



Analysing regulation ecosystem services recent trends in coastal agro environmental landscapes of Eastern Spain

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Climate regulation is one of the services that is provided by ecosystems, being carbon storage one of the most widely recognized of all ecosystem services. Although, in very dynamics human intervened landscapes, managing for carbon storage and sequestration requires information not only of the organic carbon stock agents (soils and vegetation) but also of the temporal dynamics produced by human activities on the territory.

To analyse recent trends in organic carbon stocks and fixation due to land use-cover changes a spatial GIS methodology has been developed. Initial input information consisted on digital maps of organic carbon contents in soils, CO₂ fixation by vegetation and land use-cover maps for the years 1990 and 2012 adapted from CORINE LAND COVER nomenclature. The study has been undertaken in the fluvio-littoral landscape area of the city of Valencia, Spain.

Results show that from 1990 to 2012 major changes in land cover have been produced by the increment of impervious-artificial covers, a process known as anthropogenic soil sealing. Since 1990 to 2012 there has been an increase in artificial cover of 2600 ha (6%), ranging in 2012 to 15% of the total area (43602 ha). Such trends have been produced mainly in detriment of agricultural irrigated lands (with a total loss of 2574 ha). Regulation services, expressed as potential carbon stocks of both soils and vegetation, do also reflect land cover dynamics. A total reduction of 111937 tones (6,3%) has been produced between 1990 and 2012, of which 72583 T are attributed to soils and 39354 to vegetation.

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