

# Coastal wetlands and the climate crisis:

Why the Mediterranean needs nature-based solutions





# Mediterranean wetlands: vital but vanishing

The Mediterranean is getting hotter – and we need its wetlands more than ever. Wetlands are at the heart of life itself. They give us our drinking water, irrigate our crops, support huge biodiversity, underpin cultures, and are increasingly vital in the fight to mitigate and adapt to climate change. But our wetlands are in trouble. In the Mediterranean we've destroyed about half of our wetlands in the last 50 years, and there are intense pressures on remaining areas, most of which are damaged and degraded.

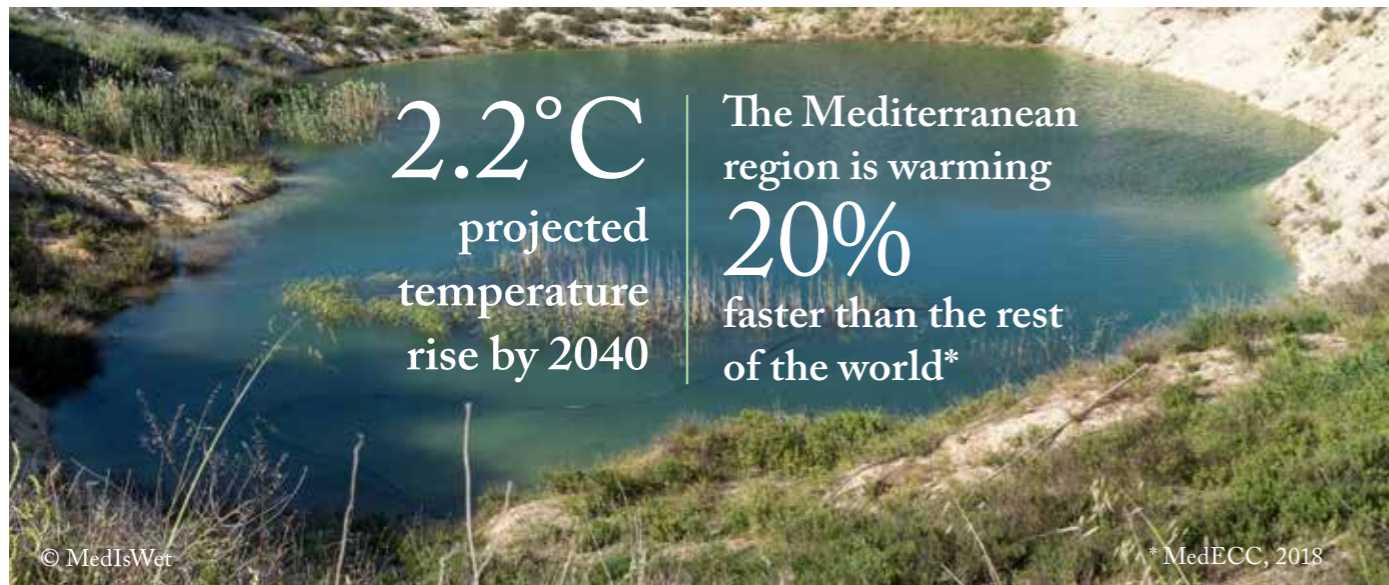
When we lose our wetlands, we lose all the benefits and services they offer – and with a growing population and a heating planet, we can't afford for this to happen.

## The Mediterranean: a climate crisis hotspot

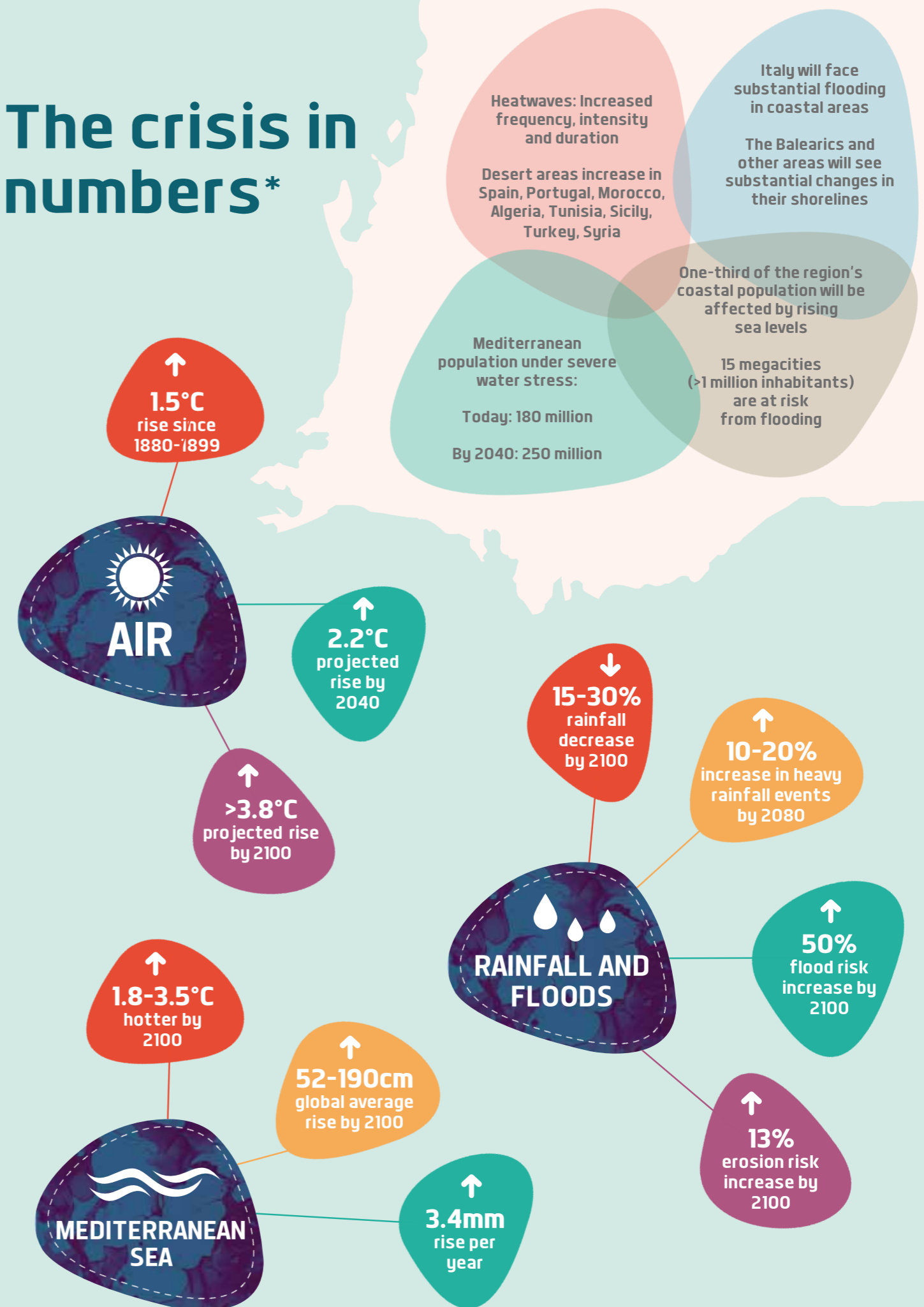
The Mediterranean is a climate change hotspot, and this makes how we manage its wetlands in the coming decades all the more significant.

Scientific projections for climate change in the region were released by the network of [Mediterranean Experts on Climate and Environmental Change \(MedECC\)](#) in 2019. The findings are shocking, confirming that the region will be hit harder and faster than most other parts of the world. This will have serious social, economic and environmental consequences for millions of people.

The overall figures vary depending on the scenarios used in the estimates, but they paint a vivid picture of a region at the sharp end of the climate crisis:



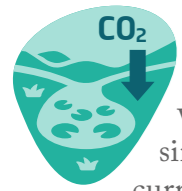
# The crisis in numbers\*



\*Figures from *Risks associated to climate and environmental changes in the Mediterranean region*, MedECC, 2018

# How wetlands provide nature-based solutions to the climate crisis

Against the urgent backdrop of a changing climate, healthy wetlands provide people and planet with diverse critical services – effectively, they offer nature-based solutions to manmade problems.



## Carbon sinks

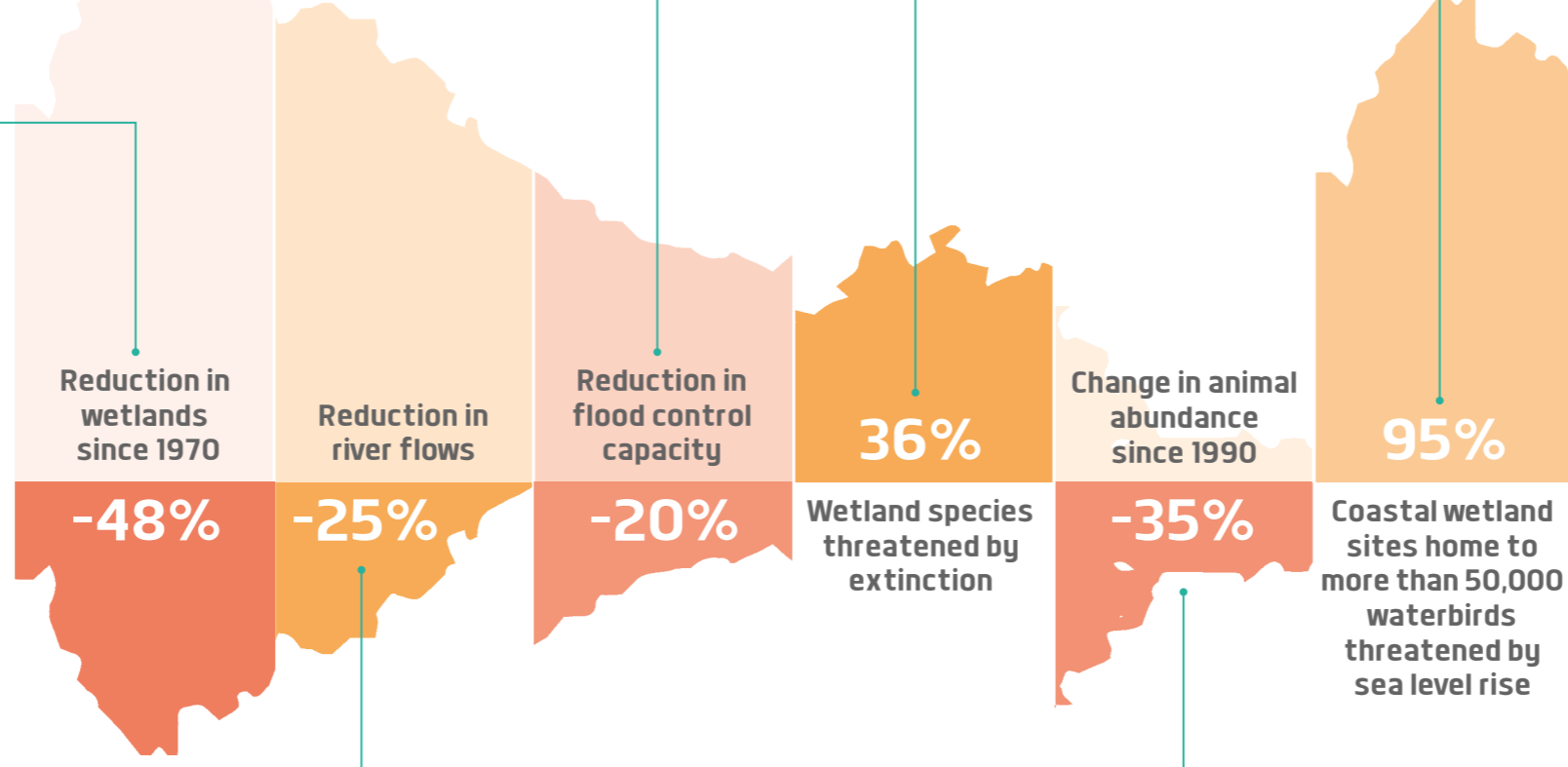
Wetlands are among the world's most significant carbon sinks – estimates show they currently store up to 40% of the world's carbon. Restoring more wetland areas would sequester more carbon, reducing the level of atmospheric greenhouse gases fuelling global heating, and making an important contribution to mitigating future temperature rises. When they're destroyed, though, the carbon they store enters the atmosphere – so damaging wetlands doesn't just prevent us from enjoying their benefits, it directly makes the world a hotter place.



## Water provision and purification

Wetlands are the kidneys of Nature. They play a critical part in storing and cleaning our drinking water, either directly or by recharging groundwater aquifers. Climate change is reducing the quantity and quality of available water, while demand continues to rise. Once water enters wetland systems, plants known as hydrophytes filter its chemicals and sediment, absorbing pollutants and converting them into nutrients, a natural purification and storage system. In a water-stressed Mediterranean, this role is growing more important by the day.

## Mediterranean wetlands under threat\*



## Protection from rising seas

Along the coast, wetlands buffer the land from waves and wind. As sea levels rise, coastal wetland areas from sand dunes to mangroves become the first line of defence against the encroaching salt waters – which otherwise threaten settlements, farmland, drinking water supplies and freshwater ecosystems. The more robust and resilient they are, the more effectively they can dissipate the energy of the waves.



## Flood defences

Wetlands disperse and absorb excess water, which slows down flows, preventing soil erosion and flood damage caused by extreme weather events. Water stored in this way can also help maintain river levels during droughts. Such events are increasing, and through this 'sponge effect' wetlands offer a really effective – and entirely natural – way of defending ourselves against the damage they cause.



## Biodiversity

Wetlands are among the most productive habitats on Earth, and are home to some of the world's richest biodiversity: freshwater wetlands hold more than 40% of the world's species and 12% of all animal species. Coastal wetlands host countless bird species, especially during migrations, and shelter critical fish populations. Biodiversity projections in a heating climate show major losses in all species groups, so it's imperative that existing wetland habitats remain viable and as many others as possible are restored.

## Wetlands today: a Mediterranean crisis

Wetland areas used to extend across vast expanses of the Mediterranean basin, but for hundreds of years wetlands were seen as land that needed to be drained, filled in, cleared, made 'productive'. The process accelerated in the 20th century as a fast-growing population drove runaway development in an increasingly resource-starved region.

Today wetlands cover some 18.5 million hectares, between 1.7-2.4% of the total area of the 27 Mediterranean countries. With a very few exceptions their flooding regimes are now artificially managed, and many of the remaining areas are badly degraded.



## Food provision

The global food system is one of the biggest contributors to climate change. Sustainable aquaculture and coastal fisheries can both provide important low-carbon sources of nutrition to reduce net emissions – but to operate successfully over the long term both depend on healthy and resilient wetlands.

\* Source: report "Mediterranean wetlands - Challenges and prospects 2: solutions for sustainable Mediterranean wetlands", MWO-OZHM, Tour du Valat, 2018.



# Why are our wetlands disappearing?

**Agriculture** – The single biggest factor in the loss of Mediterranean wetlands is agriculture. Vast areas have been drained and converted for agricultural use.

**Development** – From ever-spreading industry and urbanisation to waterfront tourist complexes, infrastructure development has ravaged much of the Mediterranean’s natural heritage – wetlands have been at the sharp end of land use change, particularly in coastal regions.

**Changes in hydrology** – Few wetlands today maintain natural hydrological cycles: dams, dikes and diverted flows for irrigation and other purposes all reduce nature’s ability to self-regulate, and ecological processes begin to break down.

**Sedimentation/erosion** – Wetland vegetation plays an important role in keeping waterways clear – when it’s removed for grazing or development, banks are eroded and sedimentation follows.

**Pollution** – Agriculture, industry and urban centres all pollute wetlands, harming biodiversity and reducing the resilience of natural processes.

**Invasive species** – Whether introduced on purpose or by accident, alien wetland species can out-compete native ones, unbalancing ecosystems. The issue is compounded because waterways act as networks through which new species spread.

**Climate change** – While wetlands can help defend us against climate change when they’re preserved, they’re also directly threatened by it. The increased droughts and storms of our heating planet damage wetlands, while rising sea levels will submerge many Mediterranean coastal wetland areas in the coming decades.

# Ramsar: working for wetlands

Wetlands have one effective global mechanism dedicated to their ‘conservation and wise use’: the Ramsar Convention. An international treaty which came into force in 1976, the Ramsar Convention identifies and protects internationally important wetland sites, encouraging action and cooperation between the 170 contracting parties. In total, there are 2,372 Ramsar sites in the world covering over 2.5 million km<sup>2</sup>. There are currently 424 Ramsar sites in the Mediterranean, and campaigners are working hard to bring other important Mediterranean wetland areas under Ramsar Convention protection.



Country	Ramsar sites	Hectares
1. Albania	4	98,181
2. Algeria	50	2,991,013
3. Bosnia and Herzegovina	3	56,779
4. Bulgaria	11	49,873
5. Croatia	5	94,358
6. Cyprus	1	1,107
7. Egypt	4	415,532
8. France	49	3,714,412
9. Greece	10	163,501
10. Israel	2	366
11. Italy	56	73,308
12. Jordan	2	13,472
13. Lebanon	4	1,075

Country	Ramsar sites	Hectares*
14. Libya	2	83
15. Malta	2	117
16. Monaco	1	23
17. Montenegro	3	21,627
18. Morocco	38	316,086
19. Portugal	31	132,487
20. Serbia	10	63,919
21. Slovenia	3	8,205
22. Spain	75	304,564
23. Syrian Arab Republic	1	10,000
24. North Macedonia	2	21,616
25. Tunisia	41	840,363
26. Turkey	14	184,487

\* Figures from Ramsar

# MedWet: driving action

The Mediterranean Wetlands Initiative (MedWet) encourages and supports wetland managers and governments to adopt policies and take action on the ground to drive the conservation and sustainable use of Mediterranean wetlands. Founded in 1991, MedWet was the first – and remains the leading – regional initiative officially recognised under the Ramsar Convention.

Geared to long-term collaboration, MedWet is the only platform where institutions and civil society share knowledge and technical capacity for the benefit of wetlands in the Mediterranean. It includes the 27 Mediterranean contracting parties to the Ramsar Convention, as well as Palestine, the Ramsar Secretariat, intergovernmental institutions, NGOs, and specialist national wetland organisations.

Find out more at [www.medwet.org](http://www.medwet.org)



# A new story for Mediterranean wetlands

Coastal wetlands are particularly important for fighting climate change, and pilot restoration projects are already underway in some areas where the need is greatest. Ultimately the aim is to scale up and adapt the lessons learned across the wider Mediterranean, so wetlands can once again provide the full range and extent of functions and services we need to underpin a sustainable future for people and planet.

## The Off Your Map initiative: inform and act

Off Your Map, coordinated by MedWet, brings NGOs focused on conservation and natural resource management together with economic experts. Its goals are:

- To promote the critical role that wetlands can play as nature-based solutions to the climate crisis
  - To encourage more effective conservation of the rich natural and cultural heritage of wetland sites.
- Off Your Map is currently supporting projects in four

areas where the diverse issues to address reflect the challenges facing wetlands across the Mediterranean:

- Buna River, Albania (lower delta)
- Ghar el Melah, Tunisia (coastal lagoons and dunes)
- Ulcinj, Montenegro (salt pans)
- Oristano, Sardinia, Italy (coastal lagoons)

The collaboration also includes a project to evaluate ecosystem services at each site (TESSA), a focus on saltpans (The Saltpan Initiative), and the network for Mediterranean island wetlands (MedIsWet).



Fishermen in Sinis, Sardinia ©MedSea Foundation



Ulcinj Salina, Montenegro. ©CZIP



Educational activities in Ghar El Melh



Bulls, Camargue, France © O.Pineau/Tour du Valat



© MedSea Foundation



Flamingos, Camargue, France © MedIsWet



Lake Skadar, Montenegro © J.Jalbert/Tour du Valat



© MedWet



# Buna River Albania

 **LINK** <http://livingbuna.org/>

**Geography:** river delta

**Area:** 230.2km<sup>2</sup>

**Demographics:** 36,000 in region

**Main economic activities:** agriculture, fishing, tourism

**Importance:** rich biodiversity, ecosystem services, fisheries

## Pressures

- Coastal habitat destruction through development
- Mass tourism
- Unsustainable fishing
- Unsustainable agriculture
- Water abstraction
- Pollution (solid waste/wastewater)

The Buna River contains the most important wetlands of high ecological value in the Eastern Mediterranean, sheltering some 320 species of flora, 250 bird species and 107 fish species. Many of the animals in the region are rare and endangered, including pygmy cormorant, Eurasian otter, golden jackal and sturgeon. It also has important oak forests.

Crop and livestock production, fishing and tourism in and around the Buna River are all heavily dependent on healthy wetland resources – but unsustainable practices are common in all these activities, reducing the resilience of local ecosystems. A possible solution could be to stop development in high value wetlands to prevent further habitat degradation and to restore damaged critical wetlands and coastal habitats.

The cross-border nature of the site adds to the complexity of the situation: Albania and Montenegro must work together towards integrated management of their shared natural resources, particularly in addressing water use, pollution and unsustainable development.

An 'Action for Buna' grants initiative for civil organisations and community representatives in the Buna Delta protected landscape, which will end in June 2020, aims to encourage regional socioeconomic development through ecosystem and habitat restoration. It also supports the implementation of the Buna Delta management plan, focusing on three key areas: i) coastal habitat restoration projects; ii) agri-environmental incentive schemes including irrigation; and iii) sustainable tourism/ infrastructure development.



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## Action plan

- Increase knowledge base and awareness on ecosystem services and values, integrated coastal wetland management, sustainable land use practices
- Improve management and restoration of pilot site through innovative conservation programmes and sustainable business models and incentives for local communities (environmentally friendly fishing and farming, sustainable tourism, habitat restoration)
- Enable a multi-stakeholder governance and transboundary mechanism to address threats, enforce regulations, support knowledge transfer and joint planning

*“I trust that we’re on the path towards a sustainable and resilient Buna River Delta as we work to get the community more active and educate the young on the importance of wetlands and good management. Through the Action for Buna grants we’re helping the local residents take small but important steps, counting on the support from the government and local institutions as well as the international community.”*

**Zamir Dedej**

Director, National Agency of Protected Areas in Albania



# Ghar el Melh Tunisia

 **LINK** [https://www.wwf.tn/fr/nos\\_projets/gemwet/](https://www.wwf.tn/fr/nos_projets/gemwet/)

**Geography:** lagoon

**Area:** approx. 35km<sup>2</sup>

**Demographics:** 5,345 in town

**Main economic activities:** agriculture, aquaculture, fishing, tourism

**Importance:** biodiversity, fisheries, cultural heritage

## Pressures

- ♥ Coastal development
- ♥ Illegal construction
- ♥ Agricultural run-off (eutrophication)
- ♥ Drying out/salted up polders
- ♥ Unsustainable fishing
- ♥ Inadequate or non-existent wastewater treatment
- ♥ Climate change

Designated a Wetland of International Importance, Ghar el Melh was the first North African and Middle Eastern city to receive Ramsar's Wetland City Accreditation Award, in recognition of its formal engagement in efforts towards wetland protection and sustainability. Ghar el Melh actively promotes the ecological importance of its wetlands, and it also recognises their sociocultural value and their place in the region's rich historical heritage.

While the city is much smaller today than it has been at times in the past, many of the remaining residents depend on the lagoon for their livelihoods. Artisanal fishers ply its calm waters, primarily targeting mullet and eels; while the wider region has become a popular seaside

touristic destination, particularly in the summer months. Farmers use land right up to the shores of the lagoon, and on the floodplains to the north.

Unfortunately, neither the fishing, nor the farming, nor the tourism have been developed with sufficient care, and all are now contributing to the stresses on the local ecosystems. Climate change is exacerbating the pressure. With vulnerable fish populations, dried and salt-damaged land, and unsustainable (and sometimes illegal) coastal development, the natural resources which have supported Ghar el Melh's residents for centuries are at a tipping point, and their long-term viability is in doubt – the need for sustainable and integrated resource management has never been greater.



## Action plan

- ♥ Improve local knowledge and information on biodiversity, hydrology, marine resources and socioeconomic aspects through collaboration with science, academia etc
- ♥ Develop a governance model which aims to reconcile development challenges and natural capital preservation (regulate tourism to match site carrying capacity, introduce sustainable fisheries management etc)
- ♥ Raise awareness with decision-makers and build capacity for integrated planning and action through lobbying and policy work
- ♥ Demonstrate and spread best practices in tourism, agriculture, water use, fishing

*“Ninety-five percent of coastal wetlands today are threatened by flooding, and wetlands are disappearing three times more quickly than forests. I hope solutions are found quickly – it would be wise to begin by highlighting the ecological role these environments play.”*

**Inji Hanini**

Regional Commissioner for Agricultural Development in Bizerte, Tunisia



# Ulcinj Salina Montenegro

 **LINK** <https://www.euronatur.org/en/what-we-do/campaigns-and-initiatives/saving-ulcinj-salina/>

**Geography:** salt works

**Area:** 15km<sup>2</sup>

**Demographics:** 400+ jobs at former salt works

**Main economic activities:** salt production (currently halted), tourism

**Importance:** migrating, nesting and wintering birds

## Pressures

- Breakdown of water management
- Luxury leisure developments
- Illegal hunting of birds and eggs

Salt pans are an interesting type of wetland. Although manmade, many have become very important habitats for birds across the Mediterranean, and the salt pans at Ulcinj are among the most important in the whole region. They're the last stop-off for birds migrating across the Adriatic, and they also provide crucial nesting, wintering and roosting grounds for many others – more than 250 species have been recorded at Ulcinj, including flamingos, black-winged stilts and Dalmatian pelicans. The salt pans are also home to many endangered fish, amphibians, reptiles and saline plants.

The salt works at Ulcinj were set up in 1935, producing up to 40,000 tonnes a year at their peak and providing more than 400 jobs. But they were privatised in 2005 and systematically run down. The salt harvest was stopped in 2013 and the remaining workers dismissed, and the site was allowed to deteriorate as legally questionable efforts were made to sell it and

construct a luxury hotel resort with golf courses and a marina.

A sustained international campaign finally won a landmark victory in June 2019, when the salt pans were declared a national protected area in recognition of their ecological and cultural value; then as from July 2019, Ulcinj Salina was designated as a Ramsar site. But the years of neglect have come at a heavy cost. The dykes and channels that make up the complex wetland system have run into disrepair, and its ecological processes have been disrupted. Already bird numbers are falling as some species struggle to adapt.

If Ulcinj Salina is to maintain its immense importance, it needs to be actively managed once more. A long-term conservation campaign aims to achieve full legal protection and effective new management, while creating sustainable incomes through salt production, wildlife tourism and other small business opportunities.



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## Action plan

- Develop advocacy campaign and legal action for protection and law enforcement
- Halt/significantly reduce unsustainable development
- Demonstrate the effectiveness of conservation approaches for wildlife, habitats and people through innovative management and restoration programmes
- Offer sustainability incentives and create nature-based small/family business models for local population

*“I work for the protection of the Salina because I believe in saving nature for generations to come. It’s an amazing experience being part of such a dedicated team, fighting against all the odds.”*

**Jovana Janjušević**

Executive Director, CZIP



# Oristano Sardinia, Italy

 LINK [www.maristanis.org](http://www.maristanis.org)

**Geography:** coastal wetlands

**Area:** 77km<sup>2</sup> Ramsar sites, 267km<sup>2</sup> Marine Protected Area

**Demographics:** 35,000 in towns projected to be underwater by 2100

**Main economic activities:** agriculture, cattle breeding, aquaculture, tourism

**Importance:** ecosystem services, biodiversity, heritage, nature-based climate change solution

## Pressures

- Intensive agriculture, livestock and aquaculture
- Coastal development
- Pollution
- Increased precipitation variability, extreme weather events

The six Ramsar wetlands in Oristano have been central to Sardinia's economy and culture for hundreds of years. A rich cultural heritage developed on the back of the agriculture and fishing that supported the population, two activities particularly suited to the fertile soils, clean waterways and fish-filled coasts around Oristano. Natural wetland processes provided clean water for locals and protected them from floods and storm surges, while creating ideal conditions for biodiversity to flourish. Hundreds of bird species – some of them endangered – still nest, feed and winter here.

Over the years, however, wetlands on the Oristano coast have been severely degraded by human activities and other external elements, with no adequate management measures taken in response. This has led to blocked and polluted waterways, habitat fragmentation, biodiversity

loss and erosion; while increasing saltwater intrusion is inevitable as global heating drives increased coastal flooding.

Projections show that the Oristano Gulf is one of the first Mediterranean areas that will be severely affected by widespread flooding as sea levels rise: by 2100, local towns that are today home to around 35,000 people will be underwater. Ironically, these same towns are now beginning to experience a shortage of fresh water.

Thankfully for Oristano, concerted efforts are underway to turn things round. The key is in working with local communities to enhance their wetland environment to a point where it can once more provide the resources they need to guarantee new, sustainable livelihoods – as well as some protection against climate change. In this case, natural solutions are the way forward.



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## Action plan

- Improve knowledge base on all aspects of Oristano wetlands
- Establish a new common wetlands management process involving both public and private sectors
- Ensure connectivity of marine/terrestrial wetland systems
- Promote sustainable water management
- Reduce pollution
- Enhance economic and cultural value of local heritage
- Raise local awareness to restore society's bond with wetlands

*“Climate change has had a strong impact on our work. It has transformed the wetlands and the water salinity, and it has caused the disappearance of some species and encouraged the arrival of other invasive ones. That’s why the previous generation of fishers asked us to join and lead the cooperative, to adapt it to this new context. But it’s not enough – all actors in the territory must join forces and work together in harmony.”*

**Alberto Porcu**

President, Oristano fishers' cooperative



# Salt pans Initiative

**Salt pans are a uniquely important kind of Mediterranean wetland. Often part of larger wetland complexes, they're mostly found in estuaries or marshes and tend to be located near cities. Although they're artificial constructions, when salt pans are well managed over time they provide complex and critical ecosystem services, and support a great deal of biodiversity, particularly birdlife. As well as birds which live there permanently or visit them to breed or overwinter, salt pans are particularly significant for migratory species, which depend on them for foraging and rest.**

Salt pans can also offer sustainable economic benefits, generating jobs and livelihoods for local populations. Some of these come direct from salt production – salt pans are known for their gourmet-quality output – while ecotourism, mostly birdwatching, is also very much a growth industry for such areas.

But in recent years many of the salt pans across the Mediterranean have been run down or simply abandoned. Cheaper rock salt has undermined the economic model behind sea salt production, while endless coastal development is encroaching on sites all over the region. Agricultural pollution and unsustainable water extraction has further damaged their delicate ecosystems, which at the same time are coming

under increasing pressure from climate change impacts such as sea level rise and coastal erosion.

If we lose the salt pans, we run the risk of losing crucial habitats for birds, as well as the other benefits they offer local populations – and we can't allow this to happen. That's why a partnership of NGOs and other bodies led by Birdlife International has launched the Saltpan Initiative, a multi-year programme to restore salt pans and their surrounding wetlands right across the Mediterranean.

The Saltpan Initiative is active at numerous sites, including Oristano (Sardinia), Ghar el Melh (Tunisia), Ulcinj Salina (Montenegro), Bahia de Cadiz (Spain) and Gediz Delta (Turkey), as well

as Herdade da Mourisca and Samouco and Brito Salt pans in the Tagus Estuary (Portugal).

Most of these sites belong to the network of Important Bird and Biodiversity Areas (IBAs), and are also protected under European legislation as Natura 2000 sites and/or included in other international agreements (e.g. Ramsar, the Emerald Network) that recognise their crucial role in conserving species and habitats. However, most of them face a wide range of problems, which require an equally wide range of solutions.

Seven local partners – MedSea, AAO/BirdLife Tunisia, CZIP, SEO/BirdLife, Salarte, Doga Dernegi and SPEA – are responsible for the on-the-ground project implementation, leading on activities related to restoration, ecotourism, assessment of ecosystem services, biodiversity monitoring and improvement of management plans.

The Saltpan Initiative will develop and share best practices, build capacity and coordinate with other saltpan restoration efforts in the region.

**The project aims to achieve the following results:**

- Support best practice sharing and restoration measures
- Coordinate efforts with other saltpan restoration projects
- Support the development of priority wetlands, and especially salt pans, as functional natural habitats which support healthy populations of migratory and non-migratory birds, involving local stakeholders
- Carry out ecosystem service assessments at Oristano, Ghar el Melh and Ulcinj
- Identify potential sustainable income streams that can contribute to the sustainable management of the target sites
- Create or enhance the capacity of local communities living in the selected sites to understand and assess ecosystem services, and support them in communicating the results to all relevant stakeholders.



*“Our Mediterranean coastal wetlands are key sites for the conservation of migratory birds and other biodiversity. Over the years, the BirdLife Partnership has identified a network of Important Bird and Biodiversity Areas (IBAs) and tried to tackle the wide range of threats they face. Some of these important coastal wetlands are also salt pans, which provides a fantastic opportunity to work with site managers and local communities in order to develop a common vision for the future where people and biodiversity go hand in hand.”*

**Sofia Capellan**

Senior Conservation Officer for Important Bird and Biodiversity Areas, BirdLife



[www.birdlife.org/worldwide/projects/saltpan-recovery-project](http://www.birdlife.org/worldwide/projects/saltpan-recovery-project)



# MedIsWet

## The Mediterranean Island Wetlands Network

**There are more than 14,000 island wetland sites in nine Mediterranean countries with an area above 0.1 hectares. They are a key conservation priority, but they have suffered historically through conversion for development. Today, island wetlands face the same man-made pressures as other wetlands in the region. Given the limited nature of their freshwater supplies, natural island wetlands in particular are in need of an informed and joined up approach to restoring and maintaining their ecological functions.**

Ramsar resolution XII.14 addresses this point, and “Calls upon Contracting Parties in and around the Mediterranean to address urgently the significant human-induced pressures threatening island wetlands through effective and decisive legislative or executive measures and other actions which apply a precautionary approach that would prevent the destruction of island wetlands, while developing more long-term and integrated strategies or plans.”

MedIsWet is a network of partnerships and collaborations between governmental authorities, NGOs, research institutions, local communities, MedWet and the Ramsar Convention formed in 2017 in response to resolution XII.14. Over a five-year term it

aims to grow knowledge and raise awareness of the importance of these small, numerous and dispersed island wetlands among both the public and the scientific community; and to advocate for their improved protection at national and international levels.

Following a successful pilot project in the Greek islands, national inventories of island wetlands are also underway in Croatia, Cyprus, France, Italy, Malta, Spain, Tunisia and Turkey; and restoration activities have begun. Conservation measures, effective administrative frameworks and other best practices will be applied and shared across the MedIsWet network, enabling a broad and growing impact.



*“Given that we’ve lost almost 50% of our wetlands assets in the Mediterranean over the last 40 years, that we’re still losing wetland areas three times faster than forests, and that we’re in uncharted waters when it comes to extreme events caused by the climate crisis, it’s totally clear that we have to act now to protect these valuable ecosystems. Wetlands, especially on islands, are exceptionally important for preserving wildlife and safeguarding human existence!”*

**Thanos Giannakakis**

Project Coordinator, WWF-Greece

 [LINK sites.google.com/view/mediswet/home](https://sites.google.com/view/mediswet/home)



# TESSA

## Toolkit for Ecosystem Service Site-Based Assessment

The growing awareness of the importance of wetland ecosystem services around the Mediterranean is a positive development for the region, but in order to understand the nature and value of these services at particular locations, detailed site-specific information is needed. That's where TESSA – the Toolkit for Ecosystem Service Site-Based Assessment – comes in.

TESSA provides practical guidance on low-cost methods for evaluating the benefits people receive from nature, identifying, measuring and putting a meaningful value on ecosystem services in assessed locations. This information means practitioners can make better planning decisions which take the importance of natural systems fully into account.

The toolkit includes methods ranging from household surveys and participatory mapping to quantitative biophysical assessment. No specialist

ecosystem services valuation experience is needed on the part of the user.

One of TESSA's key aspects is to emphasise the importance of comparing estimates for alternative states of a site, for example before and after draining a wetland area for agricultural use. Decision-makers can assess the likely real net consequences of such a change, and hence the benefits for human-wellbeing that could be lost by conversion or gained by conservation of the land.



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TESSA has been used in all four wetland regions featured in this information pack.

Wetland ecosystem services that can be assessed with the toolkit include:

- Nature-based recreation and tourism
- Cultivated goods (farming and fishing)
- Harvested wild goods (lagoon fishery)
- Water quality
- Flood protection
- Cultural services (aesthetic and spiritual)
- Climate regulation (coming in phase 2)

*“TESSA results contribute to a better appreciation of the services provided by nature on the part of the local population and decision-makers, allowing them to make the right decisions for sustainable management and the conservation of biodiversity.”*

**Moujib Gabous**

Association 'Les Amis des Oiseaux', Ghar El Melh



LINK <http://tessa.tools>

<https://www.birdlife.org/worldwide/science/assessing-ecosystem-services-tessa>



# Wetlands: securing a sustainable future

**The Mediterranean Basin is currently facing the most severe ecological and climatic crisis of its long history, with unprecedented biodiversity loss on land and under water, water shortages, increasingly frequent storms and fires, coastal erosion and other major challenges.**

If nothing is done to mitigate these impacts, the unique ecosystems of the region and its growing population will be seriously affected over the next decades, with likely consequences including weakened human security, health problems, natural resource conflicts, increased migration, and economic collapse.

It's time for Mediterranean countries with their common history to join forces for their common future. They must save their precious natural capital to ensure the resilience of their unique ecosystems and their human societies, and maintain the political stability of a strategically important region of the world.



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Wetlands are among the best available nature-based solutions to address the many challenges of the climate and ecological changes taking place. Governments, private companies, local communities, NGOs and international organisations must act now in a coordinated way to secure a sustainable future for Mediterranean wetland ecosystems and the many crucial services they provide for wildlife and human well-being. Moreover, preserving Mediterranean wetlands is key to achieving the Sustainable Development Goals in the region by 2030.

**Off Your Map is a collaboration between the following partners, with the funding and support of the MAVA Foundation.**

<http://offyourmap.org/>

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## Contacts

To find out more about Mediterranean wetlands – and the work going on to save them – please contact any of the following people:

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