# Through remote fields

Management proposal to create a resilient landscape
to climate change in Montnegre i Corredor Natural Park,
Barcelona


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|---|---|
| Country / City | SPAIN, BARCELONA |
| University / School | ETSAB, UPC |
| Academic year | 2019-2020 |
| Title of the project | Through remote fields |
| Authors | Patricia Flores, Isabel Rodríguez |

## TECHNICAL DOSSIER

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|---|---|
| Title of the project | Through remote fields |
| Authors | Patricia Flores, Isabel Rodríguez |
| Title of the course | Landscape Studio |
| Academic year | 2019-2020 |
| Teaching Staff | Pepa Morán, Lidia Garrido |
| Department/Section/Program of belonging | |
| University/School | ETSAB, UPC |

Written statement, short description of the project in English, no more than 250 words

The site is located in the northern part of Montnegre Park in Barcelona. In general, this area is known for its high forest density, which over time has spread throughout the territory, almost completely replacing the patches of abandoned crops. Within this sector is the Ramió stream, and two urbanizations located on the edge of the park, Roca Rossa and Ágora Park. Ecological and social values are analysed and it is intendet to improve connectivity by means of ecological corridors (traced from small existing streams) and open spaces that promote biodiversity; as well as social corridors and new spaces for public use that promote the participation of citizens in the management of the park. After analyzing wildfire risk to identify areas of propagation and vulnerable zones, preventive forest management measures are proposed for the Ramió stream and the urbanizations. These measures consist of forest clearing and prescribed burns to reduce forest density, and then continue management through grazing and implementation of permaculture, taking advantage of resources and natural conditions to generate open spaces that promote the conservation and mobility of fauna, and using existing spaces and facilities to promote social identity and participation.

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# CLIMATE CHANGE AGAIN

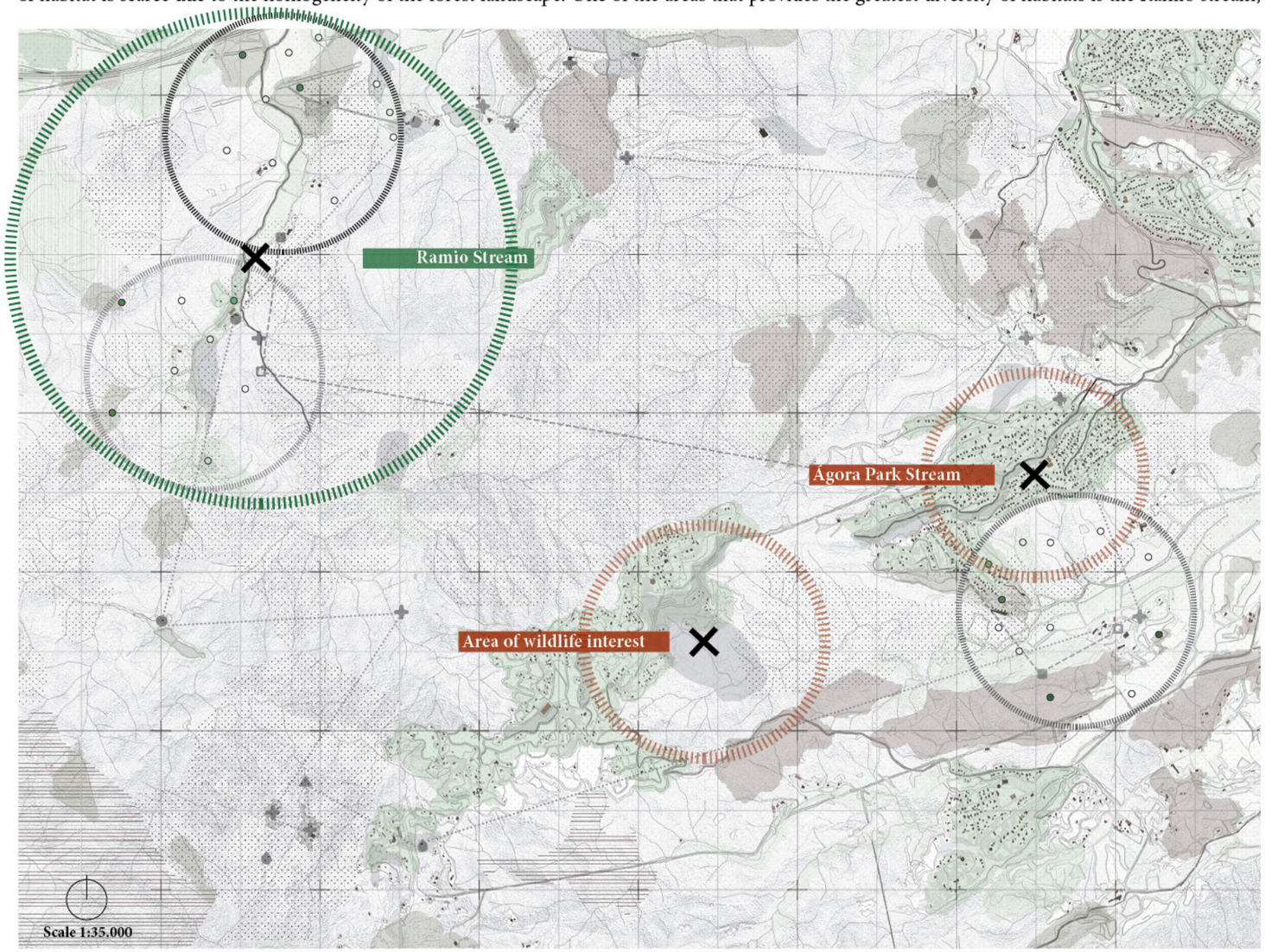
**11th International Biennial Landscape Barcelona**

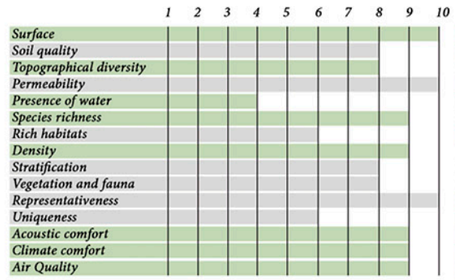
Barcelona September 2020

SCHOOL PRIZE

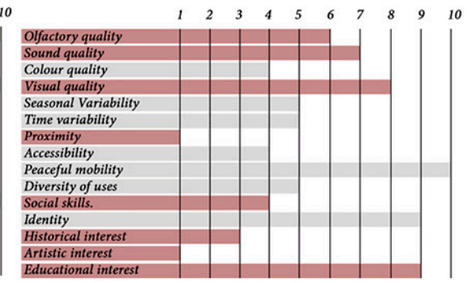
## Social, economic and ecological study

Analyzing the ecological value of the area, the majority of the forests are identified as being Pine, Cork oak, and small patches of Mediterranean scrub, meadows and herbaceous crops. This landscape provides diverse habitats for the fauna of Montnegre, however, we identified several species in danger of conservation within the park, which require open spaces, such as meadows, scrublands, crops, and areas close to streams. Unfortunately, this type of habitat is scarce due to the homogeneity of the forest landscape. One of the areas that provides the greatest diversity of habitats is the Ramió stream, which has active areas of crops and open areas remaining from abandoned crops. In economic and social terms, the Riera de Ramió contains areas of grazing and livestock, which are of great value to this sector, as well as farmhouses and a hostel that is currently in operation. The Roca Rossa and Ágora Park developments adjacent to the park are perceived as having great potential to promote the economic and social values of the area. The social and ecological values that a natural space like this must achieve are studied to create goals to achieve:



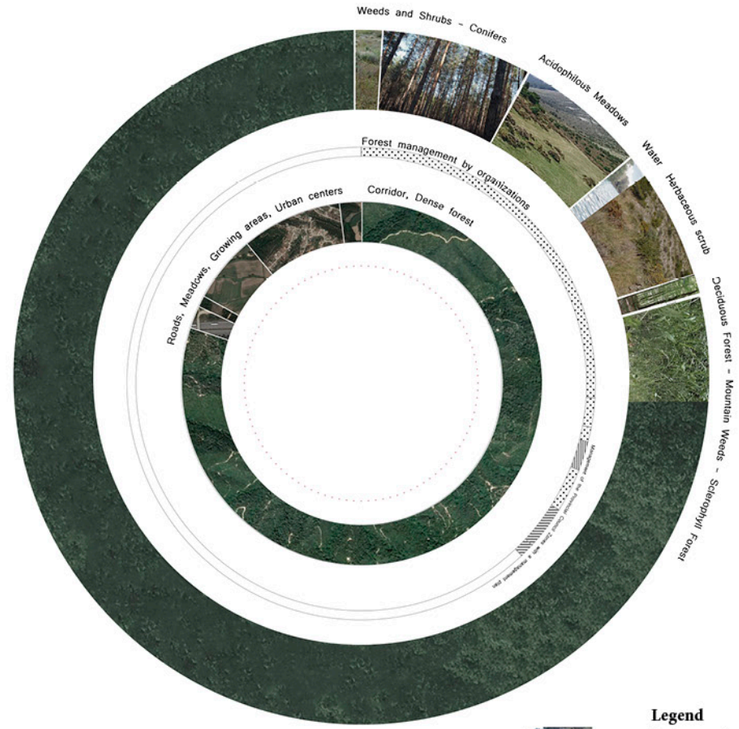




*Ecological values. Our* **objectives** *are marked in* **grey**




*Ecological values. Our* **objectives** *are marked in* **grey**

**Relationship between different types of tesserae, habitats and managed areas**

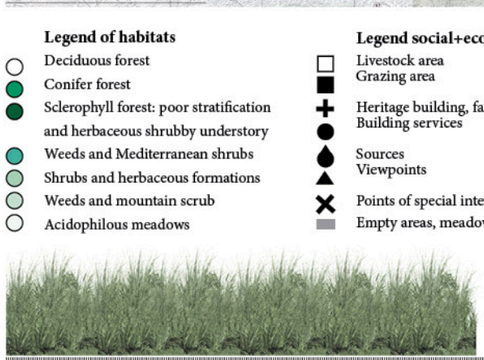



**Legend of habitats**
- Deciduous forest
- Conifer forest
- Sclerophyll forest: poor stratification and herbaceous shrubby understory
- Weeds and Mediterranean shrubs
- Shrubs and herbaceous formations
- Weeds and mountain scrub
- Acidophilous meadows

**Legend social+economic**
- Livestock area
- Grazing area
- Heritage building, farmhouses
- Building services
- Sources
- Viewpoints
- Points of special interest
- Empty areas, meadows

**Management legend**
- Managed by organizations
- Managed by the Provincial Council
- No forest management

**Relevance legend**
- Social interest
- Ecological interest
- Habitat relevance

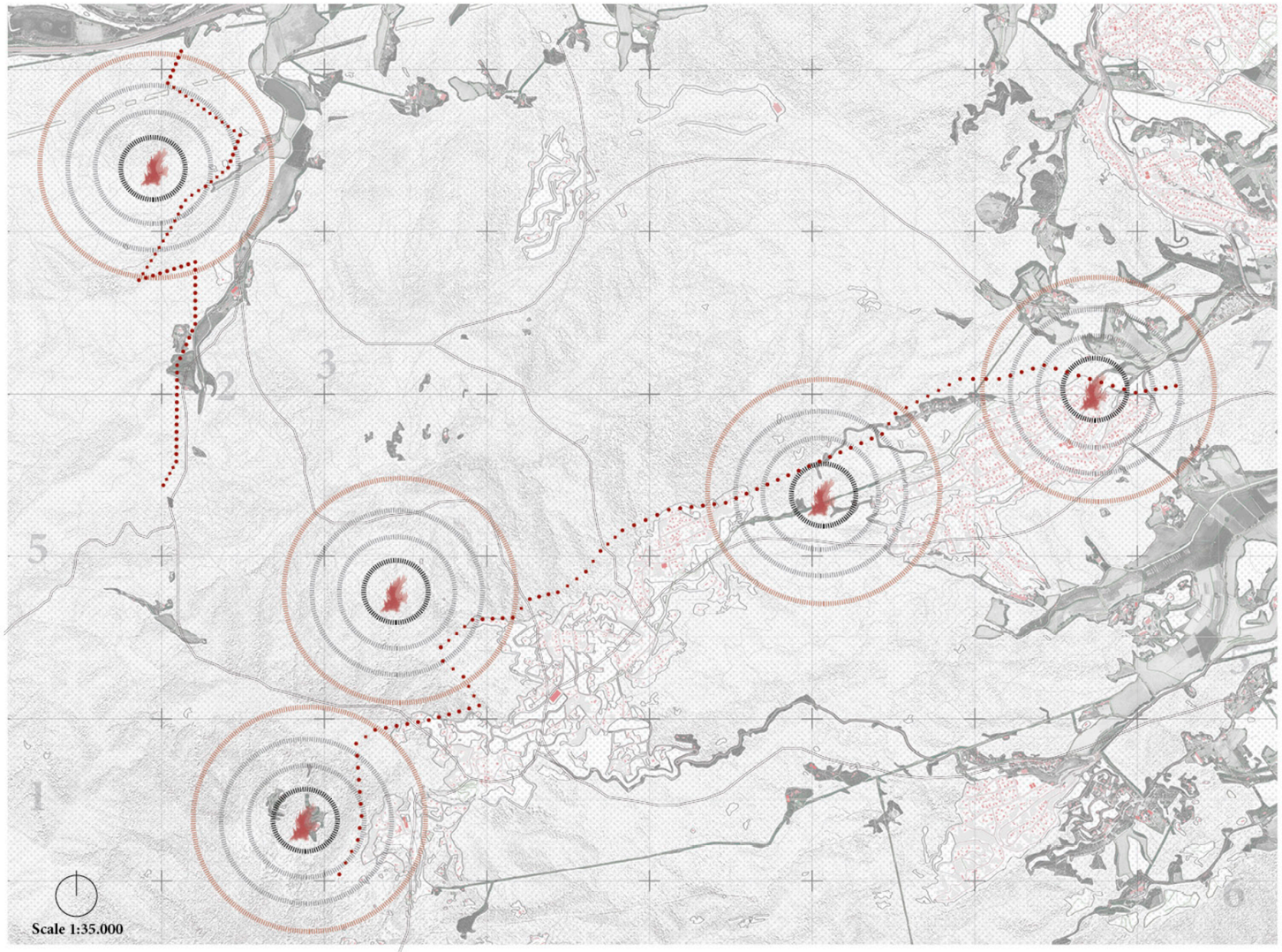


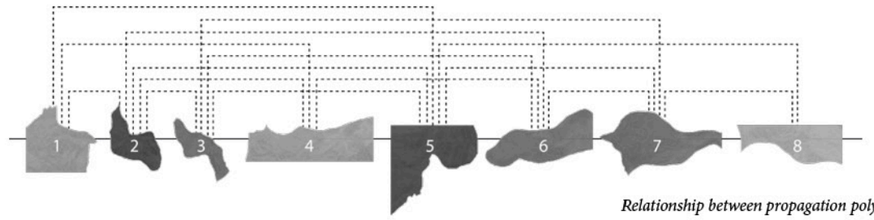
**Legend**
- Endangered species
- Endangered habitats

*Fauna is related to each habitat. That is the reason why we study which ones may be in danger of disappearing in the Montnegre.*

## Wildfire landscape

The Montnegre Natural Park has a very high forest density. Due to climate change there is a risk of fire, which would be a great loss. That is why, based on a risk analysis of wind and convective type forest fires, the polygons with the greatest potential for propagation were identified, as well as the polygons with the most vulnerable areas, where Roca Rossa and Agora Park urbanisations are located along a mountain ridge, which represents a great risk in a wind type forest fire as it is spread by the continuity of the carenes. Similarly, the Ramió stream is located as a protection zone due to its high ecological value, and as an open space, as a possible fire mitigation zone. Management measures such as logging and prescribed burning are proposed to provide more protection and reduce the risk of forest fire spread. Urban areas have priority to be protected because the lives of many people living there are at risk. The use of prescribed and controlled fires in areas such as this can help to ensure that if a fire does occur, it is not as critical. This is a method that is beginning to be used in Barcelona by firefighters, and although socially it is not very accepted, it is one of the most viable preventive measures for the near future.



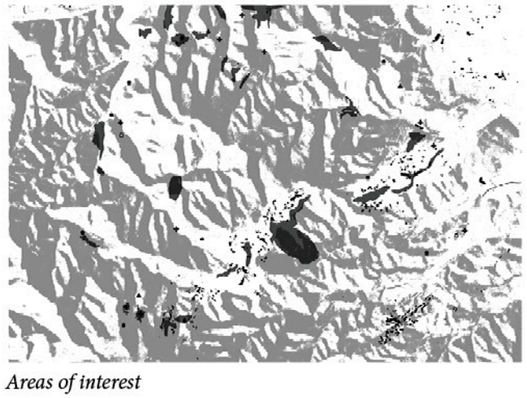




*Relationship between propagation polygons*

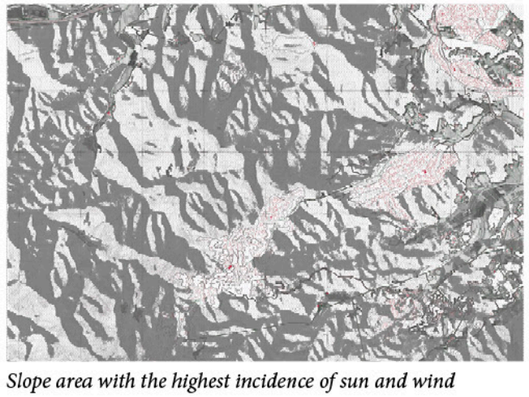
*Before management by pre-written fire*

*After management by pre-written fire. Maintenance with grazing*

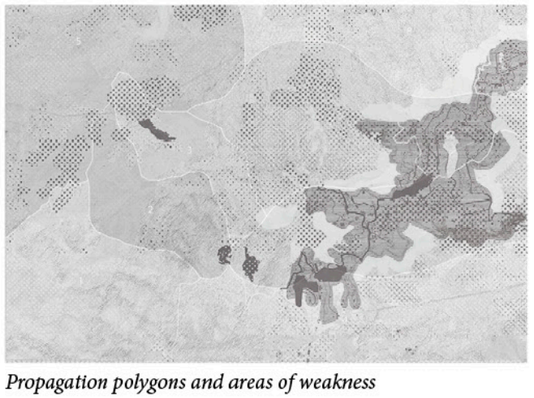
*Dense vegetation: fuel*



*Areas of interest*



*Slope area with the highest incidence of sun and wind*

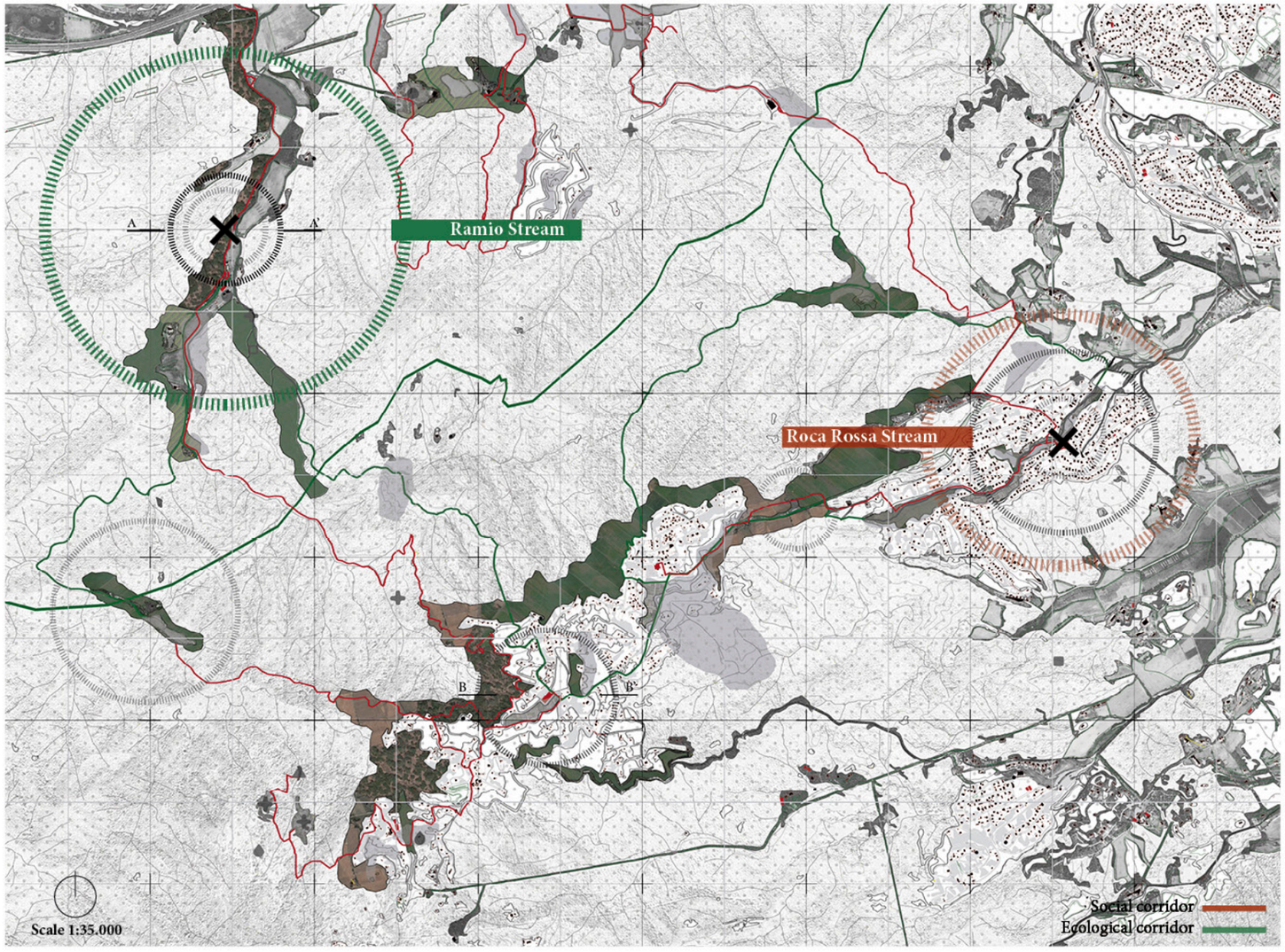


*Propagation polygons and areas of weakness*

*Study of all the factors that make the probability of fire greater: wind, sunshine, areas of greater vulnerability, areas of greater strength due to the behaviour of vegetation in the face of fire, past fires*

# Masterplan

The Master Plan proposal consists of improving connectivity, generating spaces for social activities and providing new habitats for fauna. Social corridors and ecological corridors are implemented, the first ones with the purpose of promoting social participation within the park, and that visitors and inhabitants of the urbanizations get involved as forest management agents; and the ecological corridors to enable the mobility of the Iberian fauna and flora. In the Ramió stream and the urbanizations, preventive forest management measures are proposed, such as clearings and elimination of the understory that could act as fuel in the event of a fire. These spaces could later be used as grazing areas and spaces of productive use, such as urban orchards, which could be managed by the citizens themselves, and businesses such as restaurants, in order to promote the social coexistence of citizens and interaction with the park.to provide more protection and reduce the risk of wildfire propagation.



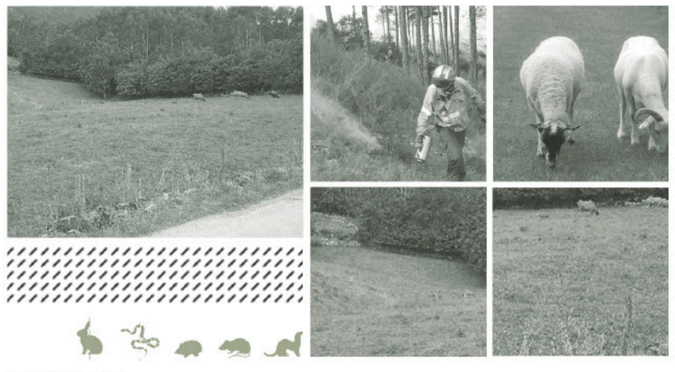


*General section of managed area in ecological corridor*


*General section of the area managed in a residential area*


*Urban participation in management*

*Dense vegetation:*
*Manual felling + extraction of biomass + eliminating shrub under tree species*



*Grazing areas:*
*manual felling + biomass extraction + burning + grazing*

*Agricultural areas:*
*Manual felling + biomass extraction + burning + cultivation*

*The management of each type of tessera provides safe habitats and therefore better living conditions for fauna.*

**Management generates a new landscape more resilient to climate change.**