

# Banner Cattle Year Would Be Threatened by Drought

February 2000

Chris Hurt

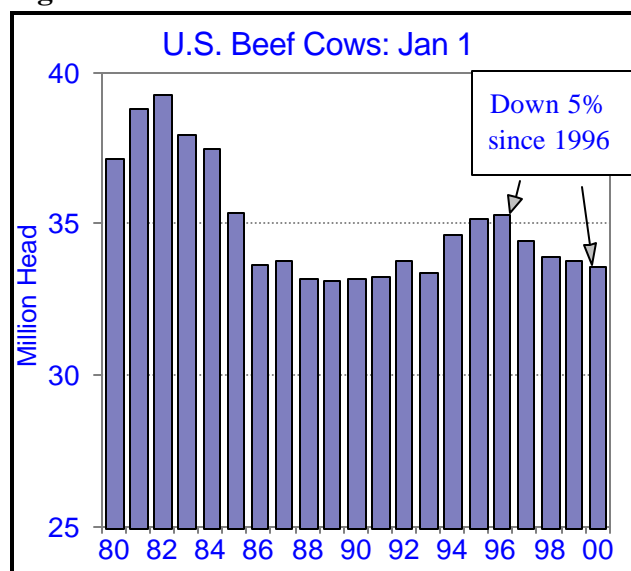
Led by improving beef demand and declining supplies, the year of 2000 is expected to provide strong cattle prices and profitability. With a decline of 4% expected, fed cattle prices are expected to average near \$70 per cwt, a level not achieved since 1993. Calf prices and feeder cattle are also expected to be strong, with low price feed being bid into very strong calf prices.

While total cattle and calf numbers are down only 1%, declining cow and heifer slaughter will further pull numbers downward, especially in the last-half of the year. The nation's beef cow herd has been on the decline since 1996, but there are early signs that the industry may begin to shift toward expansion later this year or into 2001. The period of increased heifer retention normally results in the highest cattle prices of the cycle.

While prospects appear very promising at the start of the year, threats do loom. Backgrounders and finishers will have large investments in younger animals making them vulnerable to lower than expected fed cattle prices or higher feed prices. Dry weather in the Midwest and Southern Plains persists, raising possibilities for drought this summer, and sharply higher feed prices. Higher feed prices will cut quickly into calf prices and to feedlot margins. In a similar fashion, interest increases will continue to add costs and cut calf and feeder cattle prices. Finally, beef demand has improved in 1999 with the "high protein" diet. If this turns out to be a fad diet, the price enhancement effect could wane in 2000.

## The Numbers

Figure 1

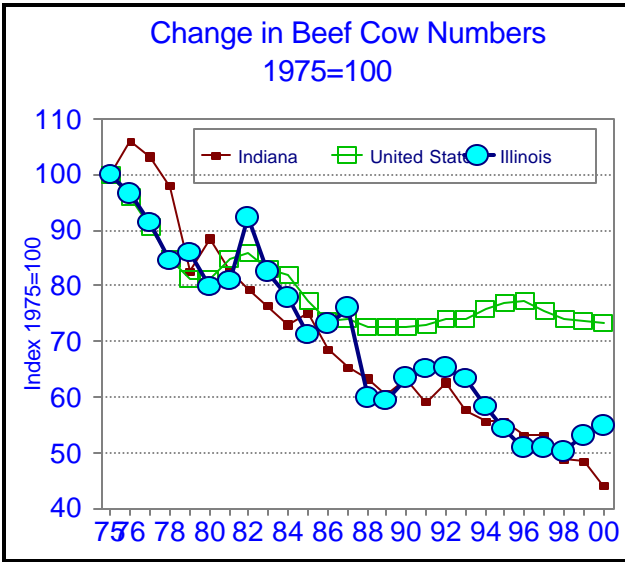


The number of cattle and calves was set at 98 million, down 1%, in the latest *Cattle* inventory report from USDA. Beef cow numbers were down about 1%, while milk cow numbers were up 1%. Since the peak numbers on this cycle in 1996, beef cow inventory has been down 5%,

### Figure 1.

Over the last 25 years, beef cow numbers in Illinois and Indiana have dropped more than the rate of decline in the country as a whole as shown in **Figure 2**. Beef cow numbers for the country are down about 28%, while those for Illinois and Indiana have been down nearly 50%. The declining trend continued in Indiana in the past year with beef cow numbers dropping 9% to 257,000 cows. However, Illinois reversed the long-run decline by

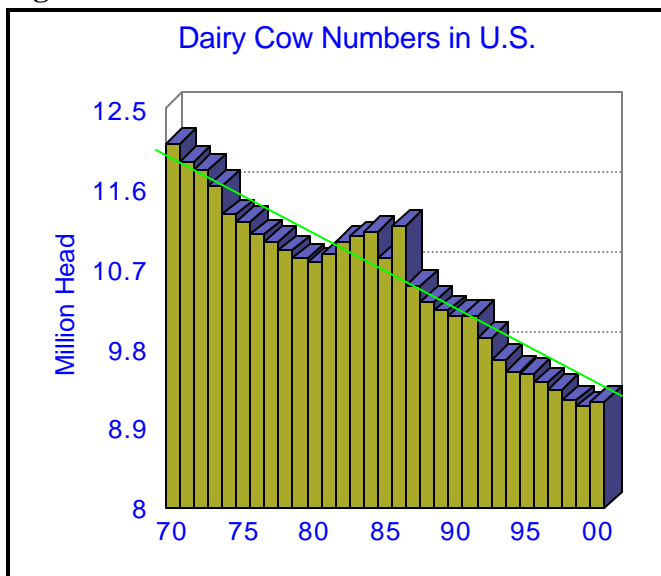
**Figure 2**



retention is the largest.

The continued good news for corn producers is that on-feed numbers remain high at 8% above previous year's levels in the 7-state report. Currently, 11% more heifers are in the feedlots (7states) in

**Figure 3**



return to the long-run decline in dairy numbers.

Illinois dairy cow numbers dropped to only 120,000 cows, a decline of 38% in the decade of the 1990's. As shown in **Figure 4**, Illinois milk cow numbers have been down over 50% in the last 25

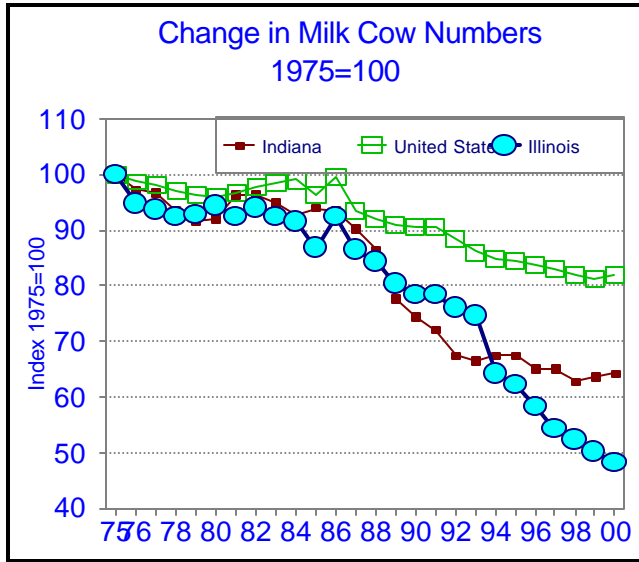
increasing cow numbers to 480,000 head, a 3% increase in the past year.

The question of when brood cow expansion will begin is an important one for beef supplies and cattle prices this year. The report indicated that replacement beef heifers were unchanged from year-previous levels. This means that producers have not yet shifted into an expansion mode, with some moderate decline expected in the herd over the next year. However, it is likely that heifer retention could become greater late this year, thus signaling the start of the next beef cow expansion. While expansion sounds threatening to the industry, keep in mind that the highest prices of the cattle cycle come when heifer

retention is the largest. The continued good news for corn producers is that on-feed numbers remain high at 8% above previous year's levels in the 7-state report. Currently, 11% more heifers are in the feedlots (7states) in comparison to only 6% more steer calves indicating that producers have been more anxious to collect the high values for feeder heifers as opposed to retaining them for expansion. The mix of heifers and steers will likely begin to shift late this year when more heifers are retained for herd replacement.

Milk cow numbers were up slightly (+.6%) as producers responded to record high milk prices in late 1998 and early 1999. This is the first time since 1986 that there was an appreciable increase in milk cows as seen in **Figure 3**. However, sharply lower milk prices more recently have apparently caused many milk producers to cut back on expansion plans as current milk replacement heifer numbers are down 3%, and indicate a

**Figure 4**



years. Indiana has experienced less decline. During the decade of the 1990s, milk cow numbers decreased 14% to 138,000 head. Since 1975, Indiana milk cow numbers have been down 36% compared to a decrease of 18% for the country, (**Figure 4**).

The calf crop numbers for 1999 were estimated at 38.7 million head, only modestly lower than the 1998 calf crop. Contributing to a somewhat bigger than expected calf crop was the expansion noted in milk cows.

### A 4% Drop In Beef Supplies

For the year of 2000, beef supplies are expected to drop about 4%, after rising a surprisingly large 3% in 1999 (see below, and in Table 5).

The number of steers and heifers available for slaughter in the first-half will be down about 2% and cow slaughter is also expected to remain low, thus first-half beef production is expected to be down 3%. Large numbers of market ready cattle will be coming out of feedlots in the first quarter, and thus second quarter supplies will drop more than in the first quarter.

Weights are expected to remain at record high levels throughout the year as shown in Table 4. Each quarter of 1999 had a new record high weight. Yearly weights averaged about 730 pounds, up from the previous record in 1998 of 723 pounds. The sharp increase in weights is a result of cheap feed and rising fed cattle prices. If feed prices begin to move upward this year, cattle weights will likely drop.

Beef supplies will decline by greater amounts in the last-half of the year. The number of calves under 500 pounds that will compose the last-half slaughter are down 3%. Two additional factors are expected to contribute to even greater declines. Cow slaughter is expected to be even lower, and the possible beginning of heifer retention for expansion of the beef cow herd is also expected to further drop beef supplies.

<u>Year</u>	<u>Quarter</u>	<u>Production Million lbs.</u>	<u>Percent Change Year-ago</u>
1998	I	6,215	+1.7%
	II	6,461	+ .7%

	III	6,638	+ .5%
	<u>IV</u>	<u>6,339</u>	<u>+1.3%</u>
	Year	25,653	+1.0%
1999	I	6,397	+2.9%
	II	6,627	+2.6%
	III	6,841	+3.1%
	<u>IV</u>	<u>6,525</u>	<u>+2.9%</u>
	Year	26,390	+2.9%
2000	I	6,170	-3.5%
	II	6,342	-4.3%
	III	6,483	-5.2%
	<u>IV</u>	<u>6,295</u>	<u>-3.5%</u>
	Year	25,290	-4.2%

### Prices May Average Near \$70 for Fed Cattle

Prices of fed cattle in 1999 averaged \$66, a strong recovery from the \$61.48/cwt. level of 1998. It is significant to note that prices were \$4.50 higher with 3% **greater** supplies. Generally this means an increase in demand given higher prices with larger supplies. The primary reasons for strong beef demand in 1999 were the combination of a strong domestic economy and the Atkins diet. This diet, also known as the “high protein” diet suggests that consumers reduce the amount of carbohydrates and increase the portion of proteins in their diets. Medical advocates of these diets say that in addition to weight loss, added benefits include reduced cholesterol levels, reduced blood pressure and reductions in heart disease. These results are of course the opposite of what much of the medical community has discussed for the past 25 years.

In the models I estimate, these factors began to have an impact in the second quarter of 1999. The larger of the two is the “high protein” diet which may have contributed from \$4 to \$7 per cwt. to higher fed cattle prices in the last-half of 1999. This impact is not just the diet impact, but the result of the positive press given to the diet and to protein consumption in general. This information likely serves as an image enhancer, and when combined with purchasing power from strong incomes provides better demand.

The question of how long the demand kick will last is important to 2000 cattle prices. I have assumed that the price improvement will be in the range of \$1 to \$3 per hundredweight for this year. If it continues as strong as in 1999, then prices could average as high as \$74 for fed cattle (of course this also assumes a 2% to 3% growth in consumer incomes). Needless to say, the industry is excited to see better demand after the last quarter of a century of declines.

On the negative demand side however, will be weaker exports and more imports as a result of smaller U.S. supplies and higher prices. The USDA is estimating that exports will decline by 3% and imports will rise by 5%. The net impact will drop fed prices about \$0.75 per cwt.

Fed cattle prices are expected to remain in the very high \$60s in February, but move into the lower \$70s by early spring. The normal seasonal decline in fed cattle prices in the summer is expected to be modest this year as supplies move downward. Prices could return to the very high \$60 for periods this summer. Late summer prices are expected to move back above \$70 with the last-quarter of 2000 finding average prices in the \$68 to \$73 range.

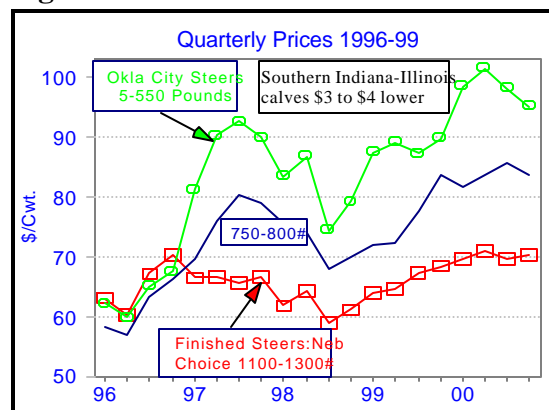
Price estimates for calves and feeder cattle are expected to continue to be even higher than in late-1999. Oklahoma City 500 to 550 pound steers as an example are expected to exceed \$1.00 per pound in late winter and spring, the highest prices since 1993. With current prices quoted at \$.98 to \$1.10 a pound, prices would seem to have already reached these levels. If fed prices continue to improve, and if feed prices remain moderate, calf prices will continue to rise into the spring.

In a similar fashion, feeder cattle prices are expected to strengthen into the spring and early summer. In 1999, 750 to 800 Oklahoma City feeder steers averaged \$83.54. For 2000, they are estimated to reach an average slightly higher at about \$84 per cwt. (See Table 5 and **Figure 5**).

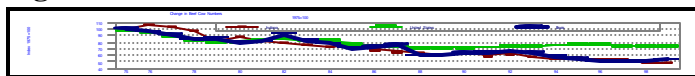
Calf and feeder cattle prices will be sensitive to the potential for higher feed prices and higher interest rates in 2000. While fed cattle prices are going to be stronger, this may not necessarily lead to higher calf and feeder prices.

Year	Quarter	Choice steers Nebraska Price	% Change Vs. Year-ago
1998	I	\$61.73	- 7.0%
	II	\$64.16	- 3.8%
	III	\$58.97	-10.2%
	IV	<u>\$61.06</u>	<u>- 8.3%</u>
	Year	\$61.48	- 7.3%
1999	I	\$64.00	+ 3.7%
	II	\$64.45	+ .5%
	III	\$67.31	+14.1%
	IV	<u>\$68.41</u>	<u>+12.0 %</u>
	Year	\$66.04	+ 7.4%
2000	I	\$69.57	+ 8.7%
	II	\$70.89	+10.0%
	III	\$69.65	+ 3.4%
	IV	<u>\$70.13</u>	<u>+ 2.5%</u>

**Figure 5**



**Figure 5**



Year \$70.06 + 6.1%

## **Implications for Industry**

The year of 2000 has great promise for the cattle industry. Calf and feeder cattle prices are expected to be at the highest levels since 1993. Fed cattle prices are expected to average near \$70, and higher if demand remains as favorable as in the last-half of 1999.

The improved prospects for the beef sector are a result of an expected 4% reduction in supplies this year and favorable demand from the strong economy and the “high protein” diet.

While cow-calf producers are enjoying the high prices, those in the backgrounding and finishing operations are becoming dependent on higher cattle prices as they have large investments in younger animals they have purchased.

The potential for drought and much higher feed prices must be on the minds of finishers. It is recommended that finishers consider price protection for feed prices for the last-half of the year, and early 2001. Drought in the Southern Plains could lead to more cow liquidation and the selling of fed cattle at lighter weights. This means that fed cattle prices would also be vulnerable, and thus protection of profitable fed cattle prices with futures, options, or forwarding contracting should be considered.

Brood cow operations will also be vulnerable to drought as it reduces feed supplies and reduces calf prices. However, if dryness does lead to increased liquidation of cow herds, this will keep calf prices lower this year, but provide even higher prices in 2001 and 2002. The cattle cycle appears about ready to move into expansion later this year and early 2001. This means both strong calf prices and high premiums for cow-calf pairs. Those who have been seeking a time period to liquidate a cow herd may need to look no further into the future than the next 12 to 18 months.

Table 1. Cattle Number, 1991 - 2000

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	% Change
All cattle and calves											
January 1	98,896	99,559	99,176	100,988	102,755	103,487	101,656	99,744	99,115	98,048	-1.1
July 1	109,000	109,200	109,000	111,300	113,000	111,500	109,200	107,700	106,800		
Beef cows											
January 1	33,271	33,775	33,365	34,650	35,156	35,228	34,458	33,885	33,745	33,546	-0.6
July 1	34,400	34,550	34,900	35,600	36,100	35,600	34,800	34,400	34,050		
Milk cows											
January 1	10,156	9,913	9,658	9,528	9,487	9,416	9,318	9,199	9,133	9,188	0.6
July 1	10,000	9,850	9,700	9,500	9,500	9,400	9,300	9,200	9,150		
Heifers 500 lbs. + Beef replacement											
January 1	5,605	5,761	6,092	6,365	6,475	6,179	6,042	5,764	5,535	5,530	-0.1
July 1	5,300	5,700	5,700	5,900	5,700	5,500	5,300	5,000	4,800		
Milk replacement											
January 1	4,220	4,202	4,176	4,144	4,141	4,104	4,058	3,986	4,069	3,954	-2.8
July 1	4,200	4,200	4,000	4,000	3,900	3,700	3,600	3,600	3,700		
Other heifers 500 lbs. +											
January 1	8,357	8,142	8,550	9,068	9,275	9,949	10,212	10,051	10,170	10,045	-1.2
July 1	7,400	7,100	7,300	7,500	8,000	8,100	8,200	8,100	8,100		
Steers 500 lbs. +											
January 1	16,369	16,755	16,940	17,042	17,463	17,732	17,392	17,189	16,891	16,652	-1.4
July 1	15,100	15,100	14,900	15,200	15,400	15,100	14,800	14,600	14,400		
Bulls 500 lbs. +											
January 1	2,228	2,279	2,278	2,307	2,390	2,392	2,350	2,270	2,281	2,294	0.6
July 1	2,200	2,200	2,200	2,300	2,400	2,400	2,300	2,200	2,100		
All Calves < 500 lbs.											
January 1	18,691	18,733	18,117	17,884	18,369	18,488	17,826	17,401	17,290	16,840	-2.6
July 1	30,400	30,500	30,300	31,300	32,000	31,700	30,900	30,600	30,500		
<b>Calf Crop</b>	<b>39,026</b>	<b>39,290</b>	<b>39,448</b>	<b>40,059</b>	<b>40,211</b>	<b>39,776</b>	<b>38,961</b>	<b>38,812</b>	<b>38,710</b>		<u>99 vs. 98</u> -0.3

Table 2a. Ratios of Commercial Slaughter Steers and Heifers to Beginning Cattle Inventories, 1985 to 2000

	January 1 <sup>a</sup> Slaughter Supply	Total Commerical Steer and Heifer Slaughter	Ratio of Slaughter to Supply
	-----Thousand Head -----	-----	-----Percent-----
1985	50,885	28,139	55.3
1986	48,488	28,613	59.0
1987	45,881	28,350	61.8
1988	44,299	28,087	63.4
1989	43,673	26,970	61.8
1990	42,970	26,664	62.1
1991	43,417	26,445	60.9
1992	43,630	26,368	60.4
1993	43,607	26,573	60.9
1994	43,994	27,614	62.8
1995	45,107	28,667	63.6
1996	46,169	28,573	61.9
1997	45,430	29,541	65.0
1998	44,641	28,893	64.7
1999	44,351	29,795	67.2
2000	43,537	28,430	65.3 <sup>b</sup>

<sup>a</sup> Steers 500 pounds and over, other heifers, and all under 500 pounds

<sup>b</sup> Projected

Table 2b. Ratios of Commercial Slaughter Steers and Heifers to Beginning Cattle Inventories, 1985 to 2000

	January 1 Inventory	First Half	Ratio	Calves <	Second Half	Ratio
	Steers and Heifers	Steer and Heifer		500 Pounds	Steer and Heifer	
	500+ <sup>b</sup>	Slaughter		January 1	Slaughter	
	thousand head			thousand head		
1985	24,435	14,083	57.6	26,450	14,056	53.1
1986	24,057	14,219	59.1	24,431	14,394	58.9
1987	22,797	14,046	61.6	23,084	14,304	62.0
1988	23,404	13,986	59.8	20,895	14,101	67.5
1989	23,100	13,477	58.3	19,899	13,493	67.8
1990	23,939	13,425	56.1	19,031	13,239	69.6
1991	24,726	13,048	52.8	18,691	13,397	71.7
1992	24,897	13,137	52.8	18,733	13,231	70.6
1993	25,490	13,101	51.4	18,117	13,472	74.4
1994	26,110	13,576	52.0	17,884	14,038	78.5
1995	26,738	14,119	52.8	18,369	14,533	79.1
1996	27,681	14,742	53.3	18,488	13,831	74.8
1997	27,604	14,680	53.2	17,826	14,861	83.4
1998	27,240	14,460	53.1	17,401	14,447	83.0
1999	27,061	14,794	54.7	17,290	15,001	86.8
2000	26,697	14,363	53.8 <sup>b</sup>	16,840	14,067	83.5 <sup>b</sup>

<sup>a</sup> Projected

<sup>b</sup> Excluding replacement heifers

Table 3. Cow Inventory, January 1 and Cow and Bull Slaughter for the Following Year

	Cow Inventory	Cow Slaughter	Ratio Slaughter /Inventory	Bull Slaughter	Ratio Bull Slaughter to Cow Slaughter
	-----thousand head-----			thousand head	
1980	47,865	6,334	13.2	724	11.4
1981	49,586	6,634	13.4	775	11.7
1982	50,331	7,354	14.6	818	11.1
1983	48,987	7,606	15.5	808	10.6
1984	48,603	8,617	17.7	788	9.1
1985	46,212	7,391	16.0	758	10.3
1986	44,811	7,958	17.8	715	9.0
1987	44,457	6,604	14.9	691	10.5
1988	43,494	6,331	14.6	642	10.1
1989	43,337	6,294	14.5	668	10.6
1990	43,353	5,969	13.8	658	11.0
1991	43,427	5,624	13.0	615	10.9
1992	43,688	5,839	13.4	653	11.2
1993	43,023	6,088	14.2	659	10.8
1994	44,178	5,974	13.5	643	10.8
1995	44,643	6,144	13.8	675	11.0
1996	44,644	7,172	16.1	723	10.1
1997	43,776	6,619	15.1	707	10.7
1998	43,084	5,985	13.9	606	10.1
1999	42,878	5,711	13.3	587	10.3
2000	42,734	5,470	12.8 <sup>b</sup>	569	10.4 <sup>a</sup>

<sup>a</sup> Projected

Table 4. Commercial Beef Slaughter, Production, and Dressed Weights, 1983-2000

Year	Slaughter (1,000 hd)	Weight (lb)	Production (lbs)	Slaughter (1,000 hd)	Weight (lb)	Production (lbs)
	-----January-March-----			-----April-June-----		
1983	8,735	632	5,525	8,844	627	5,549
1984	9,169	623	5,708	9,341	623	5,819
1985	8,936	637	5,691	9,023	656	5,917
1986	8,884	649	5,769	9,574	652	6,247
1987	8,765	657	5,756	8,878	646	5,737
1988	8,575	664	5,696	8,759	660	5,784
1989	8,180	676	5,529	8,694	664	5,777
1990	8,117	678	5,507	8,541	671	5,733
1991	7,858	685	5,383	8,299	686	5,694
1992	8,032	697	5,597	8,255	693	5,726
1993	7,910	677	5,357	8,469	672	5,690
1994	8,162	704	5,745	8,615	702	6,042
1995	8,418	699	5,888	9,053	699	6,325
1996	8,971	703	6,303	9,589	693	6,642
1997	8,912	686	6,112	9,307	690	6,419
1998	8,681	716	6,215	8,995	718	6,461
1999	8,733	733	6,397	9,161	723	6,627
2000 <sup>a</sup>	8,360	738	6,170	8,735	726	6,342
	-----July-September-----			-----October-December-----		
1983	9,547	630	6,012	9,537	626	5,974
1984	9,559	622	5,949	9,503	624	5,933
1985	9,352	659	6,166	8,978	643	5,774
1986	9,654	650	6,275	9,180	645	5,925
1987	9,222	657	6,063	8,783	666	5,852
1988	9,199	672	6,186	8,538	674	5,575
1989	8,612	684	5,892	8,430	686	5,785
1990	8,449	689	5,814	8,112	687	5,564
1991	8,453	711	6,012	8,074	707	5,710
1992	8,451	709	5,991	8,122	696	5,654
1993	8,673	700	6,076	8,268	704	5,819
1994	8,825	723	6,377	8,629	709	6,114
1995	9,279	714	6,625	8,890	706	6,277
1996	9,123	700	6,390	8,900	684	6,084
1997	9,300	710	6,603	8,879	704	6,258
1998	9,071	732	6,638	8,737	726	6,339
1999	9,337	733	6,841	8,914	732	6,525
2000 <sup>a</sup>	8,809	736	6,483	8,565	735	6,295

<sup>a</sup> Projected

Table 5. Beef, Pork, Poultry Production, Nebraska Steer Prices, and Oklahoma City Feeders by Quarter

	Beef Production	Pork Production	Poultry Production	Nebraska Choice Steer Price	Oklahoma City 5-550 Steers	Oklahoma City 750-800 Steers	
	million pounds				\$/cwt.		
1991	I	5,383	3,901	5,821	80.89	109.37	91.16
	II	5,694	3,792	6,311	79.34	112.00	93.42
	III	6,012	3,821	6,415	70.29	101.91	87.66
	IV	5,710	4,434	6,338	70.60	94.76	81.88
1992	I	5,595	4,321	6,314	75.95	95.72	79.56
	II	5,723	4,033	6,624	77.18	93.44	80.71
	III	5,990	4,264	6,816	72.84	94.16	83.50
	IV	5,660	4,567	6,644	76.49	91.17	81.72
1993	I	5,357	4,204	6,542	80.65	99.51	85.76
	II	5,690	4,151	6,987	79.78	104.17	86.80
	III	6,076	4,140	7,027	73.77	100.08	87.99
	IV	5,819	4,535	6,970	71.23	94.83	85.27
1994	I	5,745	4,182	6,765	73.10	98.96	82.14
	II	6,042	4,240	7,238	68.79	94.16	77.63
	III	6,377	4,326	7,504	66.37	86.42	76.37
	IV	6,114	4,913	7,339	67.63	84.58	74.74
1995	I	5,888	4,488	7,343	71.51	86.81	72.62
	II	6,325	4,394	7,653	64.73	78.62	65.77
	III	6,625	4,240	7,472	62.65	68.29	65.44
	IV	6,277	4,690	7,683	66.10	64.45	67.55
1996	I	6,303	4,389	7,880	63.06	62.12	58.11
	II	6,642	4,104	7,949	60.26	59.83	56.79
	III	6,390	4,143	8,043	67.35	64.90	63.29
	IV	6,084	4,449	7,930	70.39	67.49	66.15
1997	I	6,107	4,194	7,875	66.40	81.28	69.44
	II	6,416	4,091	8,341	66.63	90.28	75.88
	III	6,603	4,194	8,275	65.65	92.65	80.44
	IV	6,258	4,767	8,259	66.56	89.90	78.98
1998	I	6,215	4,687	8,135	61.73	83.44	75.49
	II	6,461	4,429	8,316	64.16	86.71	74.00
	III	6,638	4,625	8,244	58.97	74.41	67.89
	IV	6,339	5,239	8,452	61.06	79.21	69.80
1999	I	6,397	4,865	8,501	64.00	87.35	71.93
	II	6,627	4,631	8,930	64.45	89.12	72.17
	III	6,841	4,672	8,848	67.31	87.15	77.57
	IV	6,525	5,125	8,675	68.41	93.30	83.54
2000	I	6,170	4,726	8,925	69.57	98.42	81.68
	II	6,342	4,502	9,250	70.89	101.50	83.72
	III	6,483	4,571	9,175	69.65	98.13	85.58
	IV	6,295	4,921	9,200	70.13	95.18	83.74

<sup>P</sup> Preliminary

Prices are point estimates, but users should look at a range of possible prices at least in a band that both adds and subtracts the following \$/cwt. These are the estimation errors:

Nebraska steers: \$2.00/cwt. 550 to 600 # steers: \$2.50/cwt. 750 to 800 # steers: \$3.00/cwt.

This range has included about 66% of the prices from the historical price estimates.