

Milaneta Project: Gamification and Environmental Education for Red Kite Conservation in Aragón (Spain)

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ABSTRACT

Proyecto Milaneta is an educational board game that recreates the conservation challenges faced by the red kite (*Milvus milvus*) in Aragón, Spain. The game mirrors the regional captive breeding program, where players represent released red kites attempting to reach various protected natural areas while facing realistic threats including wind turbine collisions, poisoning, power lines.

Developed over two years with scientific supervision from Aragón Government biodiversity technicians and veterinary expert María Cortés, the project involved numerous Aragonese artists and partnerships with major conservation organizations including SEO/BirdLife, FCQ, AMUS, and the LIFE EUROKITE Project.

The game offers competitive and cooperative modes, requiring strategic decisions using "fortune cards" (representing conservation measures) or chance (dice rolls) to overcome threats. This mechanic effectively communicates real conservation dilemmas to players aged 10 and above, nature enthusiasts, and families.

One hundred copies were acquired by the Aragón Nature Protection Council for distribution in public libraries. An English version is in development for international distribution through the LIFE EUROKITE Project.

A unique feature of the project is its direct connection to the actual conservation program. One red kite released in 2025 was named through a participatory voting process on Proyecto Milaneta's Instagram profile. The bird, named "Onza" (referencing the chocolate-making tradition of Benabarre, the municipality where it was found), was released on October 28, 2025, and is equipped with a GPS transmitter allowing real-time tracking of its movements across Aragón.

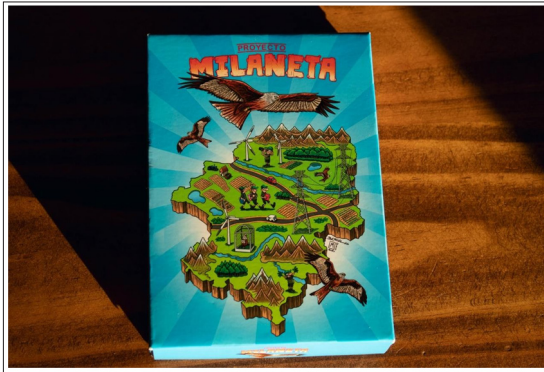
Red kite conservation requires actions at multiple scales, but also needs an informed, sensitized society emotionally connected to the species. Proyecto Milaneta demonstrates that gamification can be a powerful environmental education tool, enabling players to experience conservation challenges firsthand, understand the complexity of threats and solutions, and value the work of administrations and conservation entities.

Keywords: Environmental Education, Milaneta Project, The Red Kite

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Introduction

As an environmental educator and interpreter, I have seen first-hand that the conservation of a species depends not only on technical measures, but also on fostering an emotional connection and raising awareness within society. And that is precisely where the Milaneta Project comes in: a board game that turns the reality of the red kite in Aragón into an educational, fun and transformative experience.



Context: The Red Kite in Aragon

The red kite (*Milvus milvus*) is one of Europe’s most iconic birds of prey, but also one of the most endangered. In Aragon, this species has experienced a significant decline, necessitating the implementation of a captive breeding programme.

Each year, this programme releases a varying number of captive-bred birds into protected natural areas, with the aim of bolstering wild populations. However, these birds face multiple threats:

- Natural threats: predation, competition, adverse weather conditions, diseases.
- Anthropogenic threats: collision with wind turbines and power lines, poisoning, habitat loss, electrocution.

This complex reality, with its challenges and hopes, lies at the heart of the Milaneta Project.

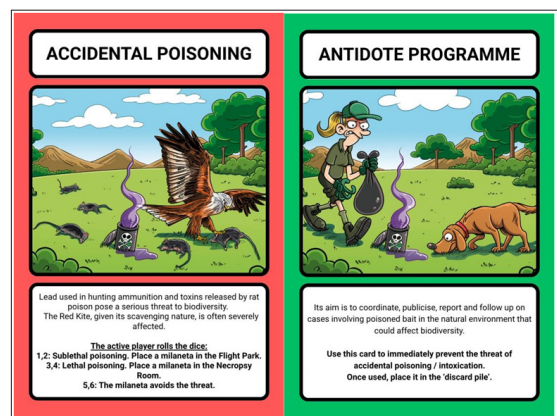
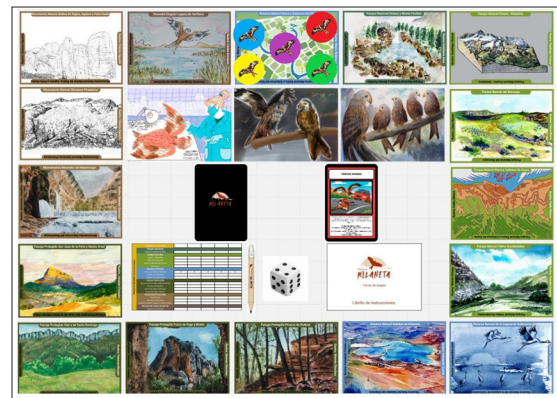
Gameplay Mechanics

The game is based on a simple yet powerful premise: players take on the role of red kites that have been released into a protected natural area and must reach other natural areas in Aragon, facing the real-life threats to the species along the way.

Depending on the outcome of the threats they face, they continue their journey through Aragon, enter the flight park whilst awaiting re-release, enter the captive breeding programme’s facilities as irrecoverable specimens, though specimens born through the programme may be released again, or end up in the necropsy room where, if several specimens are found, preventive measures can be taken and future threats eliminated from the game.

Design Process: A Collaborative Project

The Milaneta Project is not the work of a single person; it is the result of almost two years of multidisciplinary collaboration that has brought together artists, scientists, conservationists and educators.



Artistic collaboration

Numerous artists from Aragon have taken part in the project, contributing their technical skills and artistic sensibility to:

- Capture the beauty and uniqueness of each protected natural area in Aragon
- Depict the Aragonese landscape in all its diversity
- Illustrate the threats in an educational yet striking way, highlighting realities that affect not only the red kite but biodiversity in general.

Scientific rigour and technical supervision

A key aspect of the project has been ensuring the accuracy and rigour of the content. To this end, we have benefited from the active collaboration of:

- Ester Ginés and Jorge Rucio. Biodiversity specialists from the Government of Aragon, responsible for the red kite captive breeding programme
- María Cortés Benedé. (Red Kite’s mother) Veterinary technician responsible for the captive breeding programme

run at the Aragón Wildlife Recovery Centre.

- Juan Antonio Gil of the Bearded Vulture Conservation Foundation.

His supervision has been essential in ensuring that the game accurately reflects biological reality, documented threats and the conservation measures implemented.

Network of institutional partners

The project has received the support and collaboration of key organisations in Aragonese and European conservation:

- Foundation for the Conservation of the Bearded Vulture (FCQ)
- SEO/BirdLife
- AMUS
- LIFE EUROKITE Project (European project for the conservation of the red kite)
- ANSAR (Aragon Naturalist Association)
- Friends of the Vulture Fund

This collaboration ensures the scientific rigour of the content and its connection to the reality of conservation on the ground.

Impact and Projection

A direct link to Reality: A Kite with A Name of its Own

One of the most exciting milestones of the project is the direct link between the game and the real-life conservation programme. Officials from the Government of Aragon have allowed one of the birds released in 2025 to be given a name chosen by the Milaneta Project.

Onza was the name chosen through a participatory voting process on social media via the proyectomilaneta Instagram account, actively and emotionally engaging the community in conservation efforts.

Released on 28 October 2025 and, thanks to the GPS transmitter she is fitted with, we are able to regularly track her movements across the Aragon region. This is undoubtedly a tool that allows us to continue raising awareness of the threats she faces on her journey through the Aragonese landscape, as well as other interesting facts about her.

In the following screenshots, we can see the route, speed and change in altitude over a few seconds as described by Onza whilst riding a thermal current.

In another of the images, Onza can be seen standing on the railway tracks, presumably feeding on a roadkill. This is a highly dangerous situation, not only due to the risk of being hit by a train but also because of the risk of collision or electrocution with the overhead lines whilst manoeuvring to enter or leave the area.

Finally, tracking this bird—given its gregarious nature—allows us to discover new roosting sites within the Ebro Valley.

This connection between the game and Onza makes the educational experience tangible, vivid and dynamic.

Institutional Adoption

The Aragon Nature Conservation Council has purchased 100 copies of the game, which have been distributed to:

- Public libraries in Zaragoza
- Libraries in various municipalities across Aragon



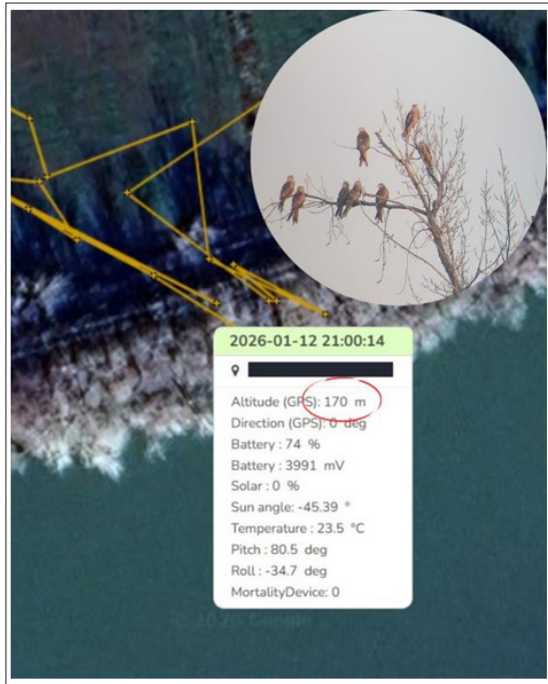
This distribution broadens the educational reach, enabling families, schools and groups to access the game free of charge and learn about the life of the red kite.

Educational value

The Milaneta Project is applicable across multiple curriculum levels:

- Knowledge and identification of the species: biology, ecology, threats
- Geography and natural heritage: protected natural areas in Aragon

- Awareness of threats: identification of human-induced and natural problems
- Empowerment: understanding conservation alternatives and measures
- Critical thinking: strategic decision-making
- Teamwork: in a cooperative manner



Conclusions

The conservation of the red kite requires action on multiple levels: breeding programmes, habitat protection, threat reduction, scientific research... but it also needs something fundamental: a society that is informed, aware and emotionally connected to the species.

The Milaneta Project demonstrates that gamification can be a powerful tool for environmental education. It is not just about 'playing', but about:

- Experiencing the challenges of conservation first-hand
- Understanding the complexity of threats and solutions
- Appreciating the work of government bodies, conservation organisations and volunteers
- Connecting emotionally with the red kite and its habitat

The game has shown that it is possible to discuss complex and urgent issues in an accessible, engaging and rigorous way. And most importantly: it is reaching diverse audiences, from 10-year-old children to adult nature enthusiasts, creating a wider community of red kite advocates.

At a time when biodiversity faces unprecedented challenges, we need to expand the ways in which we communicate, educate and mobilise. The Milaneta Project is our contribution to this collective effort.

The red kite flies in Aragon thanks to the work of many. Now, it also flies across the game boards, sowing seeds of knowledge and commitment.