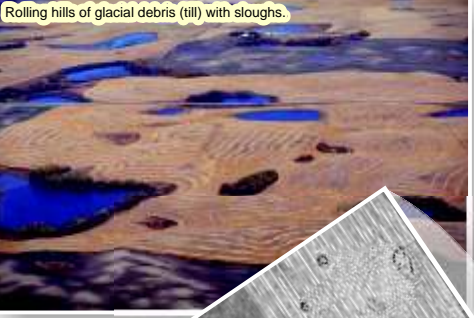# FOOD FROM THE LAND: DIFFERENT LANDSCAPES, DIFFERENT HARVESTS

Rolling hills of glacial debris (till) with sloughs.

Prairie Farm Rehabilitation Administration

Irrigated cropland, Qu'Appelle River valley.

Prairie Farm Rehabilitation Administration
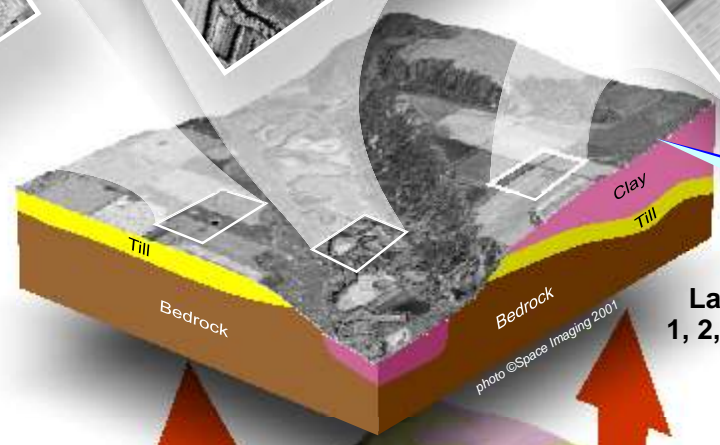
Grain fields on glacial-lake-floor plain.

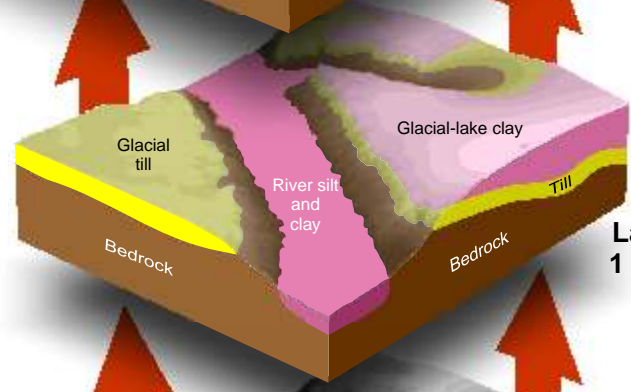*Prairie Farm Rehabilitation Administration*

100 m

Clay
Till
Till
Bedrock
Bedrock

photo ©Space Imaging 2001

...and add the picture of Earth from space

Layers 1, 2, and 3

Glacial till
Glacial-lake clay
River silt and clay
Till
Bedrock
Bedrock

...add earth materials

Layers 1 and 2

Rolling hills
Plain
Valley

***Start* with the shape of the land**

Layer 1

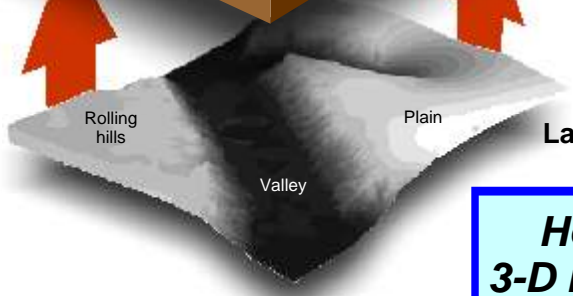**How to build a 3-D map of the land**

How landscape controls agriculture

Any farmer will tell you that different landscapes are suited to different types of agriculture. For example, flat plains (floors of ancient glacial lakes) with rich soils are ideal for growing wheat and canola. Rolling hills of glacial deposits are suitable for pasture or grain farming, depending on the proportions of clay, silt, sand, pebbles, and boulders and on the amount of local precipitation. The floors of major valleys have rich stream deposits of silt and clay and provide important sites for market-garden farming where irrigation water is available.

Seeing patterns in the complexity: modern management of the land

Because landscapes are complex, land management is also complex. Computer-based geographic information systems (GIS) can store complex information in 'layers' that can be combined to produce a map useful for land management. Which areas are best for cultivation? for pasture? for conservation? The map shown here combines topographic data (shape of the land) with earth-material and satellite data in order to illustrate slope, earth materials, and land cover, each of which affects the potential use of the land.

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Picking rocks

Many people who grew up on farms have memories, rarely good, of long days spent picking rocks from fields. Why are some farm soils full of rocks whereas others have no rocks at all?