

Quantifying the ecological impacts of the woody invasive, *Prosopis juliflora* in Gantsi District, Botswana

Ms Tshegofatso Chilume¹, Dr Cate Macinnis-Ng¹

¹*The University Of Auckland*

Invasive species play a major role in transforming the environment and ecology of their invaded areas. This transformation has led to many introductions with the aim of controlling other factors detrimental to our environment. However, in some situations the introduced species present benefits coupled with devastating socioeconomic and ecological consequences. This is the case with *Prosopis juliflora*, a woody invasive plant of Central American origin, introduced into the Kgalagadi Desert in the early 1980s. Evidently, this introduction has tremendously transformed Kgalagadi Desert, improving both its soil and species richness but it has now invaded the adjacent Gantsi district, a place of high economic and ecological value to Botswana. The objective of this study was to assess the impacts of *Prosopis juliflora* on soil properties and native plants along Hanahai valley, in Gantsi district. Species richness, density and composition were assessed in 40 paired invaded and uninvaded plots. Soil samples were also collected for a range of chemical analysis. Height and diameter at breast height were recorded for dominant native and *Prosopis* trees and these were used to evaluate the size impact relationship. In this talk, I will discuss findings from my fieldwork and as well as analysis results. Preliminary results show that the presence and absence of *Prosopis juliflora* strongly influence both soil chemistry and vegetation in Gantsi district. The presence of *Prosopis juliflora* was found to positively influence all soil components studied except calcium and sodium. *Prosopis* was also found to influence plant species richness, density and composition. The results also show that 19 out of 20 times *Prosopis juliflora* trees were more dominant over the native dominant woody species growing in the invaded sites.