Chapter 2: State of Idaho Profile

Geography and Environment

The State of Idaho covers 83,564 square miles, with a land area of 82,412 square miles and 1,152 square miles of water. Its northeastern boundary is Montana, with Wyoming on the east, Utah and Nevada on the south, Oregon and Washington on the west, and British Columbia, Canada on the north. It has forests, deserts, mountains, narrow valleys, and plains. Altitudes range from 738 feet above sea level at the shores of the Snake River in Lewiston to 12,662 feet at the summit of Borah Peak. Steep mountain streams and large, forceful rivers are found throughout. With a 600-mile north-south profile, it has a vast exposure to the dominant westerly flow of weather, and its climatic characteristics vary not only from north to south, but from east to west. The geology, hydrography, climate, and land cover all play a role in the natural hazard environment that characterizes our State.

Source: Flickr

Geology and Terrain

Idaho features a diverse and dramatic geologic setting. Throughout much of the State, outcroppings, steep slopes, and high relief make the residents very aware of the foundation of the State. This diversity also makes for a geologically active State, with earth movement through earthquakes and landslides, large and small, still shaping the terrain.

Northern and central Idaho is mountainous, with peaks reaching elevations over 12,000 feet. The continental divide runs along the lower portion of the border with Montana. The landscape is characterized by large changes in elevation in short distances (over 4,000 feet in some cases), steep slopes, and narrow V-shaped valleys. Past glaciations are evident in some areas. The northern portion

of the State is underlain with ancient (1.4 billion years old) metamorphic rocks with pronounced layering. Major mountain ranges include the Selkirk, Coeur d'Alene, and Cabinet Mountains.

Central Idaho is underlain by the Idaho Batholith, a 70 to 100 million year old and deeply eroded complex of coarse-grained granitic rocks. This area is marked by massive mountain ranges such as the Sawtooth, Salmon River, and Bitterroots. The deeply eroded canyon of the westward-flowing reach of the Salmon River bisects this area. In both regions, the exposed rocks present an unstable terrain subject to slides and rock falls, and the landscape has been and is being formed by these factors. Soils formed from the granitic rocks of Central Idaho are given to instability after vegetation disturbance from wildland fires or logging.

The southern portion of the State, in contrast, is characterized by the broad basalt plains that are deeply cut by river valleys. This rock is part of one of the largest basaltic lava flows in North America and is quite young (geologically speaking). Although the volcanoes are now dormant, there is a possibility of renewed lava flows in the future. Where it is exposed as tablelands and steep cliffs, this type of rock is also unstable and given to slides and rock falls.

The subsurface geology of Idaho creates the potential for seismic activity throughout the State. Only the northernmost portion of the State (the Panhandle) and a belt running from the southwest to Rexburg in the east (corresponding somewhat to the Snake River Plain) are considered relatively inactive. The key phrase is "relatively," though; it is important to note that the entire State is considered to have at least a moderate seismic threat, and earthquakes can occur anywhere.

Climate

Idaho, although also diverse in climate, is generally characterized by warm, dry summers and cold, moist winters. Flanked by the Cascade Range on the west and the Rocky Mountains on the east, the State is shielded from the significant precipitation found on the Pacific coast and the severe arctic cold spells and destructive summer storms found on the Great Plains. In general, violent or prolonged adverse weather events (e.g., tornadoes and extended winter storms) are rare.

The State's annual average precipitation is 22 inches, but there is significant variation. The considerable north-south extent of the State (seven degrees of latitude) and lifting of air masses over the mountainous areas results in heavy precipitation in the north and in the central Idaho mountains (up to 60 inches, much as snow) and low precipitation in the downwind, "rain shadow" southern and eastern areas (down to 10 inches). Winter snowfall ranges from a low of 20 inches in the southwestern valleys and canyons to a record of 300 inches (and perhaps up to 400 inches) in the high mountains.

November, December, and January are generally the wettest months of the year in most Idaho locations. In the central and northern half of the State, a second cycle of precipitation usually occurs during spring. Spring and summer thunderstorm activity provides much of the moisture for the eastern communities located in the rain shadow of the central mountain mass. Idaho's significant north-south extent and altitudinal variations also influence temperatures, with the highest summer temperatures occurring in the south. Further from the moderating influences of the Pacific Ocean and generally

higher in elevation, the southeastern corner of the State is cooler than the southwestern corner. Representative locations are described in the Table 2.A below.

Table 2.A. Representative Climate Examples

City	Elevation (feet above sea level)	Annual Mean Precipitation	Mean Snowfall	July Average High Temperature (Fahrenheit)	January Average Low Temperature (Fahrenheit)	July Average Afternoon Humidity
Boise	2,840 ft.	12.1 in.	21.3 in.	90.2	21.6	22%
Coeur d'Alene	2,158 ft.	25.9 in.	52.2 in.	85.4	23.3	34%
Idaho Falls	4,730 ft.	10.9 in.	37.5 in.	86	10	25%
Lewiston	1,440 ft.	12.4 in.	19.8 in.	89	27.6	34%
Pocatello	4,450 ft.	12.1 in.	47.2 in.	88.1	14.4	38%
Twin Falls	3,670 ft.	10.4 in.	31.3 in.	85	18.6	27%

Water Bodies and Streams

Idaho's water bodies and streams play a key role in its natural hazard climate. Large rivers are found throughout the State and, due to the rugged terrain, they often share their floodplains with development. Most Idaho residents live near rivers that are subject to periodic flooding.

Much of Idaho's precipitation falls as snow, leading to a stream flow pattern keyed to spring and early summer snow melt. In general, stream flows are highest during this period and lowest in fall and winter.

Extensive water storage facilities (over 12 million acre-feet of storage) in the State modify this pattern, especially downstream along the larger rivers. These facilities and off stream use of the water can significantly alter the natural flow patterns.

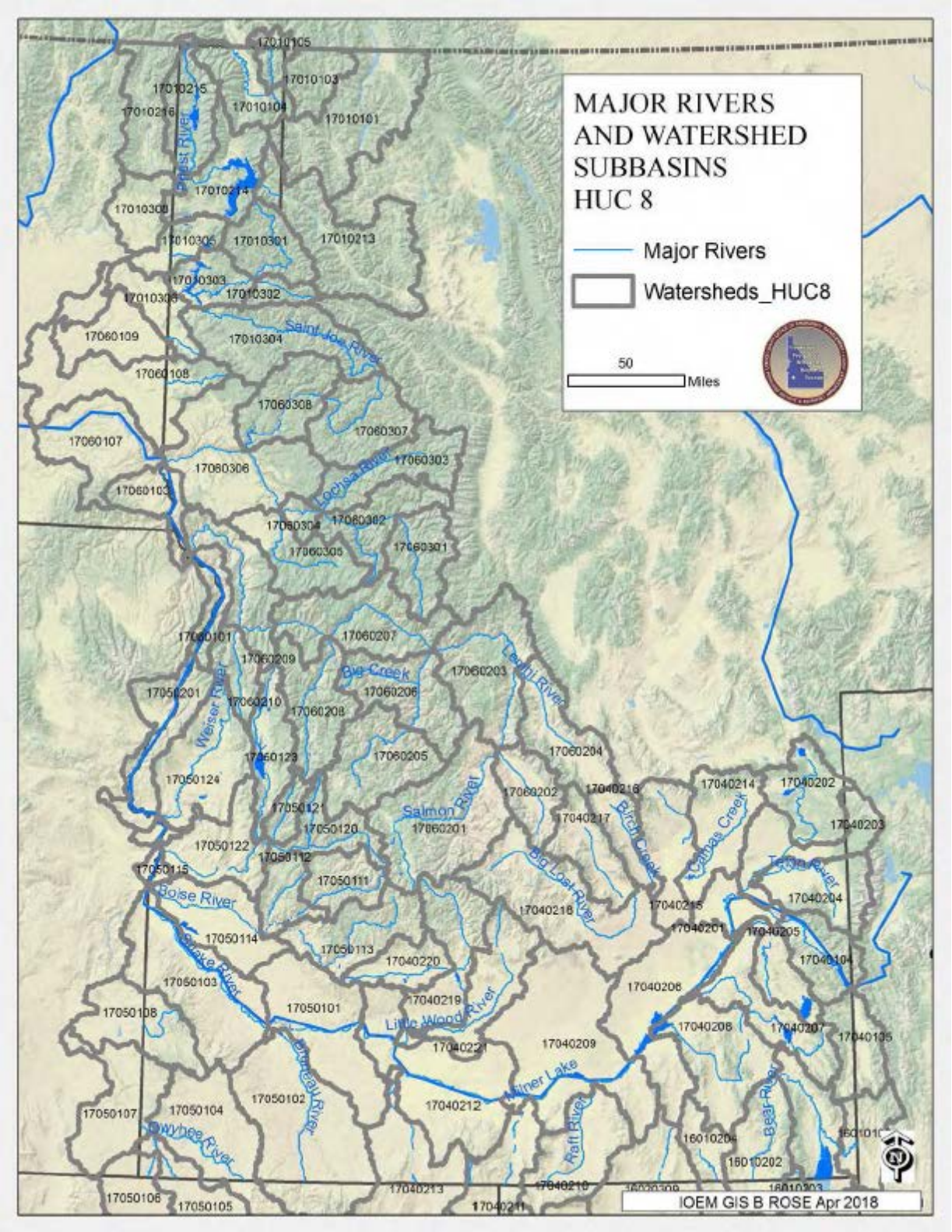
The Snake River, cutting across the width of the southern portion of the State, is a key feature in Idaho – its basin covers 88 percent of the State. The river is impounded at Palisades Reservoir upon entering the State from Wyoming and then flows from the reservoir onto the Snake River Plain. The river curves across southern Idaho through the State's largest valley, where the river may be completely depleted by irrigation diversions during the summer. Continuing west, the flow is replenished by the Snake Plain aquifer (groundwater comprises up to one-half of the flow at Glenn's Ferry). It then turns north to form the western boundary and travels through Hells Canyon (the deepest canyon in North America) before turning west into Washington State at Lewiston. As it enters Hells Canyon, the Snake is altered by river regulation for hydropower production and inflow from the Boise and Payette Rivers.

Major tributaries, such as the Salmon and the Clearwater, begin in the mountains of Central Idaho as small, steep streams and often maintain a relative steepness throughout their courses. Idaho's lakes include Dworshak Lake, a 53-mile long reservoir, and numerous alpine lakes in the high mountains. Two

Panhandle rivers, Kootenai and Clark Fork, are regulated by dams upstream in Montana. Flood control and power production increase the flows from late summer through winter. The Clark Fork is also controlled by the Cabinet Gorge Dam, whose power operations produce daily fluctuations (along with the Noxon Rapids Dam in Montana). The Spokane River flows west from Lake Coeur d'Alene, one of the State's largest lakes, passing quickly out of the State at Post Falls. Two major tributaries, Coeur d'Alene and the St Joe, originate in Idaho's Bitterroot Range and flow into Lake Coeur d'Alene. Other large lakes in the northern Panhandle include Priest and Pend Oreille, the largest lake in Idaho. These lakes are regulated by dams at their outlets. In general, lake levels are lowered in the late fall to provide for winter flood protection. Smaller lakes include Hayden Lake, Spirit Lake, the Upper and Lower Twin Lakes, and Hauser Lake.

The Bear River enters the State near Bear Lake. At that point, it is regulated by upstream storage and is depleted by irrigation diversions in Wyoming and Utah. High flows are common in May and June, and very low flows in July, August, and September. Water levels are affected by reservoir releases for power generation, unregulated tributary inflow, and irrigation diversions. Its major tributaries, Thomas Fork and the Malad River, exhibit flows typical of unregulated streams. Peak runoff occurs during the snowmelt season and declines through the summer months. Major rivers and water bodies and the watershed sub-basins across the state are shown on Map 2.B.

Map 2.B. Major Rivers and Basins of Idaho



Population

CHAPTER 2
STATE OF IDAHO PROFILE

In 2016 Idaho remained the 39th most populous state. From 2010 to 2016, Idaho ranked 10th among the states in population growth at 7.4 percent, or 115,490 people. The current rate of growth is 1.8 percent. Population growth peaked in 2006 at 2.8 percent. The recession slowed migration to the state.

Below, Table 2.C depicts 2020 and 2026 Idaho population estimates by county. The most populous county in Idaho is Ada County, with a 2020 estimated population of 481,544. Clark County, with a population of 786, is the least populated county in the state.

Table 2.C. Summary of 2020 and 2026 Population Estimates by County, as Projected by Idaho Department of Labor

County	2020 Population Estimates	2026 Population Estimates	County	2020 Population Estimates	2026 Population Estimates
Ada County	481,544	533,734	**Gem County**	17,509	17,917
Adams County	3,887	3,794	**Gooding County**	14,958	14,562
Bannock County	83,111	77,897	**Idaho County**	16,038	15,188
Bear Lake County	6,115	6,538	**Jefferson County**	28,947	30,580
Benewah County	9,015	8,764	**Jerome County**	23,332	23,790
Bingham County	45,233	45,042	**Kootenai County**	168,419	192,076
Blaine County	22,014	22,176	**Latah County**	40,788	42,948
Boise County	7,233	7,288	**Lemhi County**	7,581	7,314
Bonner County	44,359	47,074	**Lewis County**	4,078	4,467
Bonneville County	117,267	124,773	**Lincoln County**	5,302	5,333
Boundary County	12,168	12,600	**Madison County**	39,853	40,534
Butte County	2,286	1,998	**Minidoka County**	21,001	21,595
Camas County	1,037	974	**Nez Perce County**	41,493	42,237
Canyon County	226,681	248,905	**Oneida County**	4,365	4,186
Caribou County	6,773	6,250	**Owyhee County**	11,306	11,118
Cassia County	23,781	24,177	**Payette County**	23,250	23,465
Clark County	786	676	**Power County**	7,563	7,356
Clearwater County	8,479	8,299	**Shoshone County**	12,664	13,345
Custer County	3,919	3,611	**Teton County**	11,433	12,026
Elmore County	25,168	23,618	**Twin Falls County**	87,567	93,586
Franklin County	13,905	14,488	**Valley County**	10,936	11,502
Fremont County	12,755	12,392	**Washington County**	10,132	10,019

Source: Idaho Dept. of Labor 2018

The steady shift of Idaho's population from rural to urban counties continued between July 1, 2016 and

July 1, 2017, according to estimates released March 22, 2018 by the U.S. Census Bureau.

Six urban counties – Ada, Canyon, Kootenai, Bonneville, Bannock and Twin Falls – had a combined population of 1,116,173, accounting for 75 percent of the growth in the state's population and 65 percent
of overall population. The state's total population was estimated at 1,716,943.

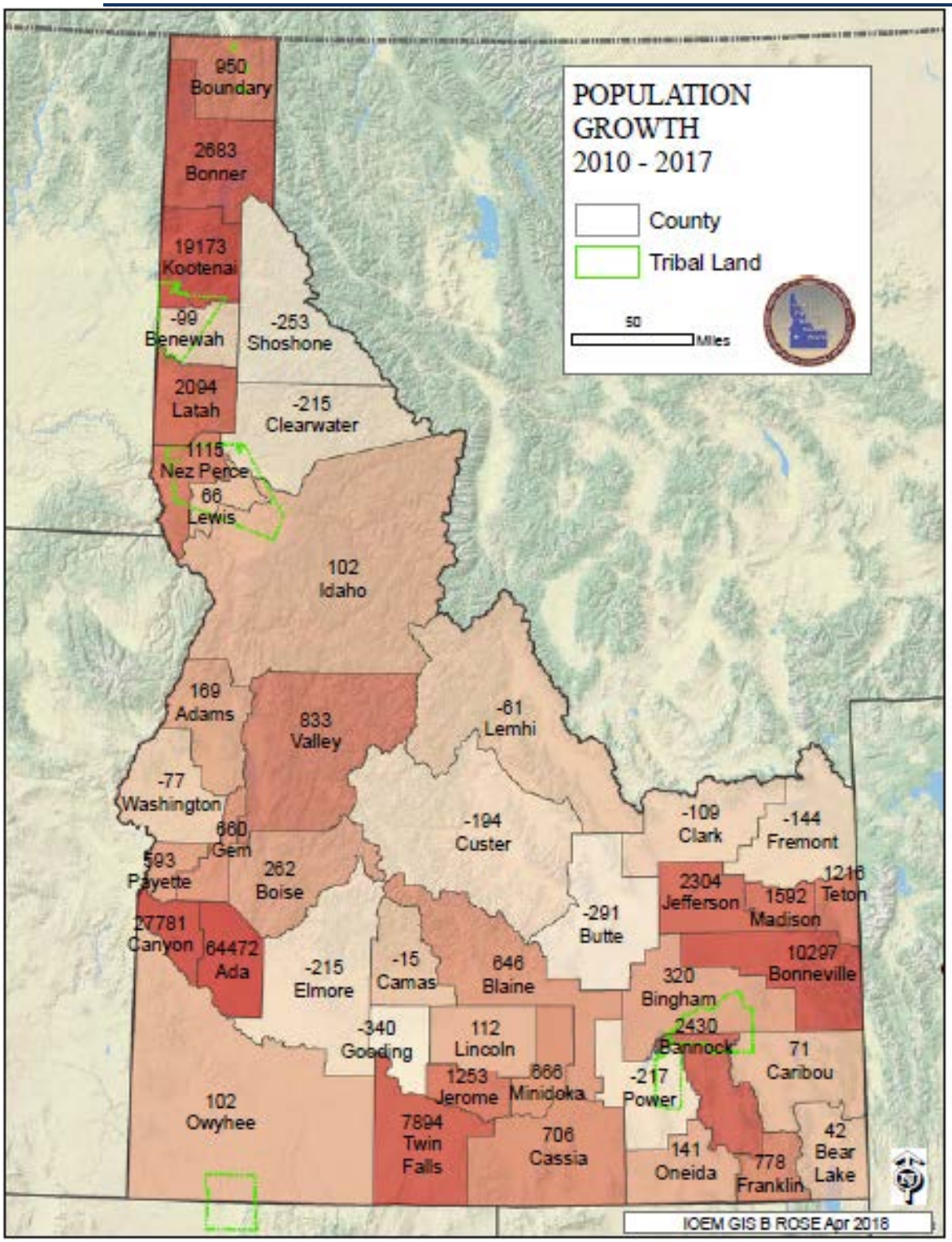
Adams had the highest percentage gain at 5 percent, but less than 200 new people. Fifteen counties had a percent increase larger than the state's 2.2 percent gain. Clark County's population increased at the same rate as the state. Forty-two counties showed population increases ranging from 12,580 people in Ada County to 18 additional people for Camas County. Six counties reported growth in excess of 1,000 – Ada (12,580), Canyon (5,588), Kootenai (4,493), Bonneville (2,570), Twin Falls (1,588) and Bonner (1,217).

Two counties experienced a decrease in population – Clearwater's population decreased by nine people and Power's population dropped by 61 people.

Population estimates show the net migration in Idaho was 26,525, or 1.5 percent of total population. Nearly 93 percent of the state's population growth was due to people moving into the state. More people
moved into 40 of Idaho counties than moved out, adding 27,334 people. The increase from net migration
ranged from 10,268 in Ada County to 11 in Cassia County. Four counties – Gooding, Madison, Minidoka and Power - experienced losses in net migration – 809 more people left than moved in. The 12 counties that make up Idaho's five Metropolitan Statistical Areas accounted for 60 percent of the state's net migration.(Idaho Department of Labor 2018)

Below, Map 2.D below depicts population growth in Idaho's 44 counties between 2010 and 2017. Although 12 of the 44 counties experienced some amount of population decline, the Northeast area of the state had the largest amount of negative growth. The South Central region experienced the most growth in population.

Map 2.D. Population Growth 2010-2017



According to the US Census, the state is projected to continue to grow. Rural growth trends, however, are less positive. Counties that are losing population, or growing at a slow pace, tend to be very remote or have yet to recover from declines in historically important industries. The demographic make-up of

the state's rural areas is steadily changing. In the southern part of the state, Hispanics account for a growing share of the rural population. Additionally, the share of the population 65 years or older is increasing.

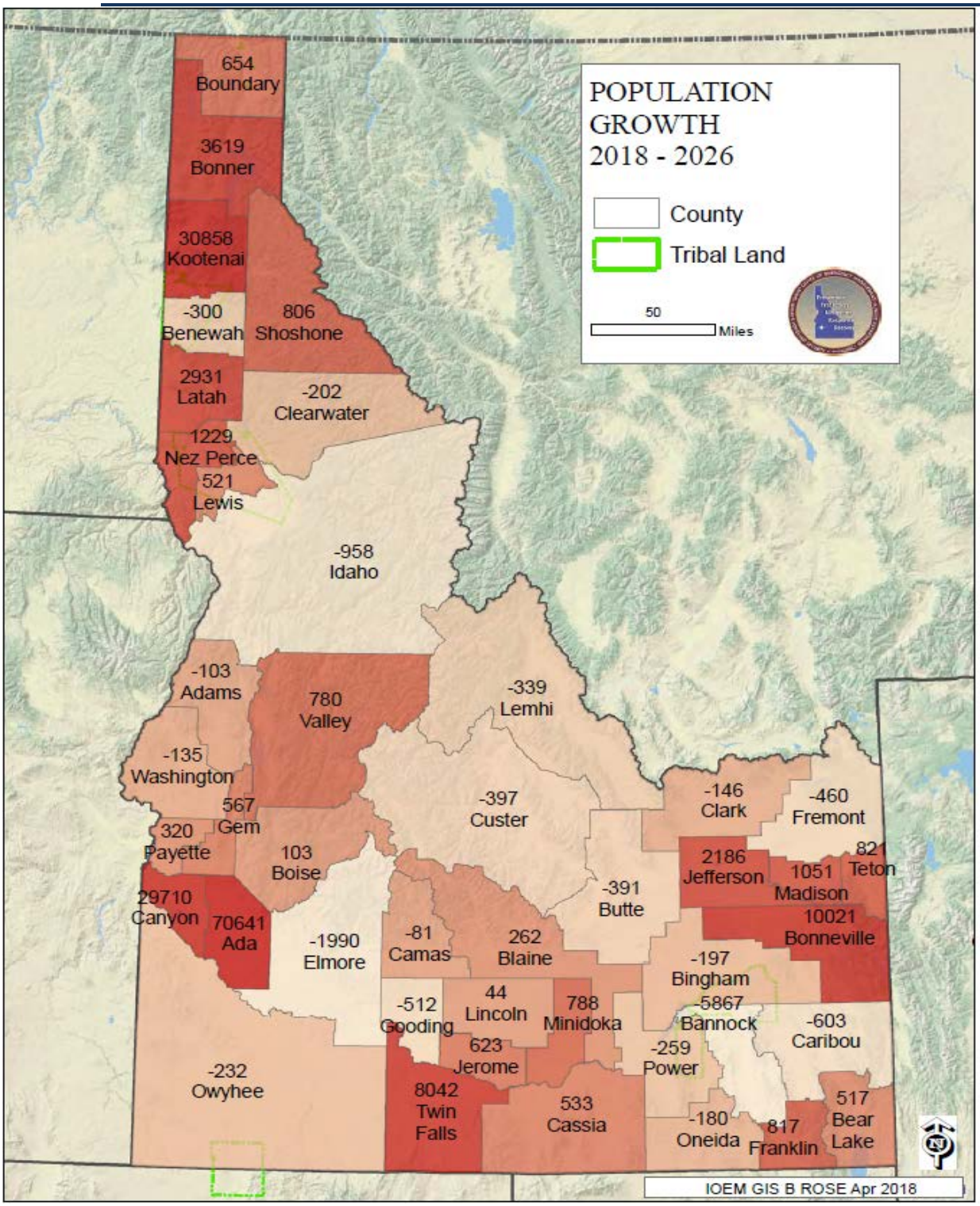
The City of Boise is the largest city in Idaho with a population of 223,154 people (Census 2010 population 2016 estimate). The second most populous city is Meridian with a population of 95,623 people (Census 2010 population 2016 estimate). Table 2.E lists the most populated cities in Idaho.

Table 2.E. Most Populated Cities of Idaho

City	2016 Population Estimates
Boise	223,154
Meridian	95,623
Nampa	91,382
Idaho Falls	60,211
Pocatello	54,746
Coeur d'Alene	50,285
Caldwell	53,149
Twin Falls	48,260
Lewiston	32,872
Post Falls	31,865
Rexburg	28,222
Moscow	25,322

The Idaho Department of Labor produced population projection data for each county in the state through the year 2026. The projection numbers are displayed on Map 2.F.

Map 2.F. Projected Population Growth 2018-2026



Population density has a strong correlation with hazard vulnerability and loss. For example, urban areas like Boise, Meridian, and Nampa (as well as the cities listed in Table 2.E) naturally have larger populations and numbers of structures; therefore, they are expected to experience greater loss during

hazard events. The northern county of Kootenai (home to Coeur d'Alene) and the southwestern counties of Ada and Canyon (home to Boise and Nampa, respectively) have the greatest population densities in the state.

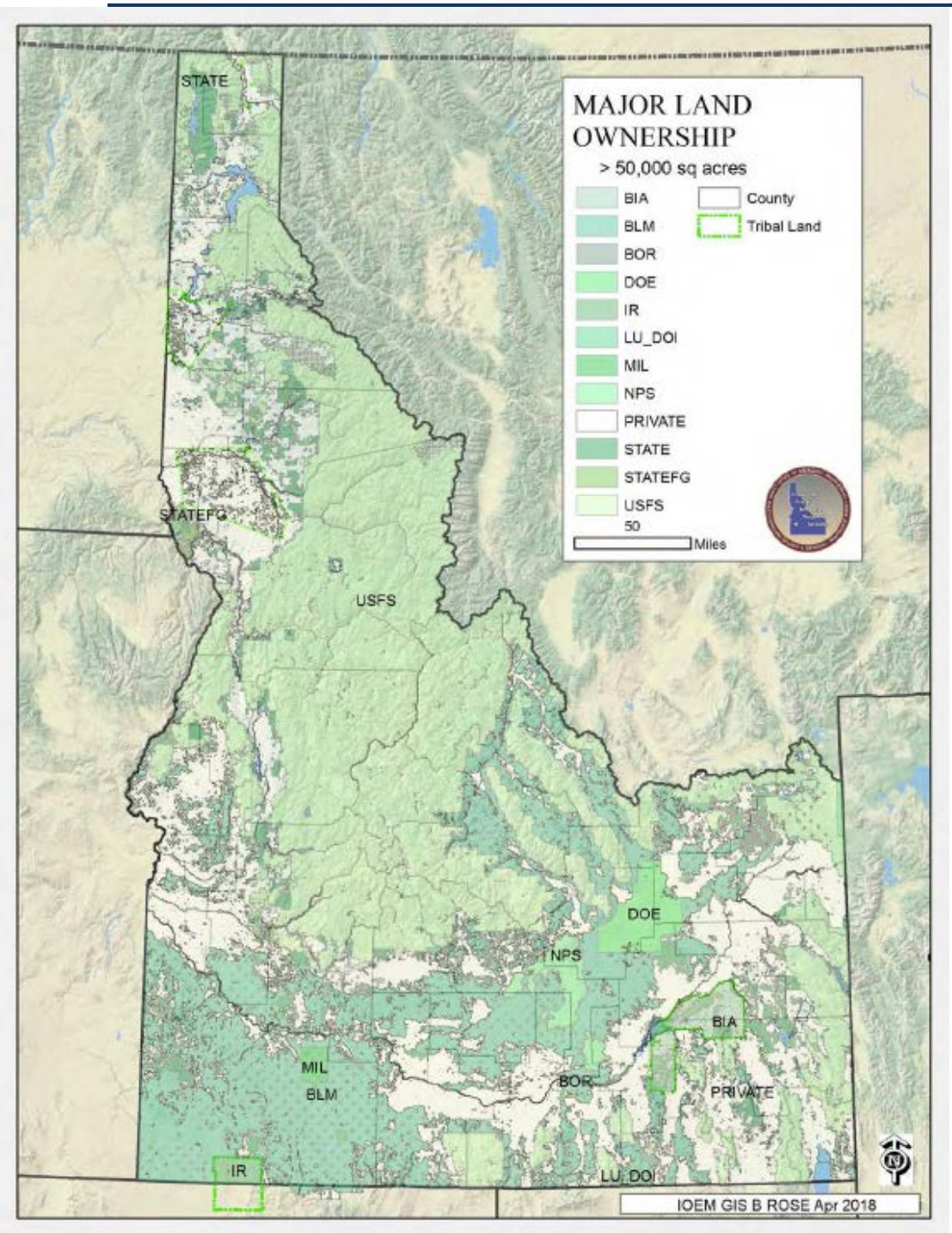
Land Use and Development Trends

The State of Idaho has a variety of land uses, ranging from agricultural to industrial. Agriculture has been the backbone of Idaho's economy for many years, since before the area became a State. Although Idaho's growing season is about 200 days long around the city of Lewiston, it can be very brief at high altitudes. With no hurricanes and infrequent tornadoes, crop damage due to weather is minimal across the state, with limited damage from hail and wind storms. Idaho's greatest threats to crops remain drought and invasive species. According to the United States Department of Agriculture, approximately 11,900,000 acres of land were used for agricultural purposes in 2012. Idaho agriculture is flourishing. It is the single largest contributor to Idaho's economy, accounting for 20% of Idaho's gross state product each year according to the Idaho Department of Agriculture.

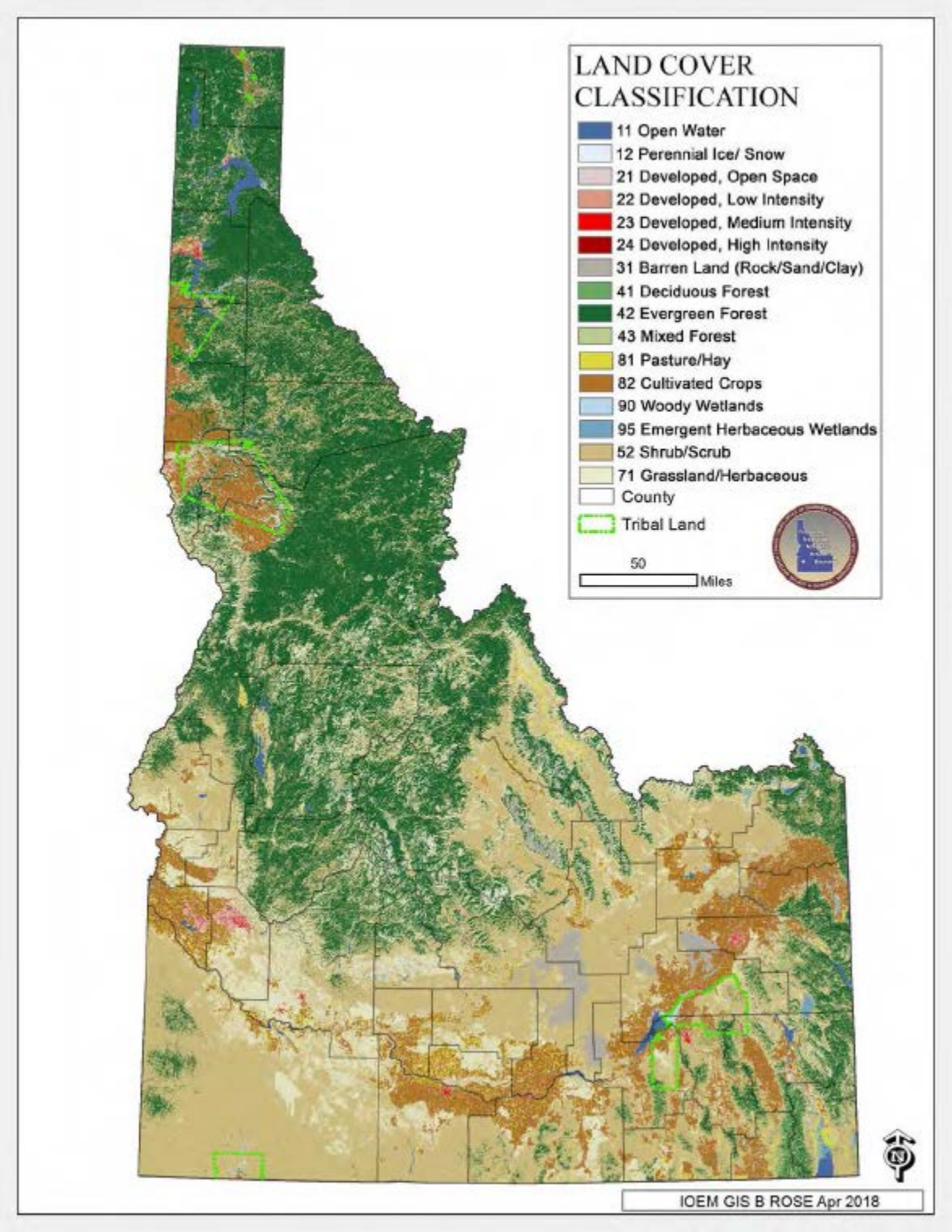
Forests cover approximately 21,500,000 acres and make up 40 percent of Idaho's land cover. According to the Idaho Forest Products Commission, approximately 89.6 percent of the forestland existing in 1630 is still present today. The United States government owns 76 percent of all the land in Idaho and manages nearly three-quarters of the Idaho forest. The rest of Idaho's forestland is divided between public and private ownership. The State of Idaho and other public agencies own 10 percent, or 2.4 million acres; forest products companies own 5 percent, or 1.1 million acres; and the remaining 10 percent, 2.2 million acres, is owned by ranchers, farmers, tribes, and other private landowners. Map 2.G on the following page shows land ownership in the State.

Land cover significantly affects hazard vulnerability in Idaho. For example, counties with a large percentage of forest cover, such as those that contain the Clearwater National Forest, are more susceptible to wildfire hazards and also some invasive species. Map 2.H displays land use cover across Idaho, including urban or built-up areas. As urbanization continues across the state, areas that were once covered by trees and grass are being replaced by impervious surfaces of roads, roofs, and parking lots. This type of development reduces the infiltration of rainwater, thus increasing the amount of storm water runoff and the potential for flash flooding.

Map 2.G. Major Land Ownership



Map 2.H. Idaho Land Cover


LAND COVER CLASSIFICATION
11 Open Water
12 Perennial Ice/ Snow
21 Developed, Open Space
22 Developed, Low Intensity
23 Developed, Medium Intensity
24 Developed, High Intensity
31 Barren Land (Rock/Sand/Clay)
41 Deciduous Forest
42 Evergreen Forest
43 Mixed Forest
81 Pasture/Hay
82 Cultivated Crops
90 Woody Wetlands
95 Emergent Herbaceous Wetlands
52 Shrub/Scrub
71 Grassland/Herbaceous
County
Tribal Land
50
Miles
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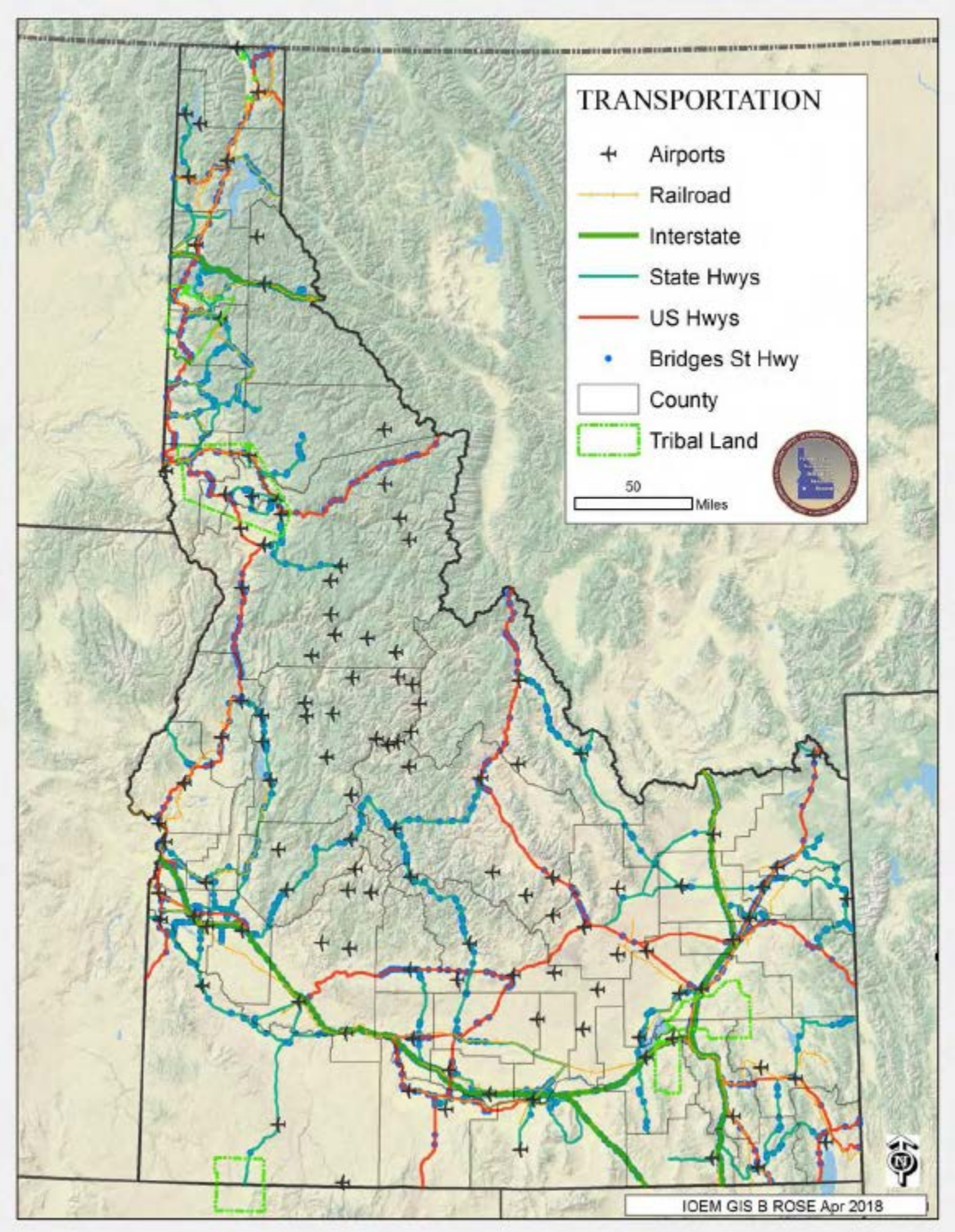
Land use and development in Idaho are largely dictated by the State's transportation infrastructure. Roads, rail lines and airports are critically important for the movement of people and the provision of goods and services. As a result, development typically occurs around transportation lines. Idaho has a widespread highway network of over 60,000 miles, which includes interstate highways such as Interstates 84, 86, 15, and 90 (See Map 2.I below). Idaho's transportation system also includes about 4,000 bridges, 1,887 miles of rail lines, 68 county and city airports, 38 recreational and emergency airstrips, 14 public transportation providers, and one seaport, the Port of Lewiston (Idaho Department of Transportation (DOT)). The State of Idaho is responsible for nearly 5,000 miles of highway, just 10 percent of all roadway miles in the State. However, according to the Idaho DOT, the State highway system accounts for 54 percent of the State's vehicle miles of travel. More discussion of development trends can be found throughout each hazard profile in Chapter 3.

Map 2.I. Transportation



Over time, growing urban populations across the state have been using rural resources for multiple purposes other than those that have sustained Idaho's rural economy in the past. In both the 1970's and 1990's, Idaho was among the seven fastest growing states in the nation. Conflicting demands to use or conserve land, water and wildlife dominate regional policy debates. Many people living in rural areas are developing innovative ways to capture economic benefits from recreation, wilderness, and tourism.

As shown in Table 2.J below, employment continued to increase in 2016 with 55,959 private employers — up 4,142 from 2006. Private employers provided 572,341 jobs, 21,461 more than in 2015 and 39,725 more than 2006. The growth occurred in all sectors except information services. The largest growth was in the professional and business services sector with more than 5,200 jobs. Leisure and hospitality, construction and educational heath services, each had an increase of more then 3,000 jobs.

The average 2016 private wage was $39,650, an increase of only $806 from 2015 but an increase $7,022 from 2006. The largest increase was in the information and financial activities sectors at 4 percent, or more than $2,000. Manufacturing were the only sector to report a decrease, $160, or 0.3 percent, Mining continued to have the highest wage at $71,6652. Leisure and hospitality continued to have the lowest average wage at $15,797. Over the decade, all industries have experienced an increase in the average wage from 40.7 percent in mining to 19.5 percent in government.

Idaho's 2016 per capita income increased for the seventh year following a drop in 2009. The 2016 increase brought Idaho's per capita income to a record high $39,470. Idaho's per capita income was 80 percent of the national average and ranks 45th in the United States.

Table 2.J. Employment and Wage Trends (2006-2016)

Covered Employment & Average Annual Wages Per Job for 2006, 2015 & 2016	2006		2015		2016	
	Average Employment	Average Wages	Average Employment	Average Wages	Average Employment	Average Wages
Total Covered Wages	643,272	$32,628	664,735	$38,844	687,944	$39,650
Agriculture	21,747	$25,108	24,349	$32,791	24,600	$34,043
Mining	2,363	$50,915	2,328	$70,333	2,366	$71,652
Construction	52,144	$33,599	36,187	$39,982	39,459	$41,607
Manufacturing	65,949	$45,279	61,577	$55,408	63,765	$55,248
Trade, Utilities and Transportation	126,357	$30,195	133,173	$36,895	134,789	$37,641
Information	10,591	$38,199	9,176	$47,055	8,999	$49,146
Financial Activities	29,817	$40,003	28,862	$50,262	29,910	$52,478
Professional and Business Services	81,507	$39,279	79,265	$45,336	84,506	$45,895
Educational and Health Services	67,005	$32,060	91,919	$39,487	94,952	$40,751

Leisure and Hospitality	59,552	$12,584	67,791	$15,271	71,677	$15,797
Other Services	15,584	$22,626	16,554	$27,528	17,319	$28,578
Government	110,655	$33,616	113,555	$39,541	115,603	$40,178

Source: Idaho Dept. of Labor 2018

Idaho's labor force grew 9 percent from 2006 to 2016 to 814,571. The unemployment rate dropped for the sixth year to 3.8 percent. Unemployment increased monthly from March 2008 through March 2009 with a small decrease in April then again increasing through June 2009 when it peaked at 73,749. Since May 2007, when unemployment was at it lowest during this period, the number of unemployed nearly tripled while workers with jobs began falling in August 2007 and continued dropping through March 2013. The largest employment drop occurred between November and December 2008 at 3,870. In May 2009 the number unemployed increased 13,176, the largest recorded, coupled with a loss of 1,829 employed resulting in the labor force expanding even as the jobless rate hit near-record highs. Since September 2009, the number of unemployed declined and the number employed increased with a few minor exceptions. After rebounding from the 2001 recession, the unemployment rate hit a record low 2.9 percent in March 2009. The 9.7 percent rate in mid-2009 was short of the record 10.2 percent in December 1982.

Nonfarm job growth came to an abrupt halt in 2008. After yearly increases in excess of 2 percent since 2004, nonfarm jobs began falling for the first time since 1986. In 2010 nonfarm jobs dropped to 603,600, the lowest level since 2004 when it was just over 587,900. The annual average loss of nearly 39,000 jobs in 2009 spanned all sectors of the economy except education and health care. In 2011 nonfarm jobs were once again on the increase with an additional 7,200. In 2012 the growth continued with an additional 11,500 jobs. By 2015 the job growth was at 19,400 bringing the total number of jobs to 673,900. The largest increase in jobs was in trade and leisure & hospitality, each adding 3,000. Construction added 2,700 jobs. The information and natural resources & mining sectors remained unchanged.(Idaho Department of Labor 2018)

The associated influx of visitors to the state presents new emergency management challenges and planning concerns related to hazard vulnerability. Often, tourists are more vulnerable to disasters due to unfamiliarity with the area including evacuation routes and local communication outlets such as radio, television or newspaper. Additionally, high staff turnover in the service industry can reduce overall community preparedness for disasters.

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