

Ecosphere

Special Feature: Insights from Subseasonal Imaging Spectroscopy

Intrinsic dimensionality as a metric for temporal plant diversity evaluation: Case study from the SHIFT campaign

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Appendix S2

Window size will play a role in the comparison between ID and field data. We have tried to choose the smallest window that would provide the required number of pixels for the ID computation. Figure S1 shows that ID increases as the window size increases, as expected. For the $60\text{ m} \times 60\text{ m}$ window there are only 144 pixels considered for the ID computation, so ID is likely underestimated due to the mathematical assumptions of the equation (it is assumed that the number of pixels tends to infinity. In practice, more than ~ 500 pixels is sufficient). For all window sizes containing more than 500 pixels, the ID is always greater than or equal to the number of species observed in the field. This is because the ID window is larger than the size of the field size ($8\text{ m} \times 8\text{ m}$), and also because ID will detect changes not recorded in the field survey, such as heterogeneous soil types.

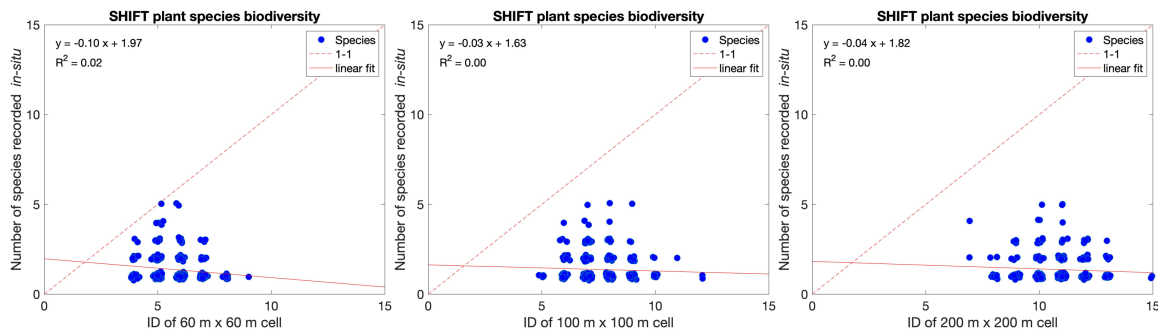


Figure S1: Field data are compared to ID for various window sizes: (a) $60\text{ m} \times 60\text{ m}$ window; (b) $100\text{ m} \times 100\text{ m}$ window; and (c) $200\text{ m} \times 200\text{ m}$ window. In this figure, there is no merging of nearby sites. A small amount of jitter is added to each point so that overlapping data values can be seen.

Figure S2 shows the impact of considering multiple $8\text{ m} \times 8\text{ m}$ field sites when trying to validate a $100\text{ m} \times 100\text{ m}$ ID cell.

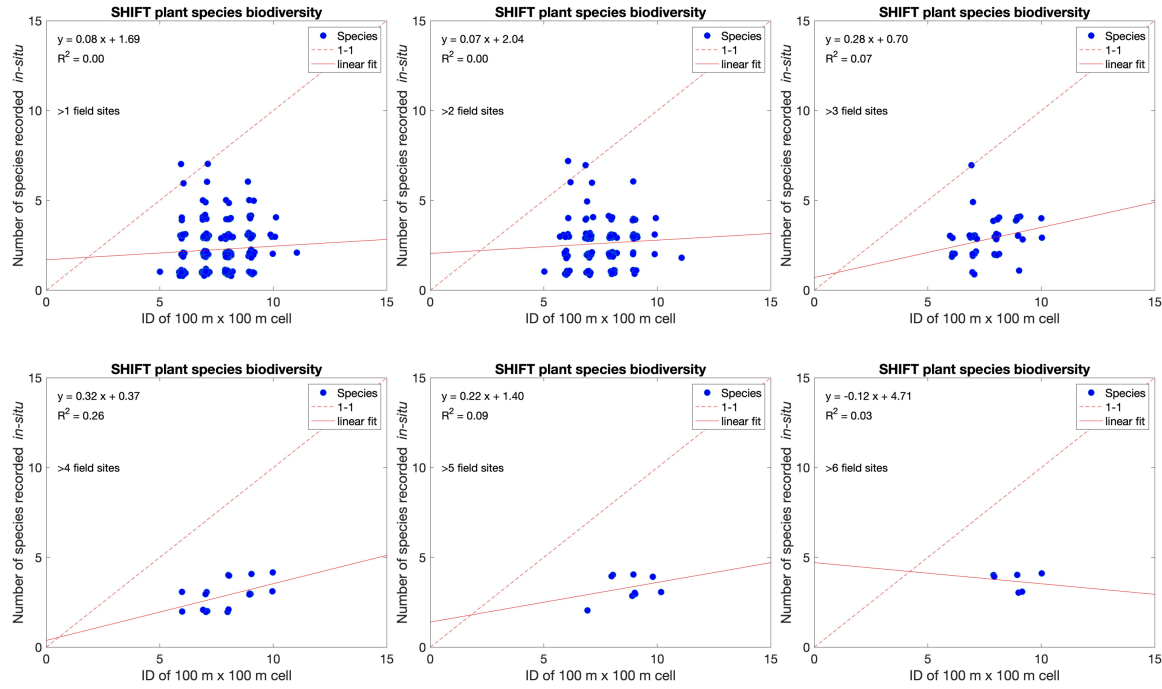


Figure S2: Field data are compared to ID within $100\text{ m} \times 100\text{ m}$ cells, where the validation is only considered if more than a certain number of field sites are present within a cell (shown as a label in each figure, bottom right). Using a higher number of small ($8\text{ m} \times 8\text{ m}$) field sites per window provides a more accurate validation that more closely represents the number species estimated in the ID computation. A small amount of jitter is added to each point so that overlapping data values can be seen.