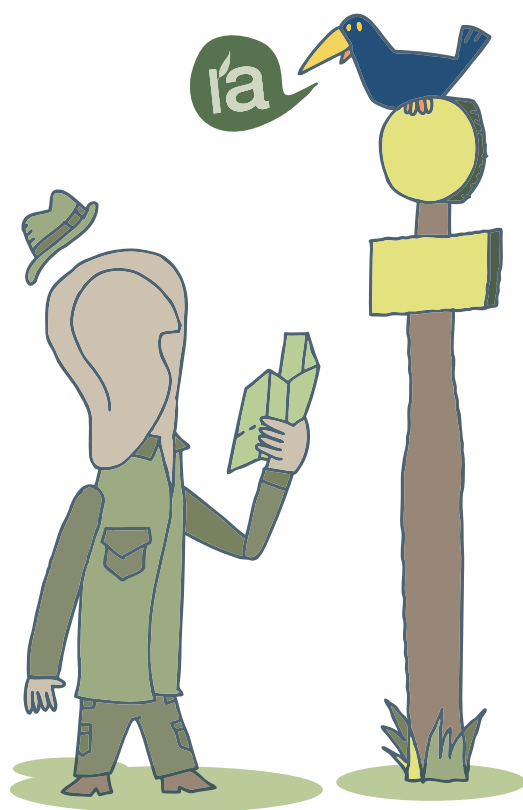


# l'Albufera de València audio guide

## l'albuferadevalència



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SEDUCCIÓN AMBIENTAL





## **“ENVIRONMENTAL SEDUCTION” ENGLISH AUDIO GUIDE**

### **1. LANGUAGE SELECTION**

L'Albufera de Valencia. Please choose your language. Press 1 for Spanish, 2 for Valencian, 3 for English.

### **2. ENTER**

Welcome to the l'Albufera de Valencia Audio Guide. Here you will find all the information you need to discover this natural park. The audio track number is shown on the audio guide panels distributed at different points throughout the park area. Use these numbers to listen to the recording about each place you visit. Remember that there are three ways to access the Albufera de Valencia Audio Guide:

- By telephone.
- By using the devices that can be rented at the Information Points.
- By downloading the recordings from the following website:  
[albuferadevalencia.com](http://albuferadevalencia.com)

Which recording number do you want to listen to?

If you would like to listen to a general introduction about this Natura 2000 network area, go to track number 3.



### 3. Albufera de Valencia.

The Albufera Nature Reserve, covering an area of 21,000 hectares, is one of the most important wetland areas in Europe and offers an example of interaction between humans and nature. There are three different eco-systems within this setting of great natural wealth: **The Albufera lake**, after which the reserve is named, is at the heart of this natural environment. It covers an area of 2,100 hectares, almost the same size as the entire city of Valencia. And how deep do you think it is? Scarcely 1 metre, on average. Surrounding the lake, there is a second eco-system, composed of **the marsh and the rice fields**. This farming activity is compatible with nature conservation. Finally, the lake is separated from the sea by the **Devesa forest**, the third eco-system in the Albufera and one of the most relevant coastal forests on the Mediterranean.

A million years ago, you would be underwater right now the Albufera is a section of the sea that became isolated by a sand dike where the Devesa forest was formed. Even now, the lake is connected to the sea across this strip of coastline by three inlets, known as "golas". The inlets at El Pujol, El Perellonet and El Perelló regulate the lake water levels through sluice gates that make it possible to flood the rice fields when closed. Despite its origin and connection to the sea, the water in the Albufera is freshwater. The lake currently receives water from the rice fields, which in turn are fed by waters from the Júcar and Turia Rivers.

Surrounding the Albufera lake is one of the most interesting traditional landscapes on the Mediterranean coast of Spain, also one of the most environmentally valuable areas on the peninsula. However, this wealth of biodiversity is under pressure due to the fact that it is surrounded by a major metropolis with over one and a half million inhabitants. Its eutrophic waters prevent it from reaching its true ecological potential. For this reason, the efforts made to protect the Albufera and improve the quality and quantity of water that feeds it are increased year after year.

Do you want to know more about the creation and history of the Albufera de Valencia? Go to audio track number 4.



#### 4. Creation and history of the Albufera

The origins of the Albufera lake date back to over one million years ago. It was formed when a marine gulf was blocked by a large strip of coastline. The mountains surrounding this gulf gradually eroded and the rivers, especially the Turia, as well as numerous ravines, released sediment into the sea. The sea currents deposited this sediment near the coast, creating a sandbar that surfaced grows up above sea level. The dunes and vegetation that we can see today grew on this sandbar. The Albufera thus became isolated and its connection to the sea was reduced to a single inlet or canal. At that time, the lake spanned the area of the entire nature reserve, covering some 30,000 hectares.

The Romans and Muslims have left traces of their admiration of the beauty of the lake and its surroundings. But the first clear references to the lake are not found until James I conquered Valencia in 1238 and claimed the property of the Albufera and the Devesa forest for himself. Two centuries later, the Crown also granted privileges on the goods produced in the Albufera to the Church, to the city Chapter, and to local fishermen and the inhabitants of the area. Mainly, these goods were salt, fish and game. The saltwater lake was connected to the sea by a natural inlet that remained in existence until the early 18th century. However, rice farming gradually took over. Large amounts of fresh water reached the area through the Royal Canal from the Júcar River, which led to the expansion of this crop, and the lake was reduced in size because of the earth dams built for planting rice.

During this period, the lake and the Devesa forest changed hands several times, owned intermittently by the Royal Family and the State, and vice versa. However, in 1927 King Alfonso XIII gave the Albufera to the Valencia City Council in exchange for just over one million pesetas. By that time, the lake had decreased from its original size by over 90%, to 3,114 hectares.

Do you want to learn about the more recent past of the Albufera and the Devesa? Did you know that there were plans to build a large tourist resort on the forest and dunes in the 1960's? Go to audio track number 5.



## 5. The urban development process in the Devesa. *El Saler per al Poble*

As you approach the Devesa forest, you may be surprised to find the tall buildings that soar above the trees. These are left over from the 1960's, when the entire area was almost turned into a tourist resort and residential zone, which was not built in its entirety in the end. From the time it became the property of the Valencia City Council up until the 1960's, the Albufera and the Devesa had remained intact. During that period, however, in the midst of the Spanish tourism boom, an urban development process began in the Devesa. The plan included numerous high-rise apartment buildings, a vast network of roads, a marina surrounded by mansions and even a racecourse.

In the late 1970's, pressure from citizens acting under the motto of "*El Saler per al poble*" managed to stop this urban development through an unprecedented environmental movement. But by that time, much had changed in the Devesa: roads, parking areas, drinking water and sewage systems, housing developments and a promenade had all been built. Moreover, the moving dunes were destroyed and the dune slacks filled in. The land was levelled, wiping out the rolling silhouette typical of dune environments.

These were the darkest years experienced by the Albufera. Urban clusters and industrial parks built nearby dumped their wastewater directly into the lake. In just a few years, the Albufera was transformed from having clear waters with a wide diversity of plant and animal life to having murky green waters from the proliferation of phytoplankton. The aquatic plants and a large number of animal species disappeared.

In the early 1980's Valencia City Council implemented a plan to recover these valuable ecosystems, which continues to this day. Of note, for example, are the results attained in the regeneration of the dunes that have been levelled. What is the current situation in this space? Find out on audio track number 6.



## 6. Current situation of the Albufera Nature Reserve.

The first democratically elected City Council of Valencia halted progress of the Monte de la Devesa Urban Development Plan in 1979. It cancelled building permits in the area and led the way to achieving the utmost protection for the future reserve. In 1986, the Generalitat (the regional government) granted legal protection to this space by declaring the 21,000 hectares comprising the lake, the Devesa forest and the rice fields as a Nature Reserve, making the Albufera the first natural park created in the Autonomous Region of Valencia. Thus began a new stage in the recovery of the Albufera.

The area known as Racó de l'Olla, demolished for the construction of a racecourse, was completely regenerated and made into an Information Centre with a Bird Observatory and an Integral Reserve. Several projects were implemented to regenerate the dunes and reverse the urban development process from the 1960's. In addition, improvements were implemented in the urban and industrial water treatment systems to prevent poor quality water from reaching the Albufera.

In 1990, the Albufera Nature Reserve joined the list of internationally relevant wetlands for birds. Shortly afterwards, it was included in the Natura 2000 network, which contains the most environmentally important areas in Europe. As part of this network, l'Albufera was designated as a Special Protection Area for Birds and as a proposed Site of Community Interest.

Do you want to learn more about the Natura 2000 network of European protected spaces? Go to audio track number 7.



## 7. The European Union Natura 2000 network

Biodiversity in Europe is under serious threat. Natural environments have experienced a reduction in size and have become isolated from each other due to development in countries and the impact of human activities. The European Union has decided to combat this alarming loss of biodiversity by linking the protection authorities in each country into a single protected area network to guarantee the conservation of a significant number of eco-systems on the continent.

The Natura 2000 network is the official group of protected areas in the European Union, whose aim is to ensure the long-term survival of the species and habitats under the greatest threat in Europe. This network, created in 1992, divides the spaces into two types: Special Protection Areas for birds (SPAs), designated to ensure there is sufficient space for all the bird species, and Sites of Community Interest (SCIs), containing natural habitats or plant and animal species of interest to the European Community.

There are over 5,000 SPAs and more than 21,000 SCIs in Europe. Almost 30% of the territory of the Autonomous Region of Valencia has been proposed as Sites of Community Interest. The Albufera Nature Reserve is considered a Special Protection Area for birds and is a proposed SCI area.

Do you want to learn more details about the natural value of the Albufera? Go to audio track number 8.



## 8. Biodiversity in the Albufera

Despite its proximity to a large urban area, the Albufera is bursting with biodiversity. The international renown of the Albufera de Valencia and surrounding areas is largely due to its diversity and abundance of bird fauna. Some 350 bird species use the area at some point during their lifetime and approximately 90 out of these species regularly nest in this nature reserve. Ornithologist Nacho Díes will give us more details:

*“The Albufera de Valencia is home to more than 50,000 water fowl at any given time. These birds feed on invertebrates and water plant seeds found in the large marshland, as well as numerous freshwater and seawater fish. It is a vulnerable food chain, endangered by water pollution and growing human activity in the area”.*

Of interest in the Albufera are the bird groups that use the wetlands on their migratory routes throughout the year, including ducks, herons, seagulls, terns and shorebirds.. Many of these are classed as rare or endangered species, both in Europe and Spain, according to Nacho Díes.

*“Many of the birds that we can see in the Albufera undertake long journeys. Some come from African regions as far away as several thousand kilometres south and, when they arrive here, they still have another journey of several thousand kilometres north to do, as far as the Arctic”.*

Birdlife, as spectacular as it may be, represents just a portion of the natural wealth of this area. The diverse habitats found here favour the presence of a large number of flora and fauna. Dunes, beaches, the forest, the lake, dune slacks and rice fields. In the Albufera de Valencia, more than 800 species of plants can be found, many of which are classified as rare, endemic or endangered species. Moreover, this area is home to diverse animal groups such as insects, molluscs, crustaceans, amphibians, reptiles, fish and mammals, making up a mosaic of unquestionable beauty.

How can you become involved in the Albufera de Valencia? Go to audio track number 9.





## 9. Environmental Seduction

In spite of how important this environment is and the efforts made to preserve it, many citizens are unaware of the ecological and environmental relevance of the Albufera. In order to spotlight this natural asset, and thereby help encourage visitors to collaborate in its conservation, the Valencia City Council and the European Commission implemented the LIFE+ Environmental Seduction project in 2009. The goal of this environmental awareness campaign is to promote the Albufera to make people fall in love with it.

In 2010, 2011 and 2012, numerous initiatives will take place, aimed at the population within the natural park and the citizens living in the surrounding area and visitors who come to enjoy this emblematic space in which nature, tradition and recreation are combined in equal doses.

One of the actions included in the project is the creation of the audio guide you are listening to. A public participation newsletter will also be published quarterly, as well as numerous pamphlets and maps of the natural park. Information points will be installed during seasons with the greatest number of visitors and an environmental promotion office will be open year-round. Aided by the information panels and topics posters spread throughout the area, visitors will easily find their way around to discover every detail of the Albufera. The website, [albuferadevalencia.com](http://albuferadevalencia.com), contains all the information needed to organise your routes or find out more about the natural park. You can even consult the Geoportal to take a virtual tour without leaving home, using the interactive map. The Regulations Guidebook, which was also created within the framework of this project, clarifies any questions about the activities that can legally be carried out within the park. All of these activities take place within the framework of an ambitious Public Participation Plan, in which all the opinions and ideas offered by citizens will be reflected in Environmental Seduction actions, thus helping to increased the number of people with a commitment to the Albufera.



## 10. El Saler

The salt extracted from the old saltworks near the Racó de l'Olla area was one of the earliest goods obtained by the crown in this area, when the Albufera was considered royal property. Its name, El Saler, refers to the small grouping of cottages where this salt was stored before being transported to the city of Valencia.

In 1855, El Saler had only 39 residents and one inn. The "Cubano" and Montoliu cottages were amongst the most well-known ones in the village. The last of these, which was unoccupied and in ruinous conditions, was demolished in 1998. This municipal district of Valencia is currently home to some 700 people and is known for its numerous cafes, restaurants and shops.

Before the CV-500 highway was built, the only connection between El Saler and the Albufera and the marsh was through its port. At "Port del Saler" there was a fleet of boats that carried merchandise and passengers to the villages on the lake. At the present time, people have to cross over the highway on a footbridge to reach this wharf, which has become completely separated from the village.

The church of San José, from the early 20th century, and the Casa de la Demanà, from the late 18th century, are among the highlights in this district of Valencia. Until the past century, hunting permits for the Albufera were auctioned off in the entrance hall of the Casa de la Demanà, giving it this name of "The House of Demand".. Heading from the village toward the sea, you will pass by the Luis Santángel School, which is worth noting for "El Piverot", a monumental stone pine tree that is about 175 years old. Near the beach, on the right, there is a recreation area called "El Muntanyar de la Mona", with fountains and tables, and on the left is the Casa Forestal in El Saler, which houses the offices of the municipal forest rangers.

Would you like to learn more about the Casa de la Demanà? Any resident of El Saler could show it to you, but first... listen to audio track number 28.



## 11. El Palmar

The early beginnings of the village of El Palmar are not quite clear. Of all the existing versions, the most accepted one claims that it was the fishermen from the village of Ruzafa who gradually settled on the island.

The population started to grow and as an interesting piece of trivia we know that in 1874 there were 99 families, most of whom were engaged in fishing. Only a few worked the land.

The most common type of dwelling in El Palmar was the "barraca", a typical cottage. In 1854, there were 65 cottages and chapel. The following year, a fire literally blazed through the entire village. From this moment on, single-family bungalows started to be built.

El Palmar was still an island well into the 1930's, when three bridges were built, connecting it with the motorway towards Valencia.

The entire life of El Palmar revolved around fishing in the Albufera: fishing nets, the local boats called "albuferencs", the fish market, the wharf, and not least the Community of Fishermen, which is quite an institution on the island. In fact, until fairly recently, fishing was almost exclusively the only way to make a living in this village. Voro, a local fisherman and resident of Palmar, tells us about it:

*"Ever since I was little, from the age of eleven, I went fishing on the lake. We were completely cut off. We were twenty kilometres away from a capital city and we were completely isolated. And that is what we did for a living: fishing and growing rice".*

Nowadays, El Palmar is still a typical village of the Albufera, although tourism and hospitality have taken over from fishing as its main economic activity.



## 12. Pinedo

Pinedo is the northernmost town in the Albufera Nature Reserve, located nearest to the city of Valencia.

Its population of just over 300 inhabitants registered in the 19th century had grown to almost 3,000 one hundred years later. However, the monumental work of engineering that would transform Valencia in the 1960's also had a traumatic effect on this district. In order to prevent flooding, the course of the Turia River was changed and a new course was built to the south of the city, the mouth of which coincided with part of Pinedo. Many residents were forced to move to the city, to witness the water covering lands that had previously been occupied by their homes, fields and even the parish church.

Despite the fact that Pinedo is a district of Valencia, its residents do not consider themselves a city neighbourhood. They still have a strong sense of community, with their own customs and festivities. Most of the town's inhabitants are still known by their nicknames: such as *Tita*, *Palmera*, *Nano* and *Rojeta*.

Even though they are surrounded by major infrastructures such as the port of Valencia, the Valencia Wastewater Treatment Plant and the new course of the Turia River as well as numerous dance halls and clubs halls, life in this town is still laid-back and pleasant.

In Pinedo it is easy to find people tending small kitchen gardens carefully sheltered from the sea winds. There are cottages and farmhouses, horses and carriages such as those used in "*les corregudes de Joies*" a horse race along the beach in which the grand prize, known as, *la Joia*, is a coloured handkerchief. They are also used in the "tiro y arrastre" (or, "pull and drag") competitions, in which horses must drag a heavy load along the beach in less than five minutes.



### 13. El Perellonet

El Perellonet is the southernmost district of Valencia. Located adjacent to the Perellonet inlet, the town arose when the inlet channel was built, in 1903. But it was not until 1950 that the town of El Perellonet, founded by the Marquess of Valterra and composed of some twenty houses and a church, was officially inaugurated.

With a beautiful beach, dunes such as the Devesa dunes and kitchen gardens for its residents, in the 1960's and '70's El Perellonet was transformed into a network of high-rise apartment buildings and residential complexes that destroyed the dunes and part of the beach. Its residents changed their livelihoods as farmers or fishermen to work in the tourism industry.

Amongst this labyrinth of buildings, we can find the fossil dune called “*Penyeta del Moro*”, the only remains existing of the sand dune that gave rise to the Albufera lake some 6,000 years ago.

If you would like to hear more about this interesting dune, go to audio track number 33.



#### 14. The Albufera lake

The first description found of the Albufera is from the 1st century, when Pliny referred to it as a "Pleasant Pond". Three centuries later, the Latin poet, Festo Rufo Avieno, described the wealth of ducks and coots in a place he called Lake Nacaros. The name Albufera actually comes from the Arabic, al-buhayra, which means "small sea". This word is the perfect description for it, considering that the lake was originally a part of the Mediterranean Sea that became separated from the rest by a strip of land formed by river sediment.

Located 10 kilometres south of Valencia, this is the largest lake on the Iberian Peninsula. Covering an area of 2,100 hectares, it is surprising to find that its depth is just one metre on average. Although its water was originally saltwater, it is currently a freshwater lake, fed by the Júcar and Turia Rivers. It is surrounded by expanses of reed beds and vegetation typically found in freshwater habitats, forming islands in some cases, which are locally known as "matas" or thickets.

This coastal lagoon originally had an area of around 30,000 hectares, which gradually decreased, mostly for use as rice fields. In winter, when these fields are covered with water, the Albufera recovers a size that is similar to its original area.

The Albufera de Valencia is significant among European wetland areas because of the diversity of bird species present year-round and for the quantity present of each species. Some birds come to nest and breed, others spend the winter season here, while others come to feed and rest on their migration paths. More than 250 bird species use this eco-system.



## 15. Water

The Albufera lake is one of the most valuable eco-systems of the Nature Reserve. However, its present ecological condition is a far cry from its condition a few decades ago. Up until the 1960's, its fresh water was clear and was rich in diverse flora and fauna. Voro, a local fisherman and resident of El Palmar, longingly recalls the quality of the water that he even use to drink:

*“Back in those days, the surface of the water was full of mosquitoes and I used to get down on my knees in the boat, brush the mosquitoes away with my hands, and drink the water straight from the lake”.*

The urban, agricultural and industrial development that took place in Valencia and neighbouring towns and villages caused, in the early 1970's, an intense degradation of the quality of l'Albufera's water. Water plants and most fish, molluscs, water insects and small mammals disappeared. A shortage of food meant that birds were also driven away and their numbers fell sharply.

In addition to the issues of pollution and the extinction of the species, less and less water was fed into the lake. The unfinished business concerning the lake of l'Albufera is to secure an ecologic water flow in sufficient amounts and quality to restore the lake to its former glory back in the 1960's.

In spite of all, the lake of the Albufera continues to attract more than 250 bird species, making it their chosen place for feeding, resting and breeding. L'Albufera has been internationally recognised as one of the most important wetlands on the Mediterranean, as shown by its designation as a “Special Protection Area for Birds”.



## **16. The Matas, or islands, of the Albufera**

The term “matas”, or thickets, is locally used to refer to the islands and shores of the Albufera lake, which are densely covered with wetland plants. Of the lake's 2,100 hectares, more than 200 are covered with "matas".

The deterioration of the water quality in the Albufera led to the disappearance of all the water plants that grew on the lake. These plants acted as buffers for the island shores against the effects of waves during storms. Now, with no vegetation to protect them against the force of the waves caused by the wind, the "matas" are exposed to the power of the water, which undermines them, uproots them, easily crushing and breaking them up. In recent decades, the area of the "matas" on the lake has dropped by 20%.

However, despite their limited size, the "matas" are considered a Reserve Area because of the fundamental role they play as the habitat for highly unique botanical species such as giant reeds, cat's-tails and purple loosestrife, as well as providing an area for nesting, shelter and feeding for most of the birds present at the natural park.





## 17. Fishing

The Arabs used to carry out the organised exploitation of the abundant fish stocks of the Albufera. Following the Reconquest, various kings who owned their share of the lake also reaped the benefits by taking a fifth of any catch taken on its waters. King James I granted this activity legal status in the year 1250, when the foundations for fishing were laid in the Community of Fishermen of El Palmar, made up then by residents of Ruzafa that settled permanently on the island of Palmar to fish on the Albufera. Later on, the same foundations would be laid in the communities of fishermen in Silla and Catarroja.

From 1857 on, fishing, the most profitable activity, started to be regulated in a more orderly fashion. Back then, the first agreements were signed between different fishing brotherhoods from the area in order to have taxes paid in cash and not in kind, which until then had been the most usual method. Among the fishing companies, El Palmar stood out due to its specific organisation. The fishermen of this district of Valencia were organised in a unique democratic manner. They were and still are governed by a committee that meets three times a year. The most important of these meetings is held the second Sunday in July, when there is a raffle to allocate the fishing permits or *redolins* among the members of the Community of Fishermen of El Palmar. Entitlement to a *redolí* is passed on through inheritance, donation or sale.

Before the industrial development of the lake's catchment area, fishing had made some substantial economic profits. The clean water of the Albufera contained highly diverse and abundant fish stocks among which were worth noting the sea bass, eels, and freshwater shrimp such as "náyades" or dog cockles (where mother-of-pearl buttons were extracted). At present, sea bass and eel fishing has decreased noticeably in favour of grey mullet fishing, according to Voro, a fisherman of El Palmar:

*"Nowadays there are only carp and mullet left. Bear in mind that in the 1960's or 1970's we could fish up to, well, eighty and ninety kilos worth of one type of eel, and just as much of any other type. Nowadays it's only two thousand".*



## 18. The Devesa forest of the Albufera

The Devesa forest of the Albufera is a stretch some 10 kilometres long, located on the sandbar separating the Albufera lake from the Mediterranean and between the towns of El Saler and El Perellonet. It occupies about 850 hectares where we can find closely intertwined, diverse eco-systems from the beach to the shore of the Albufera lake.

The Devesa forest is commonly known as “la pinada”, due to the large Aleppo pine woodland, used as a recreation area by the local residents of Valencia and neighbouring towns and villages.

Between 1960 and 1975, the Devesa forest bore the brunt of an urban development plan including the construction of numerous blocks of flats and a large railway system, among other structures. The destruction of part of this eco-system following the early works caused the local residents to stand up for the area and protest against this project in what was a first and unprecedented environmental movement. Under the motto “El Saler per al poble”, or “El Saler for the people”, the pressure by local residents managed to halt urban development in the Devesa. By that time, however, a large number of buildings, structures and a marina had already been built.

Those who knew and loved the Devesa without concrete remember it longingly. One such person is Xuano, a local resident of Saler:

*"My name is Xuano, I'm 75 years old and I've lived in this village for a long time and I've never moved away. Anyway, I used to know the "pinada" or Devesa, but not anymore. In the past, I used to cover my eyes and walk around all over the Devesa. Now, if I go in, I get lost and lose my sense of direction, with all that has been built, roads, buildings, everything. And I think to myself: where am I? I don't know where I am. I try to remind myself what the Devesa used to be like; I look down at the ground and look only at the plants, since here we have every type of plant. This is a real botanical garden. And then, I think to myself: this part here was the Pujol Vell, this one here was the Montanyar de la Mona, that one there was the firebreak of the Rambla, these were the Ferros, that one over there was the Brava, this one here was the Sanxa... all the firebreaks ...there were twelve of them and I knew them all".*

Since 1982, Valencia City Council has been carrying out several regeneration projects that have succeeded in reverting part of the Devesa back to its original state, especially south of the El Pujol inlet, where we can enjoy a completely natural sand dune area .

Are you curious to know more about the large blocks of flats that stand out in the middle of the forest? If you wish to know more about them, listen to track number 5.



## 19. Flora and fauna in the Devesa forest

The mere name of "Devesa forest" gives an idea of what one might find there. Thick, tall trees that provide shade for the bushes growing below them, up to two or three metres high. This forest also contains climbing plants and vines that grow entangled on top of this vegetation, making it even more difficult to get through. This is the Mediterranean Maquis shrubland.

All five senses will find their reward during a stroll through the Devesa. We can find every shade of green mixed in with hints of yellow, white and pink flowers, along with berries and oranges. We can hear the sounds of nature, such as the wind, the crashing waves and the every-changing songs of the birds. Our lungs will be filled with sea-scented air. Plants such as myrtle, mastic and houseleek invade the fields with their gentle, sweet scents. We can walk barefoot along the seashore, feeling the sand caressing our skin. Or find a spot to enjoy the shade and the cooler air in the summer, and shelter in the winter. After experiencing all these sensations, we will probably work up a good appetite...

In addition to these sensations, we may be surprised to see animals such as rabbits and partridges looking for food amongst the shrubs, or a genet might cross our path at night. We might find a nest with eggs in a tree, or we may have to stop the car to allow a mother duck to cross with her ducklings. All of these animals and more can be found in the Devesa.



## 20. The Dunes

All of the land we walk upon in the Devesa is sand. The rivers carry sand to the sea, which then deposits it on the shore. The wind whips the sand around from one place to another until it meets an obstacle and stays there. Thus begins the life of a dune. Over thousands of years - about 6,000 in the case of the Devesa - a small dune grows and plants sprout up on it, gradually making it less mobile. Depending on the age of the dune, the flora and fauna found there will differ.

In the Devesa, the oldest dunes near the Albufera lake, furthest from the sea, are "fixed dunes". Although they are known locally as "la pinada", the Aleppo pine is just one of the more than 400 shrub species that grow in the Devesa. Crossing or walking through the jumble of shrubs and vines that grow beneath the pine trees can sometimes prove to be a difficult task.

As we come closer to the beach, we can see that the vegetation is no longer as tall or as varied as before. The sand can be seen on the dunes and the sea breeze reaches us. These are the "moving dunes", where the wind easily moves the sand from one place to another. The plants found here are herbaceous plants, creepers that are well-adapted to remaining buried under the sand and the lack of rain during the summer months when the temperatures soar.

There is a close relationship between the sand and the dune, since the wind in summer carries the sand from the beach to the dunes and in winter, the storms carry it back to the beach. In addition, the dunes protect the Devesa forest by stopping the wind that blows in from the sea tending to burn up the plants along the edge.



## 21. Flora and fauna on the dunes

Our first impression upon seeing the dunes bordering the beach is that there are few plants and barely any animals. However, if we stop to take a closer look, we start to notice differences between certain plants, between those exposed to the winds from the sea and those that are sheltered. There are a total of 35 different species, with names such as the sea daffodil, cottonweed, knotgrass, runemark and milk thistle.

The names of these plants give us a hint as to the environment and conditions in which they grow: "marine life".

To better understand the conditions experienced by these plants, we might imagine ourselves in their place during the month of August, in the mist of summer. The sand can reach temperatures of up to 50°C, the heat is stifling and there is no rain in August. Where do they get the water they need to survive? They have deep roots that seek moisture in the lower layers, but they also have a web of smaller roots near the surface to capture the moisture from the morning dew. Moreover, their leaves are small and have a waxy or furry surface, and they are curled up in order to leave the smallest surface area possible exposed to the sun, thereby preventing water loss through evaporation.

On the other hand, in the month of February, in the dead of winter, the strong winds blow sand over these plants, leaving them buried or even uprooting them. They need to have a strong root system to hold them in the ground.

If the plants on the dunes are small, so are the animals we can observe there: beetles, butterflies, snails, lizards, caterpillars, etc. They must also adapt to the environmental conditions, coming out in the evenings and at night when the heat has subsided. They take shelter under the plants in search of the cool temperatures and moisture, or like snails, they may climb to the tips of plant stems where the sea breezes blow. As soon as we take a closer look, we can see hundreds of animals living on the dunes.



## 22. Beaches

The Albufera Nature Reserve faces the sea. From Pinedo in the north to Cullera in the south, it has sandy beaches along the coast stretching for some 31 kilometres, only interrupted by the five inlets or canals that connect the lake to the sea.

On these beaches, the sand comes from materials that rivers drag and deposit in their estuaries. The sea, with its currents and waves, takes this sediment and moves it, finally depositing it on the beach. In the case of the Albufera, the Turia River has provided the sand to create the beaches over thousands of years.

In the Albufera there are beaches for all kinds of visitors with differing needs. There are some that can be accessed by vehicle, and others, only on foot. Some have first aid huts, showers, and umbrella and beach chair rental services, whereas other, more unspoilt, beaches are difficult to access and lack these services.

When visiting the beaches we must always keep in mind that this is a fragile environment of great natural importance. Therefore, even though our only intention is to spend the day having fun, we may have an impact that will be difficult to reverse.

Just focusing on the Devesa, from El Saler to El Perellonet, we can see that the further south we go, the beaches are left in more natural conditions. Here we must be most careful. Some birds such as the plover use hollows in the sand to lay their eggs and raise their chicks, while others dart about the water's edge in search of food washed ashore.

Currently, the beaches in the Albufera are suffering from a lack of sediment provided by the rivers and from the barrier effect caused by the port of Valencia, leading to a reduction in the size of the beaches throughout the protected zone.



### **23. Dune slacks**

In between the fixed dunes in the Devesa there are areas that are flooded with water in winter, like small lagoons, and yet you will be surprised to find that they are completely dry in summer. These are dune slacks, areas where the plants and animals have to adapt to survive in extreme conditions of alternating drought and flooding.

Dune slacks are depressions with predominately muddy ground, making them impermeable. For this reason, in winter the slacks become flooded with rainwater, whereas in summer the water evaporates and a saline crust is formed. Due to these conditions, the plants in dune slacks grow in concentric circles according to their degree of resistance to high salt concentrations in the soil. At the centre, the degree of salinity is so high that nothing is able to grow at all.

The animals that live in dune slacks are authentic specialists at surviving in this environment that is both land and water-based. Their life cycles alternate between phases with drought-resistant eggs and others in which their larvae develop under water.

During the urban development process of Monte de la Devesa, the slacks were seriously altered as they were filled in with sand from the dunes at construction sites. Moreover, eucalyptus trees were planted there to speed up the drying process as this type of tree extracts and uses all the water in the soil.

Nowadays, the slacks are undergoing a recovery process as a result of numerous projects that combine the regeneration of the moving dunes and the dune slacks. The dune slacks are excavated and the sand is replaced on the rebuilt dunes.



## **24. The marshes and the rice fields**

The marshes and the rice fields go together hand in hand, as more than 14,000 hectares of the Albufera Nature Reserve are devoted to this crop, the only crop that is truly compatible with the conservation of this environment. It is the largest of the habitats comprised in this protected area. Farmland, paths, canals and "acequias" cover up to 70% of the natural park. This area represents the main feeding zone for the water fowl that lives in the natural park, both the species that spend the winter here and those that come to breed.

The ever-changing landscape in the Albufera throughout the year is largely the result of the rice-growing phases. Green tones in summer, blue in winter and brown during the periods when the land is bare. For the most part, the rice fields are lands that have been taken from the lagoon in a dredging process that reached its climax during the 19th century. .

Rice farming is highly relevant for economic, ecological and scenic reasons. After the Albufera was declared a natural park in 1986, a series of measures were taken to minimise the negative impact of farming in the vicinity due to the burning of stubble or the conversion of natural habitats. These measures include the need to make traditional economic activities compatible with the conservation of natural eco-systems and their ecological wealth. Many of these protection measures have been dictated by the European Union and are accompanied by certain economic aid packages that constitute a highly relevant source of income for the support of the farmers.





## 25. Tancats and Perellonà

*Tancat* and *Perellonà* are two local terms related to rice farming.

A "tancat" is a plot of land used for rice farming that was originally part of the Albufera lake. After purchasing or leasing a section of the lake, a "tancat" is created by demarcating the plot through the creation of a dike built up above water level. Then, more muddy earth is added, taken from a shallow area of the lake, until the area is filled in and level with the neighbouring fields. All of this arduous work was done with great effort using rowboats, hoes, grass baskets.. Once the "tancat" was isolated, it was possible to control the water level inside it by using mechanical pumps, which were originally run by steam engines. Most of the rice fields in the natural park are on lands taken from the Albufera over the years in the 19th and 20th centuries.

The rice growing cycle in the "tancats" begins with the "perellonà", which is the time when the sluice gates are closed on the inlets and canals where water from the Albufera is released to the sea. By retaining and raising the water level on the lake, the "tancats" can be easily flooded. This flooding of the fields enables to avoid the germination of weeds during the growing season and controlling any possible infestations. The "perellonà" takes place between the 1st of November and the 1st of January, at which time the gates are reopened, the fields drained and the soil is worked and prepared for planting. During the "perellonà" the entire marsh is flooded, providing shelter for numerous bird species that winter here.



## 26. Ullals

"Ullals" are underground springs located throughout the marsh in the Albufera. Usually surrounded by rice fields, they form small lagoons that have gradually been reduced due to farming activities. They are, let's say, a reminder of the days in which the lake covered all of the present-day rice fields. The water quality in the "ullals" is quite good and for this reason they currently provide shelter and act as a reserve area for the freshwater flora and fauna that used to occupy hundreds of hectares in the natural park. Native fish species such as the "samaruc", or Valencia Toothcarp and the "fartet", or Spanish Toothcarp, can be found here, as well as plants such as the white water lily, or purple loosestrife, known as *trencadalla* locally because it dulled the blade of the reaping sickles. Indeed, "ullals" are the main source of clean water released into the lake.

Throughout the marsh there are some 50 springs in varying conditions of good preservation. Two examples of these "ullals", the Baldoví and Sants springs, can be found in the vicinity of Muntanyeta dels Sants in Sueca. They were restored as part of the European Life Ullals Project. From the observatory and lookout platforms we can identify plant and animal species that have almost disappeared in the Albufera, but survive here thanks to the excellent water quality. These include freshwater shrimp, bivalve molluscs such as dog cockles and fish like the Valencia Toothcarp.



## 27. Hunting

The hunting tradition in the Albufera de Valencia goes back to the times of the Arab occupation. The lush vegetation and abundant game made this an excellent place for hunting, and for this reason King James I claimed it as his property after conquering the Kingdom of Valencia in the 13th century. According to the botanist from Valencia, Cavanilles, and other chroniclers from diverse periods, the area abounded with deer, wild boar, mountain goats, francolins, partridges, hares, rabbits, otters and up to sixty varieties of water birds, in addition to a wealth of fish. This is how it was described in the mid-13th century in "Un Rincón del Paraíso" ("A Corner of Paradise").

Hunting allowances were granted over the years, competitions organised and permits auctioned off. In 1987, Valencia City Council finally banned hunting on the Albufera lake, including the island and shore areas, due to the impact it had on protected species. Besides the ban in the Albufera, hunting is also prohibited in the Devesa and the reserve areas of *Tancats* in La Ratlla and in La Pipa, and *Bassa de Sant Llorenç*, Ullals de Na Molins, and others.

Currently, hunting is allowed in most of the marsh area used for rice farming between the last Sunday of September and the first weekend in February.

On the one hand, there is the reserve area known as the "vedat", where most of the water fowl on the Albufera live and vehicle and human traffic is restricted. Eight shoots per season are held here. When these shoots are finished, the event known as "Càbiles" takes place, which constitutes six days of uninterrupted hunting during which any hunter may hunt in the "vedat" area. On the other hand, there are game reserves, in which 36 hunting days are authorised, spread out among weekends and holidays. These days include the "Càbiles".

The species most commonly brought down in Sueca and Cullera are the Northern Pintail and the Red-crested Pochard, whereas in Silla, the main species is the Eurasian Coot. There are more than 6,500 hunters in the natural park.



## 28. Casa de la Demanà

The Casa de la Demanà, or casa de la Campaneta, was one of the most emblematic buildings in the Albufera Nature Reserve. This 18th-century building held auctions to allocate hunting permits in l'Albufera; which was traditionally referred to as "The Demanà". Located in Saler, it provided lodging for nobles, and writers such as Vicente Blasco Ibáñez included descriptions of it in their novels, such as in "Cañas y Barro" ("Reeds and Mud"). Currently, it is privately owned by the Castelló brothers. Since 2004, it hosts meetings for Youth Association "Amics de la Casa de la Demanà", made up of about a hundred youngsters and with the support of all the local residents of El Saler. Quique Dasí is the chairman of this association:

*"We, the youth of Saler, decided to renovate the Casa de la Demanà, which was in poor conditions, since it was so valuable to the people of Saler. In addition, we realised that it could serve as a platform for what would later become the association, which is currently known as the Association of the Demanà. When we created the association, our goal was to discover, promote and spread the cultural values of the people of Saler, values that are closely linked with the Parque Natural de l'Albufera".*

This youth group developed with the intention of promoting El Saler and achieve full integration into the "albuferenc" landscape. The main goals set out in the association bylaws are to restore, preserve and spread the cultural, environmental and ethnographic values.

*"There are about one hundred of us who are members; we come from El Saler and the city of Valencia. The association's emblem or flagship project is the recovery of the Puerto del Saler, which deteriorated in the 1970's due to the construction of a motorway that cuts through the point of interconnection between the village and the marsh. We would like to see it restored as soon as possible".*

Of note, in the early structure of the Casa de la Demanà, are the original bowed grilles encasing the small windows that are crowned with crests or tops with an equally unique bowed shape. The main entrance is at the front of the building, leading to an entrance hall where the "Demanà", or the hunting permit auction, would have been held in the past. An extension to the north wing of the house was carried out in the early 20th century, clearly showcasing through the top of the north façade the architectural trends of that period, strongly influenced by modernism.



## 29. Barracas, or a frame cottages (Pinedo and Palmar)

The "barraca" a frame style cottage has long been identified as the traditional dwelling in Valencia, although they are increasingly rare and hard to find. There are still a few "barracas" to be seen in the Albufera, kept up in quite good conditions. To name a few, we could point out the ones known as "La Genuina" in Pinedo and "*dels Arandas*" in El Palmar.

All the districts in the park were originally groupings of these cottages, and some had special features, such as those known as *barracas de culata* in El Palmar, in which the side exposed to the prevailing winds was round in shape.

The materials used to build a "barraca" can be found in the surrounding area, in the Devesa and the Albufera lake. The walls are made of *canyes i fang*, meaning reeds and mud. The materials for the roof and floor are obtained in the dune slacks of the Devesa. A material called "borró", which is a grass that can be cut and quickly grows back, was used on the roof. Slabs of packed mud are taken from the dune slack bed for the floor.



### **30. Golas, or inlets**

“Gola” is the name locally used to refer to the canals that connect the wetlands of the Albufera Nature Reserve to the sea. There are five inlets, or canals, all of which are man-made, with sluice gates and pump systems that make it possible to control the water level on the lake depending on the rice farmers needs. Three of them, the canals in El Pujol, El Perellonet and El Perelló, connect the Albufera lake to the sea. The other two, known as Gola del Rei or Gola del Mareny and Gola de Sant Llorenç, release the waters from the marsh in Sueca and Cullera.

Of the three canals that link the lake to the sea, the one in El Pujol is the newest. It was built in 1953 to solve drainage problems, just over a kilometre south of the former canal, known as Pujol Viejo. In fact, this is the only inlet that directly links the lake to the sea, as the other two do so through a network of canals. The name "pujol" means mound or hill, and probably refers to the dunes that existed in the area. Facing the sea from the Pujol inlet, we can see one of the tallest dunes in the Devesa, the Muntanyar del Pujol. This 9.5-metre tall dune escaped from being levelled during the urban development process carried out in the last century.

Numerous fish species enter the Albufera through the inlets to breed and then feed in the freshwater. One such species is the elver, which later becomes an eel when it grows. The elvers that enter the inlet from the sea swim upstream near the banks toward the Albufera, shying away from the light. Therefore they are most easily caught on dark nights in calm waters.



### 31. Racó de l'Olla Information and Interpretation Centre

Construction of the Information and Interpretation Centre at *Racó de l'Olla* began in 1986, sponsored by Valencia City Council in collaboration with the regional government of Valencia. The aim of the project was to provide the infrastructure necessary to carry out environmental education and citizen awareness activities on the intrinsic value of the natural park. It also aimed to regenerate the most deteriorated eco-systems in the area to foster the seriously endangered species in the natural park.

Racó de l'Olla contains an area that is open to visitors and a reserve area. Near the lagoon there is an information centre for visitors, bird observatories, foot paths with interpretation panels and a lookout tower over the Albufera and the Devesa, as well as audiovisual information and exhibitions. Entry to the Centre is free of charge.

Most of the buildings in Racó de l'Olla are vestiges of the past. The "Caballerizas" are stables pertaining to a racecourse built in the 1960's. The visitor centre used to be a campsite built after the racecourse. These structures completely altered the eco-systems in the area.

Nowadays the Racó de l'Olla is a valuable zone that acts as a buffer between the Devesa and the Albufera eco-systems, and its habitat is unique in the natural park. The reserve area is now a place to rest and breeding ground for numerous bird species, as well as a benchmark for the study and observation of these species.

Thousands of visitors come to the centre each year to inquire about the natural park and receive information. Particularly noteworthy is the work done with schools to promote understanding, appreciation and involvement in the conservation of the many attractions and values of this park.

Any season is perfect for a visit to Racó de l'Olla. In winter, we can see mainly anatidae such as the red-crested pochard, common pochard and the common teal. In the spring and summer, the sight of the comings and goings of the breeding colony of terns is impressive. Our attitudes and behaviour are essential in order to avoid disturbing these animals.



### **32. The El Palmar Community of Fishermen**

Fishing has long been one of the most important economic activities in the Albufera. The different kings who owned the lake gradually came to regulate this activity. In 1250, James I granted permission to fish on the lake in his privilege in Morella to "any resident or inhabitant of the City or Kingdom of Valencia" in exchange for one fifth of the fish caught. This portion was handed over to the monarch and the fishermen kept the remaining four parts.

The exact origins of the The El Palmar Community of Fishermen are unknown. In 1857, their deed of establishment was officially signed. The Community of El Palmar was thus granted a reduction in the fishing fee by the Royal Treasury, from one fifth down to one tenth of the catch.

The Community of El Palmar is governed by a committee that meets every year with three commissions and on various dates. The Chapter Commission Meeting, held on the first Sunday in July, is in charge of reviewing or modifying the regulations and electing offices. The following Sunday, the "Redolins" Commission Meeting deals with the most important activity: raffling off the fishing permits for the Albufera, known as "redolins". The next Sunday the Accounting Commission meets.

Membership in the Brotherhood of El Palmar is an inherited right passed on to men when they reach the age of 24 or before that, if they get married. The right to hold a "redolí" (fishing permit) could also be transferred by donation or sale. However, only relatives can substitute the buyer or donor.

At present, the Community of El Palmar has approximately 400 members, and about one hundred of them remain active. They continue to devote themselves to the traditional fishing of eels and the flathead mullet. At their fish market, each day they sell the mullets fished using traditional methods and eels from fish farms or caught on the lake.





### **33. Fossil dune in El Perellonet**

In the section of the land strip located between the El Perellonet and the El Perelló inlets, we find the most relevant spot in the area, from the geomorphological and scenic point of view. This is the fossil dune in El Perellonet, known as "The Penyeta del Moro". Dating back 200,000 years, it is the only trace of the coastline that existed long before the Albufera lake was formed some 6,000 years ago.

This small dune was almost wiped out during the urban development boom in the mid-20th century. It is now surrounded by structures and buildings that endanger the future of this natural geological monument.

The land on which this fossil dune stands is classified as a comprehensive special protection area under the Special Plan for the Albufera Nature Reserve.



### 34. Casa Forestal

The Casa Forestal in El Saler is located at the heart of the Devesa, between the Quarter dune slack and the Muntanyar de la Mona. This building, built in 1920 and currently the headquarters for the forest rangers, is worth noting because of the ceramic features on both the façades and interiors. On the left façade there is a panel from the 18th century with 20 tiles dedicated to the "Allegory of purity". Next to it, there is another 35-tile panel from the same period representing the veil of Veronica bearing the face of Christ. In addition, on the main façade, the planters are decorated with gothic themes containing inscriptions such as "Devesa del Rei" or "Devesa of the king".

The inside of the building, which is not open to the public, has ceramic tiles on all the floors. In the entryway and the kitchen, unglazed tiles measuring 30x30 centimetres are alternated with glazed, decorated tiles measuring 11x11 centimetres.

In the kitchen, one highlight is the tile wainscoting with a variety of scenes with typical Valencian motifs, above which several highly interesting crockery pieces are hung.

In the room on the left, one can see a large floor motif placed at 45° angles, the central theme of which shows the scene between Sanxa and the Shepherd narrated by Blasco Ibáñez in his novel, *Cañas y Barro, Reeds and Mud*. According to the author, legend has it that Sanxa was a small snake who befriended a shepherd who fed it. The locals were terrified to see how Sanxa coiled up around the young man's body when they played. The shepherd left for a few years and when he returned, he quickly sought out his snake Sanxa. But Sanxa had grown tremendously. When it recognised him, it coiled up around his body, but the snake greeting suffocated the shepherd.



### **35. The lateen sail**

Boat sails may be of two types. The oldest type is known as the square sail, which always has the same side facing the wind. Therefore it is appropriate for large vessels sailing with a previously established course. The other type was developed much more recently, known as the fore-and-aft sail. The first fore-and-aft sail was the lateen sail. Triangular in shape, either side can face the wind and therefore it is much more effective when sailing upwind.

The origin of the lateen sail is unknown. It was probably introduced by the Arabs on the Mediterranean, where it is quite widespread, but no one knows whether it was originally designed by the Arabs or the Polynesians. This sail is most often used on vessels carrying cargo and passengers, or on fishing vessels that sail near the coast or in enclosed areas, lakes and lagoons. They were also used by pirates and corsairs in their raids.

On the Albufera lake, the "albuferencs" are single-masted vessels with triangular lateen sails. They were used for fishing and for transporting products or people across the lake.

In recent years, several lateen sailing associations have emerged in Catarroja, Silla and El Palmar, which have helped bring back this type of sailing that had virtually disappeared from the lake when internal combustion engines were added to the fishing boats.



### **36. Nature Reserve management**

If the Albufera had not been declared a Nature Reserve, nowadays we would probably have an extension of the city before our eyes, instead of trees and dunes. By protecting this area, rules were established in order to ensure its conservation.

But the management of a Nature Reserve poses a major challenge. In protected areas such as the Albufera, different interests converge that must be harmonised. On the one hand, conservation of its natural assets. On the other, the economic activities that inhabitants of the natural park carry out in order to earn their livelihood. In the Albufera, this challenge is even more complex. Its proximity to the city of Valencia, the large number of visitors it welcomes, especially in summer, and the large number of inhabitants and companies within it, make regulating its use difficult.

The regulations that govern the Albufera Nature Reserve are contained within the PRUG or “Plan for Governing Usage and Management”. This plan is a compilation of the zoning maps of the protected area, the activities and uses permitted in each zone, and general directives to govern the management of the Nature Reserve.

The responsibility for Nature Reserve management falls under the Autonomous Region of Valencia through the Technical Office in charge of the management the Albufera. The main office is located in El Palmar and it deals with permit applications and environmental surveillance and is in charge of the natural park's Governing Body, which has representatives from the 13 local councils in and around the protected area, and bodies and organisations involved.

Out of all the local councils represented on the Governing Body, Valencia City Council is particularly influential. Although it is not the largest in area within the natural park, the most valuable eco-systems, such as the Lagoon and the Devesa forest, are located within its district boundaries. Moreover, since it is the third largest city in Spain, it has the capacity to undertake large nature regeneration projects, such as the regeneration of dunes or the reduction of light pollution.

Listen to track number 39 for more details of these projects.



### 37. Huerta

A "huerta" or "huerto" is a garden or orchard consisting of a plot of land that is used for growing crops that need plenty of water to develop. For this reason, these gardens are usually found in alluvial plains where water was supplied to all the fields, by means of the construction of infrastructures such as "acequias" or irrigation channels, leats, watermills, "azudes" or small dams.

What is currently known as the "huerta valenciana", or Valencian garden, originated in the Middle Ages, during the Islamic period. It was then, with the introduction of irrigation, that the waters of the river Turia and local streams were harnessed and used in order to create a rich farming land. It was in those times as well that rice crops were introduced.

The Albufera Nature Reserve is characterised by an agricultural landscape due to the large area planted with rice fields. There is another type of farming that, although it does not cover as much area, is just as important. We are referring to the "huerta".

This type of garden features orange groves planted along the perimeter of the park, skirting the rice fields. It is also characterised by the intensive production of fruit and vegetables under a plastic housing (greenhouse production) in the Perelló area and lastly by the very traditional gardens on the outskirts of villages such as Pinedo and El Palmar..



### 38. The wharf

The most frequently used means of transport in the Albufera, until the construction of motorways through the marsh, used to be by boat, known as "*the albuferenc*". The boats were used to carry soil for levelling and filling rice fields. They were also used for fishing and carrying the fish to sell in Valencia. The boats were used for carrying the ill to nearby hospital. The life of everyone in the villages of the Albufera revolved around the lagoon, which is why there were so many ports and mooring for the boats such as the ports in Silla, Catarroja, El Saler, El Palmar or Mirador de Pujol.

Nowadays, the ports and wharves around the Albufera have another purpose that is more suited to modern times: tourism. The demand to go on boat trips on the lagoon and do bird-watching is on the rise. This economic activity is regulated by Municipal Bylaws.



### **39. Dune regeneration projects**

Following the standstill of the urban development project of Monte de la Devesa, Valencia City Council created the current Devesa-Albufera Service in 1980, which seeks to ensure the conservation of the Devesa and promote the regeneration of their eco-systems. From then on, one of the main initiatives from this Service has been to regenerate the dunes that had disappeared.

The methods used can be summarised in three stages: first, the sand is collected by machines in order to create the dune shape; second, the sand is set, aided by the construction of fences and planting a wide variety of flora native to this area; lastly, the entire regenerated area is adapted for public use, so it is temporarily cordoned off. The public is informed of the reason for this closure and purpose of the works through an information campaign requesting their cooperation. After a period of 5 or 6 years, this process is able to achieve the shape, flora and fauna of the coastal dunes

Dune regeneration in the Devesa has been given a boost with the delivery of two LIFE projects, jointly funded by the European Union. The LIFE Duna and the LIFE Enebro projects, carried out between 2001 and 2007, have transformed the southern section of the Devesa, which is an area of great environmental and scenic value, and unique on the Spanish coast.



#### **40. Green filters**

There are several initiatives focusing on purifying the water of the Albufera. With the construction of treatment plants and new pipelines, and improvements to existing plants, the authorities are trying to bring the lagoon water back to the quality and clarity it had prior to the 1960s. Certain projects, however, stand out a all other initiatives: the green filters.

Green filters are water treatment systems using natural wetlands. The mechanism is very simple: water is made to circulate as slowly as possible through soil with vegetation. As the water filters through the vegetation, the plants feed on the organic matter carried by the water. Thus, the filter releases water which is much cleaner and clearer.

Green filters have been used for a number of years as wastewater treatment for small villages, hotels or camp sites outside the water supply network or within isolated areas. But they have rarely been applied to a metropolitan area of the size of Valencia or a lagoon like the Albufera.

To the north of the Albufera a green filter at Tancat de la Pipa is already in operation. This filter, which can be visited by booking in advance, used to be a rice field many years ago. At present, part of its 40 hectares are given over to recirculating the water from the lake which is treated as it flows through, whereas the rest has been renaturalised and protected as an integral flora and fauna reserve.

To the south of the Albufera there are another two green filters of similar size, in Tancat de Milia and Malvinar. These have not only been designed to recirculate water, but also to finish treating the water coming from two treatment plants, before it reaches the lagoon.

Each of these systems will contribute towards improving the quality of the water in the lagoon, increasing water purity and making it possible to repopulate the Albufera with valuable species of aquatic plants and fish, such as those that lived in the lake in the 1950s.