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MANGROVE ECOSYSTEMS DETERMINE FISH DIVERSITY IN SOUTHERN BENIN WATER BODIES: IMPLICATIONS FOR FISH BIODIVERSITY AND AQUATIC ECOSYSTEMS CONSERVATION

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1- Introduction

❑ The degradation of natural ecosystems combined with overfishing lead to a decline in fish captures and a high risk of fish biodiversity loss in Beninese natural ecosystems.

❑ Moreover, the mangrove ecosystems which play a significant role for the prevention of floods and carbon sequestration are subject to destruction due to human activities.

❑ This research has been initiated to assess fish diversity and inventory fishing practices in the coastal lagoon, Gbaga lagoon and Hlan lake in order to formulate strategies and policy recommendation for conservation
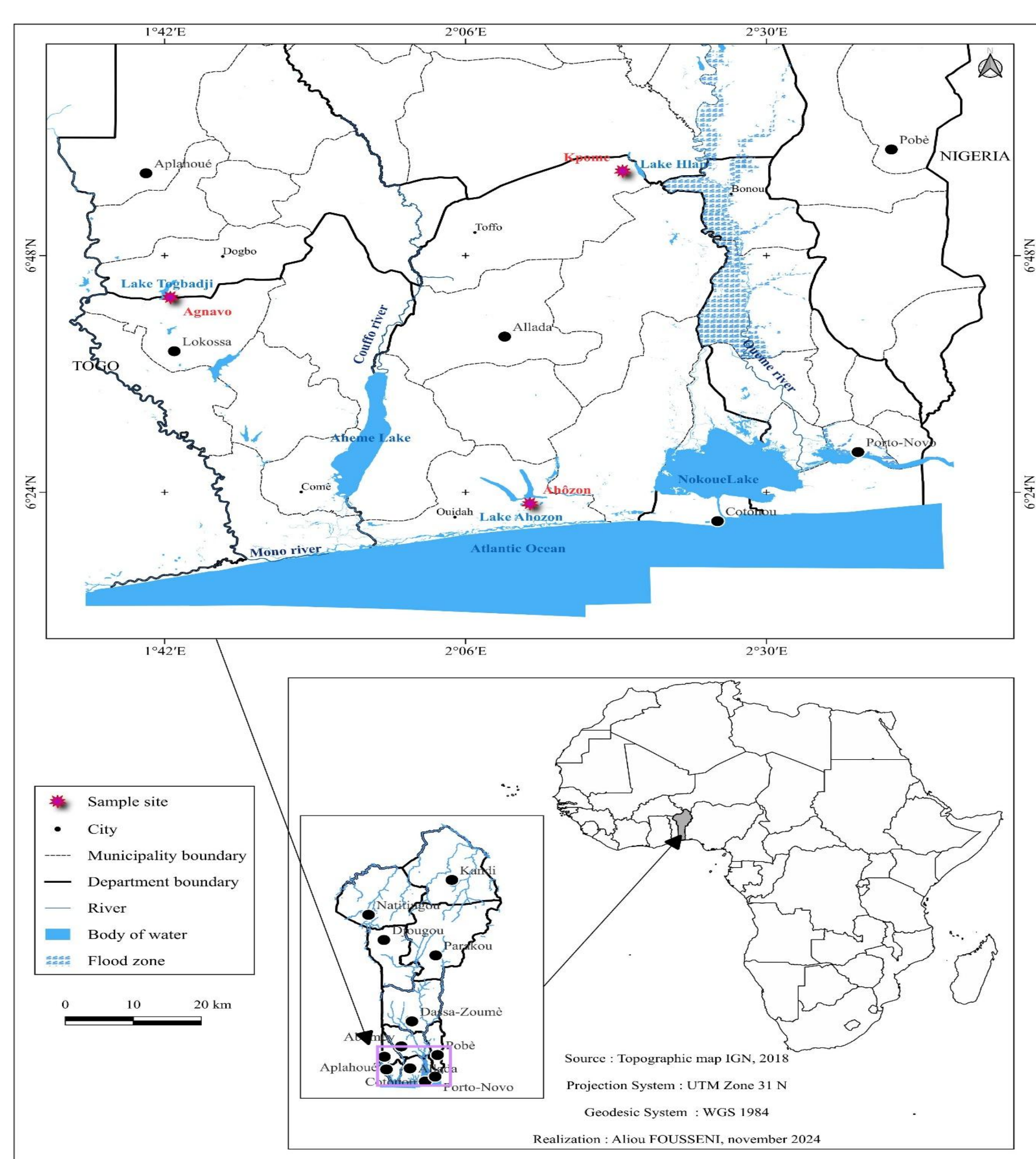
2- Methods

Photo 1: Map of the study area

❑ **Fish Samples**: Collected from traditional fisheries (salt vs. non-salt production areas).

❑ **Identification of fish specimen**: Paugy et al. (2004) Fish identification Key.

❑ **Surveys & Field Visits**: Documented fishing gear & techniques.

❑ **Data Analysis:** Species richness & diversity (Shannon Index (H')) and species distribution (Pielou's Equitability Index)

3- Results

Fish diversity and specific richness

The investigations showed a variation of the specific diversity in the water bodies (Fig 1)

highest specific richness (21 species) recorded in the Coastal Lagoon with followed by Gbaga Lagoon and Hlan lake (19 species and 18 species (13 families) respectively.
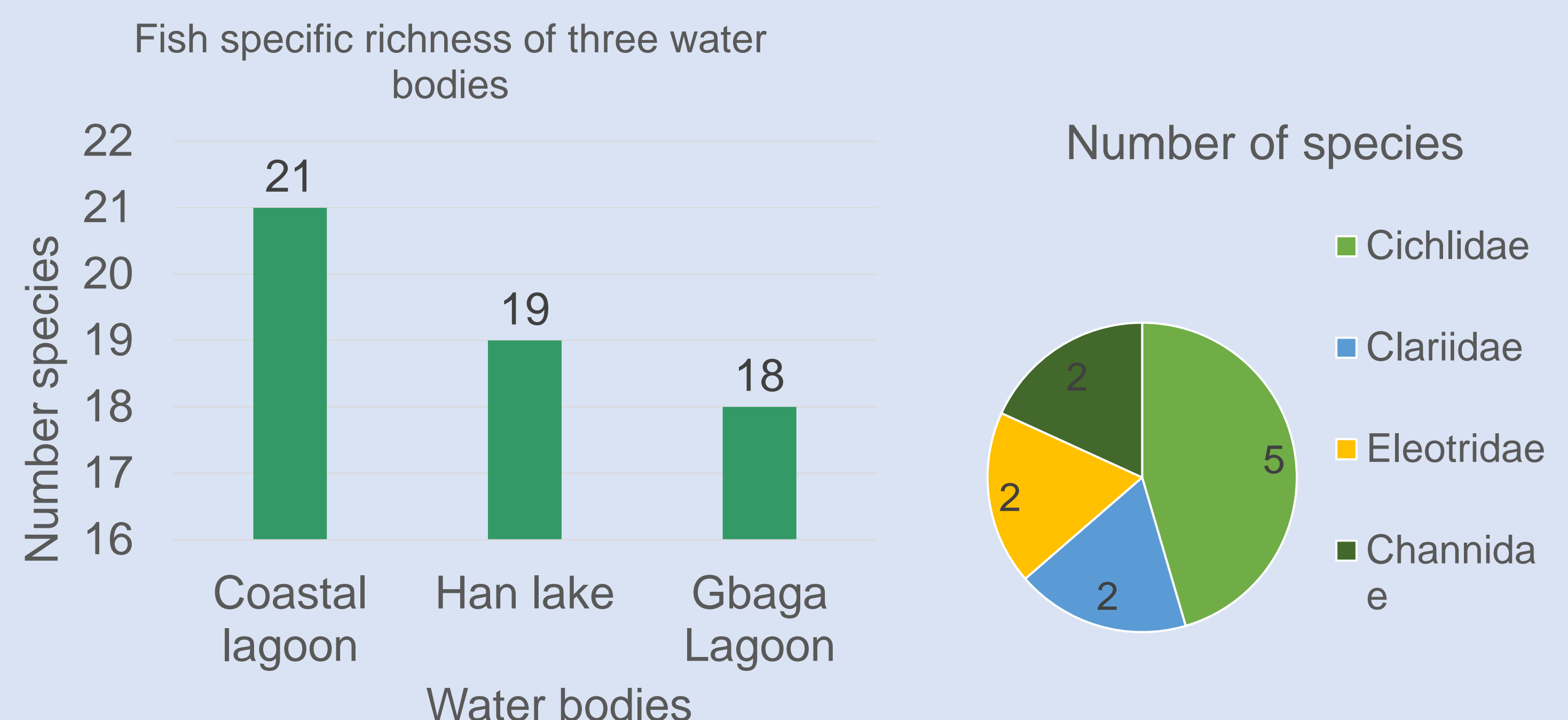

Fish specific richness of three water bodies

Number of species
- Cichlidae
- Clariidae
- Eleotridae
- Channidae

Fig 2: Specific richness of water bodies   **Fiig 3**: Most abundant families

Species distribution

Fish species are diverse & evenly distributed across ecosystems.

Wataer bodies	Coastal Lagoon	Gbaga Lagoon	Hlan lake
Shannon Index	2.50	3.01	2.74

Fishing practice

The fishing gears and technics used in the water bodies include fixed gillnet, fish traps and fishing hooks and fishing longlines

Fished gillnet   **Fish trap**   **Fishing longlines**

4- Discussion and Implications

❑ salt production activities destroys mangroves which could reduce fish diversity.

❑ The highest number of species recorded in the coastal lagoon is probably the result of policies and conservation strategies implemented in the lagoon including the establishment of the Mono transboundary biosphere reserve sustaining biodiversity

5- Conclusion & recommendations

❑ Diversified fish communities in southern Benin water bodies

❑ Sustainable management of salt production & fishing practices and enforcement of conservation policies will contribute to the conservation of the mangrove ecosystems and fish biodiversity

6- References:

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