KU KANSAS GEOLOGICAL SURVEY
The University of Kansas

THE FLINT HILLS WITH PRAIRIE AREAS

2016

FLINT HILLS DISCOVERY CENTER FOUNDATION

Kansas Geological Survey
Open-file Report 2016-1

Compiled by
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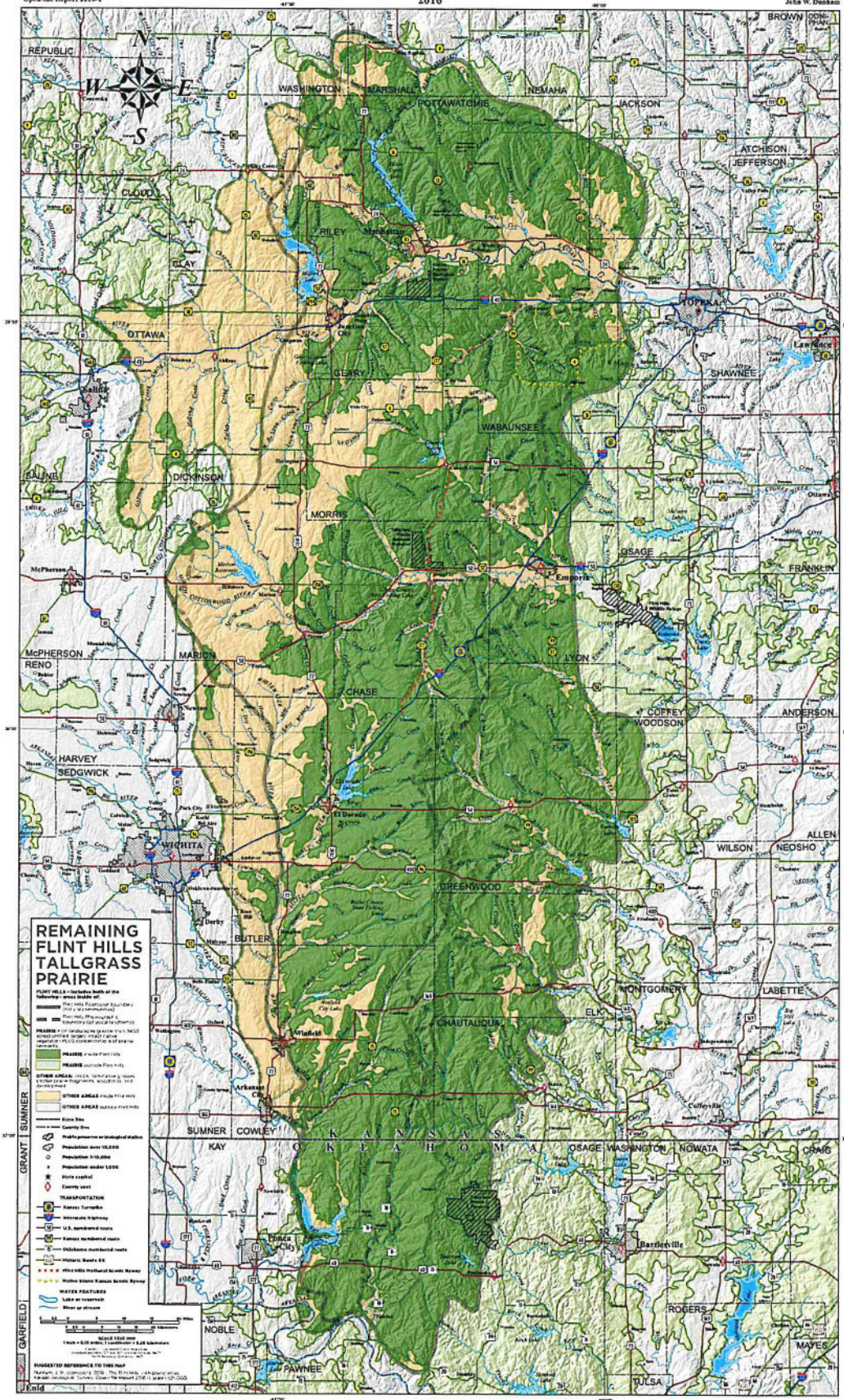

Map produced by John Dunham, GIS Cartographer. Web version. Map data from the Kansas Data Access and Support Center (DASC) at the Kansas Biological Survey, the Oklahoma Center for Geospatial Information, and the Oklahoma Office of Tourism and Recreation, and KGS.

This project has been funded by and produced as part of our educational outreach for the Flint Hills Discovery Center and is in the Kansas Map & Treasures Program as a Rock Formations map design.

First edition, 2016, no guarantees of accuracy are given or implied.

Projection and Coordinates: Universal Transverse Mercator, Zone 14 North, North American Datum of 1983 (NAD83).

Last updated 10/2016

Flint Hills Region

The following discussion of the Flint Hills physiography is summarized from Thornton et al. (1963).

The Flint Hills comprise a the largest remaining intact tallgrass prairie in the Great Plains. Extending along the western edge of the Central Plains Section of the Interior Plains Province of the Interior Highlands, the ecoregion is characterized by rolling hills, underlain by limestone and shale bedrock, with broad, nearly level uplands and steep slopes not difficult to plow, consequently, the region historically has supported very little cropland agriculture. The natural soil was prairie, in which most of the ecoregion land is used for range and pasture land. However, some of the land is now cultivated and along the northern of the Flint Hills has been converted to cropland, especially in the northeast corner where the topography is more level. The ecoregion's climate is marked by humid, hot summers and average annual precipitation of 28 to 35 inches.

Vegetation—geographic areas that encompass similar plant species and environmental conditions—provides a framework for mapping, studying, assessing, managing, and monitoring the ecosystems and ecosystem components within their borders (Omernik et al., 2011). Ecoregion boundaries are established by identifying significant mixing patterns of geology, physiography, vegetation, climate, soil, land use, wildlife, and hydrology (Bailey, 1980; Omernik, 1987, 1995).

The following discussion of the Flint Hills physiography, region is summarized from Kansas Geological Survey (1999).

The Flint Hills were formed by the erosion of Permian limestone and shales. During the early Permian Period (295–270 million years ago), shallow seas covered much of the state, as they did during the earlier Pennsylvanian (320–295 million years ago). Unlike the Permian oceans' tendencies to flat out, however, some of the Flint Hills limestones contain features of beach sand, or fish. Because chalk is much less soluble than the surrounding limestone, weathering has produced a ridge-and-hill of shallow gravel that is characteristic of the Flint Hills. Some of the hillsides in the region are covered with flint stone gravel. The hill gravels in this region are formed by Big and Silex Harvard Chalkgravel gravels. Limestone-dominated, interbedded

[Limestone-dominated, and Subterranean Geophysical regions. Except along river and stream bottoms, trees are rare. The streams in the Flint Hills have cut down into limestone channels. Stream cut in chalk-bearing strata produce waters. Smaller streams, whether flowing all or seasonally, usually drain cooler water, more gently sloping valleys.

Though there is some disagreement about the boundaries of the Flint Hills, most geologists agree that the Flint Hills region is bounded on the west by the Nemaha Uplift and on the east by the Humboldt Fault. They are known as the Osage Hills. For this map, a southern Flint Hills boundary is drawn where it intersects with maps from participants in the Kansas and Oklahoma geological societies.

The following discussion of the classification of prairie regions is summarized from The Nature Conservancy Osage Plains Ecoregional Assessment Planning Team (1998).

At a local the surrounding the long-term vicinity of crossed-below, forgets in existing local communities, Nebraska-wide areas, or in other natural vegetation systematic ground data in western Kansas

were identified in the Osage Plains/Flint Hills ecoregion from interpretation of Landsat Thematic Mapper (TM) satellite imagery. These areas were classified as either (1) areas with limited direct removal or semi-natural vegetation or (2) fragmented areas with a combination of native/ community remnants. Hydrologic processes of Landsat TM scenes were then interpreted to delineate these two preservation categories. (An Equinox and modified are a geographical information use consult FGDC data base).

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