

Your Florida Legacy

a guide to protecting what's best about Florida

2017



Dear Florida Policymaker,

As a lawmaker, you have the power to chart a course towards a sustainable future for Florida's families. It is a future where protecting our natural areas and promoting clean, renewable energy brings economic prosperity and a high quality of life.

In Florida, elected officials from both ends of the political spectrum once worked together to focus their collective power towards protecting our natural treasures. It was the Florida Legislature that often took the lead.

For example, in 1934 the Florida Legislature took the first step towards creating a protected area within the Everglades by establishing the Tropical Everglades National Park Commission to study the creation of a national park. In more recent years, between 1990 and 2008, Republicans and Democrats alike nurtured visionary programs like Florida Forever and the Florida Communities Trust to preserve millions of acres of our most ecologically valuable areas and parks.

Conservation and sustainability are values shared by all Floridians, regardless of political affiliation.

Florida's citizens want leaders like you to put those values above party loyalties, work together to protect our natural heritage, and preserve what's best about Florida. They have declared these values at the ballot box time and again.

The two most recent examples include the overwhelming support for the 2014 Water and Land Conservation amendment and the resounding defeat of the utility-backed, anti-solar amendment in 2016.

Florida's great beauty will last only as long as Florida citizens and lawmakers work to conserve it. This year, you have the power to build upon our shared legacy of conservation. Your children and grandchildren will thank you for it, as will mine.

Florida Conservation Voters Education Fund collaborated with more than a dozen conservation groups and experts to bring you this briefing book. We hope that it will serve as your guide to understanding the key environmental issues currently facing our state—and how you can make a difference.

If you have any questions, please feel free to contact me at aliki@fcvoters.org. Thank you.

For Florida,



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CLIMATE CHANGE



Ponte Vedra Beach after Hurricane Matthew
photo by Gary Appelson



**Between \$15 and
\$23 billion of
existing property
in Florida
likely will be
underwater by
2050.**

"A Climate Risk Assessment for U.S."

Risky Business, June 2014

Florida has more residents and more property at risk from sea level rise than any other state in the nation.¹

Our climate is changing because the Earth is warming. Over the last two centuries, people have increased the amount of carbon dioxide in the air by 40 percent, and other heat-trapping greenhouse gasses like methane are also increasing.² As a result, the seas are rising at an accelerated rate. Without adaptive planning and funding, sea level rise will cause billions of dollars of damage to our structures, water supply, agricultural soils, and natural resources.

Florida is at the greatest risk in the nation for property loss because it has the longest sea coast in the continental U.S. and among the most expensive coastal real estate. This, compounded by our low elevation and high water table, means we are at ground zero for rising sea levels. In fact, in many parts of the state, communities are already experiencing the damaging effects of climate change and sea level rise.

Since 2006, flooding in the

Miami area from from sea level rise has increased 400 percent, which is well above the global average increase.³ Researchers at the University of Miami have found that the average rate of sea level rise increased over the last decade from three millimeters per year before 2006, to nine millimeters per year after 2006.

In Florida's coastal regions, where the majority of our 20 million residents choose to live, homeowners are already experiencing record-breaking cost increases on property insurance because of their vulnerability to flooding and higher storm surges. Because of our porous karst topography, which allows salt water to move laterally inland, several communities are already losing drinking water wells to saltwater intrusion. Sunny day flooding is inundating streets and structures on Miami Beach, higher tides are topping sea walls and flooding yards, and salt water is destroying



coastal habitat.

Climate change is the biggest challenge of our generation. It will take all of us—scientists, policymakers, and citizens—to work together collaboratively and creatively to save our environment, our economy, and our current way of life. Florida must explore policies that will enable our communities to both adapt to our changing climate and reduce our state's greenhouse gas emissions.

The response may be costly, but ignoring climate change and sea level rise will cost us more over the long run and will disproportionately harm the most vulnerable communities who can least afford it. ■



**Three-fourths
of Florida's
20 million
residents live
in coastal
communities.⁴**

Ft. Lauderdale Beach, aerial view

Policy Recommendations

- Fund a state university to conduct a comprehensive statewide review of existing reports, literature, data, and research, and prepare a report of existing and projected impacts of climate change and sea level rise over the next 50 years on Florida's economy, citizens, and natural resources.
- Assemble a task force of federal, state, local, and regional governmental officials, including state agencies, citizens, scientists, real estate and business representatives, as well as the U.S. military, to prepare recommendations to address the effects of climate change in Florida, based on the findings of the university review.
- Fund and implement the task force's recommendations.

¹ Staletovich, Jenny. "Sea rise could force millions in Florida to adapt or flee, study finds." *Miami Herald*. 14 Mar 2016.

² "What Climate Change Means for Florida." Southeastfloridacclimatecompact.org/U.S. Environmental Protection Agency. Aug 2016.

³ "Climate Change and Sea Level Rise in Florida: An Update of Effects of Climate Change on Florida's Oceans and Coastal Resources." Florida Oceans and Coastal Council. Dec 2010.

⁴ Wdowinski, et al. "Increasing flood hazard in coastal communities due to rising sea level: A case study of Miami Beach, Florida." *Ocean and Coastal Management*, Vol 126. Jun 2016.

Florida should be at the forefront of shaping a clean energy future.

The explosive growth of solar technology offers a huge opportunity for the Sunshine State to become a national leader in clean energy. The cost of solar panels has dropped dramatically in the last few years, making solar competitive with other forms of power. Other states have seen massive expansions in solar markets as a result, but Florida continues to lag behind because of unfair regulatory and tax obstacles that prevent consumers from having the same affordable choices as consumers in other states.

But the good news is finally here for solar in Florida. The local solar industry is reporting strong job growth, with one in 50 U.S. jobs in solar in 2016,¹ despite the many barriers it continues to face. Moreover, public support for solar in Florida has never been stronger, as evidenced by high-profile election wins for solar in two statewide constitutional amendment campaigns in 2016.

Florida is poised to reap the benefits of policies that move us

toward a cheaper, more resilient energy grid that relies on clean energy sources like solar and avoids risky and expensive investments in outdated fossil fuel resources. This can be accomplished by eliminating unfair tax penalties, cutting red tape, rejecting unfair regulations, expanding energy choices for all Floridians, and protecting consumers from punitive rate changes for those who want to go solar.

Achieving these policy goals will help provide Florida families and businesses benefit from competition in the marketplace by opening the door for an affordable way to produce their own energy, create thousands of new solar jobs, and reduce Florida's reliance on environmentally harmful fossil fuels.

ELIMINATE TAX PENALTIES ON SOLAR

Florida is among the top states in the country for solar potential, but it continues to rank far below where it should be regarding the

amount of installed solar. When industry analysts are asked why the state lags behind, they consistently point to high property taxes on solar projects as the most significant barrier that keeps the economics from “penciling out” in Florida.

In particular, businesses and utilities that choose to invest in solar are subject to property tax penalties on those new solar systems, which eats away at the energy savings they would otherwise see as a return on their investment. Smaller residential customers are already protected from those property tax increases



Solar employs more people in the U.S. than oil, coal, and gas combined.²



by a constitutional amendment approved in 2008.

To remedy this property tax penalty, the legislature placed a constitutional amendment on the 2016 primary ballot, Amendment 4, to expand the property tax exemption to include commercial renewable energy projects. It passed overwhelmingly in both houses and was ultimately approved with 72.6 percent support by voters.

Supporting swift passage of a clean, bipartisan bill to implement Amendment 4 is an important step that Florida policymakers can take

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Policy Recommendations

- Eliminate unfair tax penalties on businesses and homeowners who go solar.
- Cut red tape that unnecessarily burdens solar installers.
- Reject efforts to single out solar for new regulations not applied to other consumer industries.
- Expand energy choice for all customers in Florida.
- Protect customers from punitive rate changes by utilities that block customers' ability to manage their own energy costs.

¹ 2016 National Solar Jobs Census. [thesolarfoundations.org/The Solar Foundation](http://thesolarfoundations.org/TheSolarFoundation). 2016. Web.

² 2017 U.S. Energy and Employment Report. [Energy.gov/U.S. Department of Energy](http://energy.gov/U.S.DepartmentofEnergy). 13 Jan 2017. Web.

³ National Solar Jobs Census 2016. [thesolarfoundations.org/The Solar Foundation](http://thesolarfoundations.org/TheSolarFoundation). 2016. Web.

SOLAR ENERGY



In 2016 alone Florida added 1,700 new solar jobs. Nationally, a new solar job is created every 10 minutes.³

to open the market to more solar jobs and lower solar energy costs in 2017 and beyond.

CUT RED TAPE

Florida currently imposes an odd and very burdensome regulatory requirement on all new solar systems in the state. Solar installers must receive a special state certification of compliance with equipment standards set by the Florida Solar Energy Center (FSEC). This is in stark contrast to other states, where solar panels must comply with established

national technical standards, like those set by the U.S. Department of Energy's National Renewable Energy Laboratory (NREL).

To bring Florida into alignment with national best practices, policymakers should streamline certification by allowing installers to comply either with state FSEC certification standards or national NREL standards. This would free solar companies from costly and time-consuming state approvals, and make the solar market more efficient and solar energy less costly for consumers.

While policymakers are considering cutting burdensome red tape that currently hinders Florida's small but growing solar industry, they must also be vigilant against efforts by opponents of solar to single out the industry for unnecessary new regulations that will slow solar market growth under the guise of "consumer protection" laws. Arizona recently passed new laws designed to throw sand in the gears of its solar market, and a similar campaign in 2016 in Florida (Amendment 1) would have had a chilling effect



on a nascent but growing industry here. Luckily, voters were alerted to the duplicitous nature of this amendment, which would have reduced access to solar rather than expand it, and voted it down in November.

EXPAND ENERGY CHOICE

Florida is one of only four states in the country where the law prohibits customers from buying electricity from anyone other than their assigned utility. In most cases, that's a monopoly investor-owned utility. Other Southeastern states

have removed similar prohibitions, as Georgia did in 2015 with Republican-sponsored legislation.

Power purchase agreement (PPA) arrangements with third-party solar companies help avoid large upfront costs for customers and allow the customer to pay only for the value of energy produced by the solar panels. Florida would benefit from a common-sense, market-based approach that expands options for electricity customers to include the most popular forms of financing used throughout the country. Allowing homeowners and businesses to choose clean energy for themselves without new subsidies or government incentives is a policy approach that everyone can support, and a practical way to remove obstacles to a cleaner energy future for Florida's economy and environment.

PROTECT UTILITY CUSTOMERS FROM PUNITIVE RATE CHARGES

The rapid growth of solar has been great news for customers who want to take advantage of cleaner, more sustainable, lower-cost energy. But monopoly utilities have not welcomed the competition from inexpensive rooftop solar. Across the country, utilities are attempting to redesign their customer rates to single out solar customers for additional fees, thus reducing the economic payback of investing in solar panels. Another tactic they are employing involves shifting all customers toward new types of rates that ascribe a bigger portion of monthly power bills to fixed charges. This reduces their customers' ability to manage their own energy costs and invest in solar or energy efficiency

improvements that would otherwise dramatically lower their bills.

Utilities are also launching attacks on a popular rate policy known as "net metering," which ensures customers are fairly compensated by the utility for the energy produced from their own solar panels. That excess generation is sent to neighbors and replaces the fossil fuel generation that the utility would otherwise produce. It's a win-win for solar customers, their neighbors, and the environment. This simple crediting arrangement is one of the most important state policies for enabling Floridians to generate their own power from the sun.

Because utilities have monopoly control over the prices paid for solar generation under net metering, Florida's utility customers need policymakers to stand up for them and defend their right to be fairly compensated for the beneficial energy they provide to the grid with their own private investment in rooftop solar systems.

As solar grows and becomes more cost-competitive with traditional energy options in Florida, we expect more utility rate changes and attacks on net metering in the legislature, the Florida Public Service Commission, and in municipal and rural cooperative utilities statewide. Policymakers should discourage this constant game of whack-a-mole that puts a heavy burden on customers to be ever vigilant in protecting their rights to get a fair return on their investment to preserve the economic value and affordability of new clean energy technologies. ■

Unconventional drilling is too risky for Florida's waters and economy.

Florida is not an oil rich state. Yet for decades, prospectors and wildcatters have used conventional oil and gas drilling techniques hoping to get-rich-quick by finding the nation's next big oil deposit beneath the Florida peninsula. They've had little success, finding only a limited supply in the Panhandle and southwest Florida. And what few reserves they found have been on the decline since the early 1980s.

As oil and gas deposits declined elsewhere in the country, drilling companies began to implement unconventional extraction techniques to boost production—at the high cost of polluting water supplies.

In Florida, the risks that these unconventional techniques pose to our state's water supplies are too great.

WHAT IS FRACKING?

Fracking originated as a term to describe hydraulic or acid fracturing. It involves injecting

millions of gallons of highly pressurized water, usually mixed with sand and chemicals, deep into the earth to crack the rock and release oil or gas deposits.

Another method, known as “matrix acidizing,” involves injecting acidic chemicals into underground rock formations, but at lower pressure, with the chemicals dissolving the rock (not fracturing it) to release oil and gas. All fracking techniques use a toxic chemical combination and produce large amounts of wastewater.

THE DEFINITION MATTERS

Legislation that seeks to ban all forms of fracking that could occur in Florida must not only refer to “hydraulic fracturing,” but also to all forms of “well-stimulation” for oil and gas production or recovery. Legislation must cover any process that seeks to change the permeability of an underground geologic formation through fracturing or dissolving the rock, at either a high or low pressure,



to improve the flow of oil and gas (hydrocarbons) from the formation into the well.

FRACKING IN FLORIDA

Florida contributes a scant amount to the production of oil and gas in the United States. In fact, Florida's reserves for potential future oil production are estimated to be less than one-tenth of one percent of our national reserves, and the quality of our oil is considered poor.¹

Oil prospectors have identified the Sunniland Trend, which



Leakage from fracking waste pits has caused contamination of nearby underground water sources with toxic chemicals known to cause cancer, like benzene.

underlies Big Cypress National Preserve and Everglades National Park, and Jay Field in the Panhandle among other locations as areas of interest for risky well stimulation and fracking activities. However, Floridians do not support fracking. More than 85 local governments have passed resolutions or ordinances opposing fracking. In other words, the *majority* of Floridians now live in a city or county that has either banned fracking locally or called for a ban on fracking at the state level.

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Policy Recommendations

- Prohibit all forms of fracking within the State of Florida.
- Ensure that fracking is defined to include methods that involve well-stimulation.
- Protect local government home rule by preserving local authority to define tougher regulations through zoning and land use plans.

Fracking could harm our public health, environment, and economy.

PUBLIC HEALTH & SAFETY

Nearly 75 percent of chemicals used in fracking have been proven harmful to the skin, eyes, and respiratory and digestive systems. Half of these chemicals also affects immune, cardiovascular, and brain/nervous system functions, and a quarter cause cancer and birth defects.² Putting aside direct contact with fracking chemicals, it is important to recognize that fracking operations also form ground-level ozone, which, when combined with particulate matter, forms smog. Higher levels of ozone and smog can irritate the lungs, aggravate asthma, and reduce lung function, affecting sensitive populations such as children and disproportionately affecting low-income communities.³

In Florida, as in many states, the chemicals used in drilling operations can be withheld from public knowledge under “trade secret” provisions. The driller decides what is “trade secret” without an independent evaluation, leaving communities in the dark about chemicals that may affect their health. This lack of transparency can become particularly acute in emergencies, potentially hampering local governments' ability to provide proper medical and fire emergency response.

RISKS TO THE FLORIDAN AQUIFER

Spills and leaks resulting from the transport, storage, and injection of hazardous chemicals pose a serious threat of contaminating our drinking water and water resources. In fact, thousands of water contamination cases reported across the country show that fracking has caused illness in humans and deaths in livestock.⁴ A new fracking study from the Science for Nature People Partnership found an average of 55 spills per 1,000 wells in any given year.⁵ Besides posing a grave threat to water quality, fracking also uses vast amounts of freshwater.

CLIMATE CHANGE IMPACTS

More fracked gas infrastructure deepens our dependence on fossil fuels. Nearly 70 percent of Florida's electricity needs are now met by burning gas, making us already dangerously over-dependant on this source of energy. Furthermore, fracking releases methane directly into the atmosphere, which as a greenhouse gas is 30 times more potent than carbon dioxide. As one of the states most vulnerable to climate change and sea level rise, Florida should make policy decisions to support renewable energy rather than exacerbating our dependence on fossil fuels.

ECONOMIC IMPACTS

Environmental disasters have an enormous impact on Florida's tourism-based economy. From the BP Deepwater Horizon disaster of 2010 to the devastating algal blooms in the Indian River Lagoon and Caloosahatchee Estuary in 2013 and 2016, the entire state is impacted economically even when an ecological disaster affects only a local or regional area. Even down at the most personal level, studies have shown that homes with private drinking wells within one kilometer of a fracking well lose up to 22 percent of their property value.⁶ ■

Questions? Check out our list of experts on page 36

¹ Hernandez, Luis. "Energy Pro: Florida Is Not A Big Oil State. So Why Drill?" Wlrn.org./WLRN, 17 Aug 2015. Web.

² Colborn, Theo et al. "Natural Gas Operations from a Public Health Perspective," pgs 1039-1056. Jun 2010.

³ Bienkowski, Brian. "Poor Communities Bear Greatest Burden from Fracking." Scientificamerican.com/ *Scientific American*. 6 May 2015. Web.

⁴ Bamberger, M. and R.E. Oswald. "Impacts of gas drilling on human and animal health." *New Solutions*. Pubmed.gov. 2012. Web.

⁵ Patterson, Lauren et al. "Unconventional Oil and Gas Spills: Risks, Mitigation Priorities, and State Reporting Requirements." *Environmental Science & Technology*. 2017.

⁶ McMahon, Jeff. "Pollution Fears Crush Home Prices Near Fracking Wells." Forbes.com/ *Forbes*, 10 Apr 2014. Web.



BEACHES & COASTLINES



**In 2015, tourism
added \$108 billion to Florida's economy
and created more than 1.3 million jobs.**

Visit Florida, 2015 Tourism Report



Our Florida way of life wouldn't be the same without healthy coasts and beaches.

Our beaches are the engines that drive our tourism-based economy and make Florida a great place to call home.

Many Floridians have first-hand experience with the damage caused to our beaches and estuaries by overdevelopment, shoreline armoring, degraded water quality, and increasingly, sea level rise. Half of our beaches have been designated as “critically eroded,” meaning most of the adjacent upland development needs protection from the encroaching surf. Our beaches are being squeezed between high-risk shoreline development and long-term coastal erosion. Development on the most seaward dunes, combined with efforts to protect that development from surf, has established a line in the sand that prevents beaches from moving naturally.

Despite the obvious threat to our beaches, and hefty expense to taxpayers, Florida continues

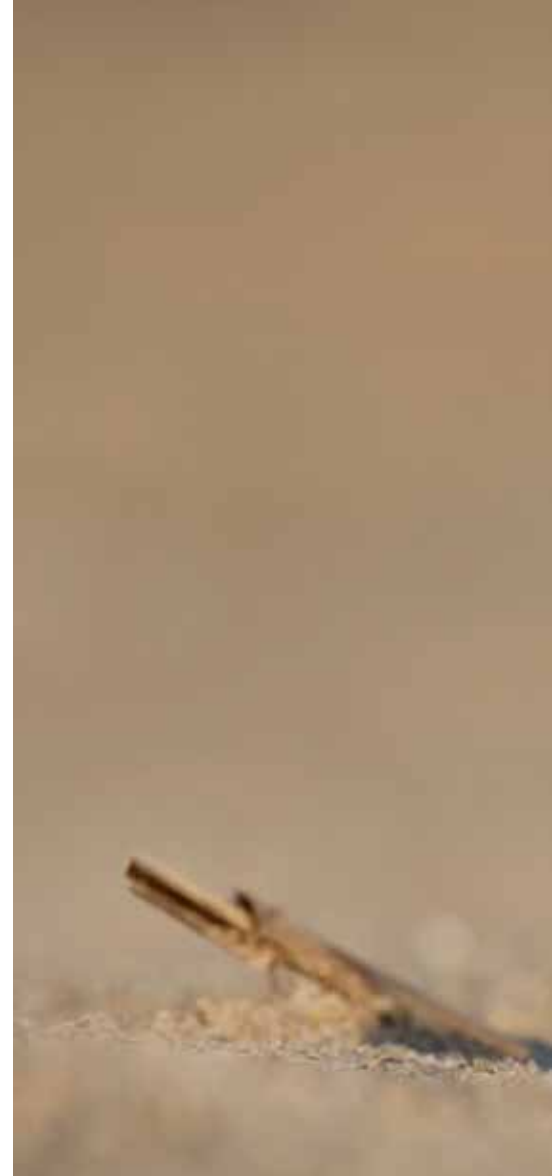
to incentivize reckless coastal development with subsidized insurance, exemptions to development setbacks, and no long-term consideration for sea level rise and storm events.

Ill-planned and rampant coastal development ultimately makes us more vulnerable because it dramatically reduces our ability to withstand storm events, like hurricanes Matthew and Hermine which just impacted Florida in 2016. Hurricane Matthew, which never made landfall, raked Florida's east coast. Its impacts highlight how fragile our beaches are and how susceptible they are to erosion. Florida has 362 miles of sandy barrier island beaches fronting the east coast. Matthew caused major beach and dune erosion to more than 50 percent of those Atlantic beaches, stretching 212 miles over six counties, from the St. Johns River to Vero Beach. According to a new draft report by the Florida Department of Environmental

Protection on the storm damage, these two hurricanes alone resulted in millions of dollars of damage to Florida's beaches and dunes, with the bulk of the destruction occurring along Florida's northeast coast. The state's share of these costs is estimated to be about \$77 million.¹ This is in addition to \$85 million local governments had already requested for repairs and restoration prior to the hurricanes.

As coastal properties become threatened by erosion, owners look for ways to combat beach erosion by building sea walls or through expensive and never-ending beach nourishment. But hard armoring of the beach with steel and concrete

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In addition to reducing shoreline resiliency, sea walls also damage beach habitat that is critical to shore bird and sea turtle nesting.



Piping plover and her chick

Policy Recommendations

- Establish a Coastal Commission of scientists and other experts to help guide coastal policy.
- Establish a coastal land acquisition program, which includes both direct purchases and conservation easements.
- Update and implement inlet management plans, so there is no net loss of sand to the coastal system.
- Create new policies that incentivize the landward siting of new coastal development.
- Implement post-disaster redevelopment policies that restrict rebuilding in the same vulnerable coastal locations after storms.
- Reform the state's 25-year-old coastal development laws to reduce development on the frontal dunes of critically eroding beaches.
- Fund the Florida Healthy Beaches Program, a beach water-quality sampling program, with sustainable, recurring state revenue.
- Curb plastic and other pollution by returning home rule to local governments so that they can regulate pesticides, fertilizers, and single-use plastic bags.
- Set resource-based carrying capacities for special coastal areas like beach state parks and wildlife refuges to help ensure they remain vital habitats and provide quality user experiences well into the future.

BEACHES & COASTLINES



seawalls or other coastal structures actually intensifies beach erosion. Hard armoring vastly increases wave energy in front of the structures, locking up beach sand on their landward side—sand that would otherwise be available to help beaches recover naturally from storm events. While a sea wall may temporarily save the structure, the public beach is ultimately lost unless the sand is constantly replenished at great expense to taxpayers. In addition to reducing shoreline resiliency, which is the ability of beaches to migrate and recover naturally after storm events, sea walls also damage beach habitat that is critical to shore bird and sea turtle nesting. Therefore,

we must plan ways for natural habitats to migrate upslope ahead of sea level rise. Creating migration corridors for coastal habitat will be key.

Because of our extensive coastline and karst topography, Florida is the most at-risk state for sea level rise. Yet, there is no reference to these vulnerabilities in any of the state's coastal development and beach management laws, and there is no statewide plan to mitigate the impacts of climate change and sea level rise to our beaches.

Our warming coastal waters are already harming Florida's unique coral reefs, which are home to more than 500 species of fish and

are the only tropical reefs in the continental U.S. Increased ocean temperature and acidity further threaten corals by making them increasingly vulnerable to disease and bleaching.

Many coastal states including North Carolina, New Jersey, and California are adopting coastal management policies that account for sea level rise. The Florida Legislature should, at a minimum, direct the Florida Department of Environmental Protection to: (1) conduct a study of anticipated sea level rise impacts to Florida's coasts and (2) recommend monitoring and policies to guide local governments and state agencies in their coastal

The top visited tourist locations in Florida are its sugar sand beaches and hikable trails.³



management, planning, and land use decisions.

Florida's beaches are the most visited in the world and our coastline is world-renowned for sugar-sand shores and crystal-clear waters. We must protect these priceless natural assets and our economy by taking measures to mitigate the effects of climate change and sea level rise for our families and for future generations.■

¹ Draft 2016 Hurricane Recovery Plan: Florida's Beaches and Dunes. Florida Department of Environmental Protection. 13 Dec 2016.

² "Power of Florida." 2015 Florida Tourism Report. VisitFlorida.org/Visit Florida. Web.

³ Ibid.



EVERGLADES

"There is no other Everglades in the world. They are, they have always been, one of the unique regions of the earth, remote, never wholly known."

Marjory Stoneman Douglas





The Everglades is a unique treasure unlike any other in the world.

The greater Everglades ecosystem encompasses nearly three million acres of Florida's landscape, flowing from the Kissimmee Chain of Lakes into Lake Okeechobee, and down to the Florida Keys.

At an elevation near 60 feet above sea level, Shingle Creek in Orlando is the northernmost headwaters of Florida Everglades. The creek meanders 23 miles flowing south into Lake Tohopekaliga in Osceola County, which begins its 350-mile journey through the Kissimmee Chain of Lakes, down the Kissimmee River and into Lake Okeechobee, before flowing into the Everglades and out to Florida Bay at the southern tip of Florida. A drop of water used to take six to eight months to reach Lake Okeechobee and then another 16 months, moving only one mile every four days, from the Lake through the wide, shallow River of Grass through the Everglades to Florida Bay.

Efforts to drain the Everglades started in the 1800s with the objective of converting "worthless wet land" to productive uses like agriculture and development. In 1926 and 1928, hurricanes hit Lake Okeechobee causing devastating floods and loss of thousands of lives. That prompted

the state of Florida to ask the federal government for help with flood control. In 1930, construction began on the Herbert Hoover Dike around Lake Okeechobee along with a larger system of floodway channels, control gates, and levees designed for flood control. Because the dike cut off the flow of water south to the Everglades, the Caloosahatchee River to the west was deepened, and the drainage canal to the east connecting the Lake to the St. Lucie Estuary was expanded, redirecting Lake Okeechobee water from the Everglades to the west and east coasts. Together known as the Okeechobee Waterway, these projects, for the first time, provided a navigable connection between the Gulf of Mexico and the Atlantic Ocean. The historic Everglades south of Lake Okeechobee was drained and farmed. Today it includes approximately 700,000 acres called the Everglades Agricultural Area where sugar cane, vegetables, citrus, and rice are grown.

More than 100 years of digging canals, building dams, and controlling the waters for agriculture and development have drained natural wetlands and destroyed the flow of the River of Grass. Today, less than half of the

original Everglades remain. Florida has lost healthy wetlands that once stored and cleaned excess water for use during Florida's dry season and now struggles with alternating years of costly water shortages and water excesses that threaten coastal communities. Meanwhile, pollution and stormwater runoff from agriculture and urban development have disrupted the natural balance and health of ecosystems and the fish, birds, reptiles, and mammals that inhabit them.

Restoring the River of Grass is vital to support Florida's tourism, agricultural, and real estate economies, and is fundamental to providing clean, fresh drinking water for more than eight million Floridians. Florida's \$9.7 billion fishing industry (129,000 jobs), \$10.4 billion boating industry (83,000 jobs),¹ and \$89.1 billion tourism industry (1.1 million jobs)² depend on the health of the Everglades ecosystem and coastal waters.

Since Congress passed the Comprehensive Everglades Restoration Plan (CERP) in 2000, significant progress has been made towards restoration. However, funding delays have hampered restoration, causing the ecosystem to continue its decline. Every wet year, our lack of storage sufficient to



Roseate Spoonbills

capture, clean, and send freshwater south to the Everglades devastates the estuaries in Martin and Lee Counties with harmful polluted water from Lake Okeechobee. In 2015, drought conditions caused Florida Bay to suffer from lack of freshwater flow leading to record high salinities and the loss of 50,000 acres of critical seagrass habitat. The 2016 outbreak of toxic algae in Lake Okeechobee released to Florida's estuaries to the east and west, marked the fourth time since 2004 that algal blooms brought ecological and economic calamity to our coastlines.³

Strong leadership is needed to ensure critical water infrastructure is built to store, clean, and move freshwater through the Florida peninsula all the way into Florida Bay. ■

Policy Recommendations

- Issue bonds to purchase lands in the Everglades Agricultural Area (EAA) to complete the CERP EAA storage project. This is critical to store, clean, and move water south to the Everglades, and reduce damaging Lake Okeechobee discharges to the St. Lucie and Caloosahatchee coastal estuaries.
- Build storage to protect estuaries from Lake Okeechobee discharges, provide vital flow to Everglades National Park and Florida Bay, reduce pressure on the Herbert Hoover Dike, and protect against salt water intrusion to the water supply of southeast Florida caused by climate change and sea level rise.
- Enact and enforce strong pollution limits that safeguard Florida's water resources from degradation.

¹ Economics of Fish & Wildlife Recreation in Florida, Myfwc.com/Florida Fish & Wildlife Conservation Commission. June 2016. Web.

² Seccombe, Will. "Florida Tourism Generated \$89.1 Billion in Economic Impact in 2015." Visitfloridablog.org/Visit Florida. 28 Apr 2016. Web.

³ Parker, Laura. "Slimy Green May Be Florida's New Normal". Nationalgeographic.com/National Geographic. 27 Jul 2017. Web.

Florida has more than 1,000 artesian springs—the greatest assemblage of large springs in the world.

Many of our springs are iconic and beloved by Floridians and visitors alike. In addition to being part of our natural heritage and a great source of enjoyment and recreation, the value of springs can also be measured by the environmental services and economic benefits that they provide.

During the past two decades, the degradation of Florida's springs has become undeniable. Every major artesian spring in Florida, except those few in remote areas far from human population, are experiencing declining flows because of water withdrawals from the Floridan aquifer, as well as impaired water quality from municipal and agricultural pollution.

Rapid population growth, coupled with inefficient utilization and protection of natural resources, has been the driving forces behind the decline of Florida's springs. More than 700 people move to Florida each day, which means increased water use for domestic purposes, more urban fertilizer applications, and more human waste; all of which contribute to

elevated nitrogen levels in ground and surface waters. Agricultural operations also withdraw substantial volumes of groundwater from the aquifer and contribute significantly to nutrient pollution. The excess of nutrients in Florida's waters has recently led to noxious algae blooms that plague both coastal and springs waters. Many of Florida's most treasured springs have suffered stagnation and decreased visibility due to algal proliferation stimulated by depleted flows and nutrient pollution.

Senate Bill 552, which passed during the 2016 legislative session, purported to address some of the complex problems facing our springs, and mandated that the water management districts develop minimum flows and levels for Florida's first magnitude springs and second magnitude springs on public lands. While these processes are now underway, political pressure to continue permitting groundwater withdrawals often undermines good intentions. Additionally, the regulatory process is plagued by a variety of issues, including imprecise groundwater modeling and insufficient monitoring of

consumptive uses by permitted sources. Similarly, springshed Basin Management Action Plans, which seek to identify projects and funding opportunities to reduce nutrients in our waterways, are hampered by a continued lack of funding and agency enforcement.

Toxic contamination from industrial and fossil fuel extraction processes also continue to threaten Florida's springs. The Florida Department of Environmental Protection has recently proposed controversial water quality standards for benzene and other carcinogens that are weaker than the standards recommended by the Federal Environmental Protection Agency. These standards were promulgated in a process that undermined public participation, damaging public trust in the state to protect Florida's springs and waterways.

Climate change also exacerbates both water quality and quantity problems. Coastal springs are already affected by saltwater intrusion, and changing weather patterns have diminished springs' and spring ecosystems' resilience statewide.



To restore our springs to their former health and vibrancy, we must reduce human impacts by developing a comprehensive statewide plan to expedite restoration and protection of Florida springs.

Successful implementation of a comprehensive springs protection and restoration effort is dependent upon funding and oversight from the Florida Legislature, responsible agency environmental stewardship, enforcement of state laws that are intended to protect springs, and local government initiatives.

Healthy springs are a precious natural resource in Florida for the ecological, economic, social, and spiritual benefits they provide. By focusing much-needed attention on protecting our springs, we will be taking an important step towards preserving our most critical resource—water—for our families and future generations. ■

Questions? Check out our list of experts on page 36

Policy Recommendations

- Fund land conservation and restoration in springsheds and surrounding areas.
- Increase grants to cities and counties via the Clean Water State Revolving Fund program to remove polluting septic systems in springsheds and connect properties to central sewer, contingent upon a prioritization plan that analyzes which areas would result in greatest reductions in groundwater nitrogen.
- Change agricultural land use practices to restrict nitrogen fertilizer sales and their use in springsheds.
- Promote stricter urban fertilizer ordinances.
- Implement effective water conservation measures in all springsheds and reduce the withdrawal of groundwater for human uses based on the goal of preserving the natural water resource values of artesian springs.
- Evaluate how best to implement a water-use fee on all groundwater withdrawals to discourage excessive and wasteful uses and to further safeguard this public resource.
- Require groundwater consumption monitoring and mandatory water conservation measures for all agricultural, commercial, and individual users.
- Award grants for improved peer-reviewed groundwater and springshed impacts modeling.
- Eliminate disincentives for water management districts to deny applications for water use permits while necessary water planning efforts continue.

STATE & LOCAL PARKS

As Floridians, we take great pride in our state parks. They are the heart of what makes Florida special.

Thanks to the long-term vision and dedication of our earliest citizens, residents and tourists alike can still enjoy the wonders of natural Florida. We can visit Ichetucknee Springs State Park near Lake City to experience the springs as Hernando de Soto did when he was there in 1539. At Manatee Spring State Park, near Chiefland, we can see the natural landscape that naturalist William Bartram described in 1774. No other state has managed their state parks with this extraordinary vision.

Ours is the premier state park system in the United States, having won the national state parks Gold Medal Award three times in the last decade. In many of Florida's more rural counties, the state park is one of the most important attractions, drawing visitors to the county and

supporting small businesses that depend on tourism for survival.

Our state parks were enjoyed by more than 31 million Floridians and tourists in 2015, providing a huge economic boost to both the state and local economies.¹ In 2014-2015, Florida's network of 174 state parks, greenways, and trails contributed more than \$2.8 billion to local economies throughout the state. They also generated more than \$184 million in sales tax revenues (which are deposited to the state's General Revenue coffers) and supported nearly 45,050 jobs.²

The Department of Environmental Protection oversees the Florida Park Service and is responsible for the protection of Florida's state parks. The state parks have been a single-use agency for 80 years, meaning that activities

like logging and livestock grazing are very limited. Our state parks provide one of the few remaining opportunities to observe and photograph wildlife where they feel safe, and to enjoy the serenity and beauty of Florida's finest natural areas.

State parks are living natural museums where we can experience Florida as it was when Europeans first landed on our shores. In our fast-developing Florida landscape and increasingly complex world, state parks allow Floridians and visitors to enjoy the "Real Florida" and protect what we love most for future generations. ■

¹ "2015 Annual Report." Land Management Uniform Accounting Council. Dep.state.fl.us/Florida Department of Environmental Protection. 2015.

² Ibid.





Orlando Rail Trail
photo by Darcy Kiefel

Community parks provide urban oases.

For many families in Florida's metropolitan areas, the majority of their time spent in the natural world occurs at community parks. This is where Floridians gather with families, watch their children's athletic games, exercise, and explore nature through trails and greenways.

In addition to recreational benefits, parks are economic engines for communities seeking to attract and retain residents and businesses. Because proximity to parks is usually considered an amenity to homeowners and renters, this trend ultimately raises the property values of homes and businesses.

Additionally, preserving parks and open space increases residents' level of physical activity and generates medical cost savings for those who exercise in these important places. Preserving parks and open space creates recreation opportunities for residents and visitors and generates revenue and jobs in the local economy.

Florida has an excellent parks program known as Florida

Communities Trust (FCT). Created in 1991, FCT provides state matching funds for local governments to buy land for the protection of natural areas and to provide close-to-home recreational opportunities. Since its inception, FCT has helped acquire land for nearly 600 local or regional parks. The program is extremely popular with local officials and citizens because of its focus on meeting community needs and priorities and providing tangible results.

One of the economic benefits of this program is that the cost of maintaining the land is covered by local governments, placing no additional burden on state land management funds.

Perhaps most importantly, FCT

is the only state program aimed at urban open space conservation needs—providing high quality outdoor recreational opportunities, greenways, trails, playgrounds, and other spaces that families can use on a daily basis because they are near their homes and workplaces.

In recent years, the Florida Legislature has not adequately funded FCT, but with Florida's ever-increasing population, the need for community parks remains important. Fortunately, with the passage of the Water and Land Conservation Amendment in 2014, there is now a stable, dedicated funding source for restoring conservation lands and acquiring new ones. ■

Policy Recommendations

- Implement the intent of the Water and Land Conservation Amendment (Art. 10, Sec. 28) by statutorily dedicating at least one-quarter of the Land Acquisition Trust Funds to the Florida Forever and Florida Communities Trust programs.
- Adequately fund management of our state's awarding-winning state parks system.

CONSERVATION LANDS

Florida has a proud history of conserving land for nature, wildlife, and people.

Since 1963, Floridians have voted repeatedly for preserving land, healthy rivers, springs, and beautiful places to enjoy and experience nature. From local ballot measures to statewide constitutional amendments, Floridians have consistently supported raising public funds for land conservation, even when it means imposing additional taxes.

Both native and new Floridians understand the need to protect our natural environment because it is the reason we choose to live, retire, and raise our families in this beautiful state. For visitors, our natural environment is the Florida brand—the “Real Florida,” and the health of our economy depends directly upon the health of our ecosystems.

With 20 million people and growing, Florida is a thirsty state. Our growing population puts significant demands on our natural resources, and most importantly,

on our drinking water. Protecting land is the most conservative and cost-effective way to protect our water supply. Natural, undeveloped land adjacent to waterbodies acts as a filter and barrier for pesticides, fertilizers, and other pollutants, allowing clean water to replenish the Floridan aquifer, which supplies 90 percent of our state’s drinking water.

It is far cheaper to buy land or conservation easements on riparian properties than to restore polluted water or build water treatment plants.

Conserving land adjacent to waterbodies will prepare our state for sea level rise, offering coastal resiliency and protecting our \$9.7 billion fishing industry and \$89.1 billion tourism industry. Smart land policy includes investing in Florida’s future in the form of strategic and science-based land acquisition that will protect areas with the highest biodiversity. Protecting these areas

will ensure other important land conservation goals are met, such as drinking water aquifer recharge and flood protection, among others.

Florida already has an award-winning conservation and recreation lands acquisition program: Florida Forever. Thanks to the Water and Land Conservation Amendment, which passed in 2014 with 75 percent voter approval, we now have a dedicated funding stream to purchase and protect these critical conservation lands.

Our Florida Forever program provides a clear roadmap for investing in our conservation future, using science-based analysis and criteria and choosing the most efficient way to reap the desired results. It is the product of decades of fine tuning with an elegant application—as the real estate market heats and cools, so does the funding. Investing in Florida Forever will ensure Florida continues to be the number one destination for visitors and citizens alike.

Both residents and visitors know there is no place in the world like Florida. From our pristine beaches to the wonders of the Everglades, our abundant wildlife, and crystal clear springs, we have inherited an irreplaceable heritage. While growth and development are important to our prosperity, protecting our land and water is equally necessary to preserve both our way of life and continued prosperity. ■





Since 1988, Floridians have voted for more than 85 local and statewide conservation measures, which by conservative estimates will raise more than \$12.5 billion for preserving land.¹

Our land management requires prescribed burns and invasive exotic species control.

The scenic beauty and ecological health of Florida's upland and wetland landscapes are maintained by fire. Support for prescribed burning is critical to protecting the "Real Florida." Many of our unique species cannot exist without periodic fires that provide nutrients, maintain structure, and prevent the encroachment of hardwoods that shade out their habitat. Northern Bobwhite Quail, Gopher tortoises, and Wild Turkeys all depend on grassy savannas for survival.

More than any other state, exotic invasive plants and animals threaten Florida's native flora and fauna. Exotic invasive plants like Cogongrass, Brazilian pepper, and Old World climbing fern can overrun protected natural areas, pushing out or smothering native species. Often, small, early prevention efforts can prevent huge, costly eradication efforts and the

loss of native wildlife later.

Managed public lands also need buffers. Development on the edges of our public natural areas makes prescribed fire, restoration, and fighting exotic invasive species more challenging. Funding conservation programs like Florida Forever and the Rural and Family Lands program helps private landowners ensure their lands are protected and Florida agricultural lands can persist despite development pressures.

Bringing private lands under conservation easement can buffer adjacent public lands from the many challenges created by development. Funding acquisition and conservation easements of outparcels and buffers around state parks and other managed public lands also creates fewer conflicts with prescribed fires, battling exotics, and other natural resource management operations. ■

¹ LandVote®. Landvote.org/TheTrustforPublicLand. 2016. Web.

Policy Recommendations

- Implement the intent of the Water and Land Conservation Amendment (Art. 10, Sec. 28) by statutorily dedicating at least one-quarter of the Land Acquisition Trust Funds to the Florida Forever and Florida Communities Trust programs.
- Continue to fund the Rural and Family Lands program.
- Ensure adequate funding for land management, with preference given to practices that retain, and where possible, restore natural processes and indigenous populations of plants and animals.

WILDLIFE



Our Florida panther population is on the rise. Despite this, vehicular collision remains the leading cause of human death for panthers with a record 34 fatalities in 2016 alone.¹



Florida boasts some of the nation's highest concentrations of rare plants and animals.

From the iconic Florida panther and West Indian manatee to the more common Great Blue Heron and Wild Turkey, when we protect wildlife habitat for wildlife, we are protecting the natural systems upon which our economy and quality of life depend.

Florida is one of the most species-rich states in the nation. With more than 80 different types of ecosystems, Florida supports more than 100 species that are listed by federal and state wildlife officials as endangered, threatened or of special concern. Many of these rare species are found only in our state—like the Florida bonneted bat and the Florida Scrub-Jay.

While it is difficult to quantify all the ways that Florida's wildlife and their habitats enrich our quality of life, there are many tangible benefits to preserving strong and healthy ecosystems. Animal, plant, and marine biodiversity keeps ecosystems functional, which in turn allows us to thrive.

Direct economic benefits associated with conserving Florida's wildlife and habitat include increased tourism, recreation, and fishing. International and domestic tourism now accounts for more than 106 million visitors each year. Tourists delight in catching

a glimpse of our charismatic creatures, and through activities like birdwatching and ecotourism, they pump billions of dollars into local economies each year. The Florida Fish and Wildlife Conservation Commission reports about \$6 billion in annual spending on wildlife viewing activities alone.²

DEVELOPMENT & HABITAT FRAGMENTATION

With more than 20 million residents, Florida is the third most populous state in the nation and growing. Experts at the University of Florida Bureau of Business and Economic Research predict that by 2070, our population will increase by another 14 million residents. Florida's wildlife is feeling the squeeze. Development consumes and divides natural areas and agricultural fields that are essential to wildlife, putting more pressure on existing conservation lands.

If development occurs as it has in the past, Floridians will lose roughly five million acres of agricultural and natural undeveloped lands by 2070.³

CLIMATE CHANGE & INVASIVE SPECIES

Our changing climate is already affecting wildlife and the

habitats on which they depend. Rising sea levels force animals and vegetation to move to higher ground or more northern latitudes. Freshwater resources are becoming more saline as water sources and freshwater habitats become more scarce. Coral reefs, coastal beaches, sand dunes, and wetlands—our first line of defense against damaging storms or hurricanes—are in serious decline, along with their ability to protect against stronger waves and storm events.

On top of development pressures and a changing climate, the introduction of invasive non-native species such as Old World climbing fern, Brazilian pepper, pythons, and lionfish, also threaten native plants and animals. According to the National Park Service and Florida Fish and Wildlife Conservation Commission, the removal of exotic invasive species costs Florida taxpayers more than \$500 million each year, and those costs pale in comparison to the harm they cause to natural systems.⁴

THE IMPORTANCE OF WILDLIFE CORRIDORS

Permanently protecting rare species' habitat and



Species like the Red-cockaded Woodpecker, which relies on old-growth longleaf pine forests to survive, may disappear unless we protect the places where these rare animals live.

Red-cockaded Woodpecker
photo by USFWS

completing the Florida Wildlife Corridor—a statewide network of vital conservation lands and important waterways—as well as installing safe wildlife crossings, will enhance wildlife habitat connectivity and, in turn, protect natural systems that are crucial to protecting our water supplies.

The good news is that more than half of the Corridor is already protected. Connecting existing public lands with private lands through acquisition, easements, and incentives will preserve wildlife habitat, enhance food and freshwater supply, and foster rural economies.

This will help ensure adequate conservation lands for wildlife, abundant water supply for people, and protection of Florida's rural cultural heritage. ■

Policy Recommendations

- Implement the intent of the Water and Land Conservation Amendment (Art. 10, Sec. 28) by statutorily dedicating at least one-quarter of the Land Acquisition Trust Funds to the Florida Forever and Florida Communities Trust programs.
- Support programs that maintain Florida's rural and working agricultural lands, such as Rural and Family Lands and Florida Forest Legacy.
- Strengthen incentives to protect, manage, and restore wildlife habitat.
- Prevent habitat fragmentation and reduce conflict with wildlife through sound transportation and land use programs, installation of wildlife crossings, and programs that encourage responsible homeowner practices.
- Install wildlife underpasses in key panther and bear mortality hot spots.
- Incentivize urban re-development, rather than green fill and urban sprawl, through expedited permitting for re-development and re-use projects.

¹ Florida Panther Net. Floridapanthernet.org/Florida Fish & Wildlife Conservation Commission. 2016. Web.

² "Economic Benefits of Wildlife Viewing in Florida." Myfwc.com/Florida Fish & Wildlife Conservation Commission. 2011. Web.

³ "Florida 2070 Report." 1000friendsofflorida.org/1000 Friends of Florida, University of Florida Geo Plan Center, Florida Dept. of Agriculture & Consumer Services. 2016. Web.

⁴ Beck, Sandy et al. *Florida Invaders*. National Park Service and Fish and Wildlife Conservation Commission, 2nd Ed. 2013.

Florida's population is projected to grow to approximately 33.7 million residents by 2070.¹

If current development trends continue, by 2070 more than five million acres of land, much of which is currently in agriculture or timber production, will be permanently lost to development.² The loss of working and natural lands will only be exacerbated by the effects of sea level rise as some of the nearly 15 million Floridians who live in coastal counties may need to relocate further inland.

But that fate is not inevitable. Florida can achieve a more sustainable future by taking a long view in planning, and specifically by establishing policies that require local governments to consider the cumulative impact of developments, big and small. Incremental changes will inevitably shape the future of Florida and our natural resources and, in most cases, local control of development decisions is appropriate. Sometimes, however, development decisions affect not only local, but significant regional or state resources; impact adjacent communities; or are inconsistent with local comprehensive plans or state law. In these cases, Florida currently lacks the tools to protect our environment, economy, and

communities from development.

Beginning in 2011 and continuing through 2016, the Florida Legislature made significant changes to how Florida balances growth and development with the protection of natural resources, rural areas, and existing communities. The 1985 Growth Management Act, the Department of Community Affairs, and the Developments of Regional Impact program are now gone. In their place are the Community Planning Act, the Department of Economic Opportunity (DEO), and state coordinated review. The state coordinated review process is limited in that it only applies to:

- Areas of Critical Area of Concern;
- Rural Land Stewardship Sector plans;
- Plans based on evaluation and appraisal reports;
- Plans for newly incorporated municipalities; and
- Developments that qualify as a development of regional impact.

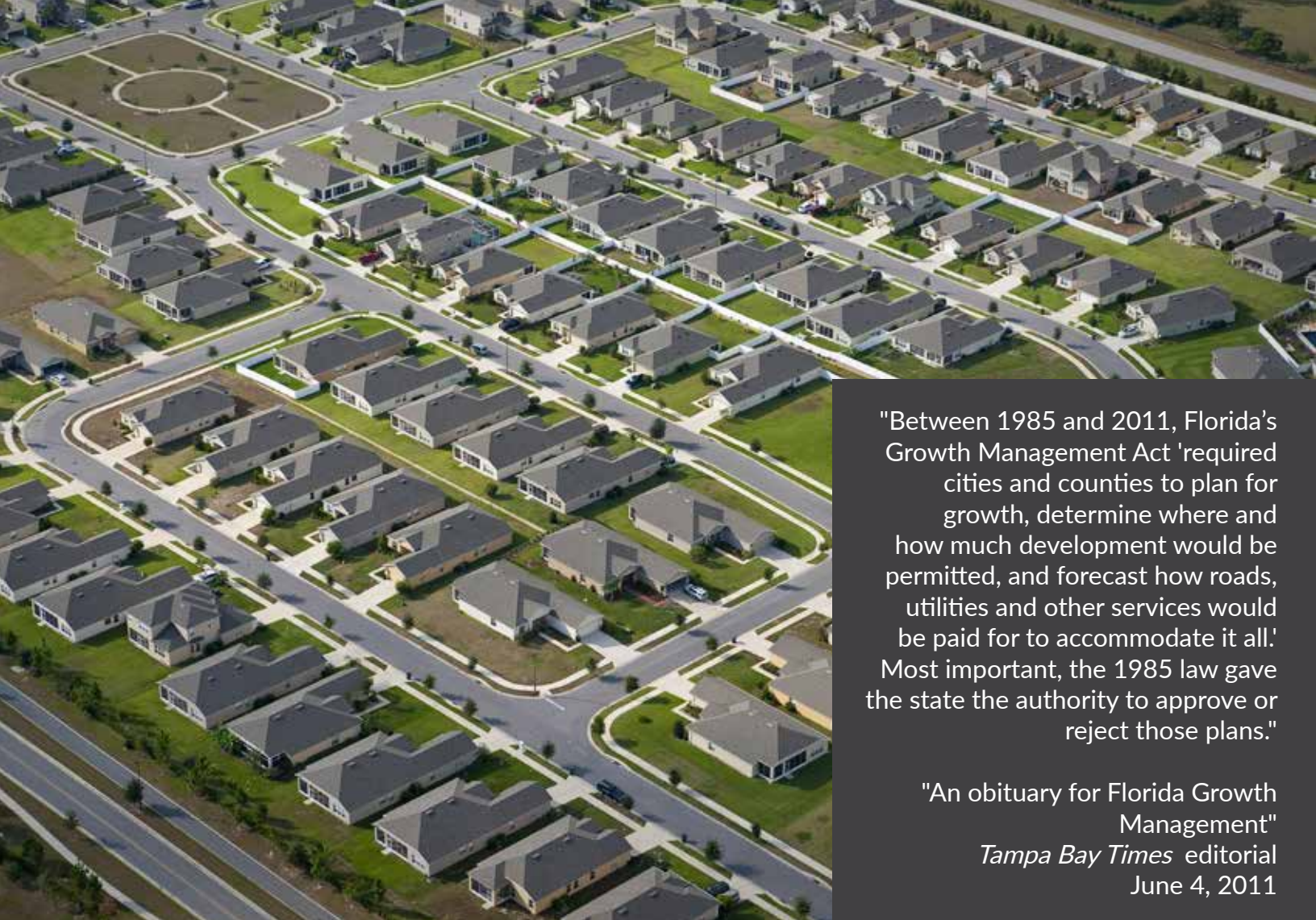
In other words, the state coordinated review process has applied to only 237 out of 2,112 plan amendments since 2011 (11.2

percent).

It is not only agency and program names that have changed. Florida no longer has robust state oversight of local government development decisions. DEO objected to 93 percent fewer comprehensive plans from 2012 to 2016 than the Department of Community Affairs did from 2006 to 2010. Of the 1,861 local government plan amendments adopted since 2012, DEO only found three to be out of compliance with state law and only challenged one. Essentially, no one is holding local governments accountable for following state law.

The pendulum has swung too far away from a sustainable, long-term, community-minded, and comprehensive vision for the future of Florida. State Senator Tom Lee, Chairman of the Senate Community Affairs Committee, said in a January 2016 committee meeting, that now is the appropriate time “for us to take a look at where we’ve come from, where we are today and, to the extent that anyone sees anything out on the horizon, it’s best to get out in front of it.”

Good planning must take into account both where and how



"Between 1985 and 2011, Florida's Growth Management Act 'required cities and counties to plan for growth, determine where and how much development would be permitted, and forecast how roads, utilities and other services would be paid for to accommodate it all.' Most important, the 1985 law gave the state the authority to approve or reject those plans."

"An obituary for Florida Growth Management"
Tampa Bay Times editorial
June 4, 2011

growth occurs. Some areas of our state are simply not suitable for development and must be preserved as natural lands or in low-impact agriculture. Such lands should be permanently protected through Florida Forever and the Rural and Family Lands program, or through public-private partnerships between local governments and landowners. In areas where development makes sense, sufficient infrastructure must be provided—and adjacent local governments must be given a seat at the table—in order to protect our quality of life and manage growth for the long-term.■

¹ "Florida 2070 Report." 1000friendsofflorida.org/1000 Friends of Florida, University of Florida Geo Plan Center, Florida Dept. of Agriculture & Consumer Services. 2016. Web.

² Ibid.

Policy Recommendations

- Require the Department of Economic Opportunity to review all comprehensive plan amendments to determine if they are in compliance with state law.
- Give local governments affected by the development decisions of an adjacent government a seat at the table by:
 - improving the dispute resolution process under Chapter 164 and section 186.509, Florida Statutes; and
 - providing the more equitable preponderance of the evidence standard of review to affected local governments in the event that dispute resolution is unsuccessful and legal action becomes necessary to protect their rights.
- Implement the intent of the Water and Land Conservation Amendment (Art. 10, Sec. 28) by statutorily dedicating at least one-quarter of the Land Acquisition Trust Funds to the Florida Forever and Florida Communities Trust programs in order to provide willing landowners with alternatives to developing high conservation value lands that should be permanently protected.

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Adult and Juvenile Crested Caracaras at Kissimmee Prairie
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