**Surficial Geology of Mills County, Iowa**

**Introduction to the Surficial Geology of Mills County, Iowa**

Mills County, located in the Northern Iowa Drift Plain, covers an area of 782 square miles, with a population of approximately 27,000. The county is known for its fertile soil and agricultural productivity, with corn and soybeans being the primary crops. The terrain is largely flat, with gentle slopes and low hills, typical of the drift plain.

The geology of Mills County is characterized by the presence of Quaternary deposits, which include till, glaciofluvial deposits, and outwash plains. These deposits have been formed by the retreat of the last glacial advance, the Wisconsinan, which occurred approximately 15,000 to 20,000 years ago.

**Quaternary Stratigraphy**

The Quaternary deposits in Mills County are divided into several units, each with distinct characteristics and depositional environments. The following units are recognized:

1. *Illinoian Till*: Formed during the Illinoian glacial advance, which occurred between 700,000 and 100,000 years ago. The Illinoian Till is a coarse-grained deposit, consisting of sand and gravel, and is often associated with fluvial and glacial outwash deposits.

2. *Kansan Till*: Deposited during the Kansan glacial advance, which occurred between 100,000 and 120,000 years ago. The Kansan Till is a finer-grained deposit, consisting of silt and clay, and is often associated with glacial meltwater deposits.

3. *Aftonian Till*: Deposited during the Aftonian glacial advance, which occurred between 120,000 and 140,000 years ago. The Aftonian Till is a well-sorted deposit, consisting of sand and gravel, and is often associated with fluvial and glacial outwash deposits.

**References**


**Acknowledgments**

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**Correlation of Map Units**

<table>
<thead>
<tr>
<th>Map Unit</th>
<th>Description</th>
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<tbody>
<tr>
<td><strong>Till</strong></td>
<td>Includes Illinoian, Kansan, and Aftonian till.</td>
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<tr>
<td><strong>Fluvial Deposits</strong></td>
<td>Sediments deposited by streams and rivers.</td>
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<tr>
<td><strong>Outwash Deposits</strong></td>
<td>Sediments deposited by glacial meltwater.</td>
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<tr>
<td><strong>Flood Basins</strong></td>
<td>Low-lying areas inundated by floodwaters.</td>
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The map is based on the work of Tinney, B.J., Anderson, R.R., and Rovey, C.R., supported by the U.S. Geological Survey. The map was created using ArcGIS software and was published by the Iowa Department of Natural Resources.