

**SIZE CLASS COMPARISONS AND TREE SPECIES COMPOSITION OF BUR OAK (*QUERCUS MACROCARPA* MICHX.) SAVANNAS IN CENTRAL AND EASTERN NEBRASKA.**

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*Abstract:* Bur oak (*Quercus macrocarpa* Michx.) savannas have historically been documented in the loess hills mixed-grass prairies of Central Nebraska, even though they are restricted to more mesic canyon and hillside sites. These savannas are often perceived as a detriment to cattle grazing and have occasionally been removed mechanically or sprayed with herbicides. Selected oak savanna upland sites bordering the Loup River Valley, Custer County, Nebraska, were analyzed by the point-centered quarter method during the 2009 growing season. Based on average Importance Values (IV), the dominant tree species in Central Nebraska savannas were bur oak, *Fraxinus pennsylvanica* (green ash), and *Juniperus virginiana* (eastern red-cedar), while bur oak, *Quercus rubra* (red oak), and *Ostrya virginiana* (hop-hornbean) were the dominants on upland sites in eastern Nebraska. All bur oaks recorded in this study were arranged by size class. These data were compared to size class information derived from studies by the author on upland forest sites in 4 counties bordering the lower Platte River Valley in eastern Nebraska. Significant size class differences ( $P < 0.05$ ) were found between the bur oak populations of Central Nebraska and those in eastern Nebraska. The presence of many smaller trees (size classes  $< 20$  cm dbh) and the lack of the same in Central Nebraska indicates that bur oak savannas are reproducing in the eastern Nebraska upland forests but are not being replaced in Central Nebraska.