

Dataset Associated with the Landscape Character Assessment of Nigeria: A Machine-assisted Learning Approach

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General Information

This dataset contains the results of the landscape character assessment of Nigeria, utilising machine-assisted learning and open geospatial data at a broad scale. It includes the final result and intermediate datasets obtained in our analyses, as detailed in the GitHub repository - <https://github.com/Patrick-Samson-Udama-Eneche/landscape-character-nigeria>. Within this repository, all input datasets and analytical (python) codes used in the assessment are captured, except for the results (“all_outputs”), which are uploaded here. The dataset is made public for reference, re-use and also to serve as supplementary data for our publications (thesis, articles, etc.). This study is pre-registered on the Open Science Framework¹ and it is part of an ongoing PhD project of Eneche, Patrick Samson Udama.²

Dataset Description

The dataset is saved in two different files – a zipped folder (.zip) and a single file in .geojson format. First, the zipped folder contains all the intermediate data obtained in the cause of the landscape assessments and analysis. The files are saved using generally acceptable formats (.csv, .xlsx, .png, .svg and .geojson) and easily identifiable forms, such as:

- “class_level_metrics.csv”: Landscape class-level metrics saved in comma-separated value format,
- “gap_statistics500_comparison_plot.png”: The result of Gap statistics performed using 500 assumed clusters and shows a comparison between when all datasets were considered and without landcover, etc.
- For other instances, refer to the GitHub repository hitherto mentioned.

¹ <https://doi.org/10.17605/OSF.IO/E2K73>

² <https://www.itc.nl/research/phd-at-itc/phd-projects/!/864842/geospatial-simulation-of-urban-surface-warming-in-major-landscape-characters-of-nigeria-and-its-implications-for-strategic-green-infrastructure-planning>

Secondly, the file “landscape_ch_polygons_with_class_metrics.geojson” is the final result of our assessment and was obtained by extracting respective values of different results unto the file. The data comprises 4,951 landscape patches and 181 distinct landscape typologies. The data is interoperable and can be viewed across multiple applications that support geospatial data structures, e.g. ArcGIS, QGIS, ERDAS Imagine, ILWIS, Tableau, PowerBi, etc. In addition, an attribute table comprising 25 columns is also associated with this data, as shown below:

S.NO.	COLUMNS	DESCRIPTION
1	<i>raster_val</i>	Original raster value indicating the combination of physiographic clusters (as prefix - "1", "2", "25") and landcover code (as suffix - "10", "20", ... "90")
2	<i>area_sqkm</i>	Total area occupied by grid
3	<i>Elevation</i>	Classified elevation code
4	<i>Climate</i>	Classified climate code
5	<i>Landcover</i>	Classified landcover code
6	<i>Geology</i>	Classified geologic code
7	<i>Cluster25</i>	25 Physiographic cluster codes
8	<i>land_code25</i>	25 Physiographic landscape cluster abbreviations
9	<i>Elevation_Class</i>	Elevation class name
10	<i>Climate_Class</i>	Climate class name
11	<i>Landcover_Class</i>	Landcover class name
12	<i>Geology_Class</i>	Geology class name
13	<i>complete_code</i>	Complete landscape character code (i.e. physiographic cluster and landcover codes)
14	<i>mLST</i>	Mean Land Surface Temperature per landscape typology
15	<i>total_area</i>	Total area occupied by patch
16	<i>num_patches</i>	Number of patches
17	<i>description</i>	Description of each landscape patch/typology
18	<i>color_auto</i>	Automatically generated colour codes
19	<i>color</i>	Semi-automatically generated colour codes
20	<i>proportion_of_landscape</i>	Proportion of landscape per landscape typology
21	<i>patch_density</i>	Patch density per landscape typology
22	<i>largest_patch_index</i>	Largest patch index per landscape typology
23	<i>total_edge</i>	Total number of edges per landscape typology
24	<i>edge_density</i>	Edge density per landscape typology
25	<i>landscape_shape_index</i>	Landscape shape index per typology

Additional Notes

- Users of this dataset are encouraged to cite this dataset in research or publications.
- Contributions and improvements to the GitHub repository are welcome.
- Future updates to the repository, particularly the “all_output” folder mentioned, will lead to a newer version of this dataset.
- For more inquiries, please reach out via the contact information provided in this README document.