



Parc Natural
dels Aiguamolls
de l'Empordà



Government of Catalonia
Department of Environment
and Housing



Els Aiguamolls de l'Empordà Natural Park

Els Aiguamolls de L'Empordà Natural Park (The Marshes of L'Empordà) has an area of approximately 4,730 hectares, of which 825 hectares are a strict natural reserve. The Park is situated in the region of L' Alt Empordà, and consists of the following municipalities, listed here in order of protected area: Castelló d'Empúries (57.4%), Sant Pere Pescador (12.8%), Palau-saverdera (10.2%), Peralada (8.9%), Pau (4.7%), Pedret i Marzà (2.6%), L'Escala (2.1%), Roses (1.1%) and L'Armentera (0.2%). The objective of the declaration of this area as a natural park is two-fold: on the one hand, to protect, improve and boost the natural systems, and on the other, to make conservation compatible with the area's economic development.

AN AREA UNDER HEAVY HUMAN PRESSURE

The region of L'Alt Empordà has approximately 100,000 inhabitants. In some of the Park's municipalities, the population can increase fourfold in summer. One example of the pressure from humans are the Natural Park's beaches, which in summer can be visited by some 23,000 people a day. Over 80% of the Park's area is private property and within the Natural Park's limits is the most important residential marina in Europe, Empuriabrava, with 30km of navigable canals.

A SPACE OF COEXISTENCE BETWEEN WATER, EARTH, HUMANS AND NATURE

A mosaic of ecosystems that are interdependent but also very different:

Sea

On the edges of the Natural Park is an area of relatively calm, sandy-bottomed marine waters. The bay of Roses is sheltered even from strong north winds. Nevertheless, the east winds strike the coastal edge of the Park with force.

Coastal beaches and sands

These are present around the whole coastline of the Park, and are the only remaining virgin beaches on the Costa Brava. In fact, the extended southern edge of territory included in the Park, following the beach, is intended to preserve a fully representative example of this type of habitat.

Lagoons and salt-loving plant life

The salty coastal lagoons, known locally as *llaunes*, are located directly behind the beach, between the mouths of the rivers La Muga and El Fluvià. The vegetation surrounding the lagoons, consisting of low-growing plants adapted to the salinity of the soil, such as glasswort and rushes, is known in the area as *salsura*, which means preserved with salt.

Closes, peces and feixes

In L'Empordà, grassland meadows typical of this region are known as *closes* (enclosed areas). They are surrounded – enclosed – by drainage channels, edged with riparian trees (elm, ash, poplar, alder and others). They are situated in the beds of the old lakes, and therefore flood in times of heavy rain. Other fields and pastures of this type, long and narrow, enclosed by tamarisk bushes, are given the name of *peces* or *feixes*.

Freshwater lakes and marshes

These are the remains of the old lake at Castelló, and the most emblematic is the lake at Vilaüt. Its inland location, far from the sea, means that the water is entirely fresh, and the vegetation is especially adapted to cope with immersion, flooding and high humidity, depending on the depth of the water. The Natural Park has promoted the recovery and creation of new lakes, such as the lake in El Cortalet or the Europa lakes.

Cover: Aerial view of the Les Llaunes Strict Nature Reserve
Photo: Santi Font

Previous page: Stork (*Ciconia ciconia*)
Photo: Masses Pery



Rivers, watercourses and irrigation channels

Besides La Muga and El Fluvià, the Park's two main rivers, in the marshes there is also an extensive network of waterways and irrigation channels. The vegetation on their banks is of obvious botanical and faunal interest. The Isle of Caramany Strict Reserve, covering 5.6 hectares, situated in the river Fluvià, has a riparian wood that is evolving entirely naturally.

Crops

These occupy a high percentage of the Park's area. From winter cereals (barley, wheat) and alfalfa, there has been a shift towards maize, sorghum, sunflowers and fruit trees. The rice crop, recovered with the creation of the Natural Park, is without doubt the best suited to the marshy nature of the land in the region of El Baix Empordà.

Rough lands

Situated between the plain and the neighbouring Serra de Verdera mountain range, in the north east, these occupy slightly sloping ground. They are covered in non-irrigated crops (such as vines), scrubland and pastures, groves of cork oaks, Holm oaks and other types of oak, and also groves of pines in some areas such as La Torre del Vent, the highest point in the Park.

Inhabited areas

The Park has a good number of farms, manors and country houses scattered over the plain. They are often

found integrated into the landscape and offer shelter to the wild flora and fauna.

HISTORICAL HERITAGE

The Aiguamolls de L'Empordà in the past occupied almost all the plain of the bay of Roses and the lower Ter river. The Montgrí massif was set away from the waters, and when the Greeks settled here, they did so on an island between the former mouths of the rivers Fluvià and Ter, where they later founded Empúries. The extensive marshland gradually disappeared, due mainly to the expansion of agriculture. The wide Castelló Lake, with its three islands, and the lakes of Siurana, Vilacolum, Riumors, Bellcaire, Ullastret and Pals are now also part of history.

The construction of tourist facilities was another degradation factor. Extensive areas disappeared and were turned into housing developments. This would have continued were it not for the campaign that began in 1976 with the slogan "The last marshes of L'Empordà, under threat", which aimed to raise public awareness of the importance of the lakes and their value as a nature reserve.

It was in 1983 that the Parliament of Catalonia finally passed the Law declaring the Aiguamolls de L'Empordà a natural site of national interest and strict nature reserve, later reclassified as a natural park.

The Nature Reserve only includes the lakes of the Alt Empordà region; those of the El Baix Empordà region

are included in the PEIN (Plan for Areas of Natural Interest).

HUMAN ACTIVITY

Human activity in the Park is an important force, due both to the tourist industry that it brings and to farming activities.

Since irrigation came into use here, the crops grown in the Park have changed. Cultivation was originally of winter crops, and this has changed to maize, sorghum, sunflowers and fruit trees, which are good wintering places for insectivorous birds and for thrushes, due to the abundance of fruit on the ground.

The rice fields are undoubtedly the cultivated land that is most beneficial to water fowl. There are currently some 150 hectares of cultivated rice paddies, for the most part cultivated without pesticides, which are kept flooded even outside the growing season in order to encourage the presence of water fowl.

FAUNA

The marshes are one of the natural areas of Catalonia with the largest variety of animal species. Many birds use the marshes as a shelter and rest area, and there are over 300 species, many of them protected and of great beauty.

The birds are the main faunal attraction of the Park. Up to now, 329 species of bird have been sighted, of which 82 species nest here on a regular basis. Species associated with aquatic environments are the most representative and the most plentiful.

Among the most numerous nesting birds we have the mallard (*Anas platyrhynchos*), the moorhen (*Gallinula chloropus*), the blue-headed wagtail (*Motacilla flava*) and the reed warbler (*Acrocephalus scirpaceus*). In lower numbers, there are also nests of the little grebe (*Tachybaptus ruficollis*), the great bittern (*Botaurus stellaris*), the little bittern (*Ixobrychus minutus*), the purple heron (*Ardea purpurea*), the gadwall (*Anas strepera*), the marsh harrier (*Circus aeruginosus*), the coot (*Fulica atra*), the black-winged stilt (*Himantopus himantopus*), the Kentish plover (*Charadrius alexandrinus*), the kingfisher (*Alcedo atthis*), the roller (*Coracias garrulus*), the lesser spotted woodpecker (*Dendrocopos minor*), the moustached warbler (*Acrocephalus melanopogon*) and the great reed warbler (*Acrocephalus arundinaceus*). The garganey (*Anas querquedula*), known locally as the *roncaire* (snoring duck), and the lesser grey shrike (*Lanius minor*) - two of the Park's most emblematic species - last reared young here in 1997 and 2001, respectively. The white stork (*Ciconia ciconia*), which had nested occasionally in the area, now has a population of some 40 pairs, thanks to the recovery project begun in 1987. The purple swamphen (*Porphyrio porphyrio*), which had disappeared by the middle of last century, has also been reintroduced. From specimens released

in 1989 and 1991, the population has recovered and currently stands at some 30-40 nesting pairs.

During migration periods (February-June and July-October), thousands of birds use these marshes as a place of rest and feeding, especially during the Spring and when the north wind blows. During the second two weeks of April and the first days of May is when the largest number of species can be seen. Among the most representative migratory birds there are, among others, the squacco heron (*Ardeola ralloides*), the glossy ibis (*Plegadis falcinellus*), the flamingo (*Phoenicopterus ruber*), the garganey (*Anas querquedula*), the osprey (*Pandion haliaetus*), the red-footed falcon (*Falco vespertinus*), the little crane (*Porzana parva*), the collared pratincole (*Glareola pratincola*), the marsh sandpiper (*Tringa stagnatilis*), the Adouin's gull (*Larus audouinii*), the white-winged tern (*Chlidonias leucopterus*) and the red-throated pipit (*Anthus cervinus*). The wader group deserves a special mention, as up to 32 different species are seen regularly, some of the most numerous being the little-ringed plover (*Charadrius dubius*), the little stint (*Calidris minuta*), the ruff (*Philomachus pugnax*), the common redshank (*Tringa totanus*) and the wood sandpiper (*Tringa glareola*).

In winter these marshes, like the Bay of Roses, are visited by large numbers of birds coming from Northern and Central Europe. The duck group is one of the best-represented, with a monthly presence of some 15,000 specimens. The most abundant species are the mallard (*Anas platyrhynchos*), the common

teal (*Anas crecca*) and the northern shoveler (*Anas clypeata*). The cormorant (*Phalacrocorax carbo*), the grey heron (*Ardea cinerea*), the coot (*Fulica atra*), the lapwing (*Vanellus vanellus*), the common snipe (*Gallinago gallinago*), the curlew (*Numenius arquata*), the black-headed gull (*Larus ridibundus*), the European penduline tit (*Remiz pendulinus*) and the reed bunting (*Emberiza schoeniclus*) are also abundant. Among the water fowl present in the Bay of Roses are the black-throated diver (*Gavia arctica*), the great crested grebe (*Podiceps cristatus*), the Balearic

1 Mas del Matà Observatory
Photo: Archives of the Natural Park

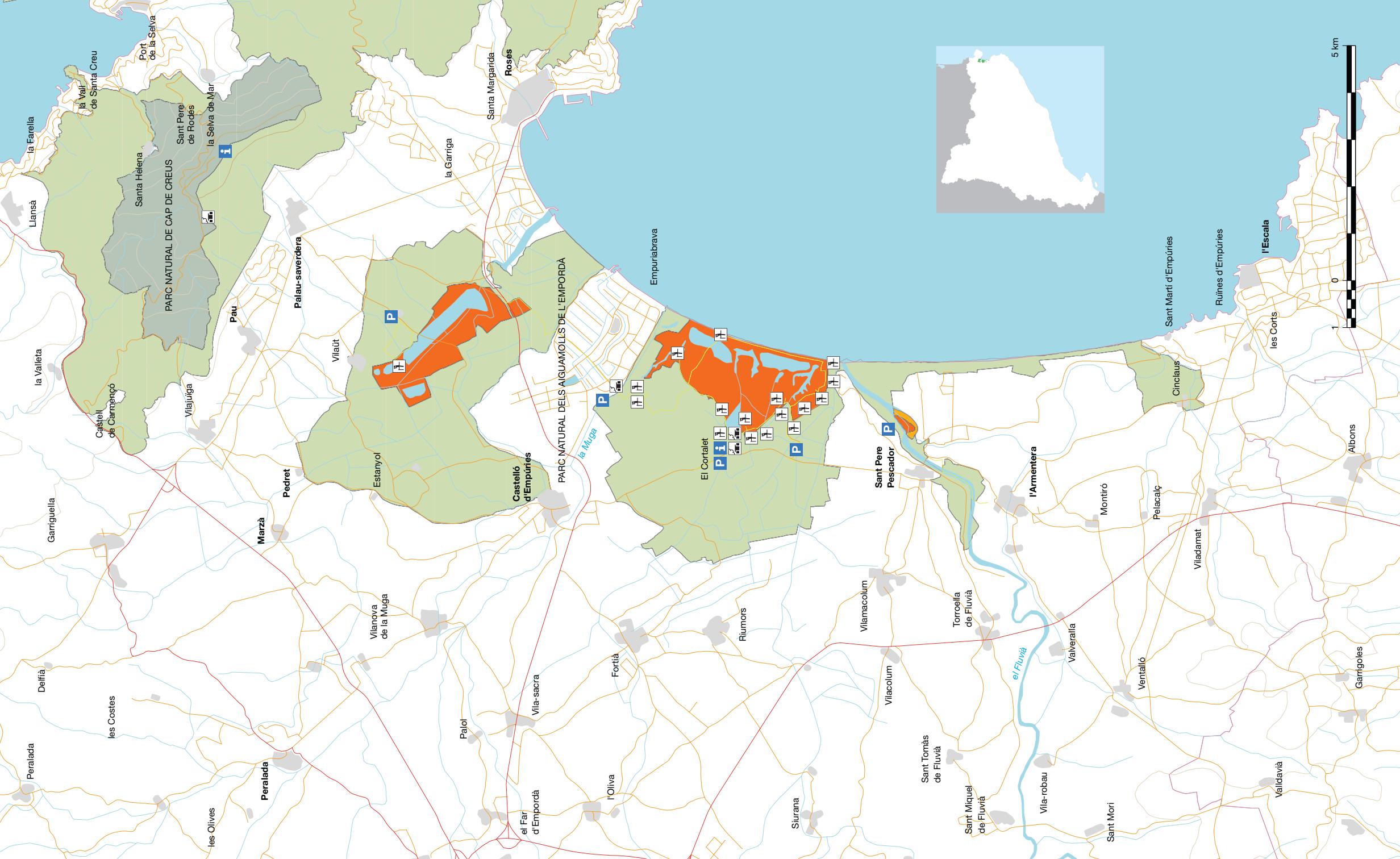
2 European roller (*Coracias garrulus*)
Photo: Antoni López

3 Little egret (*Egretta garzetta*)
Photo: Richard Martín

4 Kentish plover (*Charadrius alexandrinus*)
Photo: Tono Folguera

5 Nest workshop
Photo: Richard Martín

6 Black-winged stilt (*Himantopus himantopus*) mating
Photo: Richard Martín



PUBLIC TRANSPORT AND ACCESS

By road

Motorway: **AP-7**, from Barcelona to La Jonquera. Exits at Orriols (L'Escala) and Figueres.

Road: **N-II**, from Barcelona to La Jonquera.

By train

Barcelona to Portbou line. The nearest station is Figueres.

- Natural Park
- Strict Nature Reserve
- Nature Reserve
- Natural Site of National Interest
- i Information Centre
- P Car park
- Picnic Area
- Hide
- Major road
- Minor road



shearwater (*Puffinus mauretanicus*), the sandwich tern (*Sterna sandvicensis*) and the razorbill (*Alca torda*). The fish that are most abundant in the area are the carp (*Cyprinus carpio*), the thicklip grey mullet (*Chelon labrosus*), the spotted flounder (*Citharus macrolepidotus*), the pumpkinseed sunfish (*Lepomis gibbosus*), the eel (*Anguilla anguilla*), etc. Important for their rarity is the presence of the fartet (*Lebias iberá*), a small fish native to the Iberian peninsula, and the three-spined stickleback (*Gasterosteus aculeatus*).

The population of reptiles and amphibians can be found all over the Park, mainly in the freshwater areas. Among these are the painted frog (*Discoglossus pictus*) in some freshwater lakes, the marbled newt (*Triturus marmoratus*), the Mediterranean terrapin (*Mauremys leprosa*), the psammudromus (*Psammudromus algerus* and *P. hispanicus*), the rare three-toed skink (*Chalcides striatus*) and the Western green lizard (*Lacerta bilineata*). Four different species of snake, and the slow worm (*Anguis fragilis*) shelter on the riverbanks and in the riverside woods.

The most typical mammal of the marshes, apart from the Southern water vole (*Arvicola sapidus*), is the otter (*Lutra lutra*), which until half a century ago was seen frequently and has been reintroduced. In addition, there is the least weasel (*Mustela nivalis*), the polecat (*Putorius putorius*), in large numbers, the badger (*Meles meles*), the red fox (*Vulpes vulpes*), the common genet (*Genetta genetta*) and the fallow deer (*Dama dama*), reintroduced in 1987.

Small mammals such as the vole, the mole, the shrew, the rat and the mouse are spread over the Park. The rabbit (*Oryctolagus cuniculus*) is very abundant in certain parts of the Park, unlike the hare (*Lepus capensis*). The wild boar (*Sus scrofa*) population has grown a great deal and this is now one of the species abundant in the Natural Park. Bats are seen frequently in the marshes (13 different species) and contribute to the control of insects such as mosquitoes.

VEGETATION

The vegetation of the marshes has some special characteristics that make it very different from that of the surrounding areas. This is very noticeable in the areas around the edges, where the water and the salinity have an important part to play. Rice crops are combined with pasture land, valuable for biological and scenic reasons.

The main types of vegetation we can see in the marsh areas are:

Saline soil vegetation

In these areas a number of very specialised plants grow, usually of the succulent variety, such as the glasswort (*Arthrocnemum*) or the Mediterranean saltbush (*Atriplex halimus*), or rushes such as the marine rush (*Juncus maritimus*) or the salt meadow comgrass (*Spartina patens*) and, in the months of May

and June, we can enjoy a spectacular show of seashore iris (*Iris spuria*).

Sand-growing vegetation

This is a type of vegetation that is highly adapted to this inhospitable environment, such as the sand couch grass (*Agropyron junceum*), which grows right down to the sea, and the marram grass (*Ammophila arenaria*), which grows up in the dunes.

Marsh plants on the riverbanks, and in irrigation channels and flooded meadows.

The sedimentation of the Fluvià and Muga rivers is crossed by a collection of drainage channels, which have their own specific vegetation, dominated by the reed beds and similar communities. The plants most characteristic of this habitat are the common reed (*Phragmites australis*), the bulrush (*Typha angustifolia* and *T. latifolia*), the common club-rush (*Schoenoplectus lacustris*), the yellow iris (*Iris pseudacorus*), the water plantain (*Alisma plantago-aquatica*), the marshmallow (*Althaea officinalis*) and the purple loosestrife (*Lythrum salicaria*), among many others.

At certain times of the year, the meadows are flooded with freshwater, and in this vegetation, also used as pasture for cows and horses, we can find sedges (*Carex riparia* and *C. otrubae*) and common spike-rushes (*Eleocharis palustris*).

On the edges of the rivers or the irrigation channels grow the riparian woods. These are a mixture of

willow (*Salix alba*), white poplar (*Populus alba*), Lombardy poplar (*Populus nigra*), alder (*Alnus glutinosa*), elm (*Ulmus minor*), narrowleaf ash (*Fraxinus angustifolia*) and French tamarisk (*Tamarix gallica*).

Waterlogged and lakeland vegetation of the lakes and waterways

The sight of the water florid with floating plants such as the brackish water crowfoot (*Ranunculus baudotii*) or underwater plants (*Zannichellia*, *Potamogeton*, *Najas*, *Chara*...), together with the tiny common duckweed (*Lemna minor*) or the delicate starwort (*Callitriche*) that cover the still water, is a curious and pretty sight to see.

PLACES OF INTEREST

Els Aiguamolls de L'Empordà Natural Park is surrounded by other areas of historical, artistic or natural interest, abundant on the Costa Brava and in regions such as Alt Empordà and Baix Empordà. Here is an outline of some of the most popular.

Castelló d'Empúries

A municipality situated at the mouth of the river La Muga, in the Bay of Roses. This is a predominantly mediaeval village. The gothic church of Saint Mary with its parochial museum, Court and mediaeval prison is highly recommended, as is the La Farinera Ecomuseum.

Roses

Roses is worth visiting for its Citadel and the megalithic route from there, which leads to the Creu d'en Cobertella dolmen, the largest megalithic monument.

Sant Pere Pescador

The Reserva de Mig de Dos Rius (Between Two Rivers Reserve) is situated here, as is the mouth of the Fluvià river and Caramany Island.

Pau and Palau-saverdera

Megalithic routes.

Peralada

This palace castle, a veritable mosaic of architectural styles, is to be found surrounded by a fascinating landscape of vineyards. It is worth highlighting the Convent del Carme and the Cloister of Sant Domènec.

L'Escala - Empúries

The remains of the Greek colony of Emporion and of the Roman city are found at Empúries. These are valuable pieces of evidence of the presence of the classical cultures in the Mediterranean. Also near this area is the hamlet of Cinc Claus (Five Keys).

Figueres

An important transport nucleus and the birthplace of Dalí. Of significant importance are the Dalí Theatre-Museum, the museums of Toys, of Technology and of the L'Empordà region, and the Castle of Sant Ferran.

VISITS OF NATURAL INTEREST

Cap de Creus Natural Park

Llançà, Port de la Selva, Cadaqués and Roses
Telephone: 972 193 191

Albera Natural Site of National Interest

La Jonquera, Cantallops and Espolla
Telephone: 972 545 079

Bassegoda Salt Marshes Area of Natural Interest

Telephones: 649 017 641 and 600 056 210

Medes Islands Protected Area

L'Estartit
Telephone: 972 751 103

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- 1 Dune vegetation
Autor: archives of the Natural Park

 - 2 Avinyó Manor
Autor: archives of the Natural Park

 - 3 Yellow Iris (*Iris pseudacorus*)
Photo: Masses - Pery

 - 4 Aerial view of the Strict Nature Reserve of the Isle of Caramany, Riu Fluvià.
Photo: Santi Font
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Albera Tortoise Reproduction Centre

Garriguella
Telephone: 972 552 245

ACTIVITIES

Els Aiguamolls de L'Empordà Natural Park offers a variety of activities to get to know and to enjoy this area. These are directed both at the public in general and at a more specific target. All of the valuable elements of this area that have led to its protected status can be seen first-hand on the GR-92 network of hike trails and mountain bike routes. The Park has a Guide service, with guides who have extensive in-depth knowledge of the area. For further information, telephone El Cortalet, 972 454 222.

Collaborating bodies: APNAE, IAEDEN, Fundació Roger Burlet and Voluntaris Forestals.

RULES AND RECOMMENDATIONS

- For more comprehensive information, ask at the Natural Park Information Centre, El Cortalet, where in addition to informative leaflets, you will also find maps, guides and books to enhance your visit to the Park.

- Over 80% of the area of the Natural Park is private property. Please ensure that your visit does not disturb those who live there.
- The maintenance service goes to a great deal of effort to ensure the most-frequented areas are kept tidy. Please try to generate as little rubbish as possible, avoiding leaving cans, cartons, paper etc. Use the rubbish bins placed in the car park, or take your litter home.
- Catching and collecting animals and plants is forbidden in the Park. Respect the flowers, snails and wild mushrooms.
- To observe the animals, you must be cautious and use binoculars. The more mimetic your clothing and the more silent your movements, the easier it will be to observe the animals.
- Try to avoid loud and disturbing noises; silence is an important value and everyone has the right to enjoy it.
- To make the most of your visit, use the services of a guide.
- Groups wishing to visit the Park without the services of a guide should give advance notice of their visit.

- The Park has a network of trails. The use of bicycles is not possible on some of these.
- Wild camping is not permitted within the Park.
- In spring, summer and autumn it is advisable to use mosquito repellent in some areas.

THE PARK IS EVERYONE'S HERITAGE, LET'S LOOK AFTER IT!

- Quim Franch Hide**
Photo: Archives of the Natural Park
- El Cortalet Lake**
Photo: Archives of the Natural Park
- Nature camps**
Photo: Richard Martín
- El Cortalet. Park Information Centre**
Photo: Archives of the Natural Park

Back cover: Fallow deer at El Cortalet Lake
Photo: Archives of the Natural Park

Area

(Department of the Environment and Housing Planning Service. Last updated: 2004)
4,731 hectares (including 834 hectares of nature reserves)

Municipalities

L'Armentera
Castelló d'Empúries
L'Escala
Palau-saverdera
Pau
Pedret i Marzà
Peralada
Roses
Sant Pere Pescador

Region

L'Alt Empordà

Date of Creation

Law 21/1983, of the 28th October, declared the natural site of national interest and integral zoological and botanic reserve of Els Aiguamolls de L'Empordà.

International protection

- Natura 2000. Mediterranean Region.
- Special Protection Area (ASPB), September 1987, according to Directive 79/409/EEC on the conservation of wild birds.
- Resolution of 15th March 1993 of inclusion in the Ramsar List of Wetlands of International Importance.

Park Information and Offices

El Cortalet

Ctra. de Sant Pere Pescador to Castelló d'Empúries (GIV-6216, km 13)
17486 Castelló d'Empúries
Telephone: 972 454 222
Fax: 972 454 474
<http://www.parcscatalunya.net>
pnaiguamolls.dmah@gencat.net

Nearest Tourist Information Offices

Castelló d'Empúries

Plaça dels Homes, 1
Telephone: 972 156 233

Empuriabrava

Centre Cívic
Av. Pompeu Fabra
Telephone: 972 450 802

Sant Pere Pescador

C/ Doctor Josep Vidal, 4
Telephones: 972 520 535 / 972 520 050

L'Escala

Plaça de les Escoles, 1
Telephone: 972 770 603

Peralada

Centre Cultural Sant Domènec
Plaça Peixateria, 2
Telephone: 972 538 840

Figueras

Plaça del Sol
Telephone: 972 503 155

Roses

Av. de Rhode, 101
Telephone: 972 257 331



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www.parcscatalunya.net