Landscape analysis through pictorial transects in degraded lands.

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Understanding the dynamics of plant populations and their relationship with the characteristics of the terrain (slope, texture, etc.) and with particular phenomena (erosion, pollution, environmental constrains, etc.) that could affect them is crucial in order to manage regeneration and rehabilitation projects in degraded lands. In recent years, the emphasis has been placed on the observation and assessment of microtopographic drivers as they lead to large-scale phenomena. All the ecological variables that affect a given area are interconnected and the success in unraveling the ecological patterns of operation relies on making a good characterization of all the parameters involved.

It is especially interesting to study the natural colonization processes that take place in Mediterranean areas with a high degree of seasonality, to whose climatic restrictions, the presence of pollutants and various anthropic actions, can be added. Over these degraded areas, we propose using a new tool, what we have come to call "pictorial transects", that is, one-dimensional artificial transects built from low-scale photographs (2 m²) taken along a line of work (transect) where you can see the points where ecological resources are generated, stored and lost, and their fluctuation throughout time. A derivative of these would be the "green transects" in which the green color has been discriminated using the open software Image I. It is an inexpensive, fast and straightforward pictorial method that can be used to research and monitor the spatial and temporal fluctuation of the potential input of resources (organic matter, water, fine particles, etc.) to the ecosystem.

The information obtained from pictorial transects not only refers to the measurement of the photosynthetic potential per unit area or the location of the critical points (generate, storage or sink of resources) but also makes it possible to monitor the specific composition of the plant cover. For an appropriate use of this methodology, the criteria to determine the direction and length of the different transects must be previously and carefully established according to the objectives proposed in the study. For example: a radial transect in a salty pond will give us information on the changes in the plant cover as we move away from the center and the salinity decreases. In the same pond, a transect parallel to the shore will give us information on those changes that occur in the vegetation that do not depend on the degree of salinity. There are some cases in which this method could be very useful, as in the natural colonization of a degraded mine.
site or to assess the progression area affected by allochthonous species or weeds in extensive crops.