

Southeast Resilience Project



Tags

Resilience, Resilient Sites, Climate Resilience, Landscape Diversity, Landform Variety, Wetland Density, Geophysical Settings, Southeast, Southeastern United States, Sea Level Rise, Climate Change, Terrestrial Resilience, Elevation Range

Summary

The Nature Conservancy's Southeast Resilience Project aimed to identify key places areas for conservation based on land characteristics that increase diversity and resilience. This is the estimated resilience score, based on the combined scores of landscape diversity and local connectedness, and ranked relative to the geophysical setting and ecoregion. The estimated resilience score is given as a SD category based on its standard normalized score for the setting and ecoregion.

Description

A climate-resilient conservation portfolio includes sites representative of all geophysical settings selected for their landscape diversity and local connectedness. We developed methods to identify such a portfolio. First, we mapped geophysical settings across the entire study area. Second, within each geophysical setting we located sites with diverse topography that were highly connected by natural cover. Third, we compared the identified sites with the current network of conservation lands and with The Nature Conservancy's (TNC's) portfolio of important biodiversity sites identified based on rare species and natural community locations. Using this information we noted geophysical settings that were underrepresented in current conservation and identified places for each setting that could serve as strongholds for diversity both now and into the future.

We prioritized among examples of the same setting using two categories of physical characteristics that increase resilience. The first, landscape diversity, refers to the number of microhabitats and climatic gradients available within a given area. Landscape diversity is measured by counting the variety of landforms, the elevation range, and the wetland density. Because topographic diversity buffers against climatic effects, the persistence of most species within a given area increases in landscapes with a wide variety of microclimates. Local connectedness, the second factor, is defined as the number of barriers and the degree of fragmentation within a landscape. A highly permeable landscape promotes resilience by facilitating range shifts and the reorganization of communities.

The study area includes the seven states of NC, SC, GA, FL, AL, TN, and KY in their entirety as well as large portions of VA and WV, and a tiny portion of MD. Scientists and conservation planners from those states helped with the development of these methods, the evaluation of datasets, and review of the results.

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Extent

West -90.958124 East -74.426148
North 40.710530 South 23.936678

Scale Range

Maximum (zoomed in) 1:5,000
Minimum (zoomed out) 1:20,000,000

ArcGIS Metadata

Topics and Keywords

* CONTENT TYPE Downloadable Data

Citation

TITLE Resilience stratified by setting and ecoregion with regional override

PRESENTATION FORMATS * digital table

Resource Details

DATASET LANGUAGES * English (UNITED STATES)

SPATIAL REPRESENTATION TYPE * grid

* PROCESSING ENVIRONMENT Microsoft Windows 7 Version 6.1 (Build 7601) Service Pack 1; Esri ArcGIS 10.2.0.3348

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ARCGIS ITEM PROPERTIES

- * NAME Resilience_stratified_by_setting_and_ecoregion_with_override
- * LOCATION
- * ACCESS PROTOCOL Local Area Network

Extents

EXTENT

GEOGRAPHIC EXTENT

BOUNDING RECTANGLE

EXTENT TYPE Extent used for searching

- * WEST LONGITUDE -90.958124
- * EAST LONGITUDE -74.426148

- * NORTH LATITUDE 40.710530
- * SOUTH LATITUDE 23.936678
- * EXTENT CONTAINS THE RESOURCE Yes

EXTENT IN THE ITEM'S COORDINATE SYSTEM

- * WEST LONGITUDE 512665.087000
- * EAST LONGITUDE 1835455.087000
- * SOUTH LATITUDE 274895.574000
- * NORTH LATITUDE 1983095.574000
- * EXTENT CONTAINS THE RESOURCE Yes

Resource Constraints

CONSTRAINTS

LIMITATIONS OF USE

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Spatial Reference

ARCGIS COORDINATE SYSTEM

- * TYPE Projected
- * GEOGRAPHIC COORDINATE REFERENCE GCS_North_American_1983
- * PROJECTION NAD_1983_Albers
- * COORDINATE REFERENCE DETAILS

PROJECTED COORDINATE SYSTEM

X ORIGIN -16901100
 Y ORIGIN -6972200
 XY SCALE 266467840.99085236
 Z ORIGIN -100000
 Z SCALE 10000
 M ORIGIN -100000
 M SCALE 10000
 XY TOLERANCE 0.001
 Z TOLERANCE 0.001
 M TOLERANCE 0.001
 HIGH PRECISION true

WELL-KNOWN TEXT

PROJCS["NAD_1983_Albers",GEOGCS["GCS_North_American_1983",DATUM["D_North_American_1983",SPHEROID["GRS_1980",6378137.0,298.257222101]],PRIMEM["Greenwich",0.0],UNIT["Degree",0.0174532925199433]],PROJECTION["Albers"],PARAMETER["False_Easting",0.0],PARAMETER["False_Northing",0.0],PARAMETER["Central_Meridian",96.0],PARAMETER["Standard_Parallel_1",29.5],PARAMETER["Standard_Parallel_2",45.5],PARAMETER["Latitude_Of_Origin",23.0],UNIT["Meter",1.0]]

REFERENCE SYSTEM IDENTIFIER

- * VALUE 0

Distribution

DISTRIBUTION FORMAT

- * NAME File Geodatabase Raster Dataset

Fields

DETAILS FOR OBJECT VAT_Resilience_stratified_by_setting_and_ecoregion_with_override

- * TYPE Table

- * ROW COUNT
11441

FIELD OBJECTID

- * ALIAS OBJECTID
- * DATA TYPE OID
- * WIDTH 4
- * PRECISION 0
- * SCALE 0
- * FIELD DESCRIPTION
Internal feature number.

- * DESCRIPTION SOURCE
Esri

- * DESCRIPTION OF VALUES
Sequential unique whole numbers that are automatically generated.

FIELD Value

- * ALIAS Value
- * DATA TYPE Integer
- * WIDTH 4
- * PRECISION 0
- * SCALE 0

FIELD Count

- * ALIAS Count
- * DATA TYPE Double
- * WIDTH 8
- * PRECISION 0
- * SCALE 0

Metadata Details

- * METADATA LANGUAGE English (UNITED STATES)

SCOPE OF THE DATA DESCRIBED BY THE METADATA * dataset

SCOPE NAME * dataset

- * LAST UPDATE 2014-05-14

ARCGIS METADATA PROPERTIES

METADATA FORMAT ArcGIS 1.0

METADATA STYLE ISO 19139 Metadata Implementation Specification

STANDARD OR PROFILE USED TO EDIT METADATA FGDC

CREATED IN ARCGIS FOR THE ITEM 2014-03-06 13:20:29

LAST MODIFIED IN ARCGIS FOR THE ITEM 2014-05-14 09:06:56

AUTOMATIC UPDATES

HAVE BEEN PERFORMED Yes

LAST UPDATE 2014-05-14 09:06:56

Metadata Contacts

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INDIVIDUAL'S NAME Eastern Division Conservation Science of The Nature Conservancy

ORGANIZATION'S NAME The Nature Conservancy

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Thumbnail and Enclosures

THUMBNAIL

THUMBNAIL TYPE JPG