

林学—研究报告

洞庭湖湿地草地不同利用方式对土壤碳储量的影响

康文星¹,王卫文²,何介南¹

1. 中南林业科技大学

2.

摘要:

为研究不同利用方式对湿地草地土壤有机碳储量的影响,通过不同时段... 结果表明:苔草地营造杨树林,对土壤有机碳储量的影响是一个骤变过程,可以引起土壤40 cm甚至以下土层有机碳的损失;造林8年后,原来储存在土壤中的有机碳损失了33.89 t/hm2;每年取走地上产品对土壤有机碳储量的影响是一个逐渐变化的过程,主要影响土壤表层尤其是0~10 cm深土壤碳的积累量,与未受人为干扰的苔草地相比,8年内土壤有机碳的积累量只少1.95 t/hm2。不论何种人为利用方式都减少了湿地草地土壤有机碳的积累量。

关键词: 土地利用; 湿地; 土壤碳储量; 洞庭湖

Impacts of Soil Carbon Storage on Different Land Use in Wetland and Grassland of Dongting Lake

Abstract:

In order to study the effects of different land use/cover change (LUCC) types on soil carbon storage, the changes were analyzed based on the data of soil organic carbon contents at different time. The results showed that: (a) there was a leap decrease on soil organic carbon storage in the early stage when sedgelands changed into poplar forest, which mainly lead to the loss of soil organic carbon at or below 40 cm depth; (b) the land lost soil organic carbon at 33.89 t/hm2 after 8 years of poplars plantation; (c) taking away the aboveground vegetation products every year changed soil organic carbon storage gradually, which mainly affected soil carbon accumulation in the top layer of soil especially at 0~10 cm depth. Compared with sedgeland which had not been disturbed by human, the soil carbon accumulation reduced 1.95 t/hm2 within 8 years; (d) whatever LUCC types, all reduced soil carbon accumulation in wetland and grassland of Dongting Lake.

Keywords: land use/cover change wetland soil carbon storage Dongting Lake

收稿日期 2010-06-02 修回日期 2010-07-28 网络版发布日期 2011-03-01

DOI:

基金项目:

湖南省科技厅重点项目;国家林业局重点项目

通讯作者: 康文星 中南林业科技大学, 长沙410004

作者简介:

作者Email: kwx1218@126.com

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