

RESTORATION OF THE VEGETABLE COVER

Description

The ecological restoration consists in the treatment of degraded or altered spaces in order to recover its original form and function. Within this framework, it is offered the development of technical revegetation protocols, designed for specific scenarios that guarantee the quality of future actions.



In scenarios such as abandoned gravels the objective is not the restoration of the ecosystem but the redefinition of slopes and revegetation in order to promote a recreational use of these enclaves and to minimize environmental risks.

How does it work?

Design and validation of technical protocols for the restoration of unique ecosystems, based on knowledge of the dynamics of unaltered ecosystems, which pursue not only the restoration of biological diversity but also the functioning of the ecosystem.

The establishment of adequate protocols in these environments subjected to a high environmental stress will give a quality standard to the actions that are developed in these scenarios. These technical protocols will be applicable to the different phases of the ecological restoration process:

- Plant production: Development of protocols for the production of suitable indigenous woody plants.
- Commercialization of plants: Supply of new species of native plants more suitable in these environments and not currently contemplated in restoration projects or revegetation. Implementation in nursery of guides of technical recommendations that orient the client on the adequacy and management of the vegetal material supplied.
- Selection of reproductive material for restoration projects: Development of selection criteria for plant material during the writing of the project, as well as in the execution phase of works.
- Plantations and sowing: Analysis of spatial patterns and interspecific relationships to optimize the design of planting modules and temporal sequences of plantings and sowing.
- Follow-up of the evolution of the actions.

Advantages

If the objective is to implement a stable plant cover with low maintenance and low environmental impact, the replacement of exotic ornamental species by native species, as a first step, does not constitute a sufficient quality guarantee in revegetation projects. The complexity of the dynamics of wild systems cannot be emulated by the precarious lists of species that are considered in revegetation projects. Hence the interest of integrating in the design of technical protocols criteria based on the form and function of the affected ecosystems and that allow to anticipate the long-term risk of failures or negative environmental impacts.

These new criteria should consider aspects such as interspecific relationships, with implications in the definition of spatial patterns in plantations, or genetic variability and phenotypic plasticity of plant populations, of obvious interest in the selection of the origin of the reproductive material.

Where has it been developed?

This technique has been developed in the Department of Plant Biology of the Faculty of Biological Sciences. This technique has been developed in the Department of Plant Biology of the Faculty of CC. Biological. The responsible research group was established as such in 1986 and has been involved in research projects of the National R & D

Plan for 15 years, as well as in several projects and studies funded by companies, working on the characterization of the response of vegetables against stressors always from the optics of ecophysiology or functional ecology. The research group maintains a continuous dedication to the development of methods for the evaluation of the effects of bioindicator pollutants, through projects financed by companies (ENDESA, ALCOA, S.A.). However, since 1993, attention has focused on the response of vascular plants to stress. This line has allowed us to collaborate with Viveros Barbol in the design of experiments with autochthonous woody species of interest in the context of ecological restoration and revegetation.



Ecological restoration seeks to restore the appearance and functioning of altered ecosystems. Examples are the restoration of the Doñana marshes that were dried with eucalyptus (left) or the restoration of mountain ecosystems after the removal of ski slopes (Falda de Peñalara, right).

And moreover

The service offered allows the customer to incorporate new criteria into their production process. The research team will develop the protocols for the particular case of environments and specific problems at the request of the client. This service is offered either as a consultancy prior to the performance of the proceedings or as technical assistance during the execution of works corresponding to a previous project. A third possibility would be to train personnel specialized in the environmental problems of the company under the supervision of the research group.

Researcher in charge

Beatriz Pías Couso: mpias@pdi.ucm.es
Department: Plant Biology
Faculty: Biological Sciences