Prediction of seasonal availability of the African manatee (*Trichechus senegalensis* link, 1795) in response to water chemico-physical's parameters: Case of Lake Ossa, Cameroon

Paul, Rodrigue NGAFACK
Theodore, B.Mayaka ; Aristide, Kamla Takoukam

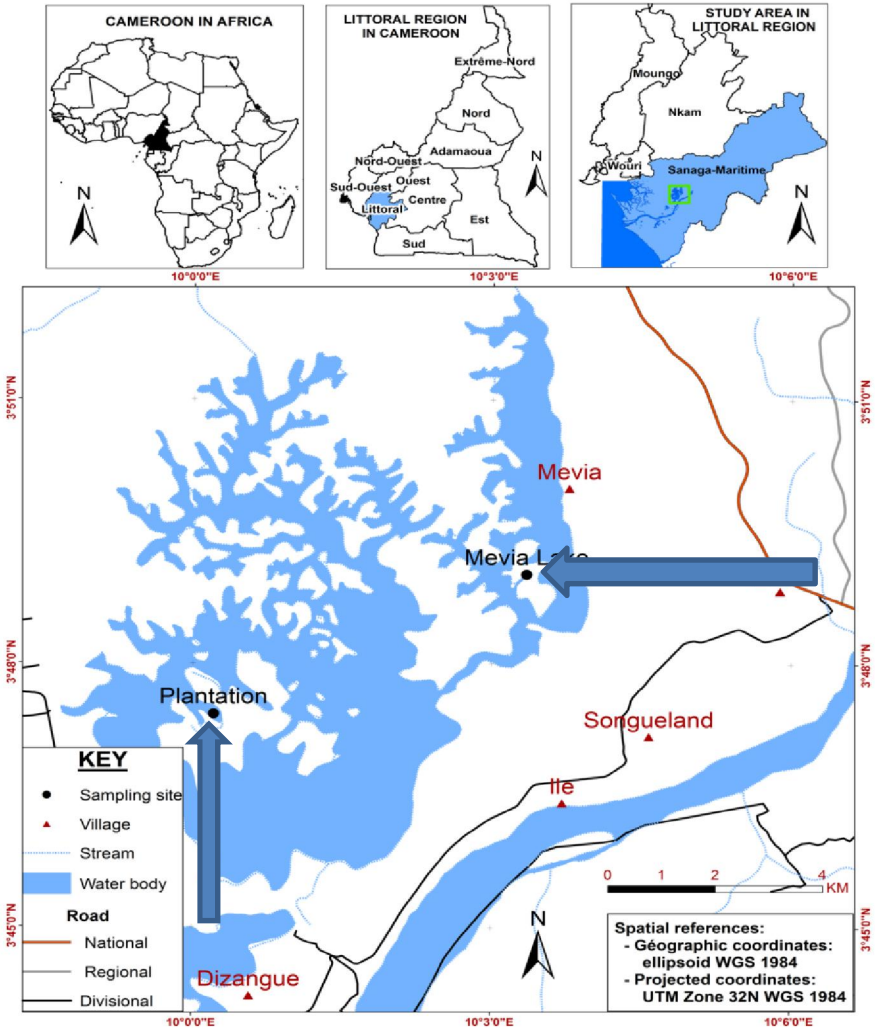
- Introduction
- Study area
- Methods and results
- Conclusion
- Challenges & Solutions
- The next steps

Overview

- African manatee is the least studied marine mammal in Africa,
- Only few conservation effort are directed toward African manatee in Cameroon,
- Past and recent studies confirm the presence of African manatee in Cameroon,
- The seasonal use of Lake Ossa by the african manatee is not well known,
- Illegal hunting, bycatch and habitat degradation are the major threats to the African manatee in Cameroon.

Introduction

This project was conducted in the Lake Ossa Wildlife Reserve



Study area

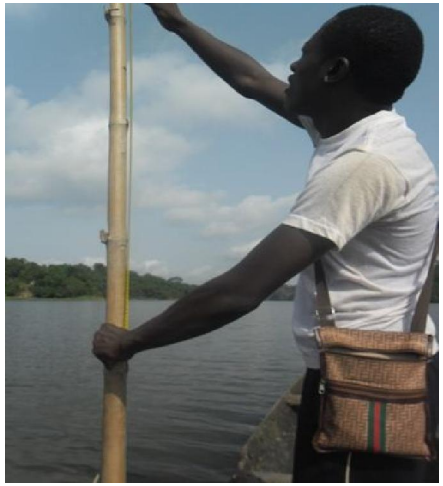
✓ **Weather condition's data**

- Cloud cover
- Sea state

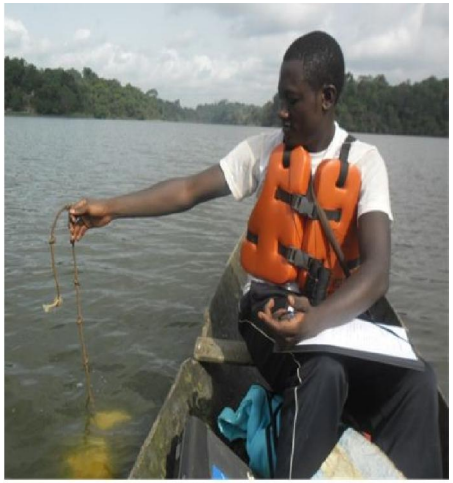
✓ **Water Physico-chemical's parameters**

Water pH

Conductivity



Water depth



Water transparency

Methods

Manatee sighting

- 30 minutes visual point scan.

Methods

Manatee sighting

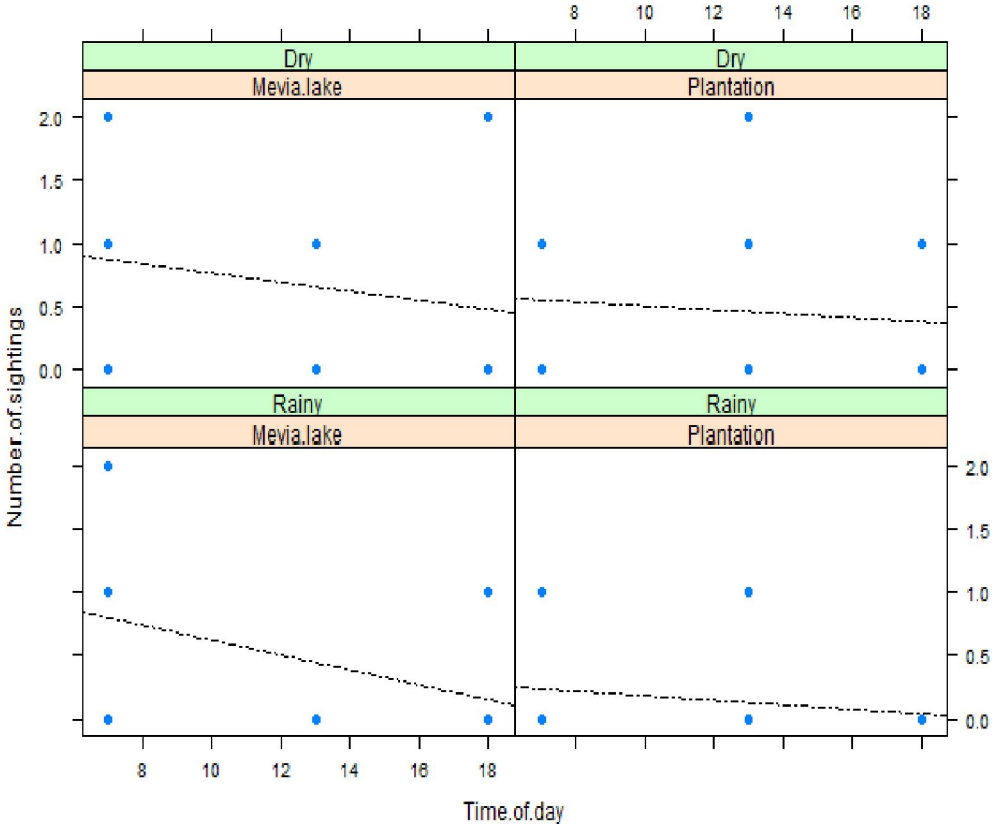
- Direct manatee observation
- Indirect manatee observation

Methods

- The probability of sighting a manatee was higher at Mevia with (53%, n= 30 scans) than in Plantation (30%, n=30 scans). It is more likely to encounter manatee in lake Ossa during dry season (56%, n=30 scans) than rainy season (26%, n= 30 scans).

- The probability of observing a manatee sighting signs decreases as time of the day goes from morning to evening ((= -0.09174, P = 0.0991 estimated regression coefficient).

- Manatee presence signs were mostly encounter during the day period 0500-0800 during wet season and 1100-1400 during dry season.



Results

	Estimated coef	Type Error	Z Values
Constant	0.21918	5.92588	0.03
Period	-0.1033	0.04974	-2.07 *
Wet season	12.56195	7.74165	1.62
Plantation site	1.87827	1.19141	1.57
pH	0.97635	0.58718	1.66 †
Depth	-3.56348	2.15145	-1.65 †
Wet season * Plantation site	-5.41656	2.41490	-2.24 *

Critère d'Information de Akaike (AIC) = 100.82
* Effet significatif au seuil de probabilité de 5%.
† Effet significatif au seuil de probabilité de 10%.

- There was a positive significant effect of the pH on the detectability of manatee indices in lake Ossa (estimated regression coefficient = 0.97635, P = 0.0964.
- While there was a negative significant effect of the depth (estimated regression coefficient = -3.56348, P= 0.0977).

Results

- The detection of Manatee indices in the the Lake Ossa is mainly linked to the time of day, the depth, and the water pH variation . The station do not play a sensitive role in the Manatee occurrence in the Lake Ossa.

- In the light of the results obtained from this work and our personal observations, we can conclude that manatee uses Lake Ossa as refuge during the dry season (Powel 1996 and Kamla, 2011). Hence we can strongly suggest the establishment of Lake Ossa as manatee sanctuary with permanent and temporal no fishing zones.

Conclusion

- Little or no attention from administrative authorities / Sensitization
- African manatee inventory in high turbid water with low visibility / Adaptation of innovative surveys tools and methods
- Limited financial resources & Lack of logistic equipment / Proposal writing
- Inhospitality of locals populations / Sensitization

Photo:
Lucy Keith

Challenges and solutions

- ❑ Assess the distribution and the local perception toward the African manatee in the Northern part of Cameroon
- ❑ Extend the Marine Mammals Observers network in Cameroon
- ❑ Increase the knowledge on biology and ecology of the African manatee in Cameroon through field and lab work
- ❑ Scientific inventory of African manatee in high frequencies reported manatee areas
- ❑ Promote African manatee oriented tourism in Cameroon (LOWR and DEWR)
- ❑ Increase public and administrative authority awareness toward African manatee
- ❑Establishment of African manatee sanctuary in Lake Ossa Wildlife Reserve
- ❑ Cameroon African Manatee Conservation Plan

The next steps

AKNOWLEDGMENT

AFRICAN AQUATIC CONSERVATION FUND