IUCN Conservation Outlook Assessment 2014 **(archived)**
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# Garajonay National Park

## SITE INFORMATION

Country:
Spain
Inscribed in: 1986
Criteria:
(vii) (ix)

Site description:

Laurel forest covers some 70% of this park, situated in the middle of the island of La Gomera in the Canary Islands archipelago. The presence of springs and numerous streams assures a lush vegetation resembling that of the Tertiary, which, due to climatic changes, has largely disappeared from southern Europe. © UNESCO

# SUMMARY

## 2014 Conservation Outlook

**Significant concern**

The establishment of Garajonay National Park has prevented the loss of the largest remnant of Laurel forest in the Canary Islands after centuries of human impact such as logging for timber, firewood and charcoal production, conversion and degradation of the forest. While otherwise well-managed, a catastrophic fire in 2012 had devastating effects on the park, including management infrastructure and equipment. The fire raged for almost three months until it could be brought under full control. While it is clear that it will take decades for the national park to recover the enabling conditions to do so are in place. Provided that (i) existing plans to further study the effects of the fire are funded and implemented; (ii) the results of the studies are used to support the natural recovery of the property; (iii) future fires can be prevented or reduced in their intensity; (iv) other threats, in particular alien invasive species, can effectively be addressed; and coordination and cooperation across institutions and stakeholders across the entire island can be consolidated, recovery is possible in the long term. It is a well-documented agreement that the various forests subtypes of laurel forest on the island of La Gomera are not fully represented in the property and that the inclusion of areas of high conservation significance could further add to the value and integrity of the property. The current crisis of the park induced by the fires could be used as a new starting point, including in terms of the overall boundary design of the World Heritage site.

## Current state and trend of VALUES

**High Concern**
**Trend: Improving**

The national park of Garajonay, inscribed on the World Heritage List in 1986, has substantially suffered from a catastrophic fire event occurred in August 2012 with consequences in the hydrology and soil conservation. There is adequate legal protection and management in place, and provided adequate future

management, including effective responses to risks stemming from alien invasive species and fires and, in cooperation with other relevant institutions and civil society, there is good potential for maintenance and recovery of the World Heritage values.

## Overall THREATS

**High Threat**

Major fire events are both a reality and a threat. The relatively small Laurel forest is vulnerable to current and future fire events, as the vulnerability of the forest is increased from past and current use, as well as from alien invasive species. Increasing tourism likewise increases the risk of fire. The predicted increase in temperatures and more pronounced droughts, change of the altitude of the cloud formation are threats in the longer term likely to further increase the vulnerability of the park.

## Overall PROTECTION and MANAGEMENT

**Some Concern**

The legal protection status and overall level of management and funding are adequate. There is a longstanding principal question mark regarding the boundary design of the property though; strategic additions to the property would not add only conservation value but facilitate coherent management. It has also become clear that conventional park management reaches its limits in case of catastrophic events such as the major 2012 fires, suggesting a permanent need to ensure full coordination and cooperation at the level of the entire island of La Gomera. A less visible management challenge stems from alien invasive species, but control programmes have been established for the most aggressive species.

# FULL ASSESSMENT

## Description of values

### Values

### World Heritage values

- **Exceptional remnants of a rare and exceptionally beautiful forest type**
  **Criterion:(vii)**

  Garajonay National Park was set up to conserve the largest continuous area of Canary Island laurel forest, a rare relic forest type that has almost disappeared and is today mostly restricted to small fragments. Unlike remnants elsewhere in Canary Islands, Garajonay contains unique stands of old trees such as Persea and Laurus (Ministerio de Agricultura, Alimentación y Medio Ambiente, 2014). Some 90% of the park is covered by Laurisiliva, transitioning into ridge-top cloud forest in higher altitudes (Garcia-Santos et al. 2004, Garcia-Santos and Bruijnzeel 2011). The beauty and particular atmosphere of the lush and almost permanently misty forests are stunning.

- **Laurel forest with very high degree of floral and faunal endemism**
  **Criterion:(ix)**

  The most important feature of the site is the Laurisilva canaria, laurel dominated Laurel forest in the bottom valleys and slopes and mixed heath/beech dominated ridge-top forest (Garcia-Santos 2012) characterized by high presence of floor and trunk mosses and liverworts (Gonzalez-Mancebo et al. 2004; Fernández et al. 2004), which occupies about 90% of the park (WHC website, retrieved 21.03.2014). The property boasts a very high degree of floral endemism. Among the recorded 1487 flora species 74 are restricted to Macaronesia, 134 to the Canary Island and 56 to the island

of la Gomera. The fauna likewise shows a high degree of endemism, with 80 sprecies restricted to Macaronesia, 472 to the Canary Island and 214 to la Gomera Island. This holds true in particular for invertebrates. Laurel forest in La Gomera is found between 600 and 1300 m a.s.l. growing on the humid northern slopes, or slopes covered by clouds. The most common trees are Lauraceae species (Apollonias barbujana, Laurus novocanariensis, Ocotea foetens, and Persea indica) with Ilex canariensis, Ilex perado, Picconia excelsa, Rhamnus glandulosa and Viburnum rigidum (del Arco et al. 2006). The Morella-Erica heath (Morella faya and Erica arborea) is intermixed in natural areas with laurel forest and are dominant over 1300 m, specially in southern slopes.

## Other important biodiversity values

### ► Species conservation

While the World Heritage inscription does not focus on species as such, the high endemism is not only noteworthy from an evolutionary but also from a species conservation perspective, both for vertebrates and invertebrates. The national park is also a stronghold for two rare pigeon species endemic to the archipelago. With respect to plant species, the rupicolous vegetation on cliffs and volcanic rock hosts highly specialized native plants. 122 species of flora and 34 species of fauna are considered endangered using UICN criteria.

### ► Other international designations

The National Park of Garajonay was inscribed on the World Heritage List in 1986. The park also lies within a Conservation International-designated Biodiversity Hotspot, a WWF Global 200 eco-region, WWF/IUCN Centre of Plant Diversity and a BirdLife-designated Endemic Bird Area. Since 2012, all of La Gomera and parts of the marine area surroundings are recognized as a biosphere reserve.

# Assessment information

## Threats

### Current Threats

**High Threat**

It is difficult to separate current from potential threats, as the already observable consequences of current threats decrease the resilience to potential threats. Given the small size of the park the threat of fires, floods and invasive species strongly affecting the conservation values is high.

#### ► Livestock Farming / Grazing

**Low Threat**
**Inside site**
**Outside site**

In combination with other pressures, in particular fire and invasive herbivores, (illegal) grazing in the property is an obstacle to natural forest regeneration.

#### ► Fire/ Fire Suppression

**Very High Threat**
**Inside site**
**Outside site**

Intentional and accidental anthropogenic fires are common (IUCN, 1986; UNEP/WCMC, 2011). A major fire in 2012, started by arson, raged for weeks during exceptionally dry and windy conditions destroying approximately one fifth of the park (State Party Report, 2013).

#### ► Invasive Non-Native/ Alien Species

**High Threat**

**Inside site**
**Outside site**

Alien invasive species, such as rats, rabbits and parrots, as well as feral dogs and cats compete with and prey on native species. Forest plantations consist of some introduced species (Eucalyptus and Monterey Pine) and another pine species endemic to the archipelago. While not an alien species as such, the latter has been planted beyond its natural range at the expense of native vegetation within and outside the property (IUCN, 1986; UNEP/WCMC, 2011).

### ► Tourism/ visitors/ recreation

**Low Threat**
**Inside site**
**Outside site**

Tourism levels are not problematic per se but trigger pressure to expand infrastructure and increase the risk of accidental fires.

## Potential Threats

**Very High Threat**

The combination of increased vulnerability and expected climate change could have profound impacts on the conservation values as defined today.

### ► Temperature changes

**Very High Threat**
**Inside site**
**Outside site**

The laurel forest creates its own, very particular microclimate, which differs sharply from the surroundings. Laurel forest habitat very much depends on particular climatic and orographic conditions. Reduced forest cover and degradation increases the vulnerability to floods and droughts. Major disturbance, such as the 2012 fire event, not only directly affects the forests but increases future vulnerability. Several climatic models on the Canary Islands (e.g. Sperling et al, 2004 and Martin et al 2013) suggest changes in intensity and distribution of the monteverde forest belt due to mainly changes in the cloud belt.

## Protection and management

### Assessing Protection and Management

#### ► Relationships with local people

**Some Concern**

In the history of La Gomera, including prior to European arrival, the forests played a crucial role in the subsistence economy of the island (Ministerio de Agricultura, Alimentación y Medio Ambiente. 2014). Despite earlier protection efforts and eventually the establishment of the national park some resource use continues resulting in some conflicts with local residents (UNEP/WCMC, 2011).

#### ► Legal framework and enforcement

**Some Concern**

Strong and longstanding legal protection framework culminating in the establishment of the national park in 1981. A major legal change occurred in 2010 when the exclusive management authority was transferred to the autonomous community of the Canary Islands (Comunidad Autónoma de Canarias), implementing legislation introduced in 2009 (Ministerio de Agricultura, Alimentación y Medio Ambiente. 2014; UNEP/WCMC, 2011). Some collection of firewood and other forest products and some livestock grazing continue illegally.

#### ► Integration into regional and national planning systems

**Some Concern**

As a substantial portion of the island (exceeding 10 % of the terrestrial surface) the property should be fully considered in the overall planning of the island as an indispensable water provider, source of identity and a major touristic resource. The establishment of the La Gomera Biosphere Reserve provides a promising umbrella in this regard (UNESCO, 2014).

### ► Management system

**Mostly Effective**

Adequate overall but could improve linkages with local communities and broader planning scheme for the island of La Gomera (UNEP/WCMC, 2012, IUCN, 1986).

### ► Management effectiveness

**Some Concern**

While adequate overall, the major fire event in 2012 exceeded the possibilities of management, illustrating the need for coordination and cooperation across sectors and land-use designations on the entire island.

### ► Implementation of Committee decisions and recommendations

**Some Concern**

The inscription decision encouraged "initiatives to extend the boundaries of the park" (World Heritage Committee, 1986), drawing upon the IUCN evaluation (IUCN, 1986). The suggestion has repeatedly been taken up but so far has not been followed up upon (UNEP/WCMC, 2011, UNESCO, 2006).

### ► Boundaries

**Some Concern**

It is well documented that the boundaries of both the property and its buffer zone leave room for improvement (UNEP/WCMC, 2011; IUCN, 1986, see also inscription decision by the World Heritage Committee in 1986).

### ► Sustainable finance

**Some Concern**

Funding levels are not a major limiting factor (IUCN, 1986). However, the costs of recovery from the 2012 fires are likely to be substantial and will require adequate funding.

### ► Staff training and development

**Mostly Effective**

Adequate provided coordination and cooperation with other institutions in charge of land use in the surroundings and as regards monitoring of and responses to fire (UNEP/WCMC, 2011).

### ► Sustainable use

**Mostly Effective**

Nature-based tourism, if defined as sustainable use, is a major and increasingly important factor in the island economy with Garajonay National Park being a major resource (AIDER/Parques Nacionales. N d.).

### ► Education and interpretation programs

**Some Concern**

A good level of corresponding efforts with some room for improvement in terms of awareness-raising (UNESCO, 2006).

### ► Tourism and interpretation

**Some Concern**

Given the small size, the property receives high tourist numbers (UNEP/WCMC, 2011).

### ► Monitoring

**Mostly Effective**

The IUCN evaluation encouraged the consolidation of monitoring (IUCN, 1986). The suggestion was taken up by the World Heritage Committee in the inscription decision (World Heritage Committee, 1986). Since the inscription monitoring efforts have been stepped up but could be further systematized (UNEP/WCMC, 2011).

### ► Research

**Mostly Effective**

The IUCN evaluation also encouraged the consolidation of research (IUCN, 1986) and the suggestion was likewise taken up by the World Heritage Committee in the inscription decision (World Heritage Committee, 1986). Since the inscription important research has been carried out across a wide

range of fields, including archaeology, ecology, hydrology, geology, biology (Ministerio de Agricultura, Alimentación y Medio Ambiente, 2014).

### Overall assessment of protection and management

**Some Concern**

The legal protection status and overall level of management and funding are adequate. There is a longstanding principal question mark regarding the boundary design of the property though; strategic additions to the property would not add only conservation value but facilitate coherent management. It has also become clear that conventional park management reaches its limits in case of catastrophic events such as the major 2012 fires, suggesting a permanent need to ensure full coordination and cooperation at the level of the entire island of La Gomera. A less visible management challenge stems from alien invasive species, but control programmes have been established for the most aggressive species.

▶ **Assessment of the effectiveness of protection and management in addressing threats outside the site**

**Some Concern**

The recent history of Garajonay National Park is a telling example of situations where site management is adequate but still fails to prevent and adequately respond to catastrophic events. The response to the raging fires was beyond the scope of park management and possible future events of similar nature are unlikely to differ in this regard, stressing the need for risk preparedness across institutions at the level of the entire island of La Gomera.

## State and trend of values

### Assessing the current state and trend of values

#### World Heritage values

▶

### Exceptional remnants of a rare and exceptionally beautiful forest type

**High Concern**
**Trend:Improving**

The current state and recent trend of this value is overshadowed by the major 2012 fires. While recovery seems possible in long term, there is a need to minimize the risk and impacts of future fires (State Party, 2013).

### ► Laurel forest with very high degree of floral and faunal endemism

**High Concern**
**Trend:Improving**

The current state and recent trend of this value is overshadowed by the major 2012 fires. While recovery seems possible, there is a need to minimize the risk and impacts of future fires (State Party, 2013). While there is no evidence of major loss of endemic species, the combination of past modification, fires and alien invasive species is responsible for an overall trend of degradation, flood risks and increased vulnerability (UNEP/WCMC, 2011).

## Other important biodiversity values

### ► Species conservation

While the World Heritage inscription does not focus on species as such, the high endemism is not only noteworthy from an evolutionary but also from a species conservation perspective, both for vertebrates and invertebrates. The national park is also a stronghold for two rare pigeon species endemic to the archipelago. With respect to plant species, the rupicolous vegetation on cliffs and volcanic rock hosts highly specialized native plants. 122 species of flora and 34 species of fauna are considered endangered using UICN criteria.

### ► Other international designations

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of La Gomera and parts of the marine area surroundings are recognized as a biosphere reserve.

### Summary of the Values

▶ **Assessment of the current state and trend of World Heritage values**

**High Concern**

**Trend: Improving**

The national park of Garajonay, inscribed on the World Heritage List in 1986, has substantially suffered from a catastrophic fire event occurred in August 2012 with consequences in the hydrology and soil conservation. There is adequate legal protection and management in place, and provided adequate future management, including effective responses to risks stemming from alien invasive species and fires and, in cooperation with other relevant institutions and civil society, there is good potential for maintenance and recovery of the World Heritage values.

▶ **Assessment of the current state and trend of other important biodiversity values**

**High Concern**

**Trend: Improving**

There is no principal difference compared to the above specific Word Heritage values. However, from a species conservation perspective there are a number of particularities which are not entirely covered under the specifically defined World Heritage values. In terms of other international designations it is important to recall that these refer to larger areas than the property, which adds complexity but at the same time is a much more promising approach.

## Additional information

### Key conservation issues

### ► Major fire risk

**Local**

Laurel forests have a relatively low degree of susceptibility to fires by creating their own humid microclimate. The complexity of the recent fire events and ongoing threat of disastrous future fires stems from a combination of entry points for fires in former pine plantations and degraded areas. Many ravines or "barrancos" are covered by an invasive weed species known to propagate fires. The road network and increased visitation likewise increase the fire risk. Anticipated that temperatures rise and droughts may become more pronounced contributing to making the fire risk a key conservation issue for the foreseeable future.

### ► Alien invasive species

**Local**

The invasive plants compete with native vegetation changing the hydrology and contributing to the vulnerability to fires. Invasive mammals include herbivores and predators impacting on both native flora and fauna. There is an acute need to better understand and respond to the issue given that the major fire disturbance could favour selected invasions.

### ► Tourism management and fire risk

**Local**

Nature-based tourism is an essential part of the island economy of La Gomera. Besides conventional management aiming at minimizing impacts and maximizing benefits, it is essential to reduce the risk of fire which inevitably comes with tourism.

### ► Incomplete coverage of the subtypes of Laurisilva in the design of the national park and the World Heritage property

**Local**

It is well documented, including in the inscription decisions that the boundary design of the property fails to cover representations of all forest subtypes and areas of highest conservation value in the vicinity of the property.

## Benefits

### Understanding Benefits

#### ► Water provision (importance for water quantity and quality)

The laurisilva intercepts water in the form of mist and rainfall and creates its own microclimate. The cloud forest enables the water recharge of acquirers, springs and creeks of vital importance for the entire island of La Gomera. This major environmental service that has long been recognized and is an important basis for the longstanding conservation efforts.

#### ► Soil stabilisation

The rugged terrain is prone to erosion and floods, in particular during the episodic events of heavy precipitation.

#### ► Importance for research

As a rare relic forest Garajonay permits unique insights into a fascinating ecosystem shaped by its island location. Garajonay National Park is of major scientific importance, including but not limited to research on the evolution of endemism in island ecosystems and the ecology of a rare relic forest ecosystem and paleoecology (UNEP/WCMC, 2011, IUCN, 1986, State Party, 1986).

#### ► History and tradition

Sites within the property continue to be used for traditional pilgrimages (UNEP/WCMC, 2011).

### Summary of benefits

The property has a fundamental role in the climate of the island and water provision of the island, both in terms of quantity and quality. The island's economy is largely dependent on tourism and the property is an increasingly key resource in this regard. The scientific importance of the property is

noteworthy given that it is the main remnant of a rare forest type. Last but not least, the property protects sites that continue to attract locally highly important pilgrimages.

## Projects

### Compilation of active conservation projects

| № | Organization / individuals | Project duration | Brief description of Active Projects |
|---|---|---|---|
| 1 | Park management | | Current management efforts focus on the restoration after a major fire event in 2012 (38COM.Garajonay.SPreport). |
| 2 | Park management | | Likewise in response to the 2012 fire event, current projects focus on restoration of the heavily affected park infrastructure (38COM.Garajonay.SPreport). |
| 3 | LIFE Project "Garajonay vive" | | Restoration of damaged areas affected by the 2012 fire |

### Compilation of potential site needs

| № | Site need title | Brief description of potential site needs | Support needed for following years |
|---|---|---|---|
| 1 | Integrated management of the property and its surroundings | The consolidation of Integrated management of the property and its surroundings could improve the protection of other areas of comparably high conservation significance while contributing to addressing threats originating outside the boundaries of the property. The recent designation of the entire island as a biosphere reserve provides an ideal framework for such consolidation. Enhanced consideration of the surroundings may include the consideration of additional land being added to the property through a minor boundary modification procedure (see below). | |

| № | Site need title | Brief description of potential site needs | Support needed for following years |
|---|---|---|---|
| 2 | Re-visiting the boundaries of the property and its buffer zone. | Starting with the IUCN evaluation it has repeatedly been suggested to include additional remnants of Laurel forest in the property (IUCN, 1986). One concrete example is the adjacent Reserva Natural Integral de Benchijigua, which has repeatedly been suggested as a possible extension of the property. Regrettably, Benchijigua was likewise heavily affected by the 2012 fires. The inscription decision encouraged extension of the property. According to the results of the Periodic Reporting (2006) there is an acknowledgement of shortcomings in the overall design of the property and its buffer zone. The results suggest a willingness to expand and re-design both. | |

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