

# MPs, insects and trees: The Pine Wood Nematode in the Portuguese Parliament

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**Abstract.** The Pine Wood Nematode (PWN) *Bursaphelenchus xylophilus* is the causal agent of the pine wilt disease, and a quarantine organism within the European Union. This pathogen was first detected in Portugal in 1999, associated to dead coastal pines (*Pinus pinaster*), its vector among trees being the native insect *Monochamus galloprovincialis*. Over the years, the management and control of both the nematode and the vector has been implemented by the Portuguese National Programme to Control the Pine Wood Nematode (PROLUNP), one of whose main current strategies is focused on the prevention of dispersal of wilt disease to new locations. This paper aims to explore how the pathogen and the forestry management strategy were perceived by the members of the parliament (MPs) of the Portuguese Republic, based on documents from 1999 until the present day.

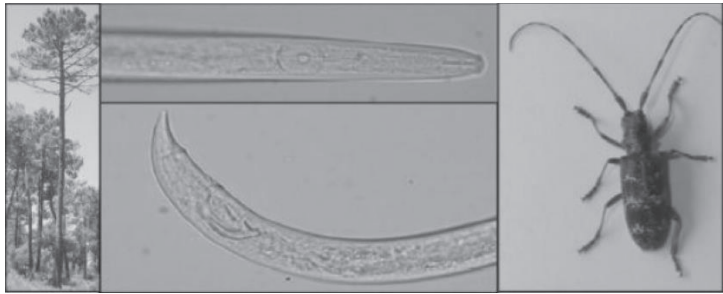
## 1 Introduction

Portuguese forest policy has fascinated participants and observers alike because of its unpredictable twists and turns. Governing forest resources is challenging, as there is usually a need to reconcile diverse interests and ideologies. The challenge is further compounded by historically embedded legacies of centralized and bureaucratic control over natural resources, and the predominance of scientific management ideologies which tend to resist pluralistic approaches to environmental governance. [1]

This paper aims to present a case study of the interaction between a national policy institution – the Portuguese Parliament (PP) – and one of the most complicated problems of national forest policy in the last decades: the pine wilt disease (PWD). *Monochamus* beetles are the dispersing vectors of the North American pine wood nematode *Bursaphelenchus xylophilus*, the causative agent of PWD. Since 1999, PWD has inflicted significant damages to Portuguese pine forests. The nematode is a pest worm species that was discovered for the first time in the European Union in Portuguese forests in 1999<sup>1</sup> [2] Today, the entire territory of Portugal is affected by the presence of the worm, with a 20 km buffer zone, free from the pest, established along the Spanish border to prevent its further spread. [3]

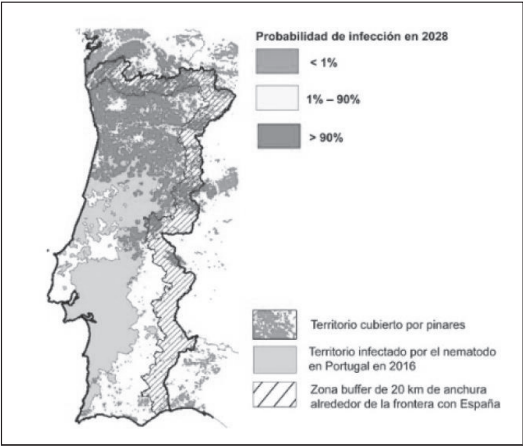
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<sup>1</sup> Although native to North America, the PWN was accidentally introduced into Japan in the early 1900s, with devastating effects on native pines. In 1979, it was also reported from wilted maritime pines, *Pinus pinaster* Aiton, on the Landes region in south-west France.



**Fig. 1:** From left to right: a) Maritime pine (*Pinus pinaster*); b) Pine Wood Nematode, *Bursaphelenchus xylophilus*, detail of head (above) and tail (below); c) Insect vector in Portugal, *Monochamus galloprovincialis*. Source: Sousa et al, 2011.

We use documents from the Parliament (committee rep-rts, plenary debates) in order to examine in detail the narratives of the policies proposed to fight the pest. This detailed examination reveals interesting features of the reform of national forest policy. The paper is intellectually indebted to studies by Nuno Silva and Hugo Pereira. [4, 5, 6] We try to do theoretically-informed empirical research, so that an precise image of the PP working narratives will emerge.



**Fig. 2:** Map of PWN affected (in pink) and risk (low-risk in green; middle-risk in yellow; high-risk in red) areas in Portugal. Source: Begoña Fuente. <https://www.lne.es/sociedad/2019/06/25/lomos-escarabajo-invade-nematodo-pino/2493439.html>

The findings include an evaluation of different narratives by MPs. The conclusions of this paper, along with other case studies could be used to perform comparisons between the different procedures used by the PP for legislative decision-making. The paper is organized in four sections. First, we present a review of the expectations generated by the theoretical literature. Second, we briefly explain the Portuguese forest policy of the last decades. Third, we analyze the PP documents. Fourth, we present new evidence of strategic calculations by the different institutional actors. We conclude by relating our findings to the existing corpus of specialized literature.

## 2 The Portuguese Parliament and national forest policy

From the 1870s to the 1970s, the forestry approach has been the major theoretical approach to the Portuguese forest policy. [7] Since the import of its new technical profession from Germany, foresters, the professional community in control of the National Forest Service (NFS)<sup>2</sup>, [8, 9] incorporated many innovations related with territory management that appeared for over a century, among which the fight against forest fires (1950s), the control of alien species (1960s)<sup>3</sup>, [10] or the network of protected natural areas (1972). Legislation during that long period regulated such diverse issues as the use of dangerous substances in the fight against agricultural pests or the protection of the national flora and fauna.

Environmental concerns became increasingly prominent in the late 1960s. Since then, environmental issues turned into a high-profile policy area, whose management has been helpful for institutions to preserve their legitimacy. Furthermore, they have often required coordinated action at an international level, through institutions such as the *Food and Agriculture Organization* (FAO) or the *International Union for the Conservation of Nature* (IUCN), both created in 1948. The PP provided a natural arena for the emergence of new policy issues in Portugal.

Control measures against agricultural pests is a policy area where all the above-mentioned factors operated since the inception of the new environmental policy, and even decades before<sup>4</sup>. Portuguese studies have focused on historical outbreaks of pests, analysing what measures had been taken to fight them, as well as their effectiveness. [11] Chemicals are substances with great potential to harm humans and the environment, and often these properties are necessary for the product to be efficient.

Since 1974, other professional groups, such as firemen, landscape architects or biologists, have “stolen” some of these policy and management responsibilities to foresters. Since the 1980s researchers observed the emergence of new institutions through the legislative process, such as the *Serviço Nacional de Parques, Reservas e Património Paisagístico*. [12] While literature on these institutions boomed, the analyses of the role played by PP in their origin and evolution have been largely absent.

According to some scholars, the PP substantially increased its powers since 1974 because of its status as “agenda setter”, or the increased role assigned to parliamentary committees. [13] Since 1976, the political system is based on a triangular scheme, power being shared between the President of the Republic, Parliament and Government<sup>5</sup>. Statistics of that early period of democracy report hundreds of parliamentary amendments related to forestry issues, but their practical effects were limited because, most of the times, the government virtually retains the last word<sup>6</sup>. [13]

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<sup>2</sup> After the 1872 law reform, a new, institutional approach was developed. Through the legislative process, a professional forest service emerged, which was responsible for the management of the network of National Forests (*Matas Nacionais*). Technical articles and books on forestry proliferated.

<sup>3</sup> Introduced alien species are a major component of global trade and environmental changes, resulting in a significant loss in the economic value, biological diversity and function of invaded ecosystems.

<sup>4</sup> A Decree of December 23, 1899 was the first general regulation against plant pests in Portugal.

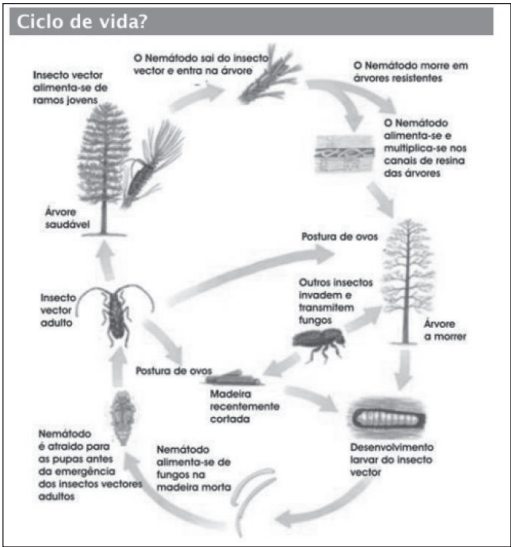
<sup>5</sup> Since 1976, there were four revisions of the constitution in 1982, 1989, 1992 and 1997; in each of these revisions, the powers of parliament were enhanced.

<sup>6</sup> The constitution ascribes to parliament extensive legislative powers. Parliament has an exclusive right to legislate in a wide range of areas, including a set of 21 distinct areas of legislation, covering matters such as electoral law or the education system. There is a primacy of the *Assembleia da República* in the legislative process. The PP has important political and legislative roles, and these have increased since the end of the *Estado Novo* in 1974.

### 3 MPs attitudes

Data on the perception of environment issues by national political elites is scarce. How did Portuguese MPs respond to the PWN crisis? The Portuguese case is particularly relevant for an assessment of future global warming crises. Portugal belongs to a Southern European region which, during the next years, is expected to suffer the effects of global warming in forest ecosystems harder than the north of Europe. [14]

The first news of the entry of the nematode in Portugal in 1999 were followed years later by a political crisis inside the NFS. Since 2004, one of its six priorities had been the so-called *Programa Nacional de Luta contra o Nemátodo da Madeira do Pinheiro* (PROLUNP)<sup>7</sup>. [15] Attached to that program there was a set of tough requirements for forest owners, involving drastic cuts of ill and suspicious trees. Since forests were spotted as risking contagion, the government fell to the pressure to swiftly reduce their extension, a decision that challenged the legitimacy of the NFS.



**Fig. 3:** Pine Wood Nematode life cycle. Source: [https://www.cascais.pt/sites/default/files/anexos/gerais/mematodo\\_da\\_madeira\\_do\\_pinheiro.pdf](https://www.cascais.pt/sites/default/files/anexos/gerais/mematodo_da_madeira_do_pinheiro.pdf)

The NFS management strategy was focused on three core points [16]: (i) identification of nematode-affected areas; (ii) prevention of dispersal of wilt disease to new locations, (iii) and reduction of wilt incidence in affected areas. The detection of nematode in new locations implied the delimitation of an Intervention Zone encompassing the infected area and a bordering buffer zone (nematode-free). Scientific evidence suggested that *Monochamus galloprovincialis* makes short-distance flights of a few hundred meters if adequate hosts are available. Dispersal of wilt disease could be avoided by trunk-injection with insecticides in healthy pines, along with an intensive monitoring system in the buffer zone. To prevent

<sup>7</sup> In 2006 it was created a *Grupo de Acompanhamento o Nemátodo do Pinheiro* (GANP), with representatives of the State (*Secretaria de Estado das Florestas* and *Direcção-Geral dos Recursos Florestais*) and the foresters.

anthropogenic dispersion, transport of wood between infected and non-infected areas was officially regulated.

In 2006 new pine wilt foci were detected in Central Continental Portugal, and the Portuguese government was obliged to take strong measures. One of the victims was the Forests General Director, Francisco Castro Rego, resigned by the minister of Agriculture Jaime Silva<sup>8</sup> in November 2007. According to the newspaper *Público*, “esta decisão estava iminente, sobretudo desde que foi conhecido que os números de árvores a erradicar para combater o nemátodo do pinheiro tinham sido superiores ao previsto, o que fez derrapar as contas”. [17] The fight against the nematode necessarily involved the slaughter, transport, filling and removal of leftovers in a 430 km containment strip. For this purpose, a contract had been signed on 25 January 2007,

“which turned out to be a contract that did not foresee the quantities of trees actually infected, which motivates the need to cut down many more than those that were contracted. Because of this extra work, the State will have to update the contracts by at least 100% more, that is, the costs went from 11 million euros to at least 23.7 million euros”. [18]

One good example of the attitudes or the MPs is the activities of the *Subcomissão de Agricultura, Desenvolvimento Rural e Pescas*. Between February and September 2008, that sub-committee made 16 trips outside the Parliament, one of them with eight MPs<sup>9</sup>. They visited Manique (Azambuja), to see a *Faixa de Contenção do Nemátodo do Pinheiro*. [19] In July 2008, the critics to the minister Silva continued. The MP Paulo Portas addressed him in this way:

“Another example that the Ministry failed, exactly in the inspection, has to do with the pine wood nematode. The Government had two commitments on behalf of the Portuguese State: to contain the disease, but it increased; to eradicate the disease, but it spread. Now that we face a threat of embargo and considering the entire national territory as potentially affected, it is important to ask why the State failed. It failed to inspect, it forgot to prevent, and it forgot to inspect the transport of the cut wood. Minister, you can fail in many things, but in inspection, in a market economy, the State cannot fail!”.

The answer of Silva was:

“Your Honorable Member will understand that the pine wood nematode and the sustainability of the Portuguese pine forest does not allow me to proceed with much discussion, not least because there are no certainties from the scientific point of view. But I give you a fact: your government, in 2004, cut 98,000 trees and, the following year, we had to cut 238,000 trees. Who was idle?! How many analyses has your government performed to detect the pine nematode?! A third of what it should... So, Mr Deputy, don't be alarmed, tell Portuguese farmers, forest producers and the pine industry that there are no problems with the sustainability of the Portuguese pine forest. There are not! The pine wood nematode only represents between 12% and 18% of dead trees”.

## 6 Final remarks

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<sup>8</sup> Agriculture minister between 2005 and 2009.

<sup>9</sup> Miguel Gínestal (Socialist Party, PS), Jorge Fão (PS), Manuel José Rodrigues (PS), Nuno Antão (PS), Jorge Tadeu Morgado (Social Democratic Party, PSD), José Manuel Ribeiro (PSD), Luís Carlotto Marques (PSD) e Agostinho Lopes (Communist Party of Portugal, PCP).

In this article I have described and analysed the attitudes of Portuguese parliamentary elites towards a forestry problem: the nematode.

Insects are potentially harmful to agriculture and forestry and can lead to economic losses. These threats were, on several occasions, severe enough to shape Portuguese management practices and policymaking. [10]

Historical research on the parliament debates gives us a new picture of nematode evolution and the political response. A knowledge of MPs debates allows us to make an assessment of the continuous interest of the PP in nematode control.

The findings of this paper also open new avenues for research, for the Portuguese case, but also beyond. In relation to Portugal, research dealing with the MPs attitudes should also take into account the nature of their previous technical knowledge.

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