Southeast Conservation Blueprint Summary

for Kentucky

Created 10/11/2024

Table of Contents

The Southeast Conservation Blueprint 2024

Southeast Conservation Adaptation Strategy

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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

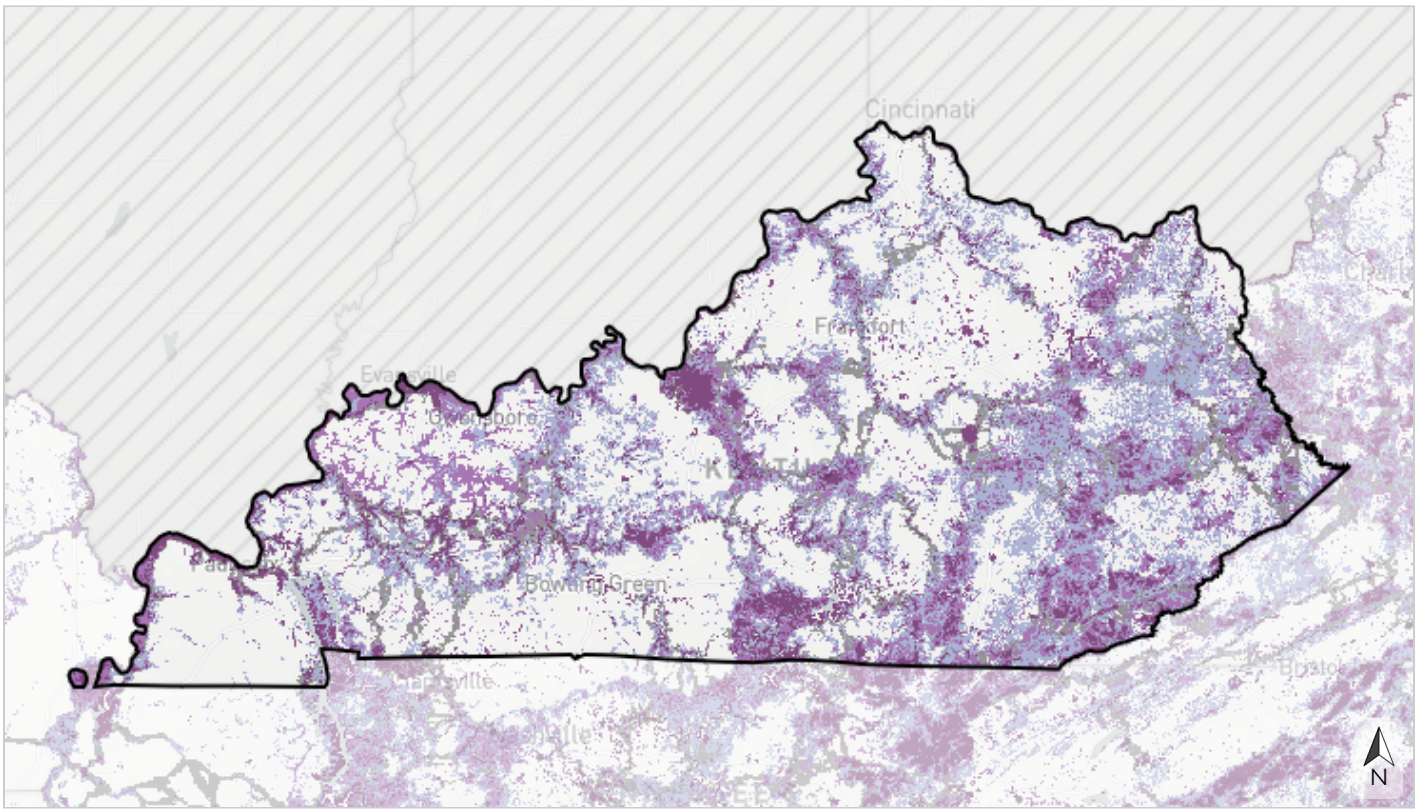
We're here to help!

- 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



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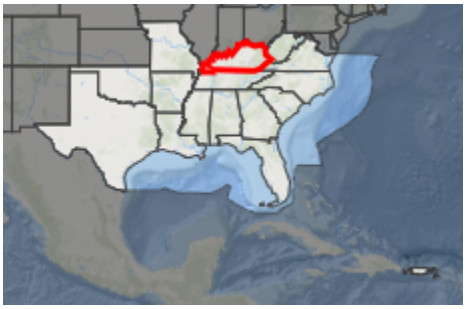


Priorities for a connected network of lands and waters

- 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.

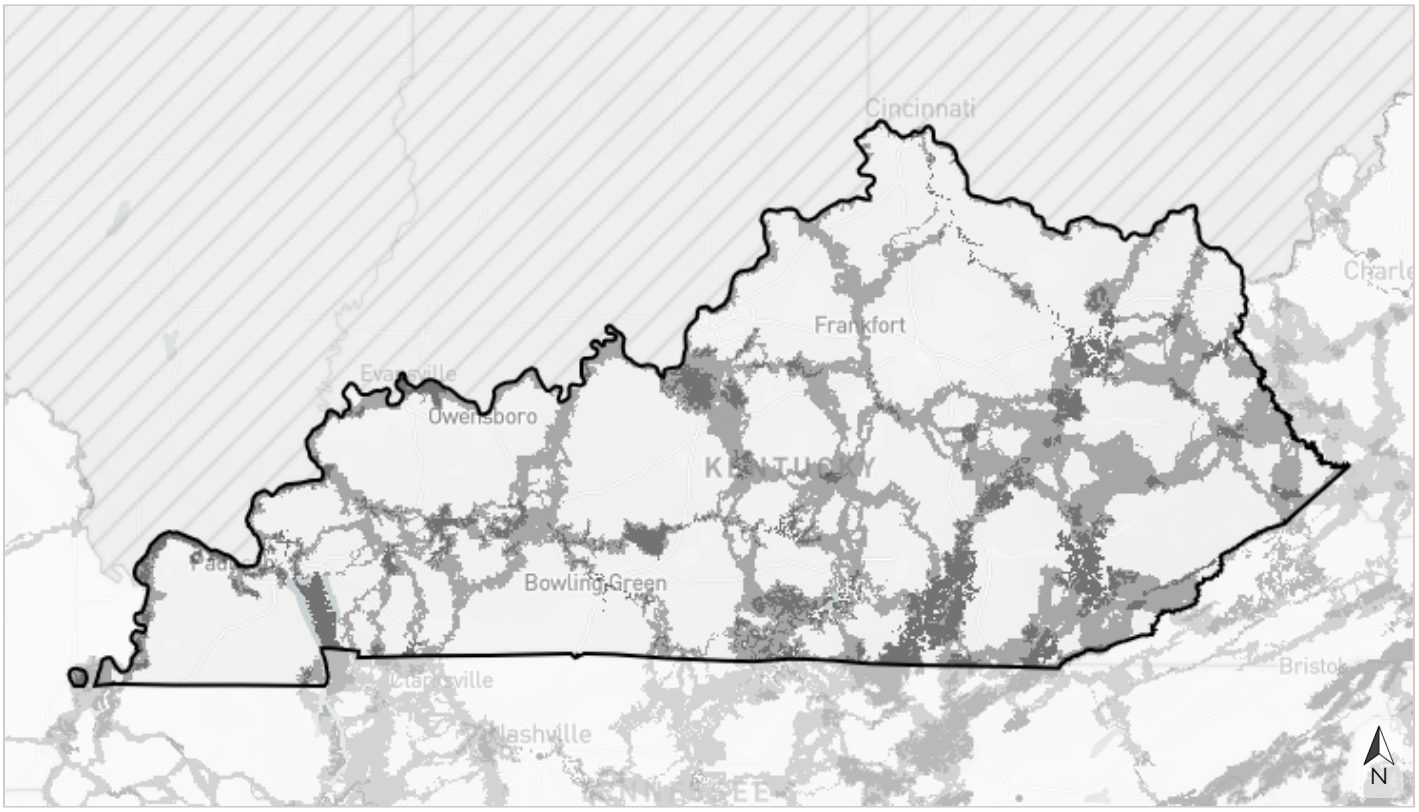
Table 1: Extent of each Blueprint priority category within Kentucky.

Priority Category	Acres	Percent of Area
Highest priority	2,187,146	8.5%
High priority	3,873,107	15.0%
Medium priority	5,718,675	22.1%
Priority connections	1,717,923	6.6%
Lower priority	12,360,362	47.8%
Total area	**25,857,213**	**100%**

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.



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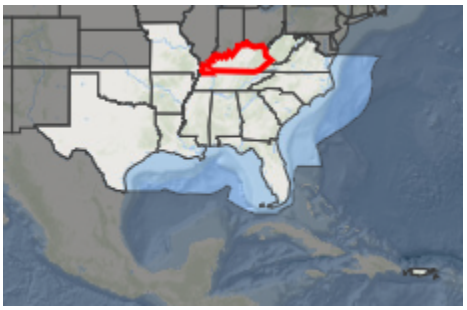


Hubs
Corridors

Table 2: Extent of hubs and corridors within Kentucky.

Type	Acres	Percent of Area
Hubs	2,122,526	8.2%
Corridors	6,146,885	23.8%
Not a hub or corridor	17,587,802	68.0%
Total area	**25,857,213**	**100%**

Indicator Summary

Table 3: Terrestrial indicators.

Indicator	Present
Amphibian & reptile areas	✓
East Coastal Plain open pine birds	-
Equitable access to potential parks	✓
Fire frequency	✓
Grasslands and savannas	✓
Greenways & trails	✓
Intact habitat cores	✓
Landscape condition	✓
Mississippi Alluvial Valley forest birds - protection	✓
Mississippi Alluvial Valley forest birds - reforestation	✓
Resilient terrestrial sites	✓
South Atlantic forest birds	-
Urban park size	✓
West Coastal Plain & Ouachitas forested wetland birds	-
West Coastal Plain & Ouachitas open pine birds	-
West Gulf Coast mottled duck nesting	-

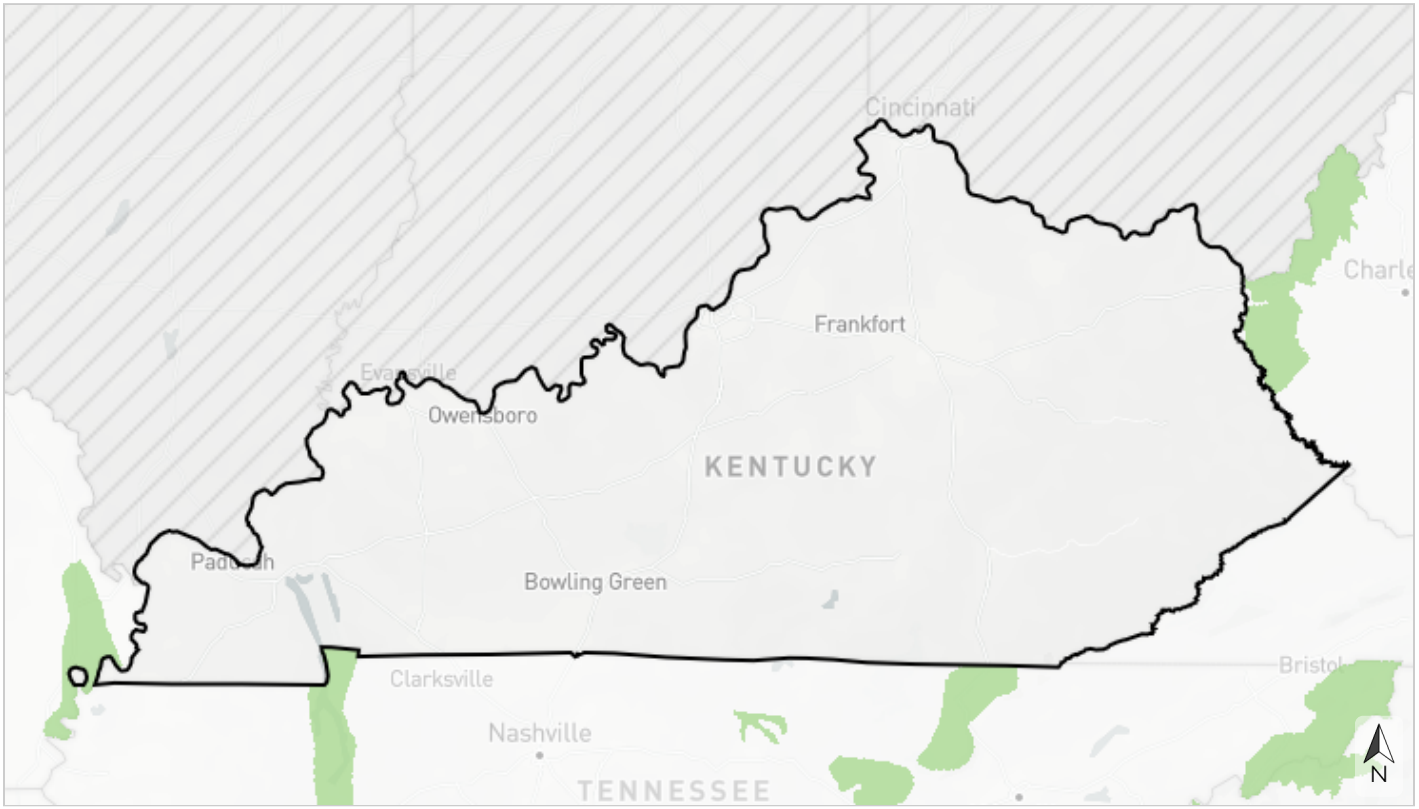
Table 4: Freshwater indicators.

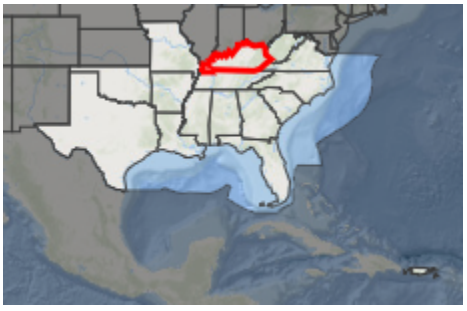
Indicator	Present
Atlantic migratory fish habitat	-
Gulf migratory fish connectivity	-
Imperiled aquatic species	✓
Natural landcover in floodplains	✓
Network complexity	✓
Permeable surface	✓

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 Kentucky. 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)	809	<0.1%
↓ Low	Not a PARCA (excluding Kentucky and Virginia)	0	0%
	Area not evaluated for this indicator	*25,856,404*	*100.0%*
	Total area	**25,857,213**	**100%**

Priority Amphibian and Reptile Conservation Areas:

Cumberland Mountains

The Cumberland Mountains PARCA occurs within the Central Appalachians ecoregion and contains the highest elevations of the Cumberland Plateau and some of largest tracts of contiguous forest in Tennessee. Much of this PARCA is mountainous and much more dissected than the adjacent Cumberland Plateau, with elevations ranging from 360-1,060 m with local relief up to 600 m. It's located primarily on publicly owned land, including North Cumberland Wildlife Management Area, Tackett Creek Wildlife Management Area, Frozen Head State Park, and Indian Mountain State Park. It contains a very rich diversity of herpetofauna, with a big portion of that diversity consisting of salamanders. One is the Wehrle's salamander, with a subspecies population only occurring on the Cumberland Plateau. Unfortunately, a lot of primary habitat has been disturbed and negatively impacted by coal mining, feral hogs, and incompatible forestry practices. However, recent conservation focus and effort have been aimed toward mitigating the impacts of mining and conducting inventory and monitoring of the Wehrle's salamander.

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.

Wayne

The Wayne PARCA, encompassing almost all of Wayne County, West Virginia, is predominantly characterized by rolling hills and river valleys, with the Big Sandy River and its tributaries like Twelvepole Creek weaving through its terrain. These waterways not only provide vital habitats for aquatic species, but also contribute to the PARCA's overall biodiversity. Wayne County is heavily forested, primarily with hardwood species such as oak, hickory, maple, and poplar, which support a variety of wildlife, including the eastern hognose snake, a rare species found in the region's diverse habitats.

Western Tennessee River Valley

The Western Tennessee River Valley PARCA is an ecologically diverse region characterized by its rich

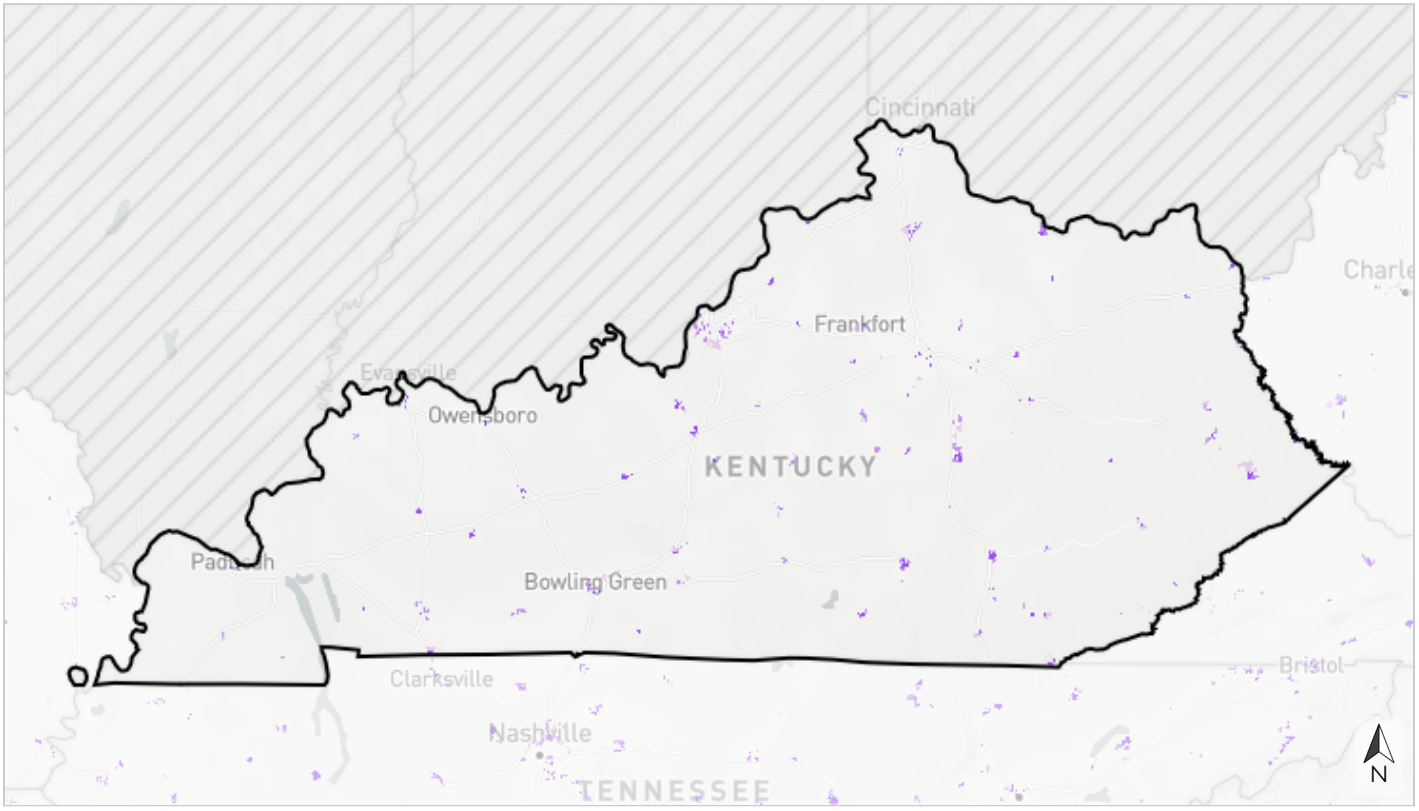
alluvial soils and a mix of hardwood forests, wetlands, and riverine habitats. This area, which stretches along the Tennessee River, supports a variety of plant and animal life adapted to its moist, fertile environment. The floodplains and riverbanks are home to lush bottomland forests with species such as oak, cypress, and tupelo trees, while the wetlands host a range of amphibians, fish, and migratory birds. This valley is also critical for maintaining water quality and providing essential ecosystem services, such as flood regulation and nutrient cycling.

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.



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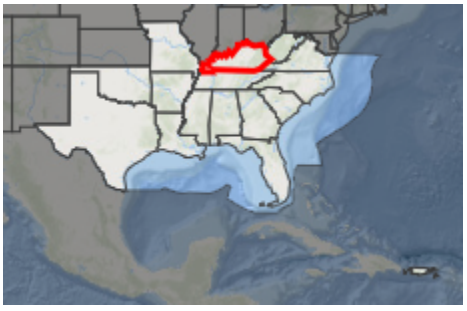


Priority for a new park that would create nearby equitable access

- 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 Kentucky. A good condition threshold is not yet defined for this indicator.

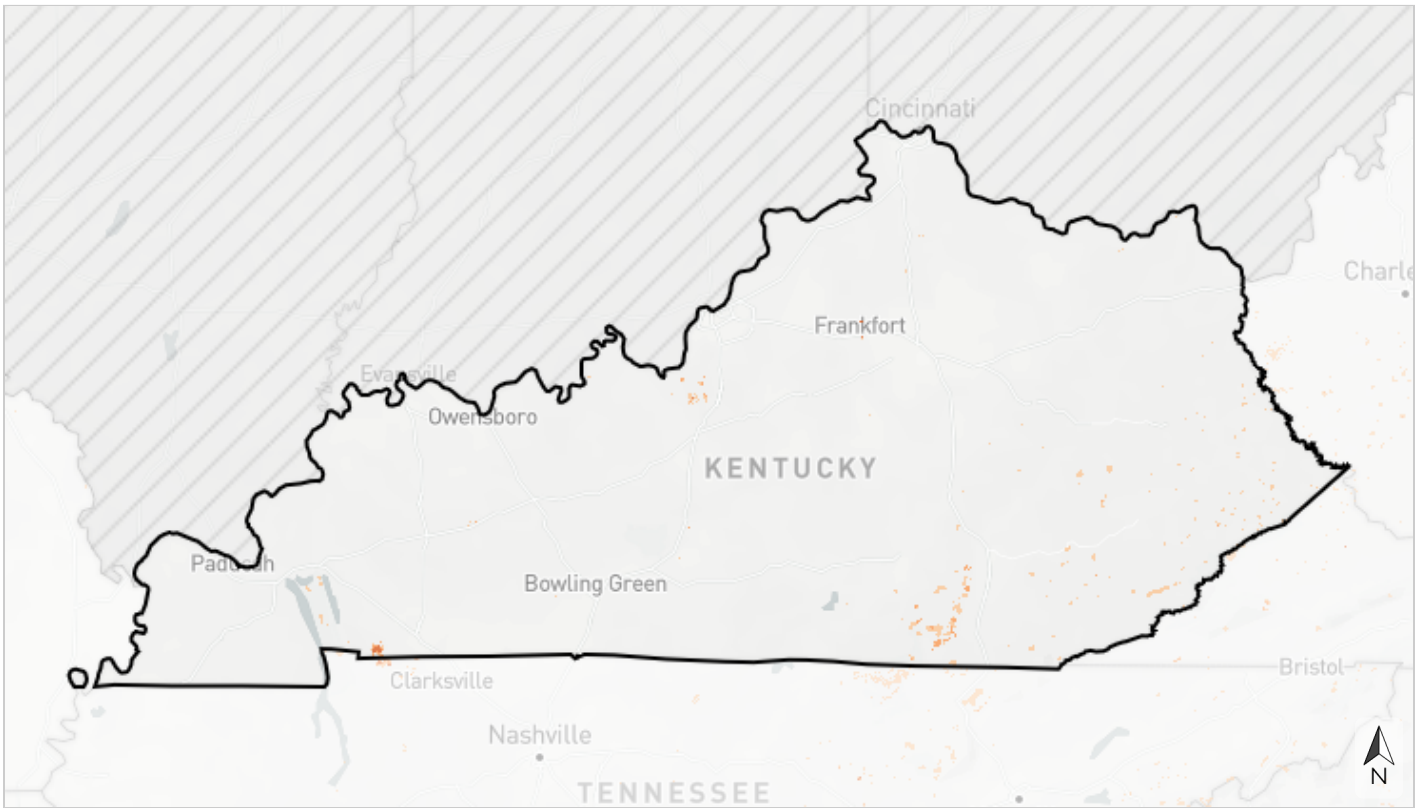
	Indicator Values: Priority for a new park that would create nearby equitable access	Acres	Percent of Area
↑ High	Very high priority	56,093	0.2%
	High priority	72,406	0.3%
	Moderate priority	59,347	0.2%
↓ Low	Not identified as a priority (within urban areas)	25,669,367	99.3%
	Total area	**25,857,213**	**100%**

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.



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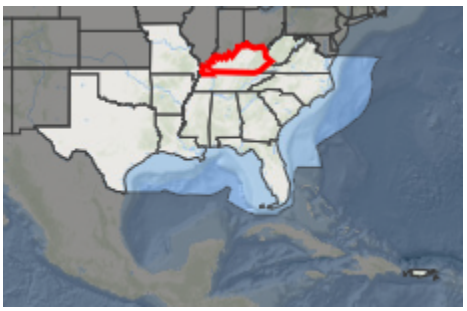


- Burned 3+ times from 2013-2021
- Burned 2 times from 2013-2021
- Burned 1 time from 2013-2021
- Not burned from 2013-2021 or row crop

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

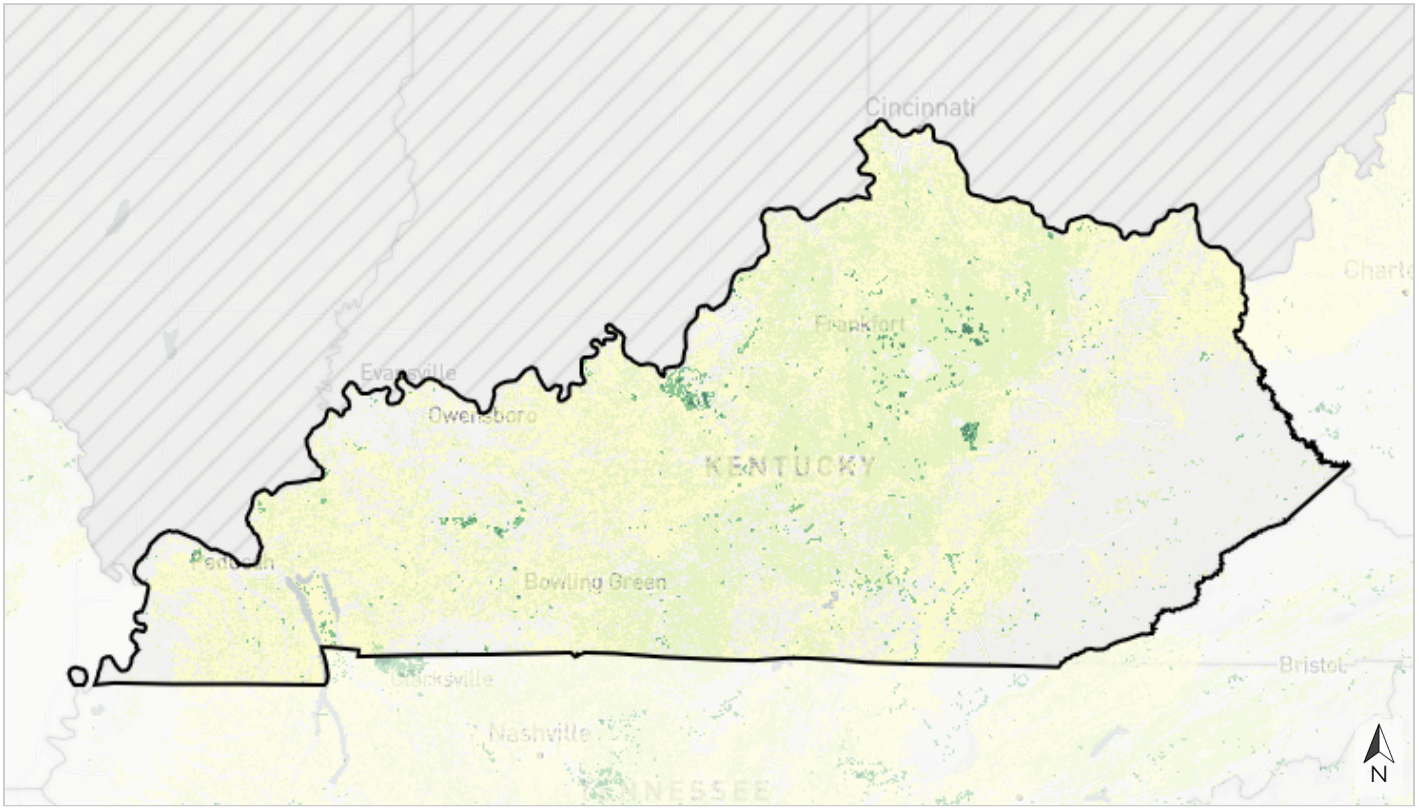
	Indicator Values	Acres	Percent of Area	
↑ High	Burned 3+ times from 2013-2021	5,628	<0.1%	
	Burned 2 times from 2013-2021	20,204	<0.1%	↑ In good condition
	Burned 1 time from 2013-2021	131,277	0.5%	↓ Not in good condition
↓ Low	Not burned from 2013-2021 or row crop	25,700,104	99.4%	
	Total area	**25,857,213**	**100%**	

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.



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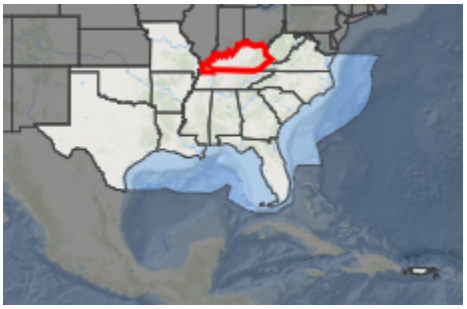

- Known grassland/savanna
- Likely grassland/savanna >10 acres
- Likely grassland/savanna ≤10 acres
- Pollinator buffer around known or likely grassland/savanna
- Potential grassland/savanna in mostly natural landscape
- Potential grassland/savanna in more altered landscape
- Historic grassland/savanna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

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

	Indicator Values	Acres	Percent of Area	
↑ High	Known grassland/savanna	621	<0.1%	
	Likely grassland/savanna >10 acres	72,205	0.3%	
	Likely grassland/savanna ≤10 acres	25,696	<0.1%	↑ In good condition
	Pollinator buffer around known or likely grassland/savanna	307,583	1.2%	↓ Not in good condition
	Potential grassland/savanna in mostly natural landscape	196,436	0.8%	
	Potential grassland/savanna in more altered landscape	6,797,149	26.3%	
	Historic grassland/savanna	8,685,618	33.6%	
↓ Low	Not identified as grassland/savanna	9,767,278	37.8%	
	Area not evaluated for this indicator	*4,627*	*<0.1%*	
	Total area	**25,857,213**	**100%**	

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.

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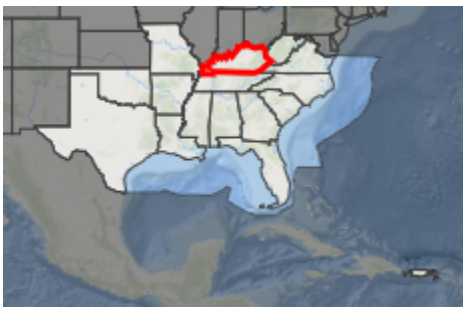


- Mostly natural and connected for ≥40 km
- Mostly natural and connected for 5 to <40 km or partly natural and connected for ≥40 km
- Mostly natural and connected for 1.9 to <5 km, partly natural and connected for 5 to <40 km, or developed and connected for ≥40 km
- Mostly natural and connected for <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 Kentucky. Good condition thresholds reflect the range of indicator values that occur in healthy, functioning ecosystems.

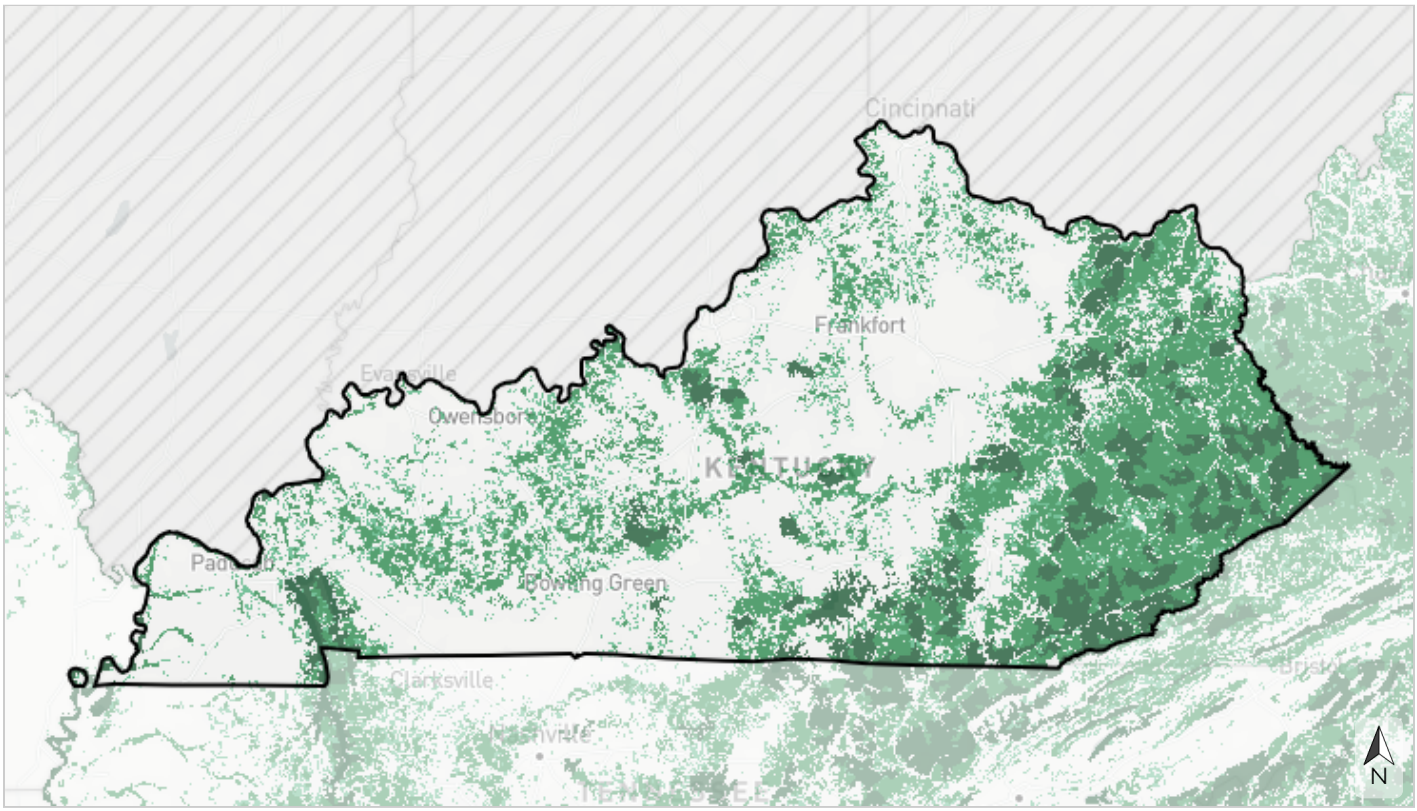
	Indicator Values	Acres	Percent of Area	
↑ High	Mostly natural and connected for ≥40 km	3,994	<0.1%	
	Mostly natural and connected for 5 to <40 km or partly natural and connected for ≥40 km	8,838	<0.1%	
	Mostly natural and connected for 1.9 to <5 km, partly natural and connected for 5 to <40 km, or developed and connected for ≥40 km	6,592	<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	5,179	<0.1%	↑ In good condition
	Partly natural and connected for <1.9 km or developed and connected for 1.9 to <5 km	2,829	<0.1%	↓ Not in good condition
	Developed and connected for <1.9 km	3,454	<0.1%	
	Sidewalk	15,705	<0.1%	
↓ Low	Not identified as a trail, sidewalk, or other path	25,810,622	99.8%	
	Total area	**25,857,213**	**100%**	

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.



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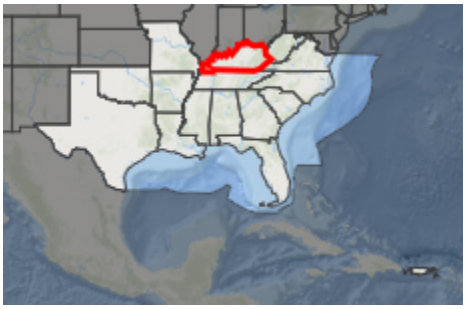


- Large core (>10,000 acres)
- Medium core (>1,000-10,000 acres)
- Small core (>100-1,000 acres)
- Not a core

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

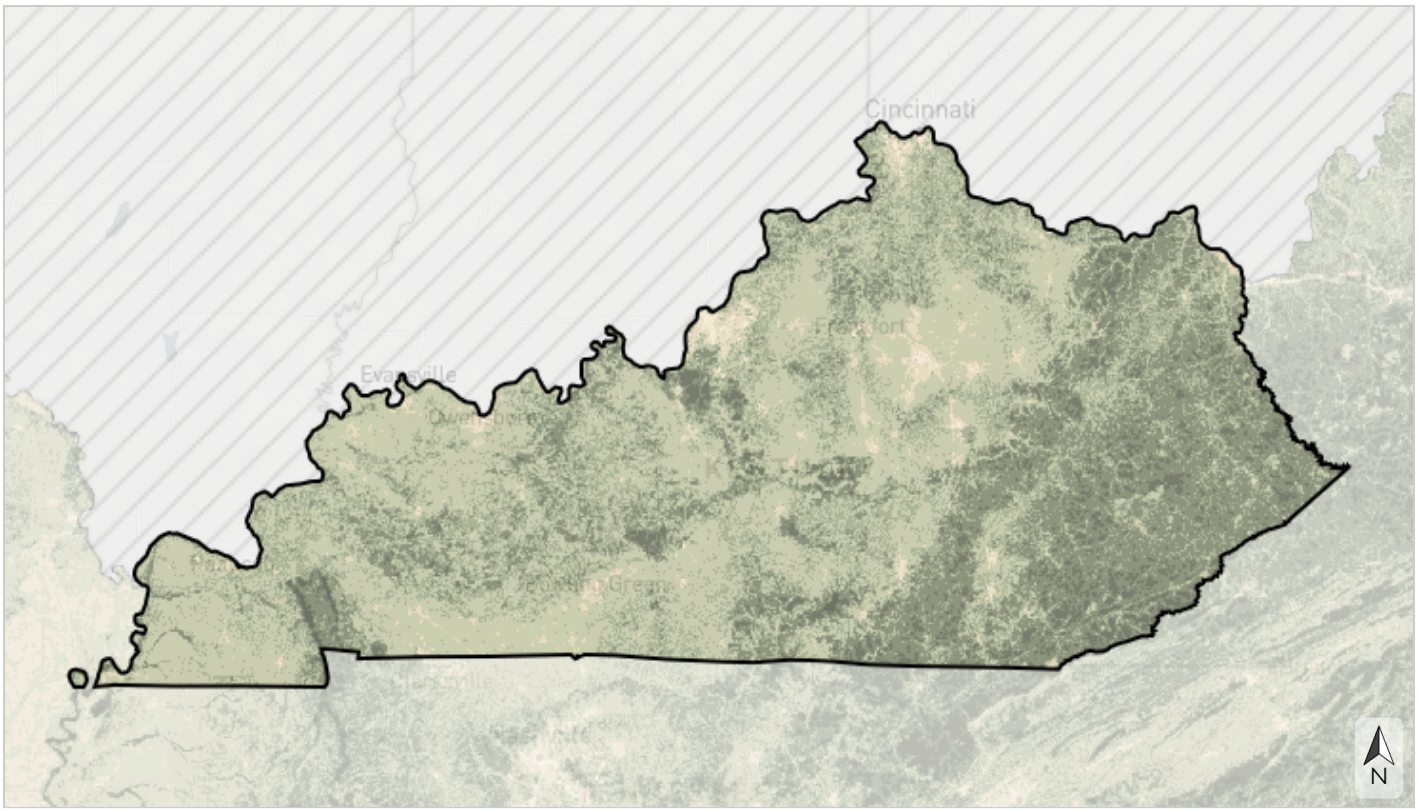
	Indicator Values	Acres	Percent of Area	
↑ High	Large core (>10,000 acres)	2,619,469	10.1%	
	Medium core (>1,000-10,000 acres)	5,640,142	21.8%	
	Small core (>100-1,000 acres)	1,995,665	7.7%	↑ In good condition
↓ Low	Not a core	15,601,937	60.3%	↓ Not in good condition
	Total area	**25,857,213**	**100%**	

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.



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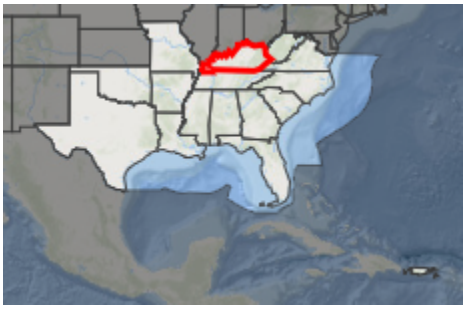

- Very natural landscape
- Natural landscape
- Mostly natural landscape
- Partly natural landscape
- Altered landscape
- Heavily altered landscape

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

	Indicator Values	Acres	Percent of Area	
↑ High	Very natural landscape	1,315,843	5.1%	
	Natural landscape	6,105,666	23.6%	
	Mostly natural landscape	7,494,573	29.0%	↑ In good condition
	Partly natural landscape	10,011,158	38.7%	↓ Not in good condition
	Altered landscape	790,910	3.1%	
↓ Low	Heavily altered landscape	134,435	0.5%	
	Area not evaluated for this indicator	*4,629*	*<0.1%*	
	Total area	**25,857,213**	**100%**	

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.

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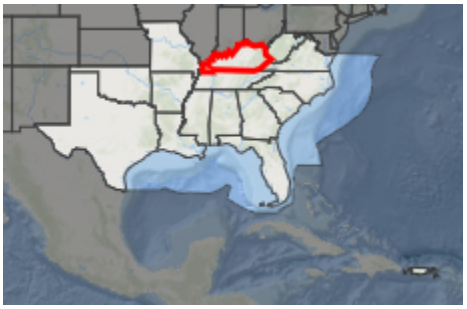

Priority of forest breeding bird habitat patch for future protection

- 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 Kentucky. A good condition threshold is not yet defined for this indicator.

	Indicator Values: Priority of forest breeding bird habitat patch for future protection	Acres	Percent of Area
↑ High	Score >90-100 (highest priority)	4,325	<0.1%
	Score >80-90	0	0%
	Score >70-80	3,640	<0.1%
	Score >60-70	3,377	<0.1%
	Score >50-60	3,861	<0.1%
	Score >40-50	0	0%
	Score >30-40	4,122	<0.1%
	Score >20-30	0	0%
	Score >10-20	1,955	<0.1%
	Score >0-10 (low priority)	46	<0.1%
↓ Low	Score 0 (not a priority)	128,989	0.5%
	Area not evaluated for this indicator	*25,706,900*	*99.4%*
	Total area	**25,857,213**	**100%**

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.

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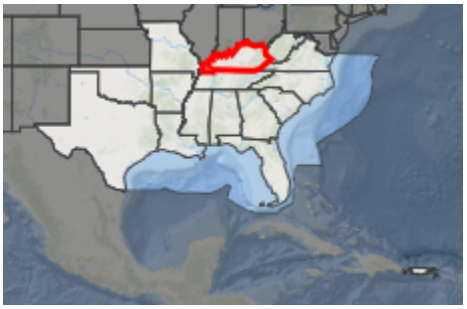


Likelihood that reforestation will contribute to forest breeding bird habitat needs

- Most likely (≥90th percentile)
- Most likely (80th to <90th percentile)
- More likely (70th to <80th percentile)
- Less likely (60th to <70th percentile)
- Least likely (50th to <60th percentile)
- Least likely (40th to <50th percentile)
- Least likely (30th to <40th percentile)
- Least likely (20th to <30th percentile)
- Least likely (10th to <20th percentile)
- Least likely (<10th percentile)
- Not a priority for reforestation

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

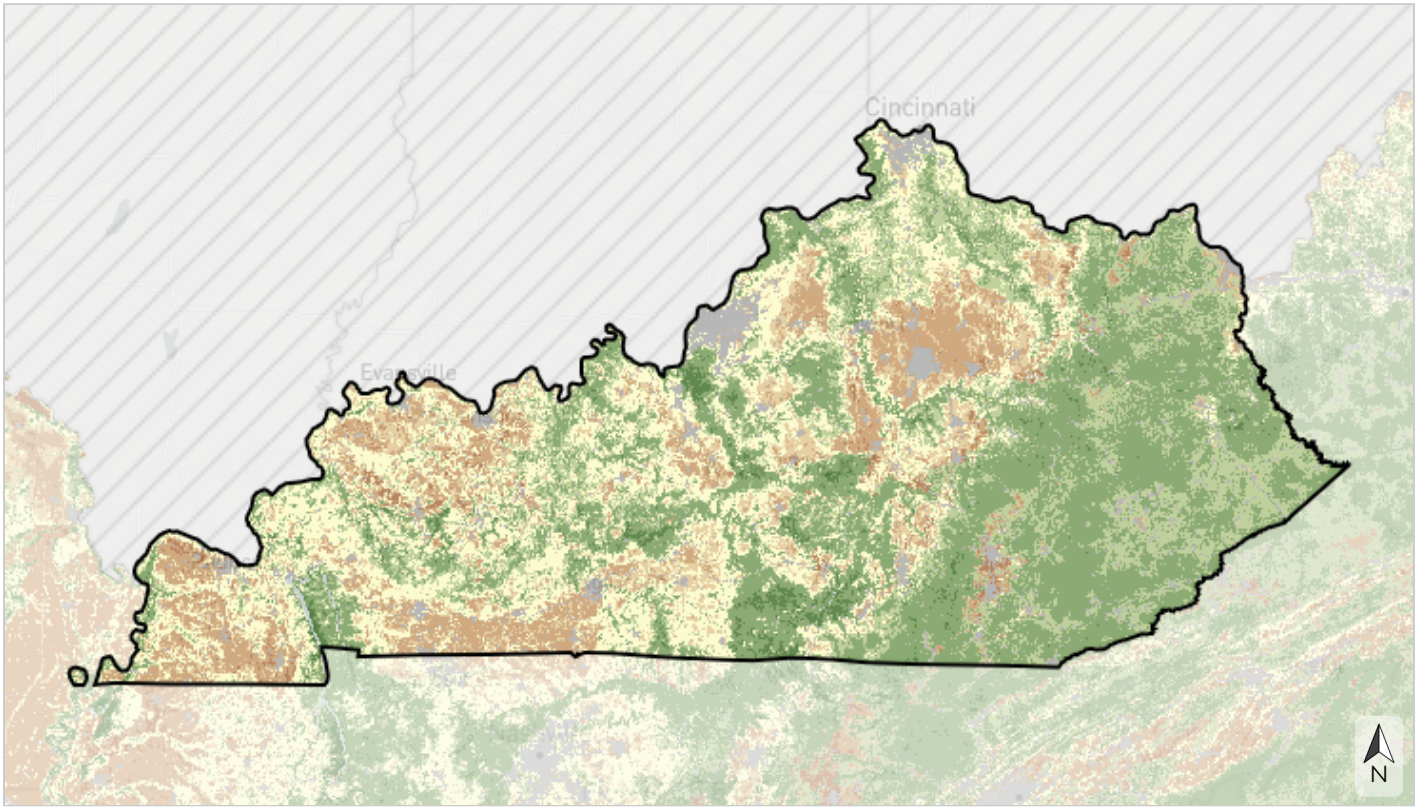
	Indicator Values: Likelihood that reforestation will contribute to forest breeding bird habitat needs	Acres	Percent of Area
↑ High	Most likely (≥90th percentile)	15,272	<0.1%
	Most likely (80th to <90th percentile)	25,760	<0.1%
	More likely (70th to <80th percentile)	12,031	<0.1%
	Less likely (60th to <70th percentile)	3,885	<0.1%
	Least likely (50th to <60th percentile)	9,778	<0.1%
	Least likely (40th to <50th percentile)	1,754	<0.1%
	Least likely (30th to <40th percentile)	125	<0.1%
	Least likely (20th to <30th percentile)	0	0%
	Least likely (10th to <20th percentile)	0	0%
	Least likely (<10th percentile)	0	0%
↓ Low	Not a priority for reforestation	81,561	0.3%
	Area not evaluated for this indicator	*25,707,049*	*99.4%*
	Total area	**25,857,213**	**100%**

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.



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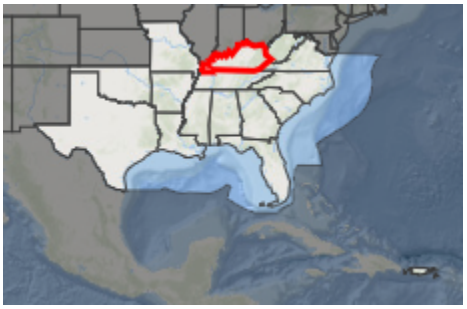

- Most resilient
- More resilient
- Slightly more resilient
- Average/median resilience
- Slightly less resilient
- Less resilient
- Least resilient
- Developed

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

	Indicator Values	Acres	Percent of Area
↑ High	Most resilient	552,793	2.1%
	More resilient	7,088,139	27.4%
	Slightly more resilient	4,951,997	19.2%
	Average/median resilience	5,025,118	19.4%
	Slightly less resilient	2,545,660	9.8%
	Less resilient	2,273,710	8.8%
	Least resilient	236,873	0.9%
↓ Low	Developed	2,754,581	10.7%
	Area not evaluated for this indicator	*428,344*	*1.7%*
	Total area	**25,857,213**	**100%**

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.

192 miles
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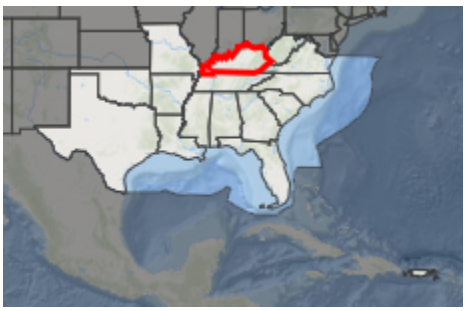


- 75+ acre urban park
- 50 to <75 acre urban park
- 30 to <50 acre urban park
- 10 to <30 acre urban park
- 5 to <10 acre urban park
- <5 acre urban park
- Not identified as an urban park

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

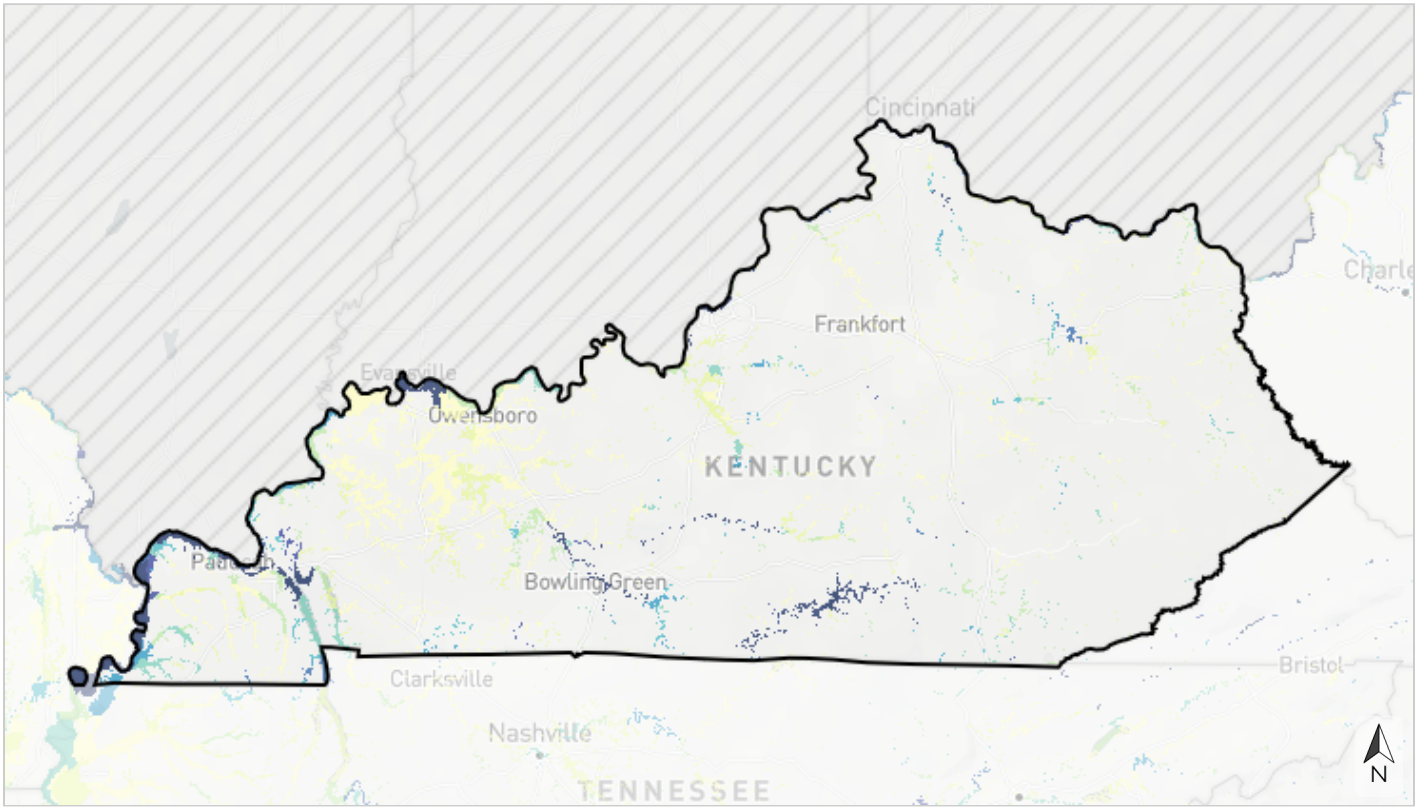
	Indicator Values	Acres	Percent of Area
↑ High	75+ acre urban park	42,966	0.2%
	50 to <75 acre urban park	2,424	<0.1%
	30 to <50 acre urban park	3,648	<0.1%
	10 to <30 acre urban park	4,750	<0.1%
	5 to <10 acre urban park	1,097	<0.1%
	<5 acre urban park	1,346	<0.1%
↓ Low	Not identified as an urban park	25,800,982	99.8%
	Total area	**25,857,213**	**100%**

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).



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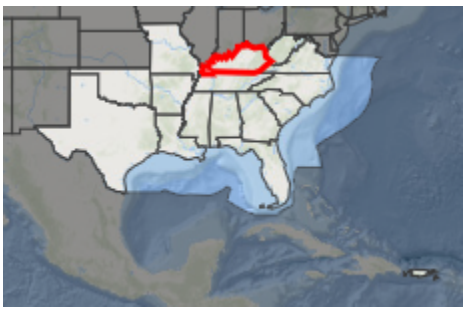


Number of aquatic animal Regional Species of Greatest Conservation Need (RSGCN) observed

- 8+ species
- 7 species
- 6 species
- 5 species
- 4 species
- 3 species
- 2 species
- 1 species
- 0 species
- Not identified as a floodplain

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

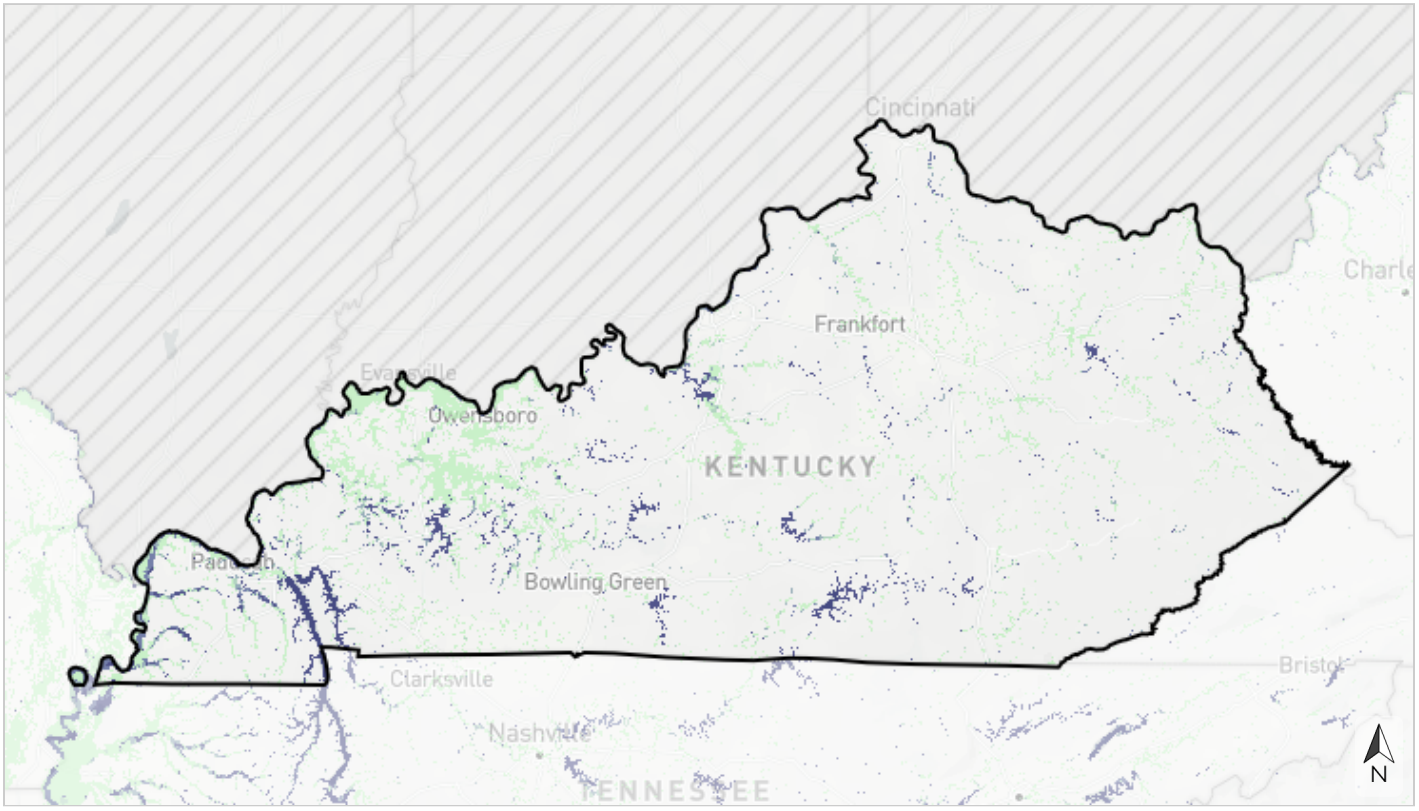
	Indicator Values: Number of aquatic animal Regional Species of Greatest Conservation Need (RSGCN) observed	Acres	Percent of Area
↑ High	8+ species	347,007	1.3%
	7 species	44,341	0.2%
	6 species	49,592	0.2%
	5 species	101,720	0.4%
	4 species	96,784	0.4%
	3 species	214,446	0.8%
	2 species	296,811	1.1%
	1 species	512,396	2.0%
	0 species	1,390,829	5.4%
↓ Low	Not identified as a floodplain	22,803,286	88.2%
	Area not evaluated for this indicator	*0.22*	*<0.1%*
	Total area	**25,857,213**	**100%**

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).



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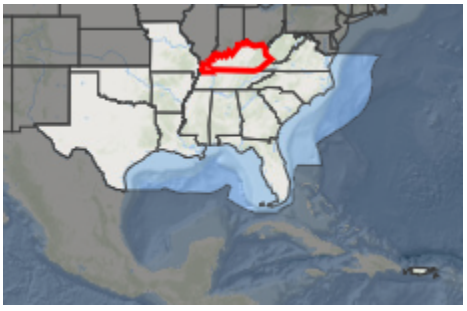


Percent natural landcover within the estimated floodplain, by catchment

- >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 Kentucky. Good condition thresholds reflect the range of indicator values that occur in healthy, functioning ecosystems.

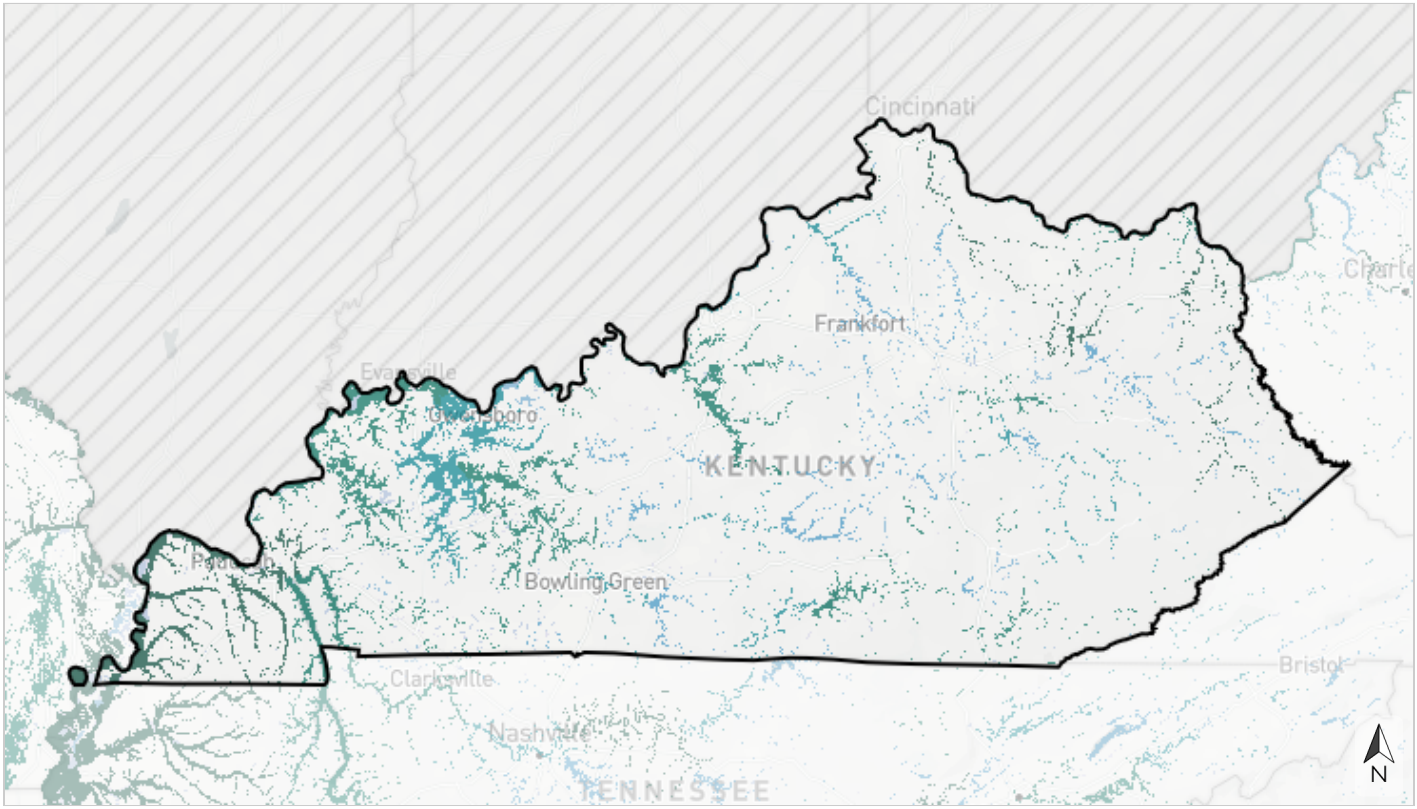
	Indicator Values: Percent natural landcover within the estimated floodplain, by catchment	Acres	Percent of Area	
↑ High	>90% natural landcover	544,856	2.1%	
	>80-90% natural landcover	222,945	0.9%	↑ In good condition
	>70-80% natural landcover	222,438	0.9%	↓ Not in good condition
	>60-70% natural landcover	230,343	0.9%	
	≤60% natural landcover	1,833,344	7.1%	
↓ Low	Not identified as a floodplain	22,803,286	88.2%	
	Area not evaluated for this indicator	*0.22*	*<0.1%*	
	Total area	**25,857,213**	**100%**	

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).



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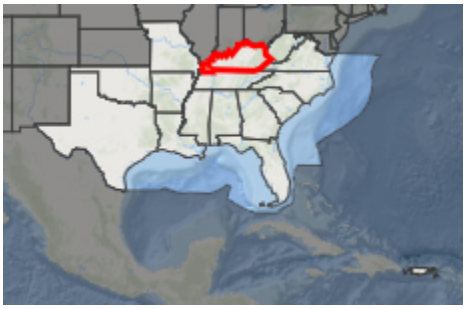


Number of connected stream size classes

- 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 Kentucky. Good condition thresholds reflect the range of indicator values that occur in healthy, functioning ecosystems.

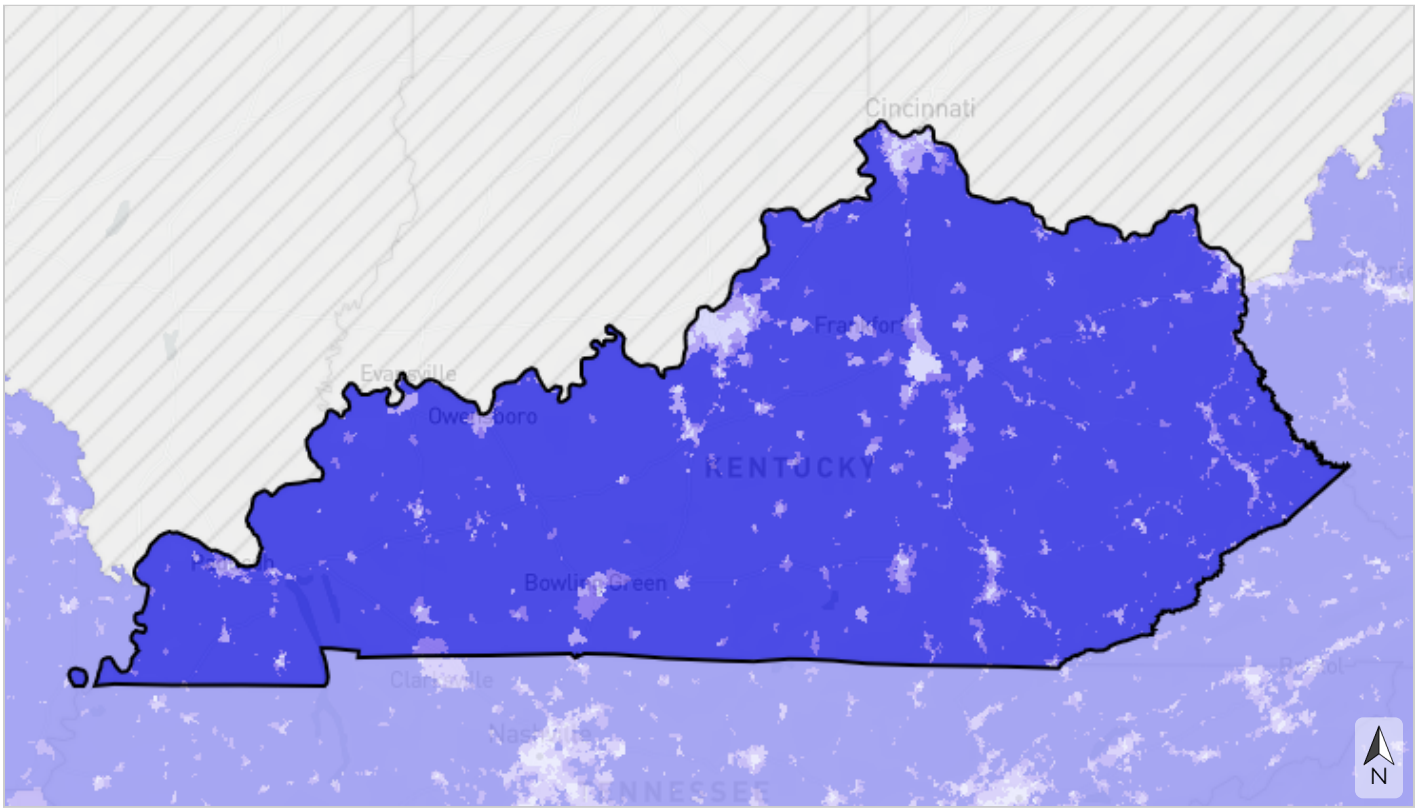
	Indicator Values: Number of connected stream size classes	Acres	Percent of Area	
↑ High	7 size classes	591,956	2.3%	
	6 size classes	1,169,870	4.5%	
	5 size classes	604,775	2.3%	
	4 size classes	375,437	1.5%	↑ In good condition
	3 size classes	110,943	0.4%	↓ Not in good condition
	2 size classes	114,233	0.4%	
	1 size class	79,699	0.3%	
↓ Low	Not identified as a floodplain	22,810,301	88.2%	
	Area not evaluated for this indicator	*0.22*	*<0.1%*	
	Total area	**25,857,213**	**100%**	

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.



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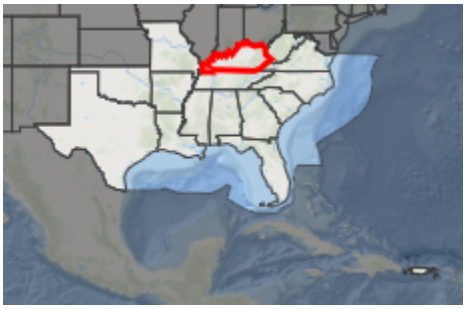
48 96 192 miles



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 Kentucky. Good condition thresholds reflect the range of indicator values that occur in healthy, functioning ecosystems.

	Indicator Values: Percent of catchment permeable	Acres	Percent of Area	
↑ High	>95% permeable (likely high water quality and supporting most sensitive aquatic species)	23,763,319	91.9%	↑ In good condition
	>90-95% permeable (likely declining water quality and supporting most aquatic species)	987,128	3.8%	↓ Not in good condition
	>70-90% permeable (likely degraded water quality and not supporting many aquatic species)	848,718	3.3%	
↓ Low	≤70% permeable (likely degraded instream flow, water quality, and aquatic species communities)	258,048	1.0%	
	Area not evaluated for this indicator	*0.22*	*<0.1%*	
	Total area	**25,857,213**	**100%**	

To learn more and explore the GIS data, view this indicator in the SECAS Atlas.

Threats

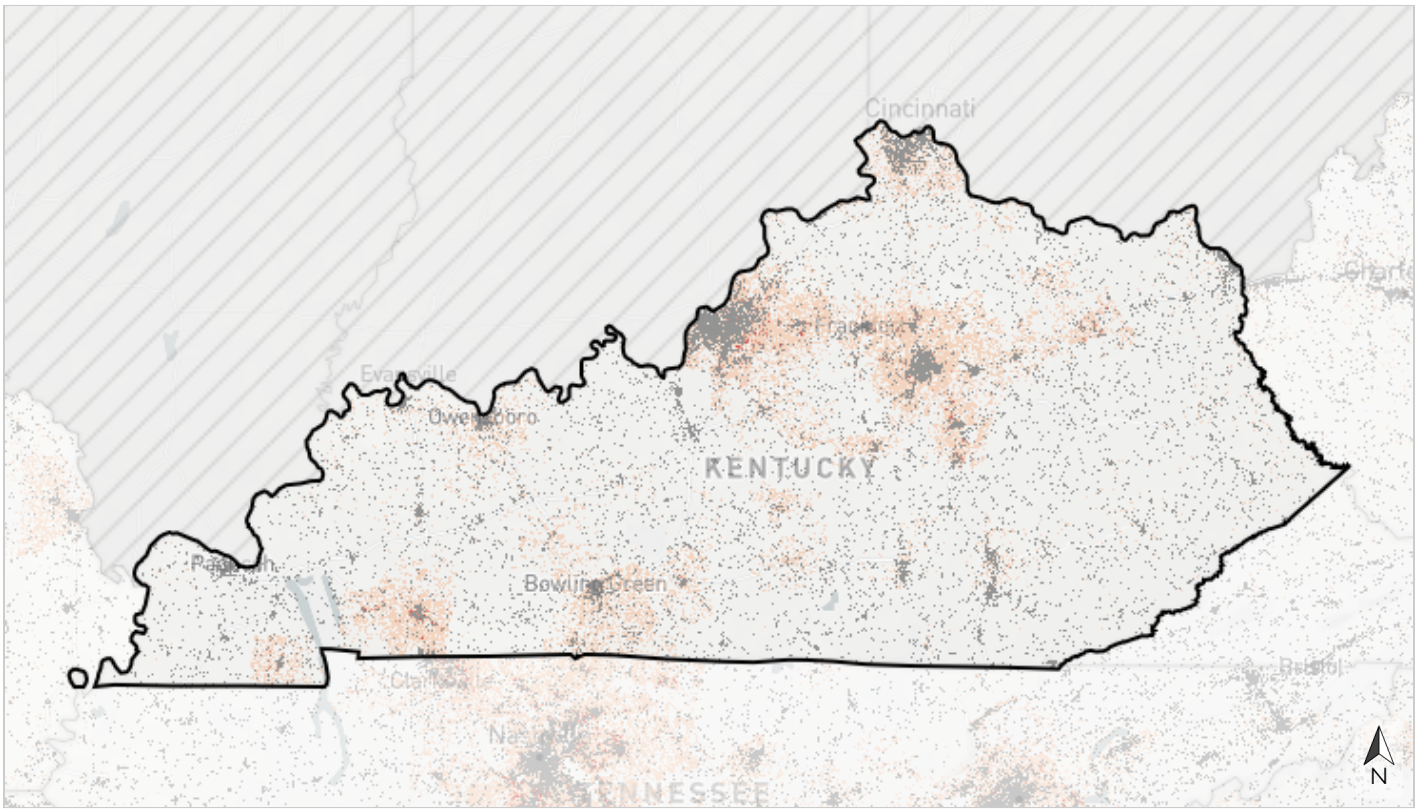
Sea-level rise

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.



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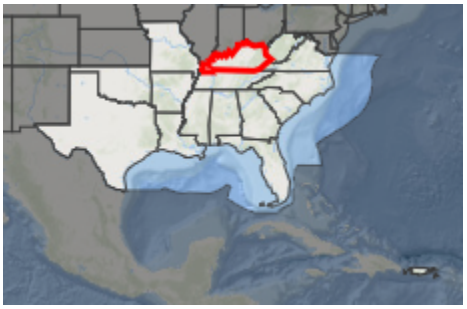


Probability of urbanization by 2060

- Urban in 2021
- Very high likelihood of urbanization (>50% probability)
- High likelihood of urbanization (25 - 50% probability)
- Moderate likelihood of urbanization (2 - 25% probability)
- Not likely to urbanize

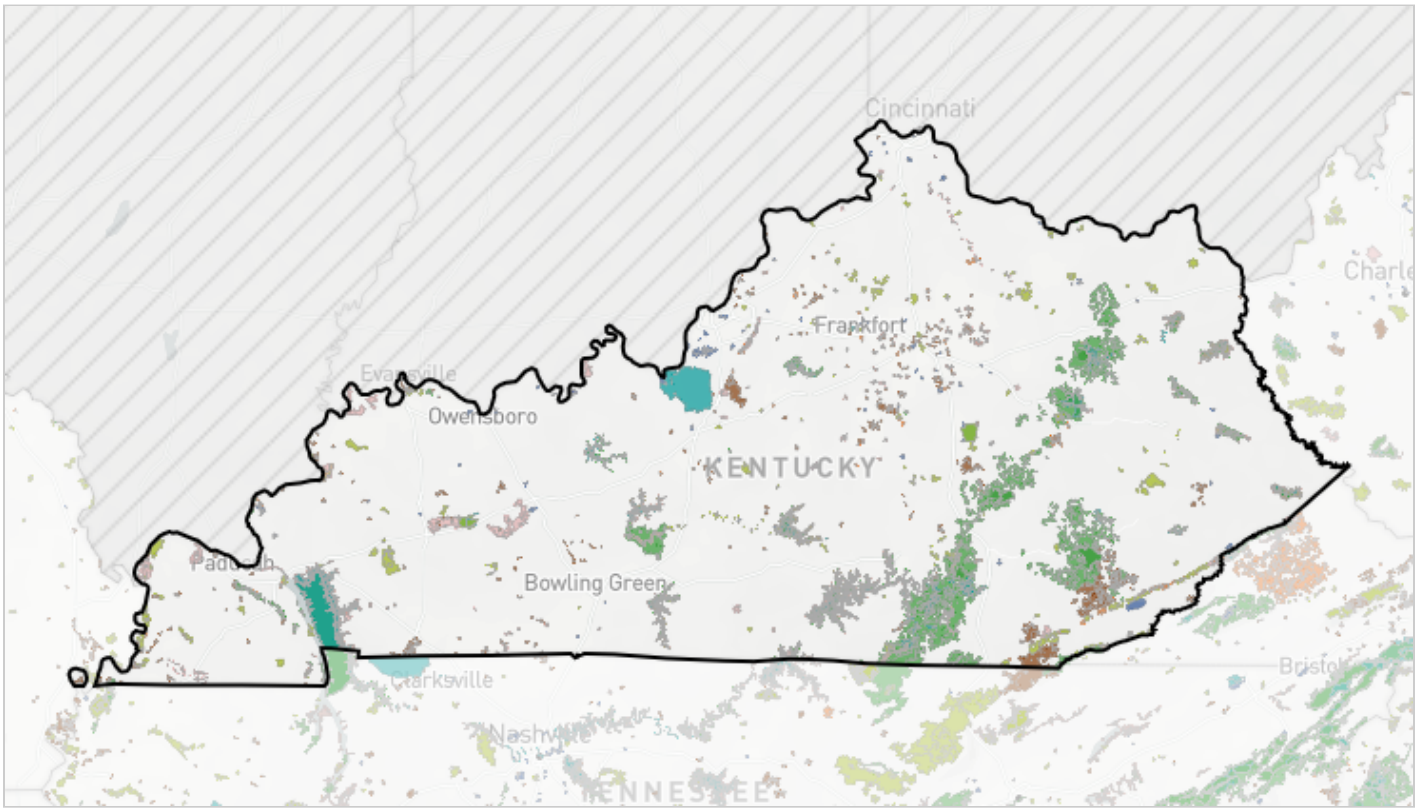
8.3% of this area is already urban in 2021, and an additional 9.4% has at least a moderate probability of urbanizing by 2060.

Table 20: Extent of projected urbanization by decade within Kentucky. 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.

Decade	Acres	Percent of Area
Urban in 2021	2,135,970	8.3%
2030 projected extent	2,187,745	8.5%
2040 projected extent	2,216,985	8.6%
2050 projected extent	2,239,416	8.7%
2060 projected extent	2,260,626	8.7%
2070 projected extent	2,280,093	8.8%
2080 projected extent	2,295,552	8.9%
2090 projected extent	2,305,825	8.9%
2100 projected extent	2,312,583	8.9%
Not projected to urbanize by 2100	*20,914,448*	*80.9%*
Total area	**25,857,213**	**100%**

Ownership and Partners

Conserved lands ownership



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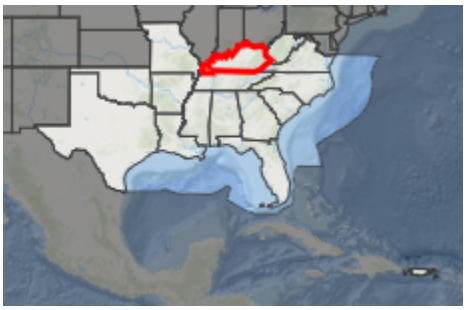
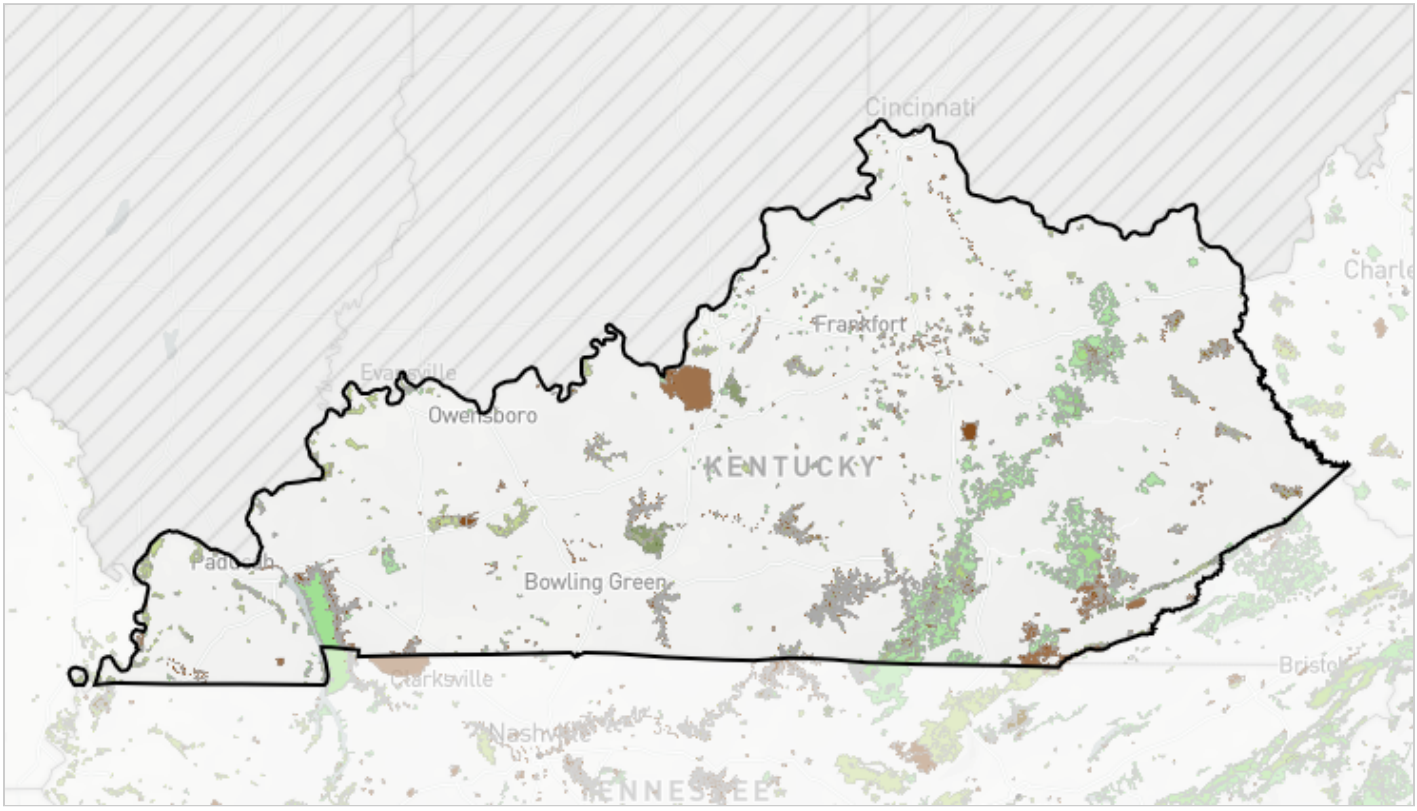


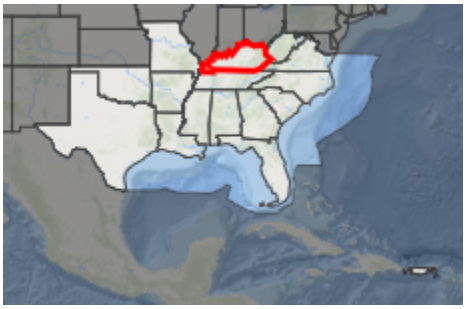
- Federal
- State/province
- Territorial
- Regional
- Local
- Joint
- Private non-profit conserved lands
- Private conservation land
- Tribal
- Designation
- Ownership unknown

Table 21: Extent of ownership class within Kentucky. 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.

Ownership	Acres	Percent of Area
Federal	1,192,130	4.6%
State/province	244,272	0.9%
Regional	2,822	<0.1%
Local	75,009	0.3%
Joint	194,081	0.8%
Private non-profit conserved lands	55,133	0.2%
Private conservation land	327,454	1.3%
Designation	414,615	1.6%
Ownership unknown	301,937	1.2%

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 Kentucky. 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)	151,112	0.6%
Managed for biodiversity (disturbance events suppressed)	627,105	2.4%
Managed for multiple uses (subject to extractive uses such as mining or logging, or OHV use)	1,133,810	4.4%
No known mandate for biodiversity protection	895,425	3.5%

Protected Areas

- Daniel Boone National Forest (USDA FOREST SERVICE; 710,017 acres)
- Fort Knox (Unknown owner; 109,089 acres)
- Land Between The Lakes (Unknown owner; 107,587 acres)
- Land Between the Lakes National Recreation Area (USDA FOREST SERVICE; 107,548 acres)
- CUMBERLAND (Unknown; 90,149 acres)
- Corrigan WMA (Molpus; 54,818 acres)
- BARKLEY (Unknown; 52,513 acres)
- Lake Cumberland Wildlife Management Area (U.S. Army Corps of Engineers; 51,668 acres)
- MACA (NPS; 50,624 acres)
- Lake Cumberland (Unknown owner; 46,069 acres)
- Peabody Wildlife Management Area (Kentucky Department of Fish and Wildlife Resources & Western Land Services & Patriot Coal Corporation; 41,327 acres)
- Lake Barkley (Unknown owner; 36,798 acres)
- GREEN RV (Unknown; 32,392 acres)
- Boone Forestlands Wildlife Management Area (Begley Properties, LLC; 31,666 acres)
- BISO (NPS; 30,307 acres)
- Bluegrass Conservancy Easements (Private Individual & Bluegrass Land Conservancy; 28,357 acres)
- Redbird Wildlife Management Area (U.S. Forest Service; 24,015 acres)
- Green River Lake Wildlife Management Area (U.S. Army Corps of Engineers; 21,039 acres)
- BARREN RIVER (Unknown; 20,297 acres)
- YATESVILLE (Unknown; 20,111 acres)
- Beaver Creek Wildlife Management Area (U.S. Forest Service; 17,751 acres)
- Elk Forest Wildlife Management Area (Private Individual; 16,801 acres)
- Bernheim Arboretum and Research Forest (Bernheim Arboretum and Research Forest; 16,164 acres)
- FISHTRAP (Unknown; 15,591 acres)
- Blue Grass Army Depot (Unknown owner; 14,578 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.