

*3rd International Meeting of Fire Effects on Soil Properties*

## **Field Trip Guidebook**

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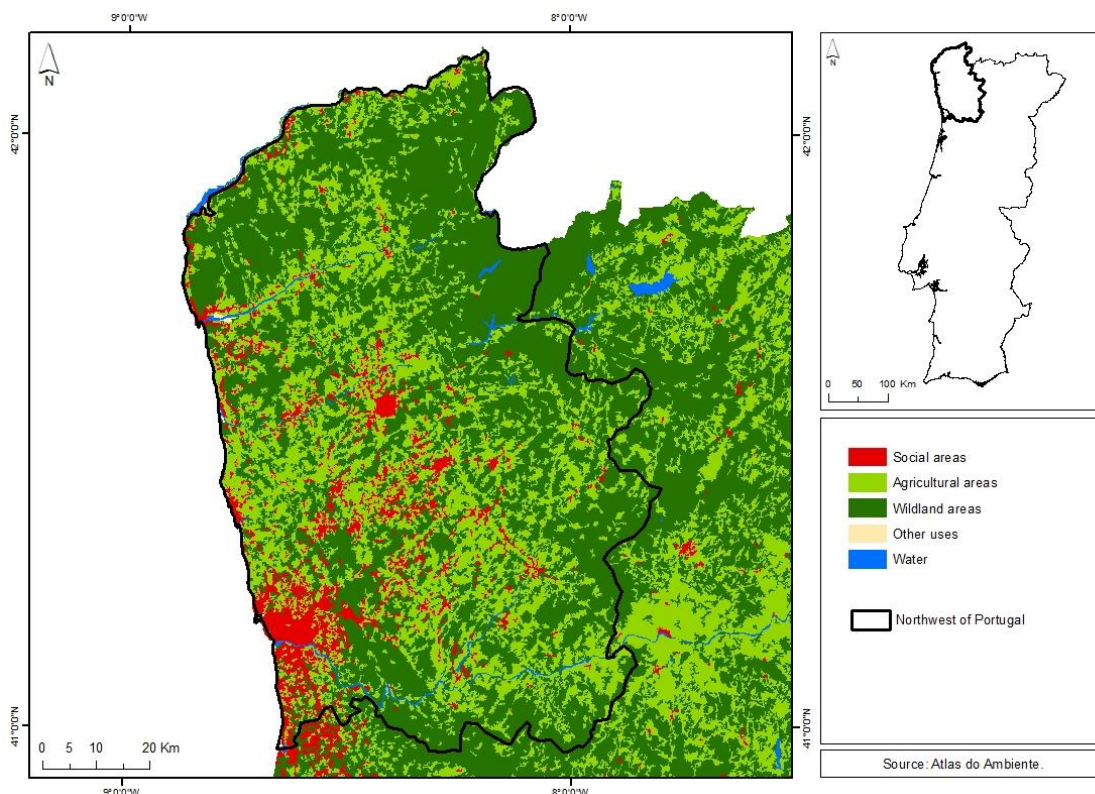
## 2. Mountain wild spaces in Portuguese northwest

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The influence that the climate and the relief exercise over the physical milieu is also determinant to the basic units of the landscape systems; forests, shrublands, agricultural zones, and urbanized structures (Figure 1).



**Figure 1** – Occupation and Land Use in the Portuguese Northwest (2000)

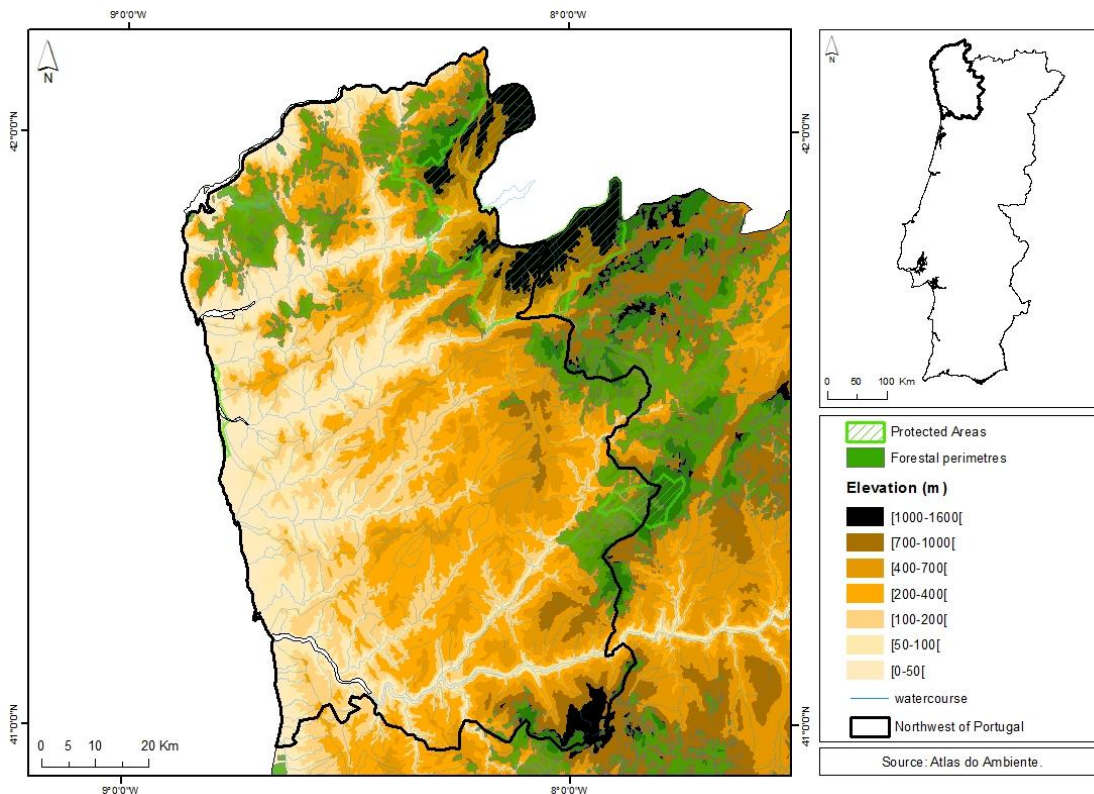
As regards to the forests, the areas most affected by the influence of the Atlantic are the most productive due to the shorter duration and intensity of the aridness of the summer season. It is in this area that the more noble species, such as the Alvarinho Oaks (*Quercus robur* L.) or the Sycamore (*Acer pseudoplatanus* L.), and the Maritime Pine and the Eucalyptus presently find the best growth conditions (A. V. CORREIA E A. C. OLIVEIRA, 2003).

As a result, the Portuguese northwest has excellent natural conditions for afforestation. The only limiting factors are related to altitude where the inauspicious topography and the lower temperatures can impose some restrictions<sup>4</sup>.

<sup>4</sup> The Portuguese northwest can be divided into four Great Afforestation Regions: Atlantic Basal Zone (zone of highly productive forests, the “manor of the Alvarinho Oak” is home of species like the maritime pine, the

The afforestation that led to the present forest areas was initiated in the 20<sup>th</sup> Century in accordance in the Forest Regime (1901 to 1905) and the establishment of the 1938 Afforestation Plan (BENTO GONÇALVES, 2006).

It was in this context that the woods and forest perimeters in the mountains of the northwest were “born” (Figure 2)



**Figure 2** – Forest Perimeters and Protected Areas in the Portuguese Northwest

The establishment of protected areas<sup>5</sup> in Portugal remotes back to the 1970s (Law n. ° 9/70 of 19 June), but is also related to the 1938 Law of Forest Settlements since this document was the first national regulation to foresee protected areas in the modern sense of the term.

In the northwest region we should highlight the *Peneda-Gerês* National Park, established by the Law n. 187/71 of 8 May, which is the only national protected area with a statute of National park, acknowledged by the International Union for Conservation of Nature (IUCN) (Figure 5).

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monterrey pine and the eucalyptus; Sub-Atlantic Sub-mountain Zone (Zone with typical forest characteristics with great aptitude for various species); Sub-Atlantic Mountain Zone (typical forest zone where the oak and chestnut trees encounter excellent conditions to grow. In higher altitudes, due to the restrictions to the expansion of some specie, the maritime pine may be substituted by exotic resinous species. In the highland plateaus with sylvan-pastoral conditions, the forest species play a fundamental role in the compartmentalization and other solutions of pasture under cover); and Altimontana Zone (where the altitude imposes great limitations to forest expansion) (A. V. CORREIA E A. C. OLIVEIRA, 2003).

<sup>5</sup> Protected Areas: “territorial areas and interior and maritime bodies of water in which the fauna, the flora, the landscape, the ecosystems or other natural occurrences present, due to their rarity, ecologic or landscape value, a scientific, cultural or social importance and relevance that merit special specific measures for the conservation and management of the natural resources in order to promote the rational management of the resources and promote the natural and cultural heritage, through the regulation of the artificial interventions that may cause them harm” (Law 19/93, of 23 January).

## References

- Agência para a Prevenção de Incêndios Florestais (APIF) e Instituto Superior de Agronomia (ISA) (2005) - Plano Nacional de Defesa da Floresta contra Incêndios, Estudo técnico I, Diagnóstico, Visão e Objectivos Estratégicos, Lisboa.
- Bento Gonçalves, A. (2006) – Geografia dos incêndios florestais em espaços silvestres de montanha. Tese de Doutoramento, Braga, Instituto de Ciências Sociais, Universidade do Minho, 439 p.
- Bento-Gonçalves, A.; Vieira, A.; Martins, C.; Ferreira-Leite, F.; Costa, F. (2009) – “A criação de Garranos na serra da Cabreira (Vieira do Minho) e o uso do fogo”. *GEO-Working Papers*, nº. 2009/1, Guimarães, p. 96.
- Correia, A. V. e Oliveira, A. C. (2003) – Principais espécies florestais com interesse para Portugal. Zonas de influência atlântica. Estudos e Informação nº 322, DGF, Lisboa, 187 pp.
- LOURENÇO, L. (2006b) – “Paisagens de socacos e riscos naturais em vales do rio Alva”. *VI Colectâneas Cindínicas*, NICIF/ Faculdade de Letras da Universidade de Coimbra, 188 p.