## **Southeast Conservation Blueprint Summary**

for West Virginia

### **Created 11/20/2025**

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**The Southeast Conservation Blueprint 2025** 



Southeast Conservation Blueprint Summ	nary for West Virginia	
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### **About the Southeast Blueprint**

The Southeast Conservation Blueprint is the primary product of the <u>Southeast Conservation Adaptation Strategy</u> (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 <u>Blueprint webpage</u>
- Review the <u>Blueprint 2025 Development Process</u>
- View and download the Blueprint data and make maps on the Blueprint page of the SECAS Atlas

### We're here to help!

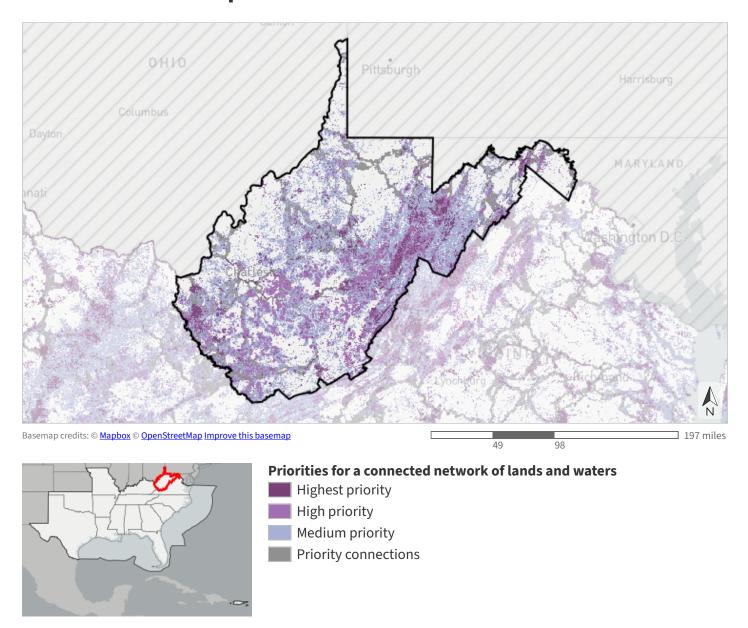
- Do you have a question about the Blueprint?
- Would you like help using the Blueprint to support a proposal or inform a decision?
- Do you have a suggestion on how to improve the Blueprint? The Blueprint and its inputs are regularly revised based on input from people like you.
- Do you have feedback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

If you need help or have questions, <u>contact Southeast Blueprint staff</u> 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!

This report was generated by the Southeast Conservation Blueprint Explorer, which was developed by <u>Astute Spruce, LLC</u> in partnership with the U.S. Fish and Wildlife Service under the <u>Southeast Conservation Adaptation Strategy</u>.

### **Southeast Blueprint Priorities**



### **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 West Virginia.

Priority Category	Acres	Percent of Area
Highest priority	986,525	6.4%
High priority	2,614,904	16.9%
Medium priority	4,734,897	30.5%
Priority connections	1,218,132	7.9%
Lower priority	5,951,806	38.4%
Total area	15,506,263	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.

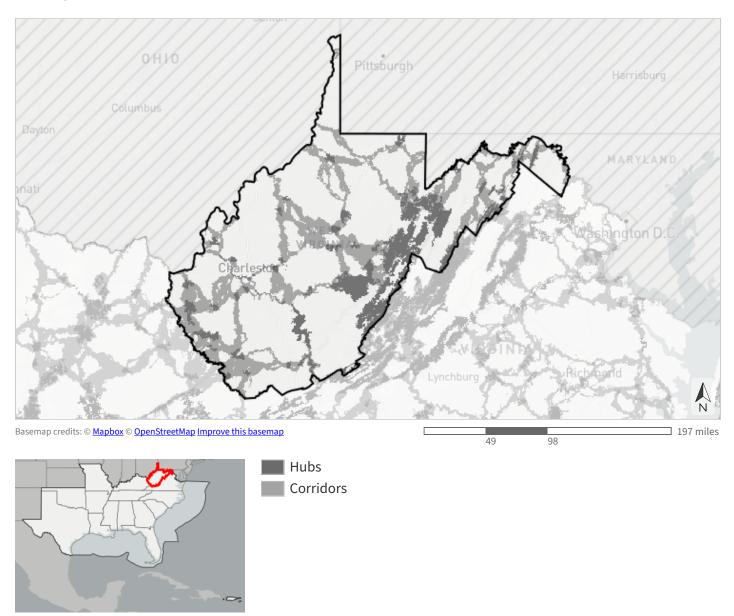


Table 2: Extent of hubs and corridors within West Virginia.

Туре	Acres	Percent of Area
Hubs	1,758,425	11.3%
Corridors	3,549,424	22.9%
Not a hub or corridor	10,198,414	65.8%
Total area	15,506,263	100%

## **Indicator Summary**

Table 3: Terrestrial indicators.

Indicator	Present
East Coastal Plain open pine birds	-
Fire frequency	✓
Grassland & savanna extent	✓
Grassland & savanna restoration	✓
<u>Greenways &amp; trails</u>	✓
Imperiled amphibians & reptiles	✓
Imperiled mammals	✓
Intact habitat cores	✓
Landscape condition	✓
Potential access to parks	✓
Resilient terrestrial sites	✓
River cane restoration	✓
South Atlantic forest birds	-
<u>Urban park size</u>	✓

#### Table 4: Freshwater indicators.

Indicator	Present
Atlantic migratory fish habitat	✓
<u>Floodplain inundation</u>	<b>√</b>
Gulf migratory fish connectivity	-
Imperiled aquatic species	<b>√</b>
Lakes & reservoirs	<b>√</b>
Natural landcover in floodplains	<b>√</b>
Network complexity	<b>√</b>
Permeable surface	<b>√</b>



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.

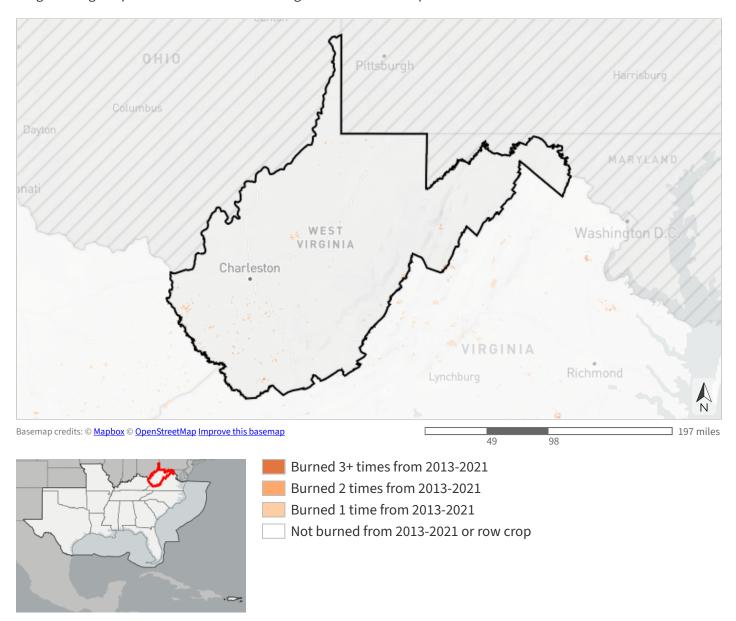


Table 5: Indicator values for fire frequency within West Virginia. Good condition thresholds reflect the range of indicator values that occur in healthy, functioning ecosystems.

	Indicator Values	Acres	Percent of Area	
↑ High	Burned 3+ times from 2013-2021	675	<0.1%	
	Burned 2 times from 2013-2021	1,937	<0.1%	↑ In good condition
	Burned 1 time from 2013-2021	93,661	0.6%	↓ Not in good condition
↓ Low	Not burned from 2013-2021 or row	15,409,991	99.4%	
	crop	13,403,331	33.470	
	Total area	15,506,263	100%	

## Terrestrial

### Grassland & savanna extent

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, predicted locations within protected areas, 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, Oklahoma and Texas ecological systems maps, and more.

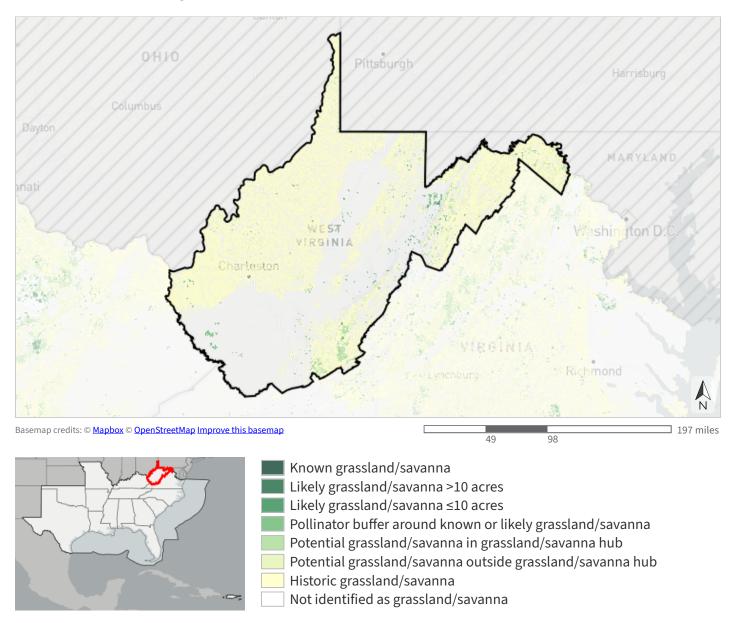


Table 6: Indicator values for grassland & savanna extent within West Virginia. Good condition thresholds reflect the range of indicator values that occur in healthy, functioning ecosystems.

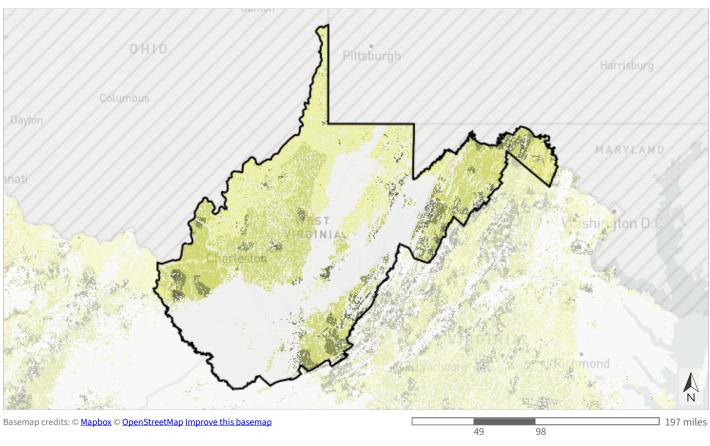
	Indicator Values	Acres	Percent of Area	
↑ High	Known grassland/savanna	13	<0.1%	
	Likely grassland/savanna >10 acres	15,116	<0.1%	
	Likely grassland/savanna ≤10 acres	11,007	<0.1%	↑ In good condition
	Pollinator buffer around known or likely grassland/savanna	105,594	0.7%	↓ Not in good condition
	Potential grassland/savanna in grassland/savanna hub	285,678	1.8%	
	Potential grassland/savanna outside grassland/savanna hub	771,534	5.0%	
	Historic grassland/savanna	5,904,437	38.1%	
↓ Low	Not identified as grassland/savanna	8,412,884	54.3%	
	Total area	15,506,263	100%	



Terrestrial

### **Grassland & savanna restoration**

This indicator represents potential restoration opportunities for grasslands and savannas within their historic range in the southeastern United States. Grasslands support important plants, reptiles, amphibians, mammals, birds, and pollinators, but have significantly declined from their current extent. It considers proximity to clusters of existing grasslands and savannas, protected areas with management potential, landcover classes with good restoration potential, priority areas for restoration of longleaf and shortleaf pine, and historic grassland and savanna locations. This indicator combines data from multiple sources, including the Southeast Blueprint grassland and savanna extent indicator, the Longleaf Suitability Analysis, shortleaf pine suitability, landcover from the National Land Cover Database and LANDFIRE, and more.





#### **Restoration priority**

- Highest (in a grassland/savanna hub, in a protected area with management potential, in a historic patch >10 acres)
- Very high (in a grassland/savanna hub, unprotected landcover with good restoration potential, in a historic patch >10 acres)
- High (outside a grassland/savanna hub, in a protected area with management potential, in a historic patch >10 acres)
- Medium (outside a grassland/savanna hub, unprotected landcover with good restoration potential, in a historic patch >10 acres)
- Low (other historic grassland/savanna)
- Very low (already known or likely grassland/savanna)
  - Lowest (not identified as historic grassland/savanna)

Table 7: Indicator values for grassland & savanna restoration within West Virginia. A good condition threshold is not yet defined for this indicator.

	Indicator Values: Restoration priority	Acres	Percent of Area
↑ High	Highest (in a grassland/savanna hub, in a protected area with management potential, in a historic patch >10 acres)	230,362	1.5%
	Very high (in a grassland/savanna hub, unprotected landcover with good restoration potential, in a historic patch >10 acres)	718,637	4.6%
	High (outside a grassland/savanna hub, in a protected area with management potential, in a historic patch >10 acres)	87,595	0.6%
	Medium (outside a grassland/savanna hub, unprotected landcover with good restoration potential, in a historic patch >10 acres)	2,853,434	18.4%
	Low (other historic grassland/savanna)	3,087,102	19.9%
	Very low (already known or likely grassland/savanna)	26,136	0.2%
↓ Low	Lowest (not identified as historic grassland/savanna)	8,488,989	54.7%
	Area not evaluated for this indicator	14,006	<0.1%
	Total area	15,506,263	100%

# 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.

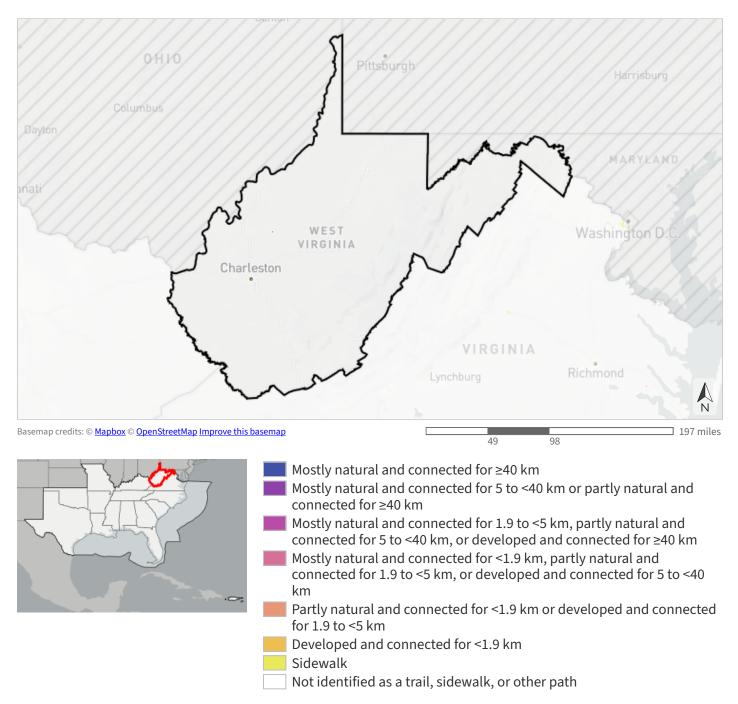


Table 8: Indicator values for greenways & trails within West Virginia. Good condition thresholds reflect the range of indicator values that occur in healthy, functioning ecosystems.

	Indicator Values	Acres	Percent of Area	
↑ High	Mostly natural and connected for ≥40 km	7,326	<0.1%	
	Mostly natural and connected for 5 to <40 km or partly natural and connected for ≥40 km	12,027	<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	6,416	<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	3,435	<0.1%	↑ In good condition
	Partly natural and connected for <1.9 km or developed and connected for 1.9 to <5 km	1,206	<0.1%	→ Not in good condition
	Developed and connected for <1.9 km	1,687	<0.1%	
	Sidewalk	4,252	<0.1%	
↓ Low	Not identified as a trail, sidewalk, or other path	15,469,915	99.8%	
	Total area	15,506,263	100%	

# Terrestrial Imperiled amphibians & reptiles

This indicator identifies potential habitat to support amphibian and reptile Regional Species of Greatest Conservation Need (RSGCN). Using a rarity-weighted richness approach, it prioritizes places important for species that are restricted to smaller ranges, such as narrow endemics, which are therefore more vulnerable to habitat loss or change. 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 uses models from the U.S. Geological Survey Gap Analysis Project that are based on known species ranges, specieshabitat relationships, and landcover.

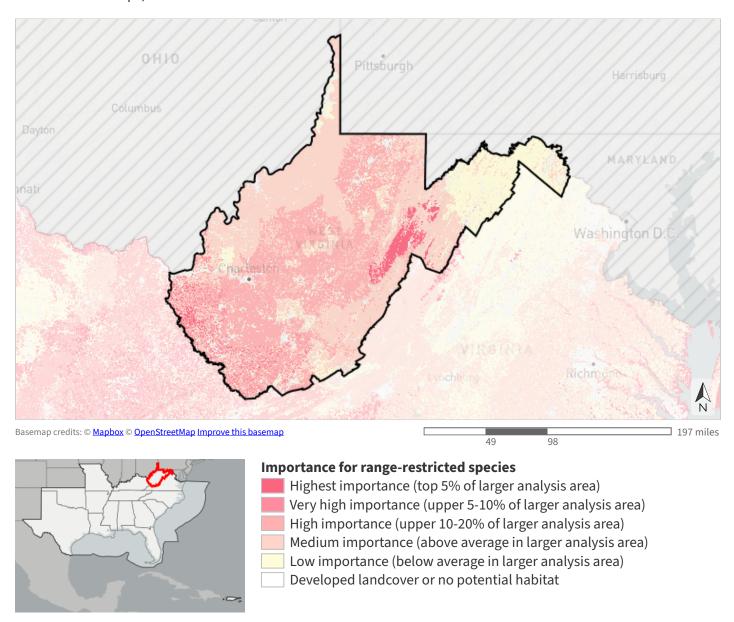


Table 9: Indicator values for imperiled amphibians & reptiles within West Virginia. A good condition threshold is not yet defined for this indicator.

	Indicator Values: Importance for range-restricted species	Acres	Percent of Area
↑ High	Highest importance (top 5% of larger analysis area)	507,292	3.3%
	Very high importance (upper 5-10% of larger analysis area)	618,284	4.0%
	High importance (upper 10-20% of larger analysis area)	3,992,317	25.7%
	Medium importance (above average in larger analysis area)	6,214,861	40.1%
	Low importance (below average in larger analysis area)	2,215,821	14.3%
↓ Low	Developed landcover or no potential habitat	1,957,688	12.6%
	Total area	15,506,263	100%

# Terrestrial Imperiled mammals

This indicator identifies potential habitat to support mammal Regional Species of Greatest Conservation Need (RSGCN). Using a rarity-weighted richness approach, it prioritizes places important for species that are restricted to smaller ranges, such as narrow endemics, which are therefore more vulnerable to habitat loss or change. 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 uses models from the U.S. Geological Survey Gap Analysis Project that are based on known species ranges, species-habitat relationships, and LANDFIRE landcover.

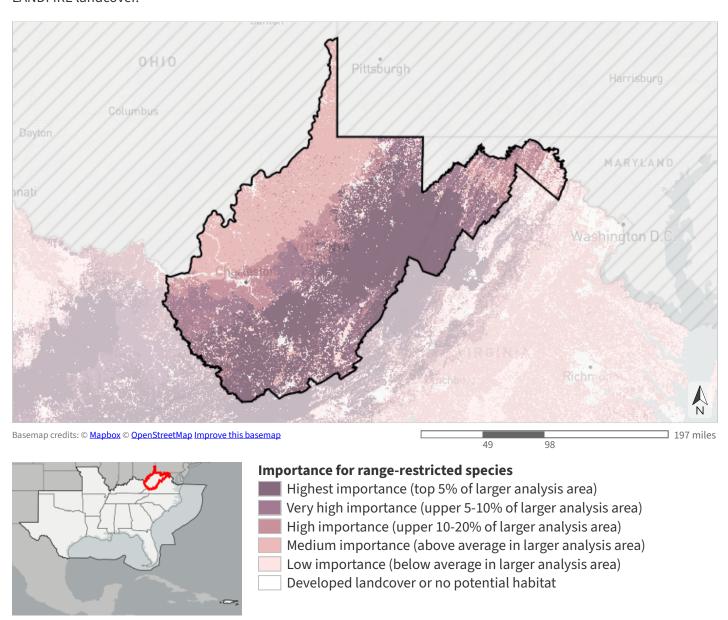
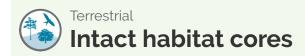


Table 10: Indicator values for imperiled mammals within West Virginia. A good condition threshold is not yet defined for this indicator.

	Indicator Values: Importance for range-restricted species	Acres	Percent of Area
↑ High	Highest importance (top 5% of larger analysis area)	5,262,420	33.9%
	Very high importance (upper 5-10% of larger analysis area)	2,009,943	13.0%
	High importance (upper 10-20% of larger analysis area)	2,448,848	15.8%
	Medium importance (above average in larger analysis area)	3,487,627	22.5%
	Low importance (below average in larger analysis area)	1,025,459	6.6%
↓ Low	Developed landcover or no potential habitat	1,271,967	8.2%
	Total area	15,506,263	100%



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.

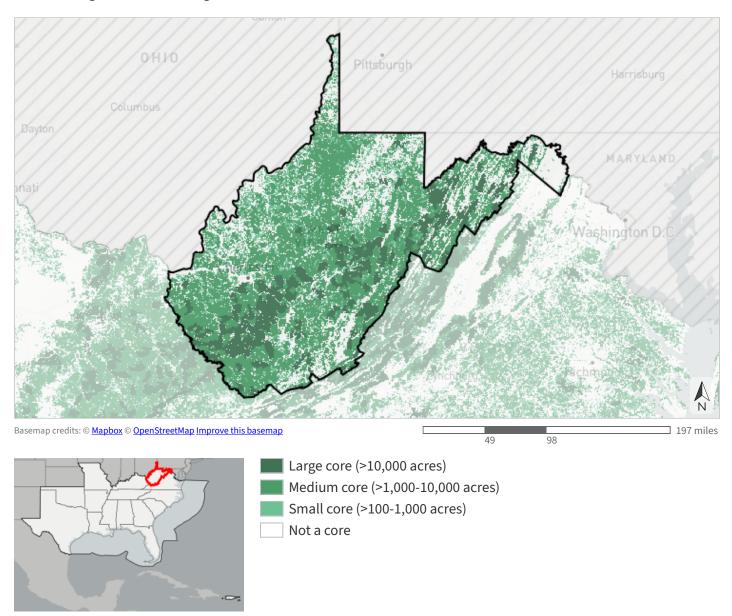


Table 11: Indicator values for intact habitat cores within West Virginia. Good condition thresholds reflect the range of indicator values that occur in healthy, functioning ecosystems.

	Indicator Values	Acres	Percent of Area	
↑ High	Large core (>10,000 acres)	2,460,708	15.9%	
	Medium core (>1,000-10,000 acres)	6,426,249	41.4%	
↓ Low	Small core (>100-1,000 acres)	1,826,182	11.8%	↑ In good condition
	Not a core	4,793,125	30.9%	→ Not in good condition
	Total area	15,506,263	100%	

# 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 combines data from multiple sources, including the National Land Cover Database; various data on grasslands, mines, quarries, and reservoirs; ideas from the Florida Critical Lands and Waters Identification Project's approach for evaluating land use intensity; and more.

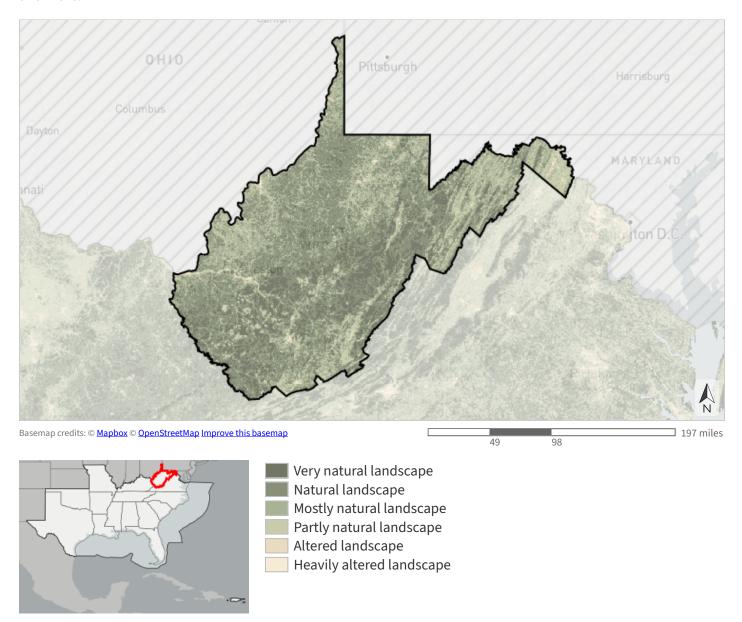


Table 12: Indicator values for landscape condition within West Virginia. Good condition thresholds reflect the range of indicator values that occur in healthy, functioning ecosystems.

	Indicator Values	Acres	Percent of Area	
↑ High	Very natural landscape	2,118,947	13.7%	
	Natural landscape	6,640,565	42.8%	
	Mostly natural landscape	4,407,758	28.4%	↑ In good condition
	Partly natural landscape	2,122,850	13.7%	→ Not in good condition
	Altered landscape	175,488	1.1%	
↓ Low	Heavily altered landscape	40,655	0.3%	
	Total area	15,506,263	100%	

# Potential access to parks

This cultural resource indicator prioritizes places to create new parks that would fill gaps in 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.

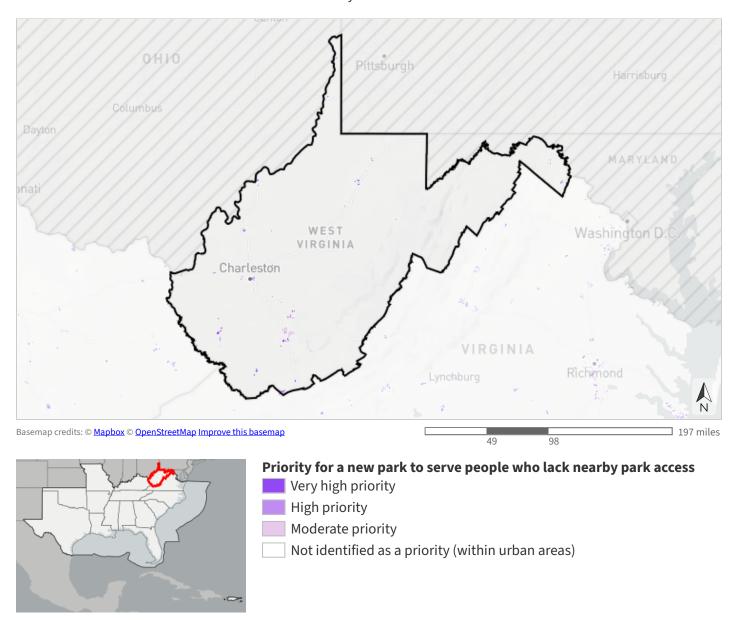


Table 13: Indicator values for potential access to parks within West Virginia. A good condition threshold is not yet defined for this indicator.

	Indicator Values: Priority for a new park to serve people who lack nearby park access	Acres	Percent of Area
↑ High	Very high priority	14,642	<0.1%
	High priority	19,551	0.1%
↓ Low	Moderate priority	21,248	0.1%
	Not identified as a priority (within urban areas)	15,450,822	99.6%
	Total area	15,506,263	100%

## 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.

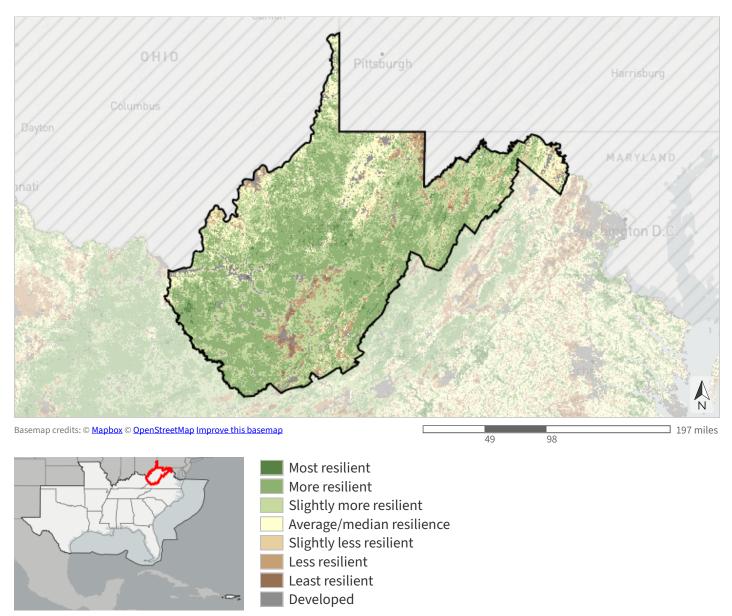


Table 14: Indicator values for resilient terrestrial sites within West Virginia. A good condition threshold is not yet defined for this indicator.

	Indicator Values	Acres	Percent of Area
↑ High	Most resilient	313,362	2.0%
	More resilient	5,965,624	38.5%
	Slightly more resilient	4,866,955	31.4%
	Average/median resilience	1,473,860	9.5%
	Slightly less resilient	553,673	3.6%
	Less resilient	577,007	3.7%
	Least resilient	136,202	0.9%
↓ Low	Developed	1,506,679	9.7%
	Area not evaluated for this indicator	112,900	0.7%
	Total area	15,506,263	100%

# Terrestrial River cane restoration

This indicator represents priority places for river cane restoration and co-stewardship near the lands of federally recognized Tribes. River cane is a bamboo species native to the Southeast. Historically, it was abundant and widespread, forming dense patches called canebrakes that could stretch for miles within the floodplain. Today, it has been reduced to less than 2% of its former extent. River cane not only provides significant habitat value and ecosystem services, but many Southeastern Native American Tribes consider it a cultural keystone species important to the continuity of traditional lifeways. This indicator combines data from multiple sources, including Natural Resources Conservation Service soils data, the Environmental Protection Agency's estimated floodplain, lands of federally recognized Tribes lands from the U.S. Census Bureau, and more.

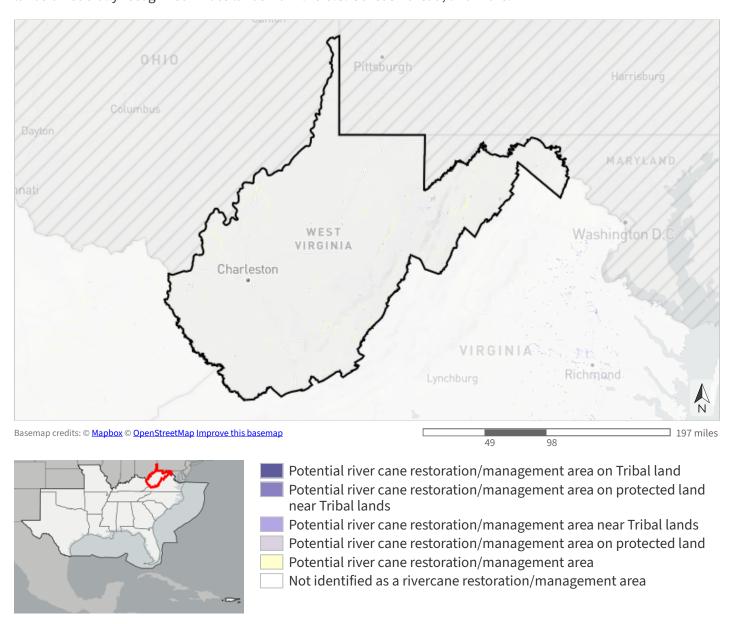


Table 15: Indicator values for river cane restoration within West Virginia. A good condition threshold is not yet defined for this indicator.

	Indicator Values	Acres	Percent of Area
↑ High	Potential river cane restoration/management area on Tribal land	0	0%
	Potential river cane restoration/management area on protected land near Tribal lands	0	0%
	Potential river cane restoration/management area near Tribal lands	0	0%
	Potential river cane restoration/management area on protected land	94,449	0.6%
	Potential river cane restoration/management area	954,196	6.2%
↓ Low	Not identified as a rivercane restoration/management area	14,457,618	93.2%
	Total area	15,506,263	100%



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, U.S. Census Bureau urban areas, and the National Land Cover Database.

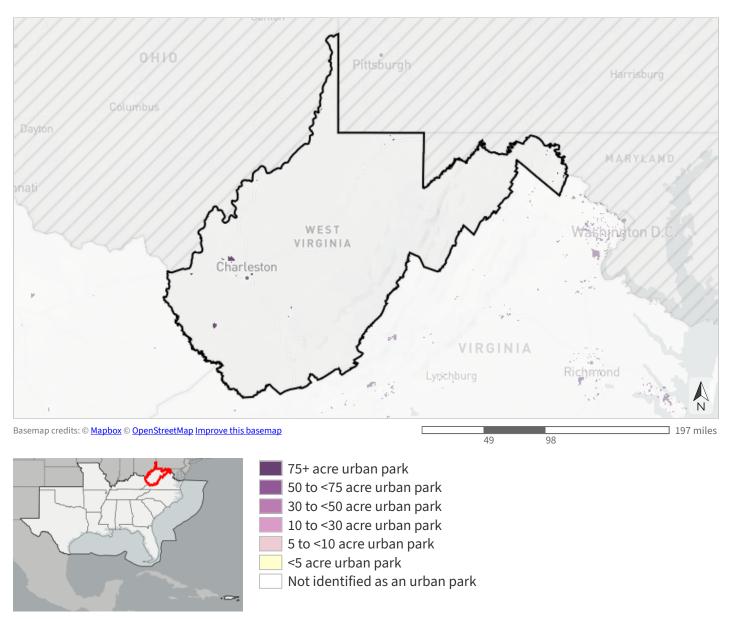


Table 16: Indicator values for urban park size within West Virginia. A good condition threshold is not yet defined for this indicator.

	Indicator Values	Acres	Percent of Area
↑ High	75+ acre urban park	23,006	0.1%
	50 to <75 acre urban park	916	<0.1%
	30 to <50 acre urban park	1,288	<0.1%
	10 to <30 acre urban park	1,569	<0.1%
	5 to <10 acre urban park	560	<0.1%
	<5 acre urban park	955	<0.1%
↓ Low	Not identified as an urban park	15,477,968	99.8%
	Total area	15,506,263	100%

# Atlantic migratory fish habitat

This indicator measures the condition of migratory fish habitat along the Atlantic coast within each catchment, using metrics of water quality, aquatic connectivity, habitat fragmentation, flow alteration, and more. Areas of excellent fish habitat are already in good condition and face few threats. Restoration opportunity areas are doing well in some respects, but restoration projects could significantly improve them. Degraded areas of opportunity face many challenges, and restoration projects are unlikely to increase available fish habitat unless particularly large in scope and scale. This indicator originates from the Atlantic Coast Fish Habitat Partnership's fish habitat conservation area mapping and prioritization project.

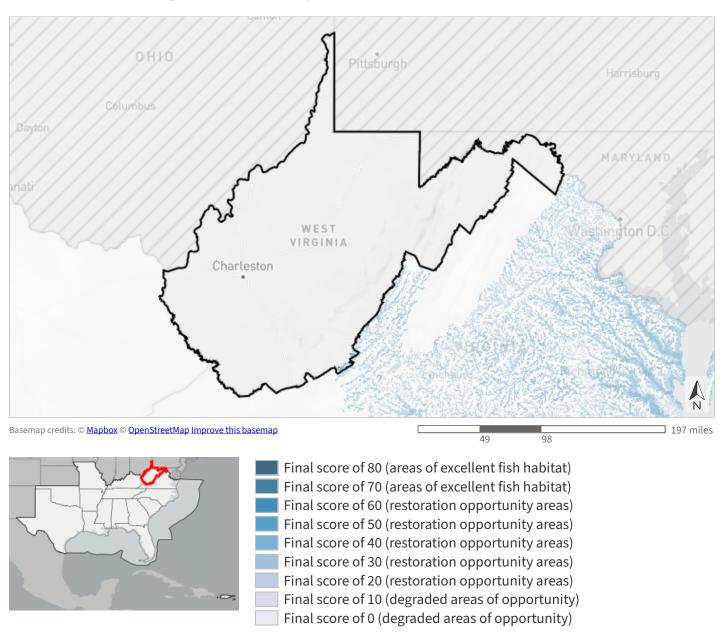


Table 17: Indicator values for Atlantic migratory fish habitat within West Virginia. Good condition thresholds reflect the range of indicator values that occur in healthy, functioning ecosystems.

	Indicator Values	Acres	Percent of Area	
↑ High	Final score of 80 (areas of excellent fish habitat)	0	0%	
	Final score of 70 (areas of excellent fish habitat)	0	0%	↑ In good condition
	Final score of 60 (restoration opportunity areas)	97	<0.1%	↓ Not in good condition
	Final score of 50 (restoration opportunity areas)	418	<0.1%	
	Final score of 40 (restoration opportunity areas)	465	<0.1%	
	Final score of 30 (restoration opportunity areas)	409	<0.1%	
	Final score of 20 (restoration opportunity areas)	2	<0.1%	
	Final score of 10 (degraded areas of opportunity)	0	0%	
↓ Low	Final score of 0 (degraded areas of opportunity)	0	0%	
	Area not evaluated for this indicator	15,504,872	100.0%	
	Total area	15,506,263	100%	

# Freshwater Floodplain inundation

This indicator uses the frequency of inundation to measure the hydrologic function of the floodplain. In a natural floodplain, water can move freely from mainstem rivers and lakes onto different parts of the floodplain. This cycle of frequent, but not persistent, flooding supports many aquatic species and habitats, like fish, waterfowl and swamp forests. It also provides essential ecosystem services such as nutrient retention and downstream flood control. When parts of the floodplain stay constantly wet or dry, this may signal negative impacts from structures like dikes, dams, and levees, which disconnect waterbodies from their adjacent floodplains. This indicator is based on Sentinel-2 satellite imagery and methods developed by Yvonne Allen of the U.S. Fish and Wildlife Service.

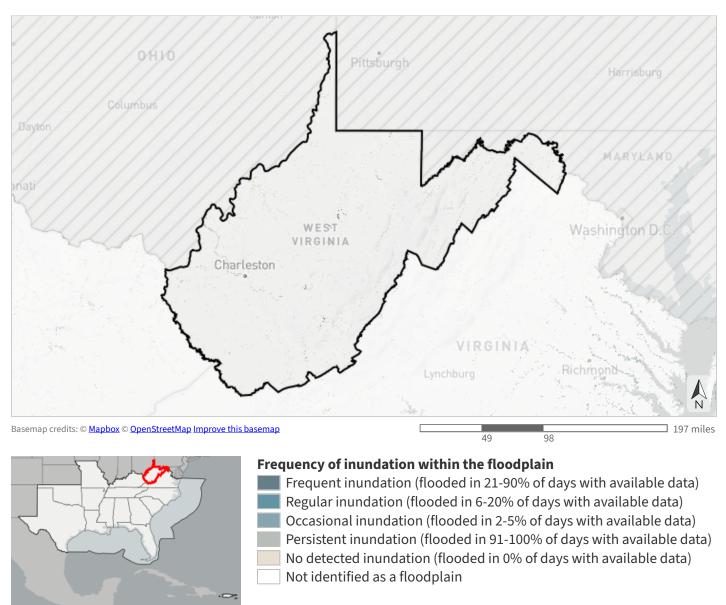


Table 18: Indicator values for floodplain inundation within West Virginia. Good condition thresholds reflect the range of indicator values that occur in healthy, functioning ecosystems.

	Indicator Values: Frequency of inundation within the floodplain	Acres	Percent of Area	
↑ High	Frequent inundation (flooded in 21-90% of days with available data)	32,931	0.2%	
	Regular inundation (flooded in 6-20% of days with available data)	21,624	0.1%	↑ In good condition
	Occasional inundation (flooded in 2-5% of days with available data)	8,440	<0.1%	→ Not in good condition
	Persistent inundation (flooded in 91-100% of days with available data)	60,051	0.4%	
	No detected inundation (flooded in 0% of days with available data)	822,808	5.3%	
↓ Low	Not identified as a floodplain	14,560,409	93.9%	
	Total area	15,506,263	100%	

# 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).

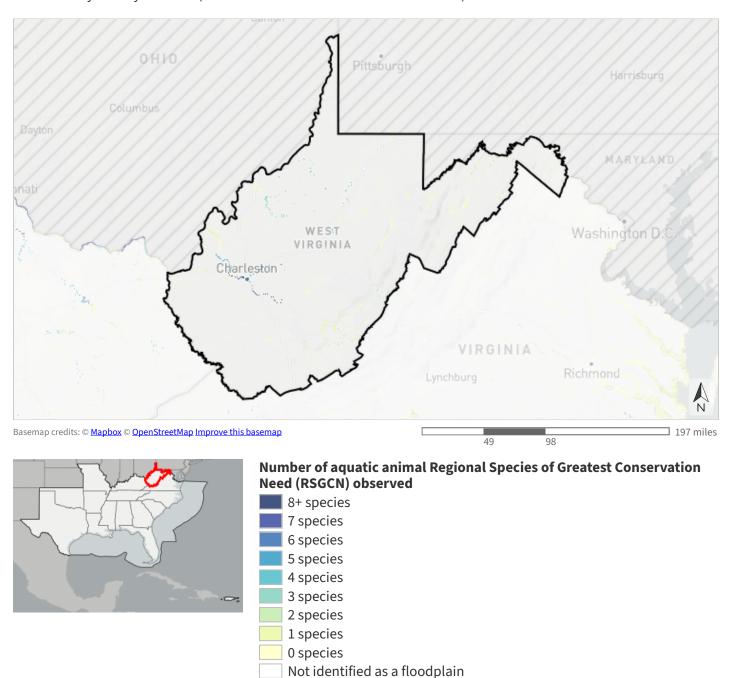


Table 19: Indicator values for imperiled aquatic species within West Virginia. A good condition threshold is not yet defined for this indicator.

	Indicator Values: Number of aquatic animal Regional Species of Greatest Conservation Need (RSGCN) observed	Acres	Percent of Area
↑ High	8+ species	35,722	0.2%
	7 species	0	0%
	6 species	5,365	<0.1%
	5 species	13,463	<0.1%
	4 species	23,961	0.2%
	3 species	45,958	0.3%
	2 species	46,136	0.3%
	1 species	149,661	1.0%
	0 species	625,587	4.0%
↓ Low	Not identified as a floodplain	14,560,409	93.9%
	Total area	15,506,263	100%



This indicator assesses the condition of lakes and reservoirs based on the amount of natural landcover within the upstream watershed. Higher scores go to lakes and reservoirs with less surrounding urban and agricultural development (including intensive forest management for timber production), which negatively impact drinking water quality and quantity and fish habitat. This indicator uses waterbody and watershed data from the LAGOS-LOCUS dataset, as well as landcover from the National Land Cover Database and LANDFIRE.

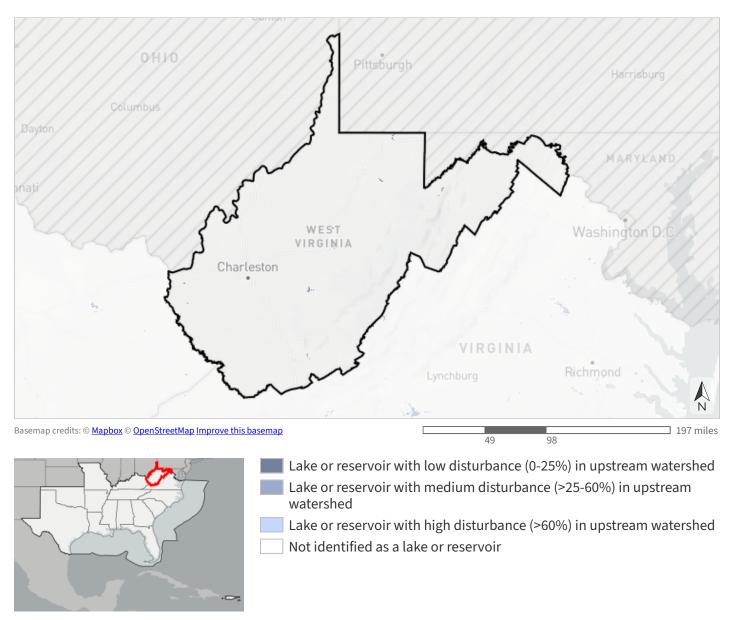
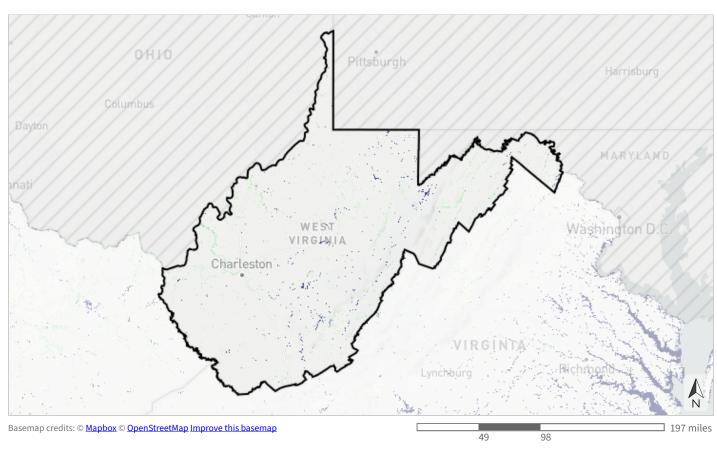


Table 20: Indicator values for lakes & reservoirs within West Virginia. Good condition thresholds reflect the range of indicator values that occur in healthy, functioning ecosystems.

	Indicator Values	Acres	Percent of Area	
↑ High	Lake or reservoir with low disturbance (0-25%) in upstream watershed	20,866	0.1%	↑ In good condition
	Lake or reservoir with medium disturbance (>25-60%) in upstream watershed	3,990	<0.1%	↓ Not in good condition
	Lake or reservoir with high disturbance (>60%) in upstream watershed	1,549	<0.1%	
↓ Low	Not identified as a lake or reservoir	15,479,859	99.8%	
	Total area	15,506,263	100%	

# 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).



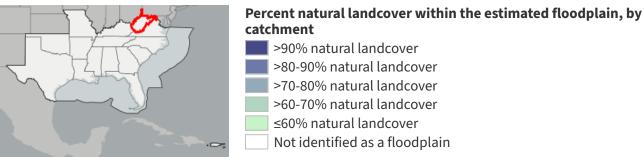


Table 21: Indicator values for natural landcover in floodplains within West Virginia. Good condition thresholds reflect the range of indicator values that occur in healthy, functioning ecosystems.

	Indicator Values: Percent natural landcover within the estimated floodplain, by catchment	Acres	Percent of Area	
↑ High	>90% natural landcover	139,289	0.9%	
	>80-90% natural landcover	75,573	0.5%	↑ In good condition
	>70-80% natural landcover	93,751	0.6%	→ Not in good condition
	>60-70% natural landcover	100,513	0.6%	
	≤60% natural landcover	536,728	3.5%	
↓ Low	Not identified as a floodplain	14,560,409	93.9%	
	Total area	15,506,263	100%	



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).

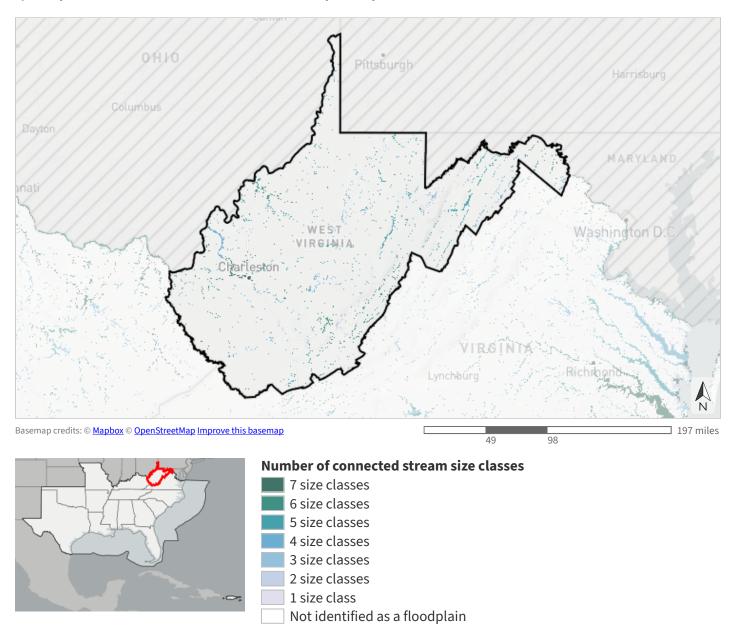
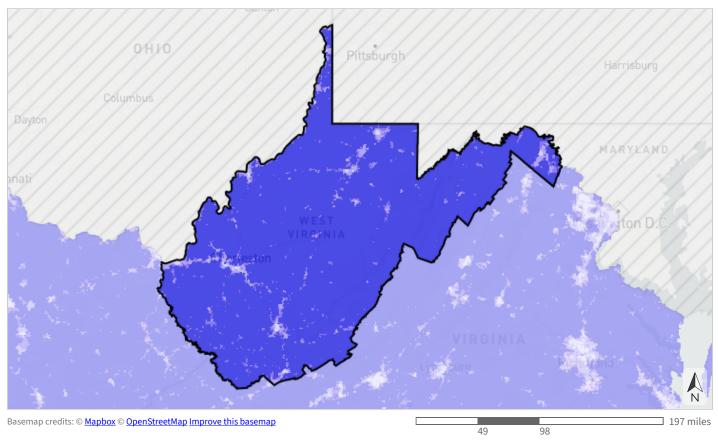


Table 22: Indicator values for network complexity within West Virginia. Good condition thresholds reflect the range of indicator values that occur in healthy, functioning ecosystems.

	Indicator Values: Number of connected stream size classes	Acres	Percent of Area	
↑ High	7 size classes	54,991	0.4%	
	6 size classes	201,113	1.3%	
	5 size classes	348,514	2.2%	
	4 size classes	219,087	1.4%	↑ In good condition
	3 size classes	74,041	0.5%	↓ Not in good condition
	2 size classes	38,018	0.2%	
	1 size class	9,955	<0.1%	
↓ Low	Not identified as a floodplain	14,560,544	93.9%	
	Total area	15,506,263	100%	



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 23: Indicator values for permeable surface within West Virginia. 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)	14,468,777	93.3%	↑ In good condition
	>90-95% permeable (likely declining water quality and supporting most aquatic species)	522,467	3.4%	↓ Not in good condition
	>70-90% permeable (likely degraded water quality and not supporting many aquatic species)	442,385	2.9%	
↓ Low	≤70% permeable (likely degraded instream flow, water quality, and aquatic species communities)	72,635	0.5%	
	Total area	15,506,263	100%	

# **More Information**

# **Priority Amphibian and Reptile Conservation Areas**

Priority Amphibian and Reptile Conservation Areas (PARCAs) are 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. 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.

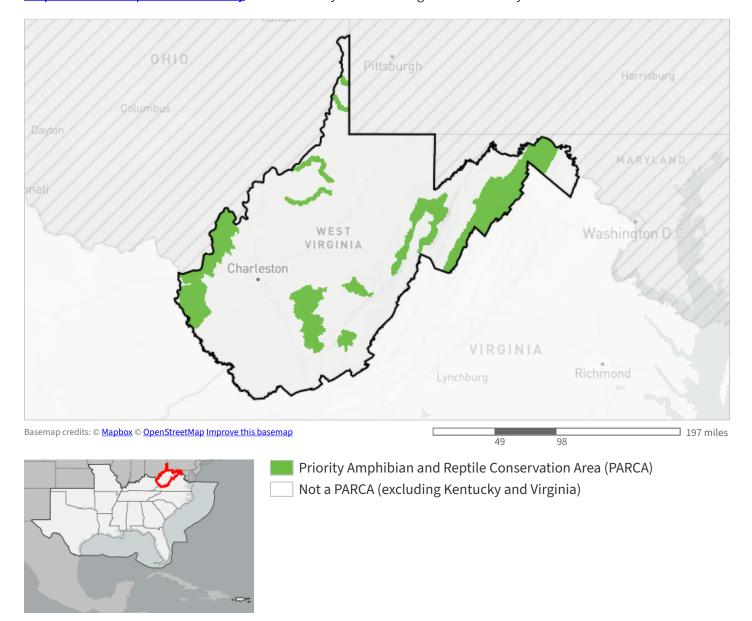


Table 24: Extent of Priority Amphibian and Reptile Conservation Areas within West Virginia.

Priority Amphibian and Reptile Conservation Areas status	Acres	Percent of Area
Priority Amphibian and Reptile Conservation Area (PARCA)	2,692,483	17.4%
Not a PARCA (excluding Kentucky and Virginia)	12,813,780	82.6%
Total area	15,506,263	100%

## **Priority Amphibian and Reptile Conservation Areas at this location:**

#### **Cow Knob**

The Cow Knob PARCA in the George Washington National Forest of West Virginia is part of the Allegheny Highlands, where the landscape transitions from lowland forests to high-elevation hardwood forests. The forests of Cow Knob are predominantly composed of hardwood species such as oak, maple, and hickory at lower elevations, while higher elevations support a mix of coniferous trees, including red spruce and eastern hemlock. These forests provide habitat for a variety of wildlife, including the Cow Knob salamander, an elusive and rare species found in these moist, forested environments. The area's streams and rivers harbor aquatic life and a large diversity of freshwater fish and salamanders.

#### Cranberry

The Cranberry PARCA encompasses a mix of forests, wetlands, and highland habitats that support a wide array of plant and animal species. Dense hardwood forests dominate the landscape, featuring species like oak, maple, and hickory, which provide habitat for a variety of wildlife, including the green salamander, a rare species that thrives in the region's moist, rocky habitats. The area's creeks and rivers, such as the Cranberry River itself, sustain aquatic life such as trout and other freshwater species. Cranberry Glades Botanical Area, nearby in the Monongahela National Forest, is known for its acidic bogs that harbor rare and endemic plant species like cranberries, carnivorous plants, and orchids.

#### **Eastern Panhandle**

The Eastern Panhandle of West Virginia shows a diverse array of biological richness, supporting a wide range of plant and animal species. Forested areas are dominated by hardwoods such as oak, hickory, and maple, interspersed with patches of pine and cedar. This array of woodland habitats provides shelter and sustenance for the wood turtle, a rare species that inhabits the region's streams and riparian zones. The Potomac, Shenandoah, and Cacapon Rivers harbor diverse aquatic life, including freshwater fish, wood and spotted turtles, and numerous other amphibians and reptiles. The Eastern Panhandle's agricultural landscapes also contribute to its biological diversity, hosting orchards, vineyards, and farms that support pollinators and provide habitat for species adapted to cultivated lands. Efforts to balance conservation with urban development are crucial for preserving the biological integrity of this ecologically rich region.

#### **General Davis**

General Davis, West Virginia, is located within the Monongahela National Forest. The area surrounding General Davis encompasses a mix of forested mountains, riparian zones, and upland habitats that support a wide range of plant and animal species. The forest canopy is primarily composed of hardwoods such as oak, maple, and birch, which provide habitat for numerous species, including the West Virginia spring salamander, a rare amphibian that prefers the cool, clear waters of the region's streams. The nearby rivers and streams, including the Williams River and its tributaries, sustain aquatic life such as trout and freshwater mussels.

#### **Gorges**

The Gorges PARCA is in the New River Gorge National Park and Preserve where the region supports a wide range of plant and animal species adapted to its unique geological and environmental conditions. The forests within Gorges are home to a variety of tree species, including eastern hemlock, mixed hardwoods such as oak and hickory, and dense thickets of rhododendron and mountain laurel. These plant

communities provide habitat for numerous wildlife species, including the Jefferson salamander, which thrives in the moist, forested areas of the gorge. The waterways that flow through the gorges support aquatic life, including native fish species like brook trout, as well as amphibians and reptiles that depend on these freshwater habitats.

#### **Moth Man**

The Moth Man PARCA is situated along the banks of the Ohio River, encompassing diverse ecological features typical of the Appalachian region. The local flora includes a mix of deciduous hardwood forests dominated by species like oak, hickory, maple, and beech, alongside riverine habitats that support willows, sycamores, and cottonwoods. These habitats provide homes for a variety of wildlife, including the midland smooth softshell, northern map turtle, eastern box turtle, and Ouachita map turtle, which inhabit the river's waters and surrounding areas. The Ohio River and its tributaries also host fish species like bass, catfish, and various panfish, while freshwater mussels and crayfish are abundant on the riverbeds.

#### Pauley's Plethodon

The Pauley's Plethodon PARCA, named in honor of Dr. Thomas K. Pauley, a renowned herpetologist, largely falls within the Monongahela National Forest. This area encompasses two ecoregions: the Northern Dissected Ridges and Knobs and the Forested Hills and Mountains. The Northern Dissected Ridges and Knobs ecoregion features broken, dissected ridges, while the Forested Hills and Mountains ecoregion includes the highest and most rugged parts of the Central Appalachians, characterized by steep hills, mountains, and narrow valleys. Despite some pastures and polluted streams, this region remains a hotspot for amphibian diversity, including the Cheat Mountain salamander. This species faces threats from habitat loss, fragmentation, and invasive pests like the hemlock woolly adelgid. Conservation efforts focus on restoring tree cover, managing invasive species, and protecting specialized habitats.

#### **Snot Otter**

The Snot Otter PARCA spans Pleasants County, Tyler County, Doddridge County, and Ritchie County in West Virginia, and is named for the eastern hellbender, a large and rare aquatic salamander. The region's diverse aquatic habitats, including clean, cool streams and rivers, are critical for the survival of this species. Pleasants County features a mix of deciduous forests and riparian areas where hellbenders thrive. Tyler County's rugged terrain and extensive forests also provide essential habitats. In Doddridge County, similar forested environments support the hellbender's needs, while Ritchie County's rolling hills and mixed forests contribute to the area's rich biodiversity. The eastern hellbender is found in these freshwater systems, which also support fish species and freshwater mussels. Conservation efforts focus on maintaining water quality and protecting these vital aquatic habitats.

#### 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.

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

## **Protected Areas**

Protected areas include a variety of public lands owned or managed by federal, state, and local agencies and nonprofit organizations, as well as some private conservation lands and conservation easements. Protected areas are derived from the <u>Protected Areas Database of the United States</u> (PAD-US v4.1) and include Fee, Designation, Easement, Marine, and Proclamation (Dept. of Defense lands only) boundaries.

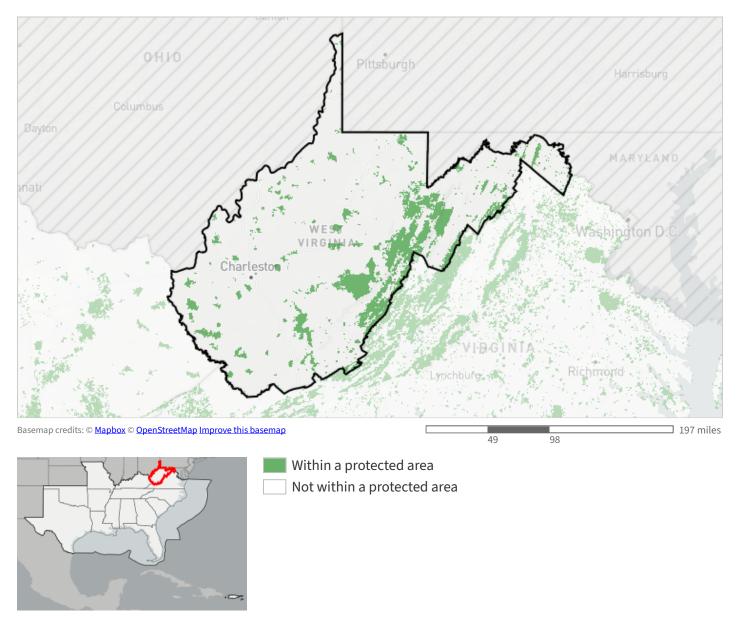


Table 25: Extent of protected areas within West Virginia.

Protected area status	Acres	Percent of Area
Not within a protected area	13,596,499	87.7%
Within a protected area	1,909,765	12.3%
Total area	15,506,263	100%

#### Protected areas at this location:

- Monongahela National Forest (USDA Forest Service; 922,096 acres)
- George Washington National Forest (USDA Forest Service; 106,487 acres)
- Neola Wildlife Management Area (U.S. Forest Service; 105,694 acres)
- Spruce Knob-Seneca Rocks National Recreation Area (99,824 acres)
- Cheat Wildlife Management Area (U.S. Forest Service; 79,571 acres)
- Rimel Wildlife Management Area (U.S. Forest Service; 68,056 acres)
- Blackwater Wildlife Management Area (U.S. Forest Service; 61,316 acres)
- Wardensville Wildlife Management Area (U.S. Forest Service; 54,942 acres)
- New River Gorge National Park and Preserve (National Park Service; 52,890 acres)
- Shenandoah Wildlife Management Area (U.S. Forest Service; 50,719 acres)
- Cranberry Wilderness (47,742 acres)
- Beaver Dam Wildlife Management Area (U.S. Forest Service; 40,641 acres)
- Tomblin Wildlife Management Area (WV Division of Natural Resources; 25,225 acres)
- East Lynn Recreation Area (24,834 acres)
- East Lynn Lake Wildlife Management Area (US Army Corps of Engineers; 24,791 acres)
- Seneca Creek Roadless Area (22,287 acres)
- Sleepy Creek Wildlife Management Area (WV Division of Natural Resources; 22,232 acres)
- Bluestone Recreation Area (22,147 acres)
- Otter Creek Wilderness (20,705 acres)
- Elk River Wildlife Management Area (WV Division of Natural Resources & US Army Corps of Engineers; 19,808 acres)
- Jefferson National Forest (USDA Forest Service; 19,439 acres)
- R.D. Bailey Recreation Area (19,158 acres)
- Middle Mountain Roadless Area (19,020 acres)
- Potts Creek Wildlife Management Area (U.S. Forest Service; 18,472 acres)
- Stonewall Jackson Lake Wildlife Management Area (US Army Corps of Engineers; 18,399 acres)
- ... and 1,155 more protected areas ...

Note: areas are listed based on name, ownership, and boundary information in the Protected Areas Database of the United States, which may include overlapping and duplicate areas.

# 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.

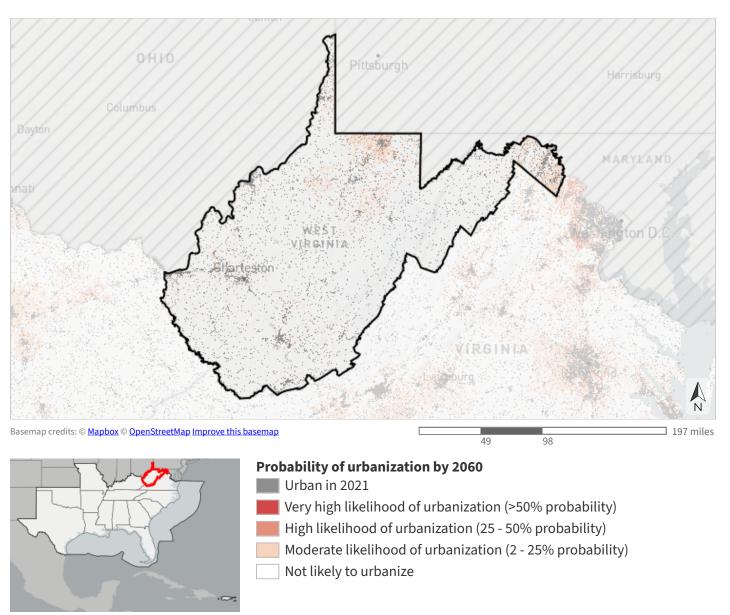


Table 26: Extent of projected urbanization by decade within West Virginia. Values from <u>FUTURES model</u> <u>projections for the contiguous United States</u> developed by the <u>Center for Geospatial Analytics</u>, NC State University. 2060 corresponds to the <u>SECAS goal</u>: a 10% or greater improvement in the health, function, and connectivity of Southeastern ecosystems by 2060.

Decade	Acres	Percent of Area
Urban in 2021	1,059,646	6.8%
2030 projected extent	1,075,058	6.9%
2040 projected extent	1,079,834	7.0%
2050 projected extent	1,083,777	7.0%
2060 projected extent	1,087,476	7.0%
2070 projected extent	1,090,380	7.0%
2080 projected extent	1,092,677	7.0%
2090 projected extent	1,094,518	7.1%
2100 projected extent	1,095,483	7.1%
Not projected to urbanize by 2100	14,410,780	92.9%
Total area	15,506,263	100%

6.8% of this area is already urban in 2021, and an additional 4.8% has at least a moderate probability of urbanizing by 2060.

By 2060, the size of the urban footprint is projected to increase 2.6% over 2021 levels.

## Wildfire Likelihood

Wildfire likelihood data originate from the Wildfire Risk to Communities project developed by the U.S. Forest Service. This layer depicts the probability of wildfire burning in a specific location in any given year. Annual burn probabilities in the United States range from 0-14%, but do not exceed 8% in the Southeast. Wildfire likelihood is based on fire behavior modeling across thousands of simulations of possible fire seasons. In each simulation, factors contributing to the probability of a fire occurring (such as weather, topography, and ignitions) vary based on patterns derived from observations in recent decades. Wildfire likelihood is not predictive and does not reflect any forecasted future weather or fire danger conditions. It also does not say anything about the intensity of fire if it occurs. To explore additional wildfire risk information, please see the Wildfire Risk to Communities website.

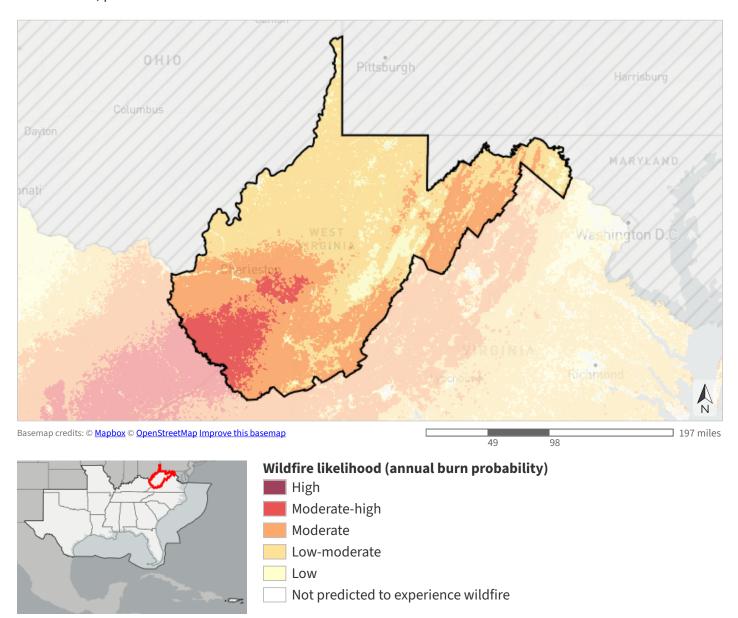


Table 27: Area in each wildfire probability category within West Virginia. Values from the <u>Wildire Risk To Communities</u> project developed by the USDA Forest Service.

Wildfire likelihood (annual burn probability)	Acres	Percent of Area
Not predicted to experience wildfire (0% probability)	155,822	1.0%
Low (>0 - 0.01% probability)	987,469	6.4%
Low-moderate (>0.01 - 0.02154% probability)	4,095,464	26.4%
Low-moderate (>0.02154 - 0.04642% probability)	3,298,240	21.3%
Moderate (>0.04642 - 0.1% probability)	3,080,053	19.9%
Moderate (>0.1 - 0.21544% probability)	1,366,517	8.8%
Moderate (>0.21544 - 0.46416% probability)	1,105,379	7.1%
Moderate-high (>0.46416 - 1% probability)	1,273,862	8.2%
Moderate-high (>1 - 2.15443% probability)	143,295	0.9%
High (>2.15443 - 4.64159% probability)	48	<0.1%
High (>4.64159% probability)	0	0%
No wildfire risk data available	115	<0.1%
Total area	15,506,263	100%