University of Florida

Center for Landscape Conservation Planning

2023 Annual Report

Table of Contents

Reflections

The past year has been an exciting one for the Center. In July, we received a second year of legislative funding to support our work developing the science needed to protect the Florida Ecological Greenways Network (FEGN) and Florida Wildlife Corridor (Corridor). We have also expanded our work with federal, state, and local conservation partners focused on land protection, conservation and land use planning science, and urban green infrastructure. Our projects range from strategic prioritization of lands within the Corridor and working land protection to community resilience and urban green infrastructure design.

We've also maintained our partnership with the Florida Conservation Group (FCG) to provide direct science support for land protection in southwest Florida. During the past year, FCG has worked with ranchers and other private landowners to protect over *31,000 acres* of land and submit close to *57,000 acres* to the state and other agencies for inclusion in priority programs such as the state's Florida Forever program land acquisition list. All of these projects are based on the strategic prioritization science provided by the Center.

To accomplish these tasks, we have hired additional staff and students, including key science and technical experts, focused on various aspects of Florida Wildlife Corridor science and conservation, and we have begun to formalize an Urban and Recreational Green Infrastructure Initiative.

As the third most populous state in the nation with growth of approximately 1,000 new residents per day, protecting Florida's remaining rural and natural lands while planning for resilient and smart growth has never been more important. Center staff are actively working to address these issues through applied research projects and engagement with state, local, and federal agencies, while providing learning opportunities for students at the University of Florida.

Please feel free to reach out to Center staff for more information about our mission and work.

Sincerely,

Tom Hoctor, Director

The Center at a Glance

The Center for Landscape Conservation Planning, established in 2010, is one of the foremost entities within the University of Florida and the State of Florida engaged in applied research on landscape conservation and land use. The Center provides an official forum within the University of Florida's Department of Landscape Architecture and College of Design, Construction and Planning for conducting applied research on the relationship between conservation and land use bridging the disciplines of design, planning, and wildlife conservation.

We work at the regional and state scales to provide the science foundation for conservation policy and land protection decisions, and at the community scale to inform the use of green infrastructure to assist with climate and resiliency planning in urban landscapes.

The activities of the Center include five programmatic areas:

- Research and planning related to protection of regional ecological networks
- Landscape and biodiversity conservation planning
- Green infrastructure planning in urban and rural environments
- Resilience and adaptation planning related to climate change and sea level rise
- Education for students, designers, and planners in principles of landscape ecology, conservation biology, and conservation planning including relevant GIS applications and tools

Work conducted by Center staff is funded entirely by research and grants. Your support through new partnerships, projects, or direct financial support is extremely important. Funding received by the Center is used to directly support research activities, including graduate and undergraduate students, Center staff, and necessary research expenses.

Please contact us for more information or consider making a financial contribution by clicking the support link below, or visit **https://conservation.dcp.ufl.edu/support/**

CURRENT PROJECTS AND INITIATIVES

The Florida Ecological Greenways Network and Florida Wildlife Corridor

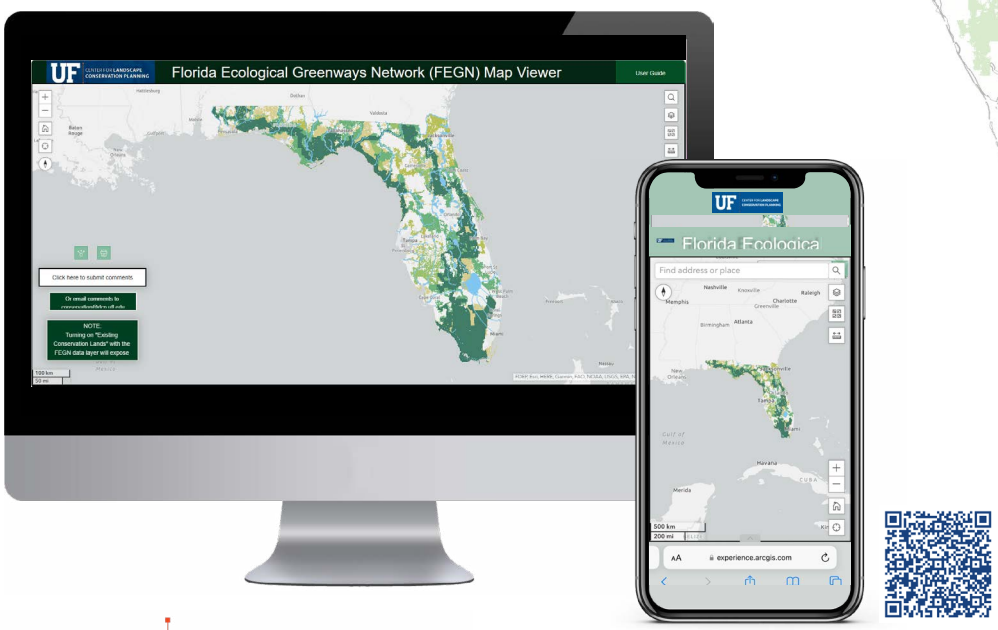
The Florida Ecological Greenways Network and Florida Wildlife Corridor

Center staff developed and maintain the Florida Ecological Greenways Network (FEGN), a statewide database that identifies and prioritizes a functionally connected statewide ecological network of public and private conservation lands. With support from the Florida Department of Environmental Protection (DEP), the Center and Dr. Tom Hoctor have led efforts to identify, update, and protect the FEGN since 1995. In 2021, Senate Bill 976 designated the top three priorities of the FEGN as the Florida Wildlife Corridor. The FEGN continues to provide the science foundation and boundaries for the Florida Wildlife Corridor, and it is continuously updated to help refine and strategically prioritize areas within the Corridor based on improvements in scientific data and land use changes.

As part of ongoing work to provide the science foundation for the Florida Wildlife Corridor, the Center is updating or expanding existing data layers, developing new data layers, and conducting other corridor related projects. New data includes the usage of ecological connectivity methods to model connectivity for the Florida panther, black bear, indigo snake, and fox squirrel to identify biologically accurate areas for prioritization.

The Florida Ecological Greenways Network (FEGN) Viewer

Center staff, with support from the University of Florida GeoPlan Center, developed an online, statewide FEGN Map Viewer. This viewer displays data to assist legislators, agencies, landowners, land trusts, and others in identifying opportunity areas for protection within the FEGN. Together with the FEGN (2021 edition) data layer, the viewer includes existing and proposed conservation lands, future development scenarios, political boundaries, sea level rise projections, and other key reference layers. The Center is currently developing additional map viewers and dashboards for release in the coming year.



Sea Level 2040 and Sea Level 2070

Future Development

In partnership with 1000 Friends of Florida and with funding from the Florida Department of Agriculture and Consumer Services and the Natural Resources Conservation Service, the Center developed a set of future development scenarios for the state. These scenarios represent future development in 2040 and 2070 at current rates and trends, as well as what land use would look like with more proactive land conservation and redevelopment. This information was shared with the public in a spring 2023 webinar that received almost 1,000 participants and was covered by multiple news outlets statewide. A public-facing website has been developed (https://1000fof.org/sealevel2040/), along with publicly available geospatial data (https://fgdl.org/).

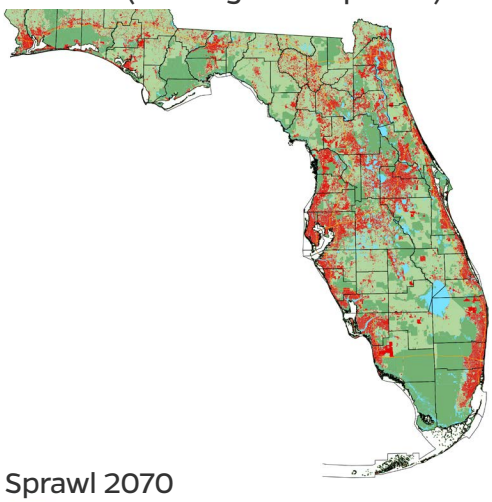
Florida's Agriculture

Using the Sea Level 2040 and 2070 scenarios, the Center identified current agriculture with potential conservation value, potential threats to agriculture, and opportunities for protection. This analysis found that many, if not most, agricultural lands in Florida support one or more conservation priorities and are likely eligible for some sort of protection funding. However, future development and sea level rise pose significant threats to these agricultural lands.

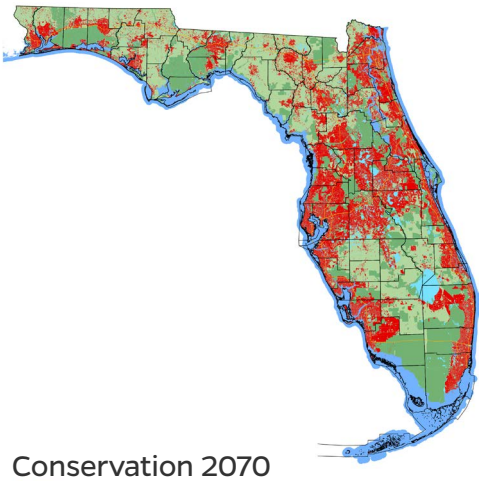
Ongoing Outreach and Engagement

Working with 1000 Friends of Florida and the Florida Climate Smart Agriculture Work Group (FLCSA), the Center is continuing public outreach and engagement activities, both for the general public and decision-makers, as well as with key agricultural stakeholders and organizations. This includes public workshops, a seminar series, a white paper, and other activities. The Center is also working with 1000 Friends of Florida at the county level in multiple locations, including Levy, Taylor, Escambia, and Santa Rosa counties to share information about future development impacts and planning.

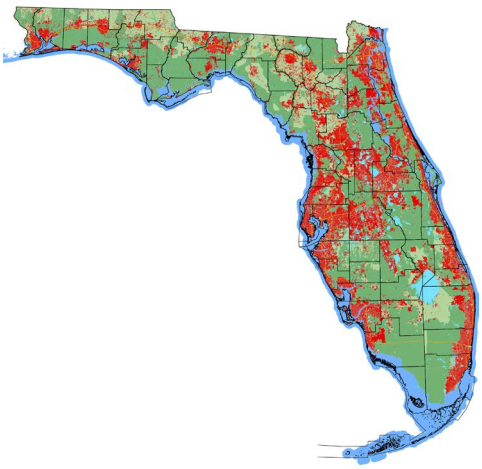
Baseline (Existing Development)



Sprawl 2070



Conservation 2070



Regional Landscape Conservation

Science Support for Land Protection

The Center continued its partnership in 2023 with the Florida Conservation Group (FCG) to provide direct support for land protection in southwest Florida. **During the past year, FCG has worked with ranchers and other private landowners to protect approximately *31,000 acres* of land and submit nearly an additional *57,000 acres* to state and other agencies for inclusion in priority programs such as the Florida Forever program land acquisition list and the Rural and Family Lands Protection Program.** All of these projects are based on the strategic priority science provided by the Center.

The Everglades to Gulf Conservation Area

The Center, along with the Florida Conservation Group, and National Wildlife Refuge Association partnered with the U.S. Fish and Wildlife Service (USFWS) to provide the science foundation for the USFWS' effort to establish an Everglades to Gulf Conservation Area. Within this proposed 4-million-acre Conservation Area in southwest and south-central Florida, the USFWS would work with willing landowners to pursue conservation easements or fee-title acquisitions. Land protection in Southwest Florida is critical because this area is home to over 70 federally or state-listed threatened and endangered species including the Florida panther, Florida scrub jay, and crested caracara. However, this ecologically diverse area faces threats from climate change, rapid population growth, and land use intensification. Protected lands, including those within the Florida Wildlife Corridor, would improve species' resilience in the face of these threats. Land protection also supports family farms and ranches and improves water quality.

Rural and Family Lands Protection Program

The Center partnered with the Florida Natural Areas Inventory and Common Ground Ecology to support the Florida Department of Agriculture and Consumer Services (FDACS) in their effort to improve the science foundation of the Rural and Family Lands Protection Program (RFLPP) evaluation process. This program acquires conservation easements on working agricultural lands for the purpose of protecting valuable agricultural lands and natural resources in conjunction with economically viable agricultural operations.

Images courtesy of: https:// wildpath.com/may-2023-media-toolkit/

Regional Landscape Conservation

Critical Lands and Waters Identification Project (CLIP)

The Center is working with the Florida Natural Areas Inventory to complete an update to the Critical Lands and Waters Identification Project (CLIP) database, which identifies statewide biodiversity, landscape level, and surface water priorities. These data are used in Florida Forever and Rural and Family Lands Protection project evaluation and prioritization, and is also often used to support conservation and land use planning across the state.

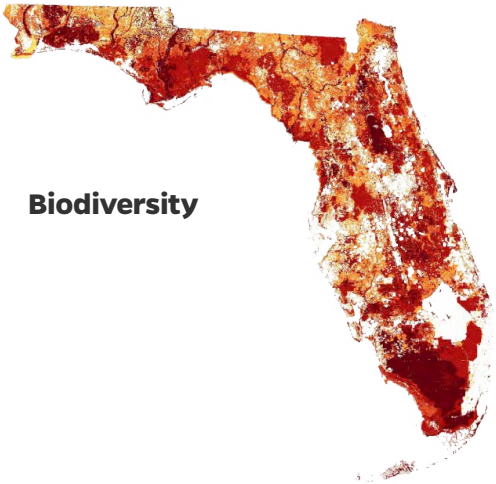
Aquatic Preserve Conservation Opportunities

The Center has been contracted by the Florida Department of Environmental Protection Aquatic Preserves (AP) and Coastal Management Program (FCMP) to identify and prioritize conservation opportunities within the watersheds of Florida's 42 Aquatic Preserves. Once supporting science is complete, the Center will use this information to further assist with development and review of conservation and restoration proposals within the Florida Forever and Rural and Family Lands programs.

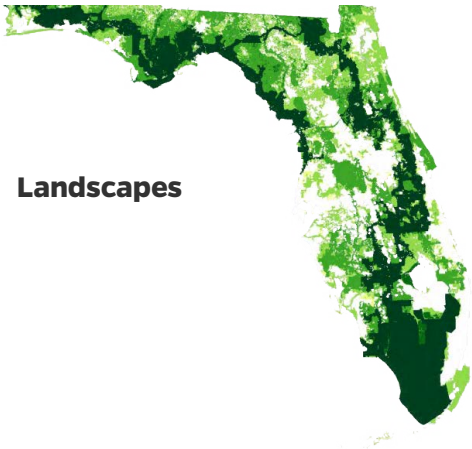
Protecting Water Quality through Land Use

The Center partnered with the UF Center for Coastal Solutions with legislative funding to map and analyze future growth scenarios and identify regional conservation priorities for the Northwest Florida Panhandle area (Escambia, Santa Rosa, and Okaloosa Counties). The task generated new modeling efforts and provided area stakeholders with parcel level prioritization for lands that would improve or maintain water quality or provide water storage benefits. This work has since been expanded with funding from the Pensacola and Perdido Bays Estuary Program to assess the effects of future development patterns on water quality within Santa Rosa and Escambia Counties in more detail.

CLIP Resource Categories



Biodiversity



Landscapes

Surface Water

Regional Landscape Conservation

Longleaf Sustainability Analysis

The Center worked in collaboration with Florida Natural Areas Inventory on a Longleaf Sustainability Analysis (LSA) v.1, completed in August 2023, to model connectivity across landscapes that are potential priorities for longleaf habitat and restoration. The longleaf pine LSA has a transparent, evidence-based, and strategic goal of identifying the "right work" in the "right places" across the historic range of longleaf pines. By incorporating cartographic data on extant longleaf, possible restoration locations, landscape connectivity, and other sustainability criteria, the LSA prioritizes landscape restoration and conservation initiatives. The priority maps that resulted from this work support the 15-year Range-Wide Conservation Plan for Longleaf Pine (2025-2040), which will be released soon.

Corridor Outreach through Art

In September, the Center hired Dr. Eleanor Laughlin as an Art and Museum Exhibition Coordinator to create an exhibition focused on utilizing the new Vickers' Collection of Florida-themed artwork at the Harn Museum to showcase art and media related to conservation and environmental issues in Florida, as the first in a series of future museum and artist partnerships. To inform the Florida Wildlife Corridor (FWC) exhibition projects and for the purposes of future collaboration on a national show to feature the FWC, Eleanor met with curators in the Pacific Northwest to discuss four art exhibitions in the greater Seattle area focusing on landscape conservation and wildlife. The museums represented include The Henry and The Burke on the University of Washington campus, The Museum of Northwest Art, and the Frye Art Museum.

Urban Green Infrastructure and Climate Change

Resilient Cedar Key

The Center is partnering with the City of Cedar Key through the UF Florida Resilient Cities program to assist with vulnerability assessment and planning to address future flood risk within the City. In Spring 2023, an interactive flood risk tool for Cedar Key was released by the project team, and the partnership is currently working to develop adaptation strategies and priority projects for the City. To explore the interactive tool, please visit: https://resilientcedarkey.web.app/

Resilient Jacksonville

The Center continued its partnership with UF's Florida Institute for Built Environment Resilience, the UF Shimberg Center for Housing Studies, UF JaxLab, Groundwork Jacksonville, and UF Health to engage with issues around air and water quality, heat effects, and housing conditions within Jacksonville's Hogan's and McCoys watershed. For more information on this project, please visit: https://dcp.ufl.edu/fiber/housing-environment-and-well-being-advancing-community-resilience-through-watershed-planning-for-jacksonville-florida/.

Resilient Port St. Joe

Since 2019, the Center has worked with the City of Port St. Joe as a partner in the UF Florida Resilient Cities program to assist with green infrastructure-based resiliency planning and current issues of environmental justice. *As part of this work, Associate Director Mike Volk and Dannie Bolden from the North Port St. Joe Project Area Coalition participated in a White House Roundtable for Environmental Justice in Action organized by Harold Mitchell Jr. and a team from The Regenesis Institute to discuss ongoing work with the community.* This discussion included the role of community-university partnerships in building a coalition that leads to federal, state, and private funding in the realm of equity and environmental justice. UF/Center staff are continuing to work with the City and community to address issues of resiliency and environmental justice through new funding proposals and initiatives. For more information, please see: https://dcp.ufl.edu/news/volkspeaksatwhitehouse/.

St. Augustine University of Florida Structures Landscape & Resiliency Assessment

In partnership with the University of Florida's Department of Historic Preservation, UF Department of Planning, Design and Construction, and the UF Historic St. Augustine organization, the Center kicked off a project focused on resilient planning and design for the UF-owned and managed properties within the city of St. Augustine. The center is developing landscape level adaptations to protect these historic structures and enhance the essence of the historic landscapes.

Urban Green Infrastructure and Climate Change

Springshed Design and Recreation Planning

The Center continued work with the U.S. Forest Service in the Ocala National Forest focused on springshed design and recreation planning. A master plan for Silver Glen Springs, a popular recreational destination in the forest, was completed in the fall addressing sustainable nature-based recreation planning strategies for the spring and surrounding landscape. This work built upon concepts developed by UF landscape architecture students in fall 2022, and it is the second plan developed for the Forest Service.

Ecological Planting Design

The Center, in partnership with the UF Department of Environmental Horticulture, has been working on two projects related to ecological planting design. Both projects were funded by the UF/IFAS Center for Land Use Efficiency (CLUE). The first project, completed earlier this year, developed and tested an alternative type of planting plan for creating a small-scale, ecology-based residential landscape design that could be installed by contractors with minimal training in landscape design or plan use. Testing was done in three landscape plots located at the UF/IFAS Tree Unit (arboriculture facility), and the contractors were surveyed to determine the plan's ease-of-use.

The goal of the second project, which began earlier this year, is to test public preference for a landscape that utilizes an ecologically-focused extension of the Florida Friendly Landscape principles. During the first phase of this project, we designed and planted three landscapes at the UF/IFAS Tree Unit adjacent to the landscapes that were installed during our earlier project. The next step, which will occur in spring 2024, is to invite the public to various events to view and evaluate the landscapes.

The purpose of these projects is to facilitate the conversion of traditional residential landscapes to ecologically functional designed landscapes that could mitigate some of the losses in biodiversity and ecosystem services that are occurring due to increased growth pressures and loss of natural areas.

Cumberland Island

The Cumberland Island National Seashore is working to identify strategies to expand and increase the ease of access to the park by increasing the number of visitors per day and improving circulation and wayfinding on the island. The Center is assisting the National Park Service with an analysis of existing trail and circulation networks, including strategies for trail alignment to minimize visitor impacts, enhance the visitor experience, maintain the integrity of existing natural and cultural resources, and improve wayfinding.

Outreach and Connections

Publications

In addition to multiple technical and peer-reviewed publications published or in progress by Center staff:

- Tom Hoctor and Reed Noss are currently editing a book for the University Press of Florida: "*Landscape Conservation Planning in Florida: History and Science*," with publication expected in late 2024 or early 2025.
- Eve Bohnett was a guest editor of a special issue of *Land,* "Modeling Biodiversity and Landscape Conservation Planning."
- Center staff are working with Florida Atlantic University and other partners on a white paper focused on the Florida Wildlife Corridor and climate resilience.
- Center staff are coauthors of a pending patent focused on onsite sustainable sanitation systems.

Other Media and Outreach

Center staff served as speakers at numerous state and national conferences and were engaged in multiple forms of media and outreach to share research and connect with the public, agencies, and other stakeholders. Some of these included the following:

- Dr. Tom Hoctor was a keynote speaker for the Florida Native Plant Society and the Florida Chapter of the Wildlife Society. He also spoke at the Florida Forestry Association's Annual Meeting.
- Dr. Tom Hoctor received the Conservation Friend Award from the Florida Cattleman's Association.
- The Center's work on the Florida Ecological Greenways Network (FEGN)/ Florida Wildlife Corridor and Florida 2070 was featured in a 6-episode docuseries *Protect our Paradise* by Conservation Florida and Crawford Entertainment. This series examines the challenges facing Florida's environment and the conservation efforts shaping the future. It is currently streaming on https://www.discoverfloridachannel.com/
- Reed Noss was filmed at Catoosa Wildlife Management Area in Tennessee for a documentary on restoration of grasslands and savannas on the Cumberland Plateau.
- The Center and 1000 Friends of Florida hosted a webinar, "Florida's Rising Seas: Sea Level 2040 and Sea Level 2070" to discuss the results of the Sea Level 2040 and Sea Level 2070 work. The webinar can be viewed at: https://1000fof.org/upcoming-webinars/past/.

Our Staff

Tom Hoctor, Ph.D., *Director*

Michael Volk, MLA, *Associate Director*

Eve Bohnett, Ph.D., *Ecological Modeling Coordinator*

Dan Farrah, Ph.D., *Development & Land Use Coordinator*

Isabella Guttuso Browne, MLA, *Urban & Recreational Green Infrastructure Coordinator*

Tricia Kyzar, Ph.D., *Water Resources Analyst; Researcher and Project Manager, UF Center for Coastal Solutions*

Eleanor A, Laughlin, Ph.D., *Art & Museum Exhibition Coordinator*

Sarah Lockhart, MEM, *Networking & Communications Analyst*

Julie Morris, MS, *Conservation Policy & Programs Coordinator; Executive Director, Florida Conservation Group*

Belinda B. Nettles, Ph.D., *Land Protection Planning Coordinator*

Reed F. Noss, Ph.D., *Lead Scientist; Chief Scientist, Conservation Science, Inc.*

Michael O'Brien, MLA, *GIS Manager*

Daniel J. Smith, Ph.D., A.I.C.P., *Road Ecologist/Conservation Planner*

Elizabeth Thompson, MURP, *GIS Analyst*

Derya Yesilkusak, MUE, *Research Assistant*

The Center also works with multiple federal, state, local, non-profit, academic, and other partners throughout the state. There are too many to list here, but without these partnerships our work would not be possible.

Center for Landscape Conservation Planning
University of Florida College of Design, Construction and Planning
Architecture Building
PO Box 115701
1480 Inner Road
Gainesville, FL 32611-5701

Web: https://conservation.dcp.ufl.edu
Facebook: https://facebook.com/UFCLCP
LinkedIn: https://linkedin.com/school/ufclcp