Mapping Florida's Future – Alternative Patterns of Development in 2070

FLORIDA 2070

A joint project of . . .

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FLORIDA DEPARTMENT OF AGRICULTURE AND CONSUMER SERVICES EST. 1868

Summary Report

September 2016, Updated November 2016

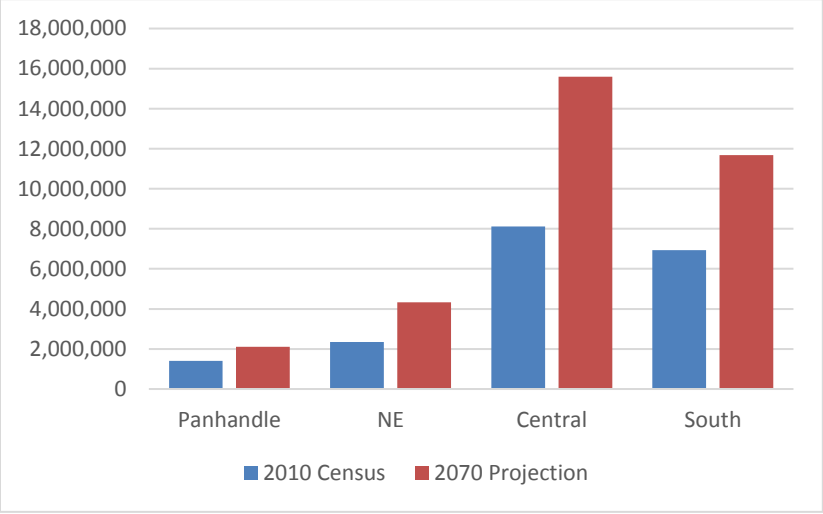
This is a joint project of the Florida Department of Agriculture and Consumer Services (DACS), University of Florida Geoplan Center and 1000 Friends of Florida with funding provided by DACS and The Curtis and Edith Munson Foundation.

For more detailed information on Florida 2070, including an online presentation, state and regional maps and the technical report with methodology, please visit www.1000friendsofflorida.org/Florida2070.

Florida 2070
Summary Report

Based on moderate projections by the Florida Bureau of Economic and Business Research (BEBR), Florida's population is projected to grow to approximately 33.7 million residents by 2070, 14.9 million more people than in 2010. The Florida Department of Agriculture and Consumer Services (DACS), the University of Florida's Geoplan Center, and 1000 Friends of Florida have partnered on Florida 2070 to spotlight alternative scenarios to accommodate these new residents. This map series uses geographic information systems (GIS) to compare actual 2010 land use patterns with two 2070 scenarios.

The projected population growth is not evenly distributed. As the graph below reflects, the population in the region defined as Central Florida is much greater than in the other three regions of the state. Consequently the predicted land use change from undeveloped (agriculture and natural areas) to developed is most significant in Central Florida.



Florida 2070 includes a series of statewide and regional (Panhandle, Northeast, Central and South Florida) maps for each of the following:

- **Baseline 2010** – 2010 actual development distribution based on US Census and 2010 Florida Property Appraiser data
- **Trend 2070** –2070 development distribution if current development patterns continue to accommodate BEBR's projected population increase of 14.9 million people
- **Alternative 2070** – 2070 development distribution showing a land use pattern that still accommodates the 2070 projected population with a more compact pattern of development and increased protected lands

Basic assumptions for 2070 Trend and 2070 Alternative maps:

- For the 2070 Trend and 2070 Alternative maps, lands to which new population is distributed are prioritized based on the following suitability criteria:
    - Proximity to existing urban areas
    - Presence/absence of wetlands
    - Road density
    - Proximity to coastline
    - Approved DRIs and Sector Plans
    - Proximity to major roads
    - City/town influence
    - Proximity to open water

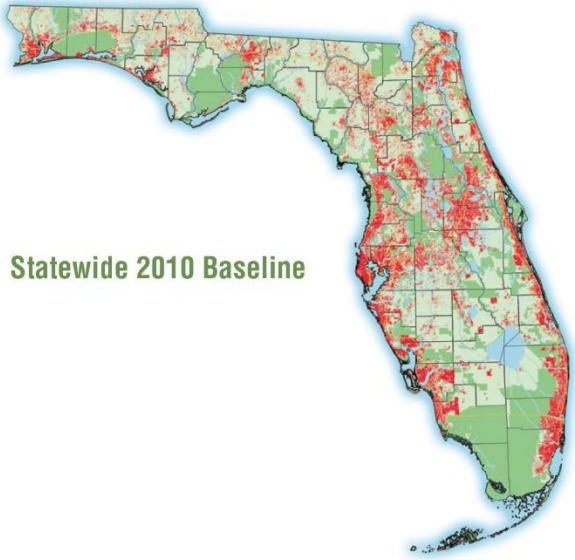
- For the 2070 Trend maps, the density of new development on greenfield and infill land remains the same as in 2010, and no new protected lands are added
- For the 2070 Alternative maps:
    - A portion of each county's projected population growth was accommodated within existing urban areas, with urbanized counties projected to have greater urban redevelopment than rural counties
    - The gross development density used to predict each county's new development was increased 20% over the gross development density used in the Trend
    - Lands on the proposed Florida Forever Acquisition lists and lands identified as Priorities 1 & 2 in the Florida Ecological Greenways Network were added to protected lands

State and regional maps for the 2010 Baseline, 2070 Trend and 2070 Alternative include representations of developed, protected and other lands. The visual comparison of these maps reveals significant differences among the three scenarios and among the four regions of the State. Supporting tables and graphs assist with comparing the three scenarios and are particularly useful for comparing 2070 Trend with 2070 Alternative.

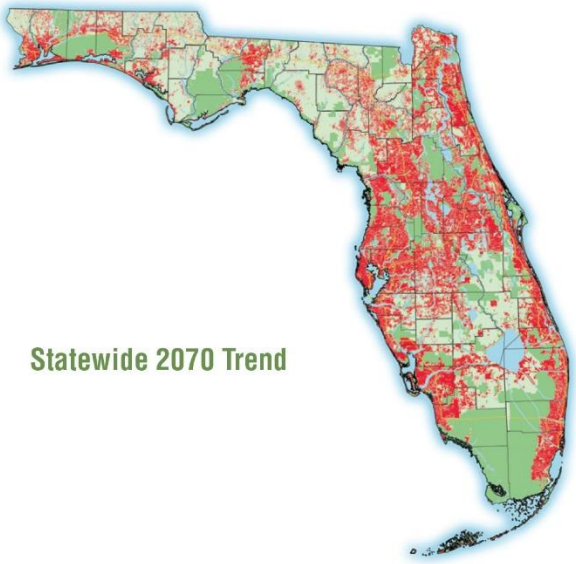
Key observations from this study include:

1) Land is a finite resource.
2) If gross development densities are increased there is sufficient land to accommodate projected population growth while also providing protection for agricultural lands and natural areas.
3) Even with higher gross development densities it is possible to have a wide variety of housing types including single family residential.
4) There are clear fiscal advantages to more compact development patterns. These include lower costs to the public for utilities, roads, drinking water, stormwater management and sewage treatment.
5) Local governments are empowered with making land use change decisions and must consider the long view, because while the cumulative effect of small land use changes may seem minor in the short run, over time these incremental changes will shape the future landscape of Florida.
6) Land conservation, through fee-simple acquisition and conservation easements, is essential to preserving natural and rural agricultural lands as Florida's population grows.

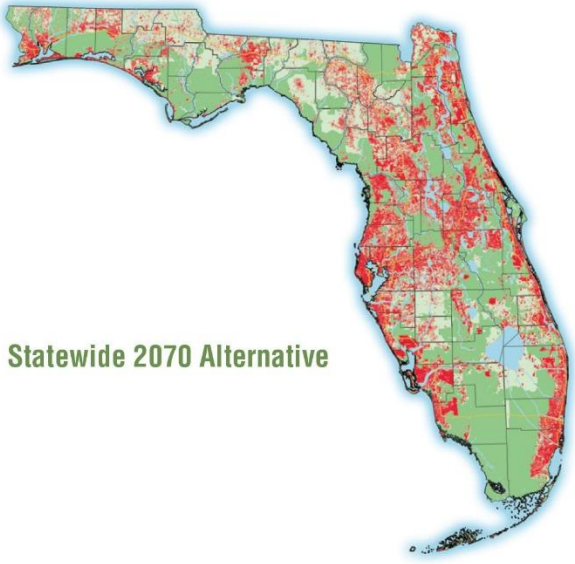
State Development Scenarios



Statewide 2010 Baseline



Statewide 2070 Trend



Statewide 2070 Alternative

Developed Protected Other

November 2016

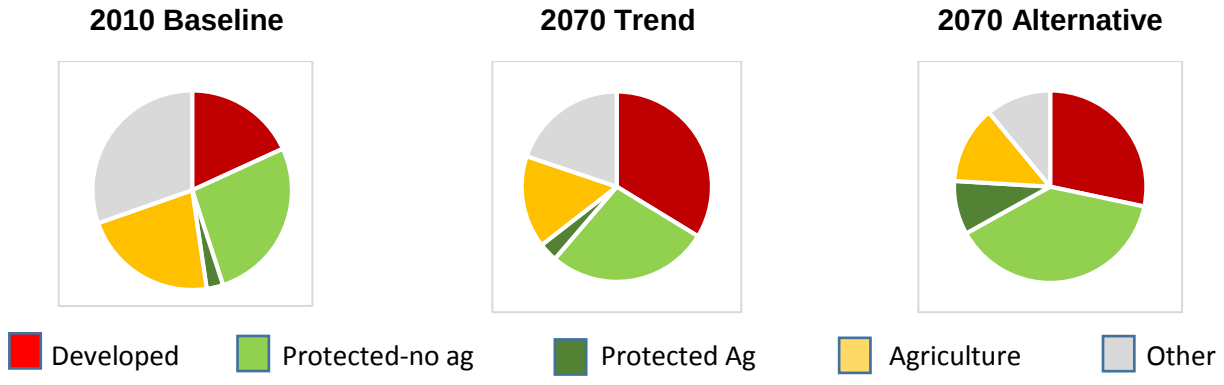
STATEWIDE RESULTS

From the maps and comparative data it is clear that 2070 Alternative accommodates the projected population increase on significantly less land area – and results in much greater protection for agricultural lands and natural areas – than 2070 Trend.

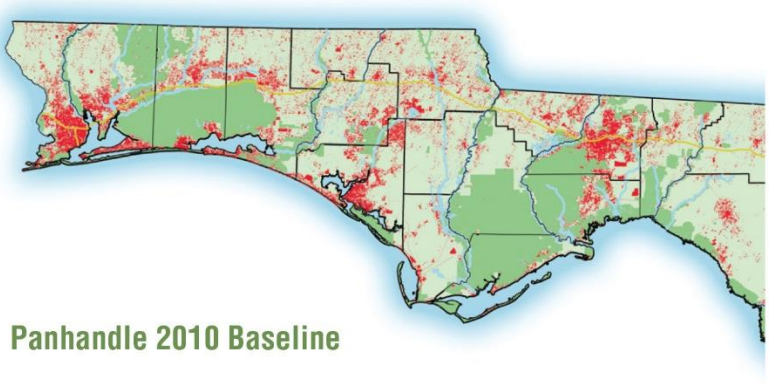
Acreage comparison of Statewide alternative population allocation scenarios

	Baseline	% of Land	Trend	% of Land	Alternative	% of Land
Developed	6,275,000	18.17%	11,648,000	33.72%	9,777,000	28.30%
Protected (excluding agriculture)	9,269,000	26.83%	9,525,000	27.57%	13,339,000	38.62%
Protected Agriculture	924,000	2.67%	1,106,000	3.20%	3,120,000	9.03%
Protected Subtotal	*10,193,000*	*29.51%*	*10,631,000*	*30.78%*	*16,459,000*	*47.65%*
Agriculture (croplands, livestock, aquaculture)	7,586,000	21.96%	5,422,000	15.70%	4,513,000	13.06%
Agriculture Subtotal	*8,510,000*	*24.64%*	*6,528,000*	*18.90%*	*7,633,000*	*22.10%*
Other (mining, timber, etc.)	10,489,000	30.37%	6,842,000	19.81%	3,794,000	10.98%
Total State Land Acres	34,543,000	100.00%	34,543,000	100.00%	34,543,000	100.00%

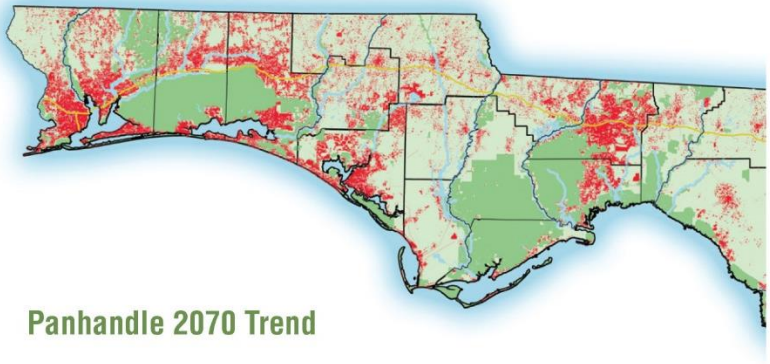
Comparison of land use acreages for three statewide scenarios



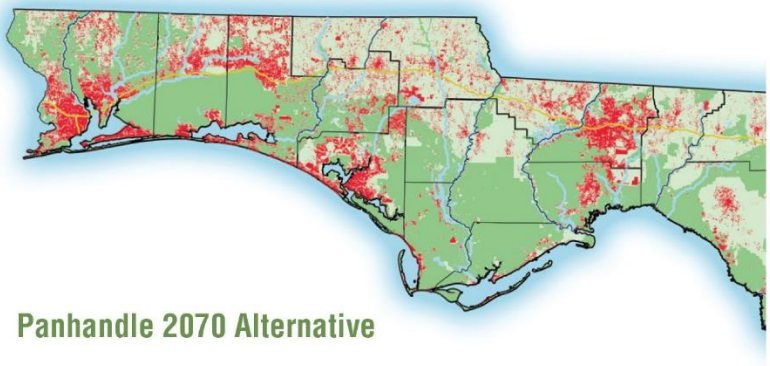
Panhandle Florida Development Scenarios



Panhandle 2010 Baseline



Panhandle 2070 Trend



Panhandle 2070 Alternative

Developed Protected Other

November 2016

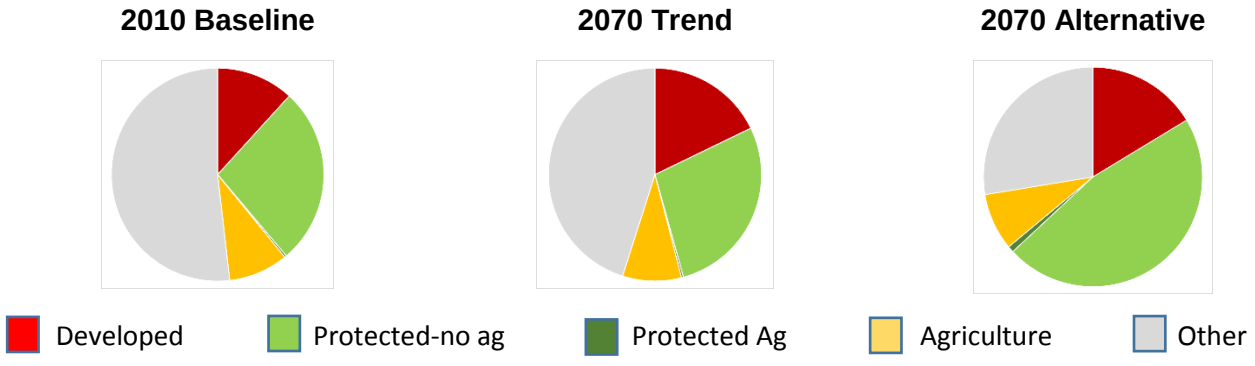
PANHANDLE FLORIDA

The Panhandle will remain the least developed region of the state regardless of the future scenario that plays out. The primary difference between 2070 Trend and 2070 Alternative is the increase in protected lands in the Alternative as a result of land classified as "Other" moving into protected status.

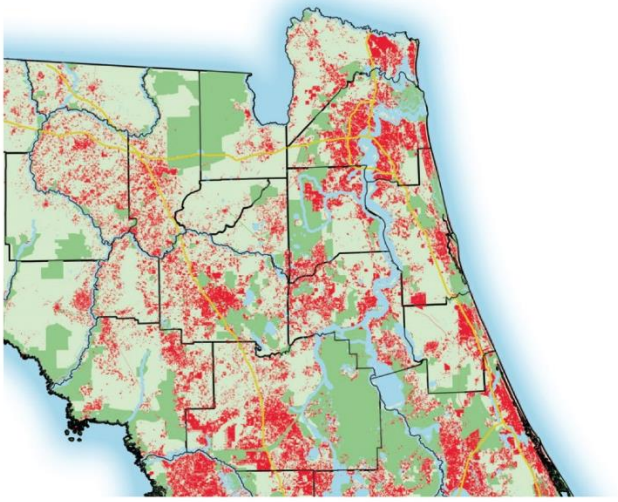
Acreage comparison of Panhandle Florida alternative population allocation scenarios

	2070 Baseline	% of Land	2070 Trend	% of Land	2070 Alternative	% of Land
Developed	989,000	11.78%	1,496,000	17.82%	1,372,000	16.34%
Protected (excluding agriculture)	2,269,000	27.03%	2,339,000	27.86%	3,924,000	46.74%
Protected Agriculture	25,000	0.30%	25,000	0.30%	77,000	0.92%
Agriculture (croplands, livestock, aquaculture)	762,000	9.08%	751,000	8.95%	706,000	8.41%
Other (mining, timber, etc.)	4,350,196	51.82%	3,784,196	45.08%	2,316,196	27.59%
Total Land Acreage in Panhandle	8,395,196	100.00%	8,395,196	100.00%	8,395,196	100.00%
Open Water	121,734					
Total Acreage in Panhandle	8,516,930					

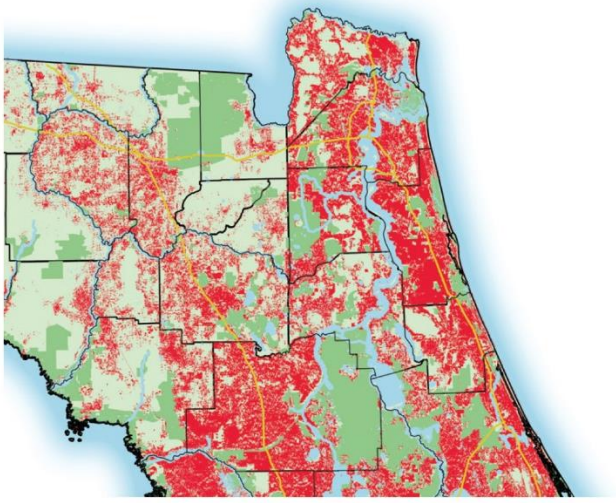
Comparison of land use acreages for three Panhandle Florida scenarios



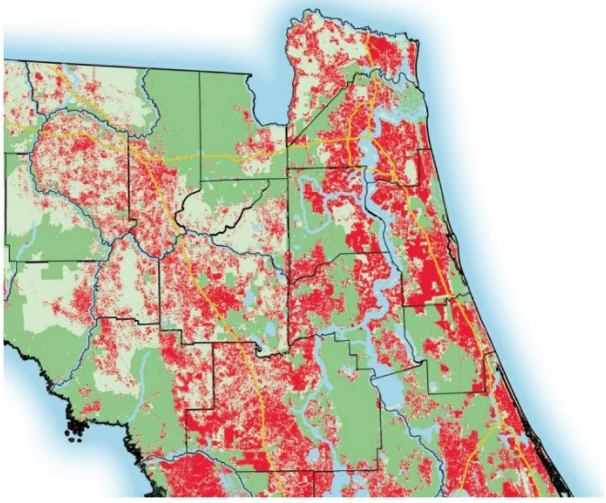
Northeast Florida Development Scenarios



Northeast 2010 Baseline



Northeast 2070 Trend



Northeast 2070 Alternative

Developed Protected Other

November 2016

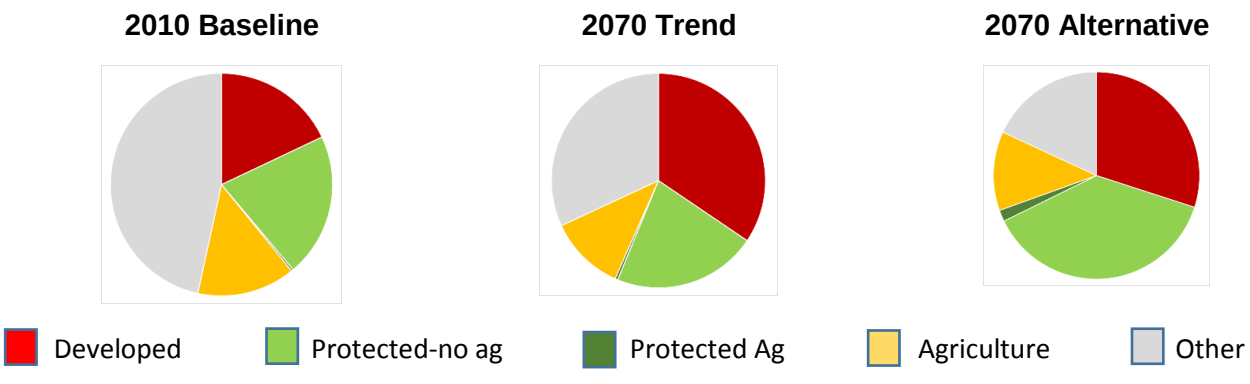
NORTHEAST FLORIDA

In the Northeast Region there is potential for a substantial increase in developed lands in 2070 Trend. This increase is reduced in the 2070 Alternative due to the higher development densities. As in the Panhandle, there is opportunity for a significant increase in protected natural areas and a modest increase in protected agricultural lands. The "Other" land category becomes substantially reduced in the 2070 Alternative. The most dramatic changes are evident along the east coast and in Marion, Lake and Sumter counties. This is largely due to the significant population increase projected for these counties and their relatively low development densities.

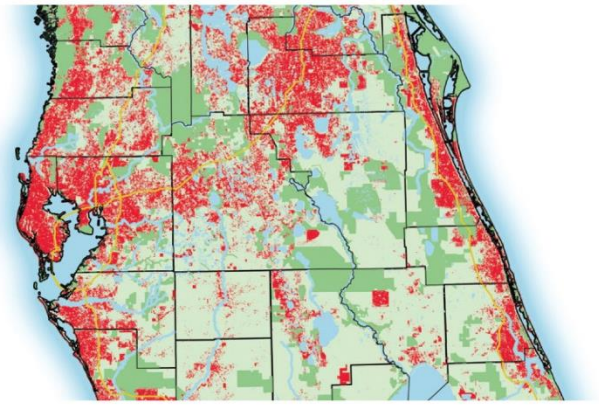
Acreage comparison of Northeast Florida alternative population allocation scenarios

	2070 Baseline	% of Land	2070 Trend	% of Land	2070 Alternative	% of Land
Developed	1,410,000	17.97%	2,704,000	34.46%	2,351,000	29.96%
Protected (excluding agriculture)	1,639,000	20.88%	1,708,000	21.76%	2,966,000	37.79%
Protected Agriculture	23,000	0.29%	33,000	0.42%	140,000	1.78%
Agriculture (croplands, livestock, aquaculture)	1,121,000	14.28%	899,000	11.46%	968,000	12.33%
Other (mining, timber, etc.)	3,654,900	46.57%	2,503,900	31.91%	1,422,900	18.13%
Total Land Acreage in Northeast	7,847,900	100.00%	7,847,900	100.00%	7,847,900	100.00%
Open Water	279,310					
Total Acreage in Northeast	8,127,210					

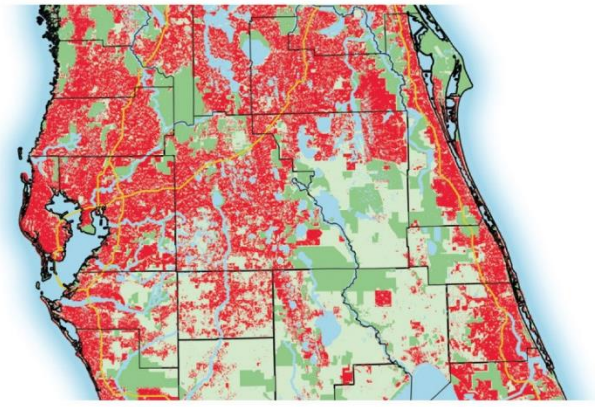
Comparison of land use acreages for three Northeast Florida scenarios



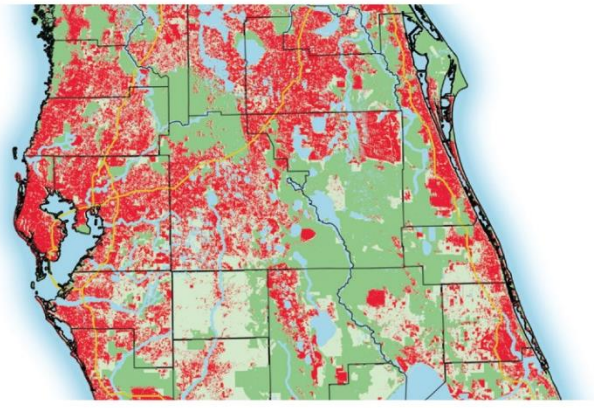
Central Florida Development Scenarios



Central 2010 Baseline



Central 2070 Trend



Central 2070 Alternative

Developed Protected Other

November 2016

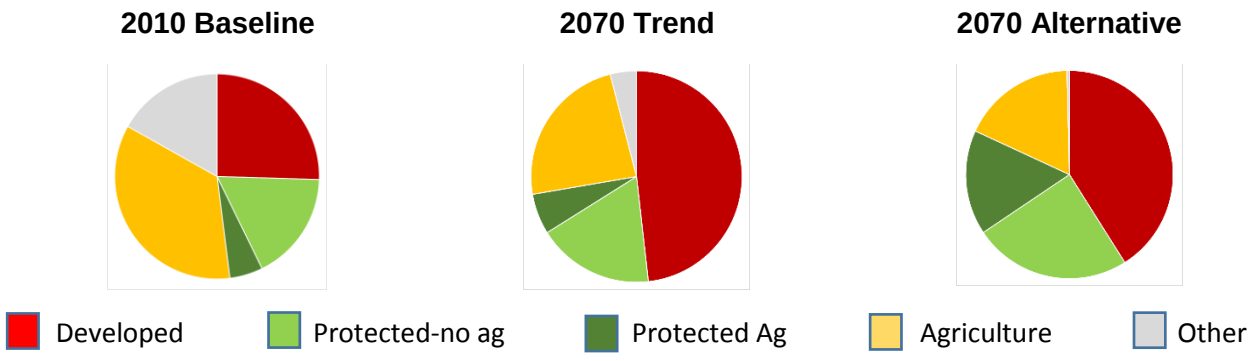
CENTRAL FLORIDA

Due to two factors the Central Region will likely see the greatest absolute and relative increase in developed lands when compared with the other regions. First, the population increase projected for this region is substantial. Second, the development densities used to project the population distribution are based on 2010 gross development densities and these are fundamentally lower in the Central Region than in the South, even in the 2070 Alternative scenario. The result is that more land will be allocated to development. There is the potential for a substantial loss of agricultural land in 2070 Trend when compared to 2010 Baseline and 2070 Alternative. Many acres of crop, livestock and aquaculture lands likely will be lost without protection or financial incentives to keep the land in agricultural production.

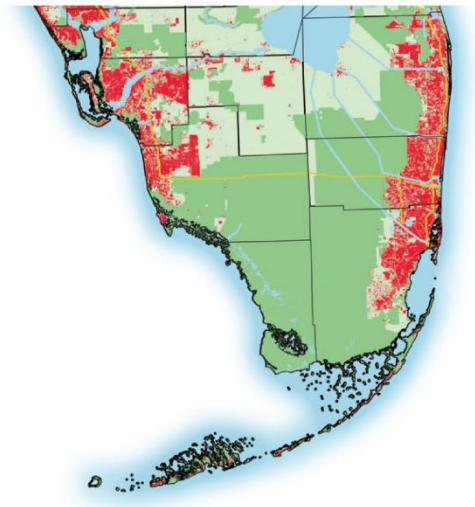
Acreage comparison of Central Florida alternative population allocation scenarios

	2070 Baseline	% of Land	2070 Trend	% of Land	2070 Alternative	% of Land
Developed	2,695,000	25.49%	5,097,000	48.21%	4,338,000	41.03%
Protected (excluding agriculture)	1,825,000	17.26%	1,891,000	17.89%	2,598,000	24.57%
Protected Agriculture	554,000	5.24%	657,000	6.21%	1,721,000	16.28%
Agriculture (croplands, livestock, aquaculture)	3,714,000	35.13%	2,503,000	23.67%	1,877,000	17.75%
Other (mining, timber, etc.)	1,785,068	16.88%	425,068	4.02%	39,068	0.37%
Total Land Acreage in Central	10,573,068	100.00%	10,573,068	100.00%	10,573,068	100.00%
Open Water	841,582					
Total Acreage in Central	11,414,650					

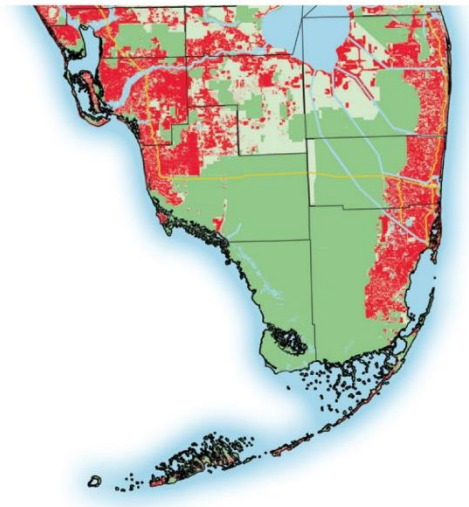
Comparison of land use acreages for three Central Florida scenarios



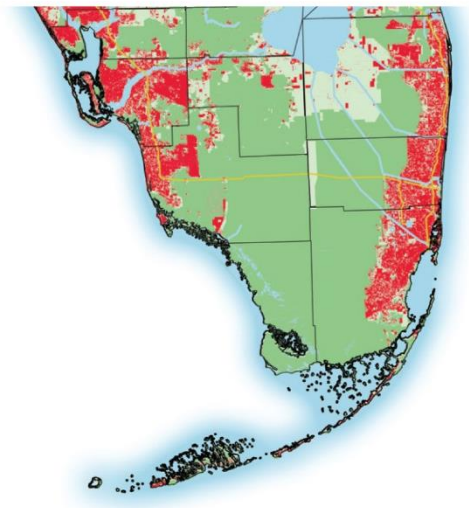
South Florida Development Scenarios



South 2010 Baseline



South 2070 Trend



South 2070 Alternative

Developed Protected Other

November 2016

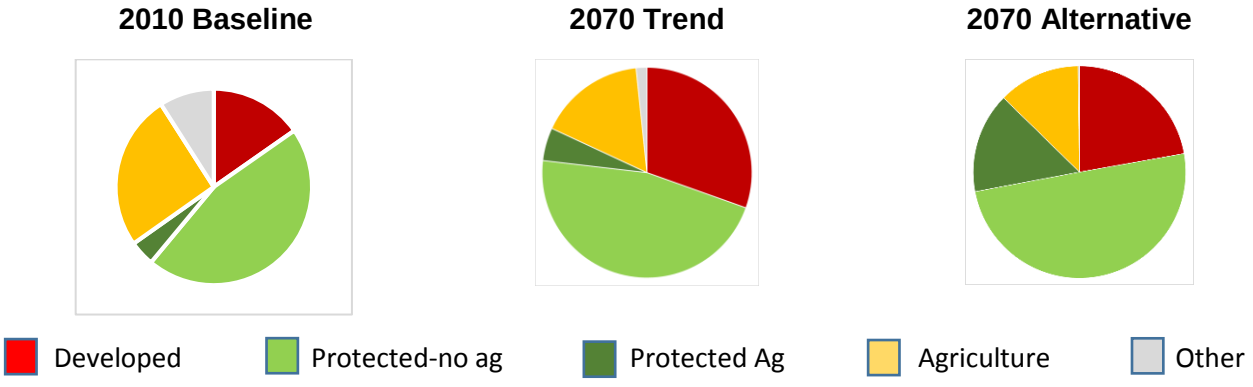
SOUTH FLORIDA RESULTS

Within the South Florida Region, the most dramatic potential changes in Trend 2070 can be seen in the areas south of Lake Okeechobee, including in Palm Beach, Hendry and Glades counties, as well as in Lee and Collier counties. Other than those counties, the high percentage of protected land in the South Region in 2010 (largely found in the Everglades/Big Cypress complex) has a significant impact on both the 2070 Trend and Alternative scenarios. This, combined with the higher densities found even now in South Florida, means that there is a significantly smaller portion of new lands converting to development even in the 2070 Trend scenario. South Florida also has a relatively high percentage of agricultural lands with the potential for these to continue in productivity even in the 2070 Trend scenario.

Acreage comparison of South Florida alternative population allocation scenarios

	2070 Baseline	% of Land	2070 Trend	% of Land	2070 Alternative	% of Land
Developed	1,181,000	15.28%	2,351,000	30.43%	1,716,000	22.21%
Protected (excluding agriculture)	3,536,000	45.76%	3,587,000	46.42%	3,851,000	49.84%
Protected Agriculture	322,000	4.17%	391,000	5.06%	1,182,000	15.30%
Agriculture (croplands, livestock, aquaculture)	1,989,000	25.74%	1,269,000	16.42%	962,000	12.45%
Other (mining, timber, etc.)	698,836	9.04%	128,836	0	15,836	0.20%
Total Land Acreage In South	7,726,836	100.00%	7,726,836	100.00%	7,726,836	100.00%
Open Water	552,374					
Total Acreage in South	8,279,210					

Comparison of land use acreages for three South Florida scenarios



Concluding Thoughts

This study focuses on gross comparisons of alternative population distribution scenarios driven by clear and varied assumptions about development densities. The single most important finding is that even modest increases in development densities can result in substantial savings of land. These lands in turn could remain in agricultural production or be safeguarded to ensure viable ecosystem services on which humans depend.

There are clear fiscal advantages to more compact development patterns. These include lower costs to the public for roads, drinking water, stormwater management and sewage treatment. This can result in greater diversity of transportation options and can save individuals time and money otherwise spent commuting or waiting in traffic. Higher gross development densities do not mean that choice in housing type will be lost…in fact in some places it might mean that housing choice will increase.

Local governments should consider the long view even when making decisions on small tracts. The cumulative effect of multiple small land use changes will, over time, shape the future landscape of Florida.

Here are some strategies that can help protect Florida's agricultural, working and natural lands:

Save Special Places

- Protect vital conservation, agricultural and other working lands like those on Florida Forever and Florida Greenways lists
- Support funding for greenways and corridors that protect wildlife habitat and provide recreational opportunities
- Establish incentives and increase funding to help landowners conserve important agricultural lands and other working landscapes
- Work to significantly lessen the impact of new development on Florida's lands and waters

Build Better Communities

- Support infill and redevelopment in a manner that is sensitive to existing communities
- When new areas are developed, give priority to those near existing communities and infrastructure
- Promote a mixture of homes, shops, schools and offices within close proximity
- Include a range of housing choices to ensure affordability
- Design for multiple transportation options, including walking, biking and public transportation
- Protect significant historic and natural resources within communities

For more detailed information on Florida 2070, including an online presentation, state and regional maps and the technical report with methodology, please visit www.1000friendsofflorida.org/Florida2070.

About the project partners:

Established in 1984, **Geoplan** is a multidisciplinary GIS laboratory located in the University of Florida's School of Landscape Architecture and Planning, College of Design, Construction and Planning. It was developed in response to the need for a teaching and research environment for Geographic Information Systems, or GIS. Under its auspices spatial analysis is conducted in support of a broad range of academic disciplines. Additional information is available at www.geoplan.ufl.edu.

The **Florida Department of Agriculture and Consumer Services** supports and promotes Florida agriculture, protects the environment, safeguards consumers, and ensures the safety and wholesomeness of food. Our programs and activities are so varied and extensive, they touch the life of just about every Floridian. For more information please visit www.freshfromflorida.com.

Founded in 1986, **1000 Friends of Florida** is a 501(c)(3) not-for-profit organization that focuses on saving special places and building better communities in one of the fastest growing states in the nation. Visit www.1000friendsofflorida.org for more information on 1000 Friends.

Acknowledgements:

The working team for this project was comprised of representatives of 1000 Friends of Florida, The Department of Agriculture and Consumer Services (DACS), and the University of Florida's GeoPlan Center. 1000 Friends representatives include Ryan Smart, President, Vivian Young, AICP, Communications Director and Charles Pattison, FAICP, former Policy Director. The Florida Department of Agriculture and Consumer Services (DACS) was represented by Corinne Hermle. GeoPlan was represented by Dr. Paul Zwick, and Peggy Carr, Professors in the School of Landscape Architecture and Planning.

At the time of this study DACS was under the leadership of Commissioner Adam Putnam.

Members of 1000 Friends of Florida Board of Directors in place at the time of this study were:

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