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RESPOND TO REVIEWER'S COMMENTS

Paper ID   : **#49914**

Paper Title   : **Comparison of Various Spectral Indices for Optimum Extraction of Tropical Wetlands Using Landsat 8 OLI**

No.	Page	Reviewer's comments	Author's responses
1	2	Provide references here all the several research results you mentioned	We've provided all the necessary references, as you suggest.
2	5	Provide coordinate to the image and also an inzet. Some toponym will also be useful	We've fixed the image, and added some information according to your suggestions.
3	7	NDWI, MNDWI, and MNDWIs2 were explained in more detail. Why other indices are not?	In the methods, NDWI is a formula that is the basis for Xu (2006) in developing MNDWI, while MNDWI itself is a formula that is used as the basis for developing a new formula in this research, namely MNDWIs2. Of course, MNDWIs2 is a formula specifically developed in this research. Meanwhile, other indices are only cited from a number of literature, without any further development and not directly related to the development of a new formula in this research. These are the reasons why only NDWI, MNDWI, and MNDWIs2 are discussed in detail in the Methods section.
4	9	How many samples are for each of this class?	We've provided information on the number of sample pixels for each wetlands and drylands class.
5	9	Why do you need to create confusion matrix for each wetland class and dryland class? One confusion matrix can involve all the class altogether.	One confusion matrix can involve all the class altogether, this applies for example in the case of multispectral classification. However, in this research, spectral indices such as NDWI or others, are relatively difficult, or even completely unable to distinguish between Wetland classes. Given the spectral indices such as NDWI are only one band, not a multispectral imagery. One NDWI band is difficult to distinguish between Mangroves and

| | | | Peatlands, for example. While Peatlands in the case of this research are overgrown with dense forests whose spectral characters are similar to mangroves. We can confirm that the range of values between Mangroves and Peatlands in NDWI will be similar.

Like the Normalized Difference Vegetation Index (NDVI) which can only separate between vegetation and non-vegetation, so in the context of this research, spectral indices such as NDWI are only considered to be able to separate between Wetlands and Drylands. This also underlies the use of Otsu thresholding as a method of separating the features in this research. Where Otsu thresholding can only produce 2 classes in one classification process.

So when testing Mangroves on NDWI, for example, Mangroves will be tested with Non mangroves (the Dylands). When testing Peatlands on NDWI, Peatlands will be tested with Non peatlands (the Drylands). It is not possible to test Mangroves and Peatlands simultaneously on a single NDWI index, if such a test were forced the error would be very large.

The same is true of Dryland classes. NDWI certainly cannot distinguish between Built-up lands and Barelands for example.

A brief explanation of this has been provided in the Results and Discussion section. See page 12 line 1 to 9. |
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6	14	What about the user's accuracy analysis?	User's Accuracy (UA) analyzes are represented by Commission Error (CE) in Table 4. CE + UA = 100%, so if there is a CE of 15% for example, it means that the UA is 85%.
7	19	I don't really get it. To my knowledge, healthy vegetation with high leaf moisture content should have a low reflectance on SWIR 1 and SWIR 2. This is especially true in wetlands such as mangrove. So, why did you mention that SWIR 1 reflectance is much higher than green? Can you please provide the figure showing the spectral response of the objects you classified.	The data are in Table 5 and Figure 6. Where Table 5 and Figure 6 are constructed using the Mangroves, Peatlands, and Tree-dominated wetlands samples from this research. From Table 5 it can be seen that for the three types of wetlands with dense vegetation, the spectral values for SWIR1 were higher than for Green.
8	21	Why not blue band? Also, which spectral library? You did not discuss anything about spectral library in the manuscript before.	We've change the phrase spectral library into spectral value curves. The green band has the highest reflectance value of water features, as seen in the spectral value curves in Figure 2 (The Methods section).
9	21	But this condition is enough to make SWIR1 and SWIR2 to reflect very lowly	Yes, it is true. We have added the statement in the paragraph. However, since in the paragraph we only discuss MNDWIs2 that use SWIR2, so we only include SWIR2 in our statement in the paragraph.
10	21	Don't use such sentence	We've refined the sentence, and tried to propose new sentence forms in the next paragraph without changing the information.

Important!

Please also indicate your changes in the revised manuscript using track changes or highlighted text.