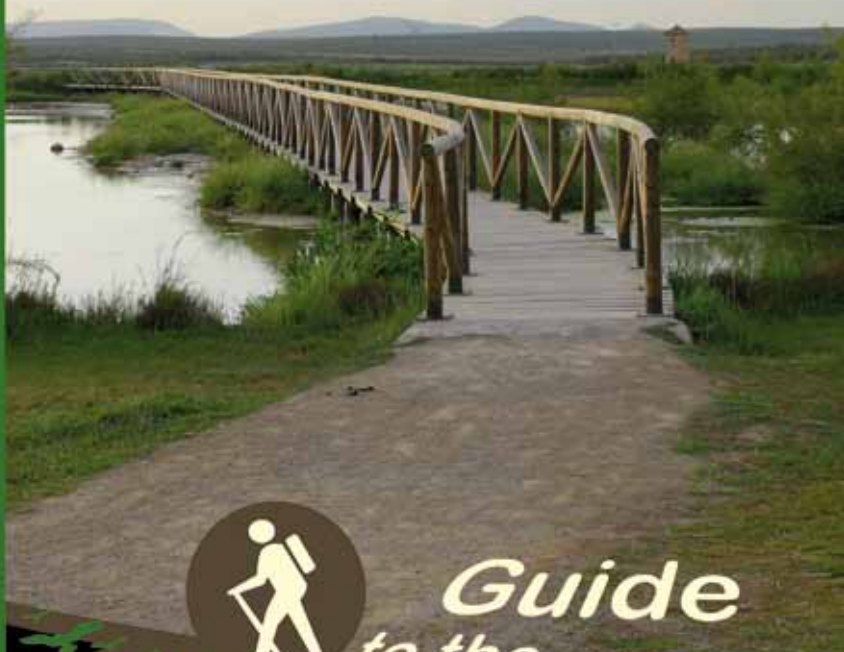
CONSEJERÍA DE MEDIO AMBIENTE

RESERVA NATURAL

Laguna de Fuente de Piedra



Guide to the lake

Andalucía se mueve con Europa

Unión Europea

Fondo Europeo de Desarrollo Regional

JUNTA DE ANDALUCIA

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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 crystalising 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 ouside its periphery, giving a total area of 1.554 hectares. Ariound this area there is a 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 importante from various pints 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 especies.

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 restired 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.).

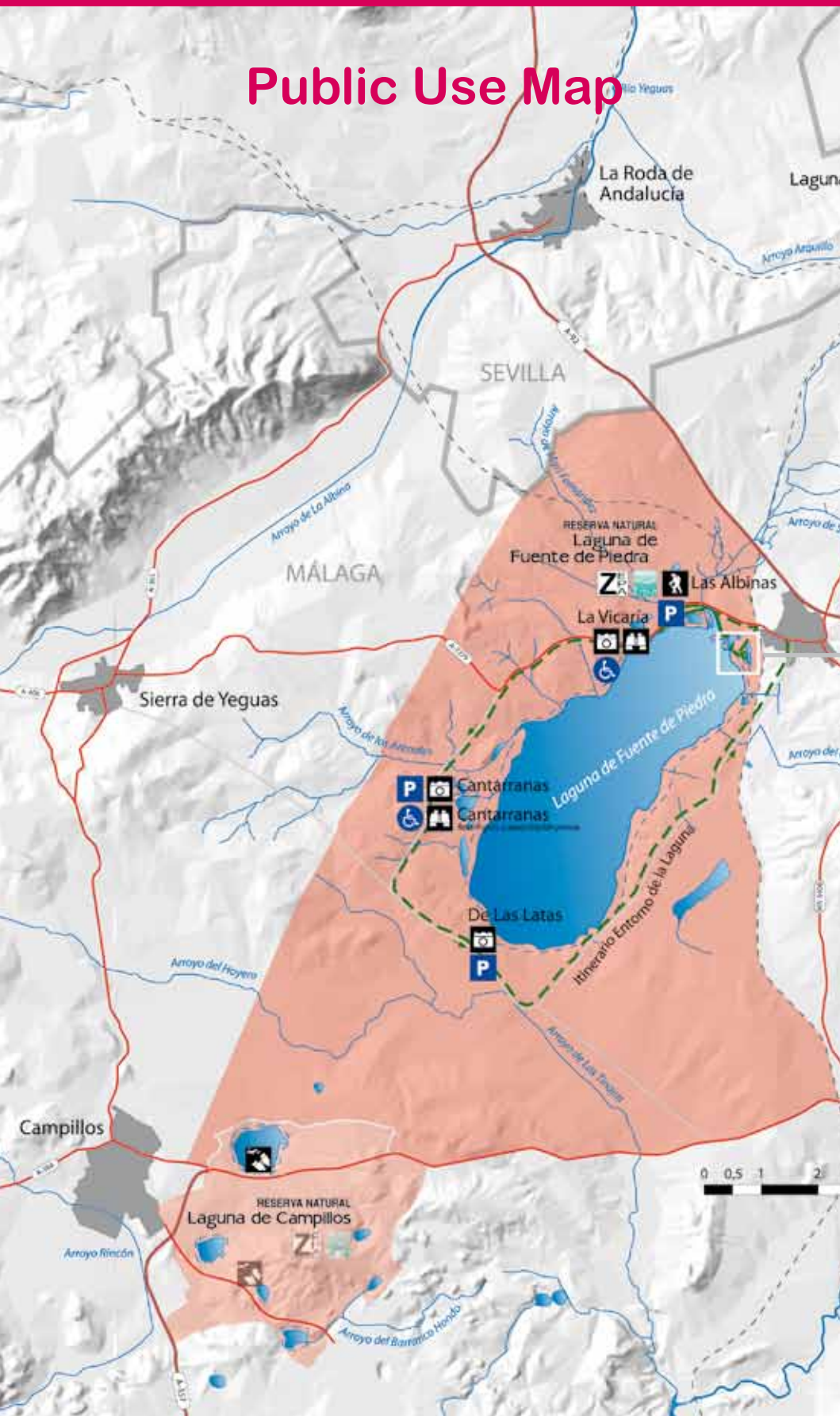
Las Albinas walk

This walk starts in the area known as 'Los Juncares' 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 end on the curve of the Vicaria where there is an observatory and watch point.

The farms which were betweent 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 Juncares, 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

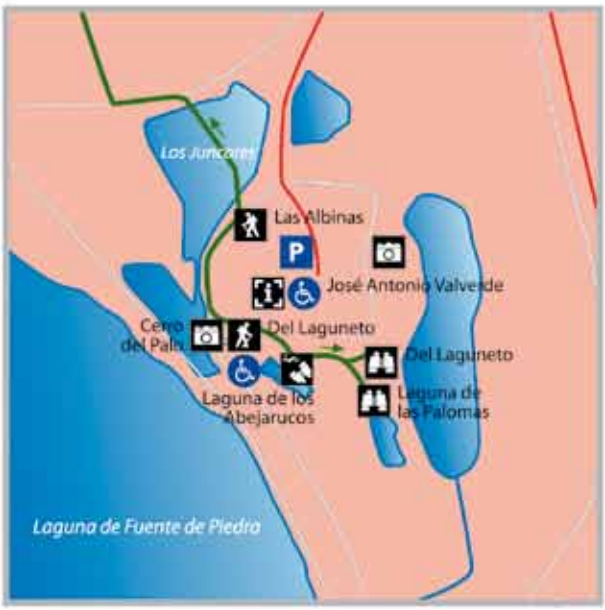


El Laguneto walk

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

Las Albinas walk

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



Itinerary around

There is an intinerary of some 21 kms which folllows the perimeter of the lake. This route runs along the road to Sierra de Yeguas and tarmacked agri-cultural traces befote ending in the village of Fuente de Piedra. Given the length of thsi route, it can be done either by caro 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 centurias anda t 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 Deoartment 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 ein 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 criss.crossed by the remains of the infrastructures of dikes and channels constructed at the end of the 19th century to take advantage of the salt.

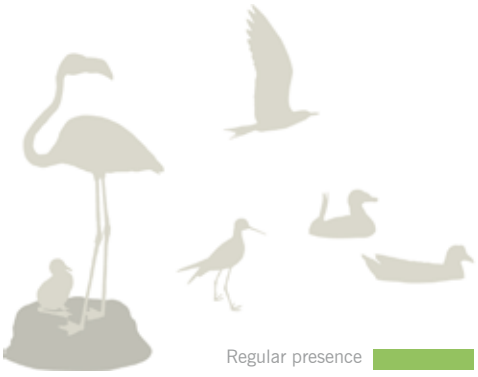
In the sector of the central dike known as the Isla de Senra, the flamingos normally establish their breeding colony. These dikes are also used for breeding by Gull-billed Terns, Black-headed Gulls and various species of waders. In years when the water level is in excess of 1 metre, the flamingo breeding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

Seasonal distribution of the most common species in Fuente de Piedra

Regular presence
Wet years

PERIOD

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



PERIOD

Regular presence

Wet years

Name	Latin Name	November-February WINTERING	February-April SPRING MIGRATION	March-August BREEDING	August-October AUTUMN MIGRATION
BURHINIDAE					
Stone-curlew	*Burhinus oedicnemus*	■		■	
GLAREOLIDAE					
Collared Pratincole	*Glareola pratincola*		■		
CHARADRIIDAE					
Little Plover	*Charadrius dubius*	■	■	■	
Ringed Plover	*Charadrius hiaticula*	■			■
Kentish Plover	*Charadrius alexandrinus*	■	■	■	■
Golden Plover	*Pluvialis apricaria*	■			
Grey Plover	*Pluvialis squatarola*				■
Lapwing	*Vanellus vanellus*	■	■	■	■
SCOLOPACIDAE					
Red Knot	*Calidris canutus*				■
Little Stint	*Calidris minuta*	■	■		■
Curled Sandpiper	*Calidris ferruginea*	■	■		■
Dunlin	*Calidris alpina*	■	■		■
Ruff	*Philomachus pugnax*	■	■		■
Snipe	*Gallinago gallinago*	■			■
Black-tailed Godwit	*Limosa limosa*		■		■
Bar-tailed Godwit	*Limosa lapponica*				■
Spotted Redshank	*Tringa erythropus*				■
Redshank	*Tringa totanus*	■	■		■
Greeenshank	*Tringa nebularia*		■		■
Green Sandpiper	*Tringa ochropus*	■	■		■
Wood Sandpiper	*Tringa glareola*				■
Common Sandpiper	*Actitis hypoleucos*	■	■		■
Turnstone	*Arenaria interpres*				■
LARIDAE					
Black-headed Gull	*Chroicocephalus ridibundus*	■	■	■	■
Slender-billed Gull	*Chroicocephaluss genei*		■		
Lesser Black-backed Gull	*Larus fuscus*	■			■
Yellow-legged Gull	*Larus cachinnans*		■	■	
STERNIDAE					
Gull-billed Tern	*Gelochelidon nilotica*		■	■	
Whiskered Tern	*Chlidonias hybridus*		■		
Black Tern	*Chlidonias niger*		■		

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