

# Agricultural Changes and the Depopulation of Nonmetropolitan Minnesota

by John Fraser Hart and Mark B. Lindberg

**Abstract:** The population of nonmetropolitan Minnesota is slowly declining as farms grow larger and require fewer workers, although the population of some small towns and cities in the nonmetropolitan area continues to grow. The demographically deprived nonmetropolitan areas have fewer young women of childbearing age and more elderly people. Population change is related to farming change that is tied to the physical geography of the state. The shift to cash-crop farming demands larger farms that use less labor but need level land to facilitate the use of modern farm machinery. We suggest that many dairy farms in areas of rolling topography are too small to remain economically competitive; their operators will downshift to hobby ranches for beef cattle and take off-farm jobs.

In 2010, three out of every five Minnesotans lived within 50 miles of the Minneapolis city hall. That share has been steadily inching up, because most of the rest of the state is continuing to leak population, a result of the geographic interplay of people, land, and livelihood (or demography, the environment, and the economy, if you prefer more stilted terminology). At the same time, the population is continuing to stagnate upward in many towns and cities outside the Twin Cities metropolitan area, which means that in the rest of Minnesota it is withering away even more rapidly than is immediately apparent.

We used the interplay of people, land, and livelihood to group Minnesota's 87 counties into six demographic regions (Figure 1), each of which has its own unique trajectory of population change (Figure 2). The dairy area in the central and southeastern part of the state has been growing at a steady rate, as has the metro area, which is completely off this chart. The prairie plains of the southwest have been losing population steadily since their peak more than half a century ago. The northwoods area has bumped upward only slightly over the last five decades. The arc of lakeshore resort and

retirement counties has been growing nicely since 1960, whereas the population of the Red River Valley in the northwest has stagnated since 1940. Our discussion here will focus primarily on the valley, prairie, dairy, and lakes areas of the state.

## The Valley and Prairie Areas

The valley and prairie areas of southwestern and northwestern Minnesota have suffered the most obvious population losses. Most of the townships in these areas lost population in five or even all six of the censuses since 1950 (Figure 3). Prospects for growth in these communities seem slender indeed unless, by some miracle, they are able to recruit significant numbers of in-migrants, because they have been unable to retain their own young

Figure 1. Minnesota: Demographic Regions

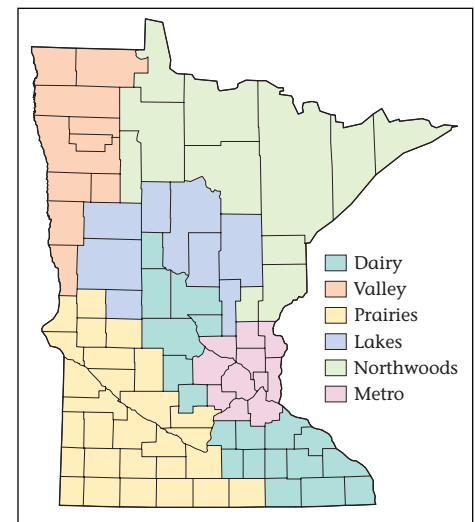
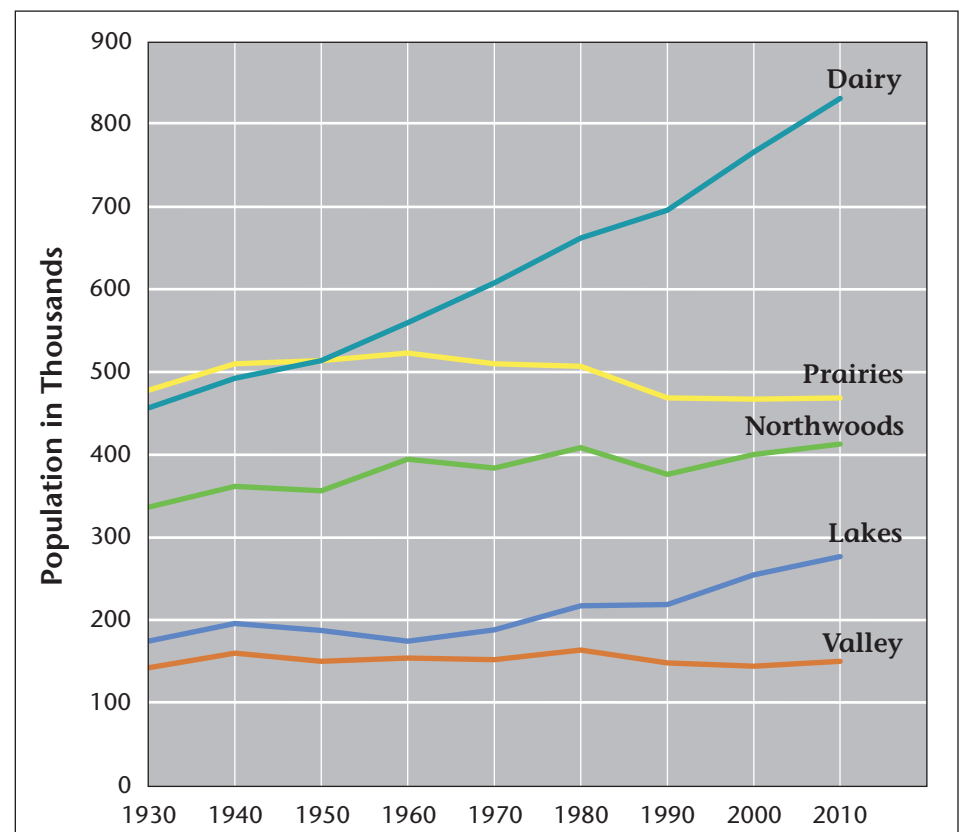


Figure 2. Minnesota: Population Change for Selected Demographic Regions



Note: Population for the Twin Cities metro region is not shown.

women of childbearing years (ages 25–44, Figure 4).<sup>1</sup> Most of the counties of nonmetropolitan Minnesota have lower percentages of women aged 25–44 than the metropolitan counties, and the counties farthest away from the metro area generally have the lowest percentages. The actual numerical differences might seem trivial, but every percentage point can be important in sparsely populated rural areas.<sup>2</sup>

The nonmetropolitan counties also have higher percentages of people aged 65 and older than the metro counties do (Figure 5), which means they probably have higher death rates. The unhappy combination of low birth rates and high death rates is a sure sign of persisting population loss and demographic deprivation. This demographic deprivation is not an indicator of economic stress; in fact, it probably is the product of economic success, because the demographically deprived areas of southwestern and west Minnesota are among the state's better farming areas. Agriculture dominates the economy of these areas because they have relatively few urban centers that offer significant alternative employment opportunities.

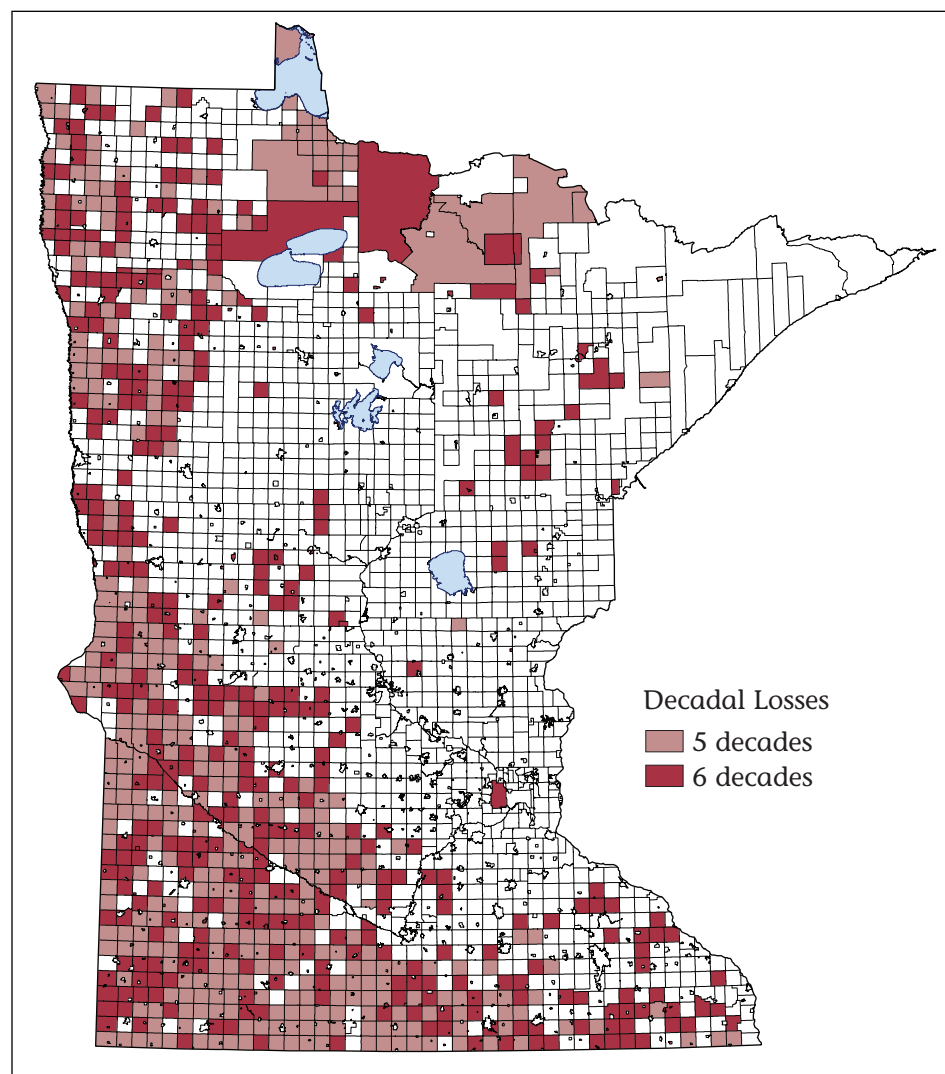
**Prairie Farms.** In recent decades, farms in these areas have become larger and more productive, and bigger and better machines have enabled ever fewer people to work them successfully. Farming has evolved into a semi-sedentary occupation; a modern farmer spends more hours sitting—on a tractor, in the cab of a combine harvester, in the glow of a computer screen—than in doing hard physical labor. In 1960, half of Minnesota's farmland was in farms of 260 acres or less, and few farms had as much as 500 acres, but by 2007 two-thirds of the state's farmland was in farms of 500 acres or more, and nearly one-quarter was in farms of 2,000 acres or more (Figure 6). In 2007, more than three-quarters of the harvested cropland in western and southwestern Minnesota was in farms of more than 500 acres (Figure 7).

Farm enlargement has been associated with a shift from a traditional mixed crop-and-livestock farming

<sup>1</sup> The ages 20–44 are more properly the childbearing years, but 20- to 24-year-old young women are heavily though temporarily concentrated in counties that have four-year colleges, which totally obfuscates the data for this age cohort. For this reason, we examined the demographics of women who were 25–44 years of age.

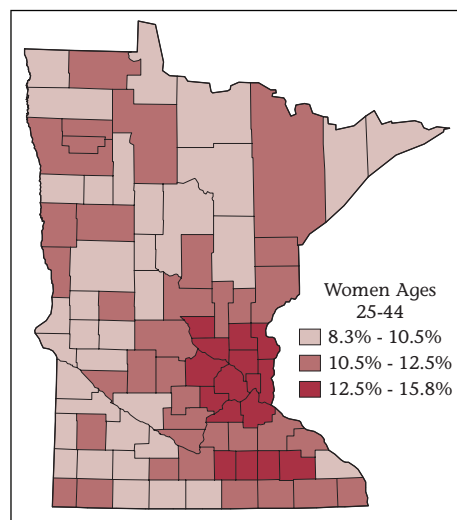
<sup>2</sup> For example, the difference between 10.5% and 12.5% could be two more babies a year, which is vital in areas where every birth is front-page news.

**Figure 3. Minnesota: County Subdivisions that Lost Population for 5 or 6 of the Decades between 1950 and 2010**



Note: Population based on decennial census data. Results for some locations had to be inferred because of boundary changes.

**Figure 4. Minnesota: Women Aged 25–44 as a Percentage of Total Population, by County, 2010**



**Figure 5. Minnesota: Percentage of Population 65 Years of Age and Older, by County, 2010**

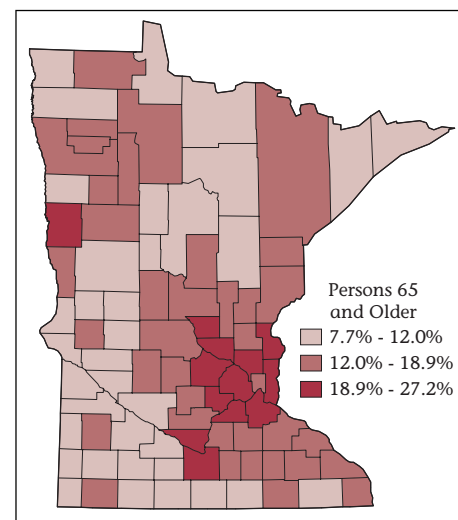


Figure 6. Minnesota: Percentage of Farmland in Farms of Specified Acreages

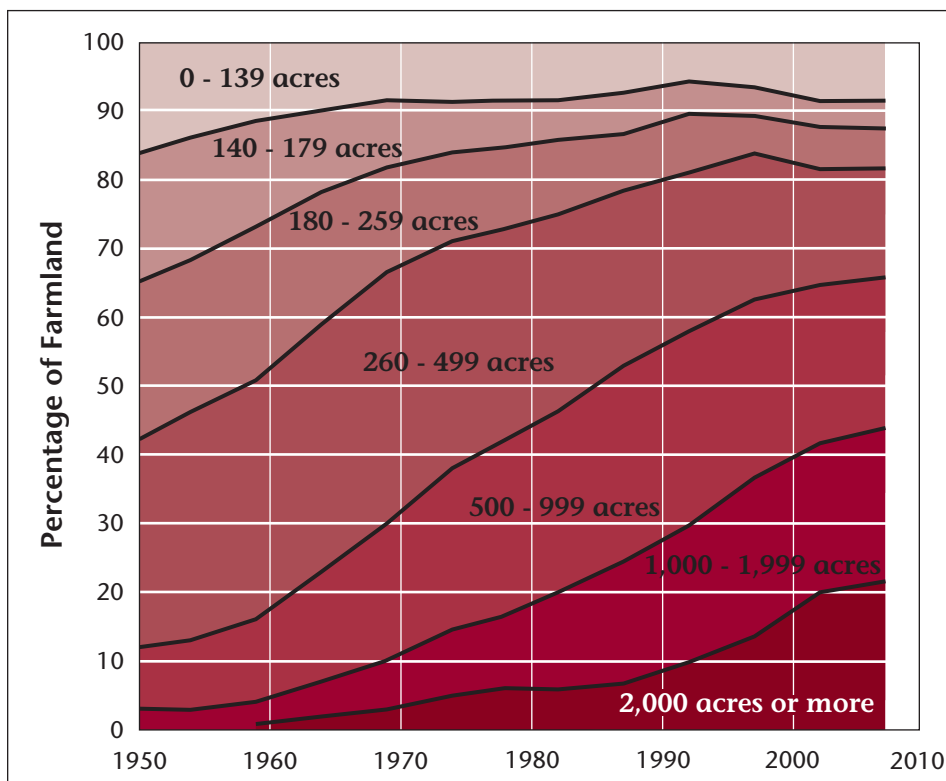
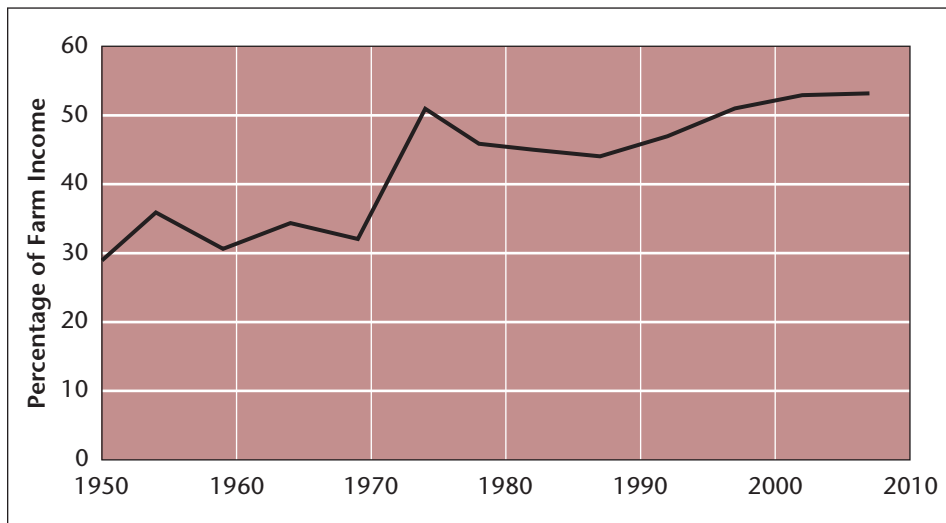


Figure 8. Minnesota: Percentage of Farm Income Derived from Sales of Crops



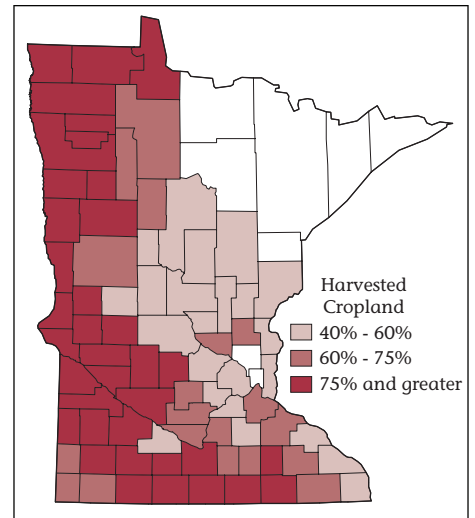
system ("corn and hogs") toward cash-crop farming ("corn and soybeans"), with a remarkable change occurring around 1970. Before 1970, Minnesota farmers derived only about one-third of their income from the sale of crops, but since then this proportion has risen to nearly half (Figure 8).

The shift from livestock to cash-crop farming coincided with the widespread adoption of computers by farmers. Their new computers told many farmers that they had not been making as much money on livestock as they

had thought, and encouraged them to jettison their livestock operations and concentrate on cash crops. Cash-crop farming now dominates the Red River Valley, where the sale of cash crops such as corn, wheat, soybeans, and sugar beets accounts for more than three-quarters of all farm sales (Figure 9).

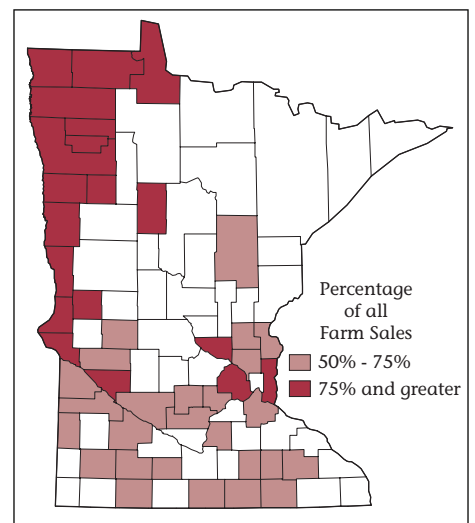
**Hogs.** The lesser proportion of cash-crop sales in southwestern Minnesota may be attributed to the emergence of entrepreneurs who have contracted with local farmers to develop large-scale hog farming (Figure 10). The entrepreneurs

Figure 7. Minnesota: Percentage of Harvested Cropland on Farms of 500 or More Acres, by County, 2007



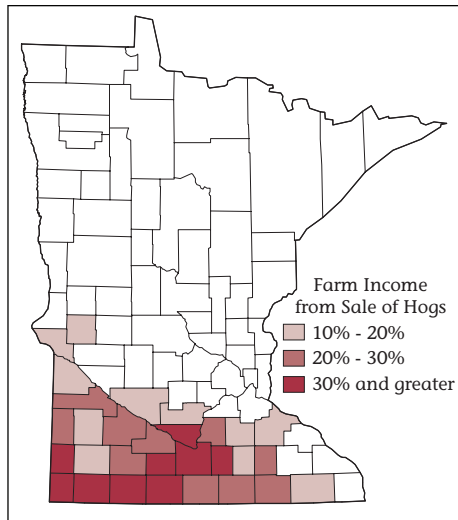
Note: Counties in white are those that either had no harvested cropland or had data withheld for privacy reasons.

Figure 9. Minnesota: Sales of Crops as a Percentage of All Farm Sales, by County, 2007

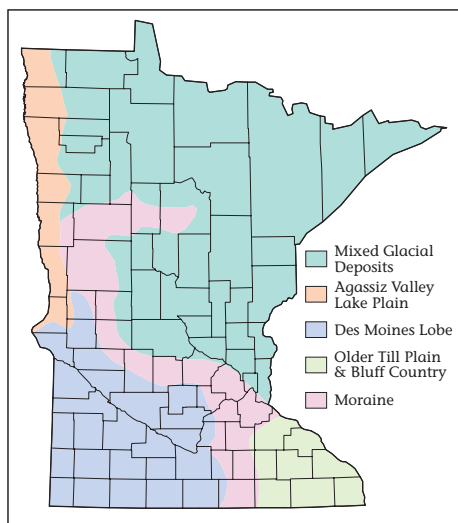


breed sows to produce piglets, they contract with farmers to feed the piglets in confined-feeding operations until they reach market weight, and then they market the hogs. Crop production and hog production are completely separate operations, even though they take place on the same farm; the farmer does not feed his or her hogs any of the crops he or she produces. The income from a contract hog operation might have slightly slowed the exodus of farm youth by enabling one son or daughter to remain on the farm, but it has not

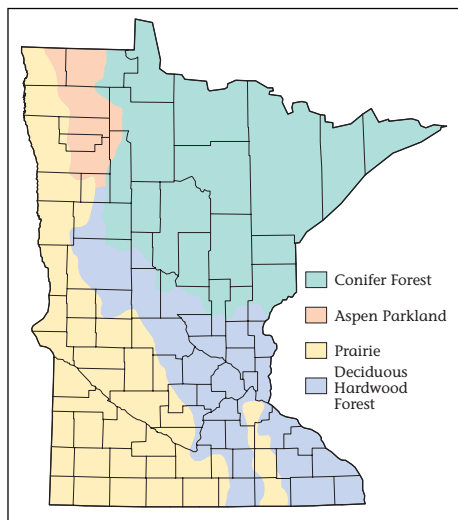
**Figure 10. Minnesota: Percentage of Farm Income from Sales of Hogs, by County, 2007**



**Figure 11. Minnesota: Generalized Land Surface Features**



**Figure 12. Minnesota: Generalized Vegetation at the Time of the First Public Land Survey**



been enough to counteract the enormous increase in farm size, which has greatly reduced the total number of farms and farm families.

### The Dairy Area

Large-scale cash-crop farming demands large acreages of level land that is well suited to the operation of massive modern farm machines. The flat glacial plains deposited by the Des Moines Lobe in southwestern Minnesota and the flat plains deposited on the floor of ice-dammed glacial Lake Agassiz in the Red River Valley of northwestern Minnesota are ideal for such farming (Figure 11). More than a century ago, these flat plains had prairie grassland that was kept tree-free by the terrifying wildfires that routinely scorched it.

To the east the rolling lake-speckled topography of the glacial moraines buffered these moraines against prairie wildfires, and they had a natural vegetation of deciduous hardwood forest (Figure 12). The choppy morainic topography is not well suited to large-scale cultivation of crops, and much of it was more appropriately used for pasture, which is better suited for maintaining herds of grazing cattle (both dairy and beef). Accordingly, dairy farming and beef cattle ranching now dominate the economy of the complex glacial topography of the rural areas of eastern Minnesota (Figure 13).

**Dairy Farms.** In recent years, successful dairy farmers have massively restructured their operations. In 1987, traditional 40-cow dairy farms were still the norm, but the number of dairy farms has continued to plummet since then, and today some people argue that

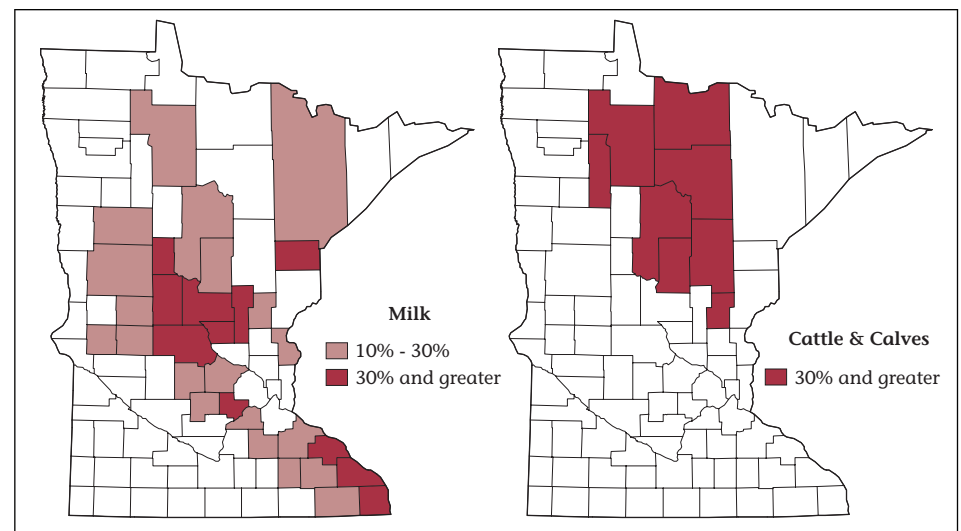
a dairy farm that milks fewer than 500 cows is too small to be economically viable. In 1987, 90% of the dairy cows in Minnesota were in herds with fewer than 100 cows, but by 2007 only 40% were in such herds, and 20% were in herds of more than 500 cows, which could not have been imagined in 1987 (Figure 14).

Although we dislike the term “factory farming,” because it has acquired pejorative connotations, today modern dairy farmers mass-produce most of our milk efficiently and cheaply in large confined-feeding operations. Small dairy farmers complain that the price they get for their milk is too low, but they have the numbers backward—they have been put out of business because they are too inefficient, and their cost of producing milk is too high.

**Dairy Downshifting.** What has happened to the 12,000 dairy farmers (and their families) who have stopped milking since 1987? Some have sold or rented their land to other farmers, but many have downshifted their dairy herds to beef-cattle production, which demands far less labor, and frees them to take jobs in towns nearby. We believe that small-scale beef ranching increasingly is going to become the norm in the former dairy areas, but most of the farms in these areas are so small that beef ranching will never amount to more than a hobby.

Former dairy farmers are fortunate, because they live near towns that provide jobs. Several decades ago, a dairy farm had to be close to a creamery that could manufacture its milk into butter and cheese, so every small town and many a crossroads in the dairy area had a small processing plant. These

**Figure 13. Minnesota: Source of Farm Income for Milk and Cattle, by County, 2007**





creameries were the nuclei that helped to transform the small towns of the dairy area into minor manufacturing centers, with attendant employment opportunities. They are in sharp contrast to the lonely trackside grain elevators in the whistle stops along the railroads in the prairie grain-farming areas.

Farming no longer dominates the rural economy or the demography in the dairy area. The availability of employment in its small towns may veneer the fact that the farm population is continuing to decrease as small dairy farms downshift to small-scale beef ranches. The total population has continued to increase sluggishly, but this growth is deceptive, because it is concentrated in incorporated places (cities, towns, and villages), and many townships with no incorporated places have actually been losing population as the number of dairy farms has plummeted.

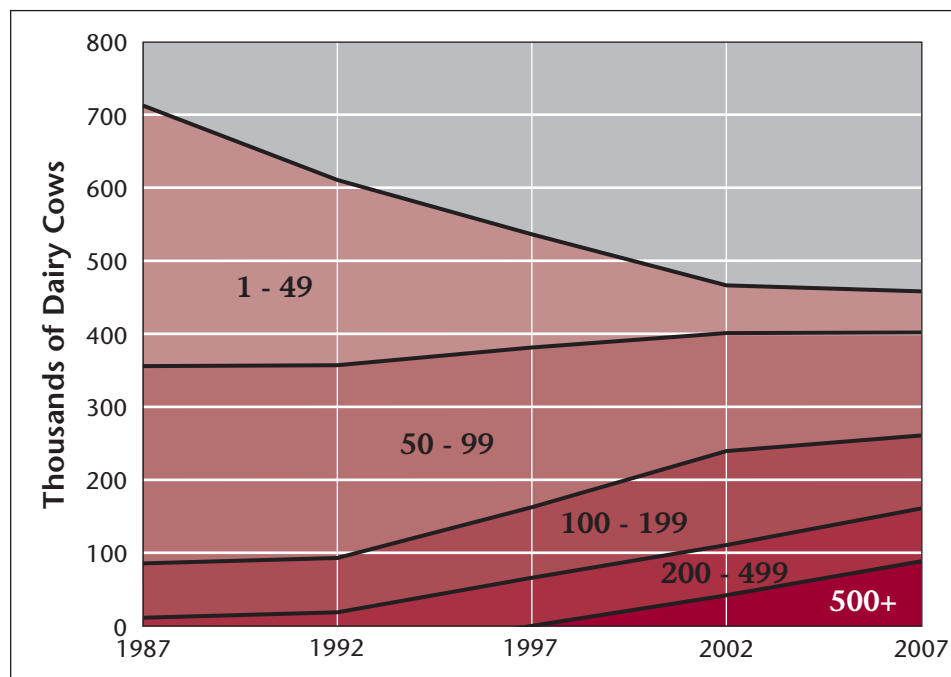
### The Lucky Lakeshore Loop

The exception is the arc of lakeshore resort counties that loops around the northern end of the dairy area (Figure 1). These counties have grown with the influx of elderly people who have converted their summer cottages into permanent year-round retirement residences. These individuals need an influx of younger workers to do for them the things they are no longer able to do for themselves. Conversely, many nonmetro areas in Minnesota that are dominated by farming probably will continue to lose population. This loss is clearly evident in cash-crop farming areas that have little alternative source of employment, and perhaps a bit less evident in dairy areas whose small towns are minor cogs in the national network of manufacturing centers. Only nonmetro areas that are close enough to major urban areas, or aesthetic enough, will be able to recruit people who desire the amenity of residence in the countryside.

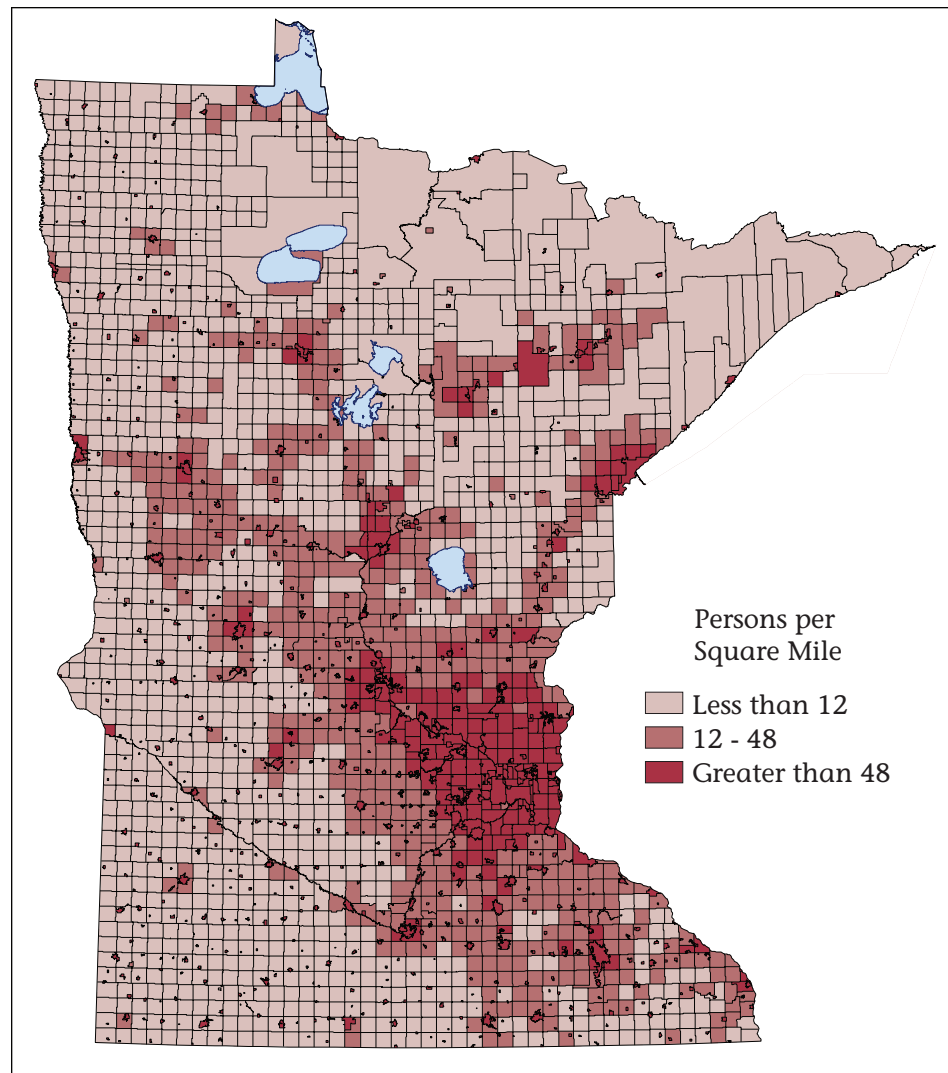
### Conclusion

The ongoing depopulation of nonmetropolitan Minnesota has resulted in a population distribution in 2010 with three major areas: a more densely populated metropolitan area from St. Cloud to the Twin Cities; a vast swath of moderately populated townships that strikes southeastward in a line from Moorhead to Leech Lake, with Bemidji, the Iron Range, Duluth, and the Brainerd-lakes area as northern outliers; and sparsely populated areas across the northern third of the state and

**Figure 14. Minnesota: Number of Dairy Cows, by Size of Herd**



**Figure 15. Minnesota: Population Density, 2010**



in the southwestern quadrant (Figure 15). Smaller areas of denser population speckled through the latter two areas mark smaller cities and towns.

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# CURA:Tech—A Civic-Technology Incubator

*by Kristen Murray and Adja Gildersleve*

**C**URA has recently launched CURA:Tech, a civic-technology incubator. The program is funded by the McKnight Foundation's Region & Communities Program, and will provide funding for a set of awards to support the collaborative development of new "civic technologies," including apps, websites, data visualizations, and other digital tools that leverage public data to increase transparency, accountability, and efficiency in how people and government interface. Civic technologies can improve people's access to jobs, transportation, housing, education, health resources, public processes, and engagement with decision makers. CURA:Tech asks the question, "How can technology strengthen your community?" and particularly seeks to create benefit for low-income communities and communities of color. This question and the program are situated in two larger contexts: digital-equity work and the civic-technology movement.

## Digital-Equity Work

In today's growing digital society, access to computers and the Internet (and the skills to use these tools) are critical. As schools move to using online textbooks, as the GED becomes available online only, and as job applications increasingly require an Internet connection, people without Internet access and digital-literacy skills are left behind in the economic market. A survey conducted by the City of Minneapolis's Information Technology Department reported that a high disparity in Internet access at home exists between white communities and low-income communities and communities of color. This finding suggests that the digital divide is a reality in Minneapolis that threatens to perpetuate the present racial employment and achievement gaps. Local efforts such as the AmeriCorp-supported Community Technology Empowerment Project and the cross-sector organizations in which its members serve (including the City of Minneapolis's Information Technology

Department) are working to increase digital inclusion and digital equity in economic and workforce development, as well as in civic participation, education, healthcare, and public safety.

## The Civic-Technology Movement

The last several years have also seen a growth in energy directed to the development of civic technologies. Much of this work has been led by Code for America, a San Francisco-based organization that places technology designers and developers in city governments around the country. Civic technologies are also being developed by coders and designers who work on projects in their spare time, at weekend "hackathons," and at other community gatherings. Locally, Open Twin Cities (a Code for America Brigade and a CURA partner) has been working since 2012 to build community, support, and awareness for opening up public data sets and developing local civic technology.

## CURA:Tech

Much of the national civic-technology work to date, however, has not considered who benefits from the tools that are created. To address this issue, CURA:Tech will engage a diverse group of community leaders, community-based organizations, technology developers, designers, and others to collaboratively imagine, design, build, and test civic technologies that will strengthen communities and create benefit for low-income communities and communities of color in the Twin Cities metropolitan area. This work, including the tools that are developed and the community-building processes that are established, will help broaden participation in the local and national conversation about civic-technology development and public data access.

During the fall of 2013, CURA staff engaged community partners in conversation about how a civic-technology incubator could and should work. Approximately 50 people working

across the Twin Cities in a variety of focus areas gathered to give feedback on initial process ideas and talk about possible tools that would resonate with their work. In recent months, CURA staff have also been discussing ideas informally with designers, technology developers, and social entrepreneurs at the CityCamp Minnesota unconference in November (cohosted by E-Democracy.org and Open Twin Cities), as well as during other gatherings and events.

These conversations have revealed some strategies that will be part of CURA:Tech—leveraging design thinking and design strategies, involving end users in the process, building community and capacity (as well as tools and technologies), making sure the social/political goal drives the technology, and watching for opportunities for "t" technology (such as printed material or physical objects) to enhance "T" technology (apps, data visualizations, websites, text-messaging systems, etc.).

CURA:Tech program activities launched in January 2014, and will culminate in a "Demo Day" of tools in late summer 2014. CURA:Tech will make awards to teams interested in developing civic-development projects in two phases—the first in May, and the second in August. Technical assistance for applicants includes a human-centered design workshop and opportunities to discuss potential projects with mentors from the fields of design, technology, communication, and social entrepreneurship. For more information about the application process and potential projects, visit [www.cura-tech.org](http://www.cura-tech.org), or contact Kristen Murray at 612-625-7560 or [kmurray@umn.edu](mailto:kmurray@umn.edu).

**Kristen Murray** is a CURA program developer. **Adja Gildersleve** is a member of the City of Minneapolis's Community Technology Empowerment Project.

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