Martin County 2040: The Western Lands Study

Future Development Assessment: Technical Report

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Summary of Methods and Results

The following report provides a very brief summary of methods and results for a set of future 2040 development scenarios created for Martin County at the request and with funding from the Guardians of Martin County. These results and their potential implications for future land use planning within Martin County are also discussed in more detail in the summary report for the 1000 Friends of Florida Martin County 2040 Western Lands Study, and related documents.

Future Development Scenario Methods and Results

Two potential future development scenarios were created, including a "Sprawl" scenario for 2040 based on current development densities and trends, and a "Conservation" scenario that incorporates a 30% increase in density, additional redevelopment, and avoids development of priority conservation and agricultural lands. These two scenarios are also compared to current "Baseline" development.

Likelihood for future development is identified based on a set of basic assumptions following the recent Sea Level 2040 and 2070 reports developed by 1000 Friends of Florida and the University of Florida Center for Landscape Conservation Planning (1000 Friends of Florida, 2023) incorporating the best available updated and county-specific data for Martin County. Specific assumptions include the following:

- Population: Future population projections were based on medium population projections for 2040 from the University of Florida's Bureau of Economic and Business Research (BEBR).
- Sea Level Rise: A 0.25m rise in sea levels was also incorporated, based on the 2022 National Oceanic and Atmospheric Administration (NOAA) Intermediate projection, with residents on lands lost to sea level rise relocated to other areas within the county or out of state.
- Redevelopment: In the Conservation scenario, 13% of the population was allocated to redevelopment in Martin County based on the anticipated redevelopment rates identified by 1000 Friends of Florida and the Center for Landscape Conservation (2023).
- Priority Conservation: Priority conservation lands were identified in the Conservation Scenario as lands that are either currently protected or are high priorities for protection in Martin County for agricultural, biodiversity, water, or other ecosystem service purposes. For this project, these included existing conservation lands based on the Florida Managed Areas (FLMA) dataset from Florida Natural Areas Inventory; Florida Forever state land acquisition program projects; Comprehensive Everglades Restoration Plan (CERP) priorities; Preserve Area Management Plan priorities; existing wetlands; and Priorities 1, 2, and 3 in the Florida Ecological Greenways Network (FEGN), otherwise known as the Florida Wildlife Corridor. Existing agriculture was also identified as a high priority, but not fully prohibited from development.

Future population in the Sprawl scenario was allocated based on likelihood of development and current gross development densities (GDD), using methodology and assumptions from 1000 Friends of Florida and the Center for Landscape Conservation (2023). Note that in the Sprawl scenario development was not restricted to the current Urban Service Districts (as of 2024). In the Conservation scenario, future population was only allocated within existing Urban Service Districts, and at a 30% higher density. Future population included those impacted by sea level rise and forced to move from the coast (50% of those impacted were relocated within the county, while the remaining 50% were assumed to move elsewhere).

Table 1 below identifies the future population projection for 2040 for Martin County that was used to identify the area needed to accommodate future development. Table 2 provides the same information as Table 1 for 2070 population growth. The 2070 population projections were extrapolated from the BEBR 2045 projections. Table 3 includes the gross development densities (GDD) that were used to allocate population for 2040 throughout the county based on current (Sprawl) densities, and with a 30% increase for the Conservation scenario. The table also identifies the acres needed to accommodate anticipated future population in 2040. Table 4 contains the same information as Table 3 using the 2070 population projection. Table 5 includes statistics comparing the current and future development scenario results for specific land use types. Figures 1-4 identify potential future development by 2040 (in red) for Martin County. Already approved developments (as of 2024) are shown in pink, and as they are not derived from the GIS-based model of development, and may not directly align with the areas in red.

Additional Notes

- As noted above, these models are based on the methodology described **in** 1000 Friends of Florida and the Center for Landscape Conservation (2023). A much more detailed methodology as applied at the statewide level can be found at this link: https://1000fof.org/sealevel2040/.
- The results from these models are not intended to be a prediction of future growth in Martin County, or a judgement on where future growth is best to occur. The Sprawl and Conservation scenarios included here merely represent a potential outcome for the county based on the set of modeling assumptions used.
- Areas identified in red as “projected development” in Figures 1-4 were defined based solely on GIS modeling assumptions (e.g. proximity to existing development, proximity to roads, etc). Existing zoning and future land use plans were not considered. This was due to limitations in time and budget, but also the potential (or likelihood) for these designations to change in the future.
- Gross development densities for both scenarios (Tables 3-4) represent an average for all new potential development. Actual development densities would vary per land use and zoning regulations, and to meet desired planning goals.
- Existing infrastructure and/or space needed for new infrastructure to accommodate future development were not considered in the model due to time and budget constraints.
- Time and budget limitations did not allow for a detailed mapping of approved development plans (shown in pink). These are areas where we know development is likely to occur, and which will accommodate some future population growth in the county. Capacity in already approved development areas may actually exceed the projected population growth for 2040. However we also know that development will not only occur within currently approved areas, making it important to consider potential impacts in other portions of the county as well.
- Broadly, these results show that future 2040 population can be accommodated within existing urban service districts at moderately higher densities while protecting important natural and agricultural lands, although some existing agricultural lands within urban service districts may be impacted by development in order to do so.

2023 Population Baseline	BEBR (2023) Projection for 2040	Total Population Change	Percent Population Change
162,847	181,300	18,453	11%

Table 1. Future population projections for Martin County for 2040

2023 Population Baseline	BEBR (2023) Projection for 2070	Total Population Change	Percent Population Change
162,847	206,432	43,585	27%

Table 2. Future population projections for Martin County for 2070

2023 Gross Development Density	Acres needed to accommodate 2040 population (Sprawl Scenario)	30% Higher Gross Development Density (Conservation Scenario)	Acres needed to accommodate 2040 projected population (30% higher density)
3.09	5,972	4.02	4,594

Table 3. Acres needed to accommodate 2040 future development and GDD for Martin County

2023 Gross Development Density	Acres needed to accommodate 2070 population (Sprawl Scenario)	30% Higher Gross Development Density (Conservation Scenario)	Acres needed to accommodate 2070 projected population (30% higher density)
3.09	14,105	4.02	10,842

Table 4. Acres needed to accommodate 2070 future development and GDD for Martin County

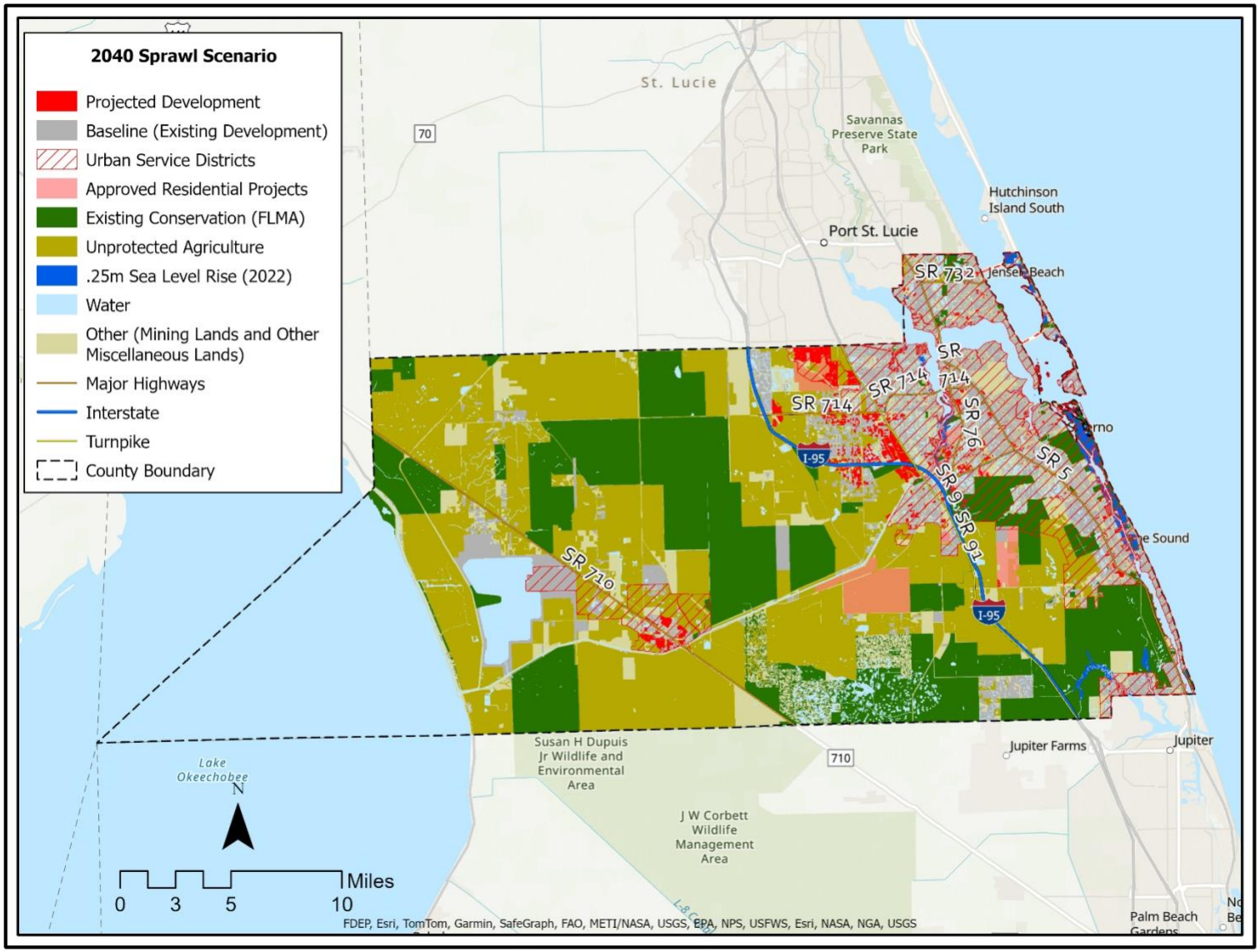

Figure 1. 2040 Sprawl Development Scenario Results

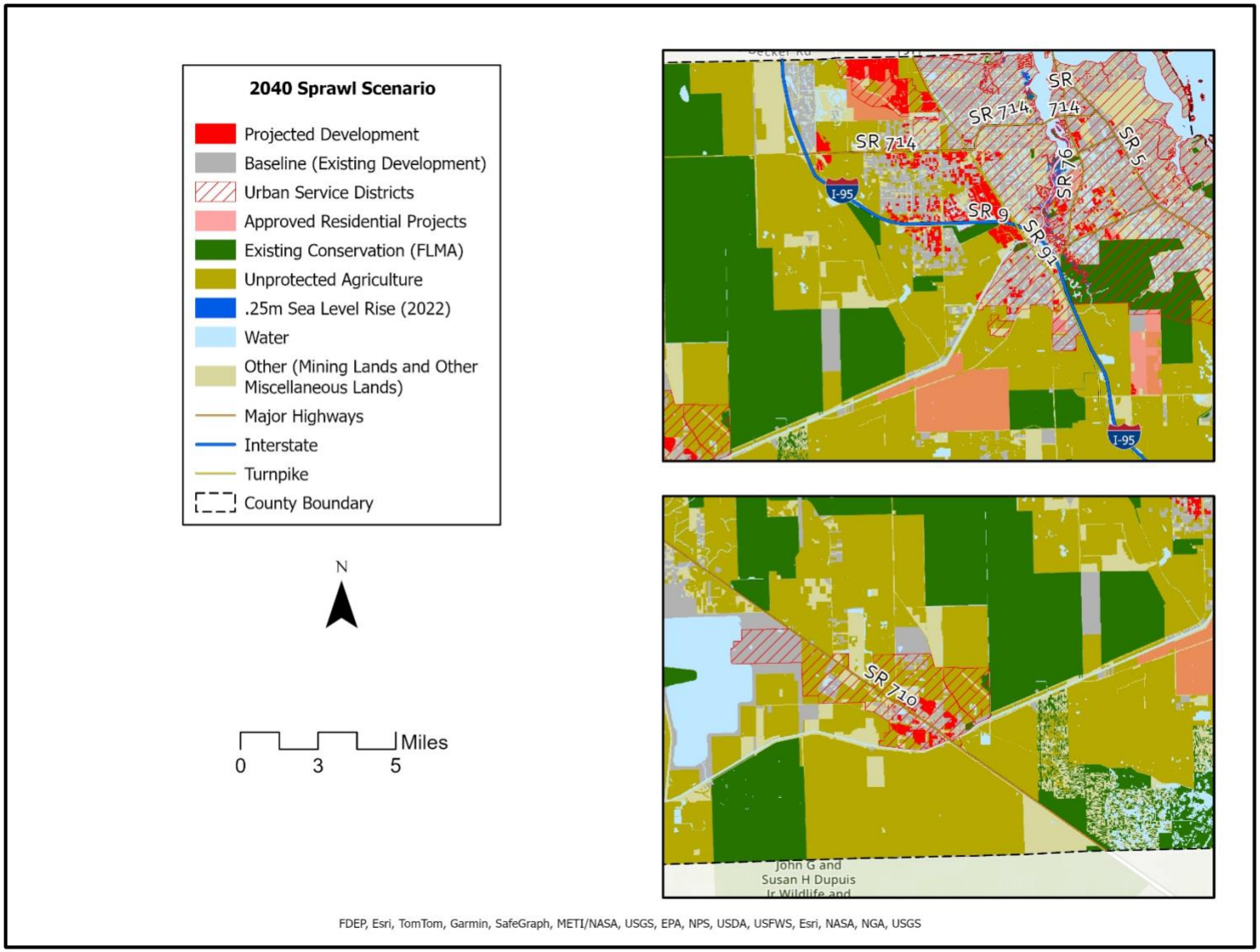

Figure 2. 2040 Sprawl Development Scenario Results (NE county and Indiantown)

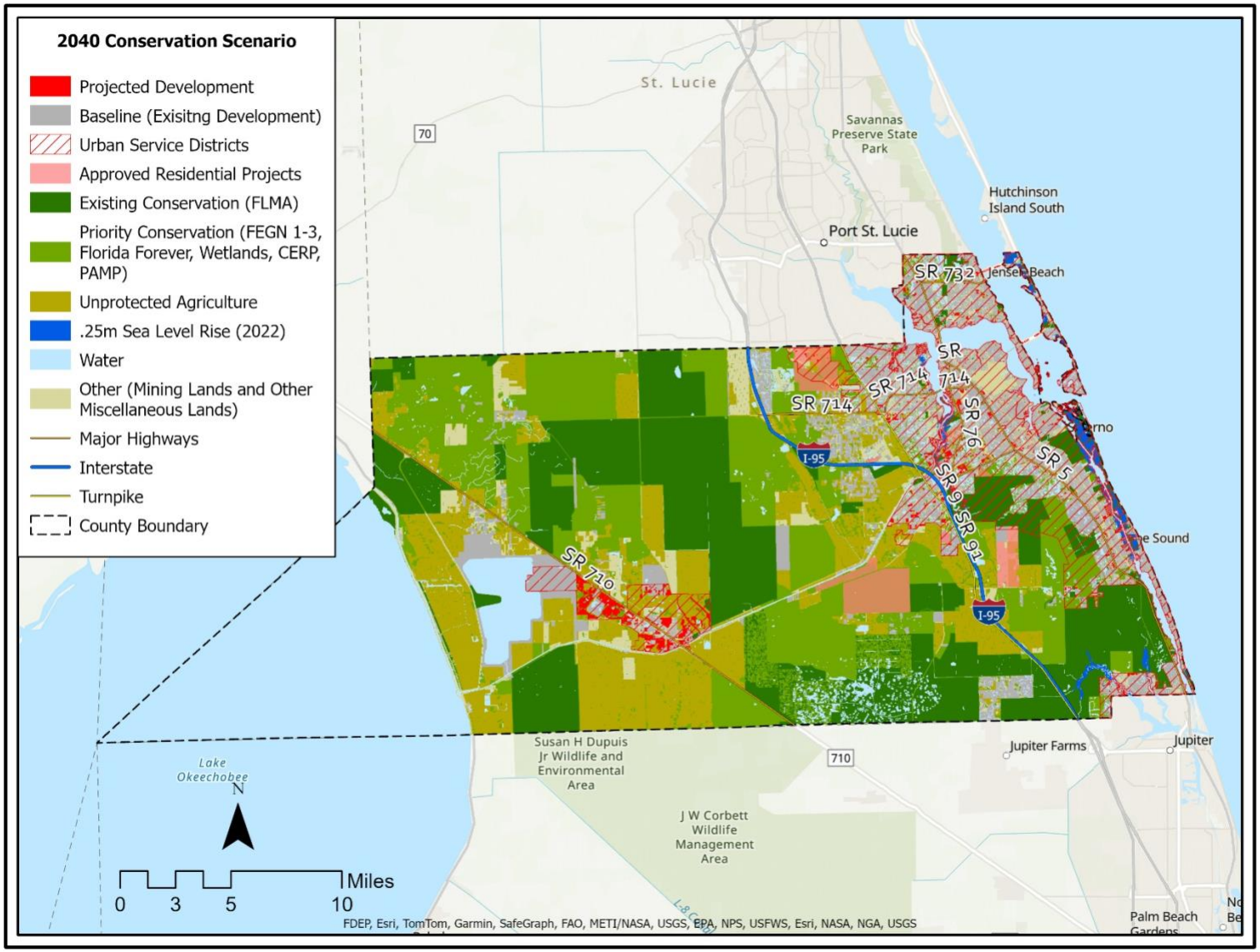

Figure 3. 2040 Conservation Development Scenario Results

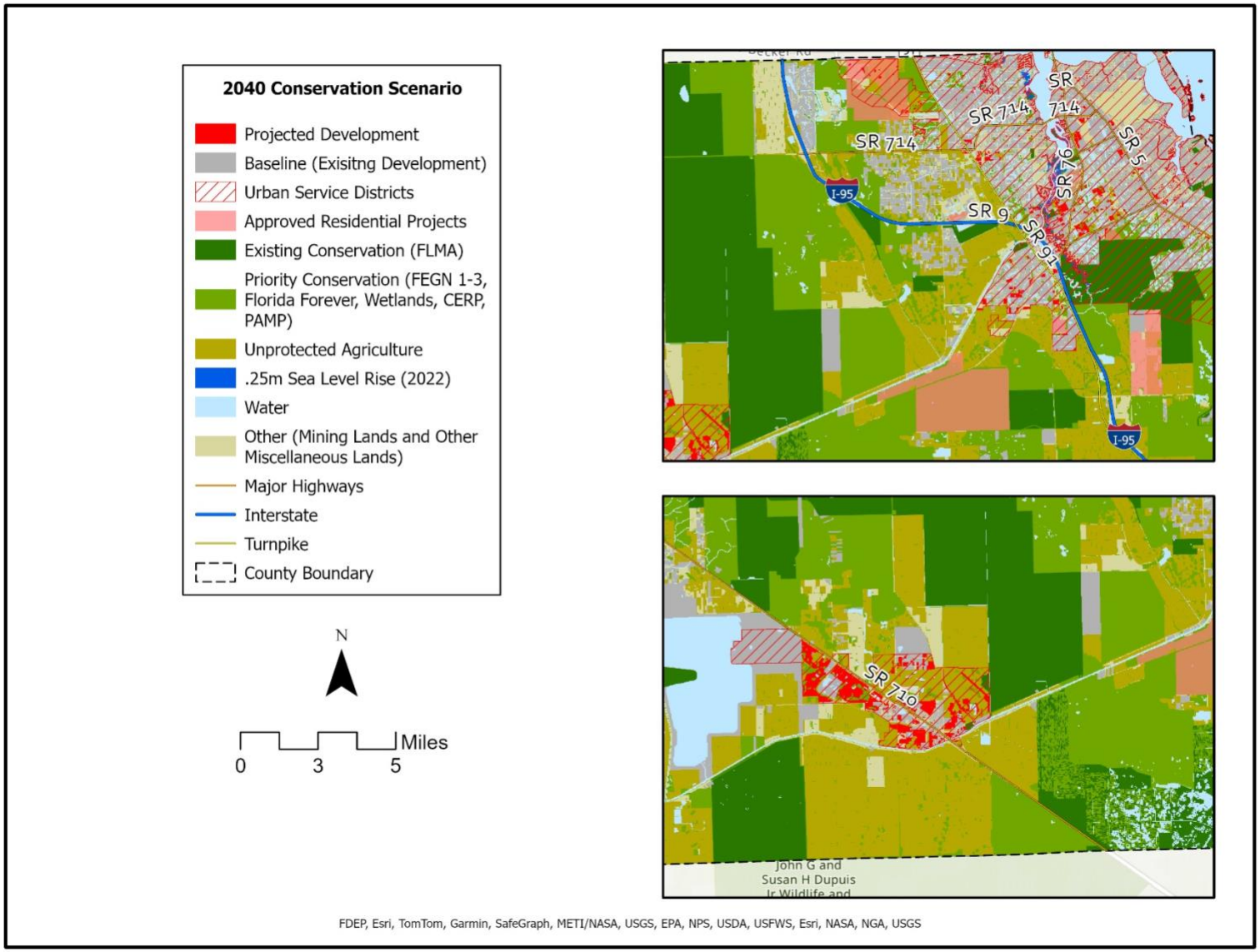

Figure 4. 2040 Conservation Development Scenario Results (NE county and Indiantown)

	2023	% of Total Acreage	Sprawl 2040	% of Total Acreage	Conservation 2040	% of Total Acreage
Developed	42,756	10.03%	48,296	11.42%	46,470	10.99%
Protected Natural Land	59,356	13.93%	57,439	13.58%	77,247	18.27%
Protected Agriculture	35,705	8.38%	35,705	8.44%	103,533	24.48%
Agriculture	157,626	36.99%	154,024	36.42%	88,450	20.92%
Other*	39,722	9.32%	33,818	8.00%	13,582	3.21%
2019 Open Water	91,023	21.36%	91,023	21.52%	91,023	21.52%
Sea Level Inundation: Protected Lands	0	0.00%	1,917	0.45%	1,955	0.46%
Sea Level Inundation: All Other Land Uses	0	0.00%	650	0.15%	612	0.14%
Total Acreage	**426,188**	**100.00%**	**422,872**	**100.00%**	**422,872**	**100.00%**
Total Land Acreage	335,165	78.64%	329,282	77.87%	329,282	77.87%
Total Sea Level Inundation	0	0.00%	2,567	0.61%	2,567	0.61%
Total Open Water including SLR	91,023	21.36%	93,590	21.96%	93,590	21.96%

Table 5. Acreage and land use comparisons between current (baseline) development and the Sprawl and Conservation future development scenarios for Martin County.

Works Cited

1000 Friends of Florida and University of Florida Center for Landscape Conservation Planning. 2023. Florida's Rising Seas: Mapping our Future - Sea Level 2040. Prepared for the Florida Department of Agriculture and Consumer Services. https://1000fof.org/sealevel2040/.