

# Southeast Conservation Blueprint Summary

for Missouri

---

Created 10/02/2024

## Table of Contents

About the Southeast Blueprint	3
Southeast Blueprint Priorities	4
Hubs and Corridors	6
Indicator Summary	8
Threats	41
Ownership and Partners	44
Credits	49

[The Southeast Conservation Blueprint 2024](#)



[THIS PAGE INTENTIONALLY LEFT BLANK]

## About the Southeast Blueprint

The Southeast Conservation Blueprint is the primary product of the [Southeast Conservation Adaptation Strategy](#) (SECAS). It is a living, spatial plan to achieve the SECAS vision of a connected network of lands and waters across the Southeast and Caribbean. The Blueprint is regularly updated to incorporate new data, partner input, and information about on-the-ground conditions.

The Blueprint identifies priority areas based on a suite of natural and cultural resource indicators representing terrestrial, freshwater, and marine ecosystems. A connectivity analysis identifies corridors that link coastal and inland areas and span climate gradients.

For more information:

- Visit the [Blueprint webpage](#)
- Review the [Blueprint 2024 Development Process](#)
- View and download the Blueprint data and make maps on the [Blueprint page of the SECAS Atlas](#)

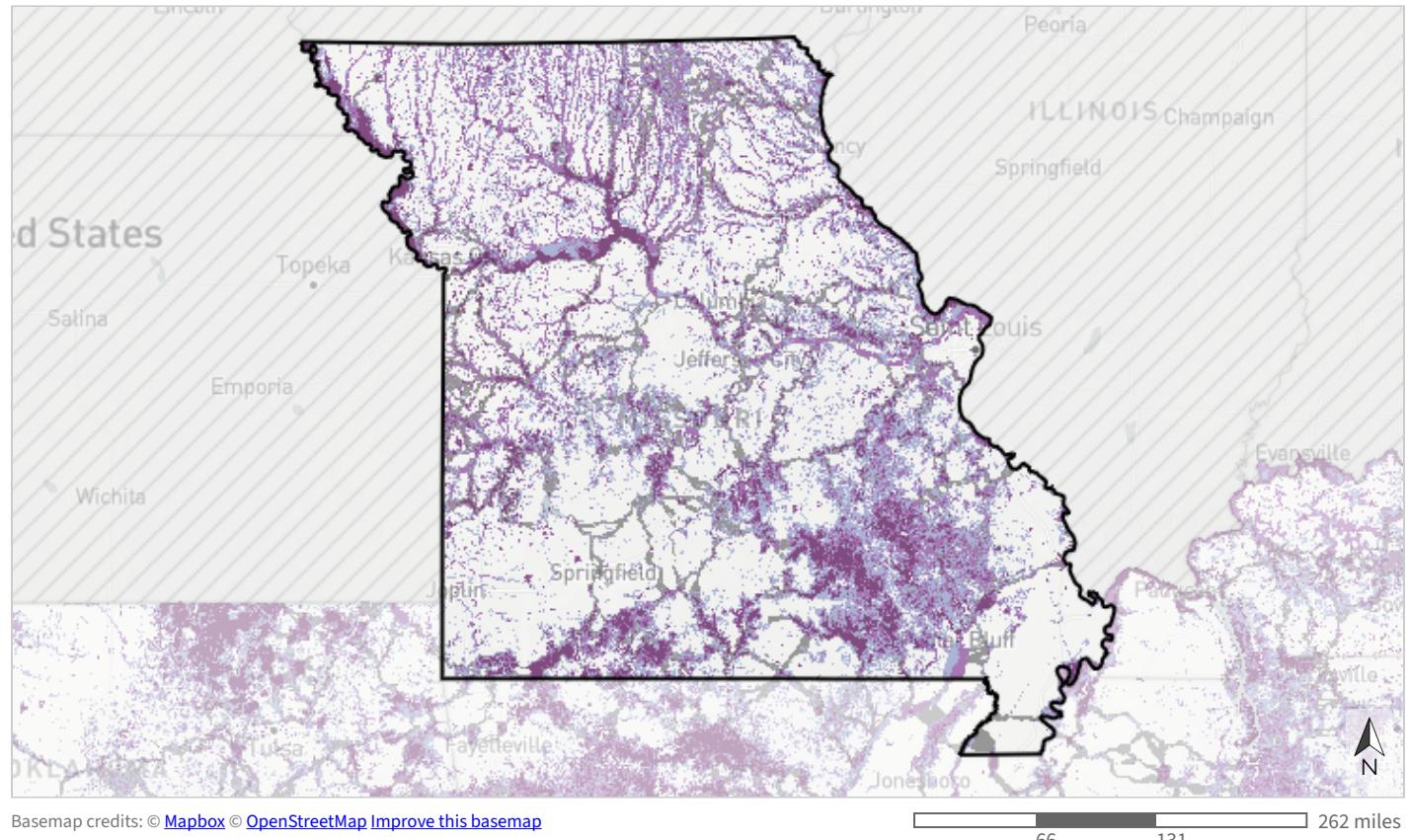
### We're here to help!

- Do you have a question about the Blueprint?
- Would you like help using the Blueprint to support a proposal or inform a decision?
- Do you have a suggestion on how to improve the Blueprint? The Blueprint and its inputs are regularly revised based on input from people like you.
- Do you have feedback on how to improve the Blueprint Explorer interface?

If you need help or have questions, [contact Southeast Blueprint staff](#) by reaching out to a member of the user support team.

We're here to support you. We really mean it. It's what we do!

# Southeast Blueprint Priorities



## Priorities for a connected network of lands and waters

- Highest priority
- High priority
- Medium priority
- Priority connections

## Priority Categories

### For a connected network of lands and waters

In total, Blueprint priorities and priority connections cover roughly 50% of the Southeast Blueprint geography.

#### Highest priority

Areas where conservation action would make the biggest impact, based on a suite of natural and cultural resource indicators. This class covers roughly 10% of the Southeast Blueprint geography.

#### High priority

Areas where conservation action would make a big impact, based on a suite of natural and cultural resource indicators. This class covers roughly 15% of the Southeast Blueprint geography.

#### Medium priority

Areas where conservation action would make an above-average impact, based on a suite of natural and cultural resource indicators. This class covers roughly 20% of the Southeast Blueprint geography.

#### Priority connections

Connections between priority areas that cover the shortest distance possible while routing through as much Blueprint priority as possible. This class covers roughly 5% of the Southeast Blueprint geography.

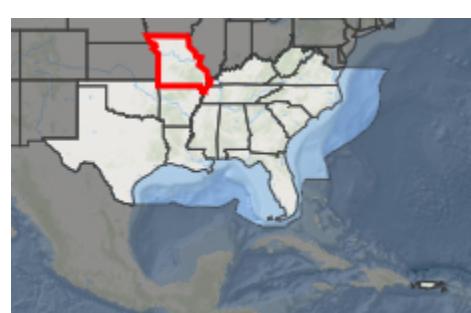
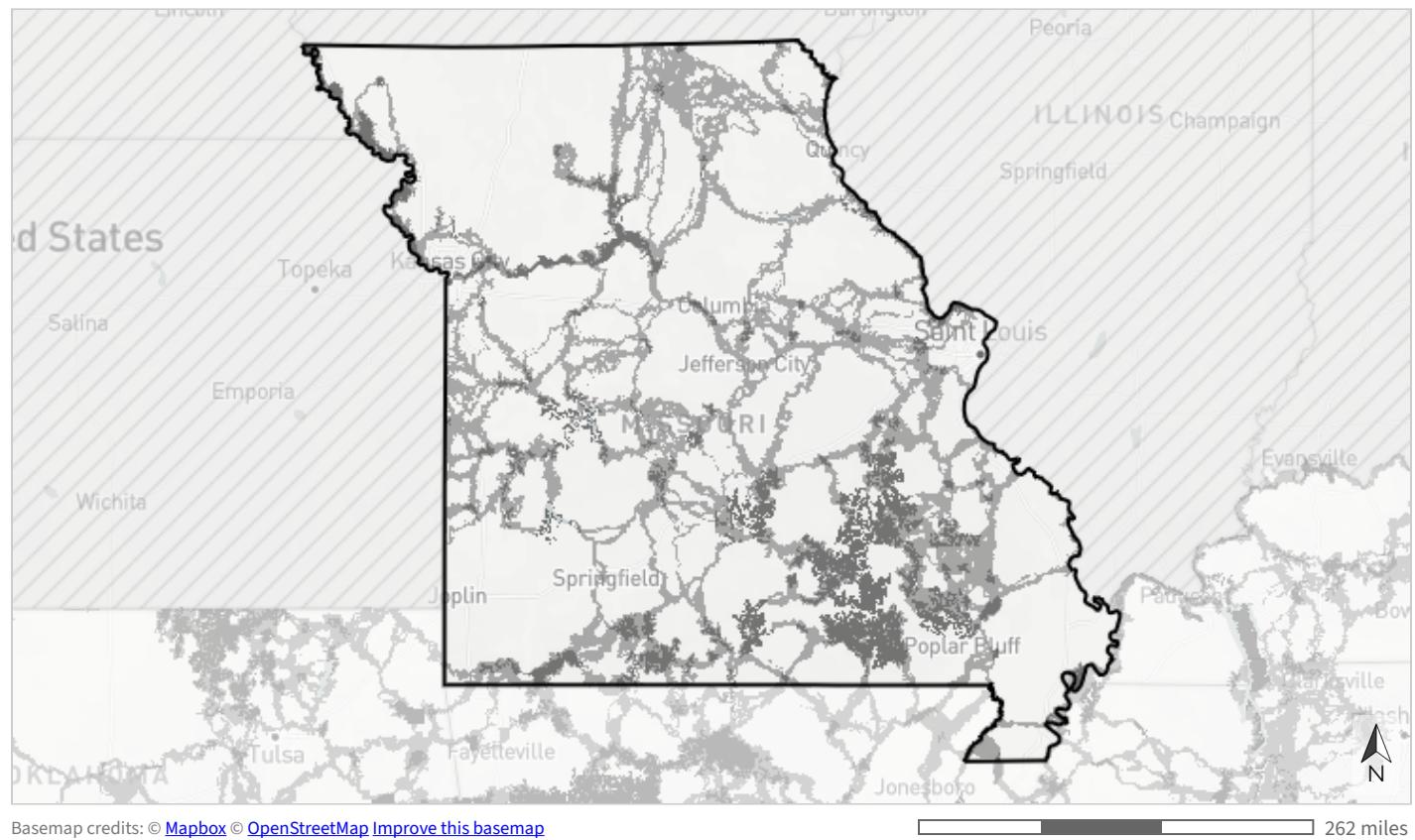
Table 1: Extent of each Blueprint priority category within Missouri.

Priority Category	Acres	Percent of Area
Highest priority	3,530,103	7.9%
High priority	6,238,797	14.0%
Medium priority	8,103,576	18.2%
Priority connections	2,999,480	6.7%
Lower priority	23,735,992	53.2%
<b>Total area</b>	<b>44,607,949</b>	<b>100%</b>

## Hubs and Corridors

The Blueprint uses a least-cost path connectivity analysis to identify corridors that link hubs across the shortest distance possible, while also routing through as much Blueprint priority as possible.

In the continental Southeast, hubs are large patches (~5,000+ acres) of highest priority Blueprint areas and/or protected lands.



*Table 2: Extent of hubs and corridors within Missouri.*

Type	Acres	Percent of Area
Hubs	3,399,635	7.6%
Corridors	9,346,232	21.0%
Not a hub or corridor	31,862,081	71.4%
<b>Total area</b>	<b>44,607,949</b>	<b>100%</b>

# Indicator Summary

Table 3: Terrestrial indicators.

Indicator	Present
<a href="#">Amphibian &amp; reptile areas</a>	✓
<a href="#">Equitable access to potential parks</a>	✓
<a href="#">Fire frequency</a>	✓
<a href="#">Grasslands and savannas</a>	✓
<a href="#">Greenways &amp; trails</a>	✓
<a href="#">Intact habitat cores</a>	✓
<a href="#">Landscape condition</a>	✓
<a href="#">Mississippi Alluvial Valley forest birds - protection</a>	✓
<a href="#">Mississippi Alluvial Valley forest birds - reforestation</a>	✓
<a href="#">Resilient terrestrial sites</a>	✓
<a href="#">Urban park size</a>	✓
West Coastal Plain & Ouachitas forested wetland birds	-
West Coastal Plain & Ouachitas open pine birds	-
West Gulf Coast mottled duck nesting	-

Table 4: Freshwater indicators.

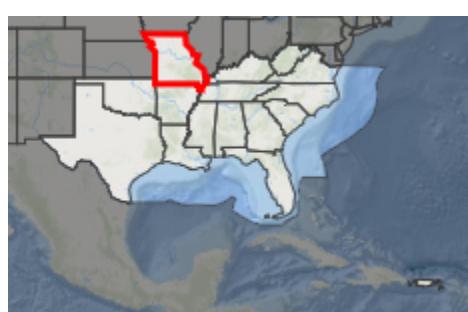
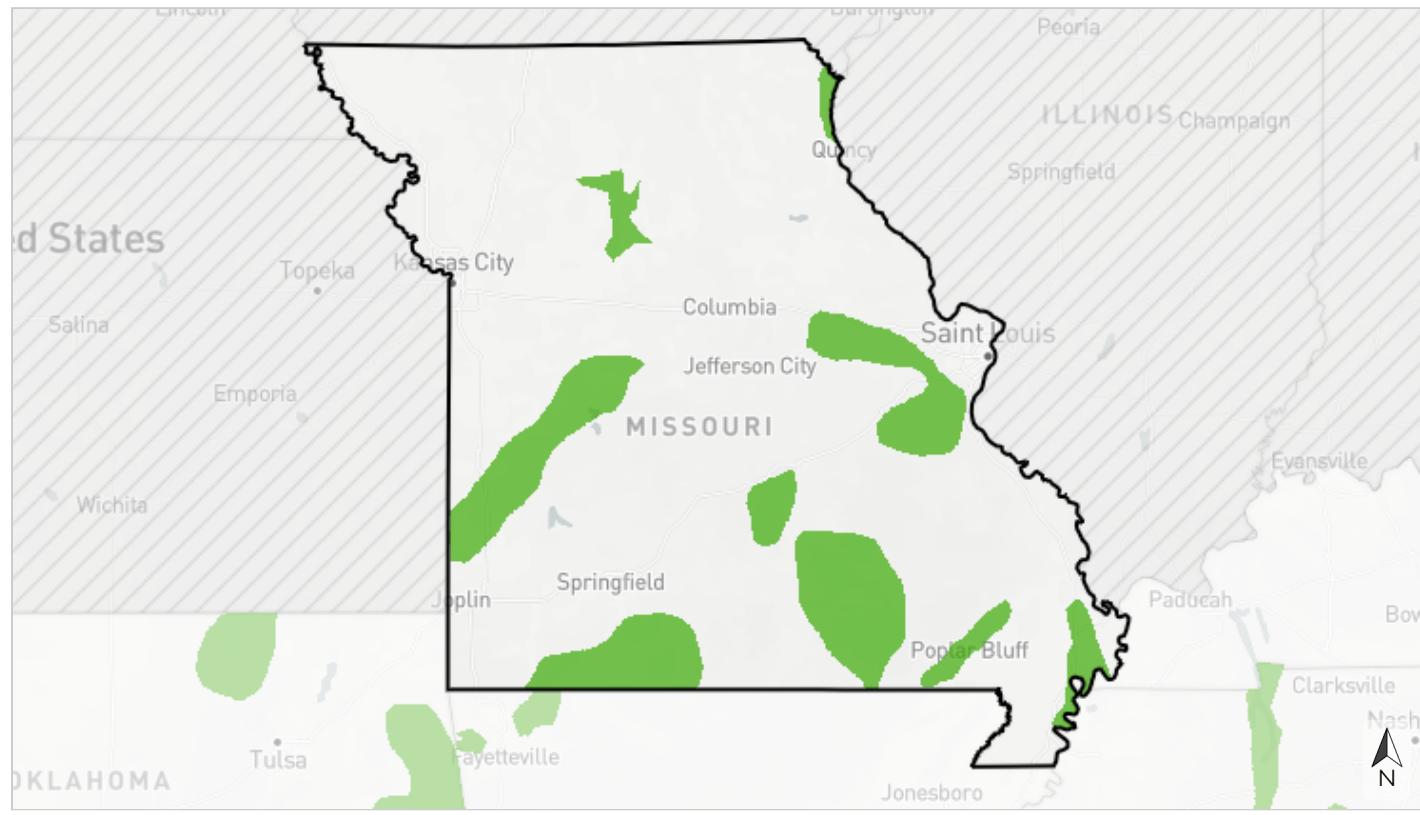
Indicator	Present
Gulf migratory fish connectivity	-
<a href="#">Imperiled aquatic species</a>	✓
<a href="#">Natural landcover in floodplains</a>	✓
<a href="#">Network complexity</a>	✓
<a href="#">Permeable surface</a>	✓



Terrestrial

## Amphibian & reptile areas

This indicator represents Priority Amphibian and Reptile Conservation Areas (PARCAs) across the Southeast. PARCA is an expert-driven, nonregulatory designation that includes places capable of supporting viable amphibian and reptile populations, places occupied by rare or imperiled species, and places rich in biodiversity or species unique to that geographic area (i.e., endemism). Reptiles and amphibians are a critical part of the Southeast region's rich biodiversity and many populations are declining in the face of threats like habitat loss, invasive species, and climate change. The PARCA dataset is maintained by the Amphibian and Reptile Conservancy and does not yet include Virginia or Kentucky.



- Priority Amphibian and Reptile Conservation Area (PARCA)
- Not a PARCA (excluding Kentucky and Virginia)

*Table 5: Indicator values for amphibian & reptile areas within Missouri. A good condition threshold is not yet defined for this indicator.*

	Indicator Values	Acres	Percent of Area
↑ High	Priority Amphibian and Reptile Conservation Area (PARCA)	6,812,946	15.3%
↓ Low	Not a PARCA (excluding Kentucky and Virginia)	37,795,003	84.7%
	<b>Total area</b>	<b>44,607,949</b>	<b>100%</b>

## Priority Amphibian and Reptile Conservation Areas:

### Big Piney

Maintaining hellbender habitat is becoming increasingly important, especially for the endangered Missouri populations. Major threats to this species are habitat loss and degraded water quality. Protecting the streams and rivers of the Big Piney PARCA will help shield this amazing species from extinction. The landscape for this PARCA consists of moderately dissected hills, steep slopes, and narrow valleys with karst features. Predominant vegetative species are mostly white oak forests and white-black oak forests with some small sandstone and limestone glades. Numerous caves, losing streams, and calcareous wetlands are common throughout this region.

### Current River Hills

The Current River Hills PARCA contains the Roger Pryor Pioneer Backcountry. This stretch of land is about 62,000 acres and is the largest contiguous piece of land in the state of Missouri. Comprising mostly hills, narrow ridges, streams, and caves, this area is a diverse wonderland and one of the least developed areas in the state. Pine and oak forests dominate the land and some of the trees have been aged at 300-400 years old. The high-quality streams found in the valleys are home to the endemic and endangered Ozark hellbender. This area is a popular recreation destination and important for timber harvests.

### Devil's Eyebrow

This rugged PARCA is steep and rich in biodiversity. Not only is it a safe haven for many amphibians and reptiles threatened by encroaching development, but it supports one of the highest concentrations of rare plant species in Arkansas. This PARCA also contains the state's largest state park, Hobbs State Park Conservation Area. Most of the land is underlain with cherty limestone that includes caves and many spring-fed streams. This area is also known for its glades, but most of the forest and prairies have been converted to agriculture and residential areas. Fire suppression in the glades have allowed for unwanted woody vegetation to invade and suffocate the rich understory. Restoring the natural fire regime to the area, coupled with woody vegetation removal, will help return the diverse plant communities to this unique landscape and keep it open for pollinators and the dwindling numbers of eastern collared lizards.

### Lower Grand

The Lower Grand PARCA is found within the Missouri Alluvial Plain and Loess Flat and Till Plains ecoregions. The Missouri Alluvial Plain is part of the big, wide, flat alluvial plain that spreads across the five neighboring states and is bordered by bluffs covered with deep loess. This area has rich soil resulting

from periodic flooding. In the Loess Flats and Till Plains, the glaciated landscape includes low hills, smooth plains, and perennial streams with wetlands. The bulk of the historic vegetation in the Lower Grand has been replaced by croplands. This area is important for the state listed western massasauga and corridors are needed to reconnect populations isolated by fragmentation.

### **Missouri Black River**

The Missouri Black River PARCA consists of a wide, flat alluvial plain with rich soil created by glacial outwash deposits from the Mississippi and Ohio Rivers. It is also characterized by sand dune fields, moderately dissected hills, streams, and wetlands. Historically, the land was covered with bald cypress and tupelo swamp forests, along with mixed deciduous bottomland forest. Natural grasslands and oak woodlands were also found within this region. However, row crop agriculture dominates the land today and many streams have been channelized and wetlands drained. Restoring and maintaining riparian habitat and wetlands is crucial to protecting healthy ecosystems.

### **Missouri River Hills**

Daniel Boone's last homestead and the place where he spent his final years is found within the Missouri River Hills PARCA. Landcover throughout this region is varied, with row crops, improved pasture, woodland, savannas, and oak and mesic mixed hardwood forests. Bluffs, valleys, low hills, and perennial streams are characteristic of this PARCA. Maintaining wetlands and fishless ponds are important to preserving the high amphibian richness and abundance of this area.

### **Northeast Sandhills**

The Northeast Sandhills PARCA is situated along the western side of the Mississippi River. The area is a combination of hills, valleys, bluffs, and drained bottomlands. Historically, much of this region was covered in prairies and marshes, but conversion to agriculture has severely altered and fragmented the land. This drastic change to the natural habitat has caused an increase in mesopredators and a decrease in land quality, which has caused devastating results to imperiled turtles, such as the Blanding's turtle.

### **Osage Plains**

The unglaciated Osage Plains can be distinguished by a flat to gently rolling topography with tallgrass prairies, savannas, and wetlands. Perennial streams can be found intermittently throughout the land, but the area can become very arid in the summer. Much of the area has been converted to agriculture and could benefit from habitat restoration with invasive plant removal and sustainable grazing practices. Soil compaction can also be an issue and more research is needed to understand the impacts on native species, like the crayfish burrow-loving crawfish frog that is dependent on healthy prairie ecosystems.

### **Sand Prairie Bottoms**

The Sand Prairie Bottoms PARCA is situated along the Mississippi Alluvial Valley and encompasses the meander belt of the Mississippi River. Point bars, oxbows, natural levees, and abandoned channels are all components of this ecosystem. This area was once extremely diverse, but due to draining of wetlands, channelizing of streams, and clearing of bottomland forests for agriculture, much of the land has been severely altered and tarnished.

### **Southwest Glades**

With a step-like landscape of level-crested buttes, lower benches, and bottomlands, the Southwest Glades

PARCA is a rugged expanse inhabited by woodlands and rocky glades. Cliffs, sinkholes, and caves are prevalent, with some of the largest caves in Missouri found in this area. The White River runs through this PARCA and is dissected into three reservoirs: Table Rock Lake, Bull Shoals Lake, and Lake Taneycomo. Many glades have been degraded by fire suppression, overgrazing, and the spread of undesirable woody vegetation. These desert-like communities are sensitive to disturbances and their thin soils are susceptible to erosion, which can destroy essential habitat for reptiles and other animals.

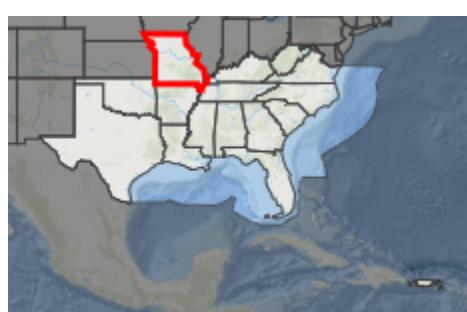
To learn more and explore the GIS data, [view this indicator in the SECAS Atlas](#).



Terrestrial

## Equitable access to potential parks

This cultural resource indicator prioritizes places to create new parks that would fill gaps in equitable access to open space within socially vulnerable communities in urban areas. It identifies areas where residents currently lack access to parks within a 10-minute walk (accounting for walkable road networks and access barriers like highways and fences), then prioritizes based on park need using demographic and environmental metrics. Parks help improve public health, foster a conservation ethic by providing opportunities for people to connect with nature, and support critical ecosystem services. This indicator originates from the Trust for Public Land's ParkServe park priority areas and the Center for Disease Control's Social Vulnerability Index.



### Priority for a new park that would create nearby equitable access

- █ Very high priority
- █ High priority
- █ Moderate priority
- █ Not identified as a priority (within urban areas)

*Table 6: Indicator values for equitable access to potential parks within Missouri. A good condition threshold is not yet defined for this indicator.*

<b>Indicator Values: Priority for a new park that would create nearby equitable access</b>		<b>Acres</b>	<b>Percent of Area</b>
↑ High	Very high priority	48,574	0.1%
	High priority	62,503	0.1%
	Moderate priority	70,260	0.2%
↓ Low	Not identified as a priority (within urban areas)	44,426,612	99.6%
<b>Total area</b>		<b>44,607,949</b>	<b>100%</b>

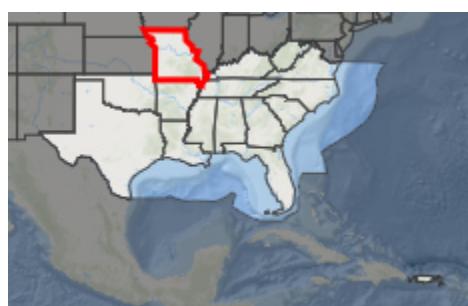
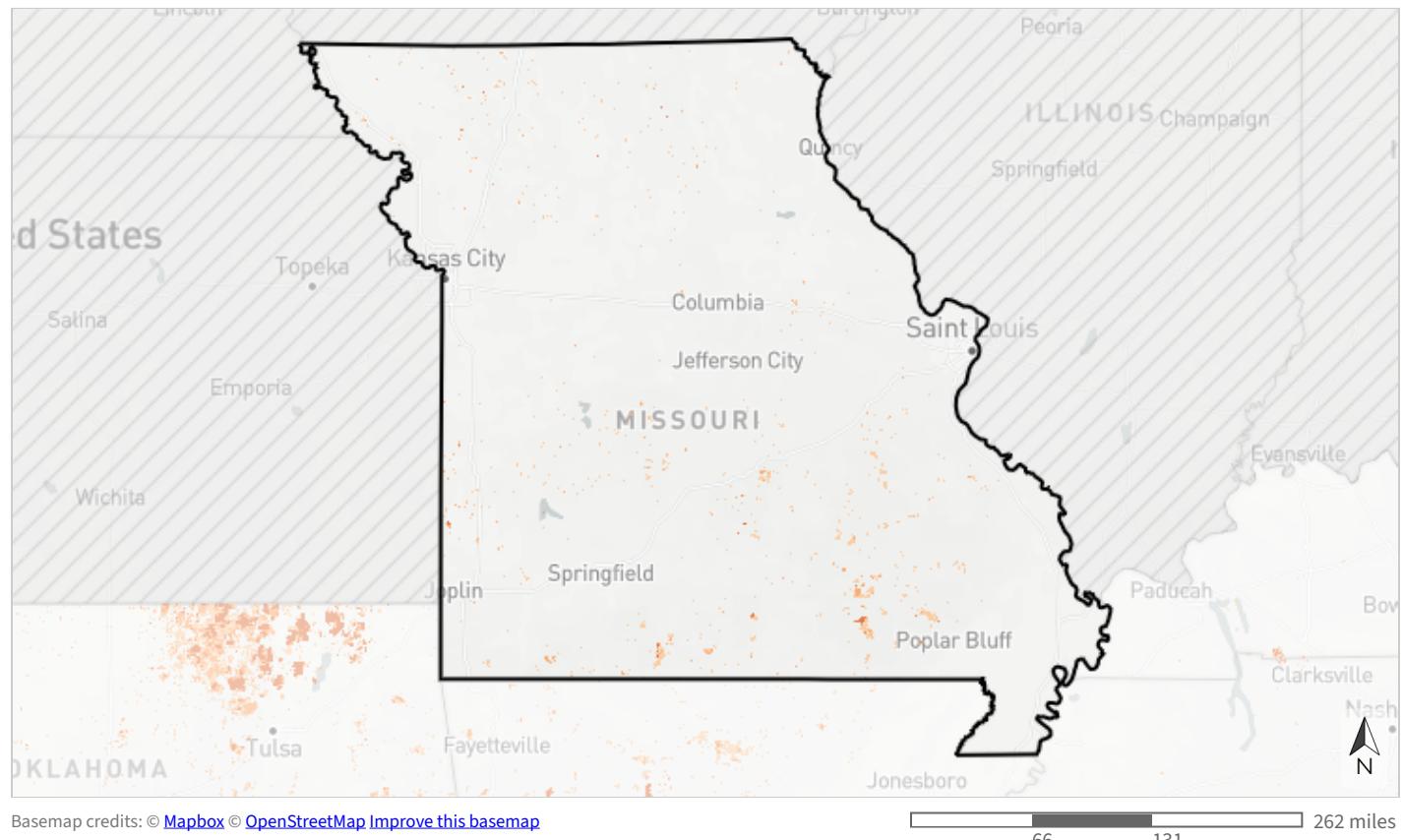
To learn more and explore the GIS data, [view this indicator in the SECAS Atlas](#).



Terrestrial

## Fire frequency

This indicator uses remote sensing to estimate the number of times an area has been burned from 2013 to 2021. Many Southeastern ecosystems rely on regular, low-intensity fires to maintain habitat, encourage native plant growth, and reduce wildfire risk. This indicator combines burned area layers from U.S. Geological Survey Landsat data and the inter-agency Monitoring Trends in Burn Severity program. Landsat-based fire predictions within the range of longleaf pine are also available through Southeast FireMap.



- Burned 3+ times from 2013-2021
- Burned 2 times from 2013-2021
- Burned 1 time from 2013-2021
- Not burned from 2013-2021 or row crop

*Table 7: Indicator values for fire frequency within Missouri. Good condition thresholds reflect the range of indicator values that occur in healthy, functioning ecosystems.*

	<b>Indicator Values</b>	<b>Acres</b>	<b>Percent of Area</b>
↑ High	Burned 3+ times from 2013-2021	19,035	<0.1%
	Burned 2 times from 2013-2021	83,754	0.2%
	Burned 1 time from 2013-2021	559,411	1.3%
↓ Low	Not burned from 2013-2021 or row crop	43,945,749	98.5%
	<b>Total area</b>	<b>44,607,949</b>	<b>100%</b>

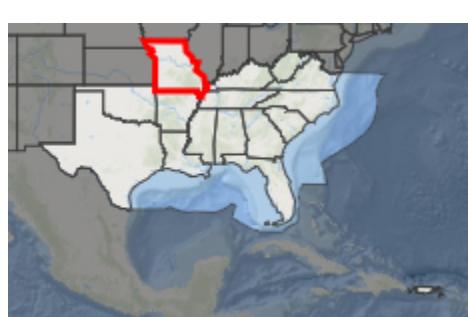
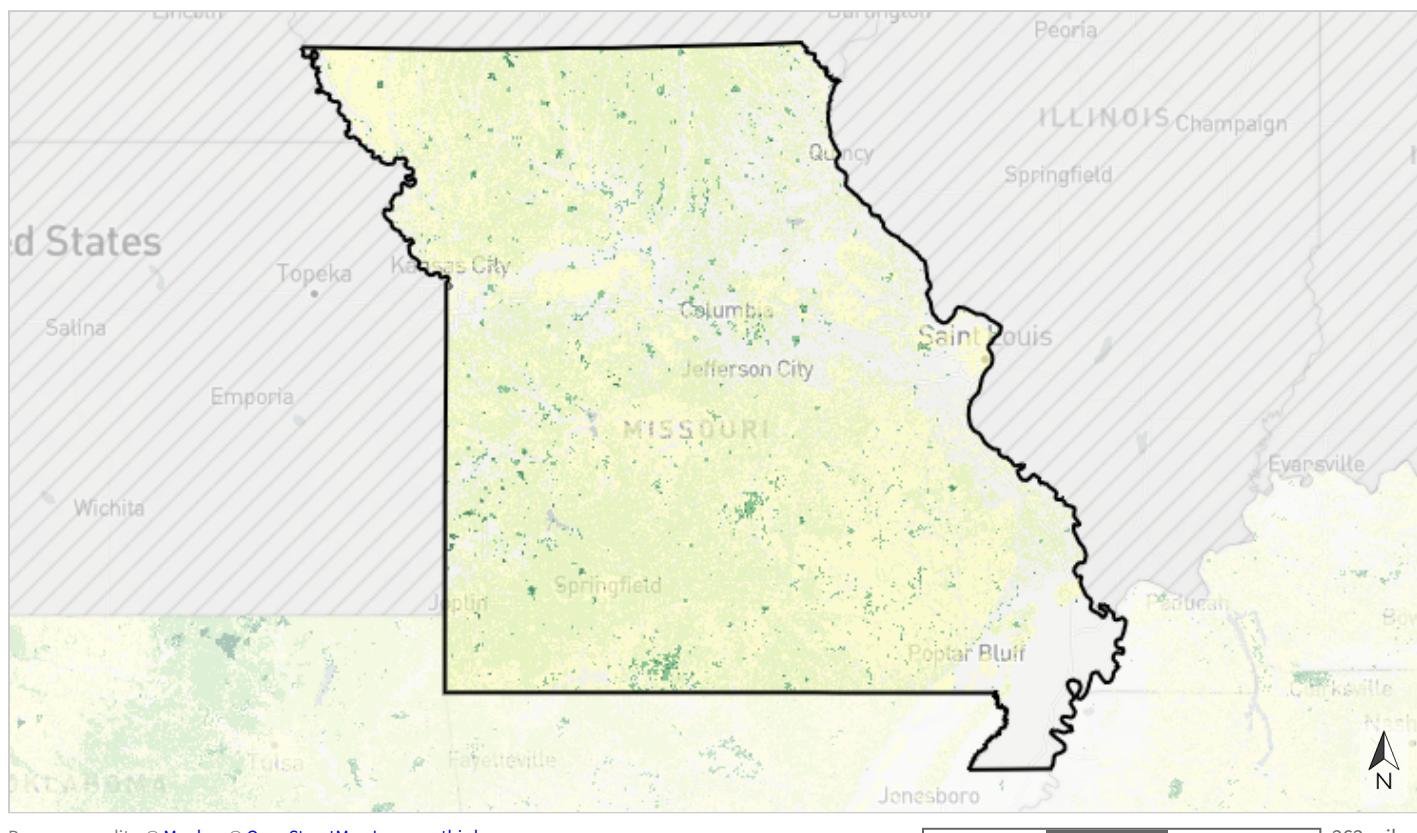
To learn more and explore the GIS data, [view this indicator in the SECAS Atlas](#).



Terrestrial

## Grasslands and savannas

This indicator represents grasslands and savannas in the southeastern United States, which support important plants, reptiles, amphibians, mammals, birds, and pollinators. It considers known grassland and savanna locations, likely locations managed for biodiversity, and surrounding pollinator buffers. It also incorporates other potential grassland and savanna locations within natural and altered landscapes, and restoration opportunities within historic locations based on past fire intervals and historic ecosystem predictions. This indicator combines data from multiple sources, including the Southeastern Grasslands Institute, the National Land Cover Database, LANDFIRE biophysical settings, Oklahoma and Texas ecological systems maps, and more.



- Known grassland/savanna
- Likely grassland/savanna >10 acres
- Likely grassland/savanna ≤10 acres
- Pollinator buffer around known or likely grassland/savanna
- Potential grassland/savanna in mostly natural landscape
- Potential grassland/savanna in more altered landscape
- Historic grassland/savanna
- Not identified as grassland/savanna

Table 8: Indicator values for grasslands and savannas within Missouri. Good condition thresholds reflect the range of indicator values that occur in healthy, functioning ecosystems.

	<b>Indicator Values</b>	<b>Acres</b>	<b>Percent of Area</b>
↑ High	Known grassland/savanna	3,886	<0.1%
	Likely grassland/savanna >10 acres	192,574	0.4%
	Likely grassland/savanna ≤10 acres	58,288	0.1%
↓ Low	Pollinator buffer around known or likely grassland/savanna	838,225	1.9%
	Potential grassland/savanna in mostly natural landscape	253,034	0.6%
	Potential grassland/savanna in more altered landscape	15,374,970	34.5%
↓ Low	Historic grassland/savanna	14,178,769	31.8%
	Not identified as grassland/savanna	13,702,858	30.7%
	<i>Area not evaluated for this indicator</i>	5,344	<0.1%
<b>Total area</b>		<b>44,607,949</b>	<b>100%</b>

To learn more and explore the GIS data, [view this indicator in the SECAS Atlas](#).



Terrestrial

## Greenways & trails

This cultural resource indicator measures both the natural condition and connected length of greenways and trails to characterize the quality of the recreational experience. Natural condition is based on the amount of impervious surface surrounding the path. Connected length captures how far a person can go without leaving a dedicated path, based on common distances for walking, running, and biking. This indicator originates from OpenStreetMap data and the National Land Cover Database.



- Mostly natural and connected for  $\geq 40$  km
- Mostly natural and connected for 5 to  $< 40$  km or partly natural and connected for  $\geq 40$  km
- Mostly natural and connected for 1.9 to  $< 5$  km, partly natural and connected for 5 to  $< 40$  km, or developed and connected for  $\geq 40$  km
- Mostly natural and connected for  $< 1.9$  km, partly natural and connected for 1.9 to  $< 5$  km, or developed and connected for 5 to  $< 40$  km
- Partly natural and connected for  $< 1.9$  km or developed and connected for 1.9 to  $< 5$  km
- Developed and connected for  $< 1.9$  km
- Sidewalk
- Not identified as a trail, sidewalk, or other path

*Table 9: Indicator values for greenways & trails within Missouri. Good condition thresholds reflect the range of indicator values that occur in healthy, functioning ecosystems.*

Indicator Values	Acres	Percent of Area
↑ High Mostly natural and connected for ≥40 km	11,809	<0.1%
Mostly natural and connected for 5 to <40 km or partly natural and connected for ≥40 km	16,578	<0.1%
Mostly natural and connected for 1.9 to <5 km, partly natural and connected for 5 to <40 km, or developed and connected for ≥40 km	13,728	<0.1%
Mostly natural and connected for <1.9 km, partly natural and connected for 1.9 to <5 km, or developed and connected for 5 to <40 km	9,112	<0.1%
Partly natural and connected for <1.9 km or developed and connected for 1.9 to <5 km	4,617	<0.1%
Developed and connected for <1.9 km	6,406	<0.1%
Sidewalk	36,851	<0.1%
↓ Low Not identified as a trail, sidewalk, or other path	44,508,849	99.8%
<b>Total area</b>	<b>44,607,949</b>	<b>100%</b>

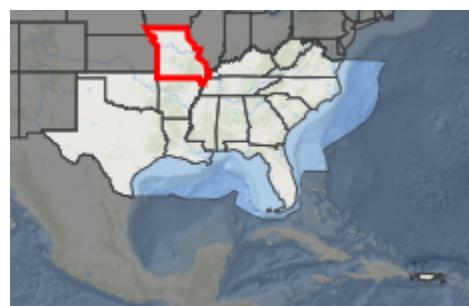
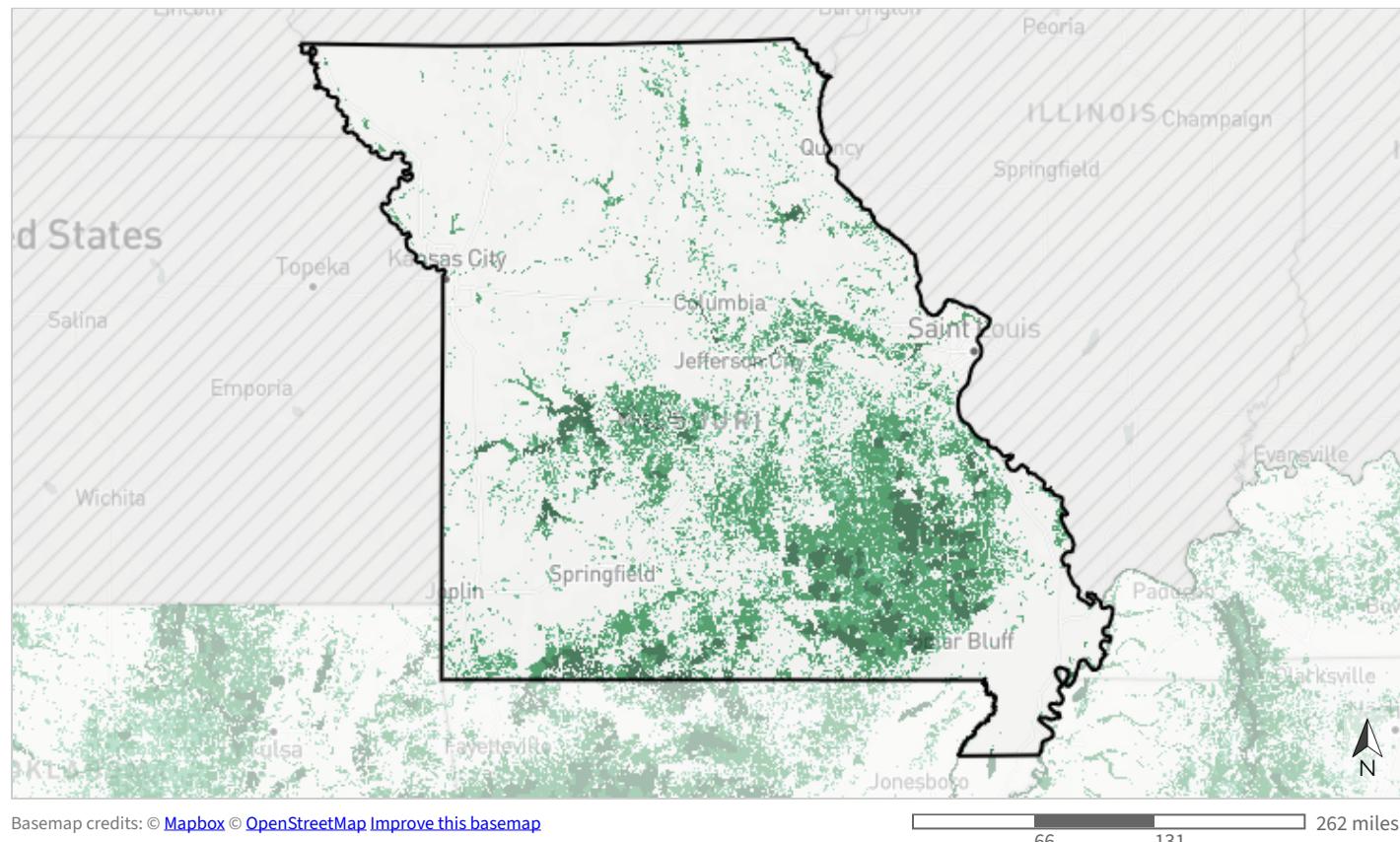
To learn more and explore the GIS data, [view this indicator in the SECAS Atlas](#).



Terrestrial

## Intact habitat cores

This indicator represents the size of large, unfragmented patches of natural habitat. It identifies minimally disturbed natural areas at least 100 acres in size and greater than 200 meters wide. Large areas of intact natural habitat are important for many wildlife species, including reptiles and amphibians, birds, and large mammals. This indicator originates from Esri's green infrastructure data.



- Large core (>10,000 acres)
- Medium core (>1,000-10,000 acres)
- Small core (>100-1,000 acres)
- Not a core

*Table 10: Indicator values for intact habitat cores within Missouri. Good condition thresholds reflect the range of indicator values that occur in healthy, functioning ecosystems.*

	<b>Indicator Values</b>	<b>Acres</b>	<b>Percent of Area</b>
↑ High	Large core (>10,000 acres)	1,810,413	4.1%
	Medium core (>1,000-10,000 acres)	5,014,751	11.2%
	Small core (>100-1,000 acres)	3,062,310	6.9%
↓ Low	Not a core	34,720,475	77.8%
	<b>Total area</b>	<b>44,607,949</b>	<b>100%</b>

↑ In good condition

↓ Not in good condition

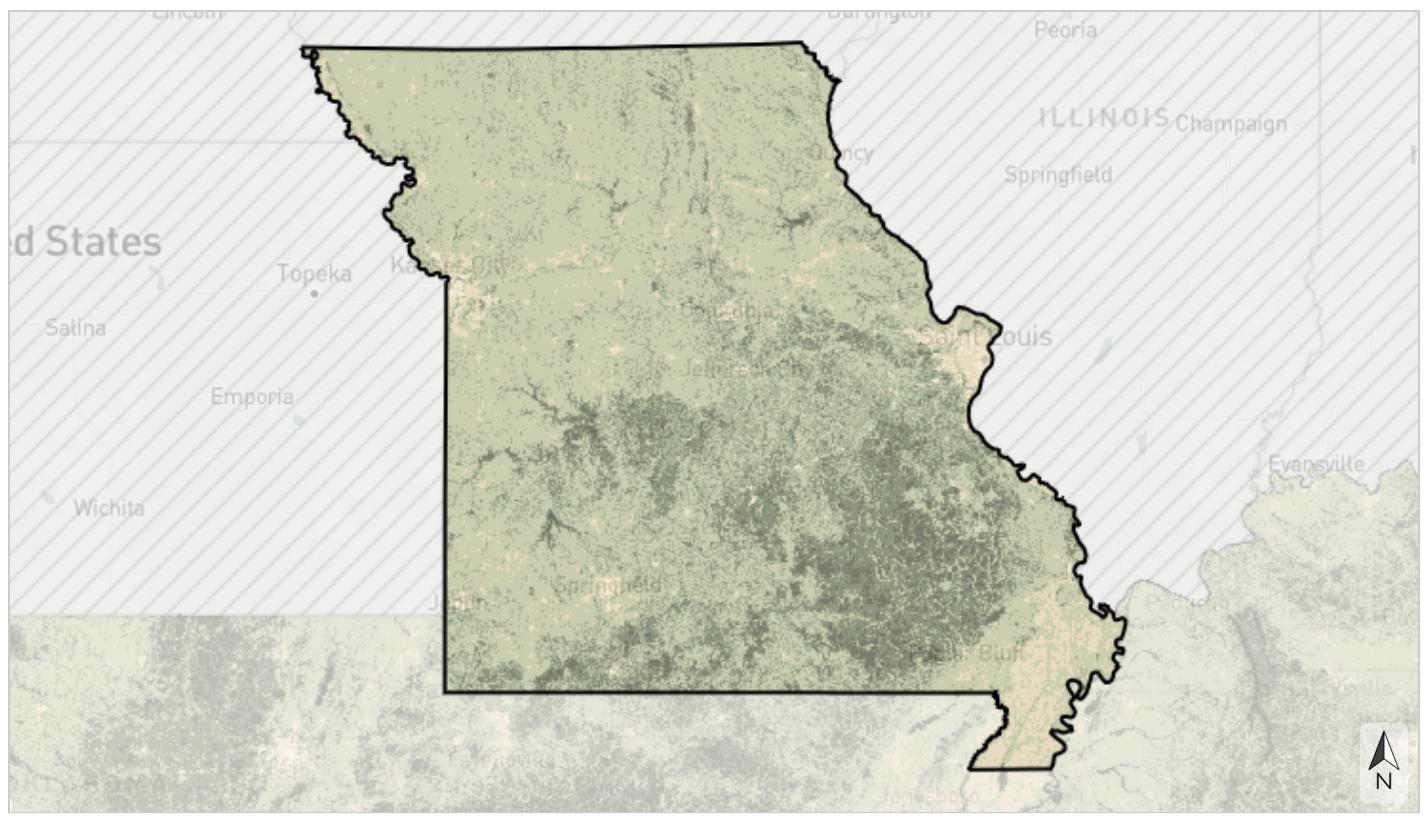
To learn more and explore the GIS data, [view this indicator in the SECAS Atlas](#).



Terrestrial

## Landscape condition

This indicator represents natural areas with limited human alteration while also considering the naturalness of the surrounding landscape. Examples of human alteration include urban development and intense agricultural use. The degree of naturalness across the landscape is a key ecological condition for sustaining species and ecosystem services that are sensitive to habitat fragmentation at multiple scales. This indicator uses the National Land Cover Dataset, various data on grasslands, mines, and quarries, and ideas from the Florida Critical Lands and Waters Identification Project's approach for evaluating landscape integrity.



- Very natural landscape
- Natural landscape
- Mostly natural landscape
- Partly natural landscape
- Altered landscape
- Heavily altered landscape

*Table 11: Indicator values for landscape condition within Missouri. Good condition thresholds reflect the range of indicator values that occur in healthy, functioning ecosystems.*

	<b>Indicator Values</b>	<b>Acres</b>	<b>Percent of Area</b>
↑ High ↓ Low	Very natural landscape	1,285,887	2.9%
	Natural landscape	5,703,801	12.8%
	Mostly natural landscape	11,171,668	25.0%
	Partly natural landscape	23,686,288	53.1%
	Altered landscape	2,490,828	5.6%
	Heavily altered landscape	264,133	0.6%
	<i>Area not evaluated for this indicator</i>	5,344	<0.1%
<b>Total area</b>		<b>44,607,949</b>	<b>100%</b>

↑ In good condition

↓ Not in good condition

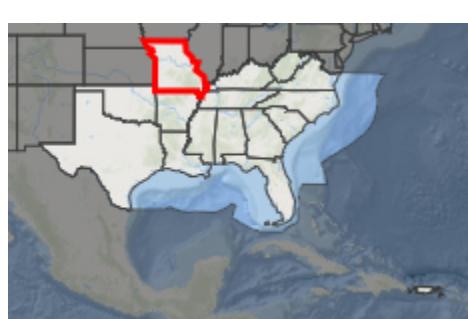
To learn more and explore the GIS data, [view this indicator in the SECAS Atlas](#).



Terrestrial

## Mississippi Alluvial Valley forest birds - protection

This indicator prioritizes areas for new land protection within the Mississippi Alluvial Valley (MAV) based on benefits to forest breeding birds that need large interior cores of bottomland hardwood habitat (Swainson's warbler, cerulean warbler, swallow-tailed kite). The model considers core size, the amount of existing protected land within a forest patch, proximity to reforestation priorities, and risk of conversion to agriculture based on flooding frequency. The highest scores go to drier, unprotected forest patches with cores at least 2,000 ha (~5,000 ac) in size that are adjacent to complementary reforestation priority areas also identified by the Lower Mississippi Valley Joint Venture (LMVJV). This indicator originates from the LMVJV MAV forest breeding bird protection priorities.



### Priority of forest breeding bird habitat patch for future protection

- Score >90-100 (highest priority)
- Score >80-90
- Score >70-80
- Score >60-70
- Score >50-60
- Score >40-50
- Score >30-40
- Score >20-30
- Score >10-20
- Score >0-10 (low priority)
- Score 0 (not a priority)

*Table 12: Indicator values for Mississippi Alluvial Valley forest birds - protection within Missouri. A good condition threshold is not yet defined for this indicator.*

<b>Indicator Values: Priority of forest breeding bird habitat patch for future protection</b>		<b>Acres</b>	<b>Percent of Area</b>
↑ High	Score >90-100 (highest priority)	0	0%
	Score >80-90	0	0%
	Score >70-80	0	0%
	Score >60-70	285	<0.1%
	Score >50-60	9,560	<0.1%
	Score >40-50	2,315	<0.1%
	Score >30-40	1,611	<0.1%
	Score >20-30	1,231	<0.1%
	Score >10-20	3,758	<0.1%
	Score >0-10 (low priority)	2,493	<0.1%
↓ Low	Score 0 (not a priority)	2,505,624	5.6%
	<i>Area not evaluated for this indicator</i>	42,081,072	94.3%
<b>Total area</b>		<b>44,607,949</b>	<b>100%</b>

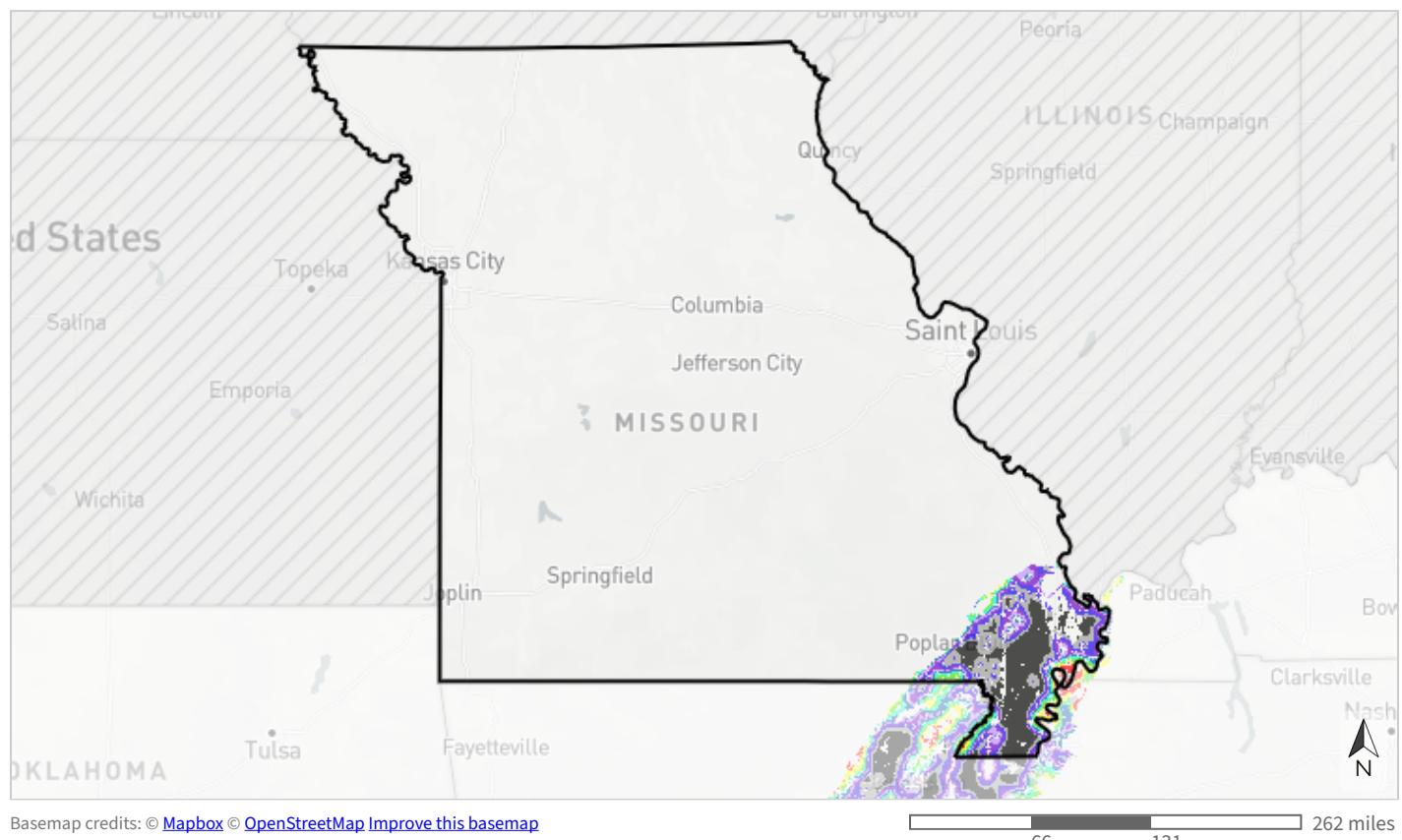
To learn more and explore the GIS data, [view this indicator in the SECAS Atlas](#).



Terrestrial

## Mississippi Alluvial Valley forest birds - reforestation

This indicator prioritizes areas for reforestation within the Mississippi Alluvial Valley (MAV) based on benefits to three species of forest breeding birds that need large interior cores of bottomland hardwood habitat (Swainson's warbler, cerulean warbler, swallow-tailed kite). The model considers the core size, number of cores, and percent of local forest cover that would result from reforestation, as well as risk of conversion to agriculture based on flooding frequency. The highest scores go to drier areas where reforestation would create new forest patches containing interior cores at least 2,000 ha (~5,000 ac) in size. It originates from the Lower Mississippi Valley Joint Venture MAV forest breeding bird reforestation priorities.



### Likelihood that reforestation will contribute to forest breeding bird habitat needs

- Most likely ( $\geq 90^{\text{th}}$  percentile)
- Most likely (80 $^{\text{th}}$  to <90 $^{\text{th}}$  percentile)
- More likely (70 $^{\text{th}}$  to <80 $^{\text{th}}$  percentile)
- Less likely (60 $^{\text{th}}$  to <70 $^{\text{th}}$  percentile)
- Least likely (50 $^{\text{th}}$  to <60 $^{\text{th}}$  percentile)
- Least likely (40 $^{\text{th}}$  to <50 $^{\text{th}}$  percentile)
- Least likely (30 $^{\text{th}}$  to <40 $^{\text{th}}$  percentile)
- Least likely (20 $^{\text{th}}$  to <30 $^{\text{th}}$  percentile)
- Least likely (10 $^{\text{th}}$  to <20 $^{\text{th}}$  percentile)
- Least likely (<10 $^{\text{th}}$  percentile)
- Not a priority for reforestation

*Table 13: Indicator values for Mississippi Alluvial Valley forest birds - reforestation within Missouri. A good condition threshold is not yet defined for this indicator.*

<b>Indicator Values: Likelihood that reforestation will contribute to forest breeding bird habitat needs</b>		<b>Acres</b>	<b>Percent of Area</b>
↑ High	Most likely ( $\geq$ 90th percentile)	18,175	<0.1%
	Most likely (80th to <90th percentile)	32,837	<0.1%
	More likely (70th to <80th percentile)	59,590	0.1%
	Less likely (60th to <70th percentile)	76,094	0.2%
	Least likely (50th to <60th percentile)	99,660	0.2%
	Least likely (40th to <50th percentile)	159,657	0.4%
	Least likely (30th to <40th percentile)	204,979	0.5%
	Least likely (20th to <30th percentile)	244,769	0.5%
	Least likely (10th to <20th percentile)	408,592	0.9%
	Least likely (<10th percentile)	730,951	1.6%
↓ Low	Not a priority for reforestation	491,746	1.1%
	<i>Area not evaluated for this indicator</i>	42,080,898	94.3%
<b>Total area</b>		<b>44,607,949</b>	<b>100%</b>

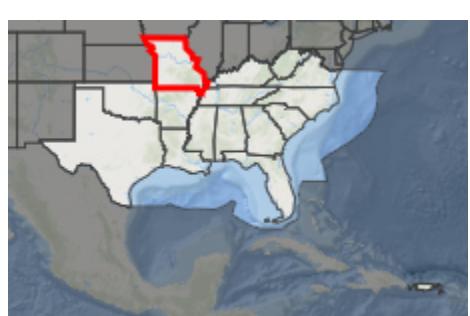
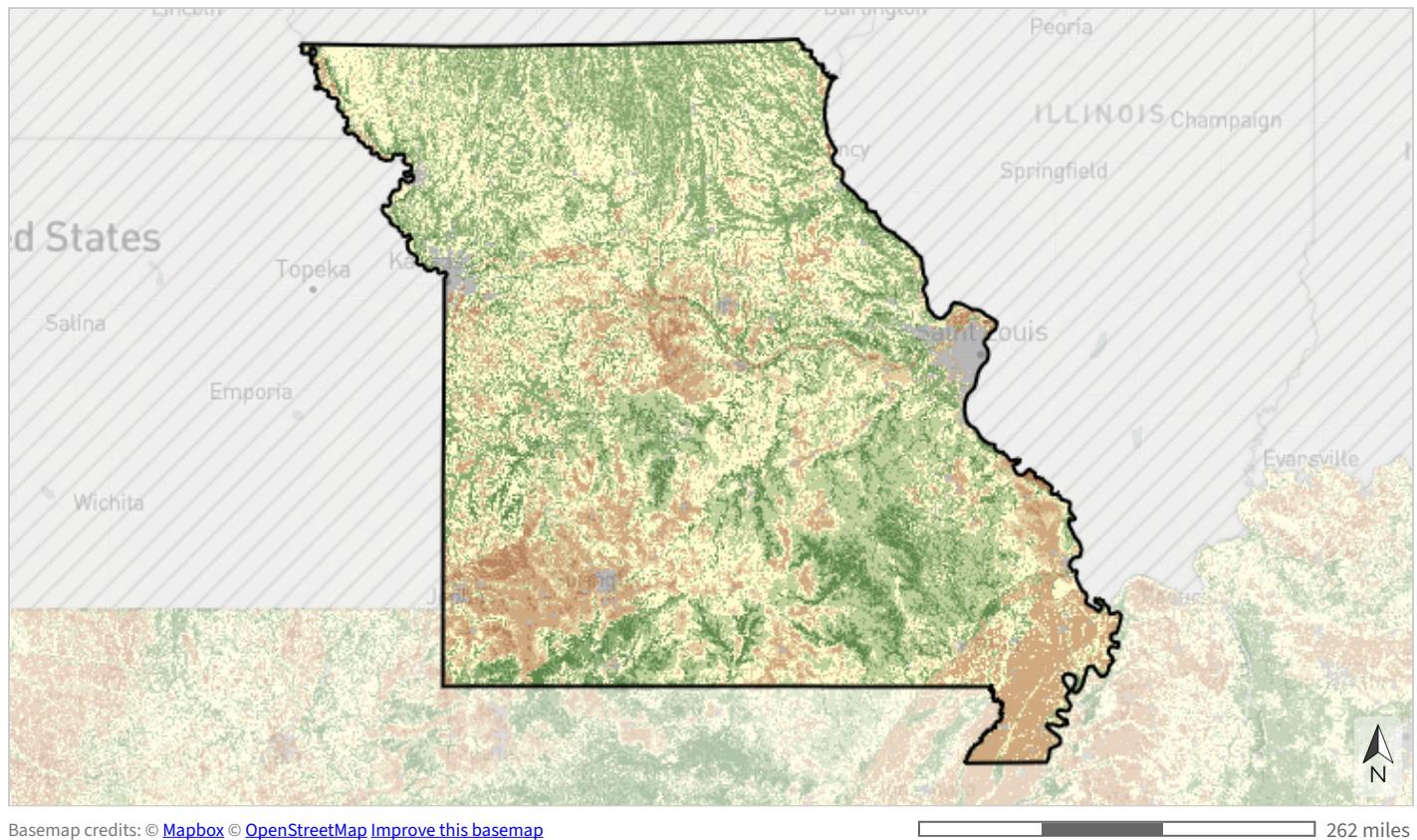
To learn more and explore the GIS data, [view this indicator in the SECAS Atlas](#).



Terrestrial

## Resilient terrestrial sites

This indicator depicts an area's capacity to maintain species diversity and ecosystem function in the face of climate change. It measures two factors that influence resilience. The first, landscape diversity, reflects the number of microhabitats and climatic gradients created by topography, elevation, and hydrology. The second, local connectedness, reflects the degree of habitat fragmentation and strength of barriers to species movement. Highly resilient sites contain many different habitat niches that support biodiversity, and allow species to move freely through the landscape to find suitable microclimates as the climate changes. This indicator originates from The Nature Conservancy's Resilient Land data.



- Most resilient
- More resilient
- Slightly more resilient
- Average/median resilience
- Slightly less resilient
- Less resilient
- Least resilient
- Developed

*Table 14: Indicator values for resilient terrestrial sites within Missouri. A good condition threshold is not yet defined for this indicator.*

	<b>Indicator Values</b>	<b>Acres</b>	<b>Percent of Area</b>
↑ High	Most resilient	1,494,407	3.4%
	More resilient	7,978,070	17.9%
	Slightly more resilient	10,746,686	24.1%
	Average/median resilience	11,507,022	25.8%
	Slightly less resilient	4,696,291	10.5%
	Less resilient	4,955,934	11.1%
	Least resilient	524,581	1.2%
	Developed	2,007,374	4.5%
<i>Area not evaluated for this indicator</i>		697,583	1.6%
<b>Total area</b>		<b>44,607,949</b>	<b>100%</b>

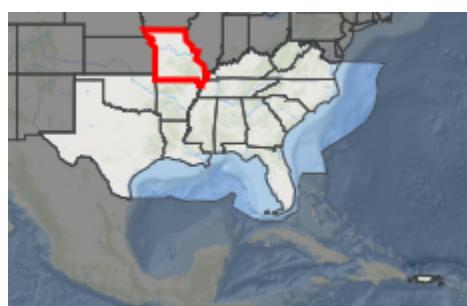
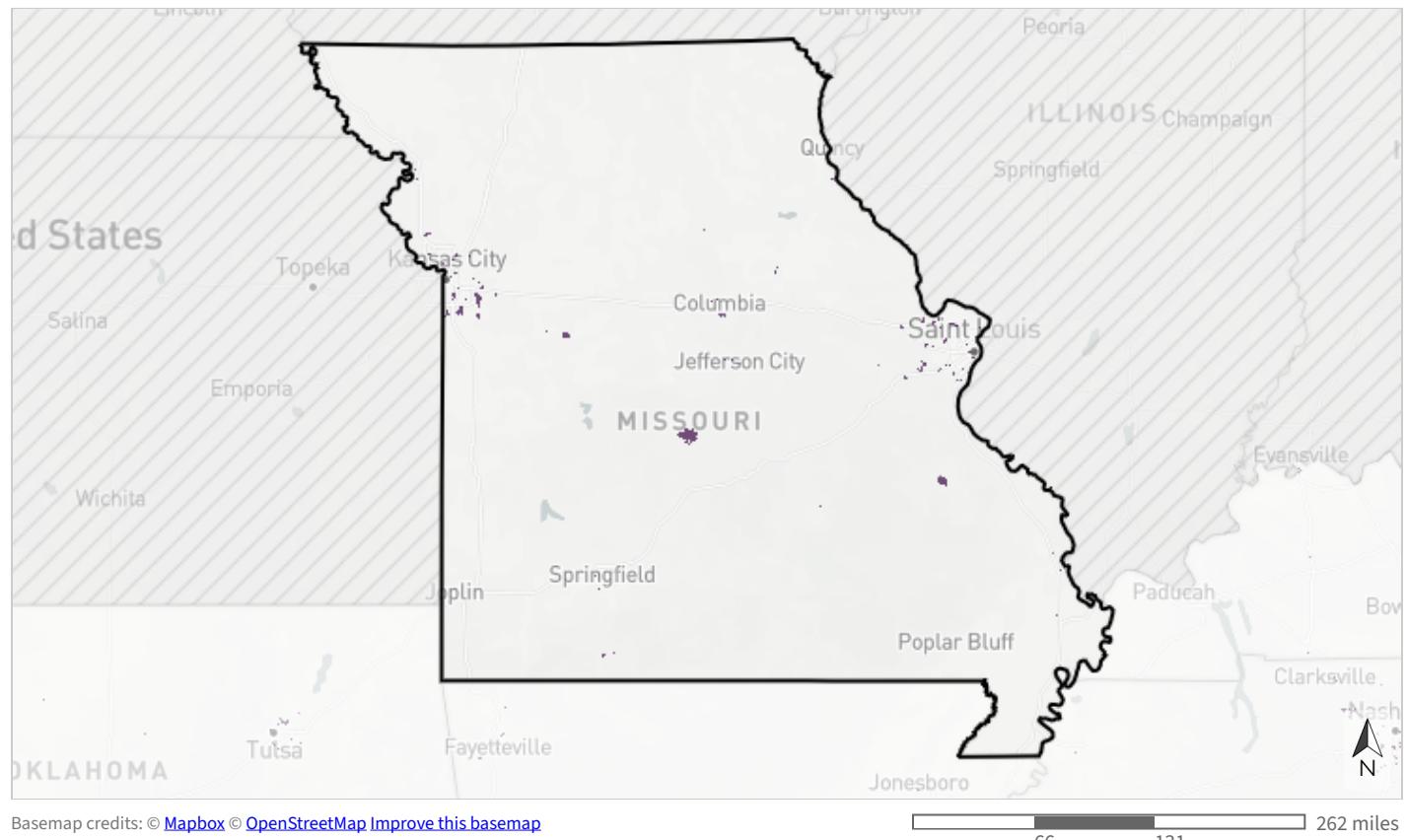
To learn more and explore the GIS data, [view this indicator in the SECAS Atlas](#).



Terrestrial

## Urban park size

This cultural resource indicator measures the size of parks larger than 5 acres in the urban environment. Protected natural areas in urban environments provide urban residents a nearby place to connect with nature, and offer refugia for some species. This indicator complements the equitable access to potential parks indicator by capturing the value of existing parks. It originates from the Protected Areas Database of the United States, Census urban areas, and the National Land Cover Database.



- 75+ acre urban park
- 50 to <75 acre urban park
- 30 to <50 acre urban park
- 10 to <30 acre urban park
- 5 to <10 acre urban park
- <5 acre urban park
- Not identified as an urban park

*Table 15: Indicator values for urban park size within Missouri. A good condition threshold is not yet defined for this indicator.*

	<b>Indicator Values</b>	<b>Acres</b>	<b>Percent of Area</b>
↑ High	75+ acre urban park	114,984	0.3%
	50 to <75 acre urban park	5,319	<0.1%
	30 to <50 acre urban park	7,056	<0.1%
	10 to <30 acre urban park	10,618	<0.1%
	5 to <10 acre urban park	3,891	<0.1%
	<5 acre urban park	4,239	<0.1%
	Not identified as an urban park	44,461,842	99.7%
<b>Total area</b>		<b>44,607,949</b>	<b>100%</b>

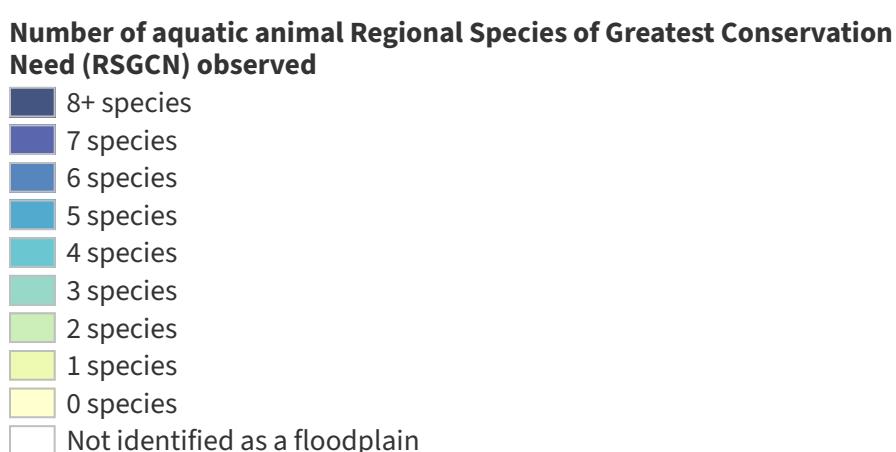
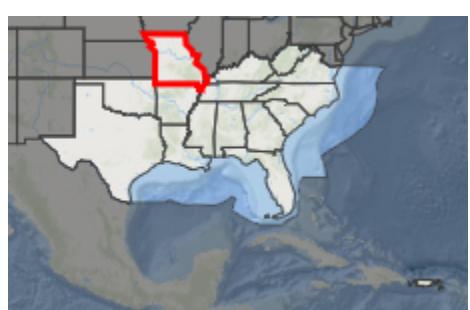
To learn more and explore the GIS data, [view this indicator in the SECAS Atlas](#).



Freshwater

## Imperiled aquatic species

This indicator measures the number of aquatic animal Regional Species of Greatest Conservation Need (RSGCN) observed within each 12-digit HUC subwatershed, including fish, mussels, snails, crayfish, and amphibians. RSGCN are regional priority species derived from the list of SGCN identified in Southeast State Wildlife Action Plans as most in need of need of conservation action. RSGCN were chosen based on consistent criteria, such as level of conservation concern, regional stewardship responsibility, and ecological significance. This indicator originates from state Natural Heritage Program data collected by the Southeast Aquatic Resources Partnership and applies to the Environmental Protection Agency's estimated floodplain, which spatially defines areas estimated to be inundated by a 100-year flood (also known as the 1% annual chance flood).



*Table 16: Indicator values for imperiled aquatic species within Missouri. A good condition threshold is not yet defined for this indicator.*

<b>Indicator Values: Number of aquatic animal Regional Species of Greatest Conservation Need (RSGCN) observed</b>		<b>Acres</b>	<b>Percent of Area</b>
↑ High	8+ species	147,041	0.3%
	7 species	84,335	0.2%
	6 species	123,436	0.3%
	5 species	326,867	0.7%
	4 species	293,426	0.7%
	3 species	231,572	0.5%
	2 species	397,482	0.9%
	1 species	785,395	1.8%
	0 species	4,175,201	9.4%
	Not identified as a floodplain	38,043,193	85.3%
<i>Area not evaluated for this indicator</i>		0.67	<0.1%
<b>Total area</b>		<b>44,607,949</b>	<b>100%</b>

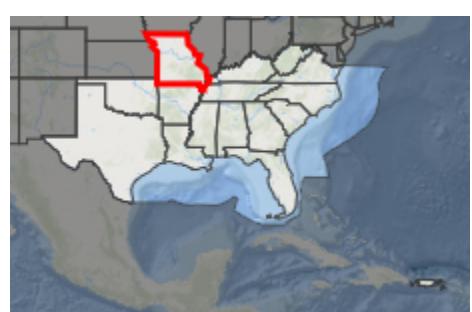
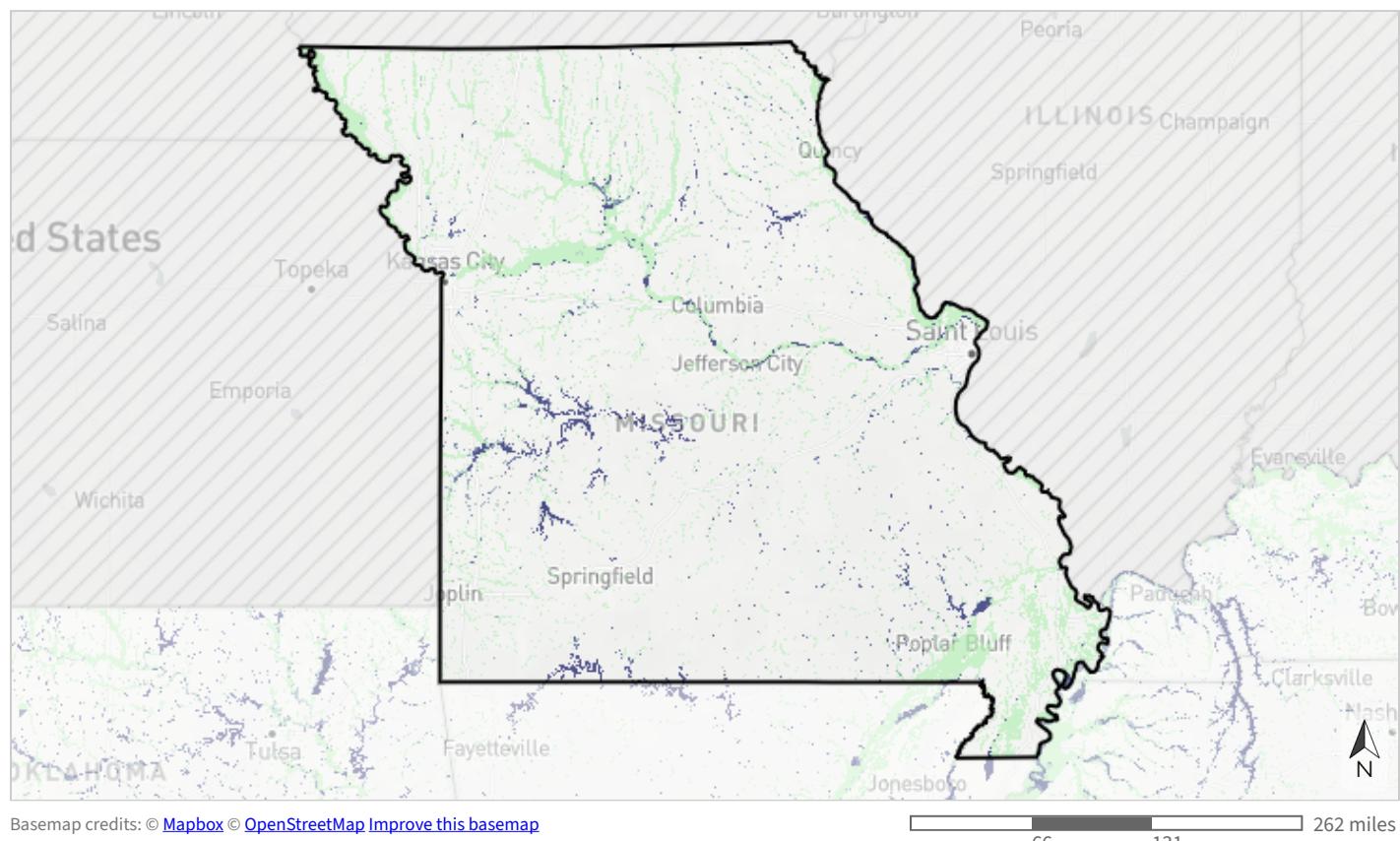
To learn more and explore the GIS data, [view this indicator in the SECAS Atlas](#).



Freshwater

## Natural landcover in floodplains

This indicator measures the amount of natural landcover in the estimated floodplain of rivers and streams within each catchment. It assesses the stream channel and its surrounding riparian buffer, measuring the percent of unaltered habitat like forests, wetlands, or open water (rather than agriculture or development). Intact vegetated buffers within the floodplain of rivers and streams provide aquatic habitat, improve water quality, reduce erosion and flooding, recharge groundwater, and more. This indicator originates from the National Land Cover Database and applies to the Environmental Protection Agency's estimated floodplain, which spatially defines areas estimated to be inundated by a 100-year flood (also known as the 1% annual chance flood).



### Percent natural landcover within the estimated floodplain, by catchment

- >90% natural landcover
- >80-90% natural landcover
- >70-80% natural landcover
- >60-70% natural landcover
- ≤60% natural landcover
- Not identified as a floodplain

*Table 17: Indicator values for natural landcover in floodplains within Missouri. Good condition thresholds reflect the range of indicator values that occur in healthy, functioning ecosystems.*

<b>Indicator Values: Percent natural landcover within the estimated floodplain, by catchment</b>		<b>Acres</b>	<b>Percent of Area</b>
↑ High	>90% natural landcover	761,878	1.7%
	>80-90% natural landcover	319,979	0.7%
	>70-80% natural landcover	329,922	0.7%
	>60-70% natural landcover	400,527	0.9%
	≤60% natural landcover	4,752,449	10.7%
	Not identified as a floodplain	38,043,193	85.3%
	<i>Area not evaluated for this indicator</i>	0.67	<0.1%
<b>Total area</b>		<b>44,607,949</b>	<b>100%</b>

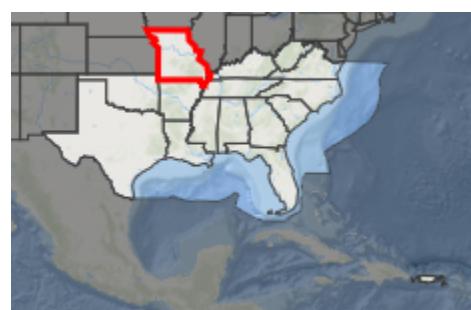
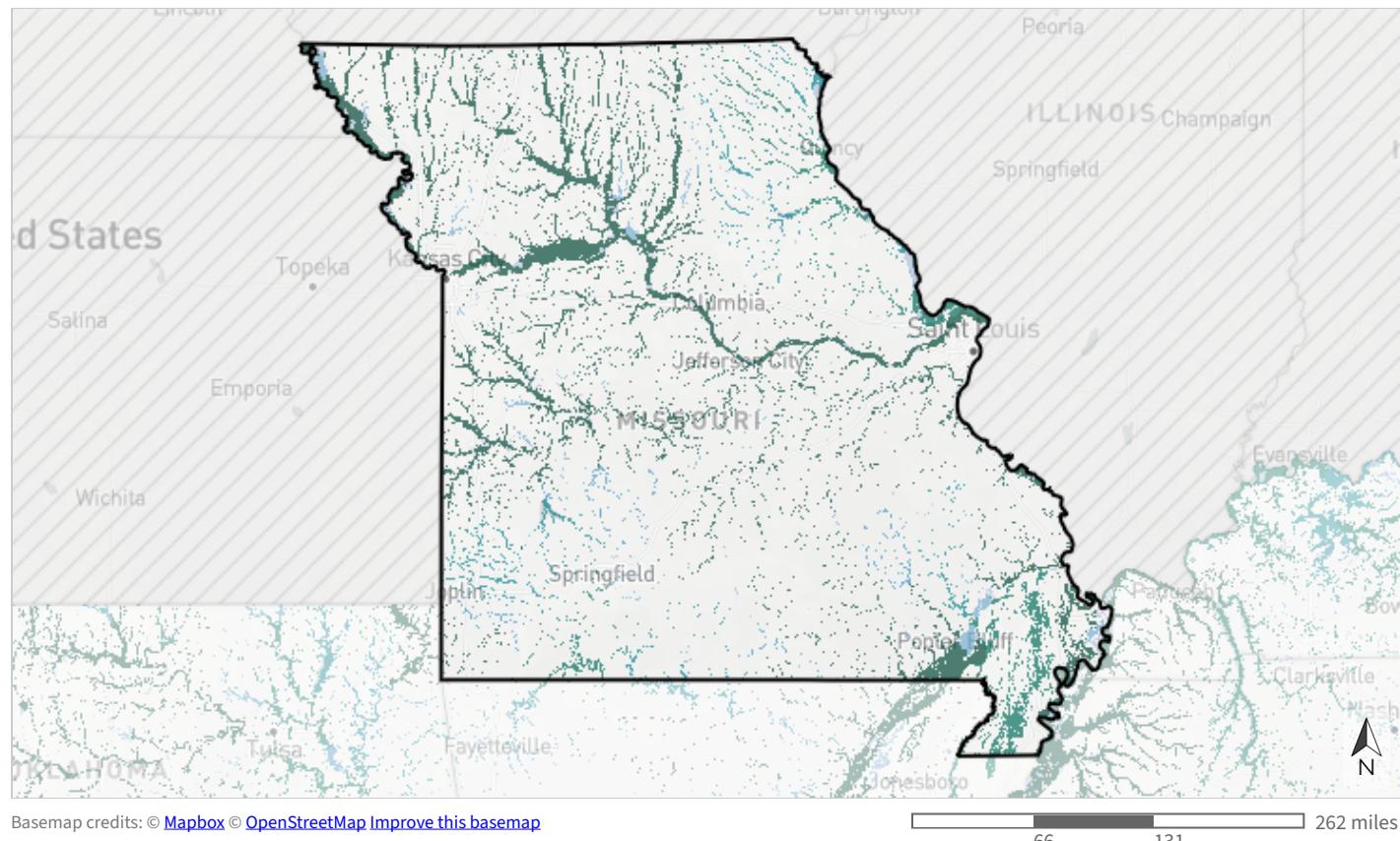
To learn more and explore the GIS data, [view this indicator in the SECAS Atlas](#).



Freshwater

## Network complexity

This indicator depicts the number of connected stream size classes in a river network between dams or waterfalls. River networks with a variety of connected stream classes help retain aquatic biodiversity in a changing climate by allowing species to access climate refugia and move between habitats. This indicator originates from the Southeast Aquatic Resources Partnership and applies to the Environmental Protection Agency's estimated floodplain, which spatially defines areas estimated to be inundated by a 100-year flood (also known as the 1% annual chance flood).



### Number of connected stream size classes

- 7 size classes
- 6 size classes
- 5 size classes
- 4 size classes
- 3 size classes
- 2 size classes
- 1 size class
- Not identified as a floodplain

*Table 18: Indicator values for network complexity within Missouri. Good condition thresholds reflect the range of indicator values that occur in healthy, functioning ecosystems.*

	<b>Indicator Values: Number of connected stream size classes</b>	<b>Acres</b>	<b>Percent of Area</b>
↑ High	7 size classes	4,193,527	9.4%
	6 size classes	900,671	2.0%
	5 size classes	576,256	1.3%
	4 size classes	183,534	0.4%
	3 size classes	300,942	0.7%
	2 size classes	218,355	0.5%
	1 size class	190,188	0.4%
	Not identified as a floodplain	38,044,454	85.3%
<i>Area not evaluated for this indicator</i>		22	<0.1%
<b>Total area</b>		<b>44,607,949</b>	<b>100%</b>

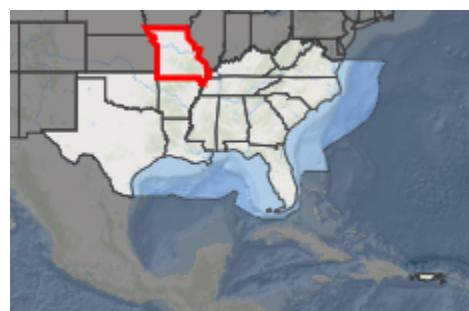
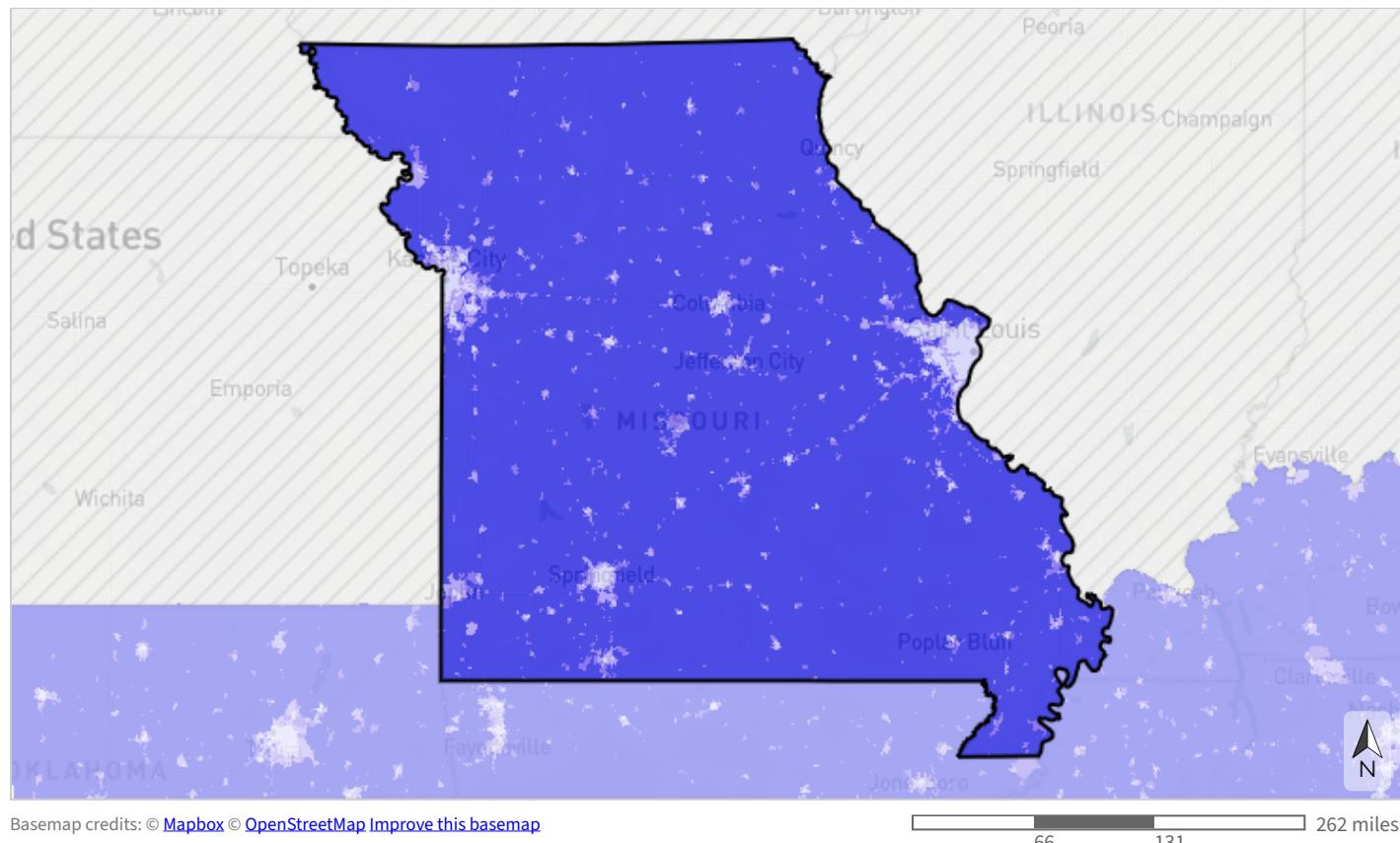
To learn more and explore the GIS data, [view this indicator in the SECAS Atlas](#).



Freshwater

## Permeable surface

This indicator measures the average percent of non-impervious cover within each catchment. High levels of impervious surface degrade water quality and alter freshwater flow, impacting both aquatic species communities and ecosystem services for people, like the availability of clean drinking water. This indicator originates from the National Land Cover Database.



### Percent of catchment permeable

- >95% permeable (likely high water quality and supporting most sensitive aquatic species)
- >90-95% permeable (likely declining water quality and supporting most aquatic species)
- >70-90% permeable (likely degraded water quality and not supporting many aquatic species)
- ≤70% permeable (likely degraded instream flow, water quality, and aquatic species communities)

*Table 19: Indicator values for permeable surface within Missouri. Good condition thresholds reflect the range of indicator values that occur in healthy, functioning ecosystems.*

	<b>Indicator Values: Percent of catchment permeable</b>	<b>Acres</b>	<b>Percent of Area</b>
↑ High	>95% permeable (likely high water quality and supporting most sensitive aquatic species)	41,770,250	93.6%
			↑ In good condition
	>90-95% permeable (likely declining water quality and supporting most aquatic species)	1,156,508	2.6%
			↓ Not in good condition
	>70-90% permeable (likely degraded water quality and not supporting many aquatic species)	1,079,886	2.4%
↓ Low	≤70% permeable (likely degraded instream flow, water quality, and aquatic species communities)	601,304	1.3%
	<i>Area not evaluated for this indicator</i>	0.67	<0.1%
	<b>Total area</b>	<b>44,607,949</b>	<b>100%</b>

To learn more and explore the GIS data, [view this indicator in the SECAS Atlas](#).

# Threats

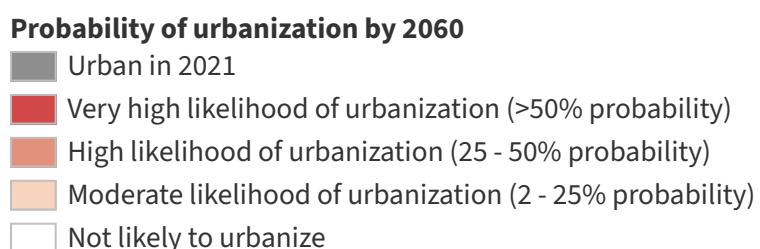
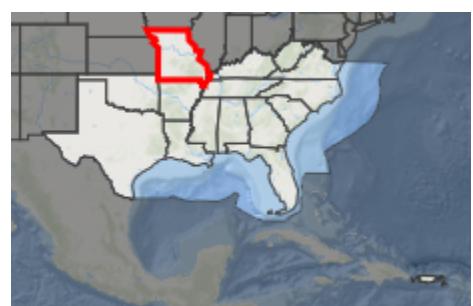
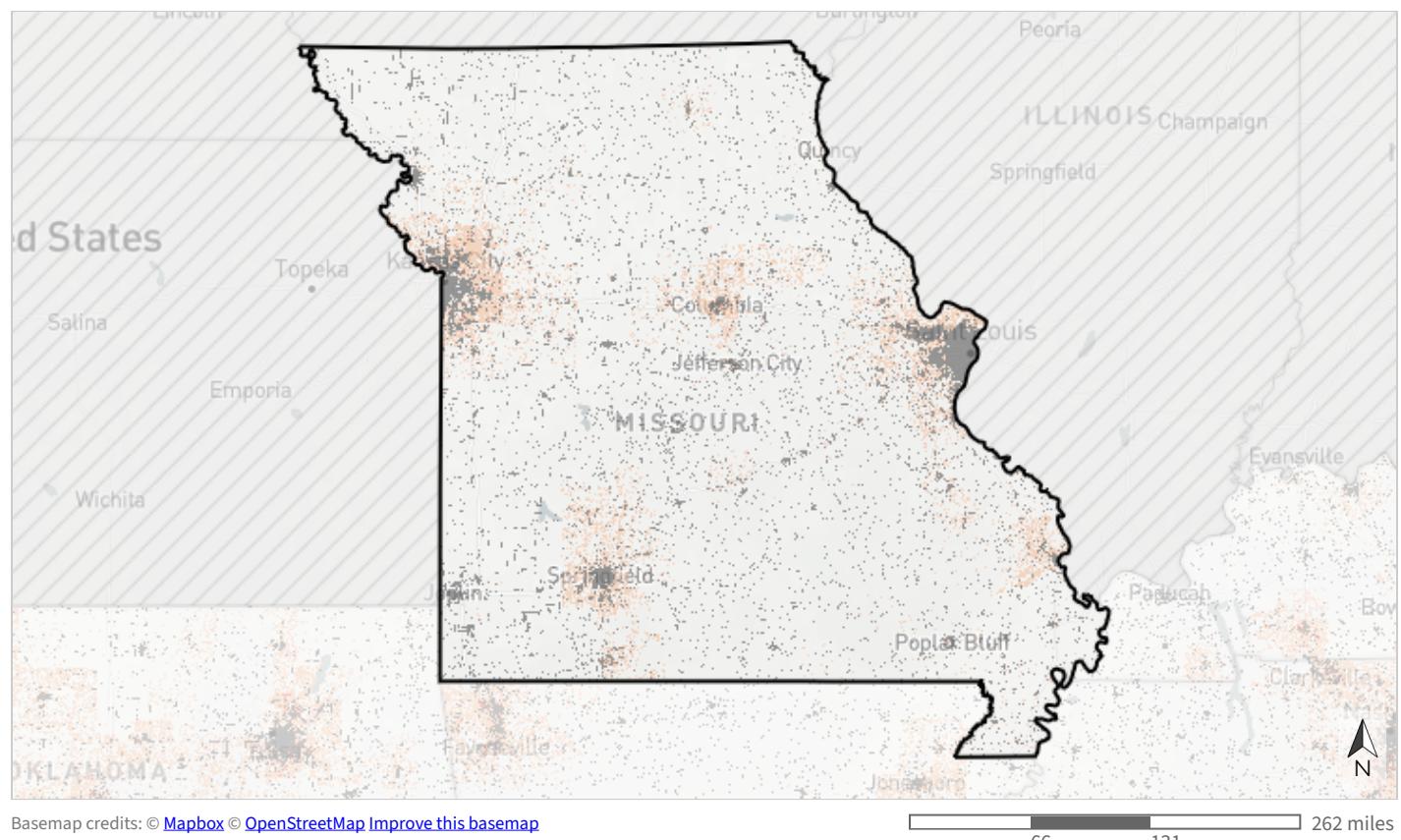
## Sea-level rise

Sea-level rise unlikely to be a threat (inland counties).

## Urban growth

The FUTURES urban growth model predicts the likelihood that an area will urbanize at every decade from 2020 to 2100. Developed areas from the 2021 National Landcover Database serve as the baseline for current urban areas. The model simulates landscape change based on trends in population growth, local development suitability factors, and an urban patch-growing algorithm. It considers environmental drivers like distance to floodplain, slope, and available infrastructure, and even socio-economic status. The probability of urbanization for each area reflects how many times it urbanized out of 50 model runs.

To explore maps for additional time periods, [click here](#).



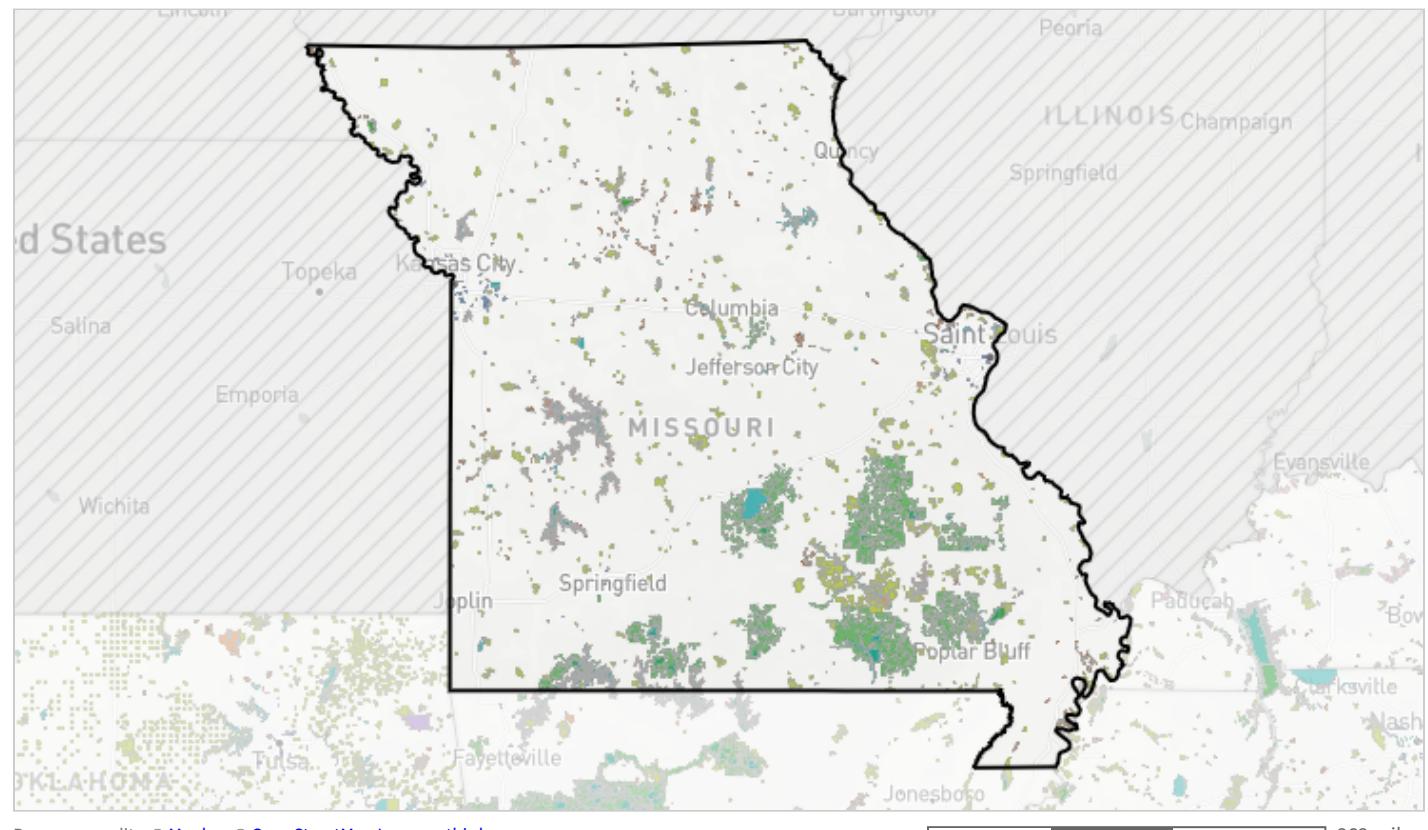
7.1% of this area is already urban in 2021, and an additional 5.8% has at least a moderate probability of urbanizing by 2060.

*Table 20: Extent of projected urbanization by decade within Missouri. Values from [FUTURES model projections for the contiguous United States](#) developed by the [Center for Geospatial Analytics](#), NC State University. 2060 corresponds to the [SECAS goal](#): a 10% or greater improvement in the health, function, and connectivity of Southeastern ecosystems by 2060.*

<b>Decade</b>	<b>Acres</b>	<b>Percent of Area</b>
Urban in 2021	3,177,187	7.1%
2030 projected extent	3,235,373	7.3%
2040 projected extent	3,255,403	7.3%
2050 projected extent	3,271,584	7.3%
2060 projected extent	3,287,935	7.4%
2070 projected extent	3,301,667	7.4%
2080 projected extent	3,312,213	7.4%
2090 projected extent	3,317,357	7.4%
2100 projected extent	3,319,057	7.4%
<i>Not projected to urbanize by 2100</i>	38,439,430	86.2%
<b>Total area</b>	<b>44,607,949</b>	<b>100%</b>

# Ownership and Partners

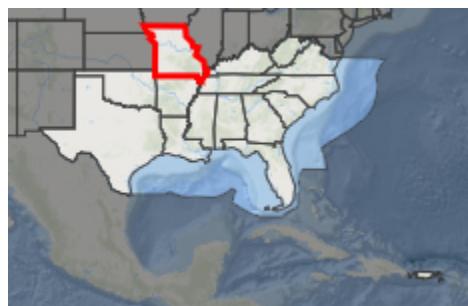
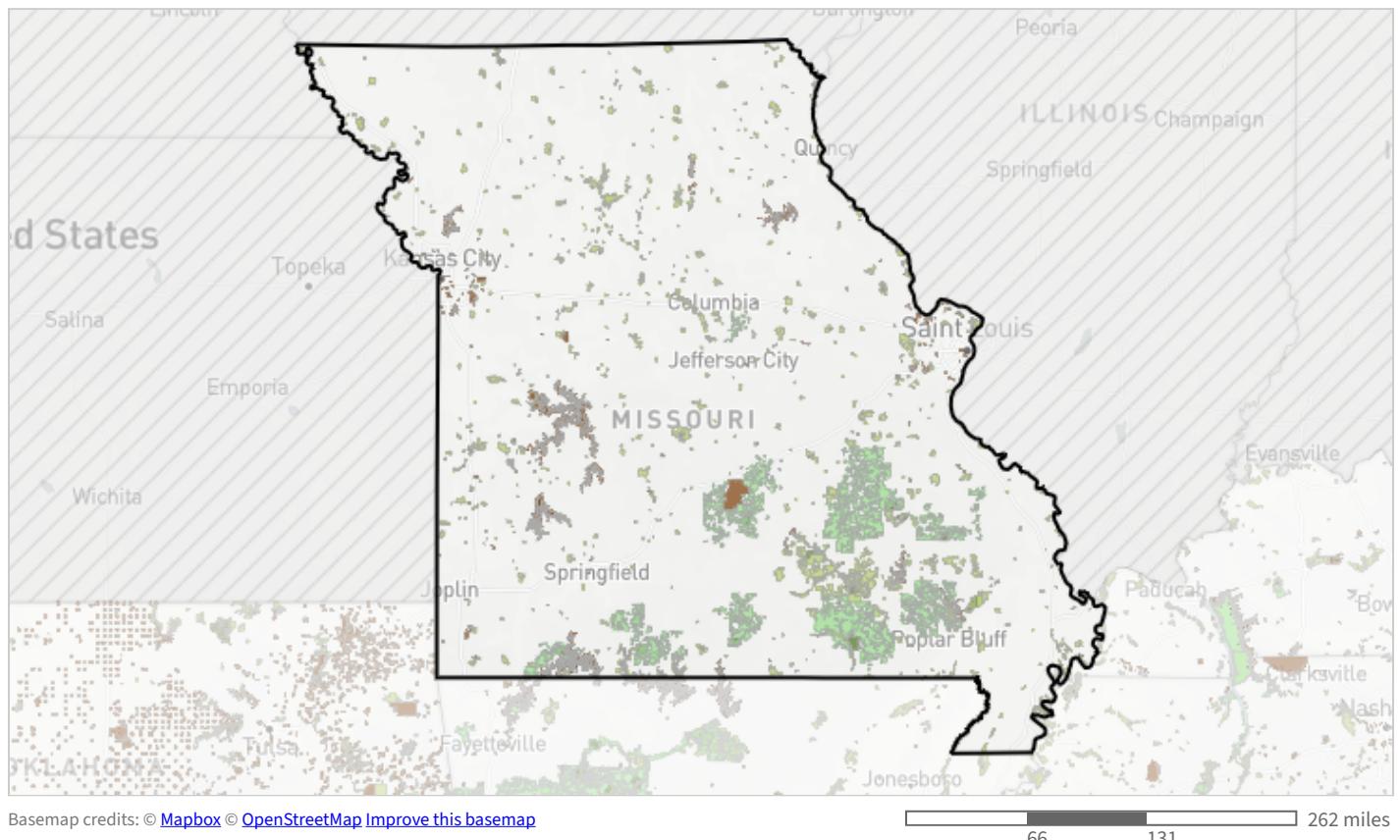
## Conserved lands ownership



*Table 21: Extent of ownership class within Missouri. Protected areas are derived from the [Protected Areas Database of the United States](#) (PAD-US v4.0 and v3.0) and include Fee, Designation, Easement, Marine, and Proclamation (Dept. of Defense lands only) boundaries. Note: areas are based on the polygon boundary of this area compared to protected area polygons, rather than pixel-level analyses used elsewhere in this report. Also note: PAD-US includes protected areas that may overlap within a given area; this may cause the area within and between the following categories to be greater than the actual ground area.*

<b>Ownership</b>	<b>Acres</b>	<b>Percent of Area</b>
Federal	1,701,458	3.8%
State/province	941,721	2.1%
Regional	327	<0.1%
Local	67,136	0.2%
Joint	588	<0.1%
Private non-profit conserved lands	25,570	<0.1%
Private conservation land	331,526	0.7%
Designation	394,265	0.9%
Ownership unknown	407,213	0.9%

## Land protection status



- Managed for biodiversity (disturbance events proceed or are mimicked)
- Managed for biodiversity (disturbance events suppressed)
- Managed for multiple uses (subject to extractive uses such as mining or logging, or OHV use)
- No known mandate for biodiversity protection

*Table 22: Extent of land protection status within Missouri. Protected areas are derived from the [Protected Areas Database of the United States](#) (PAD-US v4.0 and v3.0) and include Fee, Designation, Easement, Marine, and Proclamation (Dept. of Defense lands only) boundaries. Note: areas are based on the polygon boundary of this area compared to protected area polygons, rather than pixel-level analyses used elsewhere in this report. Also note: PAD-US includes protected areas that may overlap within a given area; this may cause the area within and between the following categories to be greater than the actual ground area.*

Land Protection Status	Acres	Percent of Area
Managed for biodiversity (disturbance events proceed or are mimicked)	140,316	0.3%
Managed for biodiversity (disturbance events suppressed)	1,465,127	3.3%
Managed for multiple uses (subject to extractive uses such as mining or logging, or OHV use)	1,545,297	3.5%
No known mandate for biodiversity protection	719,064	1.6%

## Protected Areas

- Mark Twain National Forest (USDA FOREST SERVICE; 1,508,838 acres)
- HARRY TRUMAN (Unknown; 165,657 acres)
- Fort Leonard Wood (Unknown owner; 61,706 acres)
- STOCKTON (Unknown; 59,715 acres)
- TABLE ROCK (Unknown; 56,719 acres)
- OZAR (NPS; 53,180 acres)
- Harry S. Truman Lake (Unknown owner; 48,800 acres)
- Table Rock Lake (Unknown owner; 39,876 acres)
- ANGELINE CA (Unknown; 38,994 acres)
- ROCKY CREEK CA (Unknown; 37,652 acres)
- BULL SHOALS (Unknown; 37,463 acres)
- SUNKLANDS CA (Unknown; 32,407 acres)
- CURRENT RIVER CA (Unknown; 29,734 acres)
- Stockton Lake (Unknown owner; 26,032 acres)
- MINGO NATIONAL WILDLIFE REFUGE (Fee; 21,661 acres)
- Mingo National Wildlife Refuge (Fee; 21,661 acres)
- Lake of the Ozarks State Park (Unknown; 21,094 acres)
- SMITHVILLE (Unknown; 19,839 acres)
- Mark Twain Lake (Unknown owner; 19,446 acres)
- WRP, Chariton, MO (Unknown owner; 19,266 acres)
- CLEARWATER (Unknown; 18,713 acres)
- PECK RANCH CA (Unknown; 18,525 acres)
- POMME DE TERRE (Unknown; 18,363 acres)
- CLEARWATER LAKE (Unknown; 17,060 acres)
- STOCKTON RESERVOIR (Unknown; 16,881 acres)

# Credits

This report was generated by the Southeast Conservation Blueprint Explorer, which was developed by [Astute Spruce, LLC](#) in partnership with the U.S. Fish and Wildlife Service under the [Southeast Conservation Adaptation Strategy](#).

## Data credits

Land ownership and conservation status is derived from the [Protected Areas Database of the United States](#) (PAD-US v4.0 and v3.0).

Future urban growth estimates derived from [FUTURES model projections for the contiguous United States](#) developed by the [Center for Geospatial Analytics](#), NC State University.

Sea level rise data are derived from the National Oceanic and Atmospheric Administration's [Sea Level Rise Inundation Depth Data](#) and the [2022 Sea Level Rise Technical Report](#).

Names and descriptions of public Priority Amphibian and Reptile Areas provided by the [Amphibian and Reptile Conservancy](#) on August 30, 2024 and edited slightly for clarity and consistency.