Online guide to using the Southeast Blueprint

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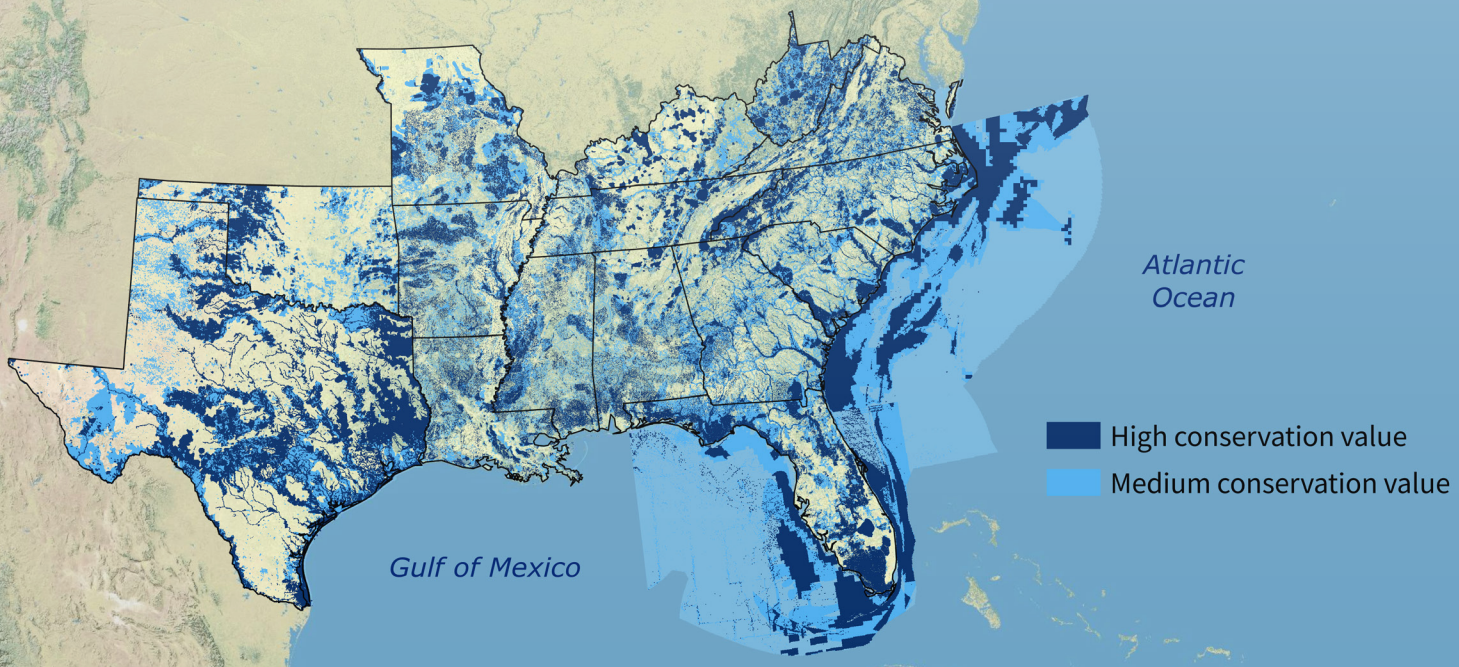

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THE PURPOSE OF THIS GUIDE

Who is this guide designed for?

If you would like help using the Blueprint to support a proposal or inform a decision, staff are here to support you at no cost. That's our job! However, some people prefer to use the Blueprint on their own. If you like to work independently, this guide is intended to help you analyze and interpret the Blueprint.

One of the most common and straightforward Blueprint uses is demonstrating the conservation value of a parcel when writing a grant proposal. As user support staff, we generally follow a consistent template for parcel analysis, so we've provided detailed instructions for you to follow to help strengthen your grant applications. Keep in mind that many other Blueprint uses are a bit more complicated and nuanced, so we aren't yet able to provide a step-by-step user guide for everything. But, staff are available to help you whenever you're ready!

We also provide real-world case studies of how people have used to Blueprint to help support conservation action. Sometimes people need to see concrete examples to help them imagine how a plan like the Blueprint could apply to them. So, this guide is also intended to inspire you to use the Blueprint in your work, in ways you may not have thought of before.

Contacting user support

If this guide empowers you to use the Blueprint on your own, great. If you ultimately decide you need help from staff, that's great, too! Did we mention that user support is free?

Reach out to the staff person working in your state:

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GETTING STARTED: BLUEPRINT BASICS

What area does the Blueprint cover?

The Southeast Blueprint covers the entirety of 15 Southeast states, as well as Puerto Rico. In the South Atlantic subregion, it also extends into the marine environment to the end of U.S. waters 200 nautical miles offshore. It also includes U.S. waters around Florida to the edge of the Exclusive Economic Zone.

The Southeast Conservation Adaptation Strategy (SECAS) geography. The Southeast Blueprint covers this entire region with the exception of the U.S. Virgin Islands. Filling this gap in the USVI is a high priority Blueprint improvement.

The Blueprint stitches together multiple smaller subregional plans, each based on different foundational datasets. So, if you dive below the surface of the final Blueprint layer, you'll find that different data is available to help you, depending on where you look.

This guide will walk you through how to use the Southeast Blueprint and complementary regional datasets. If your area falls within the South Atlantic subregion of the Southeast, a South Atlantic companion guide is available to help walk you through how to use the South Atlantic Blueprint. We hope to eventually release additional guides for other subregional inputs to the Southeast Blueprint.

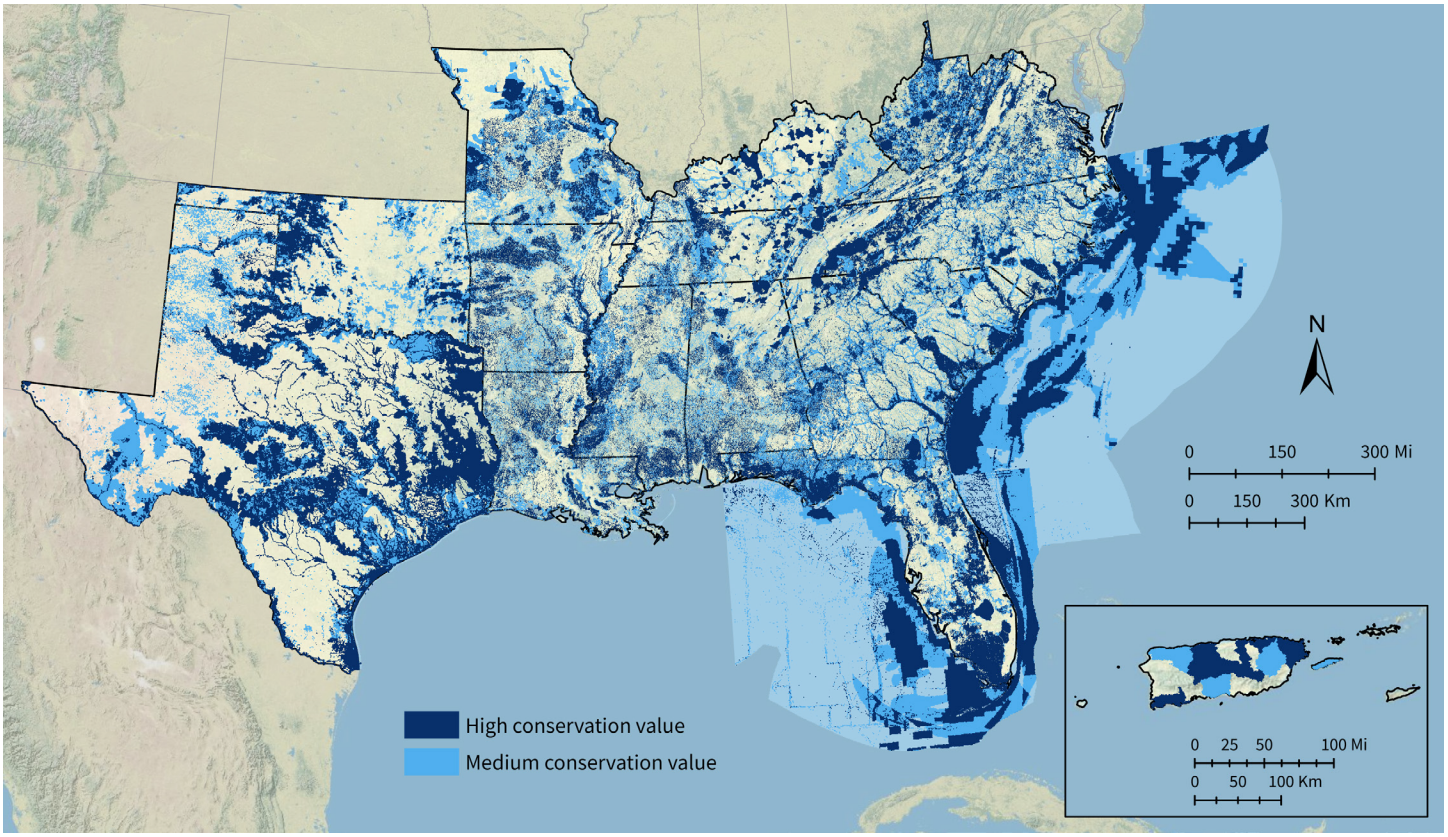
Accessing the data

There are two primary ways to access the Southeast Blueprint data. You can learn more about the Southeast Blueprint on its webpage.

- The Southeast Region Conservation Planning Atlas (CPA) is a free mapping portal designed to share regional spatial data. You can overlay multiple layers, create and export maps, and download data. In addition to the Southeast Conservation Blueprint, you'll find information about connectivity, protected lands, urban growth, and much more. The Southeast Blueprint 2020 Data Gallery contains the final Blueprint, a hubs and connectors layer, the analysis extent for each subregional Blueprint input, and several threats and future land use change layers.

- You can also download the Southeast Blueprint into your desktop GIS software. This is the best way to analyze the Blueprint and its associated layers. The Southeast Blueprint, hubs and corridors, and input and overlap areas are all available for download from the Southeast Blueprint 2020 Data Gallery on the CPA.

Introducing the Blueprint



Southeast Conservation Blueprint Version 2020.

Regardless of how you're using the Southeast Blueprint, you'll probably need to explain what it is.

Up against a word count? Here's the one-sentence version.

> *"The Southeast Conservation Blueprint stitches together multiple subregional plans into a consistent map of important areas for conservation and restoration across the region."*

Have a little more room? Here's a short way.

> *"The Southeast Conservation Blueprint is a living, spatial plan that identifies important areas for conservation and restoration across the Southeast and Caribbean. The Blueprint stitches together smaller subregional plans into one consistent map, incorporating the best available information about key species and ecosystems, as well as future threats."*

Plenty of space for detail? Here's a longer version.

> *"The Southeast Conservation Blueprint is the primary product of the Southeast Conservation Adaptation Strategy. It is a living, spatial plan that identifies important areas for conservation and restoration across the Southeast and Caribbean. The Blueprint stitches together smaller subregional plans into one consistent map, incorporating the best available information about key species, ecosystems, and future threats. More than 1,700 people from 500 different organizations have actively participated in its development so far."*

PART 1: STRENGTHENING PROPOSALS FOR FUNDING

If you're submitting a proposal to fund conservation action in a Southeast Blueprint priority area, you can use the Blueprint in many different ways to make your application more competitive.

Showing how your proposal fits into a larger strategy

Telling the partnership story

Part of the beauty of the Southeast Blueprint is that it represents a shared vision of important conservation and restoration areas. It incorporates the input of more than 1,700 people from 500 different organizations across the Southeast. And at least 225 people from over 90 different organizations have used, or are in the process of using it, to inform their work. Emphasizing the extensive partner involvement in the Blueprint, and broad adoption of the Blueprint, can help illustrate how your proposal fits into a shared strategy and aligns with other efforts. Here are some examples adapted from previous proposals:

> *"The Southeast Conservation Blueprint recognizes the conservation value of the proposed project area. Over 1,700 people from more than 500 different organizations have been actively involved in developing this Blueprint for achieving a connected network of lands and waters across the region. Acquisition and conservation of the site will be an important contribution to this shared approach to conservation throughout the Southeast."*

> *"Alignment of the parcel with high-value Blueprint areas exemplifies a complementary landscape-scale approach to conservation that links local actions with conservation outcomes that contribute at a broader geographic scale."*

Connecting to the overarching goal

The Southeast Conservation Adaptation Strategy has adopted an explicit overarching goal for conservation in the region: **a 10% or greater improvement in the health, function, and connectivity of Southeastern ecosystems by 2060.** This long-term goal is intended to be both ambitious and achievable. It is based on a synthesis of 12 regional and subregional ecosystem assessments (e.g., Everglades Report Card, State of the South Atlantic, Chesapeake Bay Report Card, State of the Birds, etc.).

The long-term goal is also accompanied by near-term goals to help track progress. SECAS is working to achieve a 1% improvement in the health, function, and connectivity of Southeastern ecosystems, as well as a corresponding 1% increase in conservation actions within the Southeast Blueprint, every four years. So, if you are proposing conservation within the Blueprint, your proposal directly advances this overarching goal. Contributing to this shared goal and measurement system can help communicate the importance of your proposal.

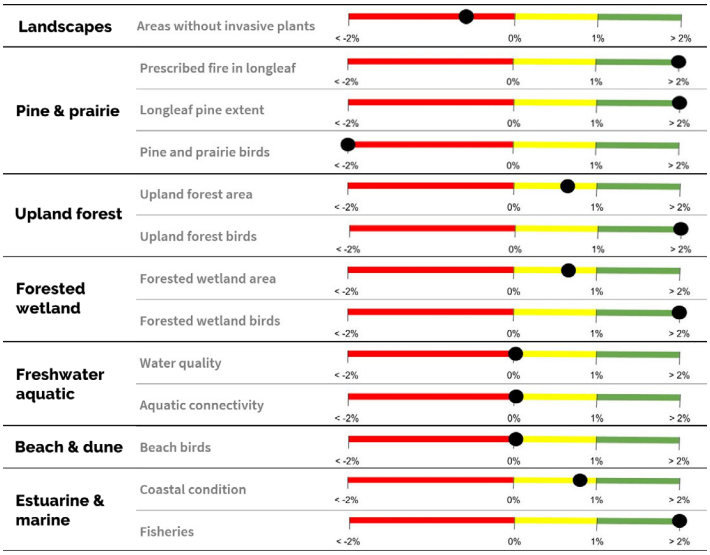
Here's some example language you could use:

> *"As part of Blueprint, acquiring this parcel advances the Southeast Conservation Adaptation Strategy's explicit, long-term goal for conservation in the region. The goal calls for a 10% or greater improvement in the health, function, and connectivity of Southeastern ecosystems by 2060. Achieving that goal will require meeting regular near-term metrics—every 4 years, a 1% improvement in ecosystem health, function, and connectivity, accompanied by a corresponding 1% increase in conservation actions within the Southeast Blueprint."*

> *"As the tract is a priority the Blueprint, protecting the parcel also advances the SECAS Goal: a 10% or greater improvement in the health, function, and connectivity of Southeastern ecosystems by 2060. Increasing conservation actions within the Blueprint is a key strategy for achieving the SECAS Goal."*

SECAS measures progress toward the goal using the annual *Recent Trends in Southeastern Ecosystems* report, which uses the most recent 3-6 years of available data from existing Southeast-wide monitoring program to track trends in various indicators. If a proposed conservation action would help combat a decline in a struggling indicator, that can also help strengthen your case.

> *"42% of the tract falls within the historic range of the Piedmont prairie ecosystem, suggesting the parcel is an excellent candidate for Piedmont prairie restoration. The 2019* Recent trends in Southeastern ecosystems *report identified grasslands outside of the longleaf range as one the ecosystems most off-track for meeting conservation goals shared by state, federal, and nonprofit organizations in the Southeast."*



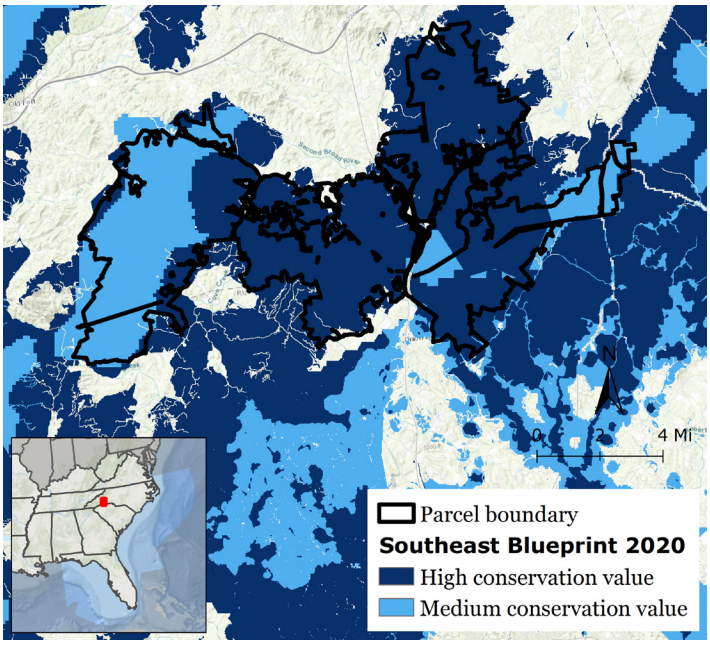
Estimated percent change in indicator over 4 years based on the most recently available data, from the 2020 Recent Trends in Southeastern Ecsosytems *report.*

Summarizing Blueprint priorities

For almost all user support requests, staff report how much of the area of interest is prioritized in the Blueprint.

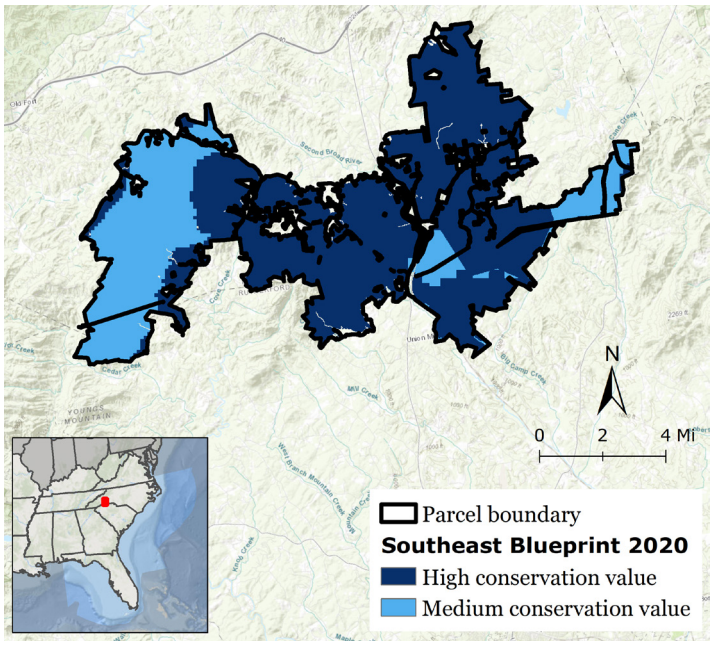
Look at the Blueprint within your proposal area to see how it scores. If you want a quick first impression and can easily find your area on a map, start with the Conservation Planning Atlas. If you want to see your parcel overlaid with the Blueprint priorities, or want to do some analysis, use your desktop GIS.

The table below provides a quick reminder of what's included in each Blueprint category.



Southeast Blueprint values within a parcel.

Color	Blueprint category	Definition
	High conservation value	These areas are the most important for ecosystem health, function, and connectivity.
	Medium conservation value	This category captures areas that might require more restoration, but are important for buffering high value areas and maintaining connectivity.



Blueprint priorities within a parcel.

Blueprint category	Pixel count	Percent of tract	Area (m²)
High conservation value	148,947	68.3%	134,052,300
Medium conservation value	62,747	28.8%	56,472,300
Not identified as high or medium	6,369	2.9%	5,732,100

To calculate the portion of your area in each Blueprint priority category, you'll want to analyze only those Blueprint pixels that fall within your parcel boundary. In your desktop GIS, you can view information about those pixels as a map or a table.

To calculate the percent of your tract in each category, divide the number of pixels in each category by the total number of pixels in your parcel. To report the actual area of your tract in each category, multiply the number of pixels by the area of each pixel. Each Southeast Blueprint pixel is 30 m x 30 m, with an area of 900 m^2. From m^2, you can use the appropriate conversion to calculate acres or hectares. These principles apply to all raster datasets—just be sure to check the pixel size.

We usually summarize the Blueprint priorities in one of the following ways:

1. Percent of the area in the Blueprint:

   "The entire tract is recognized in the Blueprint, with 93% rated as high conservation value."

   "60% of the targeted tract is prioritized in the Blueprint, with 40% rated as high conservation value and 20% as medium."

2. Total acres in the Blueprint:

   "A conservation easement on this parcel would protect nearly 20,000 acres rated as high or medium conservation value in the Blueprint."

   "The entire 3,000-acre tract is listed as high conservation value in the Southeast Conservation Blueprint."

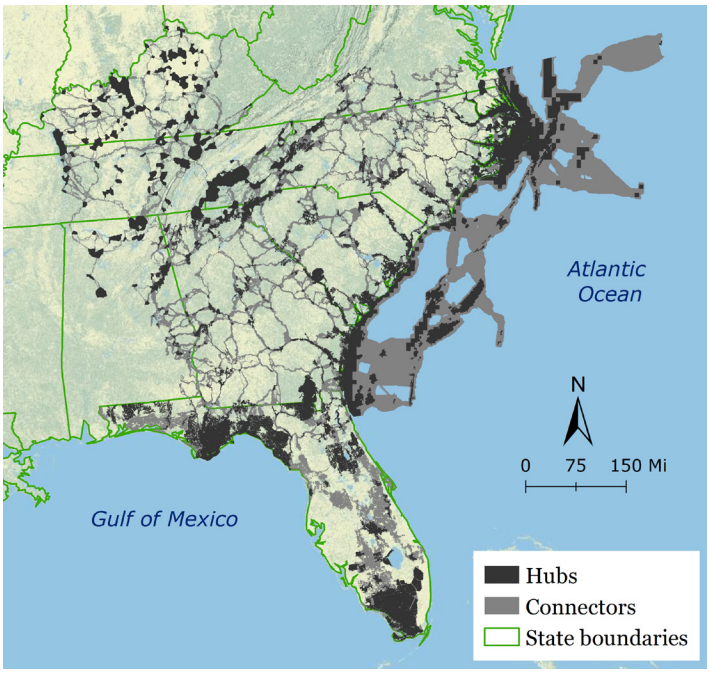
Taking a closer look at connectivity

The Southeast Blueprint also includes a connectivity layer that combines the hubs and connectors underlying the inputs from the Appalachian, South Atlantic, and Florida.

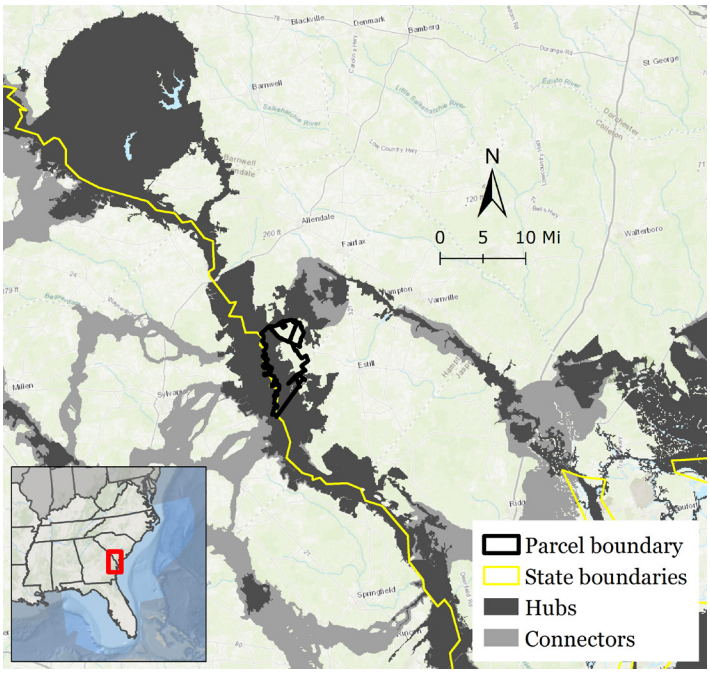
Analyzing hubs and connectors

Currently, this layer only covers the South Atlantic, Appalachian, and inland Florida portions of the Southeast Blueprint. The hubs class combines the South Atlantic hubs, Florida hubs, and Appalachian cores, while the connectors class combines the South Atlantic corridors, Florida connectors, and Appalachian connectors.

We hope to expand the integrated connectivity layer to other subregions of the Southeast Blueprint in the future. But, for now, if your area is located in the South Atlantic, Appalachian, or inland Florida, it's worth checking to see how it scores on connectivity. If it's part of a hub or a connector, this can help reinforce your area's importance for regional connectivity. Unlike the Blueprint, the hubs and connectors layer is a vector dataset.



Hubs and connectors within the 2020 Southeast Blueprint.



Hubs and connectors within a parcel.

Here's some example language adapted from previous proposals:

> *"Virtually the entire parcel is a hub for connectivity, making it a critical anchor point for creating an ecologically connected network of lands and waters across the Southeast region."*

> *"The parcel is immediately adjacent to a large hub identified in the Southeast Blueprint connectivity analysis. Protecting the tract will expand this hub and improve the connectivity of the region."*

> *"100% of the property is comprised of hubs and connectors in the connectivity analysis underlying the Southeast Blueprint. Protecting the parcel will make a significant contribution to connecting the lands and waters of the region."*

Diving into complementary data

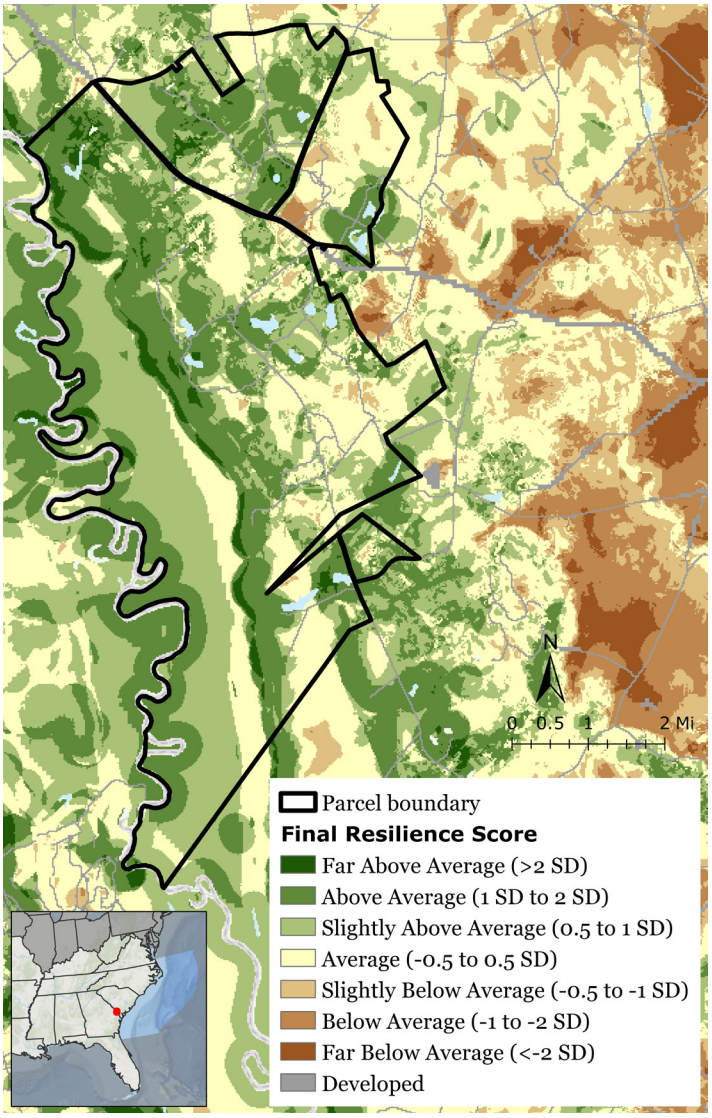
The Nature Conservancy's Resilient Land analysis

You can look at multiple components of The Nature Conservancy's (TNC) Resilient Land analysis to understand how your area contributes to climate resilience. Resilient Lands draws on the concept of "conserving nature's stage." Research shows that a site's intrinsic physical properties—like landform, bedrock, soil, and topography—largely drive how much biodiversity it supports. Conserving areas with the right geophysical characteristics can create "arenas for evolution" that allow species and communities to rearrange in response to climate change.

Final resilience

The final resilience score is the primary output of this dataset. It tells you how resilient your area is overall. Final resilience is a product of two factors: landscape diversity and local connectedness. Landscape diversity captures the number of microhabitats and climatic gradients available within a given area, based on metrics like landform variety, elevation range, and wetland density. Local connectedness refers to the number of barriers and degree of fragmentation within a landscape. So while landscape diversity is fixed, local connectedness can be influenced by management.

You can access the data on TNC's website. To analyze any of the 30 m raster layers, refer to the instructions on page 6 that describe the basics of raster analysis. Keep in mind that Resilient Lands does not address sea-level rise, so TNC recommends not using the data in the 0-3 ft elevation zone. They provide a coastal zone data layer to help you exclude data in that area.

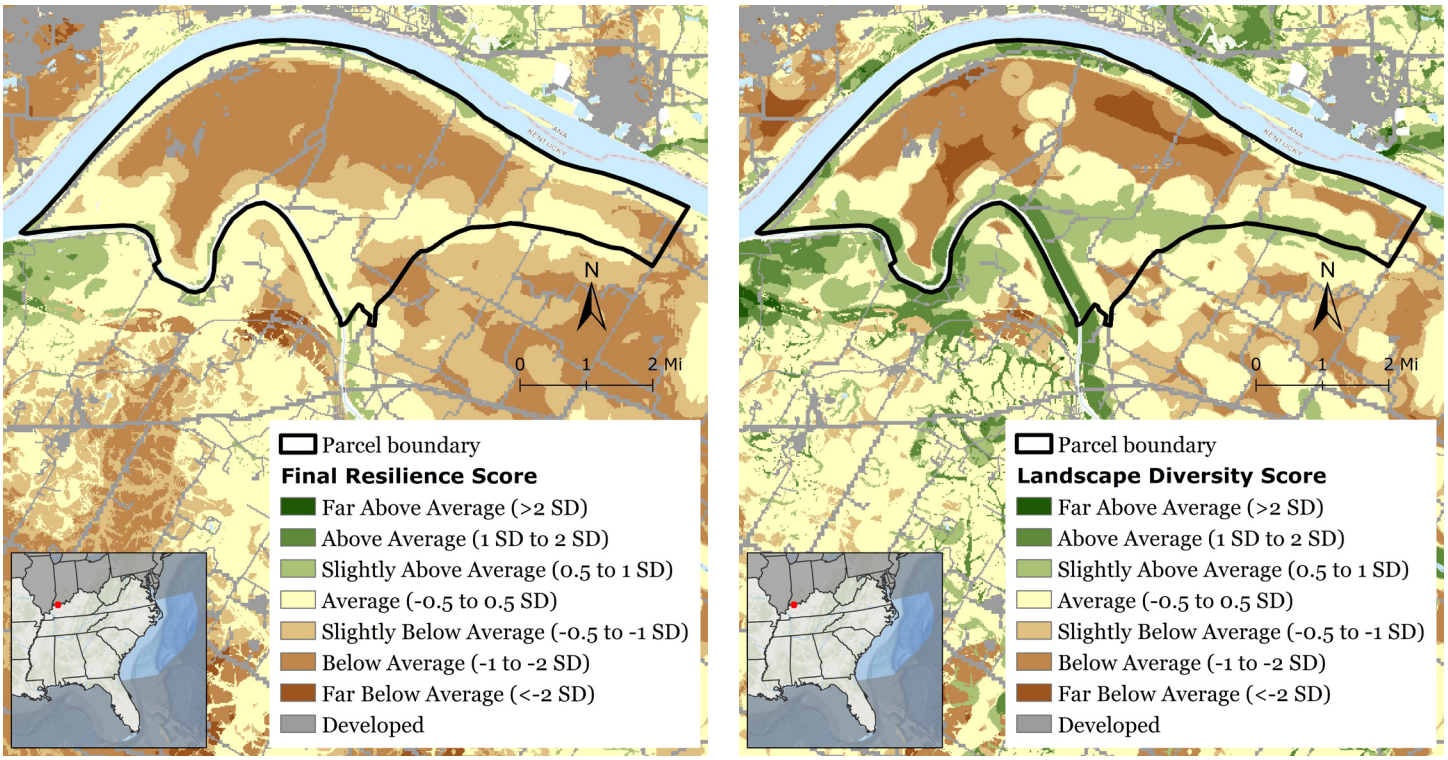


Final resilience score within a parcel.

Landscape diversity

Sometimes, even if a site does not have spectacularly high resilience, it may still have high landscape diversity. This suggests that the area's resilience is being negatively impacted by fragmentation, but that it still has the fundamental geophysical characteristics necessary to support high levels of biodiversity in a changing climate. The overall resilience of the site can often be increased by improving local connectedness through the types of conservation actions (e.g., restoration, protection) that the grant funding would support.

It's best to limit this argument to cases where restoration could realistically change the landcover, such as when a parcel contains agricultural lands or numerous roads. This can usually be determined from satellite imagery. If a tract is already comprised of intact natural habitat, it has likely already maximized its local connectedness, unless conservation action is also being proposed in the surrounding area.



Final resilience and landscape diversity scores within the same parcel.

Here's some example wording adapted from a previous Blueprint use case in Northern Kentucky:

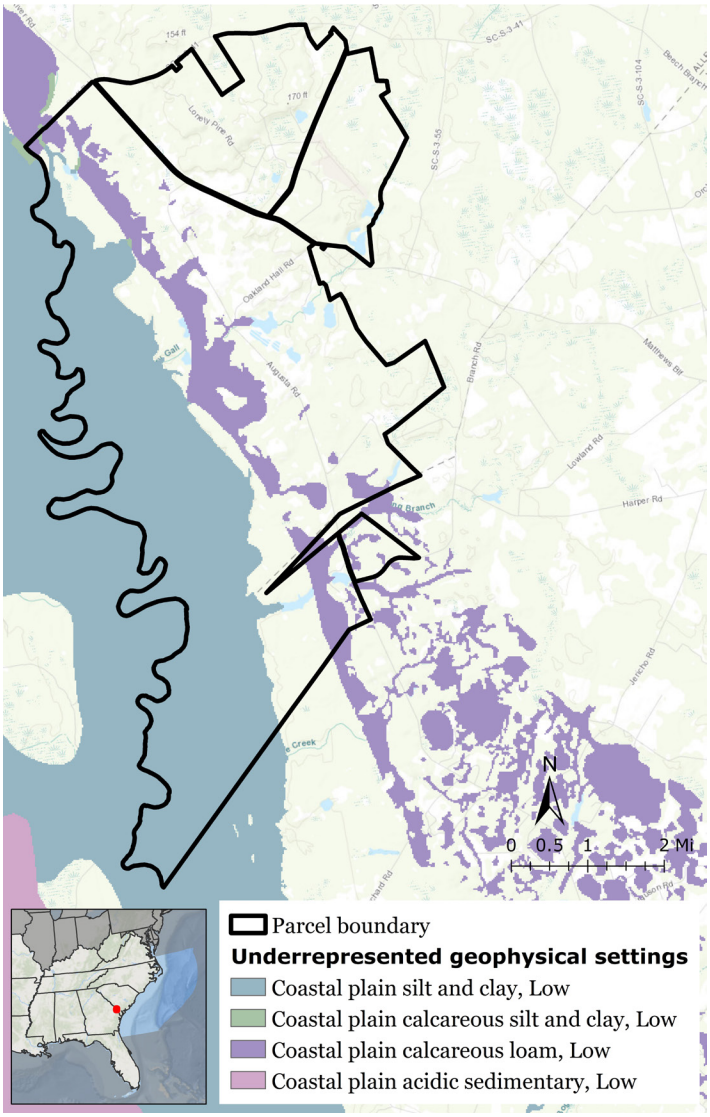
> *"The overall climate resilience of the parcel is not particularly high, according to The Nature Conservancy's Resilient Land analysis. Only 2% of the site scores above-average on resilience. However, the parcel scores much higher on landscape diversity, with 20% of the site scoring above-average on this metric. Overall resilience is a product of both a site's landscape diversity and its local connectedness to other natural areas. This suggests that, while the area's resilience is being negatively impacted by fragmentation, some of it has the fundamental geophysical characteristics necessary to support high levels of biodiversity. If this parcel is protected, management and restoration could increase the climate resilience of the area by improving connectedness."*

Underrepresented settings

Underrepresented settings is yet another component of Resilient Land that can tell you about the climate resilience of your area. Geophysical settings are distinct combinations of soil type, elevation, and landforms that support different ecological communities and species. They are a foundational element of Resilient Land because all scores are stratified by geophysical setting. In other words, an area's resilience, diversity, and connectedness scores are calculated relative to other examples of the same setting. This way, the analysis compares apples to apples, rather than grading flat coastal areas against steep mountain slopes. For example, while cove forests support more biodiversity than salt marshes, we need both to maximize our overall climate resilience.

The Open Space Institute analyzed the distribution of these settings to determine which ones were disproportionately underrepresented in the current portfolio of protected lands. If your area is comprised of one or more of these underrepresented settings, it helps fill an important gap by protecting or managing an example of that setting so it can continue to support biodiversity into the future.

Here's some example wording adapted from previous proposals:



Underrepresented geophysical settings within a parcel.

> *"Nearly 70% of the parcel is comprised of underrepresented geophysical settings. Geophysical settings are a key component of The Nature Conservancy's Resilient Land analysis. They are distinct combinations of soil type, elevation, and landform diversity that support different ecological communities and species. These specific settings were identified by the Open Space Institute as disproportionately underrepresented in current protected lands. By targeting an area predominantly composed of these underrepresented settings, the tract addresses this conservation gap and further contributes to the climate resilience of the area."*

> *"Protecting land with different soil types and at different elevations is critical for climate resilience. These geophysical settings are underrepresented in protected lands right now. 100% of the parcel is comprised of underrepresented geophysical settings."*

Using threat projections

Grant proposals often ask how threats like urban growth and sea-level rise are predicted to affect your area of interest. Determining the potential risk your area faces from these sorts of threats can tell a powerful story and emphasize the importance of taking conservation action.

A variety of different threat layers are available in the Southeast, and are easy to use in combination with the Blueprint.

Urban growth

Staff recommend using the SLEUTH urban growth model, developed by the Southeast Climate Science Center. SLEUTH maps the probability of urbanization across the Southeast by looking at the pattern of road growth that occurred from 2000-2009 and predicting what the future would look like if those trends continued. You can access the SLEUTH data on the Southeast CPA. Refer to page 6 for basic instructions on raster analysis. SLEUTH has a 60 m x 60 m pixel size.

We typically report on urban growth projections in one of two ways:

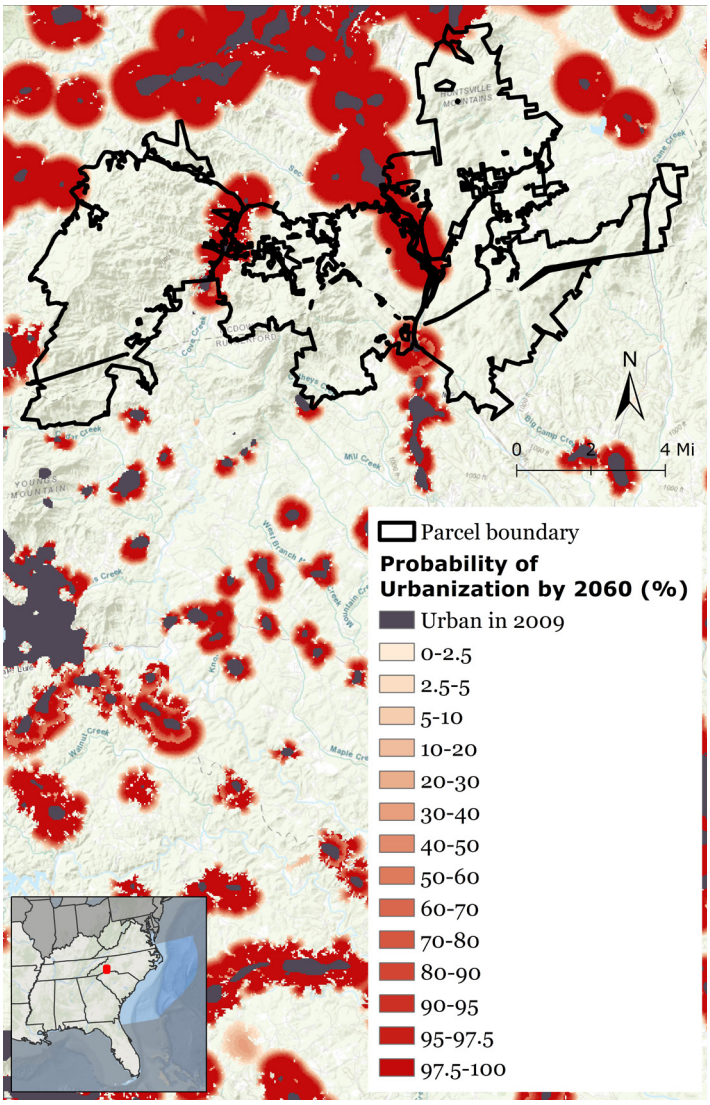
1. The percent change of the urban footprint from the present day to 2060. For example:

   "This parcel's urban footprint is predicted to more than double by 2060, an increase of 125%."

2. The percent of the area that is predicted to be urban by the year 2060. For example:

   "30% of this parcel is predicted to be urban by the year 2060, up from 5% back in 2009."

Or, you can combine those approaches to report on both, when you have the space:



Probability of urbanization within a parcel.

"According to the SLEUTH urban growth model, urbanization does not threaten this tract as much as it does other parts of the Southeast. Only 9% of the parcel is predicted to be urban by 2060. However, this projection represents a massive increase of more than 4,000% in the urban footprint from 2009 to 2060. Conserving the tract will avoid any losses to development."

Of course, you don't have to use 2060 as your benchmark. SLEUTH provides urbanization projections for each decade from 2020 to 2100. We like 2060 because it's long-term, but not so long-term that people can't wrap their minds around it. Plus, it matches the timeline for the Southeast Conservation Adaptation Strategy's overarching goal: a 10% increase in ecosystem health, function, and connectivity by 2060.

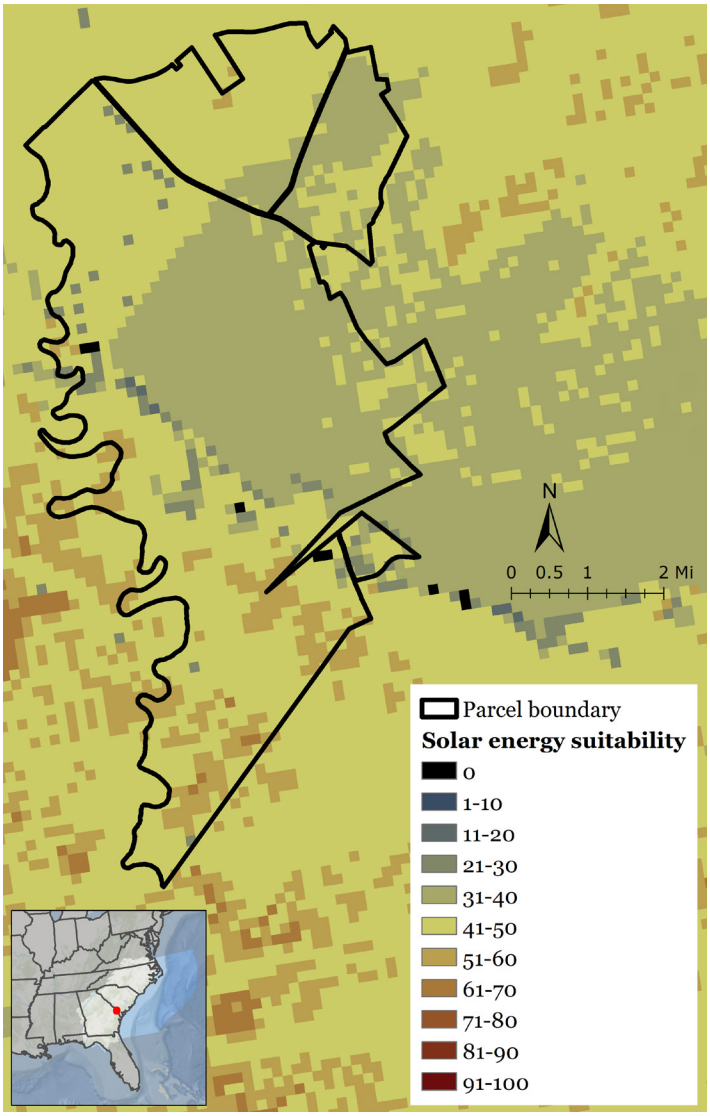
If your area is likely to experience a lot of urbanization, that can make a case for the urgency of conservation action (i.e., if we don't act now, this opportunity could disappear). It can also indicate that conservation action might provide recreational opportunities to future urban residents. On the other hand, if your area is not predicted to urbanize, that's one less thing to worry about. Plus, there are benefits to working outside of urban areas (e.g., it's easier to do prescribed burning). Either way, it's helpful to understand the urban growth projections for your area so you can weave them into your narrative.

Solar energy suitability

A solar energy suitability layer is available as one of the threats and land-use change layers in the Southeast Blueprint Version 2020 Data Gallery on the Southeast CPA. This layer depicts the output of the Energy Zones Mapping Tool conventional utility-scale photovoltaic (PV) model with default parameters. It predicts suitability for solar energy development across the entire Southeast region based on characteristics like solar insolation, energy, slope, land cover, population density, and environmental screening factors.

Here is some example wording you could use:

> *"According to the Energy Zones Mapping Tool, the solar suitability of this parcel ranges from 0-73 on a scale of 0-100. 90% of the tract scores at or above 50 for solar suitability. This suggests the majority of the parcel is at least somewhat suitable for utility-scale photovoltaic energy development. Conserving the tract will avoid any potential negative ecosystem impacts due to solar energy development."*



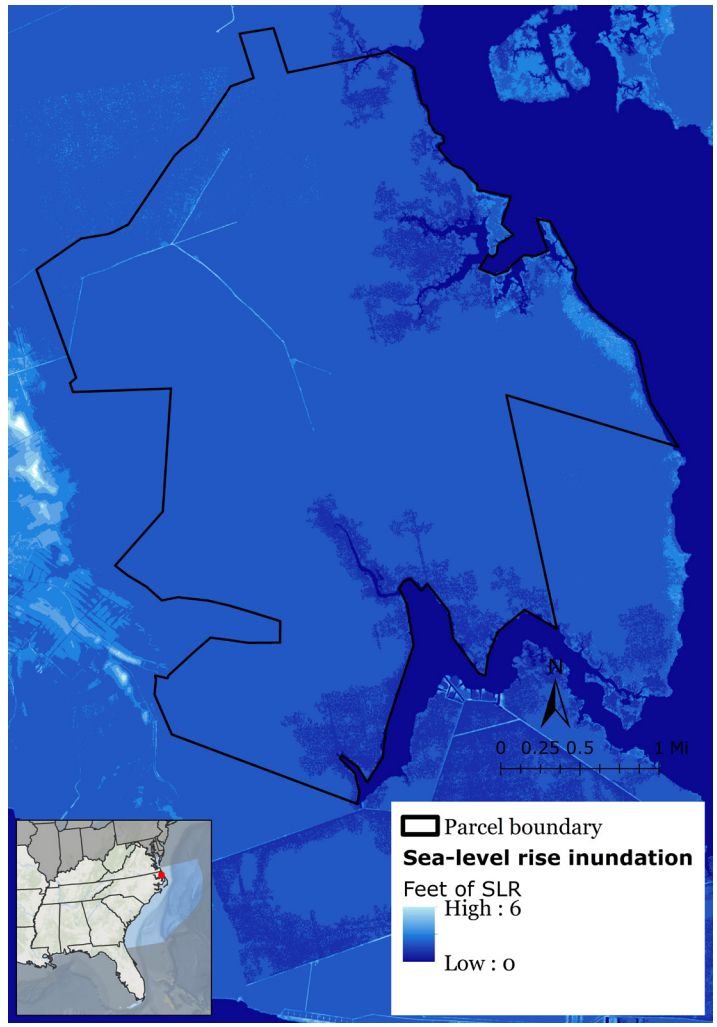
Solar energy suitability within a parcel.

Sea-level rise

To examine the projected effects of sea-level rise (SLR) on your area, staff recommend using NOAA's sea-level rise inundation data. These models illustrate potential flooding from future SLR, ranging from current mean higher high water (i.e., current average highest daily tide) to 6 feet of SLR. All the projections are based on the best available elevation data. These scenarios are not linked to time.

You can view a range of inundation scenarios and their associated confidence levels in the NOAA sea-level rise viewer. This is the best place to start to familiarize yourself with this data. If you want to overlay these layers with other datasets on the Conservation Planning Atlas, you can access each inundation scenario (from current mean higher high water to 6 ft of SLR) individually in the Southeast Blueprint 2020 Data Gallery. You can also download the data from NOAA's website to bring it into your desktop GIS.

We typically add up all scenarios cumulatively to compute the percentage of the area that is projected to be impacted by inundation with up to 6 feet of SLR. The area likely impacted by inundation at the 6 ft scenario also includes the areas projected to be impacted by inundation at current mean higher high water, and at the 1 ft, 2 ft, 3 ft, 4 ft, and 5 ft scenarios. You're also welcome to choose another scenario (don't forget to add in the areas impacted at the scenarios below it) or report a range.



Projected inundation within a parcel with 0-6 feet of sea-level rise.

If your area is predicted to be impacted by inundation, you can highlight how it will assist with wetland migration, buying time and space for coastal ecosystems to move inland. If it's not, you can emphasize how it will be an enduring investment that offsets the losses of other conserved lands that are being impacted by SLR.

Here is some example wording from previous proposals:

> *"This parcel is located in a transition zone between estuarine marsh and forested wetlands. 98% of the tract is likely to be impacted by inundation with just 2 feet of sea-level rise. This suggests protecting this parcel will help allow marshes space to migrate, facilitating ecosystem transition in the face of sea-level rise."*

> *"This tract is not predicted to be impacted by inundation, even up to 6 ft of sea-level rise. Protecting this parcel is a climate-resilient investment that will help offset the losses of other coastal protected lands that will be inundated due to sea-level rise."*

Advanced applications

Depending on the user request and the proposal requirements, sometimes staff will do extra analysis above and beyond the usual examination of the Blueprint, complementary data layers, and threats. These advanced applications are currently too complicated for us to provide the same step-by-step detail of the previous section. If you're interested, reach out to staff for user support (don't forget, it's free!). Here are a few examples of the other types of things we can help you do.

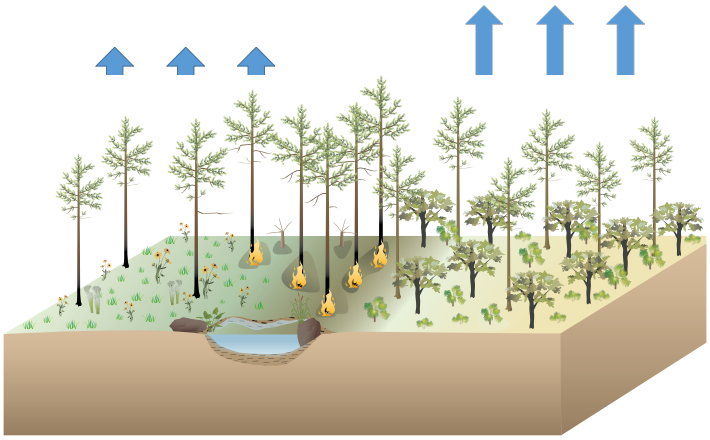
Predicting on-the-ground impacts of conservation action

Using watershed metrics

Water quantity

The South Atlantic Blueprint played a major role in bringing in $3 million over 3 years from the Department of Interior Wildland Fire Resilient Landscapes program. This funding supported prescribed burning in priority longleaf pine focus areas across the South Atlantic. Reporting on the impacts of the prescribed burns—using ecosystem metrics, more than just acres burned—was a key requirement of the grant, both in competing for the funding initially and completing annual progress updates.

As part of this reporting, staff investigated how prescribed fire in the longleaf ecosystem can increase water availability. Regular fire reduces the leaf area of understory plants, which in turn reduces water loss to evapotranspiration. While we don't yet have a clear grasp of where that extra water goes (e.g., into the soil, aquifer recharge, surface water, etc.), we can estimate the quantity of water saved. If your proposal involves prescribed burning in longleaf, including information about increased water yield can help communicate an important ecosystem services benefit.

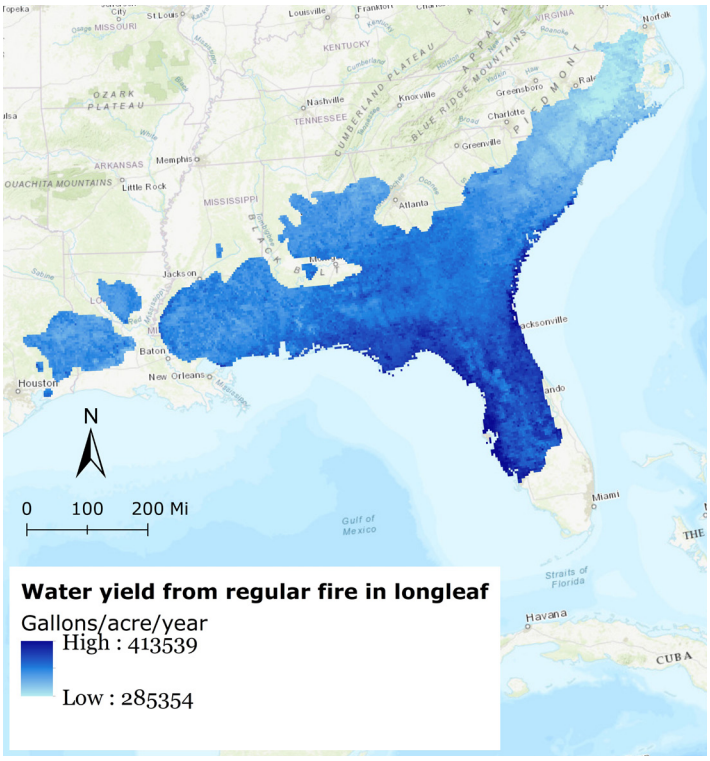


Prescribed burning in longleaf reduces water loss to evapotranspiration by reducing leaf area.

We used the U.S. Forest Service's Water Supply Stress Index (WaSSI) model and estimates of change in leaf area index from regular fire to predict increases in water yield. The GIS layer covers the whole longleaf range and will soon be available on the CPA. In the meantime, reach out to user support staff for help.

This layer is still in Version 1.0. While the mechanics of water yield savings are well-demonstrated in the scientific literature, we're using longleaf leaf area change estimates from a specific area of Florida and extrapolating those to the broader Southeast. The accuracy of those leaf area change estimates is this data's biggest limitation (if you can share paired leaf area measurements from burned and unburned sites in your area, please let staff know!).

Here's an example from one of the Resilient Landscapes reports, where we used units that people can more easily understand (i.e., gallons):



Data layer showing increased water yield in longleaf from prescribed fire.

> *"For the first time, we were able to predict increases in water yield due to prescribed fires. Water and drought are important issues in the Southeast as growing urban communities and agricultural producers are increasingly competing for a limited water supply. Prescribed fire has great potential as a new tool to insure sufficient water availability for humans and ecosystems in the region. Increased water yield also helps make landscapes more resilient to wildfire, drought, and other disturbances. Predictions using a subset of fires in the South Atlantic suggest that regular prescribed fire could be increasing overall water yield in the summer by more than 500 million gallons per day."*

Water quality

We can predict the impacts of conservation action on water quality as well as quantity. Staff have helped with this for proposals in the Big Bend region of Florida, in particular. Demonstrating a project's link to water going into the Gulf of Mexico is important to demonstrate eligibility for RESTORE Act funds. If a parcel in a Gulf watershed is proposed for protection, we can explore a "what if" scenario, showing what negative impacts might result from development on the property if it is not conserved. In other words, we can quantify the avoided cost of those negative consequences on water quality and quantity.

Aerial view of the parcel.

To do this, we look at urban growth projections to determine what portion of the tract is likely to urbanize in the absence of conservation action. Then, we use water models like the Soil and Water Assessment Tool (SWAT) to predict what watershed impacts would result from conversion to development. We're still working to make this analysis faster and easier so anyone can do it themselves, but for now, please ask for staff help with this if you're interested.

Here's an example scenario from a previous proposal:

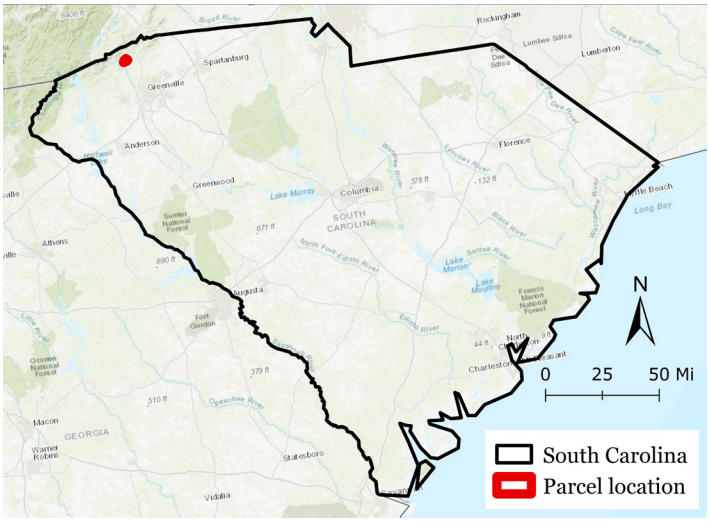
> **A large parcel is being considered for protection. 3,500 acres of uplands on the tract are likely to urbanize. What if those 3,500 acres convert to medium density urban?**

- *Average annual nitrogen in the Ochlochnee basin would increase by 1%*
- *Average nitrogen stress days/year would increase by 0.5*
- *Aquifer recharge in the Ochlochnee basin would decrease by 1.66 mm/year*

Case study: Forest Legacy grant

The SC Department of Natural Resources (DNR) requested support for a Forest Legacy grant proposal. They were applying for funding to protect a parcel in Greenville County and wanted to show how that parcel fit into the Blueprint. This parcel was located in a portion of upstate South Carolina outside the South Atlantic Blueprint geography, so we analyzed it using the Southeast Blueprint because it provides full statewide coverage. In this case, we shared text and maps with the SC DNR employee submitting the grant, providing information to be incorporated into the proposal as appropriate.

We started off by providing introductory text about the Southeast Blueprint.



For geographic context, location of parcel in South Carolina.

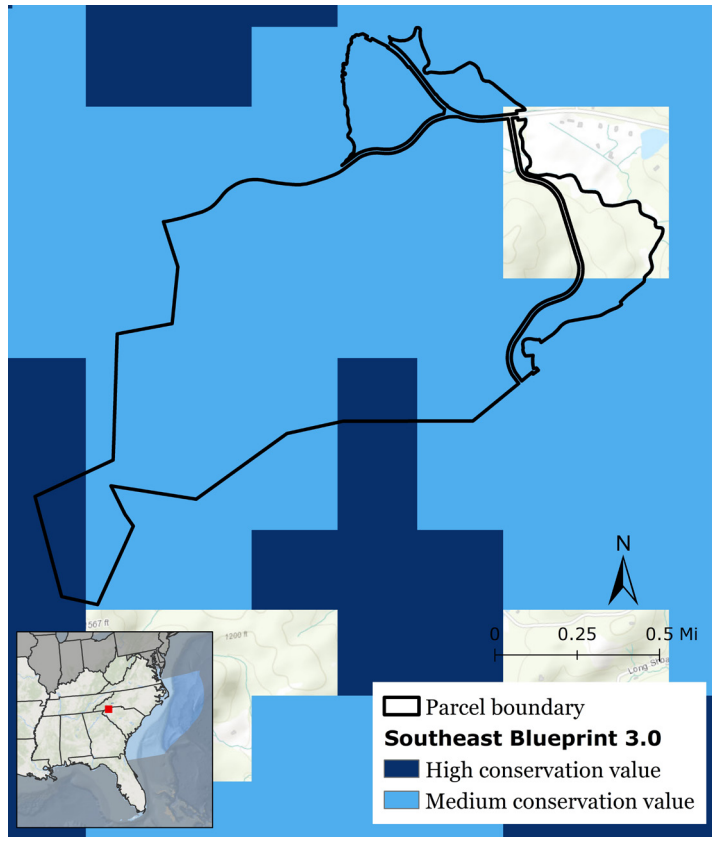
> *"The Southeast Conservation Blueprint is a living, spatial plan that identifies important areas for conservation and restoration across the Southeast and Caribbean. The Blueprint stitches together smaller subregional plans into one consistent map, incorporating the best available information about key species and habitats, as well as future threats.*
>
> *The Southeast Blueprint is the primary product of the Southeast Conservation Adaptation Strategy, or SECAS. Through SECAS, diverse partners are working together to design and achieve a connected network of lands and waters that supports thriving fish and wildlife populations and improved quality of life for people across the southeastern United States and the Caribbean. SECAS was initiated by states of the Southeastern Association of Fish & Wildlife Agencies and the federal Southeast Natural Resource Leaders Group."*

Next, we overlaid Southeast Blueprint 3.0 with the parcel to see how it scored. 90% of the parcel is prioritized in the Blueprint. The exact numbers appear in this table.

Blueprint category	Percent of parcel
High conservation value	6.7%
Medium conservation value	83.3%

We provided some text summarizing the parcel's importance in the Blueprint and explaining what the Blueprint categories mean.

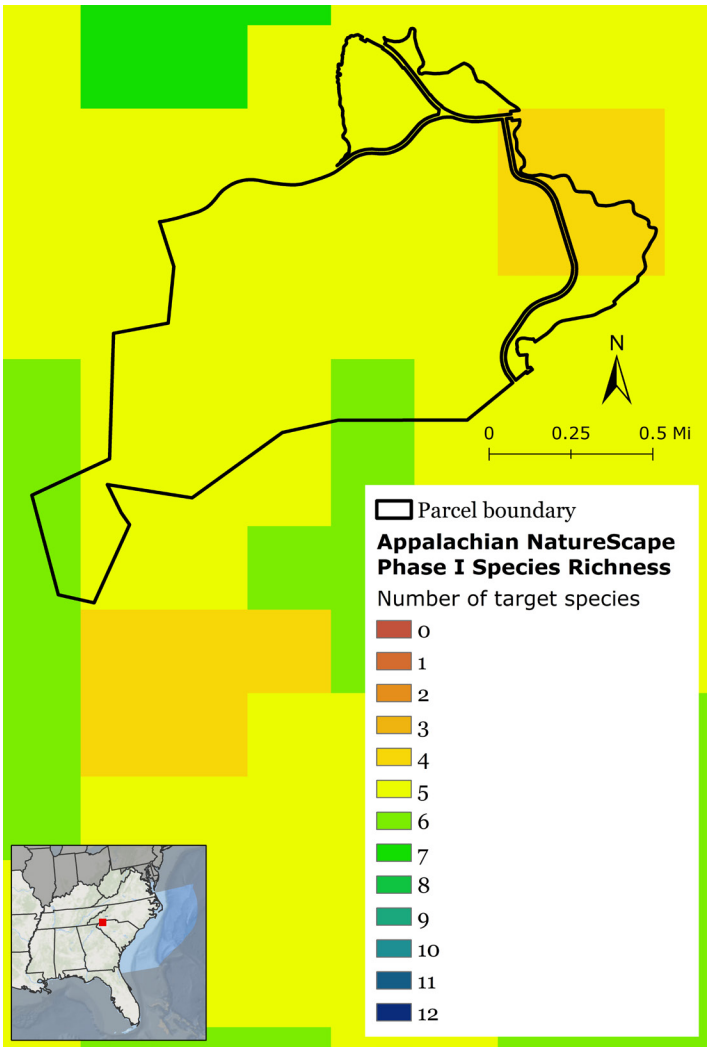
> *"90% of the tract is captured by the Southeast Blueprint. In the Greenville, SC area, the Southeast Blueprint is driven by [Appalachian NatureScape](#) data. About 7% of the tract falls into the high conservation value category. High value areas are the most important for ecosystem health and function. Another 83% of the parcel is categorized as medium priority. Medium areas may require more restoration, but are still very important for buffering high value areas and maintaining connectivity."*



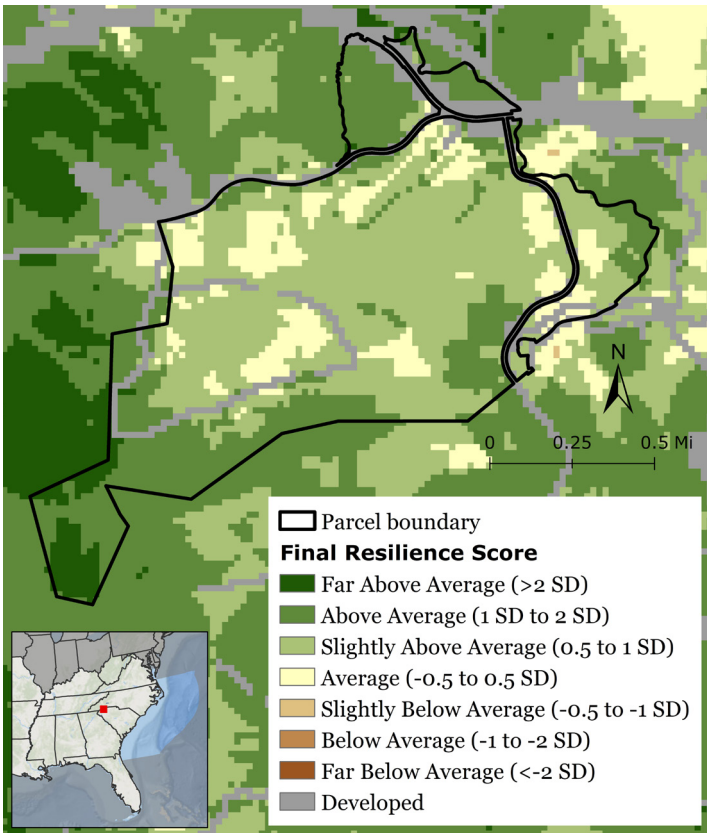
Southeast Blueprint 3.0 priorities within the parcel.

Since the parcel is entirely within the Appalachian subregion, we next looked at the underlying data from the Appalachian NatureScape design driving those Blueprint priorities. Its value in the Southeast Blueprint stemmed from its importance for biodiversity.

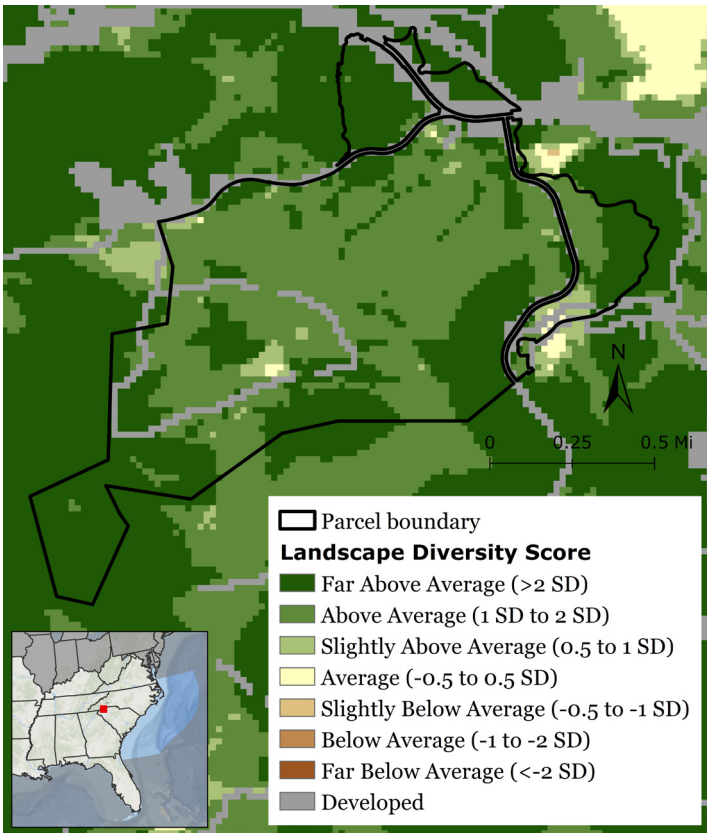
> *"Within this particular parcel, the Southeast Blueprint values are based on Phase I Species Richness Data from the Appalachian NatureScape design. This biodiversity dataset suggests the parcel supports between 4-6 Appalachian target species. This parcel also includes 3 important ecosystem types which are conservation targets in the NatureScape design: Forested Wetlands, Lowland Mature Forest, and Typic Foothill Cove Forests."*



Appalachian NatureScape Phase I species richness within the parcel.



Final resilience score within the parcel.



Landscape diversity score within the parcel.

We looked at the biodiversity resilience in the face of climate change using The Nature Conservancy's Resilient Land. We started with the final resilience score.

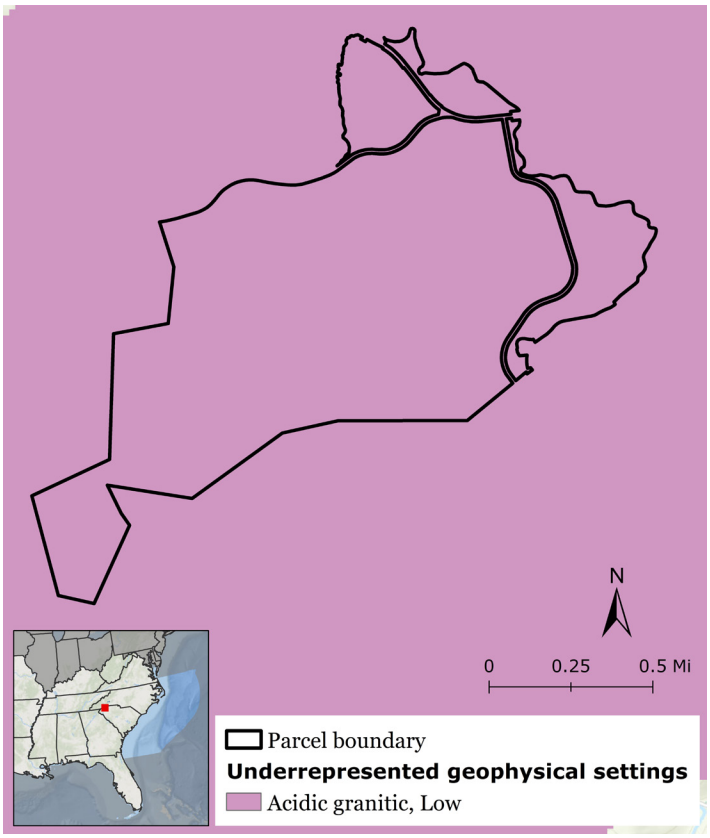
> *"79% of the tract scores above average as a climate-resilient biodiversity hotspot based on The Nature Conservancy's Resilient Land analysis. This analysis identifies mostly natural, high-diversity areas that support high levels of biodiversity today, and are likely to continue to support biodiversity in the face of climate change. Another 13% of the parcel scores average on climate resilience, while the remaining 7% is developed and therefore not rated. This suggests the parcel is a sound investment that will continue to provide conservation value into a changing future."*

Next, we looked at landscape diversity, the component of the final resilience score that describes a site's fundamental geophysical characteristics.

> *"If protected, restoration and management efforts could increase the parcel's resilience even further by improving local connectivity. While the overall climate resilience of the parcel is already high, it scores even higher on landscape diversity (again, a product of The Nature Conservancy's Resilient Land analysis). About 92% of the tract scores above average on landscape diversity, with the remaining 8% still classified as developed. Overall resilience is a product of both a site's landscape diversity and its local connectedness to other natural areas. This suggests that the parcel's overall resilience is being limited slightly by fragmentation, but those fragmented areas still have the fundamental geophysical characteristics necessary to support high levels of biodiversity. While a site's baseline landscape diversity is fixed, connectedness can be influenced by management. Improving the connectedness of the parcel would further increase its climate resilience."*

Before leaving the Resilient Land analysis, we looked at one last component—underrepresented settings.

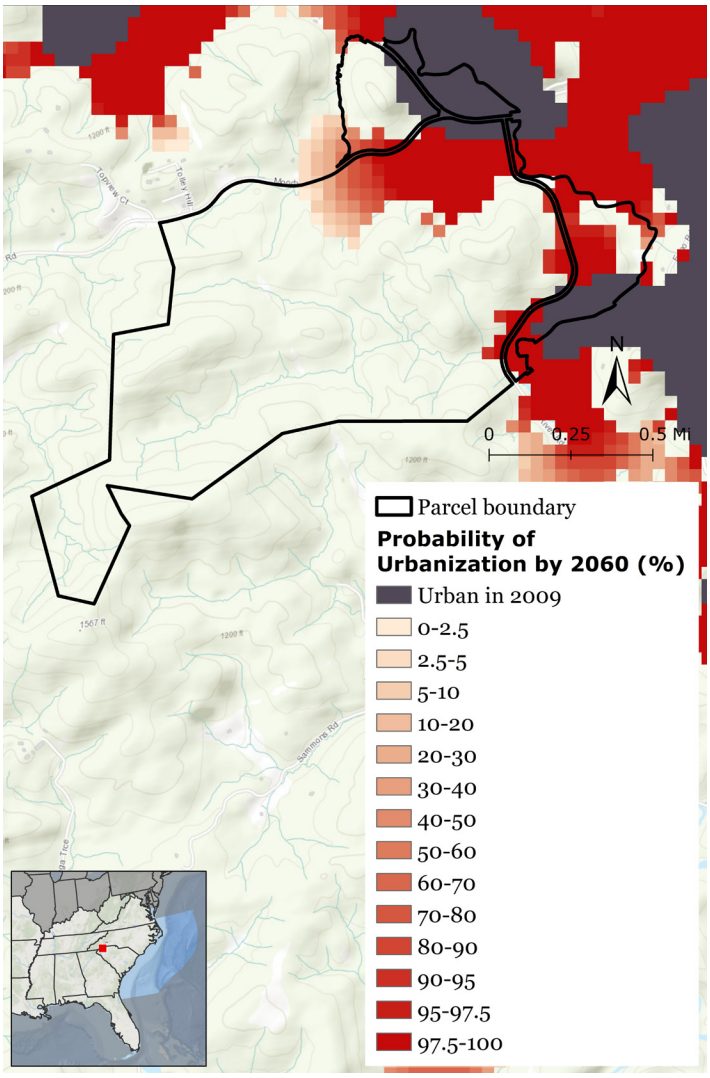
> *"The entire tract is comprised of the Low Acidic Granitic geophysical setting. Geophysical settings (another key component of The Nature Conservancy's Resilient Land analysis) are distinct combinations of soil type, elevation, and landforms that support different ecological communities and species. Low Acidic Granitic is one of the specific settings identified by the Open Space Institute as disproportionately underrepresented in current protected lands. By targeting an area entirely comprised of an underrepresented setting, the parcel helps fill this conservation gap and further contributes to the climate resilience of the area."*



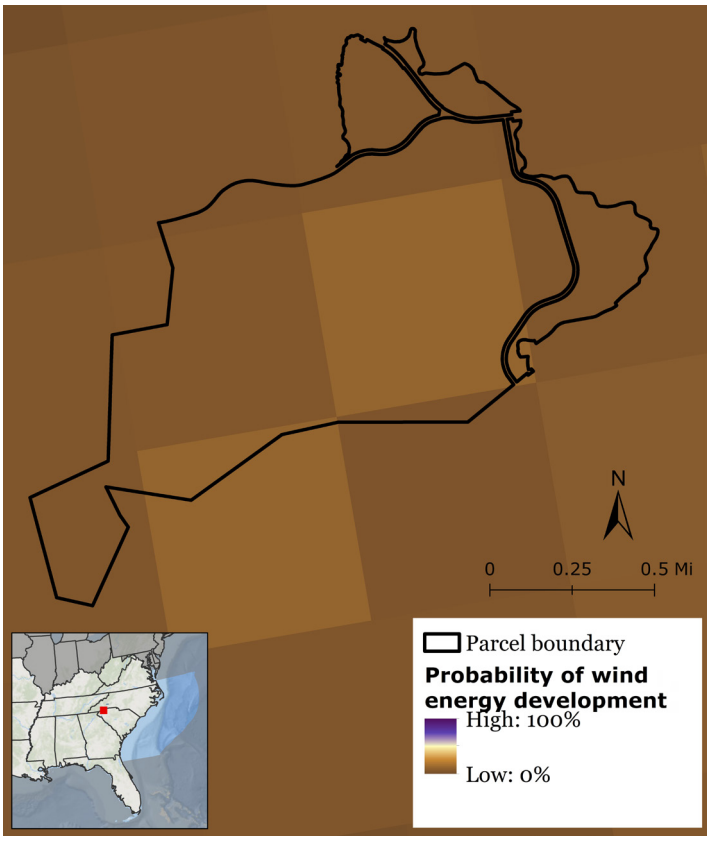
Underrepresented geophysical settings within the parcel.

We next examined the threat of urban growth, using the SLEUTH model as described earlier in this guide.

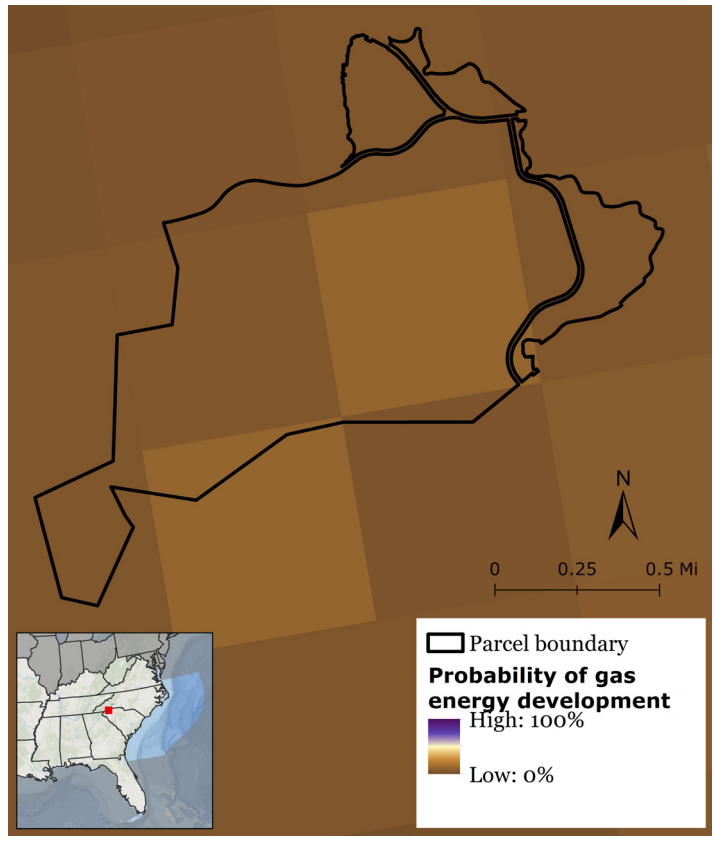
> *"The SLEUTH urban growth model suggests that urbanization is likely to increase dramatically by 2060 in the western and northern portions of the tract. 20% of the parcel is predicted to be urban by the year 2060, an increase of 189% over the urban footprint in 2009. In other words, the amount of urban area in the parcel may nearly triple by 2060 if it is not protected. The threat of urban growth reinforces the urgency of taking conservation action to secure this tract. Depending on the public access provided, the parcel's proximity to current development also suggests it could provide an important opportunity for neighboring urban residents to connect with nature."*



Probability of urbanization by 2060 within the parcel.



Probability of wind energy development within the parcel.



Probability of gas energy development within the parcel.

Again, because this parcel was entirely contained within the Appalachian subregion, we brought in the Appalachian LCC Energy Forecast Model. This threat dataset examines the potential for various forms of energy development within the Appalachian subregion. We started with wind:

> *"The tract is at low risk of wind energy development, according to the The Appalachian LCC Energy Forecast Model. The probability of wind energy development within the proposed acquisition boundary ranges from 5%-10%. Nevertheless, conserving the area will avoid the potential for negative ecosystem impacts due to energy development."*

Then we looked at gas:

> *"The tract is at low risk of gas energy development, according to the The Appalachian LCC Energy Forecast Model. The probability of wind energy development within the proposed acquisition boundary ranges from 5%-10%. Nevertheless, conserving the area will avoid the potential for negative ecosystem impacts due to energy development."*

Since all this analysis was fairly technical, we also provided a higher-level executive summary to emphasize the key themes of our analysis:

> *"Southeast Blueprint: The Southeast Blueprint recognizes the conservation value of the tract. The vast majority of the parcel is prioritized in the Blueprint. In particular, this tract makes important contributions to biodiversity. It includes areas predicted to support several target species for the Appalachian region.*
>
> *Resilience: The site already has very high climate resilience, making it a sound investment in the face of climate change. If protected, restoration and management efforts could increase its resilience even further by improving local connectivity. The tract is also located in an underrepresented geophysical setting that is critical for climate resilience but not adequately represented in the current portfolio of protected lands, so acquiring this parcel would fill an important gap.*
>
> *Urbanization: If this parcel is not protected, significant urbanization is likely to occur by 2060, making it an excellent candidate for urgent conservation action. Depending on the public access provided, the parcel's proximity to current development suggests it could provide an important opportunity for urban residents to connect with nature.*
>
> *Energy development: The site is not particularly threatened by either wind or gas energy development."*

And that's all the information we provided to support this proposal!

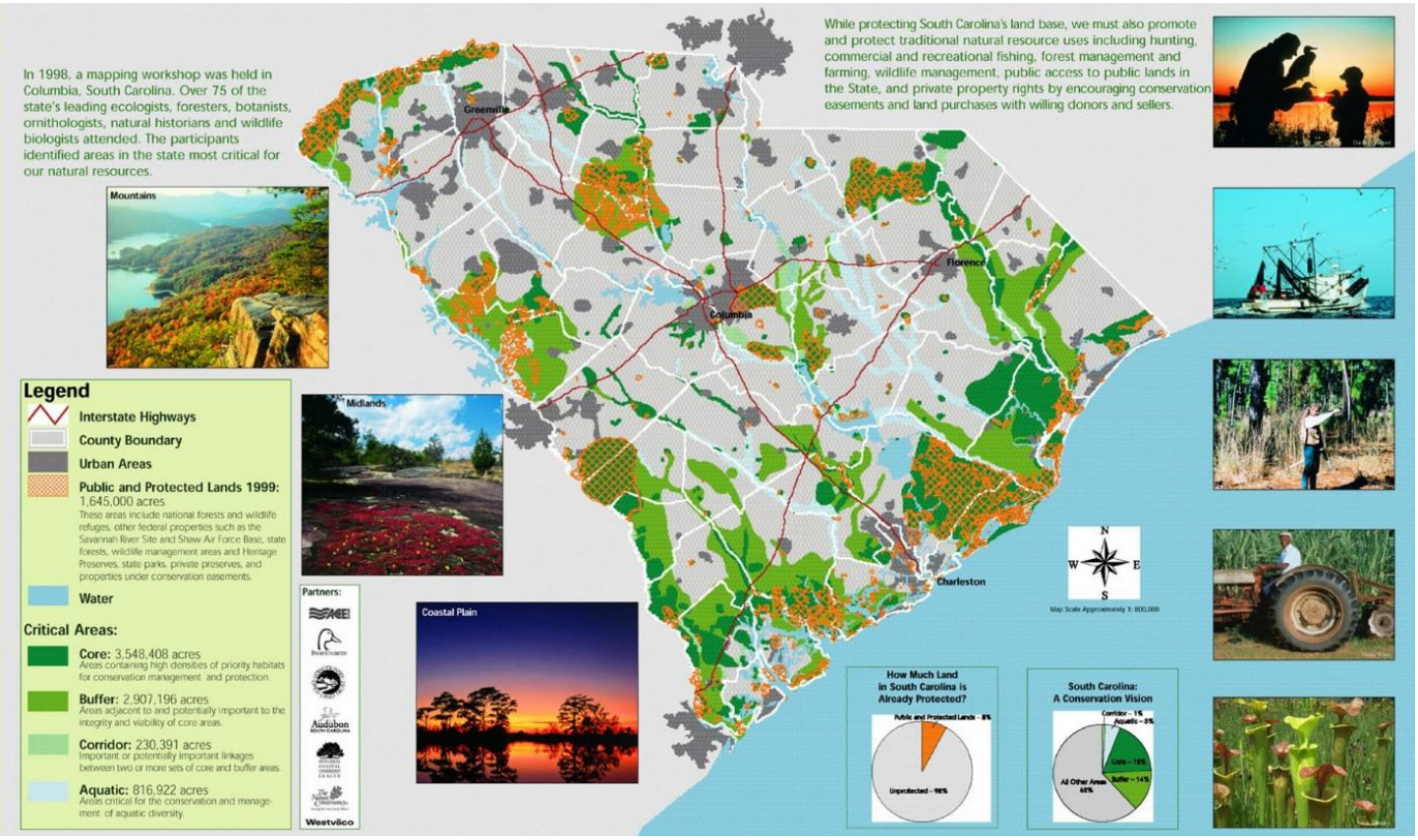
PART 2: DEPICTING ORGANIZATIONAL PRIORITIES

If your organization is looking for guidance on the best places to work, the Blueprint can help you prioritize and identify focus areas. The best approach will vary based on your organization's objectives. It could be as simple as simply depicting the Blueprint priorities within your area of interest. Or, you could undertake a more complex process of "filtering down" the Blueprint to identify a subset of Blueprint priorities that align with you organization unique mission. Staff can help you find your piece of the Blueprint, whether you want to look at the Blueprint within a particular habitat type, within a certain distance of a protected area, with some minimum patch size, or whatever other characteristic you're interested in.

Given all this variation, we can't really provide a universal template of instructions to follow, like we did in Part 1. Instead, let's look at some case studies to illustrate some of the ways different organizations have used the Blueprint to identify priorities. If any of this inspires you, just reach out to staff for help.

Case study: The 2018 SC Conservation Vision

In 1998, conservationists in South Carolina developed a statewide Conservation Vision. Foresters, ecologists, biologists and conservation scientists came together at a mapping workshop to prioritize the state's natural habitats and resources based on their importance to preserving wildlife, forests, waters and ways of life.



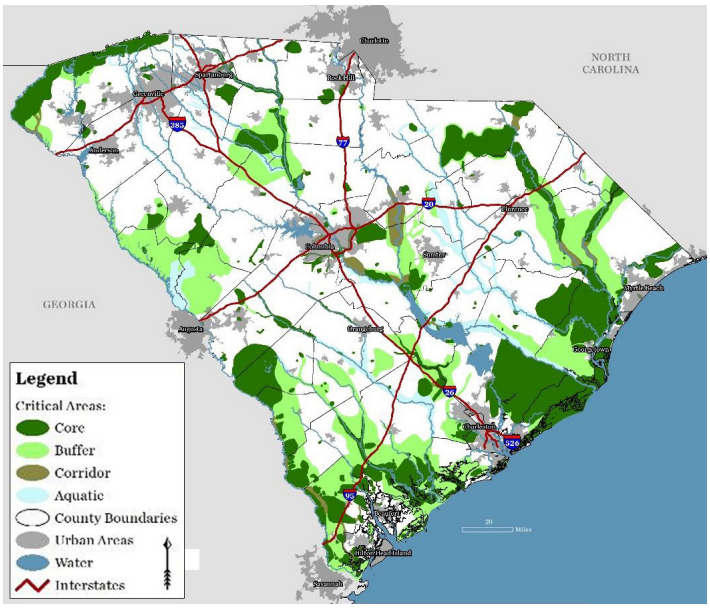
The 1998 SC Conservation Vision.

Twenty years later, the Nature Conservancy (TNC) decided to update the Conservation Vision to incorporate advances in conservation planning, threat projections, and connectivity modeling. The timing of this update also coincided with the reauthorization of the SC Conservation Bank, a major funding source from the state legislature. An early draft of the new vision was used to help support the reauthorization, which was finalized in May 2018. Check out a story map on TNC's website to learn more about their update to the vision.

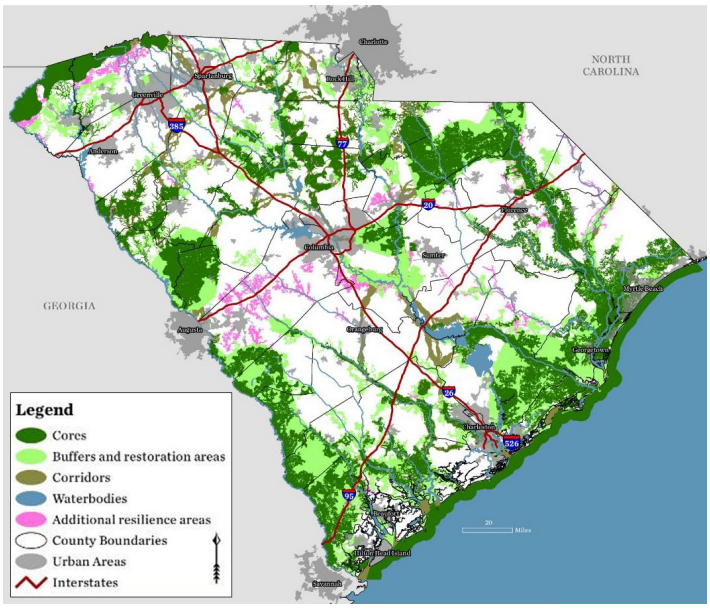
SC TNC reached out to Blueprint staff for help using the Blueprint to update the vision. Because the South Atlantic Blueprint doesn't cover all of South Carolina, we combined the South Atlantic Blueprint with the Appalachian NatureScape design. Like the 1998 version, TNC wanted the updated vision to include core areas, buffers, and corridors. South Atlantic Blueprint staff worked with TNC to pare down the Blueprint to focus on those elements. Essentially, they wanted to depict big, high-level focus-areas within the Blueprint. This meant removing some of the smaller speckles.

The cores in the vision are comprised of contiguous 5,000-acre patches of highest and high priority from the South Atlantic Blueprint, and the Appalachian equivalent—cores and "other important areas". The buffers and restoration areas bring in contiguous 10,000-acre patches of medium priority from the South Atlantic Blueprint, and the Appalachian equivalent—cores and "other important areas" not already captured in the previous step. The corridors in the vision combine the corridors from the South Atlantic Blueprint with comparable linkages from the Appalachian NatureScape design. Note that NatureScape used to refer to its "other important areas" as "local buildouts", so you will see that older term mentioned in the 2018 vision documentation.

In addition to the Blueprint, the 2018 vision adds in additional resilience areas from TNC's Resilient Land analysis. While Resilient Land is already an input to the South Atlantic Blueprint and Appalachian NatureScape, there were a few important above-average resilient areas that didn't come out strongly with the approach to filtering the Southeast Blueprint.



The 1998 SC Conservation Vision.

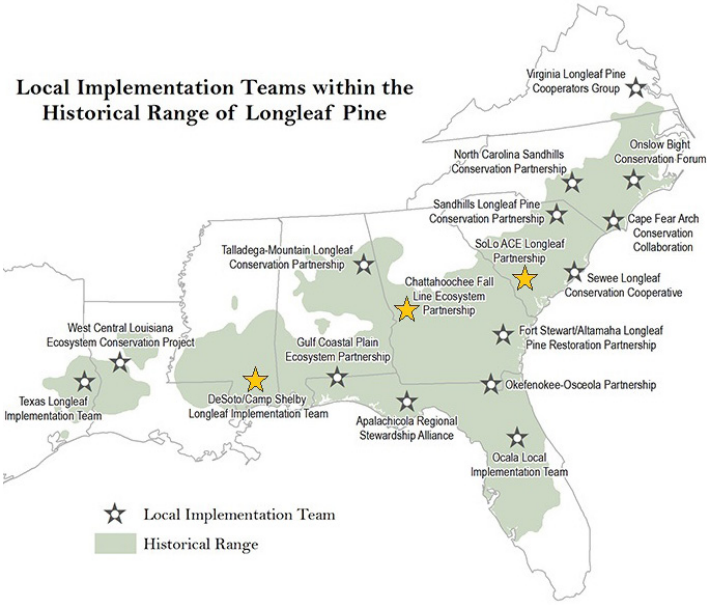


The updated 2018 SC Conservation Vision.

That summarizes how SC TNC found their piece of the Southeast Blueprint and used it to depict their organizational priorities. It's an example of filtering the Blueprint to find the portion that aligns with a specific objective—in this case, a spatial pattern of big, connected patches.

Case study: Longleaf Local Implementation Teams identify priorities

To improve range-wide communication and planning, the America's Longleaf Restoration Initiative is encouraging Local Implementation Teams to identify and share their restoration priorities. The Longleaf Alliance has been working closely with LITs and the larger conservation community to collect relevant spatial data, facilitate discussions, and assist in mapping efforts. The Longleaf Alliance started by looking for regional resources to help identify an initial set of spatial priorities. LITs needed something based on solid data, something already reviewed by hundreds of people and organizations, and something that covered the whole longleaf range. The South Atlantic and Southeast Conservation Blueprints were developed for just that purpose, so the Longleaf Alliance reached out to Blueprint staff for help.



Local implementation teams using the Blueprint (gold stars) as of August 2018.

The Blueprint helped identify potential high-quality open pine habitat outside of partner lands, and supported range-wide data compatibility. Regional datasets help overcome the real barriers to coordination and data availability posed by state and county lines. To date, the Longleaf Alliance has worked closely with three LITs to develop priority maps based on the Blueprint:

- Chattahoochee Fall Line Conservation Partnership (GA and AL)
- SoLo-ACE Longleaf Partnership (SC)
- DeSoto/Camp-Shelby Local Implementation Team (MS and AL)

SoLo-ACE was fully covered by the South Atlantic Blueprint. Chattahoochee Fall Line included the South Atlantic and Gulf Coastal Plains and Ozarks Blueprint, while DeSoto/Camp-Shelby was fully covered by the Gulf Coastal Plains and Ozarks Blueprint. For each LIT, The Longleaf Alliance organized and facilitated mapping workshops to review data, share ideas, and draw on poster-sized maps. While the Blueprint was one of many complementary datasets available, it was heavily referenced within each workshop.

The Longleaf Alliance staff found that the Blueprint helped provide partners with quality information across different parts of the longleaf landscape to effectively discuss and map strategic restoration targets. Visualizing priorities makes a real difference in achieving tangible conservation goals and supporting range-wide planning efforts for longleaf – not only for guiding the work of LITs, but also for increasing public awareness. A picture is worth a thousand words, after all, and maps communicate an exceptional amount of information at a glance. The Blueprint and other landscape-scale plans will continue to inform targeted longleaf restoration and management discussions in the coming years as LITs work toward restoring critical longleaf pine habitats across the Southeast.

Most of the writeup for this case study comes from an article published in *Longleaf Leader* magazine, a quarterly publication from the Longleaf Alliance. To see the full article, check out pages 20-21 of the Fall 2018 issue.

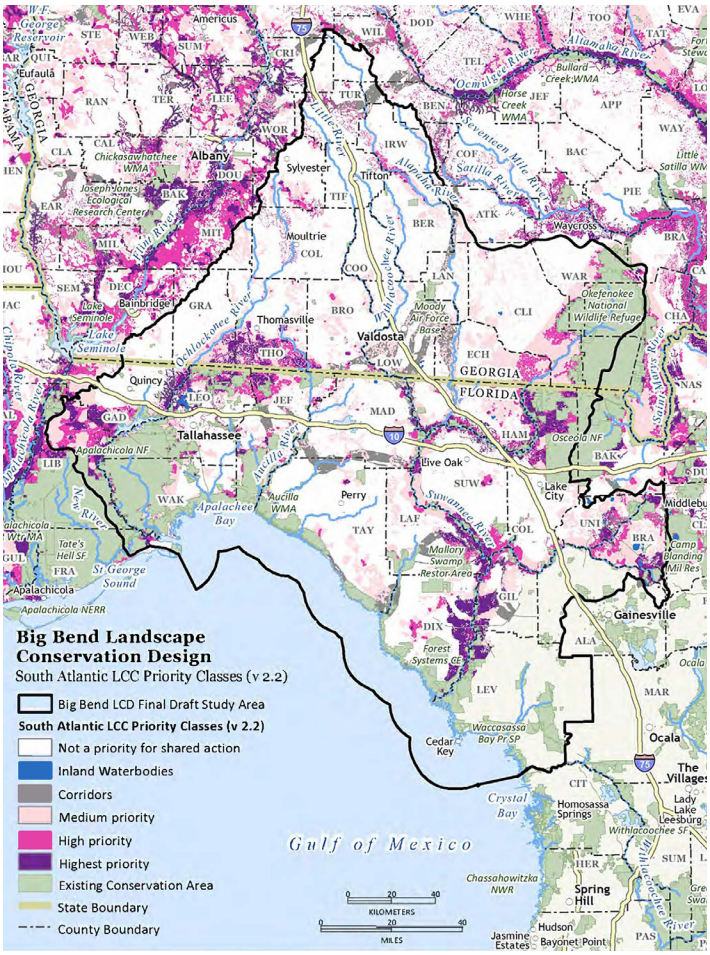
Case study: Big Bend Landscape Conservation Design

The U.S. Fish and Wildlife Service (FWS) is looking to Landscape Conservation Designs (LCD) to ensure its efforts are part of a larger, collaboratively developed conservation strategy. The development of an LCD is now an embedded requirement in FWS policy documents for National Wildlife Refuges. Given an urgent need to meet this requirement in the Big Bend of Florida, both local and regional FWS staff asked for help using the Blueprint.

Rather than filtering down the Blueprint, as we did with the SC TNC example, this case study was about demonstrating how the Blueprint fulfilled the policy requirements and could therefore be used to depict regional priorities. Almost every aspect of the Blueprint was used to meet the LCD requirements, including:

- People and organizational involvement
- Goals and objectives
- Indicators
- State of the South Atlantic
- Blueprint spatial priorities
- Blueprint implementation strategy

[The full LCD report is available on the South Atlantic LCC website](). While this example used the South Atlantic and Peninsular Florida Blueprints, this approach could just as easily be applied elsewhere in the Southeast using the Southeast Blueprint.



Excerpt from Big Bend LCD document showing South Atlantic Blueprint priorities.

PART 3: COMMUNICATING THE REGIONAL IMPORTANCE OF YOUR AREA

If you want to raise the profile of your area within the surrounding landscape, or better understand how your lands fit into the bigger picture, the Blueprint can help with that. This usually involves taking a broad view of the landscape context around your area of interest to tease out the unique role that your area plays.

The best approach may vary based on a number of factors. What is the scale of your area—an ecoregion, a large or spread out protected land base, or a smaller property? What audience are you trying to reach, and what is most important to them—birds, human health, water? The analysis steps are usually very similar to those described in Part 1 of this guide. You can simply apply those to the shapefile of your area. But, the messaging and storytelling will likely be a bit different. Let's look at a case study as an example of how you might do this.

Case study: The Promise of the Piedmont

South Atlantic Blueprint staff have worked with the U.S. Forest Service (USFS) in South Carolina for several years, from the revision of the Francis Marion National Forest Plan, to the update of the Land Ownership Adjustment Strategy for South Carolina, to Land Water Conservation Fund proposals. Sumter National Forest reached out again because staff were hosting a field trip for members of the Forest Service directorate. They wanted to take the opportunity to build awareness of the importance of the Piedmont region of the state. It was a great opportunity to promote the value of their conservation efforts in the Piedmont, demonstrate the forest's significance, and make a case for continued investment in the region. After batting around a few different names, we settled on calling this analysis "the promise of the Piedmont." All credit goes to the staff at Sumter for that idea.

The promise of the Piedmont had five sections:

- Hubs and corridors: Connectivity from the Southeast Blueprint
- Urban growth: SLEUTH projections
- A plan for shared action: The South Atlantic Conservation Blueprint
- Importance of forests for surface drinking water quality: Forests to Faucets
- Critical areas for climate resilience in need of protection: Under-represented settings

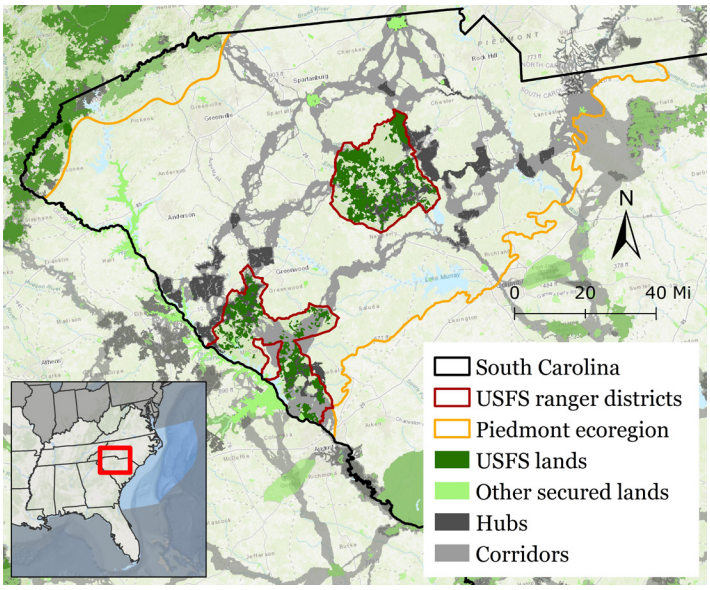
We created a powerpoint presentation for Sumter staff to give during the directorate visit. It combined maps and text illustrating the promise of the Piedmont. Because the audience was higher-level leadership, we tried to avoid too much technical language and instead focused on succinct, plain-language messages.

We also contributed some text to a briefing paper.

In this connectivity map, we showed how the USFS ranger districts and Sumter National Forest serve as major hubs that anchor the corridors called for in the Southeast Blueprint. The Southeast Blueprint connectivity analysis combines the hubs and corridors from both the South Atlantic and the Appalachians. This data is available on the CPA with the rest of the Southeast Blueprint. We recommend using protected lands data from The Nature Conservancy's Secured Lands, which covers 18 eastern U.S. states.

We included the following text on the slide to accompany the map:

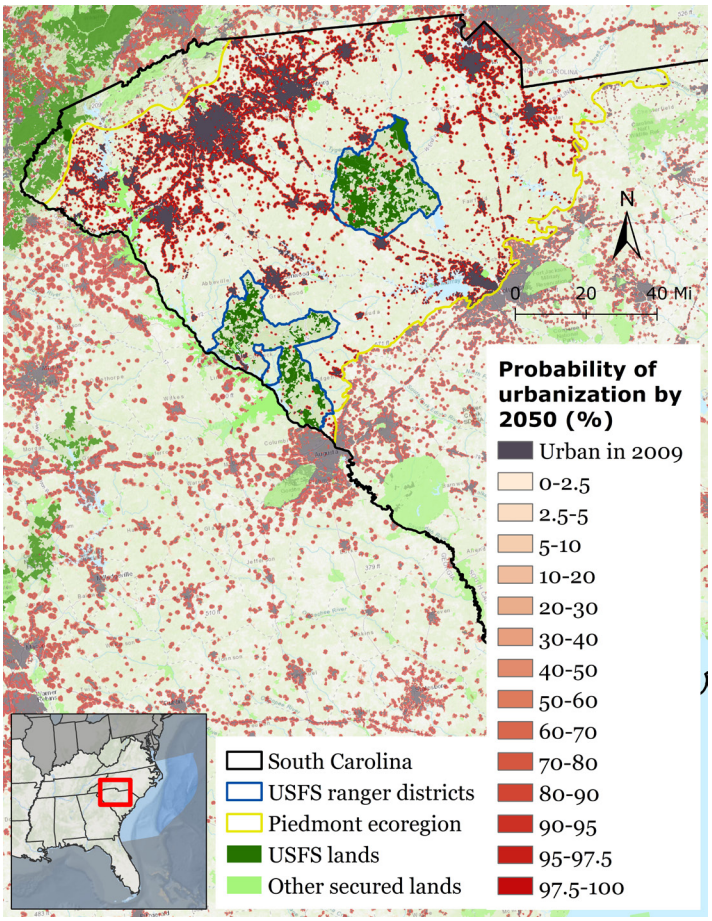
> *"The USFS ranger districts serve as critical hubs in the ecologically connected network of the SC Piedmont."*



USFS ranger districts as part of a larger network of hubs and corridors in the SC Piedmont.

In the next section on urban growth, we displayed what the urban footprint of the SC Piedmont might look like in 2050. After we finished this Blueprint use, the Southeast Conservation Adaptation Strategy adopted an overarching goal calling for a 10% or greater improvement in the health, function, and connectivity of Southeastern ecosystems by 2060. Now, we recommend using 2060 as your benchmark for consistency with this goal.

We included the full suite of probabilities from the SLEUTH urban growth model, which was developed by the Southeast Climate Science Center. SLEUTH maps the probability of urbanization across the Southeast by looking at the pattern of road growth that occurred from 2000-2009 and predicting what the future would look like if those trends continued. In the South Atlantic, the Blueprint data download already includes a 200 meter version of this dataset that matches the resolution of the South Atlantic Blueprint. Or, you can access the original 60 meter data on the Southeast CPA.

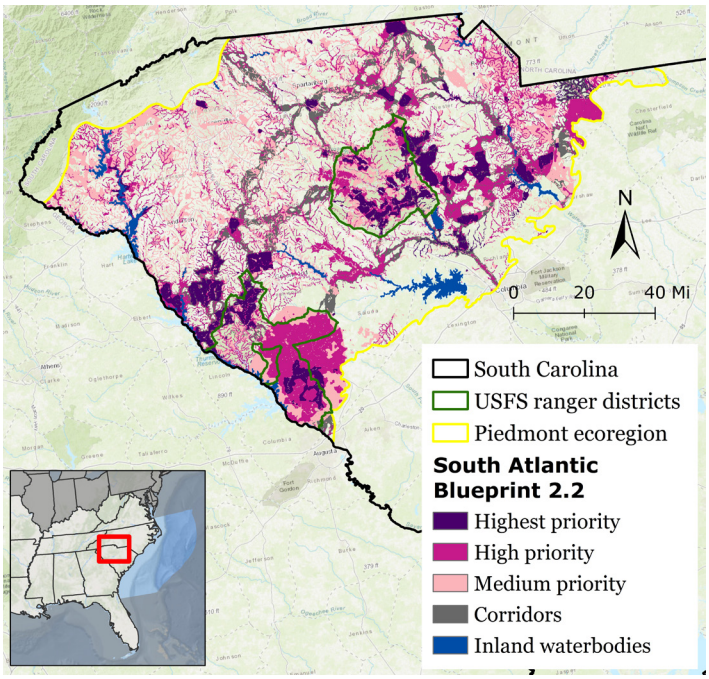


Urban growth projections for 2050 in the SC Piedmont.

When we ran the numbers, we found that 23% of the SC Piedmont was projected to urbanize by 2050. We also calculated the percent change from the 2009 urban footprint. Percent change better illustrated the urgency of taking conservation action in the SC Piedmont, so we included the following text along with the map:

> *"The urban footprint of the SC Piedmont is predicted to more than double by 2050, a 133% increase."*

In the third section, we included a map of the Blueprint to highlight opportunities for shared conservation action in the SC Piedmont. This demonstrates that a plan for shared action is available to help inform the conservation actions of many partners working in the Piedmont. We could just as easily have used the Southeast Blueprint here, rather than the South Atlantic Blueprint, to emphasize a broader regional perspective.

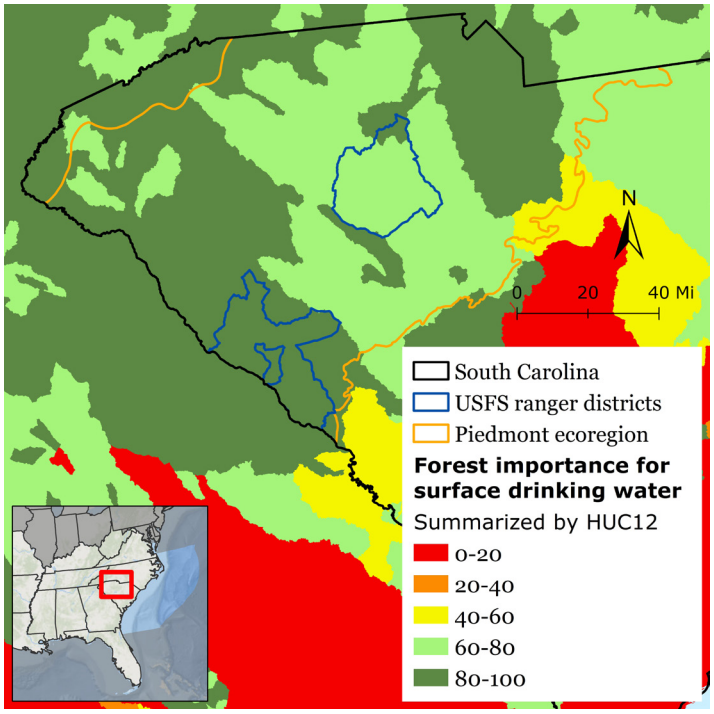


Priorities for shared conservation action in the SC Piedmont.

In this case, we did not find it helpful to report the percent of the SC Piedmont that is prioritized in the Blueprint, as we often do when analyzing a specific parcel. The Blueprint priorities in the SC Piedmont were roughly consistent with the priories across the entire South Atlantic (~30% in highest and high priority, 15% in medium, 5% in corridors), so it didn't tell us anything remarkable. We expected this result because the analysis area is so large and follows an ecoregional boundary, making it a fairly representative cross-section of the Blueprint.

The issue of water was very important to Sumter staff, so in the fourth section, we branched out beyond the Blueprint and threat layers into some complementary landscape-scale data on water quality. This map shows a dataset called Forests to Faucets, which measures the importance of forests for surface drinking water. You can learn more about Forests to Faucets here, and download the data here. It is summarized by HUC 12 subwatershed. We determined the range of values that occurred in SC Piedmont watersheds and included the following text accompanying the map to summarize the results:

> *"The entire SC Piedmont is of above-average importance for surface drinking water, relative to the rest of the nation."*

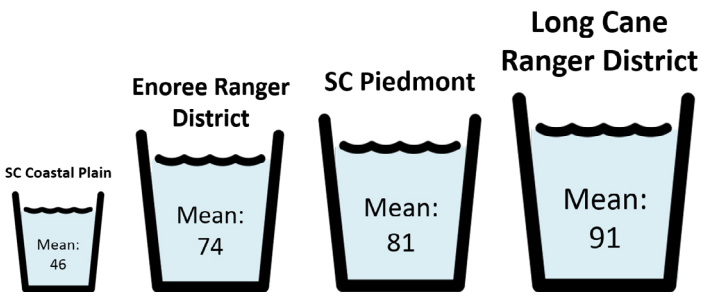


Forest importance for surface drinking water in the SC Piedmont, summarized by HUC 12 subwatershed.

In the briefing paper, we put this finding in the context of the ecosystem scores for the entire Piedmont region from the State of the South Atlantic 2015 ecosystem report card. We wanted to highlight the contrast between the region's importance for water and its current condition, to make a case for the urgency of conservation action.

> *"On average, SC Piedmont forests have been identified by Forests to Faucets as being in the top 28% in the nation for importance for drinking water, yet watershed condition in the Piedmont received a grade of D in the 2015 "State of the South Atlantic" assessment by the South Atlantic LCC."*

Before leaving this dataset, we made some infographics to reinforce how critical the forests of the SC Piedmont are for water quality, especially relative to the other major subregion of South Carolina, the Coastal Plain. This helped justify the importance of the Piedmont and the ranger districts for protecting downstream water quality, and make a case for focusing additional conservation effort in the region. We included this additional text in the powerpoint to accompany the infographics:

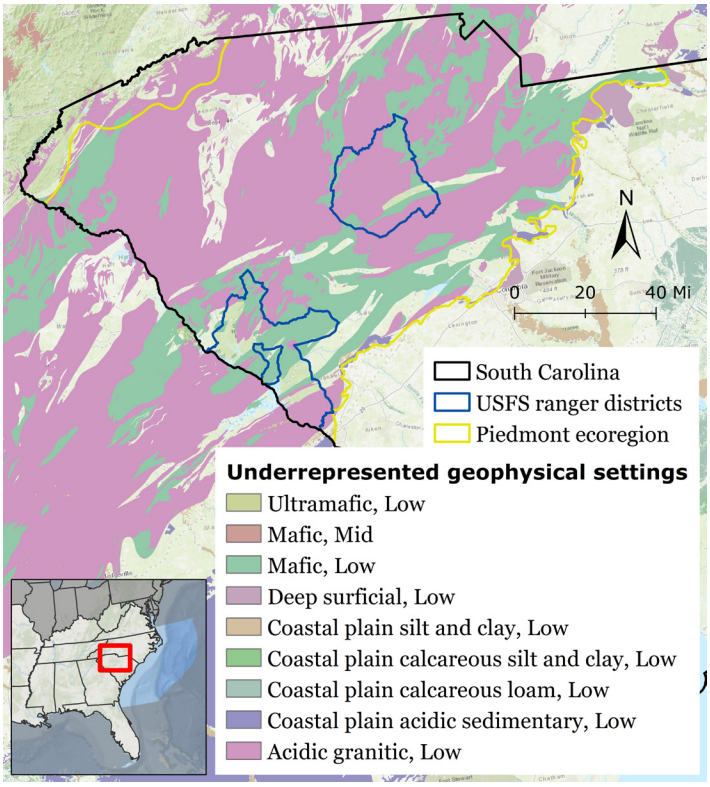


Average importance of forests for surface drinking water quality in SC ecoregions and Sumter ranger districts.

- *"On average, the SC Piedmont is almost twice as important for surface drinking water as the SC Coastal Plain.*
- *The entire Long Cane Ranger District is in the top 24% of the nation for importance for surface drinking water.*
- *The entire Enoree Ranger District is in the top 32% of the nation for importance for surface drinking water."*

In the last section of the promise of the Piedmont, we introduced the concept of underrepresented geophysical settings. Geophysical settings are distinct combinations of soil type and elevation that support different ecological communities and species. They are a core component of [The Nature Conservancy's Resilient Land analysis](). This is the same dataset used for the resilient biodiversity hotspots indicator in the Blueprint, so this is an example of how we sometimes look "under the hood" of an indicator to get different insights. Resilient Land identifies mostly natural, high-diversity areas that are likely to continue to support biodiversity in the face of climate change. These underrepresented settings were identified by the Open Space Institute in 2015 as disproportionately underrepresented in protected lands. Protecting examples of all geophysical settings is important for the region's overall climate resilience, so these specific settings may deserve additional consideration for conservation actions.

We included this text in the powerpoint presentation:



Underrepresented geophysical settings in the SC Piedmont.

"Protecting land with different soil types and at different elevations is critical for climate resilience. These geophysical settings are underrepresented in protected lands right now. 83% of the SC Piedmont is comprised of underrepresented settings, compared to just 13% of the Coastal Plain. This suggests that conservation in the SC Piedmont will advance this important component of climate resilience."

That's it for this example of how the Blueprint helped the U.S. Forest Service promote the SC Piedmont!