

研究报告

三江平原典型湿地土壤剖面有机碳及全氮分布与积累特征

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摘要 研究了三江平原2类典型湿地(毛果苔草沼泽和芦苇沼泽)沉积物剖面有机碳、全氮的分布特征与积累现状. 结果表明, 2类沼泽剖面有机碳分布均具有明显的储碳层和淀积层; 上层的储碳层厚度约为60 cm, 有机碳平均含量分别为96和184 g·kg⁻¹, 全氮平均含量分别为7.4和17.6 g·kg⁻¹; 下层的淀积层内有机碳和全氮含量低而稳定. 2类沼泽剖面有机碳和全氮含量随剖面深度增加而下降, 有机碳、全氮与容重之间相关均极显著($P < 0.01$). 2类典型湿地有机碳密度在20~40 cm剖面内最大. 储碳层内, 有机碳储量分别为 1.83×10^4 和 1.73×10^4 t·km⁻², 全氮储量分别为 1.45×10^3 和 1.67×10^3 t·km⁻²; 100 cm以内, 有机碳储量分别为 2.86×10^4 和 2.62×10^4 t·km⁻², 全氮储量分别为 2.18×10^3 和 2.49×10^3 t·km⁻². 植被类型对湿地剖面有机碳、全氮含量及储量均具有不同程度的影响.

关键词 [三江平原](#) [沼泽](#) [有机碳](#) [全氮](#) [分布特征](#) [积累](#)

分类号

Profile distribution and accumulation characteristics of organic carbon and total nitrogen in typical marshes in Sanjiang Plain.

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Abstract

The study on the profile distribution and accumulation characteristics of organic carbon (C) and total nitrogen (N) in two typical marshes in Sanjiang Plain showed that on the sediment profiles of *Carex lasiocarpa* marsh and *Phragmites communis* marsh, there existed distinct deposition horizon and illuviation horizon. In deposition horizon (0-60 cm), the average contents of organic C and total N were about 96 and 184 g·kg⁻¹, and 7.4 and 17.6 g·kg⁻¹, respectively, while in illuviation horizon, they were at low level. The contents of organic C and total N were exponentially decreased with increasing depth, and had significant correlations with bulk density ($P < 0.01$). The organic C density was the highest at the depth of 20-40 cm. In the deposition horizon of the two marshes, the stocks of organic C and total N were 1.83×10^4 and 1.73×10^4 t·km⁻², and 1.45×10^3 and 1.67×10^3 t·km⁻², respectively, and at the depth of 0-100 cm, they were 2.86×10^4 and 2.62×10^4 t·km⁻², and 2.18×10^3 and 2.49×10^3 t·km⁻², respectively. Vegetation type had definite effects on the content and stock of organic C and total N in the marsh profiles.

Key words [Sanjiang Plain](#) [marsh](#) [organic C](#) [total N](#) [distribution characteristics](#) [accumulation](#)

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