

Conservation of Sahelo-Saharan fauna & their arid steppe habitats in Tunisia: report on 2025 conservation action and impact

Marie Petretto, Conservation Biologist, Marwell Wildlife

Sophie Whitmore, Conservation Science Coordinator, Marwell Wildlife

Tania Gilbert, Head of Conservation Science, Marwell Wildlife



Citation: Petretto, M., Whitmore, S. & Gilbert, T. (2026) Conservation of Sahelo-Saharan fauna & their arid steppe habitats in Tunisia: report on 2025 conservation action and impact. Marwell Wildlife, U.K.

Cover photographs: Aerial photo of a scimitar-horned oryx, *Oryx dammah*, herd in Dghoumes National Park, Tunisia. Photograph by Marie Petretto, Marwell Wildlife.

Acknowledgements

We would like to thank Artis Amsterdam Royal Zoo, Branféré Parc Animalier et Botanique, Dublin Zoo, Fondation de France, Fossil Rim Wildlife Center, Fota Wildlife Park, Montpellier Zoo, C2S2 - Partnerships for Species, Planckendael Zoo, Wrocław Zoo Foundation DODO, and Wrocław Zoo for their ongoing and generous support.

We are grateful for the partnership of the Réseau Enfants de la Terre, Tunisia, and the École de la Nature de Branféré, France.

As always, we appreciate the unwavering collaboration and hospitality of our friends and colleagues at the Direction Générale des Forêts (Ministry of Agriculture, Fisheries and Water Resources, Tunisia), and the Commissariats Régionaux au Développement Agricole (CRDA) of Tozeur, Kebili, Medenine, Tataouine, Sfax, Sidi Bouzid and Gafsa.



Contents



Foreword	1
2025 Summary	2
Megafauna monitoring and management <i>in Tunisian protected areas and beyond</i>	
Background & Aims	5
Project Achievements in 2025	6
Impact & Outcomes	11
Challenges	11
Lessons Learnt	12
Conclusions & Next Steps	13
Slender-horned gazelle <i>ex situ</i> population	
Background & Aims	14
Project Achievements in 2025	15
Impact & Outcomes	19
Challenges	20
Lessons Learnt	20
Conclusions & Next Steps	21
Children and nature in Tunisia	
Background & Aims	22
Project Achievements in 2025	23
Impact & Outcomes	26
Challenges	26
Lessons Learnt	26
Conclusions & Next Steps	27
Funding proposal	28

Hands-on conservation: Supporting nature's recovery

Foreword

Welcome to Marwell Wildlife's 2025 Annual Report on our collaborative conservation work in Tunisia. This report shares both our current projects and our vision for the future. None of this would be possible without the strong partnerships we have with local communities, NGOs, zoo partners, foundations, universities, and government agencies. Together, we are working not only to protect wildlife, but also to strengthen skills, support local livelihoods, and inspire the next generation of conservationists. From conserving threatened megafauna and their habitats, delivering wildlife surveys, training park staff, and creating new opportunities for children to connect with nature, we are proud to be working hand in hand with the Direction Générale des Forêts and other partners to safeguard Tunisia's extraordinary natural heritage.

Marwell Wildlife, in partnership with Tunisia's Direction Générale des Forêts, has been immersed in conserving Tunisia's diverse ecosystems and wildlife for over three decades. With an established on-site team since 2012, our strategies have evolved through hands-on experiences and strong partnerships to deliver real-world conservation impact on the ground. Our work has evolved over the years but always builds on the strong foundations established through our initial work on reintroducing the scimitar-horned oryx within Tunisia's protected areas.

Tunisia's protected areas cover over 485,000 hectares in the Sahel-Sahara region and aim to restore and protect emblematic megafauna species like addax, scimitar-horned oryx, slender-horned gazelle, and North African ostrich that are threatened with extinction in the wild. Our projects focus on the conservation of aridland fauna and habitats both within and outside of protected areas and are designed to ensure the long-term sustainability and resilience of conservation efforts in a changing world.

We are changing the format of our annual report on conservation activities in Tunisia to provide **clearer updates on the activities and impact of each project**, helping our partners, donors and supporters better understand our objectives, progress and achievements.

We would greatly appreciate your feedback on this new format and any suggestions that could help us improve next year's report.

Our Commitments: Find out more about our charitable activities and conservation impact at:

www.marwell.org.uk/conservation/achievements/our-achievements

Summary

In 2025, Marwell Wildlife and its partners continued to strengthen conservation action across Tunisia's aridland protected areas, combining long-term species recovery, habitat monitoring, capacity building, and community engagement. Work with the Direction Générale des Forêts and regional partners focused on improving the evidence base for conservation management, supporting resilient populations of threatened Sahelo-Saharan species, and developing stronger links between people and nature.



Megafauna Monitoring and Management Project: For reintroduced megafauna, including scimitar-horned oryx, addax, and North African ostrich, we continued regular population assessments, camera-trap monitoring, and habitat evaluations to inform protected area management. These activities are helping Marwell and its partners to understand population trends, habitat condition, biodiversity values, and emerging threats, while also supporting anti-poaching and monitoring capacity in key sites.



Slender-horned Gazelle Ex Situ Project: This project made important progress in 2025. New enclosures were constructed at Sidi Toui National Park, facilities at El Gonna National Reserve were improved, and three female gazelles were translocated from Sidi Toui to El Gonna to strengthen the second management site. Practical training in animal handling, husbandry, veterinary care, and population management helped build local expertise among keepers, veterinarians, and conservation partners. The establishment of an EAZA *Ex Situ* Programme also provides an important framework for future population planning.



Children and Nature Project: We began a new project building environmental education capacity around Dghoumes and Bou Hedma National Parks to support conservation efforts. Through schools, teacher coordination, local associations, and support from educational partners, the project is developing place-based learning that connects children, families, and communities with local biodiversity and conservation.

Across all projects, 2025 highlighted the importance of sustained partnerships, adaptive planning, and long-term donor support. Despite logistical, financial, and environmental challenges, the year delivered practical improvements for species management, stronger local capacity, and a clearer foundation for future conservation action in Tunisia.

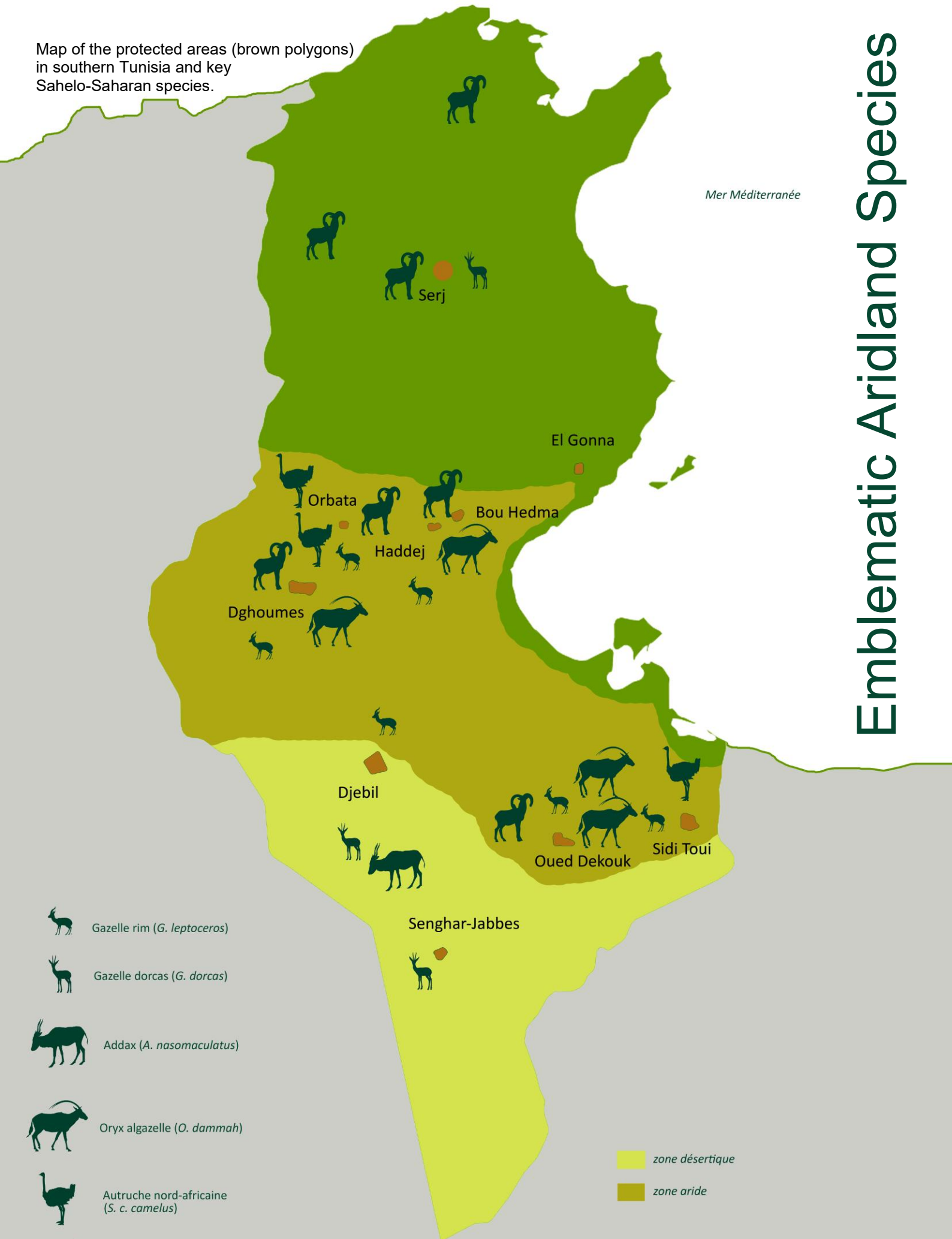


ABOVE

A solitary male scimitar-horned oryx (*Oryx dammah*) in the acacia steppe of Bou Hedma National Park.

Emblematic Aridland Species

Map of the protected areas (brown polygons) in southern Tunisia and key Sahelo-Saharan species.



 Gazelle rim (*G. leptoceros*)

 Gazelle dorcas (*G. dorcas*)

 Addax (*A. nasomaculatus*)

 Oryx algazelle (*O. dammah*)

 Autruche nord-africaine (*S. c. camelus*)

 Mouflon à manchette (*A. lervia*)

 zone désertique

 zone aride

Project report:

Megafauna monitoring and management in Tunisian protected areas and beyond

9

Protected areas
in southern
Tunisia



Background

Marwell, alongside numerous partners, has reintroduced scimitar-horned oryx *Oryx dammah*, addax *Addax nasomaculatus*, and North African ostrich *Struthio camelus camelus* to protected areas in Tunisia, where they share the landscape with native wildlife including dorcas gazelles, Barbary sheep, African golden wolves, striped hyaenas, houbara bustards and a rich diversity of other species.

Following the last release in 2007, Marwell has remained committed to the long-term monitoring and management of these reintroduced populations, their habitats and wider biodiversity.

Successful reintroductions depend on resilient biodiverse habitats. Monitoring population trends, habitat conditions, and other wildlife provides the evidence needed to identify emerging threats and inform management, particularly during periods of drought.

Since 2018, camera traps have complemented direct observations and other field surveys, generating one of the most extensive datasets on desert wildlife in the region and providing an important baseline for detecting change across four national parks.

Monitoring is designed to support decision-making by park guards, wildlife officers and national authorities, while also providing valuable data for researchers and students. Involving local teams directly in data collection and management helps build monitoring capacity within the protected areas themselves.

Aims & Objectives:

This project aims to create sustainable populations of megafauna in resilient and biodiverse habitats in and around protected areas in Southern Tunisia, specifically to:

1. Create sustainable scimitar-horned oryx, addax, and North African ostrich populations within Tunisia's protected areas.
2. Evaluate biodiversity in and around Tunisian protected areas.
3. Evaluate habitat quality and ecological resources for reintroduced and extant megafauna in and around Tunisian protected areas.
4. Make recommendations to enhance habitat quality and biodiversity in and around Tunisian protected areas.
5. Deliver training and share expertise and resources to enhance capacity and project resilience and delivery in Tunisia.

Project achievements in 2025

Objective 1: Create sustainable scimitar-horned oryx, addax, and North African ostrich populations within Tunisia's protected areas.



[^] ABOVE

A female scimitar-horned oryx with two consecutive offspring—an encouraging sign of reproductive success and population recovery at Dghoumes National Park.

Throughout 2025, Marwell maintained regular field presence across the protected areas supporting reintroduced megafauna, with at least one field visit each month from the team, alongside monitoring by Direction Générale des Forêts (DGF) park guards and local partners.

At Dghoumes National Park (NP) several years of severe drought, which eased at the end of 2024, had drastically reduced megafauna populations. Intensive monitoring with Association Tunisienne de la Vie Sauvage (ATVS) documented encouraging recovery during 2025; scimitar-horned oryx increased from 36 to 41 identified individuals, with births, deaths and body condition closely monitored. By November, 40 oryx had undergone body-condition assessment, while park guards increasingly contributed observations between monitoring visits.

At Bou Hedma National Park, continuous staff training has also helped refine the collection of behavioural and demographic data on scimitar-horned oryx. More accurate information on

reproduction and population dynamics strengthen population viability modelling and help inform the long-term management of Tunisia's oryx metapopulation. Additionally, a population reinforcement in North African ostrich is scheduled for 2026.

Across the programme, at least two park guards across eight protected areas contributed to monitoring, strengthening both the continuity of population surveillance and local capacity to identify and respond to changes.

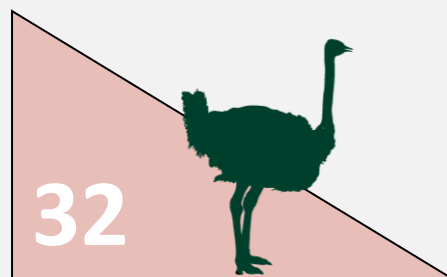
Reducing pressure on recovering populations

At Dghoumes NP, monitoring is complemented by targeted support to reduce illegal hunting. Marwell supports regular surveillance of sensitive areas, with approximately 100 km of patrols undertaken each week, helping maintain a visible presence and identify signs of illegal activity. When concerns are detected, information is shared with park management and the relevant authorities for follow-up.

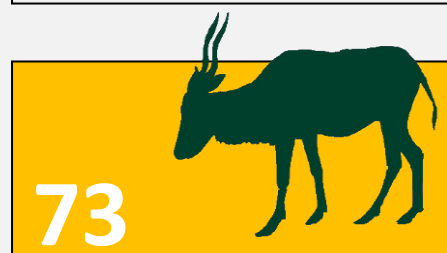


2025 in numbers

Population estimates



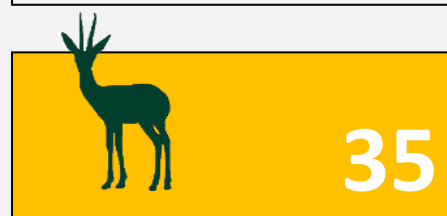
North African ostrich



Addax



Scimitar-horned oryx



Slender-horned gazelle (ex situ)



LEFT

From left to right, Najib, Boudhief and Taoufik monitoring team of Dghoumes NP, Tozeur.

Objective 2: Evaluate biodiversity in and around Tunisian protected areas.

Camera-trap networks and field patrols help us understand how threatened megafauna and the wider desert ecosystem are changing over time. In 2025, monitoring continued across Dghoumes, Bou Hedma, Sidi Toui and Senghar-Jabbes National Parks, with around 20 camera traps maintained in the field, primarily in Senghar-Jabbes.

Alongside continued data collection, particular emphasis was placed on turning the growing volume of monitoring data into useful conservation information. We are exploring how emerging technologies could make image processing faster and more efficient, with the aim of supporting more responsive monitoring and informing the future expansion of the camera-trap network.



ABOVE

The long-term use of camera-traps in Dghoumes NP document occurrence of shy species such as the striped hyena (bottom) or mating behaviour of dorcas gazelle (centre) and North-African ostrich (top).

Research informing conservation

Ewan Davies | MRes University of Southampton & Marwell Wildlife
2024–2025



Ewan adapted the Animal Welfare Assessment Grid (AWAG) to compare scimitar-horned oryx at Dghoumes National Park and Marwell Wildlife. His research identified different welfare challenges, including signs of water stress in wild oryx, and explored how welfare indicators could complement traditional monitoring of conservation populations.

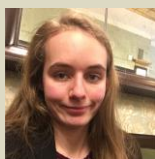
Marouane Louichi | Institut des Régions Arides



Building on his PhD research using Marwell's camera-trap data, Dr Marouane Louhichi of the Institut des Régions Arides in Médénine is now leading a new research agreement investigating predator–prey dynamics in Sidi Toui and Dghoumes National Parks. By examining when and where antelopes and their potential predators overlap, the research will help us better understand predation pressures and inform targeted management of vulnerable antelope populations.

Research informing conservation

Katherine Lester | MRes University of Southampton & Marwell Wildlife 2024–2025



Katherine investigated whether water-retaining tabias at Dghoumes benefit biodiversity. Surveys across 18 sites found significantly greater vegetation cover and bird species diversity around tabias than in adjacent plains and dunes, providing valuable evidence on the ecological effects of this habitat-management intervention.

Madeline Stewart | MRes University of Southampton & Marwell Wildlife 2023–24



Using satellite data from 2017–2024, Madeline examined changes in vegetation productivity and surface water at Dghoumes. Her research found positive effects associated with the protected area and local benefits of tabias for water retention, while declining productivity across the wider study area highlighted the importance of continued monitoring and adaptive management.

understand where and under what conditions Tunisia's protected areas can sustain healthy megafauna populations.

Objective 4: Make recommendations to enhance habitat quality and biodiversity in and around Tunisian protected areas.

Our long-term monitoring helps translate evidence into conservation action. In 2025, we continued working with the DGF, protected-area managers and scientific partners to interpret findings and identify practical management needs. Where evidence remains limited, we focus on addressing those gaps before developing site-specific recommendations, supporting an adaptive approach to managing megafauna populations and their habitats.

Objective 3: Evaluate habitat quality and ecological resources for reintroduced and extant megafauna in and around Tunisian protected areas.

As Tunisia's reintroduced megafauna populations develop, understanding the quality, availability and distribution of the resources they depend on is becoming increasingly important. In 2025, we worked with the DGF and scientific partners to identify priority questions and appropriate approaches for assessing habitat and resource availability.

Future work could combine field assessments and remote sensing to examine how resources vary across space and time, and how they respond to habitat management. Linking these findings with long-term population monitoring will help us



Objective 5: Deliver training and share expertise and resources to enhance capacity and project resilience and delivery in Tunisia.

Building conservation capacity in Tunisia is about more than delivering training: our ambition is for skills, experience and leadership to remain locally and be passed on to others.

Our partnership with ATVS provides a good example of this approach. Marwell initially trained and supervised Faouz during the fieldwork for her Master's degree, supporting her development in wildlife population monitoring. She subsequently took responsibility for training and supporting the ranger team at Dghoumes NP, progressively transferring those skills to the people responsible for monitoring wildlife on the ground. As this partnership with an emerging local NGO came to its planned conclusion in 2025, it left an important legacy: a motivated, well-organised and increasingly self-reliant monitoring team within Dghoumes National Park.

Capacity building also extended beyond individual protected areas. Marwell supported the organisation of the Sahelo-Saharan Interest Group (SSIG) meeting in Tozeur and supported park managers from the protected areas involved in our programme to participate, creating opportunities to exchange experience with conservation practitioners and specialists from across the region.

We also shared experience beyond the conservation community. Marwell contributed to the 13th African & Euro-Arab Veterinary Congress, held in Tunisia in April 2025 as part of World Veterinary Day, where the programme included a presentation on the history and conservation of the scimitar-horned oryx in Tunisia.

At the same time, new areas of work created new opportunities for skills development, particularly in *ex situ* management of slender-horned gazelles and community and school engagement, described in their respective sections of this report.

The strongest legacy of training is when those we have supported become the people training others



^ ABOVE

Faouz and Houssem (right, ATVS) worked alongside Boudhief (left), Head of Guards at Dghoumes National Park, to deliver a three-year monitoring training programme, passing on the skills they had developed while working with Marwell and other ecologists to the wider park team.

Impact and outcomes

BETTER EVIDENCE

Supporting better-informed decisions

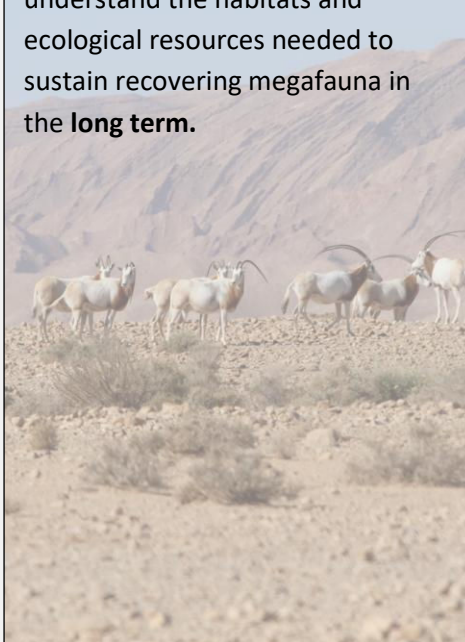
Long-term monitoring is building a stronger picture of Tunisia's megafauna populations and providing the evidence needed to support conservation management.



FROM SPECIES TO ECOSYSTEMS

Understanding what wildlife needs to thrive

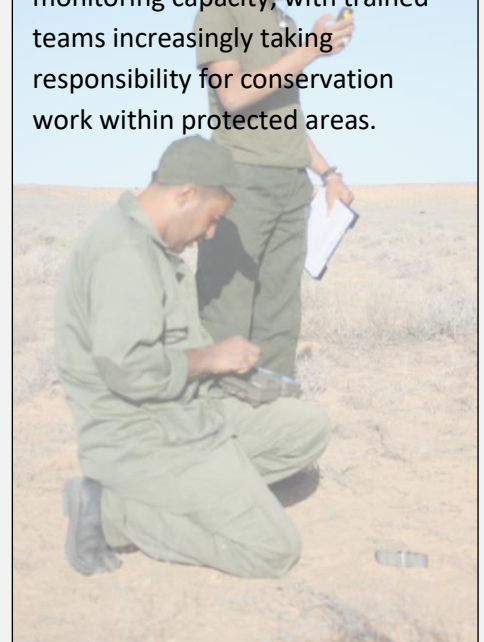
Our focus is expanding beyond individual populations to understand the habitats and ecological resources needed to sustain recovering megafauna in the **long term**.



LOCAL EXPERTISE

Building conservation capacity that lasts

Investment in people and partnerships is strengthening local monitoring capacity, with trained teams increasingly taking responsibility for conservation work within protected areas.



Challenges

Despite continued progress, several challenges were encountered:

- **Environmental Variability:** Drought and changing habitat conditions continue to affect forage availability, water resources, and the management needs of reintroduced megafauna populations. This reinforces the value of combining population monitoring with habitat assessments to inform timely interventions.
- **Logistical and Technical Constraints:** Maintaining camera-trap grids, servicing equipment, and collecting consistent data across remote sites requires careful coordination, reliable transport, and ongoing technical support.
- **Long-term Funding Needs:** Sustained monitoring, anti-poaching support, habitat management, and training depend on reliable funding streams. Continued donor support remains essential to maintain project momentum and translate monitoring results into practical management action. project aims to create sustainable populations of megafauna in resilient and biodiverse habitats in and around protected areas in Southern Tunisia.

Lessons learnt

- **Integrating** population, habitat, and biodiversity monitoring gives managers a stronger basis for adaptive decision-making.
- **Building local capacity** is essential for maintaining monitoring systems between Marwell visits.
- **Flexible project planning** is needed to respond to drought, equipment issues, changing site access, and emerging management priorities.



< LEFT

With over 35 years of conservation experience at the DGF, Abdelaziz Ben Mohamed now brings invaluable local knowledge and expertise to Marwell's work in Tunisia.

V BELOW

Mature pair of North African ostrich (*Struthio camelus camelus*) born in Sidi Toui National Park, as part of the Tunisian restoration plan for this once-endemic sub-specie



Conclusions and next steps

This project continues to strengthen the long-term management of reintroduced megafauna and their habitats in Tunisia's protected areas. By combining population assessments, camera-trap monitoring, habitat evaluation, and capacity building, Marwell Wildlife and the DGF are developing the information needed to support resilient populations of scimitar-horned oryx, addax, North African ostrich, and wider biodiversity. Moving forward, Marwell Wildlife and partners aim to:

1. Continue bi-monthly population assessments for key reintroduced megafauna species.
2. Maintain and re-deploy camera-trap monitoring to improve understanding of biodiversity trends and detect emerging threats.
3. Use habitat assessments and remote sensing to identify priority areas for habitat restoration and management interventions.
4. Provide practical recommendations to protected area managers to improve habitat quality and support population resilience.
5. Continue supporting anti-poaching and monitoring patrols where needed.
6. Deliver further training and technical support for park staff, guards, and local partners.
7. Develop sustainable funding proposals to maintain long-term monitoring, management, and capacity-building activities.

The project demonstrates the value of long-term partnership and evidence-based conservation in supporting threatened Sahel-Saharan species and the ecosystems on which they depend.

V

BELOW

Addax in Haddej, Bou Hedma National Park. This is outside of the addax's indigenous range but represents a vital conservation population in Tunisia



Project report:

Slender-horned gazelle *ex situ* population

2

**Ex situ breeding
centres
being improved**



Background

The slender-horned gazelle (*Gazella leptoceros*), an Endangered desert gazelle species, historically ranged across Algeria, Tunisia, Libya, and Egypt. Once abundant, numbers declined to an estimated 300–600 mature individuals, now restricted mainly to Algeria’s Grand Erg Occidental and Grand Erg Oriental, with small numbers in Tunisia and Algeria and an uncertain presence in Libya. Surveys confirm severe declines, with few remaining in Tunisia and none recently verified in Egypt. Declines are driven by hunting, disturbance, and habitat degradation. Recovery is unlikely without *ex situ* interventions, including population reinforcements, to prevent further loss.

Tunisia established an *ex situ* slender-horned gazelle population in Sidi Toui National Park (NP) in 1999, founded with confiscated animals and augmented with two gazelles from Planckendael Zoo, Belgium. About 30 gazelles remain under Direction Générale des Forêts (DGF) management, with four translocated to El Gonna National Reserve (NR) in 2020. Infrastructure in both facilities requires improvements to support long-term management and welfare. This *ex situ* group, possibly the most genetically diverse globally, is vital for conservation as an insurance population, a source for reintroductions within Tunisia, for establishing further *ex situ* groups, and caring for confiscated gazelles.

The slender-horned gazelle *ex situ* project in Tunisia is informed by the CMS Sahelo-Saharan Megafauna Action Initiative’s ‘Concerted Action for Sahelo-Saharan Megafauna’ (CMS, 2023) and the Slender-horned Gazelle *Gazella leptoceros* Conservation Strategy 2020-2029 (IUCN SSC ASG & RZSS, 2020).

Aims & Objectives:

To establish a sustainable *ex situ* population of slender-horned gazelles in Tunisia that optimises husbandry, animal welfare, and opportunities for conservation translocation to the wild, specifically to:

1. Improve the facilities and management of slender-horned gazelles in Sidi Toui NP and El Gonna NR to increase animal management standards and welfare.
2. Increase capacity for animal management, veterinary care, and conservation by delivering training.
3. Improve population sustainability by developing a population management plan and guidance on implementation.
4. Support the *ex situ* centres financially to maintain animal welfare and husbandry standards.
5. Evaluate Jbil and Senghar-Jabbes National Parks as potential release sites.
6. Connect protected areas and park staff to each other in a network to enhance project sustainability.

Project achievements in 2025

Objective 1: Improve the facilities and management of slender-horned gazelles in Sidi Toui NP and El Gonna NR to increase animal management standards and welfare.

During 2025, significant progress was made in transforming the facilities at Sidi Toui National Park and El Gonna National Reserve into complementary centres for the management of Tunisia's slender-horned gazelle population.

At Sidi Toui, two additional breeding enclosures and an enclosure for bachelor males were completed, bringing the facility to seven enclosures. Gazelles were reorganised into smaller breeding groups, providing greater control over reproduction and allowing animals to be managed according to age, sex and breeding requirements.

At El Gonna, two site evaluations helped reshape our plans for the reserve. Rather than functioning simply as a secondary holding facility, El Gonna is being developed as a second management site of equal importance to Sidi Toui, increasing both capacity and resilience within the national programme. Three females were transferred from Sidi Toui in October and introduced to a male at El Gonna, establishing a new breeding group.

Infrastructure at El Gonna was also redesigned around safer, lower-stress animal management. Fifteen new gates were installed and existing gates modified to facilitate animal movements during captures and health checks. Enclosures were partitioned, additional shade and shelter provided, and palm-leaf screening installed along shared fence lines to reduce aggression and the risk of injury between neighbouring groups.





SLENDER-HORNED GAZELLE

Objective 2: Increase capacity for animal management, veterinary care, and conservation by delivering training.

Training in 2025 combined practical animal-management skills with the development of a stronger local veterinary support network for the slender-horned gazelle population.

At Sidi Toui, Marwell keepers and veterinary staff worked alongside DGF and CRDA teams and Tunisian veterinarians sharing knowledge and expertise during hands-on animal management. Gazelles were health-checked, ear-tagged and microchipped, while park staff received practical training in handling, sorting and moving animals. By September, notable improvements were already evident in the confidence and effectiveness of the park team during animal-management procedures.

Veterinary capacity was also strengthened around El Gonna. Dr Fetah Souhayah, a private veterinarian based near the reserve, worked alongside Marwell's veterinary team, veterinarians from the National Centre for Animal Health Surveillance (CNVZ) and other local practitioners.



^ABOVE

Dr Fetah performing an ultrasound at Sidi Toui, assisted by breeding centre manager Mohamed Robei and his team.

v BELOW Darren Ives (left), Marwell senior hoofstock keeper during the training session with the Tunisian staff





Dr Souhayah was subsequently contracted to provide ongoing veterinary support at El Gonna and Sidi Toui, ensuring that local expertise is available when animals require care rather than relying solely on visiting teams.

The partnership with CNVZ adds another important dimension, supporting the identification and assessment of health and emerging disease risks and helping the programme develop appropriate preventative and response measures.

Objective 3: Improve population sustainability by developing a population management plan and guidance on implementation.

A major step forward in 2025 was establishing the foundations for coordinated long-term management of Tunisia's *ex situ* slender-horned gazelle population.

Gazelles were individually identified and their records consolidated, providing the information needed to follow individuals, breeding groups and movements between sites. Transport crates were also repaired and new crates constructed to enable animals to be moved safely between Sidi Toui and El Gonna. This capacity was put into practice in October, when three females were successfully transferred from Sidi Toui to El Gonna to establish a new breeding group.



^ABOVE

Female from Sidi Toui introduced to El Gonna

Significantly, an EAZA *Ex Situ* Programme (EEP) for the slender-horned gazelle was established at the end of 2025. This provides an international framework through which zoo and Tunisian expertise can be brought together to support the development of a population management plan, including future recommendations on breeding, animal transfers and maintaining genetic diversity.

These practical developments are complemented by genetic sampling, as a first step towards evaluating genetic diversity and using this information to guide future breeding decisions. The goal is not simply to increase numbers, but to maintain a healthy, genetically diverse population capable of supporting future conservation translocations.

Objective 4: Support the *ex situ* centres financially to maintain animal welfare and husbandry standards.

Improving facilities and developing expertise are only effective if high standards of care can be maintained every day. Throughout 2025, Marwell continued to provide financial and practical support to Sidi Toui and El Gonna, helping ensure that the resources required for routine husbandry, veterinary care and animal management were available to the teams responsible for the gazelles.



This ongoing support complements our investment in infrastructure and training, helping translate improved knowledge and facilities into consistent day-to-day welfare standards at both centres.

Support included veterinary provision, medicines and animal-management equipment, enclosure maintenance and improvements, and resources required for routine husbandry and animal transfers.

Objective 5: Evaluate Jbil and Senghar-Jabbes NPs as potential release sites.

The long-term aim of the programme is for a managed *ex situ* population to contribute to the recovery of slender-horned gazelles in the wild. Any future conservation translocation, however, must be based on a thorough understanding of potential release sites and the threats gazelles would face.

In 2025, camera-trap monitoring continued at Senghar-Jabbes National Park (NP), contributing to our understanding of the wildlife community and providing baseline information relevant to its future assessment as a potential release site.

Alongside ecological monitoring, we continued working with conservation partners and local communities to better understand human pressures and other threats that could influence the success of future releases. Follow-up projects and funding proposals were also developed to strengthen conservation work in Jbil NP and Senghar-Jabbes NP and build the ecological and social evidence needed before any future reintroduction is considered.

Objective 6: Connect protected areas and park staff to each other in a network to enhance project sustainability

As the slender-horned gazelle programme expands across multiple sites, connecting the people responsible for the animals is essential. In 2025, we continued to strengthen links between Sidi Toui and El Gonna, encouraging staff to share experience, work together and develop common approaches to gazelle management.

Staff from El Gonna joined practical training at Sidi Toui and participated in exchange visits, creating opportunities for teams to learn directly from one another and build relationships beyond individual training events. Tunisian veterinarians were also brought into activities alongside Marwell, DGF and the two site teams, helping develop a wider national network of expertise available to support gazelle health and management. Some communication channels have been established to share updates, key achievements and more importantly, hasten people mobilization when needed.

The network extends beyond the breeding centres. Marwell supported protected-area managers involved in our conservation programme to participate in a dedicated side-event during the Sahelo-Saharan Interest Group meeting in Tozeur (May 2025), bringing managers together and connecting them with the wider regional conservation community. At the end of the round-table participants wrote the 'Declaration of Tozeur' that will be endorsed by key institution to support the DGF in this conservation initiative.

Impact and outcomes

BETTER CARE, STRONGER POPULATIONS

Supporting better-informed decisions

Improved infrastructure, smaller breeding groups and safer animal-management systems are strengthening welfare and enabling more active management of Tunisia's *ex situ* population

LOCAL EXPERTISE

Building the skills to manage the population in Tunisia

Practical training and veterinary partnerships have increased the confidence and capacity of park staff and local veterinarians, with expertise increasingly available close to both centres.

ONE CONSERVATION PROGRAMME

Connecting animals, people and expertise

Sidi Toui and El Gonna are increasingly managed as complementary sites, supported by shared expertise, individual animal records and the new EAZA Ex Situ Programme

A PATH BACK TO THE WILD

Keeping reintroduction at the heart of the programme

Monitoring of potential release areas and work to understand threats are building the evidence needed to assess when and where future conservation translocations could be successful.



Challenges

Despite continued progress, several challenges were encountered:

- **Managing growth across two sites:** Developing Sidi Toui and El Gonna as complementary breeding centres requires continued investment in infrastructure, animal transfers and coordinated management, while rising construction costs remain a significant constraint.
- **Maintaining consistent standards of care:** Ensuring high standards of husbandry and veterinary care across two remote sites remains challenging and requires continued training, reliable local veterinary support and appropriate equipment and resources.
- **Preparing for future reintroduction:** Returning slender-horned gazelles to the wild remains a long-term challenge. Potential release sites require further assessment, while threats must be sufficiently understood and addressed before conservation translocations can be considered.

Lessons learnt

- **Flexibility is essential** adapting the original plan to strengthen El Gonna as a second breeding centre has increased the resilience of the programme.
- **Infrastructure and expertise must develop together:** improved facilities are most effective when accompanied by practical training, veterinary support and stronger day-to-day animal management.
- **The population needs to be managed as a whole:** closer coordination between Sidi Toui and El Gonna, supported by individual records and strategic animal transfers, is essential for long-term population management.
- **Reintroduction requires preparation beyond the breeding centres:** building a sustainable *ex situ* population must go hand in hand with understanding potential release sites and addressing threats in the wild.

2

Ex situ breeding centres being set up

Building a population with a future



Conclusions and next steps

2025 marked an important transition for Tunisia's slender-horned gazelle programme. Improvements to facilities, animal management and veterinary capacity are helping transform Sidi Toui and El Gonna into two complementary conservation breeding centres, while stronger links between their teams are creating the foundations for a coordinated national programme.

The establishment of the EAZA *Ex Situ* Programme provides a new framework for bringing Tunisian and international expertise together. The next phase will focus on managing the population as a whole—maintaining healthy, genetically diverse breeding groups while building the skills, infrastructure and evidence needed for these gazelles to contribute ultimately to recovery in the wild.

Our next priorities:

1. Expand & strengthen: Continue improving the infrastructure at El Gonna, including additional breeding enclosures, so that the two centres can support complementary populations and provide greater resilience.
2. Manage as one population: Develop and implement a population management plan, maintain individual records and veterinary oversight, and support strategic transfers between Sidi Toui and El Gonna. Rescued or confiscated gazelles will be incorporated where appropriate.
3. Build local expertise: Continue practical and peer-to-peer training, strengthening a network of Tunisian keepers, veterinarians and protected-area staff able to manage the population sustainably.
4. Continue to provide the *ex situ* population with veterinary and animal management care, when needed.
5. Prepare for a return to the wild: Continue evaluating Jbil and Senghar-Jabbes National Parks, including habitat suitability, social-economic factors, and threats to determine whether, and under what conditions, they could support future slender-horned gazelle reintroductions.

The success of this project so far highlights the value of collaborative conservation efforts and provides a model for future initiatives aimed at safeguarding endangered species in aridland ecosystems. We are particularly grateful to the donors and partners who have supported this project and made the work possible.

Project report:

Children and nature in Tunisia

2

**Pilot schools
engaged in
Dghoumes
National Park
surroundings**



Background

The "Children and Nature in Tunisia" project, funded by the Fondation de France as part of its Resilient Ecosystems program, aims to strengthen the link between the younger generations and their natural environment and ultimately aims to change local communities' perception and attitude toward aridland use and conservation.

Based on two pilot sites (Dghoumes and Bou Hedma National Parks) where scimitar-horned oryx reintroduction led to wider ecosystem restoration, the project introduces a place-based pedagogy built with the technical support of the Ecole de la Nature de Branféré (ENB, France) and the local anchoring of the Réseau des Enfants de la Terre (RET, Tunisia), connecting teacher-coordinators, village associations and families.

It builds on nearly 40 years of Marwell Wildlife's collaboration with the Direction Générale des Forêts (DGF, Ministry of Agriculture, Water Resources and Sea Fisheries) and on nearly 15 years of RET' partnership with the Ministry of Education to integrate biodiversity and conservation into school and extracurricular pathways, and to develop a positive perception of ecological restoration programmes in the Dghoumes and Bou Hedma regions.

Aims & Objectives:

To develop and institutionalise environmental pedagogy in the regions of Dghoumes and Bou Hedma, rooted in local schools and communities, to strengthen the relationship between children and nature and support long-term conservation, specifically to;

1. Integrate conservation education into schools.
2. Train local educators to deliver nature-based education.
3. Raise awareness and actively engage pupils in nature conservation issues and action.
4. Strengthen local capacity for nature conservation.
5. Monitor and evaluate the project integration of conservation programmes in local schools.

Project achievements in 2025

Objective 1: Integrate conservation education into schools.



ABOVE

Pupils experimenting the tools brought by our project partner, the Ecole de la Nature de Branféré, in Dghoumes Primary School, Tozeur.

The project began by establishing the institutional and educational framework for working with schools around Dghoumes and Bou Hedma National Parks. The programme was developed with the Ministry of Education, DGF and regional partners, participating schools were identified, and teachers were recruited to establish and lead Nature Clubs.

Activities were launched around Dghoumes through dedicated school launch days, followed by a programme combining regular Nature Club activities, visits to Dghoumes and Bou Hedma National Parks, and events connecting conservation with local culture and heritage. The programme around Bou Hedma will be formally launched in October 2026.

Objective 2: Train local educators to deliver nature-based education.

Teachers are at the heart of the project's long-term approach. During the school year, selected teachers and project Engagement Officers will receive Training of Trainers at École de la Nature de Branféré in France, introducing participatory approaches to environmental education.

This was followed by cascade training in Tunisia, allowing the first group of trained educators to share their experience and methods with other participating teachers and progressively build local capacity to deliver conservation education independently.



ABOVE

Dghoumes primary school teachers attending the working session led by Marwell, the ENB, the RET, the School Director and Regional Education inspector.

Objective 3: Raise awareness and actively engage pupils in nature conservation issues and action.

Nature Clubs provide children with regular opportunities to explore biodiversity and conservation beyond the classroom. Activities have been complemented by visits to the national parks, giving pupils direct experience of the wildlife and landscapes they are learning about.

The programme also connects natural and cultural heritage. We will take the occasion of the Culture and Natural Heritage Day in April 2026 to bring pupils together through creative activities, including a painting competition, helping children explore the relationship between their local environment, traditions and identity.



^ABOVE

Moufida, Dghoumes Engagement Officer, leads an environmental education activity at Intileka School in Dghoumes village

Objective 4: Strengthen local capacity for nature conservation.

Dedicated Engagement Officers were recruited to support teachers, coordinate activities and strengthen links between schools, protected-area teams and local partners. Together with the Nature Club teachers and cascade-training approach, they are helping establish a local network capable of carrying the programme forward.

Work also began on renewing the interpretation at Dghoumes ecomuseum, with educational content and visitor experiences being developed to make the park and its biodiversity more accessible to school groups, local communities and other visitors..

Objective 5: Monitor and evaluate the project Integration of conservation programmes in local schools.

The first phase has provided an opportunity to test the programme around Dghoumes before extending it more fully to Bou Hedma Village. Experience from the launch activities, nature clubs, park visits and teacher training is being used to refine the approach and prepare the next phase of implementation.

The October 2026 launch around Bou Hedma National Park will extend the programme to the second project landscape, building on the methods and lessons developed around Dghoumes.

Impact and outcomes

CONNECTING CHILDREN WITH NATURE

Nature Clubs, park visits and school activities are giving pupils new opportunities to discover their local biodiversity and protected areas, connecting classroom learning with direct experiences of nature and local heritage.

BUILDING LOCAL EDUCATIONAL CAPACITY

Training teachers and Engagement Officers, including through the Training of Trainers and cascade approach, is building local capacity to integrate conservation into school and extracurricular activities and progressively lead environmental education locally.

STRENGTHENING LINKS BETWEEN SCHOOLS & PROTECTED AREAS

Joint activities involving schools, educators and protected-area teams are creating stronger connections between local communities and Dghoumes and Bou Hedma National Parks. The development of new ecomuseum interpretation will provide an additional resource to strengthen these connections.

Challenges

Despite continued progress, several challenges were encountered:

- **Coordination Across Partners:** Delivering a school-based conservation programme requires alignment between schools, teachers, associations, protected area teams, families, and technical partners. Clear communication and agreed roles are essential to maintain progress.
- **Adapting Materials to Local Contexts:** Educational content needs to be practical, age-appropriate, and rooted in the local landscapes, species, and experiences of pupils in Dghoumes and Bou Hedma villages. This requires close collaboration with local educators and communities.
- **Sustaining Engagement Over Time:** Initial enthusiasm must be supported through regular activities, follow-up visits, and resources for teachers and associations so that the project becomes embedded beyond the pilot phase.

Lessons learnt

- Place-based education is most effective when it reflects local species, landscapes, culture, and community priorities.
- Training and supporting teachers is essential for embedding conservation learning into normal school practice.
- Families and local associations can help extend the impact of school activities into the wider community.
- Monitoring changes in knowledge, attitudes, and participation from the beginning helps demonstrate impact and improve delivery.

Conclusions and next steps

This Children and Nature project has established a strong foundation for environmental education in the Dghoumes and Bou Hedma regions. By working through pilot schools, local associations, families, and technical partners, the project is helping children build a lasting connection with nature while strengthening local support for conservation. Moving forward, Marwell Wildlife and partners aim to:

1. Complete and refine the adapted educational programme with teachers, ENB, RET, and local partners.
2. Continue classroom and outdoor sessions focused on local biodiversity, protected areas, and emblematic species.
3. Deliver further teacher training and provide educational kits and practical materials for participating schools.
4. Support regular nature club activities, school visits, and pupil-led engagement activities.
5. Strengthen the role of local associations as educational relays and community organisers.
6. Involve families through exhibitions, workshops, and intergenerational activities that connect conservation with local livelihoods and heritage.
7. Use the monitoring framework to assess changes in participation, knowledge, and attitudes, and adapt the programme accordingly.
8. Explore opportunities to scale the approach to additional schools and communities around other protected areas.

The project highlights the importance of investing in young people, teachers, and communities as long-term partners in nature recovery and protected area stewardship.

V

BELOW

Celebrating nature together. At Intileka School's end-of-year ceremony, pupils from the two project-supported Nature Clubs came together to celebrate their commitment to Tunisia's natural heritage.



Funding proposal

The annual costs of operations in Tunisia are underwritten by Marwell Wildlife, maintaining our presence in-country and ensuring the continuity of work that is essential for long-term success. We have the opportunity and ability to build on our work and enhance conservation impact and are seeking funding for the delivery of projects. Hence, we would very much welcome the support from partners who share our goals of achieving sustainable conservation in North Africa. By supporting local development and promoting the motivation and the skills of the next generation of Tunisian ecologists, our programme could provide great and inspiring stories to emphasise the contribution of the partners of our work.

Project: Megafauna monitoring and management in Tunisian protected areas and beyond.

Cost item	Cost basis	£
Contracting a Tunisian ecologist to monitor key species, analyse data	£1300 per month (fees & expenses), 12 months	15,600
Tunisian field assistant fees	£850 per month (fees & expenses), 12 months	10,200
Private guard in Dghoumes National Park	£315/month – 12 months	£3,780
Monitoring protected areas by Marwell team	Mileage: 1500m/mo @ 0.55p per mile Subsistence: 16d/mo @ £14/d	9,900 2,688
Training and skill development for protected area staff	2 training events, totalling 15 days @ £600/event	1,200
Batteries & SD cards for camera traps	8 batteries/camera, 4 times a year, 40 cameras @ £0.5/batt £4/card x 40 – 4 times a year	1280
Small equipment for protected area staff	e.g. Binoculars, camera, camera traps	4,000
Emergency care, diagnosis and management of antelope and ostrich	Estimated: 5 oryx, 5 addax, 2 ostrich per year, @ £60 per animal (drugs, consumables)	720
Sampling and analyses	parasitology, histology, serology etc.+ storage and shipping @ £50/animal, estimated 20 individuals per year	1,000
Anti-poaching patrols		
Fuel for daily patrols in Dghoumes National Park	£75 per month	900
Vehicle maintenance & registration	£500 per year	500
Small equipment including binoculars	£300 per year	300
TOTAL		52,068

Capacity building and grassroots civil society organisation support (across projects)

Cost item	Cost basis	£
Friends of Jbil – establishment of an office	Equipment, rent, utilities, awareness raising on conservation in the Grand Erg	3,000
Dghoumes cultural society	Awareness campaign for conservation in Dghoumes National Park	1,000
Internship & training support for Tunisian students (food, accommodation, transport, material and logistics)	X2 ecology/veterinary students a year	1,500
TOTAL		5,500

Project: Slender-horned gazelle *ex situ*.

Cost item	Cost basis	£
Tagging the gazelles, instigating record keeping and training the staff in El Gonna NR and Sidi Toui NP (Population management & animal handling training for staff)	£3,500 per session, 1 per year	3,500
Population management training (including ZIMS) for DGF and <i>ex situ</i> centre staff	1 training course, plus ongoing support	3,500
Placements for El Gonna and Sidi Toui staff at regional zoos for keeper training	£200 a week, 2 weeks, 8 people	3,200
Annual ZIMS registration fees for El Gonna and Sidi Toui	£450 per site, 2 sites	900
Genetic analyses of global slender-horned gazelle populations to identify population management and reintroduction strategy	Sample collection, shipment, laboratory analyses, data analysis pipelines, & results dissemination	35,000
Modifications & maintenance of gazelle enclosures at El Gonna and Sidi Toui to improve animal husbandry including blind fencing made of palm or reeds	£2,500 per site – 2 sites	5,000
Mileage, accommodation and subsistence to visit <i>ex situ</i> centres	500 miles per visit, 10 visits	2,750
Translocating gazelles from Sidi Toui NP to El Gonna NR	£600 per crate x 4 crates. Mileage, veterinary care, health checks	5,000
Food provision	£4 per 25kg-bale of hay, ~1,5 bale/day £100 per 50kg pellets, ~30bags/year	2,190 2,700
Veterinary prevention and emergency care	£450 per month for routine check + av. £30/mo: vaccines, consumables	5,760
Public engagement signage	Sidi Toui NP and El Gonna NR	3,000
Habitat assessments of Jbil and Senghar-Jabbes National Parks for future potential reintroductions.	Mileage, accommodation, subsistence, ecologist fees	5,000
Socio-economic assessments of Jbil and Senghar-Jabbes National Parks for future potential reintroductions.	Mileage, travel, accommodation, subsistence, social scientist fees	10,000
Camel patrols in the Grand Erg to raise awareness of gazelle conservation, gather data on habitat quality and human land use.	£5,000 per patrol – 6 patrols a year	30,000
TOTAL		117,500

Project: Children and nature: This project is fully funded for 2026.

£480



Pays for a Tunisian veterinarian to care for the slender-horned gazelle at El Gonna for one month

£2,600



Contracts a Tunisian ecologist for two months

£3,780



Pays for a private guard at Dghoumes National Park for a year to support scimitar-horned oryx and ostrich conservation

£900



Pays for the fuel for anti-poaching patrols in Dghoumes National Park for a year

£3,500



For animal management training in Tunisia

£35,000



Pays for a global study on slender-horned gazelle genetics to inform population management and reintroduction conservation



**Marwell
Wildlife**

For more information, please visit
www.marwell.org.uk/conservation