

**Resolution CM/ResDip(2008)1  
on the revised regulations for the European Diploma for Protected Areas**

*(Adopted by the Committee of Ministers on 20 February 2008  
at the 1018th meeting of the Ministers' Deputies)<sup>1</sup>*

**Appendix 5: Model plan for annual reports**

**Annual report for the year 2018**

Annual reports should describe the changes that have taken place since the previous year in dynamic terms of management and function and not be limited to basic data. Any new text or map introducing a change in the situation of the area should be attached to the annual report.

State: SPAIN

Name of the area: **TEIDE NATIONAL PARK**

Year and number of years since the award or renewal of the European Diploma for Protected Areas:

**Central authority concerned:**

Name:        Consejería de Política Territorial, Sostenibilidad y Seguridad del Gobierno de Canarias  
                 (Regional Ministry of Territorial Policy, Sustainability and Security of the Government  
                 of the Canary Island)

Viceconsejería de Medio Ambiente (Vice-Council of the Environment)

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<https://www.miteco.gob.es/es/red-parques-nacionales/nuestros-parques/teide/>

**Authority responsible for its management:**

Name:        **Cabildo Insular de Tenerife (Área de Sostenibilidad, Medio Ambiente y  
                 Seguridad)**

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<sup>1</sup> As amended by Resolution CM/ResDip(2014)2 on 2 July 2014 at the 1204th meeting of the Ministers' Deputies.  
Internet : <http://www.coe.int/cm>

1. **Conditions:** List here all conditions which were attached to the award or the renewal of the European Diploma. Explain either how the conditions have been totally complied with or detail the progress in complying with the conditions. Please also indicate any unresolved difficulties that you have encountered.

N/A

2. **Recommendations:** List here all recommendations which were attached to the award or the renewal of the European Diploma. Explain either how the recommendations have been totally complied with or detail the progress in complying with the recommendations. Please also indicate any unresolved difficulties that you have encountered.

1. the areas around the cable car should be restored in line with the Proyecto de restauración de la Rambleta del Teide;

- The project was rejected because although it was adapted to the real needs and was integrated in the landscape, it exceeded the usable area set by the MPUM. It was considered advisable to wait until the reassessment of the MPUM specified an area which was more consistent with the objective needs for the safety of the visitors, suitable sanitary facilities with sewage water treatment, installations allocated to the cable car service, national park and research.

- Specific action for landscape integration: Changing of floor and handrails, Painting of the terminal and Improvement of adjacent footpaths.

- Rules for access of visitors to the Telesforo Bravo footpath (Rambleta-pico del Teide) 2010.

2. efforts to eradicate populations of moufflons and wild rabbits from inside and outside the park, with special emphasis on removing the invasive animal pressure from areas located outside the park should be continued;

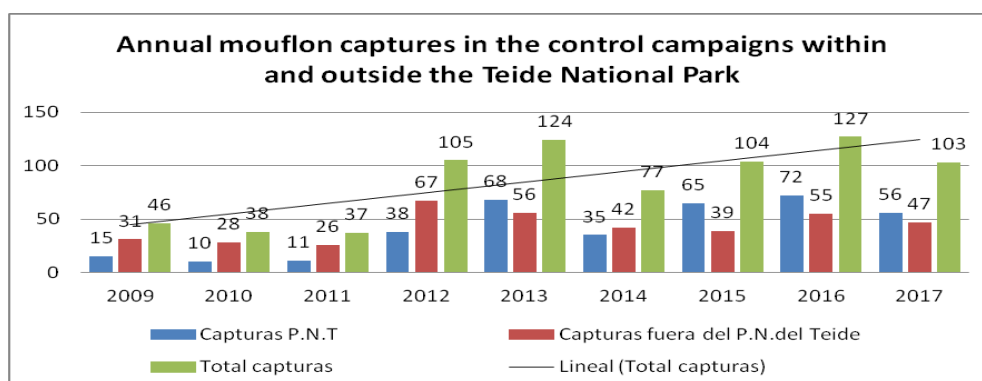
Measures of progressive control of mouflon in the Teide National Park, with the aim of its eradication.

The control of the mouflon in the Teide National Park aimed at its eradication is carried out annually during the periods of May-June and October-November. These acts have been consolidated during this last decade, highlighting in this process a significant increase in the number of days dedicated to this end, which have increased notably in the last few years and reaching a total of about 26 days annually, and an increase in hours every day.

The control of mouflon as a management activity is carried out with the participation of local hunters, but is closely managed and supervised by the administration, which allocates for it specific economic resources and personnel. This activity is complemented the rest of the year by specialised marksmen working for the public administration who act outside the middle of the day and in places where there is not a large number of visitors to increase the mouflon hunting quotas.

Another important point to highlight is the improvement in coordination between the action taken in the interior of the Teide National Park and that carried out in the exterior, a circumstance which was made possible by the situation of the delegation of the National Park by the Cabildo of Tenerife (Tenerife Island Council) which possesses legal competence to control this species in the exterior, acting in its control by use of rifles and using the same crew who works in the National Park.

With this plan the annual number of captures has notably increased with respect to campaigns prior to 2009.



Hunted mouflons in the mouflon control campaigns in the Teide National park with the participation of crews, within and outside the Teide National Park (Period 2009-2017).

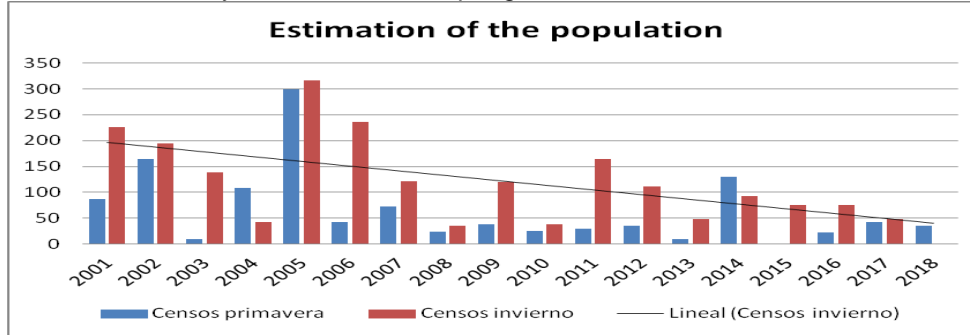
T.N.P. captures

Captures outside the T.N.P.

Total captures

Line (Total hunted)

On the other hand the mouflon population within the boundaries of the National Park continues to be monitored twice a year, in winter and spring.



*Estimation of the mouflon population in the Teide National Park for the 2001-2018 period, according to Spring and Winter censuses using census itineraries with simple extrapolation without stratification. (At the time of writing this report the Winter census for 2018 had not been carried out yet).*

*Spring census                      Winter census                      Line (Winter census)*

### Measures to control rabbits in the Teide National Park

As in previous years measures to control rabbits in the interior of the National Park have been continued, through the use of annual campaigns which are carried out between the months of August and November, with an estimated duration of between 25 and 30 days per year, and with the participation of local hunters.

It should be stressed that as from 2011, an important regression in the rabbit population in all the island of Tenerife has been recorded, and the Teide National Park has not been an exception, as is reflected in the annual censuses which are carried out before each control campaign.

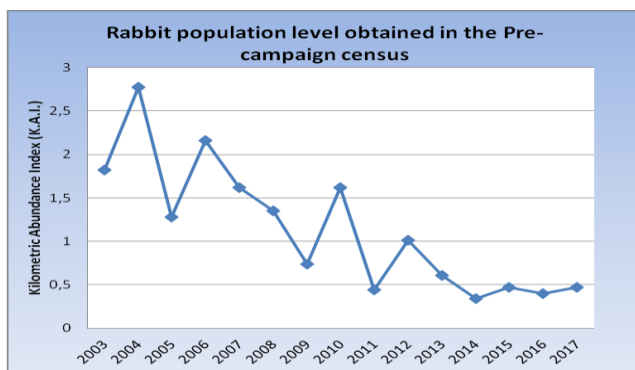
During this last decade all-time lows for the Kilometric Abundance Index (K.A.I.) have been reached on the track of Siete Cañadas in the Pre-Season period, reaching an absolute minimum in 2014, with a value of 0.34, as well as absolute minimums also for values of Hunting Abundance Index, (H.A.I.), reaching the lowest levels in the last season of 2017, which highlights the lowest population level known to date.

In spite of the above, it must be pointed out that this situation of a decrease in the rabbit population occurs in the areas of the park where control measures are taken, and is not a reflection of the situation in the areas which, due to their inaccessibility, are out of the reach of control measures.

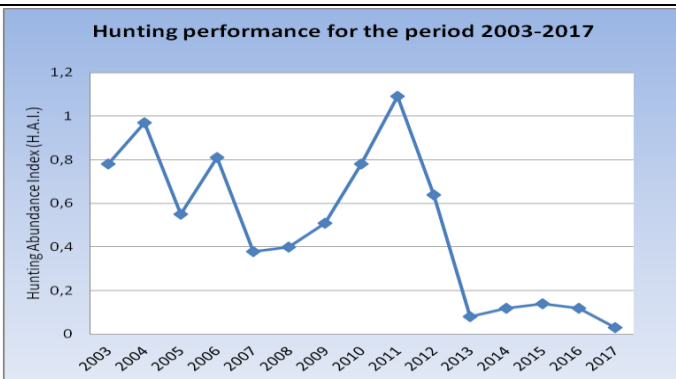
For this reason the development of control campaigns for this species, above all in the area of the National Park, including all the reserve area except for the Teide Peak, has continued.

The most important new features of rabbit control measures for the period 2009-2018 should be highlighted:

- Since 2016 the census of nocturnal rabbits has been implemented, increasing the number of routes.
- The building of large enclosures as an effective protective measure for specific plant species against the action of the rabbit, which has gone hand in hand with the development of control actions in their interior, like the trap trials carried out, for the eradication of all rabbit specimens in their interior.
- As of 2017 and during 2018 and for the aforementioned reasons, the administration has also begun to develop actions to control rabbits, in addition to the large enclosures, in areas of difficult access, where the action of the collaborators in the yearly campaigns is insufficient due to their remoteness and inaccessibility.



*Rabbit population levels obtained in July in the nocturnal census in Pista de Siete Cañadas (period 2003-2017).*



*Participant performance measured using the Hunting Abundance Index (period 2003-2017).*

#### Mouflon control measures in the exterior of the Teide National Park

In 2014 and after the approval of the Spanish catalogue of exotic invasive species, which includes mouflon in the Canary Islands, mouflon game hunting in Tenerife, for the first time is oriented towards a management activity which aims to increase pressure on the species, reaching today the consideration of population control whose ultimate aim is its eradication.

For this reason in 2015 the term “game hunting” is finally eliminated from the regulatory bases which govern the activity dictated by the Tenerife Cabildo, to reinforce the approach of population control, and in 2017 the promotion of the activity of more effective gangs is introduced as a relevant factor, all of which with the intention of increasing the number of annual captures.

Over the years, and with the objective of improving the effectiveness of the activity, the mouflon control sectors in the exterior of the Teide National park, and surrounding it, have increased in area, the last increase dating from 2013, with the creation of the West sector and the extension of the limits of the North sector, thereby adapting to the current area of distribution of the species on the island, after having confirmed mouflon sightings beyond the limits of the initially established action zones.

Another important aspect in which advances have been made in recent years, is that for the first time, and in compliance with Law 52.2 of Law 42/2007, of 13 December, of Natural Patrimony and Biodiversity, which establishes that the Public Administration forbids the introduction of non-native species susceptible to altering the ecological balance, and the inclusion of mouflon, in Annex 1 of the National Catalogue of Invasive Exotic Species, (Royal Decree 1628/2011, of 14 November), steps have been taken to investigate and detect the existence of mouflons in captivity in some farms on the island, which is a very relevant aspect for the design of a strategy for eradication of the species.

3. the roadworks cabin near Riachuelo Reserve, close to the TF-21 road should be removed, thus implementing the 12.4.4 provision of the Teide National Park Management Plan (plan rector de uso y gestión);

After numerous negotiations with different managers of the Tenerife Mountaineer's Group Sports Club, in 2016 a preliminary agreement with the current club's managers was reached in relation to the building used as a Mountaineer's Refuge in the area of Riachuelo. This agreement came into effect in 2017 with the signing of a Collaboration Agreement between the Tenerife Cabildo (Tenerife Council) and the Tenerife Mountaineer's Group Sports Club for the repossession and subsequent demolition of the building called “Casilla, almacén y refugio” (Hut, store and refuge) located on the TF-21 road, Km 48, left roadside, Municipality of La Orotava, within the Teide National Park, for the purpose of proceeding with its demolition and thereby comply with the guidelines of natural landscape restoration contained in the Masterplan for Use and Management of the Teide National Park.

In the aforementioned Agreement it is agreed that the steps to be taken in relation to this property will be the following:

- a) Repossession of the Hut on the part of the Canary Government, under article 75.1 of Law 8/1987, of 28 April, of the Patrimony of the Canary Autonomous Community, the file currently being processed.
- b) Release, in accordance with articles 16.1 and 16.2 of Law 8/1987.
- c) Demolition and restoration of the area.

On their part the Cabildo of Tenerife undertakes to propose to the Canary Government the initiation of proceedings to concede free of charge to the Tenerife Mountaineer's Group Sports Club alternative premises for use as a mountain refuge, as a substitute for the building which will be demolished. These premises are located in the buildings in the area of El Portillo in the Teide National Park.

Pursuant to this agreement, the Tenerife Cabildo requests the Canary Government to transfer the property to the Tenerife Mountaineer's Group, in agreement with the competent body of the Canary Autonomous Community.

In September 2017 the "Project for the demolition of the Public Works Hut and Teide National Park Mountaineer's Refuge and restoration of the area" is finally drafted, and is currently awaiting approval.

4. the remaining buildings near the Sanatorium (El Sanatorio) should be demolished and ecological restoration of the area should be undertaken;

In 2016 the Teide National Park began to promote the project development of environmental recovery called: "Demolition of the houses of El Sanatorio and environmental recovery", which was finally drafted on December 22, 2017. This project is currently being processed, obtaining the necessary sectoral reports to achieve final approval.

In parallel a valuation report on all the buildings which make up El Sanatorio was commissioned, which was issued on November 10, 2017.

- On June 26, 2018 a plenary session of the Tenerife Cabildo (Tenerife Council) agreed to the initiation of compulsory expropriation of the endowments and entitlements known as "Las Casas del Sanatorio", located in the N.P. by the requirements of article 6.6 b) of the Uses and Management Master Plan for this space.

Also, in this session the record of endowments and entitlements whose occupation is necessary was approved, and it was agreed to submit it to public notice during a period of 20 working days from its publication in the Provincial Official Gazette so that during this time period anyone who wished to certify entitlement of the affected rights could present their allegations.

- On July 13, 2018 the record of endowments and entitlements affected in the procedure for compulsory expropriation of the buildings of El Sanatorio was published in the Provincial Official Gazette, and the period of allegations officially commenced.

- As from today and unless there are unanticipated exceptional circumstances, it is estimated that the demolition and restoration may begin in the course of 2019.

5. the monitoring of the effects of global climate change on the park's ecosystems should be improved so as to anticipate potential damage and possibly take adaptation measures;

Climate Change is, along with the loss of biodiversity, one of the main global problems of conservation. Its effects are well-known in the entire world and also in the Canaries, where studies carried out in 2010 showed that they were more intense, if that is possible, in the peaks above 2000 m altitude, that is to say, in the geographic range of the Teide National Park.

For this reason the monitoring of climatic parameters and the evaluation of the changes in temperature and /or rainfall have been a constant priority in the management of the N.P., and have also been borne in mind in the programmes of ecological monitoring and in those of conservation and recovery of endangered species.

#### THE NETWORK OF CLIMATE MONITORING

In the Teide National Park there is an important network of weather stations which makes it possible at all times to know the evolution of multiple climatic variables. The majority is limited to data acquisition of temperature and precipitation, but also atmospheric pressure, wind strength and direction, and UV radiation are also monitored. In addition, temperature is measured in the air, the ground and in plant structures.

#### THE ECOLOGICAL MONITORING NETWORK

##### *Intensive sampling stations (ISS)*

Seven intensive sampling stations have been established to concentrate the research and ecological monitoring studies. In total the area comprises 1,221 ha. and each one is fenced and has automatic climatic sensors, in order to facilitate comparison with the biological data obtained.

Three of the ISS stations are located in the North zone and another four in the South zone. One of the latter is underground and contains a sector where there are various volcanic caves with troglodyte fauna adapted to life underground. In these ISS much monitoring work is carried out by the National Park, and more specific research is carried out by universities and/or CESIC.

##### *Plots for monitoring plant life*

Although from 2004 there have been three plots of intensive monitoring to assess the effect of herbivores and climate change, in 2009 18 more were installed all over the Park, which has enabled close monitoring of how the community of mountain retamar in herbivore-free conditions is progressing, in order to separate this factor of pressure from that derived exclusively from climate change.

### *Monitoring of floral phenology*

As from 2014 every year the monitoring of flowering has been carried out, both individually in 13 of the most abundant species, as well as globally with respect to general flowering intensity. Between February and July data was taken on a weekly basis by park personnel and with the collaboration of educational and training centres which collaborate with the National Park. In this way a register of how flowering progresses in four zones of the park: north, centre, south and peak is made each year.

The objective of this monitoring is to determine how the date of the beginning of flowering and the moment this reaches maximum floral bloom may be affected by the climate.

The accumulation of records of this type over time provides valuable information to identify how climate change is modifying flowering trends in the Park.

### *Monitoring of lepidopteran phenology*

In 2016 the programme of phenological monitoring of lepidopteran abundance was commenced. As also occurs with floral phenology, it is a good indicator of climate change. The Park's lepidopteran fauna is greatly influenced by climatic variables. The species "fly" when a daily minimum of 14 degrees is reached and there is minimum wind. The monitoring is carried out once a week from February to September, because there are two cycles which overlap, one in Spring when the most abundant species is *Euchloe belemya*, and another at the end of Summer when the main species is *Cyclirius webbianus*. Both are endemic species and fly along with another dozen species in the park.

The monitoring is carried out following the norms of the Butterfly monitoring scheme (BMS), which are the same as those followed by the other national parks in Spain where they have undertaken similar experiences.

## ENDANGERED SPECIES AND CLIMATE CHANGE

Two endangered species present in the National Park have their recovery plans approved, which have been practically all fulfilled in the period between 2009 and 2018: mountain Jarilla (*Helianthemum juliae*) and the Silver Thistle (*Stemmacantha cynaroides*).

The viability of *Helianthemum* is greatly conditioned by the presence of autumn rain: it is known that in years with less than 350 mm of annual accumulated rainfall its behaviour is regressive, whereas in wet years it is expansive. When it was discovered only 200 specimens of mountain Jarilla existed, living in a single location, but thanks to the conservation actions at present there are more than 3000 specimens distributed in eight locations, thanks to assisted translocations which have been successful. The new locations are in moist and cool areas of the park which are less sensitive to occasional droughts.

With *Stemmacantha* something similar occurs. Its precarious initial population of 200 specimens has been converted to 2000, distributed in nine different locations, thanks also to translocations to more optimum zones, where the species was able to support the changes derived from the climate.

The success of the introduced measures makes it advisable to request for these two species to be removed from the list of "endangered" species, to be included in the category of vulnerable species, to continue with their recovery until they may be considered completely free of risk.

6. genetic and ecological studies on endangered endemic or indigenous plant species should be continued in order to ensure that plans to restore these species are carried out; the extension of these programmes to all endangered species should be considered;

The flora of the National Park has the following elements included in some of the established categories of threat.

- *Bencomia exstipulata* (Endangered, according to CNEA and CCEP)
- *Helianthemum juliae* (Endangered, according to CNEA and CCEP)
- *Stemmacantha cynaroides* (Endangered, according to CNEA and CCEP. Annex II HD)
- *Dactylis metlesicsii* (Vulnerable according to CNEA and CCEP)
- *Salix canariensis* (Vulnerable according to CNEA and CCEP)
- *Silene nocteolens* (Vulnerable according to CNEA and CCEP)

CNEA: Catálogo Nacional de Especies Amenazadas (National Catalog of Endangered Species).

CCEP: Catálogo Canario de Especies Protegidas (Canary Islands Catalog of Protected Species).

But the development of conservation activities is not a trivial issue, as the connections between the different variables which influence an ecosystem may become so complex that the development of in situ

conservation activities without adequate knowledge of the functioning of the ecosystem can sometimes even become counterproductive. Thus, these days it is considered dogmatic that the protection of the territorial values and resources should require scientific knowledge which allows the implementation of coherent and effective action, above all when correctly identifying the causes of a regressive process and the possible solutions to curb the process, as well as the consequences these may have on other elements of the ecosystem. This importance placed on the development of specific scientific studies to anchor conservation strategies to the results is made in Resolution CM/ResDip(2009)5 on the renewal of the European Diploma for Protected Areas given to the Teide National Park, where the continuation of the genetic and ecological studies on threatened species of flora in the National Park is recommended, in order to ensure that the plans to restore these species are carried out.

For this reason, in years prior to this renewal and in the succeeding diverse studies have been carried out aimed at filling the gaps in the information present with respect to these species.

Other taxa. In addition to the aforementioned species, since 2010 genetic or ecological studies have been or are being developed on other integral plant species of the National park, the most relevant being presented hereunder: *Sorbus aria*, *Viola cheiranthifolia*, *Laphangium teydeum*, *Juniperus cedrus* and *Spartocytisus supranubius*.

Apart from the studies focussed on one taxon in particular, we should stress that since 2010 data collection for many different sampling parameters has been carried out with the aim of understanding the global functioning of the ecosystem of the peaks of Tenerife, and the interactions which develop in it. From the aforementioned sampling, carried out in a great number of permanent plots, the final results have not yet been processed, although conclusive data has already been obtained to claim that one of the main existing interactions is that related to the presence of certain introduced herbivores and especially the rabbit (Cubas, J., Martín-Esquivel, J. L., Nogales, M., Irl, S. D., Hernández-Hernández, R., López-Darias, M., Marrero-Gómez, M., del Arco, M. J. & González-Mancebo, J. M. (2018). Contrasting effects of invasive rabbits on endemic plants driving vegetation change in a subtropical alpine insular environment. *Biological Invasions*, 20(3), 793-807).

Finally, also, in the National Park great effort has been made, not only to characterize the importance of the process of climate change, but also to analyze the consequences that this may have on the ecosystem of the peak of Tenerife. Much of this work is still at a sampling stage, although data of great importance is beginning to appear on how the structuring plants and especially the Teide broom are being affected (Olano, J. M., Brito, P., González-Rodríguez, Á. M., Martín-Esquivel, J. L., García-Hidalgo, M., & Rozas, V. (2017). Thirsty peaks: Drought events drive keystone shrub decline in an oceanic island mountain. *Biological Conservation*, 215, 99-106.).

7. the access of visitors to the park should be strictly controlled, and the access plan (plan de acceso) adopted as required by the management plan;
8. the public use plan (plan de uso publico) should be adopted and implemented.

The control of the visits to the Teide National Park and the drafting of the Plan of Public Use involve great technical, administrative, economic and legal complexity, due to the number of visitors and the necessary security measures, but above all due to the existence of three island roads, of public domain and with right of way, at least while there are no viable and fast communication alternatives between the north and the south of the island.

In the last decade various changes to the legislation on National Parks and Protected Natural Spaces have added to this complexity, at both a state and autonomic level. The main approved legal norms may be seen below:

- Decree 69/2014, of 26 June, which amends Decree 70/2011, of 11 March, for which the Canary Network of National Parks is created.
- Law 30/2014, of 3 December, of National Parks.
- Law 14/2014, of 26 December, of Harmonization and Simplification with regard to Protection of Territory and Natural Resources.
- Royal Decree 389/2016, of 22 October, for the approval of the Master Plan of the National Park Network.
- Law 4/2017, of 13 July, of Land and Protected Natural Areas in the Canary Islands.

Likewise, in the last few years profound changes in the management of the National Parks have been made, whose competence has been transferred to the Autonomous Communities, and in the case of the Teide NP, the subsequent delegation of the normal management to the Tenerife Cabildo (Tenerife Council).

This situation has prevented the approval of the ambitious Access Master Plan and the Public Use Plan, which the PRUG of the Teide National Park proposed, it being necessary to wait for the approval of the new PRUG, which must adapt to the aforementioned legislation.

However, so far the surveillance has been increased and numerous studies and engineering projects have been carried out to improve and control the visit, the most important of which being detailed hereunder:

- Regular qualitative analysis of the visit
- Annual quantitative analysis of the visit
- Studies on the load capacity of the Teide National Park
- Installation of mixed wood and steel barriers to protect the road verges.
- Drafting of projects for the adequacy of large car parks.
- Construction of numerous roadside viewpoints.
- Construction of the Telesforo Bravo Visitors' Centre in La Orotava (2011-2014)
- Creation of the Juan Evora Ethnographic Museum (2014).
- Extension of the footpath network.
- Enlargement of the Cañada Blanca Visitors' Centre (2017 - 2018)
- Drafting of the project of Enlargement of El Portillo Visitors' Centre (2017)

Moreover, in the Framework of Multiannual Strategic Development of Actions for the Development of Tenerife (2016 - 2025), approved by the Tenerife Cabildo, important budget lines have been included for the creation of service areas and new Visitors' Centres in the entrances to the National Park.

Also, in 2018 it is planned to commence a study to determine the mobility scheme in the National park and the implementation of the aforesaid Service Areas.

**3. Site Management:** List here any changes to the European Diploma holding site management, in relation to both terrestrial and aquatic environments (as appropriate), and in relation to staff and finances, since the last annual report was submitted to the Council of Europe. Please also indicate any unresolved difficulties that you have encountered.

Effective from 1 January 2016, the Government of the Canary Islands delegated day-to-day management of this protected natural area to the Tenerife Island Council.

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Staff numbers at the national park have decreased after the retirement of two employees in 2017.

**4. Boundaries:** Give details of any changes to the boundaries of the European Diploma holding site since the last annual report was submitted to the Council of Europe. If there are any changes, please attach an appropriate map to this report. Please also indicate any unresolved difficulties that you have encountered.

N/A

**5. Other information:** List here any other information about the European Diploma holding site which you consider should be provided to the Council of Europe.

On 19 March 2018, the Scientific Committee of the Board of Trustees of the Teide National Park was established by full agreement of the Board. The fundamental purpose of the Committee is to provide scientific advice to the park and its Board of Trustees and to promote scientific research and all activities that strengthen understanding so that it may be better managed. It met for the first time on 25 June.

From 28 to 31 August 2018, the national park received an official appraisal visit by Mr. Michael Usher (University of Stirling, Scotland), independent expert entrusted with the visit of the Diploma holding area by the Group of Specialists on the European Diploma for Protected areas.



The following sections of the form should only be filled in if your area is in the year before a renewal of its European Diploma for Protected Areas, i.e. year 4 after the award of the European Diploma or year 9 after its renewal.

**6. Natural heritage (general abiotic description: geomorphology, geology and hydrogeology, habitats, flora, fauna, landscape) – State of conservation**

- 6.1. Environment: changes or deterioration in the environment, of natural or anthropic origin, accidental or permanent, actual or anticipated
- 6.2. Flora and vegetation: changes in the plant population and in the vegetational cover; presumed causes
- 6.3. Fauna: changes in the sedentary or migratory populations; congregating, egg-laying and breeding grounds

**7. Cultural heritage and socio-economic context**

- 7.1. Cultural heritage
  - 7.1.1. Changes concerning cultural heritage
- 7.2. Socio-economic context
  - 7.2.1. Changes concerning the socio-economic context

**8. Education and scientific interest**

- 8.1. Visitors – Information policy
  - 8.1.1. Arrangements for receiving and informing the public (building, booklets, maps, cards, etc.)

The following recent developments are worth highlighting: opening to the public of the Juan Évora Ethnographic Museum (17 November 2014) and the Telesforo Bravo Visitor Centre (inaugurated on 26 November 2014); general information brochure also available in Russian (since March 2016); publication of a leaflet on the network of trails of the national park prepared by the Spanish National Geographic Institute (several editions, the latest published in 2018); new edition of the National Park Visitor Guide (2016); and the publication by various publishers of several books about the national park. In addition, 12 information panels have been installed in recent months in different strategic points of the national park in order to promote its resources and provide information to visitors; at present there are 71 information panels, 63 inside the national park and 8 located in the Juan Acosta Rodríguez native flora garden.

- 8.1.2. Frequentation by visitors and behavior (number, distribution in time and space)

For the second consecutive year, 2017 saw the greatest number of visitors to the national park: 4,327,527 people. Visits mainly take place between 10:30 a.m. and 1:30 p.m., with large concentrations of visitors typically occurring at specific points. The advantage is that the features of the terrain do not allow for visits to extend to more fragile areas and they are largely confined to the road and roadside facilities.

- 8.1.3. Special visits (distinguished persons, groups, etc.)

- Participants at the National Congress of National Parks and Sustainable Tourism, held on the island between 15 and 17 November 2017, which the national park co-organised.
- Pedro Ramos, Superintendent of Everglades and Dry Tortugas National Parks (USA).
- Michael Usher, member of the Group of Specialists on the European Diploma for Protected Areas.
- Attendees of the 1st Conference on research and dissemination of high-mountain scrub conservation organised by the national park.
- Participants of the 21st Science Days of the Spanish Society of Speleology and Karst Sciences, which was held in national park facilities between 2 and 5 November 2018.
- Numerous researchers from international scientific institutions visit the park every year, especially from academic institutions in the United Kingdom, Portugal, Canada, Italy, as well as from Spanish research centres.

- 8.2. Scientific research
  - 8.2.1. Current or completed research (observation, experimentation, etc.; identification or inventory of the species listed in the appendices to the Bern Convention, etc.)

Inventories of subterranean fauna are being drawn up: the national park provides a habitat for a dozen endemic species found nowhere else. Climate monitoring of this habitat is also being conducted.

Precise measurements are also being taken of the surface climate within the climate change monitoring programme. There are six automatic stations in line with the international GCOS programme and about twenty more mobile stations that continuously measure essential climate variables. 2017 was the hottest year recorded in the historical series of more than a century of continuous data collection.

A first quantification of the plant cover of *retama* or broom (*Spartocytisus supranubius*) has been carried out by remote sensing to determine the conservation status of this community. Some migratory birds are regularly monitored, such as *Turdus torquatus*, which has winter populations within the national park.

#### 8.2.2. Scientific publications

Currently 23 scientific publications are released per year. Most explore biological aspects of the national park. Other studies focus on geology and geomorphology, human activities and their impact on the natural environment, and climate sciences.

The park staff are responsible for 3-4 publications per year, particularly on biological aspects.

### 9. Site description (vulnerability, protection status, ownership, documentation)

#### 9.1. Changes in legislation or regulations

With effect from 1 January 2016, the Teide National Park is managed by the Island Council of Tenerife (when DECREE 141/2015, of 11 June, came into effect; it delegated Public Administration functions of the Autonomous Community of the Canary Islands, relating to management of the Teide National Park, to the Island Council of Tenerife).

On 1 September 2017, Law 4/2017, of 13 July, on Soil and Protected Natural Spaces of the Canary Islands, came into force.

9.2. Changes in ownership title (conversion to public property, rentals, etc.)

9.3. Extension or transfer, new uses (for example, conversion into total reserve)

### 10. Site management (management plans, budget and personnel)

#### 10.1. Improvements made

##### 10.1.1. Ecological action affecting the flora and biotopes; controls of fauna

Rabbit control campaigns continue within the national park, using capture methods that are traditional in the Canary Islands and in volcanic areas (capture by dog and ferret). The 2018 campaign lasted 29 days (medium-high duration). We do not yet have the final results in number of catches and yields, but pre-campaign indirect sampling has already revealed a continuing downward trend in the wild rabbit population; in 2018, the Kilometric Abundance Index (KAI) was the lowest in the entire historical series (1989-2018).

The mouflon populations are also subject to periodic population control actions, the ultimate goal of which is to eradicate the species. In 2018, 26 control days were organised (between 7 May and 6 June, and between 15 October and 12 November), a total of 52 actions with the involvement of local collaborators armed with rifles. This campaign resulted in a total of 53 captures in the national park. These control actions are coordinated with those that are implemented outside the park, in the surrounding lands, to improve the effectiveness of the control actions on the species. Once the control actions with collaborators are completed, the control actions intensify, and teams of specialist marksmen intervene (teams of 2 or 4 rifles), continuing to shoot as many mouflons as possible before the end of the year.

In recent years, and also in 2018, feral cat control actions with box traps have increased. Catches have increased considerably (64 cats in 2017) and are especially effective in colder months given the shortage of, and difficulty in finding, food.

Work has also been done on removing abandoned or stray dogs, although this is not so much a conservation problem as it is a disruption of public use. However, the number of dogs has decreased (46 dogs captured in 2017), as the number of collaborators in the rabbit control campaign has declined due to the lower population density of rabbit.

The restoration of natural populations of threatened flora and the creation of new population centres has begun; as a result, three species considered endangered (*Stemmacantha cynaroides*, *Helianthemum juliae* and *Bencomia exstipulata*) have overcome the critical phase and there are currently several thousand specimens.

Large enclosures have been built to exclude herbivores and to protect entire communities of *retama* in the better conserved areas, in order to facilitate the natural regeneration of their populations.

Campaigns to ring migratory species that winter in the park are organised every year.

Construction of raptor feeding areas has begun within the framework of a programme to try to attract neighbouring crow populations to the national park. This is an endangered species that lived here in the past and that fulfils an essential ecological role as a disperser of *Juniperus cedrus* seeds.

#### 10.1.2. Protection against the elements (fire, water regime)

As is the case every year, fire prevention and extinction measures are kept in operational readiness, with a period of alert, and therefore full and total availability of means and resources, normally between 1 July and 30 September.

#### 10.1.3. Approaches and thoroughfares (paths, roads, car parks, signposting, fencing, etc.)

After the creation of three new trails, the national park currently has 41 trails with a total length of about 185 km.

#### 10.1.4. Field equipment (hides and study facilities)

For some years now, a Visitors Pavilion has stood in the area of El Portillo; this is basically intended to accommodate volunteers and researchers.

#### 10.1.5. Waste management

In application of the EMAS Environmental Management System in the national park, all waste is properly managed and the quantities generated by each type of waste are monitored with proof of delivery to authorised waste managers; there is a small room in the facilities annexed to the El Portillo Visitor Centre where the waste is deposited, classified and labelled before it is delivered to the manager.

#### 10.1.6. Use of renewable energy systems

In 2017, investments were made to improve the energy efficiency of the El Portillo Visitor Centre, improving its thermal envelope. In addition, a study of the future energy demand of the centre and of the current state of the photovoltaic installation has been carried out to analyse the possibilities of improving said installation.

In the Cañada Blanca Visitor Centre, building adaptation work was carried out in 2018, during which certain criteria were also applied to improve its energy efficiency.

Other centres, such as the Juan Évora Ethnographic Museum, also have a photovoltaic system.

### 10.2. Management

#### 10.2.1. Administrative department: changes made

#### 10.2.2. Wardens' department: changes made

#### 10.2.3. Internal policing measures

#### 10.2.4. Infringement of regulations and damage; legal action

In 2017, 62 disciplinary proceedings were initiated for infringements of the regulations of the national park, most of them related to non-permitted activities (accessing Restricted Use or Reservation Areas, driving through or parking in non-permitted places, overflying, unauthorised commercial activity, camping...).

## 11. Influence of the award of the European Diploma for Protected Areas

Other certifications or national / international designations:

The environmental management system ISO 14001 (2005)  
Community eco-management and audit scheme (EMAS) (2006)  
World Heritage (2007)  
Starlight Tourist Destination and Starlight Reserve (2013)

Natural habitats (Natura 2000)

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