

Belcher, E.A., and S. D. Wilson. 1989. Leafy spurge and the species composition of mixed-grass prairie. *Journal of Range Management* 42:172-175.

Abstract: The relationship between leafy spurge (*Euphorbia esula* L.) and the species composition of mixed-grass prairie was examined on both a large scale, within a 200-km² area, and on a local scale, within a single infestation. On the large scale, cover values of 8 of the 10 most common species varied significantly ($P < 0.05$) between native prairie and spurge-dominated vegetation. Cover values of all common native species were negatively correlated with cover of leafy spurge. Within a single infestation of leafy spurge, the frequency of 5 common native species decreased significantly with leafy spurge. Most native species were absent where leafy spurge was most abundant and species richness declined from 11 outside the infestation to 3 at the center. Ninety-five percent of leafy spurge infestations within a 374-ha area were associated with anthropogenic disturbances (vehicle tracks, road construction and fire-guards) which removed native plant cover and exposed mineral soil. These observations corroborate experimental studies which show that leafy spurge establishes more readily in disturbed soil and indicate that the result of such disturbances is the replacement of native species with leafy spurge.