

Interactive comment on “Survey of the terrestrial habitats and vegetation of Shetland, 1974 – a framework for long term ecological monitoring” by C. M. Wood and R. G. H. Bunce

Anonymous Referee #2

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C.M. Wood and R.G.H.Bunce, Survey of the terrestrial habitats and vegetation of Shetland, 1974 – a framework for long term ecological monitoring

General comments

This well written manuscript data on a 40-years old vegetation survey shows an impressive example of vegetation data recorded by using a repeatable standard procedure based on stratified random plot design attempting to capture the vegetation of the entire Shetland Islands. All plots appear to be properly repeatable at the same locations as in the 1970s. The data set, consisting of over 900 plots records, contain all plant species found in each 200m² plot including cover/abundance estimates. Especially

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noteworthy is the full consideration of both bryophytes and macro-lichens (growing on soil) on a species level – a laborious effort where only few experts are usually available. Further, data are complemented with detailed soil samples and information of the directly neighbouring area. As such, the 40 years old data set is already of much interest for a resurvey.

A re-survey project, however, should target on clearly defined objectives and hypotheses. For this purpose, more information on developments during the past 40 years, such as on settlements, e.g. through the oil industry, changes in crofting practices and the intensity of pastoralism would be desirable. I think there is no need for an exhaustive search for literature and archive sources, but to provide general information on dimension the above factors were changing.

Probably even more, this accounts for the climate development during the past 40 years, which was exactly the period ranging from the cooler period around the mid-20th century to about the 1970s to the decades of exceptionally warm decades – at least globally and in most parts of Europe. Therefore, I think, climate change – temperature and precipitation in particular – across the 4 decades on Shetland Islands should be briefly described. Tracing climate change impacts would be a further very interesting reason to use these data as a baseline. The position of the Shetland Islands quite in the area of direct influence of the Gulf Stream could make this baseline data set even more important. Noteworthy is the particular value of the data for this purpose as it includes species data across different organism groups vascular plants, bryophytes, lichens, and, as such, very different functional groups. A focus on climate change, therefore, could provide a strong incentive for resurvey studies.

Specific comments

The description of the Shetlands briefly describes the climate and here a focus on climate change as much recommended. Means for winter and summer temperatures and precipitation (lines 83-87) are only the values from the 1974 report. A detailed

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description for data users on how to relocation and setup of plots is important (lines 200 ff., 335 ff.). Are the indications based on the maps used in 1974 sufficient to find the midpoints of the 200m² plots, are there precise enough geographical coordinates available to find the plots with GPS devices? In the conclusions I suggest to provide more information on land use changes and an account on climate change.

Further notes and minor corrections

line 51: Details such as 911 plots distributed over 80 1-km² and 16 environmental strata remains a bit unclear at this point of the paper. You may be more general here in the intro and refer to below where the design is described. Please use metric units throughout, e.g. lines 72-74, Table 1, Figure 2, scales in Figures 1, 5. line 211: "data collected from the ..." line 233-234: "...all vascular plants (gymnosperms, monocots, dicots, including tree species, ferns), bryophytes and macro-lichens growing on soil." (in the 1974 handbook you speak of bryophytes and macrolichens growing on soil – i.e. excluding epilithic lichens and epiphytic cryptogams). line 275: *Carex panicea* Table 3; *Sphagnum rubellum* Fig. 3: indication of diagonal distances better on the right side of the diagonal (currently, in the first glimpse, it look like of the quadrat sides).

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