



**Marwell  
Wildlife**



# Conservation of Sahelo-Saharan fauna & their arid steppe habitats in Tunisia: report on 2023 conservation action and impact

**Marie Petretto**, Conservation Biologist, Marwell Wildlife  
**Tania Gilbert**, Head of Conservation Science, Marwell Wildlife



THE QUEEN'S AWARDS  
FOR ENTERPRISE  
INTERNATIONAL TRADE

**Citation:** Petretto, M. & Gilbert, T. (2024) Conservation of Sahelo-Saharan fauna & their arid steppe habitats in Tunisia: report on 2023 conservation action and impact. Marwell Wildlife, U.K.

**Cover photographs:** calf scimitar-horned oryx taken by a Bushnell camera trap in the arid steppe of Dghoumes National Park, Tunisia. Photograph by Marie Petretto, Marwell Wildlife,

## Acknowledgements

We would like to thank Dublin Zoo, Parco Faunistico Le Cornelle, Wrocław Zoo Foundation DODO, Wrocław Zoo, Branféré Parc Animalier et Botanique, Artis Amsterdam Royal Zoo, Planckendael Zoo, and Fossil Rim for their ongoing and generous support.

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, Kébili, Medenine, Tataouine, Sidi Bouzid and Gafsa.

We are especially grateful to our team in Tunisia: Amira Saidi, Mohamed Khalil Meliane and the late Abdelkader Chetoui.



ARTIS



# Supporting Nature's Recovery: Marwell's Conservation Health Approach

## Foreword

**D**ear Supporters,

Welcome to Marwell's annual report detailing our conservation endeavours in Tunisia. For over three decades, we have been immersed in conserving Tunisia's diverse ecosystems and wildlife. With an established on-site team since 2012, our strategies have evolved through hands-on experiences, summarised in this report highlighting our present initiatives and future aspirations. Collaborating with partners including Non-Government Organisations (NGOs), universities, and governments across the region, our efforts extended beyond boundaries, empowering local communities, park rangers, veterinarians, and students. Throughout this report, we aim to showcase how our ongoing and upcoming initiatives align with our overarching global conservation objectives, particularly focusing on Conservation Health's core pillars: Animal Health, Connection, and Knowledge Exchange & Innovation. From reintroducing the scimitar-horned oryx and safeguarding threatened aridland species to conducting extensive camera-trap surveys to evaluate biodiversity, capacity-building programmes, and educational initiatives, together with the Direction Générale des Forêt in Tunisia, we remain steadfast in conserving Tunisia's remarkable biodiversity.

Our Commitments:

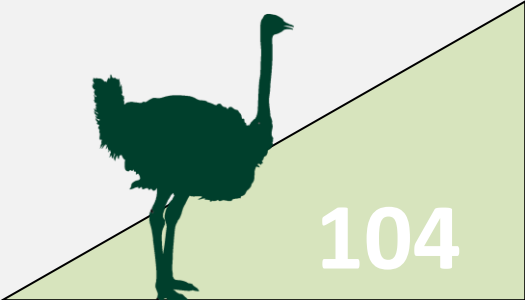
Find out more about our charitable activities and conservation impact at:

[www.marwell.org.uk/conservation/achievements/our-achievements](http://www.marwell.org.uk/conservation/achievements/our-achievements)

Where we share highlights of our work to restore nature, promote sustainable living, and help catalyse change for people, animals, and ecosystems in our annual impact report.

# 2023 in numbers

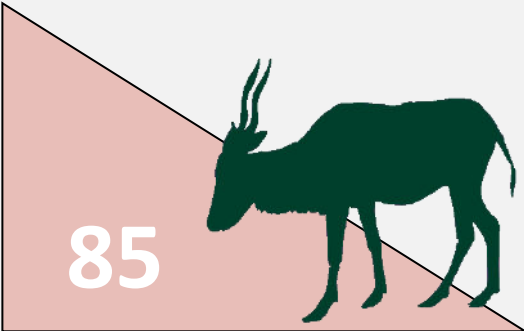
## Population estimates



North African ostriches



Scimitar-horned oryx



Addax



Slender-horned gazelles (*ex situ*)

We would like once again to extend our heartfelt gratitude to those individuals and organisations for their contribution and commitment to the conservation of aridland wildlife and their habitats in Tunisia; we could not have achieved what we have without you. Your continued support will help us build on this success and make a real difference to Sahelo-Saharan wildlife in Tunisia. Thank You!

# Contents

Introduction	1
Celebrating Success with WAZA	2
Continued expansion of conservation efforts:	4
The outcomes and outputs of long-term camera trap surveys in Tunisia's aridlands	4
Camera-trap monitoring	
Dghoumes NP	6
Jbil NP	6
Sidi Toui NP	7
Senghar-Jabbes NP	7
Empowering Conservation:	8
Fostering collaboration and building capacities With the Association Tunisienne de la Vie Sauvage (ATVS)	
Slender-horned gazelle Conservation:	9
Progress in strengthening a source population in Tunisia	
Empowering Tomorrow's Conservation Leaders:	13
Marwell's educational initiatives	
Collaborative insights:	15
Branféré's Director visits our in-situ conservation project	
Marwell's Global Engagement and Charitable Involvement in 2023	17
Proposed activities for 2024/2025	18
Costs and funding proposal	19

# Introduction



**M**arwell Wildlife began working on aridland conservation in Tunisia in the 1980s, as the government revised its Forest Code, signed international agreements for migratory species and biodiversity, and established a network of protected areas. Today, over 485,000 hectares in the Sahelo-Saharan region are protected through eight National Parks and Reserves. These protected areas aim to restore emblematic species like addax, scimitar-horned oryx, and North African ostrich that are locally or globally extinct.

Marwell Wildlife's initial focus was the reintroduction of scimitar-horned oryx but over the past 30+ years, we have worked closely with our Tunisian partner, the Direction Générale des Forêts (DGF), on restoring and conserving priority species and their aridland ecosystems. In 2020, Marwell Wildlife and the DGF renewed their Memorandum of Understanding, solidifying their partnership and the framework for future conservation efforts.

These conservation efforts focus on scimitar-horned oryx, addax, North African ostrich, and slender-horned gazelle and are based on close collaboration with Tunisian partners at Jbil National Park (NP), Senghar-Jabbes NP, Dghoumes NP, Bou Hedma NP, the Haddej reserve, Sidi Toui NP, and Oued Dekouk National Reserve (NR). We also work to enhance the skills and expertise of local partners to ensure the long-term sustainability of conservation efforts, particularly for *ex situ* breeding centres for slender-horned gazelle and North African ostrich.

Over the years, Marwell Wildlife has gained extensive knowledge of aridland fauna and their environments, allowing us to better understand what influences conservation success.

## V

### BELOW

A young dorcas gazelle (*G. dorcas*) and its family group photographed by a BUSHNELL camera-trap in Sidi Toui NP



# Marwell Wildlife: Celebrating Success at the WAZA Conference

# 40

**-year absence before conservation efforts reversed the scimitar-horned oryx's Extinct-In-the-Wild status**



## As Scimitar-horned Oryx Regains its Wild Status

The scimitar-horned oryx, an emblematic species of aridland ecosystems, is representative of an entire community of wildlife, plants, and habitats. A momentous occasion arrived on December 11th, 2023, when the International Union for Conservation of Nature (IUCN) changed the threat status for the scimitar-horned oryx from 'Extinct in the Wild' to 'Endangered' on the IUCN SSC Red List of Threatened Species. This reclassification stands as a testament to the success of long-term reintroduction and conservation efforts in its indigenous habitat. This remarkable achievement pays tribute to the dedication and commitment of many organisations that have supported the species' return to the wild.

The change in Red List status in 2023 came after Marwell Wildlife was honoured to receive the prestigious World Association of Zoos and Aquariums (WAZA) Conservation Award in October 2023 in recognition of our long-term commitment to conservation efforts for scimitar-horned oryx in Tunisia and beyond.

We extend our heartfelt gratitude to all our partners, patrons, and supporters whose unwavering contributions have made the vital conservation work a reality. Your donations, visits, purchases, and support have been pivotal to our conservation success.

The journey to restore the scimitar-horned oryx and their habitats is a testament to persistence and belief in the possible. Marwell and our partners' collaborative efforts played a pivotal role in reintroducing these antelopes, absent for 80 years in Tunisia and previously declared extinct in the wild across their global range.

Check out our video on  **YouTube**

and subscribe to our Youtube channel:

<https://youtu.be/tHKpy6M1hj4?si=6cWULjcyRSONXG4a>



**ABOVE**

Tania GILBERT and MARWELL's team holding the 2023 WAZA Conservation Award

In Tunisia, the oryx metapopulation thrives in its natural habitat without direct human management, provision of supplemental food or protection against predators and pathogens. However, the challenges posed by human land use have limited available habitat for these large antelopes outside of protected areas resulting in careful monitoring of a population of approximately 200 oryx in four protected areas. This pragmatic approach mirrors that adopted by many countries striving to conserve biodiversity and emblematic species. The data and accumulated experience in Tunisia provide invaluable insights for similar conservation programmes worldwide.



# Continued Expansion of Conservation Efforts

## The Outcomes and Outputs of Long-Term Camera trap Surveys in Tunisia's Aridlands



Since the last release of scimitar-horned oryx and addax from European (EEP) and North American (SSP) zoos 17-years ago, these populations have settled in their natural habitats. Evaluating the changing biodiversity in aridland ecosystems across protected areas remains a central focus of our work to provide vital information to protected area managers. Our commitment to conservation, bolstered by remote camera grids and local engagement, continues to yield remarkable results. The comprehensive data collected support ongoing conservation action, fostering a better understanding of Tunisia's unique ecosystems.

In July 2018, we initiated an extensive biodiversity monitoring programme in collaboration with our partners at the DGF and park managers. This programme involved deploying and regularly replacing remote camera devices strategically positioned approximately 1.5 km apart, covering the conservation areas of the national parks. By 2023, we had established monitoring grids in Dghoumes, Sidi Toui, Senghar-Jabbes and Jbil NPs.

<  
**LEFT**

Amara DERBEL (left) and Saad RIJLI (right), trained guards from Sidi Toui NP, collecting Camera-trap data

# 73

Camera-traps  
currently  
deployed

across four  
national parks

We focused our efforts on the national parks where oryx and addax were released. The cameras are set to continuously operate, detecting and photographing any movement within a 10-meter range. This monitoring tool enables detection of elusive animals that are otherwise challenging to observe and allows for unbiased behavioural studies unaffected by human presence. It significantly increases the volume of simultaneous data, facilitating more robust statistical analyses and enhancing the value of ecological observations. Collaborating with the DGF, we established a programme to document and disseminate the ecological megafauna biodiversity of Tunisia's southern protected ecosystems while training park personnel in its use.

By the end of 2023, we handed responsibility of regular maintenance and management of the camera traps to the park guards, who took over data collection under our guidance. This hands-on involvement empowered and engaged local communities from which the guards are employed, showcasing tangible conservation outcomes and encouraging greater involvement in wildlife conservation. We installed 15 cameras in Senghar-Jabbes NP in 2022 and have deployed 26 cameras in Sidi Toui NP since 2020, 12 cameras in Jbil NP since 2019, and 20 cameras in Dghoumes NP since 2018. Through this programme, we aimed to provide a comprehensive assessment of the biodiversity of these restored arid ecosystems. We patiently waited to reach the plateaus of species accumulation curves, indicating no new species detections, before we decided in December 2023 not to replace all of the cameras in future after they wear out. However, over the last few years our persistence has paid off, and we have confirmed the presence of rare species, and verified the absence or scarcity of other species. Through 2024, we will continue managing the camera traps still deployed, replace those malfunctioning in order to ensure a continuing monitoring in key areas, consolidate and share data with researchers and conservation partners, and analyse and share results.

We also utilise these data for specific studies that provide valuable information to inform our action plans and projects. Our investment, and valuable support from project partners, in remote camera grids underscores the importance of local partnerships and community engagement in driving successful conservation initiatives.

V

BELOW

Our Tunisian field ecologists, Amira SAIDI and Khalil MELIANE, responsible for much of the biodiversity monitoring and analysis



#### Publications:

- Meliane, M. K., Saidi, A., Petretto, M., Gilbert, T., & Nasri-Ammar, K. (2023). **Temporal and spatial distribution of dorcas and slender-horned gazelles in a Saharan habitat.** *The Journal of Wildlife Management*, e22408.
- Meliane, M. K., Petretto, M., Saidi, A., Chetoui, A., Gilbert, T., & Nasri-Ammar, K. (2023). **Daily and seasonal activity patterns of the dorcas gazelle, scimitar-horned oryx, north-African ostrich and canids in an arid habitat.** *African Journal of Ecology*, 61(1), 118-128.
- Meliane, M. K., Saidi, A., Petretto, M., Gilbert, T., & Nasri-Ammar, K. (2023). **The value of indigenous range data for an invasive species, the crested porcupine (*Hystrix cristata*).** *Hystrix, the Italian Journal of Mammalogy*.
- Meliane, M. K., Saidi, A., Petretto, M., Woodfine, T., Riordan, P., Gilbert, T., ... & Guidara, H. (2023). **The crested porcupine in Tunisia's semi-arid steppes.** *Oryx*, 57(1), 10-10.
- Meliane, M. K., Saidi, A., Petretto, M., Nasri-Ammar, K., Taghouti, E., Guidara, H., ... & Gilbert, T. (2023). **African houbara (*Chlamydotis undulata undulata*) confirmed in Sidi Toui National Park, Tunisia.** *African Journal of Ecology*, 61(2), 482-484.

# Dghoumes National Park

We positioned 20 remote cameras to gather data on the impacts of prolonged droughts and low primary productivity in North Africa's aridlands in Dghoumes NP where around 60 scimitar-horned oryx and 18 North African ostriches from reintroductions coexist with endemic wildlife. Recognising the significance of traditional water management systems known as Tabias (referred to as jessour in French or bunds in English) in agriculture, we explored their previously unknown potential for wildlife conservation.

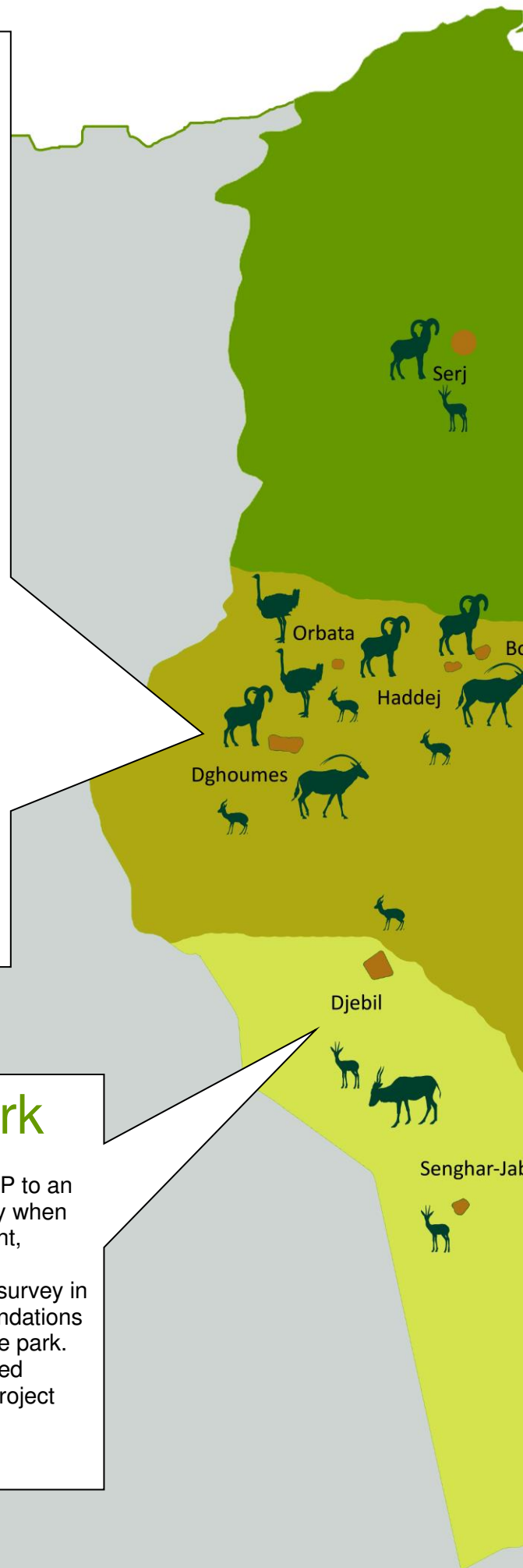
Tabias, typically used for agricultural purposes, were built in Dghoumes NP as a novel habitat restoration tool to help regulate water flow and create wetter areas between the ephemeral riverbeds (wadis). Tabia creation aimed to enhance vegetation cover that is crucial for herbivores, however, there were concerns that this would encourage the antelope to gather in one place making them more susceptible to predation. We have extracted data from the camera traps to assess the impact of tabias on the behaviour of herbivores and their predators.

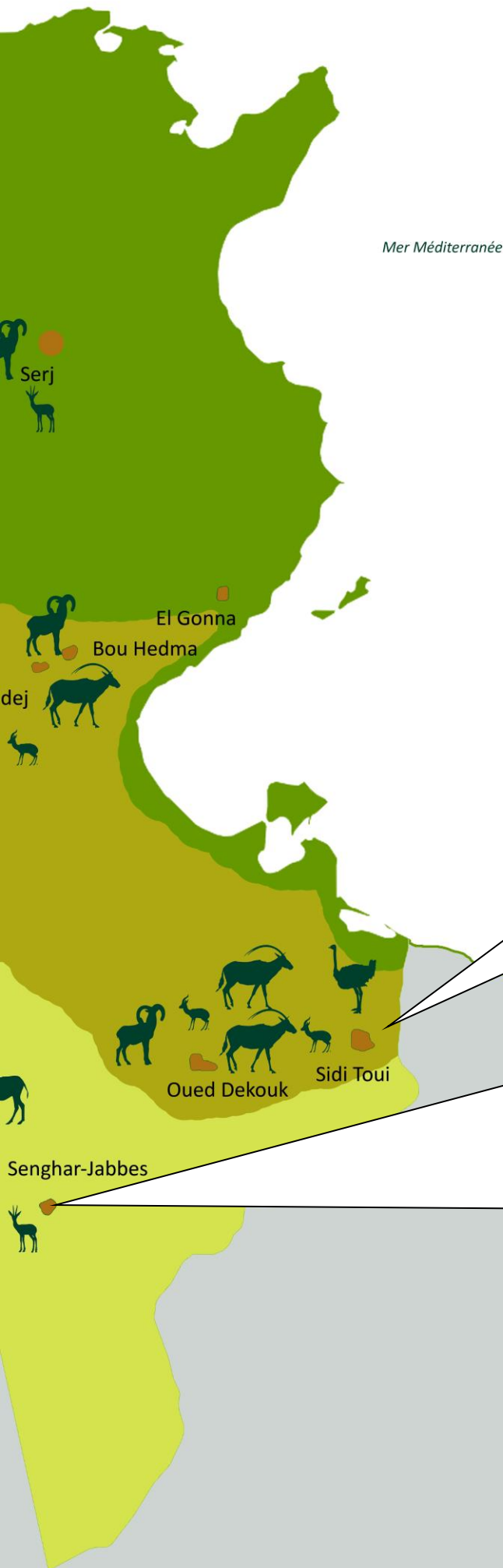
The results are being prepared for publication so please follow us on our website for updates on the impact of this habitat restoration tool on animal ecology.

In March 2023, we relocated six cameras to specifically monitor the recent sightings of the striped hyena in the mountains of Dghoumes NP, a species we initially reported in 2022.

# Jbil (Djebil) National Park

We brought our systematic camera-trap survey in Jbil NP to an end in December 2023. The cameras deteriorate quickly when deployed continuously in such a challenging environment, however we have gleaned unparalleled insights into the biodiversity of a true desert habitat since we began the survey in 2019. This has helped us make management recommendations to the Tunisian authorities to maximise biodiversity in the park. This year we published data regarding the slender-horned gazelle in Jbil NP and forms a springboard to our new project targeting the conservation of this species (see p.11).





## Sidi Toui National Park

A systematic biodiversity survey using camera-traps is underway in Sidi Toui NP, which supports a population of over 80 oryx and 17 ostriches. Since October 2020, we have deployed 26 remote cameras in a systematic grid across the entire protected area. During this period, we identified 15 different species of megafauna with numerous observations of reintroduced scimitar-horned oryx, dorcas gazelle, and North African ostrich; carnivores particularly the African wolf, red fox, and wildcat; crested porcupines; and small herbivores such as rodents and Cape hares. We have collated and processed data to identify their activity both spatially and temporally. We have made some fascinating discoveries on the activity of crested porcupines and spotted a houbara bustard for the first time within the park. We have also gained some interesting insights into the nesting behaviour of ostriches, and we are currently preparing this for publication. Our analyses are ongoing, and we look forward to sharing further results with you in the future.

## Senghar-Jabbes National Park

In 2023, our monitoring efforts expanded to encompass Senghar-Jabbes NP in the far South of Tunisia, enhancing our evaluation of the role of protected areas in rejuvenating arid steppe botanical communities and their wildlife. Until now, our cameras have documented the presence of addax, fennec foxes, wolves, Ruppell's foxes or red foxes, hedgehogs, hares, and small rodents. Additionally, we observed occasional visits by feral dogs likely fed at the military barracks situated nearby, as well as several bird species, notably owls. We plan to maintain this camera trap grid throughout 2024 to enable a comparison between the two national parks, Jbil and Senghar-Jabbes, located in the Sahara itself.



^  
**ABOVE**  
Faouz KILANI (ATVS)  
reviewing scimitar-  
horned oryx census  
data with Dghoumes  
NP guards

## Empowering Conservation: Fostering Collaboration and Building Capacity with Association Tunisienne de la Vie Sauvage (ATVS)

**M**arwell has been dedicated to monitoring the scimitar-horned oryx population within Dghoumes NP since its reintroduction in 2007, with increased commitment from 2011 when we established a team in Tunisia. Whilst we worked with park management to develop a comprehensive monitoring protocol encompassing seasonal surveys for the park's guards, it has not been consistently enacted due to changes in park personnel. Dghoumes NP experienced changes in management and social dynamics leading to a waning interest in broader conservation goals and a decline in animal and habitat monitoring. To address these challenges, local managers have asked for our help to reignite the park guards' enthusiasm for ecological management. Recognising the need for sustained local support and engagement with the park guards' activities, Marwell is collaborating with the Association Tunisienne de la Vie Sauvage (ATVS).

Together, we launched a groundbreaking 12-month pilot project to bolster ecological expertise and engagement within the reintroduced oryx protected areas, using Dghoumes NP as a catalyst for this transformation. The project was successful and we have extended our collaboration through 2024. The success achieved here has the potential to echo across other regions sharing similar conservation aspirations.

In January 2023, ATVS immersed themselves in understanding Dghoumes NP and Marwell's operations, contributing to the distribution of GDPR-compliant surveys among park staff. By February, responses from all the 34 staff members revealed diverse skills, hobbies, and perspectives concerning their roles within the park. This interaction empowered Ms. Faouz KILANI and Mr. Housseem BEN OTHMEN from ATVS to engage with staff members during their monthly visits, reinitiating the monitoring of the oryx herd and their habitat use. These monthly surveys provide a vital understanding of changes in the oryx population, how they are using their habitat, and potential threats such as poaching. This information enables the DGF and park staff to adapt management to maximise biodiversity and minimise threats to the oryx and other wildlife.

This collaboration has led to a working strategy to empower park staff and align their capacities with conservation objectives. Moving forward, we aim to harness this initial engagement to foster team spirit, ignite enthusiasm, and promote activities that will not only benefit the park but also positively impact the local community.

## V

### BELOW

Boudhief YAHYAHOU (Dghoumes NP) using MARWELL's car for anti-poaching patrol

In a bid to reinforce our commitment to combating poaching, which is present within Dghoumes NP, Marwell provided and maintains a dedicated 4x4 vehicle to bolster anti-poaching patrols in the buffer zone surrounding Dghoumes NP. It provides a much-needed and visible resource to deter poachers and protect wildlife.





# Slender-Horned Gazelle Conservation

## Progress in Strengthening a Source Population in Tunisia

^  
**PREVIOUS PAGE**  
Female slender-horned gazelle and calf in Sidi Toui NP

In recent years, it has become increasingly apparent that the slender-horned gazelle (*Gazella leptoceros*) is in trouble. Listed as 'endangered' on the IUCN Red list of Threatened Species, its last confirmed population lies in the Grand Erg Oriental, the area of the Sahara Desert that lies between southern Tunisia and Algeria. However, we simply do not know how many slender-horned gazelles are left in the wild. We have previously reported on our attempts to survey the wild population, but whilst we have found evidence of their presence, and sometimes the occasional gazelle, that evidence is infrequent and widely distributed. However, we do know that the species is under increasing threat.

The Tunisian government have supported the formation of two *ex situ* management centres for the species, one in El Gonna National Reserve (NR) and one in Sidi Toui NP. These two populations were founded on wild caught animals with some of them confiscated from private holders who had acquired the gazelles illegally, and two females donated gazelle from Planckendael Zoo in 1999. Throughout 2023, we have focused on monitoring and providing crucial management advice and veterinary support to enhance the husbandry and welfare of the slender-horned gazelles within the two *ex situ* centres.

Working with the DGF and the Regional Commission for Agricultural Development (CRDA) of Medenine, we are focusing on improving the existing facilities at Sidi Toui NP by constructing specialised breeding enclosures. These enclosures are designed to prioritise population management, preserve genetic diversity, and ensure the overall welfare of this endangered species.

Progress has been significant in outlining and conceptualizing the necessary modifications for the gazelle enclosures. Thanks to generous financial support from Planckendael Zoo (Belgium) and Fossil Rim (Texas, USA), we anticipate completing the initial phase of the project in 2024. Furthermore, governmental funding received in 2023 has already contributed to the expansion of facilities in El Gonna NR.

However, to fully realise and implement this critical project, we are urgently seeking additional funding to finalise the construction of the remaining enclosures to ensure that a high standard of husbandry and animal welfare can be attained.

If you are able to help, your vital support will play a pivotal role in advancing this crucial initiative ensuring a more secure future for the slender-horned gazelle population in Tunisia.





# Empowering Tomorrow's Conservation Leaders:

## Marwell's Educational Initiatives

# 5

Tunisian students

actively supported in their academic training in 2023

Over the last decade, we have put an increased emphasis on building capacity and empowering local conservationists in Tunisia. Over 30 Tunisian veterinary medicine and ecology students have completed research projects or internships on our projects gaining experience and practical skills in wildlife conservation. In 2023, beyond capacity-building programmes and partnerships with local NGOs and park authorities, we continued to foster collaborations with Tunisian academic institutions, including signing a data-sharing agreement with the Aridlands Institute, a prominent research institute in Medenine dedicated to agricultural development, natural resource conservation, and combatting desertification in arid regions. This collaboration supports Mr. Marouane LOUHICHI, a PhD student at the Faculty of Sciences in Gabes, in his study on the vital habitat use, diets, and behaviour of scimitar-horned oryx and dorcas gazelle in Sidi Toui NP.

^

BELOW

Marouane LOUHICHI, PhD student completing his fieldwork in Sidi Toui NP

^

PREVIOUS PAGE

Flock of reintroduced ostriches in Sidi Toui NP



In 2018, Mohamed Khalil MELIANE and Amira SAIDI completed their Master's degree research projects with us, and in 2019 we employed them as ecologists. Alongside their work for Marwell, both ecologists have been completing PhDs at the Faculty of Science at the University of Tunis El Manar, and they are now close to finishing. Their invaluable contributions to our work, particularly in the domains of camera-trapping and data analysis, have been exceptional. At the beginning of 2024, Khalil and Amira left Marwell for a new opportunity overseas marking a bittersweet departure for our team. Their dedication, expertise, and hard work have been instrumental to our conservation goals in recent years, and we are immensely grateful for their remarkable contributions to our projects.



**RIGHT**

Mrs. Amira SAIDI (top) and Mr. Med Khalil MELIANE (bottom)



In August, we warmly welcomed two dedicated trainees, Ms. Kenza GUESMI and Ms. Nour EL HOUDA LABIDI, both first year Master's degree students in Evolutionary and Functional Ecology at the Faculty of Sciences at the University of Tunis El Manar. Their enthusiasm for wildlife conservation shone through as they expressed their keen interest in gaining practical experience in the field. They were particularly impressed by our robust wildlife monitoring systems and commitment to combatting poaching in Dghoumes NP. Their eagerness to bridge academic knowledge with real-world conservation resonates deeply with our mission, and their active engagement in community-focused activities holds promise for innovative conservation action in the future.



**LEFT**

Ms. Kenza GUESMI and Ms. Nour EL HOUDA LABIDI during their summer field work in Dghoumes NP.

# Collaborative Insights:



**Behind the scenes: a zoo supporter's journey into the wild**

---

## Parc de Branféré's Director visits our *in situ* conservation projects

In December 2023, Marwell had the pleasure of hosting Alexandre PETRY, the Zoological and Scientific Director at Parc de Branféré, which has been a longstanding supporter of our conservation initiatives in Tunisia. We are always enthusiastic about accommodating visits from our supporters so they can gain firsthand insights into our projects. Alexandre's interest in immersing himself in our *in situ* conservation work aligns perfectly with Marwell's conservation strategy. We firmly believe that modern zoos have a crucial role in not only supporting such projects but also in sharing their expertise and skills with the countries where these conservation projects are taking place. Alexandre's visit offered a fantastic opportunity to exchange knowledge and perspectives, fostering a deeper understanding of our shared conservation goals.





# Marwell's Global Engagement and Charitable Involvement in 2023

# 3

Annual conferences

showcasing the impact of Marwell's conservation work in Tunisia



Marwell made impactful contributions and actively participated in international conferences, including the Annual Sahelo-Saharan Interest Group Meeting held in Almeria, Spain, by Sahara Conservation in May 2023, followed by a presence at the EAZA Annual Conference in Helsinki Zoo, Finland, in September. Moreover, Marwell was awarded the WAZA Conservation Award at the 78th Annual WAZA Conference hosted by San Diego Zoo in the United States in October. In addition to these global engagements, Marwell was generously supported by the WILD RUN charity event organized on October 8, 2023 by Wrocław Zoo, Poland where they allocated part of the proceeds from the 10km run to Marwell's conservation action in Tunisia.



PREVIOUS PAGE  
African golden wolf (*Canis lupaster*) in Bou Hedma NP

# Next steps: proposed activities for 2024-2025

Looking ahead to  
the next

# 2

## years

**we remain committed to the conservation efforts across eight Tunisian protected areas vital to aridland ecosystems and their iconic species, including the scimitar-horned oryx, the North African ostrich, the addax, the slender-horned gazelle, the dorcas gazelle, and the Barbary sheep.**

**V**

**NEXT PAGE**

Top photo: Boudhief, Amara and Saad, trained guards from Dghoumes and Sidi Toui NPs.

Bottom photo: herd of scimitar-horned oryx in Sidi Toui NP.

## Slender-horned gazelle conservation

A key priority is to enhance the welfare and management for the slender-horned gazelle in Sidi Toui NP. With the species heading towards extinction in the wild and a very small *ex situ* population outside of North Africa, managing the Tunisian *ex situ* population to maximise genetic diversity and maintain demographic stability, with a high standard of animal husbandry and welfare is vital to the survival of the species. Your support will enable us to build necessary enclosures to improve animal husbandry and welfare and enhance management skills, facilitating the establishment of a national studbook and effective *ex situ* population management for potential future reintroductions.

Alongside this, we are proposing a three-year project to evaluate the wild slender-horned gazelle population and its habitat in the Grand Erg Oriental and establish a local network to mitigate threats to the gazelles. The project will deploy innovative technologies to evaluate threats to the remnant wild population and deploy rangers to deter illegal hunting.

This ambitious project demands diverse skill development, but we are confident that we have the essential elements in place for long-term success.

## Biodiversity surveys

Our ongoing biodiversity monitoring, primarily conducted through camera-trap surveys, will continue, although we will gradually reduce efforts due to several of the sites having already undergone over 5 years of monitoring. Throughout 2024 and 2025 we will continue to maintain the existing camera traps, work with park staff to increase engagement with biodiversity monitoring, collect data, and analyse results. We plan to consolidate these data and finalise dissemination of the results to help inform biodiversity management within Tunisian and inform conservation action more widely in the region. The DGF would like to compile the data into a comprehensive database, providing a crucial foundation for future studies and be a resource to inform management.

## Education & community engagement

We have identified a gap in education, community engagement, and public awareness in Bou Hedma and Dghoumes National Parks. Both parks host ecomuseums which form the central hub for visits from local and international visitors, but also have the potential to connect school children with the nature that they live alongside. The ecomuseums are partially equipped but they need updated materials to maximise their potential for environmental education and stimulating change in perceptions and behaviours towards nature. We plan to work with local communities and schools to facilitate visits to the National Parks to connect people to nature. We are actively seeking funding and partnerships to develop educational programmes aimed at filling this gap and enhancing awareness in these crucial areas. Your support will play a pivotal role in shaping a brighter future for these unique ecosystems and their inhabitants.

## Local capacity development

We aim to sustain and deepen our collaboration with the Association Tunisienne de la Vie Sauvage (ATVS). Their invaluable partnership has been instrumental in our conservation endeavours, and we seek to further strengthen this alliance. Together, we aspire to explore new perspectives and innovative approaches in wildlife conservation, leveraging ATVS's expertise and shared commitment to bolstering conservation efforts in Tunisia. Continuity in our collaboration with ATVS will not only reinforce our existing initiatives, and increase capacity for conservation in Tunisia, but also pave the way for new impactful actions that can contribute significantly to the conservation of biodiversity and habitats within the region.

Alongside this, we will continue to facilitate peer-to-peer training for the park staff and to provide internship opportunities to Tunisian ecology and veterinary students to increase the capacity for wildlife veterinary medicine and wildlife conservation in Tunisia.

## Continued monitoring of key aridland species in Tunisia

In 2024/2025 we will continue to work with park manager, guards, and local associations to monitor the populations of key species in Tunisian protected areas. These activities provide the foundation to much of the conservation work and provide core data to enable park managers and the DGF make informed decisions for conservation.

The first reintroduction of scimitar-horned oryx took place in 1985 with the last in 2007 and we think it likely that the Tunisian metapopulation has lost much of its genetic diversity since the releases. We plan to evaluate the genetic diversity of the scimitar-horned oryx metapopulation using molecular methods and identify key management actions that will improve its long-term sustainability. This will require the collection of biological samples from all the scimitar-horned oryx in Tunisia.





Conservation health is about  
people *and* nature

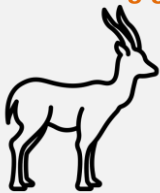


# Funding Proposal

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 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.

£4,000

to build one enclosure for a slender-horned gazelle breeding group



£405/month

required to ensure the camera trap grids continue to function and the survey data are managed



Cost item	Cost basis	£
<b>Slender-horned gazelle <i>ex situ</i> centre in Sidi Toui NP and El Gonna NR</b>		
Tagging the gazelles, building a national studbook and training the staff in El Gonna NR and Sidi Toui NP (Pedigree management & Animal handling training for staff)	£2,000 per session, 2 per year	4,000
Build sub-units for small breeding groups in Sidi Toui NP and El Gonna NR (comprising fence, hand-capture area, anti-predator electric wire)	£4,000 per 15x20m enclosure, 7 more needed + 1 double enclosure for calves (5 are under way) (i.e. equivalent to 6 units)	36,000
Batteries and solar panel for electric wire (anti-predator)	£4200 material £1250 labour costs	5,450
Veterinary prevention and emergency care	£79 per month x 12 months: vaccines, consumables, and vet fees	948
<b>TOTAL</b>		<b>46,398</b>
<b>Standardised oryx, addax, North African ostrich and biodiversity monitoring</b>		
Partnering with local NGOs (ATVS) to monitor key species & increase capacity in Tunisia	£700 per month (staff fees & expenses), 12 months	8,400
Monitoring protected areas by Marwell team	Mileage: 500km/mo @ 0.36p per km	2,160
Training and skill development for protected area staff	3 training events, totalling 15 days @ £600/event	1,800
Camera traps & consumables	15 x camera traps @ £200 per unit	3,000
Laptop and external hard drive	1 per park, 2 parks @ £ 240 (used laptop) + £60 (hard drive)	600
Batteries	8 batteries/camera, 4 times a year, 80 cameras @ £0.5/batt	1,280
Internship support for Tunisian students	X2 ecology students a year	900
Data analysis support to develop AI and machine learning protocols for the analysis of camera trap data	Short-term contract to develop AI & ML protocols	5,000
<b>TOTAL</b>		<b>23,140</b>

£500

Covers the cost of 4-fieldwork days in Dghoumes NP



£100

Pays for a veterinary visit and analyses in a remote protected area



£450

to support the expenses to train one Tunisian ecology student



Cost item	Cost basis	£
<b>Integrated wildlife &amp; livestock health monitoring</b>		
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
TOTAL		<b>1,720</b>
<b>Genetic analysis of scimitar-horned oryx populations</b>		
Biopsy needles, syringes & darts, storage tubes, ethanol, gas canisters for dart gun, export of samples to UK	200 samples	6,900
Construction of temporary bomas in 4 protected areas	£300 x 4	1,200
Transport and food cost 2 months	@ £ 450/mo	900
TOTAL		<b>9,000</b>
<b>Education and community engagement</b>		
Monthly visit to schools in local communities	Mileage: 1000km/mo @ 0.36 per km x 12 months & 2 nights accommodation per month @ 35.00 per person per night	4,320 840
We are submitting a separate grant application for the remaining project costs		
TOTAL		<b>5,160</b>
<b>Overall Total</b>		<b>£ 85,418</b>



**Marwell  
Wildlife**



For more information, please visit  
[www.marwell.org.uk/conservation](http://www.marwell.org.uk/conservation)

UK registered charity number 275433

