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TERCERA DEL GOBIERNO
MINISTERIO
PARA LA TRANSICIÓN ECOLÓGICA
Y EL RETO DEMOGRÁFICO



Coordinated actions for the recovery of the marbled teal (*Marmaronetta angustirostris*)

Results of the
LIFE CERCETA PARDILLA project
(LIFE19 NAT/ES000906)
Layman's Report








Introduction

The marbled teal, Europe's most endangered duck

The **marbled teal**, a species that was once abundant in Mediterranean coastal wetlands until the mid-20th century, has suffered a population decline in Spain of some 90% in just a few decades. The species classifies as critically endangered since 2018. It is also the most endangered duck in Europe, where its distribution range is limited to the Spanish territories and a small area in Sicily, Italy. There is therefore an Action Plan for the species in the European Union.



The main causes of its sharp decline are:

-  The loss and degradation of the wetlands where it lives.
-  Accidental hunting and poaching.
-  The pressure exerted by its predators.
-  Interactions with invasive alien species.
-  Diseases.

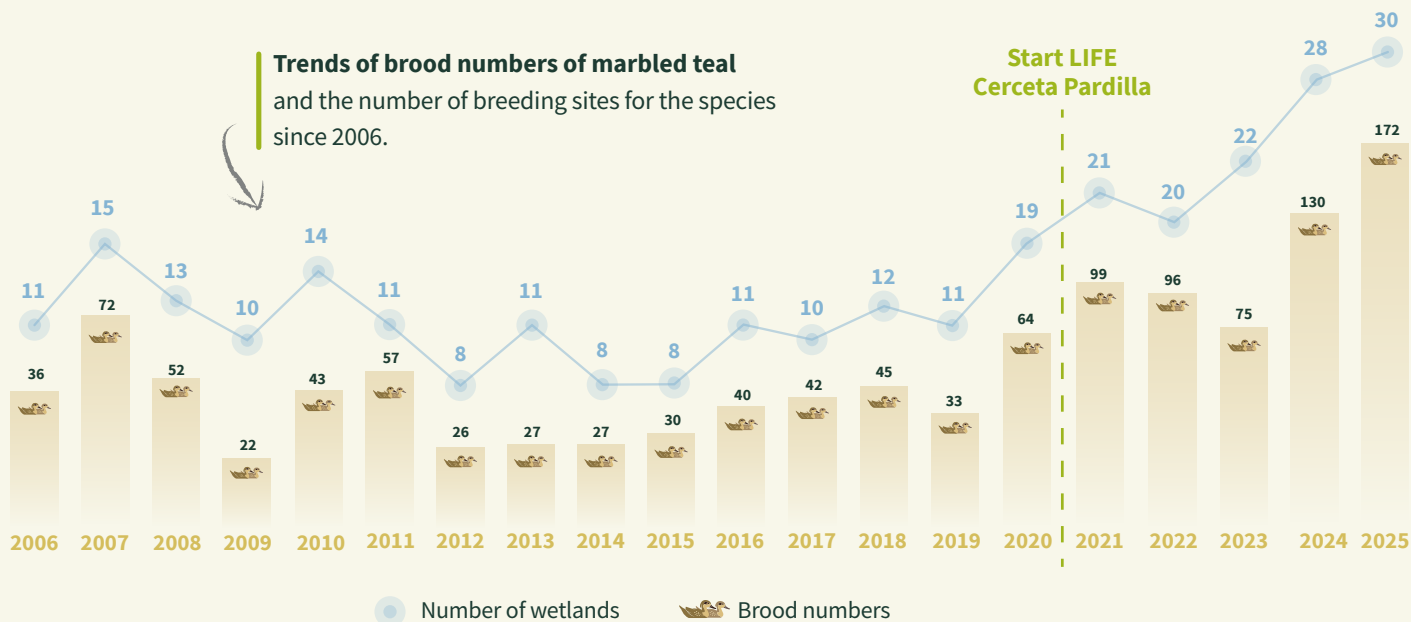
To tackle these threats and reverse the risk for the species to become extinct, the **LIFE Cerceta Pardilla** project has launched a series of research, conservation, governance and awareness-raising initiatives between 2021 and 2026. These actions have been carried out in three Spanish regions:

**Valencia,
Murcia and
Andalusia.**

A promising future

The coordination between public bodies, the scientific community and civil society organisations, as along with public engagement actions and international cooperation, have together brought the **LIFE Cerceta Pardilla** to achieve – and even exceed – its targets:

- Over 3,600 hectares of restored wetlands.
- More than 3,700 marbled teal bred in captivity and released into the wild.
- Improving our understanding of the species' ecology and biology.
- 15 land stewardship agreements.
- A record of 172 breeding pairs in 2025.
- The species breeds again in the Murcia Region.



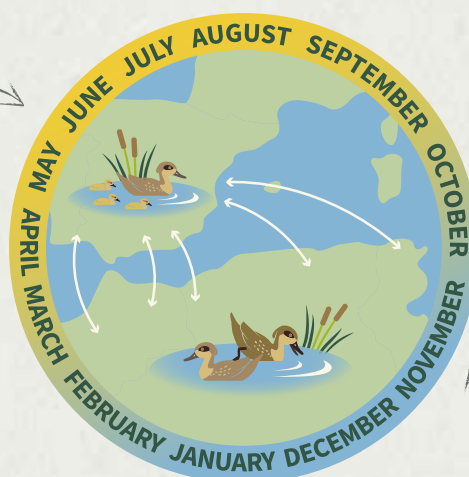
Since 2021, when the **LIFE Cerceta Pardilla** project began, the breeding population has shown an encouraging upward trend, despite a decline in 2023 due to a drought scenario. Thus, in 2021 and 2024, record numbers of 99 and 130 broods were recorded respectively, and the figures for 2025—with **172 broods**—reinforce this positive trend. Nevertheless, it seems clear that the species' recovery still depends on the *ex situ* conservation programme.

The marbled teal

A rare migratory bird

The species is defined by its nomadic behaviour, tending to migrate to Northern Africa during the winter, and to remain in Spain during the breeding season. Furthermore, it undertakes opportunistic movements at any time of the year, selecting the wetlands that offer the most suitable conditions for its needs.

A portion of the **Spanish population** migrates to Northern Africa in the autumn and **returns between March and April** to Spain to breed.

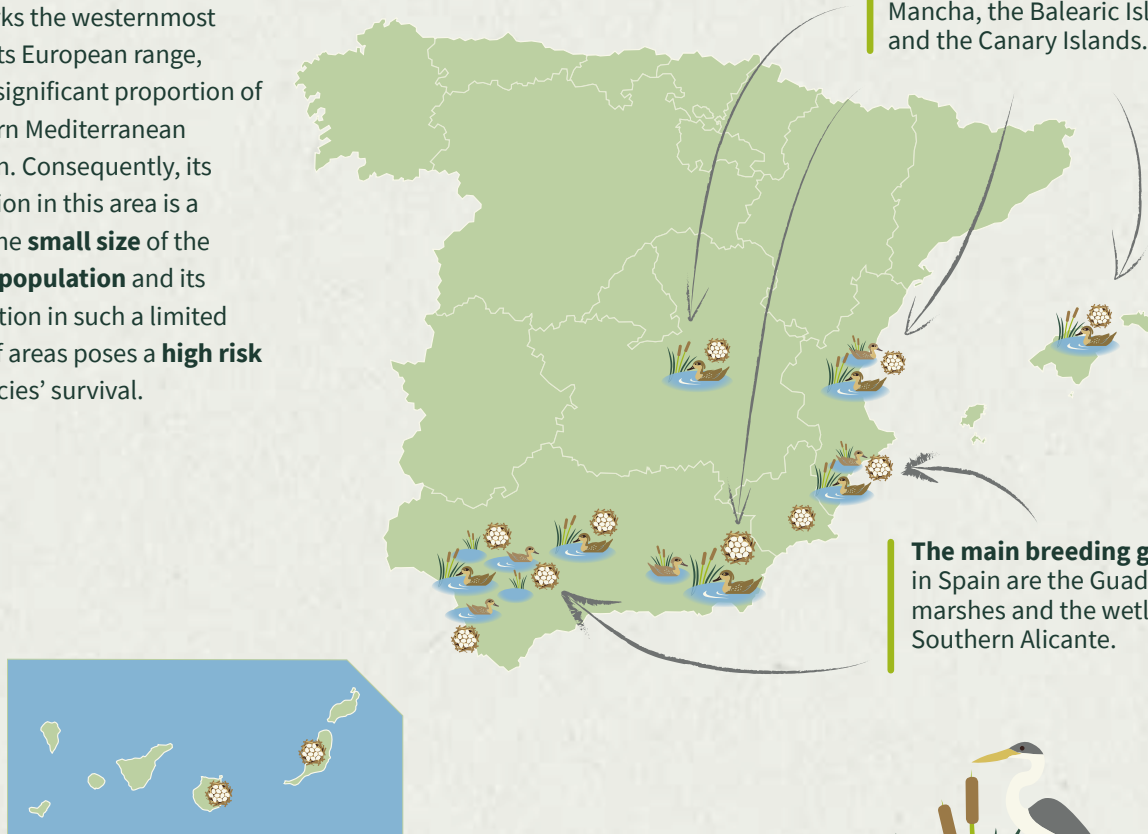


The Iberian individuals are **closely related to North African** ones and are therefore considered part of an **Iberian-Maghreb** subpopulation.

Distribution in Spain

Spain marks the westernmost extent of its European range, hosting a significant proportion of the Western Mediterranean population. Consequently, its conservation in this area is a priority. The **small size** of the **breeding population** and its concentration in such a limited number of areas poses a **high risk** to the species' survival.

Some other current breeding areas and areas where the species has recently bred: wetlands in Andalusia, the Valencia Region, Castilla-La Mancha, the Balearic Islands, Murcia and the Canary Islands.



The main breeding grounds in Spain are the Guadalquivir marshes and the wetlands in Southern Alicante.



The importance of wetlands, its habitat

Wetlands are ecosystems that are vital for the conservation of biodiversity and for our own well-being. They maintain processes which are critical for the planet.

Spain ranks third in terms of the number of wetlands included on the Ramsar List of Wetlands of International Importance, with 76 sites covering over 300,000 hectares.



The LIFE Cerceta Pardilla Project

The main aim of this project has been to improve the conservation status of over **3,000 hectares of wetlands** in order to reverse the extinction risk of the marbled teal and to achieve a minimum of **125 breeding pairs** in Spain.

The specific objectives of the project have included to eliminate and mitigate the threats on the species such as habitat loss, accidental hunting and poaching, and insufficient water quantity and quality. Specific measures have also been undertaken to boost the marbled teal populations through a captive breeding programme, to improve our understanding of its ecology, to incorporate its ecological requirements into sectoral policies, as well as to raise awareness among key stakeholders about the importance of conserving both the species and its habitat.

The implementation period for these measures ran from the 1st of January 2021 to 31st March 2026.

Project intervention areas

Andalusia

Guadalquivir marshes, lagoons of Cádiz, wetlands of western Almería, mouth of the Guadalhorce River, and Fuente de Piedra Lagoon.



Valencia Region

Albufera Natural Park, Marjal dels Moros, Marjal i Estanys d'Almenara, Fondo d'Elx-Crevillent Natural Park, and Clot de Galvany.



Murcia Region

Moreras Lagoon and Guadalentín Salt Marshes.



Doñana National Park
Guadalhorce River
Mouth Natural Park

Andalusia

Punta Entinas-Sabinar
Natural Park

Valencia Region

Albufera Natural Park

Fondo d'Elx-Crevillent Natural Park

Moreras lagoon



Actions and results



RESEARCH

The research activities carried out as part of the project have provided the scientific basis for guiding the project development.

Assessment of genetic variability and genetic structure

The Doñana Biological Station (Spanish National Research Council CSIC) carried out a **genetic study** of captive and wild populations from different origins, based on the analysis of DNA and mitochondrial RNA. The findings have helped to guide the **ex situ conservation programme** aimed at boosting the population through captive breeding, as well as to improve habitat management measures and the wild population.

Key findings:

- The genetic differences between the populations in Spain and Iraq do not justify a classification as distinct subspecies, although it is recommended that each population is managed separately.
- The Spanish wild population does not evidence a lack of genetic diversity.



Individual tracking of individuals

Five coordinated annual censuses undertaken between 2021 and 2025.

Monitoring of marbled teal populations in Algeria, Morocco and Tunisia during the winter and breeding seasons.



Study of the ecology and survival of the species

A programme has been carried out to tag individuals using GPS/GSM transmitters. Data analysis has been carried out by the Miguel Hernández University of Elche. The research about movements of **275 marbled teal tagged** between 2018 and 2024 across six Spanish regions has revealed key insights for optimising the management and conservation of the species, as well as provided the first data on long-distance movements to Northern Africa.

The results show differences in habitat use, movement patterns and survival among newly released captive-bred individuals, released individuals that have survived in the wild for over a year, and long-established wild individuals. Survival is lowest in the first group, particularly during the first three months after release, while the second group shows intermediate values, suggesting a gradual adaptation to natural conditions following release. Regarding mortality, human-related causes account for some 30% of the total, which highlights the urgent need to **strengthen the surveillance in high-risk areas**.

The monitoring has also allowed for the identification of more than **60 wetlands used** by the species, highlighting the importance of those located in the Valencia and Andalusia regions.



Habitat restoration and enhancement

The restoration of critically important sites has been one of the project's main priorities, with initiatives carried out in the three participating regions.

Land acquisition and restoration in the Valencia Region

- Purchase of 141 hectares in El Fondo Natural Park (Alicante):
 - El Espigar I y II Estates: by Spanish Ornithological Society (SEO/BirdLife) and Association of Naturalists of the South-East (ANSE).
 - La Raja Estate: by Ministry for Ecological Transition and the Demographic Challenge (MITECO), via the Segura River Basin Authority.
- Located in relevant Natura 2000 areas included in the [*Strategy for the Conservation of the Marbled Teal, the Red-knobbed Coot, the White-headed Duck and the Ferruginous Duck in Spain.*](#)
- **The measures undertaken include:**
 - Improving water management to ensure the most suitable water levels for waterbirds at all times of the year:
 - Repair and substitution of sluice gates.
 - Vegetation control through dredging, mowing and clearing.
 - Water connection between La Raja and El Espigar.
 - Extension of flooding areas in El Espigar:
 - Naturalisation of an old irrigation pond and a fish farm (over 2.5 hectares).
 - Restoration of two salt marshes (+4.5 hectares).
 - Improvement of nesting habitats:
 - Creation of islands and beaches in La Raja.
 - Public use and dissemination:
 - Informative signage.
 - Three observation towers and a bird hide.
 - Upgrading of access tracks.
 - Management after the end of the project:
 - Joint management by the three owner organisations following the completion of the project, in the context and guidelines of the El Fondo Natural Park.



Restoration of wetlands in Andalusia and

Murcia regions

Brazo del Este Nature Reserve (Seville):

- Restoration of 24 hectares of silted-up marshland.
- Restoration of two meanders of the old river course (increasing the floodplain area by 24.3 hectares).
- Consolidation of a large, flooded extension acting as a refuge during years of acute water scarcity in the Doñana National Park.
- Signing of partnership agreements on water and vegetation management with various economic sectors.

Laguna and Rambla de las Moreras (Murcia Region):

- Removal of rubble and replanting with native species. Installation of perimeter fencing.
- Clearing the reed bed to increase habitat diversity.
- Installation of a water pipeline from the wastewater treatment plant to flood a 300-metre stretch of the riverbed during the breeding season.

Other measures in various other wetlands:

- Manual control of riparian vegetation.
- Installation of nesting boxes and signage.
- Flooding enhancement and extension of areas available for nesting and sheltering.

Overall results

Total area restored or improved: **3,600 hectares**, exceeding the initial target of 3,000 hectares.

Development of a **[Guide on best practices for the management of the marbled teal's habitat.](#)**



New tools for habitat management: virtual fences

In Brazo del Este Nature Reserve (Seville), an **innovative technique for habitat management** using livestock has been trialled. A system of virtual fencing has been set up through stewardship agreements signed with two farmers who rear the Marismeña cattle breed. The aim is to **manage livestock access** to flooded grazing areas and to favour a sensible control of **reed growth by grazing**. This system involves fitting livestock with **GPS collars** that emit acoustic and electrical stimuli, and containing the cattle within the boundaries set up via a smartphone-managed app. The tool has allowed for the opening up of water surfaces in a controlled manner in areas completely covered by reeds, thereby increasing the habitat available to the species.

Threat management

The project has addressed other threats to the marbled teal, such as accidental hunting due to confusion with game species, poaching, pressure from predators, and the impact of diseases such as botulism or cyanobacteria.

Accidental shooting

- Termination of hunting rights on El Espigar and La Raja estates.
- Cooperation with the hunting sector (support for monitoring the species, habitat management, population reinforcement and the identification of threats) in:
 - Sanlúcar de Barrameda Marshes (Doñana National Park).
 - The rice fields of Los Palacios y Villafranca (Brazo del Este Nature Reserve).
 - Lebrija Marshes (Seville).
- Three awareness-raising events, supported by the Andalusian Hunting Federation.
- Collaboration with three hunting associations, which have undertaken voluntary measures to minimise the risk of accidental shooting.

Fight against poaching

The Regional Ministry of Sustainability and the Environment of the Regional Government of Andalusia has set up a **technical coordination committee to combat the poaching of waterfowl in the Lower Guadalquivir region**. The committee involves the collaboration of the following bodies: Servicio de Protección de la Naturaleza (SEPRONA), the National Police forces assigned to the Andalusia Region, Environmental Officers from the Regional Government of Andalusia, the Environmental Public Prosecutor's Office, the General Sub-Directorate for Terrestrial and Marine Biodiversity at the Ministry for Ecological Transition and the Demographic Challenge and the Andalusian Hunting Federation. The technical committee has an operational and strategic jurisdiction at the regional level, with the aim of planning precautionary campaigns, establishing protocols for action and coordinating efforts during critical periods for waterbirds.

Other threats

Measures have been undertaken to reduce the pressure from generalist predators and invasive species, and protocols for the prevention and control of **botulism** and **cyanobacteria** have been produced, intended for use by government technicians.



Captive breeding

The captive breeding programme has been carried out at three breeding **reference centres**: La Granja de El Saler and Santa Faz, managed by the Valencian Regional Government, the Cañada de los Pájaros Nature Reserve in Seville and, more recently, the Alberto Durán Zoo and Botanical Garden Biodiversity Conservation Centre –in Jerez de La Frontera, Andalusia. In the Alberto Durán centre, the breeding facilities have been extended within the framework of the project, through a partnership agreement signed with the Regional Government of Andalusia.



The results of the **ex situ conservation programme**, drafted under the LIFE project by the national working group on the species, and approved by the Ministry for Ecological Transition and the Demographic Challenge, are as follows:

- More than **3,700 individuals** have been **released** between 2021 and 2025.
- Installation of 193 nest boxes.
- Construction of 20 hacking cages.

Releases in key wetlands:

- Andalusia, Valencia and Murcia regions.
- Other Spanish regions: Madrid, Castilla-La Mancha and Catalonia.
- International cooperation with Italy and Portugal to boost populations in Sicily and the Tagus estuary.



The project has also contributed to the updating of the **Strategy for the conservation of the Marbled Teal, the Red-knobbed Coot, the White-headed Duck and the Ferruginous Duck in Spain**, approved in 2024 by the Ministry for Ecological Transition and the Demographic Challenge, as well as to the development of the *Recovery Plan for this species in the Murcia Region*.



SOCIAL DIMENSION

Land stewardship

Land stewardship has been essential for achieving the objectives of the LIFE Cerceta Pardilla project, given its proven effectiveness in species and habitat conservation projects.

Development of a **land stewardship programme** aimed at **securing the commitment of landowners and users** from both private and public sectors to the conservation of the marbled teal and its habitat. **Fifteen stewardship agreements** have been signed for key wetlands in the Valencia, Murcia, Andalusia and Madrid Regions:

In addition, the Regional Government of Andalusia has signed cooperation agreements with the Irrigation Water User's Association and the Central Rice Growers' Association of the Left Bank of the Guadalquivir River for the management of the restored area within the Brazo del Este Nature Reserve.

Administrative Spanish Region	Wetland	Sector
Andalusia	Brazo del Este Nature Reserve (Seville)	Livestock farming
	Lebrija marshes (Seville)	Hunting
	Brazo del Este Nature Reserve (Seville)	Livestock farming
	San Gaspar and Casa Colorada lagoons (Cádiz)	Third sector
	Laguna del Gosque (Seville)	Third sector
	Ribera de la Algaida (Almería)	Third sector
	Salinas de Cetina (Cádiz)	Salt producer
	Trebujena marshes (Cádiz)	Livestock farming
Valencia	Manzanilla lagoon (Alicante)	Third sector
	4 agreements in Marjal d'Almenara (Valencia)	Third sector
Murcia	Moreras lagoon (Murcia)	Administration
Madrid	El Porcal lagoon (Madrid)	Third sector

Awareness-raising

The LIFE Cerceta Pardilla project has placed great emphasis on providing information and raising awareness among local residents, particularly within the education sector and other groups whose activities may have an impact on the conservation of the species.

Social and educational participation

56

volunteering sessions
(more than 800 participants).

11

sector-specific seminars
(hunters, local enterprises, rice farmers).

145

educational sessions:

- 48 schools.
- 34 towns.
- 4,600 students.

15

training sessions for:

- 81 teachers and environmental educators.



Awareness

- Travelling exhibition shown at 42 venues and visited by over 150,000 people.
- **Educational materials** available on the project website www.cerceta-pardilla.es.
- Participation in birdwatching fairs (Global Bird Fair, Delta Bird Festival and International Birdwatching Tourism Fair).
- Production of the **Best Practice Guide for Birdwatching Tourism in wetlands**, by SEO/BirdLife.

Communication

- Organisation of three press visits.
- More than 1,800 media mentions.
- Publication of a special feature in *Quercus*, a nature conservation magazine.
- More than 600 social media posts.

International cooperation

The marbled duck is a migratory species. Therefore, substantial efforts for the exchange of information have been enabled with organisations in Portugal (mainly EVOA and the University of Coimbra), Italy (LIFE Marbled Duck-PSSO), France (Tour de Valat), Morocco (GREPOM/BirdLife), Algeria (University of 8 May 1945) and Tunisia (AAO/BirdLife).

Particular efforts have been made to allow for **monitoring the species in North African countries**. Bird counts have been carried out in **Algeria, Morocco and Tunisia** during the breeding and wintering seasons between 2023 and 2025. This has provided new and valuable information on the population in the western Mediterranean, particularly of the breeding population.

Advisory Committee

The **Advisory Committee**, a technical and scientific body set up within the framework of the project, has provided advice and support in assessing the technical and socio-economic aspects of the project. It has brought together people from a wide range of sectors, including irrigation associations, livestock farming, aquaculture, hunting, government bodies, NGOs, land stewardship specialists and scientists, amongst others. Throughout the project, the committee helped in reviewing the technical management documents produced and met on four occasions.

Results by Region



VALENCIA

Actions carried out

- Captive breeding
- Construction of hacking enclosures
- Installation of nest boxes
- Purchase of 141 hectares
- Release of individuals
- Development of a management and public access plan for the purchased properties
- Habitat restoration and management
- Installation of two multi-parameter water monitoring stations
- Sampling of Natura 2000 indicators
- Monitoring of water status in accordance with the Water Framework Directive



Wetlands

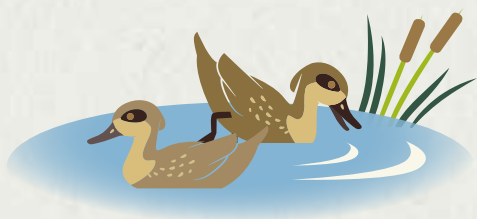
Results

<p>Individuals released: 1,111 Valencia Region 501 Different wetlands in Spain and Sicily Individuals bred in the Valencia Region and released in other areas</p>	<p>Conservation work in 743 ha</p>
<p>79 Nesting boxes installed</p>	<p>141 ha Hectares purchased</p>
<p>Water monitoring sensors installed: 2 multi-parameter probes</p>	<p>9 Hacking cages built</p>
<p>2 Workshops with economic sectors</p>	<p>Wetlands where breeding has been observed in recent years: 5 wetlands (Albufera Natural Park, Marjal dels Moros, Marjal d'Almenara, El Fondo Natural Park and Clot de Galvany)</p>
<p>5 Land stewardship agreements</p>	

ANDALUSIA

Wetlands

- Punta Entinas-Sabinar Natural Park
- Fuente de Piedra
- Dehesa de Abajo
- Brazo del Este Nature Reserve
- Trebujena Marshes
- Doñana National Park
- Guadalhorce River Mouth Natural Park
- Cetina Marshes
- Medina Lagoon



Actions carried out

- Captive breeding
- Construction of hacking enclosures
- Installation of nest boxes
- Release of individuals
- Habitat restoration and management

Results



Individuals released:
2,137 Andalusia
20 Portugal

Individuals bred in Andalusia and released in other areas



105
Nesting boxes installed



9 Workshops with economic sectors



Conservation work in
2,409 ha



9 Hacking cages built



Wetlands where breeding has been observed in recent years:
20 wetlands









8 Land stewardship agreements



REGION OF MURCIA

Actions carried out

-  Release of individuals
-  Construction of hacking enclosures
-  Installation of nest boxes
-  Habitat restoration and management
-  Sampling of Natura 2000 indicators
-  Monitoring of the water status in accordance with the Water Framework Directive



Wetlands

The Guadalentín Salt Marshes

Moreras Lagoon

Results



85

Individuals released



Conservation work in

7 ha



2

Hacking cages built



9

Nesting boxes installed



Wetlands where breeding has been observed in recent years:

2 wetlands (Morera Lagoons and Guadalentín Salt Marshes)



Water monitoring sensors installed:

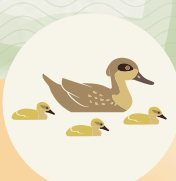
1 multi-parameter probe



1

Land stewardship agreement

Key achievements of the project



Breeding females: in 2021 and 2024, record numbers of 99 and 130 broods were recorded respectively, exceeding earlier than expected the project's target of 125 pairs. By 2025, the number of breeding females reached 172.

New breeding sites: nine in Andalusia, four in the Valencia Region, and an outstanding result in the Murcia Region, where the species bred for the first time in 15 years in two wetlands where the marbled teal was formerly absent.

Number of individuals released and monitored:
3,769 individuals released.

Total restored area:
3,600 ha.

A collaborative project: the LIFE Cerceta Pardilla project is based on science, public participation, and institutional and social collaboration.

All the project **results** are available on the website.

Resources generated as part of the project

- [Good Practice Guide for Habitat Management of the Marbled Teal](#)
- [Form for monitoring the conservation status of habitat](#)
- [Study of the Genetic Variability and Structure of Captive and Wild Marbled Teal Populations](#)
- [Report. Botulism, the success of early warning. Outbreak Prevention and Control](#)
- [Brochure. Botulism, the success of early warning. Outbreak Prevention and Control](#)
- [Report. Cyanobacteria, the silent threat. Outbreak Prevention and Control](#)
- [Brochure. Cyanobacteria, the silent threat. Outbreak Prevention and Control](#)
- [Land Stewardship Programme](#)
- [Ex situ Conservation Programme for the Marbled Teal](#)
- [Good Practice Manual for Birdwatching Tourism in Wetlands](#)

Educational Materials

- [Information Guide](#)
- [Activities – First Cycle of Primary Education](#)
- [Activities – Second Cycle of Primary Education](#)
- [Activities – Secondary Education \(ESO\)](#)
- [Surveys](#)
- [Certificate](#)

Informative Materials

- [Video Results of the project](#)
- [Video Presentation of the project](#)
- [Marbled Teal Leaflet](#)
- [Travelling Exhibition](#)
- [Species Identification Sheets \(EN\)](#)

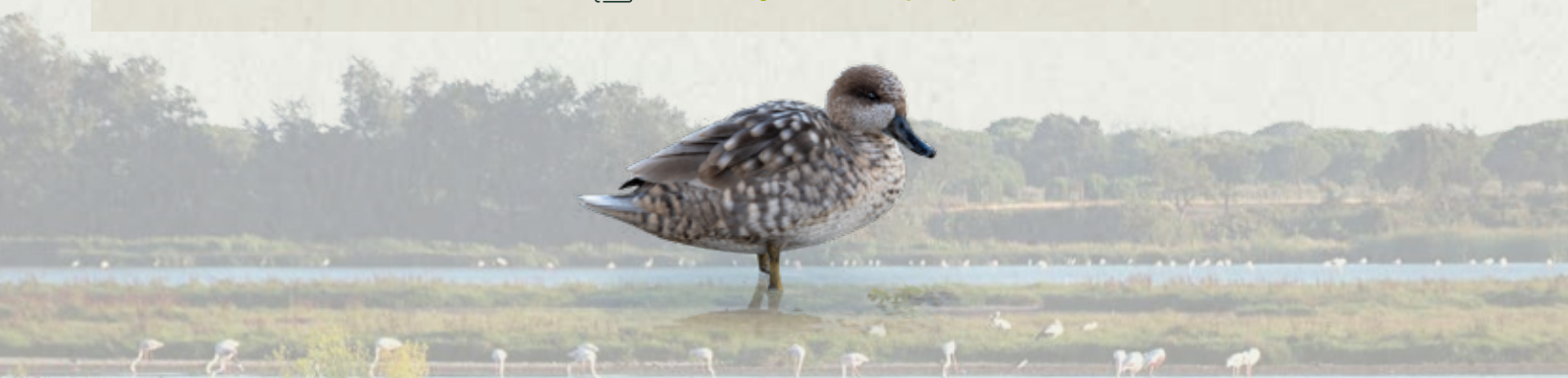


Project details



NAME Coordinated actions for the recovery of the marbled teal (<i>Marmaronetta angustirostris</i>) in Spain	ACRONYM LIFE Cerceta Pardilla	REFERENCE LIFE19NAT/ES/000906
COORDINATING BENEFICIARY Biodiversity Foundation of the Ministry for Ecological Transition and the Demographic Challenge (MITECO)		
PARTNERS Segura River Basin Authority (MITECO); Tragsatec; Regional Ministry of Sustainability and the Environment (Regional Government of Andalusia); Environment and Water Agency, M.P. (Regional Government of Andalusia); Regional Ministry of the Environment, Infrastructure, Territorial Planning and Recovery (Valencia Regional Government); Regional Ministry of the Environment, Universities, Research and the Mar Menor (Regional Government of Murcia); Spanish Ornithological Society (SEO/BirdLife) and Association of Naturalists of the South-East (ANSE)		
CO-FUNDER General Directorate for Water (MITECO)	TOTAL BUDGET EUR 6.37 million	DURATION From 1 st January 2021 to 31 st March 2026

www.cerceta-pardilla.es/en/



This report has been funded by the **European Union's LIFE programme**.

The information contained in this document reflects solely the views of the beneficiaries of the LIFE Cerceta Pardilla project. Neither the Climate, Infrastructure and Environment Executive Agency (CINEA) nor the European Commission shall be held liable for any use that may be made of the information contained in this report.

Acknowledgements

Institutions, scientific bodies, NGOs, volunteers, key stakeholder groups (hunters, rice farmers, livestock farmers, salt producers, the education sector, and conservation groups), schools and other educational centres, and partner organisations.

