

## Chapter 2

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# Manifest Destiny and the Growth of America: Cheap Energy and Spending Natural Capital

Manifest Destiny is the *sine qua non* of American history. At one time almost every American child was toilet trained on this idea of inevitable expansion of European settlement to blanket the continent. In 1833, the author Horace Greeley is reputed to have said “Go west young man.”<sup>1</sup> He expressed the widespread feeling at the time that America was a land of limitless possibilities, that if a person worked hard, especially on the fertile lands of the west (referring to the land of the Ohio Valley and the Midwest) he or she could succeed and prosper.

Indeed, in the late eighteenth century, the central part of the North American continent that would ultimately become the U.S. was a land of practically unlimited resources and possibilities. At the time, the population of non-Native Americans was still largely confined to the east coast, and Jefferson’s Lewis and Clark expedition had yet to happen. But after the Louisiana Purchase, the young nation more than doubled in size. Settlers moved west over the Appalachian Mountains to “claim” lands in the Ohio Valley. Flatboats floated down the river to New Orleans. Reports reached the east of vast stands of old growth forests, fertile prairies, mighty rivers, and abundant wildlife. It was all there for the taking, and take it they did.

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<sup>1</sup> Greeley’s actual advice to “any young man” was “Go to the West: there your capabilities are sure to be appreciated and your energy and industry rewarded.” Williams, Robert C. 2006. *Horace Greeley: Champion of American Freedom* (Kindle ed.). New York University Press.

Greeley's words reflected the then popular idea of manifest destiny<sup>2</sup>; Americans were inevitably destined to expand over the continent. Manifest destiny incorporated several beliefs of the time, including that Americans of European descent and their institutions had special virtues, they had a mission to spread these virtues and institutions across the continent, and they had a destiny under a special providence from God to do so. All of this was independent of whether or not the region was already fairly densely populated with Native Americans who had to be killed or displaced for manifest destiny to take place.<sup>2</sup> This idea was a mostly unchallenged component of the social studies curriculum in the US well into the latter half of the twentieth century.

The history of the expansion across North America is bound up in many of our folk tales, songs, and music. Daniel Boone, Davy Crockett, flatboats and steamboats on the Mississippi, the Alamo, wagon trains going west on the Oregon and Santa Fe trails, circling the wagons, the California gold rush, the taming of the west, the Golden Gate; all these contribute to a central theme of our national ethic.

But the idea of manifest destiny was conflicted from the beginning. It was popular during the first half of the nineteenth century when there was growing conflict over slavery and whether it would spread west. Of course there were people there already, Native Americans who had lived on the land for thousands of years and who felt it was theirs. Their communal land ethic was different from the pioneers. They were pushed aside, killed, decimated by disease, and their land largely taken. As the Lakota chief Red Cloud said, "they made promises, more than I can remember. But they never kept but one. They promised to take our land and they took it."<sup>3</sup> Nowadays, there is recognition of the wrongs done to Native Americans, most of which is sincere in spite of a continuing sense of the inevitability of these events. But at the time, the feeling was that most of the continent was sparsely populated and there for the taking if only you were willing to work hard enough.

There is no doubt that the national narrative of America at the time had much to do with the westward expansion. The settlers encountered a land incredibly rich in unexploited natural resources. Vast stands of old growth forests, fertile prairies, rich soils, alluvial plains, abundant wildlife, and rich fisheries awaited them. A network of rivers in the Ohio, Tennessee, and Mississippi valleys provided avenues for waterborne commerce. These rich resources fueled the westward expansion. In the second

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<sup>2</sup> Merk, Frederick; Bannister, Lois. 1963. *Manifest destiny and Mission in American History*. Harvard University Press.

<sup>3</sup> <http://www.impurplehawk.com/quotes.html>.

half of the nineteenth and early twentieth centuries, the burgeoning industrial revolution fueled by coal, oil, and natural gas impelled the expansion forward at an even greater pace.

As the country spread across the continent, it prospered from this abundance. Some areas prospered before others, and there are still large areas in the west where few people live. San Francisco, with access to huge resources through easy ship-based trade, for example, flourished beginning in the middle of the nineteenth century whereas much of Arizona remained sparsely populated until well into the twentieth century. By the second half of the twentieth century, the U.S. had become the richest and most powerful country in the world. A key to understanding the expansion of the U.S. is the enormous amount of natural resources that fed and sustained that growth. These included plentiful water resources in the east, rich natural ecosystems including especially excellent soils located where rain fell reliably, and abundant coal and oil. We don't downplay the importance of human persistence and ingenuity, but natural resources and services were a prerequisite for prosperity and power.

In this chapter, we outline the growth of the United States from the late eighteenth to the early twenty-first centuries with a look at how factors such as natural resources, climate, emerging technology, and energy availability underwrote the country's expansion. In Chap. 4, we will visit 12 characteristic cities and ten regions and show how these iconic examples, including New York, Asheville, Orlando, New Orleans, Houston, Las Vegas, Los Angeles, and Portland developed, and some of the factors that affected their growth. So climb into your wagons, ladies and gentlemen, and get ready for a wild and interesting ride. We are getting ready to travel from sea to shining sea.

## **Historic Settlement Patterns in the United States**

In North America early settlement patterns depended upon areas offering abundant water as rain and in rivers and lakes, including the cheap transportation these resources allowed. Populations initially congregated primarily along rivers and in coastal areas containing abundant and essential natural resources. This abundance provided materials and energy for the production of food, shelter, clothing and tools. Many present day large cities grew into major urban centers as a result of the natural advantages provided by the local environment in pre-industrial times. Later cheap fossil fuels facilitated further and sometimes explosive growth in these resource-rich areas, as well as the development of non-water based

transportation systems that played a large part in the growth of urban environments in resource-poor locales. For this reason, energy is sometimes referred to as the “master resource,” a topic we will come back to later in the book.

The trend of settling near coasts and along river floodplains and lakes goes back thousands of years prior to European settlement. Some of the largest Native American settlements in the U.S. prior to the arrival of Europeans were located in the Ohio and Mississippi river valleys. Evidence of their cultures and longstanding civilizations dot the landscape throughout these regions in the form of ancient mound formations that still exist today in places like Fort Ancient, Ohio and Poverty Point, Louisiana (recently declared a UNESCO World Heritage Site). Large populations of Native Americans also inhabited the Great Lakes Region and the Northwest. Seasonal floods along the major river valleys maintained fertile soils for agriculture. Lakes and streams provided water sources for game animals and habitat for fish. Coastal areas supplied an abundance of seafood. Settlements on rivers, lakes, and coastal areas also benefited from natural water-based trade routes. Our movie and television view of Native Americans living in the dry and relatively resource-poor West reflects later distributions after most of these tribes were pushed off their lands in the eastern and central U.S. and as the horse (initially from Europe) allowed greater exploitation of the bison.

Early European settlers utilized the wealth of natural resources in areas such as Chesapeake Bay, the Mississippi delta, and other coastal areas that provided easy access to coastal transportation corridors and avenues for entry into the interior of the continent. Settlements such as Jamestown, Boston, New York, Charleston, Savannah, St. Augustine, and New Orleans are but a few of these early settlements located near resource rich coastal ecosystems. In western North America, the north bound Spanish moving from Mexico settled San Juan de los Caballeros near the confluence of the Chama River and the Rio Grande, just north of present day Santa Fe, while others remained closer to the coastal margins in areas such as San Francisco Bay. Meanwhile, the Dutch settled New Amsterdam at the southern tip of Manhattan Island, the English settled in numerous locations along the Atlantic seaboard, and the French settled in the Great Lakes region near present day Detroit, and further south along the Mississippi River in St. Louis, Baton Rouge, and New Orleans. French settlements were also established in the fertile wetlands of Acadiana country in southwest Louisiana and along the Gulf Coast in Mobile and Biloxi.

Waterways served as natural trade corridors for early settlers. Interior settlements of the early colonial period often began as trading outposts that relied on the traffic of traders in fur and other useful products.

A trading outpost was a meeting place for the exchange of goods and information along trade routes. Different ecosystems provided resources to the growing population of settlers allowing for the establishment of a vibrant commercial culture. Traders marketed fur, meat, vegetables, grains, and wood. However, outposts often had the dual purpose of serving as a fort with military garrisons, while also housing tradespeople such as blacksmiths, and mills to process grains or other raw materials. In addition, many coastal areas were especially rich in food resources.

## Trends in Urbanization and the Emerging Mega Regions in Population

Trends in urbanization over the past two centuries reflect such things as transportation modes, natural resources, emerging markets, and the growing availability of cheap fossil fuels beginning in the second half of the nineteenth century. In 1800, after the Revolutionary War and the signing of the Constitution, the ten largest cities were located along the east coast (see Table 2.1). These included New York, Philadelphia, Baltimore, Boston, Charleston, Northern Liberties (PA), Southwark (PA), Salem (MA), Providence, and Norfolk. The cities of Northern Liberties and Southwark are now neighborhoods in Philadelphia. If these latter two are included with Philadelphia, it was the largest city in 1800. No city had more than

**Table 2.1** Ten largest cities in the U.S. from 1800 to 2000

Date/ rank	1800	1850	1900	1950	2000
1	New York	New York	New York	New York	New York
2	Philadelphia	Baltimore	Chicago	Chicago	Los Angeles
3	Baltimore	Boston	Philadelphia	Philadelphia	Chicago
4	Boston	Philadelphia	St. Louis	Los Angeles	Houston
5	Charleston	New Orleans	Boston	Detroit	Philadelphia
6	Northern Liberties (PA)	Cincinnati	Baltimore	Baltimore	Phoenix
7	Southwark (PA)	Brooklyn	Cleveland	Cleveland	San Diego
8	Salem (MA)	St. Louis	Buffalo	St. Louis	Dallas
9	Providence	Spring Garden (PA)	San Francisco	Washington	San Antonio
10	Norfolk	Albany (NY)	Cincinnati	Boston	Detroit

Note that in 1800, all of the largest cities were coastal

Note: 1800: Northern Liberties and Southwark are now part of Philadelphia

1850: Brooklyn now part of NYC and Spring Garden is part of Philadelphia

New Orleans was not part of U.S. before the Louisiana Purchase in 1803

100,000 people. New York City had a population of 60,515 and Philadelphia, along with its two neighborhoods, had 61,559.

By 1850, two trends are evident. There were high growth rates in a number of cities, and the population was spreading west away from the coast. New York was the largest city, having grown to over 515,000. The next five out of the ten largest cities in 1850 were Baltimore, Boston, Philadelphia, New Orleans, and Cincinnati, all of which had populations greater than 100,000. The final four were Brooklyn, St. Louis, Spring Garden (PA), and Albany, NY. Brooklyn is now part of New York City and Spring Garden is part of Philadelphia.

Four of the largest cities were not along the east coast. Settlers had moved west of the Appalachian Mountains and settled in the Mississippi River basin. Albany is on the Hudson River while New Orleans, Cincinnati, and St. Louis are on the Mississippi and Ohio rivers. By this time, the industrial revolution had begun in earnest. New York, Boston, Baltimore, New Orleans, St. Louis and Cincinnati were all important ports. All of these cities were located on the coast and along rivers where trade was important and their hinterlands were rich natural environments. New Jersey, across the Hudson River from New York and the Schuylkill River from Philadelphia, still proudly wears the official state slogan of the "The Garden State," reflecting its rich agricultural heritage.

In 1900, more large cities were located west of the Appalachians and three cities had more than a million inhabitants (New York, Chicago, and Philadelphia). In order, the top ten cities were New York (with a population over 3.4 million), Chicago, Philadelphia, St. Louis, Boston, Baltimore, Cleveland, Buffalo, San Francisco, and Cincinnati. Chicago owes its rise to second place both to its location as a trade nexus and to the great agricultural expansion in the fertile soils of the Midwest. New Orleans was no longer a part of the top 10 as trade along the Mississippi River was supplemented by freight trains. For the first time, the list of the top ten cities includes San Francisco on the west coast; it first made the top ten in 1870. By 1900, the industrial revolution was well underway and cheap fossil fuels were beginning to transform society. All of the largest cities, however, continued to be located in resource-rich natural environments.

By 1950, however, a number of additional trends become evident. Several cities peaked in population and began to decline. This transition is associated with the growth of suburbs, the expanding Interstate highway system, and the ongoing westward shift of the population. The G.I. bill after World War II enabled veterans to purchase houses in the suburbs with low interest loans. The ten largest cities were New York, Chicago, Philadelphia, Los Angeles, Detroit, Baltimore, Cleveland, St. Louis, Washington, and Boston.

The top five cities each had more than one million people. New York was the largest with almost 7.9 million. Detroit's rapid growth as a major manufacturing hub was the result, first, of the overwhelming demand to supply cars to a population whose major transportation mode had shifted to the personal automobile and, second, access to the iron of Minnesota and coal of Pennsylvania. Low interest loans played an important role in the development of the car culture. Los Angeles was the fourth largest city in 1950 and is a prime example of how cheap fossil fuels allowed the growth of a city in an inhospitable desert environment. The motion picture *Chinatown* (1972) and the book *Cadillac Desert* (1993) describe the social, political, and economic climate surrounding the massive undertaking of appropriating scarce water resources to build the nation's most populous desert city.

By 2000, further major changes had taken place in U.S. population distribution. More than half of the largest cities were now west of the Mississippi, many in arid and semi-arid areas where the existence of large cities with high-rise buildings and large populations would not have been possible without cheap fossil fuels. New York remained the largest metropolitan area followed by Los Angeles, Chicago, Houston, Philadelphia, Phoenix, San Diego, Dallas, San Antonio, and Detroit. San Jose replaced rust belt Detroit by 2010. The growth of Houston and Dallas reflected the importance of Texas for oil and gas, refining, and petrochemicals as well as the importance of Houston as a major port. Cheap fossil fuels brought roads, airports, and perhaps most importantly, water to the west that allowed cities to grow. The development of affordable air conditioning was instrumental in allowing urban expansion in the hot climates in the south and southwest.

Growing populations of retirees in the sunbelt climates of Florida and Arizona, which are desirable in the winter but often brutally hot without air conditioning in the summer, also played a role in the emergence of large petroleum-based metropolises. Phoenix and cities in the Florida peninsula are major metropolises that have, at least in part, benefitted from the seasonal migration of "snowbirds". Just like real birds, this portion of the populace migrates to the southern climates during the winter months to avoid the harsher winters of northern locales. Snowbirds travel hundreds of miles to reside in second homes that often go uninhabited for the other months of the year. In the Rio Grande Valley of south Texas these snowbirds are called Winter Texans. They more than double the population of some cities in the Valley. There is an active and light-hearted debate as to whether the arrival of Winter Texans raises or lowers the average I.Q. of the Valley. These seasonal populations bring with them disposable income that fuels tourism-dependent economies.

Let's pause for a moment and consider the trends we are discussing and how they influenced the population spreading across the continent. First, until the beginning of the twentieth century, cities like New York, Albany, Chicago, and New Orleans grew up in resource-rich areas and along waterways that provided food and fiber and convenient trade routes. Second, the climate of all of these early cities was moist, providing water for the cities and for agriculture and forestry to feed and fuel them. Finally, energy is a key element that fueled the growth of these cities. Early on, energy came from natural resources that provided food to feed the city inhabitants and wood for heating, cooking, and to fuel their machines. Falling water was another important energy source in these moist climates, powering mills to grind grain, saw wood and do other mechanical work. Many communities were established along the fall line that facilitated hydropower and was the limit of ocean going ships. With the coming of fossil fuels, cities spread into inhospitable environments, especially in the Southwest with the tremendous subsidy of these ancient fuels. Cheap fuels also allowed climate control and easy transportation that connected long distances in the west. Few thought about these fuels ever becoming scarce and expensive.

## The 11 Megaregions

The growth patterns described in the previous section led, by the end of the twentieth century, to the majority of the U.S. population becoming concentrated in 11 megaregions that are still growing rapidly according to population and employment statistics (Fig. 2.1).

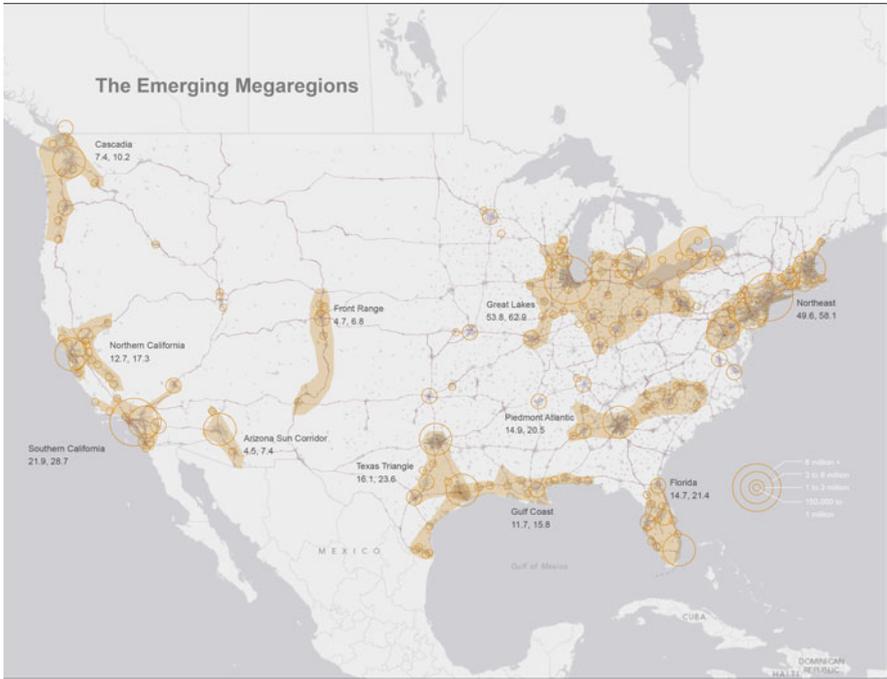
The sunbelt megaregions consist of regional concentrations of population in Florida, along the Gulf coast from Florida to Texas, the Arizona sun corridor, and southern California.

The most densely populated megaregion is the Northeast, which includes the megalopolis stretching from Washington D.C. to Boston. This megaregion is expected to increase from more than 49 million people in 2000 to over 58 million in 2025.

The Texas triangle megaregion is fueled by the energy sector-based economy of Houston, Dallas, and San Antonio.

The Great Lakes megaregion encompasses the major urban centers of the Midwest, including Chicago, St. Louis, Detroit and Cleveland, and is expected to contain over 62 million inhabitants by 2025.

Less populated megaregions exist out west along the Front Range of the Rocky Mountains near Denver, and in the Northern California megaregion situated around the San Francisco Bay Area.



**Fig. 2.1** The 11 megaregions of the United States where the majority of the population is located. The two numbers by each megaregion refer to the population in 2000 (left) and the projected population in 2025 (right) (Adapted from Regional Plan Association (RPA) 2008. The Emerging Megaregions. Published on America2050.org. Produced by the RPA)

The Cascadia megaregion is composed of the northwestern population hubs of Portland and Seattle extending north to Vancouver. The Piedmont Atlantic megaregion stretches east from Birmingham to Atlanta and north into the Carolinas.

Since 1790, the U.S. population has increased by a factor of nearly 100, growing from about 4 million to nearly 310 million in 2010. But population grew at a much greater rate in the twentieth century than in the nineteenth. The total population reached 50 million in 1880 and was over 100 million by 1920. It took another 50 years to reach 200 million individuals and approximately 36 years to add the next 100 million. The U.S. is projected to exceed 350 million by mid century.

To a considerable extent, population growth dynamics in the U.S. mirrored that of the globe. World population reached one billion about 1804, two billion in 1927, three billion in 1960, four billion in 1974, five billion in

1987, six billion in 1999, seven billion in 2011, and is projected to reach eight billion by about the middle of the next decade. Check out the population clock to watch the number of humans grow on the counter.<sup>4</sup>

As we saw in Chap. 1, the growth of cities followed an even faster trajectory. In 1800, less than 10 % of the world's population lived in cities and there was only one city with more than one million inhabitants (Beijing).<sup>5</sup> By 1900, 16 cities had more than one million and 13 % of world population lived in urban areas. The number of million plus cities grew to 74 (30 % of world population) in 1950 and over 450 by 2010 (over half the global population).<sup>6</sup> In 2015, there are almost 500 cities of more than a million. Thus growth is centered in urban areas facilitated by the social and economic opportunities of cities and fueled by increased energy use, which in turn allows accelerated exploitation of other essential resources to sustain these urban populations.<sup>7</sup> Growth initially occurred in the first world, but now is overwhelmingly in the developing world.

## The American Melting Pot

Changes in immigration policy have affected population and demographics since the early nineteenth century. The earliest records of immigration patterns show an annual increase in immigrants from the late 1840s until the Civil War years when the numbers declined from their peak of 400,000 per year. By 1880, immigrant numbers surpassed the pre-war high of 400,000 per year. More than 200,000 immigrants per year came into the country each year until the initiation of WWI. The period 1905–1914 contained 6 years when more than 1 million immigrants per year arrived in the U.S. Incoming immigrant numbers declined dramatically to less than 100,000/year in 1931 and stayed low until the post WWII years.

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<sup>4</sup> <http://www.census.gov/popclock/>.

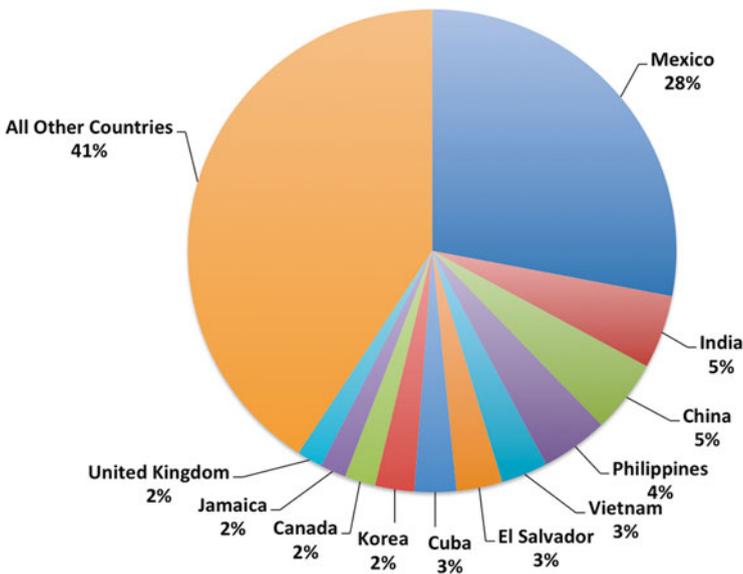
<sup>5</sup> Chandler, T. 1987. *Four thousand years of urban growth: an historical census*. St. David's University Press.

<sup>6</sup> <http://www.un.org/esa/population/publications/WUP2005/2005wup.htm>.

<sup>7</sup> Currently, more than half of the world's population lives in cities and as of May 2014, there were 463 cities of a million or more, the vast majority of them in the developing world. Tokyo was still the largest at 36.7 million, but the others in the top five were in developing countries (Delhi 22.2 million, Sao Paulo 20.3, Mumbai 20, and Mexico City 19.5). In 2010, China alone had 89 cities with more than one million people; India had 46, the U.S. 42, Brazil 21, and Mexico 12. So between 1800 and 2010, world population increased sevenfold, but the number of cities populated by over one million people increased by a factor of more than 450.

The majority of immigrants to the U.S. were from Europe up until 1965. The incoming immigrant population increased slowly from 1950 through the mid-1990s when it peaked around 1.8 million annually. It has since hovered between 800,000 and 1.3 million during the first decade of the twenty-first century. Since 1965, the majority of immigrants to the U.S. have been from Latin America and Asia.

The number of foreign-born U.S. residents has increased steadily over time and included approximately 40 million individuals as of 2010. These numbers do not include undocumented immigrants. Immigrants to the U.S. hail from a wide variety of different countries (Fig. 2.2). In 2006, Mexico made up the largest number of immigrants to the U.S. In that year, 31 % of all foreign-born immigrants hailed from south of the border. No other individual country contributed more than 4 % of the foreign-born total in 2006.



**Fig. 2.2** Countries with the largest populations in the United States as percentages of the total foreign-born population: 41,347,945 million in 2013. (Data Source: Migration Policy Institute tabulations of the U.S. Bureau of the Census, American Community Survey and Decennial Census. <http://www.migrationpolicy.org/data/state-profiles/state/demographics/US>)

## The Urban–Rural Imbalance

Current population distribution in the U.S. is heavily concentrated in the large metropolitan areas of the different megaregions. This has not always been the case. Less than 10 % of the population lived in cities until the middle of the nineteenth century, reflecting the concentration of jobs in agriculture. It was not until the first decade of the twentieth century that more people lived in urban than rural areas. In 2010, 55.7 million people lived in rural areas compared to approximately 259 million people (82 % of the total population) living in urban areas.<sup>8</sup>

The trend towards increased urbanization is expected to continue into the near future. By 2030, it is projected that 318 million people—or 87 % of a total population of 366 million—will live in urban areas. This distinction requires a rather precise definition. Urbanized areas are defined as having at least 1000 people per square mile, while urban clusters are areas with at least 500 people per square mile. Areas with population densities less than 500 people per square mile are considered rural. Greater than 80 % of the U.S. population now live in metro areas that occupy less than 20 % of the land area.<sup>9</sup> The suburbanization of the U.S. has contributed greatly to this trend during the latter half of the twentieth century.

Increasing industrialization and the introduction of new technology also enhanced the movement of people into cities. The availability of cheap energy, combined with the increasing affordability of the personal automobile and an ever-increasing consumption based on credit and debt, helped facilitate the suburban housing boom after the Second World War. The personal automobile and the modern mortgage loan were major factors leading to increased suburbanization. Dependence on public transportation was supplanted by the idea of freedom, comfort, and personal mobility that only a car could provide. No longer did railroads and streetcars dictate the worker's place of residence. The Federal Interstate Highway Act also encouraged and aided migration to the suburbs. Cheap gasoline combined with the suburban residences of the commuter class formed the basis of a large part of modern urban U.S. culture. Cheap liquid fuels also allowed the shipment of cheap food to cities. The post WWII consumer culture of the U.S. tended to glorify the urban (and especially suburban) at the expense of the rural. A wider variety of goods and services are available in

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<sup>8</sup> U. N. DESA. 2012. *World Urbanization Prospects, the 2011 Revision*. New York: United Nations Department of Economic and Social Affairs of the United Nations Secretariat, New York.

<sup>9</sup> U.S. Census Bureau 2010. <https://www.census.gov/geo/reference/ua/urban-rural-2010.html>.

urban areas. Rural areas traditionally contained locally owned businesses that have since been supplanted by strip malls and national chain stores. Underwriting this great transition was the abundance of cheap energy, mainly in the form of fossil fuels.

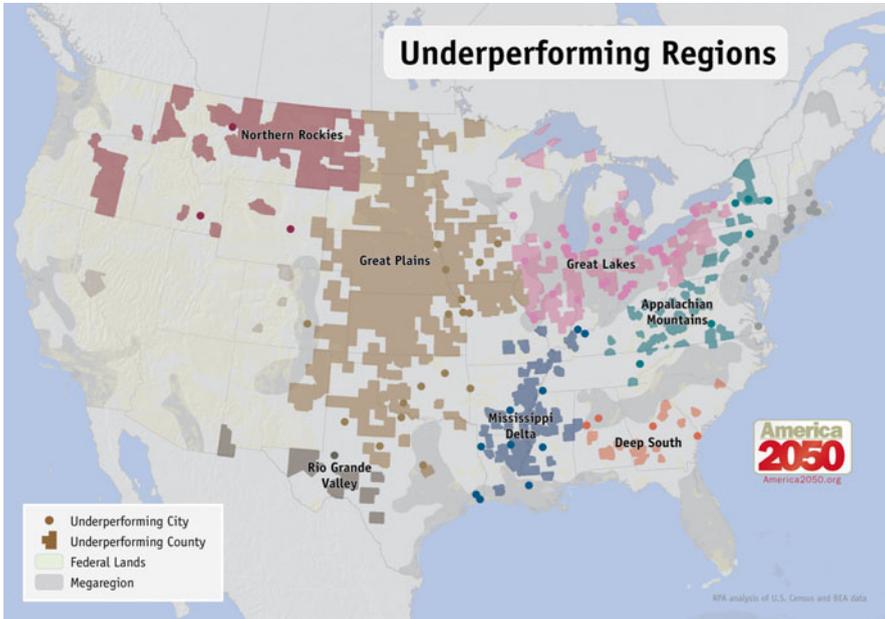
The economies of rural areas are generally based on primary sector economic activities such as agriculture and forestry, fisheries, and mining, including oil and gas extraction. Tourism and retirees also support some rural areas. By contrast, the economies of urban areas tend to be based on secondary and tertiary economic activities such as manufacturing, information, and human services, much of which is dependent on a college-educated workforce. But in the U.S., the economy has shifted away from manufacturing and towards the tertiary and quaternary sectors such as the human services and information sectors, including hospitality, information-based activities like communications and education, and financial services.

This increasing reliance upon the tertiary and quaternary sectors relates to the trend of increasing urbanization and globalization. But this shift in economic activity does not decrease the population's reliance on the raw materials provided by the primary sectors of the economy. Rural areas tend to provide low wages compared to urban areas as technology has supplanted much human labor. Most primary sector jobs do not include an abundance of highly skilled, high wage jobs. Poverty rates in rural natural resource-rich environments are often high where a few landowners tend to control the property and goods produced on these large landholdings. Resident worker populations have little opportunity for economic advancement, and there tends to be less disposable income in rural versus urban areas.

Increasing mechanization of production in the primary and secondary sectors has also shifted the labor force requirements from human-based labor to fossil fuel-based machinery. In addition, the increase in global trade has shifted manufacturing jobs to low-wage developing countries.

Paradoxically, areas rich in natural resources tend to be areas with elevated poverty rates today. This phenomenon is sometimes known as the resource curse or the paradox of plenty. The resource curse concept is evident in the international arena where developing countries that are rich in natural resources or minerals (including agriculture, forestry, fisheries, and mining—especially fossil fuels), tend to be controlled by a few wealthy individuals who profit most by servicing export markets in developed countries. The result is that the country as a whole often remains financially poor and stratified socially.

Perhaps surprisingly, this concept can also be applied to states and counties in the U.S. that are classified as “underperforming” (Fig. 2.3).



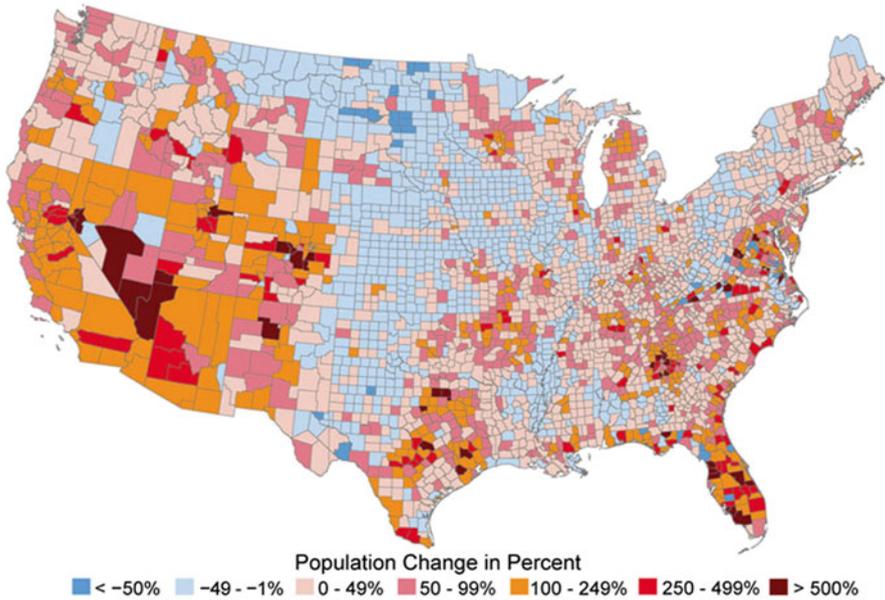
**Fig. 2.3** Underperforming regions of the United States by county. These are regions that have not kept pace with national trends over the last three decades in terms of population, employment, and wages. (Figure produced by Regional Plan Association, America 2050: [http://www.america2050.org/images/2050\\_Map\\_Underperforming\\_Regions\\_150.png](http://www.america2050.org/images/2050_Map_Underperforming_Regions_150.png))

Underperforming regions are those that have not kept pace with national trends over the last three decades in terms of population, employment, and wages. These regions tend to be in agricultural and resource-dependent rural regions, as well as former industrial (manufacturing) regions.<sup>10</sup>

The majority of “underperforming” regions of the country are rural, and in the Midwest and Northeast “Rust Belt”, the south, the plains, and the northern Rockies. The America 2050 report goes on to say:

With the exception of the Great Lakes Megaregion, the identified underperforming counties are overwhelmingly located outside of the megaregions. Most of the 640 underperforming counties are rural counties far from metropolitan centers. Of the 79 identified counties located in one of the 11 megaregions, 75 are in the Great Lakes megaregion. These seventy five counties account for nearly 6 million of the 13.4 million total residents in the underperforming counties.

<sup>10</sup> Hagler Y., Yaro R.D., and Ronderos L.N. 2009. *New Strategies for Regional Economic Development*. America 2050 Research Seminar Discussion Papers and Summary. Healdsburg, California – March 29–31, 2009.



**Fig. 2.4** Percent change in population by county from 1970 to 2008. Many of the areas losing population are the same as the underperforming regions. The regions with the highest growth rates such as the southwest and gulf coast are warmer and require air conditioning. Figure from NOAA and The Census Bureau: <https://www.climate.gov/news-features/features/will-hurricanes-change-world-warms>

As mentioned in the America 2050 report, many of the areas that are losing population (Fig. 2.4) are the same areas where basic economic activities take place that convert energy and materials of the biosphere (soil, trees, fish, minerals, buried fossil fuels) into products (agricultural products, wood, metal ores, gasoline, natural gas, and coal) that form the base of the economy. In addition, secondary economic sector manufacturing-based economies in the Rust Belt and in the Great Lakes region often underperform as well. This is partially the result of machines replacing human labor, as well as the outsourcing of jobs to lower wage foreign countries. On the contrary, some of these regions are attractive as an escape from industrialization and urbanization, such as for retirees.

The economy in the U.S. is highly dependent on resource consumption and the services associated with consumptive behavior.<sup>11</sup> However, this consumption is itself dependent on the labor of a relatively small percentage of the population who work in the primary sector that provides basic resources to the economy (food, forest products, minerals, energy). People have been departing rural areas throughout the twenti-

<sup>11</sup> Burger et al. 2012. The Macroecology of Sustainability. *PLOS Biology*, 10 (6), 1–7.

eth century both as a result of mechanization of agriculture and better opportunities in urban areas. The only time since 1900 that this trend was reversed was during the Great Depression, when job opportunities in urban areas plummeted.<sup>12</sup> Later in the book, we discuss trends in the economy, climate, and energy that may again challenge urban living and portend a new return to rural areas.

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<sup>12</sup>Source: US Census Bureau 1990 and 2000. Urban/Rural Census Data 1900 to 2000, Online at: <http://www.wsdot.wa.gov/planning/wtp/datalibrary/population/PopGrowthSMSA.htm>.



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