



RESERVA NATURAL
Laguna de
Fuente de Piedra



*Guide
to the*

lake

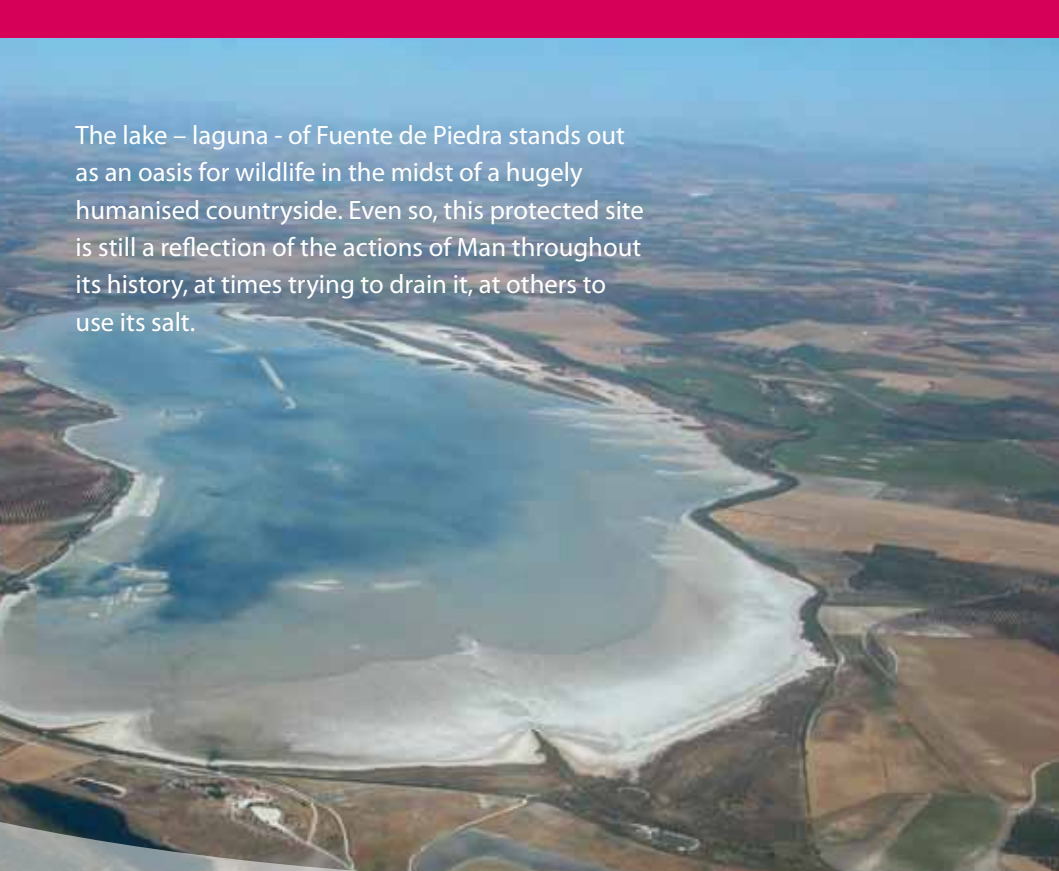


Andalucía
se mueve con Europa



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The lake – laguna - of Fuente de Piedra stands out as an oasis for wildlife in the midst of a hugely humanised countryside. Even so, this protected site is still a reflection of the actions of Man throughout its history, at times trying to drain it, at others to use its salt.

A little bit of history

The numerous Roman remains found around the lake indicate their exploitation of the salt pans - las salinas. The salt was an important source of wealth to the point that it was used as a means of payment. Furthermore, the Romans considered the flamingo as an extraordinary culinary delicacy, especially its tongue, and included it amongst the most exquisite of dishes.

The first attempts at draining the lake arrived at the beginning of the 19th century and a company was formed with that object but the Antequera town hall persuaded the king to paralyse the project. In 1876 a series of engineering projects were initiated with the aim of maintaining the water level and avoiding the salts being washed away by storm water, all with the aim of exploiting the salt pans. On the other hand, the lake bed was divided up by a series of dikes, canals and evaporating beds for condensing and crystallising the saline water, all these being necessary for exploitation as a salt works (salinera). All this work was aimed at favouring the salt production and in favourable years the lake could produce 20.000 cubic metres of salt.



Since 1958, different scientists, with José Antonio Valverde at their head, carried out a series of observations and studies of the flamingo breeding colony. In 1962, during the course of the First International Wetlands Conference and at the instance of the IUCN (International Union of the Conservation of Nature), the Fuente de Piedra lake was included in the list of wetlands in need of protection and efforts were made to change the then current view that wetlands and marshes were focal points for infection and should be eradicated.

In 1983, Fuente de Piedra lake was included in the Ramsar Convention on internationally important wetlands and on 9 January 1984 was declared a reserva integral by the Andalusian Regional Parliament (Law 1/1984) and classified as a Natural Reserve (reserva natural) after its inclusion in the Andalusian Inventory of Protected Natural Areas (Law 2/1989 of 18 July). In 1987 it was declared a Special Protection Zone for Birds (ZEPA) and forms a part of the European ecological network Natura 2000.

The reserve is made up of the lake itself and some 100 metres outside its periphery, giving a total area of 1.554 hectares. Around this area there is another 6.689 hectares of the peripheral protection zone.

The remains of the old salt pans have diversified the lake bed, giving rise to islets, depressions and channels which introduce fresh water. These artificial structures have generated a wide environmental variety which has permitted the settlement of different animal and plant species.

Fuente de Piedra lake

The lake is notable for its size (6.8 x 2.5 kilómetros), the shallowness of the water, its geographical surroundings, the high level of salinity and its geomorphology. All these have given it an especial importance from various points of view: the geological, the hydro-geological, ecological, cultural, educational and scientific.





The value of the lake is reinforced as, along with other protected areas in the Andalusian Autonomic Community, a network or system which connects different natural areas and thus contributes to the preservation, increase and dispersal of animal species.

The level of water in the lake is greatly influenced by the climatic conditions to which it is subjected. As the Mediterranean climate is characterised by seasonal rain fall which are not very abundant (the mean annual rainfall is 460 mm per square metre) and the lake dries out for periods of varying length. Furthermore, there is a considerable interannual distribution of the rainfall, which in some years is above 700 mm and in others scarcely reaches 200 mm.

Such changeable environmental factors condition the existence of organisms which are adapted to the such a variable environment, notably the micro-organisms

But if the lake is internationally known it is because it is the most important regular breeding site, along with the Camargue (France), for the of the Greater Flamingo in the Mediterranean and north-west Africa.

The number of flamingos in Fuente de Piedra varies annually as a result of the strong seasonal effects. In years of abundant rains there is a huge concentration of birds between February and July, with breeding taking place between March and August. Breeding takes place on mud banks and when the water levels are very high on the dikes and mounds which are above water level as islets.

The water bird population of the lake fluctuates, both numerically and specifically, as it is greatly conditioned by the water levels, the salinity and length of time of standing water. In dry years, the water level is low and forms a shore which is favourable for the presence of waders/shore birds. In wet years the reverse occurs, and there is a corresponding increase in diving species.





Public Access

The reserve is equipped with the necessary public access which facilitates direct contact between the visitor and the lake and this is complemented by the information and exhibition in the Visitors' Centre. There are two signalled walks (senderos) around the lake, one of medium length and the other short, which may be used.



El Laguneto walk

This walk of 250 metres starts at the lookout point (mirador) of Cerro del Palo and ends at the Laguneto del Pueblo. This walk is adapted for persons with reduced mobility, including wheel chairs, and there are three hides which enable the observation of a wide variety of water birds.

This area used to be occupied by small quarries for the extraction of sand and stone and once abandoned were used as rubbish tips. In order to restore this area, it was first necessary to buy them, which was done in 1986 and this permitted closure of the tips and recuperation of the landscape of the mound. After this was done, plant repopulation was carried out and two of the former quarries were converted into small lakes. Lastly, in 2006 and thanks to funding by the Life-Wetlands project, the Laguneta del Pueblo was restored and a system of channel constructed which permitted flooding these new lakes with water from the residual water purification system of the Fuente de Piedra village. The vegetation used in repopulation belongs basically to that characteristic of Mediterranean hills (ilex, wild olives, mastic, etc.).





Las Albinas walk

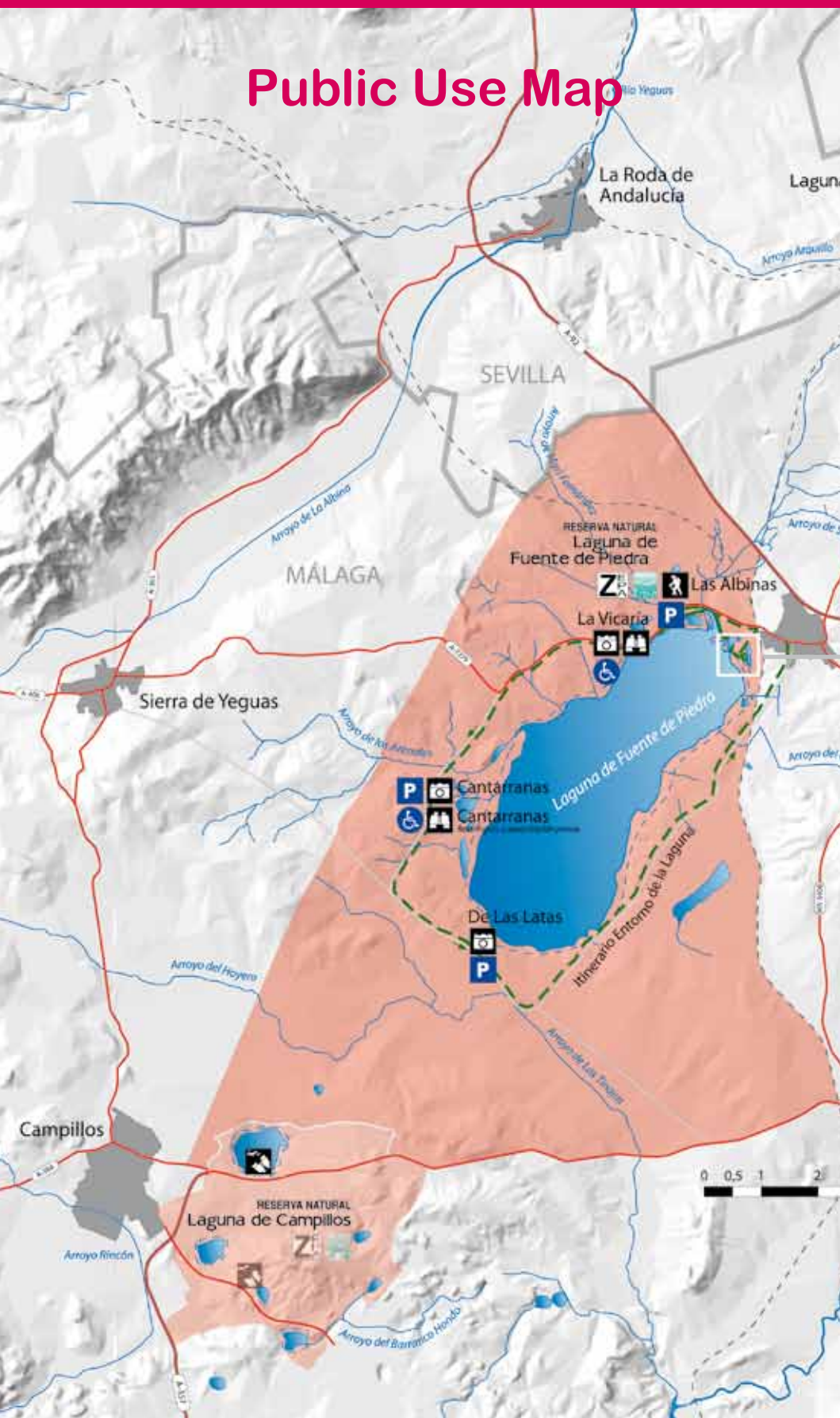
This walk starts in the area known as 'Los Juncare' and has a length of 2.4 kms. It runs between the northern sector of the lake, by the mouths of the Santillán and María Fernández streams and ends on the curve of the Vicaría where there is an observatory and watch point.

The farms which were between his route and the lake were drained for agriculture at the end of the 19th century. Once the land had been bought, the drainage ditches were closed off and the walls which prevented flooding from the streams removed. These activities have permitted the recuperation of cycles of natural flooding and also the halophytic vegetation. In years of less than average rainfall, this area is a saline steppe which is occupied by steppe bird species such as Stone Curlew, Calandra Lark and Lesser Kestrel. In the area of Los Juncare, which is kept flooded by water from the town residual water purification system and the mouth of the María Fernández stream, it is possible to see a wide variety of water birds such as Flamingos, Mallard and other ducks and a wide variety of waders such as Black-winged Stilt.

In wet years the water from the lagoon floods to these areas and the number of species to be seen along this walk increases considerably.



Public Use Map



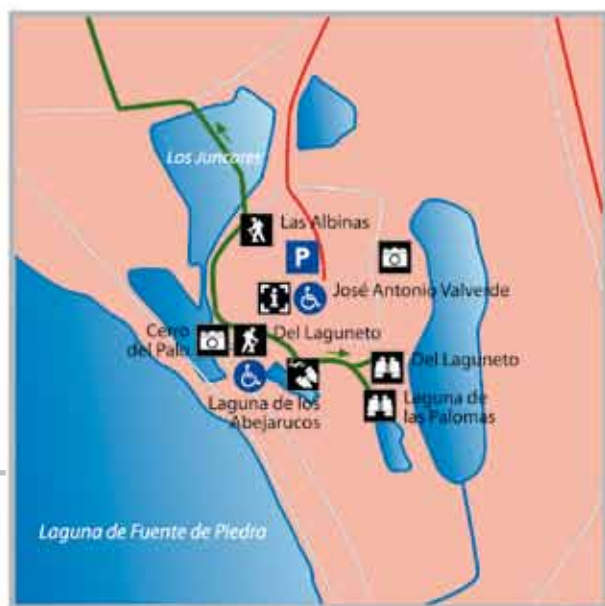


El Laguneto walk

Length: 250 metres
 Time: 10 minutes
 Level of difficulty: low

Las Albinas walk

Length: 2.4 kms
 Time: 1 hour
 Level of difficulty: low



Natural Reserve	Visitors' Centre	Provincial limit
Peripheral Protection Zone	Signaled Track	Signaled track
Special Protection Zone for Birds (ZEPA)	Lookout point	Peripheral itinerary around lake
Ramsar Wetland	Observatory	Motorway
MALAGA	Recreation Area	Road
Map actualised June 2009	Wildlife observation	Railway line
	Accessible installation	Track
	Parking	Hidrological net work





Itinerary around

There is an itinerary of some 21 kms which follows the perimeter of the lake. This route runs along the road to Sierra de Yeguas and tarmacked agricultural traces before ending in the village of Fuente de Piedra. Given the length of this route, it can be done either by car or on a bicycle. There are three well signalled stops from where the lake may be observed.





the lake

Stop 1: La Vicaría

The whole of the northern sector of the lake can be seen from this point. An ever-changing wetland, there is a belt of vegetation, this made up of reeds near the observatory, halophytic scrub in the sector nearer the lake and tamarisks around the fringes of the former perimeter channel.

The irregularity of the rains conditions the changes of this scenery according to the seasons and years. In the winter part of the saline steppe floods with water flowing in from the María Fernández stream and remains flooded until spring. In exceptionally wet years the lake surface extends considerably and floods the halophytic scrub also. In years of normal rainfall, the shores remain open and in summer the precipitated salt covers the dry lake bed.





Stop 2: Lookout / Mirador de Cantarranas

This lookout allows one to enjoy the country scenery, with the Cantarranas lake in the lower foreground and beyond it the great lake of Fuente de Piedra itself.

Many Mediterranean wetlands were drained during the last two centuries and at the same time the surrounding forests of oaks and wild olives were felled, leaving a legacy of dispersed trees and outcrops of mastic in a countryside dominated by olive trees and cereals. This countryside, now traditional, is a heritage to be conserved along with the remaining inland lakes.

The large wetland of Fuente de Piedra did not escape these transformations. The natural water supplies which supplied the lake were altered to flow along channelled streams and as a consequence adjacent land no longer flooded. In the middle of the 20th century the temporary lake of Cantarranas was drained by excavated a drainage channel and the natural route of the Arroyo de los Arenales was altered, bringing it closer to the lake. In 2005 the lake at Cantarranas was bought by the Andalusian Department of the Environment (Consejería de Medio Ambiente) and restored with funds from the Life-Wetlands Project.





Stop 3: Lookout / Mirador de las Latas

This match point is to be found at Cerro de las Latas at the southern end of the lake in the only remaining area of Mediterranean forest and oaks and pasture around the lake.

But above all, the Laguna de Fuente de Piedra is an area which has been profoundly modified by humans. For example, the islets which can be seen on the left (Los Canchones del Suroeste) are the only ones of natural origin. The lake bed is crisscrossed by the remains of the infrastructures of dikes and channels constructed at the end of the 19th century to take advantage of the salt.

In the sector of the central dike known as the Isla de Senra, the flamingos normally establish their breeding colony. These dikes are also used for breeding by Gull-billed Terns, Black-headed Gulls and various species of waders. In years when the water level is in excess of 1 metre, the flamingo breeding colony moves to the natural islets of the Canchones del Suroeste.



Seasonal distribution of the most common species in Fuente de Piedra



		P E R I O D			
		November-February WINTERING	February-April SPRING MIGRATION	March-August BREEDING	August-October AUTUMN MIGRATION
Name	Latin Name				
PODICIPEDIDAE					
Little Grebe	<i>Tachybaptus ruficollis</i>	Regular presence	Regular presence	Regular presence	Regular presence
Great Crested Grebe	<i>Podiceps cristatus</i>	Wet years	Wet years	Wet years	Wet years
Black-necked Grebe	<i>Podiceps nigricollis</i>	Wet years	Wet years	Wet years	Wet years
ARDEIDAE					
Cattle Egret	<i>Bubulcus ibis</i>	Regular presence	Regular presence	Regular presence	Regular presence
Grey Heron	<i>Ardea cinerea</i>	Regular presence			Regular presence
CICONIIDAE					
White Stork	<i>Ciconia ciconia</i>				Regular presence
PHOENICOPTERIDAE					
Greater Flamingo	<i>Phoenicopterus roseus</i>	Regular presence	Regular presence	Regular presence	Regular presence
ANATIDAE					
Greylag Goose	<i>Anser anser</i>	Wet years			
Common Shelduck	<i>Tadorna tadorna</i>	Regular presence	Wet years	Wet years	Wet years
Eurasian Wigeon	<i>Anas penelope</i>	Regular presence			
Gadwall	<i>Anas strepera</i>	Regular presence	Regular presence	Regular presence	Wet years
Teal	<i>Anas crecca</i>	Regular presence	Wet years		
Mallard	<i>Anas platyrhynchos</i>	Regular presence	Regular presence	Regular presence	Regular presence
Northern Pintail	<i>Anas acuta</i>	Wet years			
Northern Shoveler	<i>Anas clypeata</i>	Regular presence	Regular presence		
Marbled Duck	<i>Marmaronetta angustirostris</i>		Regular presence		
Red-crested Pochard	<i>Netta rufina</i>	Regular presence	Wet years	Wet years	Wet years
Common Pochard	<i>Aythya ferina</i>	Regular presence	Regular presence	Regular presence	Regular presence
White-headed Duck	<i>Oxyura leucocephala</i>	Wet years	Wet years	Wet years	Wet years
ACCIPITRIDAE					
Western Marsh Harrier	<i>Circus aeruginosus</i>	Regular presence	Regular presence	Regular presence	Regular presence
RALLIDAE					
Common Moorhen	<i>Gallinula chloropus</i>	Regular presence	Regular presence	Regular presence	Regular presence
Purple Swamphen	<i>Porphyrio porphyrio</i>	Wet years	Wet years	Wet years	Wet years
Coot	<i>Fulica atra</i>	Regular presence	Regular presence	Regular presence	Regular presence
GRUIDAE					
Common Crane	<i>Grus grus</i>	Regular presence			
RECURVIROSTRIDAE					
Black-winged Stilt	<i>Himantopus himantopus</i>	Regular presence	Regular presence	Regular presence	Regular presence
Avocet	<i>Recurvirostra avosetta</i>	Regular presence	Regular presence	Regular presence	Regular presence



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