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Interactive comment on "A spatially-explicit database of wind disturbances in European forests over the period 2000–2018" *by* Giovanni Forzieri et al.

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Forzieri et al. present the first spatially explicit collection of forest areas disturbed by wind in Europe. This is a highly timely and important effort, as natural disturbances are increasing in Europe, yet we largely lack high quality datasets for understanding and modeling these processes. Compilations such as the one presented here are thus the prerequisite for improving our predictive capacity of natural disturbances.

The current dataset follows a data compilation approach, i.e. previous records from a variety of different sources are combined in a single database. The authors thus synthesize a number of past regional efforts and make them available for the scientific

community. I overall find this work to be highly relevant and useful, and commend the authors for their efforts.

I also appreciated the comparison of the dataset against estimates derived from Landsat, Modis, and grey literature. However, I would not call this an evaluation or validation of the current dataset, as all these data are derived differently, pertain to different resolutions, and apply different thresholds for recording a disturbance, so it is basically comparing apples to oranges. If anything, I belief the current data to be the most accurate of all the datasets compared, and deviations between the products are largely the effect of differences in methodology (I would assume that also Landsat and Modis have a moderate correlation at best). This for me underlines the importance of ground-true datasets as the one presented here.

I find that two things currently limit the utility of the dataset though, and would suggest that these aspects could still be improved in a moderate revision of the manuscript before publication. First, the threshold severity that was applied in the assessments compiled here is not defined. This means that the polygons compiled here could have anything from 1% to 100% of the trees thrown or broken by wind. This ambiguity strongly limits the utility of the data for ecological analyses. It seems from the text that severity measures are available for at least some of the polygons, and I suggest that you also include them in the data where you have them.

Second, while the sampling via a PubMed and Scopus search is clearly described, it remains unclear how representative the compiled polygons are for the wind disturbances that occurred within a year in a given country. Looking at Table 4, I for instance wonder whether the 64 polygons on record for Switzerland are the total forest area that was affected by wind in this country, or whether this is a (random?) sample of all areas affected by wind. Again, information on the representativeness of the sample would be important for making ecological inference. As for my previous point, I have the feeling from reading the text that you have an understanding of how representative your database is for at least some countries and storm events. Adding this type of

information would certainly increase the value of your dataset for the further analyses.

Overall, I find this to be a highly relevant dataset, and recommend publishing it after moderate revisions. Some more minor comments are below:

l59: their excess... meaning unclear

l66, l70, and many other instances throughout the text: a space is missing before the parenthesis

l69: of the average annual harvest rate... where? in all of Europe? in the effected countries? Be more specific here. The same applies to a similar statement in line 70.

l78: substitute "Europe" for "European"

l80: not true for Senf et al. (2018), which is based on satellite information as far as I recall

l86: Full stop is missing after "decades"

l104: regardless of the degree of damage: Does this mean that it was enough for a single tree to fall within a 100 ha tract for the area to be admitted to your database?

l133: impressive!

l135: forest disturbance patch

l243: one issue that I see there (that also might account for the differences you find) is: If you use ForestEurope values for GSV these are the averages per country. However, wind disturbances are predominately affecting older stand and more productive sites (as both have taller trees), which means that the actual GSV of areas affected by wind might be considerably higher than the country-level averages.

l268-270: I don't fully understand this

l276-277: I don't agree with this statement (think about Abies alba or Pinus sylvestris); I think it is mainly the prevalence of Picea abies that drives the relationship (for which

the statement you give is correct).

Figure 1: Can you put the units next to the scale bar, rather than in the figure header?