

Leveraging Night-Time Lights (NTL) data to fingerprint the impact of the 2022 Indus floods

Ekta Aggarwal^{a,b}, Alexander C. Whittaker^a, Philippa Mason^a, Kartikeya S. Sangwan^a, Fritz Schlunegger^c, Sanjeev Gupta^a

^a Department of Earth Science and Engineering, Imperial College London, SW7 2AZ, UK

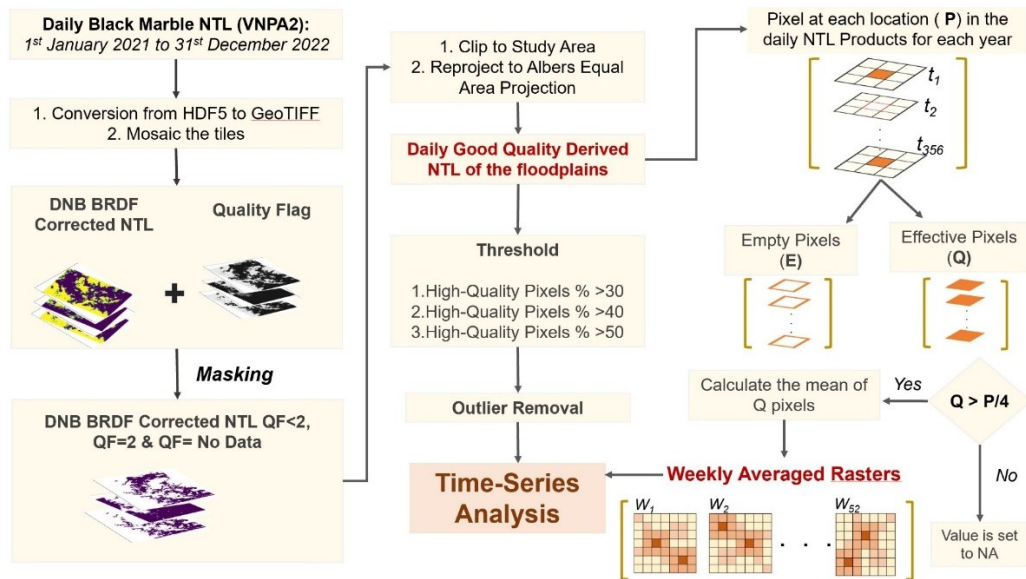
^b School of Geography and Environmental Sciences, University of Southampton, SO17 1BJ, UK

^c Institute of Geological Sciences, University of Bern, 3012, Switzerland

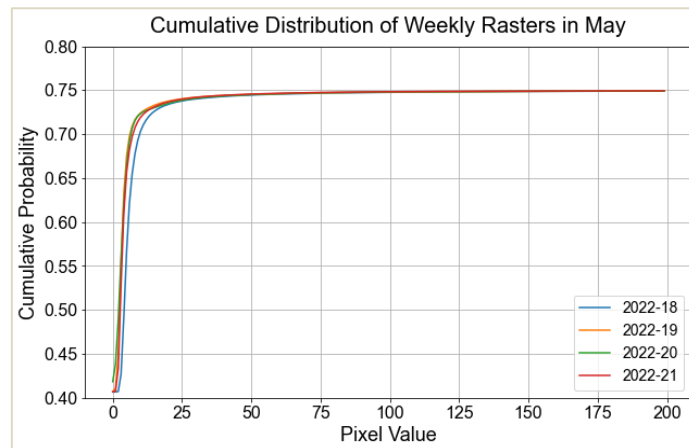
Supplementary Information:

Supplementary Table 1: Descriptive Statistics of the NTL pixels from May to November 2022 cloud-free composites within the cloud mask (derived from the August composite)

Month	WOY	Mean	Sum	Min	Max	Std Dev
May	2022-18	0.892593	609466	0	2892	10
June	2022-23	0.808739	552205	0	5119	15
August	2022-34	0	0	0	0	0
September	2022-36	0.656296	448224	0	3900	12
October	2022-40	0.803781	548754	0	4120	15
November	2022-47	0.829722	566604	0	4279	13



Supplementary Fig. 1: A schematic flowchart showing the detailed methodology explaining the pre-processing of daily raster data and creating weekly raster data. The processed good-quality daily and weekly rasters are used for time-series analysis and identifying impact areas.



Supplementary Fig. 2: Cumulative distribution of weekly NTL raster for May 2022. The blue line denotes the cumulative plot for the 18th week of 2022. Similarly, orange, green and red lines show the cumulative distribution curve for the 19th, 20th and 21st week, respectively.