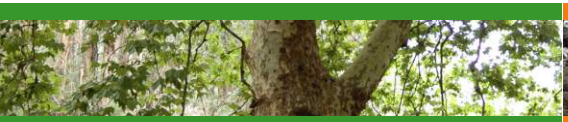
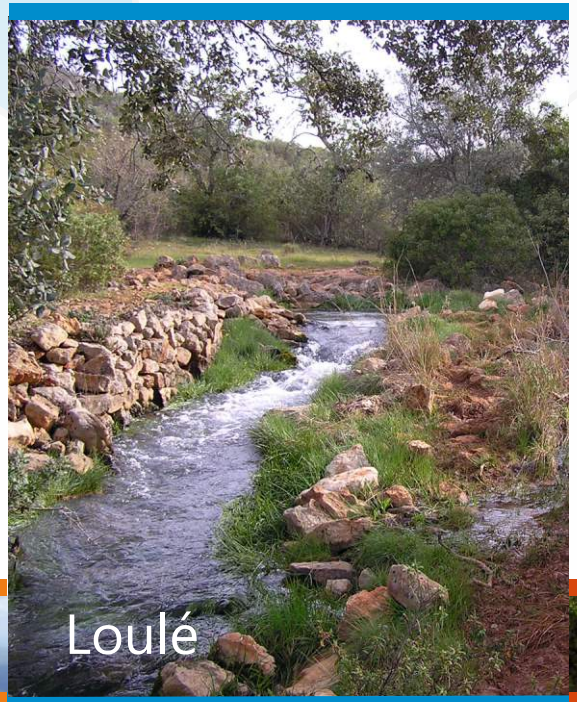
Rota
das
Árvores
Monumentais



Rota
da
Geologia

Rota
da
Água



Loulé

Rota
do
Contrabandista

Preface

In order to increase the attractiveness of Via Algarviana (GR13) there were created new products and infrastructures to enrich this Long Distance Path! One of those products was the creation of a set of 4 thematic Routes distributed by 3 Municipalities partners:

- Rota do Contrabandista (Alcoutim)
- Rota da Água (Loulé)
- Rota das Árvores Monumentais (Monchique)
- Rota da Geologia (Monchique)

The themes and the municipalities in question were not randomly selectect, as they are full in harmony! This is a way to increase the diversity of Via Algarviana, allowing people with very specific interests or just plain curious to move to these places and travel the routes that we propose, some on foot, others on mountain bike or even by car.
For each Route there is a Digital Guide, which can be downloaded for free, to help you and to find out more information along each Thematic Route!

Dare to discover the complementary offerings we have for you!

Signalling

Colour / Symbolic element

Logo /Name of the Route

Logo of Via Algarviana

Rota das Árvores Monumentais

Rota da Geologia

Rota da Água

Rota do Contrabandista



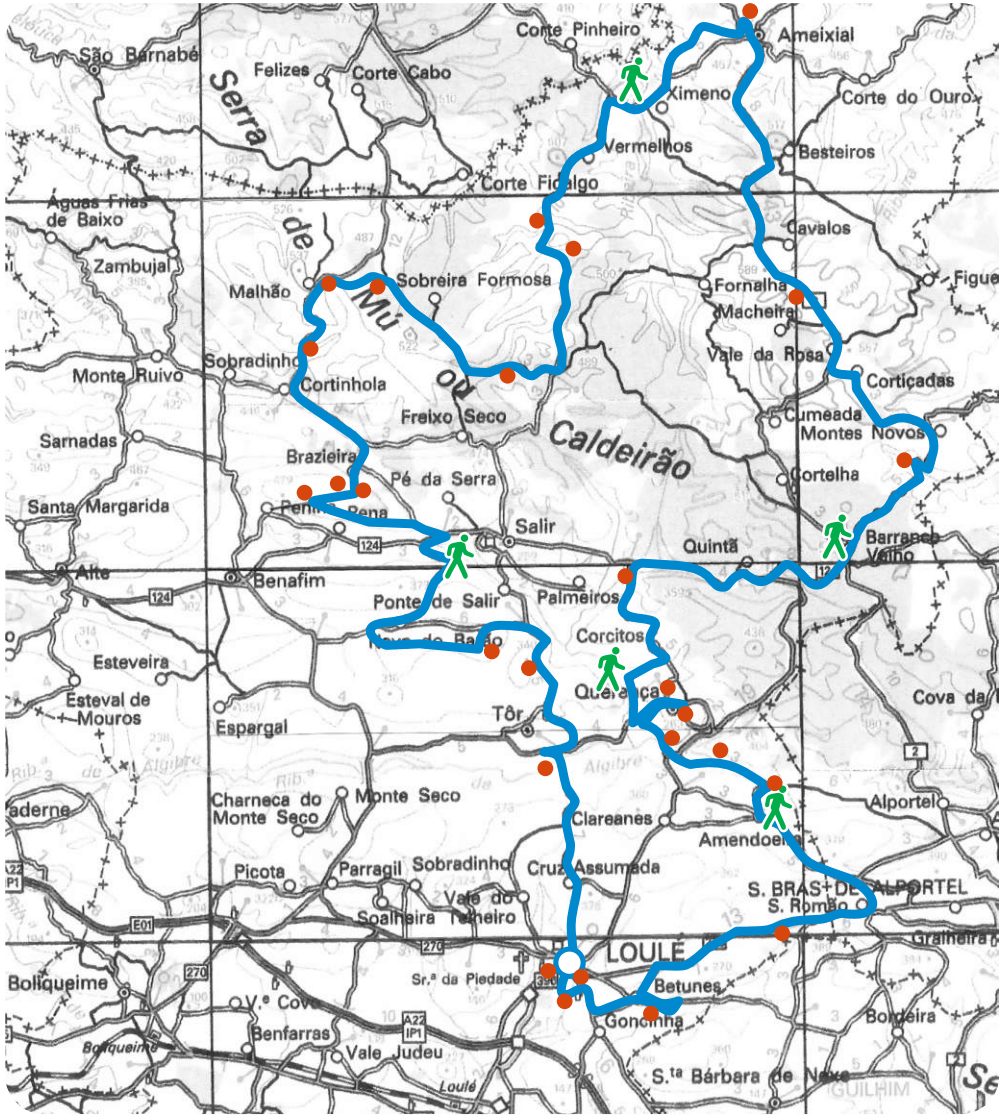

Introduction

Loule has always been a land of abundant water. There was not a single "house that did not have a well for personal use" in the city, and this was the case a little all over the county, where you can find hundreds of springs and fountains, numerous wells, dozens of dams and many miles of man-made sluices and other hydraulic structures. Today, about 98% of the population has access to piped water, but nevertheless, we should not forget nor take for granted the different methods that were engineered and built by the locals for harnessing water, that is the objective of this route. The main idea was to come up with a Water Route in Loule that covers the main watershed in this area, which can be completed a day. The route follows a path that provides an overview of most of the county of Loule, both in terms of geography and landscape as well as natural and cultural values. In addition, shorter optional Walking Routes are presented, allowing for the discovery of less accessible places, adding some variety to the actual route.

However many important and well-known features were left out, such as the "Alte" springs, or the "Santa de Quarteira" spring, among others. Only five out of the eleven county parishes were included in this route.

GENERAL CHARACTERISTICS OF THE WATER ROUTE

On-road route: 130 km
Paved / cemented roads: 119 km
Routes on good roads / reasonable dirt tracks: 11 km
Suggested walking routes: 5
Walking routes (total)**:** 12,1 a 12,5 km
Points of interest (including walking routes)**:** 46

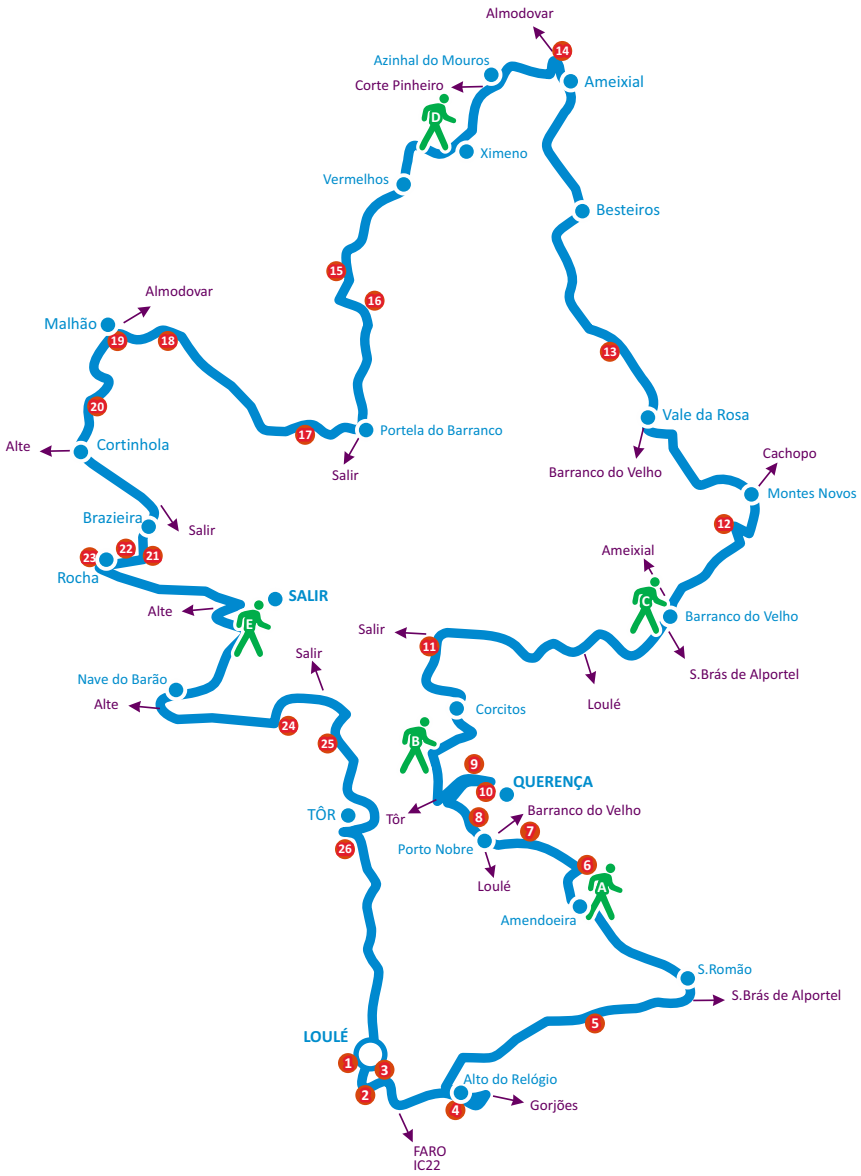


Map 1 - General Map of the Water Route

Map IGE 1/150.000

Key:

- Departure and Arrival Point
- Footpaths
- Points of interest



Map 2 - Map of the points of interest of the Water Route

Key:

- Departure and Arrival Point
- Main places
- Main crossings
- Footpaths
  - A - Olho Pariz
  - B - Benémola
  - C - Barranco do Velho
  - D - Chavachã
  - E - Almarginho
- Other points of interest
  - 1 - Bicas Velhas
  - 2 - Ponte do Álamo
  - 3 - Fonte do Cadoiço
  - 4 - Fonte da Goldra
  - 5 - Fonte de Apra
  - 6 - Fonte Filipe
  - 7 - Moinho do Ti Casinha
  - 8 - Esparrela
  - 9 - Nora da Companhia
  - 10 - Pólo Museológico da Água
  - 11 - Fonte da Salgada
  - 12 - Ribª de Odeleite
  - 13 - Miradouro do Caldeirão
  - 14 - Fonte da Seiceira
  - 15 - Águas da Rainha
  - 16 - Barragem da Califórnia
  - 17 - Fonte do Serro
  - 18 - Fonte dos Cravais
  - 19 - Barranco da Zambujeira
  - 20 - Rio Arade
  - 21 - Rocha da Pena
  - 22 - Fonte Feita
  - 23 - Fonte dos Amuados
  - 24 - Lagoa da Nave
  - 25 - Fonte do Cerro dos Passarinhos
  - 26 - Ponte da Tôr

ROUTE DESCRIPTION

Map 3 - Map of the ROUTE IN THE CITY OF LOULE

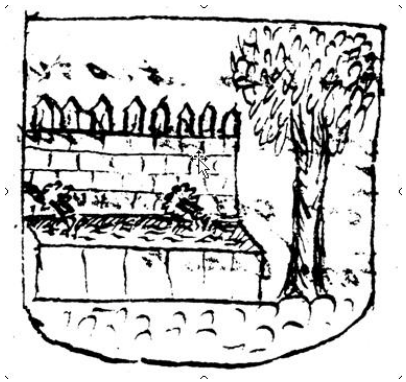
On Foot/By Car:

The Water Route starts in the inner city of Loule, at the back of the "Praça da Republica" (Republic Plaza), in the "Largo Dr.Bernardo Lopes" (Dr. Bernardo Lopes Square). From here we take the street of limited access "Rua D. Paio Peres Correia" (D.Paio Peres Correia Street), which passes in front of the Castle alcaidaria, and leads into "Largo Pedro I" (Pedro I Square). A bit further down, passing by the Islamic Public Baths (12th century), which are unique in Portugal, are the "Bicas Velhas".

Point 1 - Bicas Velhas

(S. Clemente; R. das Bicas Velhas; GPS Coordinates: N 37º 08' 21.2''/ W 8º 01' 27.1'')

The "Bicas Velhas" (Old Taps) were one of the main public fountains that supplied water to the city, and they most probably appeared on the first coat of Arms known to Loule, published in the mid-17th century but dating to 1402, where the were illustrated as a "fountain with eight walls, pouring water through two water pipes" (2)



The original source was located a dozen metres further up, next to the Islamic Baths and opposite the old Convent of Nuns (Convent of "Espirito Santo"). It was a "shallow spring, adorned with four surrounding arches, each one ending in an ogival" (4) One of these arches included the blazon of Portugal, along with the tombstone mentioned above and the local coat of arms. The actual structure of the fountain and its location, as we see it today, is in fact much more recent. The beginning of the construction dates back to 1837. This spring is fed by a water-mine located underneath the convent that also provided water for the baths. It is reputed to never run dry and was once used for irrigation of the nearby vegetable gardens ("Horta d'El Rei"). It has four metal spouts, made from an old bell belonging to the main church. On the façade, a strange chimerical figure (perhaps a waternymph) can still be seen on a stone that was presumably removed from the Convent of Graça. This 19th century fountain has somewhat changed in the meantime, as today the tank is less than half its original size. The "tank used by washerwomen, that was situated at the back" has also disappeared (5).

Fig.1 - General appearance

Fig.2 - Bicas

Fig.3 - Stone on the facade

Indications: From Bicas Velhas turn left along "Rua Martim Moniz" (Martim Moniz Street), then down below, on the right entering "Rua Camilo Castelo Branco" (Camilo Castelo Branco Street). Head straight until the end of "Rua de São Paulo" (São Paulo Street) and then turn left to "Rua do Matadouro" (Matadouro Street). Go all the way through this street until you reach "Rua Eng. Duarte Pacheco" (Eng. Duarte Pacheco Street) where you turn left. At the top, in front of one of the castle doors (Porta de Faro – Faro Door), take the right to "Rua S. João de Brito" (S. João de Brito Street). Right at the end of the street, you will find a square where you can admire the "Ponte dos Álamos" (Bridge of Alamos).

Point 2 - Ponte dos Álamos

(S. Clemente; R. 8 de Maio; GPS Coordinates: N 37º 07' 58.1''/ W 8º 01' 23.3'')

This bridge is located on an old Roman road that connected Faro (Ossonoba) to Loule and continued further north towards the Alentejo. It is no wonder that, according to traditional beliefs, the bridge was thought to be of Roman origin, although there are no signs of this in the structures and architecture of the current bridge even though it is clearly very old. There are 3 arches, but one of them disappeared when it was embedded between two houses built at the beginning of the 20th century. It underwent several alterations and reconstructions over the years, the last one being in 2011. The "Cadoiço" stream runs underneath this bridge and joins "Santa da Piedade" stream at "Franqueada", then forms "Carcavai" stream and flows out into the ocean to the west of the Vale de Lobo. The "Cadoiço" stream is born in the hills north of Loule and now crosses the city hidden through an underground tunnel and continues downstream until it reaches the water treatment plant of Loulé. The stream follows a turbulent course due to an average slope of 5%, dotted with small rapids, gorges, small waterfalls (areas known as pegos or "cadoiços" in Portuguese) and even two large waterfalls; one close to today's road to Faro, and another larger one at about 600 metres further downstream.

Close to the bridge, there is a sluice that feeds two mills. One of them (Torrinha), is part of the house on the street just to the west, while the other one (Papa Cabedais), further down, is annexed to a somewhat rundown manor

Fig.4 - Amount view.

Fig.5 - Downstream view.

Point 3 - Fonte do Cadoiço

(S. Clemente; R. do Cadoiço; Coordenadas: N 37º 08' 05.6''/ W 8º 01' 19.0'')

This spot was once one the busiest and most popular leisure places among Loule's inhabitants, especially at the end of a long summer's day. Just outside the tunnel, that crosses Loule and ends under the bridge on the road to Faro that was built in 1855, the "Cadoiço" stream crashes down a few small waterfalls, followed by a larger waterfall of approximately 10 metres in height. The turbulent waters come together at this spring.

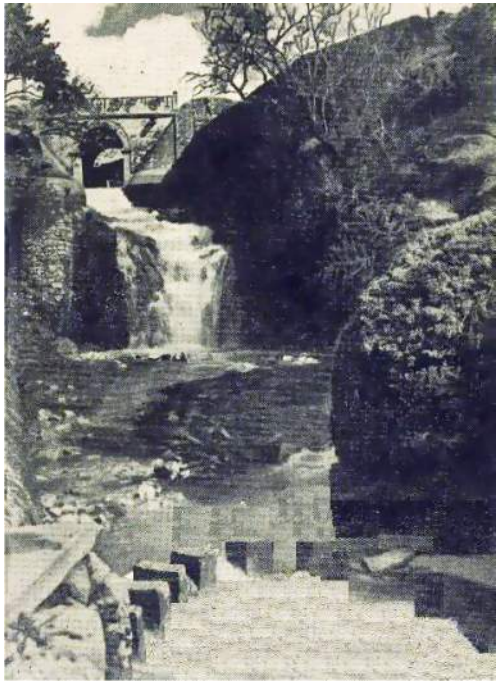


Fig.6 - Old image of Cadoiço stream.

It is located in a cave carved into the rock on the left bank of the stream. You can reach it over some stone walkways that still exist today. The "beautiful and pure water"[5] that sprouted here, supplied many families with water and served as an excuse to go for a walk, because in the past it was possible to walk along the stream. Many washerwomen worked here, singing and hanging their clothes to dry in the sun along the riverbanks.

Fig. 7 - General appearance

Fig. 8 - Cave of the fountain

By Car:

Point 4 - Fonte da Goldra

(S. Clemente; GPS Coordinates: N 37º 07' 38.9'' / W 7º 59' 53.9'')

This spring is located on a very sharp meander of the "Goldra" stream, further downstream it is renamed "San Lourenço" stream and flows into the Ria Formosa at Ludo.

It used to be a typical bathing spot. The water originating from the infiltration of rainwater into the steep slopes that accumulates in an old stone reservoir. There was an opening on the front that people went through in order to bathe directly in the reservoir's tank. In 1976, due to the risk of water contamination and disease transmission, this opening was closed with an iron door, and the water was rerouted to a fountain located at a lower level, from which you can see the old sink. In a beautiful space opposite the fountain, where people used to gather to wait their turn, there are also two stone troughs, which were manually filled with water for animals to drink. Further down, a larger tank, that was also built in 1976, originates from a raised narrow sluice, which was able to transport water from the spring over the river to water the vegetable gardens and orchards in the farm located on the left bank of the meander.

Fig. 9 - General appearance

Fig. 10 - Fountain

Fig. 11 - Sink

Indications: Is necessary to take the inverse route (at the summit the Goldra crossing is in this case particularly dangerous!) until reaching once again the Loulé roundabout and turn right until reaching the roundabout of the S. Brás road. Follow this road for about 3,5 km until reaching the locality of "Fonte de Apra". Here on the right hand side is the fountain right next to the café "Caldeirinha".

Point 5 - Fonte de Apra

(S. Clemente; R. 8 de Maio; GPS Coordinates: N 37º 07' 58.1'' / W 8º 01' 23.3'')

his very old fountain, "of undoubtedly Roman origin" (7), is located in an area with other important Roman remains. The name of the location itself (feminine for "aper", a term of Celtic origin, which means boar), would have been the surname taken by the primitive Roman owner of these lands, and the existing "villa Apra", which probably dates back to the conquest of the Iberian Peninsula in the 2nd century before Christ. In the 19th century, this fountain was "almost level to the ground" and still possesses "four arches that close above, forming a roof and the respective dome"4. Today, what remains is a large rectangular tank built below ground level with its thick spout, from which water flowed directly originating the fountain.The washerwomen have also stopped using the tank, following the construction of a local washhouse at the end of the 1980s. The fountain's patio was protected by leafy trees and always served as a magical gathering place to socialize. Today we find a beautiful row of poplars, andwhere the locals spend much of their spare time.

Fig. 12 - Tank

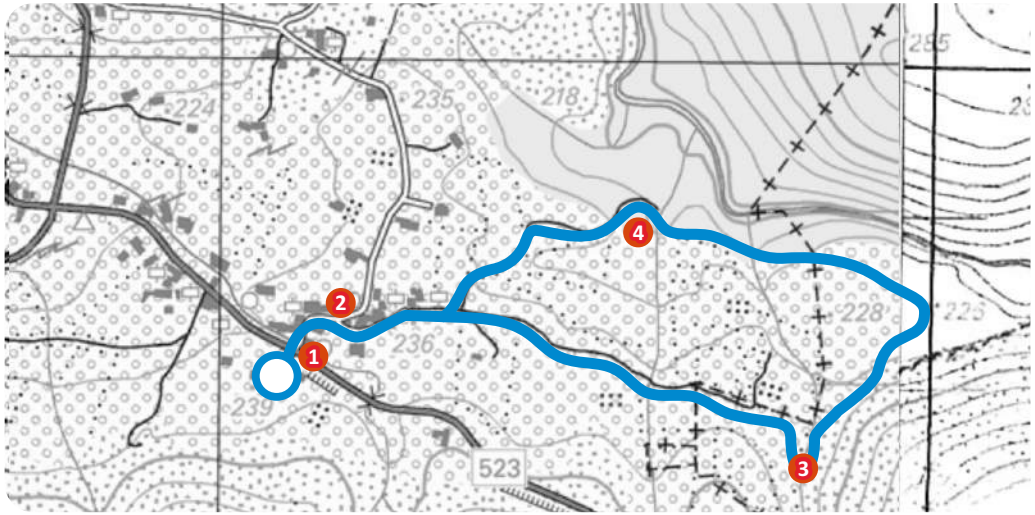
Fig. 13 - Fountain

Indications: Follow the EN 270 road and cross the bridge "Ponte do Morgado" over the "Ribeira da Goldra" (Goldra Stream), turn left a little further down the road to the EM 523 in direction to "S.Romao". Continue to follow this road up to the "Malhão" hill and then back down towards Amendoeira. In this village there is a small pedestrian course that offers the opportunity to visit 4 more points of interest.

Walking Route: Olho Pariz

Linear alternative: 1,6 km
Total uphill slope: 15 m
Circular alternative: 2 km

Total uphill slope: 25 m
Beginning of Route: Largo da paragem do autocarro (Bus stop square).



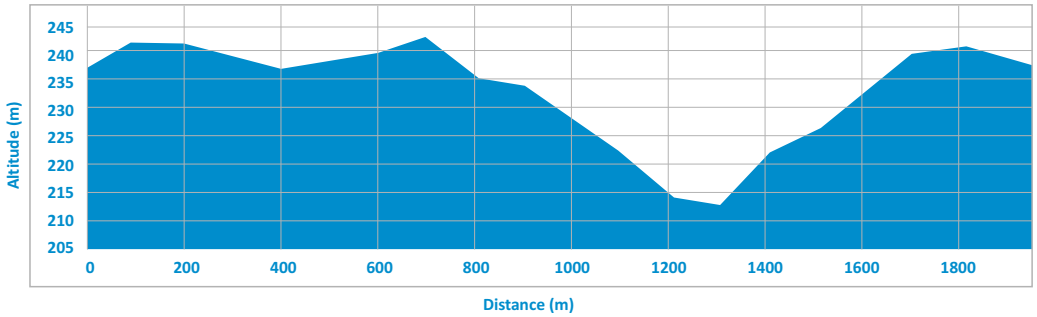
Key:

Departure and Arrival Point

MAP 1/25.000

1 Poço do Ribeiro 2 Poço da Amendoeira 3 Olho Pariz 4 Poço do Olho Pariz

Topographic profile of the Walking Route of the Olho de Pariz



On foot:

Points of Interest:

1 - Poço do Ribeiro (Ribeiro Well)

(Querença; GPS Coordinates: N 37º 10' 23.6''/ W 7º 57' 44.6'')

This old community well is located at the entrance of the village. In 1972 it was walled up and roofed, the water could be accessed through an iron grid.

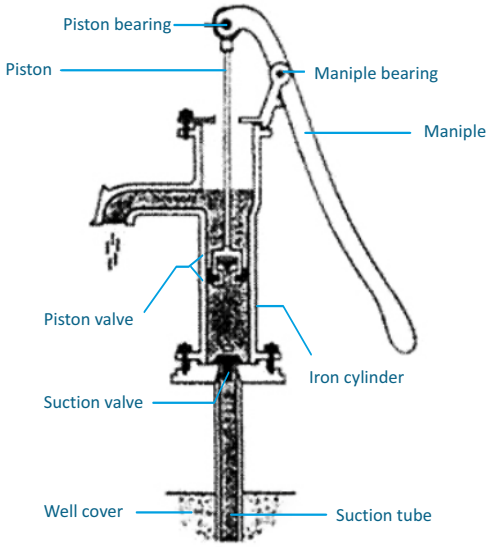
Fig. 14 - General appearance

Indications: Enter the village and continue until reaching a bifurcation, where the Casa de Escola (School House) is located. A bit further down, to the left and in the middle of the field, it is possible to see the Amendoeira well.

2 - Poço da Amendoeira (Amendoeira Well)

(Querença; GPS Coordinates: N 37º 10' 25.4''/ W 7º 57' 41.7'')

This is a private well, which is now covered and where a manual hydraulic pump was installed. Unlike many other pumps in the Algarve, this pump does not function with a wheel but rather with a vertical knob or lever.



Scheme 1 - Hydraulic pump with vertical maniple.

Fig. 15 - General appearance

Fig. 16 - Detail of the mechanism.

Indicações: Return to the bifurcation and follow a road on the right side of the School House that will become a dirt track. After passing the farm "Quinta Amendoeira", the road leaves the village and continues straight ahead until it descends to "Olho Pariz".

3 - Olho Pariz (Olho Pariz Spring)

(Querença; GPS Coordinates: N 37º 10' 19.3''/ W 7º 57' 15.5'')

This artesian spring or underground spring is usually dry and only bursts when the pressure and level of the underwater aquifer, from which it feeds from, exceeds a certain level, usually after a period of intense and prolonged rainfall. It is a very interesting spot from a geological point of view, related to the existence of a thick and enormous (approximately 10 hectares) deposit of calcareous tuffs that causes the obstruction of an old ravine and the progressive sinking of the base water table. The rocks found here are classified as "lamellar (layered) biohermic tuffs" (6), i.e. limestone formations, which have been biologically formed due to the water's high carbon dioxide content. That after filtering through the surrounding limestone, the water loses its gas as it resurfaces, either due to turbulence or to the absorption of carbon dioxide by plants (especially moss, in this case). The water is then oversaturated in calcium carbonate, which has been depositing in layers, encompassing and preserving pre-existing vegetable structures. The amount of water that flows from this spring presently does not correspond to the small size of the neighbouring ravine, where "Chaiças" stream descends from the heights of the "Apra" hill, further south. During normal winters, the water spreads over the vaste surface of the deposited tuffs, and flowing through a dozen small ravines, slowly turn into authentic waterfalls as they crash into the "Mercês" stream, which flows some twenty metres downstream. At these times, the area around "Olho Pariz" is also an important breeding site for amphibians.

Fig. 17 - Spring with water.

Fig. 18 - Waterfals

Fig. 19 - One of the ravines.

Fig.20 - Tuffs.

Indications: During the flooding season, it is recommended to return to Amendoeira along the same path. The alternative is to cross the river at the ford, upstream from the spring and then walk a little to the east and turn descend to the left to follow the trails along the cultivation plains to the northeast, crossing the small ravines and passing nearby the waterfalls, to enter a path that then becomes a rural road. After flanking an old limekiln, descend an embankment where it is possible to observe the "Poço do Olho Pariz" (Olho Pariz Well).

4 - Poço do Olho Pariz (Olho Pariz Well)

(Querença; GPS Coordinates: N 37º 10' 28.9''/ W 7º 57' 23.6'')

This ancient stone well is covered with a capstone that was recently reinforced with cement.The path now curves up until reaching the initial route in front of "Quinta Amendoeira" (Almond Farm), then returns to the starting point.

Fig. 21 - General appearance

By car:

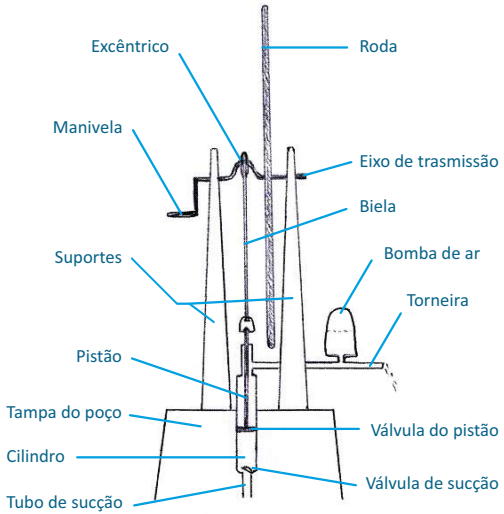
From Amendoeira, walk 350 metres along the EM 523 until reaching the crossroads with the road that continues to the right in direction of "Fonte Filipe" (Filipe Spring). Descend this road ignoring the first road on the right to then turn again to the right at the bottom, towards "Fonte Filipe".

Point 6 - Fonte Filipe

(Querença; GPS Coordinates: N 37º 10' 50.7''/ W 7º 57' 47.4'')

This is another old spring or underground spring that drains off water from the surrounding limestone. Before installing the current well with a wheel pump in the 1960s, there was a water fountain for bathing at a lower level, which could be reached by stairs that are now covered. A

plaque dating 1945 has survived and is probably the only witness of a previous restoration. In the 1980s, a fountain was built next to the hillside nearby that was fed by a cistern with a stone dome, to where water was pumped and that is presently no longer operational. The mechanism used in the wells with wheel pumps consists in converting the circular motion of the wheel (or steering wheel) into a vertical movement using an eccentric fixation located on the horizontal axle, which moves a rod that is connected further down to the piston. The piston includes valves that slide through the inside of a tube submersed in the well. When the piston descends, the air is compressed against the lower valve and when it rises, the valve opens, making the water move up to the level of the outer pipe through suction. The basic mechanism of this type of piston pump may have been initially designed by Ctesibio, a Greek engineer from Alexandria (3rd century B. C.), while the adding of a wheel is of Arabic origin.



Scheme 2 - Well pump with wheel.

Next to "Fonte Filipe" runs the "Mercês" stream, it is one of the main tributaries of the "Algibre" stream which has its origins in the southern ravines of the "Serra do Caldeirao" (Caldeirão Hill Range) in the county of Sao Bras de Alportel. The water from "Fonte Filipe" feeds a sluice used for watering the vegetable gardens further downstream. This system was governed by rules and regulations that sometimes led to confrontations in the past and that also powered the old water mill "Azenha da Fonte Filipe (aka. "do Gentil)".

Fig. 22 - General appearance

Fig. 23 - Fountain

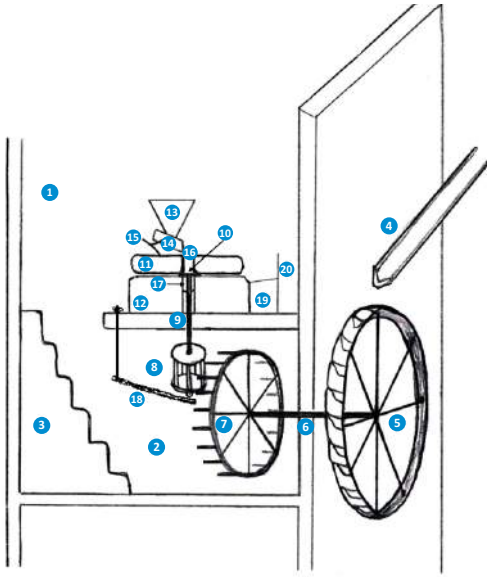
Fig. 24 - Well with wheel

Indications: Turn back 200 metres along the same road to a cemented country lane on the right, which passes the "Azenha da Fonte Filipe". It is at times very narrow and dangerous, due to the frequent falling stones. This lane leads to the "Moinho da Ti Casinha" (Ti Casinha Mill), a couple of kilometres further down.

Point 7 - Moinho do Ti Casinha (Ti Casinha Mill)

(Querença; GPS Coordinates: N 37º 11' 18.3''/ W 7º 58' 58.5'')

It is also known as the "Moinho do Azevedo" (Azevedo Mill), named after the place where it is located. Today it is better known by the name of the former miller. According to tradition, this mill is of Arabic origin (8th century). A stone with a Star of David (a symbol that was common to Islamic constructions) was found and accidentally destroyed during the restoration process at the end of the 20th century. It is one of the main hydraulic archaeological monuments in the whole of the Algarve, and has a rather unusual combination of two types of devices, which are present in water mills. It has three mills (a set of two millstones), two of which are powered by several other mill wheels, which are placed on the side walls, while the remaining wheel is moved by a horizontal caster. The water required for the functioning of this mill comes from the "Porto Pinheiro" weir, located on the "Mercês" stream some 500 metres upstream. It reaches this spot via a sluice, which carries water to irrigate the local vegetable gardens. At the entrance of the mill, is a primitive system of valves, closed up with planks that allow for the water to be directed towards a tank, where it once flowed over the caster blades (feather blades) or rerouted via a beautiful raised aqueduct, then flow onto the mill's two wheels. The mill was restored by the owner (Francisco Dias) in 1993. It has three floors (a lower compartment for the caster, a middle compartment for the mill's gear, and an upper floor for the mills. It is operational, even though only one mill wheel is used, in order to demonstrate the old way of making bread. Next to the mill and an impressive threshing floor, is a well that is fitted with a shadoof, which is a very primitive device for drawing water.



1 - Compartimento das mós
2 - Compartimento da engrenagem
3 - Escadas de acesso
4 - Caleira
5 - Roda da azenha
6 - Eixo horizontal
7 - Roda de coroa (entrosga)
8 - Carreto (pinhão de ataque)
9 - Veio
10 - Segurelha
11 - Mó corredora
12 - Mó fixa
13 - Tolda
14 - Telha
15 - Trambolho
16 - Buraco da mó
17 - Bucha
18 - Urreio
19 - Tremonhado (caixa)
20 - Panal

Scheme 3 - Simplified structure of one watermill.

Fig. 25 - Sluice, primitive system of valves, bank and aqueduct.

Fig. 26 - Walls of the watermill

Fig. 27 - Well with a shadoof

Indications: Take the rural path once again, crossing the valley to the west until reaching the vicinity of another watermill (Moinho do Lourencinho), which has also been restored, follow the rise towards the EM 396. Turn left here to the village of "Porto Nobre" where on a curve turn right into another cemented country lane that after passing a limekiln ready to be used and still covered with a beautiful dome (the only one in Algarve), start a steep descent until reaching Esparrela.

Point 8 – Esparrela

(Querença; GPS Coordinates: N 37º 11' 33.5''/ W 7º 59' 39.4'')

This is a privileged location, situated on the old path that leads to Querença (possibly a Roman path) along "Mercês" stream. The stream can be crossed by a bridge, which was built in 1934 and which once caused many problems and accidents (hence the name, supposedly, of this place), until it was restored in 1992. On the left riverbank, there is the spring "Fonte da Esparrela", and old bathing spot, which was restored in 1990 and equipped with a manual pump operated by a crank. On the right riverbank, it is still possible to see the ruins of the mill "Moinho do Cró" (named after its last miller, who operated the mill despite being blind). It is small, with only one watermill, and has been abandoned since the 1980s. The water used for turning the mill wheels came through a sluice designed to carry water from the weir of "Ponte Nova", a bridge located over the "Mercês" stream 400 metres upstream, next to the EM 396. Apart from the sluice, today all that remains are walls and millstones.

Fig. 28 - Fountain

Fig. 29 - Bridge and Mercês stream.

Fig. 30 - Millstones of the watermill

Fig. 31 - Aqueduct

Indications: Just after the ruins of the mill, ignore the climb ahead and turn left towards a paved rural road. After several bends, go up towards the EM 524 and follow it as it rises towards Querença. Further on, in Pombal, right next to the crossing for Corcitos, it is possible to see the noria "Nora da Companhia".

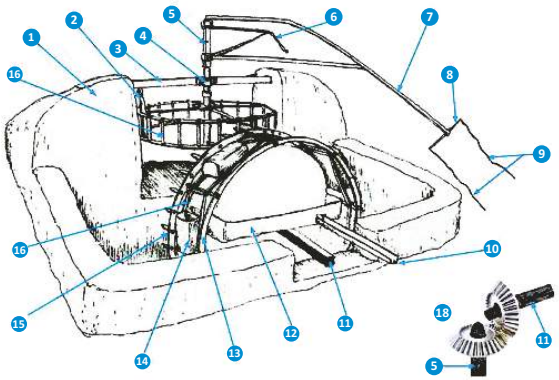
Point 9 - Nora da Companhia (Company Noria)

(Querença; GPS Coordinates: N 37º 12' 09.2''/ W 7º 59' 36.1'')

This was the result of an initiative taken by a dozen local small-scale farmers (hence the name "Companhia" that means company). This noria is quite old (possibly dating back to before the 19th century), it was restored and adequately framed next to the road at the end of the 20th century.

This is a good place to admire this ingenious mechanism used to withdraw water from the well with the help of an animal (donkey, she-mule or mule). The term for hydraulic wheel, "noria", comes from the Arabic word "na'ura", which means "hydraulic wheel". It is assumed that it originated long ago in the Middle East and was then brought by the Arabs to the Iberian Peninsula as of the 9th century. The poor animal, with its eyes covered with cloth blinders, was forced to move anti-clockwise on a round platform, after having its shoulder yokes fitted to the mill's tilting yoke and to the noria via the reins. The wheel is turned, which causes a single vertical axle to turn along with a double horizontal wheel with clamps. This is then engaged with a vertical toothed wheel, which is usually coupled to a waterwheel, fitted with a chain of buckets that hang down into a well, allowing water to be lifted and poured into a canal that feeds into a tank.

The buckets were initially made of clay in a tubular shape. They then looked like brass mugs, with a small hole at the bottom to allow the air to go through when it was dipped so as to avoid excess weight on the wheel when it was not in operation. The hydraulic wheel's older pieces were made of wood and the rope used for the buckets was actually made of strings, but in the more recent models, the entire mechanism is made of iron. In some cases, the toothed wheel and the traditional pinion were replaced with a spur gear, with a rack and pinion arrangement.



1 - Moirão
2 - Travão
3 - Trave (ponte)
4 - Enora
5 - Pião
6 - Guia
7 - Almanjarra
8 - Balancim
9 - Tirantes
10 - Algeroz
11 - Eixo horizontal
12 - Tabuleiro
13 - Roda da água
14 - Alcatruz
15 - Entrosga
16 - Corda dos alcatruzes
17 - Carreto
18 - Engrenagem cónica

Scheme 4 - Basic structure of a noria [12]

Fig. 32 - General appearance

Indications: Continuing a bit further towards the east crossing the EM 524, following a small detour and steep ramp that leads to the centre of the village of Querença, where at the end of the "Largo da Igreja" (Church Square) is the Water Museum.

Point 10 - Water Museum

(Querença; GPS Coordinates: N 37º 11' 56.0''/ W 7º 59' 15.8'')

This small space is an integral part of the Municipal Museum of Loule. It takes up an old manor house, which probably dates back to the 17th century and was used as the parish centre for many years. This space mainly functions as an interpretation centre on water, allowing visitors in Querença to use it as a starting point for other existing routes that are related to water. Audio-guides are made available to visitors who wish to discover the water-related historical wealth. As well as samples of some equipments connected to water, this water museum has a documentary exhibition made up of panels describing the water-related culture in Querença, such as the Local Protected Landscape of "Fonte Benémola" and the existing species of fauna and flora.

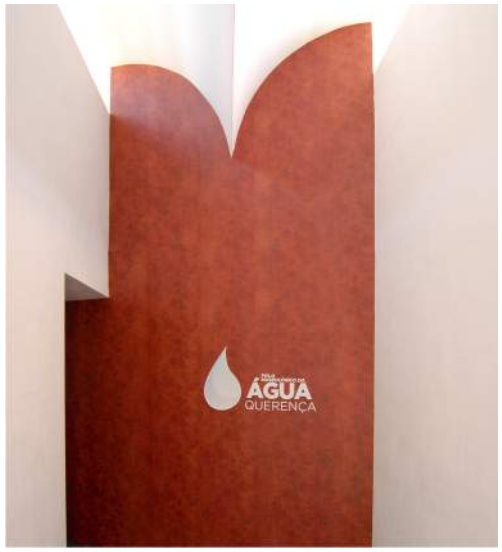


Fig. 33 - Entrance of the Water Museum.

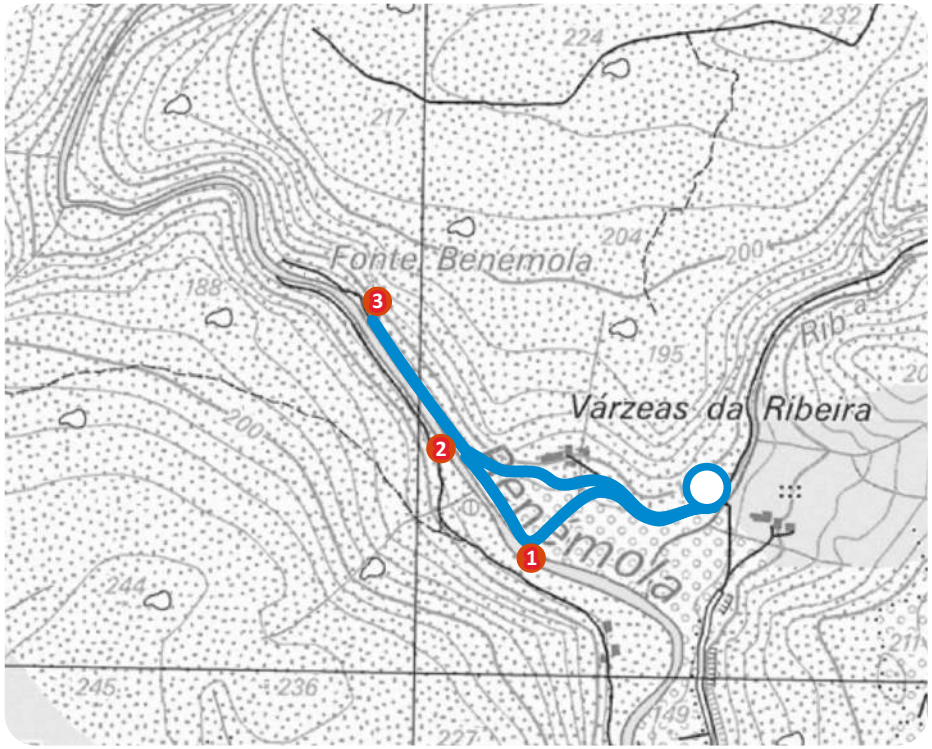
Fig. 34 - Internal appearance

Indications: Follow the inverse route until reaching the crossroads from Esparrela once again. Always following the EM 524 for approximately another 300 metres, and reaching on the right hand side one of the entrances to the Local Protected Landscape of "Fonte Benémola", next to the "Fica Bem" house. A narrow dirt track leads to a car park on the right side, where the vehicle should be parked. After the crossroads near the "Varzeas da Ribeira" houses, it is possible to follow the small pedestrian route that will provide the opportunity to see another 3 points of interest.

Walking Route: Benémola

Pequena Rota PR

Type: Semicircular
Lenght: 1,3km
Total uphill slope: 5 m
Signposts: PR 16 LLE Walking Route "Fonte Benémola"



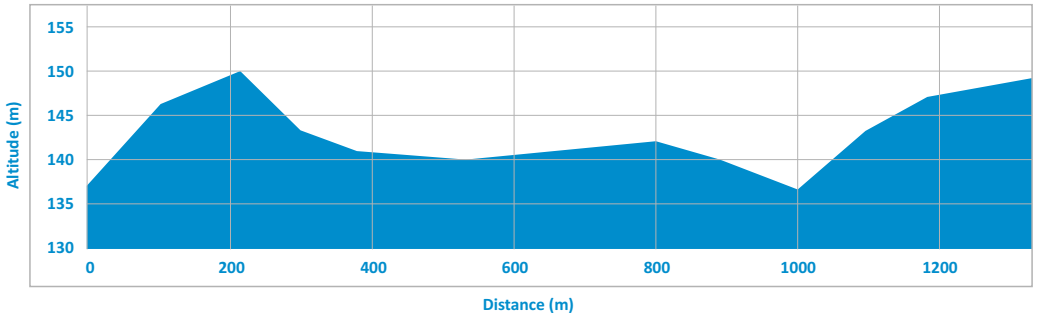
Key:

Departure and Arrival Point

1 Moinho Velho 2 Nascentes da Várzea 3 Fonte Benémola

MAP 1/25.000

Topographic profile of the Walking Route of Fonte Benémola



On foot:

This route begins at the cross-roads, where there is a panel. Proceed from this point down the road, pass under the houses of "Varzeas da Ribeira", and turn down a country lane on the left. The vegetable gardens and orchards in this area are the most productive of the whole "Benémola", due to the abundance of water and the diverse ways of taking advantage of it. At the top, an old abandoned tank is reminiscent of times gone by, with its slates of stone for washingclothes, and a small sluice that carried water to irrigate the surrounding fields. At the end of the path are the ruins of the old mill "Moinho Velho".

1 - Moinho Velho (Old Mill)

(Querença; GPS Coordinates: N 37º 12' 22.0''/ W 8º 00' 21.6')

This small rotation caster mill, with two mills, is very old. It was powered by a sluice that carried water from the weir at "Fonte Benemola", water that could be rerouted to the vegetable gardens or to the mill's tank that is now partially destroyed. In front of the mill, in the shade of leafy walnut trees, you can still see the large hydraulic wheel and its gear placed on a raised platform.

Fig. 35 - Mill aspect

Fig. 36 - Tank and entry cubes

Indications: Behind the mill, continue along the sluice towards the north, along a path through the fields until reaching a dirt track. Just after are the "Nascentes da Varzea" (Varzea Springs).

2 - Nascentes da Várzea (Varzea Springs)

(Querença; GPS Coordinates: N 37º 12' 27.1''/ W 8º 00' 28.3'')

According to tradition, the water that feeds these two springs (locally known as "Olho"), does not have the same source and presents different characteristics. Together with Fonte Benémola, these springs are responsible for the abundance in water that characterises the Benémola Valley. It is one of the few places in the Algarvian Limestone Region (known as the "Barrocal Algarvio") that has water the whole year round, hence the ample diversity of surrounding life, Thus the diversity of wildlife that surrounds the area and that led, along with other reasons, to the creation of the Classified Site of "Fonte Benemola" in 1991 (since 2010 it became the Local Protected Landscape of Fonte Benémola). This area is of high conservational value, mainly due to the valley landscape, the hydraulic national heritage (weirs, sluices, mills, norias), the dense riparian vegetation, aquatic fauna (otters, tortoises, amphibians) and the presence of several species of bats (in the caves of "Salustreira").

Fig. 37 - Spring water

Fig. 38 - Stream aspect

Indications: Indications: The route then continues towards the north, along a dirt track (follow signs for PR 16 LLE), along the sluice and the stream bank, until reaching the "Fonte Benemola"

3 - Fonte Benémola (Benémola Spring)

(Querença; GPS Coordinates: N 37º 12' 33.4''/ W 8º 00' 33.7')

Located near the weir that is named after the "Moinhos" stream, this is one of the most well known springs in the Algarvian Limestone Region. According to tradition, this spring was already used back in the time of the Arabs, who build a system to capture water and transport it "to the summit of the hill from the base where the spring is born" (4). This spring is also mentioned in the parish surveys of the Marquis of Pombal in the 18th century, and in the mid-19th century was described as "bursting with such large amounts of water, with such impetus and violence, that it cut the stream, which was already quite wide with a lot of water, and reached the opposite bank" (1). The water is classified as mineral-medicinal; it is hyposaline in nature and contains a lot of calcium ions and bicarbonate. In 1932, it was the subject of a concession contract for the company "Sociedade Santa e Benémola", which had the right of exploitation for this spring and one in "Fonte Santa" in Quarteira". This concession was never put into effect, apart from the alleged construction of the house at "Fica Bem" to be used as a hostel for those visitors who came to use the water because they suffered from rheumatism or ailments of the digestive system. The main fountain was a traditional bathing spot, which was at the foot of the hillside. People made the most of the water that came directly from the aquifer, as the natural outlet (the spring) was a bit further ahead right on the bed of the stream that in the past was enclosed in a roughly made tank. During the summer months, the surrounding yard was "occupied by mainly rheumatic patients, who camped in tents in order to take their baths in a picturesque Moorish camp" (9). A bit further upstream from the weir, the stream of "Moinhos" nearly completely dries up in summer, making a marking contrast with the abundant water from this point onwards. This stream joins "Mercês" stream in the south of the valley that forms "Tor" stream, which is renamed "Algibre" stream further downstream. One could say that it has a double origin, on one hand it descends down two southern gullies of the "Serra do Caldeirão" ("Seco" river, "Salgada" stream), whilst on the other hand it drains the water on the southern hillside of "Rocha da Pena".

Fig. 39 - Spring water

Fig. 40 - Sluice and weir

Fig. 41 - Aspect of the stream to upstream

Indications: The return is made along the same dirt road until reaching the cross roads next to the houses of "Várzea da Ribeira".

By car:

Indications: From the cross roads of "Várzea da Ribeira", take a new dirt track (following once again the signs for PR 16 LLE) towards the spring, meandering along the right bank of thestream "Ribeira da Chapa" until arriving at the village of Cerca Nova, on a tight curve of the EM 510. Turn left, continuing north towards Corcitos. After travelling 3 km always along the EM 510, drive down to "Fonte Salgada".

Point 11 - Fonte da Salgada (Salgada Fountain)

(Querença; GPS Coordinates: N 37º 13' 51.4''/ W 8º 00' 13.9'')

This small isolated fountain right next to the road was built in the 1960s where the water was rerouted from the pristine spring. It is located a bit higher up, on the hillside and provided water for a large tank, which is now covered, along with the actual spring. The "Salgada" stream is an affluent of the "Seco" river and it can be crossed using a bridge that was built at the end of the 1970s.

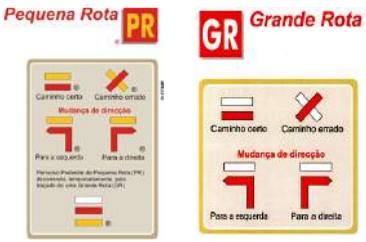
Fig. 42 - Fountain and old tank

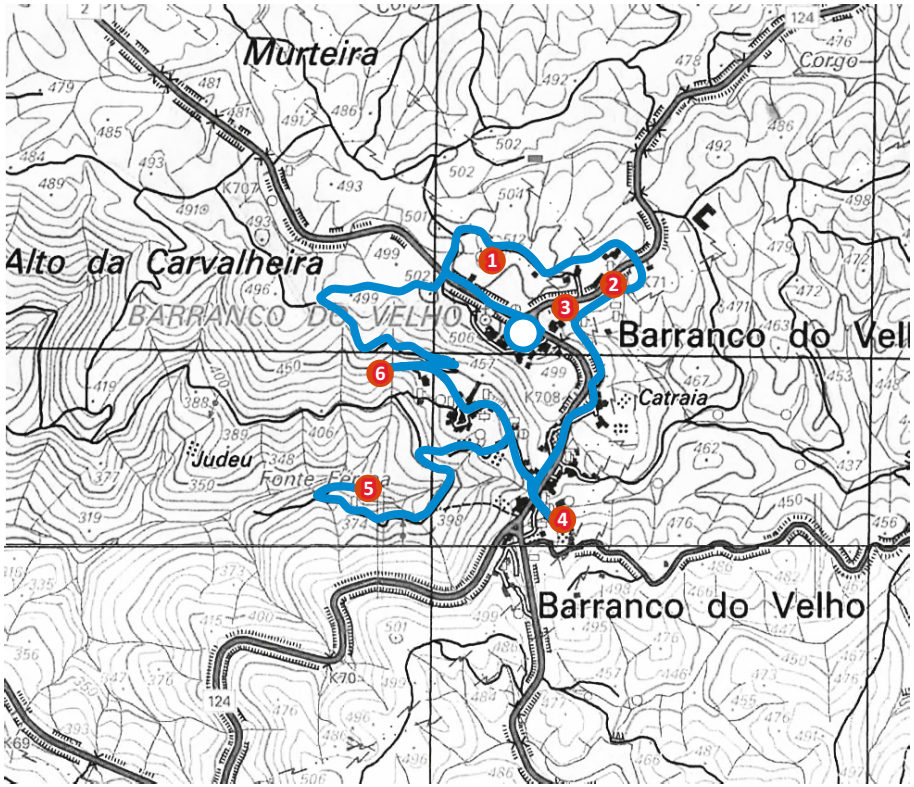
Fig. 43 - Fountain

Indications: Continue still a little further along the EM 510 until reaching EN 124. Turn right and start climbing the hillsides of "Serra do Caldeirão" towards Barranco do Velho, on the EN 2, it is possible to do a new walking route, which has a further 6 points of interest.

Walking Route: "Barranco do Velho"

Type: Semicircular
Lenght: 5km
Total uphill slope: 185 m
Signpost: PR 17 LLE Walking Route "Barranco do Velho" and GR (13) Via Algarviana





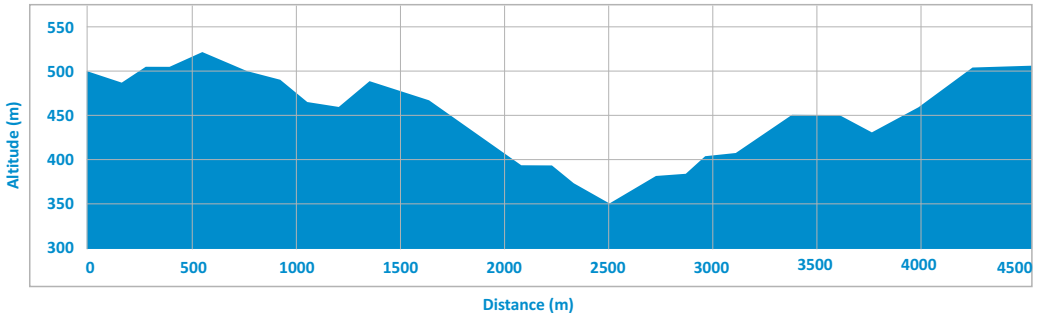
Key:

Departure and Arrival Point

1 Depósitos de água
2 Fonte do Chafariz
3 Fonte do Serro Alto
4 Fonte da Catraia
5 Fonte Férrea
6 Fonte do Monte

MAP 1/25.000

Topographic profile of the Walking Route of Barranco do Velho



On Foot:

This route covers three short sections of the Great Walking Route – GR 13 ("Via Algarviana") and part of PR 17 LLE of "Barranco do Velho", as well as the initial stretch of the Biodiversity Station of "Barranco do Velho". It starts at the crossing for Cachopo (also known locally as "Entroncamento"), opposite the hostel. Continue a bit further north, along the EN 2, coincides with the GR 13. A few metres after a bend towards the left, turn right (follow signs for PR 17 LLE) towards a cemented road, and climb up until reaching the water tanks.

1 - Water Tanks

(Salir; GPS Coordinates: N 37º 14' 31.1'' / W 7º 56' 19.6'')

From this summit (at 512 m) that overlooks Barranco do Velho, there is a wide panoramic view of "Serra do Caldeirão", in a transitional area between the hill known as "Serra Chã", a plateau that extends north and northeast – and "Serra Brava", a rugged and sloping area located in the south, bordering the "Algarve" (as some inhabitants of the hills still call this Algarvian sedimentary border made up of the limestone region and coastline).This is the second most pluvious area of the Algarve, after Monchique. An average 1020 mm of rain falls here per year; that is double the rainfall of Faro. There is no wonder therefore that there is such an abundance of water that flows down these hillsides, and that this point is where thewater was captured and stored for local public distribution since the 1970s when the first tank was built, taking advantage of the structure of an old windmill, which was replaced in 2010 by a more sophisticated structure that includes a small water treatment plant.

Fig. 44 - Old tank and new structure

Indications: Descend the hill along an unpaved track towards the spring until reaching the EN 124, there cross over by the Forestry Association. On the other side is the GR 13 once again, leading to "Fonte do Chafariz" down a long rural lane.

2 - Fonte do Chafariz (Chafariz Fountain)

(Salir; GPS Coordinates: N 37º 14' 26.3''/ W 7º 56' 07.7'')

Also known as "Fonte do Alamo", the water from this fountain was captured directly from the ground and channelled to a tank used for washing laundry (10). During the first half of the 20th century, a deposit was built on this spot that was covered with a dome, it supplied water through an open spout placed above an animal drinking fountain, and an adjoining washhouse. There are stone benches in the surrounding shaded space making this a nice spot for a rest.

Fig. 45 - Spring water with dome

Fig. 46 - Chafariz e tanques

Indications: Go a little further down, still on the GR13, and stop on a bend at "Fonte do Serro Alto".

3 - Fonte do Serro Alto (Serro Alto Fountain)

(Salir; GPS Coordinates: N 37º 14' 25.0''/ W 7º 56' 11.1'')

This is a typical bathing spot on the hill slope. On the other side of the path, it is possible to find an irrigation tank. The water of this fountain and the previous fountain are classified as mineral-medicinal and can be used to treat anaemia and liver-diseases. The water has hyposaline, alkaline and contains sodium, calcium and iron characteristics(9). These characteristics can probably be applied to all the other springs in Barranco do Velho.

Fig. 47 - General appearance

Fig. 48 - Detail of the interior

Indications: Continue following the signs for GR 13 then go up until reaching the country houses of Catraia. Leave the GR 13 at this point and continue towards the left and cross one of the roads on this hill until reaching the EN 2. Descend a road for 200 metres until reaching another road on the left, which flanks a large abandoned barn and passes in front of "Fonte de Catraia".

4 - Fonte da Catraia (Catrais Fountain)

(Salir; GPS Coordinates: N 37º 14' 11.1''/ W 7º 56' 14.2'')

This fountain is of a more modern architecture as it was built at the end of the 20th century. It is located in a small uneven enclosure that can be reached by some stairs that are shaped like a pillar of stone and it is encircled by a circular stone sink and topped by a sphere.

Fig. 49 - General appearance

Indications: BackontheEN2,crossitandturnleftafew metres further up onto a paved road that leads to "Monte de Baixo", the oldest nucleus of Barranco do Velho. However, just before reaching it turn left and continue down a dirt track, which passes in front of an old well. Leave this track behind and continue descending to the left, down a country lane that zigzags down the hillside until reaching "Fonte Férrea"

5 - Fonte Férrea (Férrea Spring)

(Salir; GPS Coordinates: N 37º 14' 13.2''/ W 7º 56' 32.5'')

This spring is hidden at the bottom of the ravine where springs can be found in abundance. According to legend, a famous serpent hides here, guardian of the fresh water high in iron content. The structure is very primitive, and looks like a cave carved in the rock, protected by two walls and a stone dome. There is an arched opening with a central column made of large stones. Water flows freely and runs along the ground flanking two rough stone benches. Outside, there is a table and stone benches, which are much more modern, where it is possible to stop and have a small snack.

Fig. 50 - General appearance

Fig. 51 - Internal aspect

Indications: Return along the same way, climb until reaching the paved road, here turn left to descend towards Monte do Baixo. Cross over, passing by the large

irrigation tank, opposite the walls of “Casa das Fontes”, a select new rural tourism development run by a German company that made the most of a manor house dating back to the 19th century. Soon after, a small square with a modern fountain is reached. Here follow down a path on the right that runs alongside the meadows on the hillside, until it passes next to a modern villa (“Casa do Monte”). Just opposite, descend a rural lane that quickly reaches the “Fonte do Monte”.

6 - Fonte do Monte (Monte Spring)

(Salir; GPS Coordinates: N 37º 14’ 21.8’’/ W 7º 56’ 28.8’’)

The spring water that feeds the old bathing fountain is rerouted towards other fissures and comes out of a spout, having already been filtered and containing less iron than the water from the spring, but it usually dries up in the summer. Opposite the spring there is a more modern fountain covered in tiles, with a small laundry tub and a trough for animals.

Fig. 52 - General view

Fig. 53 - Fountain

Indications: Backtrack until reaching the villa again, where it is possible to climb straight up, along a forest dirt track. After several sharp curves uphill, the top is reached, finding the GR 13 once again. Follow it to the right, across the initial stretch of the Biodiversity Station. Just before reaching the EN2, turn right, along private cemented path that climbs to the Barranco do Velho Church and the manor houses of two wealthy owners that had it built in the 1940s. Back on the EN2, the route then descends you to the starting point opposite the hostel.

By Car:

The Water Route continues along the EN 124, which since Barranco do Velho has continued east to the upper plateau of the “Serra do Caldeirão” hills. A few kilometres further ahead the great valley of the “Odeleite” stream is found.

Point 12 - Odeleite Stream

(Salir; GPS Coordinates: N 37º 15’ 35.5’’/ W 7º 54’ 57.5’’)

This is the second largest watercourse in the Algarve. It is 100 km long from its point of origin in the “Serra do Caldeirao” to the mouth of the river “Guadiana”. Nonetheless, the respective watershed is far more extensive, if taken into account its many tributaries, especially the “Foupana” stream. A high single-arched bridge that crosses the stream at this point was built on in the mid-20th century, made crossing the river easier, that used to be crossed with some difficulty further east, at Vale Formoso, on sloping paths and fords, that often became impossible to cross during heavy floods. Despite the drastic clean-up operations undertaken on the banks of these streams, some stretches still have dense riparian vegetation with willows, poplars and ash trees. Many species of cyprinid fish live in these waters (barb fish, ide, roach, boga) and before the construction of the Odeleite Dam in 1997 the eel was also very abundant near the river mouth. The Otter is another frequent resident, and it is still possible to find a wide variety of aquatic birds (kingfisher, grey heron, water fowl, mallard), reptiles (tortoises, water-snakes) and amphibians seeking pools to breed.

Fig. 54 - Aspecto da ponte

Indications: The EN 124 climbs up to Montes Novos. Almost at the top of the village, turn left onto a municipal tarred road, which passes nearby the “Cortiçadas” and then joins the EN 2 once again at Vale da Rosa. Here turn right, following the ridge of the mountain until you arrive at “Miradouro do Caldeirão”.

Point 13 - Viewpoint “Miradouro do Caldeirão”

(Ameixial; GPS Coordinates: N 37º 18’ 05.8’’/ W 7º 57’ 01.9’’)

This is one of the main peaks of the “Serra do Caldeirão” (575 m), located about a kilometre south east of the highest peak (Pelados, 589 m). Closer and between these two peaks, there is the tall tower of the Meteorological Institute, where the Hydro-meteorological Radar Station of the Algarve is installed, capable of obtaining data on the rainfall intensity within a radius of 200 km. This belvedere was built in the 1940s, which was when the busier EN 2, that was the main access to the Alentejo and Lisbon was paved. This road (formerly known as the District Road number 128) has a history as winding as the road itself. It was designed in 1870 but it was not completed until 1913 after the construction of the bridge over the river “Vascão”. From the belvedere, it is possible to admire a panoramic view over the “Serra do Caldeirão”, which looks like a sea of hilltops, reminiscent of petrified sea waves. At this point, the ridge on which the EN 2 runs along separates two large watersheds: the “Vascão” to the north-west and “Foupana” to the east. In the latter case, the ravines that drain the eastern hillsides join to form the “Corte” stream, one of the main streams that pours into “Foupana” stream, the third largest watercourse in the Algarve (95 km long).

Fig. 55 - Viewpoint

Fig. 56 - Pelados peak and metereological tower

Indications: Continue along the summit of “Serra do Caldeirão” over the EN 2, leaving by “Pelados” peak on the left and passing near the village of Cavalos with its traditional sausage factory behind. Leaving the village of Besteiros behind and continue a few more kilometres until reaching Ameixial. Pass the village, always along the EN 2, and nearly 600 metres further down, on a bend in the road, turn right to visit “Fonte da Seiceira”.

Point 14 - Fonte da Seiceira (Seiceira Fountain)

(Ameixial; GPS Coordinates: N 37º 22' 06.7''/ W 7º 58' 07.5'')

This is one of the most well-known fountains in the county of Loule, partly due to the lively gatherings and parties that take place here, especially on the 1st of May and during the summer. A very old popular use of bicarbonate water that contains relatively less iron than elsewhere in the hill range, classified as hydro-medicinal is to treat ailments of the digestive system9. The copious spring (8.300 litres per day) can be found at the same location, at the bottom of a staircase feeding a single spout fountain, topped by a stone pediment that ends in a stylised crown. It dates back to the end of the 19th century, and probably coincides with the opening of the highway to Lisbon. Several facilities were installed around the fountain for the purpose of providing support to parties (a yard, a band-stand, a stage, picnic tables and restrooms). A bit further down, on the right stream bank of "Seiceira" ravine, that spills its water into "Vascãozinho" stream, one of the main tributaries of the "Vascão" river, it is still possible to find an old and beautiful washhouse in ruins.

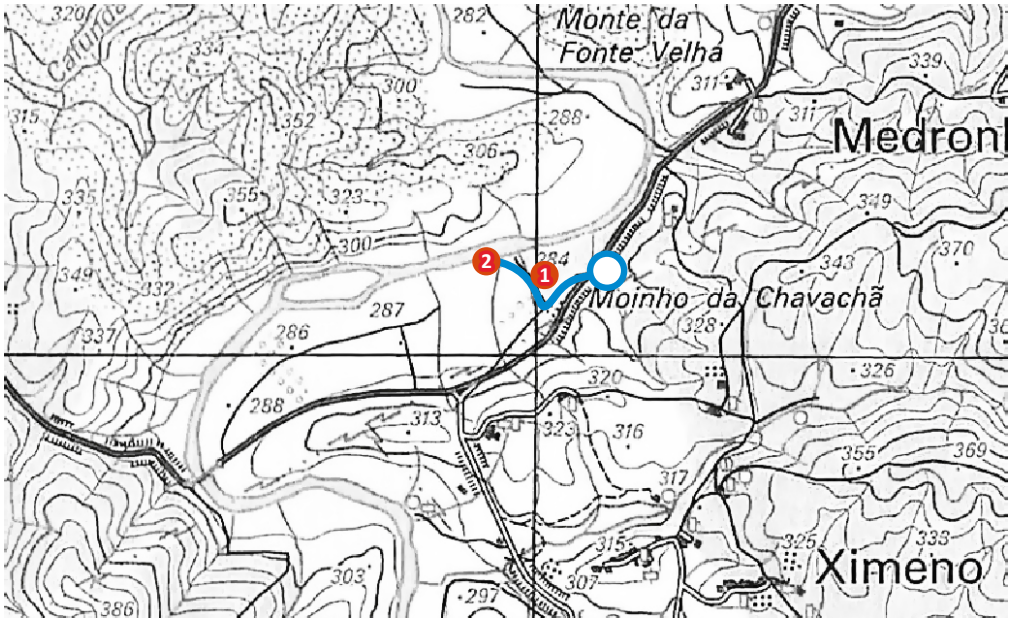
Fig. 57 - Detail of the Foutain

Fig. 58 - Old washhouse

Indications: To return, take the EN 2 again but before arriving at Ameixial, turn right onto a narrower paved road. After passing a caravan park, located nearby the old cork factory of Vale Redondo, the road goes down to Azinhal dos Mouros. About 500 metres further down, you will find a dirt track on the left, that continues for approxi-mately 1,2 km until reaching the EM 503, which has already been paved. It goes down to the "Vascão" valley where a short Walking Route that includes 2 points of interest can be done.

Walking Route: Chavachã

Type: Linear
Lenght: 0,4 Km
Total uphill sloap: 0 m



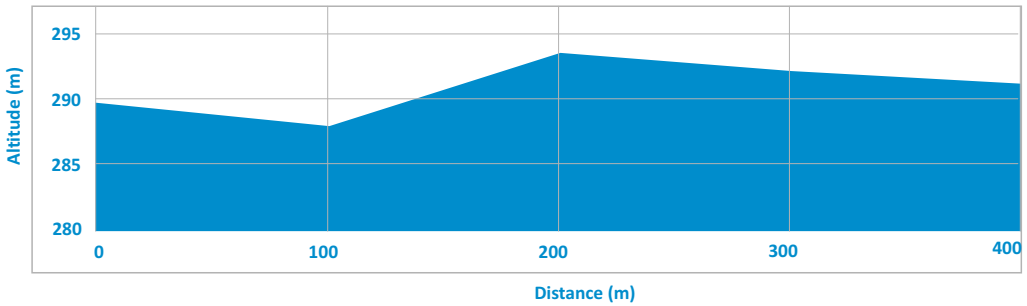
Key:

Departure and Arrival Point

1 Moinho da Chavachã

2 Ribª do Vascão

Topographic profile of the Walking Route of Moinho Chavacã



On Foot:

From the EM 503, a country lane opens up on the right pointing towards a eucalyptus grove. Just behind it is possible to see the mill "Moinho da Chavachã".

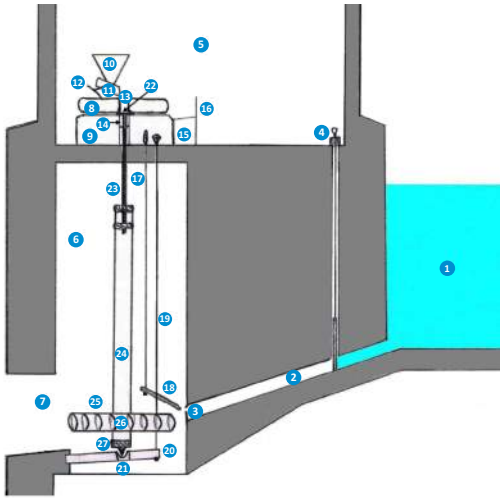
1 - Moinho da Chavacã (Chavacã Mill)

(Ameixial; GPS Coordinates: N 37º 20' 58.7''/ W 7º 59' 42.2'')

One of the last water mills in the county of Loule to be economically exploited, that stopped working on a regular basis only at the end of the 20th century.

Fig. 59 - The miller of the Chavachã Mill, Mr. Albino Pires (80's)

t has two mills, known as the white (to produce wheat flour) and black (used to shred the grain used in animal feed) millstones. The water that moved the casters came from a short sluice that carried water from the "Vascão" weir, both cleaned and recovered in 2001 within the ambit of an Interreg project. After entering the channels the water was then powerfully projected onto the caster feather blades, located in the mill's lower level, where the vertical axle powered the movable millstone.



1 - Represa
2 - Cubo
3 - Sexeira
4 - Comporta
5 - Compartimento das mós
6 - Poço
7 - Cabouco
8 - Mó andadeira
9 - Mó fixa
10 - Tolda
11 - Telha
12 - Trambolho
13 - Olho da mó
14 - Bucha
15 - Tremonhado (caixa)
16 - Panal
17 - Alavanca
18 - Pujadouro
19 - Aliviadouro
20 - Urreiro
21 - Rala
22 - Segurelha
23 - Veio
24 - Pela
25 - Rodete
26 - Penas
27 - Aguilhão

Scheme 5 - Simplified structure of a water mill.

Fig. 60 - General appearance

Fig. 61 - Mill's lower level

Fig. 62 - Entrance of Water at the channels

Fig. 63 - Pela" and the wood caster feather blades

Indications: A little to the west of the mill the weir in the river "Vascão" can be found.

2 - Rio Vascão

(Ameixial; GPS Coordinates: N 37º 20' 59.9''/ W 7º 59' 44.6'')

This is the largest watercourse in the Algarve, approximately 105 km long, and it is one of the few remaining "wild" watercourses as it is not conditioned by a large dam. It is therefore highly valuable in terms of nature conservation, recognised by the inclusion of a large part of the river in the Natura 2000 Ecological Network. The river has two main sources: "Vascão" stream, where we are now located, which is formed by the ravines of the central area of the "Serra do Caldeirão", and "Vascanito" stream, which descends down "Serra do Malhão" further to the west. Both streams join the river "Vascão" 2 km downstream from this spot, which marks the border between the Alentejo Region and the Algarve Region, all the way to the river mouth of the "Guadiana" river, to the north of Alcoutim.

Fig. 64 - Weir

Fig. 65 - Appearance of the stream

Indications: Return along the same way, until reaching the EM 503.

By Car:

A little further ahead, the road crosses the "Vascão" river, over a modern bridge that flanks an older one, and then climbs up the mountain to the village of Vermelhos. Further on, it then goes down until it reaches a small pontoon over "Barranco das Águas da Rainha", From the pontoon, on the road where the car can be left, there is a path on the right and to the back, which crosses over a meadow for about 80 metres. It is possible to see one of the springs of "Aguas da Rainha" on the foothill.

Point 15 - Águas da Rainha

(Salir; GPS Coordinates: N 37º 19' 12.9'' / W 8º 01' 42.0'')

The spring of chalybeate waters fills an old tank, that once irrigated the vegetable gardens of this small cultivated plain, which is now somewhat abandoned due to its isolated location. Another spring is located about 200 metres further up the hillside. The springs that feed the "Barranco das Águas da Rainha" will thicken this stretch of the "Vascão" river course near the Sarnadinha Village. According to local tradition, this place's strange name has its origin in the alleged passing of a royal party that had taken a break here to cool off with the spring waters. It should be noted that the road that goes from Loule to Salir rises up to "Portela do Barranco" and then passes through California and through this spot, on the way to Corte Figueira and to Ameixial that was part of an old Roman road for accessing the Alentejo region. As is the case in many other places, these Roman roads were used for centuries. As a matter of fact, in the mid-19th century this was still one of the main roads that connected the Algarve to Alentejo and Lisbon, it was the route regularly taken by the mounted post couriers on horseback, who were often the target of ambushes and robberies11, therefore the passing of a queen is therefore highly unlikely.

Fig. 66 - Spring water tank

Fig. 67 - Chalybeate waters

Indications: After a short climb, the road turns east and reaches the shores of the "California" dam.

Point 16 - Barragem da Califórnia (California Dam)

(Salir; GPS Coordinates: N 37º 18' 36.8'' / W 8º 01' 15.2'')

This dam includes a reasonably large reservoir (approximately 300 metres long),it was built in "Abrunheira" ravine after an huge fire in 2004 that devastated a large part of the central region of the "Serra do Caldeirão". The main purpose of this structure is precisely to maintain a reserve supply of water for forest fire-fighting helicopters.

Fig. 68 - Geral view

Fig. 69 - Espelho de água

Indications: The road now continues south across the whole "Venda" Valley or "California" (where one of the mounted postal couriers stations was located), and finally reaches the first houses of "Portela do Barranco". Turn right here onto a narrow paved road and after about 1,6 km, the bottom of the first hill of the "Alganduro" hills is reached. On the left, on the brow of the hill with access to the hill, is the "Fonte do Serro".

Point 17 - Fonte do Serro (Serro Fountain)

(Salir; GPS Coordinates: N 37º 17' 03.2'' / W 8º 02' 24.7'')

This fountain is located at the access to the hill of the "Serro do Alganduro". The cost of the construction was privately paid and the spring was inaugurated in 1971. The façade is decorated with pebbles and sea shells. The opening of the fountain is now sealed with a wall transforming it into a fountain with a tap.

Fig. 70 - Aspect of the foutain

Indications: Continuing along the same road for a little over a kilometre; turn right, down a dirt track. About 3,5 km to the north, you will find another dirt road on the left, which goes up to "Cravais". But just before, stop to see the fountain "Fonte dos Cravais" on your left.

Point 18 - Fonte dos Cravais (Carvais Fountain)

(Salir; GPS Coordinates: N 37º 18' 21.6'' / W 8º 04' 44.1'')

Located on the right bank of a small high ravine, which is still an integral part of the "Vascão" watershed, this ancient well with crank-handle manual pump was converted onto a fountain and enclosed in a rather unattractive hut. Further up the ravine, traces can still be found of the ancient rural landscape of these hills with walls and small terraced fields that have always protected this land. And who knows if this is where the famous "Fons Dianarias" that is mentioned in ancient references to the Roman Algarve8 can be found. In this same valley, a bit further south of this point, the "Janares" toponym still survives.

Fig. 71 - Current apperance of the fountain

Indications: Climb the road until Mount "Cravais", cross it, and after passing by a few small agricultural reservoirs, the EM 503 is reached, which is already paved. Turn left and continue until just before the entrance of the village of "Malhão", where the view at "Barranco da Zambujeira" can be appreciated.

Point 19 - Barranco da Zambujeira

(Salir; GPS Coordinates: N 37º 18' 20.8''/ W 8º 05' 49.4'')

This point offers a panoramic view over the southern slopes of the "Malhão" Ridge and over one of its most impressive ravines. It may seem unfair to state that this is where the Arade river has its origins, as there may be other possible candidates. One reasonable form of methodology would be to follow the watercourse and its most important tributaries upstream, until the highest and most distant point is reached, that could then be considered the river's main source.

Fig. 72 - General view of the ravine, before de 2004 fire

Fig. 73 - General view of the ravine, after de 2004 fire

Indications: Right after, the road runs alongside the village of Malhão and then a zigzags down to the houses at "Pé do Coelho". A bit further ahead, is the Arade river can be crossed.

Point 20 - Arade River

(Salir; GPS Coordinates: N 37º 17' 11.5''/ W 8º 06' 08.5'')

This is the first out of many bridges that crosses this well-known Algarvian watercourse. It is commonly known as a river, however, with only 71 km in length between Malhão and the river mouth in Portimão, it is actually only a fifth of the length of what is defined as a river. By taking into account the confluence as a starting point, in the area of the "Rosário" Island and the "Odelouca" stream, that is considered to be a tributary of the Arade river, therefore concluding the conclusion that the river is actually much longer (88 km) and that it has a larger watershed, as its origin lies slightly further north from here, in the ravines on the "Mu" ridge, in the Alentejo.

The role played by the Arade river as a former fluvial gateway to the city of Silves probably has much to do with this injustice in geographical terminology. On the other hand, the "Arade" is the watercourse in the Algarve that has been subjected to a large hydraulic dam for the retention of water for the longest time; since 1956 to be precise, which was when the Arade Dam starting functioning close to Silves. Nevertheless, it can boast an immense natural heritage similar to "Odelouca" stream, especially in terms of fish fauna, which includes endemic species such as the southwestern bogue, and the species known in Portuguese as "escalo-do-Arade".

Fig. 74 - Bridge at Arade

Indications: Continue along the EM 503, but ignore the turn-off to Alte, and cross a rather populated agricultural area. After the cross roads for "Freixo Seco", a paved turn-off is reached going down on the right towards the hills of "Brazieira". Continuing straight ahead along the track and then cross the houses of "Brazieira de Cima" climb straight up until high up and to the left the windmills of Rocha da Pena are reached.

Point 21 - Rocha da Pena

(Salir; GPS Coordinates: N 37º 15' 09.3''/ W 8º 05' 06.5'')

"Rocha da Pena" has a protected status since 1991 as a Classified Site (and Local Protected Landscape since 2010), it is a rugged topographic relief located on the bordering area between the Algarve's limestone region (known locally as "Barrocal") and the "Serra do Caldeirão." It possesses incredible values in terms of landscape, botanical wealth (several endemic and priority habitats) and fauna (bats and birds of prey). It also plays a special role as an enormous water reservoir. There is reference to an underground lake, which was once reached through a cave on the upper plateau (Algar dos Mouros). The limestone, which has undergone much corrosive chemical dissolution, connects deep down to strata of reduced permeability, leading to the constitution of an aquifer that connects with the outside through several cracks creating springs. Thus there are several well-known springs located in the surrounding areas of "Rocha da Pena", usually between 280 and 290 metres in altitude, namely in "Quinta do Freixo", "Brazieira" and "Vale do Alamo".

Fig. 75 - Rocha da Pena

Indications: Backtrack a little from the mills, and take a dirt track just opposite, that then starts to descend the southern slope of "Rocha de Pena". Just after a few houses, "Fonte Feita" is found.

Point 22 - Fonte Feita (Fonte Feita Fountain)

(Salir; GPS Coordinates: N 37º 15' 07.1''/ W 8º 05' 24.2'')

This spring of "Rocha da Pena" is the highest (at 370 m). Over time, several interventions have been undertaken here, including the creation by the owner of the only dwelling nearby, of a fountain and a small leisure area next to an irrigation tank that the spring water pours into.

Fig. 76 - Fountain

Fig. 77 - Rocha da Pena

Indications: Continue descending the side of "Rocha da Pena" until the village of Rocha is reached. Just in front, you will find the "Fonte dos Amuados" in a small square.

Point 23 - Fonte dos Amuados (Amuados Fountain)

(Salir; GPS Coordinates: N 37º 15' 01.0'' / W 8º 05' 52.4'')

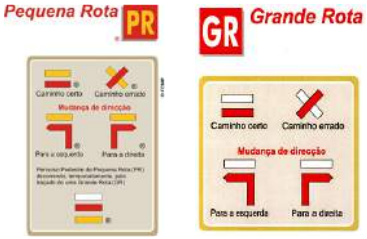
This structure is representative of popular modern architecture and it is the result of a local inhabitant's initiative (Horacio Martins). The fountain is shaped like a royal crown. It was built from scratch in 1978. Its name is related to the attitude taken by the local neighbours towards this commendable initiative ("amuo" in Portuguese is an expression of displeasure). The water is channelled from a spring located a few dozen metres to the east, on the hillside. It seems that the sense of displeasure is now long-gone and this spot has become a mandatory stop for many tourists, mountaineers and rock climbers who visit "Rocha da Pena".

Fig. 78 - Amuados Fountain

Indications: Now continue along the access road to "Rocha da Pena" always to the east, until reaching the EM 503 once again and turn right. Slightly further ahead is the EN 124, there turn right again, continue to the west for another 600 metres until reaching an intersection on the left, to the road that leads up to Almarginho. Another 1 km ahead, are the crossroads to Nave do Barão, where a last walking route with another 5 points of interest can be done.

Walking Route: Almarginho

Type: Circular
Lenght3,6 km
Total uphill slope: 40 m
Signpost: PR de Salir e GR (13) Via Algarviana

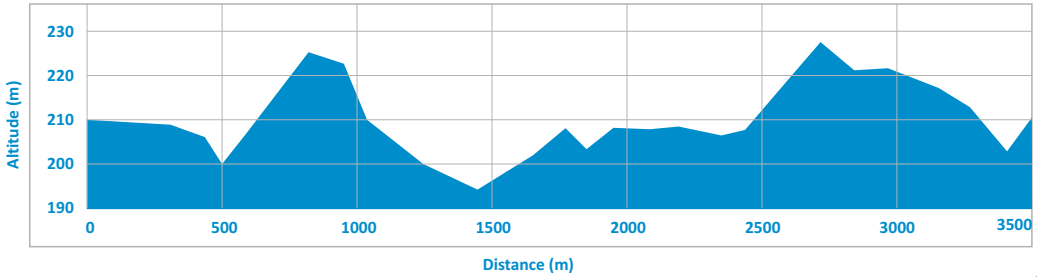


MAP 1/25.000

Key:

- Departure and Arrival Point
- 1 Fonte Figueira
- 2 Almarginho
- 3 Ponte do Olho
- 4 Quatro Ribeiras
- 5 Ribº da Brazieira

Topographic profile of the Walking Route of Almarginho



On Foot:

This route runs partly along a small section of the GR 13 ("Via Algarviana") and the PR from Salir. On the intersection to Nave do Barão, turn left onto a cemented agricultural path (GR 13 / PR from Salir) which then leads straight to "Fonte Figueira".

1 - Fonte Figueira (Figueira Fountain)

(Salir; GPS Coordinates: N 37º 14' 15.5''/ W 8º 03' 28.5'')

This old covered well is equipped with a manual hydraulic device and wheel. In this particular case, the base of the suction tube is well below the water outlet, and therefore an air chamber had to be installed, as well as a brass dome between the mill and the faucet.

This device serves the purpose of streaming the intermittent flow of water into the system. It absorbs the "intense" output of water from the piston and compensates for the "interruptions" that follow. To this day, the well is still a convivial place for socialising and there is now a picnic table nearby.

Fig. 79 - Figueira Fountain

Fig. 80 - Wheel with air chamber

Indications: A little further ahead and following the signs to GR 13/ PR de Salir, we reach the fields of Almarginho are reached.

2 – Almarginho

(Salir; GPS Coordinates: N 37º 14' 18.9''/ W 8º 03' 22.2'')

This is one of the areas in the Algarve with the highest concentration of norias. These flood plains are extremely fertile, leading to the extensive subdivision of plots of land and the subsequent installation of a large amount of wells and irrigation tanks.

Fig. 81 - General appearance

Fig. 82 - One of the irrigation tanks

Indications: Continue straight ahead along this route until the "Ponte do Olho".

3 - Ponte do Olho

(Salir; GPS Coordinates: N 37º 14' 17.9''/ W 8º 03' 10.4'')

This bridge crossing over the " Moinhos" stream was built in the 1980s and is located about 200 metres upstream from "Olho", a spring that supplied the village of Salir with water for several decades. The river is one of the several watercourses that pours into "Algibre" stream essentially draining water from the southern slopes of "Rocha da Pena". The name is related to the many water mills installed along the course (there are about 8 in just over 4 km), presently the mills are now all in ruins or integrated into residential buildings.

Fig. 83 - Appearance of the bridge

Indications: After the bridge, the route continues along the GR 13 / PR of Salir and ends when it starts climbing towards the vicinity of the town of Salir. After flanking the walls of a villa, leave the GR 13/ PR de Salir and turn left onto an unpaved rural lane. Straight after start a descent to the "Quatro Ribeiras" site.

4 - Quatro Ribeiras

(Salir; GPS Coordinates: N 37º 14' 28.8''/ W 8º 03' 13.9'')

On this site it is possible to find 4 watercourses: "Barranco da Ameijoafra", to the east, which originates on the slopes of "Serro dos Negros"; in the centre is "Barranco dos Arrodeiros", whichoriginates from "Serro da Bica", further to the west, the "Brazieira" stream and the "Moinhos" stream, which originates precisely at this spot, where the previous three courses join. During particularly rainy seasons, it becomes impossible to cross these sections due to flooding, despite the existence of old walkways used for crossing on calmer days. Nearby, a fine example of a noria with a long and elevated axle used for discharging water more efficiently into the neighbouring fields can be admired. There are 3 main types of norias: the norias with a long axle (allegedly the most primitive kind), these are the only norias where the waterwheel is placed above the well connecting via a long axle to a toothed wheel and a wheel with clamps, which turns along an external axle; the norias with short axles (are predominant in the Algarve and are also known as the Moorish norias); and the high norias that are installed on platforms at a much higher level than the surrounding land.

Fig. 84 - The walkways in times of drought

Fig. 85 - Noria with a long axle

Indications: The route continues along fertile fields in Almargem, and eventually crosses the ford at "Ribeiro da Brazieira".

5 - Ribeiro da Brazieira (Brazieira Stream)

(Salir; GPS Coordinates: N 37º 14' 25.9'' / W 8º 03' 55.6'')

This stream originates at a junction about 300 metres upstream from this point, from the "Barranco do Vale do Alamo" and the "Barranco da Brazieira", constituting the main course where the water runs off from the southern and eastern slopes of "Rocha da Pena" respectively.

Fig. 86 - Ford

Fig. 87 - Appearance of the path

Indications: The route ascends towards the tarmac road. Follow this road up towards the left, and after some 250 metres further ahead, the GR 13 once again is found. Follow it to the left, crossing the roads of Almarginho, until reaching the starting point, next to "Fonte Figueira".

By Car:

At the Nave do Barão crossroads follow the road that continues going south and that passes to the left of "Funcheira" hill, eventually reaching "Portela da Nave". From this point onwards, drive down the hill until the road at the bottom is reached the road crosses the valley from east to west, and leads to the village of Nave do Barão. Turn right, going up about 300 metres and then turn left up an agricultural track that was cemented in 2001 and that crosses the whole of the "Nave's" flat floor until reaching the "Lagoa da Nave" (Nave Pond).

Point 24 - Lagoa da Nave (Nave Pond)

(Salir; GPS Coordinates: N 37º 13' 09.7'' / W 8º 02' 58.9'')

"Nave do Barão" is a monumental platform, 100 metres high, 4 kilometres long and 1 kilometre wide. It is a polje or a blind valley, locally known as a "nave" (from the pre-Roman term for plain "nava") resulted from the sinking of solid Jurassic limestone along a geological fault line, perhaps due to the large quantity of cracks, cavities and underlying caves. Over the millennia, a reddish clay soil has accumulated on the Nave's ground as a result of the rainwater's action on limestone. All the water from the valley converge on this location, as there is no other way for water to run off, thus forming a lake that can vary in depth from year to year, depending on the rainfall. There are testimonies of some winters during which the water level rose up to a ruined house next to the main road towards the village. However, ever since the lake floor was perforated with two holes by local hydraulic services in the 1980s, it never happened again, and now during the summer months the lake is reduced to a few ponds or dries up completely. An old tank, a well with a wheel and another well with a strange underground construction, which housed an engine, are all witnesses to the agricultural labour of the past, today, only the vineyards remain as evidence. Aquatic birds try to settle on the pond but there lacks enough vegetation for the birds to feel secure. On the other hand, this is an excellent place for amphibians to breed being classified as a priority habitat by European legislation (Mediterranean Temporary Ponds). In the rest of the valley, among coal oaks, cork oaks, and carob trees grow almond trees that in winter cover the floor the Nave polje with a blanket of Mediterranean snow.

Fig. 88 - The pond in winter

Fig. 89 - Nave's ground near the pond

Fig. 90 - Nave's ground in times of drought

Fig. 91 - Well with wheel

Indications: The track to the "Nave" turns to the north here until it joins the road to the village again, turn right and climb to the intersection with the EM 525. Turn right, and a bit further on, there is the "Fonte do Cerro dos Passarinhos" (Cerro dos Passarinhos Fountains) by the roadside just before a picnic area.

Point 25 - Fonte do Cerro dos Passarinhos (Cerro dos Passarinhos Fountain)

(Salir; GPS Coordinates: N 37º 12' 41.0'' / W 8º 01' 55.3'')

This bathing spring still keeps its original structure, having undergone a popular modern architectural intervention.

Fig. 92 - General appearance

Indications: Continue along the EM 525, pass the village of Mesquita and then alongside the village of Tôr, then descend to the crossroads with traffic lights, before the new bridge over the Algibre stream. Turn right here and straight after left so as to visit the old bridge "Ponte da Tôr".

Point 26 - Ponte da Tôr

(Tôr; GPS Coordinates: N 37º 11' 24.5'' / W 8º 01' 38.0'')

This old Roman bridge is located on the secondary road from Faro (Ossonoba) to Loule (Olea), on the way to Alentejo. The Roman stamp is no longer very visible, except for on 2 arches that are closer to the left margin and half-buried. The construction is somewhat rustic; it is formed by 15 to 17 staves (the upper arch stones), it is still possible to see the large holes left due to the construction techniques used. The remaining 3 arches, which have a rather sharp trestle, that were probably rebuilt in the Late Middle Ages (14th or 15th century) present medieval markings on the base of the pillars and on the northern side of the staves there can be seen two Portuguese coat of arms with escutcheons lying on the sides.

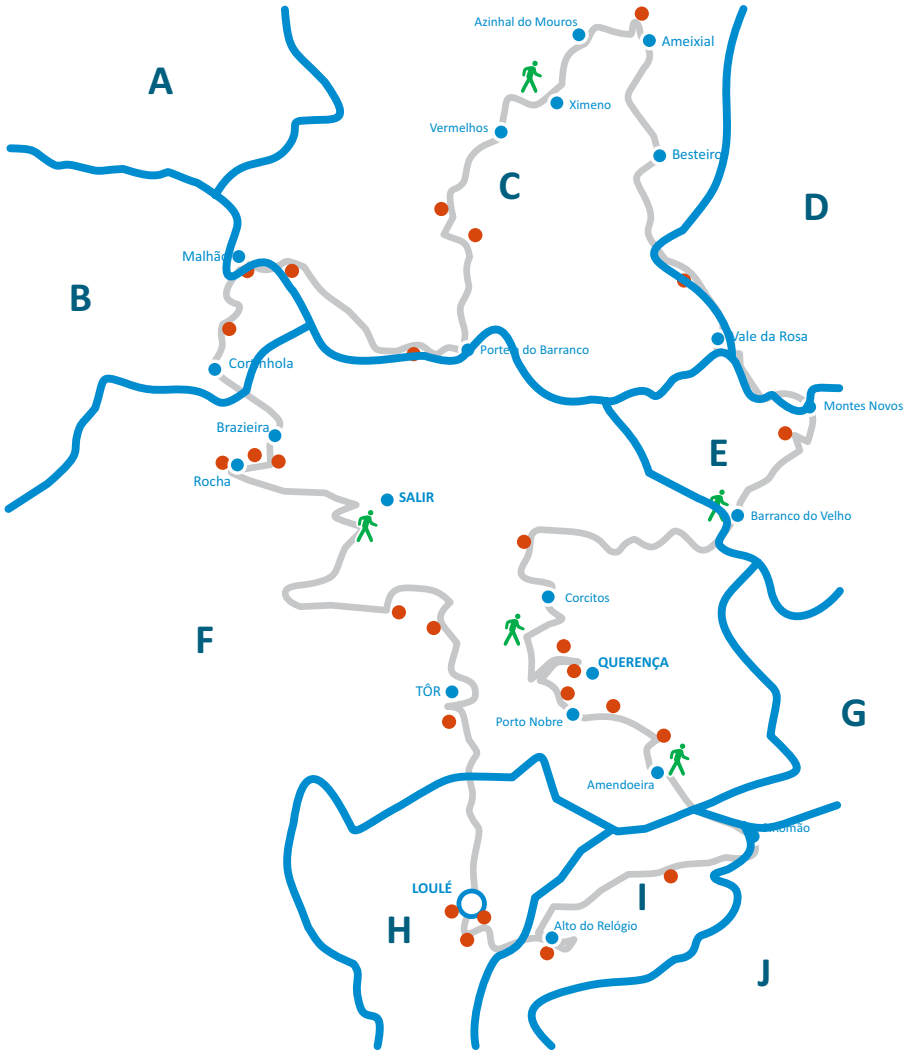
The bridge is quite narrow (3,5 metres). Reinforcement works were undertaken in 1939 and in 1995 it was finally closed to traffic and then underwent an overall reconstruction, when the new road bridge was opened just a few dozen metres upstream. The stream that goes through here is named "Tôr" stream but it quickly changes its name to "Algibre" stream, after it receives the water from the "Alte" stream already in the county of Albufeira it then becomes "Quarteira" stream, to then empty just to the west of the city with the same name, in the area of Vilamoura. If we were to take into account all the different origins, we could say the "Algibre / Quarteira" stream is the sixth largest watercourse in the Algarve, with approximately 59 km in length.

Fig. 93 - West view

Fig. 94 - Appearance of Northern Arc in times of drought

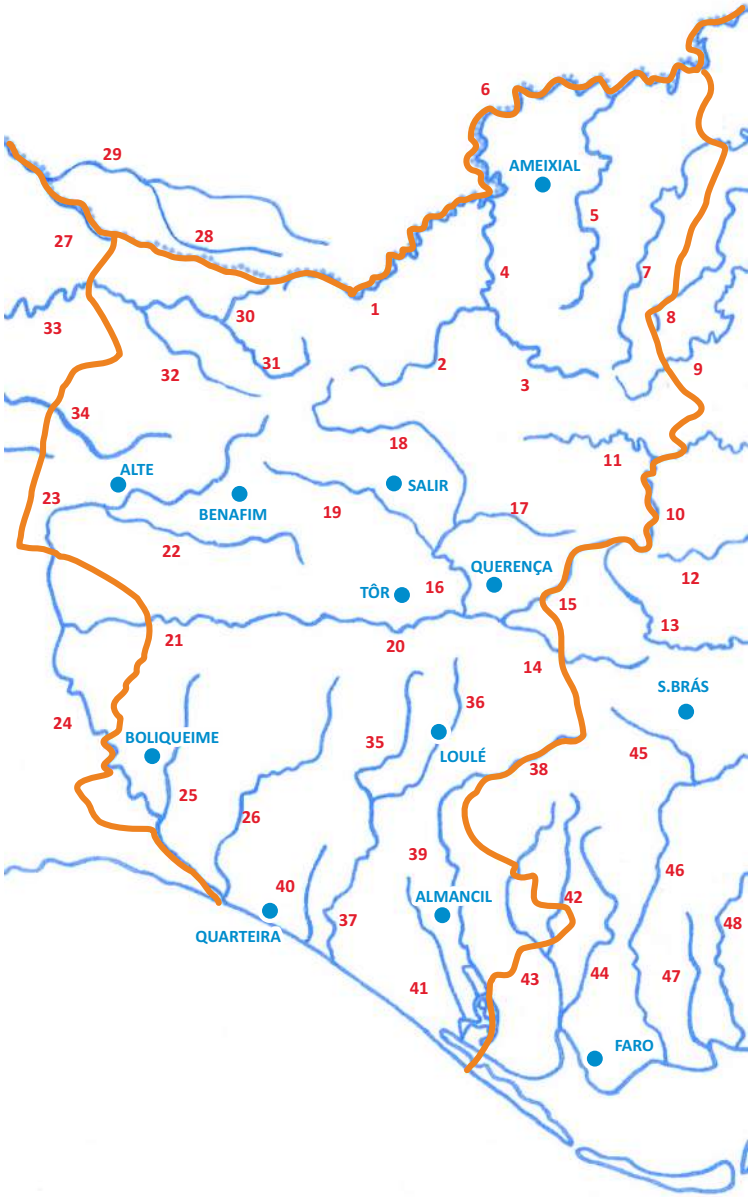
Indications: Return to Loule along the EM 525 that ends at the roundabout of the Loulé Ring Road, just north of the bus station.

Watersheds



A - Odelouca
B - Arade
C - Vascão
D - Foupana
E - Odeleite
F - Algibre/Quarteira
G - Alportel
H - Carcavai
I - S. Lourenço
J - Biogal/Rio Seco

Main waterways to the Loulé County and surrounding areas



Vascão
1. Ribª do Vascanito
2. Ribª da Sarnadinha
3. Ribª de Vasconcilhos
4. Ribª do Vascão
5. Ribª do Vascãozinho
6. Rio Vascão

Foupana/Odeleite
7. Ribª da Corte
8. Bº da Ribeirinha
9. Ribª da Foupana
10. Bº do Vale Formoso
11. Ribª de Odeleite
12. Ribª de Fronteira

Alportel
13. Ribª de Alportel

Algibre/Quarteira
14. Ribª das Mercês
15. Ribª dos Carunchos
16. Ribª da Fonte Benémola
17. Ribª da Salgada
18. Ribª do Rio Seco
19. Ribª dos Moinhos
20. Ribª da Tôr
21. Ribª de Algibre
22. Bº da Vala Grande
23. Ribª de Alte
24. Ribª de Quarteira
25. Ribª de Boliqueime
26. Ribª de Vale Tesnado

Odelouca/Arade
27. Bº do Vale de Loulé
28. Bº do Monte da Cruz
29. Ribª de Odelouca
30. Bº da Fragura
31. Bº da Zambujeira
32. Bº da Soalheira
33. Rio Arade
34. Ribª do Gavião

Carcavai
35. Ribª da Sª da Piedade
36. Ribª do Cadoiço
37. Ribª de Carcavai

S. Lourenço
38. Ribª da Goldra
39. Ribª de S. Lourenço

Others
40. Ribª da Fonte Santa
41. Ribª da Gondra
42. Ribª do Colmeal
43. Ribª do Biogal
44. Ribª de Marchil
45. Ribª da Alface
46. Rio Seco
47. Ribª da Meia Légua
48. Ribª de Bela Mandil

FOOTNOTES AND BIBLIOGRAPHICAL REFERENCES

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www.almargem.org
www.cm-loule.pt
www.turismodoalgarve.pt
www.viaalgarviana.org

Rota das Árvores Monumentais

Rota da Geologia

Rota da Água

Rota do Contrabandista