Upper Mississippi Forest Partnership

Important Migratory Bird Habitat
Bottomland Forest Birds LINK Model Results (2001 Land Cover Update)

BOTTOMLAND FOREST BIRDS USED IN LINK QUERY:

American Woodcock
Canada Warbler
Connecticut Warbler
Louisiana Waterthrush
Prothonotary Warbler
Red-shouldered Hawk

SOURCE LAYER:

National Land Cover Dataset (2001) within UMRS boundary intersecting the states of MN, WI, IA, IL, IN, and MO

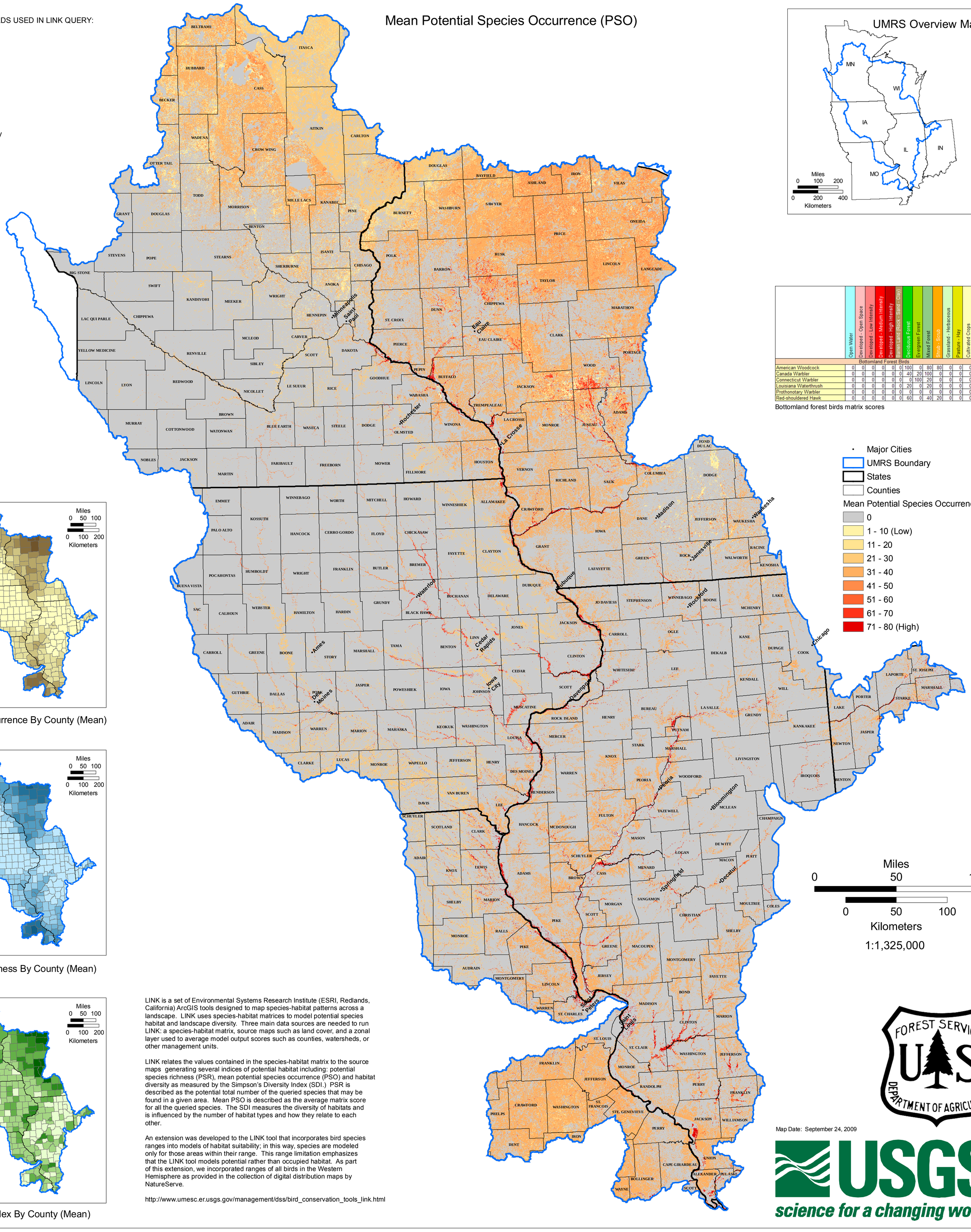
ZONAL LAYER:

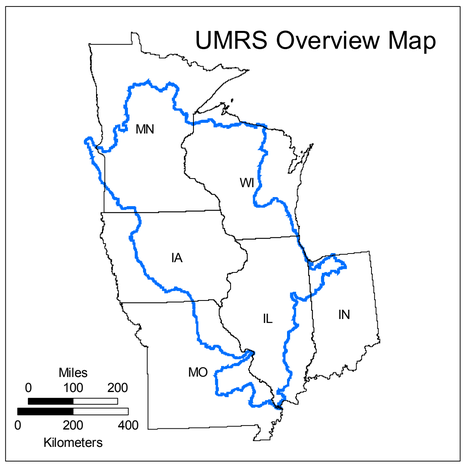
Counties

RANGE USED:

NatureServe: Digital Distribution Maps of the Birds of the Western Hemisphere

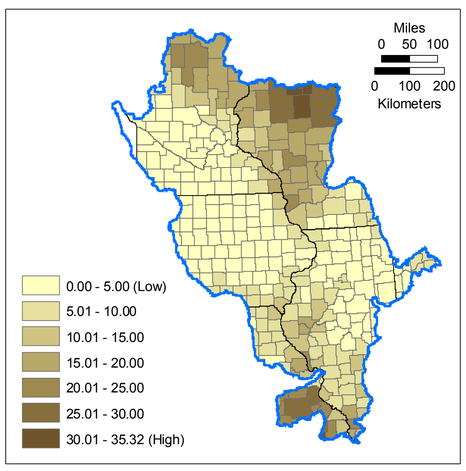
Mean Potential Species Occurrence (PSO)



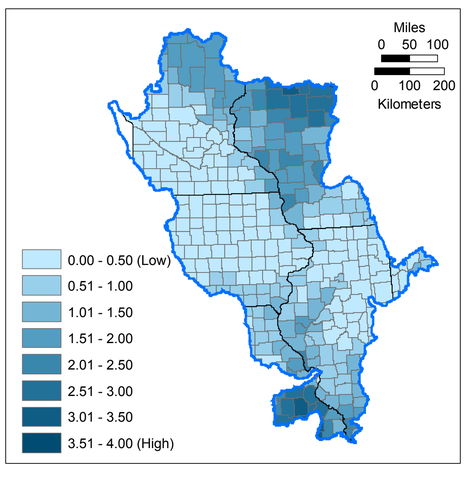


	Open Water	Developed - Open Space	Developed - Low Intensity	Developed - Medium Intensity	Developed - High Intensity	Barren Land (Rock - Sand - Clay)	Deciduous Forest	Evergreen Forest	Mixed Forest	Shrub - Scrub	Grassland - Herbaceous	Pasture - Hay	Cultivated Crops	Woody Wetlands	Emergent Herbaceous Wetlands
Bottomland Forest Birds															
American Woodcock	0	0	0	0	0	0	100	0	80	80	0	0	0	80	0
Canada Warbler	0	0	0	0	0	0	40	20	100	0	0	0	0	80	0
Connecticut Warbler	0	0	0	0	0	0	0	100	20	0	0	0	0	20	0
Louisiana Waterthrush	0	0	0	0	0	0	20	0	20	0	0	0	0	100	0
Prothonotary Warbler	0	0	0	0	0	0	0	0	0	0	0	0	0	100	0
Red-shouldered Hawk	0	0	0	0	0	0	60	0	40	20	0	0	0	100	20

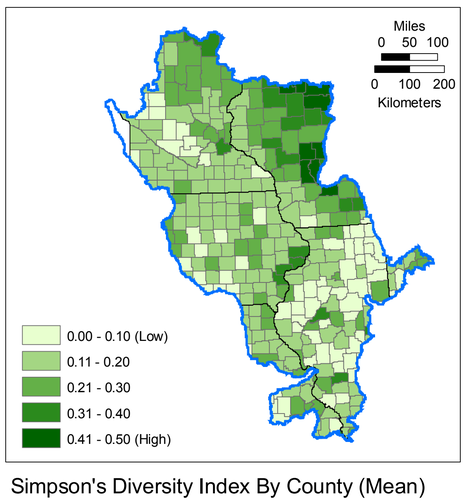
Bottomland forest birds matrix scores



Potential Species Occurrence By County (Mean)



Potential Species Richness By County (Mean)



Simpson's Diversity Index By County (Mean)

LINK is a set of Environmental Systems Research Institute (ESRI, Redlands, California) ArcGIS tools designed to map species-habitat patterns across a landscape. LINK uses species-habitat matrices to model potential species habitat and landscape diversity. Three main data sources are needed to run LINK: a species-habitat matrix, source maps such as land cover, and a zonal layer used to average model output scores such as counties, watersheds, or other management units.

LINK relates the values contained in the species-habitat matrix to the source maps generating several indices of potential habitat including: potential species richness (PSR), mean potential species occurrence (PSO) and habitat diversity as measured by the Simpson's Diversity Index (SDI.) PSR is described as the potential total number of the queried species that may be found in a given area. Mean PSO is described as the average matrix score for all the queried species. The SDI measures the diversity of habitats and is influenced by the number of habitat types and how they relate to each other.

An extension was developed to the LINK tool that incorporates bird species ranges into models of habitat suitability; in this way, species are modeled only for those areas within their range. This range limitation emphasizes that the LINK tool models potential rather than occupied habitat. As part of this extension, we incorporated ranges of all birds in the Western Hemisphere as provided in the collection of digital distribution maps by NatureServe.

http://www.umesc.er.usgs.gov/management/dss/bird_conservation_tools_link.html

Map Date: September 24, 2009

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