

THALES Project No. 5935

## **An approach on peri-urban space as a planning unit under the concept of landscape ecology**

### **Research team**

*Louis Wassenhoven, Professor NTUA*

*Chryssanthi Petropoulou, Dr. in Geography, NTUA researcher*

*Nikos Pangas, Forester environmentalist, NTUA doctoral student*

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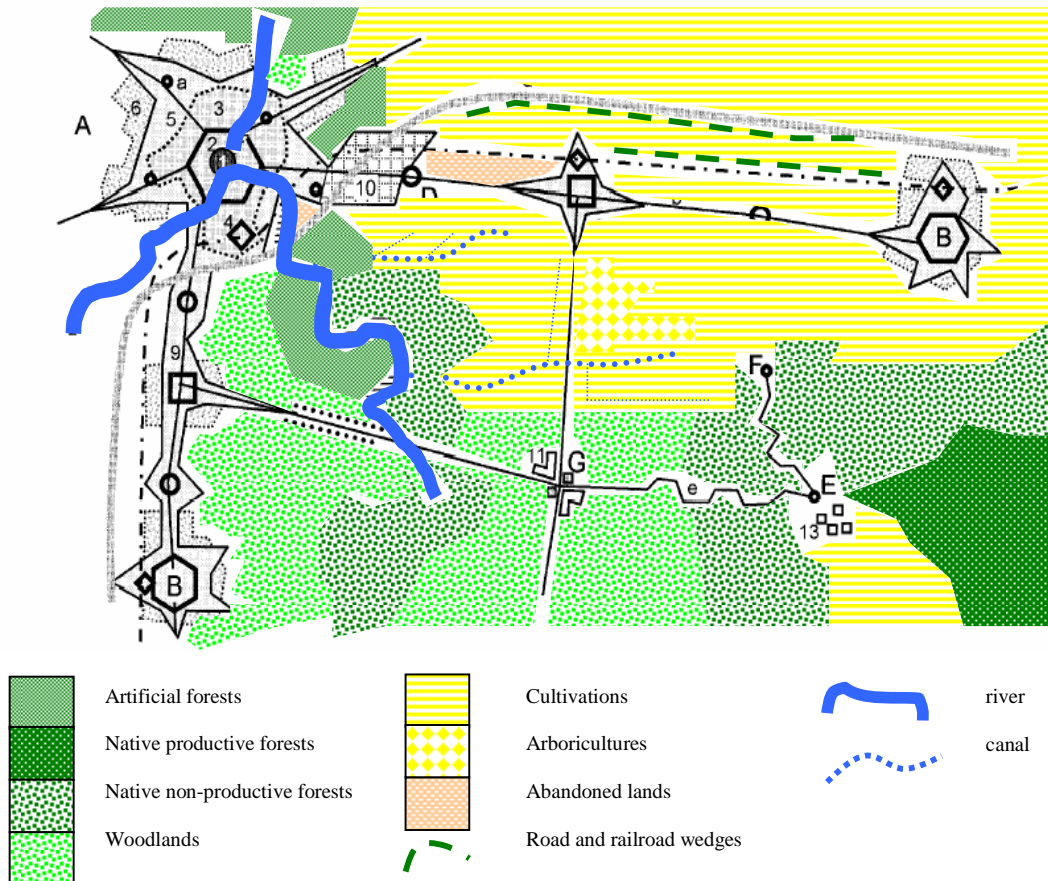
The aim of this project is i) the examination of the notion of peri-urban space and landscape, and ii) the determination of peri-urban space as a particular planning category. For this purpose an approach based on the landscape ecology have been used.

This approach supports that the peri-urban space could be included as an independent spatial category in the process of spatial planning. The peri-urban space constitutes the field the most pressed by urban development. Its spatial units reflect its uses and functions and have been considered as the expression “means” of his history and development (figure 1). In order to distinguish and determine these units, they were faced as “eco-landscapes” (“οικοτοπίο(-α)”), that is, as holistic units. The notion of “eco-landscape” that is proposed in this study, has been considered as a suitable tool for the dynamic analysis of peri-urban space. This has been resulted by a critical approach of “landscape ecology”.

Athens Metropolitan Area was selected to be studied, as it is the capital of a "recently industrialized country". From the discrimination of spatial characteristics for the study area it has been proposed a discrimination of “eco-landscapes” for the "peri-urban" space in the Greek Cities. Such an undertaking shows of the relationship between the observed “eco-landscapes” and the mode of development of these cities and therefore an “eco-landscape” classification is proposed that results in their cartography (figure 2). Satellite images, digital cards and local researches have been used for this purpose.

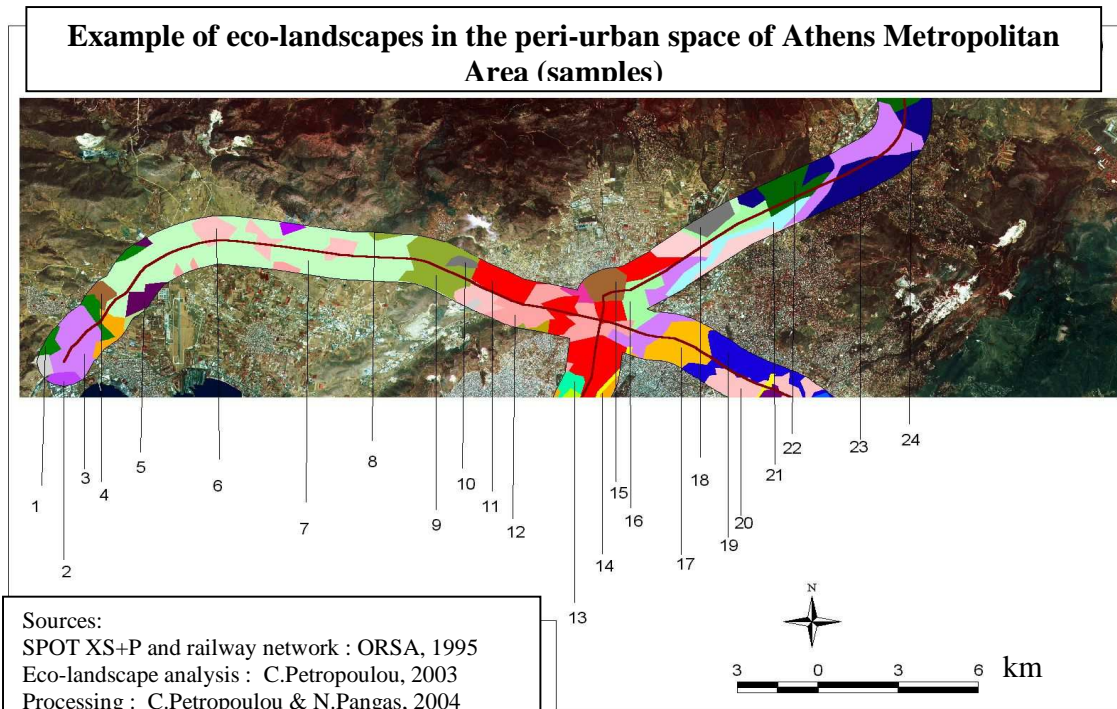
The results of this study show the unequal even interdependent mode of urban development in the "peri-urban" space of Athens Metropolitan Area and the dynamic interactions between their ecological and socio-economical features as well. This study can contribute for a critical ecological and social approach of the models and the politics that are followed for the development of this metropolis which are exclusively based on economical factors. This critical approach can be expanded in the study of development mode of a Mediterranean City.

**Figure 1 : Spatial characteristics of urbanization as a complex diffusion process acting at different scales and distances in the peri-urban space.**



A,B,C,D,E,F represent the initial pattern of settlements of different sizes. A is the main city and shows different stages of urban growth (1, 2, 3,4, 5, 6), absorbing small rural settlements (a) nearby. The urban agglomeration expands from an inner (5) to an outer (6) urban fringe. Smaller towns (B,C) developed less differentiated urban fringe zones and show a steep gradient from urban to the rural countryside. Settlements are connected by supraregional roads (b) and later by railroads (c), which initiated new urban zones (4) and ribbon-building (7) along the roads that may evolve into urban corridors (9) linking to centers. In between and mainly along river valleys and wetlands (f) green ‘wedges’ remain and are attractive for the creation of recreation areas (12). Accessibility is an important factor and roads are important initiators various changes in the countryside, such as residential housing in rural villages (8), development of new zones of economic activity at the urban fringe (10) and at road crossings (11), and exurbs (13) near remote but accessible villages (E) while isolated ones (F) are declining. Traffic congestion in and around cities caused the creation of network of motorways (d) superposed upon the existing structures. (Source : Pangas, 2005. Urban green dynamics in relation with urban functions and development. Ph. D thesis (in process) based on Antrop, 2000).

**Figure 2 : Eco-landscape analysis in a peri-urban zone (examples)**



Site	Type*	Eco-landscape description
1.	C.2.2.	Shrublands
2	A.6.1.	Industrial units distinguished from the volume and shape of their buildings
3	A.2.1.	Dense mixed zones : “big industrial type buildings” mixed with settlements
4	A.5.1	Communities in urban fringe zones
5	A.6.3	Big Building blocks
6	A.3.3.	Urban settlements zones under construction – small to medium size density 75%)
7	B.1.3	Agricultural areas in high productivity land
8	C.1.2.	Coniferous forest
9	C.2.3.	Sclerophyllous vegetation
10	A.7.2.	Dump sites (landfill)
11	A.3.1.	Dense urban zones (> 90%) , spontaneous settlements under - construction
12	A.3.2.	Medium size density or dense urban settlements zones (75%-90%) , under regularization with low green percentage
13	A.8.2.	Great park areas and green urban areas
14	A.1.1.	Dense urban zone in the city center and ribbon-building
15	A5.1	Communities in urban fringe zones
16	A.8.1.	Open sport and leisure green areas
17	A.1.2.	Dense urban settlements zone with low and high buildings
18	A.6.6.	Airports
19	A.4.2.	Planned zones (medium or dense urban zones with 50-75% green cover)
20	A.3.3.	Urban settlements zones under construction – small to medium size density 75%)
21	A.10.1.	Canals, rivers and water reserves the urban areas
22	C.1.3.	Mixed forest
23	A.4.3.	Medium or small size density settlements zones (<50%) with high green cover
24	A.6.1.	Industrial units distinguished from the volume and shape of their buildings

*\* (The types are numbered according to the hierarchy described in the final report)*

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