

University of Florida studying stormwater pond benefits

September 8, 2022 | Hometown News (Fort Pierce, FL)

Author/Byline: for Hometown News | Section: News 4

TREASURE COAST - There are more than 70,000 stormwater ponds in Florida. Developers and urban planners use stormwater ponds to capture storm runoff and prevent flooding and erosion, but they can also provide other benefits, such as reducing pollution and enhancing community aesthetics and property values. These other benefits, and how they interact with each other, are not well understood.

A team of researchers at the University of Florida have started a multi-year project to evaluate stormwater ponds' environmental, social and economic benefits, collectively called ecosystem services. A nearly \$1.6 million grant from the National Science Foundation will fund the effort.

"While stormwater ponds are very similar to natural ponds and lakes biologically speaking, the fact that they are such a visible and common part of our daily lives in Florida means that we have a lot more influence on them and that in turn influences the ecosystem services they provide," said A.J. Reisinger, an assistant professor in the UF/IFAS department of soil, water and ecosystem sciences who is leading the project.

"As Florida and the rest of the country continues to urbanize, we're going to see more stormwater ponds. With this project, we will study stormwater ponds' environmental impact and local residents' attitudes toward these ponds, using these insights to develop ways to optimize the ponds' overall ecosystem services," said Prof. Reisinger.

The project team includes ecologists, water quality and algae scientists, social scientists, economists and extension agents. This diversity of approaches will help the team generate a comprehensive picture of stormwater ponds' benefits to people and the environment.

The team's social scientists and economists will investigate how different groups, such as homeowners and regulators, understand and assess the purpose and benefits of stormwater ponds, as well as how proximity to stormwater ponds affects property values.

Ecologists and water quality scientists will team up with extension agents and high school teachers to monitor water quality in stormwater ponds. They will use this data to understand the biological and chemical processes that happen in stormwater ponds that affect the kinds of algae that appear in ponds and how well the ponds remove nutrients.

"Recent research suggests that stormwater ponds might not remove as much of the nutrients that flow into them as we thought, so we want know what enables ponds to remove nutrients and how to make those processes more

efficient," Prof. Reisinger said.

The researchers will bring all these insights together to reveal how people's perceptions of stormwater ponds affect the way they are managed, actions that in turn affect the pond's overall ecosystem services.

The researchers will conduct field work, focus groups, surveys and data collection at the state level and in two communities in Manatee and St. Lucie counties that have a large number of stormwater ponds and where algae blooms have been a problem.

The project will focus on stormwater ponds in Florida, but the results could apply to other parts of the country with stormwater ponds or other ecosystems built and maintained by humans.

For more information, visit <https://blogs.ifas.ufl.edu/news/2022/08/24/uf-scientists-to-study-stormwater-pond-benefits/>.

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