

Works Report - Casal da Carrasqueira de Cima, 2015

(Filipe X. Catry & Pedro Marrecas)

1) Works accomplished

Location of buildings and Kutis:

- The implementation locations of 12 Kutis and 7 buildings was chosen and delimited.



Delimitation of one Kuti

Water, electricity and sewage networks:

- A study was made in terms of the best possible tracks of the main network and ramifications for buildings and kutis.

Elimination of exotic species:

- Exotic specimens isolated in the property were marked to be eliminated (except the eucalyptus and acacias grouped in patches)
- The method for eliminating the areas of eucalyptus was defined, having all the samples been cut to the ground and posteriorly been carried out a sistematic manual plucking of all stump sproutings (see image 1 and attachments).
- The method to eliminate the acacia infested areas, was defined for short, medium and long term. It was chosen, in some patches, to pill off the bark at the average height of the human chest and in the remaining patches to immediately make the cut at the ground level, followed by manual control of all subsequent sprouting of stumps and roots.

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Elimination of Acacias through parcial barking method



Eucalyptus ground cut with stump sprouting

Selective thinning out / cleaning in the forest:

- All the trees meant to be cut were identified and marked to correct densities and / or improve the vegetative conditions for the deciduous autochthonous species, in detriment of the maritime-pine (see Imagem 1 in Attachments).



Maritime-pine marked for cutting

Undergrowth control:

- A selective cut of the undergrowth took place in the property, with the aim of reducing the combustible mass in the area and subsequent decrease of forest fire hazard risk, with special emphasis in the areas around the buildings, in order to comply with the legal norms in relation to forestal cleaning. The cleaning of the undergrowth was done carefully selecting the most delicate/less abundant bush species, in detriment of those species more abundant and/or with invasive character.



Undergrowth cleaning

- Around 800 samples of different species of autochthonous trees and bushes were planted along the limits of the property, water stream and its nearby humid area (old agricole low marshland). These plantations had the aim of enriching the autochthonous flora present in the property; the formation of a hedgerow/ living fence around the limits of the property; the stabilization of the water stream bank and; the future formation of a riparian gallery; and the creation of a corridor composed of deciduous species with low flammability, contributing thus for the diminishing of the forest fire risk hazard and at the same time serving as a barrier to the propagation of forest fires. See Table 2 - species planted and Figure 2.



Plantation of Celtis australis (European nettle tree)

Forest management plan - short and long term

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Elimination of exotic species:

- Eucalyptus - pursue manual and systematic plucking of the stumps sprouting, until the end of all individuals is verified . This work must be pursued until the total disappearance of the sprouting. It is important never to allow the growth/development of the shootings above 1 meter, in order never to permit the restoration of reserves in the eucalyptus, which would turn the task of its definite elimination much more difficult. Proceed to the elimination of all individuals that have sprouted from seeds, through manual plucking, as soon as detected on the field.
- Acacias - pursue manual and systematic plucking of the stumps sprouting, until the end of all individuals is verified . This work must be pursued until the total disappearance of the sprouting. It is important never to allow the growth/development of the shootings above 1 meter, in order never to permit the restoration of reserves in the eucalyptus, which would turn the task of its definite elimination much more difficult. Proceed to the elimination of all individuals that have sprouted from seeds, through manual plucking, as soon as detected on the field.
- Other - pursue the elimination of all the samples of invasive plants through manual plucking, as soon as detected on the field. Several exotic species were indentified in the property area (see table 1), some with invasive character.

Selective thinning out / cleaning in the forest:

- Proceed with the thinning out to correct the densities and/or to improve the vegetatitve conditions of the deciduous autochthonous species, in detriment of the maritime-pine, whenever the growth and development of the trees so justifies. The aim to have in mind in the future, is the progressive diminishing of the area occupied by maritime-pine and its substitution by autochthonous forestal species, namely oak and cork-oak.

Undergrowth control:

- A selective cut of the undergrowth should be performed every year, with the aim of controlling the combustible mass iin the property and avoid the raising of forest fire risk hazard, with special emphasis in the areas around the buildings, in order to comply with the legal norms relating forest cleaning. The cleaning of the undergrowth should always carefully select and give priority to the most delicate/less abundant bush species, in detriment of those species more abundant and/or with invasive character.

Plantations anew:

- In 2016/2017, the samples that didn't survive the 2015/2016 plantation, should be re-planted using the same species.
- The plantation of autochthonous trees and bushes should be performed to fill in naked areas and/or wherever justifiable (for example, to substitute trees that have died, etc.)

Hygienic and growth pruning:

- Hygienic and / or growth pruning should be performed whenever necessary (exemple: to eliminate ill parts, broken branches, etc.).

Maintenance of vegetation under the powerlines:

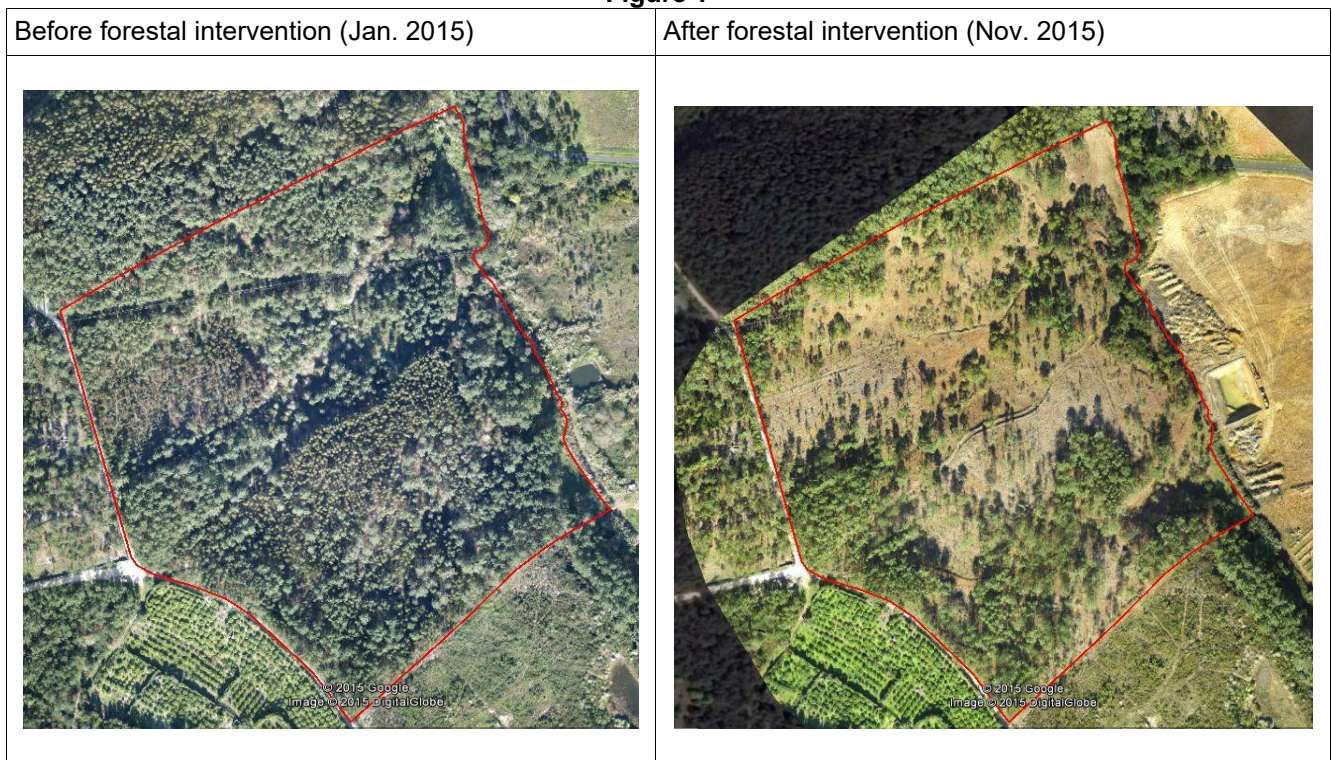
- Maintenance of the vegetation under the powerlines that cross the property should be performed: to control the vegetation growth of the bushes on this strip and allowing only the growth of autochthonous deciduous tree species, namely oak and cork-oak – eliminating all the maritime-pine that may sprout here. This will avoid the requirement of the National Electricity Network authority to perform cleanings - cleanings that in many circumstances are performed without the proper care and with great negative impact on the vegetation cover.

Maintenance of the tracks and paths network in the property:

- It should be performed a maintenance cut of the vegetation along all the extension of the tracks and paths network in the property.

Attachments

Figure 1



Visible in the orthophotos - the elimination of eucalyptus areas and thinning out of maritime-pine

Figure 2: Areas where plantations were performed (2015)

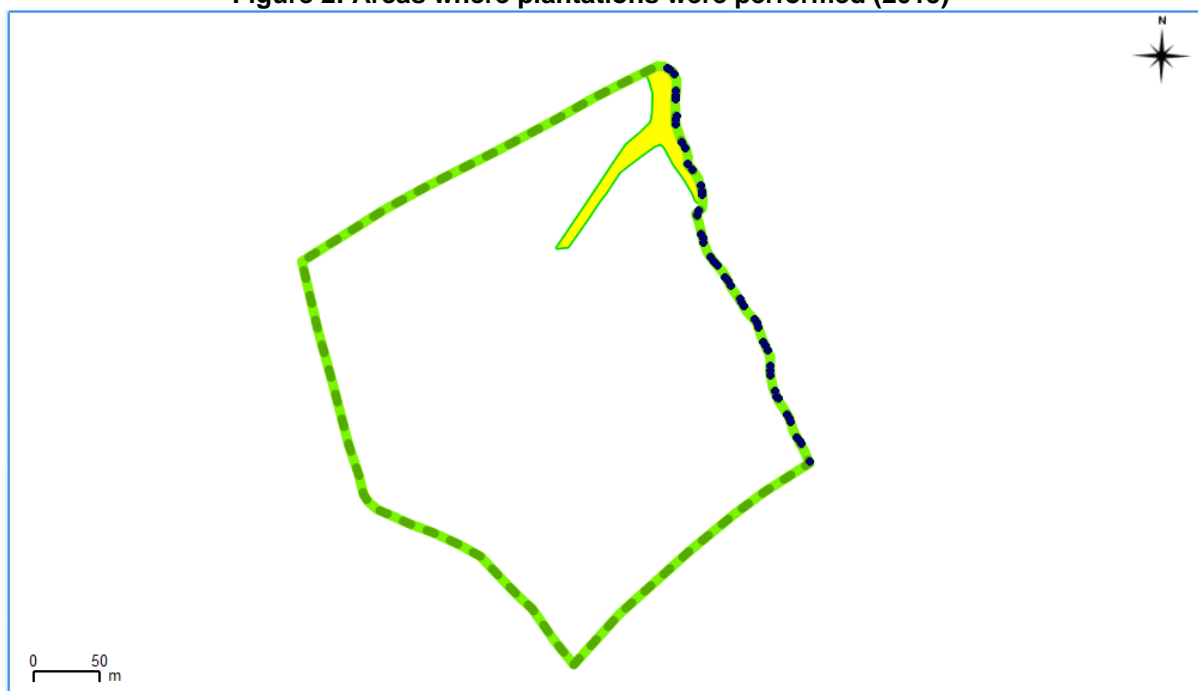


Table 1: Survey list of exotic invasive species

Woody species (trees)
Acacia melanoxylon (Acacia-australia)
Paraserianthes lophantha (Albizia)
Pittosporum undulatum (Australian-cheesewood)
Eucalyptus globulus (Eucalyptus)
Non woody species
Arundo donax (Giant cane)
Carpobrotus edulis (Hottentot-fig)
Cortaderia selloana (Pampas grass)

Table 2: Approximate number of planted bushes and trees (2015)

Fraxinus angustifolia (Narrow-leaved ash)	40
Alnus glutinosa (Common alder)	16
Salix atrocinerea (Grey willow)	6
Laurus nobilis (Laurel)	11
Celtis australis (European nettle tree)	11
Ulmus minor (Field elm)	6
Crataegus monogyna (Common hawthorn)	42
Viburnum tinus (Laurustinus)	42
Phylyrea latifolia (Green olive tree)	42
Myrtus communis (Common myrtle)	42
Sambucus nigra (Elderberry)	42
Frangula alnus (Alder buckthorn)	14
Prunus spinosa (Blackthorn)	42
Arbutus unedo (Strawberry tree)	28
Pistacia lentiscus (Lentisk)	28
Phylyrea angustifolia (Narrow-leaved mock privet)	28
Rhamnus alaternus (Italian buckthorn)	28
Olea europaea (European olive)	28
Quercus coccifera (Kermes oak) (sowing)	300
Total	796

Responsible technicians:

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