

LIFE BIOREFORMED 2020 - 2024

Implementing a Mediterranean biorefinery to boost forest management through the production of added value products



PROJECT OBJECTIVE

Evaluate and demonstrate the biorefinery process to obtain new ways to revalorize improvement actions in forest with decay or post-perturbance risk, given the subproduct added value resulting from these actions.

One of the forest types tackled by the project are the Mediterranean pine forest affected by perturbances, both biotic and abiotic. Here, the forestry management can improve its productive potential making them more resistant and resilient to climate change effects.

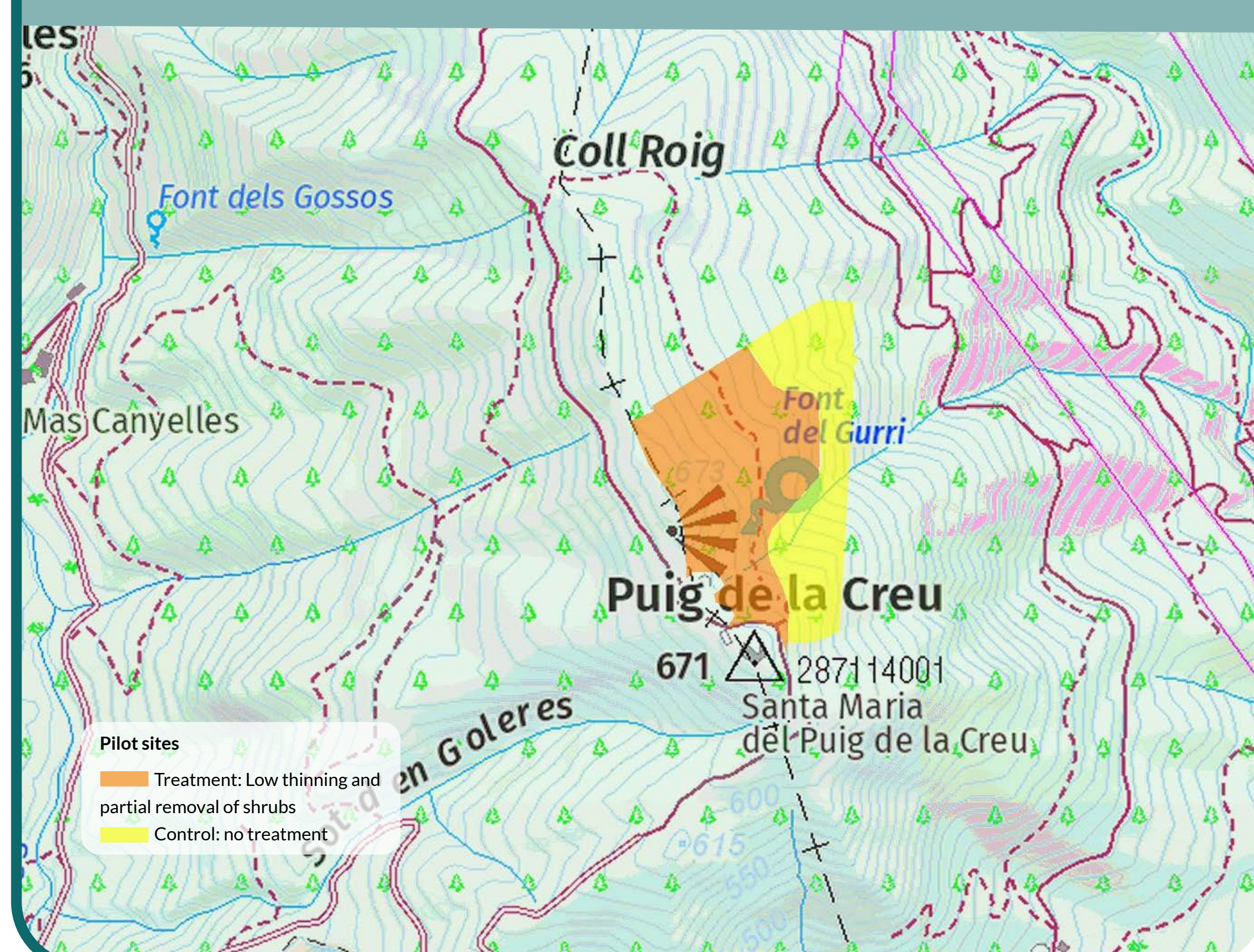
THE PINE FOREST OF VALLÈS AND THE WINDSTORM 2014

The Mediterranean pine forest (*Pinus halepensis*, *Pinus pinea* and *Pinus pinaster*) are a habitat of communitarian interest (habitat *9540). Apart from forest fires, which has always been a common characteristic of this ecosystem, during last years this pine forest have been affected by recurrent and long last droughts, as for or in combination of other perturbances, such as windstorms or plagues, reducing its total surface notably.

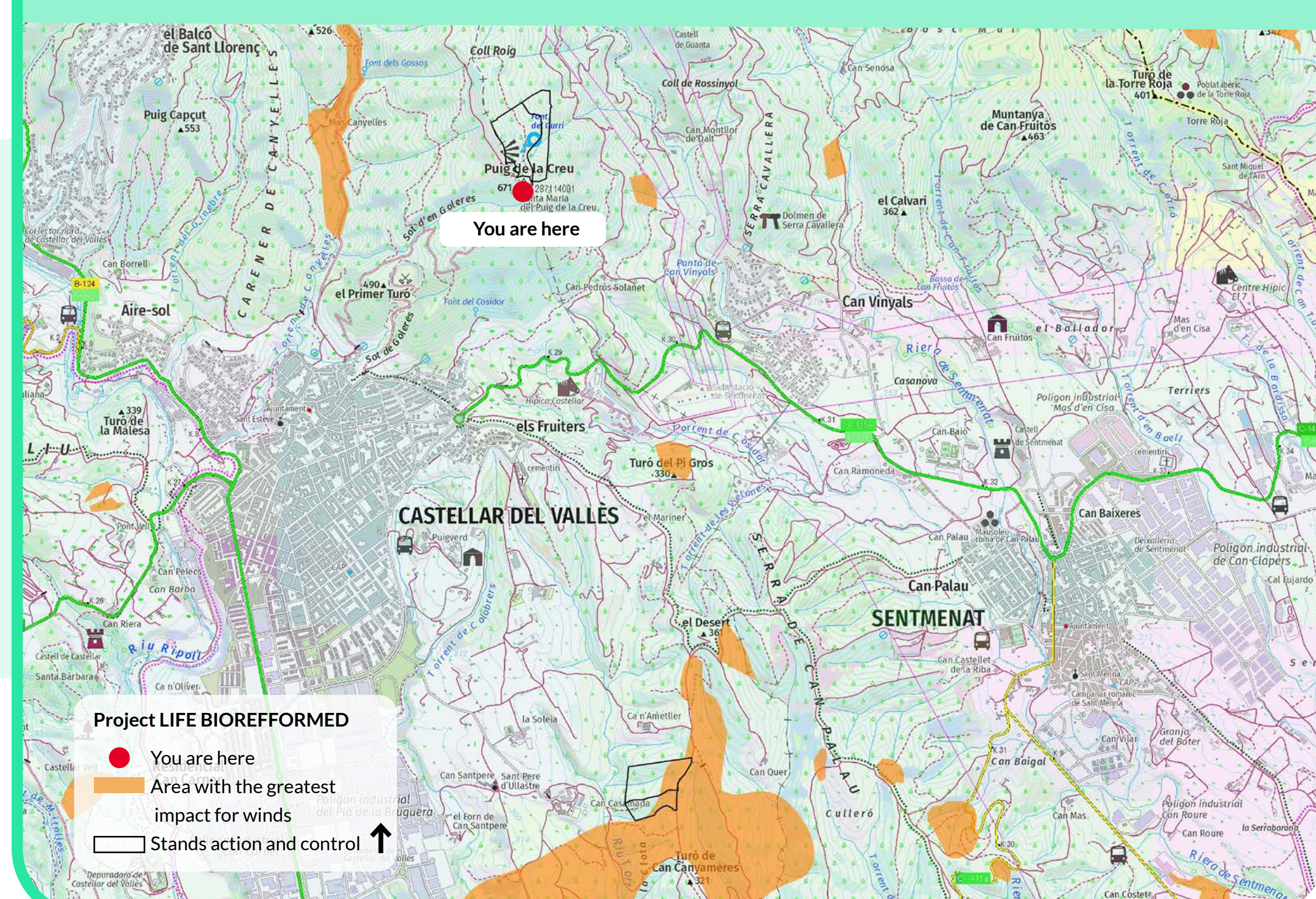
In the northern part of Barcelona provinces, covered on its major part of Aleppo pine (*Pinus halepensis*), the principal perturbation has been the windstorms. In 2014, one of such

storms significantly affected this habitat in Vallès Occidental and Oriental territories. From a total of 32.883ha, 515ha were completely devastated, and hundreds were affected, in an aleatory distributions making difficult its improvement management actions, beyond the extraction of the affected pines. The damages were estimated in a total of 26.000 m3, almost on its totally being Aleppo pine.

FORESTRY TREATMENTS APPLIED



YOU ARE HERE



FOREST ACTION IN VALLÈS

Implementation total surface:	10 hectares.
Lands:	Private forests with an active Forestry Management Plan (Puig de la Creu, number 3618; Can Casamada, number 4202). Mixed forests of Aleppo pine and Holm oak affected by the windstorm of 2014 where valuable pines have already been extracted. The actions are in two different regions of Vallès Occidental territory, with predominance of Aleppo pine and Holm oak.
Forest stands characteristics:	

SPECIFIC OBJETIVES:

- To structure the forestry mass to accelerate the starting of the production of the Holm oaks.
- Increase forestry mass vitality.
- To reduce the vulnerability to forest fires.
- To conserve the biodiversity recruitment capacity of the stands.

SILVICULTURE ACTIONS:

Affected tress cut and regrowth selection of Holm oaks up to 2-3 sprouts per strain. During cuts, key elements for biodiversity have been conserved (big trees or tress including microhabitats, companion species, dead wood of relevant dimension...), and selective and partial undergrowth clearing.

PRODUCT DESTINATION: The extracted biomass feeds a biorefinery that, through a thermochemical pyrolysis process, produces antioxidants, acetic acid, sugars and other interesting value-added compounds for the chemical, pharmaceutical and nutraceutical industries, as well as a solid fraction (torrefied biomass or biochar) for use as humic amendments or for bioenergy.

