

PLANT AND SOIL NUTRIENT CONCENTRATIONS IN A RESTORED CAJUN PRAIRIE

DOMINGO M. JARIEL, Division of Sciences and Mathematics, Louisiana State University at Eunice, Eunice, LA 70535, USA

MALCOLM F. VIDRINE, Division of Sciences and Mathematics, Louisiana State University at Eunice, Eunice, LA 70535, USA

RALLEN R. FONTENOT, Division of Sciences and Mathematics, Louisiana State University at Eunice, Eunice, LA 70535, USA

*CAROLINE E. VIDRINE, Division of Sciences and Mathematics, Louisiana State University at Eunice, Eunice, LA 70535, USA

Abstract. In the prairie ecosystem, plants play important roles in nutrient recycling by extracting nutrients from the soil during the active period of growth and then returning the same back to the soil during the period of dormancy and decomposition. The objective of this study is to determine the amount of plant and soil nutrients during the actively growing season in prairie ecosystem. A Cajun Prairie at Louisiana State University at Eunice was divided into three blocks. Four plant species (*Baptisia sphaerocarpa*, *Eryngium yuccifolium*, *Panicum virgatum*, and *Solidago odora*) were chosen in each block. Four whole plant samples were clipped at ground level for each species and soil samples were taken 2.5 cm away from the crown of the sampled plants. Periodic sampling was conducted on April 14, 2004, July 28, 2004, and October 28, 2004. Plant tissue and soil samples were prepared for nutrient analysis. Percent K, P, Cu and Zn in most species generally decreased as plant matured from April to October. Total nutrient uptake by all species increased. *Eryngium* absorbed the largest amount of Mg, P, Mn, K, Ca and Zn. The temporary decline in pH, P, Cu and Zn levels in the soil could be attributed to the nutrient absorption by these species during the short term period of growth from April to October in unfertilized Cajun prairie.