

Table of contents

Landscape	11		
Geographical overview	12		
Geology	14		
Climate	19		
Habitats	20		
Estuaries, saltmarsh and saltpans	22		
Capes, dunes and beaches	29		
Freshwater marshes and riverine habitat	33		
Woodlands, montados, orchards and matos	38		
Steppes and cereal fields	43		
History	45		
Nature conservation	52		
Flora and Fauna	59		
Flora	62		
Mammals	74		
Birds	79		
Reptiles and amphibians	92		
Insects and other invertebrates	99		
Practical Part	107		
Routes in the Lisbon – Setúbal area	108		
Route 1: The Tagus Estuary near Alcochete	109		
Route 2: The Tagus Estuary near Barroca d'Alva and Pancas	113		
Route 3: The northern Sado estuary and Palmela	117		
Route 4: Serra da Arrábida and Cabo Espichel	122		
Route 5: A Walk in the Serra da Arrábida	126		
Route 6: Sado Estuary and Tróia Peninsula	128		
Route 7: Lagoa de Santo André	132		
Additional sites Setúbal	135		
Routes in the the Alentejo	141		
Route 8: The Moura area	142		
Route 9: From Sobral da Adiça to Barrancos	145		
Route 10: Castro Verde plains	150		
Route 11: Pulo do Lobo	154		
Additional sites in Baixo Alentejo	158		
Routes in the Algarve	163		
Route 12: The Guadiana river near Alcoutim	164		
		Route 13: Castro Marim salt marshes	168
		Route 14: Ria Formosa East	172
		Route 15: Ria Formosa West	176
		Route 16: Fonte de Benémola	180
		Route 17: Rocha da Pena	182
		Route 18: Odelouca valley and Serra de Monchique	184
		Route 19: The Arade estuary	189
		Route 20: The Alvor estuary	192
		Additional sites in the Algarve	195
		Costa Vicentina – the southwest coast	199
		Route 21: Cabo São Vicente and the Sagres Peninsula	200
		Route 22: Aljezur – river and dunes	206
		Route 23: Along the Ceixe river	209
		Additional sites in the Costa Vicentina	212
		Tourist information and observation tips	217
		Acknowledgements	239
		Picture and illustration credits	240
		Species list and translation	241
		List of Text boxes	
		Tidal differences	25
		Waves on the ocean	32
		Cork Oaks in Portugal	42
		The Portuguese red list of endangered species	53
		Natura 2000	57
		Rice paddy birds: Glossy Ibis and Black-tailed Godwit	83
		Visitors from Africa	85
		The Iberian Azure-winged Magpie	87
		Bird migration at the Sagres Peninsula	91
		Clam fishing	112
		Birds of the Castro Verde plains	151
		Ecotourism code of conduct	222



LANDSCAPE

11

The 'Golden Coast' of the Algarve receives (more than) its share of sun-seekers, golfers and pensionados. Further north, the beautiful town of Lisbon deservedly attracts city-trippers. However, the land between the capital and the Algarve is given surprisingly little attention. This is undeserved, as it is a superb region for birders and naturalists.

The huge region of the Alentejo is one of the least developed parts of Europe. This is mainly because of its poor soils, which is also the reason why nature is still so unspoilt. You'll travel through endless *montados*, woodlands of Holm and Cork Oak with pastures and Mediterranean scrub. There are undulating plains with steppes and fields with some of the highest densities of steppe birds in Europe. Beautiful river valleys with rocky outcrops meander through the undulating landscape where hilltops and low sierras stand out. In the ancient villages, the casual visitor may feel himself thrown back in time 50 years or more.

Even in the built-up Algarve, nature isn't far away. There are wildflower-rich limestone hills just a few kilometres inland, while the famous Cape St. Vincent (Cabo São Vicente) is among the great wildflower hotspots of the Iberian Peninsula. While the sun worshippers are sizzling on the beaches in the south, the nearby and still wild Costa Vicentina is largely forgotten. On this impressive coast, small beaches alternate with rock cliffs and dunes at the mouths of crystal clear, clean rivers. Behind the coasts are characteristic lagoons, marshland and estuaries of international significance.

Further north, not far from Lisbon, the little-known Cabo Espichel is almost as impressive as Cape St. Vincent, while the nearby Serra da Arrábida is a scenic hotspot and a highlight for birds and wildflowers. Few naturalists know the two large estuaries near Lisbon, where masses of waders stop on migration two times a year.

This guide will introduce you to all these superb landscapes and help you to discover its flora and fauna.

Springtime in southern Portugal is a guaranteed flower festival. Wild species mix fluently with these Yellow Lupins, which are sown to improve the soil.

Estuaries, saltmarsh and saltpans

Routes 1, 2, 3, 6, 13, 14, 15, 19, 20 and 22 visit the estuaries, saltmarshes and saltpans of southern Portugal. Sites B, C, D and G on pages 135 to 139 and site C on page 169 are also set in this environment.

There is a large number of river estuaries on the coast of southern Portugal. These shallow bodies of brackish water are hotspots for birds. Both river and sea chip in to create estuary habitats. Incursions from the sea bring in salt water and nutrients, which the rivers match with fresh water and even more nutrients. No wonder that estuaries are such productive and rich habitats.

The currents of both seawater and river water vary significantly, which makes the estuary ecosystem very dynamic. Seawater pours in when the tide rises; twice a day like clockwork. The height of the tide depends on the position of the moon and the force and direction of the wind. Hence there are times when the sea invades the bays with an unstoppable force, and others when the ocean's incursions are rather modest. In a dry country like Portugal, rivers carry a steady flow of water only in the winter and spring. During the summer the river water input is negligible on small rivers



On the Tejo and Sado bays and the southern Algarve are large areas of tidal mudflats (bottom). Here, in the salt marsh in spring, the large flowers of the Yellow Cistanche are a conspicuous sight. It is a parasitic plant that taps into the roots of Sea Purslane (top).



and much reduced on larger ones so, in summer and autumn, the water in estuaries is much more saline. However, in winter, especially after periods of steady rainfall, the rivers pour fresh water out into the estuary with force, 'refreshing' it during the winter and early spring. So, all in all, there is a variable gradient from saline to fresh as you proceed deeper upstream, but this transition area lies deeper inland during the summer. Salt is an important ecological player, as it is already in low concentrations toxic to most plants. Along the high tide line there are salt-tolerant plants, like seablites, sea-lavenders, rushes, tamarisks and the Mediterranean bush *Limoniastrum* (p. 28). These all have thick, leathery leaves and branches to store fresh water and glands that excrete salt – necessary adaptations to survive in this habitat. Interestingly, there are no trees that survive in this saline soil. While in the tropics, mangrove forests would grow in these conditions, no such trees survive in the temperate regions. It is still a puzzle why mangroves are so strictly tropical, but they are and in Europe the saltmarsh is naturally open. Only tamarisks tolerate a fair amount of salt.

The soils of an estuary consist of sand or mud. Sand is blown by the ocean winds and pushed into the estuary. The rivers themselves transport mud that is deposited in the river mouth when the flow stagnates. Intertidal flats of one or both of the materials arise. In normal conditions, these flats slowly grow in extent, but are washed away just as easily during storms or by sudden discharges of the river. Sometimes, the border between sand and mud is a sharp line, such as in the Sado estuary. That of the Tagus in contrast, consists mainly of mud or a mixture of the two. The Ria Formosa is fed by several small rivers and has again a sandy bed.

So, in short, soil type and salinity is what drives the estuary ecosystem. Salt marshes are the dominant feature around the lower part of the estuaries, while freshwater habitats (mostly rice paddies, fields and a few reedy areas) are found upstream, but there are many 'shades of grey' between these two extremes. The lower marshes are flooded every high tide and exposed at every low tide. High marshes are only flooded



The small Aljezur river has an almost completely natural estuary (route 21).

southern Portugal is a shallow continental shelf interrupted by ridges and canyons. In these interruptions sea life flourishes and a concentration of pelagic birds can be expected (see also page 31). The biggest canyon is just a few kilometres from the Setúbal coast near Cabo Espichel. A smaller canyon is west of Cape St. Vincent and there is a small ridge south of the Algarve that gets close to Faro.

Seabird numbers and species out at sea and near the coast are especially good during migration periods and in winter. Many species take advantage of the fishing vessels that are around and of shoals of Sardines and Mackerel that live near the water surface. Around the fishing boats concentrations of birds can be large and some get very close to the observer.

The most numerous species are Cory's Shearwaters, Gannet, Lesser Black-backed and Yellow-legged Gull. Great, Sooty and Balearic Shearwater, (European) Storm-petrel and Great Skua are frequently seen too. These are all birds that breed elsewhere, but visit the Portuguese coast to feed. Shag, Yellow-legged Gull and Little Tern are the only breeding seabirds in southern Portugal. Cormorant is a winter bird, which mixes with Shag

Griffon Vultures are mostly seen in the eastern part of the Alentejo and on the plains of Castro Verde (routes 8-11).



on the coastal rocks.

The Gannet, (with sometimes hundreds of birds per day) and the Sandwich Tern are the most obvious species outside the breeding season, because they often pass by very close to the shore.

Raptors

Southern Portugal doesn't have the reputation for raptors enjoyed by its neighbours Extremadura and Andalucía. As the habitat on either side of the border is similar, the lack of raptors on the Portuguese side has long been a puzzle. A recent study (2017) sheds light on the issue: politics is to blame. Whereas carcasses in Spain are left in the field, they are collected by the Portuguese authorities.

However, the valley of the Guadiana, the montados next to the border with Extremadura and the steppes of Castro Verde do have a lot to offer.

The Egyptian Vulture is rare, but many Griffon Vultures breeding in nearby Spain cross into the Alentejo where the Black Vulture is also seen regularly. Short-toed Eagle and Booted Eagle are widely distributed. Increasingly, a small number do not migrate to Africa but remain in winter. Only a few pairs of Golden Eagle breed at the border near the Guadiana. Although increasing, the shy Bonelli's Eagle remains scarce and endangered but it can be surprisingly easy to find. The rare Spanish Imperial Eagle became extinct in Portugal, but since 2003 has been re-colonising the south. They breed in the Guadiana valley and the mountains of the Algarve, and juvenile birds are regularly seen, especially in the Castro Verde area. Montagu's Harrier is more numerous. It breeds in open lands and is especially common in the steppes. The Black-winged Kite is a relatively recent addition to the European avifauna (see box on page 85). It is a widespread, but not abundant bird in the Alentejo and the Setúbal-Lisbon area in agricultural lands with trees and woodlands with open fields. After breeding, there is some dispersal when Black-winged Kites can be seen in the Algarve as well. The Lesser Kestrel almost became extinct in Portugal at the end of the 20th century. Nest boxes and even purpose built 'kestrel towers' in Mértola and near Castro Verde have helped the population to bounce back and now about 450 pairs breed. Lesser Kestrel is easy to see in these areas.

Naturalised exotics

It is surprising how easily some exotic and brightly coloured birds have established populations in southern Portugal. Whether they escaped from captivity or were released deliberately is uncertain, but what is clear is that the warm climate and very mild winters are one important factor of their success in Portugal. Here we present four photographs of the most often seen species, as they are not included in most of the European bird identification guides.



The Short-toed Eagle is the most common eagle in southern Portugal.

F – The Azinhal steppes



GPS: 37.759710, -7.824406. From the hamlet of Azinhal, a track cuts through the steppes and connects with the local road between Corte Pequena and Viegas. It is a great area for steppe birds. Drive slowly and scan the area for Little and Great Bustards, Black-bellied Sandgrouse, Little Owl, Montagu's (summer) and Hen Harrier (winter), Calandra Lark and Stone Curlew. Azinhal lies 20 km northwest of Mértola on the N122. The track is signposted with wooden signs *birdwatching walk*, the first of which is at the main road in the middle of the hamlet of Azinhal.

G – Entradas



The fields surrounding the village of Entradas are among the best places to find Great Bustard. Up to date information can be had in the *Centro de Educação Ambiental de Vale Gonçalves* (Environmental Education Centre of Vale Gonçalves), run by the LPN (*Liga para a Protecção da Natureza*). The centre, situated off the E802/IP2 road 6 km north of Castro Verde (but note that you have to turn onto the track running parallel to the main road 2 km earlier). The centre, which houses a small exhibition, is open Tuesday to Saturday, 09:00-13:00 and 14:00-18:00.

There are good areas to explore around Entradas. At the Entradas junction on the IP 2 (the southern one of two), you have two options. The first is to turn left (as you come from Castro Verde) towards Carregueiro. After 1 km a track signed *Monte das Mouras* appears on your left. Here you can park safely to scan the area. Follow the track (by car) and look at the terracotta pots at the walls of the buildings that are used as nest boxes by Lesser Kestrel (GPS: 37.779533, -8.026359).

Back on the tarmac road, only 250m further on, a track heads off to the right. It ends at a gate, but the first part is excellent for steppe birds and raptors. Return to the tarmac road and continue. The whole of this 10 km road (which ends at the N2) is worth exploring.

The second option is to head into Entradas and turn right just past a small chapel onto the main street and then immediately left onto a minor road which passes a water tower and, after about 10 km, reaches São Marcos da Ataboeira. The first stretch is steppe bird country again. The scarce and declining Rufous Bush Chat has bred along the river here (GPS: 37.766010, -8.009700).

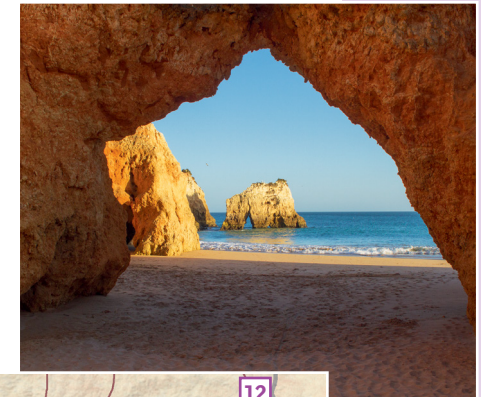


Routes in the Algarve

Splendid, sandstone cliffs, beautiful beaches, a sun that never seems to cease shining, mild winters and more golf courses than you can dream of (even in your worst nightmare): coastal Algarve has all the trimmings of a traditional A-star tourist destination. Add to this the relatively cheap flights and hotels or apartments, then it is no wonder that it is the most popular destination in southern Portugal. Less well known is what a great area this is for naturalists. Granted, you'll have to be able to stomach some ugly overdevelopment but if you look past that, you'll find bird-packed marshlands, both freshwater and saline, and some very fine areas with dunes, plus, of course, the beautiful and famous Algarve cliffs. An attractive aspect of the southern coast of the Algarve, is that it takes just a short drive inland to escape the hustle-and-bustle of coast and discover peaceful, orchid-rich hillsides, woodlands, carob groves and cliffs.

The following routes explore all the major estuaries and salt marshes of the southern Algarve: Castro Marim (route 13), Ria Formosa (route 14 and 15), the Arade (route 19) and Alvor estuaries (route 20). The few, but excellent, freshwater sites feature on route 15 and sites A and B on pages 195-196. For the famous coastal cliffs, look at sites D and F on pages 197-198 and for dunes, routes 14 and 15.

Heading into the interior, routes 16 and 17 offer short but fine walks in the botanically rich limestone hills. Routes 12 and 18 explore some of the most attractive rivers of the southern Algarve, with route 18 also bringing you to the highest peaks of the region, near Monchique.



The famous cliffs of the 'Golden Coast' of the Algarve. In the evening sun, the sandstone is of an unforgettable colour.



Overview of the southern Algarve. The letters refer to the sites on page 195-198.

Route 12: The Guadiana river near Alcoutim

36 KM, ONE WAY
EASY

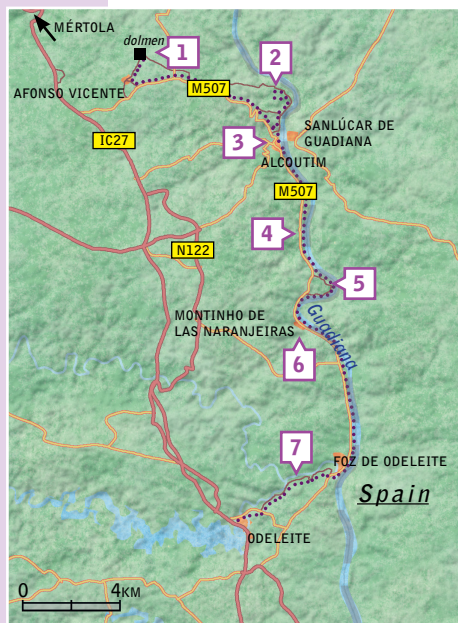


Fascinating landscape on the border with Spain.

Habitats: broad river valley, riverine woodland, flowery fields

Selected species: Barbary Nut, Champagne Orchid, Andalusian Birthwort, Rufous Bush Chat, Kingfisher, Melodious Warbler, White-rumped Swift, Rock Bunting, Mediterranean House Gecko, Spanish Terrapin, Violet Dropwing, Keeled Skimmer, Northern Banded Groundling

Best season
March-July



From the village of Alcoutim southwards, the Guadiana is much deeper and wider than further north, near Mértola. Sailing boats travel between the riverside villages, which are an attraction of their own. As the river has been the border between Spain and Portugal for centuries, castles and fortifications are frequent along its banks. The river is also fringed by a lush forest of Poplar, Ash and Willow, providing a sharp contrast with the surrounding dry hills clothed in holm oaks, scrub and olive groves.

This route explores this section of the Guadiana, including its tributaries. The main attraction is the landscape (which is quite different from the rest of southern Portugal) and the birdlife that goes with it (including several species that are rather

rare in Portugal). There is also a good sideshow of reptiles and amphibians, butterflies and dragonflies.

Starting point Afonso Vicente (GPS: 37.492694, -7.540567)

Getting there The village of Afonso Vicente, between the main IC27 road and the village of Alcoutim on the bank of the Guadiana. The *Menires de Lavajo* here are signposted from afar (GPS: 37.50143, -7.53373).

1 The first short walk starts in the village of Afonso and is a 1.3 km linear walk to the menhirs of Lavajo. The standing stones are between 3500 and 2800 years old. Although of great historical interest, from a naturalist's point of view it is the walk to the stones that is of most interest. The vegetation here (and on the rest of the route) is typical for the schist soils of the Alentejo – Gum and Narrow-leaved Cistus, French Lavender, Mediterranean Mezereon and here or there the odd Brown Bluebell, Barbary Nut or Gladiole. The flat schist stones are excellent to turn in search for amphibians (in the dry streambed) and reptiles on the hillsides. We found Mediterranean House Gecko here, but anything may turn up. The region is known for the presence of Iberian Painted Frog and Iberian Midwife Toad, and perhaps they occur here too.

Follow the M507 east to Alcoutim, which is the least densely populated municipality in Portugal. As you enter the village, turn left following the sign *Posaуда Juventude* (Youth Hostel) to explore the riverside to the north on a clearly signposted loop to the ruins of an old castle. (GPS: 37.480989, -7.472431)

2 There is a castle in the centre of Alcoutim as well as the older Castle just north of the village. This last one was built during the Reconquista on an older fortress and was used to guard the border until the 17th Century. The place lost its importance, and today little remains of this medieval castle. It is worth visiting the old ruins that have great views over the surroundings. In late spring, look around the castle and the lands along the river for Rufous Bush-chat, Melodious Warbler, Crag Martin and Kingfisher. Golden Oriole, Eagle Owl and Rock Sparrow also occur. Spring visitors will enjoy the fort's wildflowers – again the typical scrubland species occur, with addition of Purple Jerusalem-sage and Andalusian Birthwort, the latter being the host plant of Spanish Festoon which is plentiful in spring.



The ruins of the old Alcoutim castle.

Brown Bluebell (top) and Champagne Orchid (bottom) are two spring wild-flowers you can find in the Guadiana river basin.



3 Alcoutim is a lovely village that warrants a stop for its own sake. It was once an important port and border town, as is demonstrated by the centuries old castle in the middle of the village.

From the *Praia Fluvial* (river beach) you can walk along the San Marcos river, a wonderful small tributary to the great Guadiana. Keeled Skimmers and Violet Dropwings are noteworthy among the dragonflies, but Western Clubtail and Northern Banded Groundling are listed for the area too. Look for Spanish Terrapins and Viperine Snakes, while the birds are represented with Iberian Green Woodpecker, Kingfisher, Golden Oriole and Grey Wagtail.

Continue south along the M507.



4 Park at the second bridge (GPS: 37.440032, -7.462006), about 4 km south of the roundabout on the south side of Alcoutim) and follow the track down to the river to explore. The scenery here is verdant with olive groves and Mediterranean woodland. All the typical scrubland birds of south Portugal are possible here, but most attractive are the Bee-eaters and the Red-rumped Swallows that nest under the bridge. Occasionally, White-rumped Swift breeds here as well.

5 After 6.4 km after leaving Alcoutim, in the curve to the right, park at the viewpoint on the left that overlooks the Guadiana (GPS: 37.422554, -7.454662). From here you can walk a 4 km loop that leads down to the Guadiana. There are Champagne Orchids here in spring (in the trackside close to the floodplain) and all the aforementioned birds. The fields and (lovely) olive groves may host Rufous Bush-chat and Melodious Warblers.

6 Just a little further you arrive at Montinho das Laranjeiras, where there are ruins of an old Roman villa on the left side of the road. Just

beyond the ruins, on the other side of a bridge (again with Red-rumped Swallow), you can follow the dry streambed uphill. The first part runs through small orchards and allotments and has an attractive birdlife, with similar birds as in the previous sites.

Continue on the M507.

7 Just past Foz de Odeleite village, park beyond the large bridge (about 7 km south of Montinho das Laranjeiras) and follow the track on your right (GPS: 37.352417, -7.453600). It follows a broad floodplain along the large Odeleite river. In spring, there are masses of the small, pale-blue iris Barbary Nut. Rock Bunting, Thekla's Lark, Nightingale and Golden Oriole breed here and you have another chance on seeing the aforementioned birds.

You can walk (or drive) the track as far as Odeleite village (6 km), from which you can complete the loop.



The spectacularly coloured Violet Dropwing flies along the banks of the Guadiana.



The picturesque Guadiana near Alcoutim. Opposite the river lies Spain, with the village of Sanlúcar de Guadiana.