

Chapter 5.2. Demographic Trends in Northeastern California

David Flores and Gregory Russell¹

The anticipated changes in human populations, natural ecosystems, and the global climate are expected to impact public lands management. Land use is expected to shift due to altered productivity of local ecosystems, to overall increased human population, and to the changing market interests and cultural values. In rural areas, these demographic trends may result in the expansion of the wildland urban interface into previously undeveloped areas for amenity communities, and conversely, to departure from communities dependent on natural resource-supported economies. A recent science synthesis on climate emphasizes the importance of human responses to future opportunities and constraints:

The ability of communities with resource-based economies to adapt to climate change is linked to their direct exposure to these changes, as well as to the social and institutional structures present in each environment. Human communities that have diverse economies and are resilient to change today will also be better prepared for future climatic stresses, especially if they implement adaptation strategies soon (Vose et al. 2012, p. vi).

Whether about climate impacts or other sources of change, strategies of adaptation are common themes in recent science syntheses and in the experience of economic transition in the area including the Lassen and Modoc National Forests (hereafter the Lassen, the Modoc, or the Lassen-Modoc), in which service and government sector employment has expanded. Local communities near the Lassen and the Modoc have requested information regarding projected local and regional demographic trends and how State and Federal prison populations influence demographic representations in the Lassen-Modoc area. Given existing scientific peer review literature, the

following section approaches this request from a more general level. The guiding questions are:

- What are the current population trends across the Lassen-Modoc, including population trends in rural communities?
- What is the impact of prisons on rural communities?

The literature in this chapter is beyond the field of natural resources and predominantly draws from the field of political science. The section begins with an overview of current demographics, followed by projected population change in rural communities, the impact of prisons on rural communities, and ends with Federal considerations of prison populations.

Overview of Current Demographics

We attempt to orient the Lassen-Modoc stakeholders to their demographic context by responding to the following requests:

- What are the current population trends across the Lassen-Modoc, including regional population trends?
- What are the impacts on rural areas by large metropolitan cities, such as Reno, NV?

Population Shifts in Number and in Composition

The areas of Lassen and Modoc Counties cover 4,720 and 4,203 square miles (12,225 and 10,886 km²) respectively, with an average population density of approximately two people per square mile in Modoc County, and seven people per square mile in Lassen County. Like many rural counties throughout the United States, Lassen and Modoc Counties have experienced gradual population declines since 2010 (fig. 5.2.1).

In contrast to the decreasing population in Lassen and Modoc Counties, the other counties included in the Sierra Nevada Science Synthesis have experienced population growth and settlement due to an influx of seasonal and year-round residents who are drawn to the area by its unique features and amenities (Loeffler and Steinicke 2007). Population projections for 2050 in the 12-county area of the Sierra Nevada region show an anticipated increase of 48.5 percent (State of California, Department of Finance 2012). In contrast, the total populations of Lassen and Modoc Counties are projected to decline by 19.9% and 10.7%, respectively.

¹David Flores is a research social scientist, U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station, 240 West Prospect, Fort Collins, CO 80526; Gregory Russell is a PhD candidate, Department of Journalism and Media Communications, Colorado State University, Fort Collins, CO 80523.

Citation: Flores, D.; Russell, G. 2020. Demographic trends in Northeastern California. In: Dumroese, R.K.; Moser, W.K., eds. Northeastern California plateaus bioregion science synthesis. Gen. Tech. Rep. RMRS-GTR-409. Fort Collins, CO: U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station: 133–142.

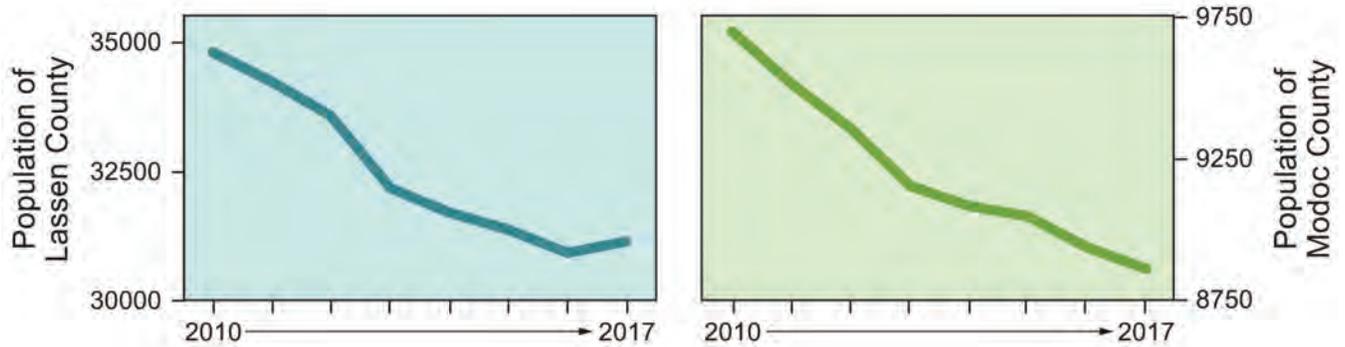


Figure 5.2.1—Population estimates for 2010 to 2017 for Lassen and Modoc Counties, CA, show a steady, gradual decline. U.S. Census Bureau data as of 1 July 2018 (<https://data.census.gov>).

While counties in the Sierra Nevada Science Synthesis area are expected to experience significant increases in diversity of racial and ethnic composition between 2010 and 2050, Lassen County is expected to experience population declines across groups identified by census data as White, Asian, Black, Native Pacific Islander, and Native American groups (State of California, Department of Finance 2012). Meanwhile, the population of people who identify as Hispanic or multiracial is expected to gradually increase. Modoc County is expected to experience a gradual decline in the population of residents who identify as White and maintain a relatively steady population of people who identify as Asian, Black, Native Pacific Islander, and Native American. Finally, the number of people who identify as Hispanic or multiracial in Modoc County is expected to gradually increase (State of California, Department of Finance 2012).

The Sierra Nevada Science Synthesis Chapter 9.1, *Broader Context for Social, Economic, and Cultural Components* (Winter et al. 2014, pp. 501–541) offers several research suggestions on how to engage and communicate with diverse communities in forest planning. More recently, Chapter 10 of Charnley et al. (2018) found in Spies et al. (2018) addresses environmental justice, low-income, and minority populations, and forest management in the Northwest Forest Plan Area.

Impacts of Metropolitan Areas on Rural Areas

Urbanization includes not only urban ecosystems (Bolund and Hunhammar 1999), but the local cultural benefits they provide (Sander et al. 2010). Urban ecosystems are also “often of poorer quality than their rural equivalents” (Bolund and Hunhammar 1999, p. 299). Urbanization can shift demographic populations (Kahn 2002), impact surrounding native ecosystems (Heckmann et al. 2008),

contribute to land-use change, pollution, and watershed stresses that impact rural landscapes.

According to Bolund and Hunhammar (1999), urban ecosystems include “street trees, lawns/parks, urban forests, cultivated land, wetlands, lakes/sea, and streams” (p. 294). Ecosystem services for urban areas are often generated in rural areas surrounding the city. Yet, the increase of local produced urban ecosystems could increase efficiency as well as “contribute to public health and increase the quality-of-life of urban citizens” (p. 294). For example, the planting of urban trees could improve the quality of air, and soft ground cover and vegetation could help reduce the level of noise pollution. Additionally, urban forests or urban tree cover may “enhance social, economic, and environmental conditions in urban environments” (Sander et al. 2010, p. 1655) specific to home ownership and dwelling.

Moreover, the development of urban areas can influence demographic trends (Kahn 2002). According to Kahn (2002), examples of demographic trends include: the aging of the baby boomer community, an increase in educational attainment, and a rise in minority populations. These demographic population changes can result in new median voters, impacting decisions surrounding myriad issues (e.g., public policy, health, social security, environmentalism, education, housing, economy, urbanization, and so forth).

Lastly, urbanization can have “ecologically significant and lasting effects on native ecosystems” (Heckmann et al. 2008). They found that as urbanization sprawls to include surrounding rural forested areas, rural populations are affected. For example, the Lake Tahoe Basin in the Central Sierra Nevada region has witnessed significant urban

development. While urbanization of the area has increased tourism, recreation, and residential populations, it has also resulted in “reduced ecological integrity and vulnerability of remnant forests in this urbanizing landscape” (p. 2454).

If metropolitan areas grow into megapolitan subregions as anticipated, the Sacramento area south of the Lassen-Modoc is anticipated to increase by more than 40 percent between 2000 and 2030, expanding eastward to the Nevada State line, that is, to Reno and at a growth rate greater than that of Reno. Such urban systems may stress watersheds with both source-water demands from rural areas and storm-water outputs to them. Overall, it is likely that as urbanizing regions attempt to adjust to change, they may “place added stress on rural and wildland ecosystems that are connected to cities due to greater resource exploitation” (Grimm et al. 2008, p. 270). It is also important to note that more than 50 years of environmental protection efforts in the Lake Tahoe Basin, however, have retained “thousands of parcels of remnant native forest located throughout the urbanizing landscape” (Heckman et al. 2008, p. 2453), perhaps laying both ecological buffers and institutional precedents against urban impacts from Reno upon Lassen-Modoc ecosystem services.

Population Change in Rural Communities

In addition to the demographic trends requested, the Lassen-Modoc community members have asked:

- How do population increases and decreases affect rural communities in general?
- How might these demographic trends impact policy and decisionmaking?

Rural Population Change

In rural forested areas in California, Ferranto et al. (2011, 2012) found landownership was quickly moving away from larger properties owned by the few, such as agriculture land owned by ranchers and farmers, toward smaller parcels owned by the many, such as vacation or second homes owned by “in-migrants” (Ferranto et al. 2011, p. 184) or urban populations moving to rural areas. As new landowners are moving to rural areas, “changes in social values and demographic characteristics” (Ferranto et al. 2011, p. 184) have surfaced. For example, “new landowners often have less experience with vegetation management than traditional foresters and ranchers, and a greater focus on recreational and residential qualities” (Ferranto et al. 2012, p. 132). By contrast, others have

found that rural forest living “contributes to environmental stewardship” and that rural population size and forest cover are positively correlated (Clement et al. 2015).

Research has shown that local jurisdictions that have restrictive land-use regulations are critical in slowing the rate of relative density gains in population (Kim et al. 2013). These regulations affect incoming rural populations, which are far from heterogeneous, and middle-aged urban citizens who are looking to gentrify while Fitchen (1995) details the immigration of the urban poor to rural areas. Such demographic discrepancies could be a consequence of small area populations being comprised of incomers who have experienced different types of migration (urbanization, lateral migration, or counter-urbanization) (Mitchell 2004).

As Lichter (2012) notes, “Ethnoracial change is central to virtually every aspect of rural America over the foreseeable future: agro-food systems, community life, labor force change, economic development, schools and schooling, demographic change, intergroup relations, and politics” (p. 3). With the racial makeup of rural communities changing, socioeconomic trends are changing as well. Considerations such as changes in family structure exacerbating economic inequality along racial lines, single motherhood decreasing intergenerational economic mobility, and gender inequality increasing from women bearing the financial brunt of raising children can be given new scrutiny as racial demographics in rural areas shift (McLanahan and Percheski 2008).

Because Lassen and Modoc Counties are expected to see a slight increase in Hispanic or multiracial populations, it is helpful to examine potential reasons for this demographic trend and how this trend may influence decision making. One possible explanation as to why Hispanic or multiracial populations may be gradually increasing in these counties may include land use in these areas. For example, agricultural activity is high in both Lassen and Modoc Counties (Lassen County Crop and Livestock Report 2015; Modoc County, California Local Hazard Mitigation Plan Update 2016). Moreover, the increase in Hispanic populations “may be explained by evidence that half of farm laborers and supervisors in the U.S. are Hispanic (ERS 2012)” (Charnley et al. 2018, p. 812).

Impact of Demographic Trends on Policies in Rural Areas

Specific to Lassen and Modoc Counties, the slow increase

in Hispanic or multiracial populations may influence decision making surrounding forested land, including an increased support for environmental regulation. For example, within California, Kahn (2001) argued that Hispanics have been exposed to considerably more air pollution than other racial groups, specifically whites or blacks. In California from 1970 to 1990, as demographic trends shifted toward an increase in minorities, there was more public support for environmental regulation, particularly among black and Hispanic communities who were “consistently pro-environment” (Kahn 2002, p. 54).

Because baby-boomers tended to migrate toward urban areas, leading to a decline in rural employment, they are less likely to have direct ties with the land (Marcin 1993). Estimates of land-use change under different *policy* scenarios in the United States from 2001 through 2051 have indicated that urban areas will increase with population increase; cropland and rangeland will decrease; pasture will shift; and surprisingly, forested areas would increase overall. Throughout the United States “developed land area of the U.S. increased by 14.2 million hectares [35 million acres] between 1982 and 2003. Along with a projected U.S. population increase to more than 360 million individuals by 2030 is an expected continuation of expanding rural land development” (White et al. 2009, p. 37). With the acquisition of greater wealth, smaller families, and diverse families without children, more second homes are being purchased in rural lands, causing increased conflicts in land use and commodity production (Marcin 1993). The South Central and Great Plains regions of the United States experienced the greatest numbers of hectares of newly developed land per additional housing unit while the Pacific Coast and Rocky Mountains experienced the least (White et al. 2009).

However, as Brown et al. (2005) note, “(b)y 2000, the area of low-density, exurban development beyond the urban fringe occupied nearly 15 times the area of higher density urbanized development” (p. 1851). Consistent with research on landscape preferences, recent rural migration patterns show that most migrants are drawn to areas with a combination of forests and open lands, water area, and sparse croplands (McGranahan 2008). Chi and Marcouiller (2013) argue that the attractiveness of forests and wetlands to migrants is contingent upon whether these areas can be accessed through managed recreational areas. In addition, “Federal agricultural policies, such as crop price support programs, likely affect the total area of cropland in production and therefore the area of forests. Local policies

regarding land uses affect the rate at which forest land is converted to developed uses” (Vose et al. 2012, p. 105).

In California, and throughout the Western United States, the restructuring of the timber industry in the 1990s provided opportunities for the growth of real estate investment trusts (REITs) on private timberland, which therefore laid a structure for the expansion of the wildland urban interface (Vose et al. 2012, p. 100, 109). Thus, public forest ownership predominates over private forest ownership in the Western United States (Vose et al. 2012, p. 98). Adapting to these changes requires an adaptive and flexible approach to land management practices. For example, Schaich and Plieninger (2013) offer the following recommendations:

In public forests, close-to-nature management approaches could be complemented with binding goals aimed at promoting old-growth forest attributes and allowing site-specific variation in management practices. To conserve diversity in small-scale private forests, financial incentives and remuneration schemes for the provisioning of forest biodiversity and ecosystem services could be developed. Moreover, consulting and the provision of information on sustainable forest and conservation management could be intensified (p. 148).

Along with rural population change throughout the United States, several communities have turned to the expansion of prison developments as an economic driver, and specifically in Lassen and Modoc Counties, the developments of major State and Federal prisons have led to mixed social and economic impacts.

Impacts of Prisons on Rural Communities

Although crime rates have fallen sharply during the last quarter century (Gramlich 2017), 2.2 million people are currently being housed in the Nation’s prisons and jails (The Sentencing Project 2017), representing a greater proportion of United States citizens in prison than any other country in the world (Walmsley 2013). The causes of mass incarceration in the United States vary by State, but statistical analyses have shown that the perceived need for more prisons and the ability to pay for prison development are the primary variables that drive or suppress prison populations (Spelman 2009). Despite experts’ warning of the rise and perpetuation of mass incarceration, most States have not reduced their prison populations (Austin 2016). Austin (2016) explains: “Fueled by systemic changes in

penal codes, sentencing practices, and Federal funding all designed to increase the use of imprisonment, most states have been unable to reverse the massive increase that has transpired over the past four decades” (p. 84). Meanwhile, in California, prison expansion in rural communities has increased and is perceived as one method of boosting rural employment and economies.

Economic and Social Impacts of Prisons on Rural Communities

Due to the presence of State and Federal prison facilities in the region, the Lassen-Modoc community members have asked for an overview of the effects of prison systems. We are able to address the following question generally, where we see issues relevant to the region:

- What are the economic and social impacts of prisons on local rural communities?

In 2002 Tracy Huling, a national expert on prisons and host communities, stated that the United States has more prisoners than farmers. Although it is necessary to limit Huling’s observation to farmers who operate small family farms, recent data from the U.S. Department of Justice (Glaze and Kaeble 2014) and the U.S. Department of Agriculture (2014) show that more Americans are incarcerated (2,227,500) than are working as principal farmers (2,109,303), when “principal farmer” is defined as “the person primarily responsible for the day-to-day operation of the farm”. Despite the fact that the incarceration rate appears to have leveled off throughout the United States (Garland et al. 2014), the widespread implementation of prisons in rural communities across the Nation has implications beyond punishment that influence social and economic trends (Eason 2016).

With the growth of the information and service sectors in the latter half of the 20th century, rural communities that once depended on agricultural and manufacturing industries find themselves economically stranded and struggling to maintain financial solvency (King et al. 2004). For several decades now, rural communities across the United States have struggled to stabilize their economies in the face of “farm crises, factory closings, corporate downsizing, shift to service sector employment and the substitution of major regional and national chains for local, main-street businesses,” triggering deep and lasting change in rural communities (Huling 2002, p. 1). Government programs to alleviate poverty have primarily focused on urban communities, while rural economies

were stimulated with farm subsidies or one-time infusions of capital, which did little to promote sustainable economic growth (King et al. 2004).

Many of these communities have embraced prison development as a means of economic stimulus to counter escalating poverty and unemployment rates, and to reverse population decline (Bonds 2006; Cherry and Kuncze 2001). Because the prison system simultaneously faces deregulation and State divestment, prison development occurred as a combination of both public management and private, for-profit industry (Bonds 2006). Prior to the recession of 2008, “the influx of public and private funds related to the punishment industry, the growing demand for prison space and the seeming persistence of crime” led to the impression that prison development was “a ‘recession-proof’ strategy for rural community development and renewal” (Bonds 2006, p. 174).

The effectiveness of prisons as economic stimulators, however, became contentious among researchers (Burayidi and Coulibaly 2009), and an increasing amount of evidence illustrates the inadequacies of prison development at producing local economic growth (Huling 2002). For instance, Glasmeier and Farrigan (2007) found that, based on a diversity measure of industry sector earnings and employment, prisons have very little impact on the rural economy and that prison development is ineffective at stimulating economic growth. Four years later, another study by Glasmeier and Farrigan (2007) did observe “a limited economic effect on rural places in general, but may have a positive impact on poverty rates in persistently poor rural counties, as measured by diminishing transfer payments and increasing state and local government earnings in places with relatively good economic health” (p. 274).

Likewise, a study looking at the economic outcomes of prisons in rural counties in New York State (King et al. 2004) concluded that the counties that hosted prisons experienced no significant differences in economic gains or losses when compared to other rural counties that did not serve as host communities for prisons. In fact, host communities see very little economic benefits with the introduction of a prison and the surging privatization of prisons impedes employment growth (Genter et al. 2013).

Deller et al. (2001) note that the major appeals of rural communities to businesses include access to open space, natural amenities, as well as small-town values, all of

which can be disrupted with the introduction of a prison. Hooks et al. (2010) observe that prisons tend to crowd out other alternative industries in rural areas, often resulting in economies dominated by a single industry. Once a prison becomes established in a community, it can have a deleterious effect on encouraging other industries to move to that community because of the economic dominance imposed by the prison on the local economy (Hooks 2010). In other words, the dilution of a prison-host community's socioeconomic profile acts as a disincentive in attracting other businesses (Burayidi and Coulibaly 2009). Thus, most researchers concur that siting a prison in a rural community does little to affect property values and crime rates generally stay static (King et al. 2004). Interestingly, along with individuals who have been victimized through direct criminal activity, the young and the well-educated express the most concern about the potential impacts that a prison might have on their communities (Maxim and Plecas 1983).

It is also recognized (see Huling 2002) that inmates recompense financially their host communities by making available more State and Federal funds, whose allocation is apportioned in accordance with population counts. In fact, Lotke and Wagner (2004) estimate that a prison with 1,000 beds can generate up to \$100,000 annually in new revenues for the host community, even if acquiring much of this revenue comes at the expense of funding other public institutions, such as community colleges (Crookston and Hooks 2012). Furthermore, for every 100 inmates, 35 jobs are created in rural communities, with an average of 275 jobs created per prison (Beale 1996). Unfortunately, these jobs are not as beneficial to rural communities as they may appear. In fact, most public prison jobs do not go to local residents. Instead, 80 percent of jobs on average go to people living outside the host community (Gilmore 2007). Additionally, job competition is extreme in depressed rural areas, with rural residents competing for available positions in a wider-than-normal job market (Gilmore 2007).

Many rural prison sites are chosen not on the basis of whether or not the local workforce is capable of meeting the requirements of prison work, but rather because rural locations are often easier for out-of-town workers to reach from great distances (King et al. 2004). Although the King et al. (2004) study claims a static crime rate with the introduction of a prison to a rural community, other studies (Clear et al. 2003) have found a more complex relationship concerning crime rates and the primarily urban areas

where the many inmates originate: "Our analysis revealed that increasing admissions to prison in one year have a negligible effect on crime at low levels and a negative effect on crime the following year when the rate is relatively low, but after a certain concentration of residents is removed from the community through incarceration, the effect of additional admissions is to increase, not decrease, crime" (Clear et al. 2003, p. 55).

Rural employment opportunities can be constrained further with the introduction of a prison labor force. Carlson (1992) observes that the prisons industry has the benefit of accessing captive workers who are accessible for community projects. "Work projects performed by prisoners for local government, churches, hospitals, libraries, and many other kinds of organizations are very common in prisons located in rural communities and small towns, and prison officials tout them as good community relations" (Huling 2002, p. 4). However, once local organizations become reliant upon prison labor, some from the existing community labor force, especially manual laborers, may become displaced, deepening local poverty rates (Gilmore 2007).

Ultimately, siting prisons in rural locations is both a blessing and a curse for the host community. Although most of the jobs offered by these prisons do not benefit the local labor force, some do.

Federal Considerations of Prison Populations

The demographic changes in Lassen County cited previously in *Population Shifts in Number and in Composition* are derived from statistics reported by the U.S. Census Bureau and the State of California. However, these population estimates are skewed because the county's major prison populations are counted in the Census Bureau data. Those statistics include the populations of two major California State prisons (California Correctional Center and High Desert State Prison) and one major Federal penitentiary (Federal Correctional Institution-Herlong). The Census Bureau counts prisoners as residents of the counties where they are incarcerated, even though most inmates do not have ties to those communities and almost always return to their home neighborhoods upon release (Gottschalk 2008). In Lassen County, the estimated population declines may be even more significant than reported by the Census Bureau. Therefore, the level of analysis provided in this science synthesis can be

compared to statistics from local county reports that remove the prison population from its demographic data.

Lassen-Modoc stakeholders requested an accounting of how correctional facilities affect Federal data, funding, and decision making. They asked:

- How are prison populations represented in U.S. Census data, and how do prison populations impact funding?

Impact of Prison Populations on U.S. Census Data

Census data is used by Federal and State agencies to draw and redraw congressional lines at the State and Federal levels. Constituent to this data is the inclusion of the 2 million prisoners incarcerated in the United States according to the location of their incarceration, rather than their place of residence or sentencing (Kelly 2012). Additional State and Federal funds become available to communities that host these mostly temporary residents (Bonds 2006). Securing these fiscal incentives creates competition among similar communities, which employ various recruiting techniques to entice public and private developers, such as donating land, making public infrastructure accessible, as well as offering property and tax breaks (Huling 2002). Both State and Federal expenditures have been spent increasingly on incentivizing prisons into rural communities. In 1982, State prison expenditures totaled \$6 billion and local expenditures equaled \$3 billion; by 1999 total State expenditures had risen to \$34.7 billion for prisons, and local expenditures reached \$15.1 billion (King et al. 2004).

The U.S. Census Bureau has studied the impacts of including inmates in local population counts. Their 2006 study concluded that counting inmates according to their place of origin instead of their place of incarceration would increase operational costs for both the Census Bureau and the agencies that operate correctional agencies, decrease statistical accuracy, and impede efforts to count people living in different types of group quarters. An increase in operational costs of \$250 million would occur because prisons do not have exhaustive records of address for all inmates and, as such, would require the Census Bureau to contract with prison officials to query each inmate in order to verify each address (The Sentencing Project 2017).

Prisons also offer local communities a political advantage because legislative and congressional lines are drawn according to inmate-inclusive population counts (Burayidi and Coulibaly 2009). Lotke and Wagner (2004) sum up the ramifications:

Overall, in the States, counting urban residents as rural residents dilutes urban voting strength and increases the weight of a vote in the rural districts. In the rural prison districts, the real residents benefit because their own issues can receive individual attention from their representative on a scale unavailable elsewhere. In contrast, urban legislators are responsible not only to their “official” district but also those community members miscounted in the prison diaspora. One can only imagine the political negotiations of reapportionment, and how a plum like a prison can count (p. 599).

This “prison gerrymandering” inflates political representation of rural prison communities, which tend to mostly be white, at the expense of urban and minority communities, from which most prisoners hail (Skocpol 2017). As Kelly (2012) explains, “By drawing these phantom populations into districts that lean heavily toward the majority party, legislators can free up eligible voters from those districts to be distributed among neighboring marginal ones, thereby increasing that party’s likelihood of winning additional seats in the state legislature” (abstract).

Skocpol (2017) outlines three obvious harms caused by prison gerrymandering. First, the collective voices of communities, both urban and rural, are manipulated by those who draw legislative lines. This practice has a corrosive effect on the foundations of democratic representation. This is especially concerning because, as noted above, the political clout of minority populations becomes further compromised. Second, prison gerrymandering elicits a dehumanization of inmates, a civil death upon inmates, which goes beyond most of the penological rationales adhered to by most contemporary jurisprudence doctrines. “[I]t is troubling to pretend that human beings who cannot vote, whose freedoms are heavily circumscribed, and who have little meaningful stake in community debates are equal ‘constituents’ of representatives who have no incentive to heed their views” (p. 1488). And third, the representational distortions caused by prison gerrymandering can inform political policy. Politicians who represent rural districts have strong incentive to support policies that maintain or increase incarceration rates because their political power depends, to some degree, on the continuation of inmates inhabiting their districts. This creates a positive feedback loop, in that mass incarceration occurs in districts where representatives are motivated to support policies that support mass incarceration.

Despite repeated calls by many organizations to have the Census Bureau count inmates according to where they are sentenced and not where they are housed (see Lotke and Wagner 2004), it appears that the Census Bureau is currently unwilling to change course on this matter. However, in 2010, the Census Bureau created and made available to States a granular data set that accounts for residents of *group quarters*, which encompasses prisons and gives individual States the ability to exclude prisoners from their redistricting data, should they choose to do so (Skocpol 2017). At this stage, the legal ramifications of prison gerrymandering continue to be debated in the courts and legislatures.

Indirect Costs of Prisons

In addition to the economic, political, and ethical issues discussed above, prison populations have related social consequences. In the United States, black and Hispanic individuals make up about 30 percent of the total population, which is significantly lower than the 56 percent of the total inmate population in the Nation that these two racial groups occupy (Vogel and Porter 2016). In fact, the incarceration rate for black males is nearly 7 times the rate for white males (Vogel and Porter 2016).

In 2009, the direct cost of incarcerating an individual was more than \$20,000 (Spelman 2009), but many economists regard the social costs of incarceration, e.g., legitimate income that could have been earned by prisoners as well as reduced financial earnings for an inmate's family, to be twice the amount of the direct cost of incarceration (Donohue 2007; Kleykamp et al. 2008). Some economic benefits occur, however, in that incarceration preserves potential victims' money and possessions that would have otherwise been lost to crime (Western 2006).

Spelman (2009) contends that we have overshot the mark and are now spending money to incarcerate criminals who would not have committed a financial or corporeal crime to begin with. The implications of mass incarceration as a means of economic development has serious implications for democratic rights and processes. Pfaff (2015) suggests that any decisions to change the trend of national mass incarceration can come from the States, which can support alternatives to incarceration for non-violent criminals. Pfaff also notes the important role of the Federal government:

...[T]he fiscal story suggests that (I) a state's willingness to incarcerate is tied to its financial ability (or flexibility) to punish, and (II) federal funding

of penal practices is not a major contributor to that fiscal ability, though not necessarily an irrelevant one either. But the federal government does provide enough money that it could encourage and assist states in developing new and innovative ways to deal with offenders, and it could attempt to help rectify the glaring moral hazard problem that runs through the criminal justice system (p. 1600).

If Federal spending programs related to punishment and incarceration were to change the way expenditures are allocated to the States—e.g., by mandating an increase in rehabilitation instead of incarceration—it could retrench the booming prison population throughout the United States (Spelman 2009). Many rural economies that depend on prisons as main economic drivers would, however, be significantly influenced by such a change. At the State level, California has already begun to roll back its trend of mass incarceration. In 2011, the California legislature passed Assembly Bill 109, a.k.a. California Public Safety Realignment Act, which mandated reductions in the State's prison population of “non-serious, non-violent, non-sexual” criminals. Despite concerns that releasing such criminals into society would lead to an increase in crime rates, “Within just 15 months of its passage, Realignment reduced the size of the total prison population by 27,527 inmates, prison crowding declined from 181 percent to 150 percent of design capacity, approximately \$453 million was saved, and there was no adverse effect on the overall safety of Californians” (Sundt et al. 2016, p. 315). Krisberg (2016) contends that the trends in California of decriminalizing non-violent crimes as well as, correspondingly, of reducing prison population counts will continue and that at present, California is pursuing cautious and gradual policy measures aimed at reducing population counts for even serious crimes.

References

- Austin, J. 2016. Regulating California's prison population: The use of sticks and carrots. *The ANNALS of the American Academy of Political and Social Sciences*. 664(1): 84–107.
- Beale, C.L. 1996. Rural prisons: an update. *Rural Development Perspectives*. 11(2): 25–27.
- Bolund, P.; Hunhammar, S. 1999. Ecosystem services in urban areas. *Ecological Economics*. 29(2): 293–301.
- Bonds, A. 2006. Profit from punishment? The politics of prisons, poverty, and neoliberal restructuring in the rural American Northwest. *Antipode*. 38(1): 174–177.

- Brown, D.G.; Johnson, K.M.; Loveland, T.R.; [et al.]. 2005. Rural land-use trends in the conterminous United States, 1950–2000. *Ecological Applications*. 15(6): 1851–1863.
- Burayidi, M.A.; Coulibaly, M. 2009. Image busters: how prison location distorts the profile of rural host communities and what can be done about it. *Economic Development Quarterly*. 23(2): 141–149.
- Carlson, K.A. 1992. Doing good and looking bad: a case study of prison/community relations. *Crime and Delinquency*. 38(1): 56–69.
- Charnley, S.; Jaworski, D.; Huber-Stearns, H.; [et al.]. 2018. Environmental justice, low income and minority populations, and forest management in the Northwest Forest Plan area. In: Spies, T.A.; Stine, P.A.; Gravenmier, R.; [et al.], tech. coords. *Synthesis of science to inform land management within the Northwest Forest Plan area*. Peer review draft of Gen. Tech. Rep. PNW-GTR-970. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station: 809–849 Chap. 10.
- Cherry, T.L.; Kunce, M. 2001. Do policymakers locate prisons for development? *Growth and Change*. 32(4): 533–547.
- Chi, G.; Marcouiller, D.W. 2013. In-Migration to remote rural regions: the relative impacts of natural amenities and land developability. *Landscape and Urban Planning*. 117: 22–31.
- Clear, T.R.; Rose, D.R.; Waring, E.; [et al.]. 2003. Coercive mobility and crime: a preliminary examination of concentrated incarceration and social disorganization. *Justice Quarterly*. 20(1): 33–64.
- Clement, M.T.; Ergas, C.; Greiner, P.T. 2015. The environmental consequences of rural and urban population change: an exploratory spatial panel study of forest cover in the Southern United States, 2001–2006. *Rural Sociology*. 80(1): 108–136.
- Crookston, A.; Hooks, G. 2012. Community colleges, budget cuts, and jobs: the impact of community colleges on employment growth in rural U.S. counties, 1976–2004. *Sociology of Education*. 85(4): 350–372.
- Deller, S.C.; Tsai, T.H.; Marcouiller, D.W.; [et al.]. 2001. The role of amenities and quality of life in rural economic growth. *American Journal of Agricultural Economics*. 83(2): 352–365.
- Donohue, J.J., III. 2007. Economic models of crime and punishment. *Social Research*. 74(2): 379–412.
- Eason, J.M. 2016. Reclaiming the prison boom: considering prison proliferation in the era of mass imprisonment. *Sociology Compass*. 10(4): 261–271.
- Ferranto, S.; Huntsinger, L.; Getz, C.; [et al.]. 2011. Forest and rangeland owners value land for natural amenities and as financial investment. *California Agriculture*. 65(4): 184–191.
- Ferranto, S.; Huntsinger, L.; Stewart, W.; [et al.]. 2012. Consider the source: the impact of media and authority in outreach to private forest and rangeland owners. *Journal of Environmental Management*. 97: 131–140.
- Fitchen, J. 1995. “The single-parent family,” child poverty, and welfare reform. *Human Organization*. 54(4): 355–362.
- Garland, B.; Hogan, N.; Wodahl, E.; [et al.]. 2014. Decarceration and its possible effects on inmates, staff, and communities. *Punishment & Society-International Journal of Penology*. 16(4): 448–473.
- Genter, S.; Hooks, G.; Mosher, C. 2013. Prisons, jobs and privatization: the impact of prisons on employment growth in rural U.S. counties, 1997–2004. *Social Science Research*. 42(3): 596–610.
- Gilmore, R.W. 2007. *Golden gulag: prisons, surplus, crisis, and opposition in globalizing California*. Berkley, CA: University of California Press. 412 p.
- Glasmeier, A.K.; Farrigan, T. 2007. The economic impacts of the prison development boom on persistently poor rural places. *International Regional Science Review*. 30(3): 274–299.
- Glaze, L.E.; Kaeble, D. 2014. Correctional populations in the United States, 2013. NCJ 248479. Washington, DC: U.S. Department of Justice Bulletin. <https://www.bjs.gov/content/pub/pdf/cpus13.pdf> (8 Sep. 2017).
- Gottschalk, M. 2008. Hiding in plain sight: American politics and carceral state. *Annual Review of Political Science*. 11: 235–260.
- Gramlich, J. 2017. Five facts about crime in the U.S. Washington, DC: Pew Research Center. <https://www.pewresearch.org/fact-tank/2017/02/21/5-facts-about-crime-in-the-u-s/> (8 Sep. 2017).
- Grimm, N.B.; Foster, D.; Groffman, P.; [et al.]. 2008. The changing landscape: ecosystem responses to urbanization and pollution across climatic and societal gradients. *Frontiers in Ecology and the Environment*. 6(5): 264–272.
- Heckmann, K.E.; Manley, P.N.; Schlesinger, M.D. 2008. Ecological integrity of remnant montane forests along an urban gradient in the Sierra Nevada. *Forest Ecology and Management*. 255(7): 2453–2466.
- Hooks, G.; Mosher, C.; Genter, S.; [et al.]. 2010. Revisiting the impact of prison building and job growth: education, incarceration, and county-level employment, 1976–2004. *Social Science Quarterly*. 91(1): 228–244.
- Huling, T. 2002. Building a prison economy in rural America. In: Mauer, M.; Chesney-Lind, M., eds. *Invisible punishment: the collateral consequences of mass imprisonment*. New York: The New Press: 1–10.
- Kahn, M.E. 2001. The beneficiaries of Clean Air Act regulation. *Regulation Magazine*. 24(1): 34–39.
- Kahn, M.E. 2002. Demographic change and the demand for environmental regulation. *Journal of Policy Analysis and Management*. 21(1): 45–62.
- Kelly, J.P. 2012. The strategic use of prisons in partisan gerrymandering. *Legislative Studies Quarterly*. 37(1): 117–134.
- Kim, J.H.; Deal, B.; Chakraborty, A. 2013. Parsing density changes: an outcome-oriented growth management policy analysis. *Journal of Housing and the Built Environment*. 28(3): 529–546.
- King, R.S.; Mauer, M.; Huling, T. 2004. An analysis of the economics of prison siting in rural communities. *Criminology Public Policy*. 3(3): 453–480.

- Kleykamp, M.; Rosenfeld, J.; Scotti, R. 2008. Wasting money, wasting lives. New York: Drug Policy Alliance. http://www.drugpolicy.org/sites/default/files/WMWL_Final_2012.pdf (8 Sep. 2017).
- Krisberg, B. 2016. How do you eat an elephant? Reducing mass incarceration in California one small bite at a time. *Annals of the American Academy of Political and Social Science*. 664(1): 136–154.
- Lassen County Crop and Livestock Report. 2015. Lassen, CA: California Department of Food & Agriculture and The Honorable Board of Supervisors of Lassen County. <https://www.lassencounty.org/sites/default/files/images/2015%20Crop%20Report.pdf> (7 Sep. 2017).
- Lichter, D.T. 2012. Immigration and the new racial diversity in rural America. *Rural Sociology*. 77(1): 3–35.
- Loeffler, R.; Steinicke, E. 2007. Amenity migration in the U.S. Sierra Nevada. *The Geographical Review*. 97(1): 67–88.
- Lotke, E.; Wagner, P. 2004. Prisoners of the census: electoral and financial consequences of counting prisoners where they go, not where they come from. *Pace Law Review*. 24(2): 587–607.
- Marcin, T.C. 1993. Demographic change: implications for forest management. *Journal of Forestry*. 91(11): 39–45.
- Maxim, P.; Plecas, D. 1983. Prisons and their perceived impact on the local community: a case study. *Social Indicators Research*. 13(1): 39–58.
- McGranahan, D.A. 2008. Landscape influence on recent rural migration in the U.S. *Landscape and Urban Planning*. 85(34): 228–240.
- McLanahan, S.; Percheski, C. 2008. Family structure and the reproduction of inequalities. *Annual Review of Sociology*. 34: 257–276.
- Mitchell, C.J.A. 2004. Making sense of counterurbanization. *Journal of Rural Studies*. 20(1):15–34.
- Modoc County, California local hazard mitigation plan update 2016. Public review draft. Modoc, CA: Modoc County. 438 p. <https://www.cityofalturas.us/Modoc%20County%20LHMP%203.4.16%20Draft.pdf> (25 Aug. 2017).
- Pfaff, J.F. 2015. Federal sentencing guidelines in the states: some thoughts on federal grants and state imprisonment. *Hastings Law Journal*. 66: 1567–1600.
- Sander, H.; Polasky, S.; Haight, R.G. 2010. The value of urban tree cover: a hedonic property price model in Ramsey and Dakota Counties, Minnesota, USA. *Ecological Economics*. 69(8): 1646–1656.
- Schaich, H.; Plieninger, T. 2013. Land ownership drives stand structure and carbon storage of deciduous temperate forests. *Forest Ecology and Management*. 305: 146–157.
- Skocpol, M. 2017. The emerging constitutional law of prison gerrymandering. *Stanford Law Review*. 69: 1473–1540.
- Spelman, W. 2009. Crime, cash, and limited options: explaining the prison boom. *Criminology & Public Policy*. 8(1): 29–77.
- Spies, T.A.; Stine, P.A.; Gravenmier, R.; [et al.], tech coords. 2018. Synthesis of science to inform land management within the Northwest Forest Plan area. Gen. Tech. Rep. PNW-GTR-966. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station. 1020 p. 3 vol.
- State of California, Department of Finance, 2012. E-1 state/county population estimates with annual percentage change – January 1, 2011 and 2012. Sacramento, CA.
- The Sentencing Project 2017. Fact sheet: trends in U.S. corrections. Washington, DC: The Sentencing Project. <https://sentencingproject.org/wp-content/uploads/2016/01/Trends-in-US-Corrections.pdf> (8 Sep. 2017).
- Sundt, J.; Salisbury, E.J.; Harmon, M.G. 2016. Is downsizing prisons dangerous? The effect of California’s Realignment Act on public safety. *Criminology & Public Policy*. 15(2): 315–341.
- U.S. Census Bureau. 2006. Tabulating prisoners at their “permanent home of record” address. U.S. Census Bureau Report. Washington, DC. https://felonvoting.procon.org/sourcefiles/tabulating_prisoners.pdf (8 Sep. 2017).
- U.S. Department of Agriculture. 2014. Farm demographics: U.S. farmers by gender, age, race, ethnicity, and more. Data Series ACH12-3. https://www.agcensus.usda.gov/Publications/2012/Online_Resources/Highlights/Farm_Demographics/Highlights_Farm_Demographics.pdf (8 Sep. 2017).
- Vogel, M.; Porter, L.C. 2016. Toward a demographic understanding of incarceration disparities: race, ethnicity, and age structure. *Journal of Quantitative Criminology* 32(4): 515–530.
- Vose, J.M.; Peterson, D.L.; Patel-Weynand, T., eds. 2012. Effects of climatic variability and change on forest ecosystems: a comprehensive science synthesis for the U.S. Forest Sector. Gen. Tech. Rep. PNW-GTR-870. Portland, OR: U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station. 265 p.
- Walmsley, R. 2013. World prison population list. 10th ed. London, UK: International Centre for Prison Studies. https://www.apcca.org/uploads/10th_Edition_2013.pdf (8 Sep. 2017).
- Western, B. 2006. Punishment and inequality in America. New York: Russell Sage Foundation. 264 p.
- White, E.M.; Morzillo, A.T.; Alig, R.J. 2009. Past and projected rural land conversion in the U.S. at state, regional, and national levels. *Landscape and Urban Planning*. 89(1-2): 37–48.
- Winter, P.L.; Long, J.W.; Lake, F.K.; [et al.]. 2014. Wet meadows. In: Long, J.W.; Quinn-Davidson, L.N.; Skinner, C.N., eds. Broader context for social, economic, and cultural components. Gen. Tech. Rep. PSW-GTR-247. Albany, CA: U.S. Department of Agriculture, Forest Service, Pacific Southwest Research Station: 501–541. Chap. 9.1.