

NATURE SITE

The Guadalhorce River Mouth



Gaining protection for a unique area

The Guadalhorce River Mouth Nature Site is a coastal wetland located in the alluvial delta of Malaga's longest and most abundant river, with artificial bodies of water in its interior.

Of all the Province's wetland environments of this type, this is undoubtedly

the most important. It is composed of the mouths of the rivers along the western coast and the Axarquía's Vélez, among others.

The River Mouth of the Guadalhorce entered the Network of Protected Natural Spaces of Andalusia (RENPA) in 1989.

The Glossy Ibis is the emblem of the Nature Site.

Photo: Huberto García.





Kentish Plovers at the edge of the restricted access area for nesting. Photo: Huberto García.

A privileged strategic location

Its coastal location, close to the Straits of Gibraltar, and the absence of other valuable wetlands in the region make the mouth of the Guadalhorce a strategic location for bird migrations, both for birds travelling inland and for those that prefer to follow the coastline.

Many birds, both aquatic and terrestrial, need to stop off and stock up before crossing the Mediterranean on their journey to their wintering grounds. Others need a place to rest and feed just after crossing it, on their way back to their breeding grounds.

Another of its distinguishing factors, and at the same time a principal virtue, is its status as an authentic isle of nature in an anthropized area, being surrounded by transport infrastructure, industrial estates, built-up areas and an international airport. In fact, the natural areas surrounding the nature site continue to be squeezed, and their existence even threatened. The high level of environmental protection and more than 30 years of conservation work have made its survival possible. It now faces the challenge of balancing its magnificent natural qualities with the attraction of thousands of visitors.

Challenges for the future

It is undoubtedly a great attraction for the general population, and more specifically for educational and scientific purposes, in addition to sporting use with the new hiking installations. However, it is precisely the growing pressure of visitors that may cause concern regarding its proper management. It must not be forgotten that the creatures that inhabit it are wild (despite at times even their names being known). Moreover, some species are in danger of extinction despite their relative abundance locally, and this is an invaluable resting place on their migratory journeys.

A Thekla Lark using a signpost as a perch. Photo: Huberto García.



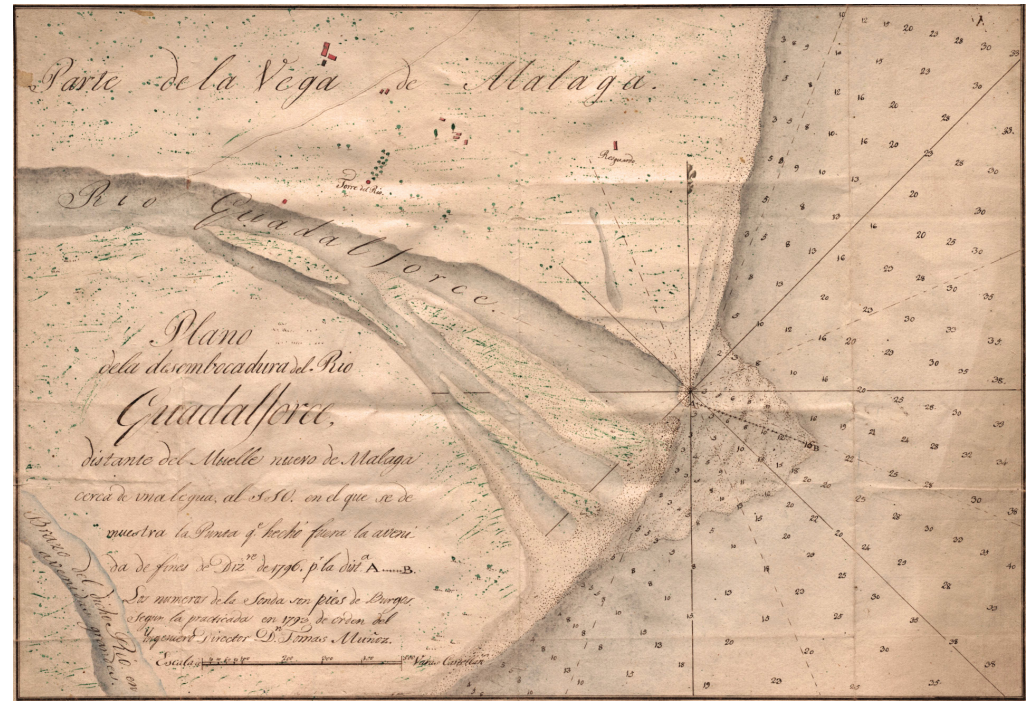
A story with a natural ending

A very interesting exercise, from an educational or scientific point of view, is to imagine the evolution of the landscape of the Guadalhorce river mouth in recent history. Almost 3,000 years ago, the Guadalhorce formed a wide estuary dotted with islets. The oldest known Phoenician settlement in Malaga was located on the western bank, where the airport is situated today. Several decades later (8th century B.C.) a new settlement was created on the Cerro del Villar, found to the west of the beginning of the public footpaths of the site and which at that time was an island most likely connected to the land.

Although research is still in progress, we now know that a small but complete town once stood here. Its river port was founded as a focal point of trade between the Phoenicians and the local population. During that time, our Nature Site was underwater in the bay open to the Mediterranean, accumulating silt, sand and gravel eroded from the sierras, the inception of its subsequent capacity.



The river mouth in 1971, at the meeting point of the farmland and the gravel pits.



Map of the mouth of the Guadalhorce River in 1796, made after the coastline was transformed by the flood. Source: Virtual Library of the Ministry of Defence.

The Guadalhorce and the change of landscape

After centuries of sediment deposition, the former estuary transformed into an alluvial delta, as seen in the attached map, one of the first graphic documents of the area. It was drawn up after one of the periodic floods and overflows of what was then known as the Guadalhorce.

This fertile land was used for agriculture, bringing on a second milestone in the river mouth's history, its transition to intensive sugar cane cultivation in the 19th century. In 1876, the sugar factory at the mouth of the Guadalhorce, the Ordóñez sugar mill, began its production on the same site where the Azucarera Hispania sugar factory was inaugurated in 1930. Our reserve was then known as "Finca La Isla", the alluvial plains located between the meandering Río Viejo and the main riverbed and the railway, opened in 1975. Even today you can still see the irrigation water pipes and some of the terraces and, in fact, the Laguna Grande Pathway follows one of the dirt tracks that existed at that time.

From agriculture to mining

The third instance is the change from agricultural use to the exploitation of the sands and gravels for use in construction from the late 1970s to the early 1980s, which was then booming on both sides of the river. This did not last long, and by the end of the decade the site was littered with large sinkholes filled with water (infiltrated and also rainwater) that attracted birds and other animals. Fortunately, we have successive records for cartographic purposes that show the evolution from one landscape to another. Once the gravel had been extracted, the holes were used as an illegal dump. On the gate of the estate, a sign read: "Rubble dumping allowed". This was possibly the lowest moment for the river mouth.



The Nature Site is an area closely linked to the city of Malaga, due to its proximity. Photo: José Miguel Ramírez.



Building materials dumped by the lagoons with no littoral vegetation. Photo: Saturnino Moreno - Silvema.

The protection of the Guadalhorce river mouth

It was around this time, both the general public and various associations called for the protection of the area. Thanks to the growth of nature conservation policies of the late 1980s, the environmental authorities gave the area one of the strongest protection statuses, that of Nature Site. This marked a turning point that brought on a fourth period in its history. Nevertheless, this new protection status coincided with the growth of the city to the west, successive ring roads and other elements of urban expansion. During the period around the turn of the century, two new viaducts appeared, along with the wastewater treatment plant, the airport expansion and the channelling of the River Guadalhorce and the Bienquerido and Las Cañas streams.

From a naturalist point of view, the Nature Site has been subjected to many alterations and environmental improvements. The lagoons have been remodelled and restored. Outside the water bodies, the vegetation around the verges has been regenerated and non-native species have been eliminated, which have substantially modified the landscape and have given it the natural appearance that makes it difficult to recognise this eventful past.



A landscape marked by vegetation

In an extremely small area, it is possible to find four different environments or ecosystems, sometimes with very clear boundaries. This is another of the semi-hidden and underappreciated merits of the Guadalhorce river mouth.

The branches of the river

Entering the protected area via the walkway or the railway bridge, the first landmark to catch the eye is the river. Its two branches are fairly wide, (between 60 and 80 metres) but the western branch is generally deeper. The riverside vegetation has had to adapt to the changing course of the river, however it is now fairly well established. Although the tall eucalyptus trees stand out, the original woodland is made up of poplars and a few ash trees, well adapted to the local conditions and the influence of the sea. In this double fringe of vegetation there are giant reed beds and African tamarisk.

Some older tamarisks and forest clearings occupied by grassland.



The western branch of the Guadalhorce with dense estuary vegetation.

The wooded grasslands

Interesting clumps of tamarisk trees, with some large individual examples, which are typically at home on clayey and saline soils grow just back from the riverbank itself, on the flood plains of the river and around the lagoons.

Thanks to the environmental efforts, there are shrubs such as mastic trees and numerous wild olive trees, most of which have appeared naturally. The clearings between the scrubland, covered in grasses, are also a very necessary habitat for certain species, accustomed to more open terrain.



The lagoons

There are several varieties of the Nature Site's showpiece, its lagoons. Those with more freshwater, due to the greater influence of the alluvial aquifer and greater depth, are surrounded by dense vegetation, with bulrushes, reeds and rushes. The boundary between land and water here is hidden and so, together with the presence of fish, this makes it ideal for diving bird species and piscivore animals.

The brackish and saltwater lagoons have barren shorelines where salt marsh plants, such as samphire, cover the sands and clays. Bare tree skeletons abound (mostly tamarisk) killed by the increase in salinity following the rechanneling of the river.



The salinity of the lagoons conditions a vegetation gradient. Photo: José Miguel Ramírez.

The coastline

On the southern side is the beach (bordered by the two branches of the River Guadalhorce) and the natural dune area with branches, reeds and other plant remains deposited by the storms. At just over a kilometre in length, it



Dense lakeside vegetation in the Escondida lagoon.

is one of the most interesting habitats, being the breeding and feeding grounds for waders. It is in this dynamic sea-land interface, exposed to storms from the east where we can study the original aspect of the area's beaches and dunes, which have all but disappeared in its current state. Here, we can observe the progressive colonisation of coastal plant species such as fennel, thistle, sand stock and sea daffodil.

Vegetation adapted to the sand and marine influence in the protected dune area. Photo: África Lupión.



Vertebrates

The bio-geographical and historical development of the Guadalhorce delta means the Nature Site's present composition of fauna is only relatively recent. This perhaps dates back to the beginning of its legal protection, at least as far as non-flying or swimming vertebrates are concerned.

Its condition firstly as an island between two branches of the river, as a monoculture, and finally, its separation from the land to the east by two channels, makes colonisation or sometimes recolonisation of this territory complicated for some species.

Reptiles

A clear example would be the Common Chameleon, which most likely reached this land by its own means, but also through the relocation of captured animals. Regarding other reptiles, the Horseshoe Whip, Ladder and, above all, Bastard Snakes are present due to the draw of a natural space with an abundance of prey and, logically, their own agility. Two Iberian species of Geckos are found here, and inhabit the bridges, breakwaters and observatories. Of this group, the Long-tailed Lizard is also present, especially in the clearings in the thicket.



A common Gecko sheltering under a wooden structure in the Nature Site.



An adult Bastard Snake crossing one of the tracks. Photo: Jacinto Segura.



Mammals

Rabbits are the most abundant of the medium-sized mammals, although it is usually just their tracks on the sides of the paths that are seen from their nocturnal activity. Shown here is a photograph of a more unexpected resident, the common hare, in the grasses and areas of open scrub areas. Although never in large numbers, we also find the Common Hedgehog present here. The population of Rats, Mice, Shrews and Voles must be therefore extraordinary in order to support such an important collective of nocturnal birds of prey, including the Barn Owl.

As for predators, there are Mongooses with the river mouth habitat being typically Mediterranean, and there are sightings of Foxes, common Genet, Weasels and even the occasional visiting Badger. A mammal that is often seen is the Otter, despite being very elusive, typically near lagoons home to larger fish, especially in La Escondida and La Casilla, and especially at times of river flooding.

Worthy of mention is the variety of Bats that live and hunt daily in the Protected area, thanks to the insects that develop in such a favourable environment for them as the mouth of a river.



A common Hare on alert at the edge of the grassland that is its habitat. Photo: Juan Carlos Bernal.

An Otter on the banks of the Guadalquivir just out of the water. Photo: Salvador López Ruiz.



Aquatic creatures

The amphibians that are sometimes heard are the Mediterranean Tree Frog and the Common Toad and Frog, perhaps carried by the flooding of the rivers, given that the lagoons or the delta are not a totally suitable habitat for them. The only Mediterranean coastal population of the very rare Spadefoot Toad can be found in some nearby streams.

Iberian pond turtles and Viperine Snakes are very common. The former can be seen sunning themselves, both in the pools and in branches of the river. All along the river there are allochthonous Freshwater Turtles, from releases (a practice that is absolutely forbidden).



A group of Spanish Pond Turtles of very different sizes on a rock jutting out of the river. Photo: Eduardo Alba.

The large Flathead Grey Mullet is the Osprey's most plentiful prey, such as this specimen ringed in Germany, a regular visitor to the Protected area every winter on its favourite perch. Photo: Huberto García.



The fish

The great unknown of the Guadalhorce's rivermouth is its fish, which is tremendously contradictory considering the abundance, diversity and the uniqueness of species. One of the most interesting cases is that of the Eel, currently prohibited to fish in Andalusia with a 10-year moratorium and repopulation measures in place. It is classified as Endangered (IUCN) and is a species that reproduces in the ocean and returns to the rivers when it is a juvenile (an elver), a process that is sometimes not possible in the Guadalhorce if the riverbed is interrupted by a sand bar.

As for the mainly freshwater species, several Iberian endemic species stand out, some of which have dwindling populations. The River Guadalhorce forms the eastern boundary of the distribution of two species: the Southern Bogue (a vulnerable species) and the largest of the



native fish, the Andalucian Barbel, with one of its highest densities here. A somewhat smaller fish, the Bordallo or Cachuelo, maintains reasonable populations in this area of Malaga, which forms its western limit of distribution in the Southern Basin.

Marine or freshwater-tolerant fish, which are very common in the mouth of the estuary, deserve special mention. For example, Mulletts, which are very abundant and one of the favourite prey of the Osprey. During larger floods when the river links up more continuously with the sea, predators such as Sea Bass typically enter upstream in search of prey.

The small Spanish Toothcarp photographed in controlled conditions.
Photo: Daniel Burón Fernández.



A pair of specimens of different ages of Andalusian Barbel.



The Spanish Toothcarp

A small fish of barely 5 cm, typical of coastal Mediterranean environments, the Spanish Toothcarp has been introduced into the reserve's lagoons. This initiative started in 2017 and aimed to increase the species' populations, declared endangered, as well to curb the proliferation of mosquitoes. The introduction has been extremely successful in the most saline lagoons, where the Gambusia or Western Mosquitofish (another small fish introduced in Spain in 1921 and which is an invasive alien species) does not survive or is less able to compete with the Spanish Toothcarp.



Invertebrates

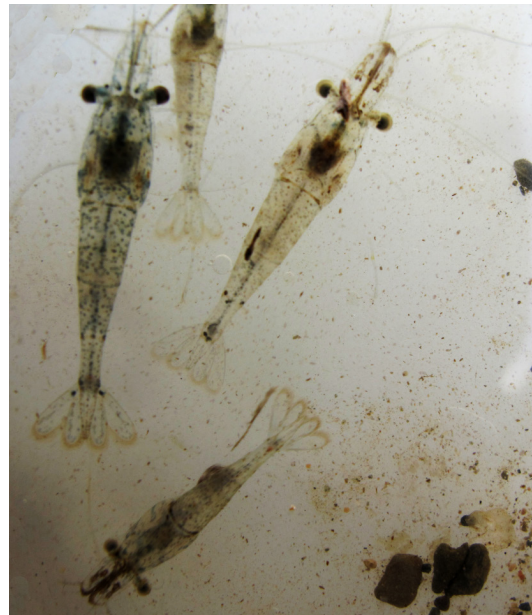
Several species of arthropods are found in the Nature Site. The flying varieties are the easiest to spot, particularly butterflies and dragonflies, a number of whose species present in the province can be seen.

In addition to the area's benefits as a stopover for birds, there are two migratory species for which it is vital: the *Anax ephippiger* dragonfly and the *Vanessa cardui* butterfly. Both stop off to rest and feed on their journey to or from the African continent. Special mention should be made for a small and striking nocturnal butterfly, the *Utetheisa pulchella*, due to its relative seasonal peaks in numbers. It can even be seen on the Nature Site's beaches. A dragonfly from Africa currently in the process of colonisation also relatively frequent in the area, is the colourful *Trithemis kirbyi*.

A *Vanessa Cardui* absorbing the sunlight on the wall of an old building



The swimming crustacean *Palaemonetes varians*. Photo: José Miguel Ramírez



Artemias photographed in a Nature Site's lagoon. Photo: José Miguel Ramírez



Salt flies. Photo: José Miguel Ramírez

The group of aquatic invertebrates is well represented, with greater or lesser development of their communities depending on the climate, rainfall, and hydrological characteristics of each annual cycle.

In general, lagoons with higher salinity are inhabited by various species such as *Artemia sp.*, salt flies and *Palaemonetes varians* shrimps, especially in the summer months. Lagoons with lower salinity however are home to species of the copepod group and cladocerans (water fleas).

These communities play an important role in the food chain of the nature site, since they are a source of food for many species, particularly for water birds. One must highlight the great importance of the submerged vegetation in these habitats, especially algae such as carophytes (*Chara sp.*) and macrophytes such as *Ruppia sp.*

An ornithological destination

Several factors contribute to the wide diversity of bird species found in the Nature Site. On the one hand, the fact that it is an island of nature in the middle of an extremely humanised environment, makes it the only place on the coast of Malaga that is capable of hosting many types of birds, both resident and seasonal. Added to this is the great variety of environments present, which means that a greater number of species have their needs covered here.

A male White-headed Duck with its upright tail, showing attitude.



A Black-winged Stilt with nuptial plumage wading in a lagoon.



A Flamingo in flight showing pink, white and black. Photos: Huberto García.

On the surface of the lagoons

Among the birds that can be seen swimming in the lagoons are the ducks, which can be divided into those that dive to look for food with their wide bills, and those that do not.

The popular Mallard (which spends the whole year here), the European Shoveler (the most abundant of the ducks that winter in the reserve) and the Shelduck find their food on or near the surface. The European Pochard or the White-headed Duck (which was on the verge of extinction in Europe and has found a place to reproduce in the Guadalhorce river mouth) dive down and look for something to eat at greater depths. A rather special case is the Marbled Teal, a species in critical danger of extinction in Spain and for which a reintroduction programme is also underway here. It can search for food either by diving or near the surface and among the silt on the banks.

Other types of birds that are not ducks, can also be found in this environment, such as Eurasian Coots with their white foreheads, Common Moorhen with their red foreheads, and Grebes, both the resident Little Grebe and the wintering Black-necked Grebe. It is also common to find Gulls, especially the Black-headed, Mediterranean and Slender-billed Gulls, swimming while feeding or making shallow dives in search of small creatures. The Audouin's Gull (a species catalogued as vulnerable) also uses the site as a resting area on its migrations.



The boundary between two worlds

On the shores of the lagoons exists a markedly different community of birds. The waders, which feed on invertebrates in the mud and water, undoubtedly catch one's eye. Some, such as Kentish & Golden Plovers use their sight to hunt for prey and capture it with their short beaks. Others use their long beaks to probe the silt, such as Snipes and Godwits.

Of the birds with longer beaks, for some it is straight, such as the common Redshank or Sandpipers; others have a downward-curved beak, such as the Dunlin and Curlew. Some even have an upward-curved bill, like the Common Greenshank and Pied Avocet. This latter bird also feeds by filtering the water with sweeps of its beak, as do other iconic birds of other taxonomic groups, such as Flamingos and Spoonbills. Among the waders of the lagoons, the black and white Stilt, with its long red legs, is representative of the Guadalhorce estuary. These are very characterful birds and are very territorial, and do not hesitate to attack intruders who approach their nests while making their high-pitched calls.

The clear banks are also frequently used by small birds such as Wagtails, especially the White variety year-round and the Western Yellow variety during the breeding and migration season, or the beautiful Bluethroats.

Wading birds and Cormorants roosting on a dead tree.



A Penduline Tit perched on a reed branch. Photos: Huberto García.

Where green meets water

The few remaining banks full of marsh vegetation provide shelter for other birds, despite the salinity. During the breeding season, the Common Reed Warbler sings tirelessly all over the Nature Site, while during the winter, the pleasant Eurasian Penduline Tit flies around enthusiastically, with its attractive calls. The rare Little Bitterns and Squacco Heron fish from the cover of the thick beds of reeds.

The colourful Kingfisher also takes advantage of the perches and the cover provided by the vegetation to stalk the fish that it catches with a quick and accurate bite. At nightfall, the roosting that takes place in the tamarisk trees on the banks of the Grande Lagoon never fails to astonish. Hundreds of Cattle Egrets and several dozen Little Egrets and Glossy Ibis, with its curved beak and iridescent feathers congregate here. This latter happens to be the institutional symbol of the Guadalhorce Mouth.

In winter, these are joined in the tamarisk and the eucalyptus trees by several hundred large Cormorants that fish during the day in the bay or the river itself.





A male Redstart on the perimeter fence of the beach. Photo: Eduardo Alba.

In the mixed woodland

The thickness of scrub and tamarisk shrubs is essential for many small resident birds such as the Sardinian Warbler, summer birds such as the Woodchat Shrike and the Spotted Flycatcher, and wintering birds such as the Common Chiffchaff, the Blackcap and Song Thrush. However, it is especially valuable for many migratory passerines that stop off at the mouth of the Guadalhorce before continuing their journey. Most notable are the Common Redstart, Pied Flycatcher, Bonelli's Warbler, Subalpine Warbler, Melodius Warbler and the scarce Wood Warbler. The increasing tree cover of the Nature Site is allowing the arrival of forest species such as the Eurasian Sparrowhawk, the Jay or the Long-tailed Tit.

Female Kentish Plover on the beach at the river mouth. Photo: Huberto García.



Northern Shoveler ducks. Photo: Huberto García.

On the coast

The beach is one of the last breeding grounds of the Kentish Plover in the province of Malaga, where it builds its nests in the sand. From here or from the seabird viewing point we can observe Scopoli's Shearwaters which use the bay for feeding or as a stopover point. In winter, we can enjoy the spectacular display of the Gannets diving and the less dramatic dives of the Sandwich Terns. With its squawks, it is not difficult to spot the wintering Common Scoter and Razorbills bobbing on the waves in between dives.

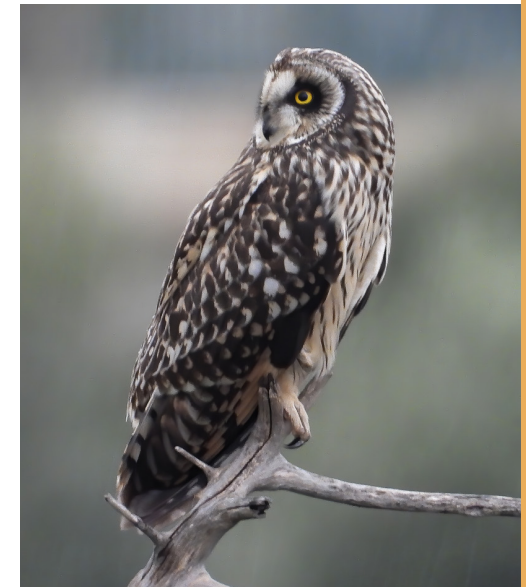
The aces of the sky

Special mention should be made of the birds of prey, which are the queens of the air wherever they fly. In the Guadalhorce river mouth, there are several pairs of Common Kestrels present throughout the year and, during the winter, an Osprey ringed in Germany has been visiting us for years, as well as others of this species: Marsh Harriers and Booted Eagles. Other small birds that feed exclusively or almost exclusively in flight, also share this environment. This is the case for Swifts, House Martins, Barn & Red-rumped Swallows and European Bee-eaters, all species that fly over the sky of the Nature Site during the summer. In winter, the Crag Martin does the same.

In open country

In open areas with grassland and scattered bushes, the Crested Lark and the Eurasian Vulture are frequent throughout the year, with the European Stonechat being abundant in winter. In winter, when voles are abundant, Grey Herons, Barn Owls and Short-eared Owls hunt there.

A Short-eared Owl. Photo: Huberto García





Leyenda:

- - - Límite Paraje Natural
- · - · - Senderos de Uso Público
- - - Gran Senda de Málaga y Senda Litoral
- Inicio senderos
- Observatorios
- P Aparcamientos
- Paradas Autobús



Guidelines for Public Use



For hiking use. Do not leave the paths.



Dogs and other pets must be kept on a lead.



Respect public facilities.



Take any rubbish with you.



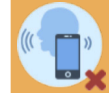
Space adapted for people with special needs.



Help us to conserve this fragile space.



Abandoning pets is forbidden.



Avoid making noise to not disturb the wildlife.



Making fires or camping is prohibited.



Gathering plants and disturbing animals is forbidden.



Flying drones is not allowed.



The use of bicycles is prohibited.

Technical info:

- **Figure:** Nature Site (Paraje Natural)
- **Date of creation:** 28 July 1989
- **Area:** 67 ha
- **Municipalities:** Málaga

Public footpaths:

	Rio Viejo Footpath	Laguna Grande Footpath
Route type	Linear	Linear
Distance km (one way)	1.6	1.9
Duration	1 hour	1 hour
Difficulty	LOW	LOW



Network of wildlife observatories:

- La Casilla Lagoon
- Río Viejo
- Sea birds (Aves marinas)
- Escondida Lagoon
- Grande Lagoon

Access:

The best way to access the Nature Site by private vehicle is from the residential development of Guadalmar, where you can park and which can also be reached by bus no. 5. To reach the protected area from here, follow the official Coastal Path, crossing the river over the bridge over the old railway line. From this bank of the river, there is also the possibility to reach it from the airport area, along the Great Malaga Path. From the western part of the city, you can park in Sacaba, or on the buses no. 7 & 40. Then follow the combined section of the Coastal Path & Great Malaga Path until you reach the Guadalhorse walkway.



The pathways for public use

The Public Footpaths start at the boundary of the natural area, at the beginning of the converted railway bridge now an access to the Nature Site. Since the construction of the Coastal Path footbridge in 2020, this point can also be reached from the western limits of the city.

The first approach, whichever point you choose, allows you to see the two branches of the Guadalhorce river, either from the footbridge or from the railway bridge. In fact, these are the best places to study this perimeter ecosystem of the protected area. In any case, it is within the area that the infrastructures and facilities for Public Use can be used to carry out activities to study and enjoy the natural virtues of the Guadalhorce river mouth.

The Escondida lagoon, in spring with numerous waterfowl.



One of the wildlife observatories in the Nature Site. Photo: José Miguel Ramírez.

The Laguna Grande Footpath

This route winds its way south-east, following an old track whose angular shape is a result of the old plots of farmland. In fact, alongside the path are some old pipes and other equipment once used for agricultural irrigation or supplying water. The path is slightly downhill and allows us to visit two of the five observatories in the Site. Near the beginning, the vegetation is very diverse with bushes and trees left over from its former uses and, above all, regeneration works. These open spaces are home to animals such as foxes, hares, rabbits and chameleons, as well as birds associated with these environments.

The salinity gradient of the lagoons depends mainly on how much contact they have with the lower water table and, therefore, the greater or lesser salinity depends on the proximity to the sea. The first body of water is the freshwater Escondida Lagoon, with its viewpoint. It happens to be one of the deepest in the complex, with a band of very dense vegetation around its edge, dominated by reeds, bulrushes and tamarisk. There are some species of fish here, which allows otters and kingfishers and diving ducks to live here.



Saltwater vegetation surrounding the lagoon and Mediterranean scrub in the background.

Another turn takes us towards the sea, but first passing the main bird watching point, the Grande Lagoon. This vast but shallow lagoon is surrounded by halophilic vegetation (adapted to saline soils) and is equipped with a wildlife observatory at the highest point of the route, allowing sweeping views over the whole area. The variety of waders, ducks and other birds is sometimes overwhelming, and it is also a roosting spot for Cormorants and Egrets and a hunting ground for some birds of prey such as Ospreys and Marsh Harriers. The route finishes at the edge of the dunes, which are in process of regeneration, being a vitally important ecosystem for the wintering of some species and for the reproduction of the Kentish Plover.

The Río Viejo Trail

Splitting off from its partner pathway a short way from the start, this second public footpath heads eastwards after a first bend. It shares the scenery with the previous route for the first section, where reeds dominate.



The beach at the mouth of the Guadalhorce.

It then runs quite high above the eastern branch of the river, which lies to the north. Apart from this riverbed, it is separated from the city by a drainage channel known as the Sacaba channel. The panoramic view over the Hoya de Málaga and its amphitheatre of surrounding mountain ranges is the finest in the Site.

There are three wildlife observation posts here. The first is La Casilla Lagoon, with similar characteristics to the Escondida, but shallower. Its boundary and thus its all-important reed beds follow the meanders of the old branch of the river. Further on is the Río Viejo Observatory, which has interesting information about how the river mouth used to be, although the old riverbed is no longer flowing. The salinity is once again higher here, and the vegetation and wildlife species respond in a similar way to before. To complete the spectrum of ecosystems present in the natural space is the Seabird Observatory, for spotting not only Mediterranean species, but also plants typical of a recovering coastline, such as fennel, poppy, arugula or rocket, sea stock or milk thistle.





Waders are a very interesting species and easy to observe at the river mouth.

A setting for environmental education, science and nature observation

Everything about the Guadalhorce River Mouth Nature Site seems to come together to create an ideal space for nature-based educational activities. The principal attribute of course, is its proximity to the city of Málaga and the Western Costa del Sol as well as its ease of access, even on foot, for many residents, visitors and educational institutions. But there are many other factors derived from its history and current status that can be used as tools to study nature in Malaga.

A recovered space

The Nature Site is a paradigm, as we have seen in the previous chapters, for an old industrial area that has survived the processes of urban growth going on around it. In fact, as far as we know it is currently in its best moment in terms of its evolution of its vegetation and becoming the habitat for a diverse variety of wildlife.

Accumulated scientific knowledge

We know more about the wildlife and flora of the natural area than in previous decades. In addition to the local administration's professionals, there is a well-established group of local ornithology enthusiasts who record the number of birds that visit the lagoons and coasts on a daily basis. They also log the rarer species that appear here on a relatively frequent basis. The monitoring is really quite exhaustive and is open to the general public and visitors.

The nature/anthropised environment interface

In few places is the drastic change between the urban growth of a metropolis and the natural island that is the Site so evident. In just a few metres one passes from motorways, industrial estates and residential estates to a natural stronghold of international importance. These differences can also be noticed in terms of light and noise pollution.

A world ecological reserve

Malaga's inhabitants should be aware of the importance of the site as a resting place and stopover for migratory species, a refuge for endangered animals or a connection between populations of living beings that are so punished on the Malaga coasts.

A male Dragonfly *Trithemis kirbyi* perched on the ground.



Ease of observation

It is unusual in the Andalusian natural landscape to be able to observe so many species, so easily and at such close range. Even without binoculars it is possible to differentiate sizes, colours, plumage patterns, behaviour and sounds. From this point of view, the educational tools that the Nature Site provides, are undeniably invaluable.

An immature Flamingo wading, accompanied by an adult.



The facilities and structures for public use

They allow access to all visitors, with very wide pathways and a total of five observatories that can accommodate medium-sized groups.



A flock of Shelducks in flight.
Photo: Huberto García.

A compact space

The Guadalorce River Mouth covers a small and manageable area and its pathways allow us to reach almost all of its individual spaces and environments. This makes it possible to get to know or study it in depth in a single day.



Tamarix africana tamarisk in full bloom.

An island that is many islands

From an ecological point of view, there are five different habitats that can be explored in less than an hour: the river, the Mediterranean scrubland, the lake (freshwater and brackish), the coastline of beaches and dunes and finally, the sea. Although for regular visitors it is something we have become accustomed to, for visitors it is possibly one of the greatest educational, scientific and enjoyable assets of this natural environment.

Pair of Marbled Teal. Photo: Huberto García.



© **EDITION AND COORDINATION:**

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Sunset at the Grande Lagoon.
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EDITION NOT FOR SALE



“Dedicated to all those who consider the Guadalorce River Mouth Nature Site a second home, either for their studies or own enjoyment.”





The Guadalhorce River Mouth Nature Site