A new global measure of environmental unpredictability

Appendix A

Stefano Mezzini[1,2] Michael J. Noonan[1,2,3,*]

[1] Okanagan Institute for Biodiversity, Resilience, and Ecosystem Services, The University of British Columbia Okanagan, Kelowna, British Columbia, Canada.

[2] Department of Biology, The University of British Columbia Okanagan, Kelowna, British Columbia, Canada.

[3] Department of Computer Science, Math, Physics, and Statistics, The University of British Columbia Okanagan, Kelowna, British Columbia, Canada.

[*] Correspondence: Michael J. Noonan <michael.noonan@ubc.ca>

Figure A1 below illustrates the color palettes used in this appendix, for each type of vision (trichromatic, deuteranope, protanope, tritanope, and achomatic). Palette A was created by Masataka Okabe and Kei Ito (Okabe & Ito, 2008), while the other palettes were created by Fabio Crameri (Crameri, 2018b a). All palettes below are available via the `khroma` package (Frerebeau, 2024) for `R` (R Core Team, 2024). Figures A2-A5 show some of the data used for fitting the models for estimating mean NDVI and the variance around the mean. The code for generating the figures is available on GitHub.

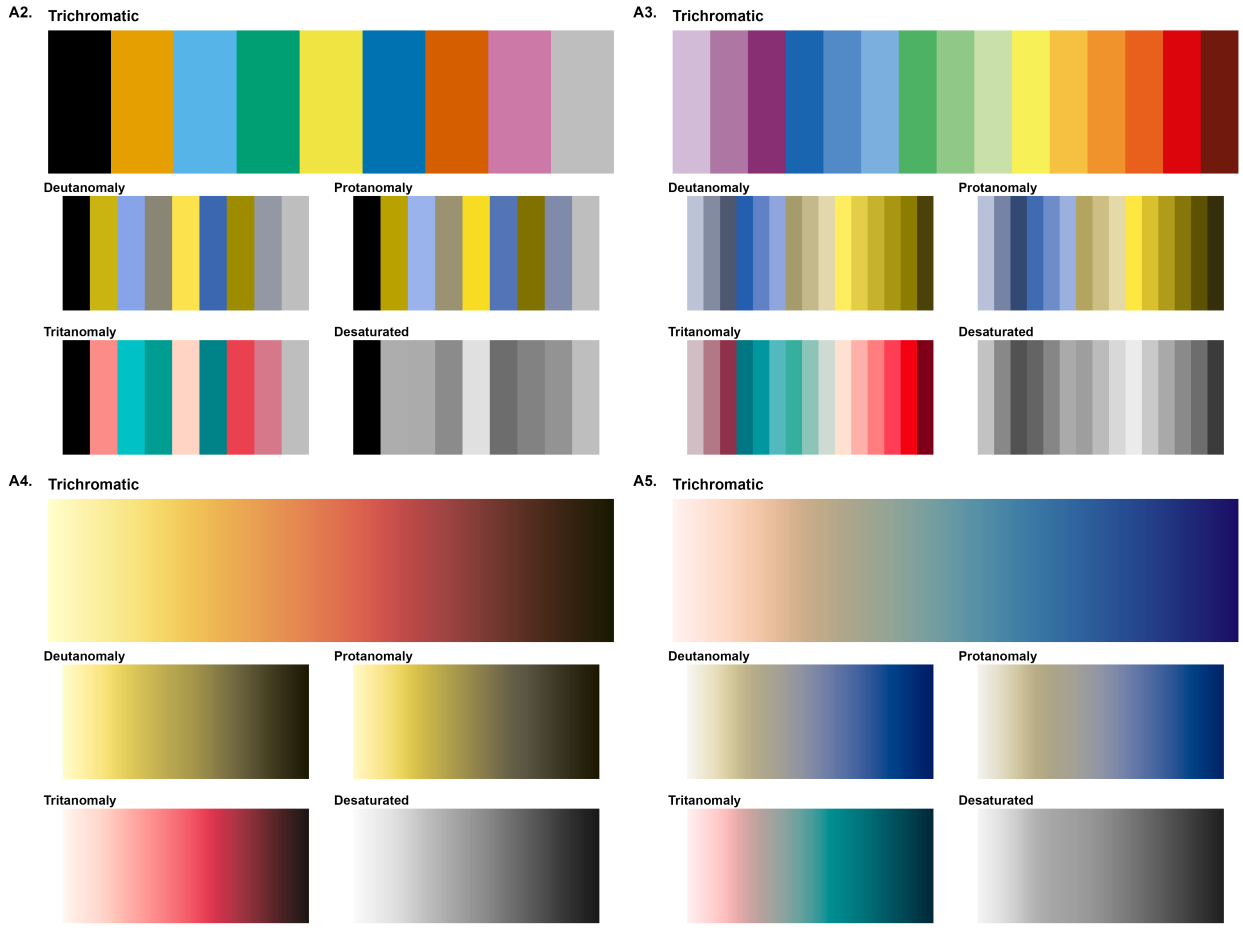

Figure A1: Color palettes used in the figures below.

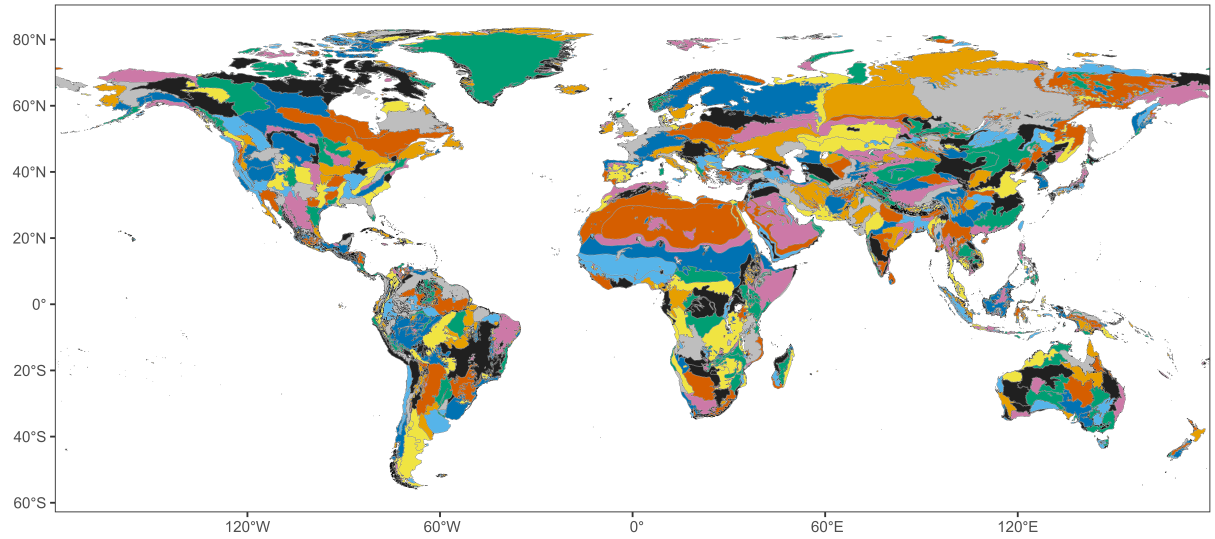

Figure A2: Map of the polygons for each ecoregion. Each polygon is colored randomly with one of 9 colors. Note that some neighboring polygons have the same color.

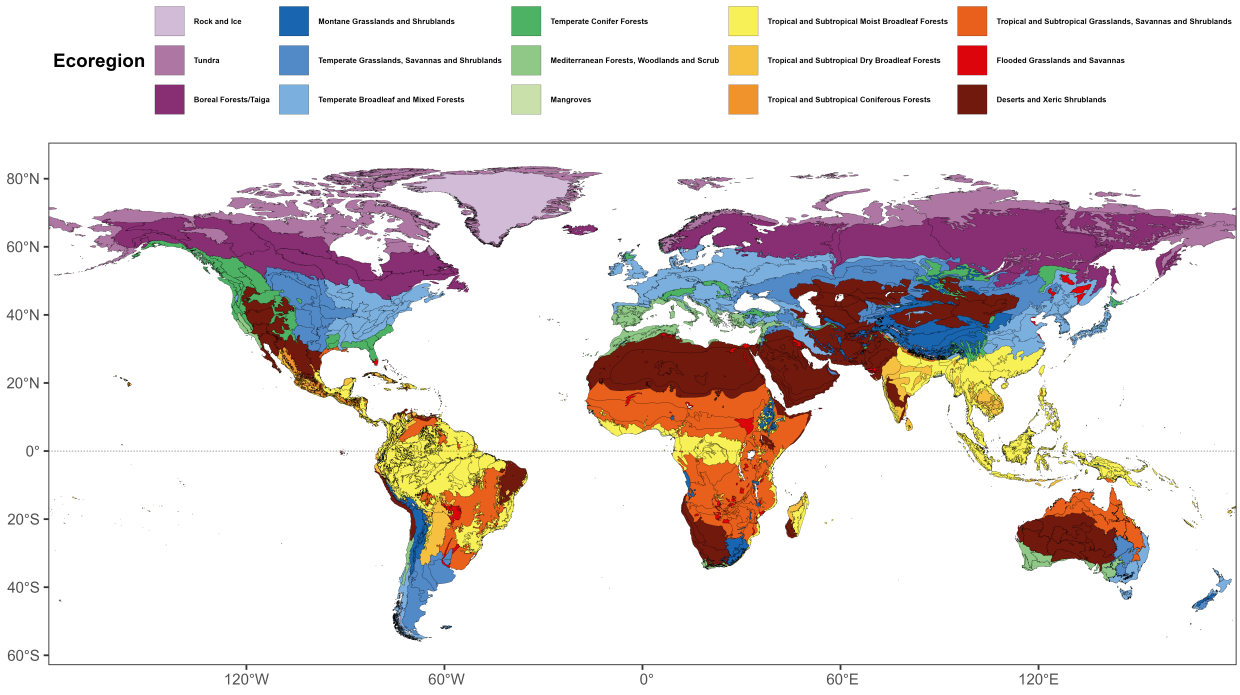

Figure A3: Map of the ecoregions. The Northern and Southern hemispheres were coded to have separate ecoregions in the model by appending "N" or "S" to the end of the ecoregion name.

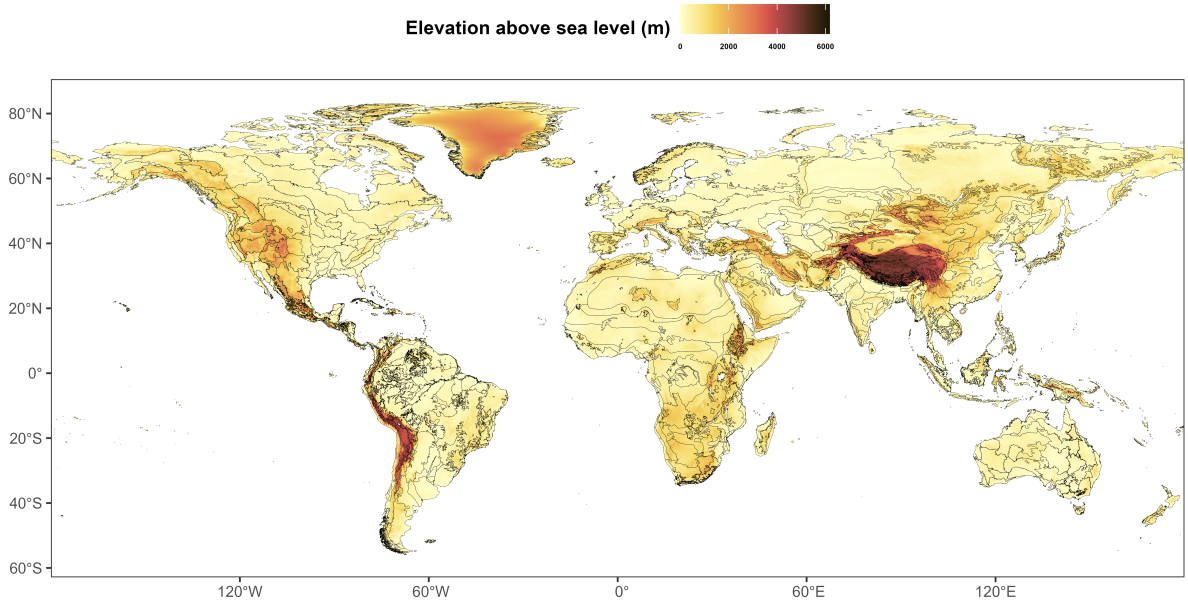

Figure A4: Map of elevation above sea level. All elevations below 0 m were set to 0 m to fix incorrect altitudes near coast lines. Terrestrial ecosystems with elevations below 0 m (such as the Dead Sea and the Qattara Depression) have also been set to 0 m because they have their own polygons, which allows to account for any differences in the Markov Random Field smooth.

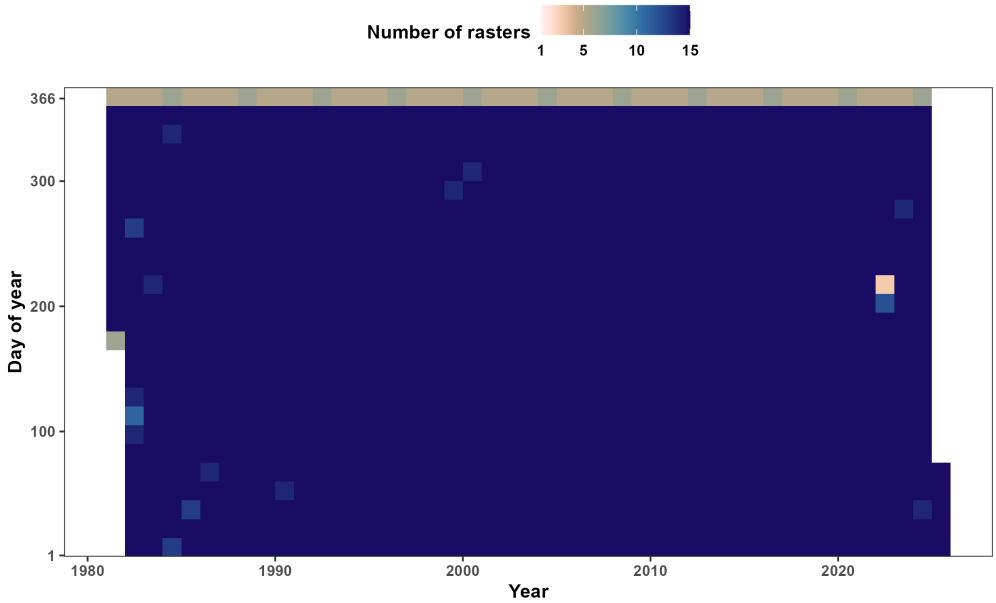

Figure A5: Number of days with a raster within 15-day periods starting on January 1st, for each year. Cells with less than 15 rasters indicate one or more missing rasters for that 15-day period, which the exception of cells near day 366, which have 6 days during leap years ($366 \mod 15 = 6$) and 5 days otherwise ($365 \mod 15 = 5$).

References

Crameri F. (2018a). Geodynamic diagnostics, scientific visualisation and StagLab 3.0. *Geoscientific Model Development* **11**, 2541–2562. https://doi.org/10.5194/gmd-11-2541-2018

Crameri F. (2018b). Scientific colour-maps

Frerebeau N. (2024). *Khroma: Colour schemes for scientific data visualization*. Université Bordeaux Montaigne, Pessac, France.

Okabe M. & Ito K. (2008). Color universal design (CUD): How to make figures and presentations that are friendly to colorblind people

R Core Team (2024). *R: A language and environment for statistical computing*. R Foundation for Statistical Computing, Vienna, Austria.