

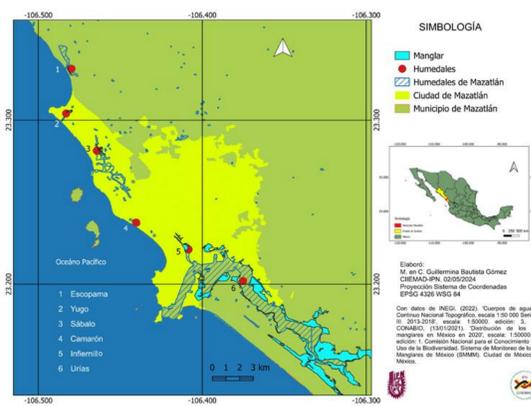
Analysis of the Growth of Economic Units and Their Influence on the Water Quality of Wetlands receptors Wastewater in Mazatlán, Sinaloa (Mexico)

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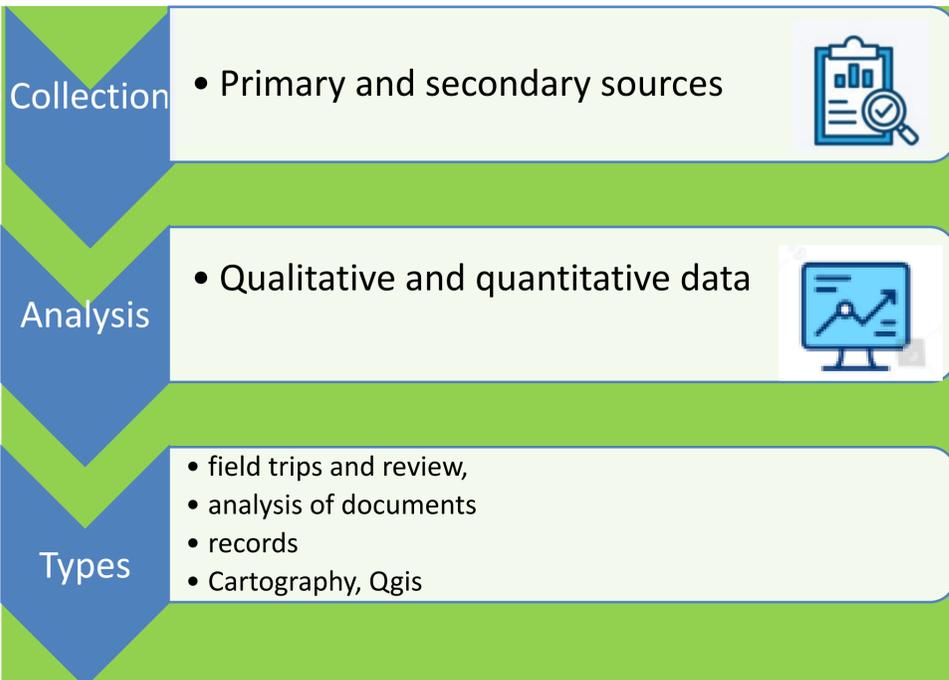
INTRODUCTION & AIM

The growth of productive and commercial establishments in urban areas affects the type and quantity of wastewater they generate and discharge into wetlands, which affects the water quality depending on whether the discharged water is treated or untreated.



METHOD

The methodological design used was mixed, exploratory and descriptive,



Therefore, this study analyzed the growth of industrial, mining, construction, commercial, electricity generation, water, natural gas, agriculture, livestock, fishing, and aquaculture establishments from 2010 to 2025.

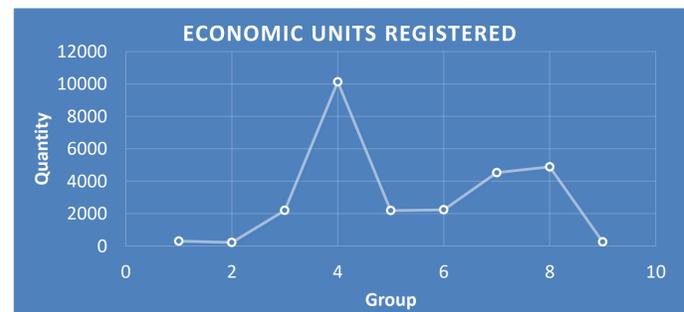
The analysis was based on the records of:

- Economic units registered in the National Statistical Directory of Economic Units (DENUE) of the National Institute of Statistics and Geography (INEGI) of Mexico [1]
- The water quality in the wetlands where wastewater from the urban area of Mazatlán is discharged, based on information from the reports of the National Water Quality Monitoring Network (RENAMECA) of the National Water Commission (CONAGUA).

RESULTS & DISCUSSION

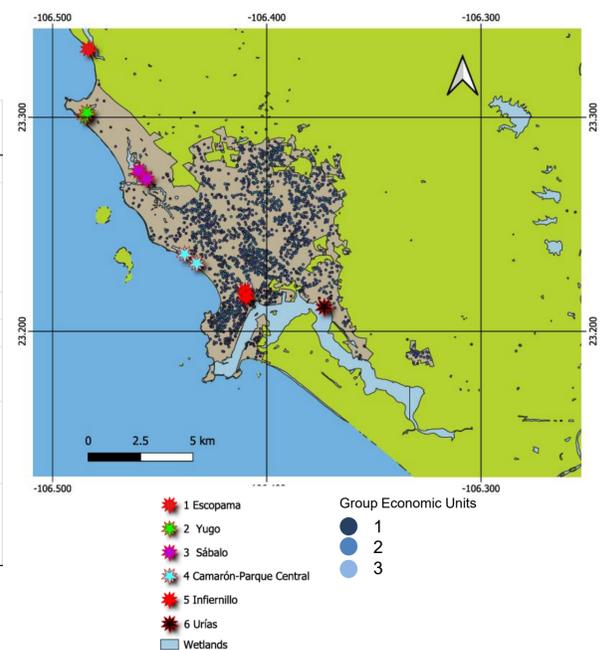
It was found that there are a total of 26,949 operating economic units, with only 8 Wastewater Treatment Plants currently discharging into the urban wetlands.

Group	Code	Economic activity
1	11	Agriculture, animal husbandry and exploitation, forestry, fishing and hunting
2	21, 22, 23	Mining, Generation, transmission and distribution of electricity, supply of water and gas through pipelines to the final consumer and Construction
3	31, 32, 33	Industrias manufactureras
4	43, 46, 48, 49	Wholesale, retail and warehousing
5	51, 52, 53, 54, 55	Mass Media Information, Financial & Insurance Services, Real Estate & Rental Services, Professional, Scientific & Technical Services, Corporate & Business Support Services & Waste Management & Remediation Services
6	61, 62	Educational Services, Health and Social Care Services
7	71, 72	Cultural and sports recreation services, and other recreational services, Temporary accommodation and food and beverage preparation services
8	81	Other services
9	93	Legislative, governmental, law enforcement, international organizations



Anthropogenic sources of specific heavy metals in the environment [2]

Heavy Metal	Industrial Sources
As	Pesticides and wood preservatives
Cd	Paints & Pigments, Plastic Stabilizers, Electroplating, Incineration of Cadmium-Containing Plastics, Phosphate Fertilizers
Cr	Tanneries, steel industries, fly ash
Cu	Pesticides, fertilizers
Hg	Release from Au-Ag Mining and Coal Combustion, Medical Waste
Ni	Industrial effluents, kitchen appliances, surgical instruments, steel alloys, automobile batteries
Pb	Airborne emission from combustion of leaded gasoline, manufacture of batteries, herbicides and insecticides



CONCLUSION

It is concluded that the current wastewater treatment capacity is insufficient for the growth of the economic units that have been operating over the past 15 years

FUTURE WORK / REFERENCES

1. INEGI, 2025. DENUE. Directorio Estadístico Nacional de Unidades Económicas. [Online] Available at: <https://www.inegi.org.mx/app/descarga/default.html> [Accessed 10 Enero 2025].
2. Ali, H., Khan, E., & Sajad, M. A., 2013. Phytoremediation of heavy metals—Concepts and applications.. Chemosphere (Oxford), 91(7), pp. 869-881.