Assessing different land cover datasets in Ecological Network implementation at medium scale

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**Abstract.** Today, the environmental issues of land use modifications and landscape connectivity denote an increasing interest in the global scientific debate. Among these, those concerning ecological connectivity and the possibility of building ecological networks would prove capable of providing a means and solutions to counter phenomena such as land fragmentation, loss of biodiversity and land management.

The proposed method focused on a multi-species approach for implementing an ecological network in the Reggio Calabria metropolitan area, comparing two land cover datasets and their combined use. To have a coherent representation of the EN, a crucial step is to collect accurate data on the artificial and natural elements of the landscape. This is the reason why Urban Atlas (UA) 2018 and Corine Land Cover (CLC) 2018 data have been used both individually and jointly. UA is shown to be more accurate in the representation of man-made elements, also retaining roads, which are absent in CLC, which is shown to be more accurate in the differentiation of agricultural and forest land. Graph theory was used to test the robustness of the network calculated in three scenarios: UA dataset, CLC dataset, and a UA+CLC dataset. Landscape connectivity was modelled based on ten focal faunal species' requirements. Parameters such as dispersal distance, home range, environmental resistance to species movement were used to identify links, corridors, nodes and patches. Numerous metrics and connectivity indices were calculated and compared in the three different scenarios.

Free open-source software such as QGIS and Graphab constituted the software environment to implement the proposed methodology.