Horizon Formation and Carbon Sequestration in Developing Soils of Created Wetlands. (S10-tandarich124548-Oral)

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Abstract:

At the Des Plaines River Wetlands Demonstration Project, soils in created sedge meadow (CSM) wetlands have been monitored for 10 years. In 1992, the preexisting soils were graded to the C horizons that became the substrate of the CSM wetlands. The CSM wetlands were divided into two units based on hydrology. The Unit 1 tier received Des Plaines River water directly while the Unit 2 tier received water that had flowed through a cleansing wetland between the tiers. The soils of selected wetlands in both units were described by geomorphic position (A-channel, B-channel edge, and C and D - floodplain), and sampled for fertility parameters in 1992, 1995, 1998 and 2002. Example results for two wetlands show carbon sequestration through horiozn differentiation and organic carbon increase most markedly at Position A. In Unit 1, Wetland C-3 and Unit 2, Wetland C-9, in 1992 the horizon sequence was Cg1-Cg2-2C. In 1995, the sequence of C-3 was Oa-2AO-3BC and C-9 was A-BC-CB. In 1998, the C-3 sequence was Oa-2AO-3BW and C-9 was OA-Bg1-2Bg2. In 2002 the sequence in C-3 was Oa-2OA-3Bg and C-9 was Oa-OA-Bg1-2Bg2.

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