

MINNESOTA

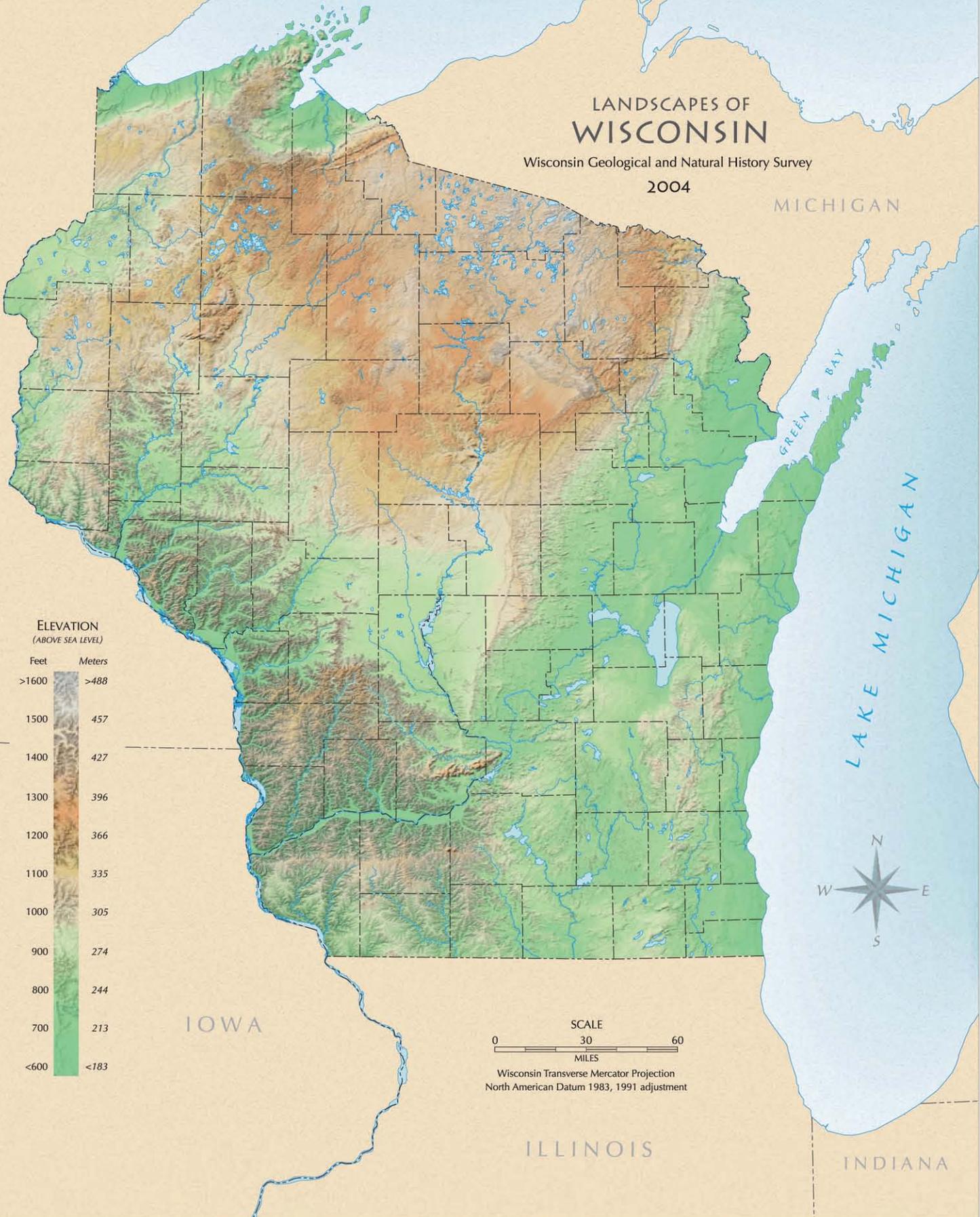
LAKE SUPERIOR

# LANDSCAPES OF WISCONSIN

Wisconsin Geological and Natural History Survey

2004

MICHIGAN



### ELEVATION (ABOVE SEA LEVEL)

Feet	Meters
>1600	>488
1500	457
1400	427
1300	396
1200	366
1100	335
1000	305
900	274
800	244
700	213
<600	<183



Wisconsin Transverse Mercator Projection  
North American Datum 1983, 1991 adjustment

IOWA

ILLINOIS

INDIANA

## LANDSCAPES OF WISCONSIN

*LANDSCAPES OF WISCONSIN* depicts the terrain of Wisconsin, stripped of vegetation and human influences.

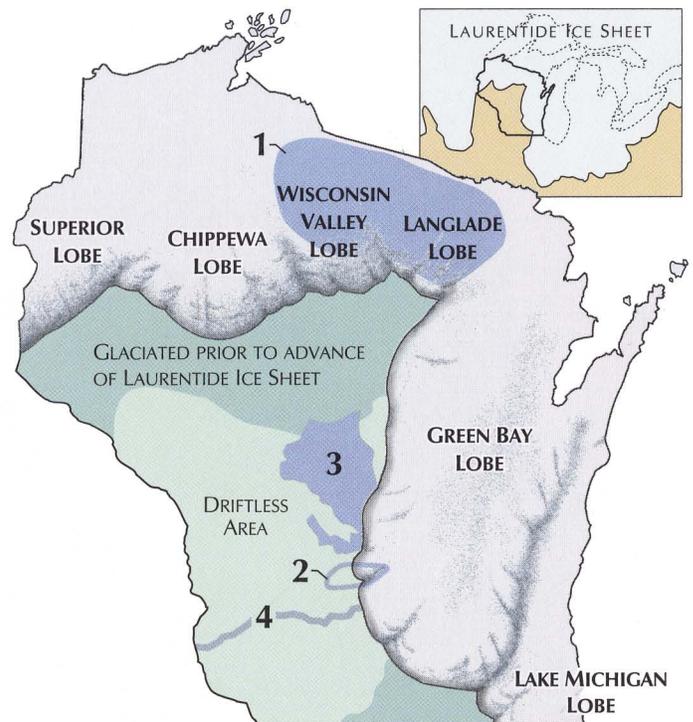
The diverse landscapes of the state can be divided into the following major regions on the basis of their geologic heritage (fig. 1):

- ✦ The northern and eastern parts of the state were most recently glaciated by six lobes of the Laurentide Ice Sheet during the Wisconsin Glaciation. Myriad hills, ridges, plains, and lakes characterize this region.
- ✦ The central to western and south-central parts of the state were glaciated during advances of early ice sheets. This region has subdued, rolling topography.
- ✦ The Driftless Area, in southwestern Wisconsin, appears never to have been overrun by glaciers and represents one of the most rugged landscapes in the state. This region contains a drainage network of stream valleys and ridges that form branching, tree-like patterns on the map.

Between about 26,000 and 10,000 years ago, the lobes of the Laurentide Ice Sheet left their imprint: They scoured and flattened the land, changed the courses of rivers, built up ridges and hills, and created numerous meltwater lakes.

For example, the northern highlands area (1) is widely known for its forests, lakes, and wetlands. Most of these lakes and wetlands occupy *kettles*, poorly drained, bowl-shaped holes. Kettles form after blocks of ice that have become detached from a glacier are buried by sediment; the subsequent melting of the ice blocks results in the sinking of the sediment and the formation of the kettles. In the northern highlands, kettles developed in broad plains that were formed by meltwater streams from the Langlade, Wisconsin Valley, and Chippewa Lobes of the Laurentide Ice Sheet (fig. 1) as it receded from its maximum extent about 18,000 years ago.

The Baraboo Hills (2), an elongated, discontinuous ring in Sauk and Columbia Counties, straddles the boundary between the Driftless Area and the glaciated part of the state. These hills rise 700 feet above the surrounding terrain and are composed of ancient-river and nearshore ocean sediment, approximately 1.7 billion years old, which has been metamorphosed and folded. The resulting rock, called quartzite, is distinctively purple-gray, extremely hard, and resistant to erosion.



**Figure 1.** Major landscape regions and extent of glaciation in Wisconsin. Numbered areas are approximate locations of the features described in text.

Although the Driftless Area was probably not covered by ice, the glaciers and accompanying climate did leave their mark. For example, immediately north of the Baraboo Hills is the broad, flat sand plain of central Wisconsin (3). This sand plain was once the floor of a large glacial lake that formed adjacent to the Green Bay Lobe as it advanced onto the eastern edge of the Baraboo Hills, damming the upper Wisconsin River. As the Green Bay Lobe began to recede, the lake drained, probably very rapidly, around the east end of the Baraboo Hills and down the lower Wisconsin River. The torrent of water cut through the soft sandstone, carving out the Wisconsin Dells. This water also transported large amounts of sand and gravel that contributed to the formation of the broad valley that contains the lower Wisconsin River (4).

More detailed information can be found on the full-size version of the *Landscapes of Wisconsin* map (size 42 x 42 inches; scale 1:500,000; available from the Wisconsin Geological and Natural History Survey).

### **<sup>UW</sup>Extension**

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