

PREVIOUS MANAGEMENT IMPACTS ON SOIL PHOSPHOROUS LEVELS

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Abstract

The Homestead Acts of the early 19th century across many areas of the United States resulted in the formation of 65 ha (160 acre) farms. The areas where livestock were concentrated on these farms consisted of a small portion of the 65 ha. As farms have become larger, many of the original farm building sites have been abandoned. These abandoned farmsteads still affect management decisions today. The objectives of this study are to show the visual and statistical relationships between both existing and abandoned farm building site locations and soil phosphorous concentration in the glaciated soils of eastern South Dakota. Three fields were soil sampled at various grid sizes and analyzed using the Olsen P method to determine the spatial distribution of soil P within these fields. Aerial images from approximately 50 years ago were collected from local NRCS offices to examine the past and present locations of farm building sites. In all three cases, the highest soil P sample in the field occurred near the present or past building site location. These individual sample points were assigned the value of a 'base point' or center point from which the distance was calculated to all other sample points within the respective fields. Regression analysis shows a negative correlation between relative soil P and distance from past and present building sites.

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