

Advancing studies on global biocrust distribution

Wang et al.

**Summary:**

The authors present a thorough review paper about the methods of measuring biocrust distribution, the factors that impact biocrust distribution, and the challenges in mapping biocrust distribution. Where the paper really shines, is the author's straightforward descriptions of the modeling techniques and methods. This would be helpful to biocrust researchers in the future and is a nice starting point for distribution studies. Overall, I recommend this paper for publication with *minor revisions*.

**Reviewer Comments:**

Overall, there are no major concerns. I know the author's worked very hard editing this draft and it shows. Well done to everyone involved. Below, I have a few line comments to improve the clarity of the manuscript.

Line 21: "still needs to be" should be "remains limited"

Line 22: "stimulate" should be "simulate"

Line 29: "is supposed to" should be "will"

Lines 60-63: This is true, but I don't see why it is necessary in the introduction for this paper. It does not provide any new information about biocrust distribution studies and the papers are cited elsewhere in the introduction.

Figure 1a: I think it is more suitable to show where biocrust distribution is measured (like 1b and 1c) rather than emphasizing the authors because unless the reader knows exactly where those authors do most of their work, it does not provide any new information.

Figure 1: 1a is very difficult to read since it is blurry (though see above comment) and the font size of 1b and 1c is also too small. Perhaps you can modify the figures so the continent text size (1b) is larger and the font size of the graph in 1c is larger.

Line 104: "inverted" should be "invented?" I am unsure what the authors are saying here

Figure 2: make the font size a little bigger. This will fill the white space and make it easier to read.

Line 258: "For a long time" is not necessary

Line 268: "The grassland is..." or "Grasslands are..."

Line 273: parentheses error with Condon and Pyke

Line 302: “To sum up” is not necessary

Figure 4: These figures are much easier to read and very nice 😊

Line 326 and 238: Chapter should be Section

Line 365: avoid using “very”