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EHABITAT: MODELLING OF HABITATS TYPES AND SIMILARITIES IN PROTECTED AREAS GLOBALLY BY MEANS OF REMOTE SENSING

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ABSTRACT:

Protected areas need to be assessed systematically and objectively according to biodiversity values and threats in order to support decision making and funding allocation. It is therefore necessary to characterize protected areas according to their species, ecosystems and threats. While species-based conservation metrics are most commonly used, assessing natural habitats is also important. Natural habitats offer many ecosystem services, including refuge for species, and can be mapped at a global scale using remote sensing in a harmonized way, avoiding the usual bias from sampling efforts related to specific study locations or taxa. Large-scale ecological models are thus needed to make progress on important conservation challenges, and the adoption of an open source community approach can vastly increase the efficiency of this modelling. eHabitat, one of the web services which supports the DOPA (Digital Observatory for Protected Areas), uses a procedure of automatic image segmentation based on several environmental variables to systematically stratify protected areas into different habitat types, which are then characterized. Maps of the potential presence of the resulting habitat types outside the protected areas are then obtained by means of multivariate analysis. These habitat maps can be further analyzed using landscape metrics, in order to identify and evaluate the suitability of different candidate sites as potential extensions to existing protected areas or for setting up new areas. eHabitat allows us to produce key indicators on protected areas that can be compared at regional level, and provides the means to identify unique ecological areas that are currently unprotected. Preliminary results, as well as advantages and limitations of the method will be further discussed.

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