

2000

Three Theories of the Future of the Great Plains

Scot A. Stradley
University of North Dakota

Follow this and additional works at: <https://openprairie.sdstate.edu/greatplainssociologist>



Part of the [Regional Sociology Commons](#), and the [Rural Sociology Commons](#)

Recommended Citation

Stradley, Scot A. (2000) "Three Theories of the Future of the Great Plains," *Great Plains Sociologist*. Vol. 12 , Article 4.

Available at: <https://openprairie.sdstate.edu/greatplainssociologist/vol12/iss1/4>

This Article is brought to you for free and open access by Open PRAIRIE: Open Public Research Access Institutional Repository and Information Exchange. It has been accepted for inclusion in Great Plains Sociologist by an authorized editor of Open PRAIRIE: Open Public Research Access Institutional Repository and Information Exchange. For more information, please contact michael.biondo@sdstate.edu.

Three Theories of the Future of the Great Plains

Scot A. Stradley
University of North Dakota

Abstract

The purpose of this paper is to present three theories of the future of the Great Plains. The theories consist of two extremes, based on the differences between supply and demand. Two of the three theories of the future of the Great Plains are supply side. One is a demand side theory. One or more of these theories can be found in public policy debates affecting the Plains.

Introduction

The first section examines the aridity hypothesis. This theory is one of the oldest, if not the oldest European view of the Plains. This hypothesis has popular standing due to its age and experience that supports it either directly or indirectly. This theory is pessimistic.

The basis of the other supply side hypothesis is developed in the second part of the body. This is the theory began as the view that the desert can be made to bloom with engineering assistance. Today it is another theory that yields a pessimistic prediction for the Great Plains.

The third part of the paper examines what may be the only optimistic theory regarding the future of the Plains. That is optimistic in the sense that the future will hold a role for humans. The Malthusian theory is a demand side hypothesis that emphasizes not over-population, as is traditionally associated with Malthus, but his theory of economic development.

The First Pessimistic View

In hindsight we now know that the Great Plains were settled during a dry cycle. Aridity was a fact that impressed a number of travelers that ventured west of the 98th or 100th degree latitude, the boundary that divides the moist from the dry States and regions. One of the first and best known of the advocates of the aridity hypothesis is John Wesley Powell, especially in his Report on the Lands of the Arid Regions of the United States.¹ Aridity shaped Powell's views on economic development policy and led him to oppose a Homestead type of settlement in the region. Limiting factors characterized the region and development would necessarily accept those limits.

Others coming before Powell also helped create the view that the West is a Great American Desert. Lewis and Clark did not use the term desert, but did note the dry streams and lack of trees in the upper Missouri basin below the mountains. Zebulon Pike reported in 1810 that the region between the Missouri River and the Rockies was a desert. Some of it, he relayed, could be grazed, but some of it was bare sand dunes. The value of the desert, as Pike saw it, was that it presented a barrier to settlement that would prevent the reckless extension and possible disintegration of the Union.

Many others saw the West as Powell and Pike saw it. Dr. Edwin James, the official chronicler of Major Stephen H. Long's 1820 expedition to the Rockies saw a dreary plain, wholly unfit for cultivation, and of course uninhabitable by a people depending

¹ Wallace Stegner, Beyond the Hundredth Meridian: John Wesley Powell and the Second Opening of the West, Introduction by Bernard DeVoto, 1st edition 1954 by Houghton Mifflin, New York: Penguin Books, 1992.

The Great Plains Sociologist Volume 12 Number 1. 2000

upon agriculture for their subsistence.² He is one of the firsts to wish that the land remained the domain of the native hunter, the bison, and the jackal. By 1843 Thomas Farnham referred to the region from the 100th meridian to the Rockies as the "Great American Desert". As late as the 1850s, Josiah Gregg Commerce of the Prairies made a desert of the entire region from the Red River of the North to the headwaters of the Missouri River.*

The aridity view is the basis of theories like the too much hypothesis advanced by Elwyn Robinson.³ A Jeffersonian populist political order in the East clamored for a cheap land policy in the West. The Homestead Act was the result and that law settled the arid regions of the West with a large number of farms that were too small, given the conditions. The ultimate error of this policy was that it was unsuited to the geography. This became painfully obvious in the 1930s in the Dust Bowl. Since it was an irrational settlement process, it was bound to eventually collapse. During the 1930s, the Resettlement Administration attempted to correct the mistakes of the previous generations by moving farmers and their families from arid areas like the western Plains to the humid areas at the east. The small farm was not viable in the more arid areas but was in the more humid east.

The "too much" hypothesis also explains farm surpluses. When farm surpluses depress market prices, the depressed condition of the market is often attributed to the too much hypothesis. There are too many farmers and too many farms.* The prevailing view of how to remedy to too much problem on the Plains is the heart of Federal farm policy. The United States is the only major power following a market policy. The European Union is following the McNary-Haugen plan of the 1920s. This policy,

² Ibid, p. 215.

³ footnote* This follows Stegner, pp. 212-219.

The Great Plains Sociologist Volume 12 Number 1, 2000

had it been enacted in its strongest version, would have guaranteed parity price to the farmers for their total production.

Exports would have been subsidized. Foreign agricultural products were kept out with tariffs so the domestic market belonged to the American farmer.

Currently the United States is trying to lead the world to a market agricultural policy through GATT (General Agreement for Trade & Tariffs, now WTO or World Trade Organization). The 1996 farm bill, the Federal Agriculture Improvement and Reform Act (FAIR), eliminates price supports, a policy created in by the 1938 Agricultural Adjustment Act. Weaning the farmer from reliance on government will force them to rely on the market. It is a market policy. The next WTO Congress is the fall of 1999. It is likely the United States delegation will again pressure the European Union and other WTO members to change its agricultural policy to one based on economic freedom. This weaning will cure the too many farmers problem as the market selects unfit farms for destruction. Better farms will remain.

The sociological corollary of the too much hypothesis is too many churches and clubs and the political corollary is too many schools and governments. The physical corollary is too many bushels of grain and too many acres of land in production. Any policy designed to eliminate the surplus will eliminate this culture, but although the "cure" makes depopulation necessary, there are provisions of FAIR designed to offset rural depopulation and decline. The 1996 farm bill also contains Title VII, Rural Development, which directs federal subsidy toward technology enhancement, financing new industrial uses for agriculture product and building rural infrastructure. Rural children would receive more technology education to aid those communities in establishing their

future in the Internet economy.⁴ Congress seems to agree that depopulation is inevitable unless other economic bases are established.

The cause of the “too much” problem is not aridity or the Homestead Act, but is instead the result of a decline in exports. American farm production has grown steadily over the 20th century. It reached 1 billion bushels regularly in WWII and 2 billion bushels regularly by 1970. What has not increased regularly is demand. Domestic demand is very stable from year to year but export demand is truly a boom or bust phenomena. When it goes bust it creates the appearance of too much production and other facets of rural life. The bankruptcy process then downsizes the rural economy to better fit its conditions. All the time in the 20th century the arable has remained amazingly stable. The number of farmers has declined but not the number of acres, at least until the 1980s.

Production responds to demand and export demand uses more than 50% of U. S. wheat production. The Plains farmer has been put in an export position by population growth and economic policy. Both are examined in the Malthus section and I only wish to point out that exports are driven by both forces. The Federal government has increased the farmers export exposure on numerous occasions in the 20th century. They have even helped to increase the ability to supply. Export exposure created by politicians often exposes the farm economy to great instability, and hence risks. Trade with Russia is an example. There are many acres of land in the U. S. whose continued production depends on whether the United States Congress supplies Russia credit for the purchase.

⁴ Elwyn Robinson, History of North Dakota, Lincoln, NE: University of Nebraska Press, 1964.

When the great export arrangements fall apart, it causes both economic disaster and political change. Then farmers seem to be in a surplus. Their product most definitely is. If this coincides with an arid period, it will increase the bankruptcy rate. If it coincides with the wet cycle, the bankruptcy rate will also increase somewhere on the Plains. Thus, aridity seems unlikely to be an effective explanatory variable as far as long run dynamic change is concerned.

Based on this view the “too much” problem is relative, not absolute. It is relative because there are other forces beyond aridity and inundation affecting the economic condition of Plains people. The second pessimistic and supply-side theory is now considered.

The Second Pessimistic View

The origins of the second pessimistic view are in a debate over the cause of the low rate of profit after the Napoleonic War between Thomas Robert Malthus and David Ricardo. The latter advanced a theory that identified the cause of the low rate of profit. It was the high cost of food. The cause of the high cost of food was an increasing unit cost of production caused by resorting increasingly to inferior soils to produce the necessary supply. Population growth forces humanity to resort to increasingly inferior soils where the cost per bushel is higher. This forces the price of produce upward and increases the landlord class share of national income. The rate of profit (on manufacturing capital) falls.⁵ The landlord is the enemy of the working class and the industrial capitalists. The farmers will never get ahead, or behind, on the average.

⁵ It must be pointed out that when the export market is brisk that no one complains about there being too many farms and farmers. There are too many farms and farmers relative to domestic consumption, but not relative to domestic plus foreign use, except when foreign use fails.

The Great Plains Sociologist Volume 12 Number 1. 2000

Ricardo did advocate an economic policy that would solve this problem for Britain for a long time. He knew that agricultural markets were protected by various Mercantilist laws. During the Napoleonic War Britain was forced to expand cultivation by resorting to uncultivated soils. The price of produce soared because of the change in cost. The great depression lasting from 1815-1820 was caused by this. The capitalists share of national income was reduced and the landowners share increased. The nation was worse off.

Free importation could solve this. Ricardo and his followers eventually succeeded repealing agricultural protectionism. The Corn Laws were repealed and Britain threw its markets open to imports. That drove down the price of food and that increased the rate of profits.

It is interesting to note that one of the areas of policy that the Republicans took up upon gaining control of the Federal government in 1860 was agriculture. The Morrill Act and Homestead Acts represent the Federal governments entry into agricultural policy. In the longer term, the Morrill Act has had a significant impact on the supply side and this has been observed by a variety of parties. What came of these laws was a fully peopled countryside and universities committed to increasing their productivity. This emphasis on productivity as compared to marketing exposes a Ricardian bias. Science could delay the decline of the rate of profit, put off the Stationary State for centuries, and make the accumulation of capital safe for centuries.

Philosophic optimism is a characteristic of Enlightenment thinking. The basis of this optimism was the belief that the rational mind was going to unlock all the secret forces of nature.

The Great Plains Sociologist Volume 12 Number 1, 2000

Once understood these forces could be made to work for man. Humanity would no longer be controlled by nature. It could control nature and possibly create it.

Science will feed the world and even eliminate famine, hunger, and poverty. Science will eliminate work. Per capita food consumption has increased for nearly everyone on the planet. Humanity engineers the food supply as Pharaohs engineers managed water supply. Today engineers supply chemicals, seed, and other scientific facets of production. Corporations, although mostly banned at the farm level, both supply and demand the farms. They have shown a remarkable capacity for developing exclusive products that have shifted the economy of agriculture from the farm to the factory.⁶

This supply side view was based on the observation as well. The trip West produced an impression quite the opposite of that envisioned by Pike and Powell. The vision was based on what they saw--the abundance of nature. The quantity and variety of animals living in the Plains was immense. The impact of European settlement is classified into eras based on the harvest of this "free gift of nature". The fur, hide and meat (pemmican) trade made small and large mammals the basis of arts and even manufacture, trade and transportation.⁷ By 1860, the buffalo hide trade became

⁶ As this is written a 2 year long agricultural depression, combined with bad weather and crops in many locations, has greatly reduced gross revenue. In some regions like North Dakota 25% of farms have negative net income. The revenue was less than the expenses, so capital is declining. That means bank deposits are declining.

⁷ This theory is found in his Principles of Political Economy and Taxation, 1st edition 1817, 3rd edition 1824. Ricardos theory is reviewed in any number of textbooks on the history of economic thought.

The Great Plains Sociologist Volume 12 Number 1. 2000

the mass market that the beaver trade had been up to 30 years before. By 1920, the great populations of animals had themselves been greatly reduced.

The abundance envisioned in the West was not that of nature, though, but that of nature assisted by man. Human development would turn grassland into field and farm. It would not have been possible had the mold board plow not been invented 800 or so years before. At the beginning of the 19th century, the average wheat yield was around 12 bushels per acre. By 1900, the average yield was around 17 bushels per acre. Starting in World War II the yield moved upward to 35-40 bushels per acre by the 1980s. This increase in output per acre was actually achieved using fewer resources, especially labor. Labor and animals were replaced only in the 20th century by the engineered forces of nature, mechanical, chemical, and biological.

The period after 1900 experienced the full force of the scientific revolution. Mechanical power replaced animal and human labor. Capital switched from oxen to tractors. By the middle of the 20th century chemistry replaced nature in supplying nutrients and food to plants. Chemicals available after the War killed pests where humans had relied on the balance of nature before. Hybrid plants combined with the other forces to produce a productivity revolution that doubled wheat yields since World War II.

The world stands on the verge of another scientific revolution that will be even greater than any others in history, so science again promises. The last agricultural revolution will pale in comparison to the next one, which will free humanity of the contradictions resulting from the last one. Some of those contradictions include pests increasingly resistant to pesticides, chemical pollution of ground water, rivers, lakes, and crops

The Great Plains Sociologist Volume 12 Number 1. 2000

increasingly prone to disease due to eventual failure of the hybrids. The new technology will solve all these problems and save scientific agriculture. The new technology is genetic engineering.

Genetic engineering is likely to turn a lot of agricultural land into pasture and park. Genetic engineers promise to increase yields by a ratio of 8 to 1 by the middle of the next century. Wheat yields of over 200 bushels per acre are considered a realistic goal. European field trials of genetically engineered wheat have already exceeded 100 bushels. The predictions hold that plants will be engineered to create the conditions necessary for their survival. They will be able to out perform weeds, fight insects, and produce the materials they consume. Disease will be eliminated. The chemical industry will be dealt a large blow, but agricultural will be more friendly to the environment, a problem with chemical agriculture. Genetics could solve all our problems.

The result of the genetic engineering revolution will be an immense quantity of food grown on fewer acres. The Great Plains will be evacuated because they do not present ideal agricultural conditions, especially water. Agriculture will move further into the humid east. The Great Plains will become pasture and park because of the scientific revolution. Is there anything that could prevent this outcome? Or will the mistake made by our ancestors when they moved here be corrected by the out migration of their children and their children?

The Malthusian Theory

When modern people think of Malthus, which they seldom do, they most often recall that he predicted that population would quickly outpace food supply producing extreme hardship for the poorest members of society. Malthus simply stated that hunger and famine were simply the result of the natural laws, which regulate the force of human reproduction. The pressure of

This view of Malthus is based on his *Essay on the Principle of Population* (1798). In later editions of this work and in his *Principles of Political Economy* (1820; 1836) he offered a more extended consideration of the relationship between population and food. He considered the impact of the exercise of reason and the accumulation of capital. By the 2nd edition of his *Principles of Political Economy* he was arguing that capital and a disciplined population could achieve both an increasing real income and a growing population and with a rising per capita real income. This can only be achieved if real income grows faster than population, which has been the case in most countries. The reason humanity would be able to reach this condition would relate first to fertility they controlled it. Secondly it would relate to the discovering of more science and the invention of new machines and processes. Mankind's ability to invent capital would postpone scarcity for a long time.

But Malthus also believed that Says Law applies to the demographic phenomena. He argued that it did not apply to manufactured goods. When the supply of them increases he did not think the demand would automatically increase to consume them. But he did believe that Says Law was true where food was involved. He thought that a change in the supply of food would cause a change in the demand for food. That process takes place relatively slowly, but families will have babies to consume the additional food. It is interesting to note that food supply has increased proportionately the most during the 20th century. World population has also increased the most during the 20th century. Where it increased from circa 1 to 2 billion from 1800 to 1900 it has increased to over 6 billion at the close of the century.

States like Argentina, Alberta, Australia, Saskatchewan, Manitoba, North Dakota, Montana, Minnesota, South Dakota,

The Great Plains Sociologist Volume 12 Number 1, 2000

Where it increased from circa 1 to 2 billion from 1800 to 1900 it has increased to over 6 billion at the close of the century.

States like Argentina, Alberta, Australia, Saskatchewan, Manitoba, North Dakota, Montana, Minnesota, South Dakota, Kansas, Oklahoma and Texas produce wheat for export. They have developed in response to this great population and income revolution in the world that began in Europe, but goes on today in more parts of the globe than ever before. All these States have very small populations relative to their wheat output. All of them have had a wheat production revolution over the 20th century. The development of production has been steady and regular, especially compared to the development of demand. The wheat market is not characterized by equilibrium, but instead by disequilibrium that can last for years.

World Wars I and II represent huge political intrusions into the normal development of the export market. The market came after the Wars when famine threatened. U. S. exports, often on credit, greatly expanded demand relative to supply. Once that was over the question becomes what to do with those export acres. This problem increased with the stored surpluses during the 1950s and even in the 1960s.

The late 1950s witnessed a worsening of the surplus problem after the European market was closed to U. S. farmers upon signing of the Treaty of Rome, which created the European Economic Community in 1957. The Economic Community adopted one piece of policy at that time--the Common Agricultural Policy. This policy fixes price above the cost of production on both the domestic and export production. It provides for subsidy of exports. The third plank, community preference requires one member to buy from another before they can import an agricultural commodity. The Community increased from 6 to 12 nations in the

The Great Plains Sociologist Volume 12 Number 1. 2000

early 1970s. Great Britain, the historic market for the export states, became an exporter by 1990. A self-subsistence policy brought economic renewal to the British countryside as it brought trouble to the Plains.

The trouble with the export market caused the cost of the farm program to rise beginning in the late 1950s. This made farm policy more political than it had been since the Great Depression. Farmers needed help but not at the taxpayers expense. The cure was exports and attention turned to increasing them. The only way the effects of population and income growth can be enhanced is by government through trade treaties. The year before a presidential election the Nixon Administration secured what is now called the Russian Wheat Deal (1971). This started an export boom that lasted the entire decade. Exports increased from about 400 million bushels to 1.8 billion bushels per year between 1969 and 1981. Prices trebled in the 1970s. U. S. farmers were now living from the market.

The export market continued to boom during the 1970s. The Organization of Petroleum Exporting Countries embargoed western nations in 1973 resulting in a three-fold increase in oil and other energy prices that year. This was good for farmers in the sense that oil nations also comprise an important part of the wheat export market. As oil nation income increased, they increased the quantity of food imported. They also tried to increase their own production, but geography limits that. The down side of this additional revenue was the additional cost brought about by higher energy prices, which affect fuel and chemical prices. There was also the additional cost of higher interest rates as the Federal Reserve Bank began responding to the inflation in 1979.

The Asian Tigers, as they are known today, began importing a larger percentage of their food consumption during the

The Great Plains Sociologist Volume 12 Number 1, 2000

1970s. This was partly due to the Tokyo Round of the General Agreement on Trade and Tariffs, which liberalized the U. S. automobile and electronics market in exchange for some trade liberalization in Japan. Other Asian Tigers are like Japan in that they need to import raw materials. China may be one of these Asian Tigers someday, but so far has not proved reliable. Collectively, though, Asian economies represent a big market for wheat exporters in the end.

By the end of that export boom, which was 1981 when wheat exports peaked around 1.8 billion bushels of a 2.4-2.5 billion production, the Plains had been transformed. This huge increase in farm income was followed by a modernization of Plains agriculture. This did not last through the 1980s, though. Wheat exports decreased by nearly 900 million bushels between 1981 and 1993. The deepest depression since the Great Depression was the result. Population declined in many States and a drought in the latter 1980s brought Dust Bowl conditions back. It might be a historical truth to say that a climatic disaster will strike during an export depression to make a bad condition worse.

The moral that can be drawn from the Malthusian scenario focuses on two forces. The first is the combined population/income force. The second is politics. It takes politics to integrate the global economy. It takes politics to destroy it. Domestic politics in our export customers countries is often the culprit leading to the decline in demand. Their domestic politics governs how they use fiscal and monetary policy. That can affect their currency value to create another variable in addition to population and income.

The Debate over the Future of the Plains

The debate over the future of the Great Plains was renewed by the depression of the 1980s. Two professors from Rutgers

The Great Plains Sociologist Volume 12 Number 1. 2000

University, an urban University, stirred up the debate over the future of the Great Plains. Although they worked with old themes Frank and Deborah Popper⁸ offered in a short article arguments that became a long needle sticking in the feelings of many Plains residents. The Poppers actually toured the Plains telling the public their theory of the future. Few social scientists tour and even fewer tour because of public, not just academic, demand. The media interpreted such response as an indicator that the Poppers were close to the truth. The politicians rushed to economic development because agriculture is a declining industry.

Their theory was that the aridity of the Great Plains made it uninhabitable. Ultimately the Plains will depopulate down to a few regional growth points along interstates or in towns that have attracted lone eagles. The rural region will depopulate because agriculture is not viable in a climate as arid as the Plains. Eventually the region will become a giant post-agricultural wasteland, unless action is taken now to direct, or engineer, this process of decline. Since the land will ultimately revert to a commons anyhow why not intervene and construct a Buffalo Commons stretching from western Texas northward to Alberta and from eastern Oklahoma northward to eastern Manitoba? Buffalo Commons would be a policy that was the result of intelligent foresight. Another Appalachia could be avoided by these social engineers.

⁸footnote* Even alleged pessimists like T. Robert Malthus held out that capital could increase food production toward positive infinity, but he still noted that the space in which to this is done is finite, or limited.

See T. Robert Malthus, Principles of Political Economy, Volumes 5 & 6 in The Works of Thomas Robert Malthus, ed. by E. A. Wrigley & David Souden, London, England: William Pickering, 1986, 6:253-266.

The Great Plains Sociologist Volume 12 Number 1. 2000

The use of the aridity hypothesis placed the Poppers with a long and illustrious list of people believing the same thing. The Plains should be left to the jackal! Leave them to the Indians, who were right: the grassland should have never been plowed. The American farmer is responsible for both an economic and ecological disaster. The critics moved in.

The Poppers theory was documented by regional demographic and economic data drawn from standard Federal sources. The data show population out migration, low net farm income, low per capita income, and aging population, decreasing number of farms and towns, increasing isolation and dependency on government for a large percentage of total rural income. The data by themselves could illustrate any number of theories but the Poppers claimed they proved that people were moving out because they could not make a go of it in the arid Plains.

The aridity hypothesis has one fundamental limitation that the 1990s have exposed. It is only a cyclical truth. The complement of the aridity hypothesis is an inundation hypothesis. This has the same explanatory power that the aridity hypothesis possesses, but focuses on a different part of the Plains. This hypothesis would be as successful explaining CRP (Conservation Reserve Program) sign ups as the Poppers theory was during the drought. It would work in the northeastern Plains where aridity works in the southwestern and western Plains.

The real cause of the data that the Poppers advanced is a combination of the Malthusian and second supply-side force. The Plains will be inhabited. If Buffalo return to the Plains it will result from demand for the meat and by-products. If people develop a taste for buffalo, and it appears they already have, the buffalo will

The Great Plains Sociologist Volume 12 Number 1. 2000

return to the Plains. The Buffalo will have more room if the genetic engineers successfully revolution agricultural productivity again. If they don't then the buffalo will have to compete with crops.

The future of the Plains will no doubt include both the dry and the wet cycle. But whether the Plains are depopulated or used depends on politics as a regulating cause and population/income as a limiting cause. Technology is a limiting cause. If the world pursues freedom to trade then the Malthusian force will result in the world entering a global division of labor and specialization. The outcome is hard to predict. Will food production keep up and surpass population growth? World population, having just passed 6 billion is headed toward 10-12 billion by around 2050. Will world population surge ahead toward 20 billion by 2100? World population increased from about 2 billion to 6 billion just in the 20th century. There is evidence that population finds a way of keeping up with the food supply.

Conclusion

The immediate and distant future of the Great Plains will be determined by supply and demand. The immediate future has already been decided. Congress passed the Federal Agriculture Improvement and Reform Act in 1996. This law established a market policy to replace the government administered price policy enacted by the Agricultural Adjustment Act in 1938. FAIR released farmers from production management and control provisions of the old farm policy. It also "freed" them from deficiency payments. After 1996 payments would be based on the Federal budget rather than on actual deficiencies. Market price has been well below the older administered levels in the late 1990s and this, combined with inundation, is responsible for the current out migration.

The Great Plains Sociologist Volume 12 Number 1. 2000

The net effect of the end of price deficiency payments was greatly amplified by the occurrence of an export depression of major proportions. Stocks have increased and prices have fallen to about the same levels as they reached in 1986 and 1990. The absence of a deficiency payment system has combined with bad weather to create conditions where a sizable proportion of farmers has negative net income. Net income is well below average. Farms are failing. Bankruptcies are increasing. Now interest rates are rising again after OPEC increased prices this year by cutting back production. The combination of the current export depression, rising oil prices and interest rates will do a lot to eliminate proprietors. This is more likely because there is no government agriculture policy other than an emergency provision and rural economic development.

Maybe eliminating proprietors with hired labor will allow corporations to deepen their vertical integration to raw material production. They will introduce technology only if it is in their economic interest to do so. No economist has been able to predict technology diffusion. There are good descriptions of the process, but no predictive models. Whatever technology is actually used and when is hard to predict. If genetically engineered wheat produces 200 bushels per acre and can be grown in humid areas then North Dakota will become pasture and park. When that might occur is hard to predict.

The possibility that this food production revolution could cause another population revolution like that of the 20th century is intriguing. That impetus could cause population to increase beyond the 10 to 12 billion that is expected in the next century. For those that are skeptical about their ability to feed themselves reflect on their reality. They will have to produce a useful thing to trade for food. If they cannot they will perish. That useful thing is most likely to be a manufactured good. The quantity of capital

The Great Plains Sociologist Volume 12 Number 1, 2000

that makes these goods is nearly infinite. The quantity of land that grows our food is finite. Even increasing productivity may have no effect on the Plains if population increases sufficiently. But it may be workers rather than proprietors that remain.