



# A TRUCE FOR DOÑANA

MAP BY WWF SPAIN OF ENVIRONMENTAL THREATS IN DOÑANA  
AND THE GUADALQUIVIR RIVER ESTUARY

THE ANALYSIS CARRIED OUT AND PRESENTED ON THIS MAP SHOWS  
THAT THERE ARE INCOMPATIBLE AND CONTROVERSIAL DEVELOPMENT  
MODELS AT ENVIRONMENTAL, ECONOMIC AND SOCIAL LEVEL.

FOR THIS REASON WWF IS CALLING TO THE ADMINISTRATIONS TO ADOPT  
INTEGRAL MANAGEMENT MODELS, INCLUDING ADAPTATION MEASURES  
TO CLIMATE CHANGE AND TAKING INTO ACCOUNT ALL STAKEHOLDERS.

ADDRESSING THESE PROBLEMS MEANS CONSERVING THE MOST  
IMPORTANT WETLAND IN EUROPE, IMPROVING THE LIVING  
CONDITIONS OF THE AREA'S INHABITANTS, AND SECURING  
ITS FUTURE, WHICH WILL BE UNCERTAIN IF WE DO NOT ACT  
URGENTLY TO AVOID THE IMPACTS OF CLIMATE CHANGE.

The full version of the report can be download at [wwf.es/donana](http://wwf.es/donana)

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# WWF IN DOÑANA: MORE THAN 50 YEARS OF CONSERVATION

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The histories of WWF and Doñana has been linked for more than 50 years, when the newly created organisation launched one of the first international crowdfunding initiatives to save the marshland. Since then, we have continued to work with the same drive to keep Doñana's heart beating.

A heart that is not isolated from its surrounding landscape, which is why this analysis of environmental problems looks at the situation of the 25 municipalities of the Guadalquivir estuary included within the WWF "Entremareas" project. The threats identified on the map have been obtained by consulting official documents and an extensive literature review; detailed monitoring of the media and social media networks; interviews with people familiar with the territory; and supplemented by data collected on the ground, up to June 2019.

**The fauna and flora related problems are closely linked to human activity; these will be aggravated by climate change and cover all four classical elements: water, earth, fire and air.**

The map does not show everything totally accurately because it is very difficult to precisely locate each element (the more than 1,000 illegal wells, for example), and, because some issues cover very large areas, such as the erosion of the river, the affected zone is marked as a whole. This document does, however, reflect the fragile situation of the most important wetland in Europe, for which recurrent monumental projects are planned that would push Doñana to the limit: These include the construction of new roads, the reopening of the Aznalcóllar mine, the underground storage of gas, the unnecessary growth of road infrastructures, and the dredging of the river that WWF have been fighting for years.

# WWF PETITIONS

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- The immediate implementation of the actions detailed in the Special Plan of the North Forest Crown (the Strawberry Plan) and its enlargement to include the entire surface area of the aquifer.
- Urgent closure of illegal farms and cessation of infrastructure use without permission (wells, streams outlets, ponds, etc.).
- Approval and application of an annual plan of aquifer extractions that respects the ecosystems water requirements.
- A Management Plan of Doñana protected area with well-defined conservation objectives that take into account the impacts of climate change.
- The enlargement of Doñana protected area, towards the sea with a plan for the recovery of marine and coastal habitats.
- Modification of the Hydrological Plan of the Guadalquivir in order to prevent the increase of regulation of the Guadiamar river and setting of ecological flows.
- Reduction of the negative impact of maintenance dredging in the Guadalquivir estuary and incorporation of its scientific supervision.
- A Strategic Plan of the Guadalquivir Estuary where all administrations are coordinated and based on new models of governance and public participation.
- A new Restoration Plan for the Guadalquivir Estuary with special focus on the Doñana's marshes and watersheds.
- Proper management of agricultural plastics, waste and spills.
- Control and eradication of poaching and illegal fishing in the area of the Guadalquivir estuary.
- An action plan against invasive alien species for the Guadalquivir estuary.
- Not re-opening the Aznalcollar mine.
- The definitive exclusion of the Doñana Protected Area and its region as a strategic gas storage site.

# CLIMATE CHANGE

**Doñana's main problems are related to human activities and will be aggravated by the climate change.**

Doñana and its surroundings will be greatly affected if we do not act urgently to combat climate change.

Temperatures will rise, rainfall will decrease, sea levels will go up, and the patterns of migratory species will change. In addition, the so-called sixth-generation fires will become more frequent, as is already happening on other parts of the planet. To avoid the most severe impacts, WWF is asking the authorities for an integral management of Doñana, in order to preserve its ecological integrity and biodiversity, and which also integrates future conditions arising from climate change.

# GAS, DREDGING AND MINING

**There are three megaprojects that are circling Doñana and that would take it to the limit. That's why WWF is trying to stop them for years.**

**Gas storage.** For almost a decade, WWF has been fighting to prevent underground gas storage in Doñana from being authorised. Finally the Andalusian High Court of Justice has given the reason to the organisation and ruled that Doñana cannot be a natural gas storage facility as this is incompatible with its natural values and its Spatial Planning Tool (called PORN).

**Dredging of the Guadalquivir River.** This threat has been hanging over Doñana for more than twenty years: the tidal changes, the erosion of the banks, and the constant traffic of large ships would have devastating consequences on the estuary. After many years of appeals, in July 2019 the Spanish Supreme Court ruled that until the situation of the Guadalquivir improved, the planned deepening dredging could not be carried out. Despite this, maintenance dredging continues to pose a problem for both the estuary and Doñana due to, among other things, the erosion of the banks and the introduction of exotic species.

**Reopening of the Aznalcollar mine.** The Andalusian government still intends to reopen the mine that caused the biggest mining disaster in Spain, in April 1998. In order to implement this activity, more water would have to be diverted from the Guadiamar River, which would directly affect the flow reaching the marshes, not to mention any mining spills that could reach the river and the impact this would have on the quality of the water.

# EARTH

**Currently, in Doñana there are about 8,000 hectares of intensive crops under plastic, of which 1,600 are in an irregular situation.**

This growth has involved forested land being transformed into cropped areas, and has an enormous impact on the quality and quantity of water available, as well as the biological diversity and connectivity of the area. It also leads further damage, including soil erosion. Another result of agricultural activity is the dumping and burning of plastics instead of them being properly recycled. Illegal dumps and landfill sites also threaten Doñana, because, like the burning of plastics, the dumping of waste is an environmental problem that can also impact the health of the population.

One of the activities that generates the greatest level of environmental transformation, habitat destruction, and erosion, is aggregate mining which are often used in beach regeneration projects. This leads to an increase in sea water turbidity, which affects coastal habitats. If the river were in good condition, the beaches would regenerate naturally with a deposition of higher quality sand.

Another age-old threat is construction on the beach front; this causes erosion, habitat destruction, and landscape fragmentation. In the study area it is necessary to distinguish the Cadiz area, where there is an intense occupation of the coastline and a large proportion of the coastal habitats have disappeared, from the Huelva area, which thanks to the Doñana protected area still has an enormous amount of virgin beach, although the threat of coastal urbanisation hangs over the Mazagon area in particular.

# WATER

**Doñana is water. Its proper conservation depends on this increasingly scarce resource continuing to give life to the marshland.**

Despite its high level of legal protection, the pressures do not let up. The overexploitation of the aquifer, or “water theft”, has been a problem for more than thirty years and, although the Guadalquivir River Basin Authority is finally sealing illegal wells, it is essential that the Strawberry Plan measures are implemented.

The banks of two-thirds of the rivers and streams in the Doñana region are either occupied by human uses or lack riparian vegetation. This leads to the silting up of streams and the clogging of the marshland. Many of these issues are caused by poor agricultural practices, which in turn exacerbate eutrophication in various lagoons, water bodies that provide unique habitats for highly threatened species, such as the marbled teal, a critically endangered waterbird.

WWF considers imperative that the competent authorities take steps from now on to care for the water that gives life to Doñana.



# FIRE

**Doñana holds large forested areas that, due to a lack of resources, are not properly managed.**

This, coupled with increasingly hot, dry summers, will lead to a greater number of large fires, like those in June 2017. In fact, the biggest danger comes from the so-called sixth-generation fires, which are uncontrollable and involve significant environmental and economic damage, as well as serious risk to human lives. This kind of terrible fire was seen in Portugal in June 2017, and continues to occur elsewhere on the planet. WWF therefore considers it essential to manage the forests appropriately and promote the recovery of the native Mediterranean forest, creating a diverse landscape that is more fire resistant.

One of the possible causes of a fire is stubble burning, an activity that is regulated and illegal in summer, when there is the most risk. The consequences of a fire are varied and serious, ranging from loss of soil to CO<sub>2</sub> emissions, not to mention the destruction of fauna and flora.

# AIR

## Doñana is also affected by air, light or noise pollution.

The heart of Doñana is not far from the chemical hub in Huelva, where gas emissions, phosphogypsum ponds, and spills into the marine environment, due to petroleum unloading accidents, for example, are the main consequences of those businesses in the area dedicated to the production of fertilizers and petroleum products.

Light pollution is one of the least-analysed environmental problems in Doñana. However, apart from the dune area, the area is practically flat, meaning artificial lights can be seen from miles away and can affect the behaviour of nocturnal species.

The Doñana region also suffers from high levels of human noise pollution: urban centres, roads, and pilgrimages are all part of the rhythm of life in this area, although there are no studies or standardised indicators that enable us to understand their impact in greater depth.

# FAUNA

## Habitat fragmentation is one of the main problems of Doñana's fauna.

The fauna is directly affected by human activities in the Doñana region. Several threats affect the globally unique animals found in the area, such as the imperial eagle and the Iberian lynx: habitats are fragmented due to the emergence of crops under plastic, housing or infrastructure, for example. This changes the way many species move, breed and hunt, and roads are also responsible for road kills, another major problem.

Birds, in particular, are affected by collisions with electrical cables and electrocution, poison and the ingestion of lead, especially from shotgun cartridges. This is the case of the geese that eat sand in the “Cerro de los Ánsares”, where the pellets accumulate despite of cleaning efforts.

Other animals that would not naturally be found in this environment also do a lot of damage: these may be feral domestic individuals, or invasive exotic species that occupy the habitat of native fauna. Also significant are domestic bees, introduced in recent years for honey production, as they are displacing wild pollinators. The poaching of certain species and bird trapping are other problems that must be fought.

The use of antibiotics in cattle farming and the consequences of these are not exclusive to Doñana. However, in this area there have been reports of effects on insect populations linked to the habitats through which the cattle move.

Finally, the lack of predators appears to be behind the persistent tuberculosis that affects the ungulates in Doñana.

# FLORA

**Doñana's flora is affected in different ways by the hand of the human beings, such as the introduction of species.**

One of the problems is the overexploitation of forest resources including mushrooms, palm hearts, asparagus, and pinus cones, activities that have always been carried out by the local population, but whose use should ensure that the environment is not damaged. Also concerning is overgrazing by sheep or cattle in some parts of the study area.

But one of the oldest threats to Doñana is related to exotic plant species like eucalyptus, introduced in the 1960s for its timber. This tree consumes a large amount of water and is not particularly fire resistant. Its presence involves a loss of biodiversity and it is not conducive to the creation of mixed native landscapes that are more resistant to fire.

# OTHER ACTIVITIES

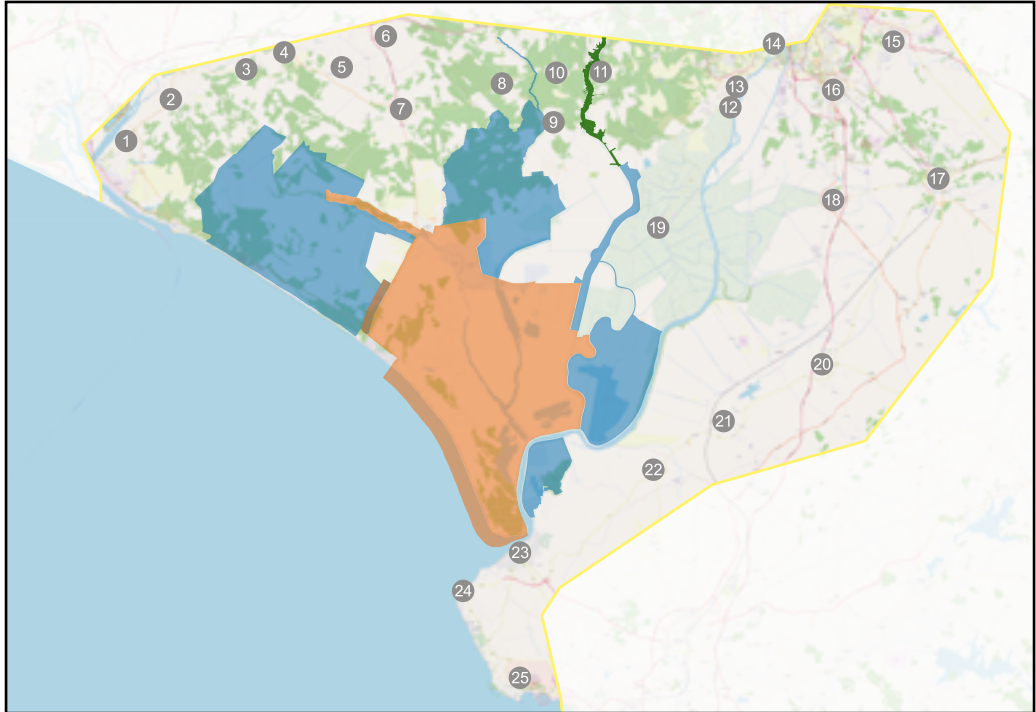
## Recreational or sports activities also leave their trail in Doñana.

Doñana is also a site of leisure and recreational activities. For this reason some of its threats are related to recreational activities, including tourist trips and sporting events, which are increasingly crowded, or with entertainment in motorized vehicles, such as quads or 4x4s that circulate in places not authorised for traffic. All of this generates noise, rubbish, and unsettle the species that live in Doñana.

Several pilgrimages are held in the region, although undoubtedly the most famous is that of “El Rocío”, where hundreds of thousands of people gather in a single weekend. This has environmental repercussions that include an increased demand for water, more waste generated, and greater light and noise pollution, and it also disturbs the fauna and flora along the route. The pilgrims are increasingly conscious of their impact, but there has been an increase in the number of motor vehicles that accompany them, in addition to the use of single-use plastic for food and drinks.

Fishing has always been carried out in the river and along the Doñana coasts, but WWF has noticed certain problems, and for this reason, since 2016, it has been working on a process to encourage the Guadalquivir Fishing Reserve to regulate the hydraulic dredges used for the non-selective capture of baby clams or to control the extraction of baby clams (*Donax trunculus*) outside Doñana protected area.

# STUDY AREA



Doñana National Park    Doñana Natural Park    Guadiamar Green Corridor

● Municipalities:

- |                                |                                |                             |
|--------------------------------|--------------------------------|-----------------------------|
| 1. Palos de la Frontera        | 10. Pilas                      | 19. Isla Mayor              |
| 2. Moguer                      | 11. Aznalcázar                 | 20. Las Cabezas de San Juan |
| 3. Lucena del Puerto           | 12. La Puebla del Río          | 21. Lebrija                 |
| 4. Bonares                     | 13. Coria del Río              | 22. Trebujena               |
| 5. Rociana del Condado         | 14. Gelves                     | 23. Sanlúcar de Barrameda   |
| 6. Bollullos Par del Condado   | 15. Alcalá de Guadaíra         | 24. Chipiona                |
| 7. Almonte                     | 16. Dos Hermanas               | 25. Rota                    |
| 8. Hinojos                     | 17. Utrera                     |                             |
| 9. Villamanrique de la Condesa | 18. Los Palacios y Villafranca |                             |



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