

Name: Sara Nazanin Alexander

Defense date: June 8, 2010

Title: A subspecific revision of North American saltmarsh mallow, *Kosteletzkya pentacarpos* (L.) Ledebour

Thesis Advisor: Dr. Andrea Weeks, ESP

Committee: Dr. Robert Jonas, ESP and Dr. Larry Dorr, NMNH

Abstract

Kosteletzkya pentacarpos (L.) Ledeb. (syn. = *K. virginica* (L.) K. Presl ex A. Gray), has been treated as a single variable species or as including four varieties: *K. virginica* var. *althaeifolia*, var. *aquilonia*, var. *smilacifolia*, and var. *virginica*. The aim of this study was to test the validity of formally recognizing these putative infraspecific taxa by using statistical analysis of morphological data. Loans were received from 15 herbaria located along the east and Gulf coasts of the United States, a total of 1114 specimens. Measurements were taken of 224 specimens for 43 characters and analyzed using principal components analysis, discriminant analysis, and analysis of variance. Putative varieties *althaeifolia* and *aquilonia* are not morphologically or geographically distinct from var. *virginica* but represent extremes in variation along a continuous latitudinal cline. Plants with dense and long pubescence, biserrate leaf margins, small seeds, and tightly constricted capsules tend to occur in the southern part of the range, while plants with short and sparse pubescence, serrate leaf margins, large seeds, and shallowly constricted capsules occur in the northern part of the range. Variety *smilacifolia*, however, is morphologically distinct from the other taxa in having linear hastate leaves with reflexed linear lobes, an unbranched inflorescence, a slender stem, and a mostly entire leaf margin, and it occurs only in peninsular Florida. A new combination is proposed: *Kosteletzkya pentacarpos* (L.) Ledeb. var. *smilacifolia* (Chapm.) S.N. Alexander. All other former putative infraspecific taxa are synonymous with *Kosteletzkya pentacarpos* var. *pentacarpos*.



K. pentacarpos, flowers.