2. Description

2.a Description of Property

This section describes the proposed property as it is today, mentioning its outstanding characteristics, the different ways that its natural resources are used and the methods employed to use them.

Description of the proposed property and its outstanding characteristics

Geology and geomorphology

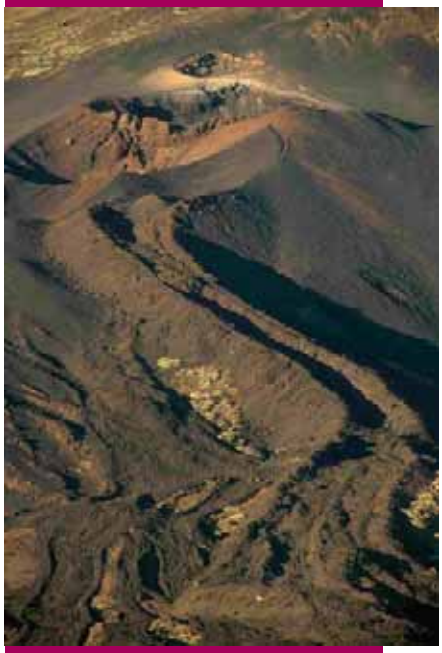
Teide National Park is essentially configured by geographic elements that have very defined morphological and geological elements. Without a doubt, the most dominant geographic element is the Teide-Pico Viejo stratovolcano that was created in the Pleistocene and that is still active today. This fact is confirmed by the high activity of the fumaroles in the areas near the crater and the recent eruptions that occurred a few hundred years ago from its slopes and from its central crater.

The stratovolcano is *located* in the centre of a large depression known as Las Cañadas Caldera that is delimited to the north, east, south and part of the western zone by a wall of abrupt escarpments of up to 650 m that displays the geological history of the area all along its 25 km and within its different stratum.

Between the base of the stratovolcano and the foot of the wall there is an extensive field of lavas and recent pyroclasts that came from Teide-Pico Viejo and its adventitious cones, as well as from other emission centres located in the interior of the caldera. This area is completed by plains of pooled volcanic sediments located at the base of the wall, Las Cañadas.

It also has spectacular recent samples of historic volcanism that are associated with the emission of basaltic magmas, such as the Fasnia Volcano, whose activity occurred in 1705, and the eruption of the Narices del Teide (Teide's Nostrils) that occurred in 1798 and whose lavas cover a surface area of around 4.5 km^2 within the Park's limits.

The National Park is a paradigmatic enclave for geology and volcanology, both for its creation and history and for the great variety of volcanic materials that can be found, which allows for the observation and study of a broad range of processes and structures within a sheltered and clearly delimited space. Because of its content, level of conservation and excellent display, this



Historical eruption

Frozen scrub

Teide - Montaña Blanca

volcanic complex is unique in the world and constitutes a reference point for volcanologists and everyone who is interested in these types of natural processes.

Climate

There are a series of factors that combine to give the Canary Islands its famous temperate climate. First of all, because the archipelago is found on the passage to the tropics it is influenced by the temperate and tropical world; the fact that it is located in a high pressure zone gives it atmospheric stability and constant winds throughout the year, but mostly in summer. Furthermore, its proximity to the high temperatures of the African continent is counterbalanced by the Canarian cold marine current that lowers and mellows its temperatures, which are generally maintained around 20º C. The combination of winds blowing from different directions and altitudes at these latitudes, along with the factors already mentioned, creates a thermal inversion at around 1,000 m that also has a great effect on the ecology of each island.

The thermal inversion and the insular orography on the summits of Tenerife (the only Macaronesian island with a large percentage of area above 2,000 m) isolates the area from marine influences, thereby creating climatic parameters that are more similar to those of continental territories than those of the rest of the islands in the archipelago.

Consequently, the altitude determines the harsh climatic system of Las Cañadas which decisively affects both the physical and natural environments.

Teide National Park practically encompasses this entire climatic domain distinguished by its strong daily oscillations (variations of more than 15 degrees) and inter-annual oscillations (with lows below -15º in winter and highs above 30º in summer). The precipitation is below 500 l/m^2, with more than 50% falling in winter, a third of which is snow. Nevertheless, the central area of Tenerife, occupied by the Las Cañadas depression, is one of the principal aquiferous reservoirs of the island.

The insolation (exposure to sunlight) is also the highest in Spain: the yearly average being 3,448.5 hours of sunlight. This amount of sunlight, coupled with the low humidity and low pressure, create an exceptionally limpid atmosphere which is especially good for astronomical observations.

The predominant winds blow from the northeast, the trade winds or counter trade winds. Westerly winds caused by Atlantic storms are less common and can reach up to 200 km/h. Southern winds are linked with invasions of Saharan air. The climatic rigours

that affect the high mountain can create exceptional morphogenetic processes in ocean environments close to the tropics. The presence of active periglacial forms are evidenced by freezing and thawing processes in solid-fluid flows, polygonal soils, snow garlands or the colloquial *caminos de cabras* (goat paths): false paths created by mechanical processes associated with freezing and thawing.

Flora

The biota found in Teide National Park is the result of a particular evolution. Adaptive radiation and isolation caused by insularity have encouraged the proliferation of a multitude of plant species that have adapted to the extremely severe conditions over time.

All of this leads to the uncommon "double-insularity" phenomenon because Tenerife is not only isolated physically by its insularity but also ecologically by its special climate and lack of geological maturity; this gives its summits an especially rich flora, in stark contrast with the apparent dryness of the territory. This phenomenon manifests itself in the fauna and in the flowers. Good examples are plant species like *Adenocarpus viscosus*, *Argynanthemum teneriffae*, *Echium wildpretti*, *Echium auberianum*, etc. that only grow in this territory, while a few kilometres outside of the Park and the summit area the following congeneric taxons develop: *Argynantemum frutescens*, *Adenocarpus foliosus*, *Echium virescens*, etc. In other cases the colonisation has not come from the lower altitudes of Tenerife but rather from other, possibly continental, extra-insular mountainous areas. For example, an exclusively endemic species such as *Stemmacantha cynaroides* is the only Canarian representative of a species that comes from the Atlas Mountains in the African continent.

The diversity of vegetation in Teide National Park is striking for its richness and singularity, sheltering abundant endemic insular, regional and local species

The level of phytogenetic diversity is also very high. Because the Canary Islands are close to the African continent (its primary source of floristic resources) it has a much higher level of diversity than other ocean islands, in fact, it is closer to the levels reached by continental ecosystems. In this sense Teide National Park is a world class example of unique and well conserved phytogenetic diversity.

Because of this Teide National Park has become one of the best examples in the world of how evolutionary forces affect the flora and fauna of high ocean mountains with its great diversity

TEIDE
PARQUE NACIONAL

Silene nocteolens

Aeonium smithii

and high level of endemics that are not easy to surpass in tall continental mountains. The National Park is without a doubt the most diverse and probably the best conserved high-mountain ecosystem on an Atlantic island.

The vascular flora of Teide National Park is made up of 220 taxons, of which 73 are endemic of the Canarian Archipelago and 33 are endemic of Tenerife, a level of endemics that reaches 50%. Moreover, 16 taxons are exclusive to the National Park. The most characteristic endemic elements are the Teide white broom (*Spartocytisus supranubius*), *codeso* (*Adenocarpus viscosus*), *Teide flixweed* (*Descurainia bourgeauana*), the Teide violet (*Viola cheiranthifolia*) and *rosalillo de cumbre* (*Pterocephalus lasiospermus*).

Pterocephalus lasiospermus

On the other hand, species such as *Helianthemum juliae* (*Cistaceae*), *Gnaphalium teydeum* (*Asteraceae*) or *Stemmacantha cynaroides* (*Asteraceae*) that are exclusive to the Park only reach around 200 specimens. Others, such as *Bencomia exstipulata* (*Rosaceae*), barely reach 60 specimens, which accounts for almost 75% of the natural specimens of this endemic taxon on the summits of Tenerife and La Palma.

Non-vascular flora is present in a variety of environments. Briophytes and hepaticas usually present a markedly local character, generally associated with humid environments such as fumaroles, etc. Up until now, 74 species of moss and eight hepaticas have been counted. Lichens are more widely distributed; in fact, they usually are the only plants that cover the recent lava flows of the Park.

In addition to this floristic diversity, the Park also has a noticeable number of vegetation units that generally define the majority of the habitats since they are crucial to the conservation of biodiversity. This fact has been highlighted in the Council of the European Union Directive 92/43/EEC on the conservation of natural habitats and wild fauna and flora. Using the criteria of this Directive, Teide National Park has eleven Community Interest habitats occupying 75% of its surface area.

Viola cheiranthifolia

Cartography of plat communities as well as distribution maps of the most important taxa are included in the annex documentation.

Fauna

Regarding vertebrate fauna, the Park has three endemic species of reptiles: a lizard (*Gallotia galloti galloti*), a salamander (*Tarentola delalandii*) and a skink (*Chalcides viridanus viridanus*).

Twenty species of birds have been observed, among which the endemics are the Blue Chaffinch (*Fringilla teydea teydea*), a veritable symbol of the Park, the blue tit (*Parus caeruleus teneriffae*) y the great spotted woodpecker (*Dendrocopos major canariensis*).

There are five species of bats, a relatively high number in such a small territory but not surprising given the great variety of invertebrate fauna that they can feed on.

A part of the invertebrate fauna lives in practically sterile lavic flows that are perfect the perfect environment for many invertebrate species whose only nourishment is organic material carried by the wind. The majority of these lavic flow elements are carnivorous insects or nocturnal animals that live on decomposing material (saprófagos). The most unique species in this habitat is the vine tendril (*Anataelia canariensis*).

One of the most interesting habitats is made up of a network of crevices and small caves where the environmental conditions have allowed for the development of remarkable evolutionary adaptations. One of the most extreme cases is that of the endemic beetle *Domene vulcanica* that apart from an astonishing lack of pigmentation also has a body and appendages that are more stylised than those of its congeners.

Aculepeira annulipes

The best represented groups are the coleopterans, hemipterans, dipterans, hymenopterans and arachnids with 195, 167, 163, 105 y 102 taxons respectively. All of these display extraordinary endemic levels greater than 40% with 70 species that are exclusive to the National Park.

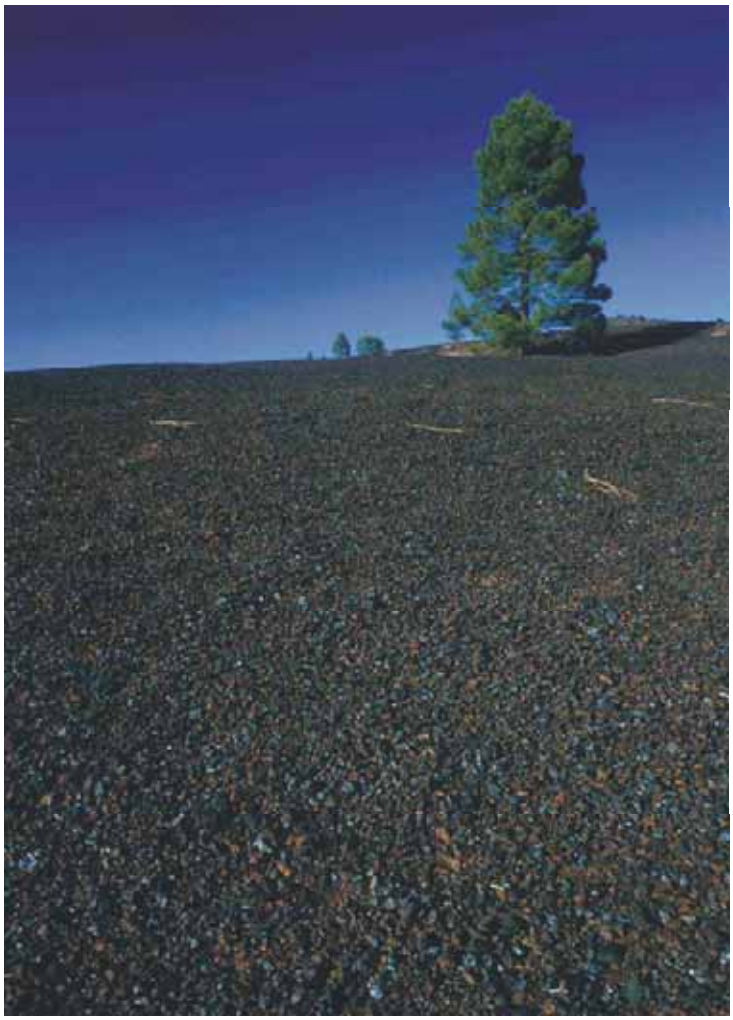
This section is complimented by information on vertebrate and invertebrate fauna that is attached to the annex documentation.

Ecological value

From an ecological point of view the biodiversity of Teide National Park is exceptional because it holds such a large number of endemic species of fauna and flora in a relatively small space (the Park holds the only or largest population in the world of close to 50 vascular plant species and also an extremely rich faunal biodiversity, especially in invertebrates). The large number of endemic species in the biota is caused by the convergence of two insular phenomena: first, the inescapable physical isolation of an ocean island, and second, the further isolation of its high-mountain ecology due to its tremendous altitude (the peak of Mt. Teide is the pinnacle of the Atlantic Ocean and after Hawaii, the highest volcanic island in the world).

The Park is one of the few volcanic island spots in the world that has zonal ecosystems above the altitude where trees can grow ("timberline"), giving rise to two unique ecosystems: the summit *retamar* and the peak ecosystem. Furthermore, Teide National Park varies in altitude by more than 2,000 m, a distance larger than the height of Gran Canaria, giving it the best defined slope in the archipelago and, along with the Hawaiian Islands, the best defined in the world. This is an especially valuable aspect of Teide National Park because it provides one of the best natural experiments on primary ecological succession in the world, closely tied to the variety of the materials emitted and the adversity of the climate that slows the process down tremendously.

Finally, from a biogeographic point of view, although the high-mountain scrub of Tenerife is made up of totally different species, it is somewhat similar to the mountain scrub found on alpine mountains of comparable height in the southern Iberian Peninsula and in northern Africa. Teide National Park also holds one of the best examples of adaptive convergence in the world, an adaptation found in the silverswords (*Argyroxiphium*) of Hawaii and the *taginastes* (*Echium*) of the Canaries.



Pyroclast flatlands

Landscape

Seen from the sea, Teide has gained renown throughout the centuries for its gigantic silhouette that seems to float above the Alizé clouds. Standing tall above the archipelago, Teide combines the singularity of its ocean geography with the distinctiveness of the Canary Islands and that of the area around the mountain which has many forms linked together on different scales. The shapes of its landscape reveal units on different scales - processes from various epochs, diverse relief constructed and shaped in patterns that are not only congruent with each other but also with the geographic system of the Teide-Cañadas complex - combining to create large sectors made up of separate havens that at the same time give rise to and separate unique plant landscapes. The first thing our sea-faring observer perceives is the harmony and beauty of the stratovolcano complex soaring 1,700 m above the Las Cañadas landing or atrium. Then his eyes drift down to the Las Cañadas atrium itself, whose crescent moon-shaped floor stands at around 2,000 m above sea level. Today the huge volcanic caldera is teeming with a network of smaller volcanic mouths, lava flows from Teide and Pico Viejo and their peripheral domes - lavas that range from light flows to viscid discharges of obsidian blocks - and with plains of fine alluvial and endorheic deposits trapped and interspersed between those lavas. Next, peering through a spike of rocky, rune-shaped spires that divide the atrium in two, the observer sees Los Roques de Garcia, and closing the complex to the south, the rest of the distinctly linear and slightly arched volcanic edifice emerging from Teide; this edifice is affected by the Las Cañadas Caldera, more than 2,700 m tall at its highest point, an asymmetrical edifice that has a pronounced slope partially covered by large amounts of debris, and to the south it slopes sharply toward the middle heights and even toward the nearby shoreline.

La Fortaleza wall and Los Guancheros dale

TEIDE
PARQUE NACIONAL

This area is also covered by medium-sized and small forms like lava flows, ridges, cones, craters, volcano fields, domes, fissures, walls, taluses, plains, blocks, needles, tubes, jameos, channels, badlands and lahars, all of which are in stark relief.

The landscapes found on Teide are broadly defined by their major relief elements, such as the caldera and the stratovolcano, and in more detail by elements like the culmination of the great stratovolcano in the recent lava cone, by the black lava flows that spill over its flanks, by the double stratovolcano's ancient lava flows, by the peripheral domes and their flows, by the cones of the smaller parasite apparatus, by the mouths and lavas of the historic Las Narices del Teide eruption, by the large and complex crater at the top of Pico Viejo which constitutes one of the most remarkable parts of the complex, by the Los Roques ridge, by the different scarps and talus of Las Cañadas, by the domatic mesas of this edifice, by the marks left by torrential incisions and rock flows, by the alluvial and endorheic deposits.

The extensive Las Cañadas scarp has a characteristic composition and layout: from east to west it starts with alternating layers of lava flows and explosion debris, followed by an arc of pumice deposits, then outflow deposits, then it is raised by a central area of domes and massive flows before continuing with discontinuous flows cut by dikes and crowned with mesas. This group of landscape elements reveals the different phases of construction and remodelling that the entire volcanic complex has undergone and accumulates a nurtured geo-diversity in a coherent system.

Pico Cabras or Echecere

Sharp, strong colours come alive under the noonday sun: greys, blacks, whites, reds, browns, ochres, sometimes even shades of blue, in addition to the bright greens of the *retamas*, the undertones of the *apagados* and *codesos*, the intense colours of the *margaritas* and the yellows of the *hierba pajonera*. The strong colours of the landscape reveal its unique and powerful nature. This power can be seen by observers able to distinguish between the landscapes; there are burgeoning elements - depending on the scale on which we observe - inserted among the gnarled lava flows, pumice, sediments, etc. that appear to be natural "gardens" enclosed in metric spaces, and there is the broader associations of groups of elements according to the largest formations and communities. These associations are entirely differentiated by altitude, by the nature of the island within the Island and by the area created by the compound edifice in this volcanic cupola.

The dynamic landscape evolves over time, principally due to eruptions. A visit to the top of Teide with its fumaroles, or to a domatic crater with its lavas stretched by the friction of viscous outflow, or to Las Narices del Teide, a structure displaying the force of a recent eruption, or an observation of the black flows or of the southwest volcano field, allows us to see cones and lavas that seem to have been frozen in a recent eruption, the current formations have the appearance of an abruptly interrupted dynamism. There is also dynamism in the way erosion has shaped the forms, which can be seen in the Corbata del Teide torrent or in the debris talus on the Las Cañadas wall, indicators of different climatic periods after the opening of the caldera and the edification of the stratovolcano.

The distribution of its peculiar high-altitude vegetation-influenced by its rocky soil, the varying humidity in different places, the stratified climate and the shadows and sunny spots on the mountain, as well as the ancient pastures and the most recent eruptions - show high levels of natural harmony with that substrate and a liveliness that contradicts the superficial impression of sterility in a rocky, cold and dry environment. In addition, throughout the year the Teide landscape goes through a phenological variation filled with pronounced contrasts that is especially remarkable considering that the island is known precisely for its mild seasons.

Use of natural resources

The ways that the natural resources have been used over time are related to water, apiculture, the extraction of coloured soil and the gathering of flowers as well as firewood and dry culm. These activities are regulated in section 11 of Decree 153/2002, October 24, approving the Teide National Park's Management and Usage Administration Plan.

Atrium and Las Cañadas wall

Rug made from flowers and coloured soils

El Riachuelo gallery

The importance of these uses and the methods used to benefit from them are described in the following section:

Extraction of coloured soils and the recollection of flowers

For more than a century, multi-coloured soils and different species of flowers from the National Park have been used to create artistic "carpets" to decorate the Town Hall Plaza and the streets of La Orotava during the celebration of the Octava del Corpus Christi, an important and unique cultural tradition of the villa.

This small-scale collection of soils and flowers is done manually on specific occasions on the periphery of Teide National Park and on the sides of the county roads that pass through it, taking advantage of naturally occurring soil run-off.

The collection is done with authorisation by the Administration which establishes where they can be collected, how much and under what conditions, as well as the monitoring and supervision systems. The extraction of soils and flowers that are in reserve zones in the Park for restricted use is prohibited.

Water use

This resource is accessed via springs and galleries. Between the end of the 19th Century and the beginning of the 20th Century, subterranean water extracted using galleries was used for agriculture and human consumption.

The length of these galleries is generally short, the volume extracted and production small and therefore quantitatively this use was not very important when compared to the rest of the island. However, qualitatively, it was significant; first of all because of the irregular precipitation and the lack of alternative water sources at altitudes higher than 2,000 m, it was important to supply the National Park in this manner.

The exploitation of water in the Park is controlled by the Management and Usage Administration Plan. This plan monitors the legally constituted water exploitations and the volume of water that the competent organisation in the Administration authorises. Because the number of exploitations and volume of water extracted cannot be increased, there will be no new authorisations.

Apiculture

Tenerife's orographic, climatic and vegetal conditions created nomadic traditions and so the beehives have been transported from the coast to the summit for ages. The hives are moved in order to find flowering plants during the spring and

summer and adequate temperatures. At the end of autumn they are returned to their winter settlements.

Each year during five or six months, depending on the blooms, an average of 150 bee-keepers and around 1,500 hives are transported to the National Park and settled in 20 apiaries that have been authorised by the Administration and in accordance with legislation that regulates this utilisation of the Park.

The bee-keepers in Tenerife only work part-time and although their work is based on tradition, they use modern technology.

The importance of this use of the Park comes from the ancestral custom of transporting the hives to Las Cañadas. To this deeply rooted cultural factor the urban development of Tenerife and the characteristics of apiculture have to be added (an activity that has been limited to certain specific sectors), thus explaining why so many of them decide to transport the hives to the National Park every year.

The collection of firewood and dry scrub culm

The collection of firewood and dry scrub culm dust is permitted in the area of Llano La Rosa - Montaña Limón.

The collection is done manually and limited to dead scrub branches. Only small quantities are removed by inhabitants of La Orotava who have a long tradition of using the Park in this way. In the last few years this activity has declined to such an extent that no solicitudes for this activity have been submitted between 2000 and 2004.

Manipulation of a beehive

2.b History and Development

The Teide and Las Cañadas are not only a “monument” of the History of the Earth and Nature but also monuments of human history. For more than 2,000 years, two essential cultural traditions affected the formation of its landscape: the first is the North African proto-historic line, linked with the first inhabitants of the island, the Guanches, and the second is the European cultural line that starts in the Low Middle Ages of the Renaissance that later fused with the first and reaches the present day.

The first communities arrived in Tenerife, just as in the rest of the Canarian Archipelago, in the first half of the 1st millennium BC. The linguistic, anthropological and archaeological evidence indicates models from the North African proto-Berber and Berber area. These aboriginal settlements reflect the convergence of traditions that these groups brought with them with new traditions that arose from their adaptation to a singular environment, creating new cultural patterns of great anthropological value.

Living space

In the Guanche cosmography Teide represented the ultimate Sacred Mountain and was also a symbolic reference for the aborigines that lived on the other islands. Teide’s tacit importance has been maintained today by the peasant population.

The sacredness of this mountain and its surroundings was reinforced over time by various volcanic eruptions that we now know for certain were witnessed by the aborigines. This led to a reinterpretation of the volcano, emphasising its malignancy, which was recorded by the first written narratives by Europeans about the aborigines in the 15th and 16th Centuries, in consonance with the fear and superstition with which mountains were regarded in this period. In the first atlases and cartographic representations of the Atlantic islands the word “hell” was used to denominate the island.

The Canary Islands and the Teide, as its most visible element were a reference point for navigation between the Strait of Gibraltar and the Atlantic coast of Africa since Antiquity. It has been proven that the colonising peoples of the Mediterranean were interested in the Atlantic coast of Africa and that they had some knowledge of the islands.

In his encyclopaedia, Pliny the Elder (1st Century AD) indicates the existence of the insulae Fortunatae; a name that deeply rooted in the mythic tradition of the Mediterranean peoples and from then on the islands became a navigation milestone of the Atlantic in the Ancient World. As J. Delgado has indicated, the historical interests of colonising peoples were mainly focused on

the narrow coastal strip that extended from Tingi (Tangiers) in the north to the Roman colony of Sala (around Rabat) in the south. The archaeological, epigraphic, numismatic and literary imprints of the Phoenician, Punic and Roman presence clearly demonstrates this. Nevertheless, the coast that extended to the meridian was not totally unknown: there is material evidence that proves that certain coastal and insular enclaves like Mogador - Essaouira were at least known at some historical point and clues from documentation makes it likely that other islands (like the insulae Fortunatae) were also known.

These navigators must have perceived the symbolic significance of these sacred enclaves in the Atlantic with growing intensity as they advanced toward the meridian; the few times that they reached the Canary Islands, the probable limit of their explorations, they would have attributed great religious value to its highest summits, particularly Teide. The best evidence for this is found in a well known passage of Pliny (Naturalis historia VI, 202-205) integrating these islands in the classical tradition of "high places with religious connotations" and thereby leading us to believe that at some point the mountains of the Canarian Archipelago were a guide for Ancient mariners and the residence of their gods.

Over the centuries, the Canary Islands and the Teide would continue being a reference point for Atlantic navigation and therefore played fundamental role in the discovery and colonisation of America. The path that Columbus took in his search for a western route to the Indies started in Port Palos of Huelva "heading toward the Canaries". "This day's journey for Admiral Columbus in 1492 would convert the islands in an obligatory supply stop for ships during the last years of the 15th Century, the Age of Discovery, and during the 16th, the Century of Colonisation", heading to the New World.

Teide's role as a geographical reference point in the early moments of Atlantic navigation gave it "cultural importance" among European nations. Renaissance travellers and navigators emphasised the broad knowledge that existed of Tenerife's mountain, especially among hegemonic sea-faring nations (England, Holland, France and Spain). It therefore forms part of the European landscape of American discoveries and colonisation.

Evidently, Teide and Las Cañadas didn't only form part of the cosmography of the Guanches but also, and for the same reason, this area was a distinctive element of their cultural landscape. They quickly began to use the resources offered to them by they high mountain, understanding the idea of resource in its broadest sense, including material and ideological aspects. Their occupation of the summits and mountains of the islands left

Edrisi's world map

Torriani's profile of Teide

behind a large quantity of archaeological vestiges that today provide us with a unique example of the Guanche way of life and their adaptation to living in a volcanic island environment. It is logical that over 2,000 years the reason that the aborigines occupied these areas would change. The eruptions that occurred at different times after the arrival of the first settlers and the regular contact that they had with Europeans starting from the 13th Century surely modified their conception of the insular territory. The most common idea about the Guanche occupation of Las Cañadas has to do with their herding traditions.

The archaeological remains found around the Teide correspond to a temporary and seasonal human occupation. Innumerable structures have been conserved that are the remains of their modest and simple homes -huts, refuges and shelters- the majority of which were found in Las Cañadas. These sites give a unique insight into the way of life of these societies. The most common structures are related to their old living compounds (huts) that extend throughout the territory of the national Park with greater or lesser concentrations in certain areas depending upon the habitability of the surroundings or its resources. The concentration of these sites in parts of the national Park converts these areas in exceptional archaeological zones of the island; for example, Cañada Blanca, Cañada de La Grieta and La Angostura. These areas and others of interest are spatially displayed on the Archaeological map that is attached to this documentation. These ancient huts were oval or circular and generally built near rocks or natural formations of the environment. In the interior and exterior of these sites it is easy to see the vestiges of the Guanche way of life, with numerous remains of ceramic plates and lithic utensils.

Valle Chafarí archaeological excavation

Volcanic caves, crevices and tubes of appropriate dimensions were also used as living spaces or burial spots. The small hollows that are so abundant in lava flows also had their specific use, becoming a special category of Canarian archaeological sites known as escondrijos (hiding places), whose best and most representative examples have been found in these areas. This custom, initiated by the aborigines was later imitated by traditional herders. The lavic flows in Las Cañadas have become a “unique refuge” for a great quantity of aboriginal and ethnographic material that today make up a substantial part of the different museum collections on the island.

Another important practice of the Guanches that has left an imprint on the landscape is the use of obsidian. The absence of metals or other rocks on the island led its prehistoric inhabitants to use volcanic rocks, especially obsidians, to make their unique tools.

Obsidian quarry/workshop

The discoveries in this area are also often associated with death. Important sites have been found in Las Cañadas of collective or individual sepulchres with human remains, some of which have been mummified.

The processes of acculturation and transculturation that took place after the conquest of the island created peculiar social patterns. The natives were incorporated into the new economy and society fundamentally for pasturing because they knew the terrain and because of their tradition in raising livestock.

During these years new social structures were consolidated on the islands; the mountain and Teide took on a new and fundamental importance that, like the earlier era, included ways of

exploiting their resources and other ideological and symbolic reasons.

The establishment of the new society fractured the indigenous populations in two: those that lived in areas inhabited by the colonisers quickly adapted their customs and those that lived far from the European settlements continued living their traditional way of live and even maintained their own language.

New ways of understanding Teide and its surrounding area were also introduced in the first years of the European colonisation. The Medieval concept of danger was quickly replaced by the "scientific" value of the mountain and by the exploitation of its resources using concepts introduced by the socio-economic interests of the new society. Hence, after the conquest and the first years of European colonisation new behavioural patterns were developed regarding the mountain by the island population, introducing ways of using its resources that would be reflected by the territory and in distinct cultural traditions with great anthropological value. This is how different traditional uses of Teide's resources and its surrounding area emerged. These practices would develop their own characteristics and historical evolution, leaving behind their particular imprints in the landscape that would add to archaeological and ethnographic richness that had already been left behind by the original Guanche indigenous populations.

Pasturing, collecting firewood and culm, coal making and apiculture are the main uses of plant species found on the mountain. Firewood and coal were indispensable energy sources for different domestic uses and coal making on the summits lasted until the second half of the 20th Century.

The exploitation of minerals basically focused on sulphur and pumice stone. At the end of the 19th Century some businessmen legally exploiting sulphur from the crater and adapted a path from Altavista that reached La Rambleta in order to transport this mineral. In theory, the commercial exploitation of sulphur ended in 1918, however there is documentation that makes reference to illegal extraction beyond this date.

Because of the lack of roads and lorries, pumice stone was exploited in small quantities using beasts of burden, but the development of transportation, the construction of county roads and the demand for these products in agriculture and construction led to the increase of its extraction in different parts of the national Park such as Montaña Blanca, Montaña Majúa and even difficult to reach areas like the summit of Guajara.

The extraction of coloured soils and the collection of flowers in the National Park in order to create the rugs that decorate the Town Hall plaza and the streets of La Orotava during the

celebration of the Octava del Corpus Christi is a tradition brought from Italy by the Monteverde y del Castillo family who covered the outside of their house this way in 1847. In 1906 they started creating these special rugs in the Town Hall plaza in order to celebrate the visit of Alfonso XIII.

In the 17th century snow was freely collected in hollows, crevices and snowdrifts on the summit, turning to the Ice Cave when it melted at lower altitudes. The Ice Cave or Snow Cave, described in various accounts of the 17th, 18th and 19th Centuries, was a perfect natural deposit and safe place to store fresh water during the summer. The Teide and Las Cañadas guides had the custom of stopping by the grotto after coming down from the crater in order to supply themselves with water for the rest of the journey. Travellers, visitors and sulphur workers also went to the grotto for the same reason.

The exploitation of plant species, water, snow and the extraction of minerals for different reasons was interrupted by the creation of the Park in 1954, the creation of a Regulation of the protected natural space and, above all, the 1981 Reclassification Law and the Management and Usage Administration Plan in 1984.

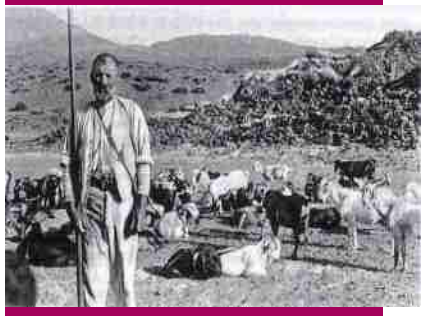
Teide and Las Cañadas have also played an important role in the History of Science and of knowledge: they have been the object and support of scientific research in various fields. Teide's proximity to Europe, its location at a crossroads of ocean routes, its ecosystems and accessibility explain why naturalists, scientists and members of the sophisticated European elite were attracted by the huge volcano.

In the 18th Century, English scientists included Teide in their experiments with references appearing in the first publications of the Royal Society of London. The first climb to its peak for scientific purposes was done by Abbot Feuillée who was important for his contributions to cartography and geodesy. The mathematician and geodesist J. Ch. Borda wrote an essay on the article with data about their population, customs and economy.

In scientific botany, the Canary Islands were the most honoured place of the 20th Century: Linneo and Masson classified and collected plants and Broussonet described new species for the Canaries, creating a basis for later studies of the flora of the islands.

In 1799, Alexander von Humboldt arrived in Tenerife and made a great contribution to science, the analysis of plant landscapes, describing the plant coverage of the island for the first time with the help of Bomplant and Broussonet's manuscript notes. The panorama was completed by Bory de Saint-Vicent who

TEIDE
PARQUE NACIONAL



Pasturing in Las Cañadas

Collecting firewood

created the first printed account of plants and animals in the Canary Islands.

Studies that have been done on Teide have made great contributions to volcanology and, more specifically, on the creation of volcanic calderas. The founder of scientific volcanology, Leopold von Buch, visited the islands in 1815 and carried out the first climatological and geological studies of the archipelago, coining terms such as “caldera”. He also came up with the first theory explaining the creation of Las Cañadas, the “elevation craters” theory and attributed for the first time the creation of La Orotava Valley to a giant landslide. Lyell, one of the fathers of geology, also visited the island and included his work on Tenerife, Teide and other places in the Canaries in his magnum opus. The Germans Fritsch, Hartung and Reiss elaborated a study and a map of geology in Tenerife.

The study of Canarian nature by two important researchers, S. Berthelot and Ph. P. Webb, resulted in a French publication of one of the most important naturalist studies of the 19th Century: The Natural History of the Canary Islands. E. Haeckel, founder of the science of ecology notes his stay on the island in his book From Tenerife to Sinai.

The excellent conditions that Mt. Teide and Las Cañadas offer as observation points led to the visit of the Astronomer Charles Piazzi Smyth and his wife Anne Duncan in the 1850s and also to that of Jean Mascart the following century. Las Cañadas has been consolidated as a privileged site for astronomical research by the installation of observatories by the Astrophysics Institute of the Canary Islands (IAC). The exceptional meteorological conditions in Las Cañadas also awoke great scientific interest in the 19th Century, leading in 1909 to the installation of pre-fabricated houses in Cañada de La Grieta, donated by Emperor Willhem II of Germany in order to carry out agrological studies. It has also led to the installation of the Izaña Atmospheric Observatory, the principle North Atlantic reference point for the measurement and monitoring of global atmospheric pollution.

In the second half of the 20th Century Teide became one of the first nature tourism centres; the first tourist guides of the archipelago were published in this period and the stories of O. Stone and G. Grahan-Toler projected the construction of the Altavista Refuge, the first facility built on Mt. Teide specifically for tourism.

The climate of Las Cañadas was considered to be healthy by the inhabitants of the island. From this belief led to a sort of custom where people would climb Teide to cure certain skin diseases such as psoriasis, parapsoriasis and leukoderma,

respiratory diseases like asthma and general diseases such as anaemia. From a medical point of view, the dryness of the climate and the absence of allergenics helped to cure these ailments.

Since the inhabitants of La Orotava and other parts of the island demanded the creation of a sanatorium, an Anti-Tuberculosis Hospital was started in 1922 with the construction of the doctor's house and stables, but the rest of the project was never carried out. Because of this use today it is still called El Sanatorio (the sanatorium).

In order to exploit the natural resources, exchange products, explore and carry out research in Las Cañadas, goat herders, coal makers, bee-keepers, snow collectors, firewood collectors, gangocheros, scientists and adventurers used the paths that connect the north and south of Tenerife via the summit. The most important of these was the Camino de Chasna, which was economically important until the first half of the 20th Century, when the road from La Orotava to Vilaflor and the one between La Esperanza and El Portillo began to be used (the Chío road was finished at the beginning of the 1970s). The trails and paths used today by visitors of the National Park were open connections in pre-historic and historic times.

El Portillo was created from the spatial configuration of the road that connects La Orotava and Vilaflor. As a consequence of tourism between 1955 and 1967, plots of land belonging to the Municipal Government of La Orotava were acquired via concession, donation or purchase in order to construct the Parador de Tourismo de Las Cañadas del Teide, La Ermita de Las Nieves, the Teide cable car, the DISA Service Station and the Montaña Rajada telephone relay.

Siete Cañadas trail