

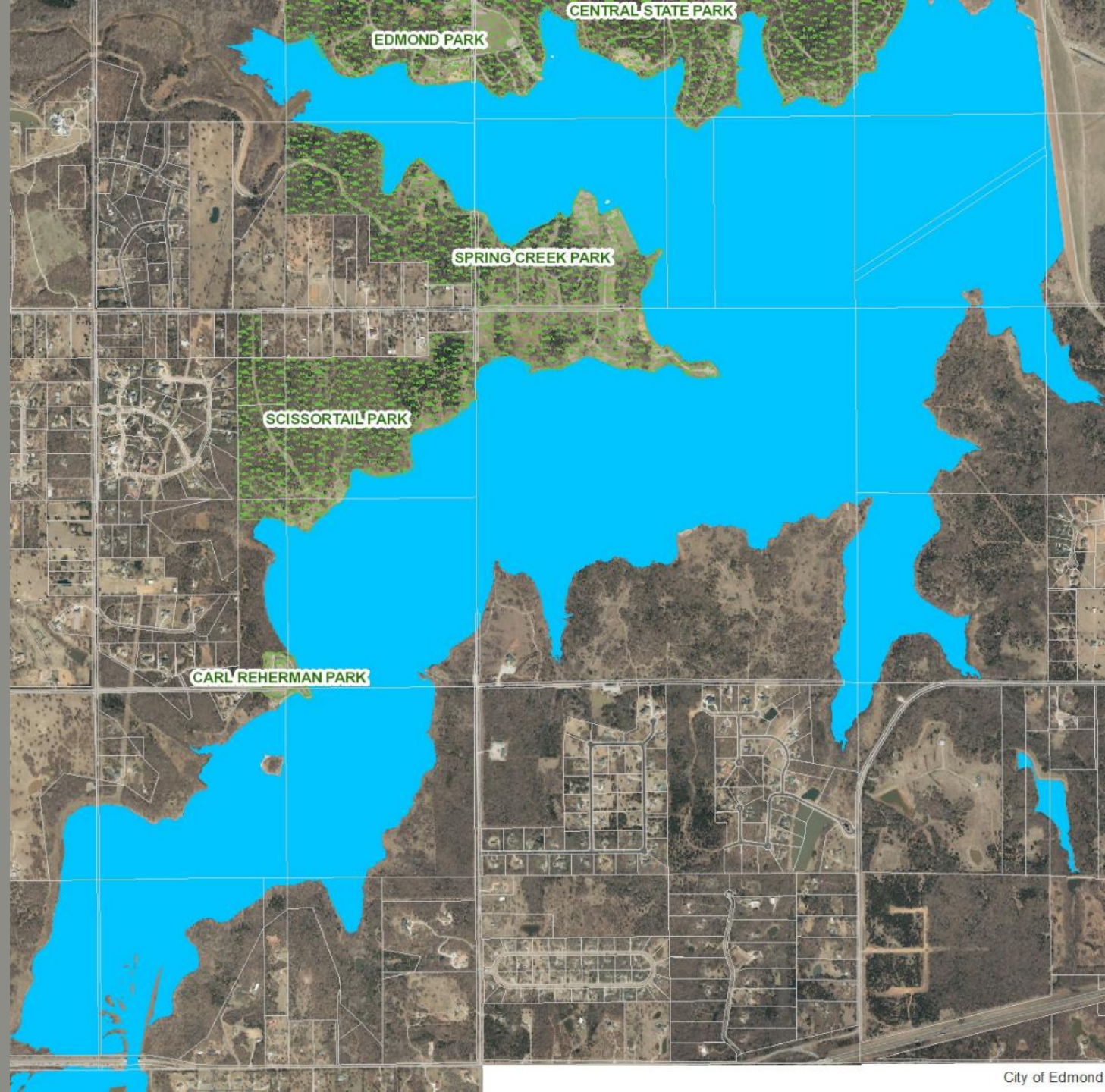
# HUMAN-MADE ENVIRONMENTAL DISORDER: A CASE STUDY ON URBAN NONPOINT SOURCE POLLUTION AT ARCADIA LAKE

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# INTRODUCTION

- Floatable litter is blighting Arcadia Lake's shoreline.
- Trash flows in from Deep Fork River and Spring Creek.
- Collaboration and public education are critical.
- We must identify best management practices (BMPs).
- This is a long-term initiative.







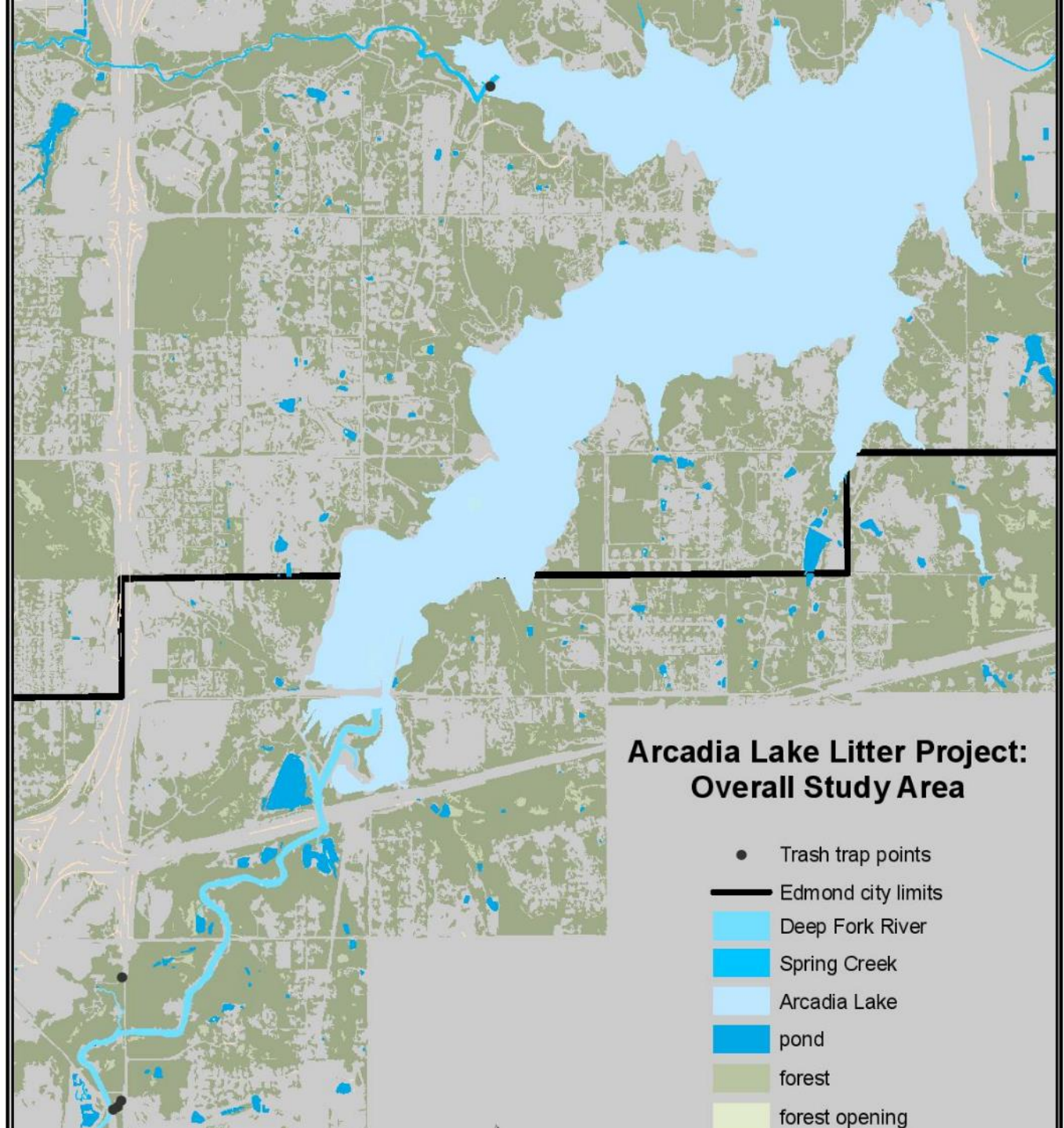
## BANDALONG LITTER TRAP

- This BMP is designed to mitigate floatable litter from entering watersheds.
- Manufactured in Cleveland, GA.
- Approx. 250 installations worldwide.
- The BMP operates 365 days a year.
- Costs between \$150-\$300k.
- Funding will be an issue.

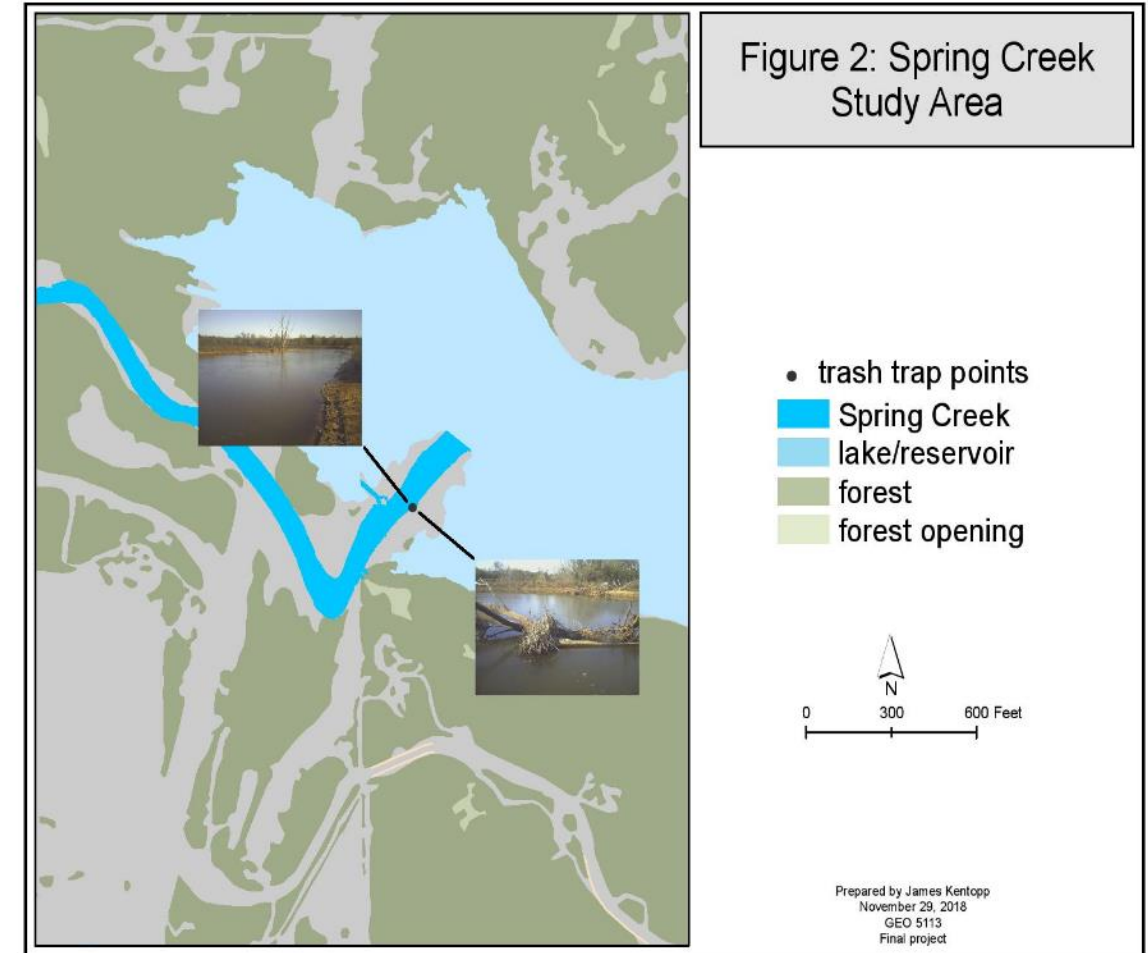
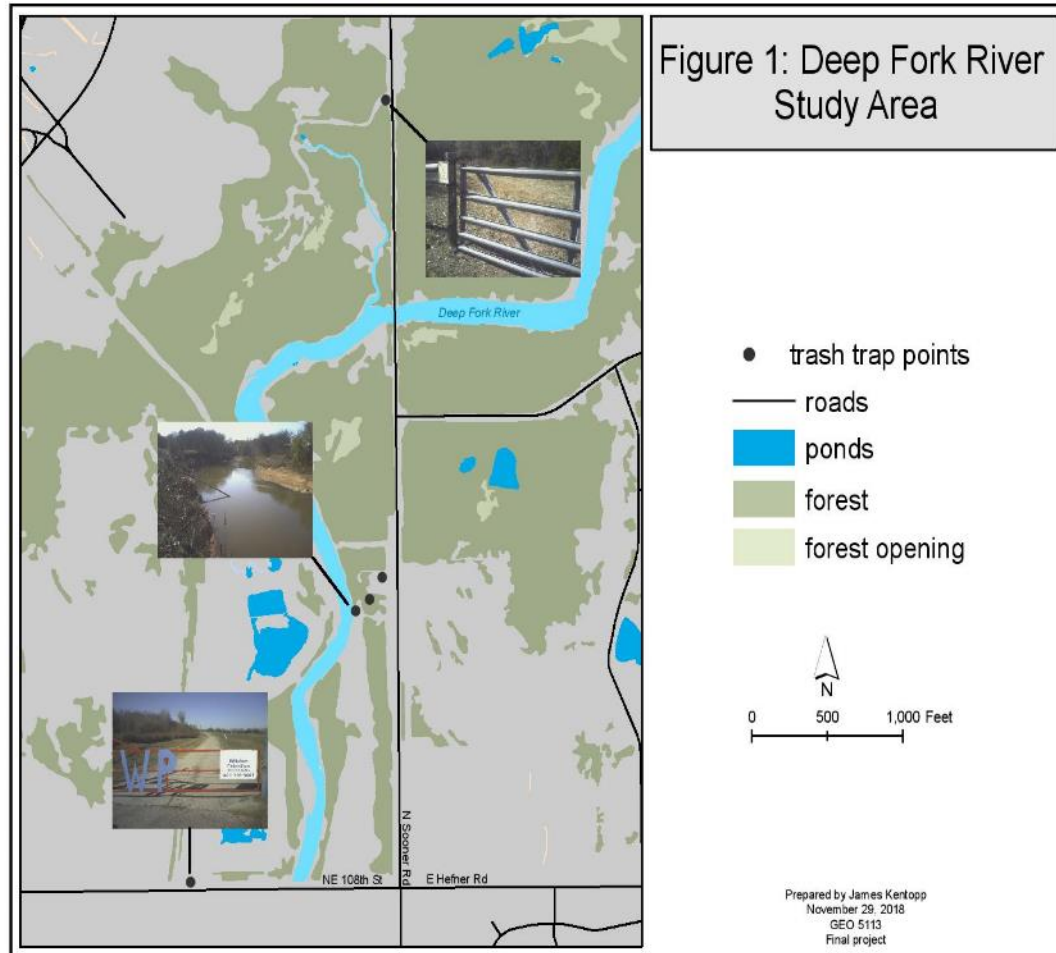


# METHODOLOGIES: GIS & SITE SURVEY

- Project research began in September of 2018.
- The project evolved into a research paper for a Fall 2018 Geographic Information Systems class.
- I utilized ArcGIS for this portion of the project.
- Spatial data analysis was vital for this project.



# Deep Fork & Spring Creek Study Areas







## SITE SURVEY NEAR CARL REHERMAN PARK

- We conducted a site survey on December 7, 2018.
- The amount of litter along the shoreline was hard to fathom.
- The area we surveyed is located directly north from where Deep Fork drains into Arcadia Lake.
- We believe that this is one of the lake's major litter collection points.
- We took drone footage of the location on December 18, 2018.



# SITE SURVEY CONTINUED







# TOTAL MAXIMUM DAILY LOAD OF POLLUTANTS

- The Arcadia Lake watershed is managed by the City of Edmond, the City of Oklahoma City, the State of Oklahoma, and private sector interests.
- Arcadia Lake is scheduled to have a TMDL completed between 2019 and 2021.
- Arcadia is impaired for turbidity and chlorophyll-a currently.
- COE departments will need to work internally and identify other partners to comply.
- It is not clear whether floatable litter will be factored into load allocations for nonpoint sources at this time.





# Current Findings

- The Arcadia Lake litter project has evolved considerably since its inception.
- Collaboration with other agencies will be necessary for it to come to fruition.
- Public education is as critical as inter-agency collaboration.
- Pilot programs can help determine the success of a BMP.
- COE staff have been receptive to the project, and agree that we must mitigate litter at Arcadia Lake
- We are trying to identify outside agencies who might be interested.





# CONTACT INFO

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