



CASAMEDITERRANEO



EXPO
DELTAS
S.O.S



Concept & Curation
David Calle &
Paco Álvarez

CONFEDERACIÓN
HIDROGRÁFICA
DEL JÚCAR



Organizers: _____

CASAMEDITERRANEO



Collaborators: _____

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DEL JÚCAR



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EXPO DELTA S.O.S

The deltas,
which are sources of
wealth and biodiversity,
are sending us an SOS.

Deltas are geographical formations found at the mouths of rivers where sediment carried by the river is deposited. These formations have enormous ecological value because their biodiversity makes them ideal habitats for plants and animals, as well as essential stopovers for migratory birds.

Throughout history, some of the world's greatest civilisations have flourished on delta plains, where the fertile land has favoured agriculture and fishing. The importance of deltas is beyond question — many have been designated as UNESCO Biosphere Reserves. However, these environments now face major threats such as salinisation, erosion and subsidence.

This exhibition, curated by David Calle and Paco Álvarez and sponsored by Casa Mediterráneo, uses texts and photographs to clearly and engagingly explain what deltas are and highlight the most significant ones in the Mediterranean basin. The exhibition also raises awareness of their value and the dangers they face, with the aim of inspiring action to preserve them. The exhibition is complemented by a series of talks and awareness events led by experts in the field, offering a broad and up-to-date overview of the situation.

At Casa Mediterráneo, we support initiatives that inform, raise awareness and drive action to protect the Mediterranean — a semi-enclosed sea that constitutes just 1% of the world's ocean surface yet is home to some of the richest biodiversity on the planet. At the same time, it is one of the regions most vulnerable to the effects of climate change. Taking a realistic yet hopeful view, we believe there is still time to halt the degradation of this natural treasure on which the survival of countless species depends.

Andrés Perelló Rodríguez
Director general Casa Mediterráneo



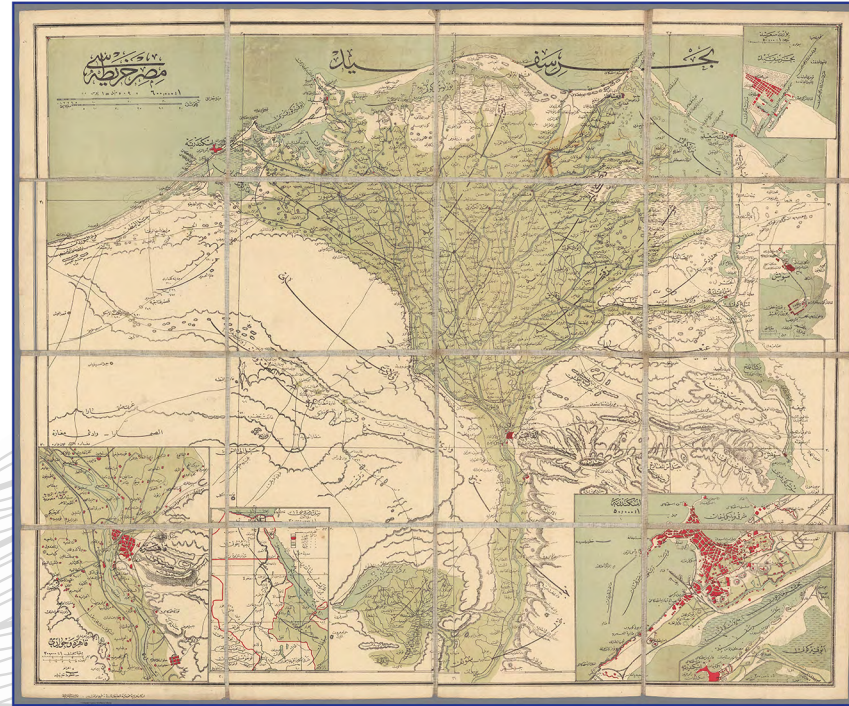
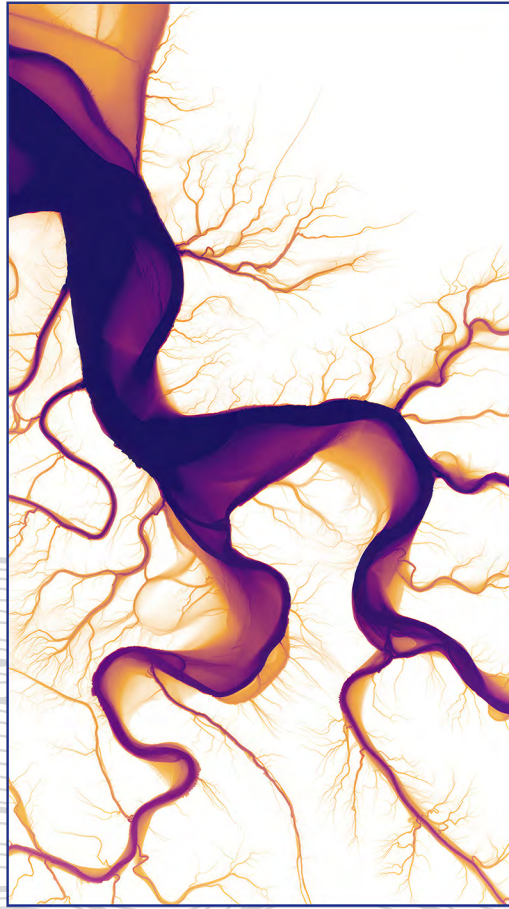
00. INTRO

Deltas play a crucial role in achieving sustainable global development. They are vital for local populations, agriculture and the hydrological balance of river basins, not to mention their often-migratory flora and fauna. The few rivers that flow into the Mediterranean often form exceptional ecosystems known as deltas at their mouths. These deltas have grown and shifted over millennia, nurturing life and serving as stopping points for birds migrating between Europe, Asia and Africa. They have also given rise to entire cultures, such as the rice-growing traditions that are deeply rooted in Mediterranean identity.

The richness of our deltas, now at risk, is a source of life, whether flowing downstream or against the current, acting as borders or crossing multiple nations, across all shores of the sea. They are sending us an SOS — let's see if we are finally willing to listen to this international distress signal.

Through this exhibition, we aim to raise awareness of a distinctive Mediterranean ecosystem that is a vital component of our history, culture, and natural heritage. Like all ecosystems on Earth, it is fragile. Although our sea is not large, it has played a central role in the story of civilisation. Only through cooperation between the peoples along its shores can we preserve what makes us different yet similar for our children and grandchildren — we are all Mediterraneans. Let us protect our wetlands and river deltas, for by doing so, we protect our history and our future.

David Calle and Paco Álvarez,
Curators of the exhibition.



01. WHAT IS A DELTA? WHY ARE THEY AT RISK?

Deltas are the calm mouths of rivers formed when sediment carried by the river is deposited as its flow slows near the sea. They may be triangular or split into multiple branches. In theory, deltas grow steadily thanks to continual sediment and organic matter contributions from rivers and plant life taking root in these wetlands. This creates unique ecosystems that are remarkably similar across Mediterranean coasts.

However, the growth of many deltas has stalled, and they are now facing degradation that threatens their long-term viability. Sea levels are rising; rivers are carrying less sediment and deltas are becoming increasingly saline. To prevent the disappearance of these rich, characteristic Mediterranean ecosystems, continuous, coordinated regional — even supranational — action is needed.



02. THE NILE, THE FATHER OF ALL DELTAS.

The Nile Delta lends its name to all deltas. It was Herodotus in the 5th century BC who first noted its resemblance to the Greek letter Δ (delta). Spanning around 240 km of coastline and extending 160 km inland, the Nile Delta has been inhabited since ancient times. It was on its banks, in the city of Rashid, that the Rosetta Stone was found — the key to unlocking the mysteries of ancient Egyptian civilisation.

The delta is home to extraordinary fauna, including the world's largest gull population. Daytime temperatures average around 25°C throughout the year, ranging from 10°C. The main threat to the area is the reduced flow of sediment since the construction of the Aswan High Dam. Consequently, the sea is reclaiming land, endangering hundreds of thousands of lives. Without action, an incursion of saltwater equivalent to five times the size of Barcelona could flood an area home to nearly a million people, not to mention the irreversible ecological and agricultural losses.



03. THE EBRO, SPAIN'S MOST IMPORTANT DELTA.

Formed by the Ebro River, the most voluminous river on the Iberian Peninsula, the Ebro Delta is the third largest delta in the Mediterranean and the third most important wetland in Europe. It extends 22 km into the sea at its mouth. Despite the strong winds, over half of all bird species found in Europe pass through during migration, thanks to the temperate climate and high humidity.

The lagoons, dunes and traditional rice farming have created a symbiotic relationship between flora, fauna and people, which is now severely threatened. A long history of hydroelectric dam construction along the river, among other factors, has led to a dramatic reduction in sediment flow. Consequently, marine erosion is outpacing sediment deposition, causing the delta to retreat and its waters to become more saline. Urgent and sustained action is required to ensure that this iconic, arrow-shaped landmass in the western Mediterranean does not disappear beneath the waves.



04. THE DANUBE. NOT SO BLUE IN THE BLACK SEA: A LESSON FOR THE FUTURE.

The Danube Delta is one of the most active deltas in Europe. Described by Herodotus 2,500 years ago, it grows by more than 40 metres each year due to the Black Sea's influence. Straddling Romania and Ukraine, the delta is one of Europe's most ecologically viable wetland ecosystems — a stark contrast to the ongoing conflict in the area.

Declared a UNESCO World Heritage Site in 1991, the delta is home to over 3,600 animal species, including more than 300 species of birds. The region has historically been subject to international supervision, from the post-Crimean War commissions in the 19th century to the Treaty of Versailles in 1919. This history of oversight, combined with UNESCO support, makes The Danube Delta a prime example of international cooperation in preserving a unique ecosystem.



05. THE MOULOUYA RIVER, THE SOUTH OF THE SOUTH OF MOROCCO.

The largest river basin in the Saharan region, it nourishes the delta of the majestic Moulouya River, which was known as the Malva by the Romans. Rising in the desert and flowing for over 500 km, the river has fascinated scholars since ancient times, including Pliny the Elder. This important river in North Africa has marked several historical borders, including those between Roman provinces, the spheres of influence of Castile and Aragon, and later between Morocco and the Rif Republic. Finally, it marked the border between Spain's protectorate and Morocco.

Today, the Moulouya Delta is a vital wetland where flora and fauna ignore borders and human history. Stretching 4 km wide and 20 km long, the delta is under threat from reservoirs such as Mechra Homadi and Mohammed V, which have become clogged with silt. Fortunately, it is part of the RAMSAR network of protected wetlands, recognised by UNESCO.



06. THE CAMARGUE. THE RHÔNE: FRANCE'S GREAT RIVER.

Spanning the two main branches of the Rhône, the Camargue covers some 85,000 hectares and is home to Europe's largest population of flamingos. It is a quintessential delta region and is designated as a UNESCO Biosphere Reserve, a RAMSAR site and a French Regional Nature Park. Despite every effort to protect this extraordinary environment, where humans lived in harmony with nature for centuries, the balance is now being threatened by industrial activity along the Rhône.

However, long-standing industrial activity along the Rhône, the second most voluminous river in the Mediterranean after the Nile, now threatens this balance. An estimated 880 million microplastics are carried from Lake Geneva to the Mediterranean annually. Oil spills, PCB contamination (which makes fish inedible) and numerous hydroelectric dams (which supply 20% of France's hydroelectric energy) also endanger this natural haven.



07. THE JÚCAR: A DELTA CELEBRATED IN POETRY

The Júcar, or Sucro as it was known to the Romans, has inspired writers such as Blasco Ibáñez, Joan Fuster and Góngora. It also features prominently in Pedro Almodóvar's film *Volver*. This river has been written about and written into history. Around 6,000 years ago, the mouths of the Júcar and the Turia may have formed a single delta, the precursor to the unique natural space known as the Albufera, which was likely cut off from the sea at the end of the last glaciation.

The Albufera can be seen as an inter-deltaic space where rice farming, marshland culture and orange groves shape a distinctive Mediterranean identity. However, the Júcar Delta is under threat from dams such as the Tous Reservoir, pesticide-contaminated waters, intensive irrigation, invasive species and drought. However, not all the news is grim: in 2023, the European Space Agency (ESA) recorded an all-time high in bird nesting at the Albufera, with 43,407 breeding pairs from over 48 different species.



08. DALYAN, TURKEY. THE TURTLE'S DELTA

Iztuzu Beach, a narrow strip of sand, shields the Dalyan Delta from the salty waters of the Mediterranean. It is one of the main nesting grounds for loggerhead sea turtles (*Caretta caretta*), one of the few species of marine turtle in the region. The Dalyan River empties into this privileged ecosystem, which is located within Turkey's oldest protected natural area.

To protect the turtles, human access to the beach is restricted from 8 p.m. to 8 a.m. between May and October. These measures earned the area the Best Open Space (Europe) award from The Times, proving that it is possible for humans to coexist with nature respectfully.

The delta narrowly escaped being turned into a tourist resort in the 1980s thanks to the WWF and Prince Philip, the Duke of Edinburgh, who stopped the construction of a hotel on the turtle beach. Today, the protected area covers more than 461 square kilometres — over twice the size of Alicante city.



09. THE MEDJERDA: A PHOENICIAN DELTA IN TUNISIA

The Medjerda (or Majarda) delta has undergone significant transformation due to deteriorating water quality and reduced sediment discharge, largely caused by human activity such as the construction of dams. Consequently, the coastline is retreating at an alarming rate of more than 46 metres per year in some areas, with the sea reclaiming the delta and its once-rich ecosystem.

Over the past century, the coastline has moved inland by almost 300 metres in certain areas. According to the European Space Agency (ESA), 47% of North Africa's coastlines are highly or very highly environmentally vulnerable due to rapid urbanisation, dam construction and global warming. The resulting salinisation of the soil has destroyed large areas of farmland, forcing local populations to abandon their land in search of a better future.



10. BUNA. A DELTA ON THE BORDER: ALBANIA AND MONTENEGRO

The Buna (Bojana) Delta is a unique wetland listed under the Ramsar Convention and forms part of the European Green Belt. Lying at the mouth of the Buna River, which flows from Lake Shkodër — the largest lake in South-Eastern Europe — to the Adriatic Sea, the delta boasts a rich variety of flora and fauna, including migratory birds. The delta is also home to species such as the golden jackal, a large mammal, as well as over 100 species of fish. Fishing is therefore one of the primary livelihoods of the 36,000 local inhabitants.

However, the area receives more than 250,000 tourist visits each summer, which endangers species such as the pygmy cormorant and the Eurasian otter. The Buna Delta is one of Europe's most fragile areas in the face of climate change — rising sea levels could easily flood it. Fortunately, a national conservation plan is now underway to protect this remarkable ecosystem.

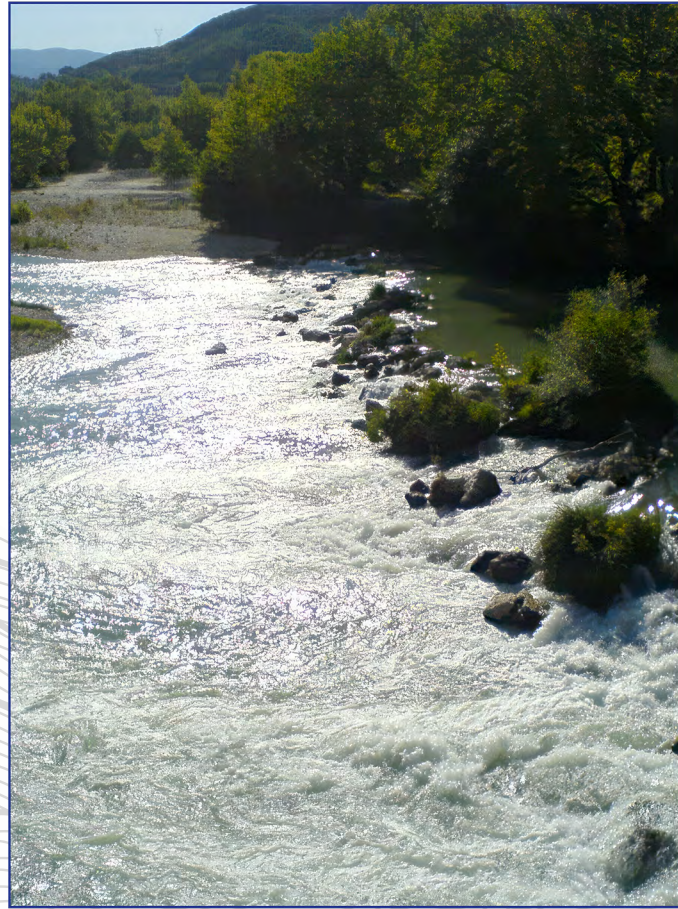


11. THE PO DELTA: A PARADISE FOR BIRDS

The Po Delta, recognised as a UNESCO World Heritage Site, flows into the Adriatic Sea and is protected by two regional nature parks. However, the administrations of these parks have yet to agree on a joint management strategy. The Po Delta is Italy's most important wetland and one of the richest in Europe. It boasts one of the highest levels of bird diversity on the continent.

Unlike most deltas in the region, the Po Delta has shown signs of recovery since 2010, with new river mouths forming and sedimentary growth (progradation) returning. This may indicate sustainable long-term stability. The delta began to take its current form in 1604 when the Republic of Venice carried out major engineering works to prevent sedimentation in its lagoon.

Thanks to sustained human intervention and monitoring, the Po Delta is now the best example of an anthropogenic delta — a man-made system that has surpassed its mid-20th-century peak of degradation. The Po Delta demonstrates that coexistence between humanity and nature is possible with careful planning and long-term commitment.



12. THYAMIS, THE MYTHICAL DELTA OF GREECE

Also known as the Kalamas, the Thyamis River is mentioned by ancient geographers such as Strabo and Pausanias, who recount the myths of Epirus. Its delta, which flows into the Ionian Sea, holds both historical and ecological significance. During the Second World War, Greek forces defeated Mussolini's fascist army on its banks in 1940.

Despite its heritage, however, the Thyamis Delta has suffered from prolonged environmental degradation. Aside from climate change, unchecked human activity and the lack of a comprehensive protection plan have led to substantial ecological disruption. The morphology of the river has changed significantly following the construction of dams and the channeling of the river during the second half of the 20th century. Part of the delta is now submerging and one of its outlets has become inactive. However, the delta can still be saved if action is taken in time.



13. THE TIBER: ROME'S OTHER ROAD

The Tiber Delta, which stretches over 25 kilometres, consists of marshes, sand dunes and a plain formed during the Holocene. This expands the area protected by the river's fresh waters. Beyond its ecological richness, this is Europe's most archaeologically significant delta plain, home to remarkably well-preserved Roman remains.

These include the ancient city of Portus, home to the imperial harbours of Claudius and Trajan, and Ostia, which was once the most important port in the Mediterranean and the gateway to Rome. The delta evolved through three phases: an initial northern outlet; a southern shift in the river mouth; and finally, the development of two distributary canals, one of which is the well-known Fiumicino, from which the nearby airport takes its name.

Founded around 2,400 years ago, Ostia has been densely inhabited ever since. The area stands as a living testament to the interaction between humans and river landscapes across millennia.



14. NERETVA, THE RIVER THAT CAME FROM THE COLD

The Neretva River originates in Bosnia and Herzegovina and empties into the Adriatic near Ploče. It is the coldest river that feeds the Mediterranean, with upper-course waters that rarely exceed 8°C, even in summer. Despite this, the Neretva forms a striking delta which is now under threat due to the construction of numerous dams upstream.

Nevertheless, the delta is a protected area listed under RAMSAR and currently covers around 12,000 hectares. Historically, the delta was nourished by twelve branches of the river; now, only three remain. The marshes, lagoons and wetlands that once made this area rich in natural beauty are rapidly disappearing. Of the 12,000 hectares, only 1,620 are properly protected.

In the middle of the river stands the Stari Most (Old Bridge) in Mostar, a UNESCO World Heritage Site. Famously destroyed during the Balkan Wars, it was rebuilt in 2004 and is a powerful symbol of the resilience of both culture and nature.

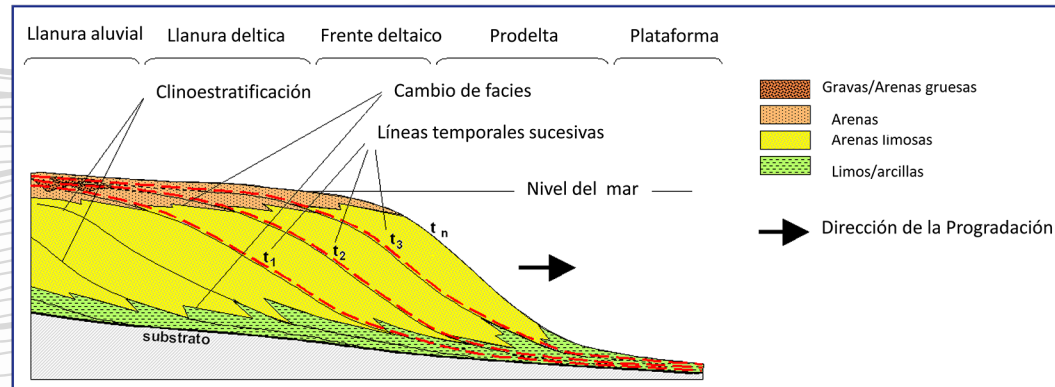
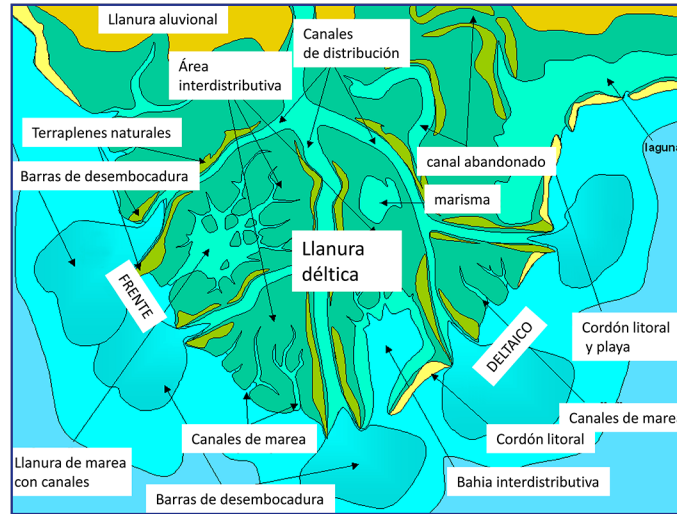


15. MARITSA: A DELTA STEEPED IN HISTORY (GREECE, TURKEY AND BULGARIA)

The Maritsa River, known as the Evros in Greek and the Hebrus by the Romans, is sometimes referred to as the “other Ebro” of the Mediterranean. The origin of its name is uncertain, but it is thought that the Iberian Ebro was named by the Greeks after this Thracian river. Today, the Maritsa flows through Bulgaria, Greece and Turkey, forming part of the EU’s external border.

The lower Maritsa frequently floods for up to four months per year, causing repeated and costly damage. These floods are driven by climate change and deforestation in the upper basin, exacerbating the river’s instability. As a frontier, the river also serves as a major route for migrants entering the EU, adding a humanitarian dimension to its environmental significance.

Its delta covers over 150 km² and discharges around 1,600 m³ of water per second into the sea, making the Maritsa one of the most significant rivers in the eastern Balkans. Fascinatingly, there is even a Martian valley named Hebrus Vallis in honour of this ancient river.

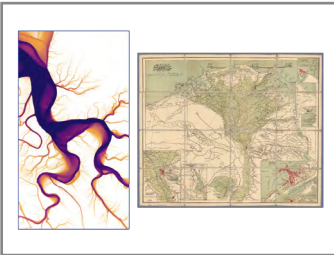


16. THE FUTURE; SAVING THE DELTAS MEANS SAVING THE SEA. AND OURSELVES.

Where rivers bring their soil to the sea, deltas form — rich, wet plains brimming with life and culture. The last few thousand years — the period since the end of the last Ice Age — have been the era of deltas. Like us, they are fragile and fleeting.

It is no coincidence that civilisations often arose near deltas. However, it is unclear what will become of our own civilisation if these vital ecosystems disappear. Today, deltas are facing a slow-motion collapse. Sea levels are rising, soils are sinking, and rivers are delivering less sediment. As the sea encroaches, saltwater invades the plains of the delta, destroying thousands of species and breaking the food chains that sustain this unique wildlife. Far away in Louisiana, the Mississippi Delta is disappearing before our eyes. A football pitch's worth of land is sinking into the sea every two minutes. This isn't a warning for the future — it is happening right now.

If we want to save our deltas, there is still time. But we must start acting now.



What is a delta? Why are they at risk?



Mouluya. South of the South. Morocco.



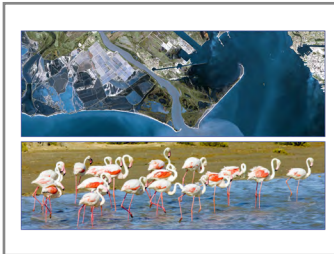
Medjerda, a phoenician Delta in Tunisia



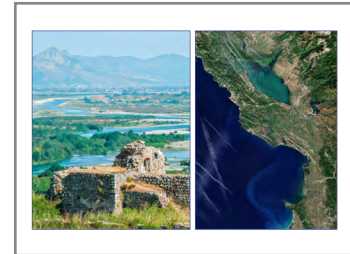
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The Nile, the father of all Deltas.



The Camargue, the Rhône: france's great river.



Buna, a Delta on the border: Albania and Montenegro.



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Maritsa, a Delta steeped in history (Greece, Turkey and Bulgaria)



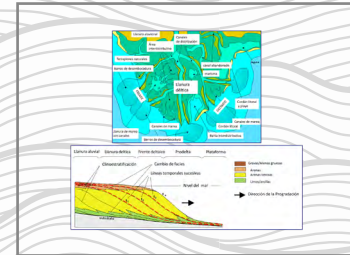
The Danube. Not so blue in the Black Sea: a lesson for the future.



Dalyan, Turkey. The turtle's Delta.



Thyamis, the mythical Delta of Greece.



The Future; Saving the Deltas Means Saving the Sea. And Ourselves.

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