



Measuring Biodiversity: Ecoregion Appendix

INTRODUCTION

Ecoregions are defined as a geographical area within which the biotic and abiotic components of the ecosystems exhibit different but relatively homogenous patterns in comparison to that of other areas. The United States Environmental Protection Agency defines and delegates ecoregions, which are important for structuring and implementing natural resource management practices.

Defining characteristics of ecoregions include: fauna, flora, climate, soils, geology, and topography. There are four levels of ecoregions for varying sizes and defining characteristics. The United States is divided into 15 broad level I ecoregions (also known as biomes). Wisconsin is partially in the Northern Forests and Eastern Temperate Forest level I ecoregions. Wisconsin is further broken up into 6 level III ecoregions, and 27 level IV ecoregions. For this exercise, we will be considering level III ecoregions.

Biodiversity varies across ecoregions due to both human and environmental factors. Some human caused impacts on biodiversity include exploitation of species, habitat loss, introduction of invasive species, and climate change. These factors lead to decrease in biodiversity and the sustainability of communities.

Environmental factors can also impact the biodiversity of regions – picture an arctic tundra, now picture a tropical rainforest. While these are two dramatically different examples, they include variations amongst important environmental drivers of biodiversity including temperature and rainfall. Areas that are warmer and more wet can support more primary producers and create more ecological niches. Different species can coexist in the same habitat by occupying different niches. An ecoregion in Wisconsin that has greater soil, plant, structural, and microclimate diversity is likely to have high diversity of available niches, and thus a higher number of species to occupy those niches.



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NORTHERN LAKES AND FORESTS

The Northern Lakes and Forests is composed of 12 level IV ecoregions and covers the northern portion of the Wisconsin. This ecoregion is characterized by coniferous and hardwood forests, nutrient poor glacial soil, low annual temperatures, and a frost-free period that is considerably shorter than the rest of the state. Due to these characteristics, the Northern Lakes and Forest ecoregion has less agriculture and more woodland and forest landcover. Additionally, this ecoregion has many oligotrophic and mesotrophic lakes (meaning lakes with less productivity – especially compared to the Southern Wisconsin Till Plains where nutrient input pushes lakes to a more eutrophic, or productive, state).

Bears captured on Snapshot Wisconsin camera in Sawyer County →



← Example of Northern Lakes and Forests habitat

Elk captured on Snapshot Wisconsin camera in Sawyer County →





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SOUTHERN WISCONSIN TILL PLAINS

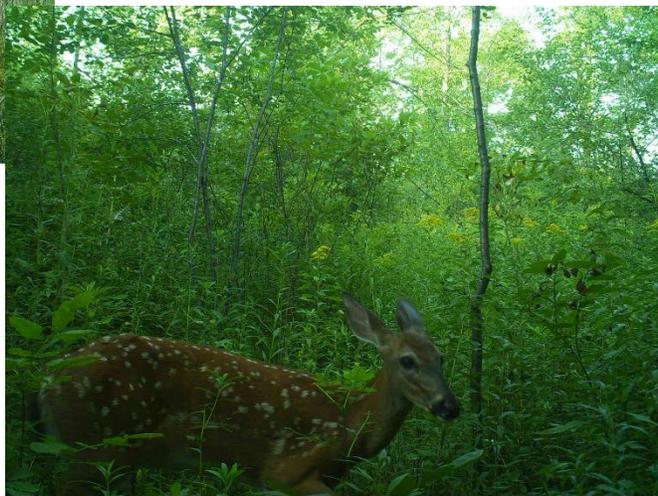
The Southern Wisconsin Till Plains is composed of 4 level IV ecoregions and covers the southeastern part of the state. This ecoregion supports a mosaic of vegetation types, from hardwoods and oak savannas to the west and tall grass prairies to the east. The Southern Wisconsin Till Plains has less native communities and is composed primarily of crop land – mostly forage and feed grains to support dairy operations. Compared to other ecoregions, there are fewer lakes and flatter topography.

Turkey captured on Snapshot Wisconsin camera in Racine County →



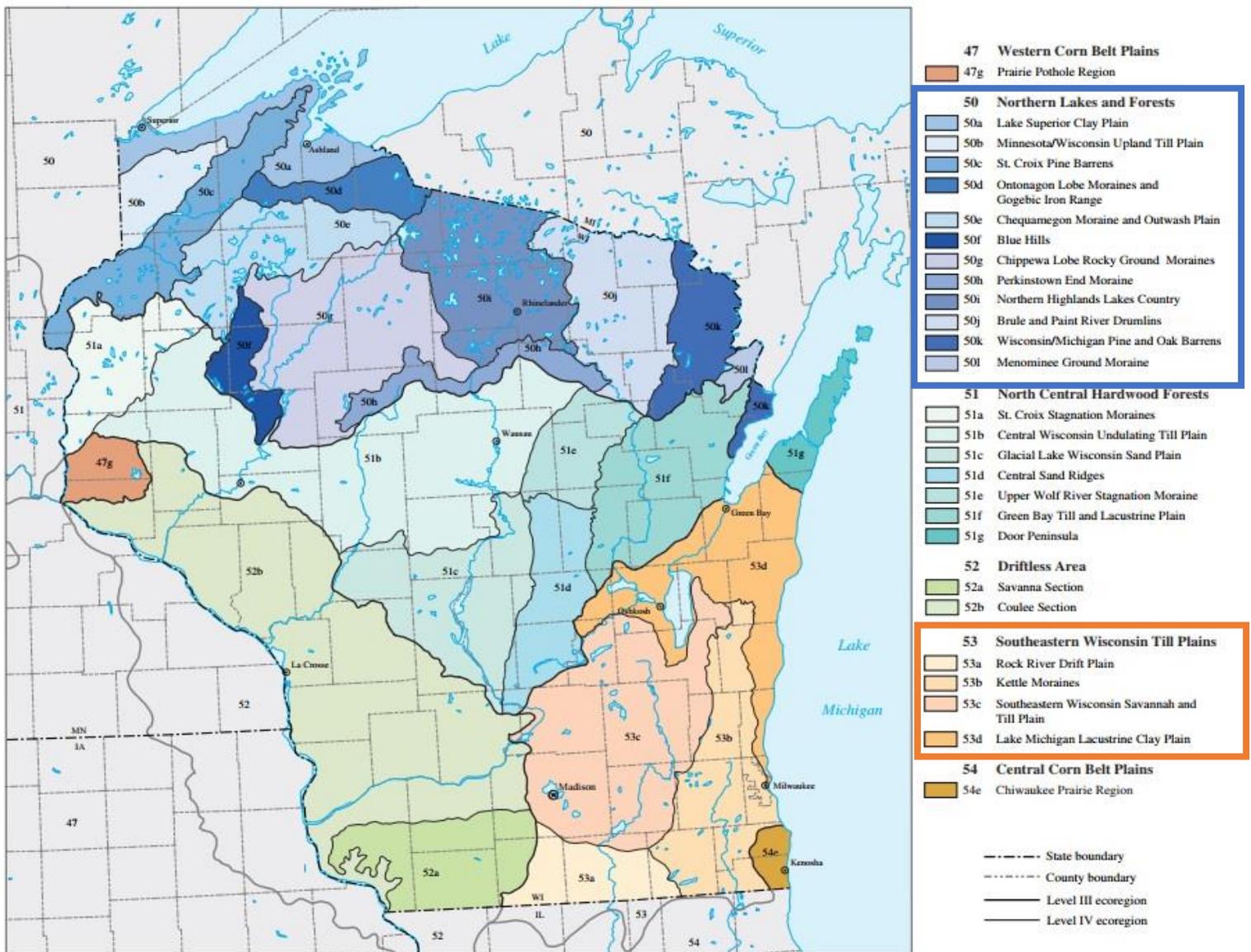
← Example of Southern Wisconsin Till Plains habitat

Fawn captured on Snapshot Wisconsin camera in Milwaukee County →





Level III and IV Ecoregions of Wisconsin



Wisconsin ecoregion map prepared by the United States Environmental Protection Agency

*For clarity, legend shades referring to Northern Lakes and Forest are encompassed by a blue box, Southern Wisconsin Till Plains by an orange box.

For a more in depth look at Wisconsin ecoregions, search keyword "Wisconsin Ecoregions" at wi.dnr.gov and follow the first link (https://dnr.wi.gov/topic/surfacewater/datasets/omernik_eco/).