



**Interreg**



EUROPEAN UNION

**Danube Transnational Programme**

**URBforDAN**

## **URBforDAN Mapping of Ecosystem Services**

Hungary

Budapest

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# 1. INTRODUCTION

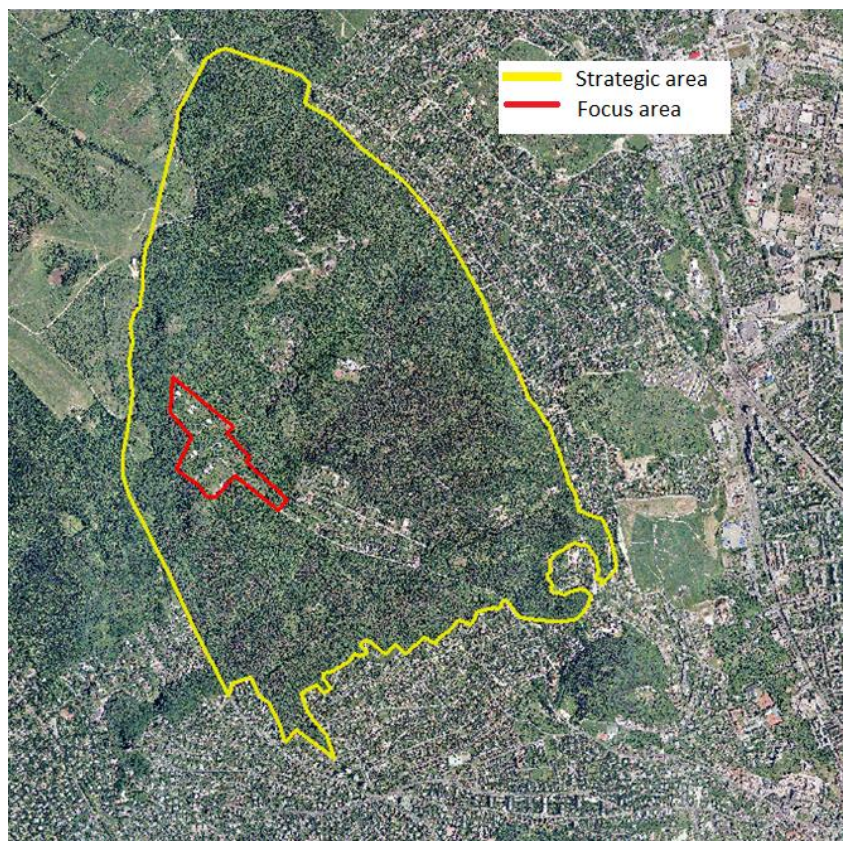
## 1. Short description of the strategic (and focus) area:

Budapest is divided into two parts by the River Danube. Pest is most a lowland, much urbanised and landscape is more agricultural. Buda is hilly and the remained green surfaces are more covered with forests. On the Pest side we can also find urban forests, but on Buda side much more natural vegetation remained. From the year 1990 the density of green areas decreased by 4 % in Budapest, altogether with the ecosystem services they provided. So one of the most important goals is to halt the loss of green areas in Budapest. Buda side's urban forests play a huge role in air cleaning, nature conservation, recreation and sport activities.

The strategic area is situated in the II. and III. district of Budapest, and very popular for sport activities such as running, rock climbing, cycling, walking, paragliding, so one.

The strategic area is about 560 hectares (yellow), as for the pilot/focus area (red) of Budapest URBforDAN project is 16 hectares.

The larger part of the strategic area is state-owned and managed by Pilisi Parkerdő Zrt. The focus area is owned by the Municipality of the 2<sup>nd</sup> District and the Municipality of Budapest.

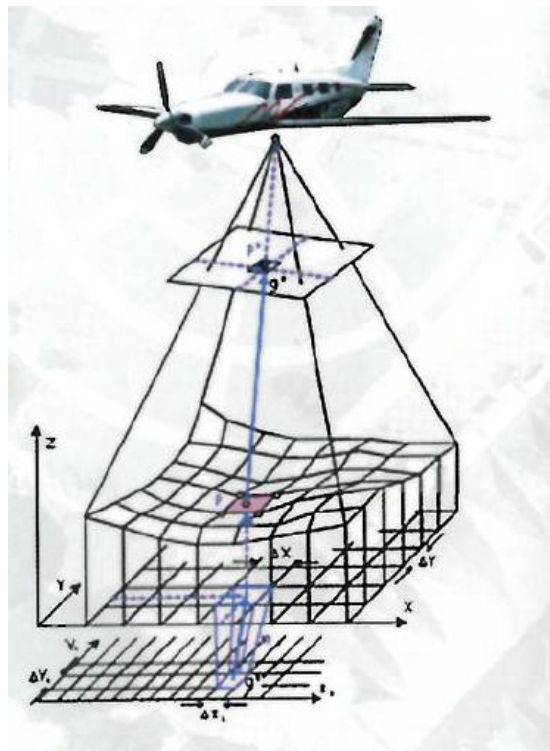


## 2. METHODOLOGY

The Municipality of Budapest and the Fókert Zrt. organised workshops where the stakeholders could express their opinion about the existing problems and the possible solutions relating to the project area. Also the outcomes of the online survey carried out among users were used during the selection of ecosystem services to be mapped, that will be a good base for the management plan which aims the overall goal, the improvement of the touristic possibilities and providing much biodiversity.

The analysis of the ecosystem services of the Hármashatár Hill was mapped by a group of external experts, the Interspect Ltd.

For collecting forest cover information remote sensing technology was also used among others (field work, forest data base), which is widely used to acquire forest land use information.



## 3. RESULTS

### 3.1. Summary of mapped ES

Relevant ecosystem services for the strategic area:

Common for all PP:

1. Wood/Timber production,
2. Non Wood forest product,
3. Local Climate and Air Quality,
4. Recreation,
5. Tourism,

Specially for Hármashatár hill:

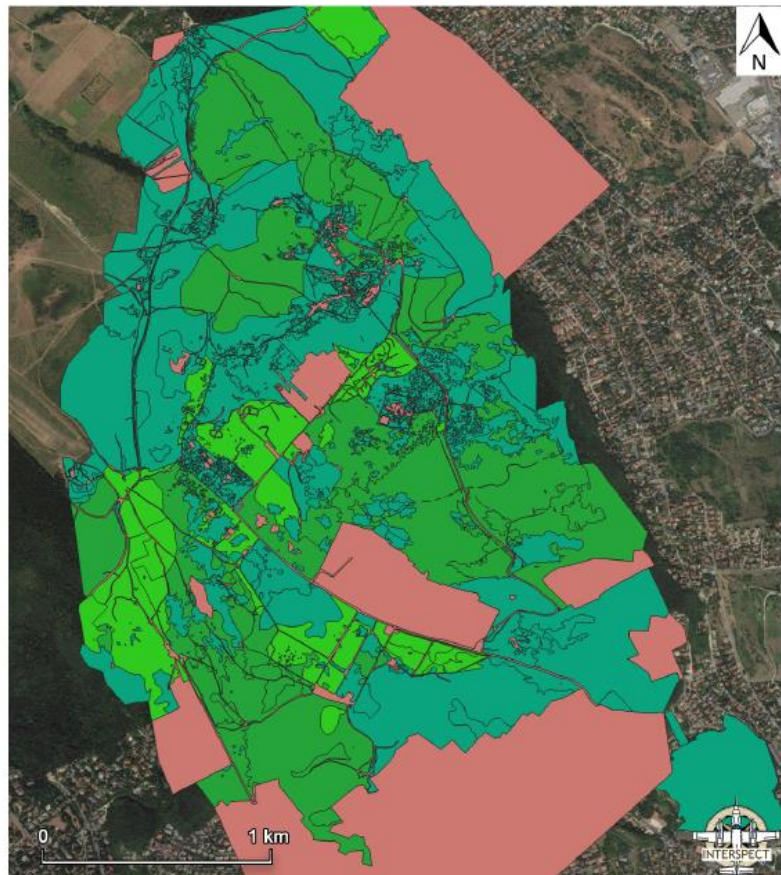
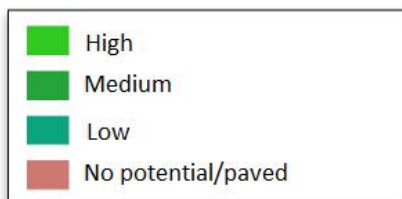
1. Important habitats and biodiversity

### 3.2. Timber production

The database for this map was provided by Pilisi Parkerdő Zrt., the criteria for each polygon was the timber production potential of the wood. Remote sensing technology and field work were also used during mapping. Commercial logging is not significant in the area, so potential timber production is not so important, but shows very well the regeneration potential of the forest.

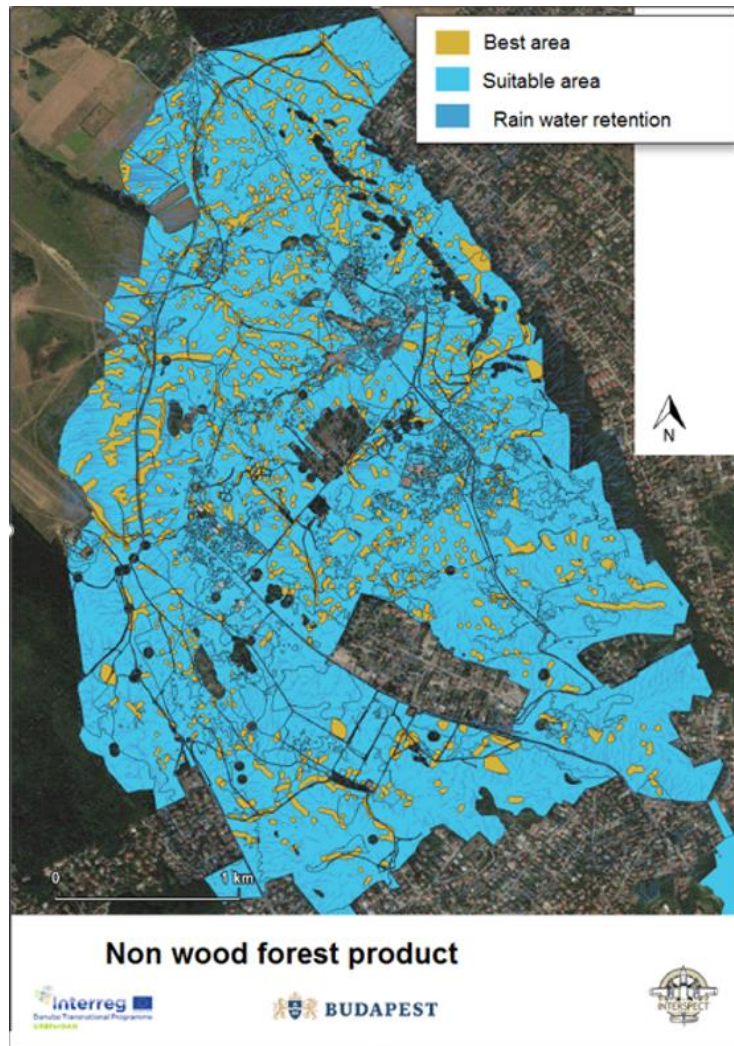
Low, medium, good ranks show the timber production of the polygons, no potential/paved polygons are built-up area, covered with pavement, or are degraded soils, surfaces.

#### Timber production potential



### 3.3. Non wood forest product

On this map we estimated the areas where environmental conditions are suitable for non wood forest products such as mushrooms and berries.



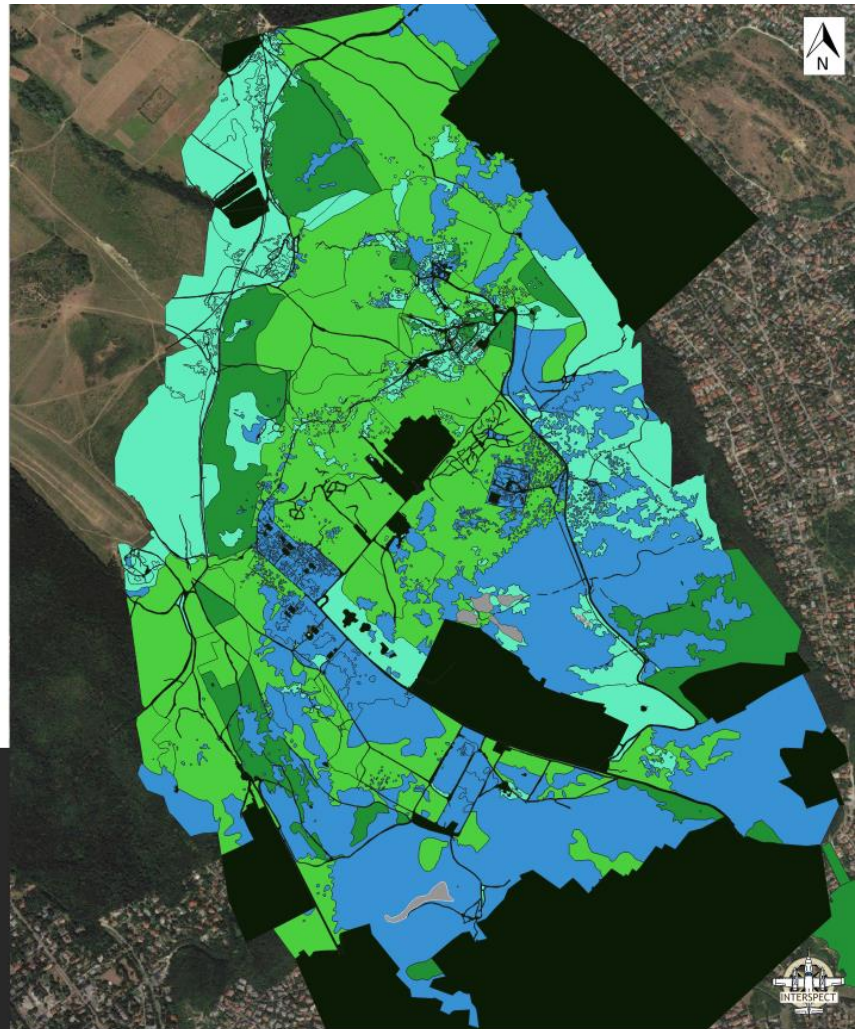
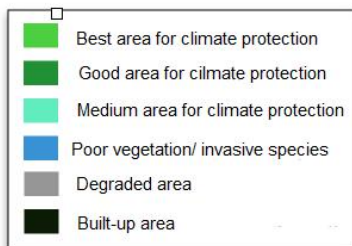
### 3.4. Climate protection/ air quality

The database for this map was provided by Pilisi Parkerdő Zrt. Remote sensing technology and field work were also used during mapping.

This map shows natural areas from the perspective of climate protection, using the database of the structure of the forest, soil quality and remote sensing images to estimate the main tree species.

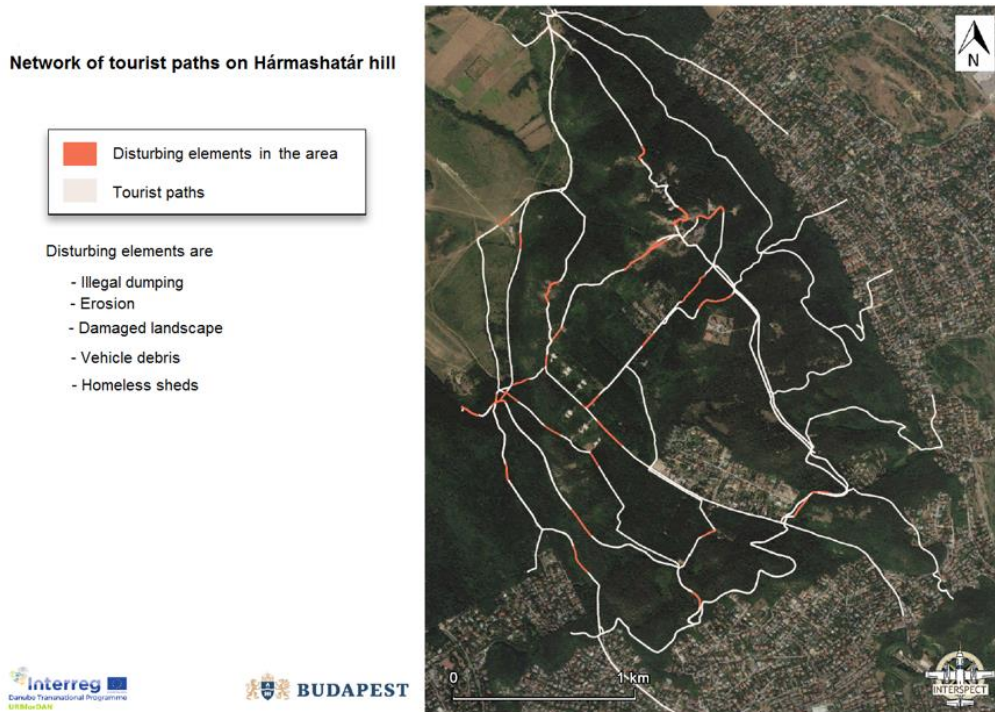
Best, good and medium climate protection areas have positive effect on air quality and climate, while degraded and built-up area have negative impact.

#### Climate protection/ air quality



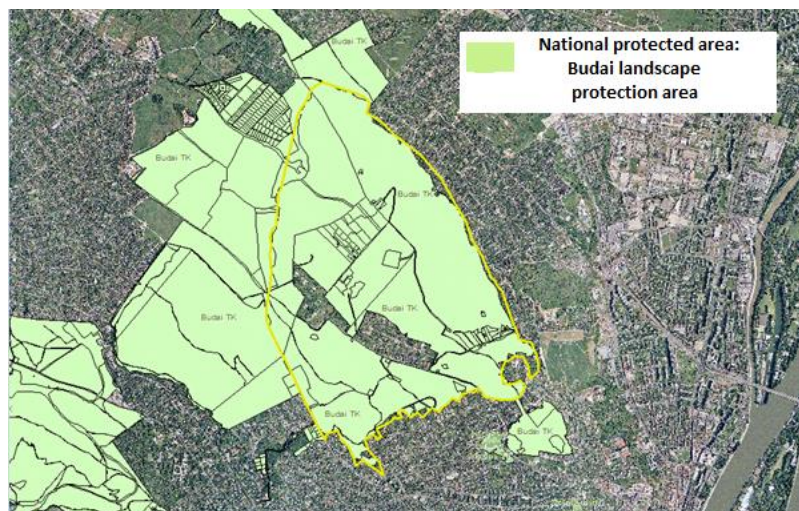
### 3.5. Tourism

This area is one of the most frequent ones for tourists heading to Buda-hills as it is located in the direct neighbourhood of Szépvölgyi residential area easily accessible by public transport, cycling or foot. Whole Hármashatár hill is important for recreation and tourism as it is fragmented by a network of tourist paths.

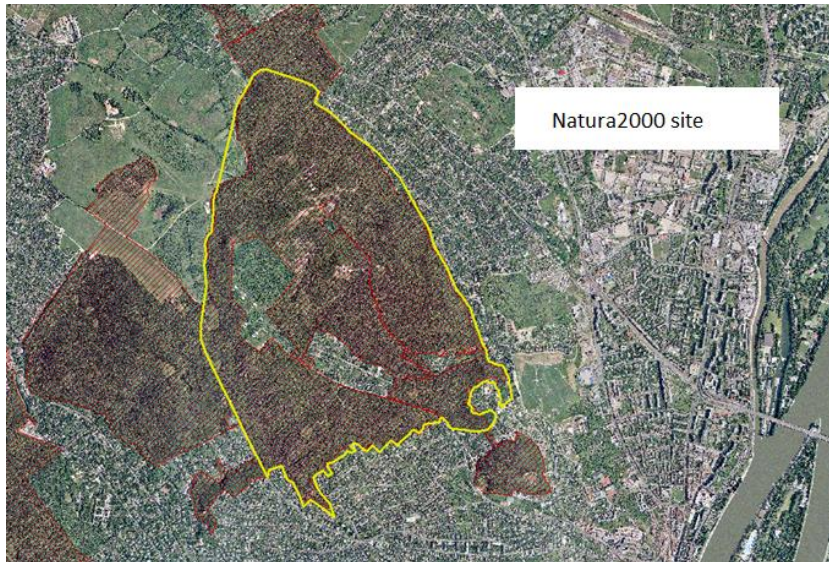


### 3.6. Important habitats and biodiversity

The Hármashatár Hill is lying on the hilly Buda side in the 2<sup>nd</sup> and 3<sup>rd</sup> District of Budapest. A part of the area belongs to the Budai Landscape Protection Area which is also part of the Natura 2000 network (HUDI20009).

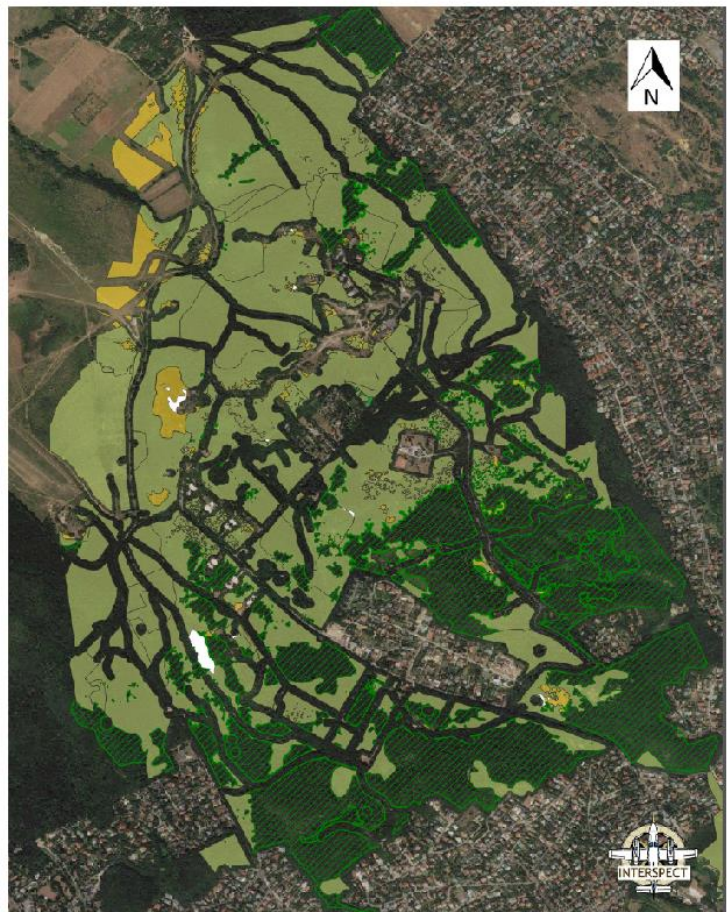






**Vegetation of the Hármashatár hill**

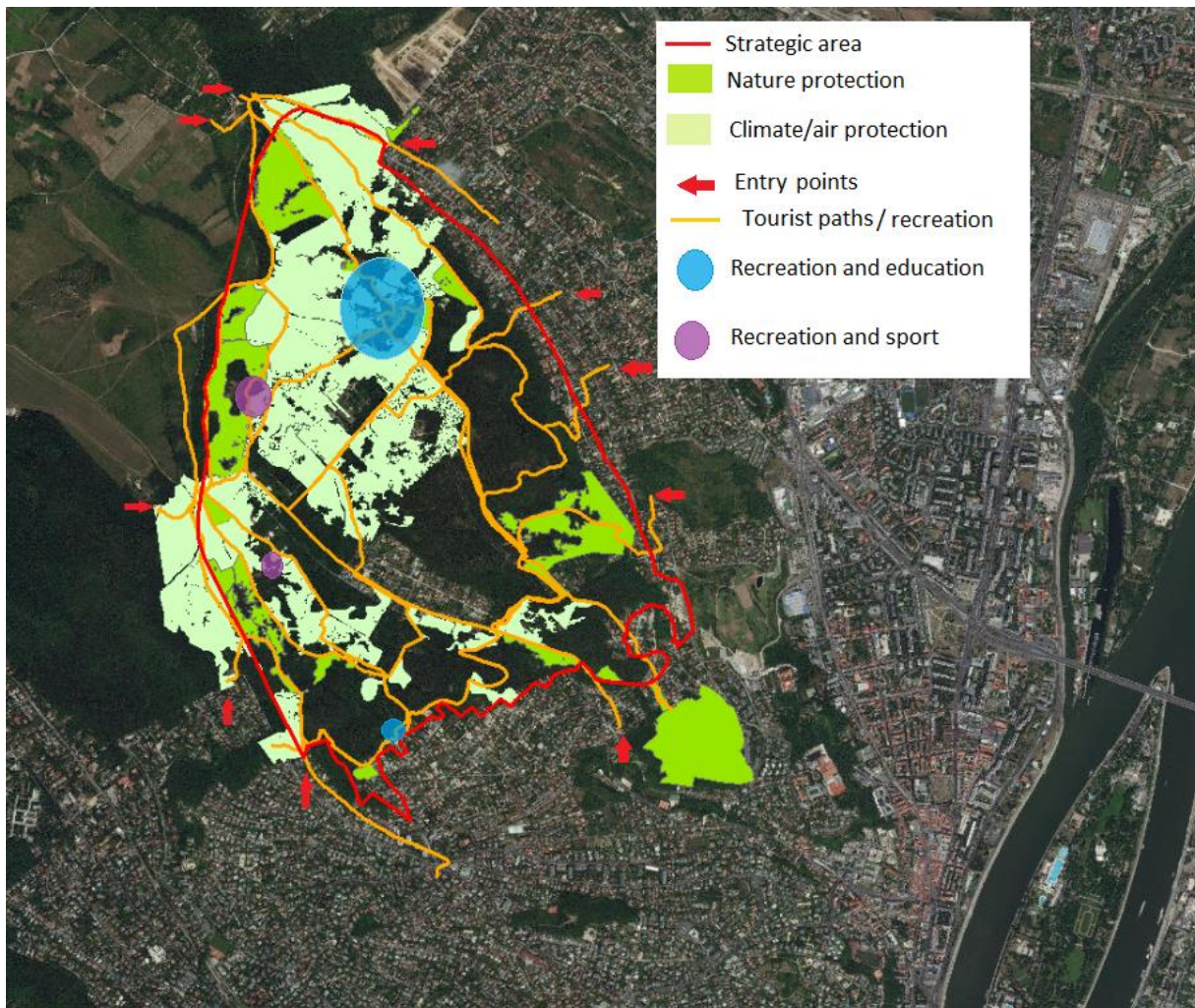
- 
- Forest/mainly endemic species
  - Open areas
  - Grasslands
  - Degraded forests



## 4. DISCUSSION

The focus area was formerly (in the 70's) prepared for real estate investment purposes but just some cottages were built, later they were abandoned and ruined. At the moment we can identify 6 isolated paved areas in the wood used for car parking. These are used for the purpose of tourism, sport and leisure activities though the area is also close to a paragliding departure point, to a quarry where rock climbing is popular and some hiking trails are accessible from this area. The quality of the woodland for the above mentioned reasons (construction works) is poor, and illegal waste deposition is regular, homeless peoples living in sheds.

Possible conflicts areas are where sport, recreations activities and protected plants occurs or animals are disturbed by these activities.



### Detected problems on Hármashatár hill

- Erosion
- Vehicle debris
- Illegal dumping
- Homeless shed



During our work the lack of relevant data for mapping of the ecosystem services caused delay or was difficult to gather. We can also mention, that the timing of the mapping work wasn't the best, as field work and botanical studies are more efficient in the vegetation period.

Few days windy weather caused also delay, using remote sensing technology because the aeroplane couldn't take off to take the aerial photographs.