# AN ECOLOGICAL STUDY OF GRASSLANDS AT HORTON PLAINS NATIONAL PARK

### A PROJECT REPORT PRESENTED BY

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# AN ECOLOGICAL STUDY OF GRASSLANDS AT HORTON PLAINS NATIONAL PARK

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This study was carried out to investigate floristic composition of different grassland communities at Horton Plains National Park and to study the diversity among these communities.

Using 2 m x 2 m quadrats, plant species of the three sites of upper wet patana grasslands were sampled. The sites represent a marshland, relatively undisturbed grassland and abandoned potato field. Individuals of each plant species were counted for each site except for the abandoned potato field and the number of individuals per hectare was calculated. The cover value of each plant species was obtained by visual estimate and the percentage of the total area of a quadrat being covered by each species was enumerated. Dominance value indices (DVI) were calculated based on relative values of density, cover and frequency of each plant species. The vertical structure of each site was studied by drawing profile diagrams considering the height of the grasses, diameter and shape of the bushes and topography of the land. The diversity of three study sites was studied by comparing the values of Shannon diversity index and evenness.

Among the three study sites sampled, the marshland could be considered as the floristically richest area than the other two, which didn't show considerable difference in the values of floristic richness.

The values of density, cover, frequency and DVI showed somewhat similar patterns in each study site. Based on these, the family Poaceae was recorded as the most dominant family in all the sites studied. The other dominant families were Asteraceae in the undisturbed grassland, Juncaceae in the marshland and Melastomataceae in the abandoned potato field.

The most dominant species in the marshland, undisturbed grassland and abandoned potato field were *Garnotia exaristata, Chrysopogon nodulibarbis* and *Pennisetum thunbergii* respectively. The other dominant species were *Coelachne perpusilla* in the marshland; *Arundinella villosa* in the undisturbed grassland and *Osbeckia parvifolia* in the study sites of abandoned potato field.

Based on Shannon diversity indices, marshland was the most diverse habitat and also it was shown that the undisturbed grassland was more diverse than that of

abandoned potato field. It could be said that there was no an equal abundance of species in any of the field sites studied according to the values of evenness.

The data gathered was used to make a guide for advanced level students to do a comparative study of three different ecosystems at Horton Plains National Park.