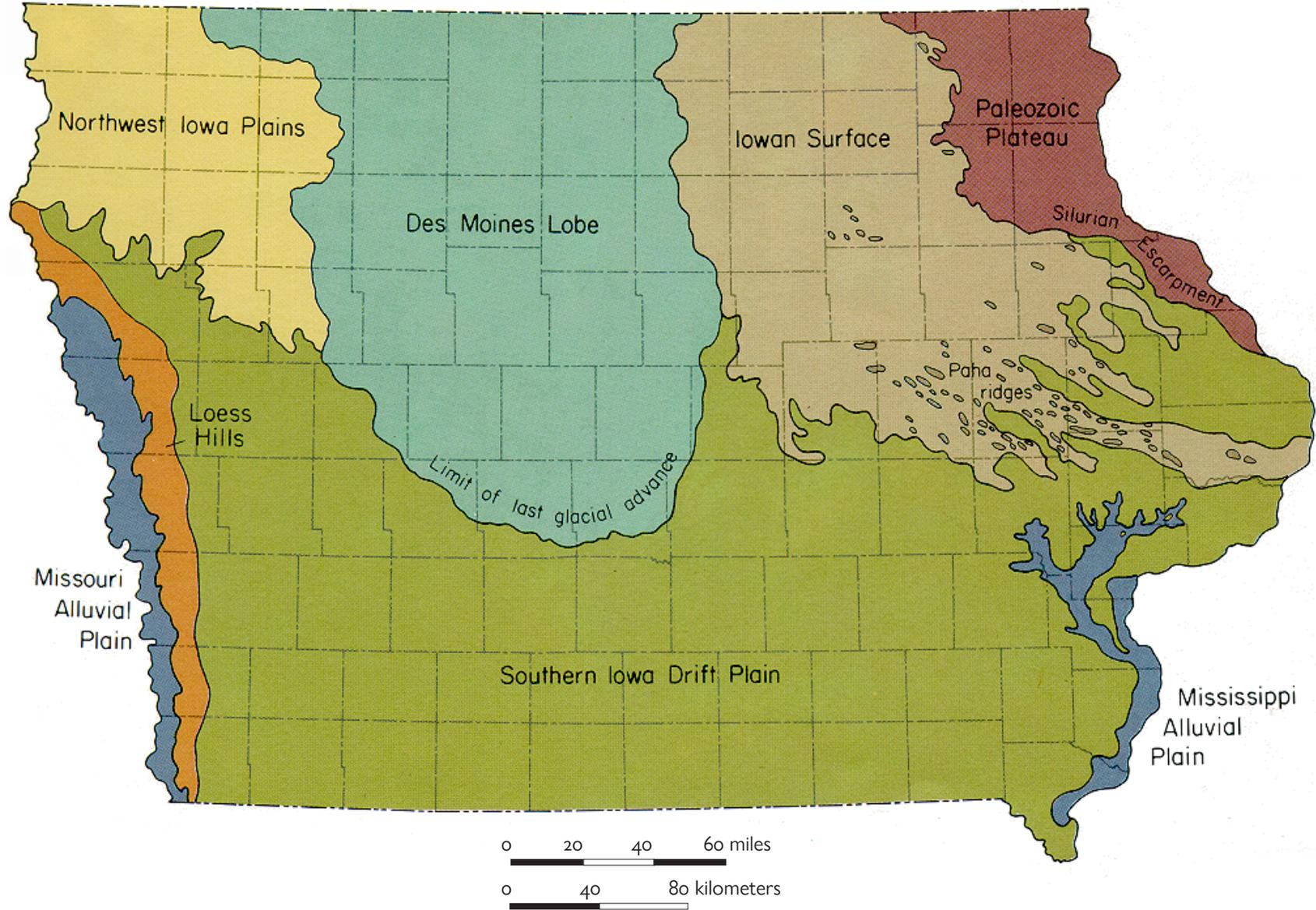


LANDFORM REGIONS OF IOWA — 2000



LANDFORM REGIONS OF IOWA

A landscape is a collection of shapes or landforms. In Iowa, these shapes are composed of earth materials derived from glacial, wind, river, and marine environments of the geologic past. This map is a guide to seeing the state's remarkably diverse landscapes and landform features.



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The Des Moines Lobe

The last glacier to enter Iowa advanced in a series of surges beginning just 15,000 years ago and reached its southern limit, the site of modern-day Des Moines, 14,000 years ago. By 12,000 years ago, the ice sheet was gone, leaving behind a poorly drained landscape of pebbly deposits from the stagnant decaying ice, sand, and gravel from swiftly flowing meltwater streams, as well as clay and peat from glacial lakes. Today, broadly curved bands of ridges and knobby hills set among irregular ponds and wetlands punctuate the otherwise subtle terrain of this freshly glaciated landscape.

Loess Hills

Here, uncommonly thick deposits of wind-blown silt (*loess*) create a distinct landscape. The silt, ground by glaciers, was carried down the Missouri River by seasonal meltwater floods. During drier periods, especially between 28,000 and 12,000 years ago, vast quantities of loose silt were swept from the broad valley and redeposited, with deepest accumulation along its leeward margins. Subsequent erosion has sculpted the tan deposits into an array of peaked hills and narrow ridge crests with steep diverging side slopes.

Southern Iowa Drift Plain

This region is dominated by glacial deposits left by ice sheets that extended south into Missouri over 500,000 years ago. The deposits were carved by deepening episodes of stream erosion so that only a horizon line of hill summits marks the once-continuous glacial plain. Numerous rills, creeks, and rivers branch out across the landscape shaping the old glacial deposits into steeply rolling hills and valleys. A mantle of loess drapes the uplands and upper hill slopes. The terrain is well suited for water impoundments.

Iowan Surface

The last period of intense glacial cold, 21,000 to 16,000 years ago, had pronounced effects across northern Iowa, which was not far from the glacier front. Tundra and permafrost conditions persisted. Hilly landscapes succumbed to vigorous episodes of weathering and leveling as materials were loosened and moved. Today the region is characterized by gently rolling terrain. Glacial boulders lie scattered across the landscape, and NW to SE trending loess-mantled hills (*paha*) stand above the surrounding plain.

Northwest Iowa Plains

Vigorous erosion that accompanied the glacial cold also produced open rolling hills across this region. Loess is abundant, a reflection of its nearness to the Missouri and Big Sioux river valley sources. Land elevation is uniformly higher and precipitation lower than elsewhere in Iowa. Low windpolished outcrops of reddish Sioux Quartzite, the oldest bedrock seen in the state (1.6 billion years), occur in the far northwest corner of the region.

Paleozoic Plateau

Narrow valleys deeply carved into sedimentary rock of Paleozoic age and a near-absence of glacial deposits define this scenic region. Fossil-bearing strata originated as sediment on tropical sea floors between 300 and 550 million years ago. Rock layers vary in resistance to erosion, producing bluffs, waterfalls, and rapids. Shallow limestone coupled with the dissolving action of groundwater yields numerous caves, springs, and sinkholes.

Alluvial Plains

Rivers weave throughout Iowa, eroding and depositing sediment (*alluvium*) on their adjoining plains. Backwater sloughs and oxbow lakes on larger floodplains mark former channel meanders. Most rivers originated during melting of various ice sheets that covered all or parts of Iowa. Some alluvial plains (see map) appear unusually wide for their river's size, owing to the large volume of meltwater floods that once flowed through them.

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For further information: *Landforms of Iowa* by Jean C. Prior, University of Iowa Press, Iowa City, 153 pages, with numerous color photographs, illustrations, and maps.