The Creating Forests Project

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Quercus

A Partnership

ReCORK and Quercus - A.N.C.N.

Final Report

Plantation Season 2010/2011

July 2011

1. Introduction

In early 2008, Quercus – A.N.C.N. presented the "Creating Forests" project to public authorities with a direct or non-direct responsibility in the creation and management of national forests (e.g. ICNB – the National Institute for Nature and Biodiversity Conservation, AFN – the Forest National Authority and APA – the Portuguese Environment Agency), in order to involve them in a common effort and to promote synergies that would allow a progressive and continuous improvement concerning the status of the Portuguese forests. Once these partnerships were established, the project would also receive, in that same year, the support from the UNESCO National Board and the High Patronage of His Excellency the President of the Portuguese Republic.

"Creating Forests" is a project consisting of very specific actions and measures that include the involvement of both the communities in which it is integrated and of the public and private partners involved, as well as of the participating technicians and volunteers. It aims mainly the creation and the conservation of Portuguese forests through the use of native species and the good use of their many valences for the maintenance and recovery of the native forest, and in particular of the priority habitats identified by the Habitats Directive (92/43/CEE), and according to the Decree-Law nº 140/99, on the 24th of April. Its specific goals include: 1. The reproduction of native trees and shrubs, mainly of some species that are rare or threatened of extinction; 2. The reestablishment of the native arboreal and shrub covers in public and private areas – preferably in Protected Areas – through the plantation and the good use of natural regeneration; 3. The availability of native plants, produced in nurseries, for their use in other conservation projects; 4. The involvement of public and private institutions in the development of the project, through actions that emphasize their environmental responsibility.

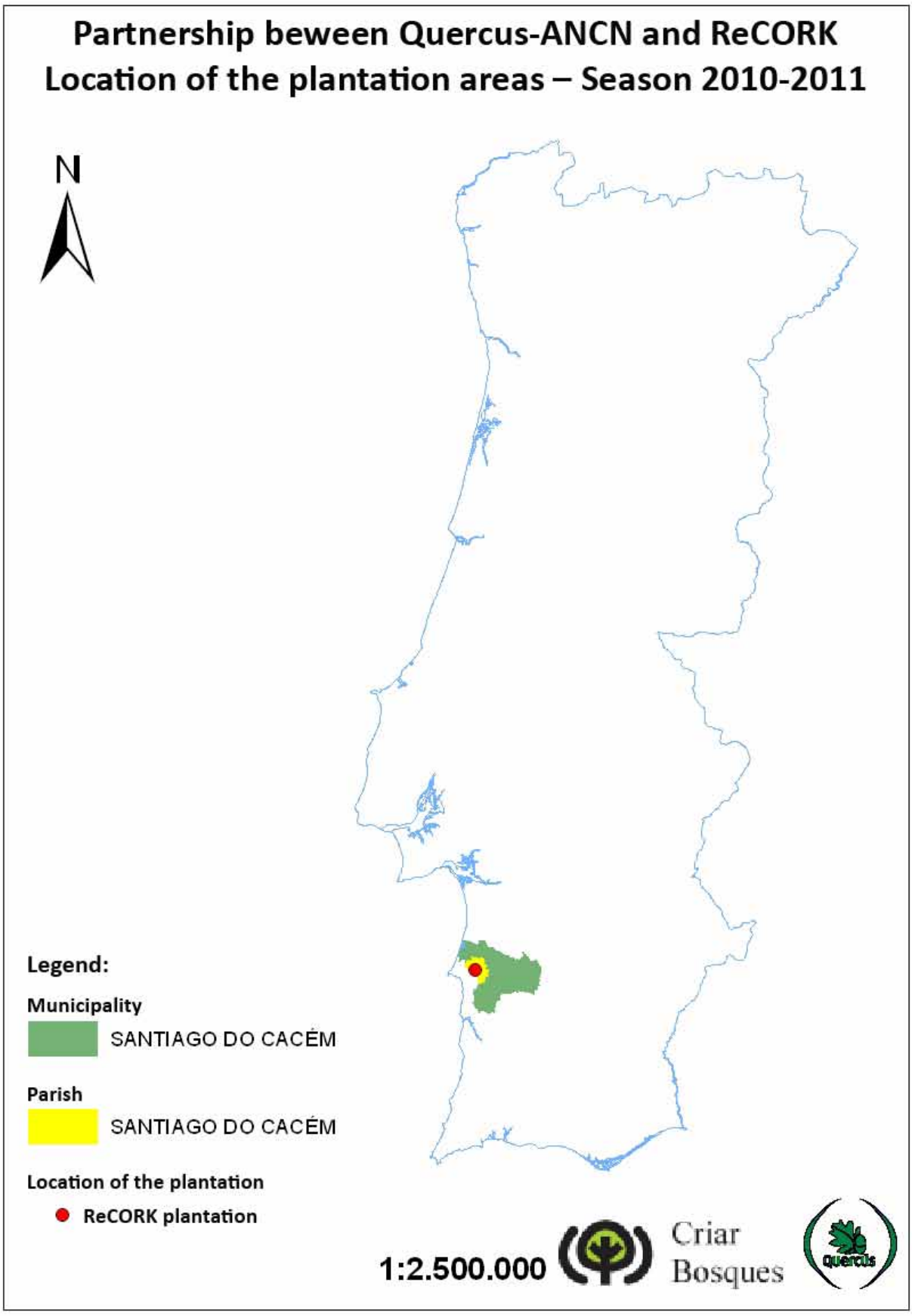
Between October 2008 and April 2011, 195 232 native trees/shrubs of 41 different species were planted in over 130 locations in Portugal (mainland). The support given by ReCORK to the Creating Forests project allowed for the reestablishment of the arboreal cover in two locations on the Sines Forest Area, through the plantation of 4040 Cork Oak trees (*Quercus suber*). The action was carried out in articulation with the Forest National Authority (AFN), responsible for the land management.

2. Intervention areas

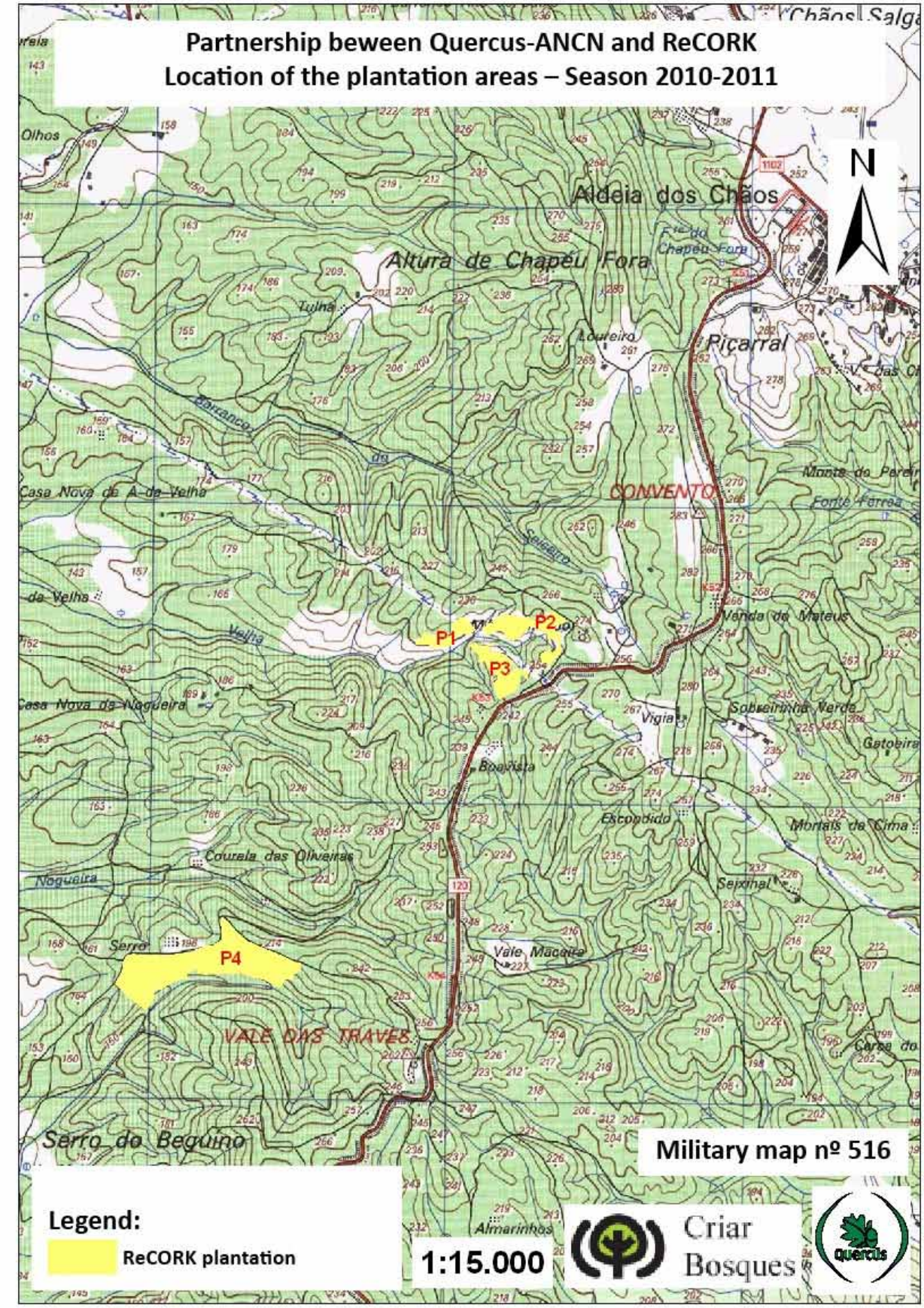
The plantation was carried out on the property “Vale das Traves”, which is integrated on the Sines Forest Area, created in 1989 with a total area of 9371 hectares. According to the Forest Management Regional Plan for the Coastal Alentejo (PROFAL), the management goals of the Sines Forest Area are: the production, the protection, the recreation, and the fitting and the aesthetics of the landscape. The Sines Forest Area is managed by AFN, as defined by the project “Role Model Forests”, which aims to improve the Management and the Land Use of the National Forests and of the forest as a whole. The fact that the land is public is an asset concerning the future preservation of the created forests.

The intervention was undertaken during February and March 2011 in two distinct locations with a total area of 11.0346 hectares, located in the municipality of Santiago do Cacém, district of Setúbal (Picture 1): “Monte Queimado” (37°58'33.04"N; 8°42'11.75"O) and “Vale das Traves” (37˚58’3.17”N; 8˚42’51.80”O). In Monte Queimado, 1500 Cork Oak trees were planted, in three lots (P1, P2 and P3), with a total area of 4.0500 hectares (Pictures 2 and 3). The remaining 2540 Cork Oak trees were established in Vale das Traves (P4) in 6.9846 hectares, in a location 1100m from Monte Queimado (Pictures 2 and 4). Annex I includes pictures of the four lots where the interventions took place.

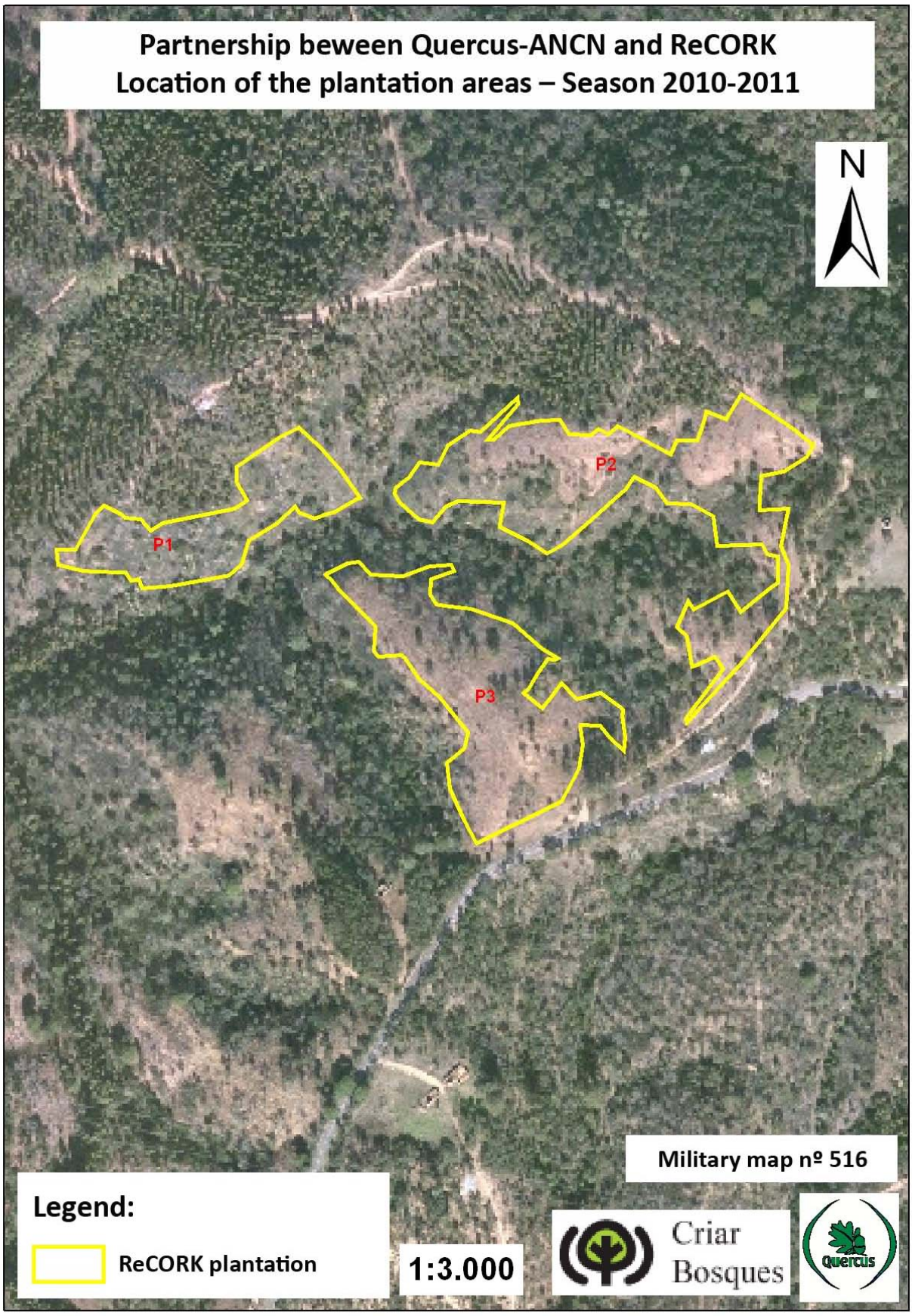
The areas were occupied by high-density sub-series arbustive vegetation, consisting mainly of Gum Rockrose (*Cistus ladanifer*), and also by disperse Cork Oak trees, part of those were either dead or in a very poor phytosanitary condition. The lithology of the area includes shales and greywackes. The soil is mainly lithosoil in all lots, apart from the far west end of lot 4 (P4), where we can find cambisol. The average slope of the lots is higher than 15%.



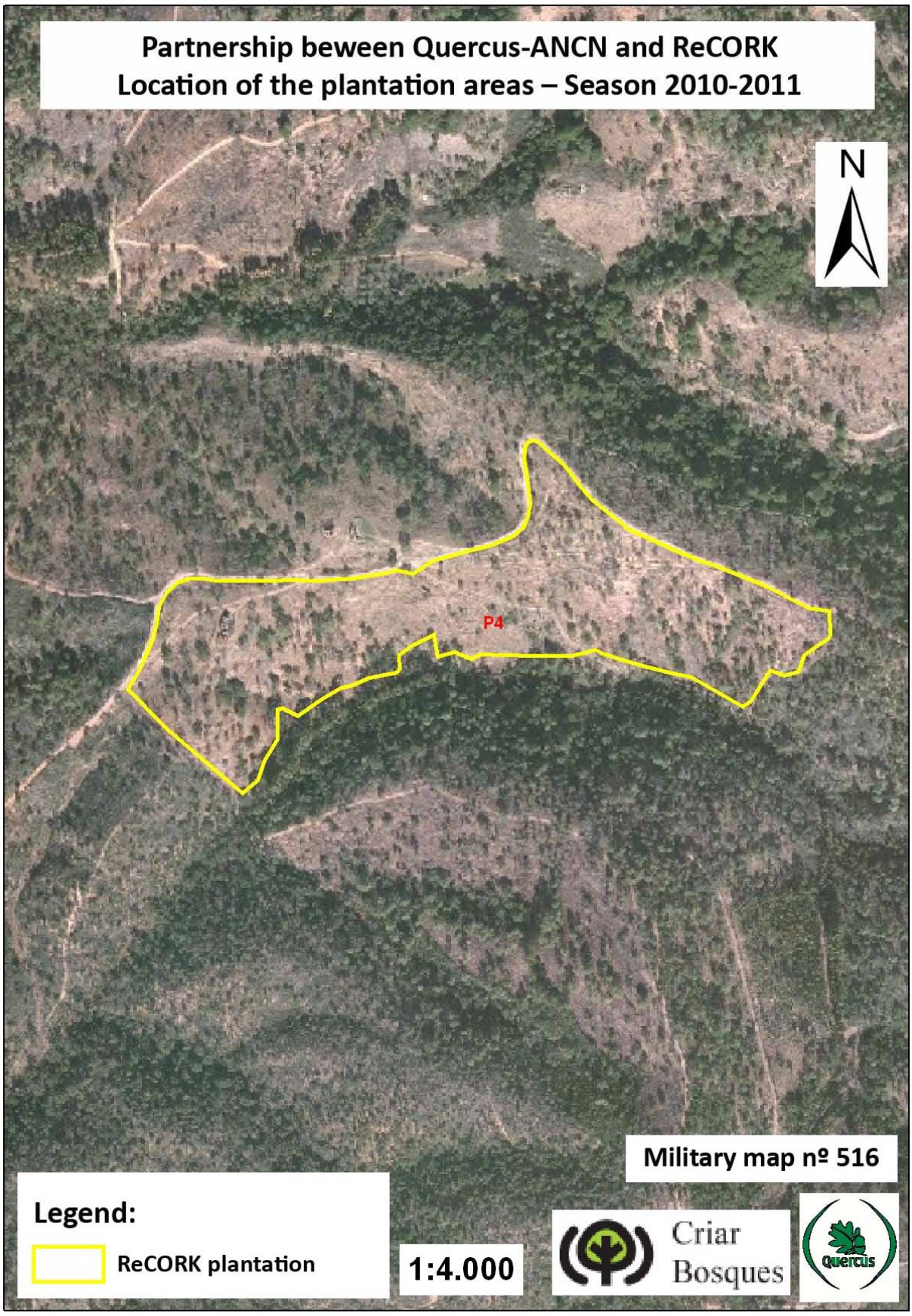
Picture 1 – Location of the plantation on the national territory



Picture 2 – Location of the plantation lots



Picture 3 – Location of Lots P1, P2 and P3 (Monte Queimado)



Picture 4 – Location of Lot P4 (Vale das Traves)

3. Species selection and techniques used

Based upon the management goals defined by AFN for the Sines Forest Area, the arboreal cover restoration was undertaken using just one species - the Cork Oak tree, a native species geographically distributed only in the Mediterranean region, preferably those under Atlantic influence, such as the Southwest Alentejo. Therefore, the Cork Oak tree is perfectly adapted to the prevailing ecological conditions and it allows us to achieve the production, protection and recreation goals stipulated by the AFN.

The intervention began with the total eradication of the subserial arbustive vegetation, using bush cutters. This technique allows for the elimination of the arbustive/shrub cover without resorting to soil mobilization, thus reducing the risks of erosion.

Soil mobilization methods consisted of ripping the land (one tooth ripper 50 cm deep) followed by subsoiling. The first operation aimed mainly to make way for the following one. Both interventions were carried out along the curb levels and, without reverting the soil horizons, they allowed for: the improvement of water surface retention; the increase of the soil water holding capacity; the facilitation of root penetration; and the reduction of risks of erosion.

The installation of these forests was carried out in March 2011, planting each hole inside the trench opened by the plough attached to the tooth ripper (see Picture 7 on Annex I). The compass of the plantation chosen was 6x3 m (with a tree density of 556 trees/hectare), which is the one considered more appropriate for this species, taking into consideration the local soil and climatic conditions and the intended goals.

4. Conclusions

The Sines Forest Area is integrated on the AFN's "Role Model Forests" project, which aims the creation of "areas for essaying and divulging innovative and sustainable forest management adapted silviculture models and cultivation practices". Thus, the recovery of the arboreal cover in around 11 hectares undertaken through the support of ReCORK will undoubtedly contribute

for this AFN project, apart from also promoting the Carbon Sequestration and, simultaneously, the landscape and biodiversity conservation.

Considering the precarious phytosanitary conditions of the rare Cork Oak trees in the lots subjected to intervention and in the adjacent areas, the installation of new individuals will allow for the recovery of the arboreal cover.

The maintenance of the installed forests that will ensue in the following five years includes technical advising, actions for the prevention of forest fires and other interventions that will prove necessary to their development (e.g. the cutting of branches), always taking into consideration the goals that guided their creation.

Annex I – Photographs

Photo 1 – Lots 1 and 3 (P1 and P3) in Monte Queimado

Photo 2 – Lot 3 (P3) in Monte Queimado

Photo 3 – Lot 2 and 3 (P2 and P3) in Monte Queimado

Photo 4 – Lot 4 (P4) in Vale das Traves

Photo 5 – Lot 4 (P4) in Vale das Traves

Photo 6 – Lot 4 (P4) in Vale das Traves

Photo 7 – Cork Oak tree plantation in P4