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EXPANSION OF BEEF COWS IN NEBRASKA

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The United States has continued to see a decline in the cattle herd with the smallest inventory since 1951. As of January 1, 2013 total cattle and calves was reported at 87.7 million head. The beef cow inventory was the lowest since 1962 at 29.0 million head. Improving drought conditions through the end of 2013 and continuing through 2014, coupled with strengthening cattle prices, sends strong market signals for expansion of the beef cow inventory. As calf prices have continued to rise, potential returns for cow/calf producers have also continued to rise.

After a year of expansion in 2011, severe drought caused liquidation of the Nebraska cow herd in 2012 and 2013 (Figure 1). Some of the expansion in Nebraska in 2011 can be attributed to the drought in Texas which caused relocation of cattle to the north. As of January 1, 2014, Nebraska beef cow inventory was 1.797 million head. Heifers held for beef replacement was the highest in over 10 years at 387,000 head. This was a 10.6% increase over the previous year. The last time we saw heifers held for beef replacement this high was in the January 1, 2012 report. The drought in 2012 caused most of those heifers to enter the feedlots instead of the cowherds which coupled with cow culling caused the decline in beef cow inventory. Continued improvements in drought conditions coupled with current market signals, signify growth within the beef cattle inventory in Nebraska over the next several years.

If market conditions are signaling growth within the beef cattle inventory in Nebraska, the question is to what level can we reach and with what methods. The following paper looks at land allocation in Nebraska and the use of corn stalk residue. It also addresses issues that include buying heifers versus raising them and other considerations for expanding the beef cow herd in Nebraska.

According to the Ag Census, total farm land in Nebraska has stayed fairly steady since 1987 at 45.3 million acres with a peak of 45.9 million acres in 2002 down to 45.3 million acres in 2012. Currently, total pasture land makes up roughly 50% of the total acres of farm land or 22.83 million acres. Total pasture land can be divided into three categories: 1) other pasture and grazing land that could have been used for crops without additional improvement (1.41%), 2) woodland pastured (0.93%), and 3) permanent pasture and rangeland other than cropland and woodland pastured (97.66%). All three of these categories have decline since 2007 causing total pastureland in Nebraska to decline 3.8%. Grazing lands have been converted to cropland across Nebraska. This is particularly evident in the decline of other pasture and grazing land that could have been used for crops without additional improvement (category 1) from 891,810 acres in 2007 to 322,093 in 2012, a 36% decline over five years. This continues a trend that has been in place since 1987 (Figure 2).

As available pastureland declines, and livestock producers compete for less land, cost of land and rental rates continue to increase. According to the UNL 2014 Nebraska Farm Real Estate

Survey¹, average grassland values increased in 2014 for both tillable grazing land (up 14% at \$1,390 per acre) and nontillable grazing land (up 24% at \$865 per acre) from 2013. Current cash rental rates for pasture land also increased for the majority of the agricultural districts. 2014 cow-calf per month basis rates were on average 20 to 25 percent higher compared to 2013.

Growth in the Nebraska beef cowherd to pre-drought levels and beyond may take some thinking outside of the box and use of “nontraditional” feed resources. Some alternatives would be the use of cover crops or the use of corn residue in feeding rations. Both of these could be included in a producer’s portfolio of alternative feedstuffs as potential economically available feed sources.

Looking at the use of corn residue within Nebraska, the first question that needs to be addressed is how much corn residue could be sustainably used. Wilhelm et al. (2010)² performed an extensive review of sustainability indicators for agricultural residue removal. The result of this review was the identification of six environmental factors that potentially limit agricultural residue removal—soil erosion from wind and water; soil organic carbon; plant nutrient balances; soil, water, and temperature dynamics; soil compaction; and off-site environmental impacts. This then leads to the question of how much residue is available. Muth et al. (2012)³ accounted for all the factors listed by Wilhelm et al. (2010) and determined that in 2011, 18,609,000 metric tons of residue were available to be sustainably removed in Nebraska. Based on these calculations approximately 40% of the corn residue could be sustainably removed from corn acres. Based on 2013 numbers, there was 9.55 million acres of corn acres harvested in Nebraska leaving an estimated 16.5 million MT of residue available to be removed sustainably.

From a cow/calf perspective this corn residue could be utilized by harvesting the residue and feeding it to the animals or by simply grazing the corn fields after grain harvest. If the residue is removed by grazing, cow performance limits the amount of residue removed because, without supplemental feeds, cows would lose body weight and body condition before removing the sustainable amount available. Based on a survey (Edgerton, 2012 unpublished data), only about 43% of cornstalks that could be sustainably grazed were actually grazed as of 2012. This signals a potential opportunity to cow/calf producers to expand the grazing of cornstalks during winter months and/or the harvesting of cornstalk residues for use during other times of the year.

Cover crops are becoming another potential opportunity for producers to capitalize on as a feed source in Nebraska. The net benefit of cover crops can vary greatly depending upon the cover crop(s) being planted, how they are grazed, and ultimately, how the crop is terminated. Research is still being conducted on the economic benefits of cover crops for the crop producer and the livestock producer. For the livestock producer, the benefit to using cover crops as an alternative feed source is based on what crop is planted, how well it germinates and grows, and its effects on animal performance compared to other more traditional feed sources.

If cow/calf producers have the available land and resources to expand their cow herd, another question to address would be the question of how to increase their herd size. The producer could

¹ Jansen, J. and R. Wilson. 2014. “Nebraska Farm Real Estate Market Highlights, 2013-2014.

<http://agecon.unl.edu/realestate>

² Wilhelm, W.W., J.R. Hess, D.L. Karlen, J.M.F. Johnson, D.J. Muth, J.M. Baker, et al. 2010. Review: Balancing limiting factors & economic drivers for sustainable Midwestern US agricultural residue feedstock supplies. *Ind. Biotechnol.* 6:271-287

³ Muth, D. J., K. M. Bryden and R. G. Nelson. 2012. Sustainable agricultural residue removal for bioenergy: A spatially comprehensive US national assessment. *App. Energy.* 102:403-417.

<http://www.sciencedirect.com/science/article/pii/S0306261912005508>

use the available resources by expanding their breeding stock, or by looking at other alternatives such as running additional stockers. The answer to this will vary depending on each individual producer.

If the producer decides to expand the breeding stock, they will need to decide whether to raise their own replacement heifers or to buy them into the herd. Based on current market conditions and feed costs, one might consider one option over the other. Again, every producer will have a different answer to this question. Current feed costs will play a vital role in the decision. The relationship between those feed costs for the heifer from weaning until a viable calf is born in relation to the cost of buying a bred heifer is important. Producers can use the tool⁴ “The Stochastic Partial Budgeting for Beef Cow Replacement” to help determine the scenario that would be most economical for their individual situation.

If the producer decides to expand the breeding stock by buying replacement heifers, the producer needs to understand what he can afford to pay for the heifer and her breakeven value. The average breakeven value of a heifer will depend on numerous factors. These factors include: the number of calves she will produce, how much feed she will eat and the cost of the feed as well as what prices her calves will sell for. Costs and revenues play a critical role in a heifer’s breakeven value. The article “Buyer Beware: What is the Breakeven Value of Beef Replacement Heifers?” provides more details⁵.

As we move into 2015, there are strong market signals for beef herd expansion. If producers decide to expand their breeding herd, there are several decisions they need to decide on. Each possible question, needs to be addressed and analyzed and will vary for every producer.

⁴ The buying versus raising tool can be found at: <https://westcentral.unl.edu/agecon3>

⁵ <http://agecon.unl.edu/documents/2369805/5842081/6-4-14.pdf/c6ed0e2d-512e-4d41-a916-b576abfec951>

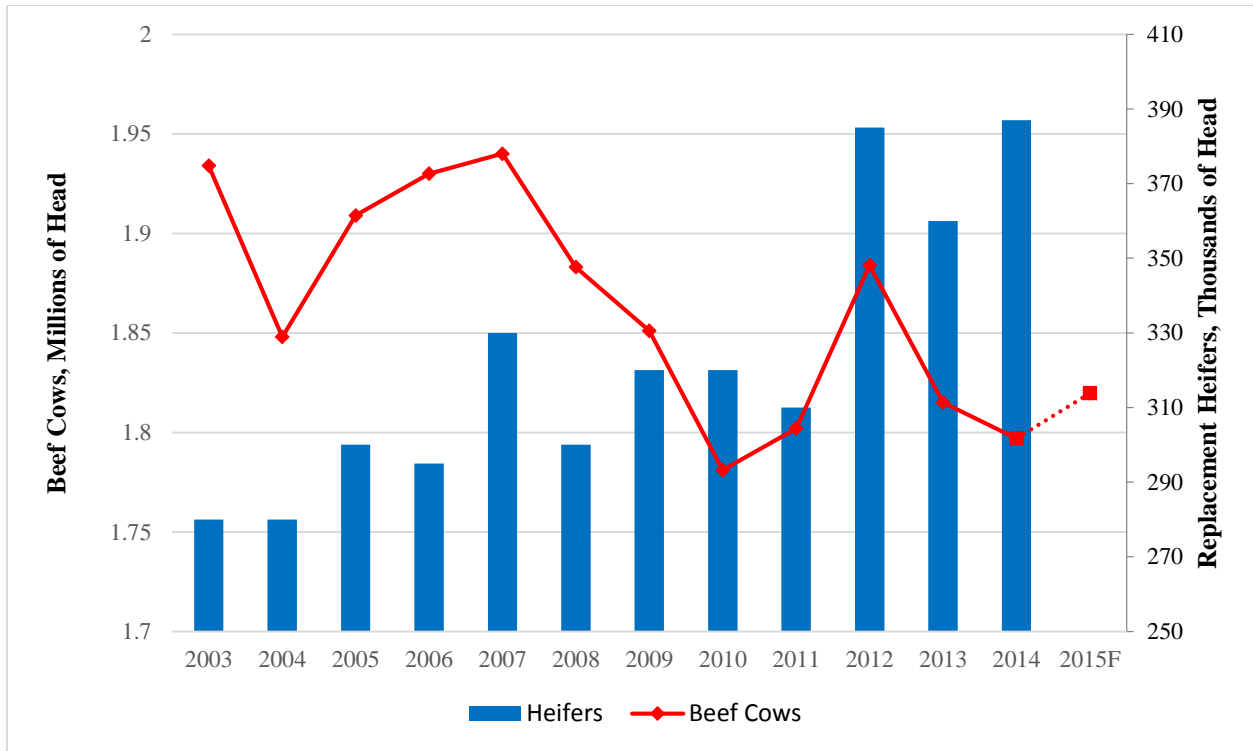


Figure 1. January 1 Beef Cow & Replacement Heifer Inventory for Nebraska, 2003 to 2014.

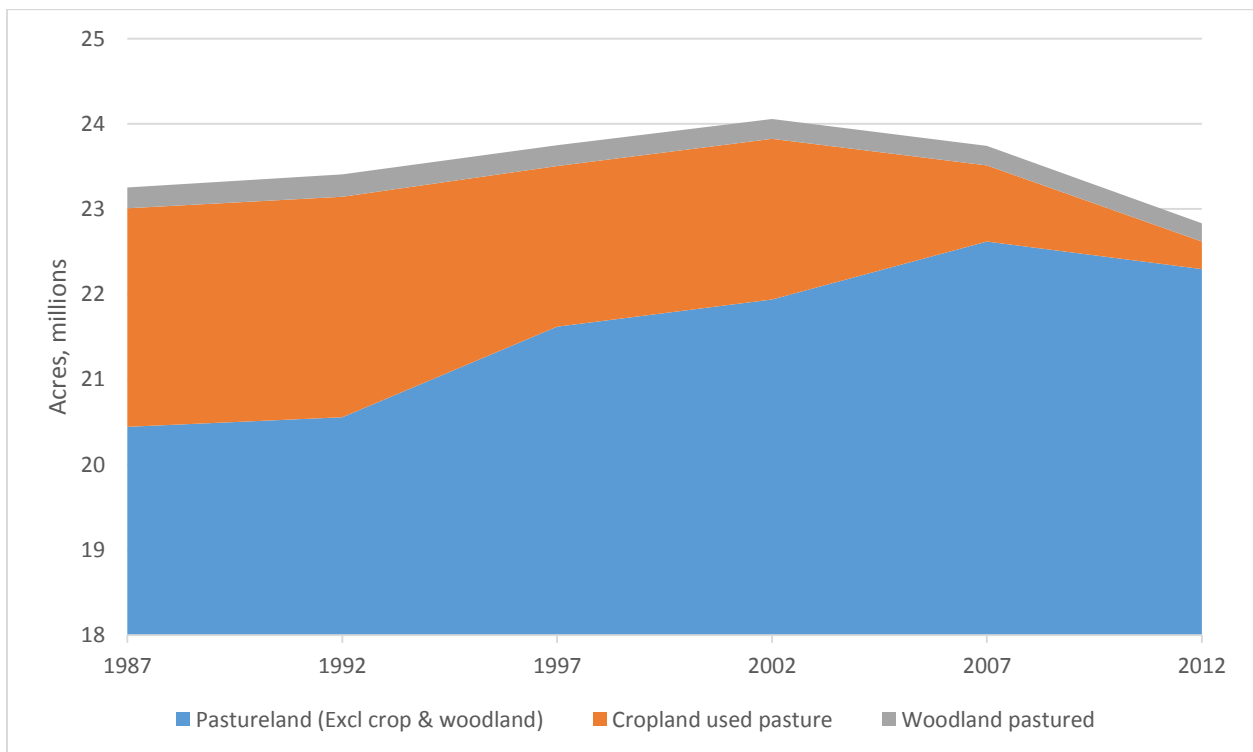


Figure 2. Total Pastureland in Nebraska.