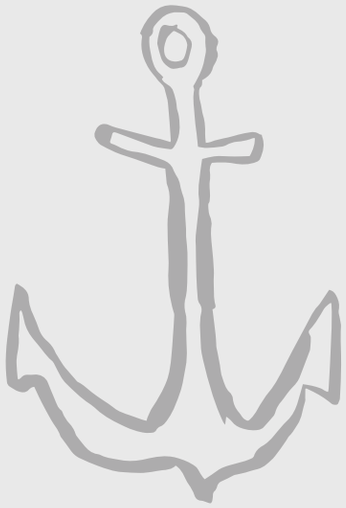
# Museum Sea of the Ebre

## THE EBRO SEA
## FROM CAP DE TERME TO SOL DE RIU

The Ebro Sea has the largest continental platform on the Catalan coast and the third-largest delta on the Mediterranean. It also has the only oilfield in operation in Spain, with various wells currently in production.

The Ebro coast offers an extensive mosaic of ecosystems that include the large deltaic bays, the rocky seabeds to the north and south of the delta, the phanerogam meadows –including some of the best-preserved examples in Catalonia– and pelagic environments that here do not reach any great depth. All this adds up to one of the most diverse floral and faunal biodiversities found anywhere on the coasts of Iberia.



The presence of the River Ebro endows this part of the Mediterranean with special characteristics brought about by the flow of fresh water. The mixture of river and sea water results in the emergence of nutrients and a highly productive coastal zone that extends beyond the immediate area as far as the Castelló platform. The abundance of food, a result of this emergence, and the mild water temperature makes this an ideal breeding ground, giving rise to large populations of many species of fish, crustaceans and molluscs. In the case of commercially exploited species, such as lobsters, it adds immeasurably to the wealth of this sea in terms of fishing.

Further proof of this high productivity are the seabirds. The Delta is one of the most important enclaves in the whole Mediterranean for seabirds, both as a breeding and a feeding area. For this reason, a large part of the Ebro Sea has been included in the Natura 2000 network and is considered a zone of special interest for birds.

MAP 1

## JOAN BRUNET I NAVARRO
## A PASSION FOR COLLECTING

Joan Brunet i Navarro was born in Sant Carles de la Ràpita on 14 April 1920. At the age of fourteen he began working with his father on the fishing vessel Lola. That, and the time he lived at La Trinitat salt pans, led to a growing curiosity and interest in nature and he began to collect everything that formed part of the marine environment that surrounded him. Over time, his interests increased and he entered the world of naturalist collecting, attracted and fascinated not only by the diversity of life forms, but also by animal behaviour.

His direct contact with the fishermen allowed him to gather together many of the items they collected, including molluscs and marine fauna in general, the malacofauna fossil of Würm, amphoras and other archaeological remains. In parallel, through contacts with other collectors, he was able to expand his collection with other examples of marine fauna from the Mediterranean and the rest of the world.

Encouraged by the continuous growth of his collection, he took advantage of the collaboration of biologists, collectors, private individuals, etc. and, through his personal and financial efforts, he succeeded in opening a permanent 80-square-metre exhibition in 1987. For many years, Joan himself met the individuals and groups who visited. He regaled them with all types of details and comments, as well as anecdotes about the sea creatures on display in his Alfacs museum of the natural sciences.

In the spirit of disseminating his observations of the marine environment and the territory of the Ebro Delta, he wrote for Ràpita magazine and published three miscellaneous books, as well as a catalogue of the marine malacofauna of the Ebro Sea. Sant Carles de la Ràpita town council eventually purchased the entire collection as the embryo of a future museum in which to exhibit and preserve this important legacy amassed over more than 50 years.

MAP 2

## MOLLUSCS

Molluscs have the second largest number of species among the invertebrates and the marine phylum is the most numerous of them. They are ubiquitous and have colonised both the aquatic and the terrestrial environment, where they can live in any area, although in the sea the majority are linked to the benthos.

They come in an enormous diversity of anatomical morphologies and are characterised by a soft, non-segmented body in which we can differentiate three zones: the cephalic region; the visceral mass, which includes the internal organs; and the muscular foot, which acts as an organ of locomotion or fixation. The mouth contains the radula which is made up of chitinous teeth used to collect food. One of the most characteristic features of many of them including the gastropods and bivalves is a defensive calcareous shell. In some groups squid and cuttlefish for example this shell has diminished and become internalised. In others including octopi and nudibranchs it has been lost completely.

From their origin in the Cambrian period, more than 500 million years ago, they have diversified considerably and are now divided into eight classes. The caudofoveata and the solenogasters are two ancient groups that are sea-dwelling, benthonic, vermiform and do not have a shell. Monoplacophora are primitive molluscs that were believed to be extinct until living species were discovered in deep ocean trenches. Polyplacophora, such as the chitons, are exclusively marine molluscs; they have oval-shaped bodies and are protected by a shell divided into eight articulated plates. Gastropods are the largest group and make up some 80% of all molluscs. They have a reptant muscular foot and a differentiated head and include snails, patellae and sea hares. Bivalves, so-called because they have two shells, are filter feeders and include many species of gastronomic interest, such as oysters, mussels and razor clams. Scaphopods stand out for their shells in the shape of arched tubes open at each end that look like tusks. Finally, the most highly evolved group is the cephalopods. These have complex nervous systems, the most highly developed eyes of all the invertebrates, tentacles that surround the mouth, and a foot that has evolved into a jet propulsion system used to propel themselves through the water.

MAP 3



## PELAGIC ENVIRONMENTS. PHOTIC (0-200 M) AND APHOTIC (200-4000 M) REGIONS

The pelagic zone includes the open waters beyond the continental shelf, where we find algae and animals; those drifting in suspension (plankton) and those actively swimming through the water mass (nekton).

The photic region –from the surface to as far down as light can reach (approximately 200m)– is the most productive zone, as this is where the first steps of the trophic network or food chain develop: phytoplankton (microscopic algae), zooplankton (cnidaria, small crustaceans and other animals) and the ichthyoplankton (the eggs and larvae of fish and invertebrates. The animal population also includes pelagic fish that are good swimmers, such as the sardine and the tuna. In the aphotic region (beginning at a depth of 200m), both oxygen and light diminish to the point that the only nutrients come from the decomposition of the creatures in the upper levels. That is why many animals, such as prawns, are forced to undertake trophic migrations. In the same way, the species that live there have adapted to the new conditions and we find creatures that have completely lost the ability to see, as well as some that generate their own fluorescent light.

MAP 4

## ROCKY ENVIRONMENTS. COASTAL ZONE (ABOVE WATER FOR SOME OF THE TIME) AND INFRALITTORAL (15-40 M)

The rocky environments in the Ebro Sea are limited to narrow strip to the north and south of the Delta. The organisms that live there depend on the hard substratum, which conditions their morphology, feeding habits and even their physiology.

In the regularly exposed zones corresponding to supralittoral and midlittoral habitats made wet by the waves and their spray, the animal population is low due to the harshness of the environmental conditions. Despite this, there is an abundance of limpets, sea snails and small crustaceans. In the midlittoral habitat there is an increasingly rich flora and fauna with communities characterised by barnacles, mussels and red algae. In the permanently submerged zones –the infralittoral– the constant environmental conditions allow for more abundant and diversified life. Here we find a high degree of biodiversity linked to specialisation in different microhabitats, with a large number of invertebrates such as sponges, cnidaria, bryozoa, tunicates, molluscs, decapods and fish such as scorpionfish, white seabream and gilthead seabream.

MAP 5

## SANDY ENVIRONMENTS. SANDY LITTORAL BOTTOMS (0-40 M) AND DEEP SANDY BOTTOMS (40-200 M)

The communities of the soft bottoms occupy most of the surface of the Ebro Sea. In the first metres, the mobility of the substratum does not allow for long-lasting structures, although living among the grains of sand you can find small creatures such as ciliates, nematodes and ostracods. Other organisms live buried, excavating galleries and filtering the sand or water to feed themselves; they include barnacles, cockles, clams, coquina clams, razor shells and mantis prawns. Alongside them we find the creatures that move across the seabed, such as crabs, starfish and sea cucumbers.

In general, the fauna tends to diversify as you descend and the depths become more stable. The peculiarities of this environment have led to the presence of species with notable physiological and morphological specialisations. The practically non-existent primary production below a depth of 40 m means that the available food resources are based on animal organisms. This has led carnivorous species to develop notable specialisations in the capture of their preys, as is the case of monkfish, goatfish and gurnards.

MAP 6

## POSIDONIA OCEANICA, ZOSTERA MARINA OR CYMODOCEA NODOSA MEADOWS (FROM 0 TO 25 M)

Marines phanerogams form meadows, known locally as alguers, normally on the sedimentary seabed, where there is little hydrodynamism, but still enough light for photosynthesis to take place.

The Posidonia oceanica grasses form a transversal belt near the coast from L'Ampolla to L'Ametlla de Mar, which has the largest such meadow in Catalonia. At other points along the coast we find species such as Cymodocea nodosa, Zostera noltii and Zostera marina.

The meadows are the main producers of the coastal ecosystems and constitute natural barriers to seabed erosion and the degradation of the beaches. They present a wide range of ecological possibilities and are filled with life. They are home to such creatures as pipefish and seahorses; annular seabream use it as a safe place for their young; and others, such as comber and dreamfish, use it for feeding or resting. A multitude of invertebrates live on the leaves, and in the sediment it is common to find sea urchins and sea cucumbers, as well as the spectacular fan mussels.

MAP 7

## SPONGES AND CNIDARIA

Sponges spend their lives attached to the substrate and they are filter feeders. The water passes through a system of internal channels that allows them to breathe and feed on organic particles. Cnidarians have a sac-like body with a single aperture that simultaneously serves as mouth and anus and is surrounded by tentacles with urticant cells. They have two life phases, one sessile (the polyp) and another free-swimming (the medusoid stage). Members of this group are medusas, sea nettles, beadlet anemones, gorgonians and corals.

MAP 8

## ECHINODERMS AND TUNICATES

Echinoderms are organisms covered in prickles or calcareous plaques that protect their bodies by adopting a radial symmetry. In this group we find starfish (asteroidea), ophiuroidea, sea urchins (echinoidea) and sea cucumbers (holothurioidea). Their adaptation to different resources has endowed them with a varied diet, from herbivores to detritivores. Sea potatoes are one of the tunicates (urochordates) and are characterised by a gelatinous body and a dorsal nerve cord (notochord) that is considered a precursor organ to the spinal column of chordates, to which they are related.

MAP 9

## MARINE ARTHROPODS: PYCNOGONIDS AND CRUSTACEANS

Arthropods, the animal group with the most representatives in the sea, are characterised by having an exoskeleton, which they use for defence, and jointed appendages. Of particular note among the wide diversity of crustacean morphologies are decapods (crabs, lobsters, prawns, Norway lobster), mantis shrimps (hoplocarida), sea acorns and Noah's Ark shells (barnacles), mysidacea (small prawn-shaped crustaceans), isopods and sand fleas (amphipods). Finally, we have the pycnogonids, also known as spider crabs due to their eight legs that make them look like arachnids.

MAP 10

## TURBELLARIA, NEMATODES, ANNELIDS, SIPUNCULA AND ECHIURA

These five zoological groups, commonly known as spoon worms, have in common a soft, vermiform body. Turbellaria (planidae) and nematodes (sea worms) are characterised by their very simple internal structure and a body not divided into segments. They include numerous marine species, both parasitic and autonomous.Annelids are common in the benthos, where they can reach very high densities. They have a soft body divided into segments and most are autonomous. Sipuncula, that bury themselves in the sand, have a muscular body, the first third of which is narrower and retractable. Echiurans have a sac-shaped body and a contractile prolongation with which they catch food.

MAP 11

## BRYOZOA AND BRACHIOPODS

Bryozoa and brachiopods are zoological groups characterised by a body divided into three clearly differentiated regions, a calcareous exoskeleton and, as a principal feature, a crown-shaped tentacular structure, known as the lophophore, around the mouth.

Bryozoa are colonial-type, sessile organisms. They make up a highly diverse and common group with more than 400 living species. The colonies are highly complex and in them each type of individual or zooid undertakes a different task (feeding, defence, cleaning, structural support or reproduction). Brachiopods, in contrast, are individual organisms that live in deep waters and look like bivalves, although they are not related.

MAP 12

## REPTILES AND SEA BIRDS

The only reptiles found in the Ebro Sea are sea turtles. They are common in the surface waters of the continental slope, both in feeding periods and during their migrations around the Mediterranean. The most common species is the loggerhead sea turtle, but occasional visitors include the green sea turtle and the leatherback sea turtle.

The Ebro Sea is one of the most important seabird nesting and migration areas on the Mediterranean. Coastal species, such as seagulls and terns, establish large breeding colonies, among which of particular note is Audouin's gull, two thirds of the worldwide breeding population of which is found in the Ebro Delta. Other representatives, including storm petrels, shearwaters and northern gannets, can also be seen out to sea.

MAP 13

## MARINE MAMMALS

Of the two large groups of marine mammals in the world, and now that the Mediterranean monk seal can no longer be found in the area, only cetaceans (dolphins and whales) are present in the Ebro Sea. These mammals are well adapted to life in the water and have their own particular morphological model: they have a hydrodynamic body, they have lost their skin and all their extremities to the extent that their rears, having adapted to swimming, have become very small and, in some cases, have completely disappeared and become a tail fin.

Some small or medium-sized cetaceans, such as the common bottlenose dolphin, striped dolphin and Risso's dolphin, are quite common. Large cetaceans are much less abundant. They can be seen sporadically out to sea and, more rarely, beachings are reported along the coast of species such as the fin whale, Cuvier's beaked whale and the sperm whale.

MAP 14

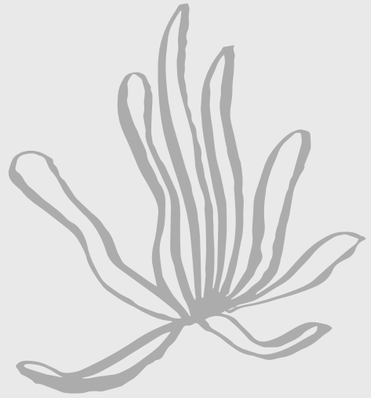


## UPPER AND LOWER PLANTS

The marine meadows are made up of upper plants (phanerogams with root, stalk, leaves and flowers). These are of terrestrial origin and colonised the sea millions of years ago. Among other representatives we find Posidonia oceanica or Neptune grass, Cymodocea (four species of sea grass) and eelgrasses.

Algae or lower plants that, like phanerogams, use photosynthesis, present a much simpler internal organisation without differentiated tissues. We can find primitive algae or cyanophytes (related to bacteria), green algae (such as sea lettuce), red algae (such as corallinaceae) and brown algae (such as peacock's tail).

MAP 15



## THE EBRO SEA: A LAND OF FISHERMEN AND SEAFARERS

The coast around the delta formed by the River Ebro has always been one of the most important shipping and fishing areas in the western Mediterranean.

A key episode in the maritime history of these complicated seas was the Battle of the River Ebro between the Romans and the Carthaginians, as it changed the hegemony of the Mediterranean. In the period of splendour of the Crown of Aragon brought about by its domination of the Mediterranean and its trade, the count-kings chose Fangós and Els Alfacs as the ports from which to begin their expeditions of conquest. The Modern Era was a convulsive period, with the constant threat from pirates that led to the depopulation of the coast and the building of costly fortifications. Finally, with the contemporary period came the repopulation of the coast, the definitive end of shipping on the Ebro and a return to cabotage from the port of La Ràpita.

This repopulation laid the foundations for the permanent establishment of fishermen's quarters, the origin of the today's coastal towns. These grew over time with the arrival of shipwrights, caulkers, sailmakers, and spinners, etc., who would endow this coast with its own character. The natural diversity has led today to the presence of many fishing boats, a powerful fleet, excellent gastronomy and a major tourist attraction.

MAP 16

## PROTOHISTORY AND ANTIQUITY: THE COAST OF THE HIBERUS

The coast around the mouth of the River Ebro the Hiberus to the ancients is described in 6th-century-BC texts by Greek travellers who sailed the Levant coasts of the Iberian Peninsula. The Phoenicians had already reached the area in the 7th century BC, as can be seen from the objects found in the Iron Age villages near the coast and along the course of the Ebro (Sant Jaume-Mas d'en Serra, Aldovesta, etc.).

The coastal sailing routes would subsequently be used by Greeks who traded with the Iberian peoples between the 5th and the late 3rd centuries BC. Carthaginian trade was brought to an abrupt halt by the defeat of that nation by the Romans at the Battle of the River Ebro (217 BC) during the Second Punic War, when General Scipio's troops sunk several of the Carthaginian ships and seized the rest. This was the beginning of the Roman occupation of the Ebro and the consolidation of Roman power in the Mediterranean, which from that moment on was in the hands of Italic traders.

During the two centuries prior to the change of era and in the first century AD, the Iberian villages were abandoned and Roman agricultural exploitations or villas, such as El Cementiri (Alcanar), La Carrova (Amposta) and L'Antic (Camarles), were established near the coast. Some of these villas were also involved in fishing-related activities. With the foundation of Dertosa, trade further increased and maritime and fluvial traffic focused on the town and the various ports in the territory.

MAP 17

## THE MIDDLE AGES: FROM THE DEAD SEA TO PORT FANGÓS

In 711, the Muslims invaded and occupied the Iberian Peninsula. This fact, and the Christian domination to the north of the Pyrenees, meant the sea was no longer a safe place for shipping and trade. For this reason, in the 10th-11th centuries a network of coastal towers was built, of which those of L'Aldea, Burjassènia and La Candela (L'Aldea) have survived. We also know of the place and the tower of Punta de Benifallim (Les Cases d'Alcanar) and the tower of La Ràpita, alongside which there was a ribat (a fortified mosque), which continued as a centre for Muslim pilgrimage until the mid-13th century.

In 1148, Tortosa and the whole territory as far as La Sénia became part of the domains of Count Ramon Berenguer IV. In these frontier lands, which needed to be repopulated and defended, the orders of the Temple, the Hospitallers and Saint George of Alfama played an important role (with donations in La Ràpita, Amposta, Alcanar and L'Ametlla de Mar). Port Fangós became the embarkation point for many campaigns undertaken by the Crown of Aragon. These included Sardinia, begun by Peter II the Great in 1282, and Sicily, instigated by Alfonso III in 1323 with the presence of 300 vessels in the port. With Port Fangós silted up, the expedition of John I to put down an uprising on the island of Sicily set sail 1392 from Els Alfacs.

Catalan dominion of the eastern Mediterranean gave a strong boost to maritime trade (wool, grain, manufactured goods, etc.) and was a period of great splendour for port towns such as Tortosa.

MAP 18

## THE MODERN ERA: ELS ALFACS, A PORT TO BE KEPT UNDER CONTROL

During the 16th and 17th centuries, the Spanish monarchy rose to be the most important in Europe and, at the same time, guarantor of the Catholic faith. This conjuncture led to continuous tension and pirate attacks from North Africa. In their incursions, pirates and corsairs captured any vessels they came across on their voyages and during their incursions inland they took captives for whom they demanded ransoms. This led to the depopulation of the coastal areas. Even the nuns of the Monastery of Santa Maria in La Ràpita moved to Tortosa in 1549 due to the frequent sackings they suffered.

In the last quarter of the 16th century, a plan was drawn up to fortify the port of Els Alfacs and the whole delta coast. La Guardiola tower was rebuilt and four more were planned: those of Sant Joan and Codonyol and, to the north, that of L'Àngel Custodi, while that of Punta de l'Aluet was never finished due to the constant attacks. Despite the danger of pirate attacks, shipping and trade maintained an important role and provided an outlet for the agricultural and manufactured goods from the Ebro basin.

In 1610, 41,952 Moriscos from all over Catalonia and Aragon were brought to Els Alfacs, from where they were expelled. The large size of the port, together with the vast surrounding areas of uncultivated land made it the ideal place to concentrate and embark the people.

MAP 19

## THE CONTEMPORARY AGE: NEW TOWNS

In 1778, Charles III had Els Alfacs port adapted for trade with America and began a project to build a major port town, San Carlos, aimed at providing an outlet for Aragonese products brought down the River Ebro, as well as for receiving those arriving by sea. At the same time, the end of piracy and the increase in coastal shipping led to the consolidation of new towns –Les Cases d'Alcanar (1740), L'Ametlla de Mar (1775) and L'Ampolla (around 1813)– that in turn favoured migration from the interior to the coast.

Els Alfacs Bay played a strategic role in the conflicts of the 19th century. During the Peninsular War (1808-1814), the withdrawal of the French troops led to the destruction of almost all the coastal towers. It also became a scenario of the Carlist Wars when General Ortega disembarked there in April 1860 with the intention of overthrowing Isabel II, an operation that quickly failed.

At the end of the 19th century, despite the project of the Real Compañía de Canalización del Ebro (1851-1872), fluvial trade began to decline. This in turn led to the arrival in the coastal towns of caulkers, shipwrights, sailors, fishermen, etc. Subsequently, at the end of the Civil War (1936-39), fishermen migrated from these same ports: from L'Ametlla to Palamós, Vilanova and Roses and from La Ràpita to Arenys de Mar, Borriana, Dènia, Málaga, Mallorca, etc. in a process that continued until the 1960s. Coastal shipping also came to an end and in 1973 the last company operating pailebots (a type of schooner) on the Mediterranean –with headquarters in La Ràpita– closed. The construction of safer ports –the earlier infrastructures were very rudimentary– and the development of tourism were the main factors affecting the contemporary growth of coastal towns.

MAP 20



## THE DANGERS OF THE SEA

Navigating the Ebro Sea has always been dangerous. The great number of shipwrecks of all ages in this area, especially in the vicinity of the delta, is testimony to this.

Before the installation of the headlights -the first one was built in 1864- the mobility of the coast of the delta was a great danger for the navigation, since the currents modified quickly the existing draft. These sudden changes caused many ships and boats to roam, and some were engulfed by waves and sand.

The storms of the East and Noth-West winds throughout history, have caused navigation has been complicated and even tragic. In the storm of St. Thomas' day of 1891, a total of 27 sailors from Sant Carles de la Ràpita lost their lives.

MAP 21

## AUXILIARY OCCUPATIONS: THE CAMA DE TERRA

Various auxiliary occupations grew up around the activities of fishing and sailing. They were traditionally located near the port or the beaches and were known as the cama de terra (the land leg) and were subsidiaries of the ram de la mar (the sea branch).

The 1960s saw the retirement of the last spinner in Sant Carles de la Ràpita, Jacint Balaguer, just a few years after the town's other spinner, Hermenegild Barberà. In 1932 Miquel Beltran employed twelve people in his rope factory in L'Ametlla. The spinners used hemp and cotton to make all types of ropes, heads and threads needed in seafaring occupations.

At the beginning of the 20th century, Ramon Piñana Mir set up his workshop in La Ràpita, working with a team of women who specialised in sewing canvas sails with cotton thread. Sailing ships began to disappear with the introduction of motors, and new marine mechanics firms, including Tallers Borràs and Tallers Cornet, were established.

Fishing nets needed lead weights to make them sink to the bottom. These plumbs were made by the fishermen themselves and for some it was almost a full-time job. Lluís del Río, alias "El Americano", made plumbs for various ports along the coasts of the Ebro and the rest of Catalonia.

Other occupations have been transformed. At one time, net-menders usually the women of the fishermen's families could be seen in all the ports. In the case of the trammel nets or trawl lines, the net-makers continued using the same patterns, while the seine –a more complex type of net– led to a specialisation in the trade at the beginning of the 20th century. On the Ebro coast, the boatbuilders were concentrated in the port of La Ràpita; those still working are Germans Cartes, Germans Mateu Brunet, Xarxes Álvaro Comí, and Xarxes Capsa.

MAP 22

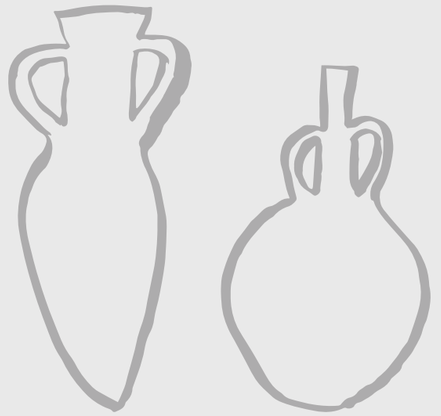
## SHIPS' CARPENTERS FROM THE RIVER TO THE SEA

Shipbuilding in the coastal area of the Ebro had been centred on Tortosa, at least from the Andalusian period until the end of the 19th century. But as the river navigation went losing importance, several families of ships' carpenters and caulkers move to the coast. Most of these families settled in Sant Carles de la Ràpita.

One of the first to do so was the Carcelle family. Pere-Vicent Carcellé Pagés was the first as early as the 1830s. Carles Piñana Pauli founded the second shipyard in the mid-nineteenth century, having formerly been a fisherman in Tortosa and having worked for the Carcelles. At the beginning of the 20th century, Miquel Nicolau Ferré also moved, after having built one of the last sailboats constructed in Tortosa, the Teresa. All these families continue today as shipbuilders as Drassanes Alfacs, Drassanes Roig Carcellé, shipyards Piñana and Drassanes Nicolau. The shipyards are concentrated in the port of La Rápita because of it is the main one in the area, with a fleet that reached 175 boats in 1985.

The construction of a wooden boat took several months. The first part that was placed was the keel and the stem post, parts that define the axes of the boat. Then the bulkheads were installed, and then the hull was closed up - an action that consisted of fixing the planks to the bulkheads. The next step was to fit the deck, prepare the engine room, cold stores and others; and finally the bridge was installed.

MAP 23



## FISHING: MANY NETS, MANY FISHING BOATS

Along the coastline of the Ebro Sea are the fishing ports of L'Ametlla de Mar, L'Ampolla, Deltebre, Sant Carles de la Ràpita and Les Cases d'Alcanar, from which different types of fishing are carried out, taking advantage of the area's marine wealth and productivity.

As early as the 16th century, Cristòfol Despuig listed a large number of fishing net types. Some of these methods –bolitxos, soltes, rossegalls, boleros, rebordes, morunes, etc.– survived into the early 20th century.

The most traditional fishing methods still in use are shellfishing (practised using various techniques in the interior waters of the bay); the paternoster line; trammel nets (used to capture the highly-prized king prawns); and pots for octopus or traps for cuttlefish. All these fishing methods fell into a sharp decline in the mid-20th century due to the competition from trawling.

Trawling –pescar al bou as it is known locally– is documented on this coastline from the mid-18th century. This type of fishing requires larger vessels, due to the type of net used, a kind of sleeve with two legs. Until the first half of the 20th century, the trawl nets were set by two sailing boats known as pairs, which dragged them along the seabed. With the generalisation of motors and their increasing power, the change was made to the current method using a single boat. This is now the most important fishing vessel in all the Ebro Sea ports.

Trawling is documented on Cape Terme from as early as the 16th century. Heir to this ancient tradition is the present-day tuna-fishing fleet of L'Ametlla de Mar, the only one of its kind in Spain.

MAP 24

## SEAFARERS AND FISHERMEN'S ASSOCIATIONS: STRENGTH IN NUMBERS

When the fishermen and seafarers came to live in the coastal towns from the late 18th century, the Confraria de Sant Pere (Brotherhood of St Peter) was a long distance away (it had been established in Tortosa since the 13th century and did not come to Sant Carles de la Ràpita until 1938). Their efforts to have an association of their own led to the establishment, between 1859 and 1864, of the Gremi de Mar de la Ràpita (Guild of the Sea).

The present-day Confraria de Pescadors Verge del Carme (Fishermen's Brotherhood of Our Lady) has its origins in 1904 in the La Unió Seafarers Association and the Pòsit de Pescadors established in 1919 by a group of boat owners. In 1922, the two were amalgamated as the Pòsit de Pescadors, which continued until the Civil War. In 1939, the association was reorganised and since 1940 it has been known as the Confraria de Pescadors Verge del Carme. In L'Ametlla de Mar (the society was founded first in 1869 and then the Pòsit in 1923) and Les Cases d'Alcanar (1905) the associations were named after Saint Peter; while in L'Ampolla (since the early 20th century) and Deltebre (1982) they are dedicated to Sant Joan.

The pòsits and brotherhoods were set up with the aim of diminishing the effects of sinkings or work accidents, as well as to provide services and to improve the conditions of the seafaring communities. From 1922 to 1978, the Pòsit de Pescadors of La Ràpita ran a school for its members' children, which also offered evening and night classes for adults.

In addition to these functions, the brotherhoods run the auction and the weekly payment for the fish. In the 21st century they continue as central institutions for the sector, informing of European regulations, administering closed seasons and fines, etc.Some of them have even headed initiatives for the direct marketing of their fish.

MAP 25