Response to Reviewer's Comments

The authors have satisfactorily addressed my prior comments and suggestions. I believe this dataset holds value for future research purposes. I have only one additional suggestion regarding Figure 11 in the revised manuscript. Initially, I recommended replotted this figure to explore potential exponential or power laws. The authors created a new version of the figure using the logarithm of the histogram. Viewing Figure 11 (a) on a log-log scale reveals a clear power-law with an experimental scaling exponent of 2.40. I suggest that the authors include this power-law in the revised manuscript. I am ready to recommend this manuscript for publication once this change is made without requiring another round of reviews.

Reply: Thanks for your suggestion! We conducted a power-law analysis on each sub-graph in Figure 11 and confirmed the reviewer's observation: the size of the green tide strip follows a clear and definite power law. Consequently, we redrew Figure 11, added power exponential fitting curves to each sub-graph, and revised the original text as follows:

"Figure 11 also illustrates the frequency of occurrence of green algae patches of varying sizes as detected by MODIS. The data reveals that large patches (>100 km²) are less common, while small patches (<100 km²) occur more frequently, suggesting that the green tide in the Yellow Sea predominantly consists of smaller green algae patches. The size of these patches influences the satellite's ability to detect them. The different sizes and the corresponding counts of the green tide patches also reveal a clear and definite power-law with an experimental scaling exponent, i.e., $y=bx^a$ ($-2.28<a<-2.97$ and $3\times10^5<b<5\times10^5$). "

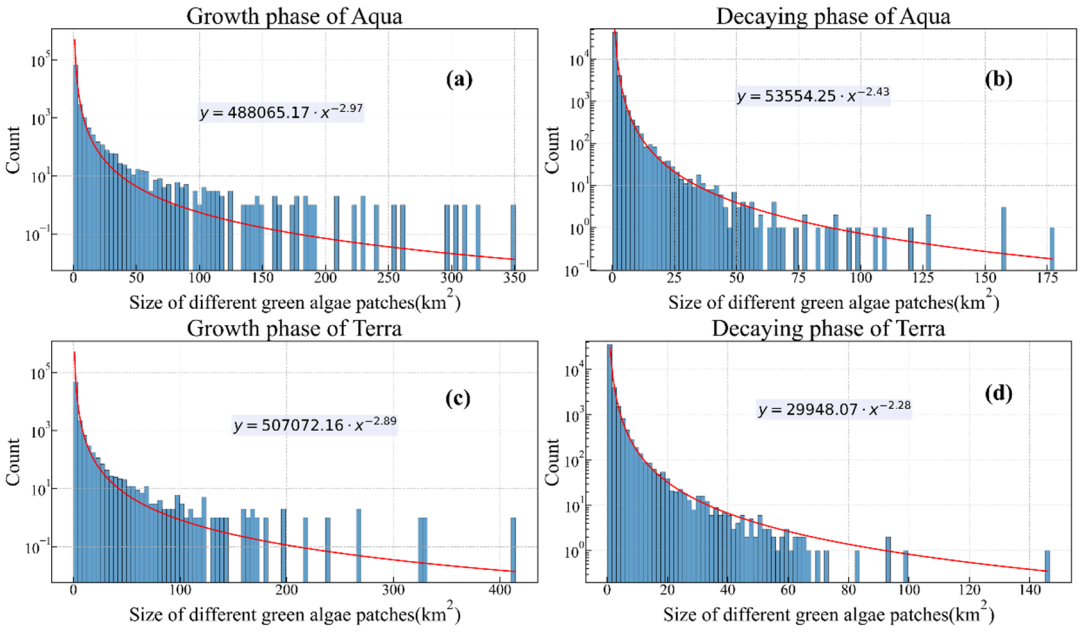

Figure 11. Statistical analysis of green algae patch size derived from optical imagery, with the vertical axis in a log scale.