



Changes in soil organic carbon stocks in the subalpine belt in the Borau Valley as a consequence of revegetation processes

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During the last decades, important land use changes were observed in the Central Spanish Pyrenees, especially cropland abandonment and secondary vegetation processes. In addition, climate variability, the decrease in the cattle pressure and the abandonment of subalpine pastures imply a new landscape scenario in Mediterranean mountains characterized by the revegetation process and the expansion of forest species in the subalpine area. The main objective of this study is to analyse and compare soil properties and soil organic carbon stocks in different land uses on the subalpine belt in the Central Spanish Pyrenees (Borau Valley). For this purpose, a total of 48 samples from 4 land covers (pastures, scrubland, young and old forests) and from four soil depths (0-10 cm, 10-20 cm, 20-30 cm, > 30 cm) were analysed. The results demonstrate that: (i) subalpine pastures present the highest carbon stocks with few variations in depth; (ii) land use changes cause significant changes in physical and chemical soil properties; and (iii) the scrubland and forest expansion in subalpine pastures will not generate an increase in the accumulation of organic carbon in the soil.

Acknowledgments: This research was supported by the ESPAS project (CGL2015-65569-R, funded by the MINECO-FEDER). Estela Nadal-Romero was the recipient of a “Ramón y Cajal” postdoctoral contract (Spanish Ministry of Economy and Competitiveness).