IUCN Conservation Outlook Assessment 2017 **(archived)**
Finalised on 09 November 2017

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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

2017 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.

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 and climate change. Increasing tourism likewise increases the risk of fire. The continuous increase in temperatures and more pronounced droughts, as well as the expected change of the altitude of the cloud formation are threats 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. Another management challenge stems from alien invasive species, control programmes have been established to regulate and solve this problem (LIFE Garajonay Vive, 2016).

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

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 a stronghold for two Canarian endemic pigeons, laurel pigeon (Columba junoniae) and Bolle’s pigeon (Columba bollii). With respect to plant species, the rupicolous vegetation on cliffs and volcanic rock hosts highly specialised native plants. 122 species of flora and 34 species of fauna are considered endangered by IUCN criteria.

Assessment information

Threats

Current Threats

High Threat

Current threats such as climate change, invasive species and increased wildfires represent the largest threats to the values of the park. Garajonay National Park is a very humid forest that rarely experiences wildfires, these

occur under extremely warm and dry weather. The wildfire of 2012 highlighted the vulnerability of the park to sever fires and invasive species. Given the small size of the park the threat of wildfires climate change 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, widespread(15-50%)
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 hot, dry and windy conditions destroying 741.7 ha of the park (18.76% of the park) (Fernández et al. 2012; State Party Report, 2013; Garajonay VIVE, 2016), impacting ancient laurisilva forests and many populations of endangered species as well as affecting highly valuable soils in terms of carbon sequestration and water provision, thus severely impacting the hydrological cycle of the forests (del Pino et al. 2015).

► Tourism/ visitors/ recreation

Low Threat
Inside site, localised(<5%)
Outside site

Tourism levels are not problematic per se, however they increase pressure to expand infrastructure, such as the works on the road going through the park, and increase the risk of accidental fires (Cabildo Insular de La Gomera, 2017).

► Invasive Non-Native/ Alien Species

High Threat
Inside site, scattered(5-15%)

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. Feral goats and sheep populations' amount to 5000 individuals, their impact represents the main threat to the conservation of native insular flora, particularly for a large group of endangered species (IUCN Consultation, 2017). Forest plantations consist of some introduced species (Eucalyptus and Monterey Pine) and another pine species endemic to the archipelago, while they are not alien species they have been planted beyond their natural range at the detriment of native vegetation within and outside the property (IUCN, 1986; UNEP/WCMC, 2011). Furthermore, after the wildfire of 2012 there was a spread of the introduced Acacia cyanophylla in 15 ha of the burned area, hindering the colonisation by indigenous species (Life Garajonay Vive, 2016).

► Droughts

Very High Threat
Inside site, throughout(>50%)
Outside site

A dye back of the forest has been observed in areas of lower altitude on the northern slopes which amount to 10% of the park. Suggesting that the reduction of precipitation, increase in temperature minimum and extremes and the increase frequency of entry of warm and dry air masses from the Sahara, experienced in the last years as a consequence of climate change, are negatively impacting the values of the site (IUCN Consultation, 2017).

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 extremes

Very High Threat
Inside site, throughout(>50%)
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). Collaboration with local people in fire prevention and conservation has increased successfully in the last years; efforts have been made to involve local communities in conservation (LIFe Garajonay Vive, 2016).

► Legal framework

Some Concern

There is a strong and longstanding legal protection framework, which culminated 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).

► Enforcement

Data Deficient

A part of the livestock facilities in the island are illegal because of

bureaucratic complexity, improved collaboration is still needed.

▶ 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

In 1986 the Real Decreto 1531/1986 approved the Master Plan for Use and Management of the Garajonay National Park. Since then the Garajonay National Park started the preparation of a new Master Plan in two occasions, in 2004 and in 2012. The work of evaluating the results achieved, meeting Plan objectives, analysing real threats and potential, etc., which was done in two occasions, as well as the elaboration of various sectorial plans has allowed Park managers to establish during these 30 years management guidelines adapting to the particular circumstances of their time, even though these guidelines have not been finally submitted for the corresponding parliamentary approval process (Parque Nacional de Garajonay, 2017). In recent years Park managers have increased the number of informative offer for the local community, trying to achieve a cross-sectorial Park protection and management (LIFE Garajonay Vive, 2016).

▶ Management effectiveness

Mostly Effective

Since the massive wildfire of 2012 efforts have been made to improve control and management of the park, different programs are now set in place to prevent wildfires involving 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). However, in recent years there has been a reduction in the budget for the Park management as well as for the socioeconomic development of the surroundings (IUCN Consultation, 2017).

▶ 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

There have been significant efforts to increment locals’ awareness of issues

concerning the Park. However, there is a part of the local population that does not have a clear conscience of the nature of the problems of wildfires. Negative attitudes or rejection towards the management of the Park and its Peripheral Zone are often caused by insufficient information. An effort of coherent and coordinated communication with different actors is needed (LIFE Garajonay Vive, 2016).

► Tourism and visitation management

Mostly Effective

Garajonay National Park receives 828.758 visitors a year (Ministerio de Agricultura, Alimentación y Medio Ambiente, 2016), and has developed strategy for sustainable tourism since the parks creation; however it has suffered from a progressive reduction in financing over the past years (IUCN Consultation, 2017).

► 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 implemented and a first assessment with remote sensing of the status of the site is already available (LIFE Garajonay Vive, 2016).

► 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. Another management challenge stems from alien invasive species, control programmes have been established to regulate and solve this problem (LIFE Garajonay Vive, 2016).

► 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.
The conflict around forest fires is being tackled from several fronts, (1) by means of environmental education of the population, (2) by means of prevention through the selective management of vegetation at strategic points (avoiding accumulation of combustible materials) and (3) with an extinction service made up of wardens and reserves as well as material resources (fire-fighting trucks) (MAPAMA, 2017).

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).

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

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).

№	Organization/ individuals	Project duration	Brief description of Active Projects
3	LIFE Project "Garajonay vive"		An integrative project that seeks to address fire hazards to prevent future ecological catastrophes, to evaluate the environmental damage of the fire, and to test and apply ecological restoration techniques adapted to the particular conditions of the Garajonay National Park and its surroundings

Compilation of potential site needs

№	Site need title	Brief description of potential site needs	Support needed for following years
1	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.	
2	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).	

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