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Lawn and Landscape Fertilizer Policy in Florida

- Every county and municipality in Florida may adopt their own ordinance regarding lawn and landscape fertilization.

- These ordinances outline various regulations often including fertilizer content and application rates, buffer and low maintenance zones, training and enforcement, and prohibited application periods.

- Over 100 ordinances have been adopted across the state, with over half being "blackout" ordinances – prohibiting all application of nitrogen or phosphorus during certain times of the year (typically the summer) (Ryan, 2016, Appendix A).

Survey Methodology

- In June 2016, surveys were sent to 1,243 Florida decision makers via an e-mail list compiled by the University of Florida/Institute for Food and Agricultural Sciences (UF/IFAS) Center for Public Issues Education (PIE). Of those sent, 82 e-mails returned as undeliverable, yielding a total delivered of 1,161.

- Reminder e-mails for completion were sent every two weeks until mid-July, with 218 individuals starting the survey, and 107 individuals providing a response to the short-answer question on information sources (response rate: 9.21%)

- Qualitative survey response data was cleaned and coded for consistency. Lists were constructed for nodes and edges. Nodes consist of respondents (coded as their stated municipality), responses, and occasionally institutions linked to responses, as named individuals were matched to affiliated organizations. Reponses were assigned further connections (edges) when relevant.

Survey Prompt

When considering the adoption or creation of policies related to landscapes and fertilizers, please list at least 4 individuals or organizations that you currently/would utilize for information, thoughts, perspectives, or ideas.

Consider friends, colleagues, industry professionals, environmental organizations, academic institutions, policy makers, extension professionals, etc.

Social Network Analysis

- Gephi (0.9.2) was utilized for social network analysis and map creation.

- Betweenness centrality was selected for node size, with non-linear scaling used on both maps to avoid only a few nodes being over-emphasized.

- The policy map colored nodes based on a binary policy analysis – either having a prohibitive application period for a portion of the year or not having such a period.

- While a significant point of interest, the node, "UF/IFAS Extension," was removed from the modularity network to avoid skewing the data with its unusually high connectivity.

- A map displaying community modularity was created to demonstrate natural segmentations/groupings of the network (Newman, 2006). These unique network features may share certain distinguishing qualitative characteristics.

Results and Discussion

- The policy map illustrates the uneven spread of localities in regards to blackout policy adoption, with little segmented grouping around distinct information sources suggesting that no information sources are particularly influential in getting blackout policy adopted. UF and UF resources were a significant information source for many respondents.

- The modularity map demonstrates natural segments to the network that may be utilized for influencing policy outcomes, particularly by UF/IFAS Extension, as they remain a significant node in the network.

- The **green** community appears to focus on landscape professionals, including commercial/retail organizations. The **blue** community appears to include water management districts and the Department of Environmental Protection. The **orange** community appears to include extension services and the Master Gardener Program. The **pink** community appears to be focused around the Indian River Lagoon.

- Rogers' (2003) diffusion of innovations is adopted as a framework for understanding how policy spreads across a network of decision makers. Social network analysis can serve as a tool for understanding the flow of information within networks.

- Some limitations center around the fact that the survey was part of a University of Florida research project, which may have biased given responses towards UF resources. Additionally, all data relied on self-reporting of behavior and may not accurately depict true network structure.
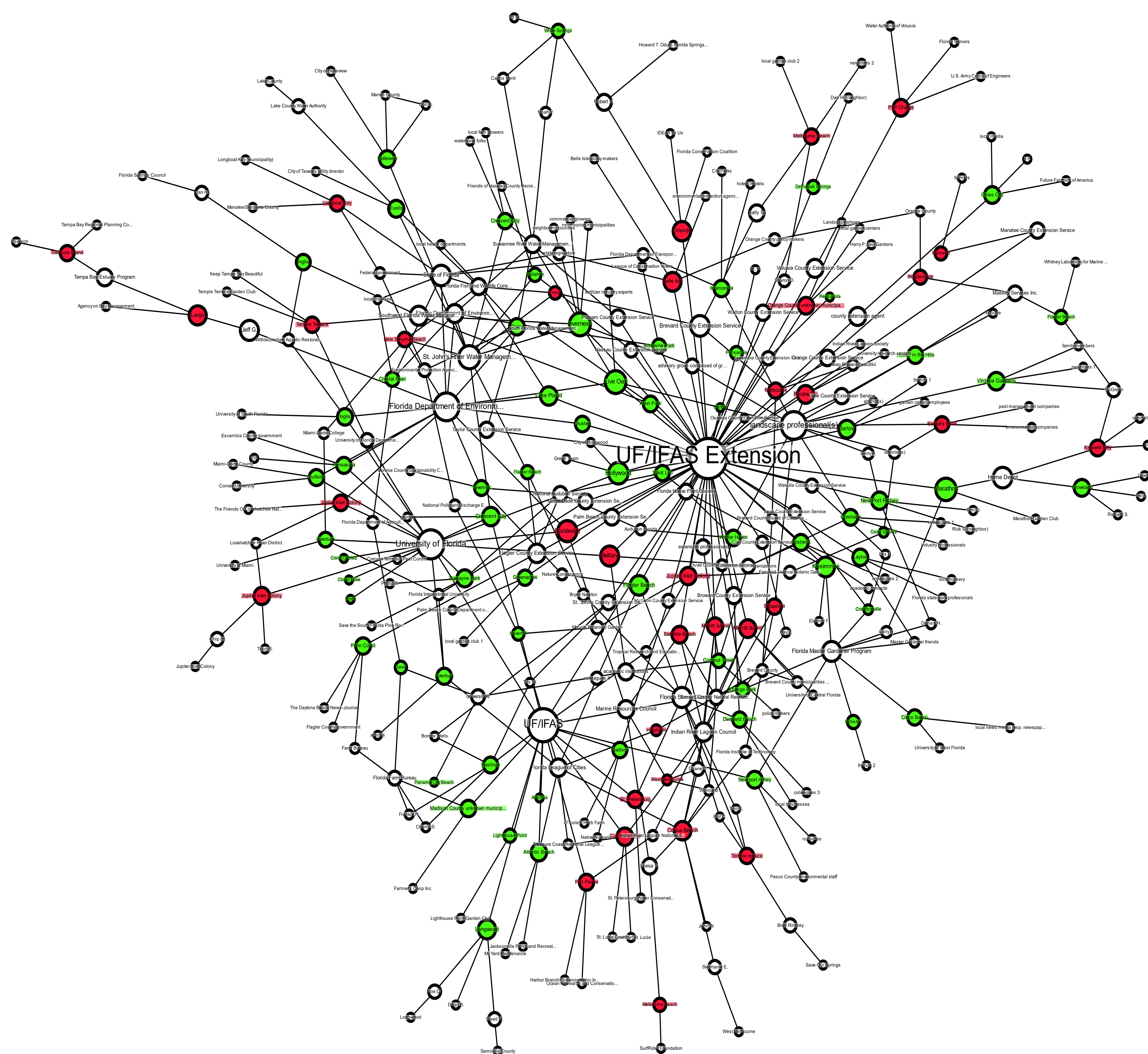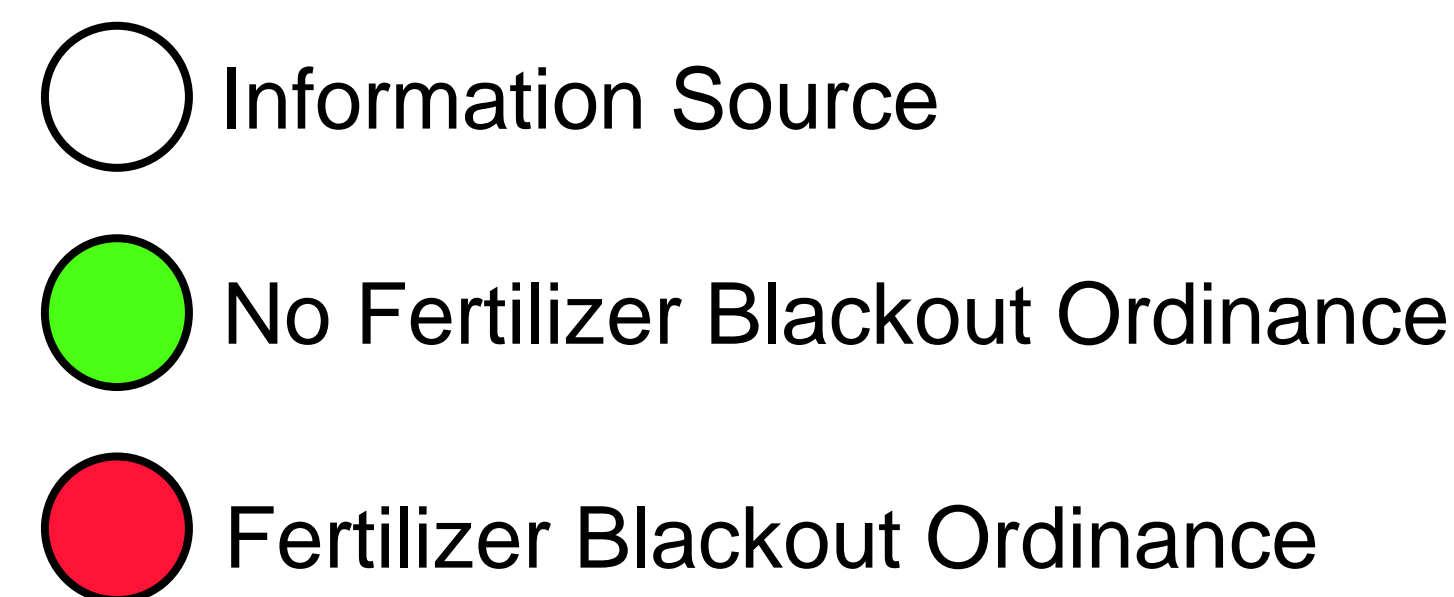
Works Cited

Newman, M. E. (2006). Modularity and community structure in networks. *Proceedings of the National Academy of Sciences*, *103*(23), 8577–8582.

Rogers, Everett M. *Diffusion of Innovations.* 5th ed. New York: Free, 2003.

Ryan, Christopher (2016, December). *Florida Lawn and Landscape Fertilizer Restrictions - A Survey of Residents and Decision Makers* (Master's Thesis). University of Florida, Gainesville, Florida.

Florida Decision Maker Network for Lawn/Landscape Fertilizer Policy

- ⚪ Information Source
- 🟢 No Fertilizer Blackout Ordinance
- 🔴 Fertilizer Blackout Ordinance

Florida Decision Maker Network Segmented by Modularity

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