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**Section 4. *Landscape governance as a socio-ecological practice: historicistic and international perspectives***

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**Title:** *Urban socio-ecological systems mapping and analysis: opportunities for urban space development* (oral presentation)

**Abstract:** Urban landscapes assessment from the perspective of the fulfilment of their regulating, supporting and cultural functions relies on the concept of ecosystem functions and services, but in application to a system of a higher order – urban socio-ecological systems (SES). We consider the regulation of natural processes in the city, creating opportunities for recreation, the emergence of a "sense of place" and an aesthetic perception of urban landscapes take place not only because of landcover type, but also by means of landforms properties, material and non-material human creations, as well as the urban environment spatial pattern or mosaic. For the city of Lipetsk (Russia) we draw the map of urban SESes and studied the effect of urban landscapes pattern on regulating (local climate, air quality and snow accumulation regulation) and cultural (recreational, aesthetic and territorial identity) landscape functions. The index-based classification of landcover helped us to determine the proportion of vegetation and sealed areas in each map contour. We calculated land surface temperatures based on Landsat 8 TIRS data for different seasons of the year and linked them to urban landscapes composition. For assessing air pollution in the city we collected snow samples from undisturbed surfaces at about 170 sites across the city and determined the total dust pollution per 1 sq.m. and pH of snow. Based on the analysis of residents' surveys a generalized rating of the city's recreational spaces was compiled. We also used expert estimates and density of citizens' photographs to identify the most and less attractive territories of Lipetsk. To determine the mental frame of the territory we analyzed mental maps and questionnaires and obtained maps of the most significant areas, streets and objects. Assessment of different functions of urban SESes revealed the problems of city areas and proposed suitable solutions for the development of urban space.