

Nature-based Solutions for Adaptation to Climate Change in Different Coastal Typologies of the Mediterranean

FINAL DRAFT

Annex 1: Selected examples from each country

PAP/RAC 2024



Albania

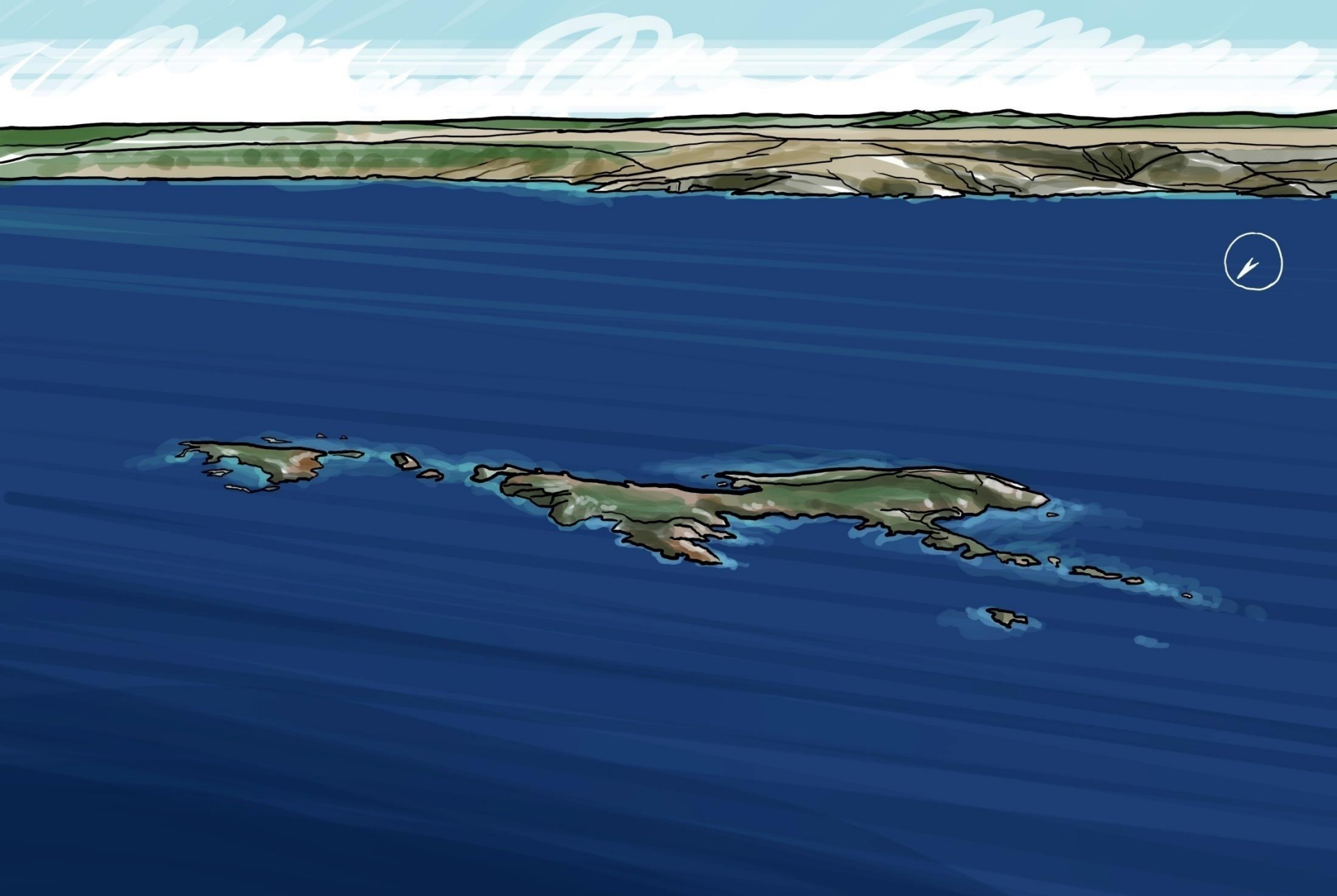
The renovation project focused on rehabilitating 2,000 meters of coastal dunes within the Kune-Vain Protected Area.

Over 65,000 indigenous, climate-resilient

plant species were planted to fortify the sand dunes, crucial for separating the lagoon from the sea and mitigating erosion, thus safeguarding the ecosystem from merging with the sea.



Albania / KUNE-VAIN LAGOON

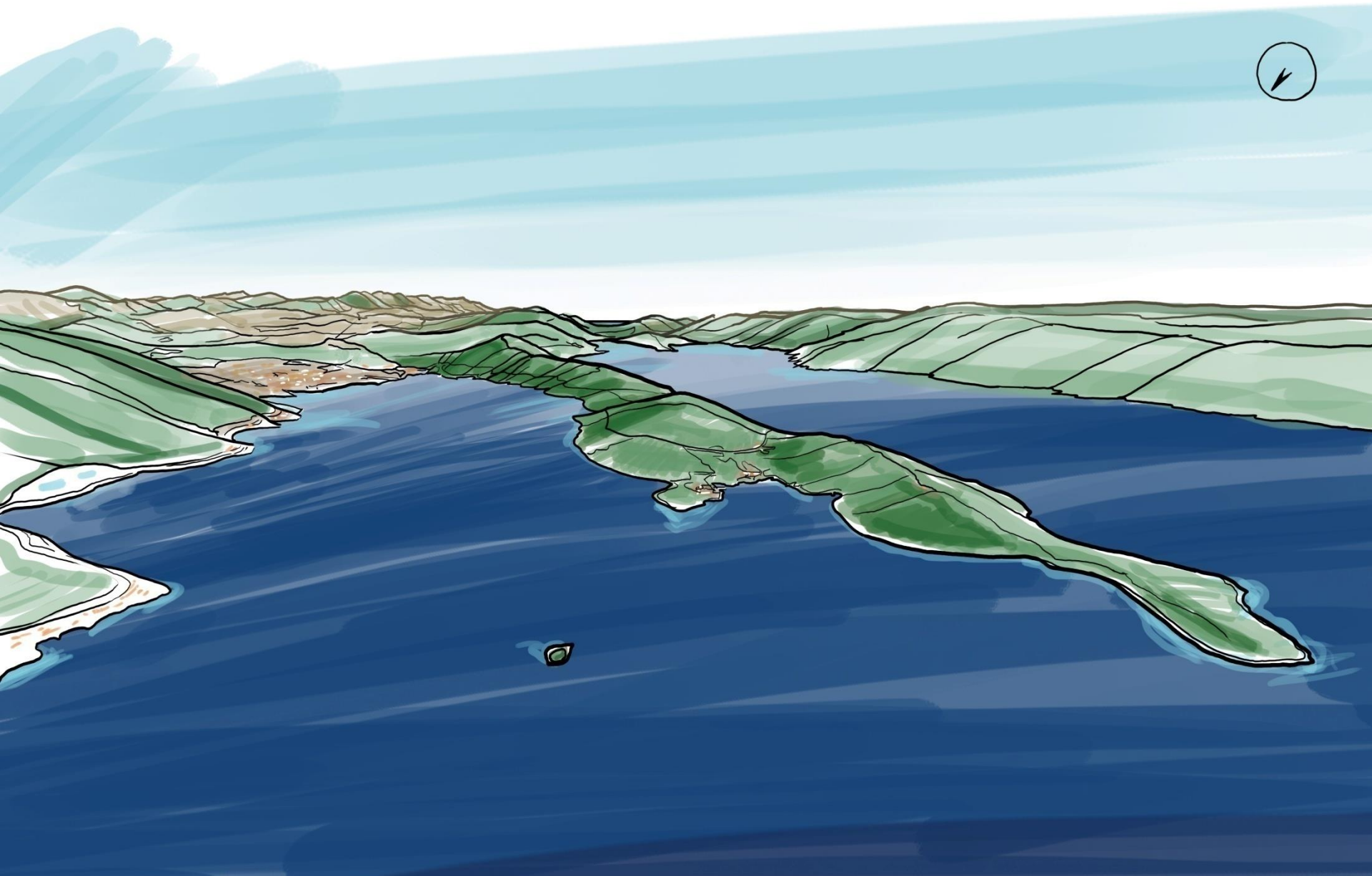


Algeria

The Habibas Islands archipelago holds significance as Algeria's inaugural Marine Protected Area, having gained legal recognition in 2004.

It also holds the distinction of being Algeria's first designated SPAMI (Special Protected Area of Mediterranean Importance) under the Barcelona Convention.





Bosnia and Herzegovina

The Klek Peninsula, nestled southwest of Neum in the Adriatic Sea, serves a vital role as a natural buffer and green belt.

Its strategic location aligns with the principles of the Barcelona Convention's Integrated Coastal Zone Management

(ICZM) protocol, particularly in managing open coastal areas. The peninsula's presence helps delineate and protect the Bay of Neum, offering environmental benefits to the broader coastal ecosystem.



Bosnia and Herzegovina / KLEK PENINSULA

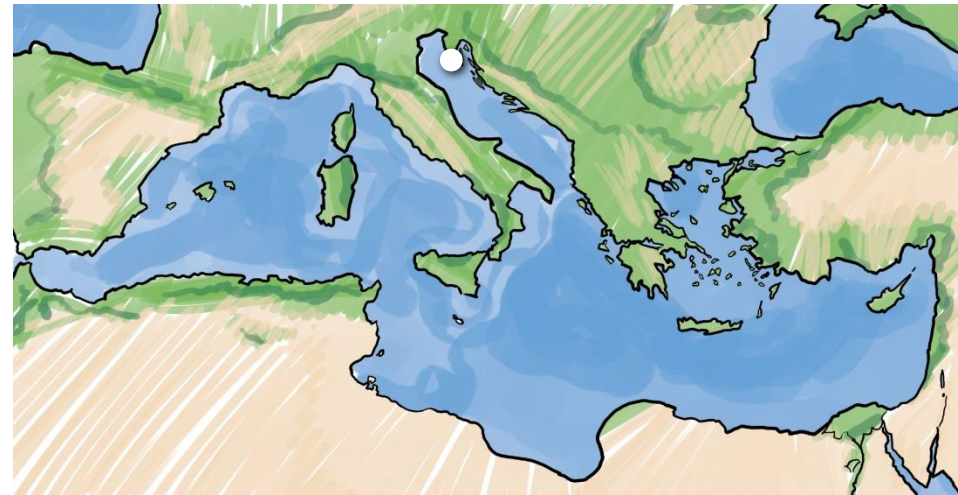


Croatia

The city of Pula reached a pivotal moment in addressing stormwater management issues, recognizing the threat it posed to citizen safety and property.

The innovative reconstruction strategy in

Pula focused on repurposing key urban areas, prioritizing natural water retention over traditional grid and pipe systems, by harmonizing with the terrain's geomorphology and soil absorption capabilities.



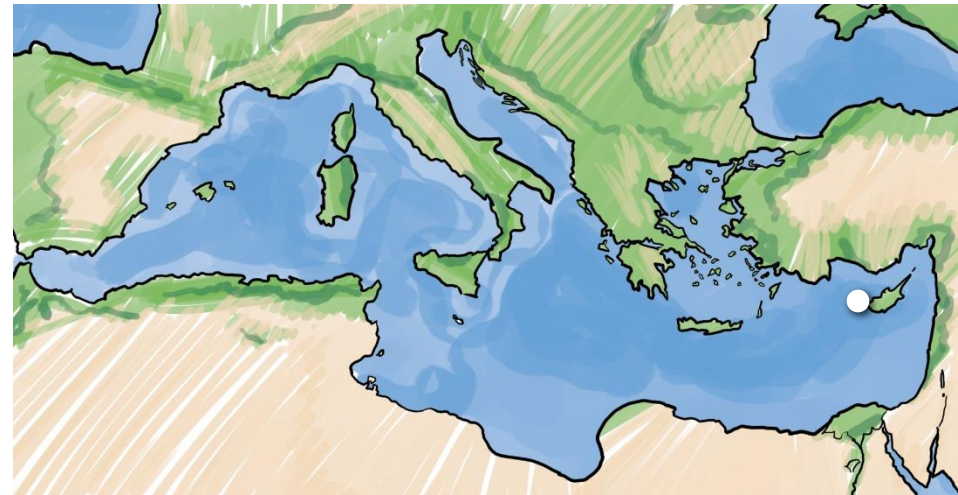


Cyprus

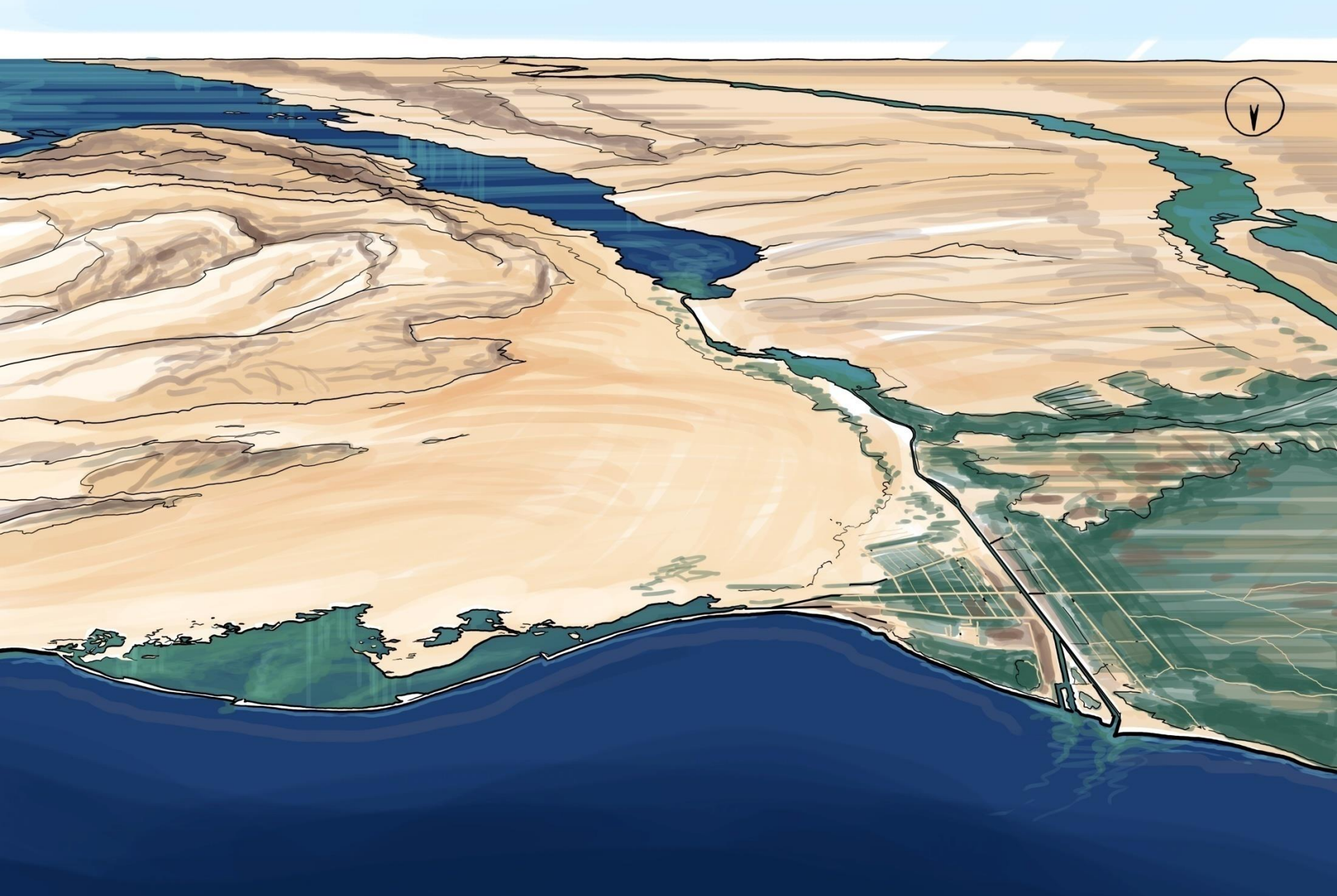
The Akamas forest encompasses a sprawling 230 square kilometers, characterized already by Ptolemy as a densely wooded headland with a dividing mountain range.

The rugged and relatively inaccessible

terrain of this protected area has nurtured a remarkable array of plant and animal species, earning it distinction as one of Europe's 22 areas of endemism by the European Environment Agency.



Cyprus / AKAMAS PENINSULA

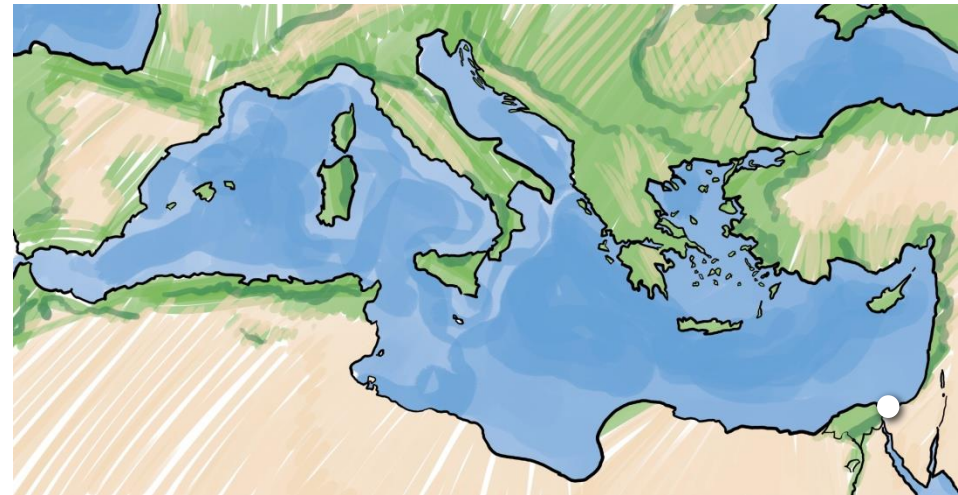


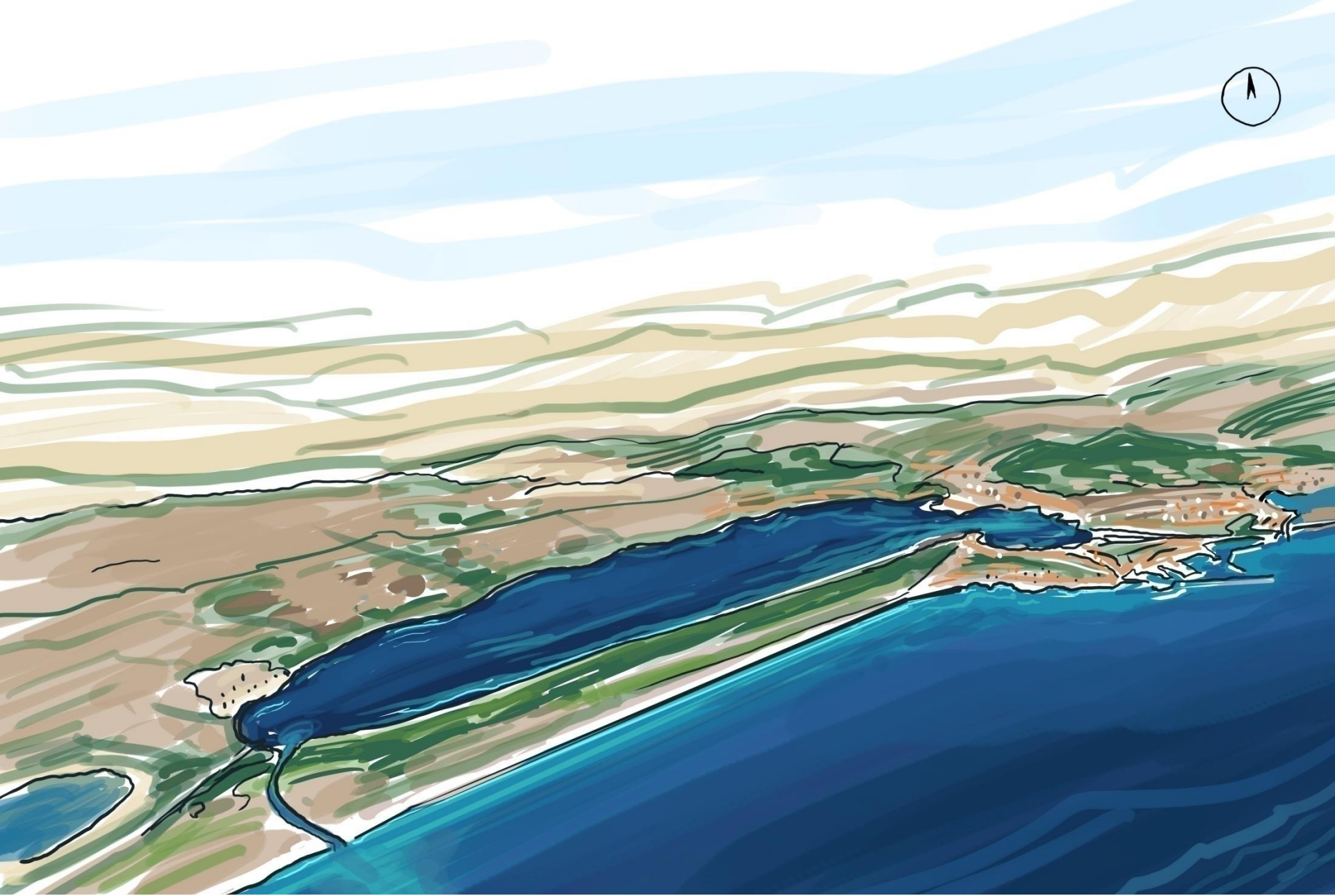
Egypt

Lake Bardawil, located in North Sinai, boasts a straight coastline bordered by sandy bars, with its shallow waters extending eastward of Al-Muhammadiyah for 98 km.

Connected closely to the Mediterranean

Sea, Lake Bardawil stands as the most saline of the northern Egyptian lakes, with its ambitious regeneration project aiming to transform the Sinai into a verdant landscape akin to the pristine, lush paradise.

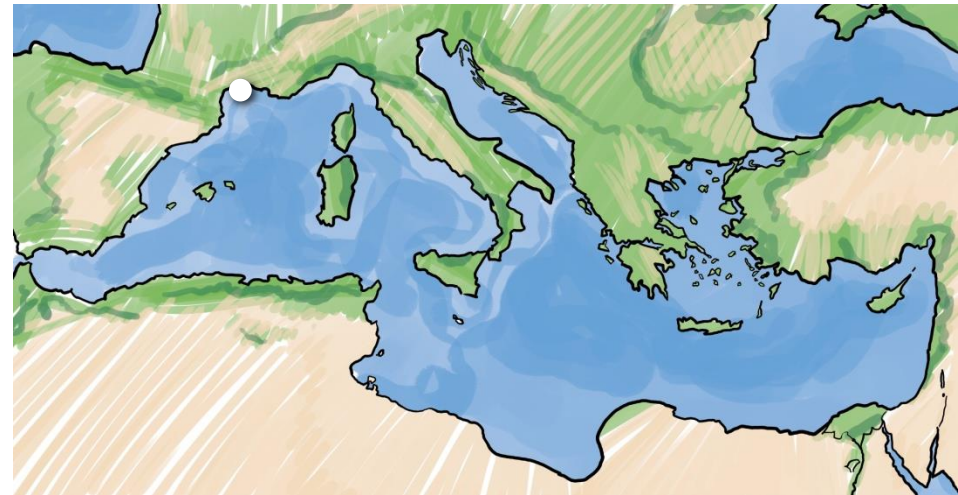




France

The littoral between Sète and Marseillan in France, separating the Thau lagoon from the Mediterranean sea, faces threats like coastal erosion and storms, harming dune ecosystems and bird habitats.

To combat erosion and preserve the delicate coastal balance, a crucial project involves managing retreat of the coastal road and restoring beaches and dunes.



France / SÈTE – MARSEILLAN

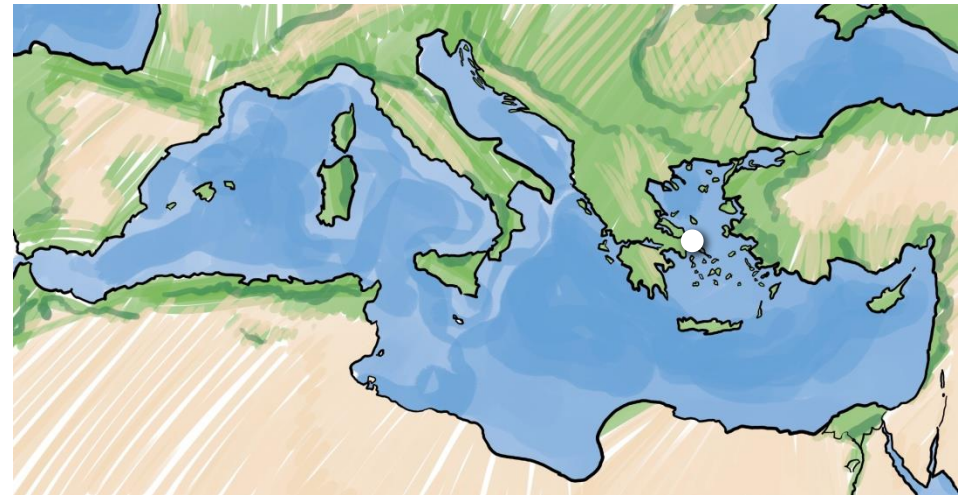


Greece

Artemis Lagoon, located in Athens, holds significant local biodiversity, hosting rare bird species as regular inhabitants.

Over the past decade, much of the biotope has suffered degradation due to systematic embankments, construction activities, and human pressures. In response, a

comprehensive project has been devised to reconstruct the area, aiming to establish a protected region through scientific monitoring, ecological rehabilitation, regeneration efforts, and promotional initiatives.



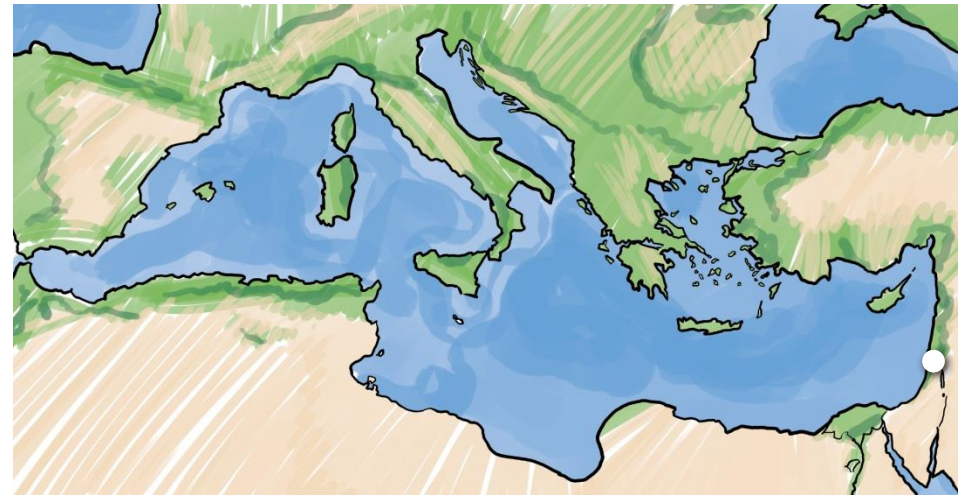


Israel

The Yarkon River in Tel Aviv is the country's largest coastal river spanning 27.5 km.

Rapid development around the river and diversion of its sources to the Negev from the 1950s onwards led to significant

ecological disruptions, with sewage, industrial waste, and agricultural fertilizers polluting its waters. In response, a rehabilitation program was initiated in the 1980s to prevent pollution, restore the river, and regulate leisure and recreational activities.



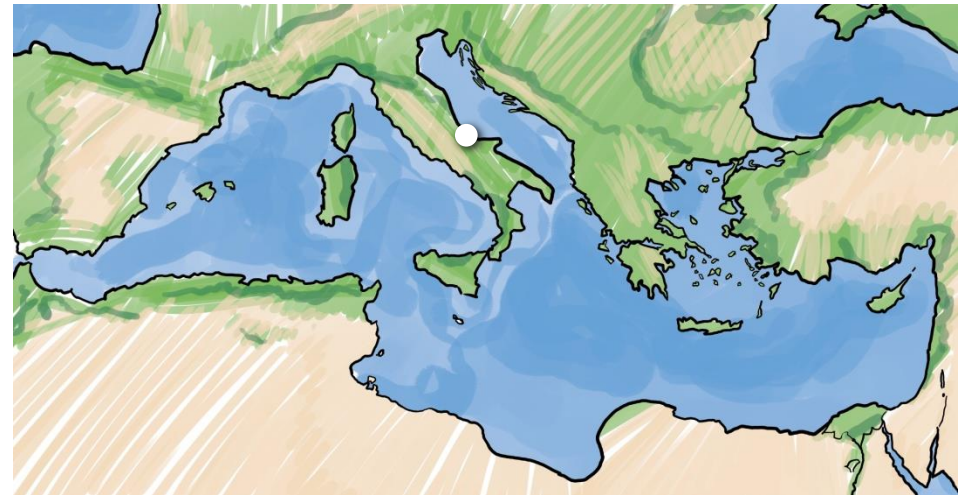


Italy

The coastal stretch of Scerni boasts numerous plant species that have become scarce along the rest of the Adriatic coast due to extensive urbanization, habitat fragmentation, and alteration.

Along with the river Vomano nearby and a coastal agricultural plain, the area serves as

a crucial stopover and nesting ground for birds, utilizing various habitats. Recent rewilding initiatives aim to protect endangered species, ecosystems, and promote eco-friendly tourism to preserve the area's unique identity.



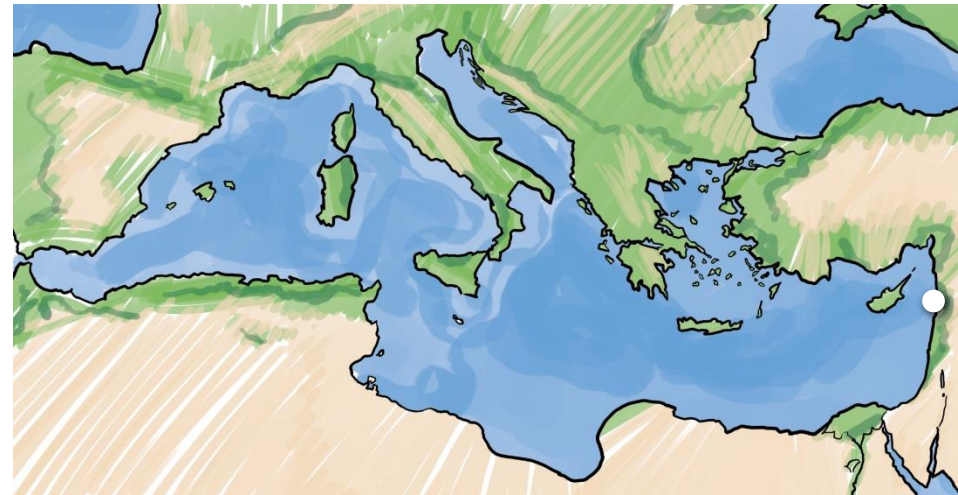


Lebanon

The Anfeh coastline abundant biodiversity, featuring a broad abrasion platform that hosts diverse habitats, from littoral caves to tide pools, supporting numerous marine and littoral plant and animal species.

Situated 70km north of Beirut and 15km

south of Tripoli, Anfeh stands out with a unique limestone peninsula extending into the Mediterranean Sea, spanning 48,000 m². Historically, salt extraction in Anfeh was vital, with claims of Phoenician origins supported by ancient salinas carved into natural rock cavities.



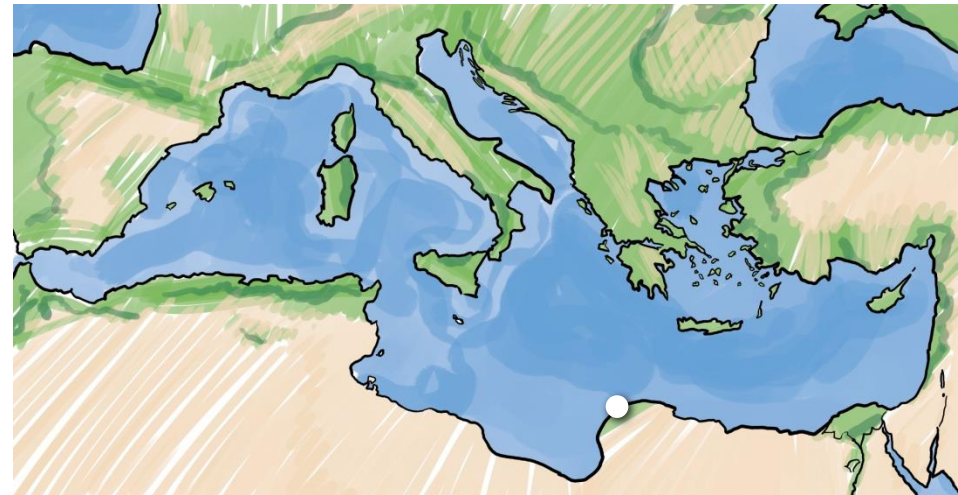


Libya

Established in 1975, El Kouf National Park covers 100,000 hectares along the southern Mediterranean coast in eastern Libya, renowned for its diverse marine and terrestrial biodiversity.

It is home to two RAMSAR sites, Ain al-Shuqaqa and Ain al-Zarqa, since 2000. The

park's landscape features limestone rock formations, karsic caves, and deep valleys like Wadi El Kouf, which flows into the Mediterranean during the rainy season, with groundwater accessible along the coastal area at depths of 100 to 400 meters.





Malta

Ongoing conservation efforts in areas like il-Qala ta' Santa Marija and other natural sites in Comino involve restoring marshland by establishing freshwater and brackish water ponds to attract diverse flora and fauna, including migratory birds.

Over the five years period, around 18,000 trees and shrubs have been planted, while also maintaining a long-term cleaning and maintenance program for ecologically significant sites on Comino Island.



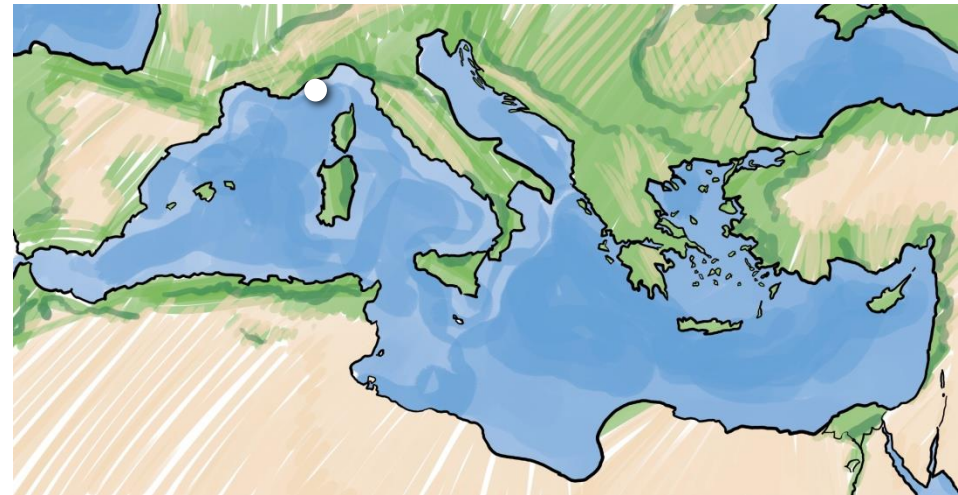


Monaco

Established in 1976, the Larvotto Marine Protected Area (MPA) holds the distinction of being one of the oldest MPAs in the Mediterranean region, despite its modest size spanning 33 hectares.

The newest land reclamation project in

Monaco prioritized environmental protection, exemplified by the transplantation of approximately 400m² of *Posidonia oceanica*, into the Larvotto MPA.



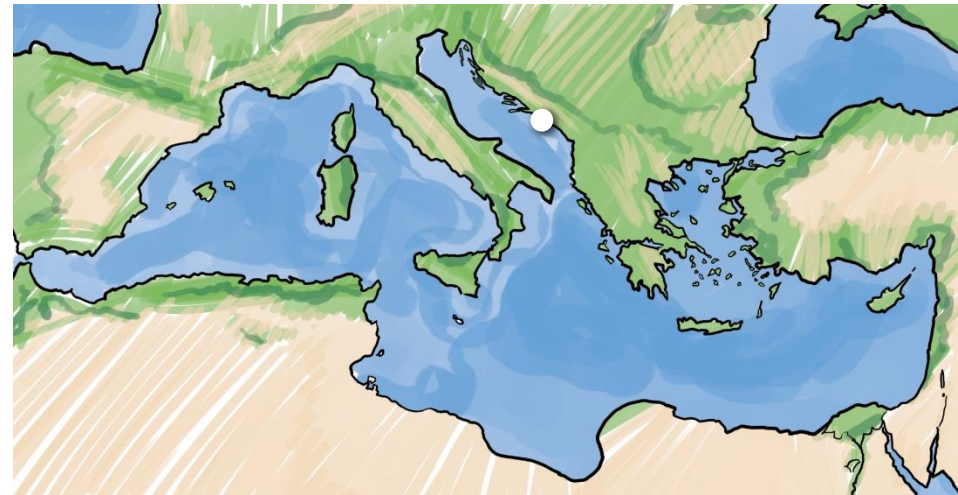


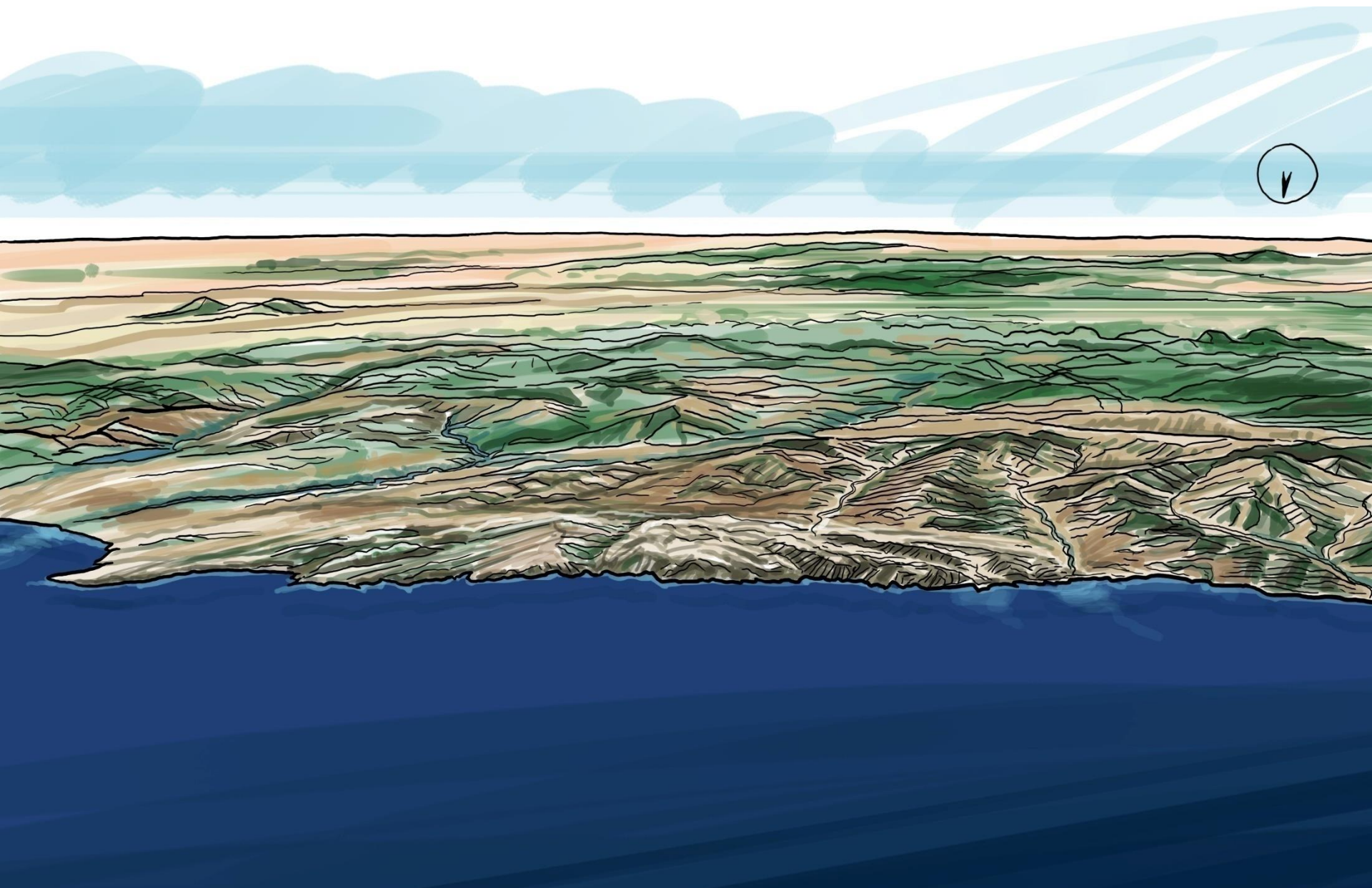
Montenegro

The Tivat Salinas were designated as a special nature reserve in 2008 to safeguard rare and endangered plant and animal species, particularly ornithofauna and plant communities.

Through collaborative efforts with local entities and communities, the Salinas has

embarked on a restoration journey marked by the elimination of hunting, establishment of recreational activities, extensive cleaning, infrastructure improvements, and the promotion of eco-tourism.



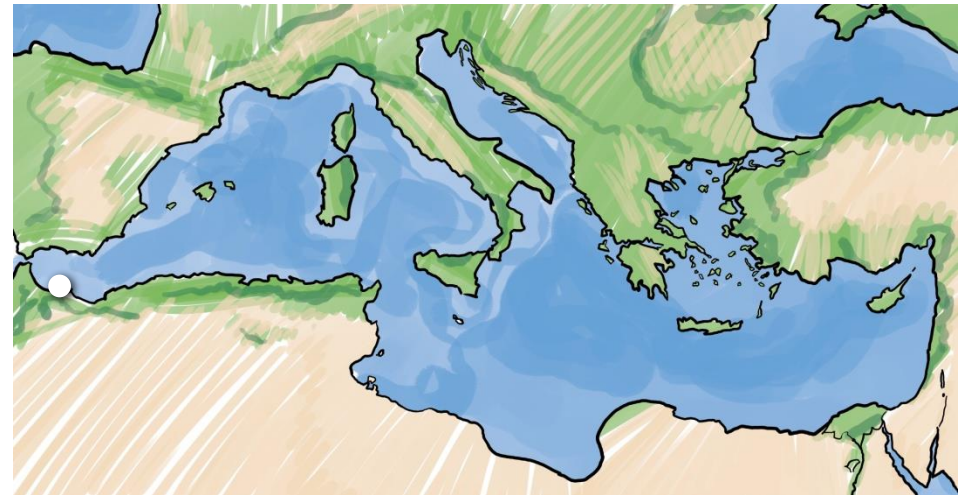


Morocco

The Al Hoceima National Park spans from Cala Iris village to the city of Al Hoceima and encompasses approximately 48.46 hectares, with 19.6 hectares extending offshore.

The steep cliffs act as natural barriers,

limiting human access to the shoreline, while the park's diverse coastline supports numerous marine and terrestrial species, including preservation-worthy species such as *Patella ferruginea*, *Monachus monachus*, and *Pandion haliaetus* found within its cliff zone.



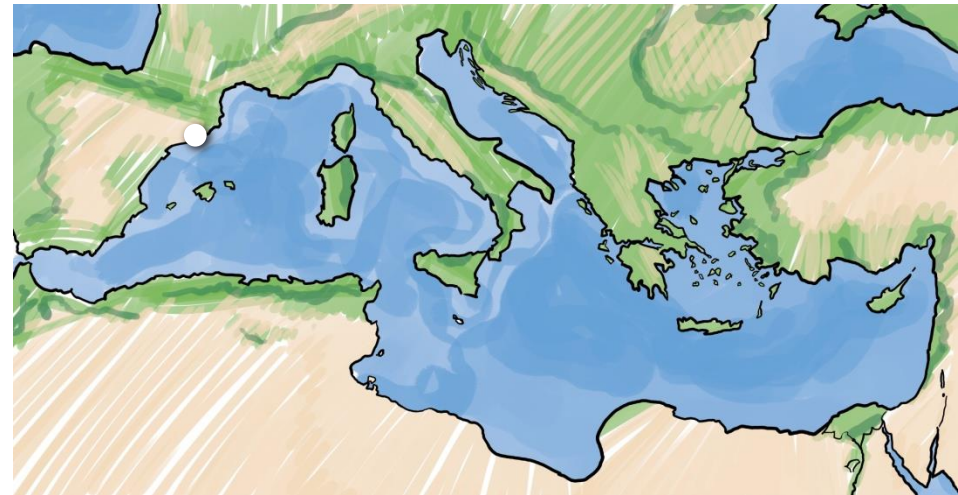


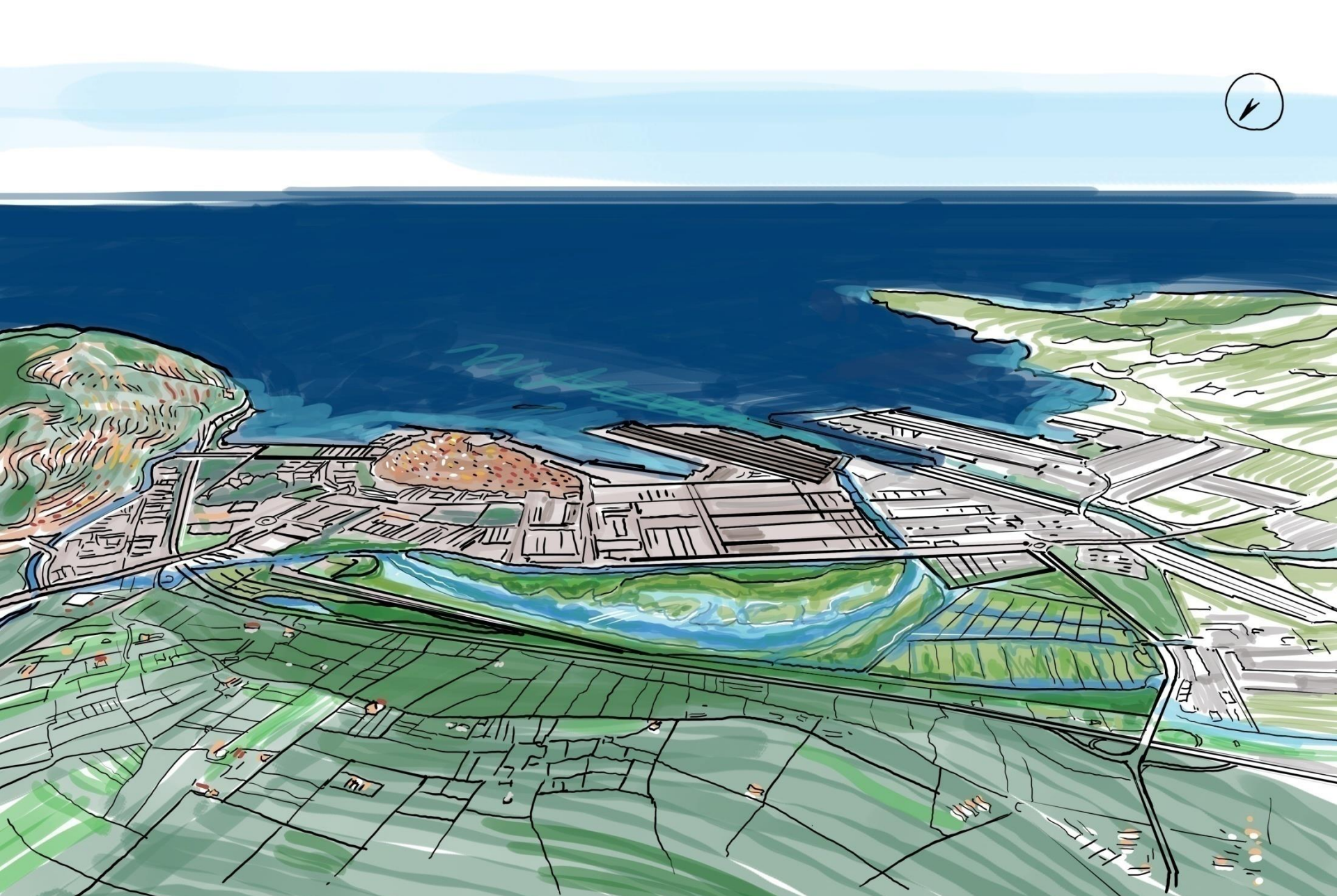
Spain

Barcelona's Green Infrastructure and Biodiversity Plan, initiated in 2013, focuses on expanding the urban green spaces network to tackle challenges like climate change.

Integrated biodiversity nodes and rain gardens enhance biodiversity and manage

rainwater infiltration as part of Barcelona's Green Infrastructure and Biodiversity Plan. Supported by tools like the Biodiversity Atlas and the Barcelona Tree Master Plan, the city seeks to transform its green strategy into tangible outcomes, taking advantage of its extensive tree canopy that covers 25.2% of its territory.

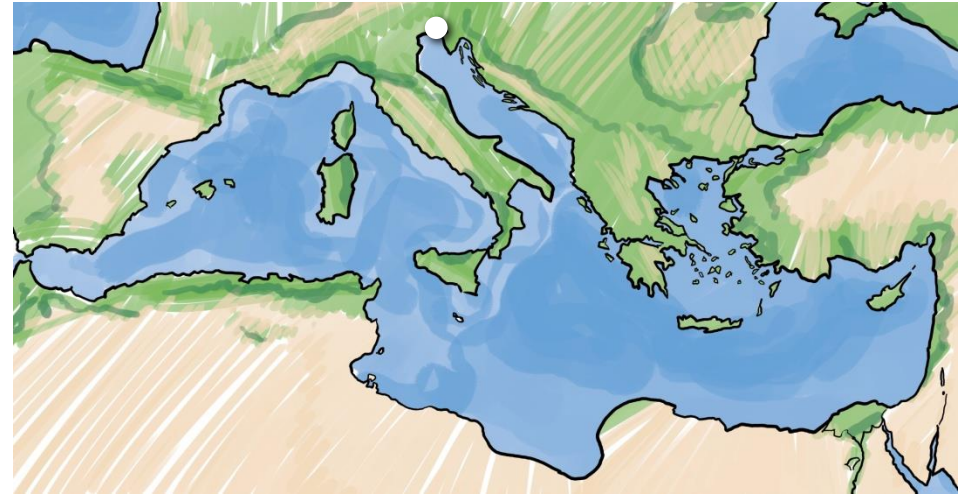




Slovenia

Škocjanski zatok is a remnant brackish wetland ecosystem historically surrounding Koper's city-island, now a designated Nature Reserve showcasing the integration of natural ecology and urban development.

Initially the largest semi-saline marsh in Slovenia, Škocjanski zatok faced degradation from anthropogenic activities until a civil initiative in the 1990s, supported by 7,000 locals, led to its protection.



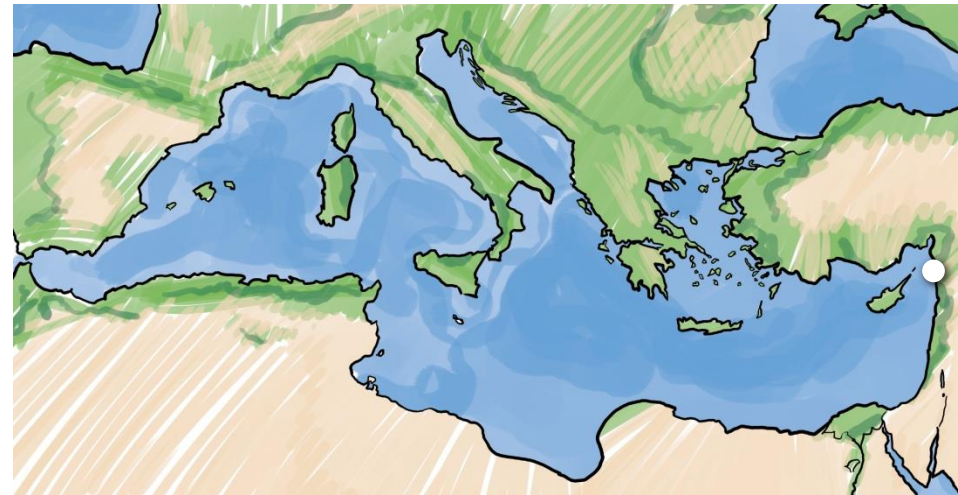


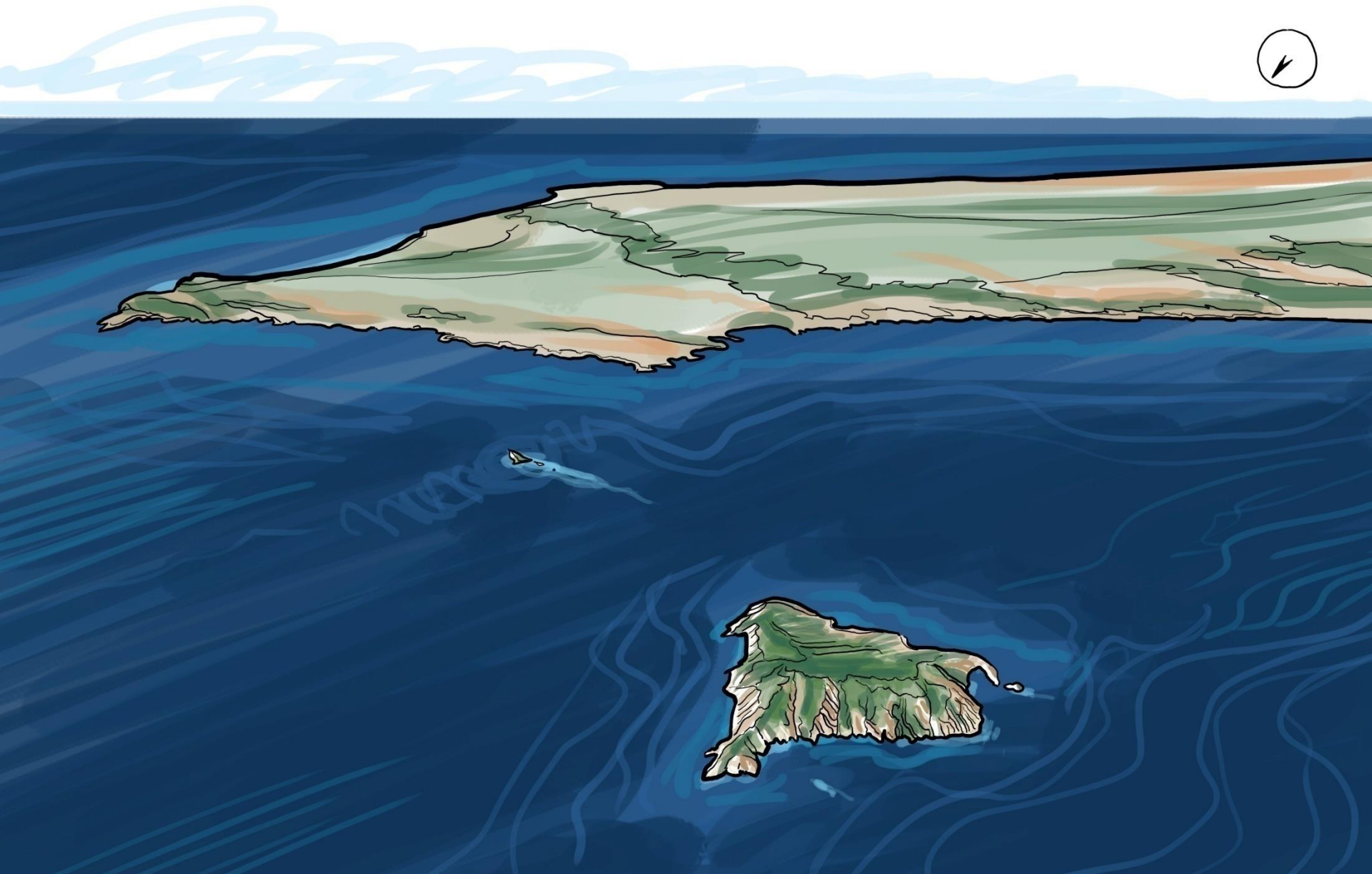
Syria

Ras Al-Bassit, situated north of Latakia, has a rich history dating back to the sixteenth century BC, with influences from civilizations including Phoenician, Assyrian, Babylonian, and Greek.

Declared a forest environmental zone in 1999, its main forest nucleus is dominated

by *Pinus brutia* and oak trees, while its coastal areas harbor diverse marine and coastal vertebrates like sea turtles and Mediterranean seals, alongside rich populations of zooplankton, benthic invertebrates, and various fish species.



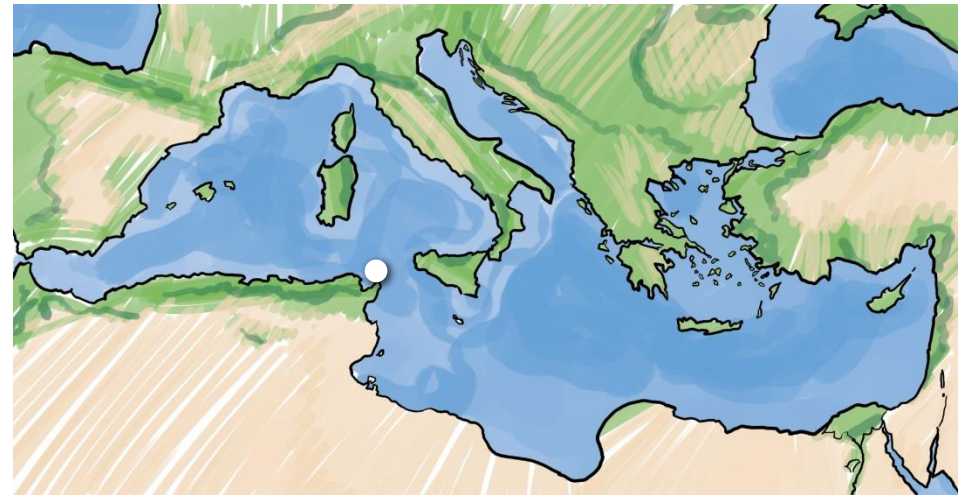


Tunisia

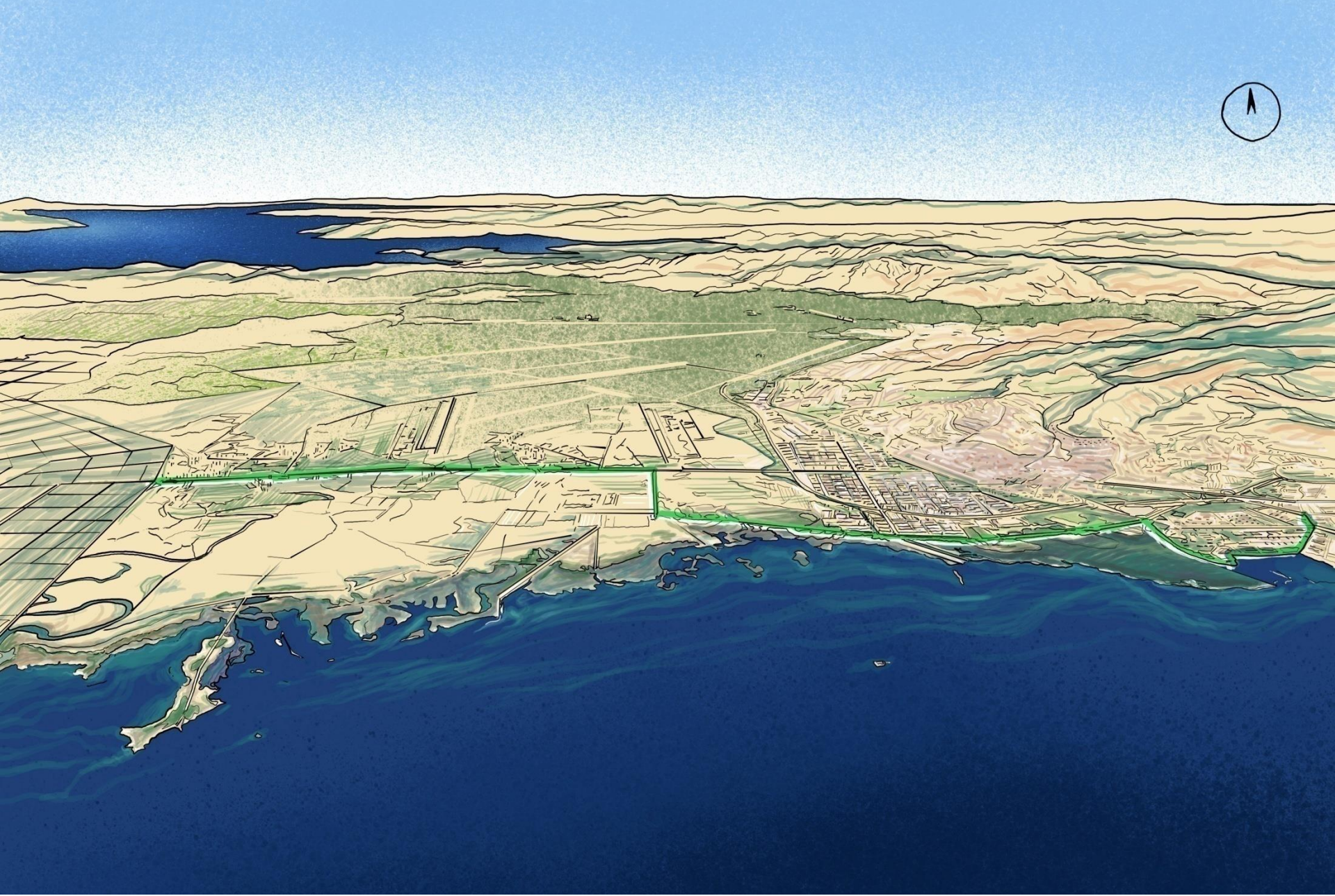
The Zembra archipelago, designated as a protected area by the Tunisian government since 1977 and by UNESCO since 1981, comprises Zembra and Zembretta Islands.

Recognized as a local hotspot for vascular

flora and an Important Plant Area for North Africa, Zembra also serves as a crucial avian migration route, nesting over 25,000 pairs of migrating birds in its rocky cliffs, while its surrounding waters teem with diverse marine life, providing habitat for various fish species.



Tunisia / ZEMBRA ARCHIPELAGO



Türkiye

Izmir's new green corridor along the Peynircioglu stream encompasses 26,500 square meters of green space with carbon-absorbing plants, trees, and bushes suitable for the Mediterranean climate.

This revitalization effort includes amenities like cycle paths, footpaths, sun terraces,

and pollinator houses. Located at the beginning of the Gediz River Delta, this project aims to address urbanization pressures and mitigate environmental challenges, contributing to the area's biodiversity and resilience.

