Soils and Hydrology of Restored Prairie-Wetland Complexes in Central Iowa: Gordon's Marsh. (S10-moran125108-Poster)

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Abstract:

Knowledge of the spatial and temporal variability of water tables in restored hillslopes can be valuable to proper prairie-wetland management. This study evaluated water table dynamics and soil morphology for Mollisol hillslopes in a 13-yr restored prairie-wetland complex in the Des Moines Lobe, Iowa. Hillslopes typically consisted of Aquic Hapludolls under upland prairies on summits and shoulder slopes; Typic Endoaquolls under dominantly upland prairie on backslopes; calcareous Typic Endoaquolls under wet prairie and cattail/sedge zones on footslopes; and Cumulic Vertic Endoaquolls on closed pond depressions. Wetland soils displayed good correlation between soil morphology and saturation and contained thicker zones of saturation. Soils on summits and shoulders contained relict redoximorphic features. Cattail/sedge zones were ponded 3-6 months and pond depressions were ponded 6-14 months during the growing season in wet years. Wetland soils exhibited shallowest mean water tables, longest times of saturation in the solum; shallowest depth s to redoximorphic features, pore linings as dominant redoximorphic features; thickest mollic epipedons, and greater SOC sequestration. Restoration practices influence the local hydrology and soils in the wetland complex.

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