

AGRUPAMENTO DE ESCOLAS DE PÓVOA DE LANHOSO

PORTUGAL

TRAINING, TEACHING, LEARNING ACTIVITIES

ROMANIA



Natural disasters in Portugal



Portugal in the world



Portugal - Mediterranean region

Mediterranean region

- Large increase in heat extremes
- Decrease in precipitation and river flow
- Increasing risk of droughts
- Increasing risk of biodiversity loss
- Increasing risk of forest fires
- Increased competition between different water users
- Increasing water demand for agriculture
- Decrease in crop yields
- Increasing risks for livestock production
- Increase in mortality from heat waves
- Expansion of habitats for southern disease vectors
- Decreasing potential for energy production
- Increase in energy demand for cooling
- Decrease in summer tourism and potential increase in other seasons
- Increase in multiple climatic hazards
- Most economic sectors negatively affected
- High vulnerability to spillover effects of climate change from outside Europe



Introduction

In this work we are going to talk about natural disasters that took place in Portugal

- ❖ Invasive species;
- ❖ Fires;
- ❖ Floods;
- ❖ Earthquakes;
- ❖ Volcanism.





Invasive Species





Mimosas (Acacia Dealbata)

Evergreen tree, with grey-green bipinnate leaves and bright yellow spherical flower heads.

Characteristics that aid invasion:

It propagates vegetatively, forming vigorous sprouts from the stump or roots after being felled.

It also reproduces by seed, producing many seeds that accumulate in numerous seed banks and remain viable in the ground for many years.

The seeds are dispersed by animals, mainly birds and ants, and sometimes by strong winds which lead to the formation of dispersed and/or far away invasion foci from the invaded areas.

Most propagules, however, accumulate underneath the tree, forming a numerous seed bank. It germinates aggressively after fires.



Native distribution area:

Southeast Australian states of New South Wales, Victoria and Tasmania.

Distribution in Portugal:

Mainland Portugal (all provinces), Madeira archipelago (island of Madeira).



Eucalipto:

Evergreen tree, aromatic, with young bluish-green leaf.

In Portugal, the most area occupied by this species corresponds to plantations by Man and not natural dispersal/invasion. The species is included as invasive because, on one hand, it has seen its invasive behaviour in many situations in the country and, on the other hand, its wide distribution creates a high propagule pressure which constitutes an increased risk. Additionally, this species is considered invasive in many regions with Mediterranean type-climate.

Characteristics that aid invasion:

Species of very fast growth. It propagates vegetatively, sprouting vigorously from stumps (used in the pulp industry). In Portugal, for a few years now, seed germination has started to be observed, including outside the stands, mainly after the plantation abandonment and wildfire occurrence, which create empty niches.



Native distribution area:

Southeast Australia and Tasmania.

Distribution in Portugal:

Mainland Portugal (all provinces), Azores archipelago (São Miguel, Santa Maria, Terceira, Graciosa, Pico, Faial and Flores islands), Madeira archipelago (Madeira and Porto Santo islands).



Fires



9th August 2016

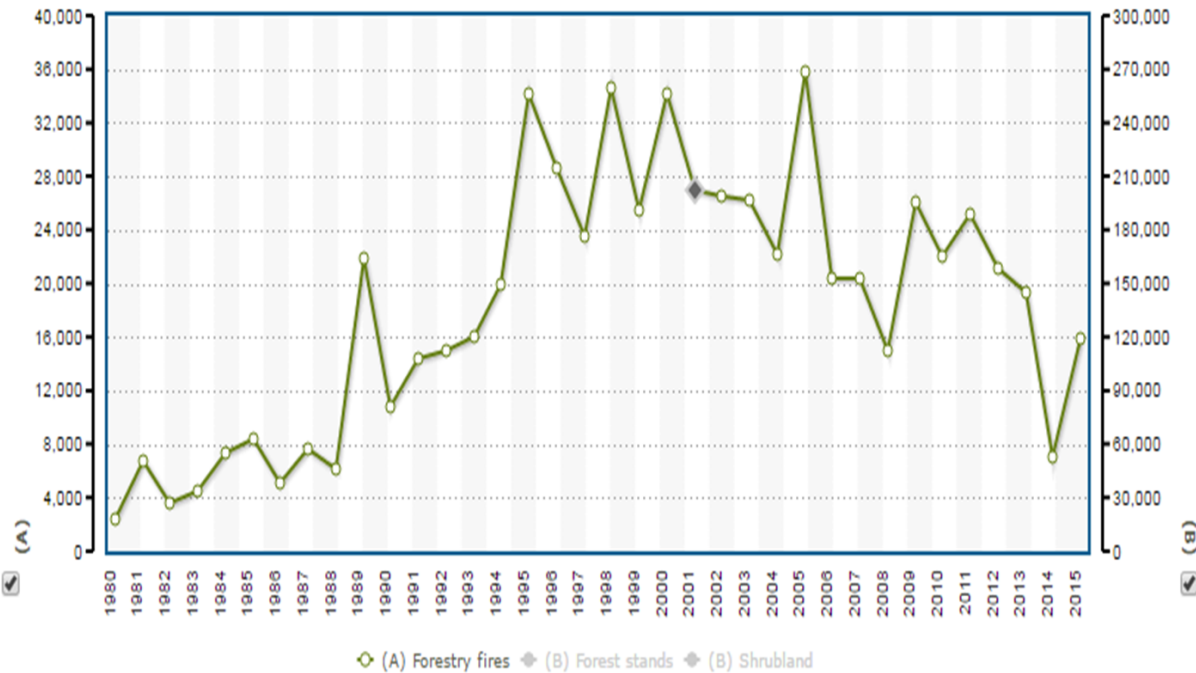
On 9 August 2016 a fire, allegedly by arson, started at the S. Roque parish in Madeira that quickly spread throughout the region of Southern Madeira and to its capital Funchal.

The fire was controlled: four casualties were recorded and a thousand of people displaced.



Forest fires and burnt area – Mainland

(A) Forest fire (B) Hectare (ha)



Sources/Entities: ICNF/MA-MAFDR, PORDATA

According to GNR (local police) Statistics , last year the total area burned in Portugal exceeded 161 thousand hectares, 93 thousand more than in the previous year.





Floods and Landslides



Portugal suffered severe floods in the past, and other natural disasters that caused serious problems like thousands of victims and much destruction due to weak structures and the few rescue and prevention techniques.



The most affected areas in Portugal are Porto, Vila Nova de Gaia and Peso da Régua.)

Floods/Landslides

Lisbon is the County that had more occurrences of floods and landslides in the last 150 years. From 1865 until 2015, the capital has registered 56 landslides that caused 32 dead, 125 evacuated and 402 homeless.





Earthquakes



Earthquakes

Some of the earthquakes with more impact in the history of Portugal:

- Lisbon earthquake - 1531:
Very violent, with a tsunami, 30.000 mortal victims.
- Lisbon earthquake - 1755:
The most intense earthquake that has ever occurred in Portugal.
- Setúbal earthquake - 1858:
Very destructive, 7.1 magnitude.
- Azores earthquake - 1980:
71 people died, 7.2 on the Richter scale, 70% of the houses on Terceira (one of the islands) were completely demolished.



Lisbon, 1755

This was the most intense earthquake that has ever occurred in Portugal. It occurred on Saturday, November 1st. Today the seismologists estimate that this earthquake had a magnitude around 8.5 on the Richter scale. In combination with subsequent fires and a tsunami, the earthquake almost totally destroyed Lisbon and affected adjoining areas killing more than $\frac{1}{3}$ of the population of the city. Even though it caused the most damage in Lisbon it was also particularly destructive in Morocco where approximately 10,000 people lost their lives.



Earthquakes nowadays

Currently, the earthquakes in Portugal occur with great frequency but low magnitude. It is likely that, in the future, we may come to have an earthquake as severe as what occurred in the past.





Volcanism



Volcanism

In continental Portugal there are no cases of active volcanism besides thermal springs (secondary volcanism) that are pretty common. However, there are volcanic events in the Azores islands.

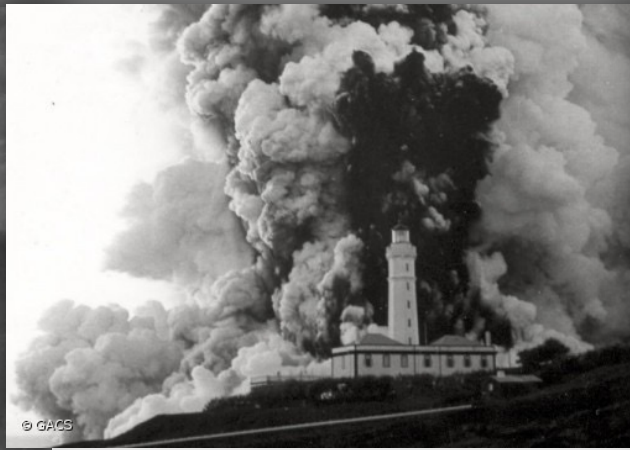
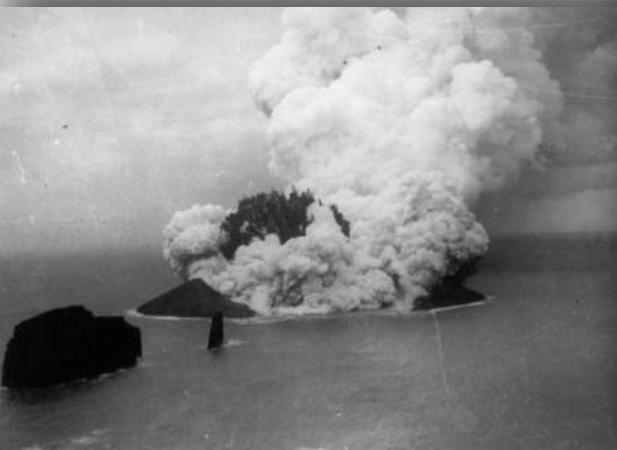
That's because they're volcanic islands and 9 of the volcanoes that formed them are still active. Submarine eruptions are not rare and there are plenty of cases of secondary volcanism on the islands like fumaroles or thermal springs.



The Capelinhos eruption

This is the most intense volcanic eruption in Portugal. It occurred in Faial, one of the islands of the Azores archipelago on 27th September 1953. This eruption was of the explosive type characterized by the big quantities of pyroclastic material (varying from rocks to dust) and gas released. Following a 2 day intense seismic period with more than 200 earthquakes, of an intensity not exceeding V of the Mercalli intensity scale.

There were a lot of buildings affected: broken windows, tiles falling from roofs. Cultivated fields were covered with a thick layer of ash. However, there were no victims. People were forced to migrate significantly between 1957 and 1960.



THE PORTUGUESE TEAM

