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INTEGRATING HABITAT QUALITY INDEX TO SUPPORT URBAN DESIGN IN URBAN AREAS. The case of study Basse di Stura, Turin (Italy)

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#### INTEGRATING HABITAT QUALITY INDEX TO SUPPORT URBAN DESIGN **IN URBAN AREAS**

The case of study "Basse di Stura", Turin (Italy)







#### Poster presentation at **ESP10 World Conference**

10 years advancing ecosystem services science, policy and practice for a sustainable future



Venue of the ESP10 - 10 years advancing ecosystem services science, policy and practice for a sustainable future. Leibnitz University in Hannover/ Germany (ph: C. Giaimo).

Opening Day of the 10th ESP world conference on 21st of October at Leibnitz University in Hannover/Germany (ph: www.franzbischof.de)

#### https://www.espconference.org/esp10

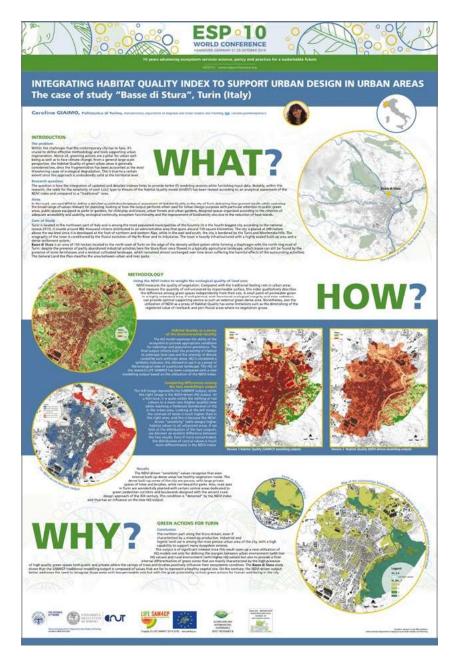
According to some activities conceived, financed and developed in the field of teaching (Design Workshop "Regenerating public space: standard, soil and ecosystem services", an educational project promoted by the College of Planning and Design of the DIST-Polytechnic of Turin within the framework of the project of Excellence MIUR 2018-2022) and research (Eco-welfare and Intermunicipal governance: soil as an infrastructure for regenerating territories", a multidisciplinary research co-funded by DIST Excellence Dept. of the Polytechnic of Turin in cooperation with a range of institutional and academic organizations) Basse di Stura was considered an interesting case to defining both operational methods to produce "new knowledge" in support of territorial governance processes aimed at limiting soil consumption (zero balance), and design methodologies for the public space as a strategic area for integrated policies of urban, ecological-landscape, historical-environmental and architectural regeneration of the contemporary city.

Basse di Stura is an area of 150 hectares located to the north-west on the edge of the densely settled system while forming a diaphragm with the north ring road of Turin. Despite the presence of partly abandoned industrial activities, here the Stura River once flowed in a typically agricultural landscape, which traces are still visible by the presence of some farmhouses disused and degraded and a residual cultivated landscape, which remained almost unchanged over time (even suffering the harmful effects of the surrounding activities). The General Land Use Plan classifies the area between urban and river parks.

The problem that the study wants to face is related to the awareness that within the challenges of the contemporary city, it's crucial to define effective methodology and tools supporting urban regeneration. Above all, greening actions are a pillar for urban well-being as well as to face climate change, From a general large-scale perspective, the Habitat Quality of green urban areas is generally considered low, since the fragmentation has been accounted as the most threatening cause of ecological degradation. This is true to a certain extent since this approach is undoubtedly valid at the territorial level. Specifically, the study puts particular attention to public green areas, public spaces equipped as parks or gardens, for child play and leisure, urban forests and urban gardens, designed spaces organized according to the criterion of adequate accessibility and usability, ecological continuity, ecosystem functionality and the improvement of biodiversity also due to the reduction of heat islands.







This study starts from some evidence delivered by the Life SAM4CP Eu project conduct with Stefano Salata and coordinated by prof. Carlo Alberto Barbieri and intends to compare the Life SAM4CP Habitat Quality ecosystem service model with a new modelling output based on the integration of the SAM4CP model with the NDVI index. Within the study, the sensitivity table of each LULC type to threats of the Habitat Quality model (InVEST), has been revised according to an analytical assessment of the NDVI index and compared to a "traditional" ones. We use the NDVI index as a proxy of Habitat Quality to weight the ecological quality of land uses; then we use the HQ ES as a proxy of the environment healthy. Results indicate that Habitat Quality index can be better modelled if NDVI is used as a proxy of habitat condition in urban areas, showing how the integration of information is crucial to obtain reliable decision making support system. The poster was made with the expert graphic contribution of Luisa Montobbio

(Dist Department).

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