Land Capacity Potential Index (LCPI) Geodatabase for the Lower Missouri River valley

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ABSTRACT

The Land Capability Potential Index (LCPI) is a relatively coarse-scale index intended to delineate broad land capability classes for approximately 811 miles of the Missouri River flood plain in South Dakota, Nebraska, Iowa, Kansas, and Missouri (river miles 811-0). The LCPI provides a systematic index of relative wetness potential and soil moisture-retention potential of the valley-bottom lands by combining the interactions among land-surface elevations, water-surface elevations, and the inherent moisture-retention capability of flood plain soils. These data should be considered indicative of general conditions rather than relevant to contemporary, site-specific conditions.

The Land Capacity Potential Index (LCPI) was created by integrating a series of eight modeled water-surface elevations, land-surface elevations, and soil permeability datasets for the Lower Missouri River Valley. The LCPI estimates relative wetness based on intersecting a series of eight modeled water-surface elevations with a high-resolution land-surface elevation model. These intersections spatially illustrate areas of the valley bottom which can potentially be inundated by surface water at various elevations. These potential inundation areas were then integrated with the soil drainage classes assigned to soils units in the digital Soil Survey Geographic Database to create a systematic index of wetness potential and moisture-retention capability of Missouri River valley-bottom lands.

The LCPIv3\_2 geodatabase contains 3 layers files (Flow\_Recurrence\_Index, LCPIv3\_2, SSURGO\_Soils). Each layer file contains metadata describing information specific to the layer such as the attribute field names and descriptions, and projection information.

An ArcGIS map document file was compiled with layers that illustrate flow-recurrence index, soil-drainage class, and all LCPI classes. However, the map document file and database were designed to allow users to customize their own map document file to query, display, or derivative maps.

DISCLAIMERS

This database, identified as DS 736, has been approved for release and publication by the Director of the USGS. Although this database has been subjected to rigorous review and is substantially complete, the USGS reserves the right to revise the data pursuant to further analysis and review. Furthermore, it is released on condition that neither the USGS nor the United States Government may be held liable for any damages resulting from its authorized or unauthorized use.

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HOW TO OBTAIN THE DIGITAL FILES

The digital files constituting the database for this report can be obtained via the Internet from the U.S.Geological Survey publications website. Go to the web page at http://pubs.usgs.gov/ds/736/ and follow the directions to download the files.

The geodatabase and map document were designed for use in ArcGIS version 10 or higher.