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The 1988 Drought and the Livestock Sector

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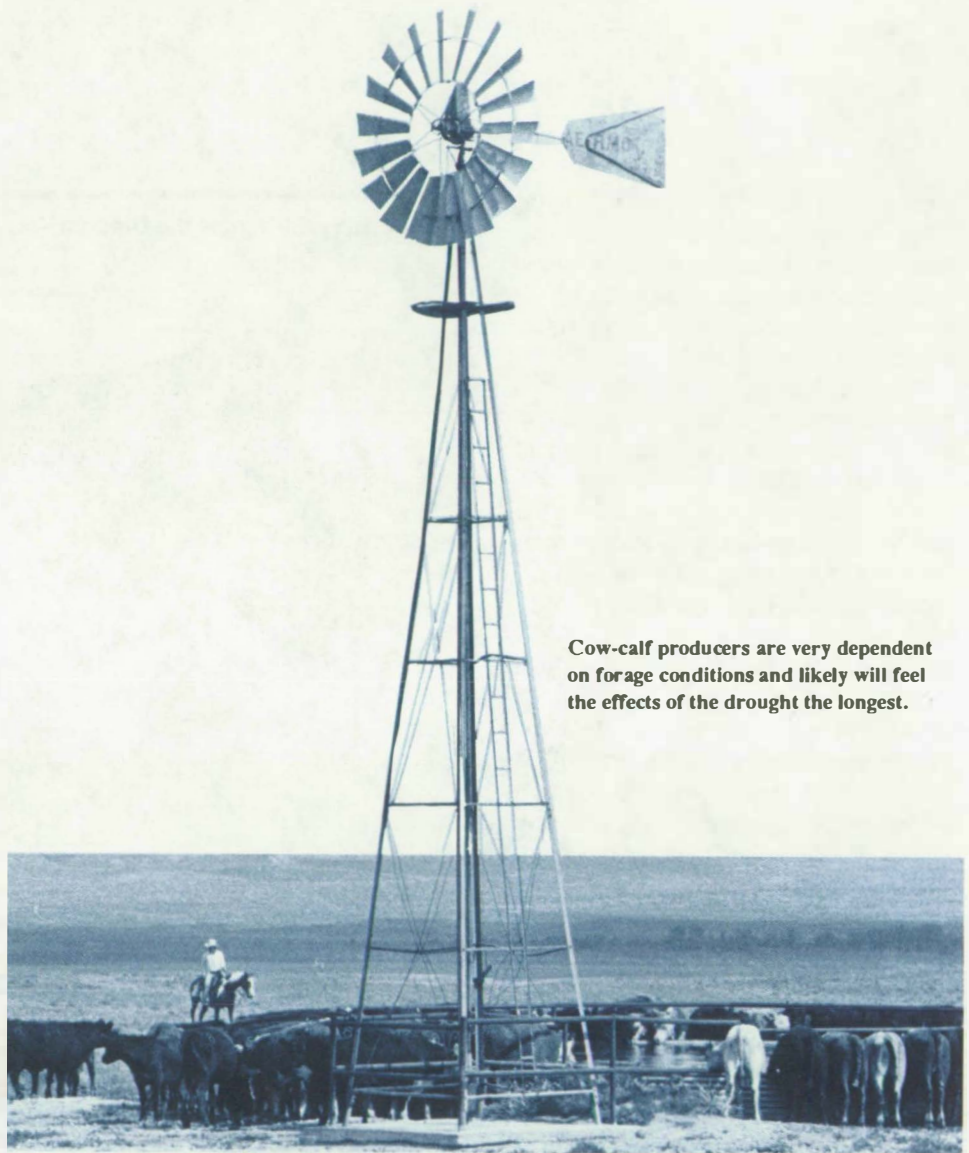
Last year, the U.S. agricultural sector faced one of the severest droughts on record. Grain farmers and others saw their crop yields fall. While producers felt the impacts fairly quickly, their losses will continue for the next few years. Consumers will also pay for the dry weather in the form of higher prices and shorter supplies of grains and livestock. In the livestock sector particularly, the effects will linger for a couple of years, and meat prices will probably be higher than they would have been without the drought.

Pre-drought forecasts put 1989 total consumption of red meat and poultry above 1988's record. Because of the drought, 1989 per capita consumption is expected to be about 2 pounds below 1988's estimated 220 pounds. However, consumption will still be the second largest on record.

As the drought spread, the price of meats dropped initially because of increased slaughter due to short feed and water supplies. Consumers, however, will pay higher prices for meat and meat products in 1989. At first, this seems contradictory. But to understand the impact of the drought on consumers, you must look at the production dynamics of the livestock sector. Livestock producers likely paid higher prices for feed purchases. Beef and dairy producers were also hindered by a lack of forage because the drought limited pasture and range growth.

These higher costs caused some farmers to cut back by slaughtering part of their breeding herds, the source of fu-

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Cow-calf producers are very dependent on forage conditions and likely will feel the effects of the drought the longest.

ture production. It would be similar to General Motors closing a plant and demolishing the building. After such a closure, the decision to rebuild must be made, and it takes time to construct and reopen a plant. In the livestock sector, rebuilding the plant requires producers to hold animals back from slaughter, reducing short-term meat supplies but laying the foundation for future livestock production.

When Did the Drought Start?

The drought of 1988 started in the West late in the fall of 1987. The snowpack in the northwestern mountains was very low. Drought then spread to the Upper Midwest where the snow cover, particularly in the Dakotas and Minnesota, was light. But other areas of the country also lacked precipitation; a part of the Southeast, centering on Tennessee, was short of rainfall. Spring weather ar-

rived on schedule in 1988, but rain in the Upper Midwest and the Lake States continued below normal. As spring ended and summer progressed, the drought spread from northern to eastern portions of the Corn Belt (*figure 1*).

Not only was the weather dry, temperatures were searing. Temperatures in the Northern Great Lakes and Northern Great Plains between May and July were the highest on record since the mid-1930's. The scorching temperatures increased the plants' need for water, accentuating the effects of the lack of soil moisture.

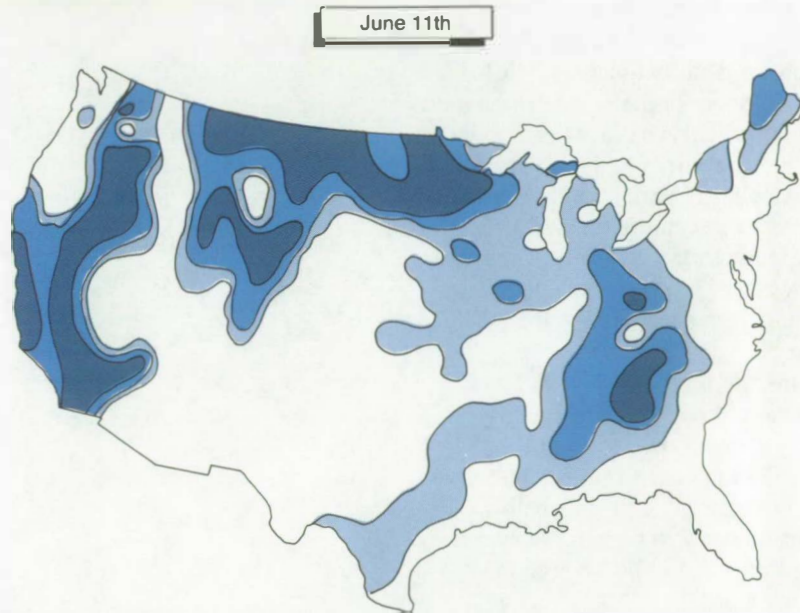
Because the drought began so early in the production cycle, its severity was felt earlier than previous droughts. By mid-July, when the first significant rainfall of the season occurred in the midsection of the country, crops were already seriously damaged. One saving grace of this rainfall was a spurt of growth and improvement in pastures and ranges.

Although rainfall patterns returned to normal in August, the damage to 1988 crops was done. Adequate rainfall is still needed for the 1989 winter wheat crop. Good snow cover is also necessary to replenish subsoil moisture.

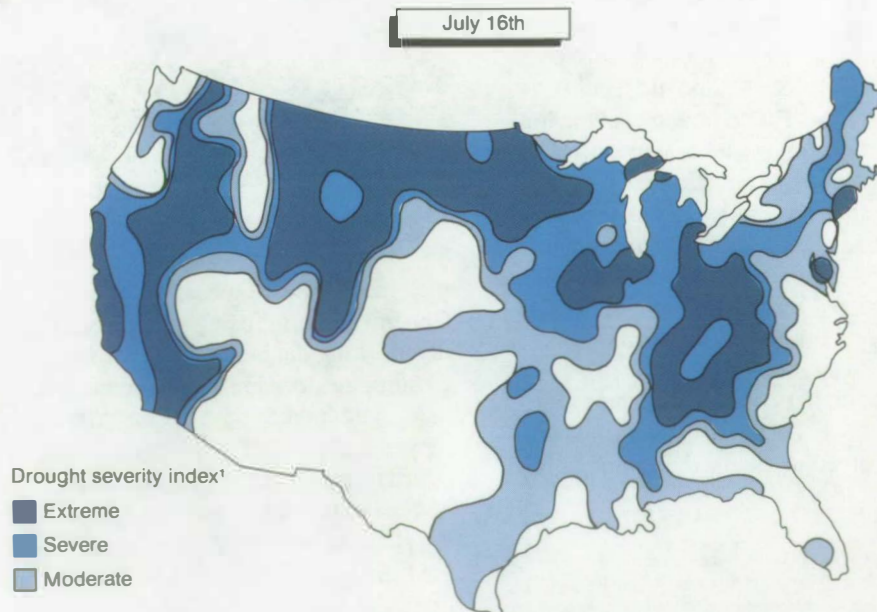
Impacts on Specific Industries

One way to examine the impact of this drought on consumers is to compare what happened in 1988 with what was expected to happen in the livestock sector before the drought hit. The outlook for 1988 strongly suggested a record level of red meat and poultry production, which translated into record per capita meat consumption. Beef consumption was supposed to decline because of the limited number of animals available for slaughter as producers rebuilt their herds. Pork production was expected to increase as farmers responded to higher profits over the last few years and raised output. Broiler production was also expected to

Figure 1. By Early June the Drought Was Already Critical . . .



And By Mid-July It Was Wider and Deeper



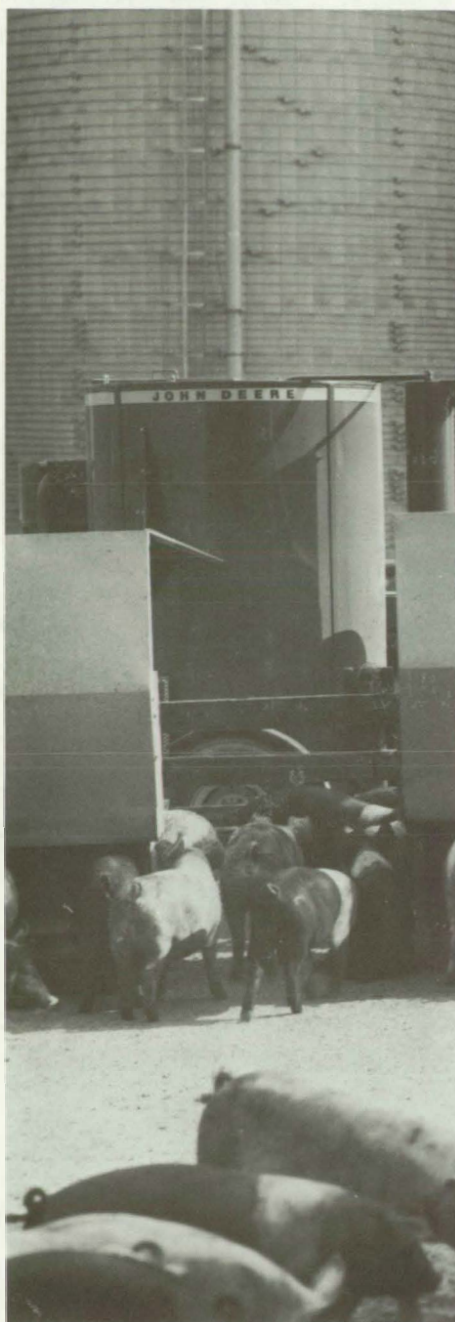
¹Long term, Palmer; depicts prolonged (months, years) abnormal dryness and reflects long-term moisture runoff, recharge, and deep percolation, as well as evapotranspiration.

increase, as it had for the last several years. Turkey production was projected to grow only slightly because of lower prices in 1987.

Initial expectations for 1989 were for another year of record per capita meat consumption. Increased availability of competing meats was expected to more than offset lower beef supplies. Beef production might have dropped slightly as producers continued to hold cattle from slaughter to rebuild their herds. Pork production was expected to remain roughly even with 1988, and poultry was supposed to rise. But the impact of the drought changed the outlook for the second half of 1988 and for 1989.

The cattle industry, because of its diverse operations, reacted to the drought in several ways. Cow-calf producers, who raise the calves that go into feedlots, are land-based. They depend on forage and use very little feed grain. On the other hand, cattle feeders, who produce the beef sold in retail stores, use a high-percentage grain ration to add the last 400 to 500 pounds of an 1,100 pound fed beef animal.

Higher grain prices increased the cost of feeding cattle and, thus, reduced cattle feeders' profits. Consequently, cattle feeders dropped the price they paid for calves. At the same time that cow-calf operators were deciding how many heifers to retain and breed, the drought was getting worse. Deteriorating conditions likely resulted in fewer heifers being bred. (The January 1 cattle inventory, which is released in February, will provide a better view of actual heifer retention.) Because fewer heifers remained in the cow herd, more were available for feeding, even at the lower prices offered by cattle feeders. This



Many hog producers who grow grain had to purchase feed from outside sources because of the drought, raising their production costs.

helped limit the decline in feedlot placements in the second half of 1988.

Many cattle feeders purchased animals at heavier weights and fed them for fewer days. Because of heavier placement weights, these cattle weighed more at slaughter in order to meet quality

grade standards. The real impact of the drought-related decline in placements will be felt late this year and next as beef production drops because more animals are held back for breeding.

Cow-calf producers are very dependent on pasture and range conditions. Very little grain is fed to beef cows. It is in this sector that the effects of the 1988 drought will be felt the longest. It takes about 2 years from the time a cow conceives to the time her fed calf is slaughtered.

Any major changes in breeding herds resulting from the drought will be felt by consumers in smaller beef supplies in 1989 and 1990, as herd expansion begins reducing the number of heifers available for feeding. Consequently, it will be next year that consumers feel the biggest price effects from the drought. Because cow-calf producers received lower prices for their calves and faced poor pasture and range conditions last year, many culled old cows, which do poorly in hot weather, as forage supplies declined. Some also sent their yearling cattle to market. As conditions worsened, a few cow-calf producers sent their replacement heifers and their lighter weight calves to market. Finally, in the worst cases, the most productive cows may have been sold.

As 1988 began, the beef herd was already small due to a scale-down in breeding animals over the past several years. Consequently, only a few beef cows were slaughtered because of the drought. As a matter of fact, beef cow slaughter for 1988 was below 1987 by about 8 percent. Because cattle numbers were at their lowest level since 1962, the pressure on pastures was not that great. Rather than disappearing from the

Nation's herd entirely, many marketed cows were apparently purchased and shipped to nondrought areas. The forage situation was further helped by Government programs that opened crop set-aside acreage for grazing and haying. In all, the drought resulted in a slight, short-term rise in beef production. However, the majority of increased cow slaughter came from dairy herds (*see box*). Beef production will remain at low levels for the next few years, resulting in higher retail prices.

Pork production in 1988 increased 9 percent above 1987, but the gain was made before the drought started. Because the actual production time for a hog from breeding to slaughter is around 9 months, producers will likely feel the effects of the drought for a shorter period. But many hog producers are also grain producers. As their grain yields fell, they had to buy feed from outside sources, thus increasing their costs. Feed shortages posed another problem—whether producers should sell their corn or feed it to their hogs. Before the drought hit, many hog producers were planning to expand. However, the dry weather in June and July caused some to cull their sows. (Sow slaughter, nonetheless, remained moderate.) This increased pork production in the short run, but it will hold down pork supply gains in 1989.

Broiler producers also faced higher feed grain and oilseed prices, thus increasing their cost of production. The broiler industry has one advantage over other livestock producers in that broilers more efficiently convert feed into weight gain. This efficiency has been reflected over time by the rise in broiler produc-

The Drought's Effects on Dairy Farmers

Dairy production is based on high levels of grain in feed rations and high-quality hay. Dairy operations were affected by the drought through higher grain and oilseed prices and lower quality and quantities of hay. The limited prospects for purchasing hay, coupled with financial problems faced by some producers, caused a fairly heavy dairy cow slaughter last summer. This increased beef supplies and lowered beef prices. However, smaller dairy cow numbers could translate into lower milk production and higher dairy prices for consumers in the future.

tion relative to other meats. It allowed the broiler industry to offer products at lower relative prices. The industry also benefits from a short production cycle. To grow a bird to slaughter weight takes about 7 or 8 weeks. This is substantially shorter than the period for either beef or pork, allowing broiler producers to respond quickly to changes in the marketplace. Thus, they were able to reduce their 1988 production and should be the first to expand in 1989.

Other poultry producers share similar advantages. For instance, it takes about 5 months to produce a market-weight turkey. But the turkey industry had a bad year in 1987 and production was not expected to increase a great deal in 1988. Higher grain prices will likely result in reduced turkey production in 1989, and prices will probably rise.

Effects on Consumers

ERS has analyzed the impact of the drought on livestock and poultry production and prices, separating these effects from any other changes. According to these estimates, consumers might have paid lower prices for meat products in 1988 if the drought had not occurred. Beef production might have increased only slightly last year, less than 1 percent, resulting in a very small decrease in prices, again less than 1 percent. Production of pork probably rose a little because of the drought, maybe less than 1 percent, and prices were only slightly below what they would have been. Broiler production likely declined about 1 percent from where it would have been without the drought in 1988. This probably meant about a 1-percent increase in prices.

This year, meat and poultry prices are estimated to rise because of the drought. Beef prices might be about 2 percent higher than they would have been. Pork prices should be about 8 to 9 percent higher because of the drought. The reason: production is estimated to fall almost 6 percent. Poultry prices are expected to rise about 5 to 6 percent, as production drops about 4 percent.

Total meat and poultry production for 1988 likely remained unchanged from 1987. The major difference will probably be in the mix of meats and poultry—less poultry and more beef and pork. In 1989, consumers might feel the impacts of the drought through tighter supplies, as total meat production is expected to drop about 3 to 4 percent from what it would have been without the drought. ■