Response to Reviewers 4

Paper is well-written and presents an important topic, although the novelty of the study is low. The factors driving animal behaviour identified by authors have already been extensively described in literature.

Au: we would first like to thank the reviewer for his attention to our work. We generally agree with this observation; on the other hand, our work concerns a cattle breed and an environment where, to our knowledge, these aspects have never been investigated and, as stated by Bailey (Mechanisms that result in large herbivore grazing distribution patterns 1996, J. Range Manage.49:386-400), “relationships between distribution patterns and environmental characteristics vary from location to location. Many regression models describe only the conditions at a particular site and cannot be transferred to other sites”.

Concerns about experimental design:

the methodology for objectively mapping the different areas of the paddock is not well described.

Au: we added some information about

some important features, such as slope, are not analysed and should be included at least in the discussion of project results. The same can be said about meteorological conditions of specific days (authors seem to have access to this information, table 1)

Au: We agree with the reviewer's assessment, but in this case, the aim of the work was not to search for the causes of animal preferences, an aspect that, in our opinion, deserves a more in-depth study. In this work we wanted to highlight the areas more or less frequented by a cattle breed and in an environment where these aspects, to our knowledge, have not been studied yet.

collar missing data are scarce, but it must be stated that this is the situation for all collars, not on average (missing data in a single collar can affect results).

Au: we agree with the reviewer and corrected accordingly

in line 200 authors talk about valid positions. Which were the criteria to define valid data?

Au: We thank the reviewer for the suggestion. We have added the information

they monitor 3 animals, which is a large percentage of the small herd, but still very few animals. Authors should discuss about the coherence of the data among animals.

Au: again, we thank the reviewer for the suggestion. We changed accordingly, based on A. Ramseyer, A. Boissy, B. Thierry and B. Dumont Individual and social determinants of spontaneous group movements in cattle and sheep Animal (2009), 3:9, pp 1319–1326 & The Animal Consortium 2009 doi:10.1017/S1751731109004790

the LRI was calculated by grid cell, then averaged by type of landscape? Management of this data should be further explained.

Au: The LRI value was calculated for each grid cell and then mapped. We tried to explain it better in the text

in general, statistical analyses could be sofisticated and discussion may be improved with all the available information about the paddock.

Au: we agree with this observation. We think, however, that the analysis of the causes determining preferences deserves to be deepened in a subsequent work, with statistical analyses aimed at this end. In this work we only wanted to verify if animal preferences were different in different seasons.

Typo errors:

line 38: compare PI for different seasons

Au: we changed the phrase

line 150-151: Briefly, low-cost GPS data loggers have been used to build

Au: we changed the phrase

table 4: letters in column preference index are confusing. Can they be presented in two columns?

Au: we changed the table, trying to make the results clearer

Line 333: woody areas in proportion

Au: done

line 335: providing information

Au: done

line 336-337: uneven grazing-related damage

Au: done

references: some are lacking, e.g. 10 and 30. Some are not standarised (complete and abbreviated journal names). Some are repeated, e.g. 42 and 46. This section may be extensively revised.

Au: we thank the reviewer and checked all the references