

May 5, 2021

Commissioner Bill Proctor, District 1
Commissioner Jimbo Jackson, District 2
Commissioner Rick Minor, District 3
Commissioner Brian Welch, District 4
Commissioner Kristin Dozier, District 5
Commissioner Nick Maddox, At Large
Commissioner Carolyn Cummings, At Large

Dear Commissioners:

I write to urge you to table item #26 on the May 11 County Commission agenda “Adopting an Ordinance Amending Article XIV of Chapter 10 of the Leon County Code of Law, Entitled “Fertilizer Use” and to direct staff to more thoroughly investigate the science supporting a summertime rainy season fertilizer application ban and to reconsider a modified three-month ban during the months of June through August.

Staff asserts (p. 3) that “While such a prohibition would seem prudent, there is currently no consistent data to support reduced nitrogen loading to both surface and groundwater where summertime fertilizer bans are in place. In fact, the science supports the opposite. The optimal time to fertilize is in the summer months when the turfgrass shoot and root growth is optimal and nutrient uptake is at its highest point. University of Florida/Institute of Food and Agricultural Sciences (IFAS) research found that when fertilizer is applied to healthy, actively growing turf, very little nitrate leaches [emphasis added] from the system.”

This argument misses the point. Many of our lakes have nuisance algae blooms for prolonged periods of time due in part to excessive nitrogen and/or phosphorus in stormwater runoff. Dye studies also have demonstrated that the large karst lakes in Leon County, e.g. Lakes Jackson, Lafayette, and Munson, are sources of nitrogen pollution of Wakulla Spring. Other research conducted for the Wakulla Springs Alliance has demonstrated that chlorophyll from the algae in these and other karst lakes is likely contributing to the dark water conditions at Wakulla Spring.

The IFAS study to which staff refers was conducted on test plots, not actual lawns and landscapes, and only assessed the amount of nitrogen leaching into the soil. The problem that the fertilizer ordinance must address is nitrogen in runoff. The IFAS study explicitly acknowledges that it does not address this issue: “These results suggest that actively growing, healthy turfgrass mitigates NO₃-N leaching [emphasis added] from fertilization events.... Further research is needed to determine the impacts of runoff [emphasis added] from lawn fertilizers” ([Greco, 2019](#)). Furthermore, a [2018 IFAS analysis](#) reports that “When UF/IFAS recommended N rates are followed, turfgrass uptake of applied N ranges from 40-68%.” That means that 60-32% may be lost through leaching or running off.

In lieu of a summer rainy season application ban, the proposed ordinance includes a provision that prohibits fertilizer application “if rain greater than or equal to one (1) inch in twenty-four

hour period is forecasted.” As Deborah Foote of Sierra Club Florida argues in her May 4 letter to you, prohibitions keyed to large rainfall forecasts are logically flawed and unenforceable. As Alachua County Water Resources Program Manager [Stacie Greco observes](#), “Most businesses operate on a quarterly schedule and may feel pressure to apply nitrogen, even if rain is in the forecast.”

Sierra Club Florida has promoted four-month rainy season fertilizer application bans (June – September) throughout the state. All but one of the jurisdictions that has adopted such a ban are in central or south Florida where growing seasons and peak rainfall seasons differ from those in North Florida. Alachua County, is the exception. They adopted a fertilizer application ban in 2019 that allows fertilization from March through June based on their rainfall and turf growth seasons and as a concession to commercial applicators who argued that they need a sufficiently long application season to remain profitable.

Leon County’s peak rainfall months are June through August. The IFAS “Fertilization guide for turfgrasses maintained without the benefit of a soil test” (table 5, [General Recommendations for Fertilization of Turfgrasses on Florida Soils](#), 2005) recommends applying fertilizer no earlier than April and no later than September in north Florida. Furthermore, for two of five turf types (bahia and centipede) the IFAS guidelines for “basic” turf maintenance call for limiting nitrogen fertilizer to April and September with none applied in June. Those guidelines also recommend applying only iron to St. Augustine grass in June. Application of slow-release nitrogen is recommended in June only for Bermuda and Zoysia.

As a compromise, I proposed to staff that the Leon County ordinance include the following provisions:

- a three-month ban on nitrogen fertilizer application during the summer months with the highest rainfall totals: June-August
- with a provision permitting the application of iron or manganese during those three months to "green up" lawns if needed.

Deborah Foote indicates in her May 4 letter that Sierra Club Florida would support a three-month ban in Leon County given our local growing season and rainfall pattern.

While staff has acknowledged receipt of my proposal, they have not provided any response to my specific recommendations. Alachua County staff conducted extensive research into the applicable scientific literature prior to adoption of their summertime application ban in April 2019. [A summary of that review](#) is available online as is [a more detailed review](#) of individual scientific articles and the rationale followed by Alachua County in adopting its raining season application ban.

Urban turf grass fertilizer is the third most significant source of nitrogen pollution of Wakulla Spring over which we have control, after farm fertilizer and septic tanks. It is essential that we adopt a county fertilizer ordinance based on sound science that will minimize that pollution. We’re not there yet. Therefore, I urge you to table the proposed ordinance and direct staff to reconsider my proposal after conducting a more rigorous review of the applicable science. In

particular, I recommend that county staff review the analyses conducted by Alachua County Water Resources Program Manager [Stacie Greco](#) and confer with her.

Thanks for your attention to this critical element of our county's efforts to improve and restore the water quality of our lakes and springs.

Sincerely,

A handwritten signature in blue ink that reads "Robert E. Deyle". The signature is written in a cursive style with a large initial 'R' and 'D'.

Robert E. Deyle, Professor Emeritus
Department of Urban and Regional Planning
Florida State University

cc: Vincent Long
Nawfal Ezzagaghi