

Assessment of landscape selectivity in relation to grazing a comparison between sheep and goats



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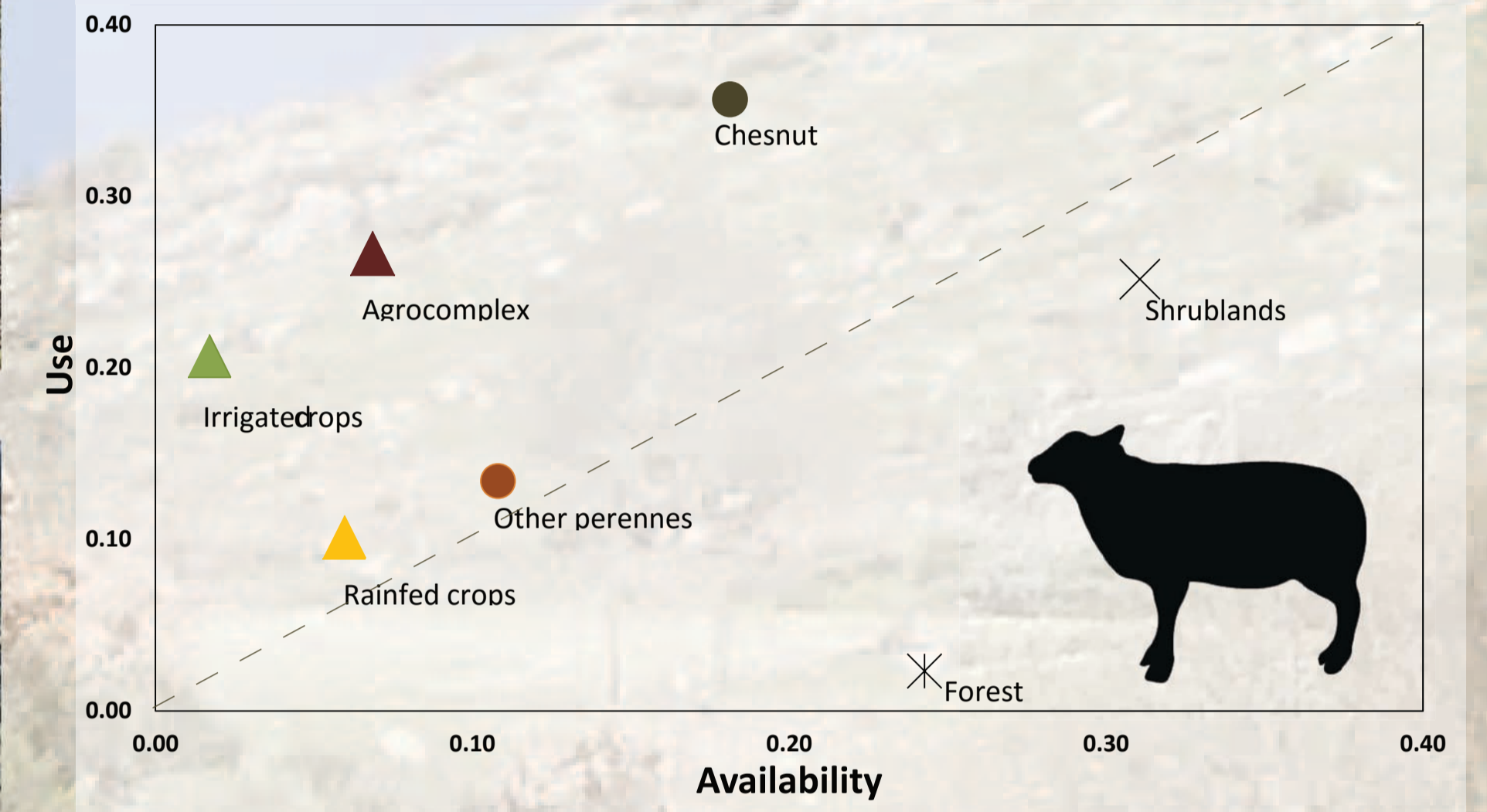
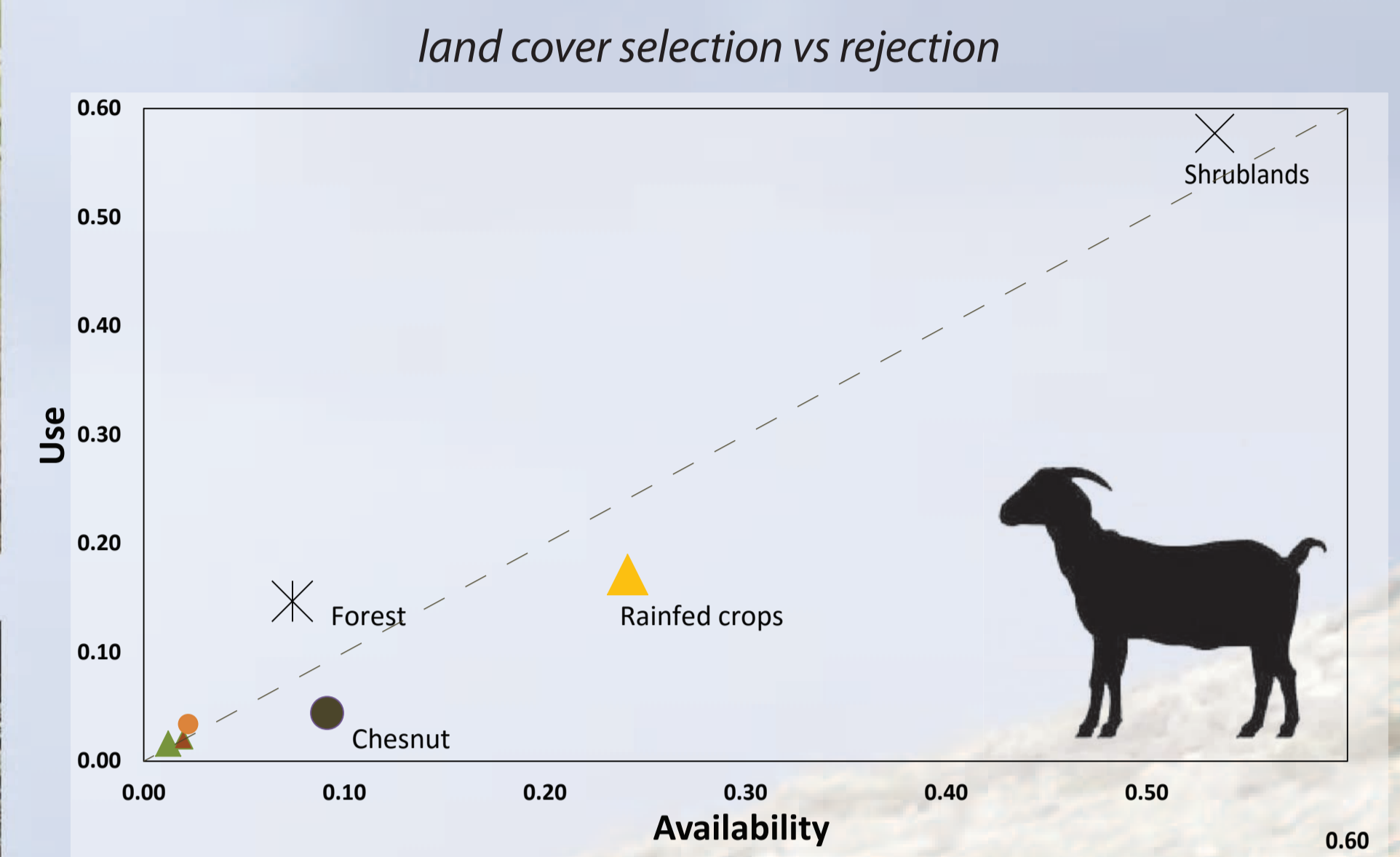
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Objective

The aim of this study is to understand how the daily grazing paths of sheep and goats in the silvopastoral systems of the North of Portugal are connected with the rural landscape. For this purpose, it was assessed and compared the land cover types used by sheep and goats herds.



Methods

A herd of sheep and a herd of goats were monitored with GPS every month during one year in order to record their geographical position. The total data includes 3210 GPS positions, 1948 for the goat's flock and 1262 for the sheep flock. A GIS was used to identify the land cover class of each GPS position on the thematic map COS 2007 published by Portuguese Geographic Institute (<http://www.igeo.pt>). The land cover selection/rejection was estimated by the Krueger's preference index (Krueger 1972). The discriminant analysis was used to determine which land cover classes discriminate between sheep and goats herds. Discriminant functions analysis was used to classify the sheep and goats positions and paths in order to distinguish the grazing landscapes of sheep and goats.

Krueger, William C. "Evaluating animal forage preference." *Journal of Range Management* (1972): 471-475.

Results

The herd of sheep and the herd of goats don't use the landscape in a random way. It seems that they selected the circuit in a rational way since they use each land cover differently from their proportion in the landscape. The discriminant analysis distinguished the land cover composition of the paths of sheep and goat's herds. The herd of sheep is more related to *Annual irrigated crops, Agricultural complex system and Agriculture with natural and semi-natural spaces*. The herd of goats is more related to the *Agroforestry fields, Deciduous forest, Coniferous forest, Shrublands and Open deciduous forest*.

