

The Salina Nature Reserve in winter, following its restoration © BirdLife Malta

CREATION OF FRESHWATER AND BRACKISH HABITATS

SALINA NATURE RESERVE - LIMITS OF ST PAUL'S BAY, MALTA

→ BACKGROUND

Salina Nature Reserve is one of Malta's largest wetland areas, featuring salt pans, a restored lagoon, and surrounding vegetation. It provides a vital habitat for various bird species and other wildlife. Once used for salt production, the site has been since transformed into a thriving ecosystem supporting diverse biodiversity.

Key ecological features include migratory and resident bird species such as Greater Flamingos, Black-winged Stilts, and Audouin's Gull. The wetland also hosts various waders, herons, and gulls. Native plant species like Tamarisk and Salicornia spp. flourish in the saline environment, playing a role in stabilizing the ecosystem. The presence of fish, amongst which the Mediterranean Killifish and the European Eel, and invertebrates supports the wetland's food web.

Salina is ecologically significant as a key stopover site for migratory birds traveling between Europe and Africa.

Restoration efforts by BirdLife Malta, funded by DIMFE, have revitalized the brackish wetland with improved water quality, habitat conditions, and visitor access, ensuring long-term conservation.

This wetland plays a crucial role in Malta's biodiversity and serves as an educational site, promoting wetland conservation and sustainable environmental practices.

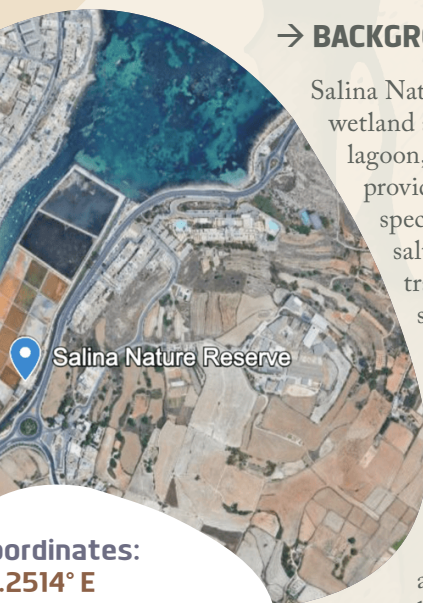


Wetland Type:
Brackish water



Protection Status:

- **Nature 2000: a Special Protection Area (SPA) and a Special Area of Conservation (SAC)**
- **Bird Sanctuary (local designation)**



Salina Nature Reserve

Coordinates:
14.2514° E
35.5641° N

Site Size: 13 ha

Area Restored:
1.2 ha

→ BEFORE RESTORATION

→ THREATS AND PRESSURES

1. Pollution & illegal dumping – unauthorized disposal of waste, including construction debris and general litter. This polluted the water and soil, and also disrupted natural habitats by completely covering the wet areas.
2. Poaching – Illegal hunting of birds threatened the site's role as a safe haven for both resident and migratory species. Disturbance from poaching reduced breeding success and deterred birds from using the area.
3. Vandalism – Acts of vandalism, particularly targeting trees and other vegetation, damaged the habitat and slowed ecological recovery efforts. Such destruction impacted the overall biodiversity and stability of the ecosystem.
4. Invasive flora – Several non-native plant species spread throughout the site, outcompeting native vegetation. These invasive species altered the natural balance, reducing food availability and suitable nesting areas for wetland wildlife.

→ OBJECTIVES

- Restore the natural habitat in Salina, providing a haven for various species of flora and fauna.
- Bring back breeding avifauna species like the Reed Warbler which over the years have been lost to a combination of disturbance and habitat degradation.
- Expand the wetland habitat footprint across the Maltese Islands.



The site before restoration with no water body
© BirdLife Malta



The site during the restoration works © BirdLife Malta

2000

square meters of open water created

→ IMPACT

1. **Environmental & biodiversity impact:** the removal of illegally dumped waste and invasive flora has improved habitat quality, allowing native plant species to thrive. Improved water management has restored the wetland's natural balance, benefiting species such as Mediterranean Killifish which

in turn attracted birds such as the iconic Common Kingfisher, highlighting the project's success in attracting migratory and resident species.

2. **Community & educational benefit:** the restoration created a cleaner, safer, and more aesthetically pleasing natural space for the local community. Information panels now line the boundaries of the wetland

while regular open days offer the community a chance to immerse themselves in the new surroundings of the wetland. Tools like bird ringing demonstrations have become an important environmental education tool.

Schools and nature enthusiasts now use the site for learning about wetland conservation, which has increased public awareness and engagement.



→ RESTORATION ACTIONS & METHODOLOGY

The restoration process involved a combination of ecological techniques aimed at improving habitat quality, enhancing water management, and promoting native biodiversity. Key actions taken include:

- **habitat reconstruction:** Degraded areas were restored by removing the dumped waste and creating a network of canals and small pools. This included creating a pond which has a constant freshwater run off routed into it.
- **removal of invasive species:** Non-native plant species were identified and systematically removed to prevent competition with indigenous flora, allowing native ecosystems to thrive. Over 700 trees and shrubs typical of wetland habitats were planted.
- **buffer zone:** The area was fenced off to prevent activities, like poaching and fishing, from harming the fauna of the site.
- **public engagement:** Two small wooden hides were set up, offering the public the opportunity to view the wetland and observe the wildlife within. Additionally, several information panels were installed, disseminating interesting facts about wetlands and their inhabitants.

These efforts are designed to promote long-term ecological balance while ensuring the wetland can sustain biodiversity and provide essential ecosystem services.

PROJECT DATES:

September 2022 to May 2023.

→ BUDGET & SOURCE OF FINANCE

- €291,003 from DIMFE (Donors Initiative for Mediterranean Freshwater Ecosystems)
- €35,000 from BirdLife Malta

→ WHO BENEFITS?

Apart from nature, the community in general has benefited from the restoration of the wetland. Over 1,200 members of the public have visited during the open days organized.

→ STAKEHOLDERS

BirdLife Malta, Ambient Malta, Environment and Resources Authority, Water Services Corporation.

→ AUTHORITIES SUPPORT

The project was fully supported by Ambient Malta, a government agency responsible for the preservation and enhancement of Malta's natural capital and biodiversity in rural, urban, coastal and marine ecosystems. It was also supported by the Environment and Resources Authority which oversees the management of Natura 2000 sites in Malta.

→ SOCIAL SUPPORT

The local council, which represents the community in the area, supported the project.

→ OTHER PARTNERS

DIMFE (Donor's Initiative for Mediterranean Freshwater Ecosystems) funded the works for this restoration.



The Salina today
© BirdLife Malta



Pruning Tamarisk Africana to then dig up canals in between the trees
© BirdLife Malta



Staff fixing new signage on the bird watching hide
© BirdLife Malta

→ LESSONS LEARNT

The Salina Wetland restoration project provided valuable insights into effective ecological management and highlighted key areas for improvement in future initiatives.

1. **Adaptive management is crucial:** flexibility in approach allowed effective responses to unforeseen challenges, such as delays in permitting, unavailability of contractors and any other issues that could affect original plans. Continuous monitoring and the ability to adapt management practices ensured the project stayed on track.
2. **Community involvement enhances success:** engaging local communities in restoration efforts not only fostered stewardship but also provided additional manpower and local knowledge, which proved invaluable during the project.
3. **Proper planning:** even the smallest site and project requires a proper degree of planning to ensure targets and deadlines are effectively met.
4. **Sustained maintenance is necessary:** initial restoration efforts are just the beginning. Ongoing maintenance, such as regular monitoring for invasive species, watering trees and shrubs, repairing the boundary fence and maintaining water management infrastructure, is essential to sustain long-term ecological health
5. **Restoring native biodiversity takes time:** while progress was visible, the full re-establishment of native ecosystems requires patience. Setting realistic timelines and expectations is key to maintaining momentum and support for such projects.

These lessons underscore the importance of a comprehensive and adaptable approach to environmental restoration, paving the way for more resilient ecosystems.

→ REFERENCES

www.birdlifemalta.org

→ CONTACT DETAILS

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"Wetlands are among the most vulnerable habitats due to human activity and climate change. Malta is a small country and so are its wetlands but their importance for our ecosystems is big. As a densely populated country, with construction and tourism being pillars of our economy, habitat and biodiversity suffer a lot. This is why BirdLife Malta has always believed it should play a role in habitat management. This small wetland was restored from massive construction dumping and today nature is taking over and is a unique site for our country."

MARK SULTANA (CEO)
BIRDLIFE MALTA



The MedWet Managers Network is a Mediterranean membership network of wetland managers dedicated to fostering the best management practices, knowledge exchange and public education about wetland values and services.

medwetmanagers.net

