Answers to reviewer 1

Thank you very much for these concise reviews and suggestions. We have considered all of them carefully while reading the manuscript again. We answer to the comments and suggestions in this document.

Italic font type: Author's replies.

My main concern, how the authors rescale the random forest predicted PFC is still there, although there is a sentence in 'All the grids sum a total of 1 (100%)' line 169. But if I understand correctly, the authors used independent RF model to predict the PFC of each community (Figure 12), how the authors to rescale these PFCs.

I mean, can values in each pixel in Fig 12 sum to one? If so, please highlight it to make clear to the readers. I appreciate your effort here, it is very important here. I also suggest the authors to display the accuracy before and after the rescaling (maybe in supporting information, please see the first two rows in Fig. 9 in Immitzer et al. (2018), doi: 10.1016/j.rse.2017.09.031 and Figs. 7e and f in Yang et al. (2020), doi:10.3390/rs12193224) to highlight the importance of this effort.

Many thanks for this useful suggestion. Indeed, the previous text in line 169 was somewhat confusing. We have now addressed this issue by rescaling the predicted PFC values to a range of 0-100 per plant community, ensuring that the total sum of predicted PFC within a MSI pixel equals 100. Subsequently, these rescaled predictions are validated with the same validation datasets used in the non-rescaled predictions to ensure comparability. The construction of this test set is explained in the Methodology and referred to Figure 5. We have added a new figure in the main text of the manuscript to visualize these results, as suggested. The methodology for this additional analysis is described in the Methodology section (lines 192-194), while the new results are presented in the Results section (lines 225-228), and a description of the implications of using this validation with rescaled PFC in the Discussion section (lines 285 – 292). Now, the Fig 12 you mention is Fig 13.

As for the feature importance analyses, I think it makes sense until the author highlight the high accuracy after the rescaling.

Here we would like to point out that feature importances are generated during the training of each RF regressor model with the training datasets from DF1 or DF2. The rescaling itself is carried only on the raster layers resulting from the RF regressor. This means that the feature importance analysis is in fact not affected by the rescaling and therefore, the importances remain the same as before the rescaling.

I also suggest the authors can read the manuscript more and take care of some worlds and grammars. There are some errors. There are some minor concerns:

1. For the title, I suggest that it could be the synergistic use of UAV and DEM to map fractional cover in Sentinel-2 pixel?

We appreciate this suggestion; however, we have opted to not include this modification in the title. We based our choice of title on publications such as Emilien et al. (2021) (see in the Reference section), which

clearly refer to the synergistic use of satellite-level data and UAV-level data. The DEM is just one more ancillary dataset in our study.

2. Line 1: threats?

This has been corrected, thank you.

3. Line 2: monitoring and assessment what? And are, instead of is.

We have changed this line to : Thus, their monitoring (coastal wetlands) and assessment is vital for evaluating their status, extent and distribution

4. Line 16: I think climate is a kind of environmental factors.

We changed this, however, see the comment of suggestion 6.

5. Line 18: I do not think it is necessary to use the ESs. I suggest the full spelling is more readable.

We changed this, however, see the comment of suggestion 6.

6. Lines 12 – 31: I still suggest there still need some improvements. You probably can go to coastal wetland is important/how and go to function of vegetation. And then go to the importance to monitor vegetation communities.

Our introduction starts with the importance of coastal wetlands with relevant references carried out on coastal wetlands, followed by an introduction of Baltic Coastal Meadows and the use of Remote Sensing to monitor the distribution of plant communities in these ecosystems.

7. Line 58: are essential?

This has been corrected, thank you.

8. Line 61: Climate changes?

This has been corrected, thank you.

9. Line 90: characteristic, I suppose typical may be more precise.

We replaced "characteristic" by the term "typical". Thank you.

10. Line 116: elevation7?

This typo has been corrected. Thank you.

11. Line 129: Band 6 of MSI.

The preposition has been changed. Thank you

12. Lin4 188: VIs?

This has been corrected. Thank you

13. Table 5: there is a '12' behind MGRVI, what does it mean?

This was a typo. Thank you.

14. Line 297: et al. (2021)?

That is right. It has been corrected, thank you.

Answers to reviewer 2

We appreciate your considerations. Thank you very much for these last reviews. We have considered all of them carefully while reading the manuscript again.

Italic font type: Author's replies.

LINE 88: I would simply say "… in relation to elevation in a boxplot…"
Thank you, this suggestion clarifies this sentence. We have changed it.

LINE 106: typo elevation7
Thank you, we have corrected this typo.

FIGURE 2: RMSE in figure does not have the unit

Thank you, this has been corrected.