

## EFFECTS OF URBAN FERTILIZER ORDINANCES ON WATER QUALITY (ASK IFAS) publication criticism and questions:

**Summary:** The study claims that fertilizer ordinances—particularly winter bans—are associated with improved water quality in Florida lakes, while summer (rainy season) bans had weaker or inconsistent effects. However, upon closer review of the underlying data, sampling locations, and ordinance classifications, serious methodological flaws undermine the study's conclusions regarding rainy season bans.

The ASK IFAS publication states “Researchers investigated the long-term impacts of fertilizer ordinances across 160 lakes throughout Florida.” The observations and questions raised here relate to how this study could have adequately measured the success of strict rainy season or winter bans, when most of the data came from counties without any strict rainy season or winter bans before or during the time the data was collected.

Looking at [the map](#) in comparison to [this list of rainy season ban ordinances and their dates of adoption](#), the following can be determined:

- **Inaccurate summer ban representation:** Most counties listed as having “summer bans” **did not have active or strict bans** during the study period (2000–2019).
- The "no bans" (white) counties had *no ordinances at all* (when the data was collected).
- The "non-seasonal ban" (light blue) counties had FDEP Model-based ordinances.
  - FDEP Model-based ordinances contain no “bans,” but rather rely on a prohibition on applying fertilizer if two (2) inches or more of rainfall is likely within a 24-hour period (something impossible to enforce or effectively adhere); and the variation of post-seeding and post-sodding fertilizer application provisions are not considered "bans." The use of the phrase "non-seasonal ban" is therefore confusing and misleading.
    - Question: How did the researchers determine “the trends of water quality metrics through time between the before and after ban periods” within a "nonseasonal ban" type of fertilizer ordinance?
- The slightly darker blue "Summer, varies by jurisdiction" counties Lake, Martin, and Palm Beach, *are extremely dissimilar*:
  - Palm Beach County still has no rainy season ban ordinance, and the Village of North Palm Beach and the City of Palm Beach have only had a rainy season ban ordinances since 2017 and 2019 respectively;
  - Martin County has had a strict rainy season ban ordinance since 2014; and
  - Lake County has had a strict rainy season ban ordinance since 2017.
- The darker but not darkest blue "Summer ban" counties include:
  - Collier, which has never had a strict ordinance (only the cities of Naples and Marco Island have strict ordinances)

- Hillsborough, which has only had a strict summer ban since 2021 (years after the data was collected) but the City of Tampa has had a strict rainy season ban since 2011.

The LAKEWATCH study clearly states that "Here, we analyze changes in water quality of lakes throughout the State of Florida from 1987 to 2018, comparing trends in water quality parameters before and after implementation of county-wide fertilizer ordinances."

- Alachua County's winter ban was adopted in 2018, and its rainy season application ban was adopted in 2019 (after most if not all of the data was collected), and no data was collected in Citrus and Hernando counties which adopted winter bans in 2016 and 2019 respectively, the only other counties with winter bans.
  - Question: What data was used then to make the conclusions related to winter bans?
- Orange County has had a strict rainy season application ban only since 2022 (years after the data was collected).
- Hillsborough has had a strict rainy season application ban only since 2021 (years after the data was collected).
- Neither Osceola nor Polk have any urban fertilizer seasonal bans at all (they have FDEP-model-based ordinances).
- Highlands County has no ordinance at all.
- No data was collected from the gulf coast counties that adopted rainy season ban ordinances between 2007 and 2010.

Overall, it should be noted that the study's "summer ban" group lacks meaningful representation from counties with both:

- Early ordinance adoption (e.g. 2007-10)
- Sufficient pre- and post-ban water quality data

### **Questions for consideration:**

How could the researchers measure significant differences in "the trends of water quality metrics through time between the before and after ban periods within each type of fertilizer ordinance (summer ban, nonseasonal ban, winter ban, and no ban)" when the vast majority of the data was collected *before* seasonal bans were ever implemented, and the majority of the data was collected from counties without seasonal ban periods? "Non-seasonal bans" are not real bans, and many "summer ban" counties had weak or no ordinances during the study period.

How could meaningful "before vs. after" trend shifts be measured if bans were implemented late or not at all?

Where were the early adopters of strict summer bans in communities like Sarasota, Pinellas, and Lee counties not included in this study?

**Conclusion:**

The limited ordinance implementation, biased sampling, and inconsistent categorization call into question any claim about the effectiveness (or ineffectiveness) of rainy season bans. The study's authors admit limitations around timing, data heterogeneity, and confounding influences (e.g., weather, fertilizer BMP adoption, other regulatory changes). Research into this subject matter could be improved with better methodologies that include consistent categorization or ordinances and corresponding samples and control for confounding influences that lead to nutrient loading (e.g. agricultural pollution, septic/sewer, pet waste, and atmospheric N).