

**Bermudagrass Adaptation and Management in Nebraska**  
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Recently in Nebraska, there has been more interest in the application of warm-season grasses, specifically the adaptation of bermudagrass. But first is to look at the background on how the environment has changed to increase the possibility of warm-season grasses adaption in select areas of Nebraska and how it influences bermudagrass in turfgrass areas.

**Information from the USDA Plant Hardiness Zone Map**

According to the recent USDA Plant Hardiness Zone Map, released in 2023, Nebraska has 4 different zones, one zone is 10-degree increments based on average annual extreme minimal temperature from 1991-2020 from zones 4b to 6a (Figure 2). A higher range of minimum temperatures compared to 2013 where the zones from 1976 to 2005 had a lower range from 4a to 5b (Figure 1).

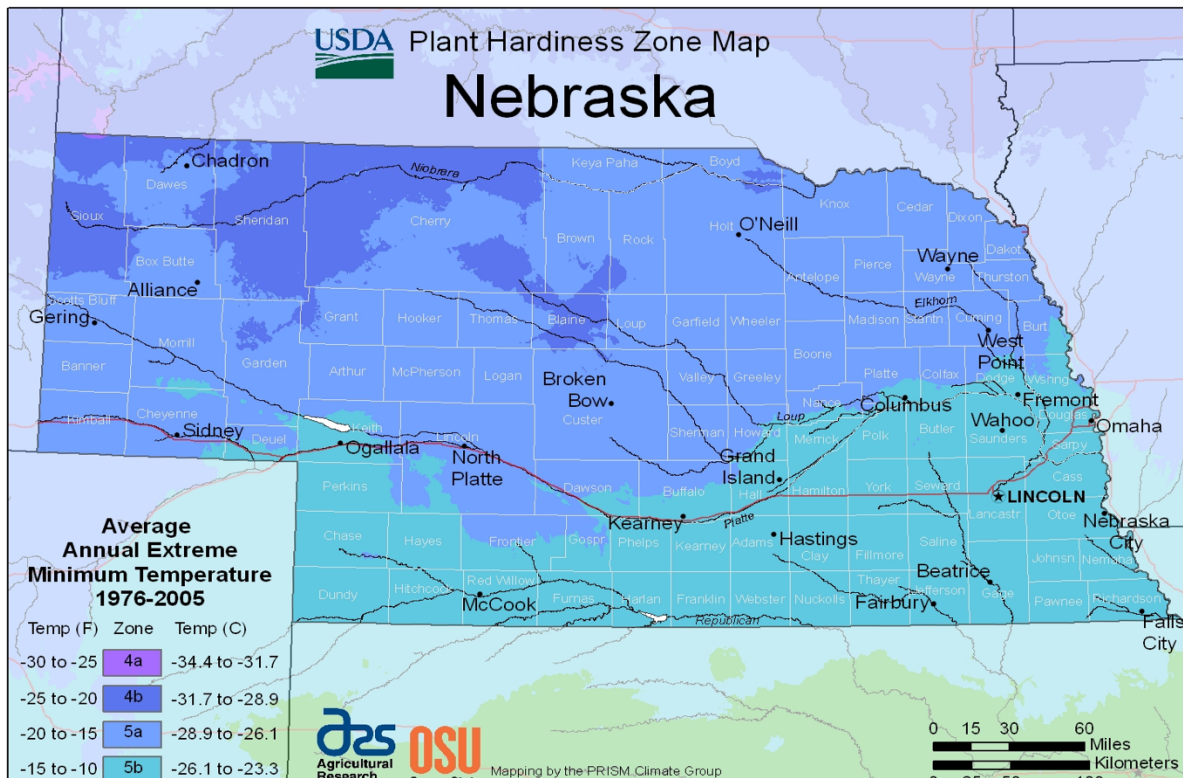


Figure 1. 2013 Plant Hardiness Zone Map of the state of Nebraska (USDA)

One of the notable changes to the last update of the hardiness zone from 2013, is the expansion of the 6a zone crossing the Kansas-Nebraska state line. The expansion of the 6a zone varies in the southern parts of Nebraska including the cities of McCook, Fairbury, Beatrice, to Falls City. This has also expanded to areas of Lincoln, Omaha, and Hastings are

also expand to areas with a 6a zone. Areas in the 6a zone can be possible areas with the incorporation of warm-season grasses

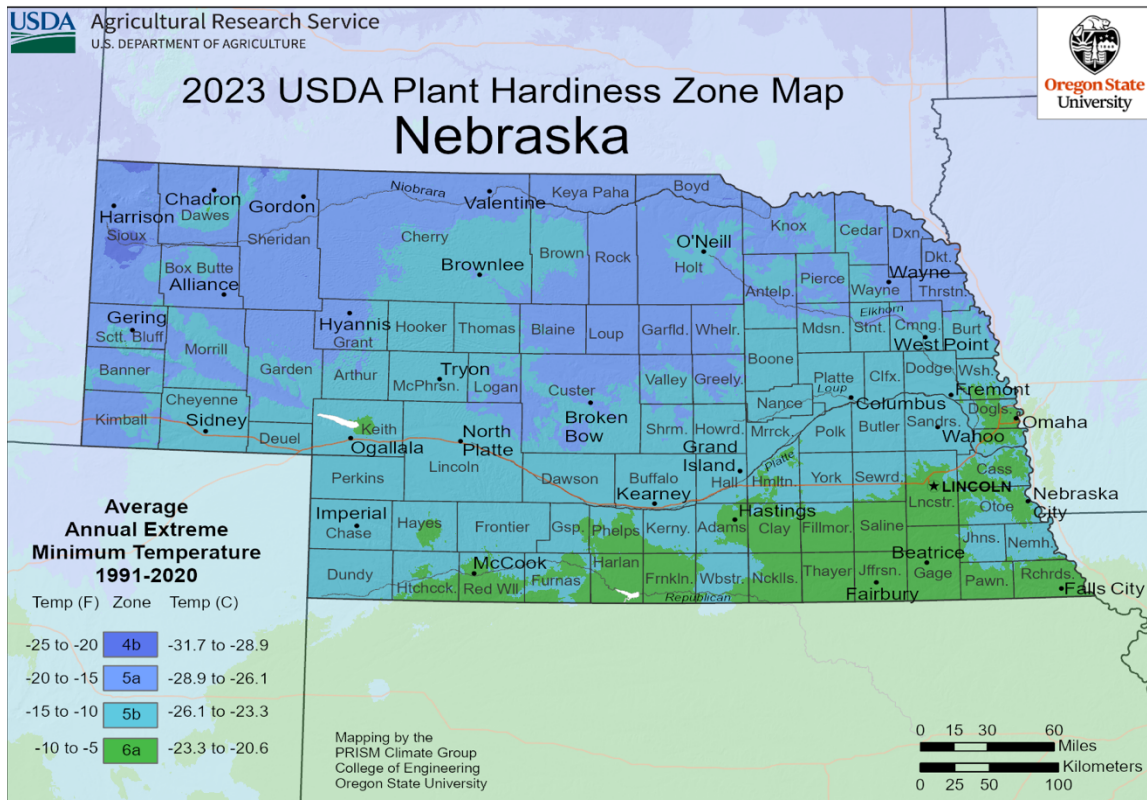


Figure 2. 2023 Plant Hardiness Zone Map of the state of Nebraska (USDA).

### **Bermudagrass in Nebraska**

In Nebraska, bermudagrass is considered a weed. An example of its weed presence is at UNL East Campus in Lincoln shown in Figure 3. The continuation of warmer conditions helps the bermudagrass spread due to its vegetation into other areas.



Figure 3. Common bermudagrass in front of Mussehl Hall (left) and Animal Science Complex (right) on East Campus at the University of Nebraska-Lincoln. Photos taken by Amanda Folck.

Various establishment of bermudagrass includes sod, plugs, sprigging, or seeding. However, for hybrid bermudagrass, it is done with vegetative establishment only (Christians et al. 2017). With new technology in genetics, hybrid bermudagrass can grow in cooler environments. Currently, in the Midwest, the use of hybrid bermudagrass has expanded with cultivars like Tahoma 31 in northern climates such as the NFL team Chicago Bears in Chicago, Illinois.

The positives of bermudagrass are the growth and spread of its rhizomes and stoloniferous growth, recovery of traffic, adaptation to heat, and drought tolerance. The negatives of bermudagrass are not grow well in shade and has poor cold tolerance when soil temperatures are below 50°F, leading to dormancy.

### **Management in Bermudagrass**

Thatch management is important for warm-season grasses like bermudagrass because of its higher productive growth of rhizomes and stolons. If the thatch is less than 1 inch, it is okay to keep. If it is greater than 1 inch, it needs to be managed with scarification/dethatching. Overseeding is using cool-season grass for coverage as bermudagrass goes into dormancy, yet still has coverage from continuing traffic. There are herbicides available to kill the cool-season grass and do not affect the warm-season grass as a result of overseeding in the fall.

### **Summary**

The recent zone changes in 6a for the southern part of Nebraska and into Lincoln and Omaha can lead to interest in bermudagrass. The plant hardiness zone map is one of many tools to use for determining favorable environment for warm-season grasses like bermudagrass. Also, consider types of establishment for bermudagrass, vegetative or seed, in your area and understanding of increased cultural practices on management of bermudagrass.

### **References:**

- Christians, N., A.J. Patton, and Q.D. Law. 2017. *Fundamentals of Turfgrass Management*. 5<sup>th</sup> edition. John Wiley & Sons. Hoboken, NJ.
- United States Department of Agriculture (USDA). USDA Plant Hardiness Zone Map Nebraska. <https://www.howdogardener.com/wordpress/wp-content/uploads/2012/01/NE.jpg>
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