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| TITLE | PA 5:” DESIGNING A SCIENCE PROJECT: TEACHING UNITS FOR PRIMARY EDUCATION CHILDREN IN SCHOOLS NEAR A PROTECTED AREA WITH ENDANGERED SPECIES IN THE BASQUE COUNTRY/NAVARRE” |
| DESCRIPTION | Within Lesson 4, "***Design and development of an instructional module regarding a topic of the natural environment***", students can voluntarily design a Vee diagram or a tree of knowledge that focuses on the work. Each group of students must develop an instructional module (IM) or science project which includes a teaching unit or instructional design (ID). The IM can **include a tree of knowledge (voluntary) and a knowledge model** to be developed by the group referring to a protected natural area from Navarre which may include endangered species living in the surroundings. The protected natural area can be: biosphere reserves (Bardenas and Irati Forest), natural parks (Urbasa-Andía, Lordship of Bertiz, Aralar), wetlands (Pitillas Lagoon, [Las Cañas Reservoir](https://www.diariodenavarra.es/noticias/vivir/medio-ambiente/2023/02/02/seis-humedales-naturales-cuenta-navarra-556782-3281.html)  ), and they will also have to decide the grade of primary education in which they want to teach it (from 1st grade until 6th grade). The **school selected** (for contextualizing the project) will be based in the nearby of the selected protected area. If students contact the school and offer the teaching material for putting it into practice, the project will gain value.  Students will have to frame the ID or teaching unit in any of the **3 basic knowledge** (and the subordinated specific knowledge contents), specific competences and evaluation criteria contained in the Natural Sciences Primary Education Curriculum. For that, they will make up a **learning situation** which will take place for 2 weeks or 3 weeks and will keep **progression in the designed activities**: introductory, developmental and summary (evaluation) activities, bearing in mind the principles of meaningful learning. Methodologies such as green pedagogy, experiential learning, service-learning, the five E model can be used. Also [Bloom taxonomy](https://theesleducator.com/teaching-with-blooms-taxonomy/) can be used to design the activities.  Students can use different **web sites** for getting information regarding the **natural protected area** they will select (more information in **Annex 1**):   * <https://www.navarra.es/es/medio-ambiente/espacios-naturales-protegidos> * <https://espaciosnaturales.navarra.es/es/> * <https://bardenasreales.es/> * <https://www.navarra.es/es/web/cin-ochagavia-otsagabia> * <https://espaciosnaturales.navarra.es/es/urbasa-y-andia> * <https://www.sierraurbasa.es/galeria> * <https://www.parquedebertiz.es/> * <https://www.navarra.es/es/medio-ambiente/monumentos-naturales>   Also, the teacher will provide the links to **two viewfinders,** one, **GEOEUSKADI** corresponding to the Basque Country ( <https://www.geo.euskadi.eus/geobisorea/> ); and the other one, **IDENA**, to Navarre (<https://geoportal.navarra.es/es/web/geoportal/visores)/> https://idena.navarra.es/navegar/#).  These applications allow the students select a specific place of the map (Basque Country or Navarre) and try to get to know the species protected in that area, which may belong to the selected natural protected area; students can observe which mammals or plants or insects are included and are endangered **(**more information in **Annex 2)**…whatever they decide it may be interesting to work in with students of primary education. For that, first students will have to test the applications and charge the layers of maps that interest them. Once they have selected the place and species, they will have to think about a nearby school which may be interested in using their teaching unit in the future.  From this practice it is necessary to bring a computer to class so that the students work on their teaching unit, using the Cmap Tools software. I have created a folder called TNS 2025 which contains 10 folders, one for each group. The user and password for TNS 2025 is tns2025. For the specific folders of each group, I will send a message with their particular user and password.  **The folders are inside “Cmaps en sitios”, and you can click “cmap.unavarra.es” in “Agregar sitios”; then the folder corresponding to the Public University of Navarra will be available. Inside you will have to click in “TNS students” (user and password: tnsstudents), and inside “TNS 2025” (user and password: tns2025). You will see the different folders of each group which have different passwords and you can start designing your concept maps inside your folder. For keeping it inside, you will have to click in “Guardar como” and then select “Cmaps en Sitios”, the server of “Universidad Pública de Navarra” and “TNS Students” and “TNS 2025” and your specific folder, as for example “GROUP1\_2025”, and so on. The teacher will provide the specific passwords to each of the groups.**  **Below you can see the folder TNS students and TNS 2025.**    **My advice is that you check the project schedule for getting to know how to structure the remaining work throughout the sessions left. First, you would have to decide the region and protected species to work about and then, you could start using Cmap Tools. Remember you can add any resource into a specific concept of the map, even another concept map. This will allow you to create a knowledge model, which in this particular case, it would be the instructional module or science project. The resources can be videos, powerpoints, PDFs, word documents, podcasts…**  **EXAMPLES FROM OTHER YEARS:**  [**http://130.206.160.21/rid=1VTP49PSY-NYXBP9-1V5/BIOSPHERE%20RESERVES.cmap**](http://130.206.160.21/rid=1VTP49PSY-NYXBP9-1V5/BIOSPHERE%20RESERVES.cmap)  \*A permission form will be offered to students if they want their work to be used by other teachers in practice, so that this didactic material can be part of “The School in the Cloud”. They will have to sign this form if they agree. |
| SPACE | Ordinary classroom |
| TIME | Practical lessons in medium and large groups during several sessions of the subject TNS |
| RESOURCES:  -HUMAN  -MATERIALS | - Teacher and practice groups (10).  - paper, pen, computer, books |
| GROUPINGS | Medium groups (10) |
| ANNEXES | Class and book notes.  Applications: Birdnet, Plantnet, iNaturalist…  Books:  “El mapa conceptual y el diagrama UVE: recursos para la educación en el siglo XXI”, by Fermín González (2008). Narcea editorial.  “Nuevas estrategias para la enseñanza de las ciencias en educación superior: aprendizaje significativo sostenible”, by Maider Pérez de Villarreal (2022). Octaedro editorial.  “Campus Verde. Guía de la Vegetación de la Universidad Pública de Navarra”  “Guía de aves de la Universidad Pública de Navarra”.  VIewers:  Basque Country: (First click on the left on “List of layers” which can be “fauna amenazada, flora amenazada) and then on the right, in an image representing spacial selection. Then you click on a circle, to select the región”.  <https://www.geo.euskadi.eus/geobisorea/>    Navarre: (Click on the right on “Herramientas” and select any of the layers which may interest you, as for example: Medio Ambiente, Biodiversidad y ecología)  <https://geoportal.navarra.es/es/web/geoportal/mapas/cartografia>  <https://geoportal.navarra.es/es/visores>  https://idena.navarra.es/navegar/#    ANNEX 1: Natural protected areas in Navarre  ANNEX 2: Endangered species in Navarre |
| CROSS-CUTTING ISSUES | * Integral education * Moral and civic education |
| ASSESSMENT | **Rubric of the concept map for the Instructional Module** and **rubric of the oral exposure** of the instructional module. |

**SOCIAL JUSTICE LEARNING:**

This year we will work on the **methodology of social justice learning** as the perspective of the subject is the science, technology, society and environmental approach, whose goal is sustainability and offering a service to the community. For that, you will construct a knowledge model on a protected natural area from Navarre which may include endangered species from the Basque Country or Navarre for primary education children who live in the selected region (for that you can use any of the viewers provided). You can decide whether you want to contact with a nearby school so that you could offer your teaching unit for its future application or just use a nearby school for contextualizing your project. The idea is that you can send the material regarding natural sciences to engage the students with their nearby environment by protecting an endangered species. You can use different methodologies, but you can also remember the 5 Es to design the activities: Engage, Explore, Explain, Elaborate and Evaluate. You can also consider Bloom’s taxonomy for a correct progress in the deepening of knowledge.

**DIDACTIC TRANSPOSITION**

In this practical activity, your role changes: you are not anymore students, but teachers, and you will have to design a project (Instructional module/IM) which contains a teaching unit (or instructional design/ ID).

Diagrama

El contenido generado por IA puede ser incorrecto.

<http://130.206.160.21/rid=21B7PMH55-FW62X3-10H/SCIENCE%20PROJECT%202025_RECOMMENDATIONS.cmap>

**PROCESS FOR DESIGNING THE PROJECT**

**The project** will start next week, and you will have to follow some steps:

\*You will have to do it using Cmap Tools software (once downloaded the latest version in IHMC).

1. **Design a Vee diagram/Tree of knowledge, which will focus on the main questions you ask yourselves as teachers and which are connected to the objectives of your work. You have a model in Word/Cmap Tools you can use and complete.**
2. Design the “KNOWLEDGE MODEL”: material known by the teacher for transmitting it to students (for its didactic transposition). This should be in the shape of a knowledge model containing different submaps and dimensions and it should be about the endangered species, the ecosystem in which it lives….
3. **Design of the Teaching Unit (Instructional design): Objectives (general ones for the current curriculum but specific ones for the activities you will develop) and basic contents (contextualized to the natural protected area and the elements that live in their ecosystems).**
4. **Design of the methodology: you can use a general strategy as for example social justice learning, but included in meaningful learning pedagogical model, inquiry, discussion, cooperative learning…and you can add a specific methodology (puzzle, pencils to the center…) used in a particular activity.**
5. **Design a learning situation that allows the sequencing of the activities: some (1-2) must be of presentation and of diagnosis of prior knowledge regarding the main concepts; others (4-6) must be of development and deepening in knowledge (use Bloom’s taxonomy and Dale’s Cone); finally (1-2) must be of summary and assessment. You can create some teaching products (as for example a didactic tale, a song, a poem /haiku, a nest for birds, a refuge for hedgehogs, a website, an experiment for showing a scientific concept that you want to include…). You can record a 1 minute video for each actitivity.**
6. **Design of the assessment (heteroevaluation, coevaluation…) and self-assessment (for the teacher). You can design rubrics…**
7. **Finally, add a reflection of the creative process itself as a group and add a score for your group work and for the particular work of each component of the group.**
8. **Make a 1’ video-recording of each of the planned activities explaining the project to the children. If you consider or if it is possible, you can always make the recording in the natural protected area you have selected.**
9. **The oral defense will last 10 minutes and will be a general summary of the whole project.**

**IMPORTANT!!!**

**\*This activity is worth 25% of the whole subject: 10% is worth the oral defense, and 15% the written project. As getting to know how to evaluate is a skill you will have to develop when becoming teachers, you will have to evaluate the oral defense of the rest of the groups except yours. The final mark of the oral defense, will be 5% the teacher’s mark and 5% the media obtained from all the rest of the groups. If a group does not evaluate the others, it will mean the can only reach 5% of the oral defense mark.**

**ANNEX 1**

### **PROTECTED HABITATS AND SPECIES IN** [**NAVARRE**](https://www.visitnavarra.es/es/home)**: PROTECTION OF THE MOST VALUABLE AND VULNERABLE SPECIES AND HABITATS**

[**https://www.navarra.es/es/medio-ambiente**](https://www.navarra.es/es/medio-ambiente)

[**https://www.navarra.es/es/medio-ambiente/espacios-naturales-protegidos**](https://www.navarra.es/es/medio-ambiente/espacios-naturales-protegidos)

[**https://espaciosnaturales.navarra.es/es/**](https://espaciosnaturales.navarra.es/es/)

**Natura 2000**

[**https://www.miteco.gob.es/es/biodiversidad/temas/espacios-protegidos/red-natura-2000.html**](https://www.miteco.gob.es/es/biodiversidad/temas/espacios-protegidos/red-natura-2000.html)

Natura 2000 is a European ecological network of biodiversity conservation areas. It consists of Special Areas of Conservation (SACs) established under the Habitats Directive and Special Protection Areas for Birds (SPAs) designated under the Birds Directive.

It aims to ensure the long-term survival of species and habitat types in Europe, helping to halt biodiversity loss. It is the main instrument for nature conservation in the European Union.

27% of Navarre's territory, 281,000 hectares with more than forty natural areas of extremely important ecological value, forms part of the [Natura 2000 Network](https://www.miteco.gob.es/es/biodiversidad/temas/espacios-protegidos/red-natura-2000.html) (a large European network designed to guarantee the conservation of biodiversity).

In Navarre there are [17 Special Protection Areas for Birds (SPAs) and 42 Special Areas of Conservation (SACs)](https://espaciosnaturales.navarra.es/es/).

**Network of protected areas in Navarre (RENA)**

The Network of Protected Spaces of Navarre (RENA) represents 8% of the territory of the region.

RENA is made up of:

2 World Biosphere Reserves: [Bardenas Reales](https://bardenasreales.es/) and [Selva de Irati](https://www.navarra.es/es/web/cin-ochagavia-otsagabia).

3 Natural Parks (64,933 ha): [Señorío de Bértiz](https://www.parquedebertiz.es/), [Urbasa y Andía](https://espaciosnaturales.navarra.es/es/urbasa-y-andia) and Bardenas Reales. These are natural areas that have been little transformed by human action, which, due to their peculiar ecosystems or geological formations, are the object of conservation.

3 Integral Reserves (487 ha): Lizardoia (Ochagavía), Ukerdi and Aztaparreta (Isaba). These are small areas of great ecological interest with forests of beech, fir and black pine on limestone; with birds such as the black woodpecker and the white-backed woodpecker; with deer, deer and roe deer. No human exploitation is allowed, only scientific and educational research.

38 Nature Reserves (9,178 ha): these are ponds, cliffs, ravines and pools of ecological interest in which human activities that do not harm nature are allowed. One example is the Larra Nature Reserve, the largest in Navarre, which includes one of the largest karst areas in Europe: 120 km².

28 Natural Enclaves (931 ha): these are copses, pine groves and lagoons with poplars, alders and white willows where birds such as the kingfisher, bee-eater, scops owl, grey heron, etc. nest. Duly ordered human activities that do not harm nature are not prohibited.

[47 Natural Monuments](https://www.navarra.es/es/medio-ambiente/monumentos-naturales), places where there are formations that, due to their beauty or uniqueness, deserve official protection.

2 Natural Recreational Areas: [Orgi Forest](https://www.bosquedeorgi.com/) (Ultzama) and [Leurtza Reservoir](https://leurtza.es/) (Urrotz, Beinza-Labayen). These are areas of scenic interest for recreation and rest.

14 Wildlife Protection Areas (APFS) (2,815 ha): Arabarko, Arrigorri, Arrollandiet, Ateas de Iza, Baigur, Bazabal, Illarg, Iparl, Larraun, Mendibeltz, Peña Beze , Peña Izaga, Rala, [Roquedo de Etxauri](https://www.lexnavarra.navarra.es/detalle.asp?r=28529).

Two of the areas included in these networks are listed as Wetlands of International Importance: the Laguna de Pitillas and the Laguna de las Cañas (Viana).

MAP FROM IDENA: <https://idena.navarra.es/navegar/#ZXh0fGJhc2V8bWFwYWJhc2V8bGF5ZXJzfHV8Ly9pZGVuYS5uYXZhcnJhLmVzL29nYy93bXN8bnxJREVOQTpCSU9ESVZfUG9sX1JFTkF8b3x2fGh8dXJ8Znx0fElERU5BfGl8bGNhdC0xLTE5XjFeNDg5Njk3LjIzM3w0Njc5Nzc0LjQxMXw3MzU0NTcuMjMzfDQ3OTc0MDYuNDExXiQwfEBJfEp8S3xMXXwxfDJ8M3xAJDR8NXw2fDd8OHxIfDl8LTF8QXwtMXxCfC01fEN8LTV8RHxFfEZ8R11dXQ==>

**Livestock trails**

What are livestock trails?

They are transhumance paths that link traditional grazing areas so that shepherds and livestock farmers can take their goats, sheep and cattle to the best pastures, taking advantage of the favourable climate. That is, to high mountain passes or pastures in summer, or to flatter areas with a milder climate in winter.

What is their origin?

They have their origins in the routes travelled by primitive nomadic shepherds, possibly before the arrival of the Romans. During the Middle Ages, and with the development of agriculture, they became particularly important to ensure the free movement of herds between fields. At the beginning of the 20th century, with the appearance of motor vehicles and in order to differentiate them from roads, the Libro General de Cañadas (1924) was written.

What is their function today?

Cattle tracks provide livestock with a place to graze and to move around. This exercise has positive repercussions, such as the prevention of forest fires and the preservation of indigenous breeds of livestock. Their role as ecological corridors is important, as they ensure the migration, geographical distribution and genetic exchange of wild species by connecting the territory. Their complementary sporting and leisure use, such as hiking, mountain biking and horse riding, are also becoming increasingly important.

What surface area do they occupy in our community?

The network of cattle trails in Navarre is estimated to be 2,673 km long and crosses 265 municipalities and the territories of Bardenas Reales, Sierra Urbasa-Andía and Sierra de Lókiz.

What are the ‘cañadas reales’?

The ‘cañadas reales’ are the main routes of the network of cattle trails. Their long route generally follows a N-S direction, linking summer mountain pastures in the north with the southern wintering areas of the Ribera del Ebro and the Bardenas Reales. The best known of these are still used by transhumant livestock along part of their route.

See Cañada Real de los Roncaleses, the oldest and most consolidated in Navarre.

See Cañada Real de las Provincias, the only cattle track in the humid north-western part of Navarre.

What types of cattle trails are there?

There are classified and unclassified routes. In the former, the route is well defined, while in the latter it is merely indicative, so legal protection is less effective.

[**https://espaciosnaturales.navarra.es/es/**](https://espaciosnaturales.navarra.es/es/)

[**https://www.visitnavarra.es/es/te-gusta/turismo-naturaleza**](https://www.visitnavarra.es/es/te-gusta/turismo-naturaleza)

**NAVARRE AND ITS NATURE**

Navarre is a land of transition, and four different climates coexist in its domains. This inevitably affects the configuration of its landscapes and the great contrasts in its geography. On the one hand, the peaks and green valleys of the Pyrenees, on the other, the desert of the Bardenas and, in between, rolling hills, vineyards and crops. This diversity is a gift that nature has given us, it is our privilege for which we are grateful and proud.

Here you'll take in trails that lead you to peaks, jungles, forests, caves, vineyards and deserts. And even the Camino de Santiago itself will leave its mark on you in these foral lands.

A place where you can rediscover your inner peace during an amalgam of landscapes that change at every cardinal point. And that in every season is dressed in different tones to give you a different picture, but always powerful and calm.

The almost 180 km that cross Navarre from north to south leave you with a scene straight out of a fairytale, where you can practise your favourite activities in the heart of nature.

**The essential places to visit in Navarre are the following:**

- [Irati Forest](https://www.visitnavarra.es/es/selva-de-irati)

[- Desert of Bardenas Reales](https://www.visitnavarra.es/es/bardenas-reales)

[- Baztan Valley](https://www.visitnavarra.es/es/valle-de-baztan)

[- Cave of Zugarramurdi](https://www.visitnavarra.es/es/cuevas-navarra)

[- Gorges of Lumbier and Arbaiun](https://www.visitnavarra.es/es/foces-lumbier-arbaiun)

[- Source of the Urederra](https://www.visitnavarra.es/es/nacedero-del-urederra)

[- Señorío de Bértiz Natural Park](https://www.visitnavarra.es/es/bertiz)

[- Pilgrims' route to Santiago](https://www.visitnavarra.es/es/te-gusta/camino-de-santiago)

**The Navarrese Pyrenees and other evergreen valleys**

the Navarrese Pyrenees is one of the most environmentally valuable natural environments in the whole country. A unique place to connect with a nature and culture that have managed to preserve their essence and authenticity.

Here we have the gentlest mountains in the whole of the Pyrenees and, believe it or not, this is fortunate.

Why? Because they are very accessible mountains, ideal for walking; for entering impressive forests such as the Irati Forest or Bertiz; or for contemplating gorges overflown by vultures such as Lumbier or Arbaiun?

The Pyrenees are a moving territory, with charming valleys such as Roncal-Belagua, Salazar and Aezkoa and with picture-postcard villages: stone streets, sturdy farmhouses and rich gastronomy. It also has some renowned artistic treasures such as the Collegiate Church of Roncesvalles and the Sanctuary of San Miguel de Aralar.There are very nice valleys such as:

[**- Baztan Valley:**](https://www.visitnavarra.es/es/valle-de-baztan)

In the heart of the Atlantic Pyrenees, it is the noblest valley in Navarre, a land of noblemen and adventurers, craftswomen, witches and smugglers.

Baztan is an amalgam of evergreen meadows, picturesque villages, beautiful farmhouses of reddish stone and dense geraniums, delicious gastronomy and a deep-rooted culture. Its gentle hills outline the silhouette of villages such as Elizondo, Amaiur/Maya, or Ziga, where water is always present, as in the Xorroxin waterfall and the Molino del Infierno (Hell's Mill).

This valley is part of the Way of St. James, although you can also delve into its more hidden history through the stories of witchcraft and mythology that surround this place.

[**- Roncal Valley**](https://www.turismovallederoncal.com/)

The Roncal Valley, in the heart of the Navarrese Pyrenees, is one of those enclaves that seem to have been sketched by a romantic painter. Cobbled villages with imposing farmhouses, smoking chimneys and geraniums colouring the streets. All in a valley that is proud of its historical past and revalues it in its festivals and traditions.

Villages with their own identity, such as Isaba, Burgui or the Roncal itself, surrounded by an abundance of nature, are reason enough to organise a getaway to the Roncal. And not only that, its gastronomy - don't miss the migas de pastor (shepherd's breadcrumbs) and, of course, the Roncal D.O. cheese - and the ancient festivals, such as the Tributo de las Tres Vacas (Tribute of the Three Cows), will round off your visit to this valley.

**- Valley of Belagua**

Without leaving the Roncal Valley, from the village of Isaba, you can access this valley, the only glacier in Navarre. It is a valley with a long tradition of agriculture and livestock farming in which ancestral customs still survive.

It has several protected areas, one of which is the Larra Nature Reserve, one of the most impressive karst landscapes in Europe. Seeing how the black pine trees break through the limestone rock will make you take out your camera immediately. Oh, and it is a very tempting valley for speleologists, as its entrails hide more than 3,000 catalogued chasms. Another of its attractions is that it is home to the highest mountain in Navarre, the Mesa de los Tres Reyes (2,242m). This makes the valley an ideal area for hiking and cross-country skiing. In short, it's a real treat for mountain lovers.

[**- Valley of Ultzama**](https://ultzama.eus/es/pagina/servicios-turismo)

Another charming little valley just 25 kilometres from Pamplona. You will find all these attractions among rolling meadows, beautiful villages with well-kept farmhouses, and some breathtaking curds:

A thousand-year-old oak grove such as the Orgi Forest with simple trails (reservation required).

[La Granja Escuela Ultzama](https://granjaescuelaultzama.com/): it is more than just a farm. There you can eat Slow Food and Km 0, do cheese workshops and meet all the farm animals while learning about ecology and the environment.

[Ultzama Golf Club](https://www.golfulzama.com/)

[Double A’ Equestrian Club in Lizaso](https://ultzama.eus/es/seccion/que-ver-que-hacer/hipica)

The [Ultzama Mycological Park](https://parquemicologicoultzama.com/es), very popular in autumn for its wealth of mushrooms and fungi.

[Ezkurdi Beekeeping House-Museum](https://ultzama.eus/es/seccion/que-ver-que-hacer/casa-museo-apicultura-ezkurdi)

[The Orkin Monumental Oak Trail](https://es.wikiloc.com/rutas-senderismo/roble-orkin-8084022)

Hiking in the area:

Download the [Ultzama Valley guide map](https://parquemicologicoultzama.com/storage/files/2021/TI1ckNNUaiJmKnjHWJfGWE1Z6mgo3yv7GKyjbBzq.pdf) with information on footpaths and other services.

To the south of Ultzama, don't miss the [paths in the Atez Valley.](http://www.atez.es/es/turismo/senderos-de-atetz/)

To the north of Ultzama, [the Belate network of footpaths](https://www.bosquedeorgi.com/red-senderos-belate.pdf) is ideal for discovering its great natural value.

And to the north, another unknown valley, [Basaburua](https://turismo.basaburua.eus/es/turismo-es/), with the Jaunsarats oak grove, its pretty villages and several trails to enjoy the little-known oak and beech woods.

[**- Sakana Valley**](https://www.visitnavarra.es/es/camino-sakana)

Sakana is another of the magical valleys of Navarre with numerous very interesting spots that are still unknown to the vast majority. Before King Sancho the Great of Navarre established the so-called ‘French Way’ as the official route to Santiago de Compostela, there was an earlier route used by pilgrims from the 9th to the 11th century.

Various documents testify that this route used the Roman road Iter XXXIV, built in the 1st century between Bordeaux (France) and Astorga (León), and that after crossing the Pyrenees it passed through Roncesvalles and Pamplona, crossed Sakana, and continued on to Vitoria and Burgos.

From the 11th century onwards, the Sakana Way, also known as the Camino de la Calzada, fell into disuse, becoming a minor route and even falling into oblivion. But today we can once again enjoy the stretch that runs through this beautiful valley as it has been signposted and has all the necessary services to spend the night, eat and travel to it.

Do you want to go back to the origins of the Camino and walk its 45 kilometres in two or three stages? Organise the route to suit you, as the villages of the Sakana valley are ready to welcome you.

**ANNEX 2**

**THREATENED AND INVASIVE SPECIES**

The landscape of Navarre has been changing in recent decades. Forests are increasing and scrubland is replacing former crop fields and grazing land. The surface area of rain-fed crops has increased, and boundaries and small areas of natural vegetation have been lost. Power lines, energy production structures and communication infrastructures have increased dramatically. And finally, allochthonous species (not native to the place where they are found) are present in our territory, significantly altering the natural communities. All these changes endanger the conservation of some of our species.

There are several species whose future is jeopardised if measures are not taken to correct the negative impacts that affect them. The classification of a species as endangered is a commitment by administrations to work towards correcting negative impacts and ensuring viable populations in the long term.

The cataloguing of endangered species is done at State and Navarre level. State legislation is also obligatory for the Autonomous Communities: therefore, all species included in the State lists are also included in Navarre, which can include new species in the list or raise their level of threat.

**1. SPANISH CATALOGUE OF ENDANGERED SPECIES**

The Spanish Catalogue of Threatened Species defines threatened taxa or populations, including them in one of the following two categories: a) Endangered (populations whose survival is unlikely if the causal factors of their current situation continue to act) and b) Vulnerable (populations that are at risk of moving to the previous category in the immediate future if the adverse factors acting on them are not corrected).

[Royal Decree 139/2011](https://www.boe.es/buscar/pdf/2011/BOE-A-2011-3582-consolidado.pdf), of 4 February, establishes the list of wild species under Special Protection Regime and the Spanish Catalogue of Threatened Species.

**2. CATALOGUE OF ENDANGERED SPECIES OF NAVARRA**

[Regional Decree 563/1995](https://www.lexnavarra.navarra.es/detalle.asp?r=28536/BOE-A-2011-3582-consolidado.pdf), of 27 November 1995, includes certain species and subspecies of vertebrates of the fauna of Navarre in the Catalogue of Threatened Species of Navarre. This catalogue is prior to Royal Decree 139/2011, so that in those species in which the foral cataloguing is lower than the state cataloguing, the one with the highest cataloguing is the one that prevails.

[Regional Decree 10/2023](https://www.lexnavarra.navarra.es/detalle.asp?r=55687), of 15 February, creates the Navarre List of Wild Flora Species under Special Protection Regime and establishes the Catalogue of Threatened Flora Species of Navarre.

**3. RECOVERY PLANS**

The cataloguing of species as ‘In danger of extinction’ entails the drafting of a Recovery Plan and those catalogued as ‘Vulnerable’ or ‘Sensitive to habitat alteration’ require a Conservation Plan.

Specifically, the animal species that have recovery plans are: crayfish (cangrejo de río), bearded vulture (quebrantahuesos), Bonelli's eagle (águila de Bonelli), capercaillie (urogallo), ptarmigan (perdiz nival) and brown bear.

The species with a conservation plan is the little owl (mochuelo boreal).

**EUROPEAN MINK**

<https://www.wwf.es/nuestro_trabajo/especies_y_habitats/vison_europeo/>

The European mink has been officially declared a ‘Critically Endangered Species’ in Spain (This declaration, agreed by the Ministry and the Autonomous Regions in July 2017, was published in the Official State Gazette on 17 October 2018 and is important because it allows the government to declare the works and projects necessary for its recovery to be of general interest). However, this new category of protection will not serve to save the European vision from extinction if it is not accompanied by sufficient economic resources to guarantee the implementation of concrete measures.

The European mink is on the verge of extinction with only 142 specimens estimated in our country, as shown by the results of the last official census carried out in 2022 by the Autonomous Communities, and published last March by the Ministry for Ecological Transition and the demographic challenge. However, we are convinced that its recovery is possible if we act decisively in the implementation of an emergency plan through 10 conservation actions that address the various problems faced by this species, mainly focused on: the presence of the American mink, the lack of adequate monitoring of the species, the outdatedness of the 2008 Ex Situ Programme and the 2005 Conservation Strategy, as well as habitat destruction and social misinformation about the European mink.

**10 urgent measures** to save the European mink from extinction

The greatest threat to this native species is the presence of the American mink, which preys on European mink cubs and competes for the same habitat and resources, so the first two measures proposed are:

The implementation of a control plan for this invasive species in the rivers of our country with sufficient economic resources to guarantee its effectiveness.

Legally articulate the urgent and definitive closure of American mink fur farms in Spain through the approval of a Royal Decree in 2024.

A third measure is aimed at adequate, regular and coordinated monitoring of the species, for which it is proposed to carry out monitoring using non-invasive techniques on a biennial basis throughout its area of distribution.

On the other hand, although the European mink has had an ex situ conservation programme in Spain since 2008, it has been clearly insufficient to achieve its objective due to the lack of sufficient resources. Thus, the following measures proposed by WWF to improve it are: Provide the Programme of high-capacity breeding centres with the necessary human and economic resources;

Incorporate new procedures to improve the efficiency of captive breeding and releases - increasing the survival rate in the wild and favouring the settlement and reproduction of released mink.

The creation of an Advisory Committee of experts on the species to promote debate and provide higher quality information to assist subsequent decision-making by the species' Working Group.

The Strategy for the conservation of the European mink in Spain, launched in 2005, has become obsolete, so we propose to revise and update this document so that it has an appropriate logical framework and to implement a comprehensive action plan through ‘SMART’ objectives (specific, measurable, achievable, realistic and of limited duration) covering the entire population.

With regard to the destruction of the habitat in which European mink are found, we propose to restore the rivers and wetlands where the species lives with a comprehensive approach, eliminating mortality black spots, physical and ecological barriers, recovering ecological flows and riparian vegetation.

Finally, to ensure that there is adequate social and scientific knowledge about the European mink and its importance for biodiversity in our country, the NGO proposes a twofold approach: The development of an awareness and communication campaign to inform society of the importance of conserving the species and its habitat, as well as its situation and threats.

Carrying out new scientific studies to fill the existing gaps in knowledge about the biology and ecology of the European mink and its habitat. Through this set of urgent measures, MITECO lead the implementation of this emergency plan in coordination with the regional administrations where the last 142 specimens of European mink are found, mainly in La Rioja, Navarra, Basque Country, as well as in Castilla y León and Aragón. In Navarra there is a Life Project called “[Project for the recovery of river habitats in Navarre](https://territoriovison.eu/)” which promotes the improvement of the biodiversity of the lower reaches of the Arga and Aragón rivers, the area with the highest population density of European mink (Mustela lutreola) in Western Europe.

**4. STEPPE BIRDS**

The Directorate General for the Environment has carried out a review and update of the Areas of Importance for the conservation of steppe birds in Navarre (AICAENAS), with the aim of establishing a new territorial reference framework for the conservation of steppe birds in Navarre, adapted to the current situation.

The aim of this revision is to determine a minimum spatial network that guarantees the survival of steppe birds, identifying the last areas in which these birds appear in a stable manner and/or still maintain good habitat conditions.

In accordance with the Strategy for the Conservation of Threatened Birds Linked to Agricultural and Steppe Environments (MITERD, 2022), these areas have been called Critical Areas for the conservation of steppe birds in Navarre.

**5. INVASIVE ALIEN SPECIES**

Invasive alien species (IAS) are allochthonous species and constitute one of the main causes of biodiversity loss in the world.

Consult the [Spanish catalogue of invasive alien species](https://www.miteco.gob.es/es/biodiversidad/temas/conservacion-de-especies/especies-exoticas-invasoras/ce-eei-catalogo.html).

Consult the [Catalogue of invasive alien species detected in Navarre](https://www.navarra.es/documents/48192/25379483/AreasCriticasparalaConservaciondelaAvifauna_Marzo_.pdf/3fca6fa2-e146-d86a-71ad-1b287390e19a?t=1713338402848).