Dear Dr. Sloyan,

Thank you for your helpful comments, which allowed us to clarify some critical parts of the manuscript. We have addressed them all point by point below.

Best wishes,
Tereza Jarnikova

Editor Comments
Line 5.
Delete " We then assess these factors for spatial coherence." Or if you feel this is important information, modify preceding sentence to
"Here, we apply a hierarchical clustering algorithm (Ward's method) and then assess spatial coherence, to four factors relating to stratification (wind energy, freshwater index, watercolumn-averaged vertical eddy diffusivity, and halocline depth), as well as to depth-integrated phytoplankton biomass, extracted from a biophysical ocean model of the Salish
Sea."

We have removed the "We then assess" sentence.

Line 40 either remove "high" or change "…which drives high salinity-induced stratification …" to "…which results in salinity-dominated stratification …"

We have added "high"

Line 59 Change "… biomass fluctuations, while remote sensing…" to "… biomass fluctuations, and remote sensing…"

We have changed "while" to "and"

Figure 1 Caption. In the caption, please provide a reference to where the division between the Central and North Strait of Georgia occurs.

We have added a reference to the southern tip of Texada Island, wcich we have labeled.

Line 123-124 Change “In summary, the model shows consistently high skill in across all clusters (Tables A1 – A2), …. respectively across all clusters, while ….” to “In summary, the model shows consistently high skill across all regions (Tables A1 – A2), ….., respectively, and ….”

We have removed the second “across all clusters”.

Figure 2 Caption.
(1) Add which year used for this example – Example yearly signals for INSERT YEAR of clustered physical ….

We have added a year reference: “Example yearly signals of clustered physical and biological factors from one station in the CSoG (red star), year 2014.”

(2) change halocline to halocline depth in figure caption

We have added “depth”

line 172-173. By removing “yearly signal”, you address the reviewer’s confusion. Delete the additional text “(i.e. one year-long daily-resolution time series of depth-integrated phytoplankton biomass for each of the three phytoplankton functional groups,” as it is not required.

The sentence now becomes “ …..groups to form three signals (Fig 2e).”

We have deleted the additional text.

Line 196-197. “…. anywhere between 2 and N clusters (where N is the number of signals being clustered)”. Is this statement correct, if N is the number of signals being clustered, then in this study N=5 is the maximum number of clusters? The authors need to correct the definition of N.

In this study, for all variables being clustered, we visualize N clusters. We tried to make this point clearer:

A common challenge in the application of clustering methods is the selection of cluster number, as the clustering algorithm can produce anywhere between 2 and N clusters (where N is the number of stations with signals being clustered).

To facilitate comparison of clusters between years, we chose a cluster number of N=5 for all years for all variables being clustered, and are confident that the structures described are robust to a selection of a variety of cluster numbers.”