



# Newsletter N. 3

March 2019

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### SOCIOS



LIFE15 NAT/ES/000790



### ADMINISTRACIONES COLABORADORAS



# 1. 3D high-precision mapping results of yew forests at Sarastarri (Aralar Nature Park) and at Zezen Erreka (Pagoeta Nature Park) in the Basque Country were published

January 1<sup>st</sup>, 2019

As part of the LIFE BACCATA Project, the characterization of forestry formations with yew trees in Aralar and Pagoeta (Gipuzkoa, Spain) was conducted. The survey included the 3-D high-precision land photogrammetric mapping of the plots which are representative of these spaces. Thanks to this, some parameters were computed, such as size, structure, species distribution and the surveyed area condition.

The conducted mapping practices combined some techniques, such as automated digital photogrammetry, remote sensing, and Geographic Information Systems (GIS). Photos of the forestry plots were taken with a 3-axis camera stabilizer (Osmo, a trademark of DJI) connected to a 5-meter rod and with a tablet with DJI Go software that allows capturing images remotely. Over 1,300 photos were taken of plots of an area that ranges from 400 to 500 m<sup>2</sup> and its resulting orthophotography resolution was up to 1-5 cm. In addition a 3D model was used with over 17 million dots in each case.

The Sarastarri plot is located in a hillside on the North of Lareo Reservoir, in Aralar. It is covered with beech forests, with the outstanding presence of yew and holly trees. Its soils feature the emergence of some limy rock in the shape of outcropped lapies, although areas interspersed by deep and well-developed soils abound.



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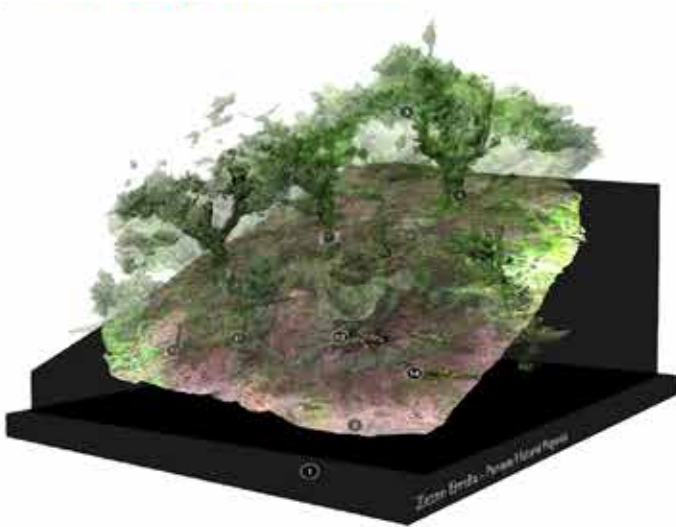
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In the case of Zezen Erreka, within the Pagoeta Nature Park, the plot is made up by a pruned beech forest that includes yew trees. Its soils, which are further developed, have no outcropped rock and its herbaceous canopy is less developed due to the reduced availability of the sun light.

Thanks to both mapping practices its fine characterization was achieved. This will allow us to compare the surveyed parameters in the future and therefore to assess the evolution of both enclaves across time.

The photogrametric mapping was carried out by the companies Bioma Forestal and 4Datum Investigación y Desarrollo S.L. under the supervision of Hazi Fundazioa, the Project Partner, and with the collaboration of the Gipuzkoa Provincial Council, the Manager of both Nature Parks.



Modelo de Zezen  
Erreka (PN Pagoeta)



Modelo de Sarastarri  
(PN Aralar)

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## 2. Upgrading work in the Priority Habitat 9580\* at Pagoeta Nature Park (Guipuzkoa) is making a good progress

January 10<sup>th</sup>, 2019

Yew tree populations –the featuring specie of the priority habitat 9580\*– at the Pagoeta Nature Park (Gipuzkoa) are well represented. These populations are comprised of a large number of specimens and thanks to the nature space management, the regeneration dynamics is quite striking.

However, there are two situations observed in need of intervention.

On the one hand, there are some female specimens of a good size which should be producing seeds but they are not because other dominant tree formations stand in the way. The lack of sun light is behind these “matriarchs” reduced reproductive function. This is particularly relevant in Pagoeta hence older yew trees are hardly abundant.

On the other hand, there are some extensive areas that receive seeds from yew trees and their companion species (holly, Albar hawthorn and butcher’s broom trees); however their tree canopy is so thick that it hinders their development. This strongly affects some spruce, Lawson cypress and Douglas fir tree plantations, although native forests such as beech woods are also affected.

To reverse both problems, Hazi Fundazioa hired some forestry labourers aimed at generating forestry gaps around the seed-producing “matriarchs” so that they can receive sufficient light.

Clearing work is also taking place in forests that receive seeds from the 9580\* priority habitat featuring species. To this end, tree felling and girdling tasks are carried out. The latter technique, which consists of making a cut around the entire tree circumference, enables the production of standing dead wood (snags), an interesting aspect to enhance the Pagoeta forest biodiversity.

To follow the guidelines set out by the Gipuzkoa Provincial Council, which manages the Nature Park, these works that started in this autumn will go on throughout the winter



**Figura 1** Abundant regenerated yew and holly trees in a beech forest which was cleared two years ago



**Figura 2** A generated gap around a female yew. The tree crown defoliation and the presence of dead branches can be observed, a sign of the lack of sun light.



**Figura 3** Cleared stand to contribute to yew trees and companion species regeneration. Felling residues, especially branches, are spread out to attract dispersing fauna so that regeneration can be initially protected.

### 3. Castile and Leon LIFE BACCATA Project coordination actions meeting

November 11<sup>th</sup>, 2019

Castile and Leon partners involved in the LIFE BACCATA Project (Castile and Leon Regional Government and CESEFOR Foundation) met last Tuesday, January 15<sup>th</sup>, in Cervera de Pisuerga Park (Palencia) in order to analyse the implementation state of the Project in the region.

The applying actions for 2019 were scheduled during this new meeting. These actions, which had been previously designed for A2 Action (Technical Planning of Conservation Actions), included, among others, silviculture treatments to improve the 9580\* Habitat (C2 Action), the plantation of featuring species in this habitat (C3 Action), some herbivore control measures (C4 Action: Excluding enclosures to protect the regenerated yew tree, etc.), protection against non-natural conditions (C5 Action), creation of three arboretums (included in the C6 Action), etc.

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ZEC Fuentes Carrionas and Fuente Cobre-Palencia Mountains, the venue chosen for the meeting, allowed visiting two yew tree stands which were characterized in the A1 Action of this Project. An excluding plot was created in one of them by a hunting enclosure to prevent large herbivores such as deer from accessing as they usually browse yew tree seedlings and as a result its further development is hindered. The results obtained are very positive; actually the plot contains a large amount of regenerated yew and holly trees. Individually protecting elements were installed as well to protect isolated yew tree seedlings.

Clearly there is a difference between the regenerated trees found outside and inside the plot. Only first-year yew seedlings are found outside the excluding plot. Meanwhile, this year's seedlings and further-developed seedlings are found inside the plot since they are not under the herbivore pressure the outside seedlings are and therefore they have the chance to thrive.

Another action taking place in this very same stand has been the opening of the beech canopy cover with the aim of facilitating the entry of sun light into the lower canopy cover that shapes the yew forest.

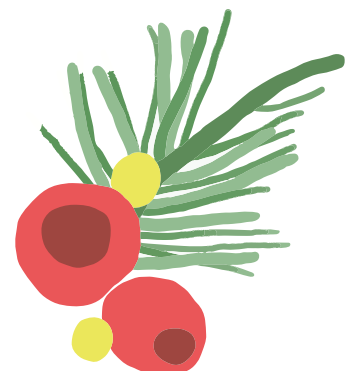
For the other visited stand, conservation actions were considered on site.



**Figura 1** Details of the enclosure installed on the stand to protect the regenerated yew trees from herbivores (especially from deer).



**Figura 2** Regenerated yew tree inside the stand excluding plot.





## 4. Results of the “Mediterranean forests of *Taxus baccata*” characterization in the Cantabrian Mountains of Castile and Leon da Cordilleira Cantábrica en Castilla y León

February 10<sup>th</sup>, 2019

The characterization of 9580 Habitat\* at the Mediterranean Forests of *Taxus baccata* in the Cantabrian Mountains of Castile and Leon was done from various perspectives, as one of the multiple actions implemented within the LIFE BACCATA Project.

This study started running a bibliographic search and a number of surveys to define the specie distribution across the territory. Then an inventory of 55 representative populations from 13 Special Areas of Conservation (SAC) was completed which was followed by a survey of their forest mensuration and biophysics features, as well as their forest and ecological dynamics. To do so the traditional sampling techniques, Geographical Information Systems and a combination of high precision mapping photogrammetrics were used.

Then for each of the surveyed stands, a diagnosis of their conservation status and pressures and existing threats was made. In parallel, several permanently monitored plots at a medium/long term were mapped. The analysis of such plots included a survey of the researched formations maturity and naturalness. In order to complete the inventory of threatened and singular biological diversity of the Castile and Leon yew forest, several populations were selected with the aim of inventorying the lichens and bryophytes communities, as well as the entomofauna associated with these slightly modified forest patches.



**Figura 1** A transect performed next to a permanent plot.



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The following results were obtained from the collected information:

- A proposal to discuss a new definition of the yew forest concept.
- The definition of indicators for the monitoring of yew forests conservation condition.
- The establishment of a set of forestry active conservation measures to lead, according to the Habitats Directive, a large proportion of the inventoried populations towards a middle-term advantageous conservation condition.

The herbivore pressure over the regenerated yew tree and its floristic entourage, the interspecific competition with other tree species as beech trees, the direct human pressure and the climate change are the main hinders for the preservation of these populations which altogether represent one of the largest HIC 9580\* wild manifestations in the Iberian Peninsula and European Union.

The LIFE BACCATA Project is cofounded by the European Commission in the framework of the LIFE Call and it will be implemented between 2016 and 2020 in fifteen locations of the Red Natura 2000 in the Cantabrian Mountains, which belong to Galicia, Castile and Leon, and the Basque Country. The University of Santiago de Compostela participates as the coordinator of the project and the Regional Government of Castile and Leon, Cesefor, Hazi Fundation and TRAGSA Group as partners.





## 5. LIFE BACCATA Technical Seminar

November 26<sup>th</sup>, 2018

On the next Thursday, 29 of November, the Agriculture Biodiversity and Rural Development Institute of Lugo (IBADER by its Spanish acronym) organizes the LIFE BACCATA Technical Seminar that is held in the Cactus Building of Lugo Campus (Location) and it will inform the population about the key role played by the yew tree (*Taxus baccata*) in conserving our own biodiversity and by extension the formations dominated by yew tree forests.

It is aimed at raising the public awareness about conserving our natural forest-based heritage and the cultural heritage associated with yew trees and the yew tree forests ecosystem services.

Different speakers from the LIFE BACCATA Project will make their presentations during the event. Currently this Project is working on conserving yew tree forests in 15 spaces located across the Red Natura 2000 of the Cantabria Mountains (Galicia, Castile and Leon, and the Basque Country). Additionally, two associations that have been working for a long time in conserving the yew tree forests and their natural and cultural assets will attend.

### November the 29th of 2018

BACCATA Technical Seminar.

Venue: The Cactus Building – The Lugo Campus.

### PROGRAMME:

**16.30** Presentation

**16.45 Paulino Martínez:** Preliminary results of the LIFE BACCATA genetic sampling

**17.30 Roberto Rubio:** Presenting the LIFE BACCATA actions in Castile and Leon.

**17.35 Javier Pérez:** Presenting the LIFE BACCATA actions in the Basque Country.

**17.40 Javier Ferreiro:** Presenting the LIFE BACCATA actions in Galicia

**17.45 Javier Ezquerro:** Advances in using yew trees as forest reproducing material in Castile and Leon

**18.15** Asociación A Morteira. The yew tree forests in the Bierzo-Leon Region.

**19.00** Asociación de Amigos del Tejo y Tejadas. New knowledge and guidelines about the yew tree and its conservation.

**19.45** Debate and discussion

Admission free to the event until seating capacity is reached (40 persons). The event poster is attached so that all the information contained can be posted on their social media.



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