

DUNES ^{of} MASPALOMAS

Special Natural Reservation

GRAN CANARIA - CANARY ISLAND



RUBÉN NARANJO y MANOLO CARDONA

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In the broad scope of the environment's education, there are two aspects to be differentiated from each other: The progressive formation and education of our people, making continuous forward movement, and, on the other side, the working out of documents, which allow our visitors –each time larger and numerous– to recognize and to judge rightly the value of our natural resources.

It was time that an educator of our people with recognized experience, like Rubén Naranjo, joined with Manolo Cardona, expert designer, took up the challenge, informing our visitors about the natural characteristics and cares of the place they are visiting, incorporating this environment information to the "commercial touristic universe", this great industry which operates on our territory now and in the future years.

And the selected place for said purpose is the Natural Special Reservation of the Dunes of Maspalomas, which is the ideal place for this aim, for it joins together a whole series of factors which make it unique in its kind from many points of view.

First, it gives shelter to a fragile natural patrimony, unusual on the Archipelago because of its landscape and biological value. Second, it joins together the biggest concentration of touristic places of the Canaries, being the cradle of the touristic development of the Island and the model of this industry. Finally, its characteristic beaches, "El Inglés" and "Maspalomas", make the two human collectives (tourists and residents) live daily together because of its high recreational use, which requires a quickly cultural adaptation to this particular environment.

Another important facet of this book is the role played as tool for the management works of the Natural Especial Reservation.

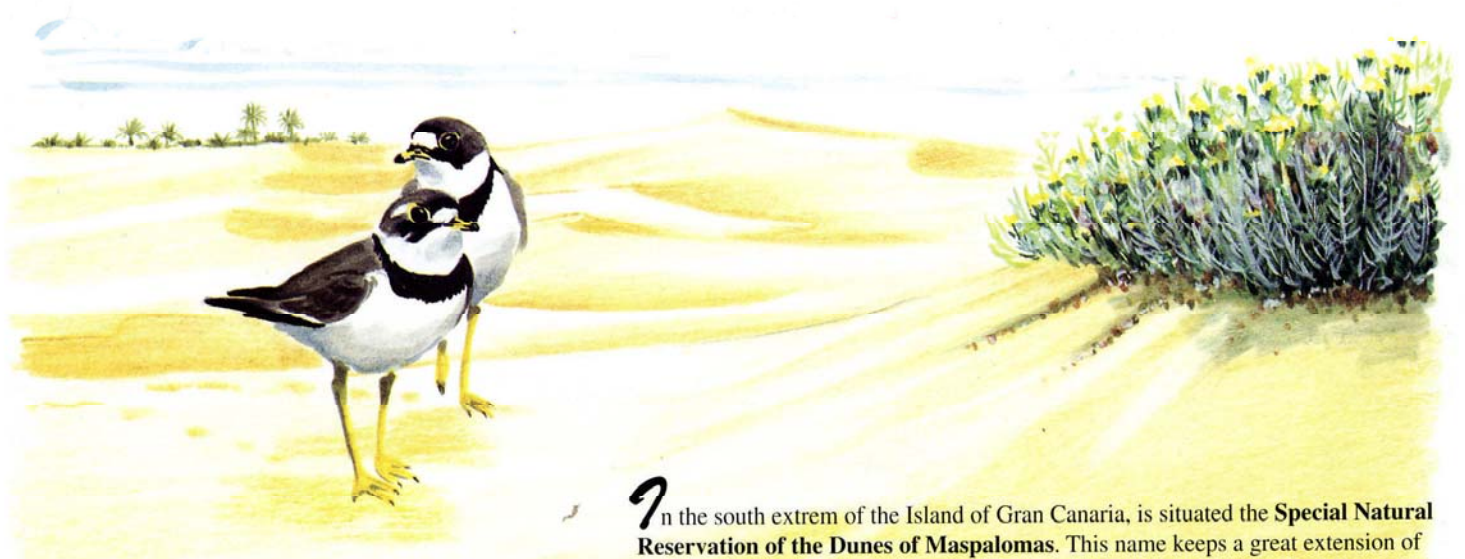
Since 1987, the Dunes and the Puddle of Maspalomas are Natural Protected Spaces and there have been made actions for the conservation and restoration from their ecological systems. For this purposes it is fundamental the collaboration of all this space's users. This book, fruit of the educative experience of the author as responsible of the Traveller School Programme during the years 1985–1990, will help for its didactic character, to the consciousness of the several school groups which will visit it, helping to create positive attitudes and, finally, accelerating the restoration process of the Special Natural Reservation.

Rubén Naranjo's work assembles another new element which revalues it: The resolution of starting a new popularizing venture without the economic help of the administration. We know about the long "travel" of this idea along different administrations, without finding neither the place nor the moment for its propagation.

Nevertheless, the decision taken still remains as a expression of the fact that everyone must assume its own projects, and that sometimes the helping of the institutions is not essential to make them real.

Finally, there are lots of residents and tourists who see "down in the south" only a place to enjoy sun, sex and beach. With works like that you will be also able to recognize and enjoy a unique Nature which we all must conserve.

Carlos Suárez Rodríguez
Director of the Natural Reservation
of the Dunes of Maspalomas



In the south extrem of the Island of Gran Canaria, is situated the **Special Natural Reservation of the Dunes of Maspalomas**. This name keeps a great extension of approximately 400 hc, where there is a natural landscape, the only one in the Archipelago. A great field of Dunes, a puddle and a palm-field give personality to this place, that during the last years have supported the hard hit of the human uncontrolled action. However, in spite of the grave damage of the zone, you can even recognize one sort of geomorphological, botanical and faunistical elements that make very interesting the knowledge of this natural reservation. You must even know that "there, in the south", it exists more than sun, beaches, and apartments.



Local pieces of ceramic typical of the South of Gran Canaria

The place named “Maspalomas” turns up with the history of Gran Canaria since long time ago although anybody knows its origin. The truth is that the *Chronics of the Conquest* already keep it, so that: *“the Spanish people discovered the Island of Gran Canaria in two dominiums; one in Telde and the other in Gáldar, on the other side or in the west wind...”*.

Likewise say the *Chronicas* that it was a pasture where there were many heads of cattle”.

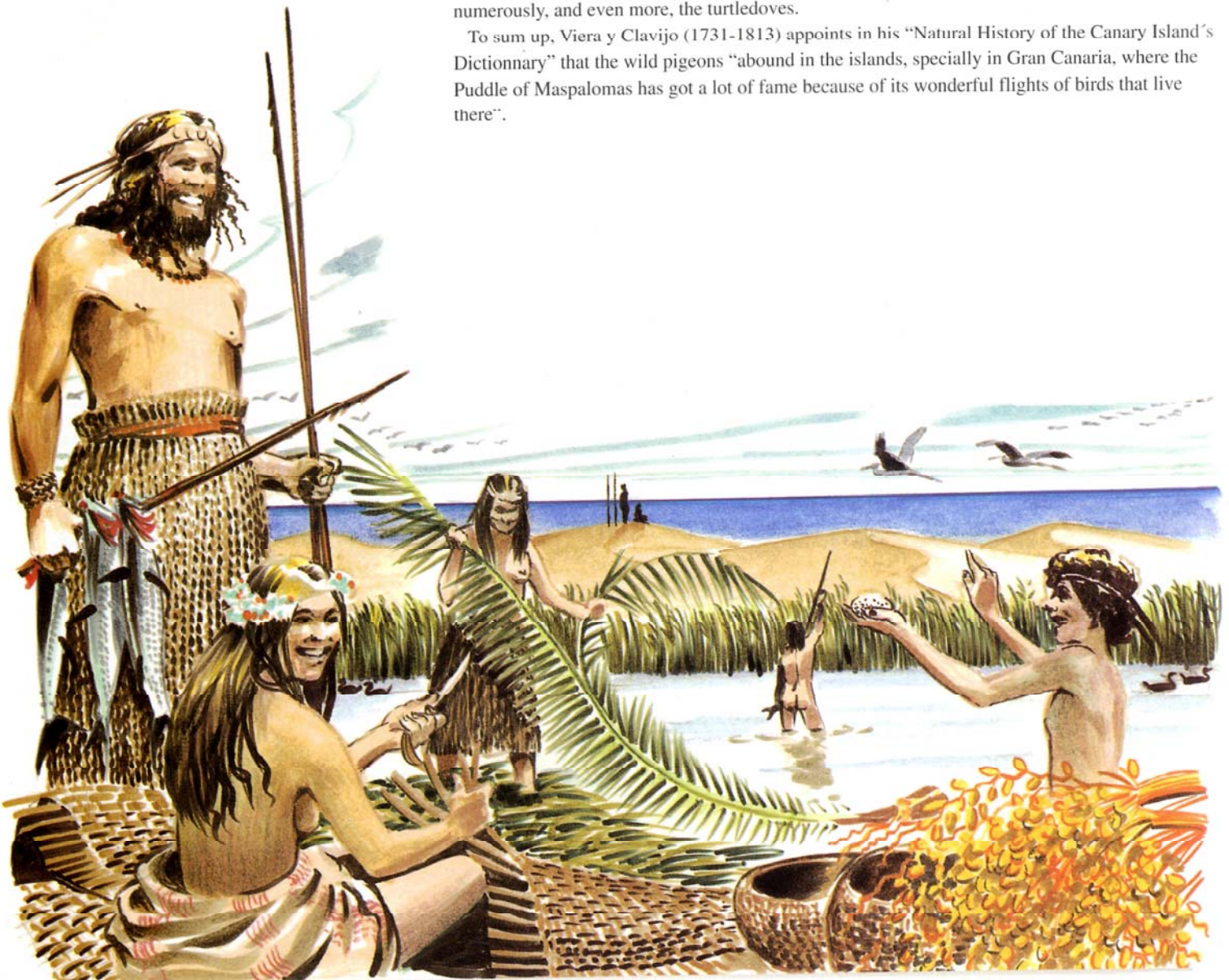
Near Maspalomas, the assent of the native population was very favorable. That’s the reason because so much archaeological remains have been found lengthwise the Fataga’s Cliff. A clear example is the population formed by numerous houses made of plants in the “Lomo Perera”, and the discovery of 142 buried bodies in “Lomo Maspalomas”, when the South road building was being made. That was one of the most spectacular necropolis located till that moment in the island.

The presence of a big population in the zone is easy to understand if we get the point of the water existence that supposed the Fataga’s Cliff, with constant contributions that nourished the puddle of Maspalomas. As the *Chronics* said, these advantageous ecological conditions allowed the existence of cattle, that was the economic base of this southly community. Even many people have also said that the Palm Field of Maspalomas had a special origin, where the old canary people planted some date palmas, or even the navigators, instead of taking water and firewood. Because of that reason, the present Palm-Field would be there where there are date- palms, canary palms and their hybrids.

Although some people wanted to relate the name of Maspalomas with one of the first pioneers of the island, “Mar de Palomar” till it turned to “Maspalomas”, it’s not probable. If we consider since the beginning, even before the distribution of the island between the conquerors, this place name appears clearly in the different manuscripts.

Without any other contributions, we can relate this place name with the abundance of birds in the zone. Curiously, even today, when the fauna has got a return, the pigeons continue being numerous, and even more, the turtledoves.

To sum up, Viera y Clavijo (1731-1813) appoints in his “*Natural History of the Canary Island’s Dictionary*” that the wild pigeons “abound in the islands, specially in Gran Canaria, where the Puddle of Maspalomas has got a lot of fame because of its wonderful flights of birds that live there”.





From 1502 we've got the reference that Hernando Colón made in his "The Admiral Mister Christopher Columbus history" from his passage through the Island: "...and coming to the Gran Canaria the 20th of May, we appear in the small barren islands; the 24th we crossed to Maspalomas, in the same island and here we took the necessary water and firewood for the travel, from here we leaved the following night towards the Indies with succesfully travel...". Later, other navigators under more dramatic circumstances, would help to define its toponymy. To take as an example, the dutch Van der Doez in 1599, with the command of 74 ships and 10,000 men destroyed the city of Las Palmas of Gran Canaria. They were obliged to beat a retreat by the canaries so they sailed along the east-coast of the island till Maspalomas, where they took water.

Although they were dutch, since then the beach at the beginning of Maspalomas has got the name of "The English" (El Inglés).

In 1886, as it is indicated in another chapter, begins the construction of the Lighthouse. It is the first outstanding human intervention in this south nook.

In 1886, in the Unredemption process of the spanish state, a lot of pieces of real state were put on sale; the present limited terrains by the natural place of Maspalomas were sold too. Till now, these "dry lands for pasture" belonged to the state, in the category of "uncultivated land"

There were 1659 hc and they were sold for 6,002 pesetas (.... pounds) to Fernando del Castillo, Conde de la Vega Grande: with this sale, one of the biggest latifundia of the island was being encouraged. Later, in this century, they would amount a great value, because of the development of the property's action, joined with the tourist advancement of the island.



Without doubt, David Bauermann, a naturalist who has gone through the Archipelago in the first decade of this century, made one of the most complete descriptions we've got of the Natural Reservation. It has got the interest that has been made by a specialist not long time ago. Bauermann indicates that "In the south extreme of the Island of Gran Canaria exists a little fringe of territory; the only one with its characteristics; and there is no other similar one in the whole Archipelago.

Situated near the coast, is the most similar to a swamp. The Canary Islands can presume of it, where many birds live which cannot be found in any other part of the island. These birds live in a distant loneliness, completely separated from mountains and deserts on the nordest territories. This place is called "The Puddle of Maspalomas" (El Charco de Maspalomas).

Traditionally, the predominating human activities in this part of the island were the cattle (goat) and the agriculture. For many years the landscape of the proximities of Maspalomas were the tomatoe's cultivation.

Big extensions planted in the open air take advantage of the good climatic conditions.

During those years the buildings were scarce; the only construction was the "Condal House" of San Fernando, little rooms where the sharecroppers –who worked in the tomatoe's cultivation– lived under precarious conditions.

According to the oral tradition, (from the fishermen of the zone) when it was the end of the crop and the cattle was joined, in the puddle of Maspalomas were organized great celebrations. One of the elements they consumed, were the captured fishes in this puddle, by the methode of the "envarbasca". With this methode you must throw in the water milk, joined with a sort of thistle. Then the fish were drugged and easily captured.

The touristic's development in the Sixties will totally change the living conditions of the South and of the whole Archipelago. Appeared in the last century in the island's capital. The urbanization of this zone started because of the best climatic and natural conditions of the canary south extreme, abounding in sunny hours (295 sunny days per year), and with beautiful beaches.

In spite of having convoked for an international contest of ideas in order to plan the urbanistic occupation of the coast, the fact is that the later intervention in the zone was "uncontrolled".

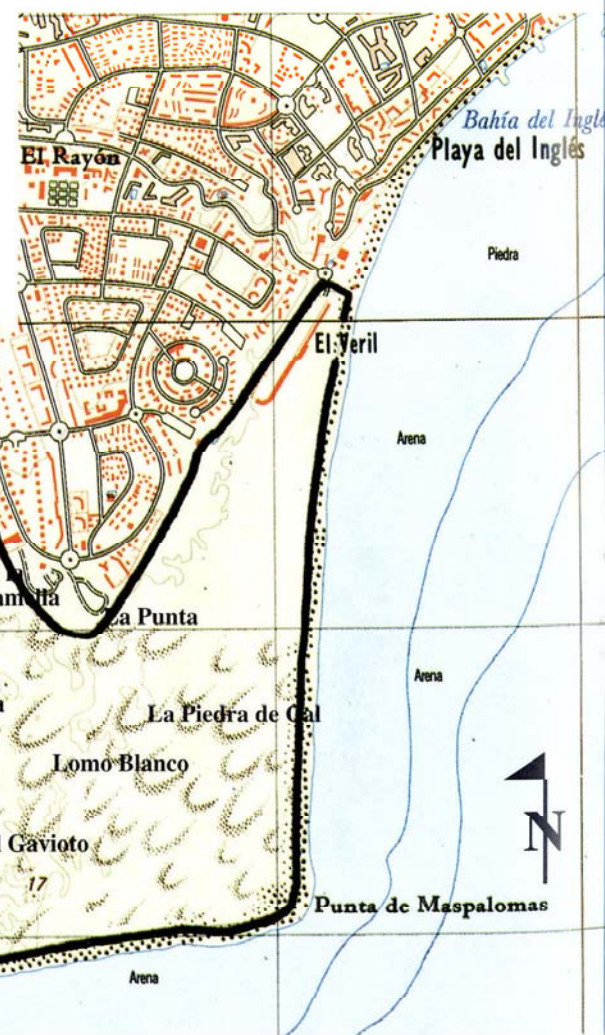
From this date on, the progressive urbanization of the whole sector of the South of Gran Canaria started on; in was the biggest particular property of the Island.

Already in 1.964, the zones of the Puddle and the Palm-Field were urbanized: Around the Puddle certain bungalows were built and in the Palm-Field the first hotel of the zone was constructed: The Oasis.

CANARY ARCHIPIELAGO



CANARY ISLAND



Escala Gráfica.



Since those years the city planning development would not finish, causing grave alterations. There are many reasons that influence upon this hard ambiental action in the whole zone today considered as protected.

Even if at the beginning the idea of building in the Dunes was descarted, the truth is that in Maspalomas was raised a great hotel in the middle of them, and in the part of "El Inglés", a parking and a shopping center; that supposed a significant alteration of this space. But even graver is the construction of a big building and a breakwater in the beach of "Las Burras"; this supposes according to the studies that have been made, the alteration of the contributions of sand which receives the "Playa del Inglés". That would bring the beach and the Field of Dunes into a progressive degradation. Many Palms should also be wrested in the Palm-Field; then the plan of the different streets and the construction of buildings could have been made changing the original physiognomy.

But without any doubt, the Puddle would be the most affected space, because of the big number of lifes it has inside, and because of its particular fragility. The nearness of the constructions, the duct of the cliff, the extraction of subterranean sweet water, the whorl of rabbish, the fire, the unceasing human-traffic... hace caused the extinction of a part of the Fauna and Flora, where many fish have also died.

The hardships of regeneration of the Puddle consists in his dredging and cleaning. This plan began in 1987 not without polemics.

In 1982 the Puddle was provisionally protected and in 1987 the whole zone was declared by the Law of the Natural Canary Spaces as a natural and protected place. This event opened the hopes of preserving and recovering this single place which nearly disappeared because of the uncontrolled human action. The qualification "protected space" was also joined with the creation of the Natural Place Association "Dunas de Maspalomas" in 1988, in addition to the respective "use and management governing Plan". These events have determinted the progressive regeneration of a so valorous natural place.



The 5th of 1989 in agreement with the worldwide day of the Environment, "Hotel Dunas" was blown up. The Hotel was a middle constructed establishment. It was situated in the space of the Dunes, near the Puddle. This event, aside from the spectacular and the controversy, supposed a definitive step in the way of regeneration of the place.

We've seen the results of these actions since the beginning of the 90 decade in order to send back the original ambiental conditions and the works of inventory and investigation of the resources.



Maspalomas, 1925

Maspalomas, 1987



If we go through the zone of Maspalomas and fix the view in the south extreme of the island, we'll notice a building over the other more recent ones. A great tower which during the night shows this point to all the ships that furrow the sea near Gran Canaria. The Lighthouse of Maspalomas. With two floors and the big tower, it presents an image joint with this landscape, with a history of already 100 years.

Although it seems much more recent, the history of the Lighthouse of Maspalomas began in 1861. Since then, there is a report from the Committee of Lighthouses about the maritime lighting of the Canary Islands, where the construction of this Lighthouse has got the highest priority.

"Its destination was for warning and guiding ships at sea from Africa, Australia and America, and also for the ships that worked near the coast of Africa...".

The one who made this literary work was Juan de León y Castillo. If we read this book, we will find details which will bring us near the little history of this lighthouse. The place where the tower is built was selected as the suitable because it was near the mouth of the cliff, in a zone free from Dunes, with an underground which allowed the requiered foundations. It steps 2.20 metres up over the high tide, with a tower of 56 metres high till its focus.

But the picture of this part of the island was, during those years, very different as today's one. This zone was "almost unknown, even for the same sons of the island, because of its south situation, the most depopulated and where only existed little country houses without any importance".

There were no communication lines and it was necessary to build a little dock to receive the materials of the island's capital. The construction began in 1886, although many modifications had to be done because of the problems with the foundations and with the selected stones for the tower.



Modelo númº 1º
Cuadro de los precios que se asignan a los jornales
de operarios y medios de transporte.

	Pesetas	Observaciones
Un mozo o muchacho	1,00	en los jornales asignados a los defensores
Un brazo	1,50	de operarios se les
Champeros	4,00	considera jornales
Oficial de obra	2,50	de los herramientas
Un carpintero	3,50	de útiles propios
Carpintero	3,00	del trabajo que
Oficial de carpintero	4,00	deben jornales
Carpintero	4,00	
Herrero	2,00	de los jornales de los
	2,00	medios de transporte
	7,50	de incluir el jornal
	1000,00	del conductor, así
		como en los folios de
	10,00	lanchones y de la
	50,00	folios se comprende
		costo del personal que
		sona para las obras
		mantenim.

Operarios:
 Un mozo o muchacho
 Un brazo
 Champeros
 Oficial de obra
 Un carpintero
 Carpintero
 Oficial de carpintero
 Carpintero
 Herrero

Medios de transporte:
 Caballería menor
 Idem mayor
 Carro de una caballería
 Zuleta de 40 toneladas, por mes
 Zuleta con 8 marineros y un patron, del porte de 5 toneladas
 Zuleta con 8 idem y un patron, y del porte de 10 toneladas

Las Palmas 18 de Junio de 1884.
 Excmo. Sr. D. Juan de León y Castillo
 El Ingeniero jefe de la Pro.
 Juan de León y Castillo

Although this construction was destined for a lighthouse far away from the inhabited nucleus, they tried to give to the tower the fitting proportions and a great aspect. Towards the harmony in its entirety, the house has got two floors because of its high, which makes it very unusual. The house was disposed for the engineer and three lighthouse keepers, joined with the creation of other rooms. Beside this tower, it was build another to be used as warehouse; at the beginning it served the workmen as a refuge . The building was made according to the constructions systems of the country: the tower was made with a sort of stone extracted from a near quarry and finally performed by the artisan workmen.

Collected document from the original report of the engineer Mr. Juan de León y Castillo

The whole budget of the building was 314,755.90 pesetas (1630 L Pounds); we must also count the 990 pesetas (5L Pounds) that supposed the expropriation of the terrains for the construction as well as for the creation of the right-of-way till the road.

The 1st of February of 1890, is the definitively registered in the Book of Arrangements that "the Lighthouse is illuminated". Since then, its light turns on all the nights in the south point of Gran Canaria. 100 years since that, its history value has determined its declaration as "public cultural interesting property".

Gran Canaria is a volcanic island with an antiquity of around 14 million years. Throughout this time there has been many eruptions episodes, separated by times of erosions which have made the island you can contemplate.

In respect of this geological evolution we can distinguish 2 different areas in Gran Canaria: on the one hand, a younger sector, in the North East, where there have been the most recent eruptions, since around 3000 years ago; on the other hand, in the South West, where there are the oldest volcanic materials, and there has not been registered any recent eruptions.

In view of that, the whole area of Maspalomas is founded in the oldest zone. The place we will consider is related to the sedimentary materials from the South relief of the island. This sedimentary materials are today near the coast, coming from this superior zone; they have been moved out by a great hydrographic net formed by: the Fataga´s cliff and its affluents, the cliffs of Vicentes, Ayagaures and Chamoriscan.

Through millions of years, the fluvial erosion has been wearing away, transporting the materials coming of a basin of 152 km² and then depositing them in the mouth of the Fataga. This event has made the big valley of the Fataga´s cliff, in which lower course –named Maspalomas– already limited by the sea, is the Natural Reservation of Maspalomas.

In this lower course of the Fataga´s Cliff, including the present urbanizations of San Fernando, Playa del Inglés and Maspalomas –till the same coast–, we can distinguish three geomorphological sedimentary units on one and other side of the cliff. Each one corresponds to different moments of the geological evolution of the island. From oldest to youngest, we can distinguish an *alluvium plain*, *fluvial edges* and a *field of dunes*.

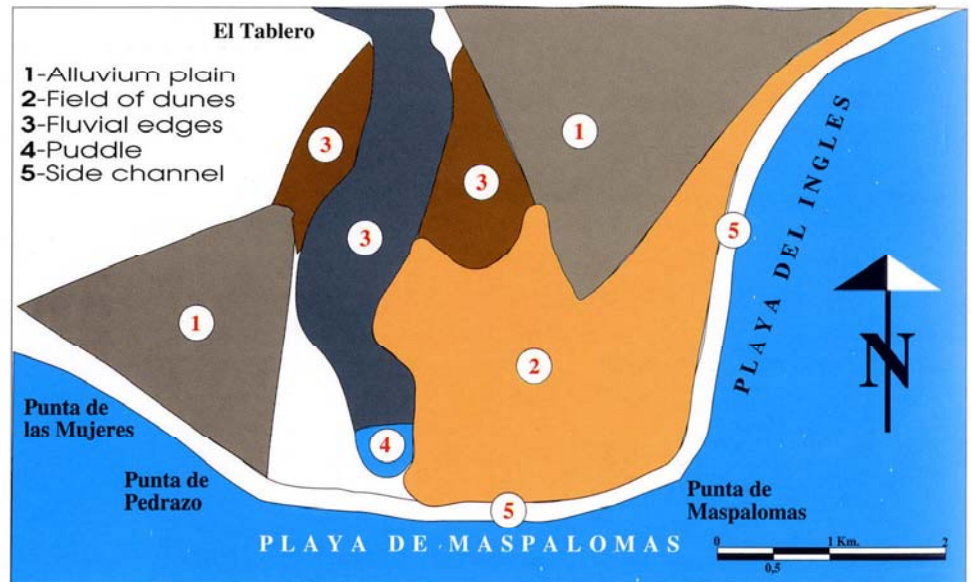
ALLUVIUM PLAIN

Over this zone, the present urbanization of San Fernando and Playa del Inglés have developed. Said space corresponds to the fragments of a big and old plain of alluvium, formed by the accumulated contributions of the cliffs which drain the higher basin.

Today, almost the only opportunity to perceive this plain is in its lower limit, in contact with the dunes of the zone.

We can observe this limit if we follow the maritime promenade that skirts the tourists urbanization.

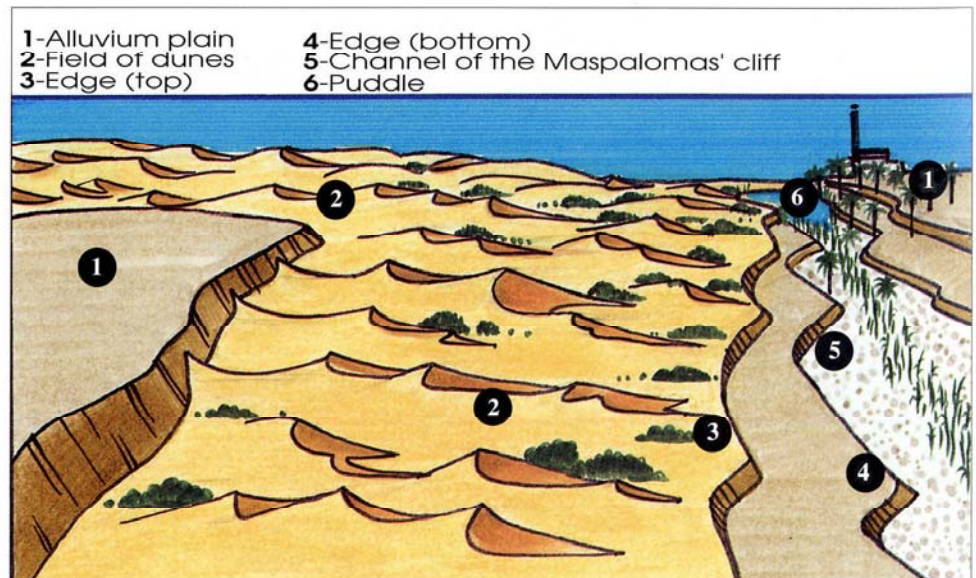
The sea, with the time, has got a sort of eustatic changes, arriving to the front of this plain. Through the plain, the maritime erosion has formed one cliff at the edge of the sea which we can found through the whole area of the maritime promenade of Playa del Inglés.



FLUVIAL EDGES

We can recognize these edges in the sides of the Maspalomas´ cliff which today is already channeled. The urbanizations Campo Internacional and the Golf Field have taken possession of some of these edges, too. You can appreciate 2 edges which correspond to different levels of the cliff´s course. One edge is older, from 4 to 6 metres over the present sea level and the other at 2 metres.

These levels of the cliff are related with the eustatic changes of the sea level: when the level falls, the cliff excavates in its river bed till the balance profile is recovered. So is the relationship of the two edges with the different sea levels.



The most showy and spectacular from the three units is, without any doubt, the Field of Dunes which takes up a surface of 4 km².

If you walk through the maritime promenade and observe the line of the coast, then you will see a beach of 6 km long from the Buenavista's cliff at the East to the mouth of the Maspalomas' cliff, at the West. This beach receives the names of "El Inglés" and "Maspalomas".

Precisely, from the beach on, the Dunes of Maspalomas have got their origin.

How was formed the Field of Dunes?

For the comprehension of the origin from the great mass of yellow sand, you must take into consideration the eustatic movements of the sea. At the end of a glaciation, there was a maritime regression, that is, the coming down of the sea level, of about 90 to 100 metres. With the backward movement of the sea, its bottom came out into the open, exposed to the wind, which piled the loose sand forming the dunes.

According to this, the piled sand that we see, forming dunes has got a marine origin and they come from the zone of the beach.

Later, under other climatological conditions, the sea increased again. We can check this event today; there are some stone bars between the dunes at 5 metres over the sea level. Then the sea descended again till its present level.

Contrary to what the people may think, the dunes are something with life. They move themselves. This can be easily checked on a windy day, because if we walked between them, we will see ourselves bombarded by thousand of sand grains. Therefore, if today we take a photo to one specific zone of the dunes and after some months we take another one in the same place, we will see that the dunes have completely changed.

The wind is responsible for this movement of dunes through the great sedimentary platform which they occupy. The sand moves forward from the edge of the beach, from East to West. Walking towards the inland, they come into the cliff and the Maspalomas' puddle.

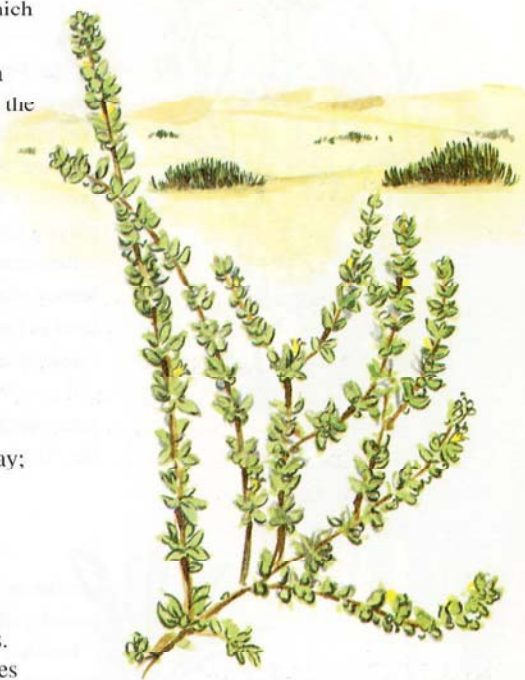
They are the Trade Winds from the North East strengthened by the sea breeze from the East or the South, the ones which "push" the sand into the inland.

The sand advances towards the West because of the push of the wind, with a "speed" from 2 or 5 metres per year, and it lines up from North to South in perpendicular direction. But ...

How are the Dunes formed?

The wind blows from the beach side and it carries the sand which stays around some plants off: the "balancón" (*Traganum moquini*). This bush, through its roots, branches and leaves "catches" the successive contributions of sand, fastened by the new butts of the plant.

The big sand accumulation give place to the separation of the sand from these bushes, advancing, pushed by the wind forming a sort of dunes: the "barjanas". Inside the Field of Dunes of Maspalomas, is possible to distinguish some series of sectors which are marked because of the particular evolution and sand movements.



Balancón
(*Traganum moquini*)





Salado (Salted)

(Schizogyne glaberrima)

7 The 3 main areas from this natural place (dunes, puddle and palm field) have got a variety of botanical species with a peculiar interest, due to the fact that they occupy unique or very scarce places in the Archipelago.

Inside the Field of Dunes, we can distinguish a kind of plants with the particularity of developing on sandy grounds. They are named the "psammófilas". One of the characteristic species of the coast sector, which also plays a fundamental role in the dune's formation is the "balancón" (*Traganum moquini*).

Between the dunes, in the nearest sector to the coast, there are some elyptical surfaces, where there is the habitat of one sort of plants. One of them occupies a big part of the space, where the salt's content is big: It is a kind of "juncia" (*Cyperus laevigatus*). We can even found other species, like the "balancón", the "pincho" (*Salsola kali*), the "brusquilla" (*Suaeda vermiculata*) and the "aulaga" (*Launaea arborescens*)(1).

If we contemplate from the plain side of Playa del Inglés the Field of Dunes, we will see some vegetation areas situated towards the inner part and aloof from the marine influence. There is a wood from which a bush, the "tarajal" (*Tamarix canariensis*) and some palms (*Phoenix canariensis*) stick out..

7 In the more opened areas there are also the "balos" (*Plocama pendula*)(2), helped in its dispersion by the lizards, which eat their fruits.

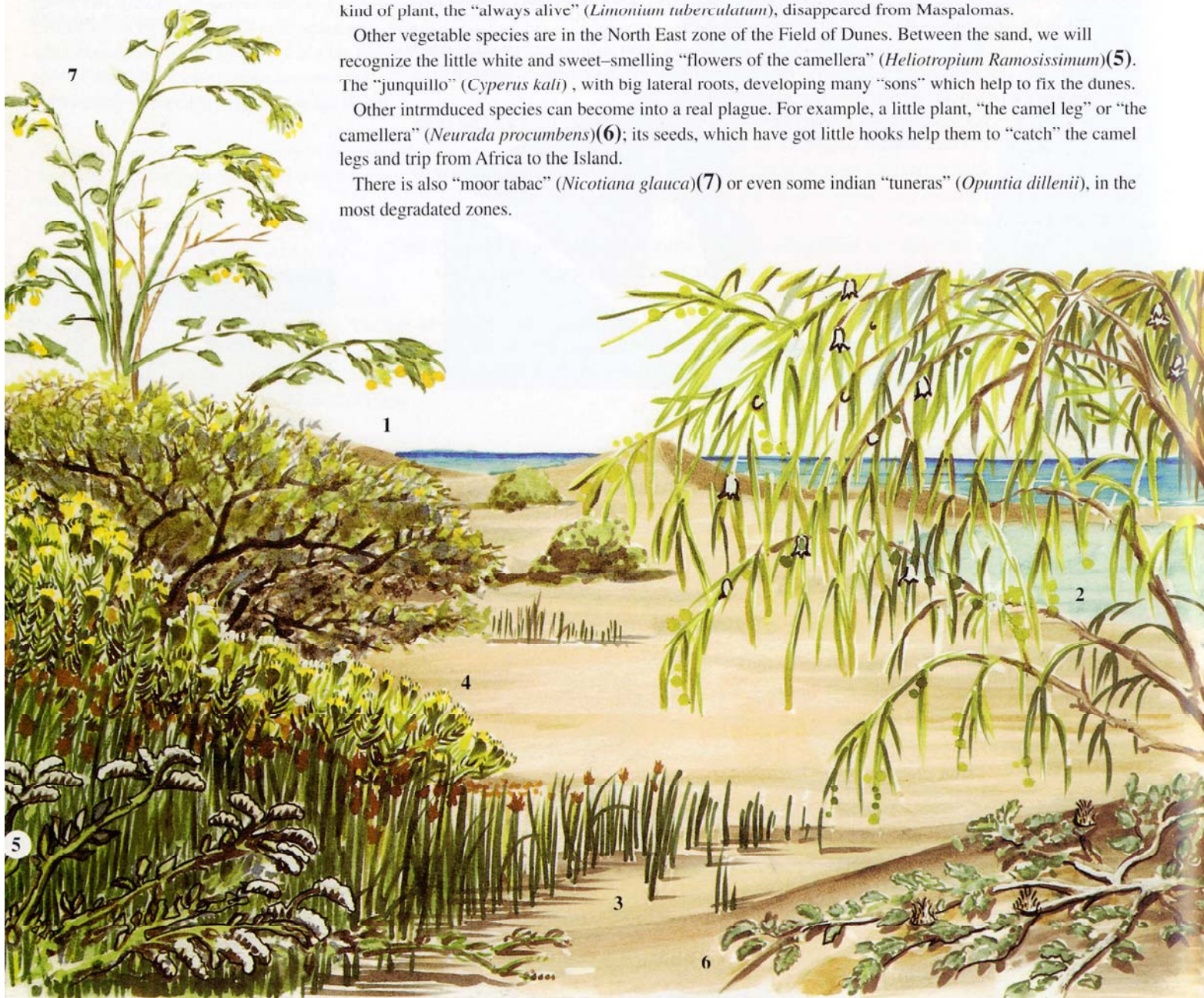
Besides this stronger plants, there are other ones which develop in different zones, easy to recognize because of the humidity degree; this places are the "juncos" (*Juncus acutus*)(3).

We can also see the "salted" (*Schizogyne glaberrima*)(4), local name of Gran Canaria. But another previous kind of plant, the "always alive" (*Limonium tuberculatum*), disappeared from Maspalomas.

Other vegetable species are in the North East zone of the Field of Dunes. Between the sand, we will recognize the little white and sweet-smelling "flowers of the camellera" (*Heliotropium Ramosissimum*)(5). The "junquillo" (*Cyperus kali*), with big lateral roots, developing many "sons" which help to fix the dunes.

Other intrduced species can become into a real plague. For example, a little plant, "the camel leg" or "the camellera" (*Neurada procumbens*)(6); its seeds, which have got little hooks help them to "catch" the camel legs and trip from Africa to the Island.

There is also "moor tabac" (*Nicotiana glauca*)(7) or even some indian "tuneras" (*Opuntia dillenii*), in the most degraded zones.



Another of the outstanding elements is the Palm Field, placed in the right edge of the cliff at one side of the puddle. Actually the picture showed has nothing to do with the older one.

This great field has been reduced, divided and partially destroyed by the hotel and appartements buildings and by the surround's planning.

The only public field available is placed near the street which goes besides the cliff. In the whole zone you can only watch the remains of a more luxurian vegetation. You can see some "tarajales" (*Tamarix canariensis*)(8), "cañas"/canes (*Arundo donax*)(9) and sticking out, the palms.

Inside the palms there are the "palm" or canary palm (*Phoenix canariensis*)(10) and the "date palm" (*Phoenix dactilifera*)(11) although most of the Palm Field is formed by the hybrids of this species due to the facility that they show.

7he third natural joint, where we found an adapted vegetation to its characteristic species, is the Puddle.

This area of salty water lives on with the water contributions from the Fataga's cliff and from the sea. The vegetation is basically formed by the "phanerogamous" (*Ruppia maritima* L var *rost*) "the cryptogamous" (*Chara globularis* thill.) and "the green seaweeds" (*Cladophora cf. vadorum*). The two first are the dominating species; the presence of the "chara globularis", considered as extinguished, shows the effective puddle's recuperation.

We also must mark the close relationship between the aquatic vegetation and the fauna, with regard to the invertebrates as well as to the fish and birds.

Taking part in the vegetal circle of the puddle, and playing an important role giving refuge and place for nest-building to the bird fauna, there are many kind of plants: The reed (*Phragmites australis*)(12), the bulrush (*Typha latifolia*)(13) and longer far away, the rushes (*Juncus* spp.).

Far away from the coast there are the tarajales (*Tamarix canariensis*), even developing little woods.



Without any doubt, one of the most outstanding natural aspects of this zone is its Fauna, its bird's fauna. Although till today there is part of the geological building left, the dunes, and a little sample of the vegetal covering, the palm-field, we cannot say the same of the birds which lived or arrived in the Maspaloma's puddle.

Therefore, the puddle of Maspalomas made an ecological system unique of its kind in the canary Archipiélago. It served for migratory birds as point to stop during their route from Europe towards the african continent and vicè versa. Due to this, the birds which have been during the winter in the continental Africa, in the South of the Sahara, far away from the cold european's winter began a trip towards the North, towards Europe. After rearing and living during the summer in this continent, they returned again when the autumn began.

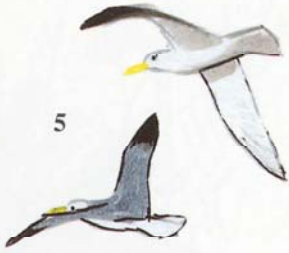
During this long travel, some places where they could bring back their energies were completely necessary. These places were more important due to the fact that near the Archipiélago there are not many natural spaces for these birds; there is only the great area of the Sahara. Even in the islands, there are not water areas with so special Flora and Fauna that allow the stablishment or the short stay of the birds.

Therefore, you can distinguish 3 zones in the Fauna's distribution. The great field of dunes, with vegetable areas which characterize it, the palm-field and the puddle. Another zone would be the coast line of the beach, although today, because of the people, it is not possible to detect any other living beings but the bathers.

Depending on the period of the year we visit the puddle there is one kind of birds or another. The months of spring and autumn are the better ones to observe some of the birds of passage.

There are several birds which visit this corner of the south of Gran Canaria, in spite of the environment's transformation and the recovery works which began at the 80 decade.

Some of them are habitual from this place, and they can be seen very frecuently at the sides of the puddle, eating invertebrates which live in the mud of the edge. Most of these invertebrates are the "limfócolas", birds which live around swamped places, looking for food between the mud and the shallow water. There are lot o species in the zone; some of them are the "nidificantes" (the ones which make nest buildings).



Between all the birds of the whole Reservation, here you can see related the species which make nests (A) either in the zone or in the island; the considered migratory birds which are only occasionally (B) and the already disappeared but with possible recovery (C).

A

- (1)-Little eagle (*Buteo buteo insularum*).
- (2)-Krestle (*Falco tinnunculus canariensis*)
- (3)-Water young hen (*Gallinula chloropus chloropus*)
- Chorlitejo chico (*Charadrius dubius curonicus*)
- (4)-Chorlitejo patinegro (*Charadrius alexandrinus curonicus*)
- (5)-Kind of seagull (*Larus argentatus*)
- (6)-Pigeon (*Columba livia canariensis*)
- (7)-Tórtola común (*Streptopelia turtur turtur*)
- Kind of Turteldove (*Streptopelia risoria*)
- (8)-Avurrión or vencejo unicolor (*Apus unicolor unicolor*)
- (9)-Avurrión or vencejo pálido (*Apus pallidus*)
- (10)-Abobito (*Upupa epops*)
- (11)-Little Owl (*Asio otus canariensis*)
- Starling (*Sturnus vulgaris*)
- (12)-Caminero o Bisbita Caminero (*Anthus berthelotii berthelotii*)
- (13)-Alpispá (*Motacilla cinerea canariensis*)
- (14)-Chirrero o curruca tomillera (*Sylvia conspicillata*)
- (15)-Capirotillo o curruca cabecinegra (*Sylvia melanocephala*)
- (16)-Hornera o mosquitero común (*Phylloscopus collybita canariensis*)
- (17)-Blackbird (*Turdus merula*)
- (18)-Alcairón o Alcaudón real (*Lanius excubitor koenigi*)
- (19)-Goldfinch (*Carduelis carduelis parva*)
- Bullfinch (*Bucanetes githagineus amantum*)
- (20)-Kind of Sparrow (*Passer hispaniolensis hispaniolensis*)
- (21)-Kind of Sparrow (*Passer montanus*)
- Coot (*Fulica atra*)

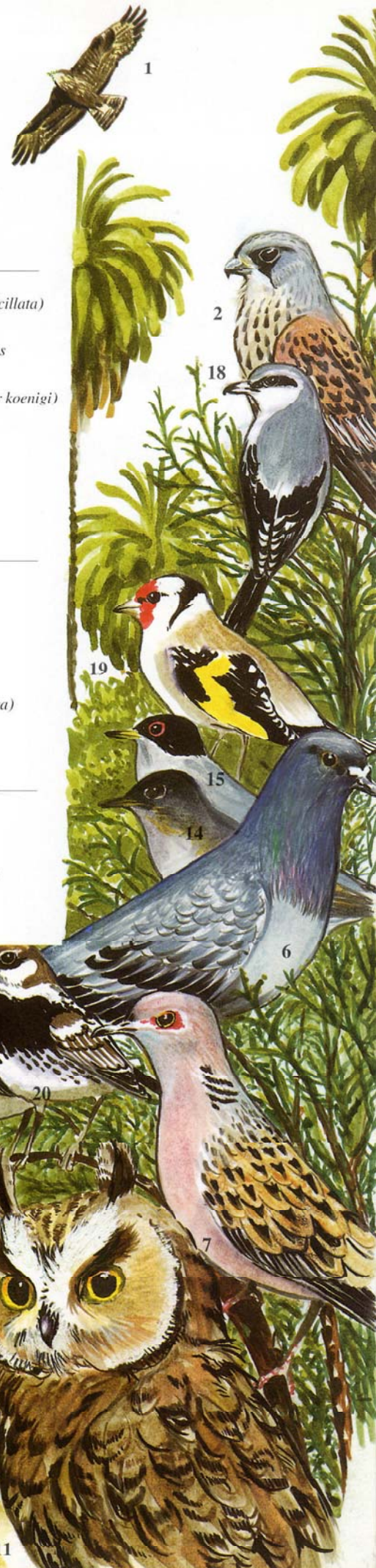
B

- (22)-Heron (*Ardea cinerea*).
- (23)-Egret (*Egretta garzetta*)
- (24)-Ostrero (*Haematopus ostralegus*)
- (25)-Kind of Storch (*Himantopus himantopus*)
- (26)-Correlimos tridáctilo (*Calidris alba*)
- Correlimos común (*Calidris alpina*)
- Correlimos gordo (*Calidris canutus*)
- Correlimos zarapitín (*Calidris ferruginea*)
- (27)-Kind of plover (*Charadrius hiaticula*)
- (28)-Plover (*Pluvialis squatarola*)
- Vuelvepedras (*Arenaria interpres*)
- (29)-Archibebe común (*Tringa totanus*)
- Archibebe claro (*Tringa nebularia*)
- Andarrios chico (*Actitis hypoleucos*)
- (30)-Zarapito trinador (*Numenius phaeopus*)
- Seagull (*Larus fuscus*)
- Swift (*Apus apus*)
- (31)-Swallow (*Hirundo rustica*)
- Avión zapador (*Riparia riparia*)
- Lavandera blanca (*Motacilla alba alba*)
- Lavandera cascadeña (*Motacilla cinerea cinerea*)
- Tejedor de fuego (*Euplectes oryx*)
- Morito (*Plegadis falcinellus*)
- Martín pescador (*Alcedo atthis*)

C

Species which today do not exist

- Eagle (*Pandion haliaetus haliaetus*).
- Stone curlew (*Burhinus oedicnemus*)
- Corredor (*Cursorius cursor bannermani*)
- Charrán común (*Sterna hirundo hirundo*)
- Cerceta pardilla (*Marmaronetta unguisrostris*)





The Maspalomas' Puddle shelters several fish, adapted to live in its particular health conditions. Its observation isn't easy, because the water is very dark. Although sometimes we can see some movements at its surface. It has been identified in the puddle 11 different species of fish. The "lebranco" or "lisa" (*Liza aurata*)(1), is the main specie, for its greater resistance to the environment and low selectivity to feed itself.

Another group of fish would be represented by the "Anguila" (*Anguilla anguilla*)(2) which has got a greater speciality in its diet. Finally, the third group would be formed by a specie which belongs to the "Poeálidos family" named Guppis (*Poecilia reticulata*) fig 1, tropical fish from sweet water, introduced by artificial way, and with nourishing habits alike the first group.

This list finishes with the next species: "Sargo blanco" (*Diplodus sargus cadenati*)(3), "sargo breado" (*Diplodus cervinus cervinus*)(4), "galana" (*Oblada melanura*)(5). Baila (*Dicentrarchus punctatus*), Palometa (*Trachinotus ovatus*)(6), Vaqueta (*Centrolabrus trutta*)(7), Barriguda (*Parablennius parvicornis*)(8), Caboso (*Gobius niger niger*)(9), Saiffa (*Diplodus vulgaris*)(10).

We must finally indicate that the big natural death-rate of the different fish groups are determined by the limited nourishment resource. The scarce depth joint with the thick vegetal layer, the intensity of the sun radiation and the high water temperature, produced during some critical moments a fall of the necessary oxygen for the fish.

This brings to a really natural death-rate. Otherwise, the fish are responsible for the control of the insect population; for example the "mosquitos".

The existence of swaped water means as well an excellent opportunity for the development of an outstanding invertebrate fauna. It shows the presence of an "Odonato", also called "dragonflies", "aquatic Bugs", several "dipterans", "coleopterons", "arachnidans", and even one crustacean, which supposes the most important biomass between the puddle's invertebrates.



fig 1



MANOLO CARDONA '95

Having got perfectly used to the ecological conditions, some bird's species you may see in the Reservation making their nests are: "Collar's Turtledove" (*Streptopelia Risoria*)(1). "Cramer's parrot" (*Psittacula Krameri*)(2) and the "Pico de Coral" or "Astrilda Común" (*Estrilda Astrild*)(3). In this case, we are seeking of first introduced exemplaries, later wild.

Already between the dunes' vegetation it is possible to detect the presence of several bird-species as we told in the last chapter. In specific cases, we can only see them occasionally overflying the dunes (like the little eagle, the seagull...; there are also birds of passage (migratories). We can often see other birds which even make their nests.

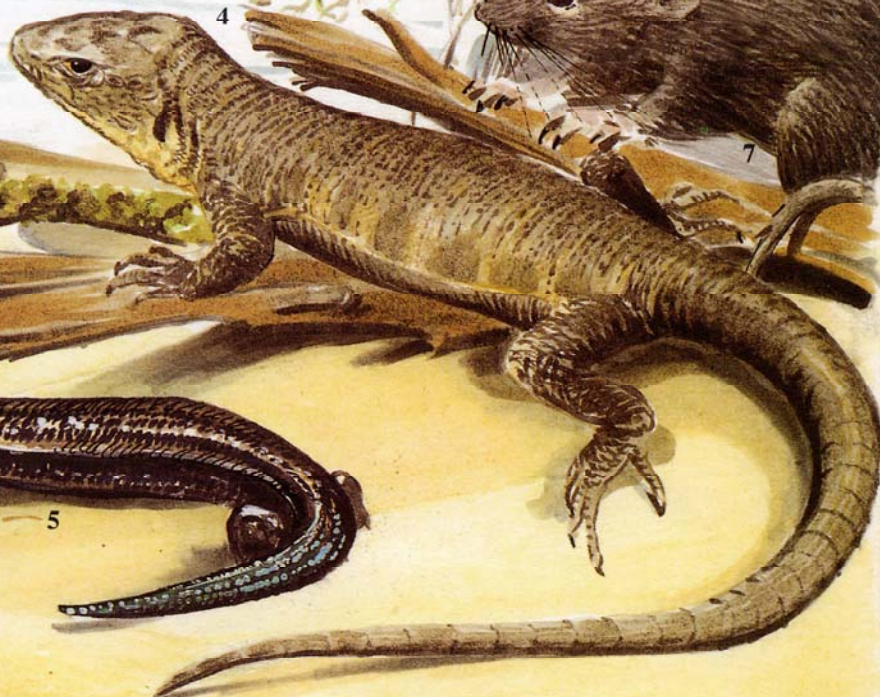
Therefore we can also notice the presence of Lizards (*Gallotia simonyi sheltoni*)(4) which leave their trail around the large expanse of sand. They mark a furrow with their tail, which becomes deeper depending on the animal. At the sides of this little furrow there are the tracks of its legs.

The life of the lizards develops specially round the gorses and even round the rushes where they find refuge below them. Their trails are marked around these plants and beside them there are a lot of excrements.

The lizards are, in a big part, responsible for the progression of the "balos". When they eat their fruits they are helping to scatter the seeds over the whole area. Other reptiles are: "the lisa" (*Chalcides sexlinea*)(5) and the "peringuén" (*Tarentola delandii boettgeri*).

The rabbits (*Oryctolagus cuniculus*)(6) are easy to detect because of their excrements, which form real piles on the most clear surfaces, and because of the several burrows. The rabbits and the mice (*Musculus*)(7) are the introduced mammals. Other mammals which yesterday lived in this Reservation, were the bats, which suffered the results of the incontrollated use of the pesticides.

We can perceive the existence of the invertebrates along our round through the dunes. The most recognizable are the beetles which stroll over the sand leaving characteristic marks. However, being the insects the most abundant fauna with more than 125 species, the strong "sunstroke" makes that they have got high customs or live between the plants or get buried in the sand.



The place you are visiting belongs very important natural values, which give it the category of **Natural Special Reservation**. For this reason, and in order that you can enjoy them better, it would be convenient that you previously knew them.

You have at your disposal an **Interpretation Center**; there we will offer you permanently any kind of information.

The **Puddle of Maspalomas** has been used for ever as habitat of numerous –vegetal and animal– species. Likewise, due to its beautiful conditions it has been used by the migratory birds as stop–place for recovering their energies during their travels –going and coming back– to Africa.

It is very important to respect its private life not interfering its daily life. For example, we should not throw bread to the Puddle's fish for it helps to break the ecological system's balance. Taking for a walk domestic animals (dogs and cats) or letting them free, could be also very harmful, specially for the little chicken during the breeding time.

The plants which live in this place have developed certain very specialized **adaptation mechanisms** to survive under the unfavourable climatic conditions. It has helped to the appearance of local species, which interests we must protect avoiding in any case their harvesting and maltreatment.

The prolonged stay in the dunes mean a general custom which contributes to the deterioration of the **Fauna** and the **Flora** of said place. ***We remain you that the only authorized nudism–zone is located in the coast, outside of the limits of the Special Natural Reservation.***

The stones you can observe between the dunes belong to the old costs lines. It is very important not to modify its lie of land by doing posters, for it can cause a negative visual impression as well as destroy important ecological witnesses.

The landscape value of this Natural Special Reservation requires not to leave one's mark from our passage through it. **We must take away the residues we produce to the nearest rubbish bin!!**

By avoiding unnecessary noises you will be able to enjoy this zone, which owns ideal conditions for this purpose, answering to peace and relax necessities, essential for your Well–being; its **environmental quality** depends, up to a point, on our behaviour customs.

Please, if you observe any irregular situation or you find an injured animal, it would be a great help that you inform the Authorities (Environmental Agents, Local Police, Red Cross or staff of the Interpretation Center).

**And don't forget!
TAKE CARE FOR YOUR NATURAL RESERVATION**



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GLOSSARY

- Coleopteron:** Group of insects popularly known as beetles, distinguished because their front wings are hardened forming one box; below it their back wings, fit to fly, get folded.
- Cryptogamus:** Plants without flowers or seeds, for example, seaweeds.
- Crustacean:** Arthropodal (Animal with external skeleton) with calcareous shell, with two pairs of antennae and branchial respiration.
- Disentailment:** Separation of real states from the Church or the State not to be transferred to "other hands". In this case, we must take into consideration the Disentailment of Madoz, 1855.
- Dipteral:** Group of insects which only have one pair of wings and popularly known as flies and "mosquitos".
- Eustatics:** Negative or positive movements of the sea level, exclusively caused by the variation of the water's total volume due to climatic effects.
- Phanerogamics:** Plants without flowers, fruits and seeds.
- Alluvium plain:** Horizontal surface formed by material brought by the erosion.
- Regressions:** The ebbing of the sea, because of the elevation of the terra firma, or variations of the water's volume (case of glaciations), remaining surfaces –yesterday submerged– outside of water now.
- Fluvial edge:** Flat terrain fringe, limited by two slopes –one rising and another descending– a big step alike, formed by the running water's action when previously deposited materials excavate its bed.
- Transgression:** It corresponds to the increasing of the sea level and its entrance into the earth. It can be caused as much as by the movements of the Earth's crust as by the variations of the sea level (for example, after the glaciations).



**"In the south extreme of the
Island of Gran Canaria,
exists a little fringe of territory; the only one
with its characteristics; and there is no other
similar one in the whole Archipiélago..."**