nearly all market transactions associated with forest uses. Timber cannot be removed from the forest for processing without National Forest System (NFS) roads. Recreational visitors will not spend money in communities near the Umatilla National Forest if they cannot access preferred recreational sites. New families and businesses will not move to the communities surrounding the forest if they lack access to infrastructure essential to modern life.

The road system on the Forest contributes to connecting people and communities to the forest and to each other. The agencies' road systems support numerous recreation opportunities. Road mileage can be used as an indicator of recreation opportunities, including driving for pleasure, which is one of the more popular outdoor recreation activities on the Umatilla National Forest (Table 15). Roads provide access to dispersed recreational opportunities such as hiking, camping, hunting and fishing. Roads also serve as recreation sites for individuals who use OHVs and bikes on the NFS road system. The Forest Service maintain five levels of roads. Level 1 includes roads closed to traffic year-round. Level 2 roads are maintained for high clearance vehicles. Level 3, 4, and 5 roads are maintained for passengers cars, although levels of convenience and comfort vary. System road miles are the roads agencies include in their inventories and are responsible for maintaining. Maintaining this road system requires resources that must compete with other forest priorities and this can lead to deferred maintenance accruing on the road system.

Outdoor Recreation and Forest Visitors

The Umatilla National Forest provides a large and contiguous area of public lands for multiple outdoor recreation opportunities. The Umatilla National Forest is relatively far away from either the Portland, Oregon or Boise, ID metro areas. In fact, under 10 percent of the Umatilla National Forest visitors traveled over 200 miles to visit and recreate on the forest. Fifty percent of visitors travel less than 50 miles to recreate on the Umatilla National Forest providing valuable recreation opportunities to individuals, friends and families in their local community. There are over 195,000 visits to the Umatilla National Forest every year (U.S. Forest Service, 2019).

The National Visitor Use Monitoring Survey offers a quantitative look at visitor activities across all the Umatilla National Forest (

). Hunting was the most frequently cited primary reason for visiting the Umatilla National Forest at 18.6 percent of all visits (U.S. Forest Service, 2019). Viewing wildlife, downhill skiing and snowmobiling were the next most popular primary visitor activities on the Umatilla National Forest, and popularity of these activities vary seasonally. The National Visitor Use Monitoring Survey indicated that in addition to those primary activities, 32.8 percent of all visitors participated in viewing natural features, 29.8 percent participated in hiking/walking, and over 24.3 percent viewed wildlife while visiting the Umatilla National Forest.

Table 15. Forest Activity Participation, 2019

Activity	Percent who participated in activity during visit (more than one activity could be checked)	Percent who indicated as primary activity during visit[1]
Viewing Natural Features	32.8	10.3
Hiking / Walking	29.8	3.9
Viewing Wildlife	24.3	0.6
Hunting	21.5	18.6
Driving for Pleasure	20.7	5.8
Relaxing	19.8	2.8
Downhill Skiing	16.2	16.2
Snowmobiling	14.4	14.4
Developed Camping	9.2	5
Cross-country Skiing	8.6	8
Primitive Camping	8.4	1.5
Gathering Forest Products	8.3	3.9
Fishing	6.6	4.3
Other Non-motorized	5.4	3.1
Picnicking	4	1
Backpacking	2.2	0
OHV Use	2.1	0.3
Nature Study	2	0.1
Visiting Historic Sites	1.7	0
Non-motorized Water	1.6	0.6
Motorized Water Activities	1.5	0
Some Other Activity	1.4	1.5
Motorized Trail Activity	1	0.1
Resort Use	0.9	0
Bicycling	0.5	0
Horseback Riding	0.4	0
Nature Center Activities	0.2	0

[1]Survey respondents were asked to select just one of their activities as their main reason for their forest visit. Some respondents selected more than one, so this column may total to more than 100%.

Source: U.S. Forest Service, 2019

Fish, Wildlife, and Plants

Fish, wildlife and plants of importance on the Umatilla National Forest include those used by the public for hunting, fishing, nature study, and observing wildlife. Approximately 24.3 percent of visitors to the Umatilla National Forest participated in wildlife viewing, 21.5 percent in hunting, and 6.6 percent in fishing.

Special forest products are harvested from National Forests and Grasslands for commercial and personal consumption. The products may include food, such as mushrooms and berries, medicinal plants and fungi, floral greenery, wildflowers, Christmas trees, and fuelwood (Table 16). Local community members and migrants earn income through harvesting and selling special forest products. Some also harvest special forest products for subsistence, cultural heritage, family traditions, recreation or spiritual fulfillment.

Table 16. Volume Cut of Selected Special Forest Products, FY22

Product (units)	Quantity
Fuelwood (ccf)	2,500
Christmas trees (numbers)	100
Limbs and Bough (lbs)	6,000
Mushrooms (gallons)	5,630

Source: U.S. Forest Service 2022

Drinking Water

Regional dependence on land areas most important for drinking water is examined to demonstrate surface area role in providing this ecosystem service. This analysis is based directly on the USDA Forest Service *Forests to Faucets* project that uses GIS to model and map continental United States land areas most important to surface drinking water (Mack et al. 2022). Each 12-digit HUC is assigned a standardized index value between 0 and 100 that summarizes relative mean annual water supply, the flow of water (e.g., from upstream to downstream watersheds), and water demand (i.e., of the municipality where water is eventually consumed). Higher indexed areas will tend to be associated with surface water sources that supply urban areas and larger populations. Because this index relies on a surface water importance rating, areas with greater reliance on ground water, not surface water, will have lower index levels. Figure 3 shows the key watersheds across the forest that provide important surface drinking water benefits.

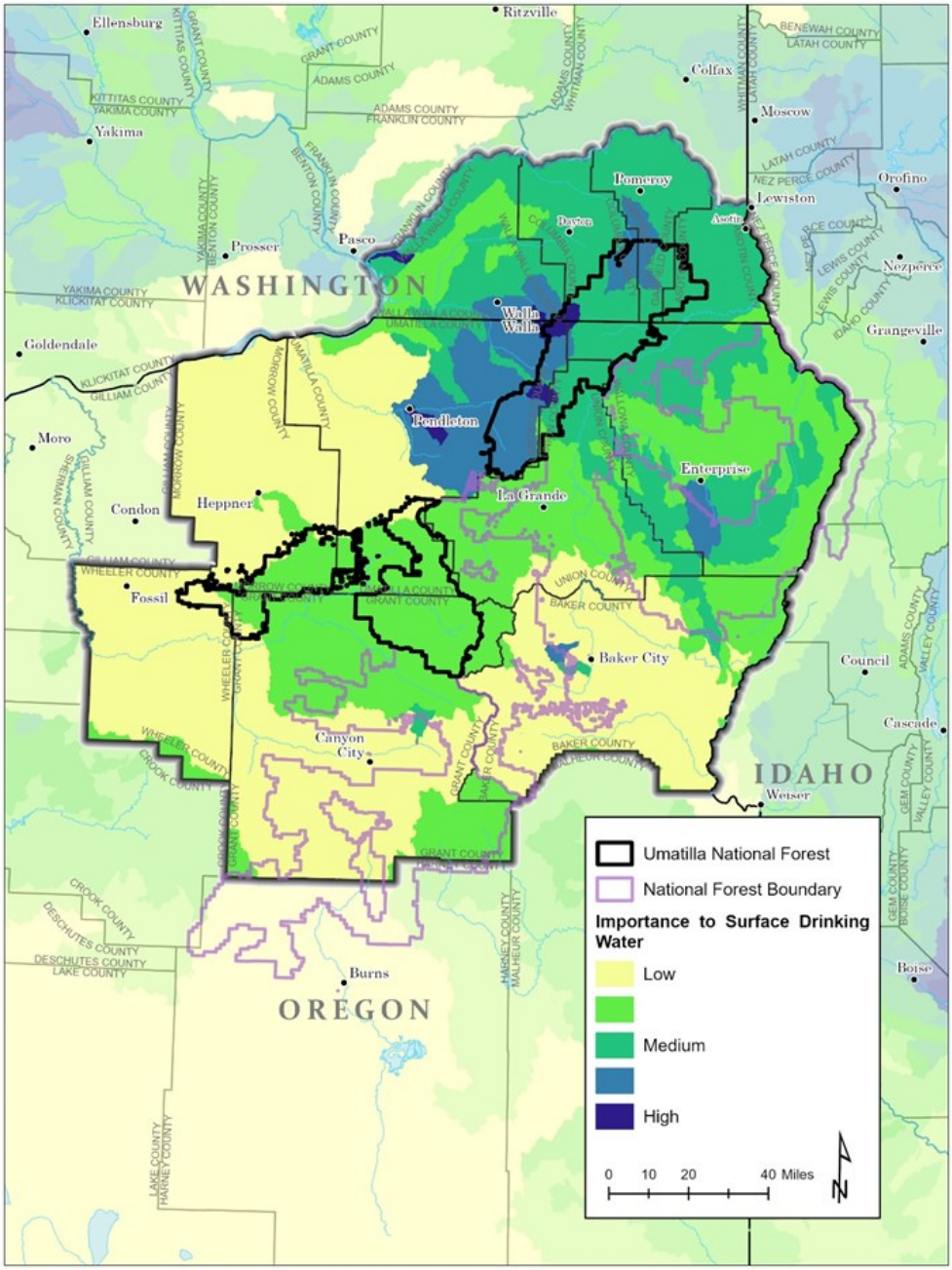


Figure 3 Importance of surface water sources for municipal drinking water

Source: Mack et al. 2022

Commercial Forest Products

Timber from federal lands supports employment opportunities in harvesting and forest-product mills; and income earned from timber-related jobs further stimulates the area's economy as it circulates through local businesses.

Trends in Timber Harvested

Not all timber sales that agencies offer are purchased; therefore, volume of timber sold is the timber that receives a bid from a qualified purchaser and is awarded. Once sales are sold, purchasers generally take two to three years to harvest. As a result, the volumes sold and harvested each year are rarely the same. Volume harvested is the timber-related value that enters the economy each year as well as measure of the timber from Forest Service lands that contributes to employment in that year. The economic contribution analysis that estimates the contribution of jobs and income related to timber-harvested from the Umatilla National Forest uses the volume harvested (see *Forest-Specific Economic Contributions* section).

Annual sold and harvested volumes vary between years (see Table 17 and Figure 4). The sold volumes ranged from a low of approximately 14,200 million board feet (MBF) in 2022 and a high of 36,300 MBF in 2003 with an average of 27,800 MBF over the 20 years. Harvested volumes ranged from a low of approximately 11,450 MBF in 2022 and a high of 48,000 MBF in 2010. The average harvested volume was 24,800 MBF between 2003 and 2022. Timber harvested from the Umatilla National Forest is entirely softwood (pine and fir species) timber.

Table 17. Sold and harvested volume, Umatilla National Forest, 2003-2022

	Volume Sold (MBF)	Volume Harvested (MBF)
2003	25,513	24,051
2004	20,998	28,820
2005	32,400	18,014
2006	45,550	23,639
2007	15,011	40,344
2008	30,905	21,675
2009	30,661	39,019
2010	27,071	48,027
2011	28,602	16,596
2012	31,422	26,502
2013	32,779	20,977
2014	36,313	14,846
2015	26,182	24,092
2016	31,756	32,487
2017	29,368	30,610
2018	16,717	19,273
2019	33,053	28,120
2020	16,046	16,592
2021	31,333	11,586
2022	14,278	11,457

Source: U.S. Forest Service, 2022

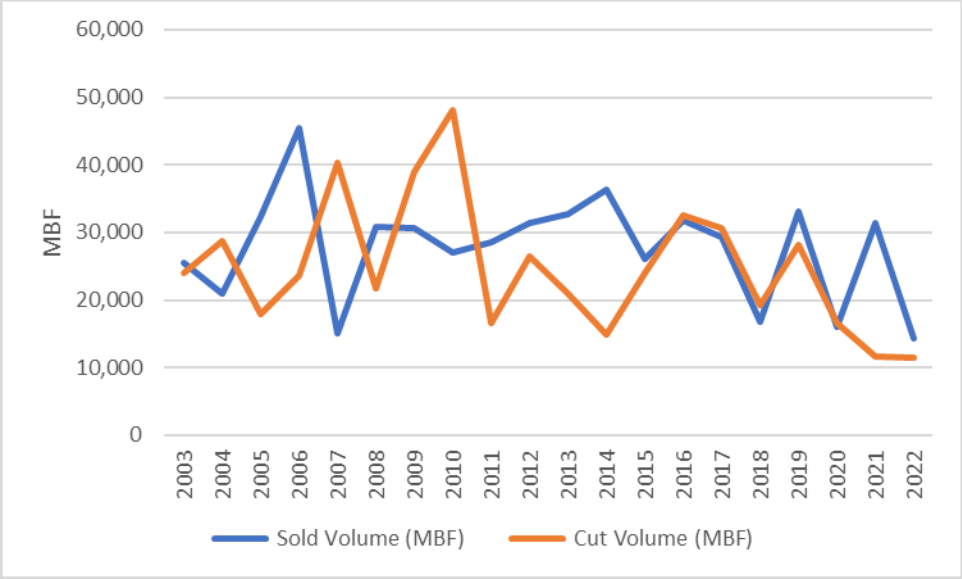


Figure 4. Volume of timber sold and harvested, Umatilla National Forest, 2003-2022

Source: U.S. Forest Service, 2022.

The timber harvested from Umatilla National Forest makes up only a portion of the total harvest in the region. Table 18 illustrates the relative size of the Umatilla National Forest harvest compared to total harvest volumes in the twelve-county area of influence. The Umatilla National Forest harvested volumes averaged less than 4 percent of the total harvest volumes within the area of influence.

Table 18. Total timber harvests from all lands relative to Umatilla National Forest harvest

	Total Harvest, Twelve-county AOI (MBF)	Umatilla NF Harvest (MBF)	NF % of Total
2014	188,044	14,846	8%
2015	178,677	24,092	13%
2016	216,883	32,487	15%
2017	173,628	30,610	18%
2018	198,743	19,273	10%
2019	175,044	28,120	16%

Source: Washington State Department of Revenue 2023, Oregon Department of Forestry 2021, BBER 2023 and U.S. Forest Service, 2022.

Wood Processing Infrastructure

Timber harvested is processed into lumber, oriented strand board (OSB) plywood, paper pulp, or exported. The condition and trends in wood processing infrastructure within the planning area is an important indicator of local community dependence on forest management as well as the ability of forests to increase the pace and scale of restoration. The relative importance of the timber sector (including growing and harvesting, saw and paper mills and wood product manufacturing) in terms of employment in the twelve-county area of influence has changed over time with changes in the wood processing sector.

In 2016, two of the 88 primary wood product mills in Washington State operated within the Umatilla AOI—a pulp and a chip facility (Washington State Department of Natural Resources, 2017). Oregon

counties in the Umatilla area of influence have more processing facilities—a total of 16 facilities including sawmills, post and pole, fuel pellets, veneer and plywood, roundwood pulp-chip conversation, and pulp and paper processing (BBER 2021).

Trends in Timber-related Employment

The relative importance of the timber sector (including growing and harvesting, saw and paper mills and wood product manufacturing) in terms of employment in the twelve-county area of influence has fallen over time. From 2001 to 2021, timber employment shrank from 5,700 to 4,800 jobs—a 16 percent decrease over the 20 year period, as seen in Figure 5. In 2001 approximately 5.5 percent of all employment in the twelve-county area of influence was in the timber sector. This has steadily decreased to 4.1 percent in 2021 (U.S. Department of Labor, 2022).

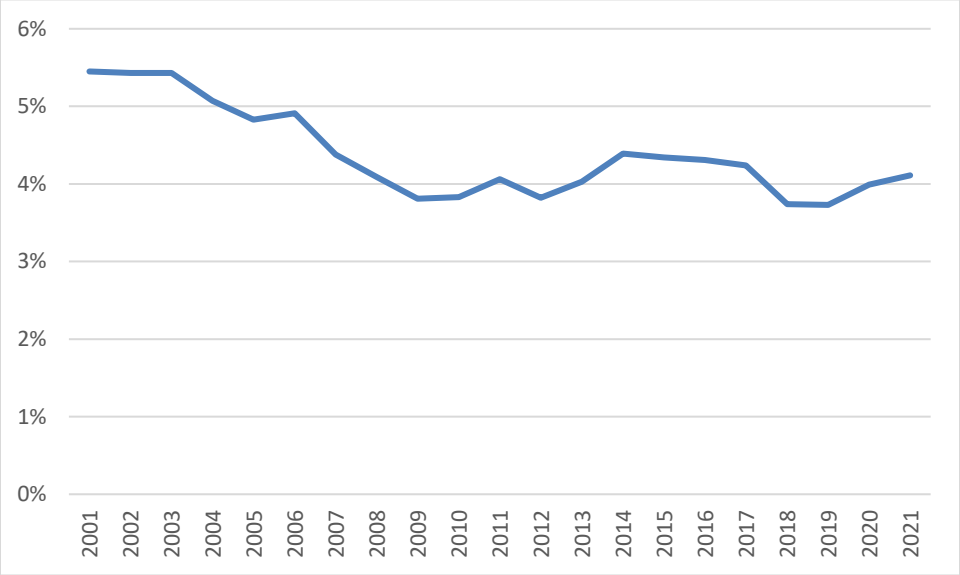


Figure 5. Timber employment as percent of total employment, twelve-county area of influence, 2001-2021

Source: U.S. Department of Labor, 2022

Region totals mask the variation occurring between counties. Figure 6 shows that timber employment ranged from a high of 16.6 percent of total employment in Grant County, Oregon in 2021, down to effectively no discernable percentage of total employment in Garfield County, Washington.

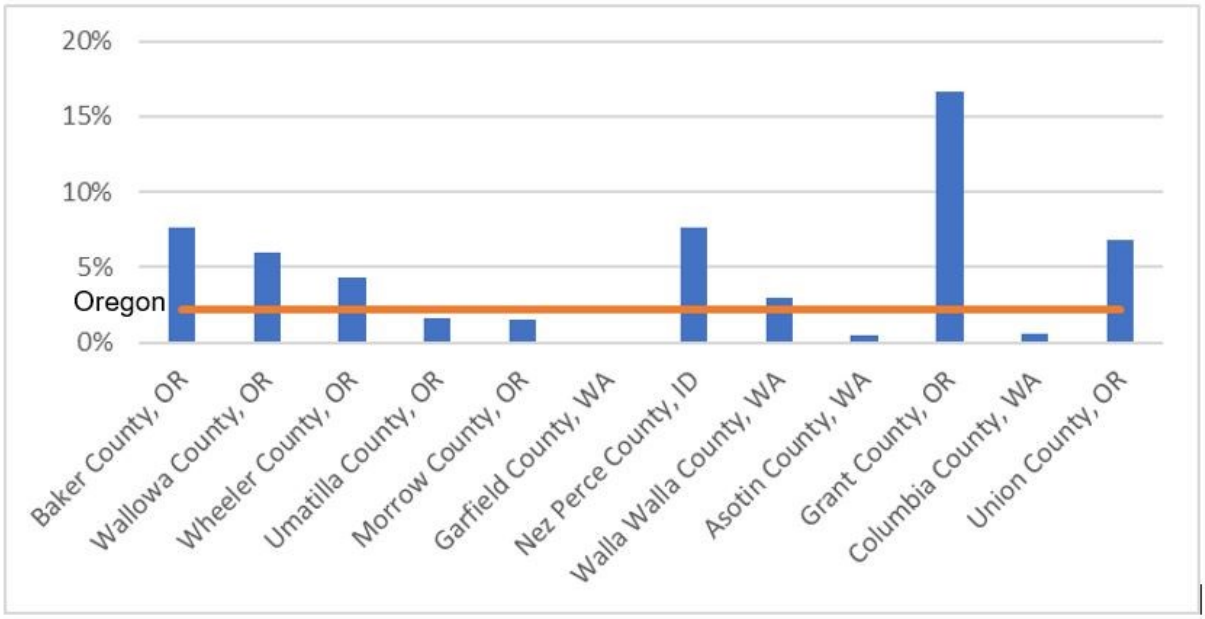


Figure 6. Timber employment as percent of total employment, twelve-county area of influence, 2021
Source: U.S. Department of Labor, 2022

Value of Forest Products

Timber harvesting represents a traditional source of employment and economic activity from National Forest System lands. The contribution, in terms of jobs and labor income, to the regional economy from the Umatilla National Forest timber program is presented in the economic contribution analysis reported in the *Forest-Specific Economic Contributions*

section.

Locally, wood product harvests help support a number of sawmills and smaller businesses and provide an inexpensive source of fuel wood for some area residents. Firewood permits can be obtained, which allow removal of 2 ccf (see Table 16). Timber production and timber harvest are important tools to use as part of wildfire risk management.

Timber harvested from public and private lands are taxed by State and local governments. Timber harvested from public lands in Oregon is subject to the forest products harvest tax (FPHT). Oregon timber taxes are calculated using the volume of timber harvested, and the tax rate is reviewed and set each legislative session. From 2019 to 2023 Oregon tax rates averaged $4.69 per MBF, ending at a high of $5.97 per MBF in 2023 (Oregon Department of Revenue 2023). In Washington the forest tax is paid in lieu of a property tax on trees. Timber owners, on public lands this is the first person, other than the public entity, to acquire title or interest in the timber, pay 5 percent tax on the stumpage value of their timber when harvested (Washington Department of Revenue 2023b). The revenue is split with 4 percent going to the county where the harvest occurred and one percent going to the state general fund. The stumpage value is determined by Washington State published values based on species, condition, location, and harvest conditions (Washington Department of Revenue 2023c).

Air Quality

Air quality is protected at two different levels within the Blue Mountains, one level of protection is established for Class I areas (i.e., those wilderness areas established by August 7, 1977 which are 5000

acres or larger) and another level of protection for all other areas (referred to as Class II areas). There are three Class I areas within the Blue Mountains: Hells Canyon wilderness, the Eagle Cap wilderness, and Strawberry Mountain wilderness, which are shown in Figure 7.

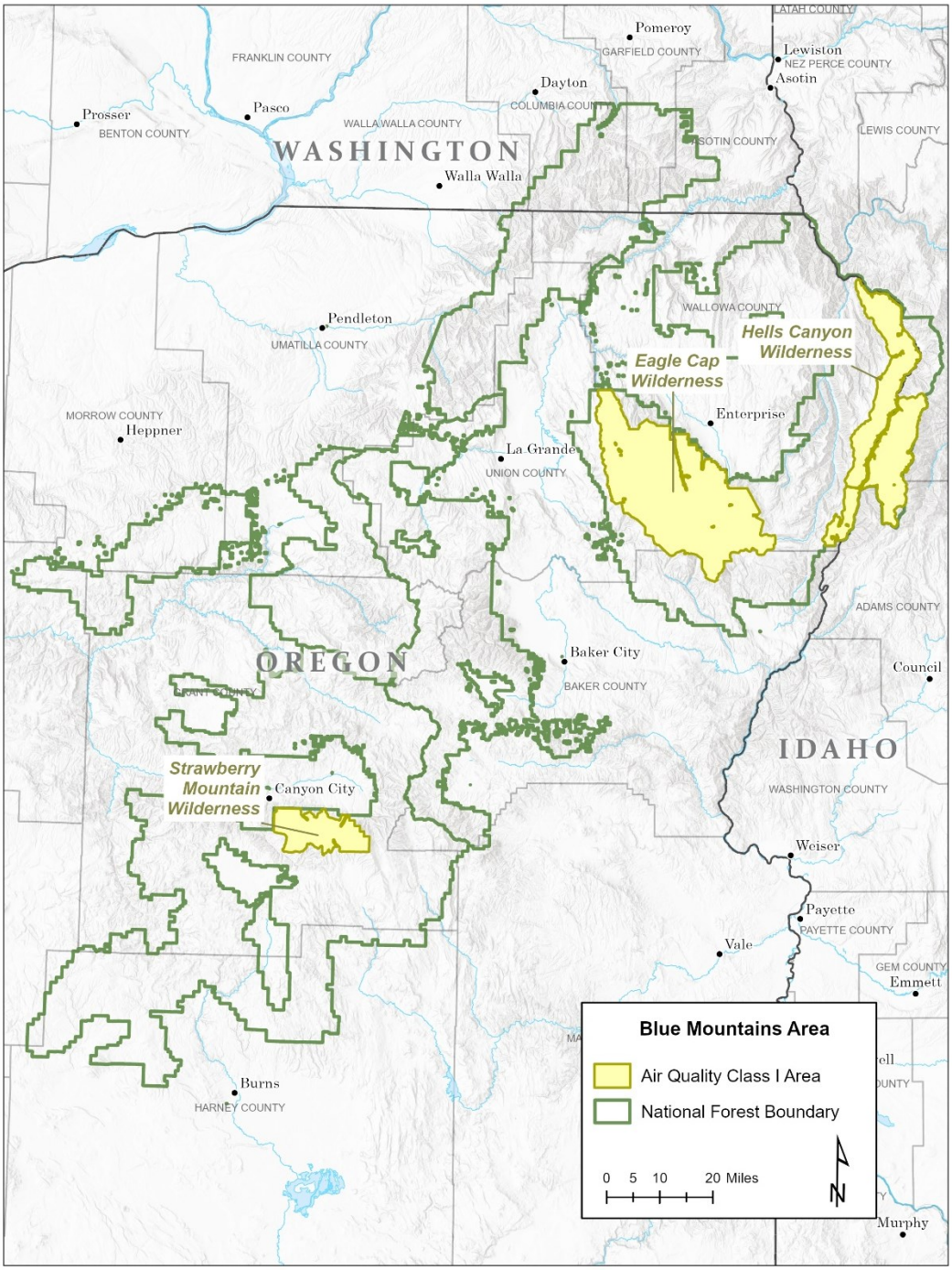


Figure 7. Class I Areas Blue Mountain Region

All Class I and Class II areas must be in attainment with the National Ambient Air Quality Standards (NAAQS) for the six criteria pollutants: particulate matter (which includes both PM10 and PM2.5), ozone, carbon monoxide, sulfur dioxide (SO2), nitrogen dioxide (NO2), and lead. However, in Class I areas, the Clean Air Act further protects against the significant degradation of air quality and air quality related values (i.e., those components of the ecosystem sensitive to air pollution) through a review and comment process.

However, EPA doesn't allow air pollution to degrade just below the NAAQS if the baseline values are way below the NAAQS, rather it only allows small, incremental increases in degradation from new sources of air pollution to prevent significant deterioration. During the application process, proposed new sources of air pollution must demonstrate that the impacts in Class I areas from the proposed project will (1) not cause an exceedance of the NAAQS, (2) demonstrate that the incremental change in PM, SO2, and NO2, will be less than allowable increments, and (3) there will be no adverse impacts on air quality related values.

States air pollution control agencies are responsible for permitting new sources of air pollution. The permits contain requirements to ensure the facility operates in compliance with all applicable air pollution regulations. When a new source of air pollution applies for a permit, the Forest Service is afforded an opportunity to review the proposed project and the expected impacts on a Class I area. If concerns occur, comments are provided to the states for consideration before issuing a permit. If adverse impacts are expected, the Forest Service may issue an adverse impact determination, which unless the issues are resolved, may result in a denial of the permit.

Visibility in Class I areas is also protected existing sources of air pollution, under the Regional Haze program of the Clean Air Act. The goal of the Regional Haze program is to improve visibility in all Class I area to natural levels by 2064. Under the Regional Haze program, the Forest Service must operate and maintain the regional haze monitors. Each week, Forest Service personnel collect and ship the samples to a centralized laboratory where the samples are analyzed for their chemical constituents. Rather than directly measuring the amount of light scattering and absorption, the amount of reduced visibility on a given day is reconstructed from the concentration of each contributing chemical. This reconstruction method has the advantage of identifying the contributing sources of the haze through a unique chemical signature based upon source type. When used along with meteorology, analyst can identify the likely sources contributing to the haze on any sample day. By tracking the temporal trends in the data, analyst can determine if haze is improving or worsening and explain why these trends are occurring. The States use this information to establish and implement plans to reduce the amount of haze to meet objectives established by EPA. The Forest Service reviews these plans and provides comments for the states and EPA to consider before finalizing these plans.

Smoke from prescribed burning is also regulated by state smoke management plans. These plans attempt to balance the need for prescribed burning with minimizing smoke impacts to communities. All states must not allow smoke from prescribed burning to exceed the NAAQS, and often have more stringent rules which limit smoke to time-averaged concentrations below the NAAQS. In contrast, smoke from wildfires is not regulated.

Air pollution monitoring and trends

The Forest Service works with other federal, tribal, state, and local governments and universities to monitor and analyze the air. Figure 8 illustrates the locations of the air quality monitors within the Blue Mountain region. Regional haze is monitored at two locations within the Blue Mountains: Hells Canyon

and in the Starkey Experimental Forest, which is between the Eagle Cap and Strawberry Mountain wilderness areas.

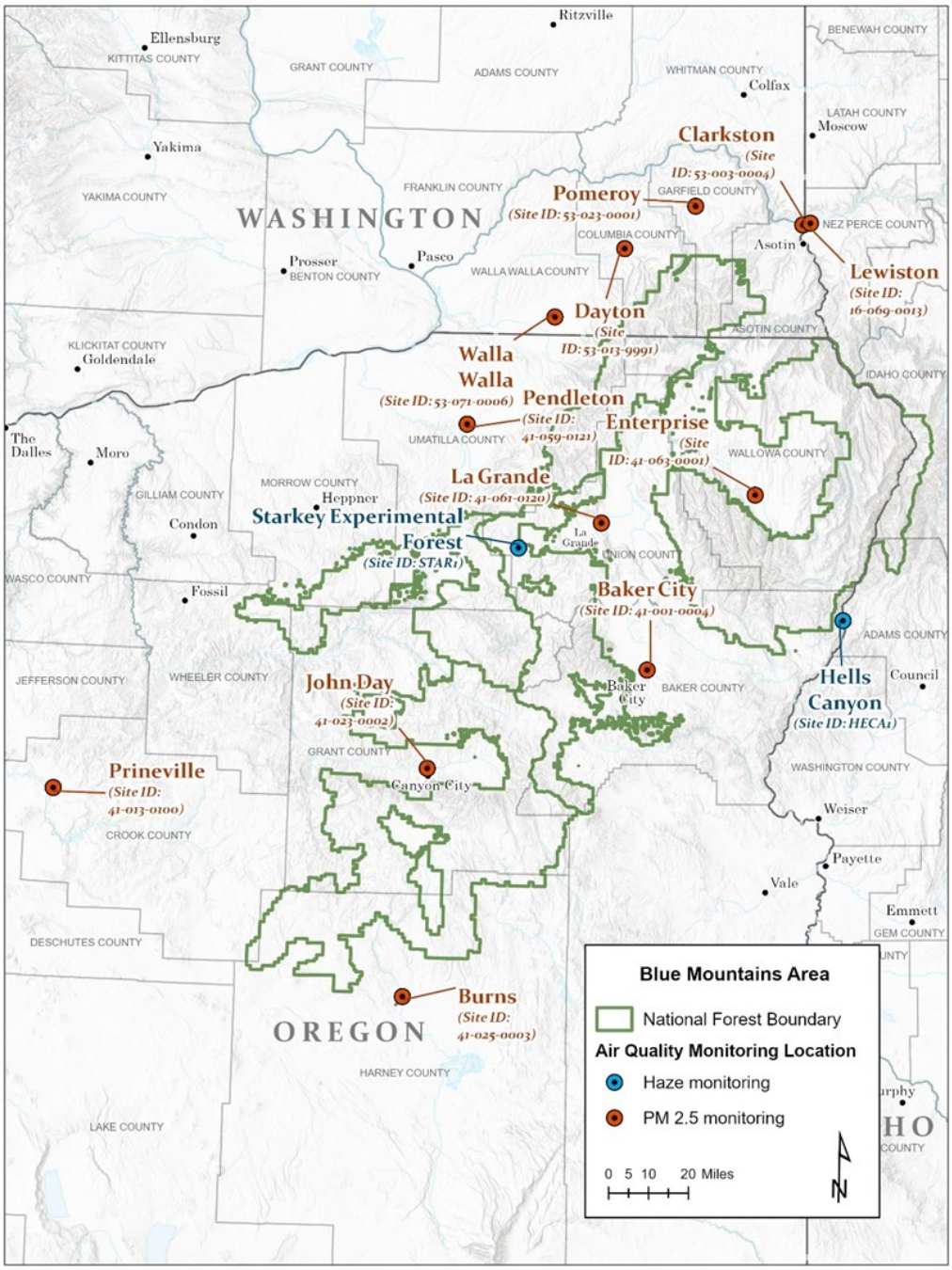


Figure 8 Air Quality Monitoring Stations Blue Mountain Region

Figure 9 illustrates the difference in regional haze and how it affects the view of Hells Canyon wilderness during the baseline period (2000 – 2004) and under natural background conditions. While mountains in the distance are still noticeable, the hazy appearance is due to the scattering and absorption of light due to the particles and gases in the atmosphere. In the absence of these man-made sources of air pollution, the view is much sharper and distant mountains appear clearer.

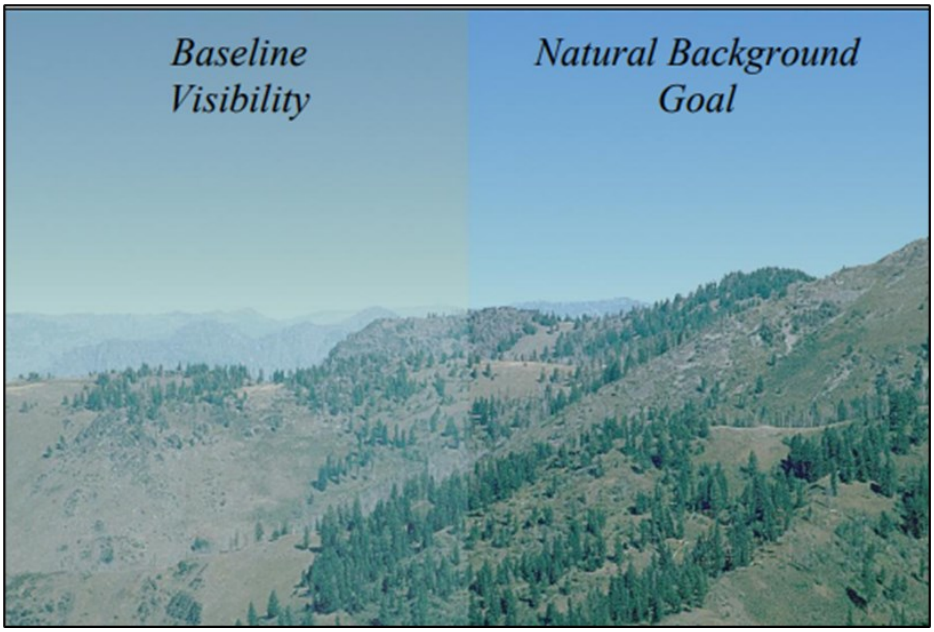


Figure 9. Baselines vs. Natural Background Visibility in Hells Canyon Wilderness

Figure 10. illustrates the composition of particulate matter on the haziest days in Hells Canyon. Ammonium nitrate is the largest contributor to the haze. Sources of ammonium nitrate include all sources of nitrogen oxide (NOx) and ammonia. NOx is formed when fuel is burned at high temperatures. NOx pollution is emitted by automobiles, trucks and various non-road vehicles (e.g., construction equipment, boats, etc.) as well as industrial sources such as power plants, industrial boilers, cement kilns, and turbines. Ammonia comes from the breakdown and volatilization of urea. Ammonia emissions are associated with high-density intensive farming practices, biomass burning, and fertilizer manufacture. Organic matter composes the second greatest contributor to haze in Hells Canyon. Paints, varnishes and wax all contain organic solvents, as do many cleaning, disinfecting, cosmetic, degreasing and hobby products. Fuels are also made up of organic chemicals. There are also natural sources of organic carbon, mostly from biogenic emissions (e.g., terpenes, pinenes emitted from trees). All these products can release organic compounds during use and when they are stored. Ammonium sulfate is the third largest contributing pollutant to haze. It is derived from the combination of sulfur dioxide and ammonia. Sulfur dioxide is emitted primarily from the burning of fuel which contains sulfur such as coal and oil. Elemental carbon is due to vegetative burning and is likely caused by wildfires.

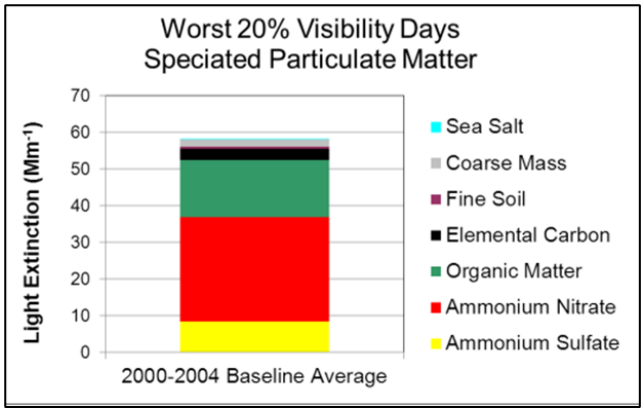


Figure 10. Composition of Particulate Matter on the Haziest Days in Hells Canyon

Figure 11illustrates the trend in annual average light extinction (i.e., haze) in Hells Canyon wilderness for the period of 2000 through 2021. In general, visibility has been improving due to a decrease in ammonium nitrate and ammonium sulfate. These improvements are a result of the State implementation plans which identified the contributing sources of these pollutants and requirements to reduce these emissions. Notice that while wildfire smoke can have a big impact on a given day, it is not a big contributor to haze on an annual basis.

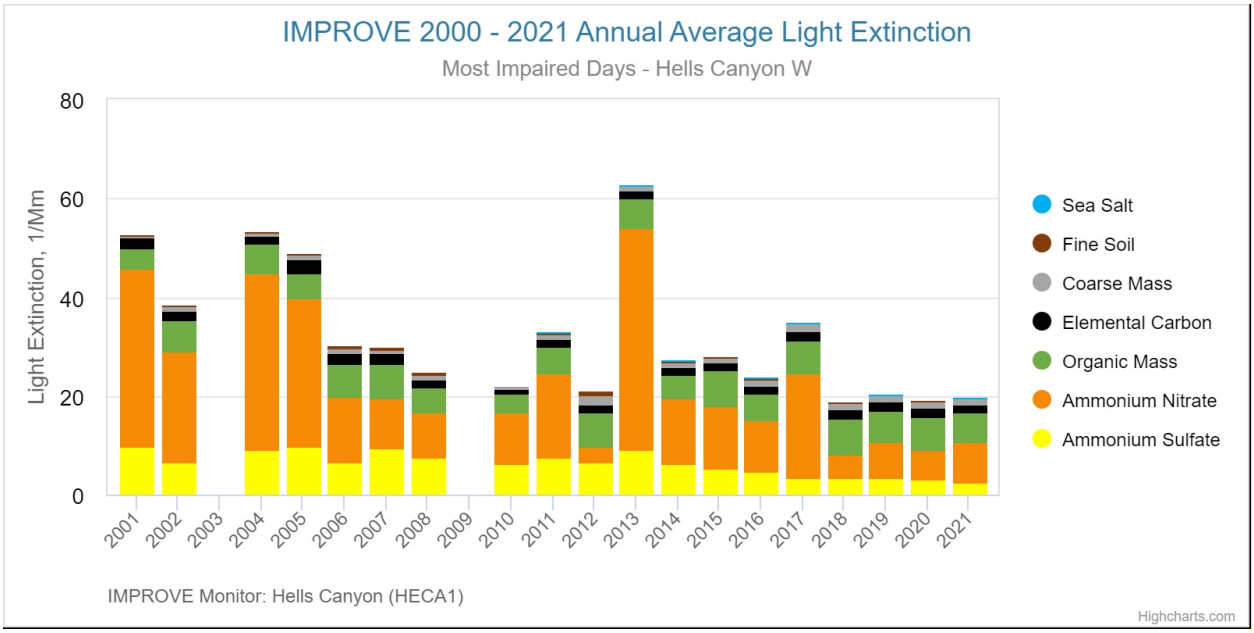


Figure 11. Visibility Trends and Future Projections in Hells Canyon Wilderness

Figure 12 illustrates the difference in regional haze and how it affects the view in the Eagle Cap Wilderness during the baseline period (2000 – 2004) and under natural background conditions. Like Hells Canyon, the mountains in the distance are still noticeable, but the hazy appearance is due to the scattering and absorption of light due to the particles and gases in the atmosphere. In the absence of these man-made sources of air pollution, the view is much sharper and distant mountains appear clearer.

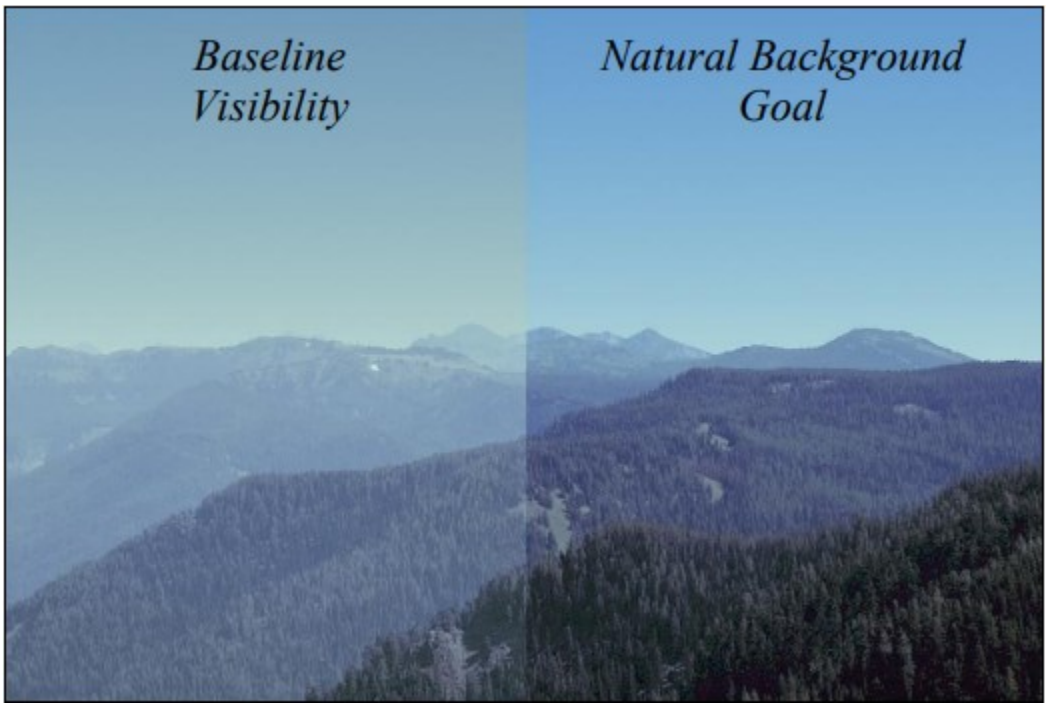


Figure 12. Baseline vs Natural Background Visibility in the Eagle Cap Wilderness.

Figure 13 illustrates the primary pollutants which are causing the haze in the Eagle Cap and Strawberry Mountain Wilderness areas during the worst 20% days. Organic matter, ammonium nitrate and ammonium sulfate or the largest contributing pollutants to haze.

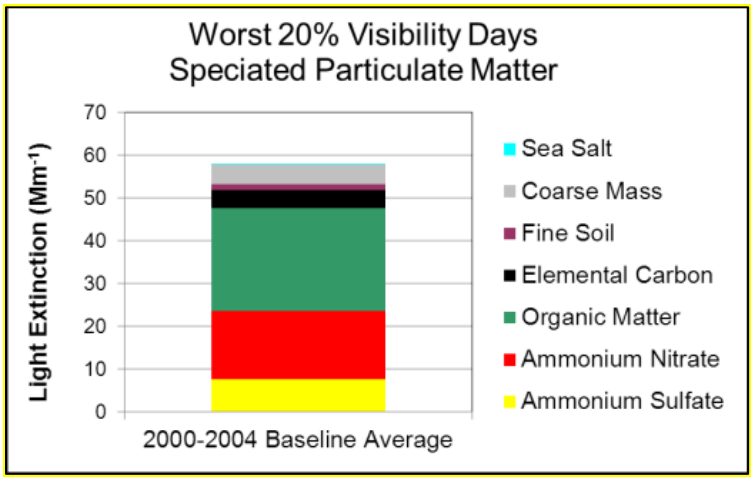


Figure 13. Composition of Particulate Matter on the Haziest Days at the Eagle Cap and Strawberry Mountain Wilderness Areas.

Figure 13 illustrates the trend in the annual average light extinction (i.e., haze) in the Eagle Cap and Strawberry Mountain wilderness areas. Since the base period of 2000-2004, the annual average amount of haze has decreased, primarily due to decreases in ammonium nitrate and ammonium sulfate.

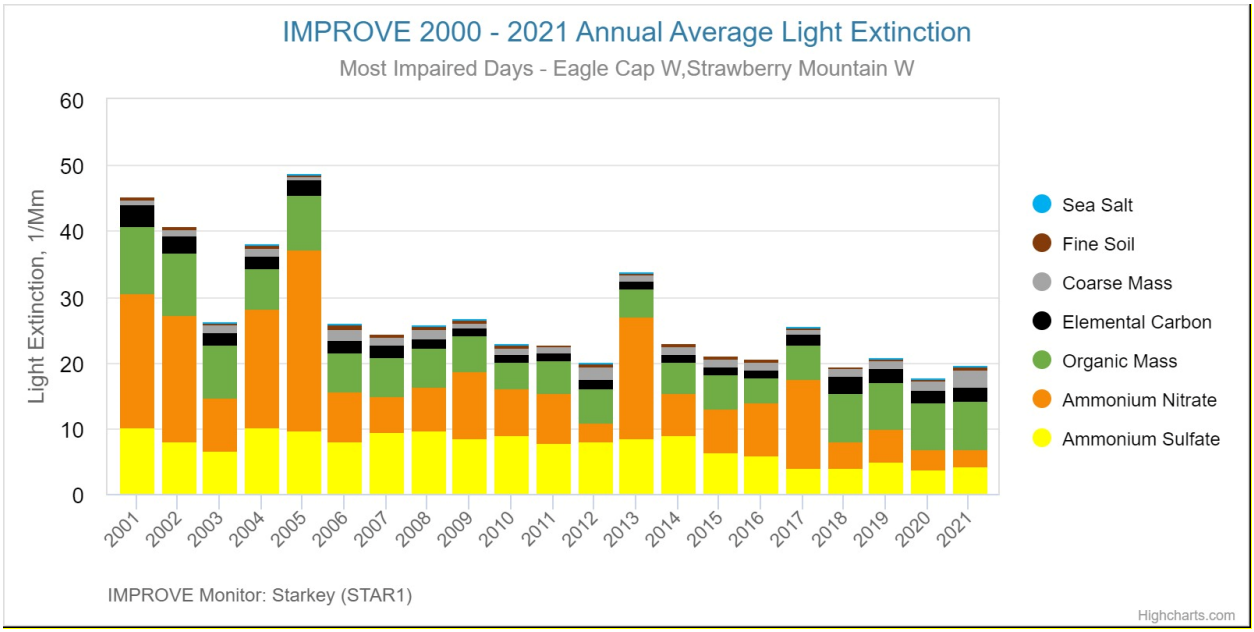


Figure 14. Visibility Trends and Future Projections in the Eagle Cap and Strawberry Mountain Wilderness Areas

Wildfire Smoke

In Oregon, Washington and Idaho, wildfire can be the largest source of air pollution, more than emissions from electrical generating facilities, industrial sources, petroleum refining or automobiles. (EPA, 2021). Smoke contains numerous pollutants, including particulate matter, carbon monoxide, greenhouse gases, and air toxics (Urbanski 2014; O'Dell et al. 2020). Smoke impacts from wildfires can adversely affect air quality, public health, school athletics, travel, tourism, employment, the economy, transportation, and the wine and timber industries (OFRI, 2018).

Wildfire smoke tends to be widespread and long lasting. The satellite image in Figure 15 taken from the MODIS Terra polar orbiting satellite during the morning overpass on September 13, 2020. During this smoke event, which began on September 8th in Western Oregon eventually covered the entire region and lasted until September 18th.

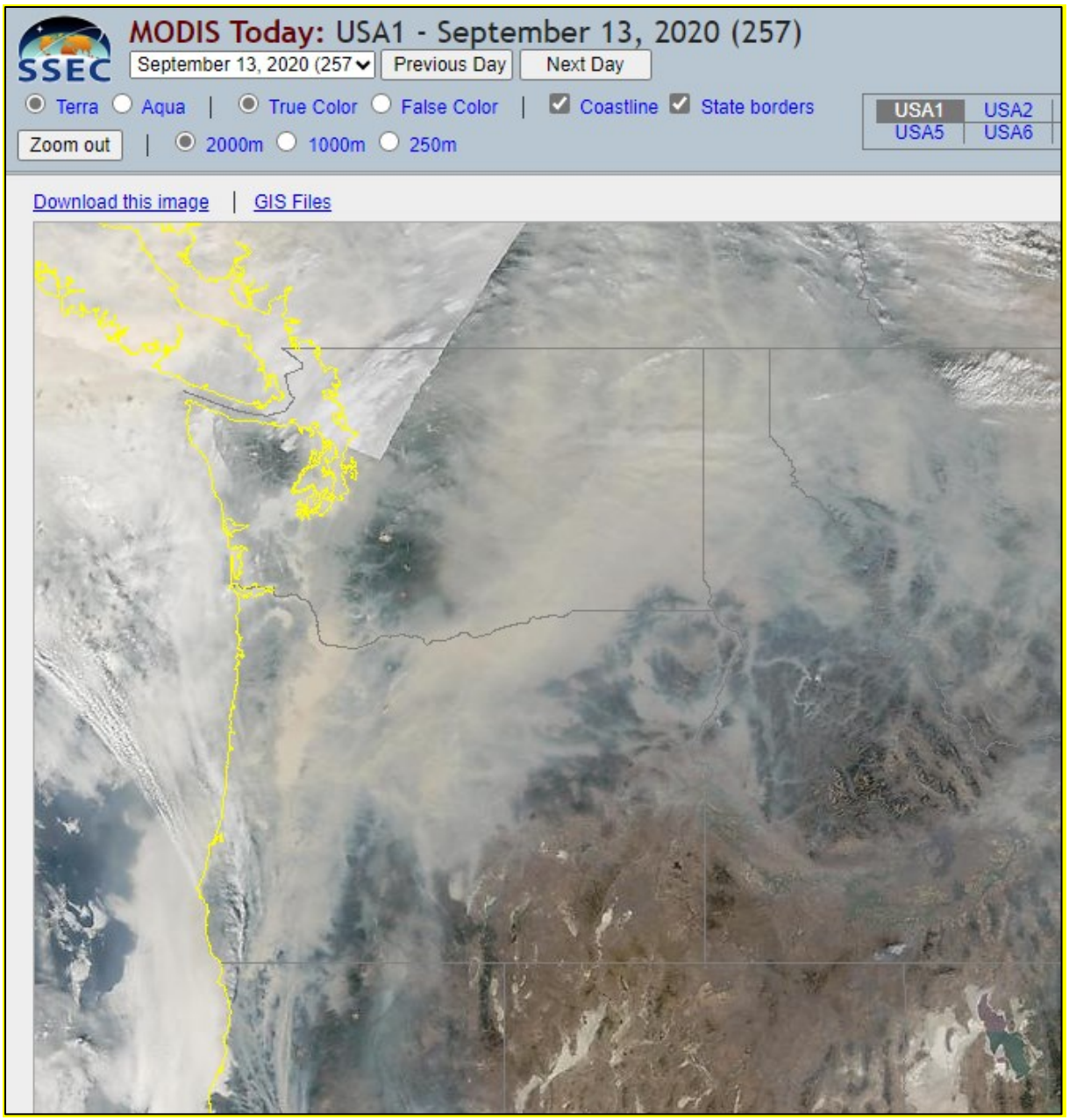


Figure 15. Wildfire smoke blankets the Pacific Northwest

Emissions from wildfire have been increasing in Oregon since 2014. (EPA, 2021b). An analysis of the ten PM2.5 monitors located in and near the Blue Mountains, as shown in Figure 16 through Figure 25, all show an increasing trend in the number of days each summer with unhealthy levels of air quality since approximately 2015. For example, in Baker County, six of the years between 2015 and 2022 had at least one day and as many as eight days with air quality characterized as unhealthy for sensitive groups, or worse, based upon the EPA's air quality index. Contrast that with the period of 2006 – 2014 in which only two years experienced air quality which was unhealthy for sensitive groups or worse. Additionally, climate scientists are forecasting an increase in wildfires and associated smoke throughout the 21st century continue (Hurteau et al. 2014; Halofsky et al. 2020). This is relevant to Forest Plan revisions because national forests have the most acres burned each year, more than any other landowner (NIFC 2021).

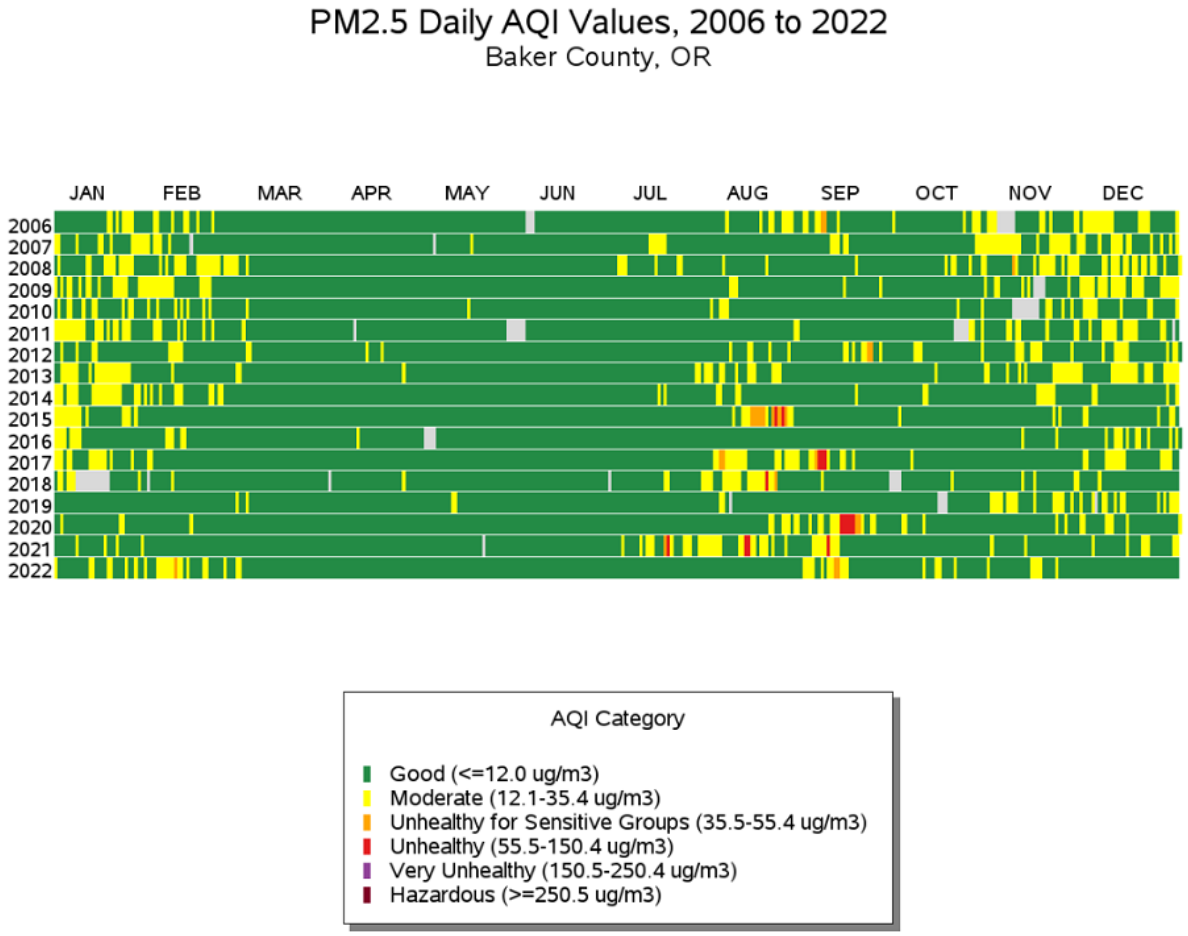
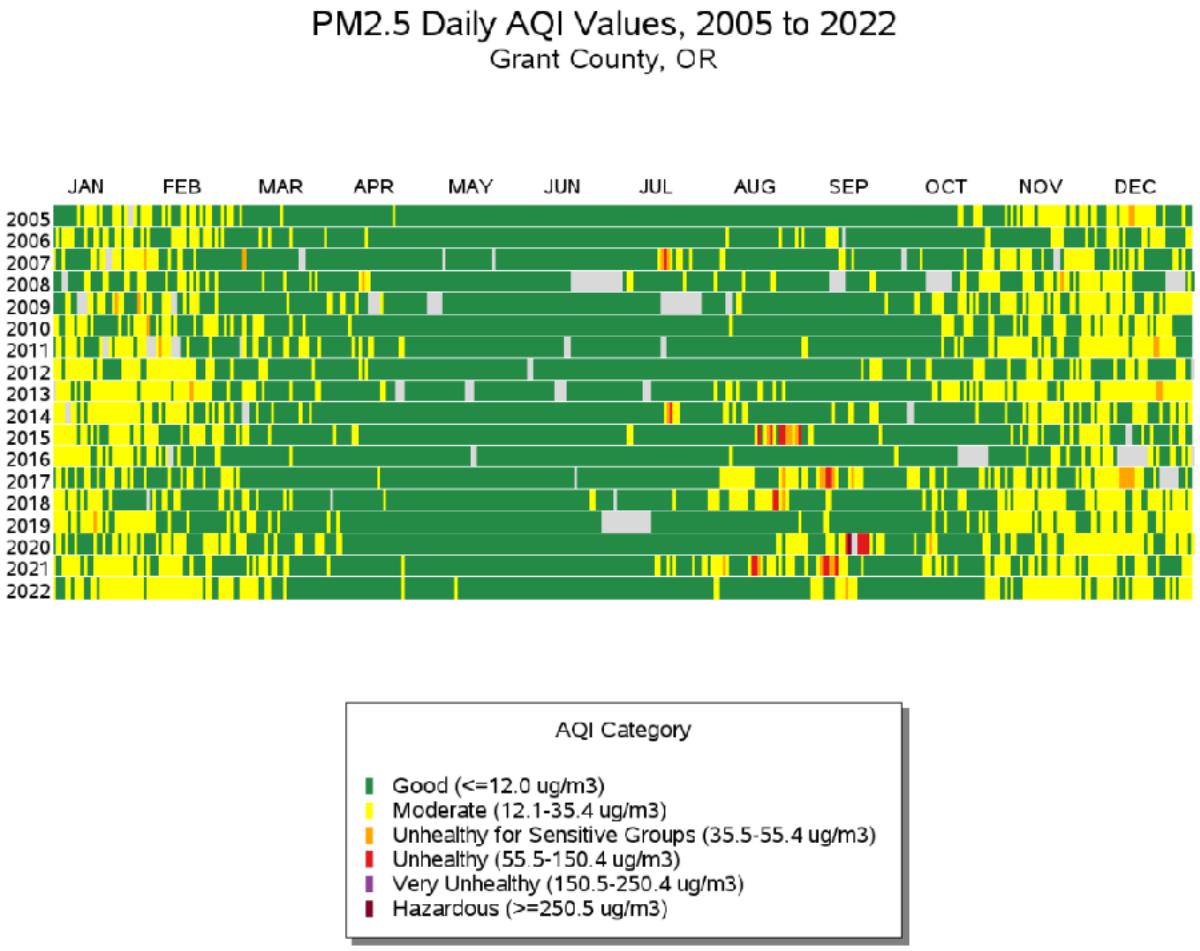


Figure 16. Daily particulate matter (PM 2.5) 2006-2022 Baker County, Oregon



Source: U.S. EPA AirData <https://www.epa.gov/air-data>
Generated: August 2, 2023

Figure 17. Daily particulate matter (PM 2.5) 2005-2022 Grant County, Oregon

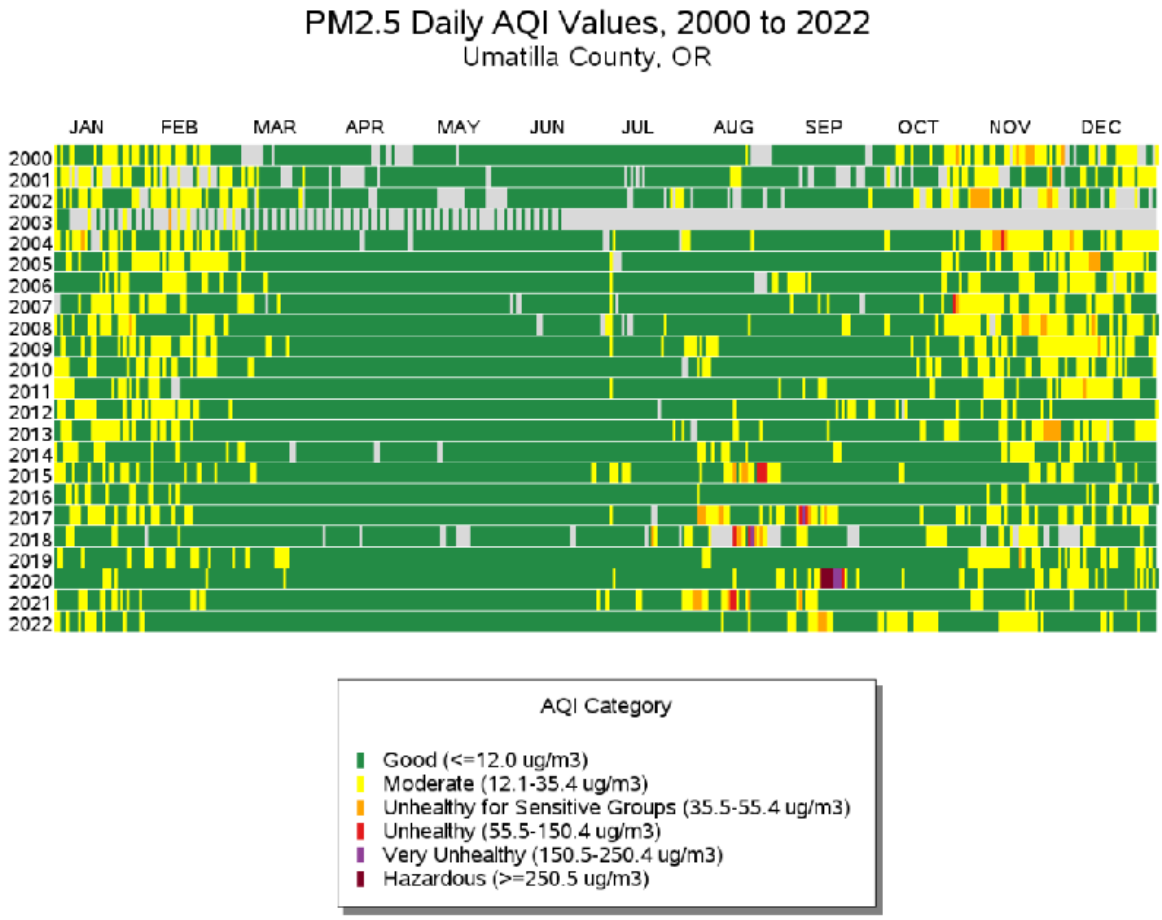
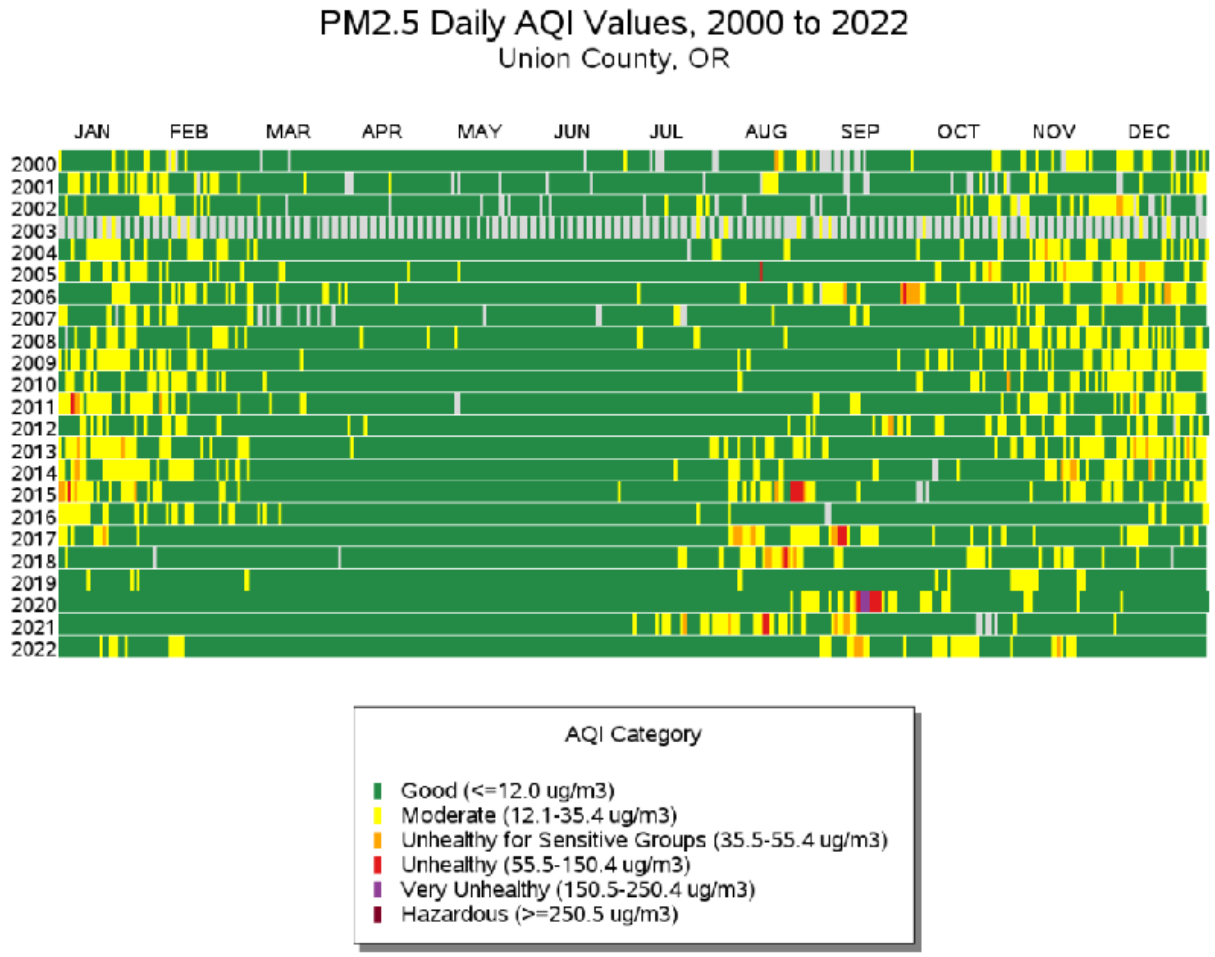


Figure 18. Daily particulate matter (PM 2.5) 2000-2022 Umatilla County, Oregon



Source: U.S. EPA AirData <https://www.epa.gov/air-data>
Generated: July 28, 2023

Figure 19. Daily particulate matter (PM 2.5) 2000-2020 Union County, Oregon

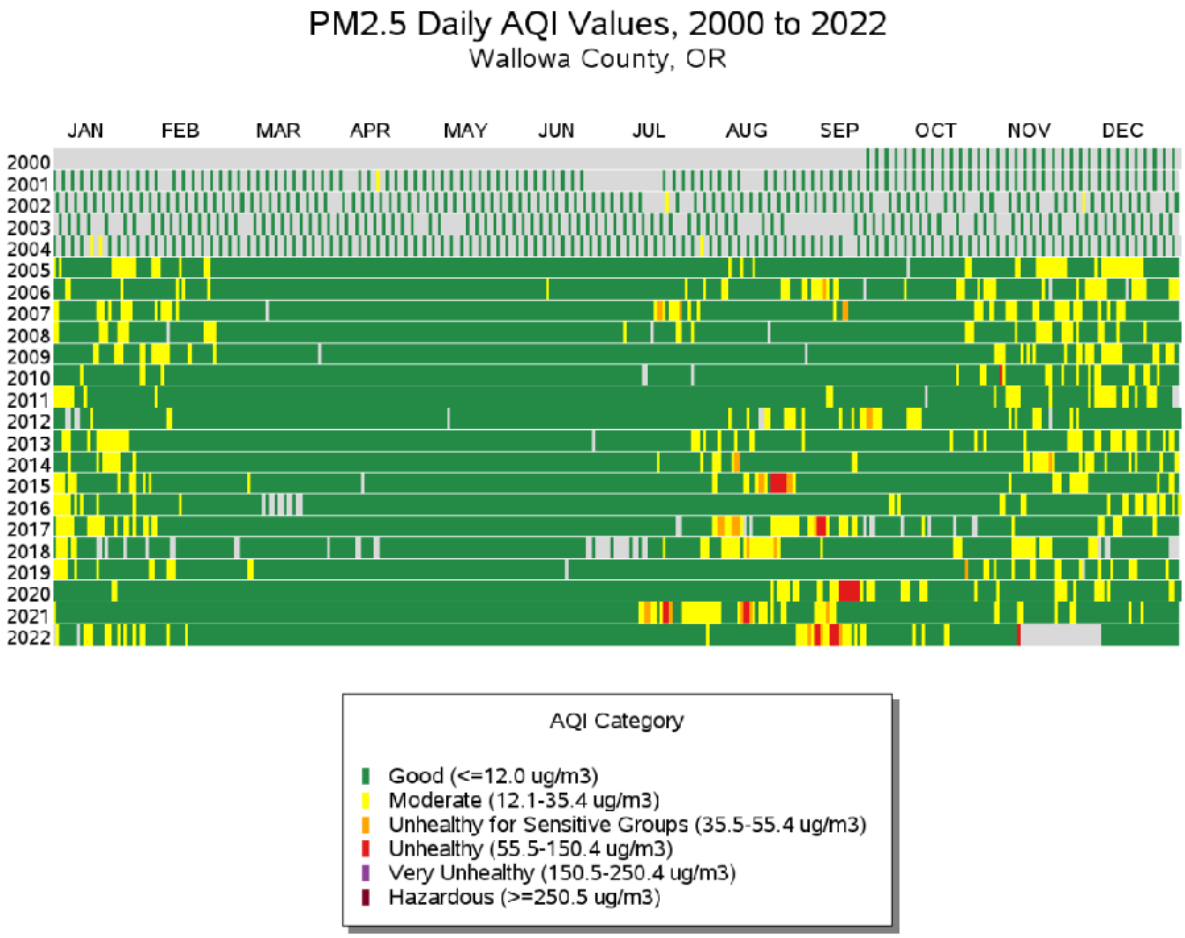


Figure 20. Daily particulate matter (PM 2.5) 2000-2022 Wallowa County, Oregon

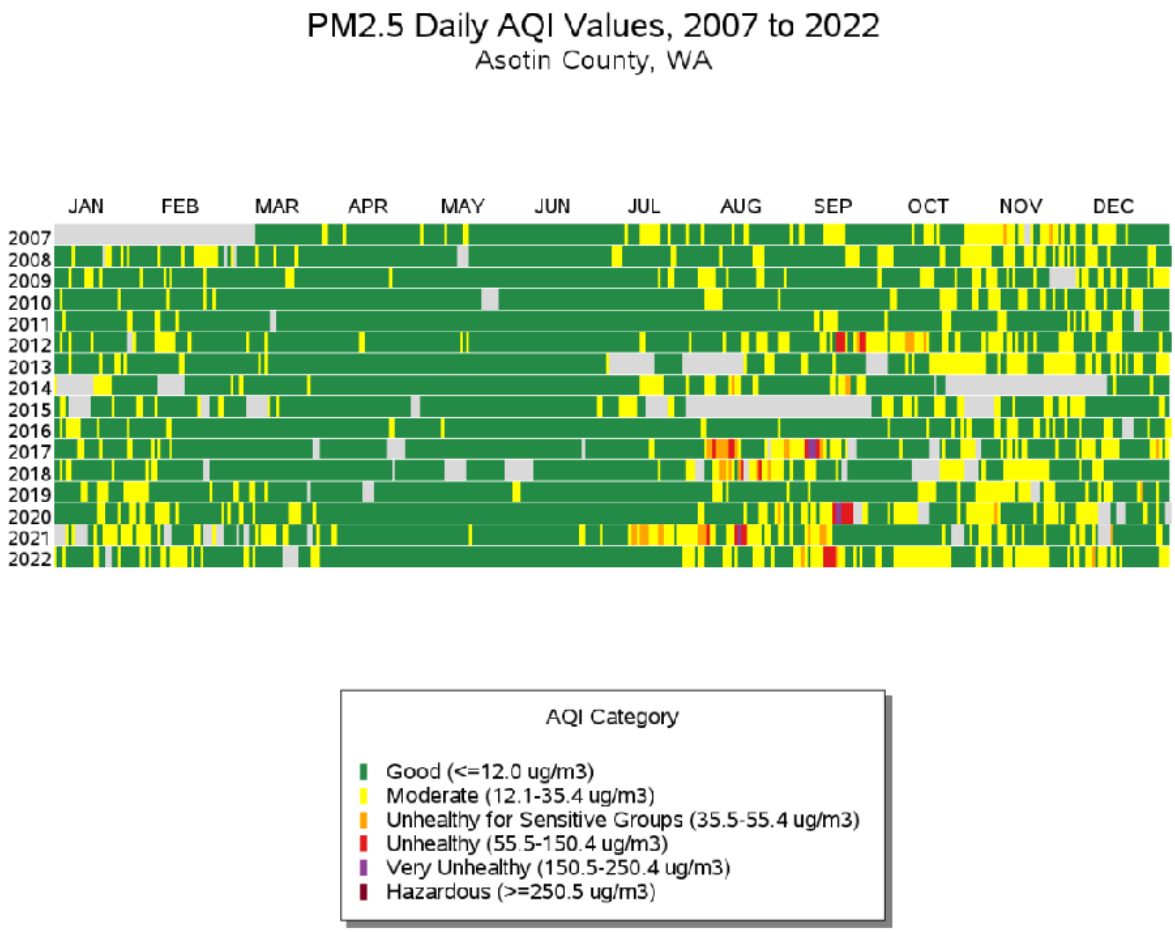
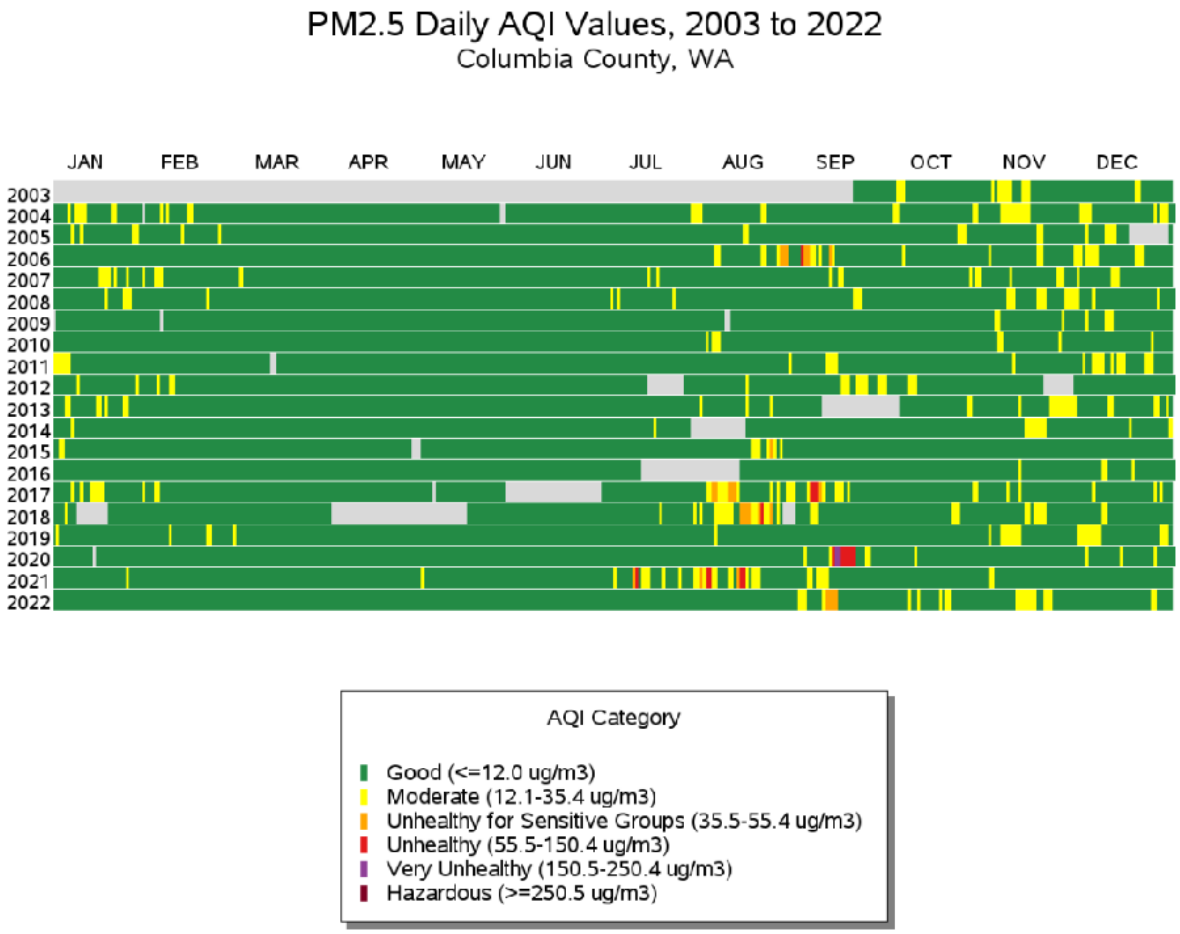


Figure 21. Daily particulate matter (PM 2.5) 2007-2022 Asotin County, Washington



Source: U.S. EPA AirData <https://www.epa.gov/air-data>
Generated: August 2, 2023

Figure 22. Daily particulate matter (PM 2.5) 2003-2022 Columbia County, Washington

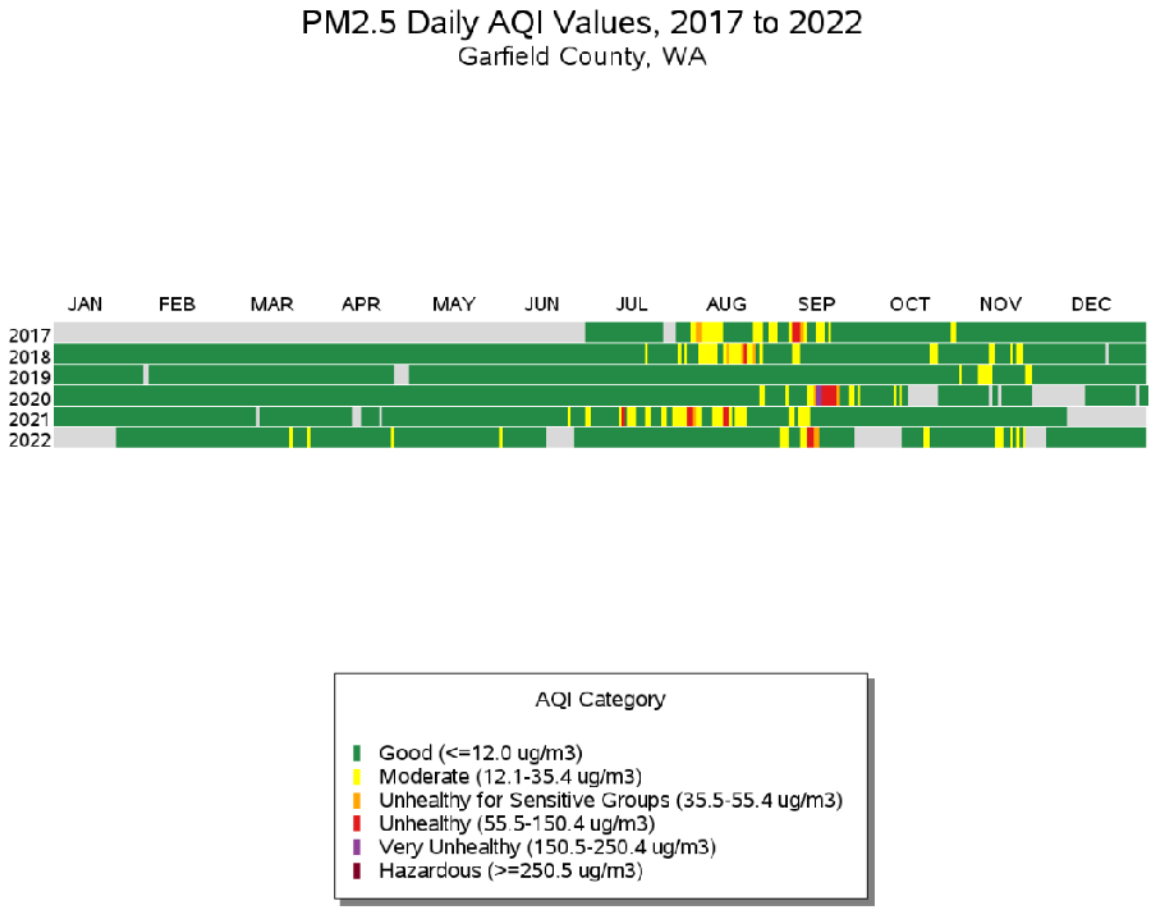


Figure 23. Daily particulate matter (PM 2.5) 2017-2022 Garfield County, Washington

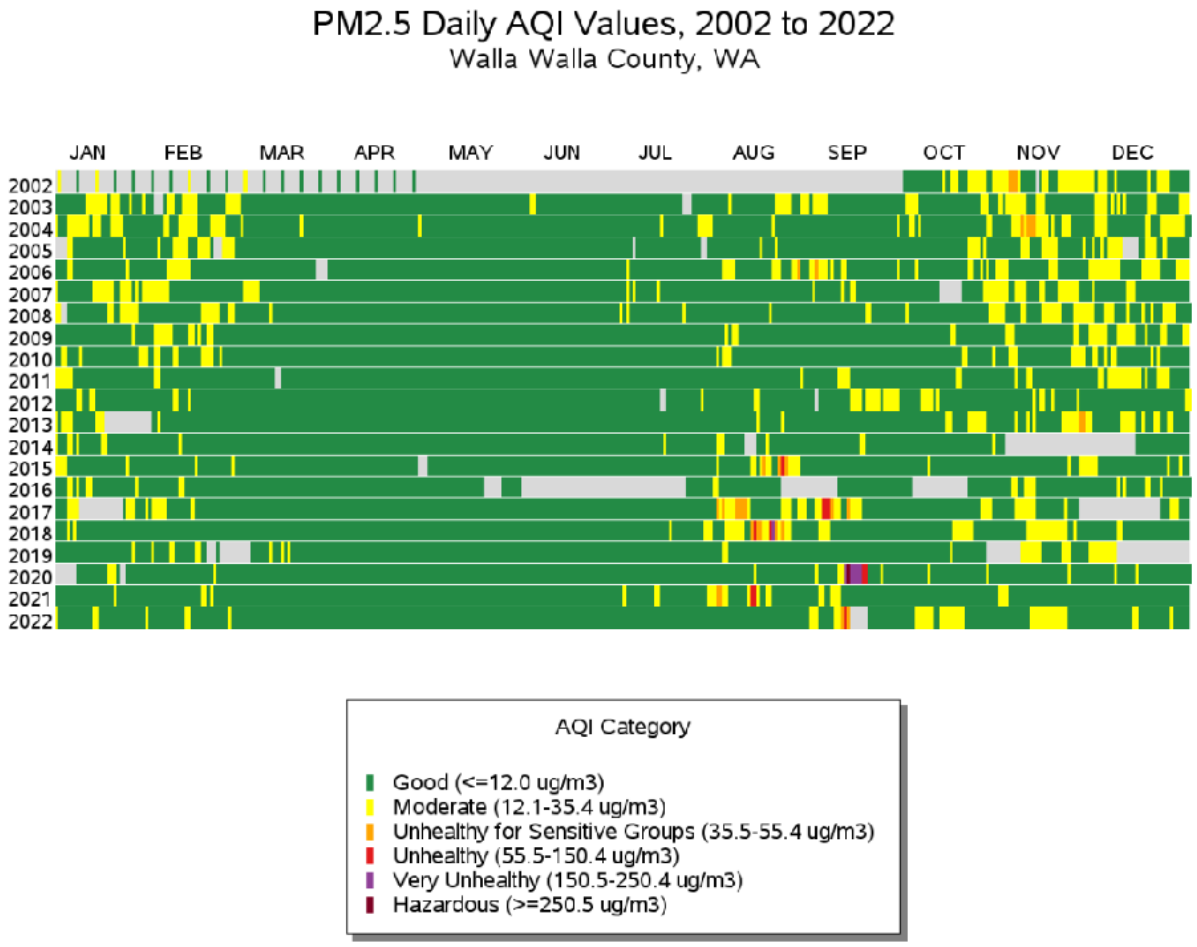


Figure 24. Daily particulate matter (PM 2.5) 2002-2022 Walla Walla County, Washington

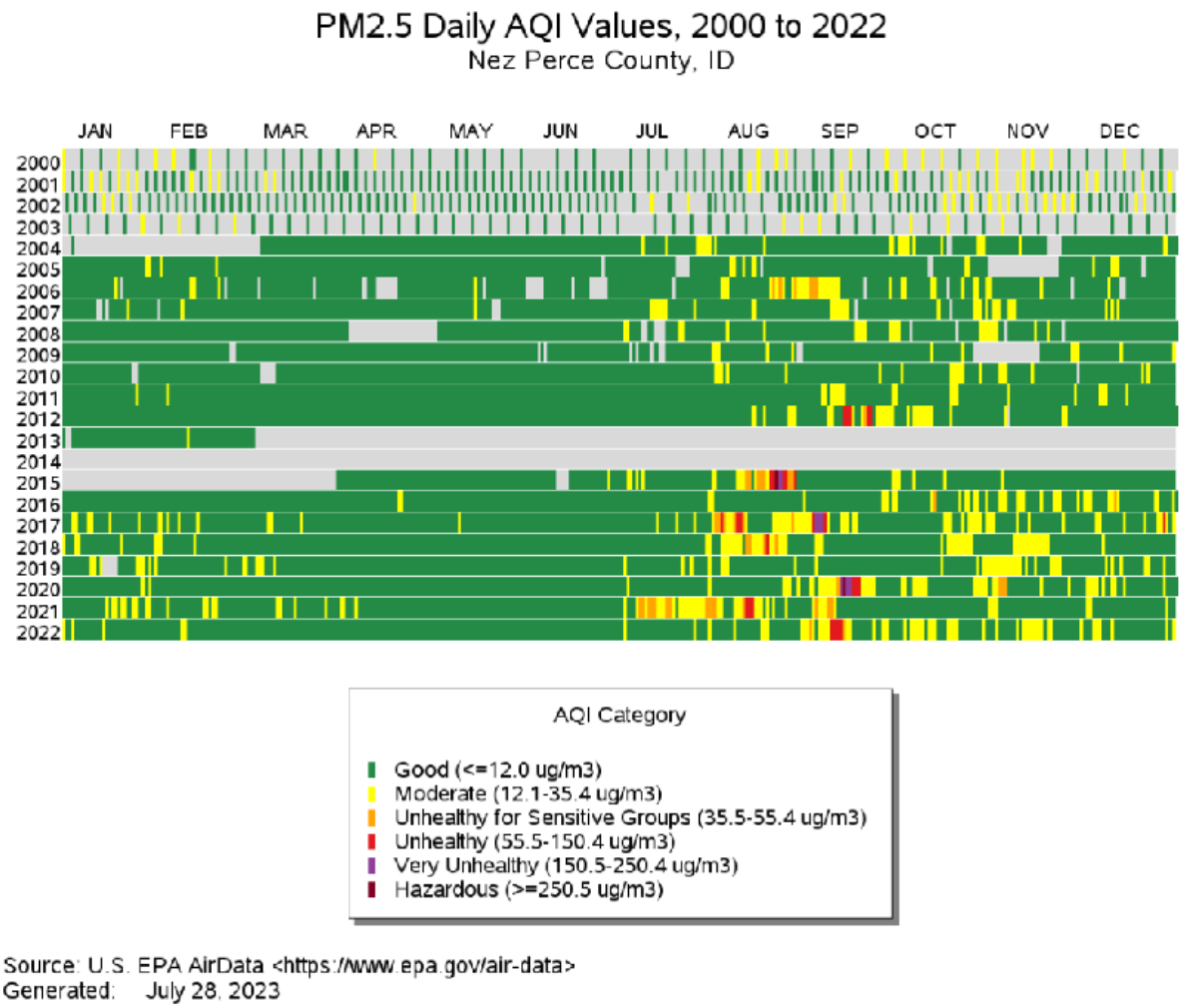


Figure 25. Daily particulate matter (PM 2.5) 2000-2022 Nez Perce County, Idaho

Prescribed Fire

Today's fire environment is very different from the past. Some of the ecosystems of the Blue Mountains developed with frequent fire. Fire was the natural remover of excess fuels on the forests and kept large fires in check as they reached areas which were previously burned and thus lacked the fuel to keep the fire growing. Today, 98 percent of wildfires are suppressed before they grow to 10 acres or more. Thus, wildfires have been limited in their natural function and distribution. As such, the fuel loads tend to build to unnatural levels, causing unnatural levels of smoke when they burn.

Today, fuel treatments have become the preferred method in which land managers attempt to replicate the role of wildfires, to reduce fuel loads and keep wildfires in check. Fuel treatments include thinning ladder fuels which transfer fire from the surface into the canopies, thinning tree density to reduce the spread of canopy fires, and prescribed burning to reduce surface fuels, which reduces flame length, rate of spread, and fire intensity. In some cases, fuels are piled then burned. In other cases, prescribed fires are used without pretreating the landscape; these are called broadcast burns. Understory burns are prescribed fires which occur after the forest is thinned.

When fuel treatments are conducted along frequent air pathways into communities, they can reduce smoke impacts from subsequent wildfires by 40-45% (Graw and Anderson 2022). Figure 26 illustrates

the location of these frequent air pathways into several communities in and near the Blue Mountains during the summer wildfire season including Baker City, Pendleton, Enterprise, and John Day. Three colors are used to depict the relative frequency of air movement into the associated community: purple indicates the most frequent, orange represents less frequent, and yellow is less frequent than orange. When a wildfire occurs along these frequent air pathways, the smoke has a high probability of being transported into the associated community. Consequently, fuel treatments along these frequent air pathways would potentially help to reduce smoke into the communities from subsequent wildfires. This is one way in which the Forest Service could help improve air quality during wildfires.

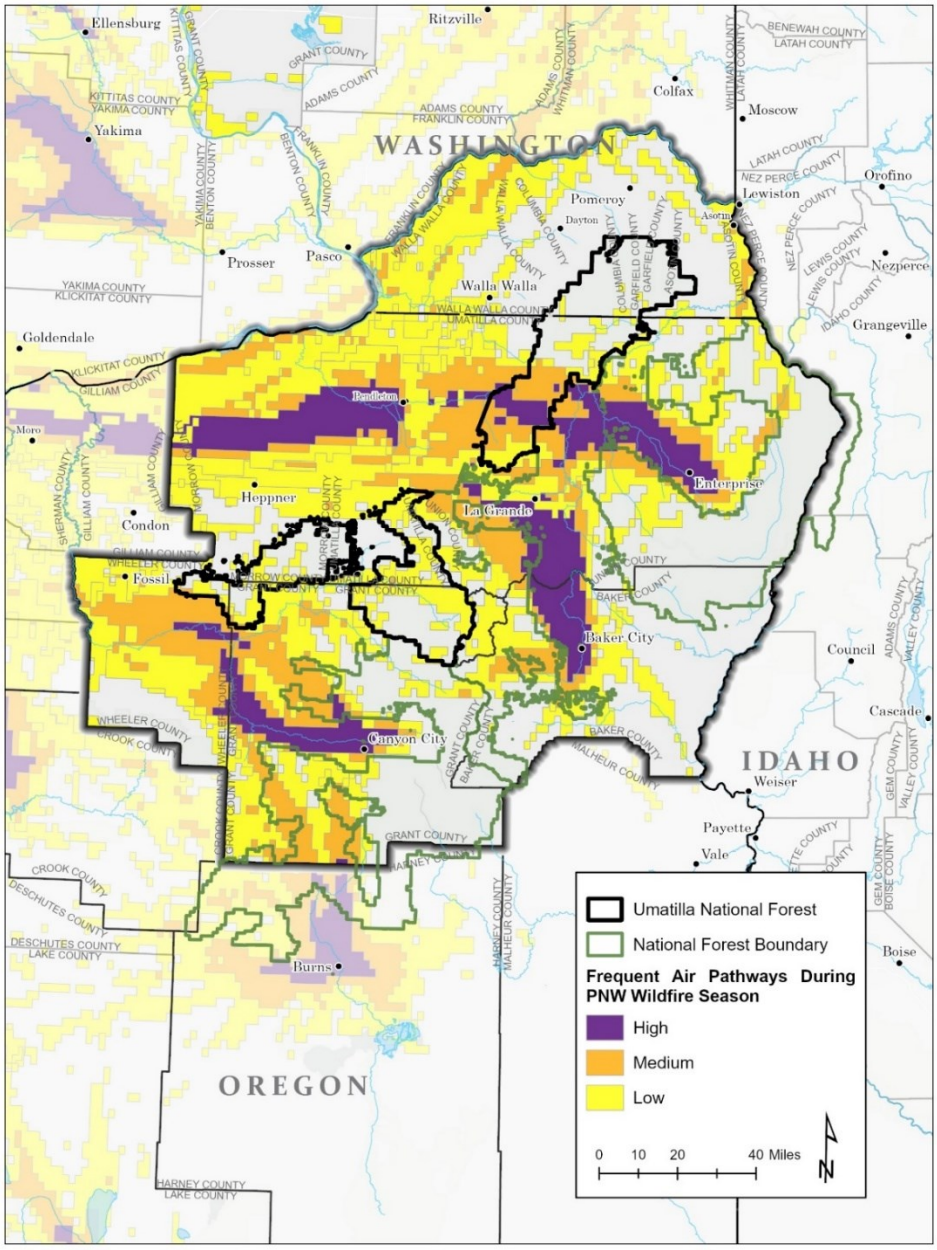


Figure 26. Frequent Air Pathways into Communities in the Blue Mountains During the Summer Wildfire Season

All prescribed burns on national forests in the Blue Mountains must be carefully planned, and each burn must be approved by the applicable state agency before ignition can occur. State agencies are not allowed to knowingly approve a burn if the smoke will cause an exceedance of the NAAQS or a more stringent state-threshold specified in its smoke management plan. However, smoke forecasting is not a perfect science and there are times in which more smoke than expected can result, impacting communities. This is because there's uncertainty in the amount of fuels which will consume during a given prescribed burn, and weather forecasts, particularly for wind direction are often inaccurate. The Forest Service does provide notification of upcoming burns to the public and tips on how to reduce exposure to smoke.

Livestock Grazing

Livestock grazing on the Umatilla National Forest contributes to the local economy and supports a way of life for ranching families. In 2009, the counties in the Oregon portion of the plan revision area had about 40 percent of the total cattle inventory of the state (USDA-USFS 2018). Grazing on the forest directly provided about three percent of the forage needs of the local cattle inventory (Table 19). The total contribution of grazing on National Forest System lands is likely understated since it affords ranchers the opportunity to grow forage on other ranch lands for feed.

Table 19. Livestock grazing permittees and animal unit months (AUMs), 2014-2016 Average Indicator

Number of Permittees	41
Cattle (Authorized AUMs)	42,800
Horses and Burros (Authorized AUMs)	0
Sheep and Goats (Authorized AUMs)	5,600
USDA-USFS 2018	

Social Value of Ranching

Noneconomic factors also influence the persistence of ranching. Over the past 20 years, academic literature has addressed the shift from the "Old West" – a rural economy based on extractive natural resources – to the "New West, which is characterized by tourism development and amenity migration (Winkler et al. 2007). This change has contributed to economic diversification but has also led to cultural conflict (Ooi et al 2015).

Ranch ownership can strengthen ties to the community, fellow ranchers, and families. Research has found that many ranchers identify the value of ranching as being closer to the earth, providing a desirable place to raise a family, and providing a satisfying way of life (Smith and Martin 1972). Interaction with other ranchers builds networks and social capital (Ooi et al. 2015). Such interpersonal relationships contribute to a sense of belonging and quality of life.

Ecological integrity and sustainability are important parts of the grazing program today. Livestock grazing is likely to be sustained within the planning area over the next 20 years. Projects have been successful in improving livestock management. Additionally, the emphasis of ecological restoration will contribute to the direct and indirect sustainability of grazing on the Umatilla National Forest. Managing grazing for intensity, duration and timing of grazing should continue to improve overall rangeland conditions. These principles will allow for productive lands which are capable of sustaining grazing and other multi-use activities into the future and will continue to be an important part of the local economy and culture.

Mineral and Energy Production

Over the past 10 years, saleable mineral materials such rip rap and gravel are removed from Umatilla National Forest. These materials were all extracted under free permits or in-service use in support of county and Department of Transportation needs, as well as Forest Service road maintenance. This

material supports regional infrastructure (for example, aggregate replacement for roads, rip rap and other materials for flood repairs) and for local and/or regional economic development (aggregate and construction materials for residential, commercial, and public works projects, for example).

Forest-Specific Economic Contributions

The economic contribution analysis estimates the role of Forest Service resources, uses, and management activities on employment and income in the communities that surround the Umatilla National Forest. US Forest Service has historically published a Jobs and Income At A Glance reports which detail the contributions of forest resources makes to local economies. These reports reflect exiting conditions of benefits provided at the time of the report generation and may not reflect current or average conditions. The analysis reported below is based on the analysis completed using 2019 resources and local economic conditions (U.S. Forest Service 2023).

In addition to the twelve local counties identified above, an additional eighteen counties were considered part of the economic contribution analysis area due to their ties to the Umatilla National Forest. These additional counties are outside the local community analysis area, but some direct expenditures are made in these counties and therefore the impact to this larger area is considered (USFS 2020).

Employment Contributions by Program Area

There are approximately 840,100 jobs and $40 billion in labor income in the 30-county area of influence (IMPLAN 2019). The five largest sectors, in terms of employment, in the regional economy are: (1) local, state, and federal government, (2) health and social services, (3) agriculture and forestry, (4) retail trades, and (5) manufacturing. The Umatilla National Forest contributes to the income and employment in the region. The extraction and consumption of forest products (for example, timber, minerals, forage), recreation visitors, and forest expenditures (for example, equipment and salaries) all contribute to the economic activity in the region.

Table 20 shows the number of jobs attributable to various Forest Service program areas with a combined approximate 820 jobs on an average annual basis. Forest Service expenditures, timber, and livestock grazing contribute the most to employment in the regional economy, relative to other resource areas. The Forest Service expenditures category captures both salary and non-salary expenditures. Therefore, this category includes Umatilla National Forest employees, forest contractors and suppliers, as well as employees of businesses where forest employees spend their household income.

The jobs estimates, presented in the table, offer an incomplete picture of the Umatilla National Forest' contributions to the 30-county economy. Not all jobs are equivalent. Labor income estimates help to clarify the role of forest management in supporting livelihoods in communities near the Umatilla National Forest.

Looking at average labor income per job reveals that jobs associated with timber pay more, on average, than jobs associated with recreation or range. This finding is consistent with recreation and range related jobs often being part time or low skilled positions.

Table 20. Total number of jobs contributed by program area, 2019

Program area	Jobs	Income ($1,000s of 2019 dollars)
Agency Operations	290	$14,438
Forest Products	230	$16,236
Livestock Grazing	180	$2,319
Minerals & Energy	1	$27
Payments to Local Governments	50	$2,291
Recreation Visitors	70	$2,530
Total Forest Service Supported	820	$38,471

Source: U.S. Forest Service 2023

The recreation category includes both local and non-local visitors. Non-local are visitors who traveled more than 50 miles to the Umatilla National Forest. Differentiating between local and non-local visitors is relevant because non-local visitors bring "new money" to communities near the Umatilla National Forest. If recreation related opportunities were no longer available on the Umatilla National Forest, non-local visitors would not be expected to spend money in the counties that surround the forest. They may travel to another area or spend money in their home county. In contrast, most local visitors may continue to spend money on another activity in the local area if recreation opportunities were no longer available on the Umatilla National Forest.

Values, Attitudes, Beliefs

Community engagement surrounding National Forest land differs greatly depending on local values, attitudes, and beliefs towards landscapes and their management. Values attached to landscapes can be emotional, social, and economic in nature as communities close to National Forest land have developed these attachments over generations of sharing these ideals. In the case of indigenous communities, these place values and traditional ecological knowledge are integral to cultural, spiritual, and subsistence practices. Values across the region can be fluid over time and adapt to new forest uses. This forest assessment summarizes the large amount of information collected for the values, attitudes, and beliefs study performed during the previous plan revision effort and then discusses proposed efforts that are underway to update this information.

The following information was originally presented in the 2018 Blue Mountains Final Environmental Impact Statement and summarizes comments received from stakeholders during that effort.

The Agency attempts to manage Forest Service land to meet as many concerns of our stakeholders as possible but given the diversity of social and economic views across communities, not all of these needs can always be met. The definitions of values, attitudes, and beliefs frame the discussion. Values, attitudes, and beliefs are inextricably linked along a continuum. There is overlap among the definitions, which are presented below.

- 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".

Key stakeholder issues addressed below include: access, economic and social well-being, livestock grazing, old forests, recommended additions to the National Wilderness Preservation System, and ecological resilience.

Access

Many stakeholders value access to the public's lands, whether that access is via motorized vehicles, hiking, biking, pack goats, or any other method to get into national forest land. Some believe that people should be able to access all National Forest System lands by motorized vehicle; others believe that backcountry nonmotorized vehicle areas are important. These beliefs are driven by the varying customary uses of the forest in the Blue Mountains Forest Plan Revision. For example, some people use the forest for gathering fuelwood and picking berries; others use the land for recreation and industrial timber harvest. All of these uses are important to the local community. It is important to consider the range of beliefs about the land management. There are a range of attitudes pertaining to how forest land management actions should affect access. People with different beliefs and attitudes perceive forest land management actions in different ways. They also view effects of the actions differently. For example, people that value access for motorized use would generally have a positive attitude towards maintaining, improving, and expanding existing road networks. On the other hand, people who value access for dispersed backcountry camping would likely have positive attitudes towards designated routes and uses that sustain a quiet natural setting.

Many people commented that they value access to forest lands and want to see existing networks of roads and airstrips maintained. They expressed multiple beliefs about why this important: maintaining cultural and traditional ties to the land, subsistence uses, recreation, and supporting local economies that are all dependent on roads to access the land. These groups would generally have positive attitudes towards actions that maintain current levels of access.

The Forest Service also received comments stating we should maintain the current number of miles of roads. They believe that it is their right to maintain their traditional access to the national forests along the existing road networks for hunting, fishing, cycling, camping, hiking, mining, mushroom picking, berry picking, firewood gathering, photography, bird watching, wildlife watching, skiing, snowshoeing, motorcycling, riding off-road vehicles, gold panning, and rock hounding.

Some stakeholders expressed concerns over access related to social and economic well-being. They believe that reducing the number of miles of roads on National Forest System lands could hurt local businesses and social stability, impact those who access national forest lands for sustenance, and destroy trust in the Forest Service.

Other stakeholders expressed concern that the Forest Service should not limit access because it will disproportionately affect children, aging populations, wounded veterans, and people with disabilities.

Some comments related to access expressed the belief that the Forest Service should not limit access because it would negatively impact the deep cultural and historic ties communities have to the forests.

Comments related to access expressed beliefs about relationship between availability of forest products and the number of miles of roads on National Forest System lands. These commenters said that the Forest Service should maintain access routes so local residents can gather firewood, berries, and mushrooms, and hunt and fish. Access to these forest products and access to traditionally used locations are important cultural resources for nourishment, income, survival, travel and enjoyment. Similar comments expressed

values related to family and tradition. Many comments expressed beliefs about designated routes. Some commenters believe that the Forest Service should eliminate the need to travel only on designated routes, and that the Forest Service should allow cross country travel to be more access friendly. Other comments stated that user conflict and safety issues could occur as a larger percentage of people are directed into the same areas. Some said the default position should be open roads rather than closed.

Other commenters believe the opposite. They believe that the Forest Service should designate routes to control where and how people travel while accommodating the growing demand for public access to public lands. For example, designated routes could direct off-highway vehicle traffic around sensitive sites.

Some people commented on how much they value solitude and quiet natural places in the Plan Area. They believe that limiting motorized use will provide this opportunity. Some people who value solitude and quiet natural places also believe in the importance of maintaining motorized access, as roads provide them opportunities to access remote trailheads for activities such as hiking and fishing. Other commenters, who value solitude and quiet natural places, believe motorized use would jeopardize the provision of quiet natural places. They would generally have positive attitudes towards actions that restrict access to backcountry for motorized use. For those that believe motorized access provides opportunities to visit quiet places, they would generally have positive attitudes towards actions that maintain existing motorized trails leading to nonmotorized areas.

Comments received on access expressed beliefs related to limiting motorized use. Some comments stated that the Forest Service should preserve large areas for nonmotorized use to provide quiet natural spaces and limit impacts to the quality of hunting, camping, hiking, fishing, backcountry packing, and skiing opportunities. Other comments emphasized nonmotorized access. They said that the Forest Service should increase backcountry nonmotorized areas, close roads to support the protection of habitat, and prohibit additional cross-country and over-the-snow vehicle travel.

Similar concerns are related to compliance. Some commenters believe that the Forest Service should enforce compliance with regulations for off-highway vehicle use to prevent environmental degradation.

Some stakeholders expressed the belief that the Forest Service should substantially reduce road densities throughout the national forests to protect and restore wildlife corridors, key habitats and ecological processes, and to reduce erosion, impacts on sensitive wildlife and aquatic species, and maintenance costs.

Economic and Social Well-Being

Stakeholders are concerned about local infrastructure maintenance including roads, timber mills, equipment, and skilled labor forces. Wildland fire, insect infestations, and forest diseases are other concerns related to forest health, which is linked to economic and social well-being. Also linked to forest health are concerns about the need for more restoration activities as they have the potential to create jobs and improve well-being.

The public expressed various ideas related to the importance of sustaining economic and social well-being through Forest Service land management. Community members value jobs and income in the local economy and maintaining traditions and social structures that maintain the social fabric. Opportunities to realize these values are what make the Blue Mountains Forest Plan Revision area vibrant and resilient. There are differing beliefs, however, about how forest planning should contribute to local social and economic well-being. Many commenters believe that supporting timber infrastructure through harvest, recreation, access, mining, and grazing are important to maintain local well-being, as it has been the

backbone for their economy in the past. They believe that meeting local community and county goals for social and economic well-being is more important, or just as important, as the ecological goals of forest management.

Public comments revealed that people are concerned about retaining the social and economic benefits from forest lands in the area. One of the main issues is sustaining harvest and resulting jobs in the timber market. Some stakeholders believe that the Forest Service should provide a predictable flow of timber to support mills, loggers, truckers, as well as other local jobs, county government, and public services that contribute toward social and economics in the Plan Area. They believe that better support of logging and milling infrastructure helps retain the capacity needed to restore national forest lands and that the Forest Service should provide incentives to foster development of new forest-related industry and should support more mill competition.

Subsistence is a concern for many stakeholders in forest dependent communities. Commenters shared their belief that the Forest Service should include subsistence needs as an attribute of social well-being and community resilience. Such needs include access for firewood and fish and wildlife. They think that a more comprehensive list of services provided by the ecosystems should be included (for example as a table), which could be clearly linked to benefits for local residents.

Some stakeholders believe the Forest Service should not allow ecological considerations to override social and economic considerations. They say that social and economic issues should be a top priority and that the Forest Service should develop standards, guidelines and additional monitoring questions related to social and economic vitality. They also believe that social and economic values should be reflected in ecological goals and desired conditions. Stakeholders also believe that the Forest Service should improve its working relationship with people to benefit the forest.

While some comments emphasized the social and economic values related to increasing resource extraction, other comments demonstrated a belief that the resource extraction on National Forest Systems lands incur long-term costs to the ecosystem, which could affect local social and economic well-being in the future. Commenters who believe extractive uses greatly support social and economic well-being in the community generally have positive attitudes towards actions that open the National Forest Systems lands for these uses. Commenters who believe extractive uses are incurring long-term costs to the ecosystem generally have positive attitudes towards restricting extractive uses. However, restoration activities can both benefit ecosystem health and produce timber. To a degree, both subsets of commenters could have positive attitudes towards restoration.

Livestock Grazing

Restrictions on grazing allotments, as well as potential income loss for ranchers are the focus of concerns. Ranchers are also concerned about the loss of ranching as a lifestyle. Others are concerned about negative impacts to fisheries, water quality, and biodiversity related to grazing in the Plan Area.

Grazing is another issue with social and economic concerns. Some stakeholders believe that the local economy and social structure will suffer from reduced grazing. On the other hand, there are competing values for the land currently used for grazing. Some people believe that the land is negatively impacted by grazing, including the ecological health of riparian areas, plant species, and wildlife. These commenters generally do not support grazing use.

Specifically, some commenters expressed the belief that grazing plays a key role in supporting the economies of local Blue Mountains communities and should not be reduced because of a “likely benefit” to aquatic species and their habitats, that grazing numbers could fall below those characterized in the Plan

because the proposed plan would make grazing less viable. Some stakeholders believe that the Forest Service should recognize the benefits of grazing including: the economic and social well-being of communities, weed control, fine fuels reduction, forage improvements, water improvements for wild ungulates, and potentially increased species richness.

Other stakeholders believe that the Forest Service should adopt forest plans that manage for reduced animal unit months and no livestock use in riparian areas, roadless areas, wilderness areas, reaches with listed fish, and seasonally-saturated meadows with fine-grained non-cohesive soils and no woody vegetation. These stakeholders say that this would help create healthy landscapes, restore fish and wildlife populations, protect water quality and soils, limit weed spread, restore sagebrush ecosystems, support recreation, and limit their impression of extensive and severe livestock damage. Comments were also made about noise and impacts to the wilderness experience associated with livestock grazing, especially as it relates to a hunting experience.

Some stakeholders value the ecological health of riparian systems more than livestock grazing. Some believe that the Forest Service should consider complete elimination or multi-year rest to recover damaged riparian systems. They believe the Forest Service should meet the requirements of Executive Order 11990 to minimize the destruction, loss and degradation of wetlands by cattle and sheep and preserve and enhance the natural values of wetlands. Some stakeholders value sensitive plant species more than grazing. They say that the Forest Service should manage grazing to protect sensitive plant species and communities.

Old Forests

Some stakeholders want to actively manage and restore old forests using mechanical treatments to improve resiliency to insects, diseases, and fires. Some want to restore old forest stands without the use of machines through the designation of old forest management areas. Commenters expressed a common value for old forests. The differences are related to beliefs about how old forests should be managed.

Some commenters are concerned about pace and scale of restoration. These stakeholders believe that the Forest Service should create an alternative to increase the pace and scale of active management so that more of the national forest landscape is managed. Managing additional acres, they say, would better achieve desired conditions, such as reducing fire hazard and improving forest resistance to insects and diseases. In addition, they believe that managing additional acres would also better address the need for re-treatment in some areas to maintain desired stand densities and surface fuel levels. Some stakeholders believe that the Forest Service should increase the predicted annual timber harvest to capture a higher percentage of annual growth and thus reduce biomass accumulation and overstocked forest stands.

Other stakeholders value schools and collaborative efforts. They believe that the Forest Service should increase timber harvest to sustain harvesting and milling infrastructure, support current collaborative efforts and stewardship contracts, and fund schools through federal forest payments based on increased harvest. The timber program, they say, should provide a continuous supply of timber.

Increasing the allowable sale quantity to support current logging and milling infrastructure is viewed by some stakeholders as needed for social and economic well-being. Allowable sale quantity is even connected to trusting the Forest Service in the eyes of some stakeholders. They believe that the Forest Service should use what they consider realistic timber harvest numbers to help create more trust of forest leadership and employees.

While some stakeholders believe that more logging is needed in the Plan Area to support social and economic well-being, others think that the Forest Service should prohibit commercial logging in old

growth stands, potential wilderness areas, roadless areas, riparian zones, and riparian habitat conservation areas.

Stakeholders who want lower timber harvests believe that the Forest Service should lower the allowable sale quantity to account for expected losses from wildfire, to store carbon, and support viability of species associated with dense forests and dead wood. In addition, they say that the Forest Service should acknowledge the small diameter of most trees currently on the landscape and the lack of commercial viability in harvesting such stands. They believe that the proposed pace of logging is ecologically unsustainable. These stakeholders believe ecological sustainability and timber production are largely incompatible.

Recommended Additions to the National Wilderness Preservation System

Some stakeholders want to add to more acres to the National Wilderness Preservation System. They value wilderness for its aesthetic qualities, recreational opportunities, and biodiversity. Others want fewer acres added to the Wilderness Preservation System because they believe that adding acres would limit timber production and decrease the Forest's resiliency to insects, diseases, and fire. Some stakeholders believe that adding more acres to the Wilderness Preservation System negatively impacts the economy.

The stakeholders who say that the Forest Service should protect wildlands, including roadless areas and wild rivers, cite economic, social, and ecological concerns as the basis for their reasoning. Recreation opportunities are particularly important to these stakeholders. They believe in protecting wildlands, despite some potential income losses in local communities.

Other stakeholders, however, express different values and beliefs about wilderness. They say that the Forest Service should limit wilderness because it has negative economic impacts, in several ways: (1) minimizes the number of natural resource related jobs (2) loss of income from motorized users, and (3) loss of county tax revenues. As a result, such additions will impede the plan's three goals: ecological integrity, social well-being, and economic well-being.

Ecological Resilience

Some stakeholders expressed a desire for more management activities designed to restore ecological resilience. They believe that restoring ecological resilience will also improve ecosystem services (interpreted as benefits the forests provide). Others want fewer management activities aimed at ecological resilience.

Some stakeholders strongly believe that Forest Service should not allow ecological considerations to override social and economic considerations, as they believe that social and economic issues should be a top priority. They also believe that the Forest Service should develop standards, guidelines and additional monitoring questions related to social and economic vitality, and that social and economic values should be reflected in ecological goals and desired conditions. Along the same lines, some stakeholders believe that the Forest Service should prioritize economics over ecology, and the effects of forest plan revision on local residents and communities should be the primary decision-making criteria for selecting the chosen alternative.

Some stakeholders go further saying that the Forest Service should work to maintain social and economic conditions rather than just contribute to these values.

Updating Values, Attitudes, and Beliefs

Values, attitudes and beliefs are fluid and always changing as communities and conditions change. Therefore, the Forest Service will be seeking additional input from communities during the current plan revision process. This new effort will include a stakeholder mapping project that will allow the public to provide important economic, social, and cultural context to the forests and other surrounding public lands. Participants will identify areas of the forest that they associate with different landscape benefits[5] such as:

1. Cultural, heritage, or historic values
2. Ecological Values (clean water, carbon storage biodiversity, habitat protection)
3. Economic/livelihoods (logging, grazing, tourism, mining contracted work)
4. Fish, game, food, firewood
5. Healthy forests (tree-planting, fuel reduction, restoration)
6. Motorized use or access (ATV, OHV, 4WD, jeep, motorcycle)
7. Outdoor recreation (hiking, biking, climbing, camping, picknicking)
8. Quiet and solitude
9. Scenery, natural beauty
10. Other

Additionally, participants will label places on a separate map where they would like to see changes in current forest conditions. They will answer questions about each of these places, including the importance of the area, the concerns they have about the place, changes they may have seen over time, and any suggestions for management actions.

This mapping effort will assist forest planners and management understand the depth of connection that surrounding communities have for different areas within the forest and focus efforts of management to streamline forest plans to the needs of the community.

Environmental Justice

In this section, we identify low income and minority populations that may be disproportionately affected by the plan revision process in communities surrounding the Umatilla National Forest due to historic cultural and economic barriers. Identifying populations with significant levels of racial/ethnic minority populations or low income is key to complying with the Executive Order on Environmental Justice.

> The Executive Order on Environmental Justice (E.O 12898, 32 FR 59).
>
> The Environmental Justice Order, in effect since 1994, has directed that *"each Federal agency shall make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations"* (Section 1-101). This Order ensures that programs, policies, and activities *"do not have the effect of excluding persons (including populations) from participation in, [or] denying persons (including populations) the benefits of…such programs, policies, and activities."* (Section 2-2)

The 2012 Planning Rule and NEPA act as the primary ways that the Forest Service incorporates environmental justice into its activities. As codified in the planning rule [36CFR219], "[USDA]

[5] Topics are still being determined so the final list may vary from this initial list.

recognizes the need to engage a full range of interests and individuals in the planning process and the responsibility to promote environmental justice. To encourage wide-ranging participation, the final rules retain the requirements for the responsible official to seek participation opportunities for traditionally underrepresented groups like youth, low-income populations, and minority populations."

Therefore, to fulfill the directives of the 2012 Planning Rule, we must first inventory the size, characteristics and location of racial/ethnic minority and low-income populations. EO 12898 sets the expectation that the Forest Service and other federal agencies would create and maintain this kind of inventory (see EO 12898 section 3-302). This inventory will be used during the assessment phase to direct public outreach efforts and be used later to support ongoing collaborative during plan development. These inventories allow forest officials to include historically disenfranchised populations in the planning process and to propose actions that consider the unique environmental justice issues facing communities surrounding National Forest land. When the NEPA phase is reached, planning teams will also have information about the location of minority and low-income populations to allow for evaluation of potential disproportionate impacts to these communities.

Analytical Approach

The approach to environmental justice analysis used below applies U.S. Census data and mapping files that are publicly accessible. This preliminary spatial concentration analysis aims to pinpoint areas with minority populations or low-income populations that are likely to be affected by management decisions.

The effects of forest planning can impact communities hundreds of miles from forest boundaries, especially in the case of resources such as water and air quality. However, it is critical to recognize that demographic comparisons over such larger areas can be misleading since state and/or regional averages likely differ greatly from rural nearby forest conditions. Therefore, to identify local forest communities with potential environmental justice concerns, it is more reasonable to examine Census Block Groups (CBGs) within a 25-mile area around the forest (Adams and Grinspoon 2021).[6] Figure 27 illustrates this study area. We compared the average demographic percentages for all CBGs within this 25-mile radius to the conditions within each individual CBG. US Census data has a range of uncertainty at the CBG level and therefore margin of error was utilized to obtain the lower and upper estimates for each CBG. If the average of all CBGs in the 25-mile radius fell outside of the range for an individual census block group's lower and upper estimate, that individual census block was identified as a potential environmental justice community. Clusters of these EJ census block groups were identified and numbered in maps below for ease of viewing, and the clusters averages were recorded in the table below each map.

Poverty

Low-income communities may be impacted by environmental management decisions differently or at higher levels than higher-income communities. These differences may stem from systemic, cultural, or financial differences and may be exacerbated by the side-effects of management decisions. For example, low-income communities with a historical lack of access to long term and emergency medical care may result in a higher risk for long term smoke-related harm from forest wildfire patterns near their communities (Rappold et al. 2017). Environmental Justice-related impacts can extend beyond health and community wellness as cost and equipment barriers that may prohibit different groups from accessing

[6] Additional relevant EJ methodology resources include: "Adams, M.D.O., and S. Charnley. 2020. The environmental justice implications of managing hazardous forest fuels on federal lands in the American West. Annals of the American Association of Geographers 110(6): 1907-1935" and "Adams M.D.O., and S. Charnley. 2018. Environmental Justice and U. S. Forest Service hazardous fuels reduction: a spatial method for impact assessment of federal resource management actions. Applied Geography 90: 257-271."

National Forests (Walker & Virden, 2005). To fulfill national guidance on environmental justice efforts around National Forest Lands, the Forest Service should perform outreach to low-income communities to gauge their investment in the revision process, and to explain how management goals and initiatives may affect their wellbeing.

American Community Survey and estimates may have large margins of error. Therefore, areas with statistically significant populations living in poverty (areas where the average for the 25-mile range does not fall within the lower and upper estimates for the census block group) are displayed with a diagonal cross-hatch pattern.

ome communities. Figure 28) shows several concentrated areas with levels of poverty higher than the average for the 25-mile area around Umatilla National Forest. The highest and most statistically significant poverty levels can be found in and adjacent to urban-designated areas. Table 21 provides the percentages for each county and Figure 29 through Figure 31 have been provided to display those urban areas in more detail. While none of the poverty averages for clusters of census blocks showed statistically significant levels of poverty, the Lewiston, Pendleton, and Walla Walla urban areas do contain several census block groups that exceed the average for poverty in the area and may be areas of focus for the Forest going forward.

Race and Ethnicity

Minority racial and ethnicity status are also factors considered when meeting environmental justice requirements. Historically minority racial and ethnic communities such as Indigenous, Hispanic, and Black communities, have been impacted by urban and environmental planning at different levels than other community groups, and may not have the same resources as other communities to mitigate impacts (Downey and Hawkins 2008). Infrastructural differences between communities of different ethnicities and races in the same county may affect community water access and safety, environmental toxicity, and air quality, which may be influenced by management decisions. One example of the complex relationship between race and environmental impacts can be seen in disparate wildfire risk to different community groups. Studies have found that indigenous communities may face the highest wildfire risk of any community due to their proximity to National Forest boundaries however their community's knowledge of fire ecology also means they may find resiliency in different ways than other communities (Davies et al. 2018). Forest management decisions about fire may directly affect tribal efficacy to control fire on these borders in ways that preserve and promote their ability to perform culturally important subsistence harvesting or other fire-dependent practices. Fire is important to many indigenous cultures and forest management should consult closely with local indigenous tribes about ideal fire management conditions to promote the success of cultural practices. The federal government has acknowledged a commitment to including indigenous people and stewardship traditions of harvesting, foraging, hunting, in management plans. This may mean granting tribal groups special permits or access individualized to their needs. (Flores & Russell, 2020)

Additionally, identifying minority ethnic and racial communities, in conjunction with other data gathered for this report may also allow insight into impacts on communities' use of National Forest space. Some racial or ethnic groups may voice safety issues in outdoor recreation spaces and may mitigate those impacts by accessing recreation opportunities differently than others. (Chavez, 2000) Some groups often report feeling less ownership of public lands or having no knowledge of recreation opportunities in their area (Roberts & Chitewere 2011). It is important to use additional data to identify if management decisions are impacting communities access on the Forest. For example, the area surrounding Umatilla National Forest has a higher average of Hispanic/Latino populations and non-white populations than areas surrounding the Malheur and Wallowa-Whitman National Forests. U.S. Forest Service's National Visitor Use Monitoring data shows that Hispanic and Latinos are underrepresented in the visitors to Blue Mountains National Forests when compared to populations found in surrounding counties. In accordance with National Environmental Justice guidelines, an effort is underway to involve these identified

communities in the planning process along with other communities in the area, including working with these groups to understand different community needs in order to participate, such as translated outreach materials.

Data on race was sourced from the 2020 Decennial Census and does not include margin of error. All other data on Hispanic and Latino communities was sourced from the 2021 American Community Survey. Racial and ethnic mapping seeks to identify areas of interest for outreach and investment efforts on the part of the Umatilla National Forest (Table 22 and Table 23 as well as Figure 32 through Figure 38). While maps displaying race below only depict the number of Census data responses categorized as "non-white" within census block groups, the tables included with the maps further distinguish specific racial communities within clustered census block groups. All highlighted areas on tables display population percentage that are larger than the average in a 25-mile radius around Umatilla National Forest, for that specific racial or ethnic identification.

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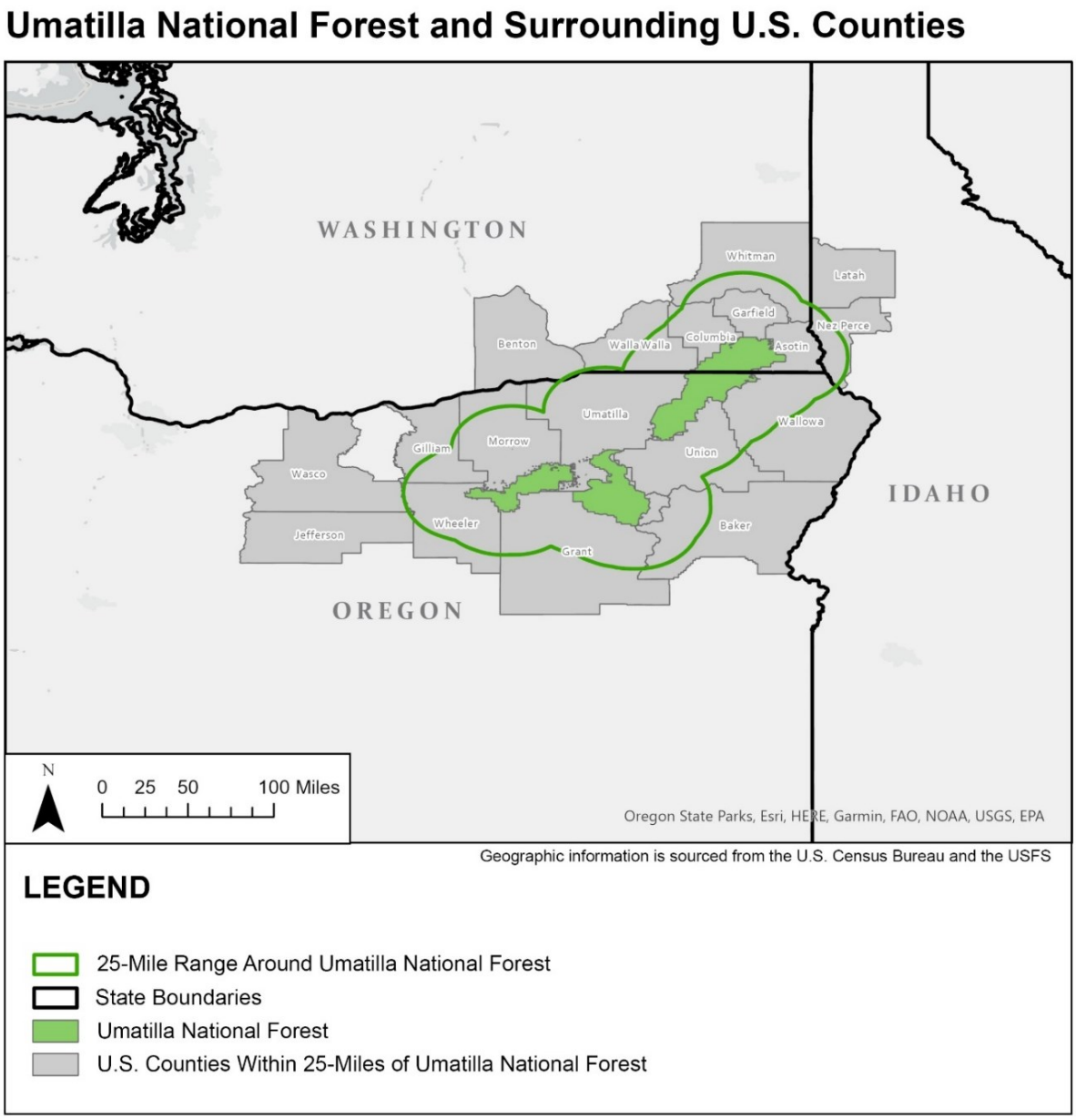
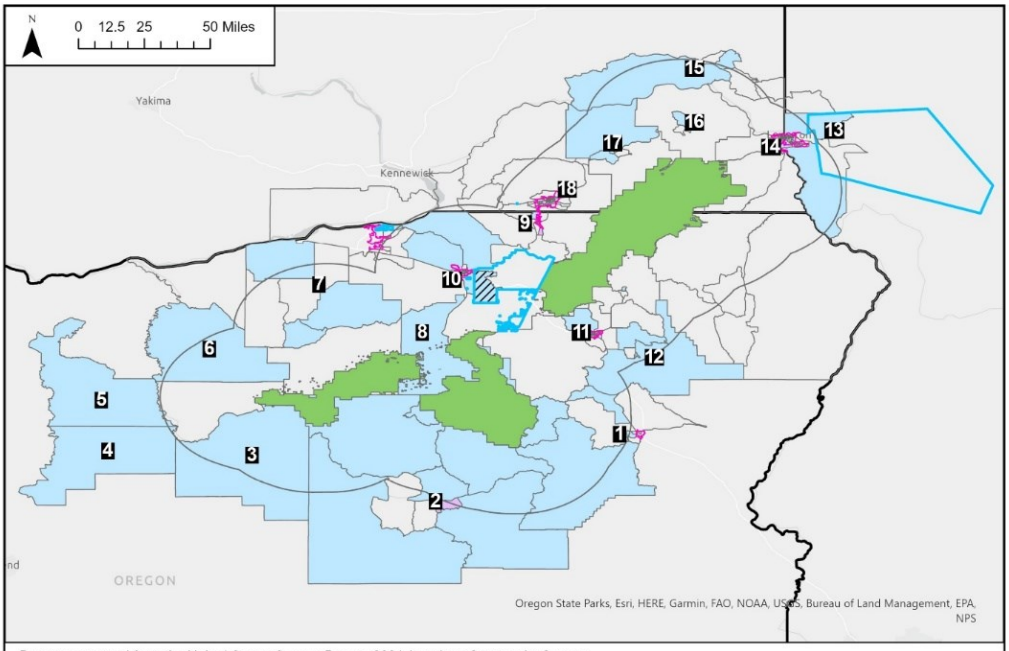


Figure 27. Environmental Justice Study Area

Estimates of Populations in Poverty Within a 25-Mile Area Around Umatilla National Forest



Data was sourced from the United States Census Bureau 2021 American Community Survey

LEGEND

- 25-Mile Range
- Umatilla National Forest
- State Boundaries
- Native American Tribal Lands
- Urban Areas
- 1-2 Times the Estimated Average Population in Poverty
- 2-3 Times the Estimated Average Population in Poverty
- 3-4 Times the Estimated Average Population in Poverty
- Statistically Significant Areas of Population in Poverty

Average population in poverty was taken from all census block groups that are contained by or intersect a 25-mile range around Umatilla National Forest boundaries. The average percent of population in poverty within these census blocks was 11.7%. All colored census block groups have a higher percentage of populations living in poverty than the average for the 25-mile range. Data was sourced from the 2021 American Community Survey and estimates may have large margins of error. Therefore, areas with statistically significant populations living in poverty (areas where the average for the 25-mile range does not fall within the lower and upper estimates for the census block group) are displayed with a diagonal cross-hatch pattern.

Figure 28. shows several concentrated areas with levels of poverty higher than the average for the 25-mile area around Umatilla National Forest.

Table 21 Low-Income Environmental Justice Analysis by Geographic Area of Interest

Geographic Areas of Interest	Number Block Groups	Lower Poverty Percentage Estimate	Higher Poverty Percentage Estimate
Baker County	3	5.9%	22.3%
Grant County	6	5.4%	27.5%
Wheeler County	1	9.5%	19.3%
Jefferson County	1	0%	30.5%
Wasco County	1	3.6%	22.5%
Gilliam County	1	9.7%	26%
Morrow County	3	2.8%	22.6%
Umatilla County	5	7.6%	28.3%
Milton-Freewater Urban Areas	5	2.9%	32%
Pendleton Urban Area	9	5.3%	35.6%
La Grande Urban Area	12	8.8%	31.5%
Union County	4	5.8%	24%
Nez Perce County	2	3.6%	22.8%
Lewiston Urban Area	25	6.6%	34.4%
Whitman County	2	8.4%	26.4%
Garfield County	1	3.7%	24.9%
Columbia County	3	5.4%	22.5%
Walla Walla Urban Area	16	6.9%	40.3%

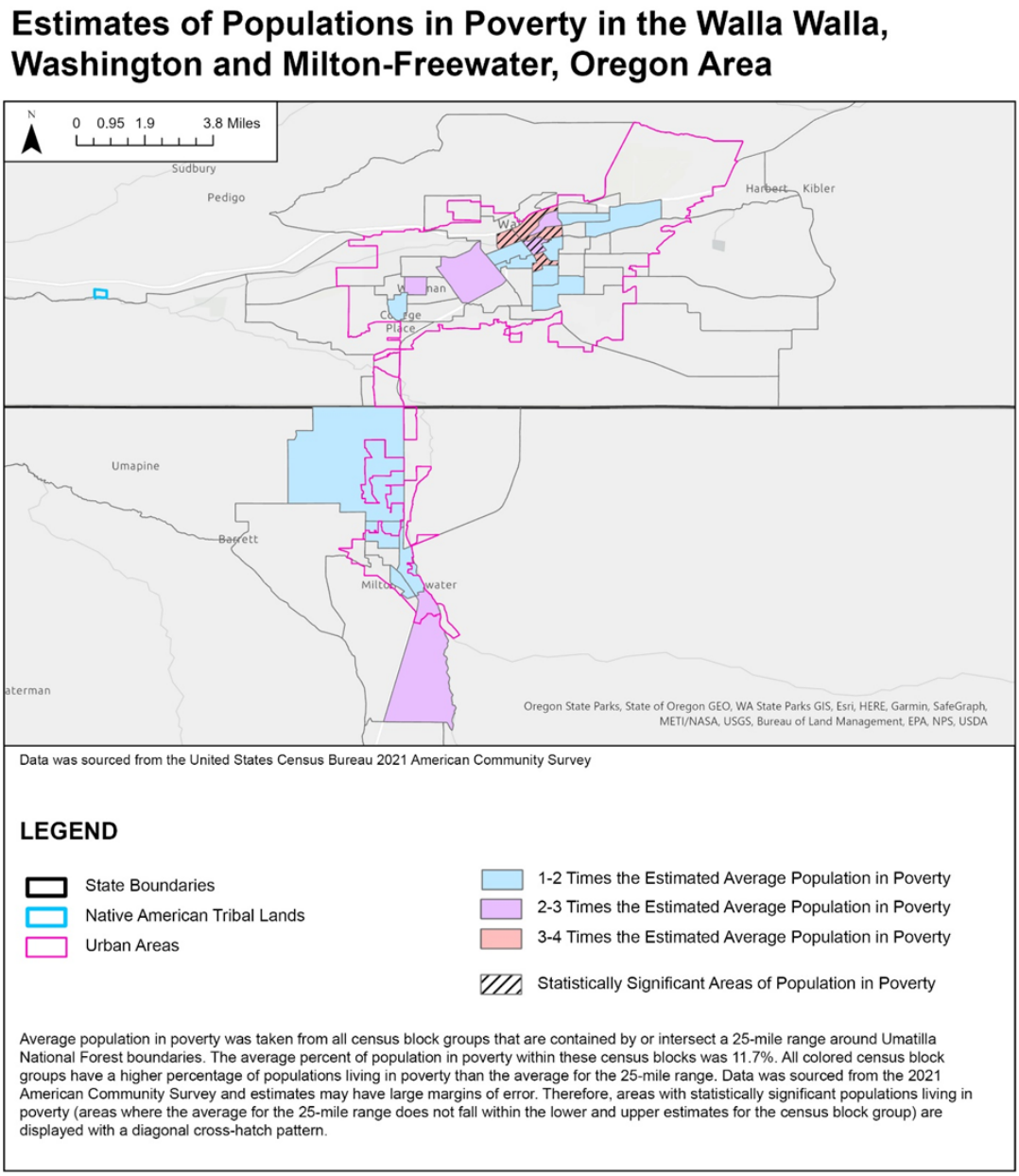


Figure 29. Environmental Justice Low-Income Communities Detailed Map in the Walla Walla, Washington and Milton-Freewater, Oregon Area

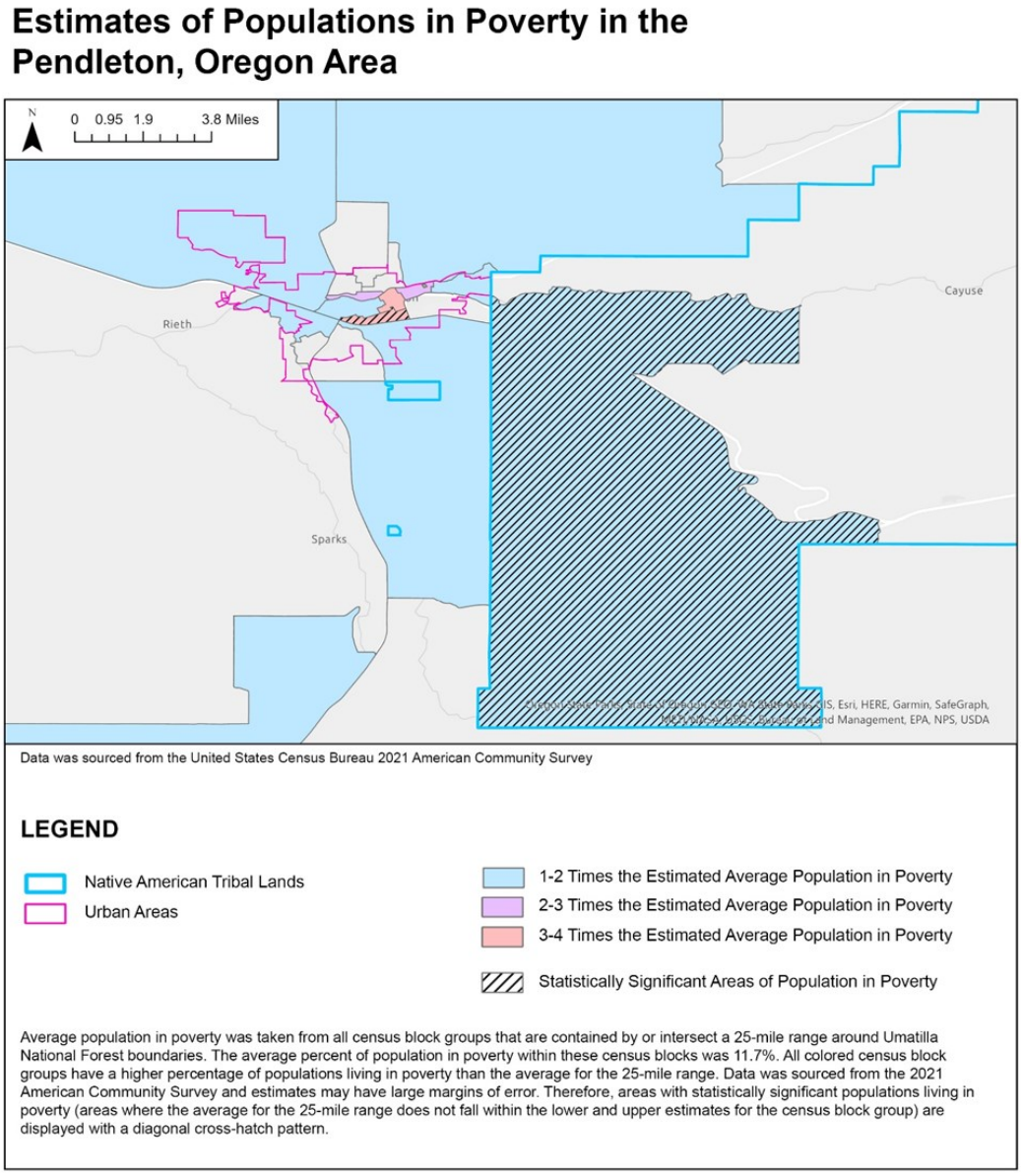


Figure 30 Environmental Justice Low-Income Communities Detailed Map in the Pendleton, Oregon Area

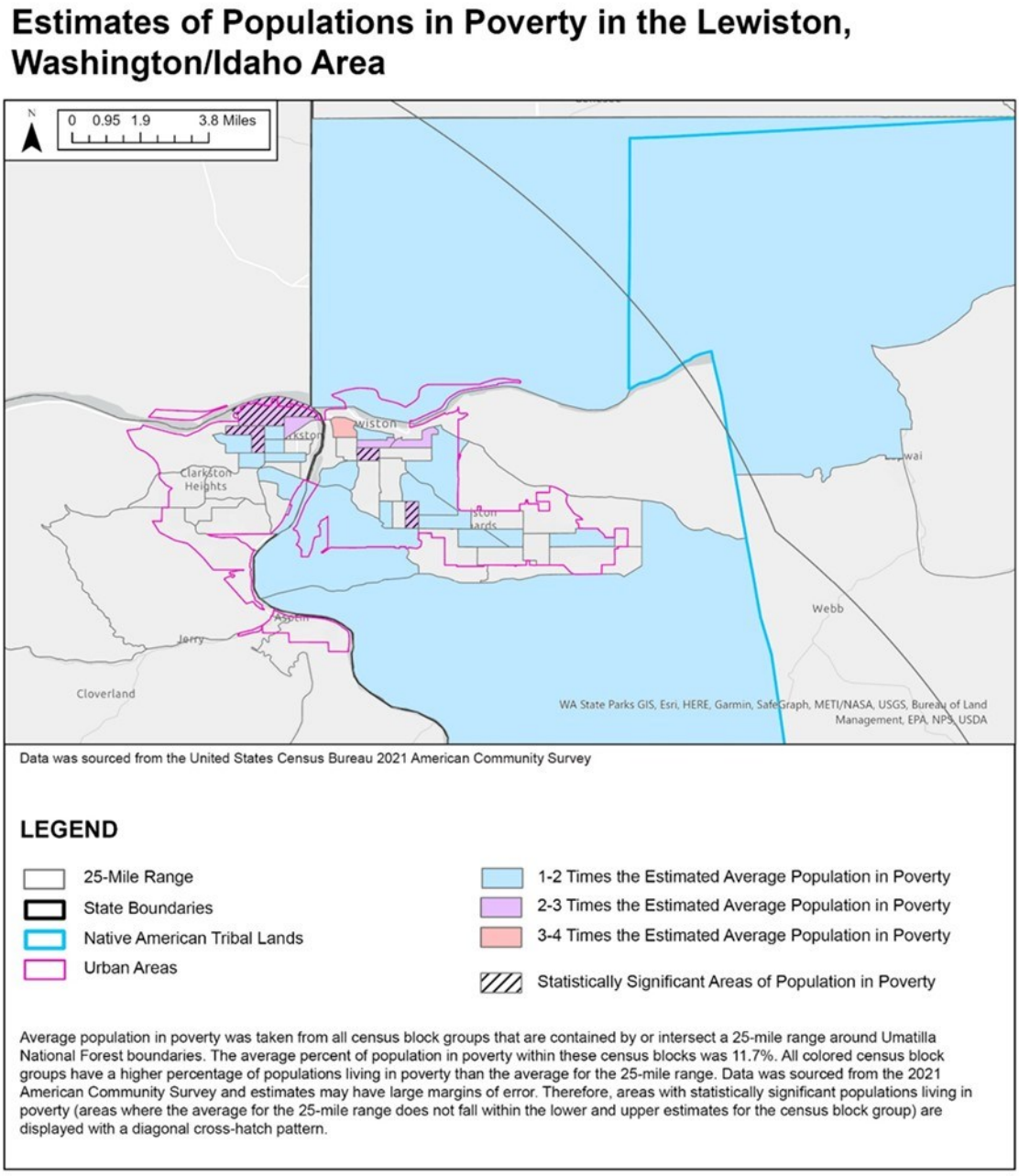


Figure 31. Environmental Justice Low-Income Communities Detailed Map of the Lewiston, Washington/Idaho Area

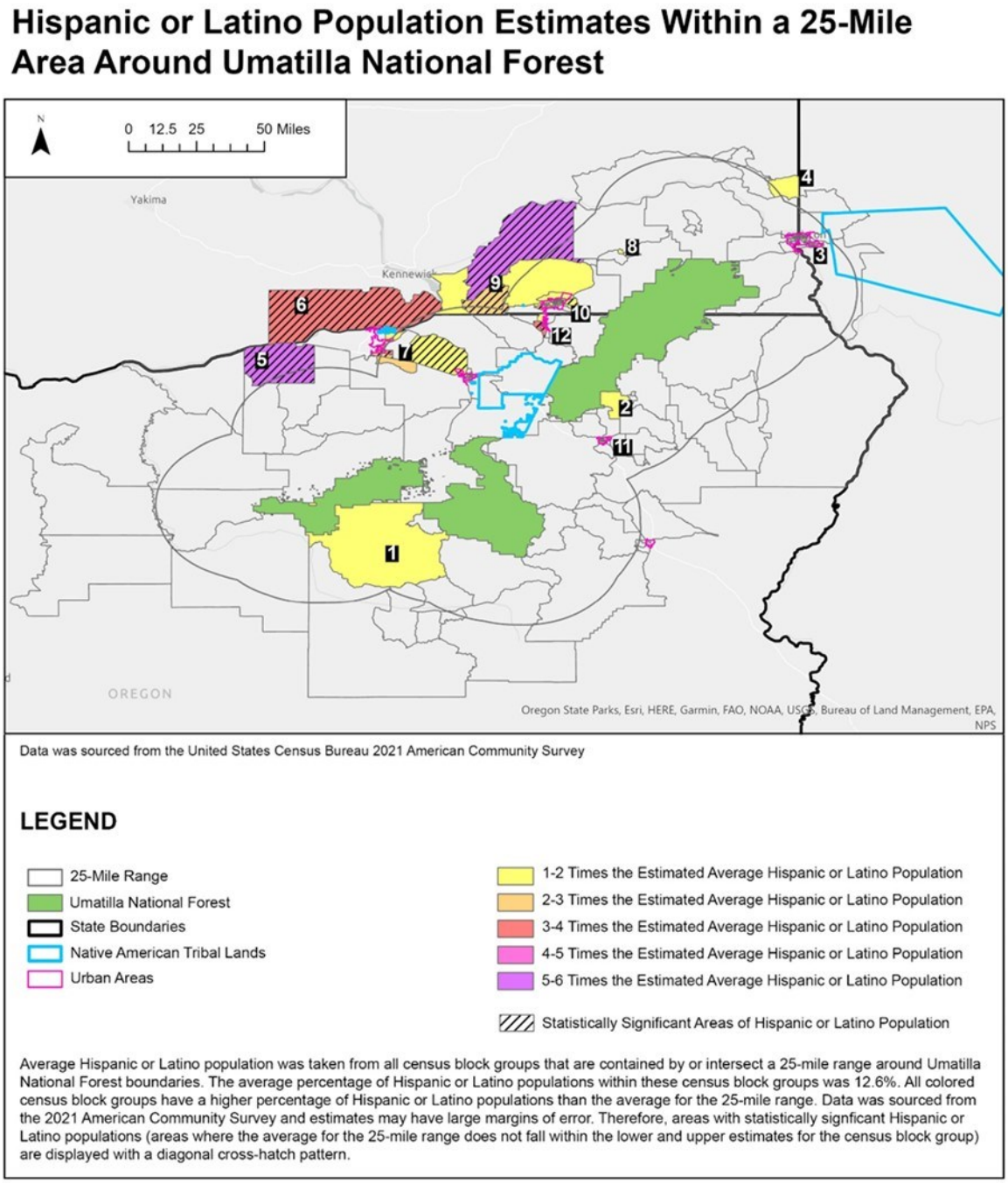
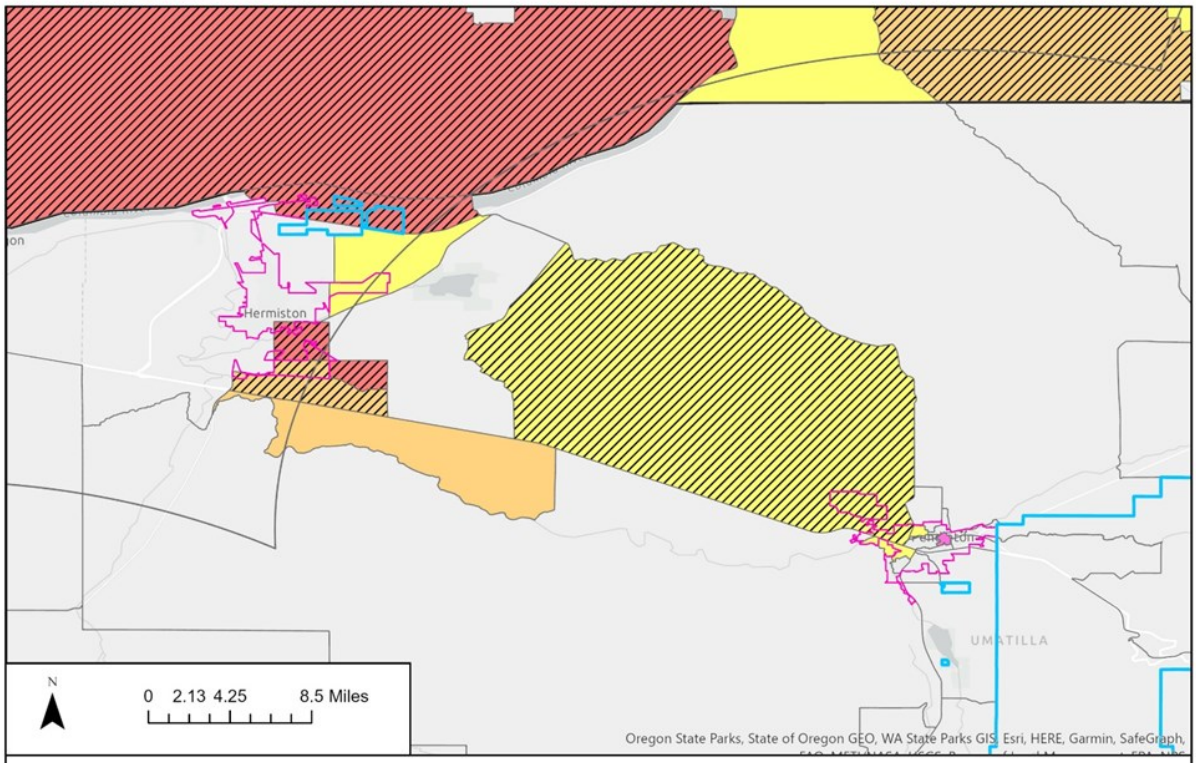


Figure 32. Environmental Justice Hispanic and/or Latino Communities

Table 22. Hispanic and/or Latino Environmental Justice Analysis by Area of Interest

Geographic Areas of Interest	Number Block Groups	Lower Hispanic or Latino Percentage Estimate	Higher Hispanic or Latino Percentage Estimate
Grant County	1	5.1%	22.9%
Union County	1	1.8%	38.6%
Lewiston Urban Area	4	3.8%	26.6%
Whitman County	1	0%	31.8%
Morrow County		49.7%	84.9%
Benton County		25.7%	68.1%
Pendleton/Hermiston Urban Areas	10	12.7%	49%
Columbia County	1	9.8%	34.2%
Walla Walla County	4	18.9%	62.9%
Walla Walla Urban Area	27	10.4%	41.6%
La Grande Urban Area	2	4.2%	26.1%
Milton-Freewater Urban Area	7	14.6%	63.9%

Hispanic or Latino Population Estimates in the Hermiston, and Pendleton, Oregon Area



Data was sourced from the United States Census Bureau 2021 American Community Survey

LEGEND

- 25-Mile Range
- State Boundaries
- Native American Tribal Lands
- Urban Areas
- 1-2 Times the Estimated Average Hispanic or Latino Population
- 2-3 Times the Estimated Average Hispanic or Latino Population
- 3-4 Times the Estimated Average Hispanic or Latino Population
- 4-5 Times the Estimated Average Hispanic or Latino Population
- 5-6 Times the Estimated Average Hispanic or Latino Population
- Statistically Significant Areas of Hispanic or Latino Population

Average Hispanic or Latino population was taken from all census block groups that are contained by or intersect a 25-mile range around Umatilla National Forest boundaries. The average percentage of Hispanic or Latino populations within these census block groups was 12.6%. All colored census block groups have a higher percentage of Hispanic or Latino populations than the average for the 25-mile range. Data was sourced from the 2021 American Community Survey and estimates may have large margins of error. Therefore, areas with statistically signficant Hispanic or Latino populations (areas where the average for the 25-mile range does not fall within the lower and upper estimates for the census block group) are displayed with a diagonal cross-hatch pattern.

Figure 33 Environmental Justice Hispanic and/or Latino Communities in the Pendleton, Oregon Area

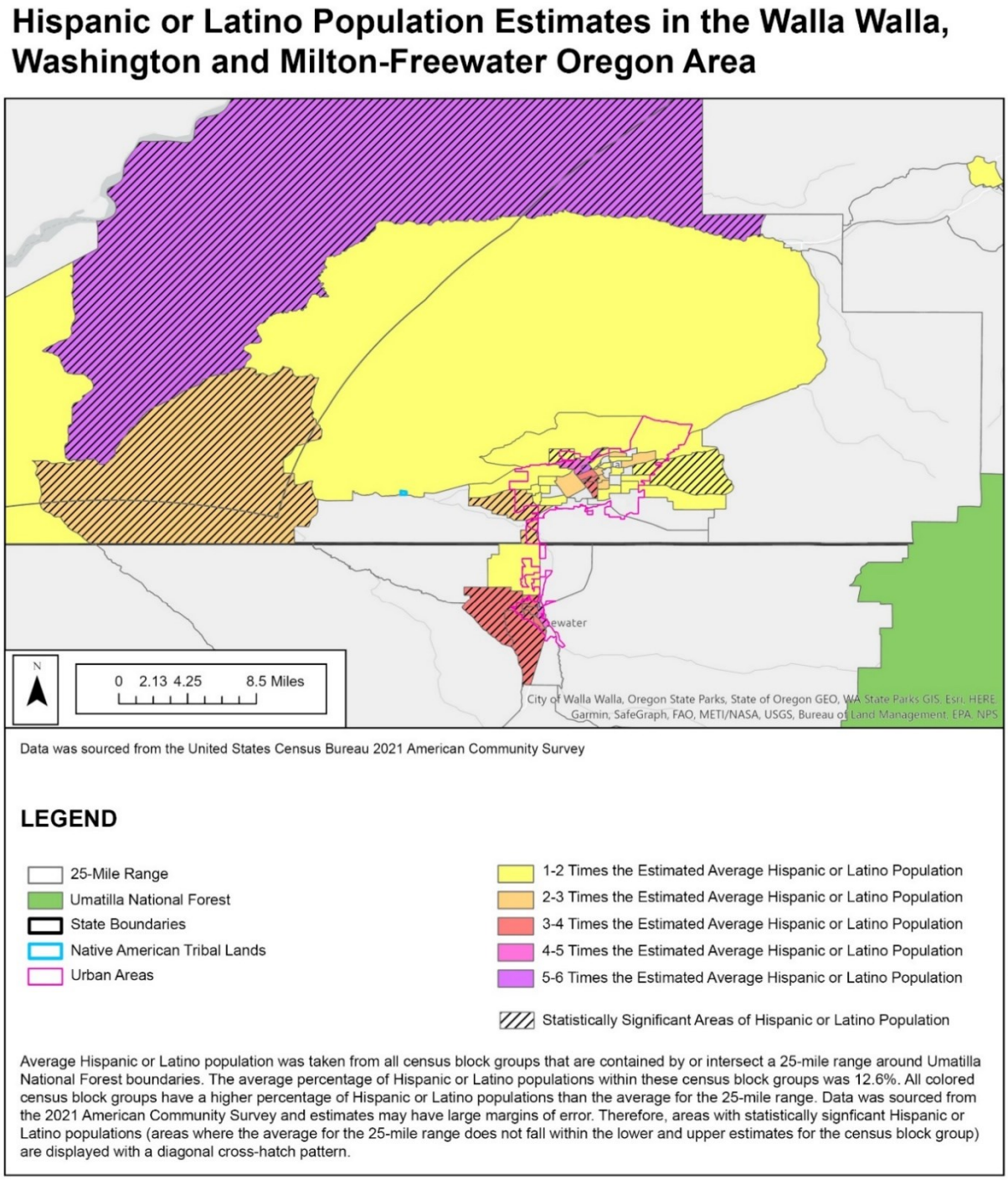


Figure 34 Environmental Justice Hispanic and/or Latino Detailed Map of the Walla Walla, Washington and Milton-Freewater, Oregon Area

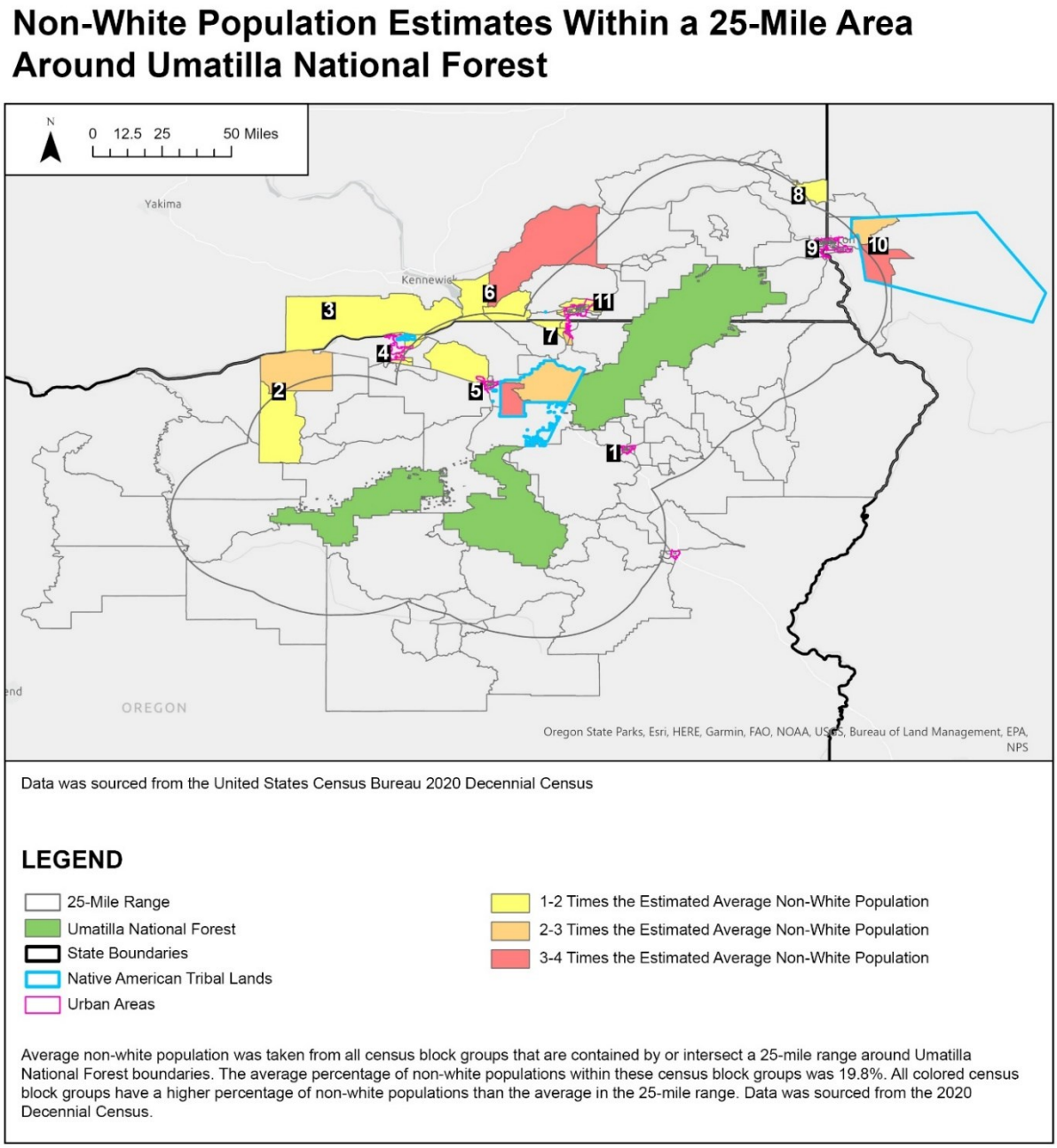
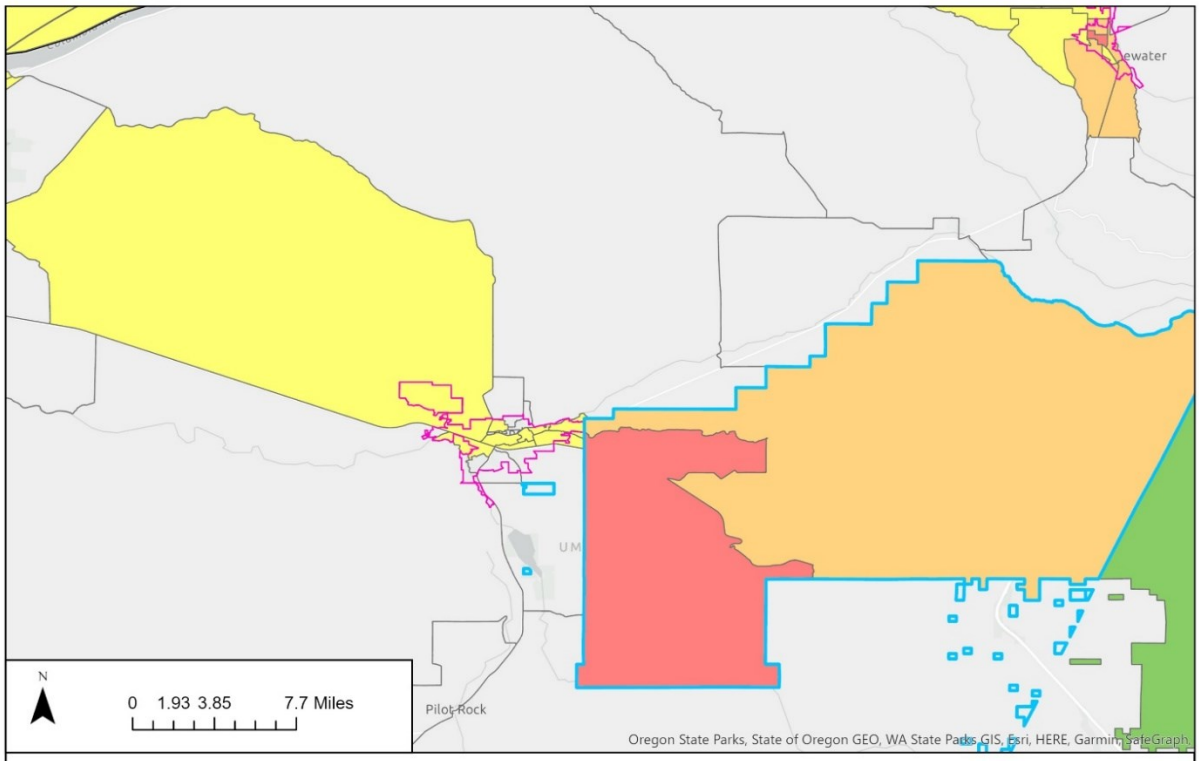


Figure 35 Environmental Justice Non-White Populations around the Umatilla National Forest

Table 23 Non-White Populations by Geographic Areas of Interest

Geographic Areas of Interest	Number of Block Groups	Percent Non-White	Percent Black or African American	Percent American Indian and Alaska Native	Percent Asian	Percent Native Hawaiian and other Pacific Islander	Percent Other	Percent Two or More Races
La Grande Urban Area	2	24%	1.6%	1.2%	1.3%	9.1%	2.2%	8.8%
Morrow County	2	46.7%	0.6%	0.9%	0.2%	0%	27.5%	17.4%
Benton	1	39.4%	0.2%	0.5%	0.6%	0.1%	23%	15%
Hermiston Urban Area	5	33.7%	2.1%	2%	0.7%	0.2%	16.9%	11.8%
Pendleton Urban Area	11	31.8%	1.7%	14.6%	1%	0.2%	6.1%	8.2%
Walla Walla County	3	42.8%	0.4%	1.4%	0.8%	0.1%	28.1%	12.1%
Milton-Freewater Urban Area	9	37.5%	0.5%	1.3%	0.7%	0.1%	24.2%	10.7%
Whitman County	2	26.6%	2.5%	0.4%	11.7%	0.2%	2.2%	9.6%
Lewiston Urban Area	1	20.9%	2.3%	1.6%	1.2%	0.5%	2.8%	13.3%
Nez Perce County	2	65%	0.5%	57.5%	0.3%	0%	0.9%	5.9%
Walla Walla Urban Area	28	31.3%	2.3%	1.3%	1.7%	0.3%	12.8%	12.9%

Non-White Population Estimates in the Pendleton, Oregon Area



Data was sourced from the United States Census Bureau 2020 Decennial Census

LEGEND

- 25-Mile Range
- Umatilla National Forest
- State Boundaries
- Native American Tribal Lands
- Urban Areas
- 1-2 Times the Estimated Average Non-White Population
- 2-3 Times the Estimated Average Non-White Population
- 3-4 Times the Estimated Average Non-White Population

Average non-white population was taken from all census block groups that are contained by or intersect a 25-mile range around Umatilla National Forest boundaries. The average percentage of non-white populations within these census block groups was 19.8%. All colored census block groups have a higher percentage of non-white populations than the average in the 25-mile range. Data was sourced from the 2020 Decennial Census.

Figure 36 Environmental Justice Non-White Communities in the Pendleton, Oregon Area

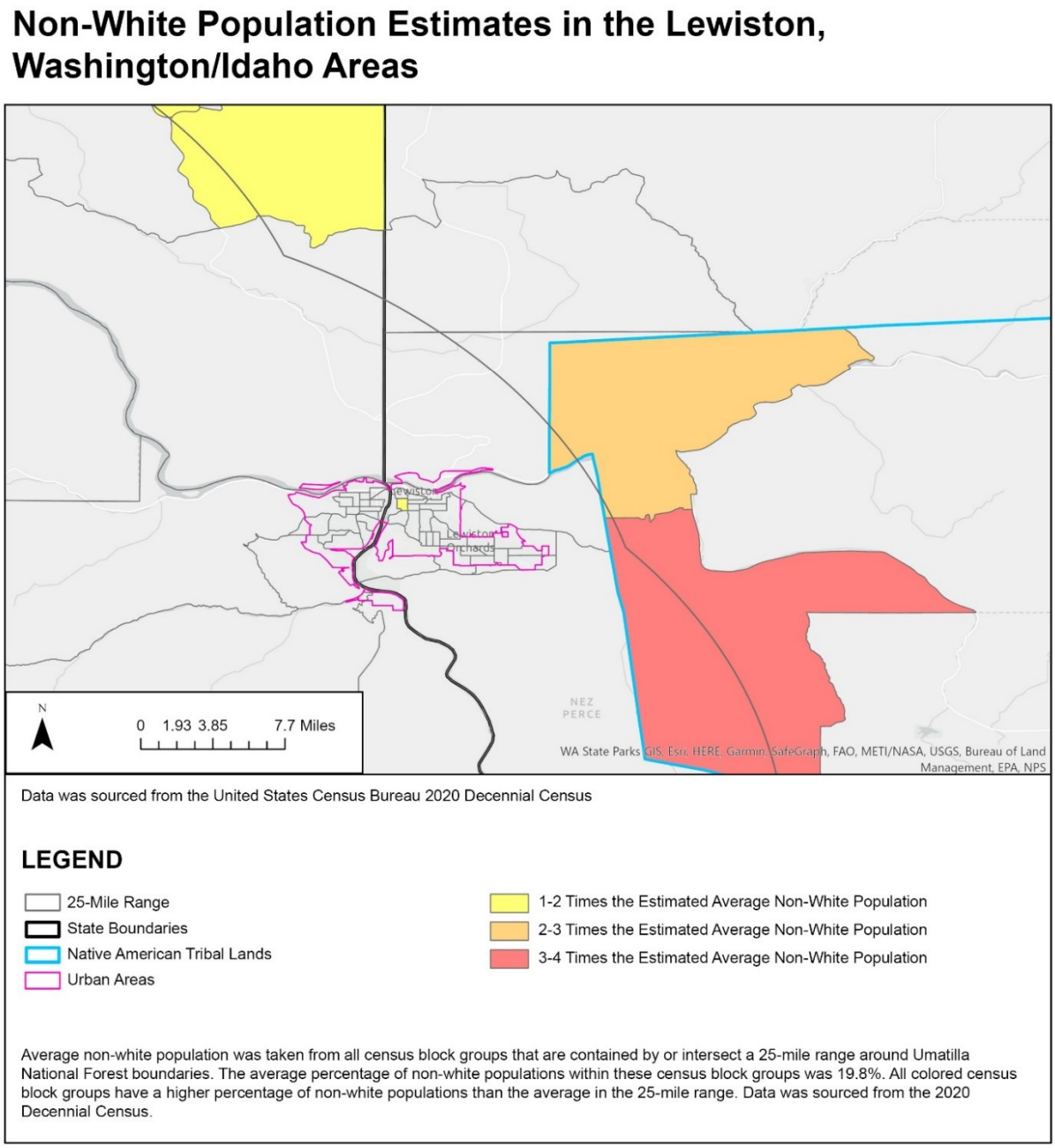


Figure 37 Environmental Justice Non-White Communities in the Lewiston, Washington/Idaho Areas

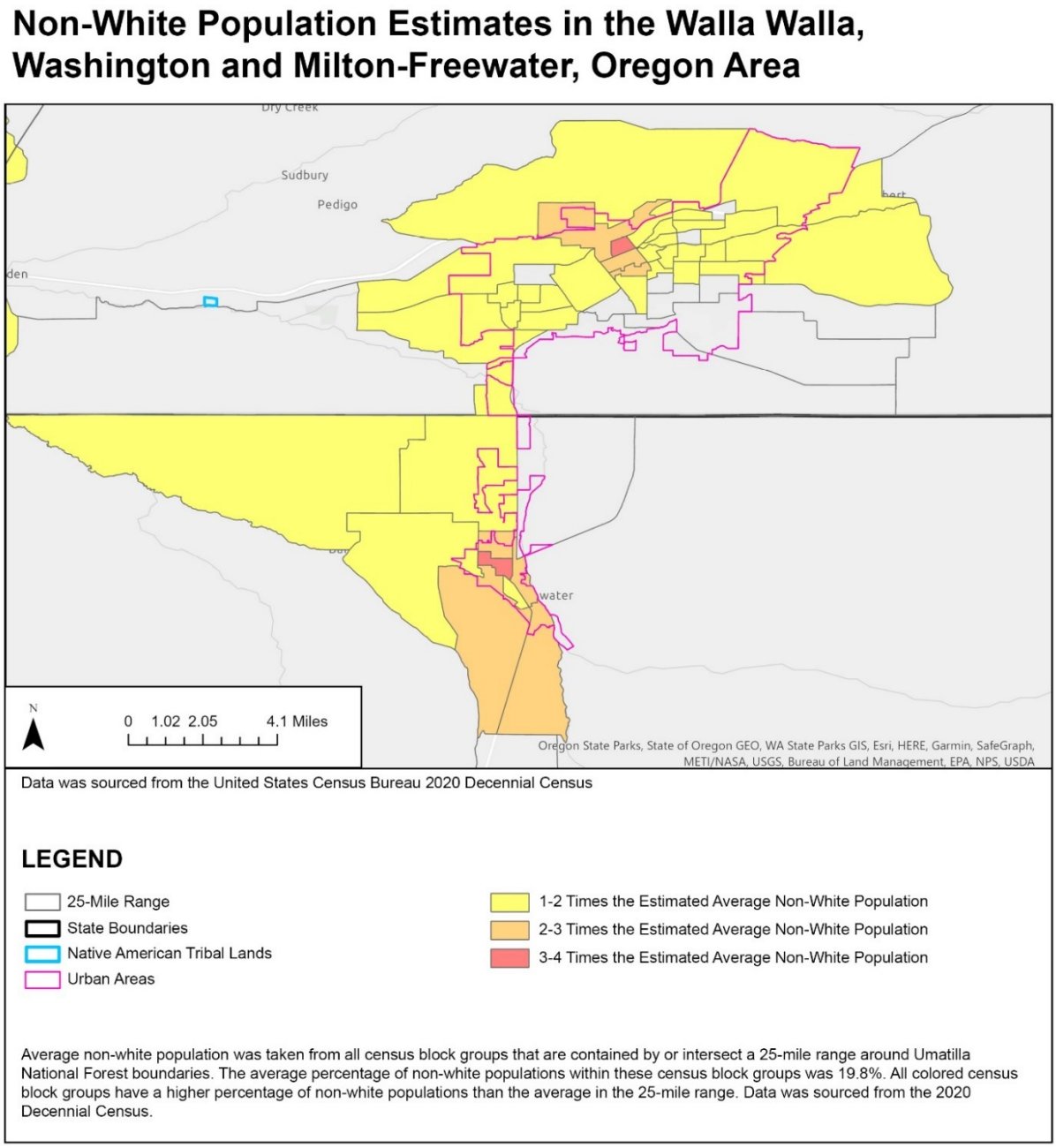


Figure 38 Environmental Justice Non-White Communities in the Walla Walla, Washington and Milton-Freewater, Oregon Area

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