

Recent Trends in Southeastern Ecosystems (2024)

Measuring progress toward the Southeast Conservation Adaptation Strategy (SECAS) goal

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Executive summary

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. The long-term goal for SECAS is a 10% or greater improvement in the health, function, and connectivity of Southeastern ecosystems by 2060. To stay on track for achieving that goal, a 1% improvement will be needed every 4 years.

This report is the fifth regular assessment of progress toward the SECAS goal using information from existing monitoring programs. It uses the best available data since SECAS was established in 2011. The report is intended to facilitate discussion around conservation actions needed to meet the goal.

A majority of indicators improved overall during the period covered in this report. Given the rapid changes happening in the Southeast, this is an encouraging sign for achieving the SECAS goal. Longleaf pine area, prescribed fire in longleaf pine, aquatic connectivity, forested wetland birds, upland forest birds, working lands conservation, coastal condition, and marine fisheries indicators improved fast enough to stay on track to meet the SECAS goal. These have all been major areas of shared conservation focus in the Southeast, and those efforts are clearly having a big impact.

Only 9 of the 20 indicators had declining trends. Of these, grassland and savanna birds continue to be the most off track for meeting the SECAS goal. Declines in habitat quantity and quality are likely driving this pattern. There is still hope that focused conservation can have an impact, as targeted improvements in habitat quality in the longleaf pine range resulted in increases in grassland and savanna species like Bachman's sparrow and red-cockaded woodpecker. This further reinforces the importance of accelerating open pine, pine/oak savanna, and other grassland restoration throughout the Southeast for grassland birds, pollinators, and other key species.

To learn more about the role of SECAS in meeting the goal, see the [SECAS Statement of Purpose](#).

Overview of recent trends in ecosystem indicators

Table 1. Overview of recent trends in ecosystem indicators. Indicators shown in green are on track to meet the goal ($\geq 1\%$ increase every 4 years); indicators shown in yellow ($< 1\%$ increase) and red (declines) are not.

Ecosystem	Type	Indicator	Yearly % change	Page	
Terrestrial					
	Health	Areas without invasive plants	0.33% decline	5	
		Beach birds	1.42% decline	7	
		Caribbean undeveloped land	0.39% decline	8	
		Forested wetland area	0.08% increase	9	
		Forested wetland birds	2.85% increase	11	
		Gopher tortoise (Eastern population)	Increasing but % change unknown	12	
		Grassland & savanna area	0.31% decline	13	
		Grassland & savanna birds	2.2% decline	15	
		Longleaf pine area	4.5% increase	16	
		Prescribed fire in longleaf pine	4.02% increase	18	
		Salt marsh area	0.03% decline	19	
		Upland forest birds	0.98% increase	20	
		Function	Working lands conservation	11% increase	23
		Connectivity	Landscape condition	0.02% decline	25
			Undeveloped land in corridors	0.02% decline	26
Freshwater					
	Health	Natural landcover in floodplains	0.008% decline	28	
	Function	Water quality	0.003% increase	30	
	Connectivity	Aquatic connectivity	16% increase	32	
Estuarine & Marine					
	Health	Coastal condition	0.56% increase	34	
	Function	Fisheries	1.1% increase	36	

Introduction

Background

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 started in 2011 by the states of the Southeastern Association of Fish and Wildlife Agencies (SEAFWA) and the federal Southeast Natural Resource Leaders Group. In the fall of 2018, SECAS leadership approved a long-term goal and supporting short-term metrics to evaluate progress toward that connected network.

The long-term goal is a 10% or greater improvement in the health, function, and connectivity of Southeastern ecosystems by 2060. One of the short-term metrics, selected to stay on track to meet the long-term goal, is a 1% improvement in the health, function, and connectivity of Southeastern ecosystems every 4 years. This report on recent trends seeks to measure progress toward that metric.

Purpose of this report

This report assesses progress toward the SECAS goal using information from existing monitoring programs. It is intended to facilitate discussion around conservation actions needed to meet the goal.

Methods

Changes since the last report

For 2024, we made four improvements: 1) A new indicator for grassland and savanna area, 2) Updated data and methods for all bird indicators (beach birds, forested wetland birds, grassland and savanna birds, and upland forest birds), 3) Another year of data for prescribed fire in longleaf pine, and 4) Standardized confidence into two categories: lower and higher.

Selecting indicators

We selected indicators that are monitored by consistent multi-state efforts and are already used by other organizations to evaluate ecosystem conditions.

Defining health, function, and connectivity

For the purposes of this report, we use these definitions for health, function and connectivity:

- **Health:** The condition of species and the ecosystems they depend on
- **Function:** The benefits provided to people by species and ecosystems
- **Connectivity:** The ability of species and ecosystems to move over time

Defining “recent” trends

SECAS began in 2011, so we focused on trends between 2011-2022. When data were not available for that entire period, we used as much data from that period as possible.

Estimating trends

For indicators where charts only show two points in time (e.g., longleaf pine area), we simply calculated the change between those points. For indicators showing data from more than two years (e.g., prescribed fire in longleaf pine), we estimated the trend based on the slope of a linear regression through all points. For coastal condition, where trends were only available for discrete subregions or states, we averaged trends equally instead of weighting by area.

Evaluating confidence in trend

We used a combination of quantitative methods and qualitative judgement to estimate confidence in the trend. For indicators where the trend is a regression, we used the p-value to estimate the likelihood that the trend is non-zero. We considered any trend with a p-value > 0.10 as not significant and having low confidence. We used the 0.10 threshold because of smaller sample sizes for some indicators and the use of the p-value in a more general confidence index. For significant trends, we used qualitative judgement based on the design of the monitoring, overall sample size, and major sources of variability in the indicator to determine whether the confidence is medium or high. For indicators where the trend is not based on a regression, we only used the qualitative judgement.

Assessments used in the report

We used 13 different assessments to evaluate indicator trends. Assessments ranged from remotely sensed data like the National Land Cover Database to long-term volunteer-driven monitoring programs like eBird. Additional assessments used included America’s Longleaf Range-wide Accomplishment Reports, Forest Inventory and Analysis, Gopher Tortoise Candidate Conservation Agreement reports, USDA Soil and Water Resources Conservation Act Reports, Southeast Conservation Blueprint, EPA 303(d) state reports, Southeast Aquatic Resources Partnership Aquatic Barrier Database, NOAA C-CAP Regional Landcover, National Coastal Condition Assessments, NOAA Reports to Congress on the Status of Fisheries, and Esri global landcover.

Assessments considered but not used in this report

There are many subregional assessments of ecosystem conditions (e.g., Chesapeake Bay, Everglades), but their coverage of only part of the Southeast made them difficult to formally integrate into this particular report. One national assessment, [Surfrider Foundation’s State of the Beach](#), had potential, but was not used because it focused on policies related to beach conditions rather than the actual condition of the beaches.

Ecosystem indicator trends



Terrestrial

All inland and coastal terrestrial ecosystems



Health

The condition of species and the ecosystems they depend on

Areas without invasive plants

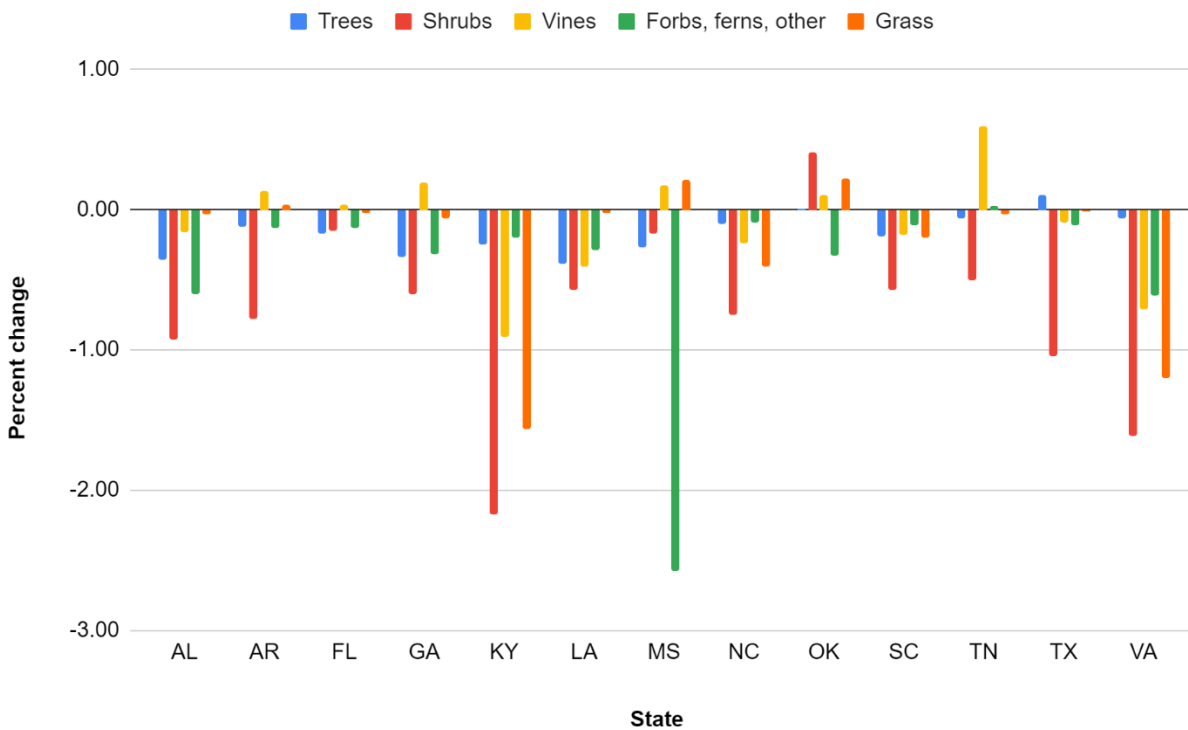


Figure 1. Percent change in areas without invasive plants by plant type, based on the most recent available state data.

Yearly trend

Most states showed declining trends for areas without different types of invasive plants. The most recent data available varied for each state, with some as old as 2016 and others as recent as 2019. Averaging trends across plant type and states results in a 0.33% decline per year. Data were not available for Missouri and West Virginia.

On track to meet SECAS goal

No. The decline of about 1.3% every 4 years is not enough to reach the SECAS goal of a 1% increase every 4 years.



Data source

Forest Inventory Analysis (FIA) data extracted using the Southern Nonnative Invasive Plant Extraction Tool (SNIPET) (note: the U.S. Forest Service [deprecated this tool](#) after this trend was calculated)

Confidence in trend

Medium. While data for some states was a few years old, the statistically randomized design of the FIA program, its long history of tracking trends, and the sample size across all states suggest these data provide a reasonable estimate of the trend.

Interpretation

This is an indicator of local conditions across terrestrial ecosystems. This indicator suggests that work to reduce the spread of specific invasive species is having an impact. Without the ongoing work to reduce invasives, landscape and climate change in the Southeast would likely lead to far worse trends. However, this indicator also shows that additional attention to invasive plants will be required to get on track to meet the SECAS goal.

Notable trends for this indicator include: 1) improvements in areas without invasive vines in Tennessee mostly due to reductions in Japanese honeysuckle, 2) improvements in areas without invasive shrubs in Oklahoma mostly due to reductions in shrubby and Thunberg's lespedeza, 3) declines in areas without invasive forbs in Mississippi due to large increases in lirioppe, and 4) declines in areas without invasive grasses in Kentucky, Virginia, and the Carolinas mostly due to increases in Japanese stiltgrass.

Other information available

A table of state-level summaries associated with the graph above is available in the appendix.

Beach birds

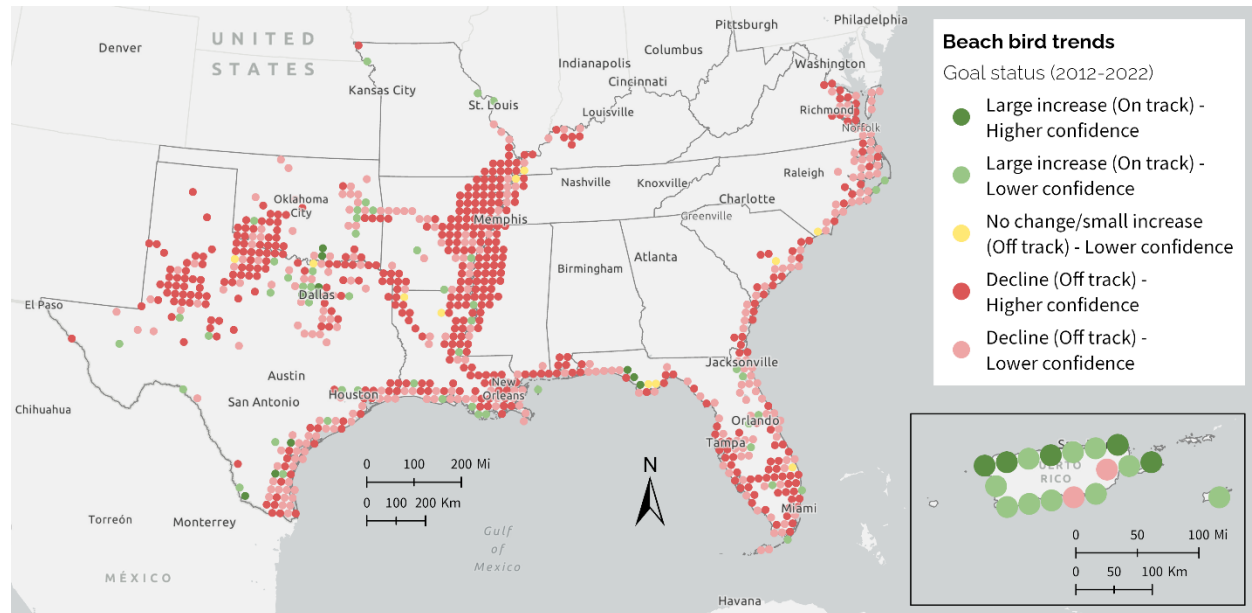


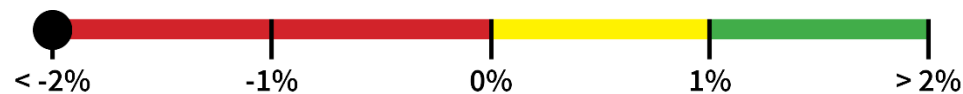
Figure 2. Trends in beach bird abundance from 2012-2022. Note: This indicator also includes interior least tern, which uses beach habitat far from the coast.

Yearly trend

When averaged across all points with trends, beach bird abundance decreased by 1.42% per year from 2012-2022. Species used were American oystercatcher, black skimmer, gull-billed tern, least tern, piping plover, royal tern, snowy plover, and willet. These species are Regional Species of Greatest Conservation Need for states in the Southeast, primarily occur in this ecosystem, and have sufficient data for trend analysis in eBird Status and Trends. Most points across the SECAS region were declining, with the exception of some areas with significant investment in coastal conservation. Individual species trends also followed this pattern. The only exception was breeding piping plover, where all breeding points in the SECAS region were declining.

On track to meet SECAS goal

No. The decline of about 5.68% every 4 years is not enough to reach the SECAS goal of a 1% increase every 4 years.



Data source

[eBird Status and Trends](#)

Confidence in trend

Medium. Most points that had declines (52%) were statistically significant.

Interpretation

This is an indicator of beach habitat quality. The mixed but mostly declining trends highlight the challenges and opportunities within this ecosystem. Habitat modification, climate change, and human disturbance continue to pose problems, but conservation action in specific areas seems to be making an impact. As these birds are migratory, conservation actions and threats impacting their populations occur both within the Southeast and in other parts of the species' ranges.

Other information available

Species-specific summaries by state and tabular data associated with the map above are available in the appendix.

Caribbean undeveloped land

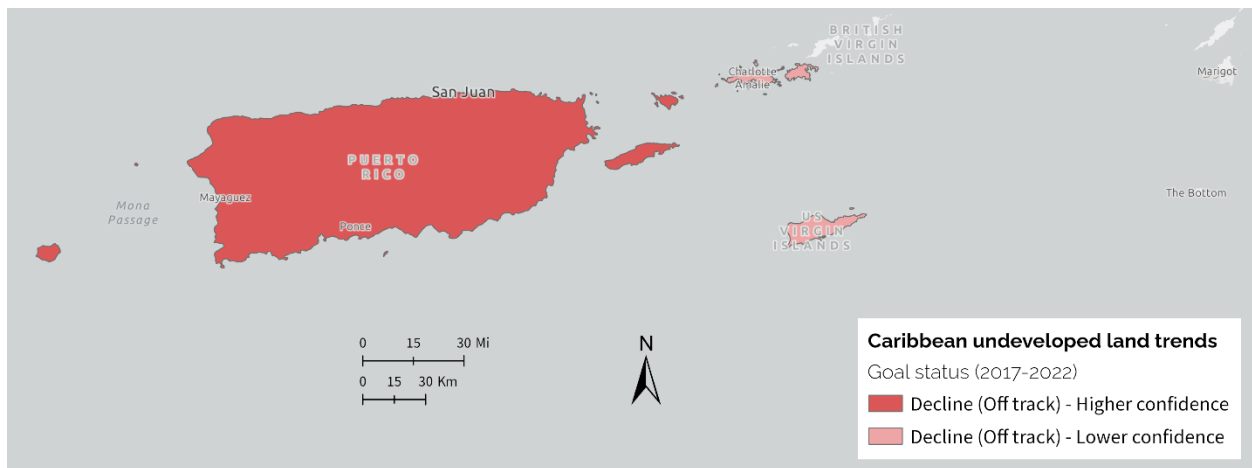


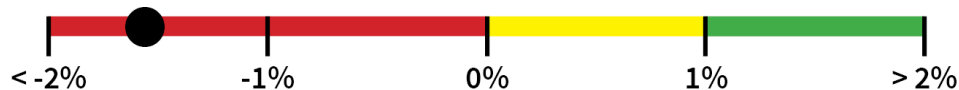
Figure 3. Trends in the amount of undeveloped land in the Caribbean from 2017-2022.

Yearly trend

Caribbean undeveloped land declined in both Puerto Rico and the U.S. Virgin Islands. Across both territories combined, this indicator declined by 0.39% per year from 2017-2022. That is a loss of approximately 279,000 acres of undeveloped land per year.

On track to meet SECAS goal

No. The decline of about 1.56% every 4 years is not enough to reach the SECAS goal of a 1% increase every 4 years.



Data source

[Esri Sentinel-2 10-Meter Land Use/Land Cover](#)

Confidence in trend

Medium. The decline is statistically significant; however, yearly weather changes and human uses can significantly impact classification errors for developed land.

Interpretation

This is an indicator of areas less impacted by development in the Caribbean. While the landcover data has significant issues with misclassification, it does seem like the Caribbean is continuing to lose undeveloped land. Overall loss in undeveloped land is most likely due to development to support tourists and others that don't live on the island year-round. The population of both Puerto Rico and the U.S. Virgin Islands actually decreased from 2017-2022.

Other information available

A table of territory-level summaries associated with the map above is available in the appendix.

Forested wetland area

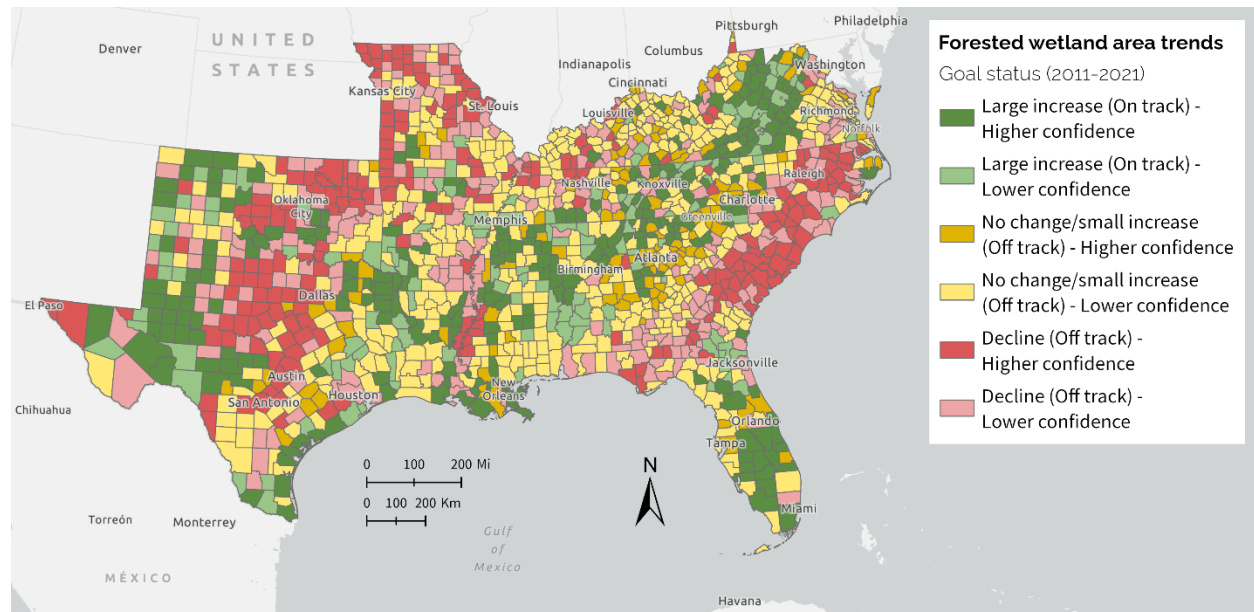


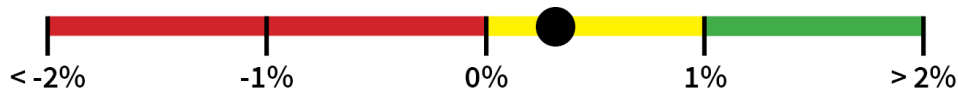
Figure 4. Trends in forested wetland area from 2011-2021.

Yearly trend

Overall area of forested wetlands increased by approximately 0.08% per year from 2011-2021. That translates to gain of approximately 181,000 acres per year. Forest wetland area overall also increased for most states.

On track to meet SECAS goal

No. The increase of about 0.32% every 4 years is not enough to reach the SECAS goal of a 1% increase every 4 years.



Data source

[National Land Cover Database \(NLCD\)](#)

Confidence in trend

Low. The trend is not statistically significant and yearly weather changes can have a major impact on classification accuracy.

Interpretation

This is a coarse indicator of the overall extent of potential habitat in the forested wetland ecosystem. Extensive conservation investments in forested wetlands, policies restricting wetland development, and growing interest from urban communities in water supply protection and reducing flood risks may be causing the increases in forested wetland area. However, forested wetland area is also very sensitive to timber management decisions and yearly weather fluctuations that facilitate or hinder harvest. It is likely that many complicated interacting factors will drive changes in this indicator in the future.

Other information available

A table of state-level summaries associated with the map above is available in the appendix.

Forested wetland birds

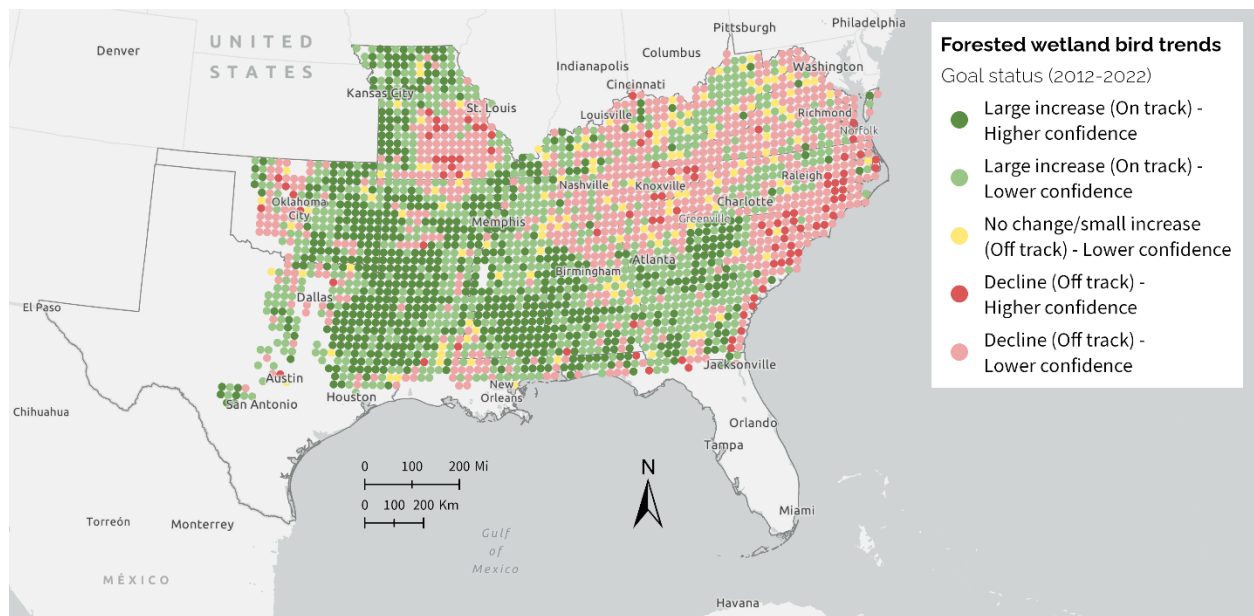


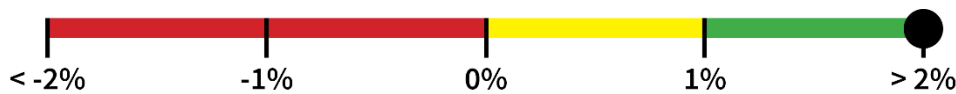
Figure 5. Trends in forested wetland bird abundance from 2012-2022.

Yearly trend

When averaged across all points with trends, forest wetland bird abundance increased by 2.85% per year from 2012-2022. Species used were prothonotary warbler, Swainson's warbler, swallow-tailed kite, and yellow-throated warbler. These species are Regional Species of Greatest Conservation Need for states in the Southeast, primarily occur in this ecosystem, and have sufficient data for trend analysis in eBird Status and Trends. Most points across the SECAS region were increasing. Declines were mostly in areas experiencing major impacts from sea-level rise. Individual species trends also followed this pattern. Breeding Bird Survey trends, which cover more coarse areas, also show similar patterns.

On track to meet SECAS goal

Yes. The increase of about 11.4% every 4 years is greater than the SECAS goal of a 1% increase every 4 years.



Data source

[eBird Status and Trends](#)

Confidence in trend

Medium. Most of the points (57%) that were on track for the goal were statistically significant.

Interpretation

This is an indicator of both local and landscape conditions across the forested wetland ecosystem. While there are some declines, especially in areas impacted by sea-level rise, overall, forested wetland birds appear to be on track to meet the SECAS goal. This may be due to the extensive conservation investments in forested wetlands, policies restricting wetland development, and growing interest from urban communities in protecting water supply and reducing flood risks.

Other information available

Species-specific summaries by state and tabular data associated with the map above are available in the appendix.

Gopher tortoise (Eastern population)

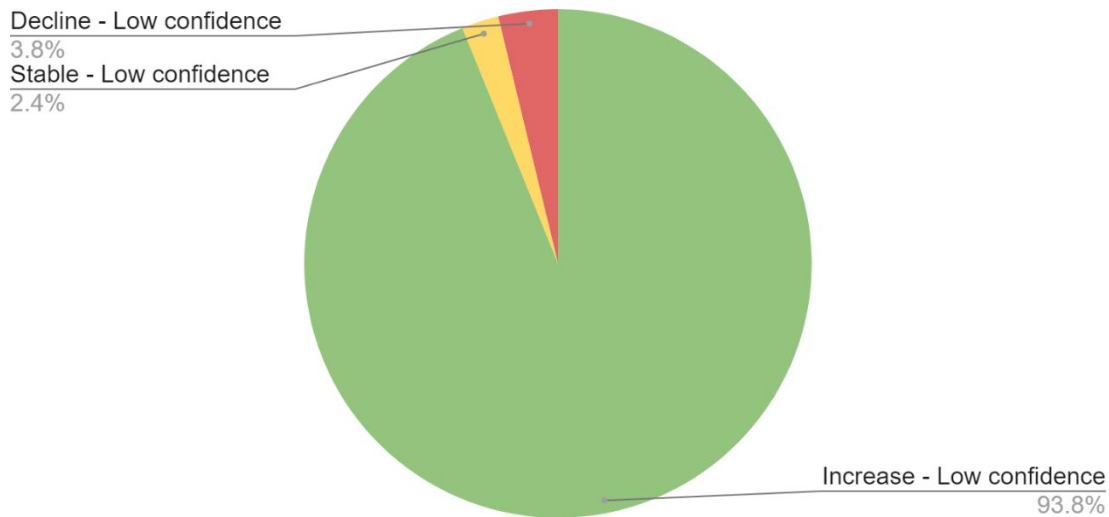


Figure 6. Percent of gopher tortoise sites with increasing, declining, or stable trends during resurveys in 2017.

Yearly trend

Most of the sites that were resurveyed in 2017 showed an increase in gopher tortoises within the Eastern population segment (Florida, Georgia, South Carolina, and eastern Alabama). The Eastern population is a candidate for listing under the Endangered Species Act. The chart above shows reported population trends and is weighted by acres surveyed. Due to inconsistencies in methods and reporting, it was not possible to estimate a numerical trend.

On track to meet SECAS goal

Unknown

Data source

[10th Annual Gopher Tortoise Candidate Conservation Agreement report](#)

Confidence in trend

Low. Due to inconsistencies in methods and reporting, it was not possible to estimate a numerical trend. The organizations in the Candidate Conservation Agreement report collectively own and/or manage more than 1.3 million acres of gopher tortoise habitat. Only approximately 35,000 acres of that habitat was resurveyed in 2017. The areas resurveyed were also not a random sample of potential habitat.

Interpretation

This is an indicator of both local and landscape conditions in part of the grassland and savanna ecosystem. Despite the low confidence in the trend, it does appear that gopher tortoise populations are increasing overall. Significant effort has gone into restoration and habitat protection for this species and, where trend data are available, it appears the species is responding positively to these actions.

Other information available

Tabular data associated with the chart above are available in the appendix.

Grassland & savanna area

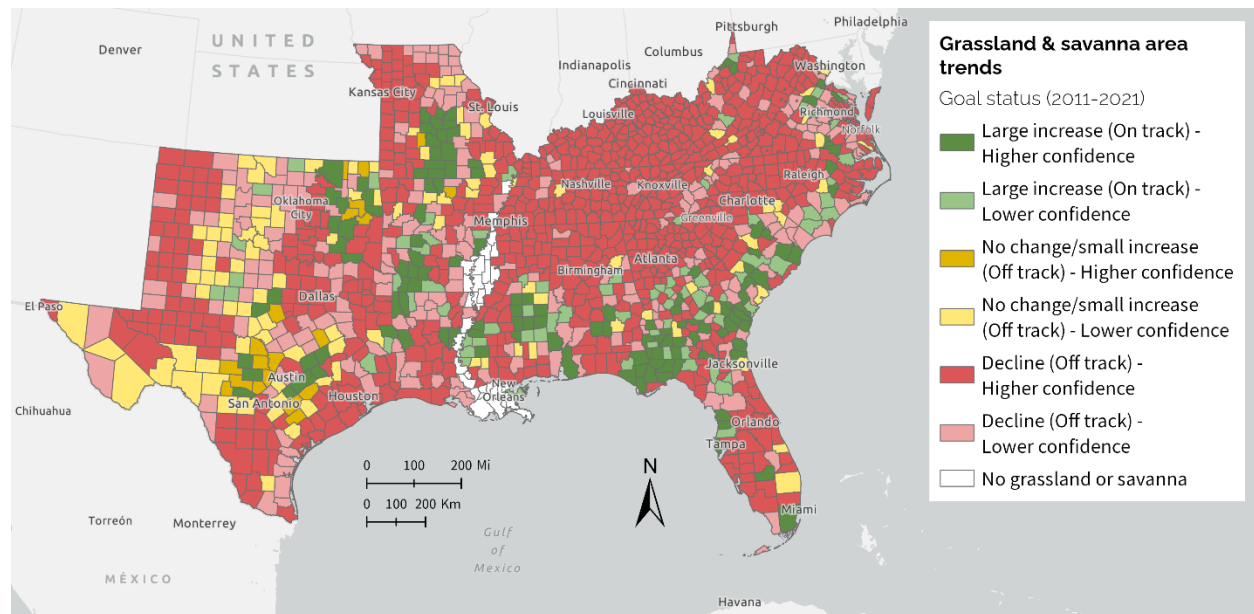


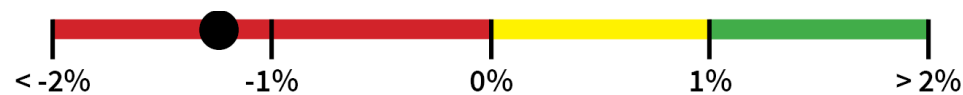
Figure 7. Grassland and savanna area trends from 2011 – 2021.

Yearly trend

Grassland and savanna area declined by 0.31% per year from 2011-2021. Area declined in most counties (76%). Increases typically occurred in counties with major ecosystem-based restoration efforts (e.g., range-wide longleaf pine, woodlands in Missouri and Arkansas.)

On track to meet SECAS goal

No. The decline of about 1.24% every 4 years is not enough to reach the SECAS goal of a 1% increase every 4 years.



Data source

Modeled indicator based on [National Land Cover Database \(NLCD\)](#) land cover and canopy cover, [LANDFIRE Biophysical Settings](#), [Texas Ecological Mapping Systems](#), [Oklahoma Ecological Systems Map](#). The model starts with areas that were historically grassland or savanna based on LANDFIRE. It then uses landcover and canopy cover to identify current area for each year. For areas of historic grassland, it uses a canopy cover threshold of 0%. For areas of historic savanna, it uses a canopy cover threshold of 60%. In Texas and Oklahoma, we further reduced the estimate by removing mesquite-invaded areas that weren't currently functioning as grassland or savanna. This approach is similar to parts of the grasslands and savannas Blueprint indicator, but includes a number of changes more focused on trend estimation.

Confidence in trend

High. Trend is statistically significant and shows consistent declines across all five years with data (2011, 2013, 2016, 2019, 2021).

Interpretation

This is a coarse indicator of the overall extent of grassland and savanna. It includes a wide range of quality, from restored areas and remnants, to temporary grasslands created by forestry, to highly altered areas of pasture. The steep declines mirror large declines seen in species that depend on grasslands and savannas, like pollinators and grassland birds. Grassland declines throughout the SECAS region are occurring on both public and private lands.

For most SECAS states, the major source of grassland and savanna loss was excess tree growth. The exceptions to this were: 1) Missouri, where the biggest loss was to row crop, and 2) Texas and Florida, where the biggest loss was to urban growth. Despite steep declines, improvements in places like the longleaf pine range, historic woodlands in Missouri and Arkansas, and tallgrass prairie in Northeast Oklahoma show that focused conservation attention can reverse declines in specific places.

Other information available

Summaries by state and tabular data associated with the map above are available in the appendix.

Grassland & savanna birds

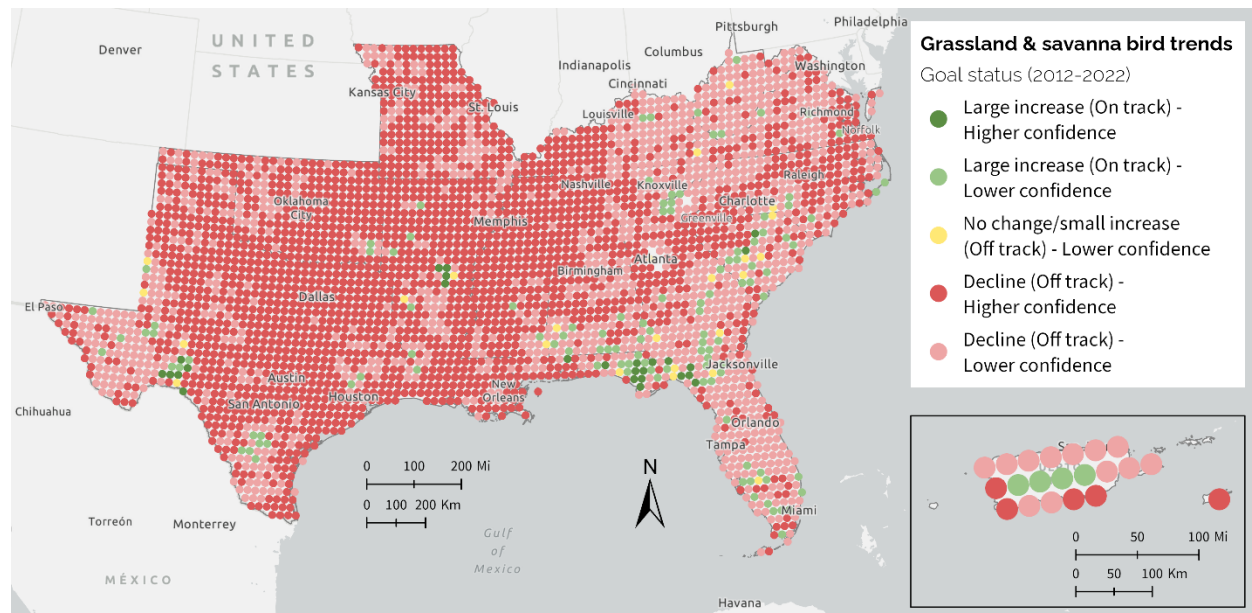


Figure 8. Trends in grassland and savanna bird abundance from 2012-2022.

Yearly trend

When averaged across all points with trends, grassland and savanna bird abundance declined by 2.2% per year from 2012-2022. Species used were American kestrel, Bachman's sparrow, Eastern meadowlark, grasshopper sparrow, Henslow's sparrow, loggerhead shrike, Northern bobwhite, prairie warbler, red-cockaded woodpecker, and scissor-tailed flycatcher. These species are Regional Species of Greatest Conservation Need for states in the Southeast, primarily occur in this ecosystem, and have sufficient data for trend analysis in eBird Status and Trends. Most points across the SECAS region were declining. For most individual species, a majority of points were declining, but there were also a number of points with increases. Two species with most of their range in the longleaf pine ecosystem had a larger number of increasing points than other species: red-cockaded woodpecker (58% increasing) and Bachman's sparrow (43% increasing). Breeding Bird Survey trends, which cover more coarse areas, also show similar patterns.

On track to meet SECAS goal

No. The decline of about 8.8% every 4 years is not enough to meet the SECAS goal of a 1% increase every 4 years.



Data source

[eBird Status and Trends](#)

Confidence in trend

Medium. Most of the points (65%) that were declining and off track for the goal were statistically significant.

Interpretation

This is an indicator of both local and landscape conditions across the grassland and savanna ecosystem. Large declines across most of the region highlight the major problems for this ecosystem and the species that depend on it. Signs of improvement in the longleaf range, South Florida, the Chihuahuan Desert, the West Gulf Coastal Plain, and the Appalachians show that targeted conservation attention can still have an impact. Improvements in specific species like red-cockaded woodpecker and Bachman’s sparrow also show that targeted improvements in habitat quality can make a major difference.

Other information available

Species-specific summaries by state and tabular data associated with the map above are available in the appendix.

Longleaf pine area

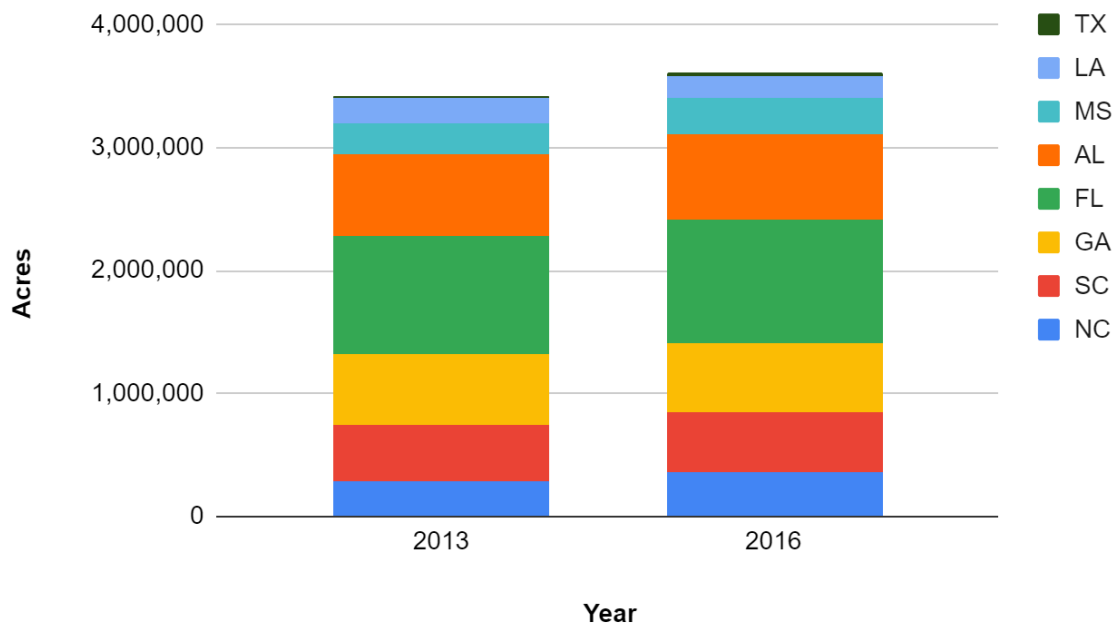


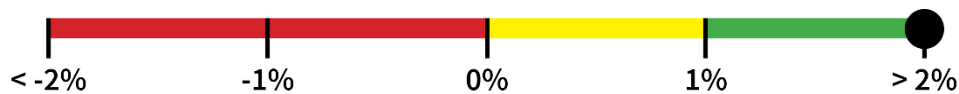
Figure 9. Acres of longleaf pine in 2013 and 2016.

Yearly trend

Longleaf pine acres increased by about 4.5% per year from 2013-2016. Acreage increased during this period in most states, except for Louisiana and Georgia, which had small overall declines. The latest data from Georgia in 2017 shows an overall increase from 2013-2017. More recent data was not available for Louisiana. Virginia also has longleaf pine, but it was not present in the samples used for this analysis.

On track to meet SECAS goal

Yes. The increase of about 18% every 4 years is greater than the SECAS goal of 1% increase every 4 years.



Data source

[Forest Inventory and Analysis \(FIA\) data from EVALIDator](#) (last revised April 10, 2019)

Confidence in trend

Medium. While the longleaf sample size is small in some states, the statistically randomized design of FIA, its long history of tracking trends, and the larger sample across all states with longleaf suggest these data provide a reasonable estimate of the trend across the full longleaf range.

Interpretation

This is an indicator of restoration for one part of the grassland and savanna ecosystem. Longleaf pine acreage continues to increase. Reported longleaf establishment numbers from 2017 and 2018 also show this positive trend.

Other information available

A table of state-level summaries associated with the graph above is available in the appendix.

Prescribed fire in longleaf pine

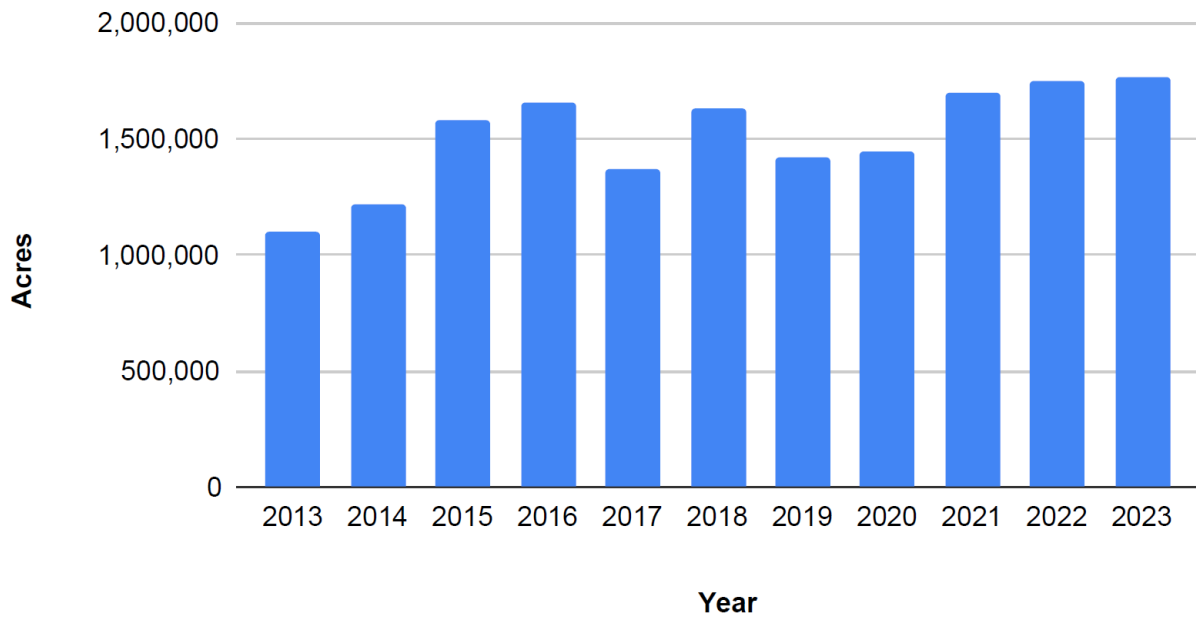


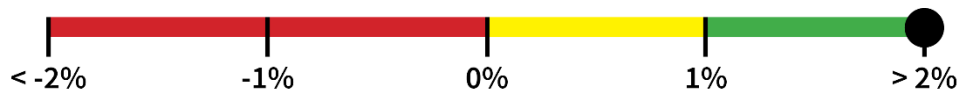
Figure 10. Acres of prescribed fire in longleaf pine from 2013-2023.

Yearly trend

Prescribed fire in longleaf pine increased by about 4.02% per year from 2013-2023.

On track to meet SECAS goal

Yes. The increase of about 16% every 4 years is greater than the SECAS goal of a 1% increase every 4 years.



Data source

[America's Longleaf Range-wide Accomplishment Reports](#)

Confidence in trend

Medium. The trend is statistically significant. While the range-wide tracking system for prescribed fire in longleaf is not perfect, its strong coverage of significant geographic areas means it likely documents a large percentage of prescribed fire in longleaf over this period.

Interpretation

This is an indicator of habitat management in one part of the grassland and savanna ecosystem. Prescribed fire is also important outside of the longleaf range, but sufficient trend data wasn't yet available in those areas. After a dip in prescribed fire in 2019 and 2020, numbers significantly increased in 2021, 2022, and 2023—setting new records in all three years. This suggests that collaborative longleaf restoration efforts are continuing to improve the condition of this important ecosystem.

Other information available

Tabular data associated with the graph above are available in the appendix.

Salt marsh area

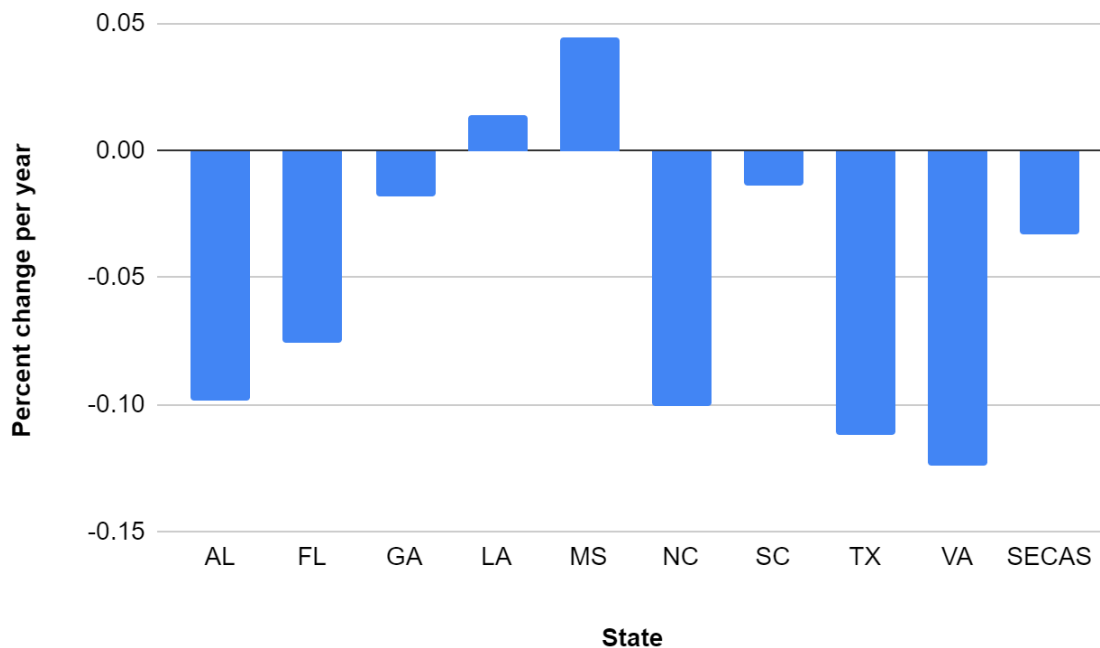


Figure 11. Percent change per year in area of estuarine emergent wetland between 2010 and 2016.

Yearly trend

Salt marsh area declined across most states. Total salt marsh area in the SECAS region declined by 0.03% per year from 2010-2016.

On track to meet SECAS goal

No. The decline of about 0.12% every 4 years is not enough to reach the SECAS goal of a 1% increase every 4 years.



Data source

[NOAA C-CAP Regional Landcover](#)

Confidence in trend

Medium. The remotely sensed data used in this indicator provides full coverage of the region, but yearly weather variations can influence how well it classifies estuarine emergent wetlands.

Interpretation

This is a coarse indicator of the overall extent of potential habitat in salt marshes. Sea-level rise is having major impacts on salt marshes and this indicator tracks how well salt marshes are keeping up with pressure from rising seas. Salt marsh area declined across most states. Two exceptions were in Mississippi and Louisiana. It's unclear how much of these increases come from marsh restoration in these areas after the 2010 Deepwater Horizon oil spill in the Gulf of America. Longer-term declines suggest that, without continued focus on marsh restoration, these increases may be temporary. From 2006-2016 (not depicted), these two states and all other Southeastern states had declines in salt marsh area.

Other information available

A table of state-level summaries associated with the graph above is available in the appendix.

Upland forest birds

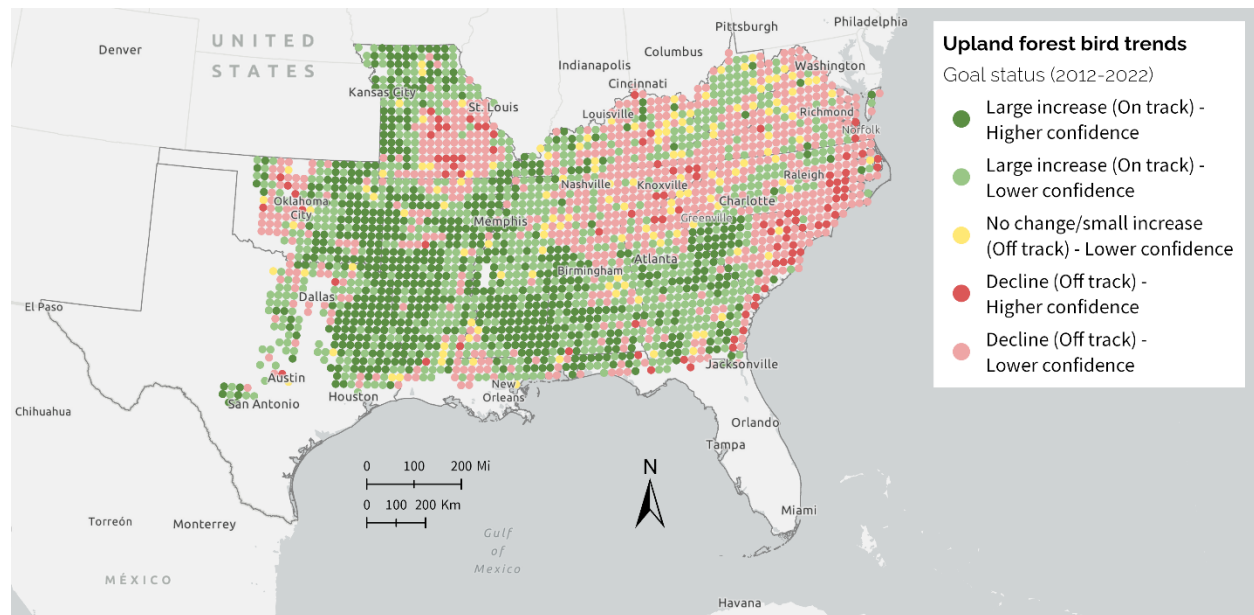


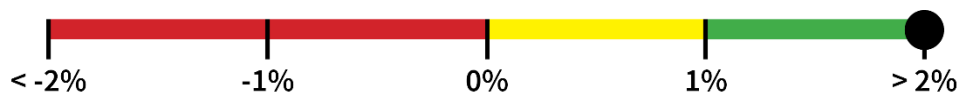
Figure 12. Trends in upland forest birds from 2012 - 2022.

Yearly trend

When averaged across all points with trends, upland forest bird abundance increased by 0.98% per year from 2012-2022. Species used were cerulean warbler, Louisiana waterthrush, wood thrush, and worm-eating warbler. These species are Regional Species of Greatest Conservation Need for states in the Southeast, primarily occur in this ecosystem, and have sufficient data for trend analysis in eBird Status and Trends. Trends varied across the Southeast, with the biggest declines occurring in the Central Hardwoods, Appalachians, and northeast part of the Southeast Coastal Plain Bird Conservation Regions. For two widespread species, points were mostly increasing: wood thrush (91% increasing) and Louisiana waterthrush (64% increasing). For two species with smaller ranges in the Southeast, points were mostly declining: cerulean warbler (78% declining) and worm-eating warbler (78% declining). Breeding Bird Survey trends, which cover more coarse areas, also show similar patterns.

On track to meet SECAS goal

Yes. The increase of about 3.92% every 4 years is greater than the SECAS goal of a 1% increase every 4 years.



Data source

[eBird Status and Trends](#)

Confidence in trend

Low. Less than half of the points that were increasing (38%) were statistically significant.

Interpretation

This is an indicator of both local and landscape conditions across the upland forest ecosystem. Upland forest birds benefit from conversion of historic grassland and savanna ecosystems into closed canopy forest. In areas with increases, that may mean increases in closed canopy forest overall are offsetting the negative impacts of land use changes like greater forest fragmentation. Some areas of upland forest bird decline, like Southeast Missouri, could actually be positive signs of conservation overall as these areas are restored to the more open forest types that historically occurred there.

Species-specific trends also highlight how more widespread generalist species (Louisiana waterthrush, wood thrush) seem to be poised to take advantage of changing landscape conditions. More specialist and range-limited species (cerulean warbler, worm-eating warbler) seem to be less able to take advantage of these changes. Based on range-wide trends for these species, it doesn't appear that climate change is a major driver of trends during this time period. It's also important to note that all these species are neotropical migrants. Threats to survival during migration (e.g., communication towers) and on their wintering grounds (e.g., habitat loss) are likely also impacting population trends.

Other information available

Species-specific summaries by state and tabular data associated with the map above are available in the appendix.



Function

The benefits provided to people by species and ecosystems

Working lands conservation

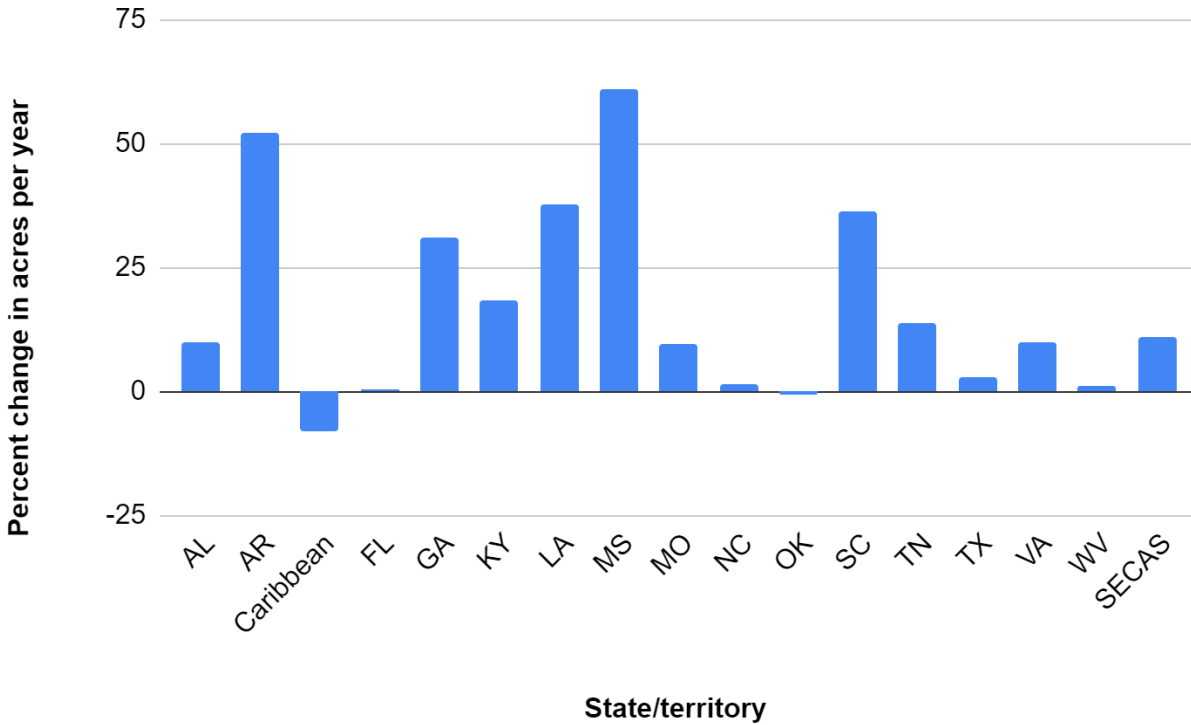


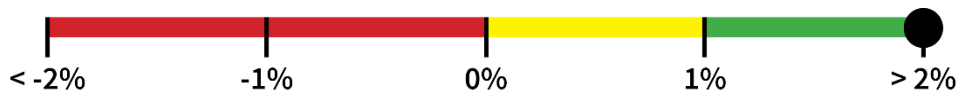
Figure 13. Percent change in acres per year under all U.S. Department of Agriculture (USDA) conservation practices from 2015-2020. Caribbean includes both Puerto Rico and the U.S. Virgin Islands.

Yearly trend

Most states and territories showed increasing trends for acres under conservation practices. Acres under conservation practices across the entire SECAS area increased by 11% per year.

On track to meet SECAS goal

Yes. The increase of about 44% every 4 years is greater than the SECAS goal of a 1% increase every 4 years.



Data source

[USDA data](#) reported as part of the Soil and Water Resources Conservation Act

Confidence in trend

Medium. A substantial amount of working lands conservation in the Southeast occurs through U.S. USDA programs and the reported acres is likely a reasonable estimate of application of these programs.

Interpretation

This is an indicator of conservation on working lands. It suggests both across the Southeast and in most states, conservation on working lands has been increasing by a large amount over the last 5 years. Working lands is a large focus of conservation in the Southeast and it appears that extra effort working with landowners is resulting in increased adoption of conservation practices.

While acres can vary widely from year to year, relative trends across states are broadly similar when looking at trends going back to 2010 (not depicted).

Acreage of conservation practices by USDA programs does have a few limitations as an indicator. It does not include working lands programs administered by states or other organizations and doesn't include voluntary actions on working lands not funded by a specific conservation program. Acreage trends don't always predict trends in conservation impact as some more expensive practices that cover smaller areas can sometimes have a bigger overall impact than inexpensive practices covering large areas.

Other information available

A table of state-level summaries associated with the graph above is available in the appendix.



Connectivity

The ability of species and ecosystems to move over time

Landscape condition

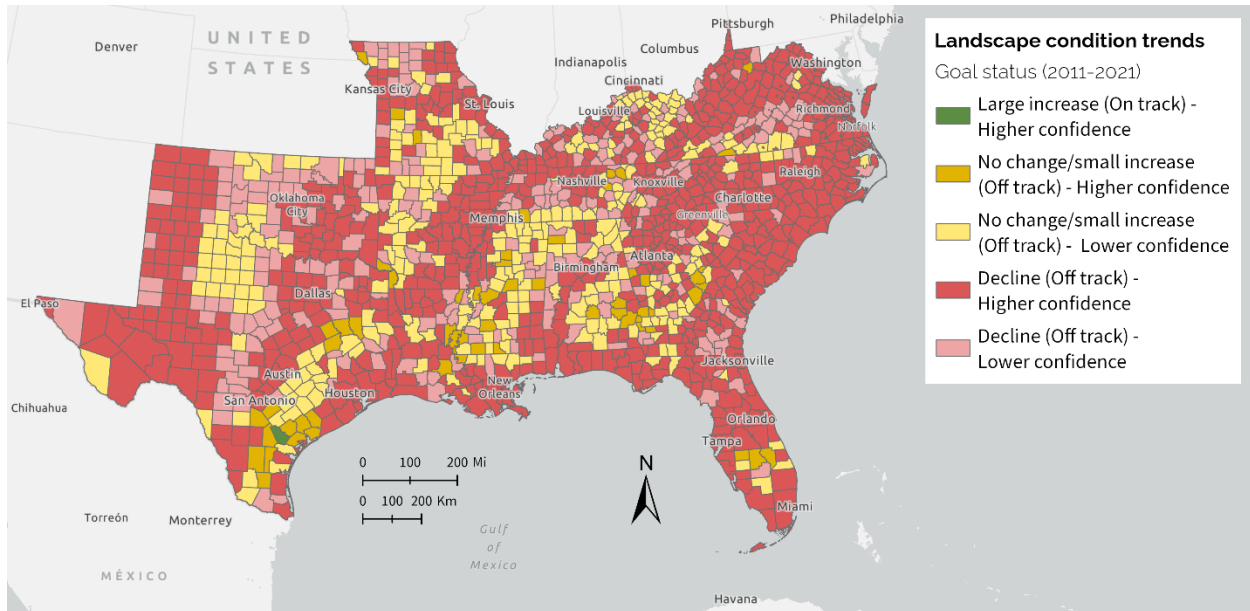


Figure 14. Trends in landscape condition from 2011-2021.

Yearly trend

Landscape condition decreased by about 0.02% per year from 2011-2021. All states had statistically significant declines except Oklahoma and Mississippi. These two states had declines that were not statistically significant.

On track to meet SECAS goal

No. The decline of about 0.08% every 4 years is not enough to reach the SECAS goal of a 1% increase every 4 years.



Data source

[National Land Cover Database \(NLCD\)](#)

Confidence in trend

Medium. The trend is statistically significant, but yearly weather changes can have a major impact on classification accuracy. NLCD is also not good at separating pasture from more natural grassland. That

means this indicator is likely underestimating landscape condition improvements resulting from grassland restoration.

Interpretation

This is an indicator of landscape condition at multiple scales relevant to species and ecosystems. It looks at naturalness of land cover within 0.22 acres (one 30 m pixel), 10 acres, 100 acres, 1,000 acres, and 10,000 acres. While there are some issues with classification accuracy, the overall declines in landscape condition likely reflect ongoing issues with habitat fragmentation and alteration throughout the Southeast. The overall declines in this indicator, however, are overestimated in areas with significant grassland restoration because the indicator often misclassifies natural grasslands as pasture.

Other information available

A table of state-level summaries associated with the map above is available in the appendix.

Undeveloped land in corridors

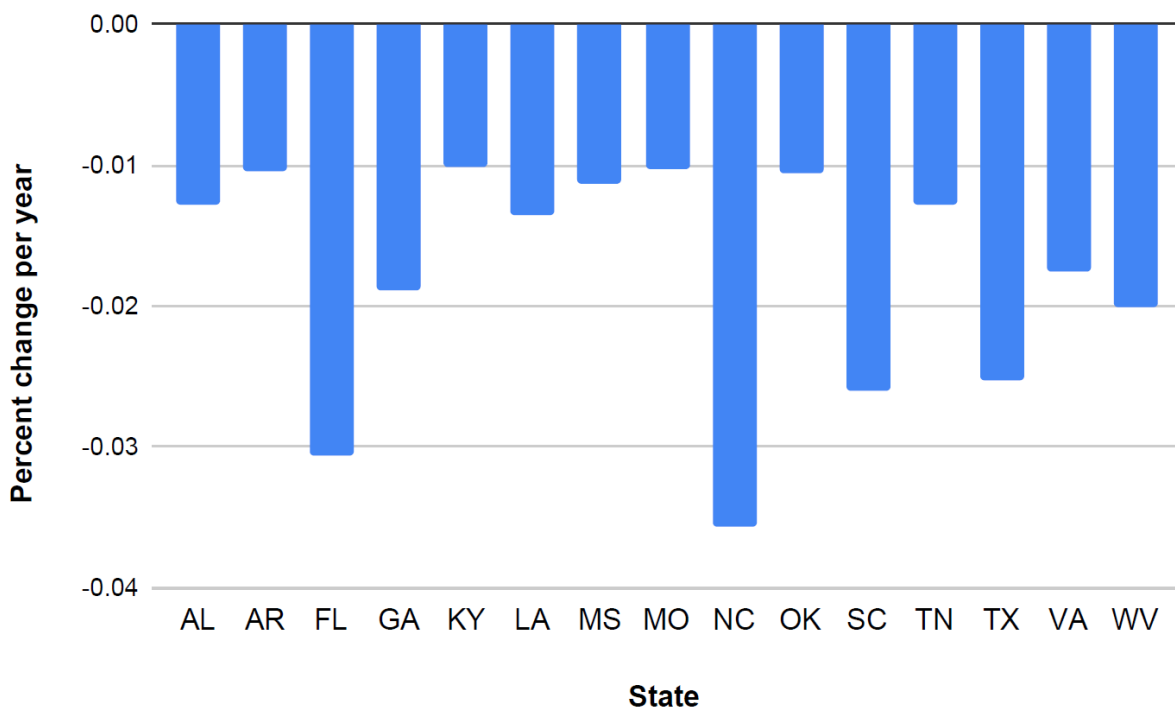


Figure 15. Percent change per year in undeveloped land within Southeast Conservation Blueprint 2024 continental corridors from 2011-2021. Sufficient landcover data were not available to include Puerto Rico and the U.S. Virgin Islands in this analysis.

Yearly trend

All states showed statistically significant declining trends for undeveloped land in corridors. Undeveloped area within corridors across all SECAS states combined declined by 0.019% per year.

On track to meet SECAS goal

No. The decline of about 0.076% every 4 years is not enough to reach the SECAS goal of a 1% increase every 4 years.



Data source

[National Land Cover Database \(NLCD\)](#) and [Southeast Conservation Blueprint 2024 continental corridors](#)

Confidence in trend

High. The National Land Cover Database (NLCD) is particularly good at separating developed and not developed areas. There were also enough years available to get statistically significant trends for each state and all states combined.

Interpretation

This is an indicator of terrestrial connectivity that looks at the landcover change within the Southeast Blueprint 2024 continental corridors. It does not account for changes in the Blueprint corridor layer across different versions of the Blueprint. Development pressure varies across the states of the Southeast, so having undeveloped areas in corridors is easier for some states than others. When looking at [population growth rates during the general period](#) this indicator covers, some states performed as expected based on their population growth while others didn't. States with the largest indicator declines like North Carolina, Florida, South Carolina, and Texas also had relatively high population growth rates. One interesting exception to this was West Virginia, which had the fifth highest decline in undeveloped land in corridors despite being only one of two SECAS states with a negative population growth rate.

Other information available

A table of state-level summaries associated with the graph above is available in the appendix.



Freshwater

Rivers and streams draining into the Atlantic Ocean and Gulf of America



Health

The condition of species and the ecosystems they depend on

Natural landcover in floodplains

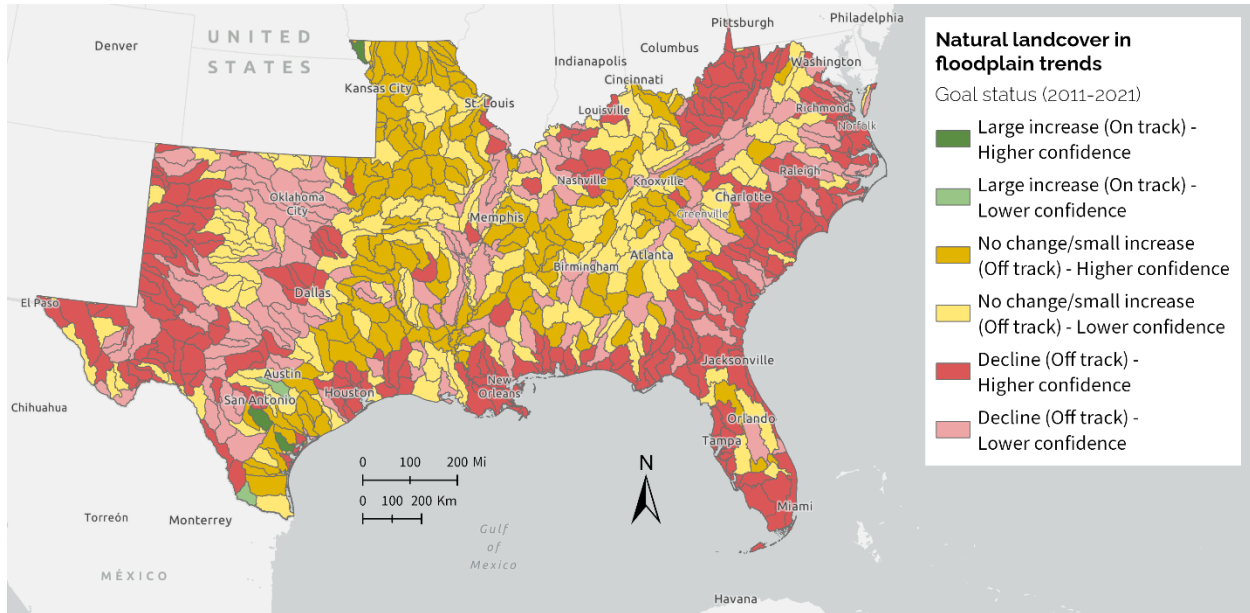


Figure 16. Trends in the amount of natural landcover in floodplains from 2011-2021.

Yearly trend

Natural landcover in floodplains declined by about 0.008% per year in the SECAS region (not including the Caribbean). That is a loss of approximately 23,400 acres per year. There were declines in most states.

On track to meet SECAS goal

No. The decline of about 0.03% every 4 years is not enough to meet the SECAS goal of a 1% increase every 4 years.



Data source

[National Land Cover Database \(NLCD\)](#)

Confidence in trend

Low. The decline was not statistically significant across the region. There are major issues with NLCD classification errors in floodplain areas—especially when separating non-natural habitats like pasture and row crop from natural habitats like shrublands, grasslands, and wetlands. These classification errors seem to be impacted by yearly climate variations and add significant noise to the trend data. In addition to yearly noise due to misclassification, the consistent incorrect classification of grasslands as pasture results in an overall underestimate of natural landcover in areas where grasslands occur in floodplains.

Interpretation

This is an indicator of the health of freshwater and nearby wetland ecosystems. Despite extensive conservation investments in protecting and restoring natural landcover in floodplains, this indicator does not appear to be improving since 2011. While increases in this indicator for some states are positive signs of progress, recent wetland policy changes will likely make it particularly challenging to meet the SECAS goal in future years.

Other information available

A table of state-level summaries associated with the map above is available in the appendix.



Function

The benefits provided to people by species and ecosystems

Water quality

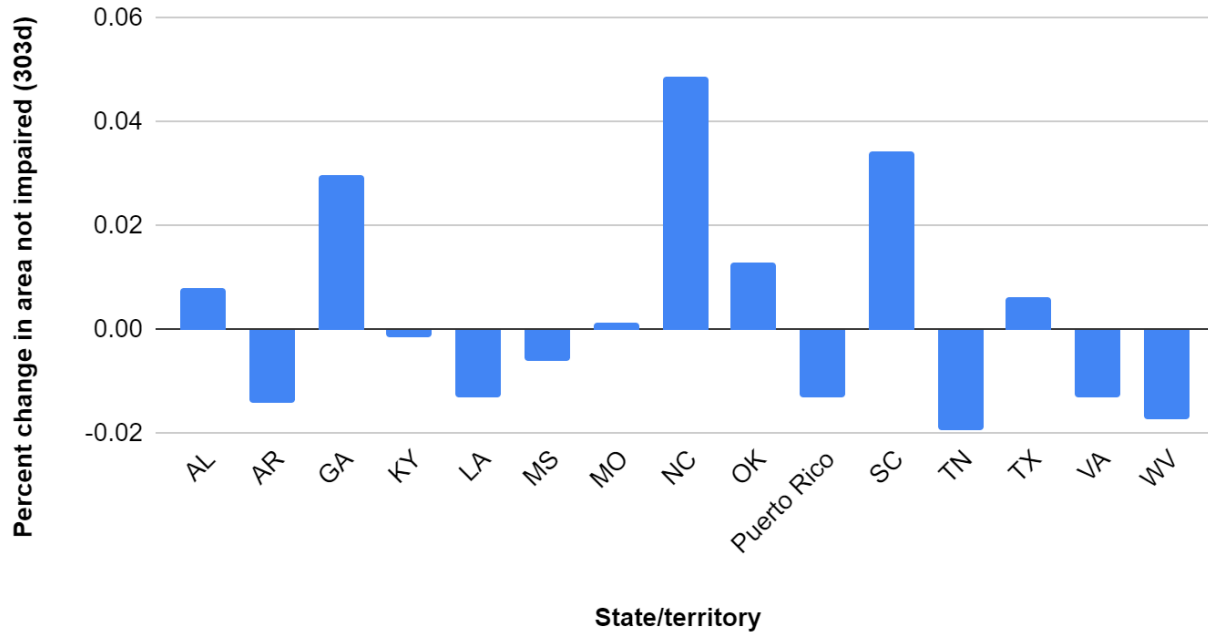


Figure 17. Percent change in area not impaired from the three most recent 303(d) assessments available per state/territory.

Yearly trend

When averaged across state trends, overall water quality increased by approximately 0.003% per year. For all states and territories except North Carolina, the most recent data available was 2014, 2016, or 2018. For North Carolina, the most recent data was 2010. Florida did not report its data in a format that allowed for trend estimates.

On track to meet SECAS goal

No. The increase of about 0.012% every 4 years is not enough to reach the SECAS goal of a 1% increase every 4 years.



Data source

[Environmental Protection Agency 303\(d\) Clean Water Act reports](#)

Confidence in trend

Low. Estimating water quality trends can be particularly challenging. While there are extensive survey efforts and approaches for standardization across state-specific 303(d) reports, yearly weather variation over multiple years and different state standards can complicate estimates of water quality trends.

Interpretation

This is an indicator of overall water quality across the freshwater aquatic ecosystem. Given the low confidence in the trends, it's important to not read too much into these initial numbers. That said, these numbers suggest mixed trends across different states and a lack of strong consistent improvement or decline across the Southeast.

Other information available

A table of state-level summaries associated with the graph above is available in the appendix.



Connectivity

The ability of species and ecosystems to move over time

Aquatic connectivity

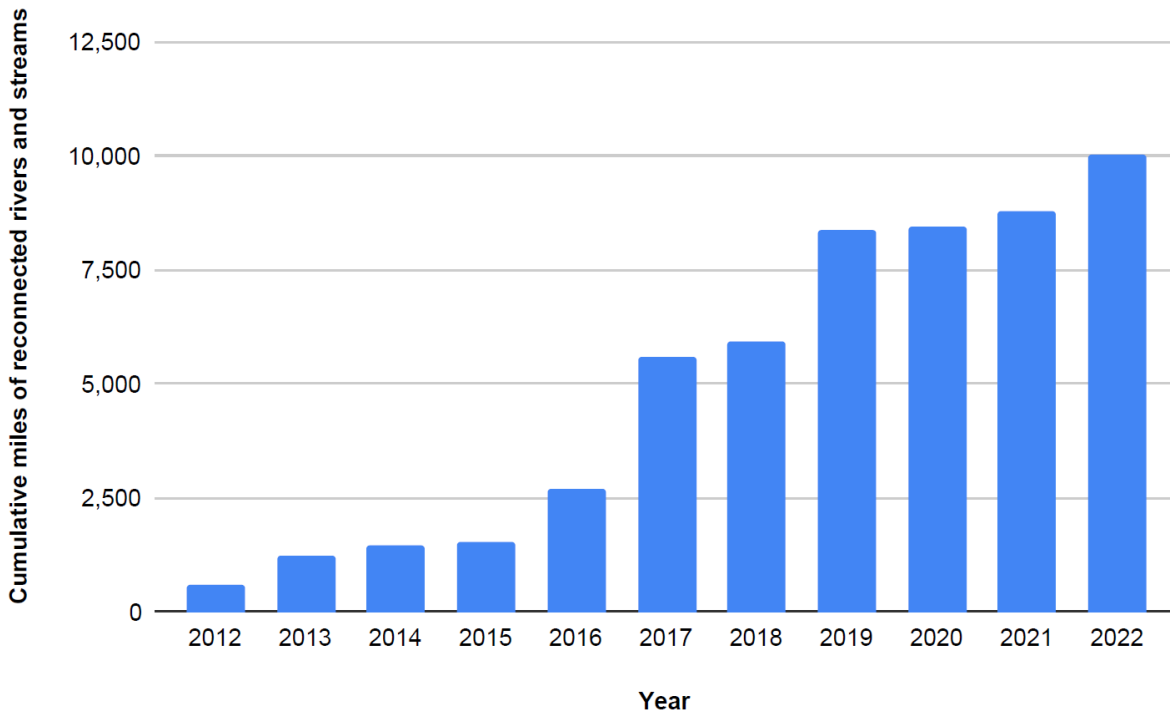


Figure 18. Miles of reconnected rivers and streams from 2012-2022. This estimate includes both dams and road-related aquatic barriers (e.g., culverts) across the full SECAS geography (including the Caribbean).

Yearly trend

Aquatic connectivity increased by about 16% per year from 2012-2022.

On track to meet SECAS goal

Yes. The increase of about 64% every 4 years is greater than the SECAS goal of a 1% increase every 4 years.



Data source

[Southeast Aquatic Resources Partnership Aquatic Barrier Database](#) (data available on request; contact kat@southeastaquatics.net)

Confidence in trend

Low. The trend estimate is not statistically significant. Tracking removals and mitigation for dams and road-related barriers, including the year they are removed, is still a challenge. Estimating the overall number of dams and road-related barriers in the region is also challenging. The current data likely underestimate both the number of miles restored and the amount of aquatic alteration in the region.

Interpretation

This is an indicator of species' ability to access habitat within the rivers and streams of the region. The increases are the result of large and collaborative work to restore aquatic connectivity throughout the Southeast and Caribbean. Past versions of the goal report, which only looked at number of dams, underestimated ongoing improvements in aquatic connectivity. Maintaining improvements in aquatic connectivity may be a challenge in the near future as coastal communities explore creating new dams and reservoirs in response to increased flooding from intense storms and sea-level rise.

Other information available

Tabular data associated with the graph above are available in the appendix.



Estuarine & marine

From estuaries to the open ocean at the edge of U.S. waters



Health

The condition of species and the ecosystems they depend on

Coastal condition

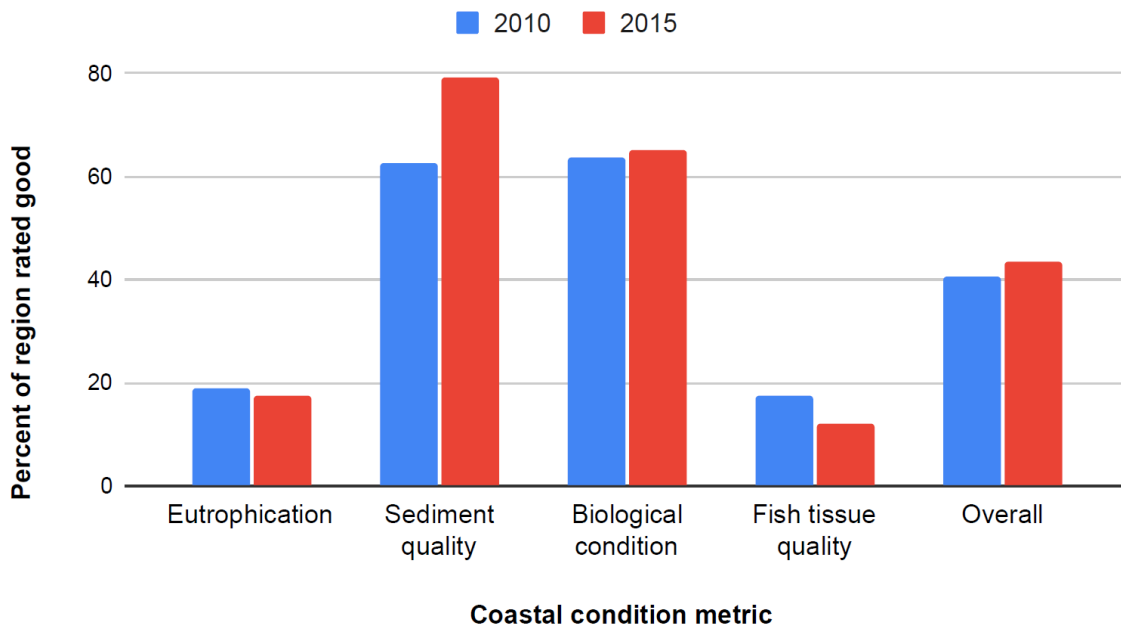


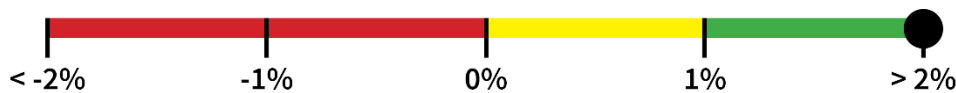
Figure 19. Percent of the Southeast rated “good” in 2010 and 2015 for the coastal condition metrics used in the Blueprint. More details on scores, trends, and uncertainty are available in the EPA dashboards for the Southeast Atlantic and Gulf regions.

Yearly trend

When averaged across subregions, overall coastal condition increased by 0.56% per year from 2010 to 2015. Overall condition declined in the Southeast and improved in the Gulf of America.

On track to meet SECAS goal

Yes. The increase of about 2.25% every 4 years is greater than the SECAS goal of a 1% increase every 4 years.



Data source

[National Coastal Condition Assessment](#)

Confidence in trend

Low. While this is a well-designed, randomized survey, we're only using two years of assessment to estimate the trend.

Interpretation

This is an indicator of the overall condition of the water and sediment in the estuaries and nearshore marine areas of the Southeast. The Gulf of America is showing major improvements while the Southeast Atlantic is showing mixed patterns and an overall decline. From 2005/2006 (not depicted in graph) to 2015, condition also continues to improve in the Gulf and show mixed patterns in the Atlantic. The trends in sediment quality should also be viewed with caution as results of that sampling can vary significantly from year to year.

Other information available

Tabular data associated with the graph above and a table of regional summaries for each metric are available in the appendix.



Function

The benefits provided to people by species and ecosystems

Fisheries

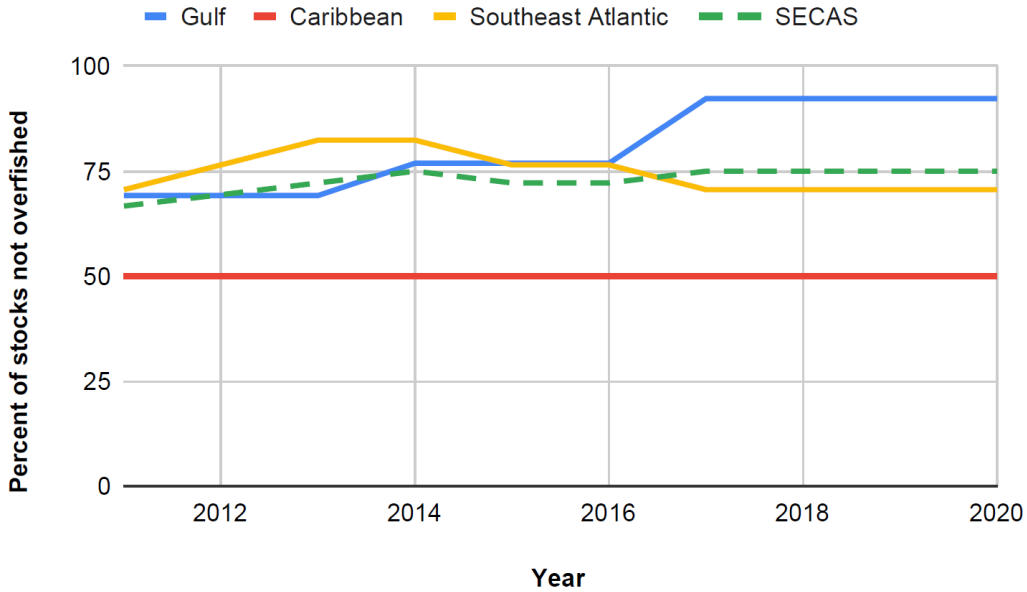


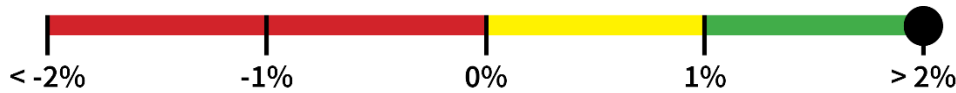
Figure 20. Percent of fisheries not overfished from 2011-2020.

Yearly trend

Overall fisheries condition increased by 1.1% per year between 2011-2020. Gulf stocks improved, Caribbean stocks were stable, while Southeast Atlantic stocks declined.

On track to meet SECAS goal

Yes. The increase of about 5.6% every 4 years is greater than the SECAS goal of a 1% increase every 4 years.



Data source

[NOAA National Marine Ecosystem Status \(Overfished stocks\)](#), [NOAA 2022 Stock Assessment Tables](#)

Confidence in trend

Medium. The trend estimate is statistically significant. Stock status assessments can be challenging, but extensive work and data go into assessing these statuses every year.

Interpretation

This is an indicator of management for the most important estuarine and marine fisheries of the Southeast. Fishing is only one of the many stressors faced by the fisheries of the Southeast. Overall improvements in fisheries management make important contributions to the SECAS goal, but broader ecosystem-based approaches will be important for sustaining fisheries at desired levels into the future.

Other information available

Regional summaries and tabular data associated with the graph above are available in the appendix.

Image credits

- Ecosystem icons (terrestrial, freshwater, estuarine and marine) from the University of Maryland Center for Environmental Science [Integration and Application Network](#)
- Health, function, and connectivity icons from [the Noun Project](#)
 - **Health:** Health by Alzam from the Noun Project
 - **Function:** People by Kiran Shastry from the Noun Project
 - **Connectivity:** Chain by Robert Bjurshagen from the Noun Project

Appendix: Additional Tables and Figures

This appendix contains supplementary tables for all indicators in the SECAS Goal Report. For accessibility purposes, it includes the tabular data associated with each graph included in the report.

Aquatic connectivity

Table 2. Tabular data associated with Figure 18. Miles of reconnected rivers and streams from 2012-2022. This estimate includes both dams and road-related aquatic barriers (e.g., culverts) across the full SECAS geography (including the Caribbean).

Year	Miles reconnected during year	Cumulative miles reconnected since 2011
2011	182.6	182.6
2012	425.2	607.8
2013	639.0	1,246.8
2014	209.0	1,455.8
2015	79.1	1,534.9
2016	1,177.3	2,712.2
2017	2,875.4	5,587.6
2018	343.8	5,931.4
2019	2,443.7	8,375.2
2020	72.0	8,447.2
2021	341.0	8,788.2
2022	1,250.0	10,038.2

Areas without invasive plants

Table 3. Tabular data associated with Figure 1. State-specific change in areas without invasive plants by plant type, based on the most recent available state data. Green colors represent any positive trend and do not imply that the increase is sufficient to be on track to achieve the SECAS goal. Confidence was not calculated for this trend.

	Trees	Shrubs	Vines	Forbs, ferns, other	Grass
Alabama	-0.36%	-0.93%	-0.16%	-0.60%	-0.04%
Arkansas	-0.12%	-0.78%	0.13%	-0.14%	0.04%
Florida	-0.17%	-0.16%	0.03%	-0.13%	-0.02%
Georgia	-0.34%	-0.61%	0.20%	-0.32%	-0.06%
Kentucky	-0.25%	-2.18%	-0.91%	-0.21%	-1.57%
Louisiana	-0.39%	-0.58%	-0.41%	-0.28%	-0.03%
Mississippi	-0.27%	-0.17%	0.18%	-2.58%	0.21%
North Carolina	-0.10%	-0.76%	-0.24%	-0.10%	-0.41%
Oklahoma	0.003%	0.41%	0.11%	-0.33%	0.22%
South Carolina	-0.19%	-0.58%	-0.18%	-0.12%	-0.20%
Tennessee	-0.06%	-0.51%	0.59%	0.03%	-0.03%
Texas	0.11%	-1.05%	-0.09%	-0.11%	-0.01%
Virginia	-0.06%	-1.61%	-0.71%	-0.62%	-1.20%

Beach birds

Table 4. Trends by state in abundance of each beach bird species from 2012-2022. Asterisks (*) and darker colors refer to higher confidence in the trend. Colors indicate goal status, where red and yellow are off-track to meet the goal and green is on-track (also see Table 5).

	American oystercatcher	Black skimmer	Gull-billed tern	Least tern	Piping plover	Royal tern	Snowy plover	Willet
AL	-20.1%*	-35.1%*	-24.8%*	-10%*		-5.5%	-9.7%*	-33.5%*
AR				-22.8%*				
FL	-15.5%*	-30.4%*	-9%	-9.8%*	-10.1%	-9.6%	-10.4%	-25.3%*
GA	-19%	-29.8%*	-13.6%*	-15.5%*		-31.7%*		-22.8%*
KY				-8.5%				
LA	3.9%	-25.7%*	13%*	-20.5%*		13.2%*		-18.9%*
MO				-12.6%*				
MS	-28.7%*	-37.2%*	-14.5%	-22.8%*		-11.7%*	-4.9%	-33.4%*
NC	5.1%	-11.4%*	11%	0.1%	-29.9%*	9.4%*		-9.2%*
OK				-14.1%*			-4.4%	-39.1%*
SC	-23.6%*	-19.3%*	-15.3%*	-13%*		-21.9%*		-6.9%*
TN				-10.7%*				
TX	-11.2%	-32.4%*	-6.2%*	-14.3%*		12%*	-36%*	-23%*
VA	-9.9%	-9.4%	-0.5%	-19%*	-22.5%*	-7.5%*		-12.5%*
PR	27%*		5.6%	29.4%*		13.3%*	14.2%	-17.1%*
USVI	25.5%*			23.7%*		10.5%		

Table 5. Goal status by state for each beach bird species from 2012-2022, abbreviated for space. “Increase/off track” indicates a small increase insufficient to meet the goal, while “increase/on track” indicates a larger increase. “High” indicates higher confidence and “low” indicates lower confidence in the trend.

	American oystercatcher	Black skimmer	Gull-billed tern	Least tern	Piping plover	Royal tern	Snowy plover	Willet
AL	Decline Off track High	Decline Off track High	Decline Off track High	Decline Off track High		Decline Off track Low	Decline Off track High	Decline Off track High
AR				Decline Off track High				
FL	Decline Off track High	Decline Off track High	Decline Off track Low	Decline Off track High	Decline Off track Low	Decline Off track Low	Decline Off track Low	Decline Off track High
GA	Decline Off track Low	Decline Off track High	Decline Off track High	Decline Off track High		Decline Off track High		Decline Off track High
KY				Decline Off track Low				
LA	Increase On track Low	Decline Off track High	Increase On track High	Decline Off track High		Increase On track High		Decline Off track High
MO				Decline Off track High				
MS	Decline Off track High	Decline Off track High	Decline Off track Low	Decline Off track High		Decline Off track High	Decline Off track Low	Decline Off track High
NC	Increase On track Low	Decline Off track High	Increase On track Low	Increase Off track Low	Decline Off track High	Increase On track High		Decline Off track High
OK				Decline Off track High			Decline Off track Low	Decline Off track High
SC	Decline Off track High	Decline Off track High	Decline Off track High	Decline Off track High		Decline Off track High		Decline Off track High
TN				Decline Off track High				
TX	Decline Off track Low	Decline Off track High	Decline Off track High	Decline Off track High		Increase On track High	Decline Off track High	Decline Off track High
VA	Decline Off track Low	Decline Off track Low	Decline Off track Low	Decline Off track High	Decline Off track High	Decline Off track High		Decline Off track High
PR	Increase On track High		Increase On track Low	Increase On track High		Increase On track High	Increase On track Low	Decline Off track High
USVI	Increase On track High			Increase On track High		Increase On track Low		

Caribbean undeveloped land

Table 6. Territory-specific change in undeveloped land from 2017-2022. Darker colors indicate higher confidence.

	Acres (2022)	Yearly acres gained/lost 2017-2022	Yearly % change 2017-2022	Confidence in trend
Puerto Rico	68,085,842	-262,106	-0.4%	Medium
U.S. Virgin Islands	2,177,841	-16,934	-0.8%	Low

Coastal condition

Table 7. Change in percent “good” from 2010-2015 for each subregion.

	Eutrophication condition	Sediment quality	Biological condition	Fish tissue quality	Overall
Southeast Atlantic	-4.1%	6.9%	-0.3%	-8.8%	-1.6%
Gulf of America	1.5%	26.4%	3.2%	-2.3%	7.2%

Table 8. Tabular data associated with Figure 19. Percent of the Southeast rated “good” in 2010 and 2015 for the coastal condition metrics used in the Blueprint.

	% good (2010)	% good (2015)	Yearly % change 2010-2015
Eutrophication condition	18.8%	17.5%	-1.3%
Sediment quality	62.6%	79.2%	16.7%
Biological condition	63.6%	65.1%	1.5%
Fish tissue quality	17.6%	12.1%	-5.6%
Overall	40.6%	43.5%	2.8%

Fisheries

Table 9. Regional change in number of fisheries not overfished from 2011-2020. Darker colors indicate higher confidence.

	% stocks not overfished (2020)	Yearly % change 2011-2020	Confidence in trend
Gulf	92.3%	4.9%	Higher
Caribbean	50%	0%	Higher
Southeast Atlantic	70.6%	-1.1%	Lower
SECAS	75%	1.1%	Higher

Table 10. Tabular data associated with Figure 20. Percent of fisheries not overfished by region from 2011-2020.

	% stocks not overfished (Gulf)	% stocks not overfished (Caribbean)	% stocks not overfished (Southeast Atlantic)	% stocks not overfished (SECAS-wide)
2011	69.2%	50%	70.6%	66.7%
2012	69.2%	50%	76.5%	69.4%
2013	69.2%	50%	82.4%	72.2%
2014	76.9%	50%	82.4%	75%
2015	76.9%	50%	76.5%	72.2%
2016	76.9%	50%	76.5%	72.2%
2017	92.3%	50%	70.6%	75%
2018	92.3%	50%	70.6%	75%
2019	92.3%	50%	70.6%	75%
2020	92.3%	50%	70.6%	75%

Forested wetland area

Table 11. State-specific change in forested wetland area from 2011-2021. Green colors represent any increasing or positive trend and do not imply that the increase is sufficient to be on track to achieve the SECAS goal. Darker colors indicate higher confidence.

	Acres (2021)	Yearly acres gained/lost 2011-2021	Yearly % change 2011-2021	Confidence in trend
Alabama	16,595,393	34,941	0.2%	Lower
Arkansas	15,434,936	12,961	0.1%	Lower
Florida	42,790,820	62,969	0.1%	Higher
Georgia	27,070,394	-151	-0.001%	Lower
Kentucky	1,388,828	-915	-0.1	Lower
Louisiana	29,454,305	48,942	0.2	Lower
Mississippi	22,355,770	35,817	0.2	Lower
Missouri	3,663,060	-4,087	-0.1	Lower
North Carolina	20,313,656	-17,722	-0.1	Lower
Oklahoma	1,532,162	198	0.01%	Lower
South Carolina	17,746,925	-48,314	-0.3%	Higher
Tennessee	3,841,349	4,944	0.1%	Lower
Texas	21,338,818	45,726	0.2%	Lower
Virginia	5,651,773	4,876	0.1%	Lower
West Virginia	115,493	1,020	0.9%	Higher

Forested wetland birds

Table 12. Trends by state in abundance of each grassland and savanna bird species from 2012-2022. Asterisks (*) and darker colors refer to higher confidence in the trend. Colors indicate goal status, where red and yellow are off-track to meet the goal and green is on-track (also see Table 13).

	Prothonotary warbler	Swainson's warbler	Swallow-tailed kite	Yellow-throated warbler
AL	3.8%	48.9%*	9.4%*	26.8%*
AR	19.9%*	32.2%*		28.5%*
FL	-16%*	-11%	23.1%*	3.6%
GA	2.1%	75.4%*	41.6%*	16.2%*
KY	18.1%*	53.6%*		5.4%*
LA	-6.5%	21.4%*	17.4%*	21.9%*
MO	18%*	32.6%*		7.8%*
MS	12.3%*	34.3%*	17.3%*	26.6%*
NC	-1.4%	19.6%*	24.2%*	13.1%*
OK	15.7%*	64.7%*		61.9%*
SC	-2.7%	38.2%*	15%*	15.5%*
TN	21.7%*	42%*		16.1%*
TX	10.5%*	47.4%*	10.3%*	90.5%*
VA	-6.6%	25.8%*		18.9%*
WV	27.9%*	51.2%*		4%

Table 13. Goal status by state for each forested wetland bird species from 2012-2022, abbreviated for space. “Increase/off track” indicates a small increase insufficient to meet the goal, while “increase/on track” indicates a larger increase. “High” indicates higher confidence and “low” indicates lower confidence in the trend.

	Prothonotary warbler	Swainson's warbler	Swallow-tailed kite	Yellow-throated warbler
AL	Increase On track Low	Increase On track High	Increase On track High	Increase On track High
AR	Increase On track High	Increase On track High		Increase On track High
FL	Decline Off track High	Decline Off track Low	Increase On track High	Increase On track Low
GA	Increase Off track Low	Increase On track High	Increase On track High	Increase On track High
KY	Increase On track High	Increase On track High		Increase On track High
LA	Decline Off track Low	Increase On track High	Increase On track High	Increase On track High
MO	Increase On track High	Increase On track High		Increase On track High
MS	Increase On track High	Increase On track High	Increase On track High	Increase On track High
NC	Decline Off track Low	Increase On track High	Increase On track High	Increase On track High
OK	Increase On track High	Increase On track High		Increase On track High
SC	Decline Off track Low	Increase On track High	Increase On track High	Increase On track High
TN	Increase On track High	Increase On track High		Increase On track High
TX	Increase On track High	Increase On track High	Increase On track High	Increase On track High
VA	Decline Off track Low	Increase On track High		Increase On track High
WV	Increase On track High	Increase On track High		Increase On track Low

Gopher tortoise

Table 14. Tabular data associated with Figure 6. Gopher tortoise sites with increasing, declining, or stable trends during resurveys in 2017.

	% of sites
Increase - Lower confidence	93.8%
Stable - Lower confidence	2.4%
Decline - Lower confidence	3.8%

Grassland & savanna area

Table 15. State-specific change in grassland and savanna area from 2011-2021. Darker colors indicate higher confidence.

	Acres (2021)	Yearly acres gained/lost 2011-2021	Yearly % change 2011-2021	Goal status
Alabama	5,134,609	-45,220	-0.82%	Decline (Off track) - Higher confidence
Arkansas	5,052,707	-8,830	-0.17%	Decline (Off track) - Lower confidence
Florida	6,769,358	-5,874	-0.09%	Decline (Off track) - Lower confidence
Georgia	6,043,326	-32,022	-0.50%	Decline (Off track) - Higher confidence
Kentucky	4,176,572	-52,061	-1.12%	Decline (Off track) - Higher confidence
Louisiana	2,279,771	-13,926	-0.58%	Decline (Off track) - Higher confidence
Mississippi	2,802,502	-21,527	-0.72%	Decline (Off track) - Higher confidence
Missouri	9,718,889	-11,343	-0.12%	Decline (Off track) - Lower confidence
North Carolina	3,298,562	-42,995	-1.16%	Decline (Off track) - Higher confidence
Oklahoma	22,423,252	-18,404	-0.08%	Decline (Off track) - Lower confidence
South Carolina	2,923,394	-17,064	-0.55%	Decline (Off track) - Higher confidence
Tennessee	4,297,391	-55,986	-1.16%	Decline (Off track) - Higher confidence
Texas	70,506,976	-111,320	-0.16%	Decline (Off track) - Higher confidence
Virginia	3,077,026	-21,523	-0.65%	Decline (Off track) - Higher confidence
West Virginia	1,187,746	-11,038	-0.86%	Decline (Off track) - Higher confidence

Grassland & savanna birds

Table 16. Trends by state in abundance of each grassland and savanna bird species from 2012-2022. Asterisks (*) and darker colors refer to higher confidence in the trend. Colors indicate goal status, where red and yellow are off-track to meet the goal and green is on-track (also see Table 17).

	American kestrel	Bachman's sparrow	Eastern meadowlark	Grasshopper sparrow	Henslow's sparrow	Loggerhead shrike	Northern bobwhite	Prairie warbler	Red-cockaded woodpecker	Scissor-tailed flycatcher
AL	-12.2%*	11.4%*	-35.5%*	-51.6%*		-32.7%*	-30.1%*	-2.2%	-7.2%	-37%*
AR	-29.8%*	-44.7%*	-44%*	-53.6%*		-39.4%*	-40.3%*	-5.2%	52.9%*	-43.1%*
FL	-15.4%	-9.5%	-11.5%*	-41.3%*		-35.9%*	-5.8%*	-13.5%*	-19.7%*	
GA	-16.7%*	-9.2%*	-33.8%*	-59%*		-1.2%	-15%*	-19.5%*	-23.1%*	-57.7%*
KY	-4.8%		-24.4%*	-48.3%*	-31%*	-29.2%*	-37.3%*	-9.3%*		-41%*
LA	-26.4%*	-42.9%*	-31.1%*			-44.1%*	-32%*	-5.7%	-24.9%*	-39.6%*
MO	-26.5%*		-27.2%*	-42.4%*	9.7%	-34%*	-29.3%*	-14.5%*		-44.3%*
MS	-32.4%*	-19.4%*	-44%*	-58.6%*		-44.3%*	-38.6%*	-4.2%	-3.4%	-36.2%*
NC	-16.2%*	6.7%	-18%*	-33.9%*	61.5%*	-36.6%*	-24.8%*	-20.2%*	2.8%	8.9%
OK	-27.7%*	-27.3%*	-15.9%*	-9.7%*	2.7%	-33.1%*	-44.7%*	20.2%*	77.1%*	-32.8%*
SC	-19.5%*	-18.7%*	-25%*	-49.8%*		-20.5%*	-19.5%*	-19.8%*	-8.9%	-5.7%
TN	-10%*		-29.2%*	-50%*	-36.8%*	-36.4%*	-45.8%*	-13.7%*		-44.1%*
TX	-25.1%*	-34.6%*	-19.1%*	-10.1%*		-36.1%*	-37.6%*	1.1%	7.9%	-27.3%*
VA	-6.9%		-15.4%*	-32.5%*		-43.8%*	-19.5%*	-22.7%*	152.3%*	-39.7%*
WV	-4.3%		-16.3%*	-46.7%*	-28.8%*	-38.5%*	-27.9%	-18%*		-48.2%*
PR	-6.3%			-44.2%*						
USVI	-13.5%									

Table 17. Goal status by state for each grassland and savanna bird species from 2012-2022, abbreviated for space. “Increase/off track” indicates a small increase insufficient to meet the goal, while “increase/on track” indicates a larger increase. “High” indicates higher confidence and “low” indicates lower confidence in the trend.

	American kestrel	Bachman's sparrow	Eastern meadowlark	Grasshopper sparrow	Henslow's sparrow	Loggerhead shrike	Northern bobwhite	Prairie warbler	Red-cockaded woodpecker	Scissor-tailed flycatcher
AL	Decline Off track High	Increase On track High	Decline Off track High	Decline Off track High		Decline Off track High	Decline Off track High	Decline Off track Low	Decline Off track Low	Decline Off track High
AR	Decline Off track High	Decline Off track High	Decline Off track High	Decline Off track High		Decline Off track High	Decline Off track High	Decline Off track Low	Increase On track High	Decline Off track High
FL	Decline Off track Low	Decline Off track Low	Decline Off track High	Decline Off track High		Decline Off track High	Decline Off track High	Decline Off track High	Decline Off track High	
GA	Decline Off track High	Decline Off track High	Decline Off track High	Decline Off track High		Decline Off track Low	Decline Off track High	Decline Off track High	Decline Off track High	Decline Off track High
KY	Decline Off track Low		Decline Off track High	Decline Off track High	Decline Off track High	Decline Off track High	Decline Off track High	Decline Off track High		Decline Off track High
LA	Decline Off track High	Decline Off track High	Decline Off track High			Decline Off track High	Decline Off track High	Decline Off track Low	Decline Off track High	Decline Off track High
MO	Decline Off track High		Decline Off track High	Decline Off track High	Increase On track Low	Decline Off track High	Decline Off track High	Decline Off track High		Decline Off track High
MS	Decline Off track High	Decline Off track High	Decline Off track High	Decline Off track High		Decline Off track High	Decline Off track High	Decline Off track Low	Decline Off track Low	Decline Off track High
NC	Decline Off track High	Increase On track Low	Decline Off track High	Decline Off track High	Increase On track High	Decline Off track High	Decline Off track High	Decline Off track High	Increase On track Low	Increase On track Low
OK	Decline Off track High	Decline Off track High	Decline Off track High	Decline Off track High	Increase On track Low	Decline Off track High	Decline Off track High	Increase On track High	Increase On track High	Decline Off track High
SC	Decline Off track High	Decline Off track High	Decline Off track High	Decline Off track High		Decline Off track High	Decline Off track High	Decline Off track High	Decline Off track Low	Decline Off track Low
TN	Decline Off track High		Decline Off track High	Decline Off track High	Decline Off track High	Decline Off track High	Decline Off track High	Decline Off track High		Decline Off track High
TX	Decline Off track High	Decline Off track High	Decline Off track High	Decline Off track High		Decline Off track High	Decline Off track High	Increase Off track Low	Increase On track Low	Decline Off track High
VA	Decline Off track Low		Decline Off track High	Decline Off track High		Decline Off track High	Decline Off track High	Decline Off track High	Increase On track High	Decline Off track High
WV	Decline Off track Low		Decline Off track High	Decline Off track High	Decline Off track High	Decline Off track High	Decline Off track Low	Decline Off track High		Decline Off track High
PR	Decline Off track Low			Decline Off track High						
USVI	Decline Off track Low									

Landscape condition

Table 18. State-specific change in landscape condition from 2011-2021. The landscape condition score ranges from 1 (heavily altered) to 3 (natural). Darker colors indicate higher confidence.

	Average condition score (2021)	Yearly % change 2011-2021	Confidence in trend
Alabama	2.7	-0.01%	Higher
Arkansas	2.6	-0.01%	Higher
Florida	2.6	-0.03%	Higher
Georgia	2.7	-0.02%	Higher
Kentucky	2.6	-0.01%	Higher
Louisiana	2.7	-0.01%	Higher
Mississippi	2.7	-0.001%	Lower
Missouri	2.4	-0.004%	Higher
North Carolina	2.6	-0.03%	Higher
Oklahoma	2.6	-0.02%	Lower
South Carolina	2.7	-0.02%	Higher
Tennessee	2.6	-0.01%	Higher
Texas	2.7	-0.03%	Higher
Virginia	2.7	-0.01%	Higher
West Virginia	2.8	-0.01%	Higher

Longleaf pine area

Table 19. Tabular data associated with Figure 9. Change in acres of longleaf pine from 2013-2016.

	Acres (2013)	Acres (2016)	Overall % change 2013-2016
North Carolina	282,551	358,124	26.7%
South Carolina	468,962	491,975	4.9%
Georgia	569,254	565,575	-0.6%
Florida	957,754	1,000,538	4.5%
Alabama	668,140	687,129	2.8%
Mississippi	246,345	293,111	19.0%
Louisiana	209,252	177,837	-15.0%
Texas	16,529	32,370	95.8%

Natural landcover in floodplains

Table 20. State-specific change in natural landcover in floodplains from 2011-2021. Green colors represent any positive trend and do not imply that the increase is sufficient to be on track to achieve the SECAS goal. Darker colors indicate higher confidence.

	Acres (2021)	Yearly acres gained/lost 2011-2021	Yearly % change 2011-2021	Confidence in trend
Alabama	19,440,964	2,060	0.01%	Higher
Arkansas	20,701,929	1,068	0.01%	Lower
Florida	61,184,688	-10,015	-0.02%	Higher
Georgia	23,751,318	-2,386	-0.01%	Higher
Kentucky	7,119,382	-384	-0.01%	Lower
Louisiana	53,906,274	5,006	0.01%	Higher
Mississippi	22,017,490	4,610	0.02%	Higher
Missouri	11,722,797	4,620	0.04%	Higher
North Carolina	19,090,875	-2,292	-0.01%	Higher
Oklahoma	20,284,247	-2,502	-0.01%	Lower
South Carolina	17,690,203	-2,573	-0.01%	Higher
Tennessee	8,284,443	1,103	0.01%	Lower
Texas	81,032,025	-28,713	-0.04%	Lower
Virginia	8,631,233	-426	-0.005%	Lower
West Virginia	2,353,292	-1,557	-0.07%	Higher

Prescribed fire in longleaf pine

Table 21. Tabular data associated with Figure 10. Acres of prescribed fire in longleaf pine from 2013-2023.

	Acres
2013	1,100,808
2014	1,216,952
2015	1,582,522
2016	1,655,096
2017	1,368,182
2018	1,632,755
2019	1,414,761
2020	1,446,879
2021	1,693,992
2022	1,747,583
2023	1,759,969

Salt marsh area

Table 22. Tabular data associated with Figure 11. State-specific changes in area of estuarine emergent wetland from 2010-2016. Green colors represent any increasing or positive trend and do not imply that the increase is sufficient to be on track to achieve the SECAS goal.

	Acres (2010)	Acres (2016)	Yearly % change
Alabama	151,510	150,618	-0.10
Florida	2,323,622	2,313,068	-0.08
Georgia	1,652,478	1,650,713	-0.02
Louisiana	7,513,330	7,519,457	0.01
Mississippi	265,745	266,456	0.04
North Carolina	1,015,849	1,009,748	-0.10
South Carolina	1,612,309	1,610,953	-0.01
Texas	2,177,225	2,162,614	-0.11
Virginia	847,644	841,351	-0.12
SECAS-wide	17,559,712	17,524,978	-0.03

Undeveloped land in corridors

Table 23. Tabular data associated with Figure 15. State-specific change per year in undeveloped land in Southeast Conservation Blueprint 2024 continental corridors from 2011-2021. Sufficient landcover data were not available to include Puerto Rico and the U.S. Virgin Islands in this analysis.

	Acres (2021)	Yearly acres gained/lost 2011-2021	Yearly % change 2011-2021	Confidence in trend
Alabama	10,426,709	-6,041.1	-0.01%	Higher
Arkansas	11,149,816	-5,202.6	-0.01%	Higher
Florida	12,889,911	-17,798.0	-0.03%	Higher
Georgia	10,316,515	-8,761.6	-0.02%	Higher
Kentucky	7,570,793	-3,433.2	-0.01%	Higher
Louisiana	10,906,760	-6,659.4	-0.01%	Higher
Mississippi	7,618,888	-5,858.3	-0.01%	Higher
Missouri	11,566,430	-3,543.5	-0.01%	Higher
North Carolina	8,657,649	-13,923.3	-0.04%	Higher
Oklahoma	12,134,578	-5,750.9	-0.01%	Higher
South Carolina	5,976,082	-6,995.4	-0.03%	Higher
Tennessee	8,180,406	-4,740.7	-0.01%	Higher
Texas	43,048,120	-48,881.7	-0.03%	Higher
Virginia	7,002,787	-5,512.4	-0.02%	Higher
West Virginia	4,899,187	-4,438.7	-0.02%	Higher

Upland forest birds

Table 24. Trends by state in abundance of each upland forest bird species from 2012-2022. Asterisks (*) and darker colors refer to higher confidence in the trend. Colors indicate goal status, where red and yellow are off-track to meet the goal and green is on-track (also see Table 25).

	Cerulean warbler	Louisiana waterthrush	Wood thrush	Worm-eating warbler
AL	-24.4%*	9.6%*	21.1%*	-10.3%*
AR	19.4%*	13.3%*	36.1%*	-1.9%
FL		-4.3%	39.5%*	
GA	-29.8%*	19.2%*	21.9%*	-31.9%*
KY	-6.3%*	3%	22.7%*	-16%*
LA		24%	52.4%*	8.9%
MO	-12.5%*	-2.8%	19.2%*	-28.1%*
MS	-17.4%	20%*	36.1%*	-14.1%*
NC	-26.4%*	4.8%	6.3%*	-23.7%*
OK	6%	10.8%*	29.4%*	-33.3%*
SC	-19.9%*	35%*	18.6%*	-26.8%*
TN	-12.2%*	2.3%	19.4%*	-21.3%*
TX		26.6%*	67.3%*	31.4%*
VA	-11.2%*	2.8%	8%*	-16.8%*
WV	-6.3%	7.7%*	20.3%*	-13.5%*

Table 25. Goal status by state for each upland forest bird species from 2012-2022, abbreviated for space. “Increase/off track” indicates a small increase insufficient to meet the goal, while “increase/on track” indicates a larger increase. “High” indicates higher confidence and “low” indicates lower confidence in the trend.

	Cerulean warbler	Louisiana waterthrush	Wood thrush	Worm-eating warbler
AL	Decline Off track High	Increase On track High	Increase On track High	Decline Off track High
AR	Increase On track High	Increase On track High	Increase On track High	Decline Off track Low
FL		Decline Off track Low	Increase On track High	
GA	Decline Off track High	Increase On track High	Increase On track High	Decline Off track High
KY	Decline Off track High	Increase On track Low	Increase On track High	Decline Off track High
LA		Increase On track Low	Increase On track High	Increase On track Low
MO	Decline Off track High	Decline Off track Low	Increase On track High	Decline Off track High
MS	Decline Off track Low	Increase On track High	Increase On track High	Decline Off track High
NC	Decline Off track High	Increase On track Low	Increase On track High	Decline Off track High
OK	Increase On track Low	Increase On track High	Increase On track High	Decline Off track High
SC	Decline Off track High	Increase On track High	Increase On track High	Decline Off track High
TN	Decline Off track High	Increase Off track Low	Increase On track High	Decline Off track High
TX		Increase On track High	Increase On track High	Increase On track High
VA	Decline Off track High	Increase On track Low	Increase On track High	Decline Off track High
WV	Decline Off track Low	Increase On track High	Increase On track High	Decline Off track High

Water quality

Table 26. Tabular data associated with Figure 17. Percent change in area not impaired from the three most recent 303(d) assessments available per state/territory. Green colors represent any increasing or positive trend and do not imply that the increase is sufficient to be on track to achieve the SECAS goal.

	Yearly % change
Alabama	0.01%
Arkansas	-0.01%
Georgia	0.03%
Kentucky	0.001%
Louisiana	-0.01%
Mississippi	-0.01%
Missouri	0.001%
North Carolina	0.05%
Oklahoma	0.01%
Puerto Rico	-0.01%
South Carolina	0.03%
Tennessee	-0.02%
Texas	0.01%
Virginia	-0.01%
West Virginia	-0.02%

Working lands conservation

Table 27. Tabular data associated with Figure 13. State-specific working lands conservation metrics from 2015-2020. Caribbean includes both Puerto Rico and the U.S. Virgin Islands. Green colors represent any increasing or positive trend and do not imply that the increase is sufficient to be on track to achieve the SECAS goal.

	% of state composed of private land	Acres of conservation practices (2020)	Yearly % change 2015-2020	# of conservation practices/acre of private land (2020)
Alabama	95.24%	2,384,324	10.0%	0.07
Arkansas	88.56%	6,211,121	52.3%	0.21
Caribbean	95.10%	37,226	-8.2%	0.01
Florida	75.57%	1,437,251	0.2%	0.04
Georgia	93.43%	3,564,081	31.0%	0.10
Kentucky	94.85%	1,013,557	18.2%	0.04
Louisiana	91.02%	3,431,829	37.6%	0.11
Missouri	93.49%	11,963,013	61.1%	0.29
Mississippi	91.26%	3,164,320	9.5%	0.11
North Carolina	90.58%	624,856	1.4%	0.02
Oklahoma	96.61%	2,936,612	-0.5%	0.07
South Carolina	93.26%	1,135,824	36.2%	0.06
Tennessee	91.13%	1,663,166	13.9%	0.07
Texas	96.74%	23,095,458	3.0%	0.14
Virginia	89.40%	868,485	9.7%	0.04
West Virginia	88.86%	389,941	1.1%	0.03
SECAS-wide	92.39%	63,921,063	11.1%	0.11