

Tree Preservation Ordinances in the State of Florida – How does Policy Impact Canopy Coverage?

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ABSTRACT

Many cities actively manage their urban trees in an effort to increase or maintain canopy coverage and its associated environmental and social benefits. As development is one of the most significant factors limiting tree abundance and health, many local governments have enacted policies or ordinances which attempt to reduce tree loss during construction activities through preservation or replacement requirements. Recently, the state of Florida passed a state statute which significantly limits the range of tree protection measures allowed on residential properties – a land use type which typically accounts for the majority of a community’s urban forest. In this study, we surveyed urban tree managers for 150 of the State’s largest cities in order to assess the range of strategies they are developing

to function under this new political normal. Our results show that more than 6 months after the passage of the statute, very few responding cities had changed their ordinances to comply with the new statute – though several indicated such changes were in progress. Other responses to the new law ranged from maintaining business as usual to actually investing more into urban forest management through increased inventory and management plan activities. Results of this work will be combined with a recently completed urban forest canopy assessment of 300 cities, providing base-level canopy data that can be used to track the effects of this new law on Florida’s urban forests over time.

INTRODUCTION AND OBJECTIVES

The United Nations estimates that 55.3% of the world’s population now resides in urban areas and projects that this could rise to 60% within the coming decade (United Nations, 2018). While greater economic opportunity is a major driver of urbanization, city life is not without its challenges. Urban environments can have adverse environmental conditions such as increased air pollution, loud noises, and elevated temperatures. Fortunately, urban trees can alleviate these conditions and enhance the quality of life of urban dwellers. Many of the benefits humans receive from urban trees are derived from trees’ living crowns. In Florida alone, canopy coverage analysis shows that urban and surrounding exurban forest remnants in the state’s major metro areas provide over \$4 billion annually in ecosystem services ranging from climate mitigation (via CO2 sequestration) to reduced medical costs associated with respiratory health (McLean et al. forthcoming).

Despite these well-documented benefits, the United States loses over 70,000 hectares of urban tree canopy each year (Nowak and Greenfield, 2018). Florida in particular loses more urban tree canopy annually than any other state in the United States (Nowak and Greenfield, 2018). Coincidentally, the Florida was second only to Texas in the total area of impervious surface added during the five-year study period. Maintaining urban greenspaces will be an ongoing challenge as urban areas continue to expand and densify with infill development (Haaland and Konijnendijk van den Bosch 2015; Daniel et al., 2016).

In addressing this issue, local decision makers often adopt policies, codes, and ordinances to prevent or mitigate tree loss during development (Schmied and Pillman 2003; Zhang et al. 2009, Lavy and Hagelman, 2019) as part of their broader urban forest governance activities.

Whenever policies or ordinances are implemented, the impacts of these initiatives should be assessed over time to gauge their effectiveness and determine if there were any unintended outcomes. Within the urban forestry literature, several studies have assessed tree protection measures (i.e. policies and ordinances) to determine their impact on urban forest abundance and condition. For example, Hill et al. (2010) investigated how local ordinances among Atlanta metropolitan area (United States) communities affected city-level canopy coverage. The authors found that ordinances such as requiring tree preservation areas during development, requiring permits for the removal of privately-owned trees, and the adoption of specimen/heritage tree protections were significant predictors of canopy coverage. Moreover, having multiple ordinances related to tree planting and preservation (they identified 9 categories of ordinances that they felt could impact tree canopy) increased predicted canopy coverage in their model (Hill et al. 2010). Similarly, in an assessment of 43 municipalities in Florida, Hilbert et al. (2019) found cities that had heritage tree protection ordinances in place had 6.7% more canopy than similar cities lacking these local protections.

While protections, regulations, and punitive actions have been effectively implemented to enhance the greening of cities, they are also seen by some as adversarial to economic growth, an infringement of personal property rights, and an example of unnecessary taxation (Braverham 2008; Conway and Bang, 2014). Moreover, it is not safe to assume that everyone values trees (Braverham 2008) or even wants them on their property (Carmichael and McDonough 2018). To address these concerns, the State of Florida (United States) recently passed a state statute which effectively bars local governments from protecting trees on private residential properties. Originating as “House Bill 1159: Private Property Rights”, the law states:

163.045 Tree pruning, trimming, or removal on residential property. —

(1) A local government may not require a notice, application, approval, permit, fee, or mitigation for the pruning, trimming, or removal of a tree on residential property if the property owner obtains documentation from an arborist certified by the International Society of Arboriculture or a Florida licensed landscape architect that the tree presents a danger to persons or property.

(2) A local government may not require a property owner to replant a tree that was pruned, trimmed, or removed in accordance with this section.

(3) This section does not apply to the exercise of specifically delegated authority for mangrove protection pursuant to ss. 403.9321-403.9333.

The passage of this statute represents a stark example of the conflict that can occur across different scales of urban forest governance. It has forced many of the state’s cities and counties to reassess their local ordinances and internal policies. In this study, we attempted to assess the magnitude of this change in governance, by assessing what tree protection ordinances were in place in Florida’s cities prior the passage of this new law. Additionally, we surveyed urban foresters in an attempt to assess how this new legal environment impacted their management of urban trees within their community as well as their strategies moving forward.

METHODS

In the winter and spring of 2020, we surveyed urban forester managers from the 150 largest cities to assess how the passage Florida Statute 163.045 impacted their urban forest operations and local ordinances. Drawing on a past survey question developed by Hauer and Peterson (2016), we asked survey participants to identify if they had the following ordinances in place prior to and after the passage of the 2019 state statute:

- Ordinances that potentially impact canopy coverage:
- An ordinance the regulates the removal of dead or diseased trees
 - An ordinance that requires preservation of trees during development
 - An ordinance the requires tree planting in new developments
 - An ordinance that requires tree planting around new parking lots
 - An ordinance the restricts tree cutting on private property
 - An ordinance that identifies preservation of heritage or significant trees

- Ordinances that allow for enforcement of urban forestry policies /ordinances:
- An ordinance the requires licensing of private tree care firms
 - An ordinance that establishes provisions for penalties for non-compliance

In addition to the above, we also asked a pair of open-ended questions. The first question asked if and how any of the above ordinances were changed given the new statute. The second question asked, in general, how (if at all) their community responded to the statute in regard to their urban forest management efforts. The survey was emailed to urban forest managers in each city. Each participant was contacted three times via email in an effort to increase responses. One follow-up call was made to any non-respondents after the third email attempt.

In parallel with this survey, we searched the Municode library (www.municode.com), the American Legal Publishing’s Corporation database (www.amlegal.com), and individual city webpages to assess the presence or absence of the above tree ordinances for non-responding cities. During the search we expanded our list of cities to include the 150 additional cities (the next largest beyond the original 150 surveyed).

Survey results are tabulated and shown in the results. The responses for the open-ended survey questions were thematically coded using a qualitative data analysis program (Quirkos, Quirkos Limited, Edinburgh, Scotland). We adopted an emergent coding strategy (i.e., we did not have predetermined codes in mind) when reviewing the response data.

RESULTS

In the winter and spring of 2020, we surveyed urban forester managers from the 150 largest cities to assess how the passage Florida Statute 163.045 impacted their urban forest operations and local ordinances.

Table 1. Tree-related ordinances addressing development and enforcement prior to the passage of Florida Statute 163.045 in the 300 most populous Florida Cities.

Ordinance	Number of Cities - Yes (%)	Number of Cities - No (%)	Number of Cities - NA (%)
Regulates removal of dead or diseased trees	244 (81.3%)	50 (16.7%)	6 (2.0%)
Requires preservation of trees during development	260 (86.7%)	34 (11.3%)	6 (2.0%)
Requires tree planting in new developments	268 (89.3%)	26 (8.7%)	6 (2.0%)
Requires tree planting around new parking lots	268 (89.3%)	26 (8.7%)	6 (2.0%)
Restricts tree cutting on private property	138 (46.0%)	155 (51.7%)	7 (2.3%)
Requires licensing of private tree care firms	53 (17.7%)	241 (80.3%)	6 (2.0%)
Establishes provisions for penalties for non-compliance	252 (84.0%)	42 (14.0%)	6 (2.0%)
Identifies preservation of heritage or significant trees	211 (70.3%)	83 (27.7%)	6 (2.0%)

Table 2. Reported changes to existing tree-related ordinances among respondents in response to the passage of Florida State Statute 163.045 (n=51)z.

Ordinance	Number of cities - Yes (%) prior to statute	Number of cities with ordinances changes (%)
Regulates removal of dead or diseased trees	46 (90.2%)	6 (11.8%)
Requires preservation of trees during development	48 (94.1%)	3 (5.9%)
Requires tree planting in new developments	49 (96.1%)	3 (5.9%)
Requires tree planting around new parking lots	48 (94.1%)	2 (3.9%)
Restricts tree cutting on private property	43(84.3%)	6 (11.8%)
Requires licensing of private tree care firms	23 (45.1%)	2 (3.9%)
Establishes provisions for penalties for non-compliance	49 (96.1%)	3 (5.9%)
Identifies preservation of heritage or significant trees	45 (88.2%)	3 (5.9%)

^z As of Winter /Spring 2020 (6-9 months after passage of new statute)

Table 3. Categorized responses to the question, “How has your community responded to the passage of Florida State Statute 163.045 (formerly HB 1159) as it related to its urban forest management efforts?” (n=47).

Institutional Framework (e.g. Ordinances and Policies)	Actors and Coalitions
• Changing existing ordinances/codes (or how they are interpreted) to comply with law (11) • New law did not conflict with existing ordinances/codes (9) • No change yet/wait for courts to weigh in (5) • Changed internal policies to comply with statute (5) • Now pursuing urban forestry management plan and GIS inventory (1)	• Relying on existing relationships with tree care professionals in community to ensure removals are legitimate (3) • Neighborhoods/homeowners associations choose to work with the city to assess trees prior to removal given past relationship (1). • Neighbors contact city to report large trees being removed (1)
Resources	Processes (e.g. Documentation, Permitting, Tracking, and Enforcement)
• Knowledge of the new statute remains low in community (2) • Following up on complaints from neighbors over tree removal more resource intensive than formal permitting process (1) • Reduction in resources required to process permits (1) • Reduced resources for tree replanting/tree loss mitigation (1)	• Tree care professionals/homeowners voluntarily working under previous permitting/approval process as a means of documenting assessments (1) • City advises homeowner to apply for permit as a cheaper alternative to arborist report (1) • Tree care professionals/homeowners voluntarily submitting risk assessment reports to city (4) • City requires a copy of the risk assessment report in lieu of permit (4) • City no longer requires permits/modifying permitting process for removal of residential trees (2) • Require city permit or copy of arborist report to use city brush site (1). • Tracking trees that are being removed (2) • Actively pursuing unscrupulous professionals removing trees that pose little risk (1)

CONCLUSIONS

The passage of Florida Statute 163.045 has the potential to impact urban forestry governance in 268 of the 300 (89.3%) cities investigated in this study. The most common ordinances adopted within our sampled cities were requirements to plant trees with new developments and parking lots (both tied at 89.3%, Table 1). In contrast, only 53 (17.7%) of the 300 cities surveyed required licensure for professional tree care companies operating within their jurisdictions.

Of the urban forestry ordinances investigated, the restriction of tree cutting on private property (often through a permitting process) was the one most impacted by the new statute. It was also one of least commonly adopted ordinances before the passage of 163.045 (138 or 46.0%; Table 1). As one respondent wrote, “If we cannot require notification, how can we effectively enforce our ordinance for unpermitted tree removals? We are looking for ways to preserve some semblance of a tree removal permit process without running afoul of the law.” Despite this, less than 12% of the respondents had changed their ordinances regarding the regulation of private tree removal at the time of the survey (Table 2). Even fewer cities made changes to the other ordinances investigated (Table 2). This partly reflects the general pace in which ordinances are modified. However, issues of clarity with regard to the law’s wording and a general uncertainty regarding the long-term prospects of the statute given future potential revisions has left many cities in a “wait and see” holding pattern (Table 3).

The results of this work are currently being incorporated into a master database that includes photo-interpreted urban canopy coverage values for the same 300 cities assessed in this study (funded jointly by the UF/IFAS Center for Land Use Efficiency and the Florida Forest Service). Phase 2 of this project will look at how these ordinances, as well as other factors such as historic land cover, housing density, median household income, relative age of developments within the city, resident demographics, and past hurricane activity impact urban canopy coverage. In addition to assessing the historic effects of past ordinances designed to protect and promote tree cover, we plan to conduct a follow-up assessment of the cities in 5 or 10 years to track the impact of the new statute – assessing relative changes in canopy for cities with and without protective ordinances prior to the passage of 163.045.

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