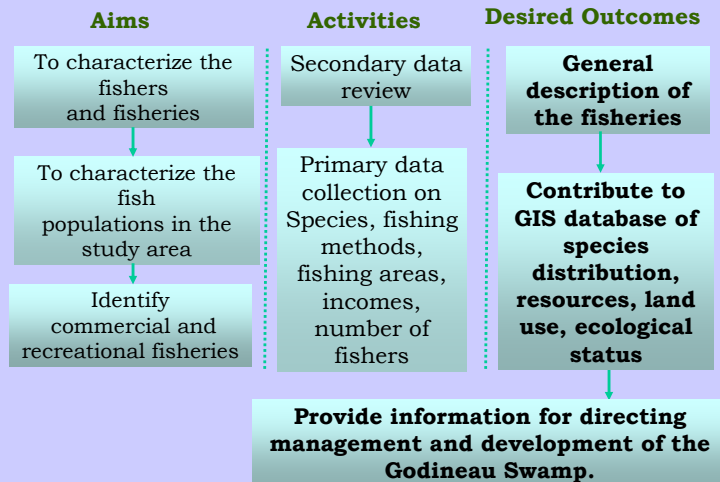


# Distribution and Abundance of Finfish in Godineau Swamp

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## INTRODUCTION

The Godineau Swamp is home to several species of plants, wildlife, fish and waterfowl, including our protected Scarlet Ibis. It has been heavily influenced by anthropogenic activities and probably needs careful regulation of its development in order to obtain the maximum benefits from the swamp without destroying it. The Fisheries component of the Godineau Swamp Research Project aims to document the fish species that live in the swamp, their relative distribution and abundance and characterize the fishing practices in the area. The first phase has been completed and the second phase, characterisation of the fishing practices, is carded to begin in mid-November. The whole Godineau Research project is directed at assessing the ecology of the swamp in its present state in order to come up with management options for the area that would allow for sustainable development.

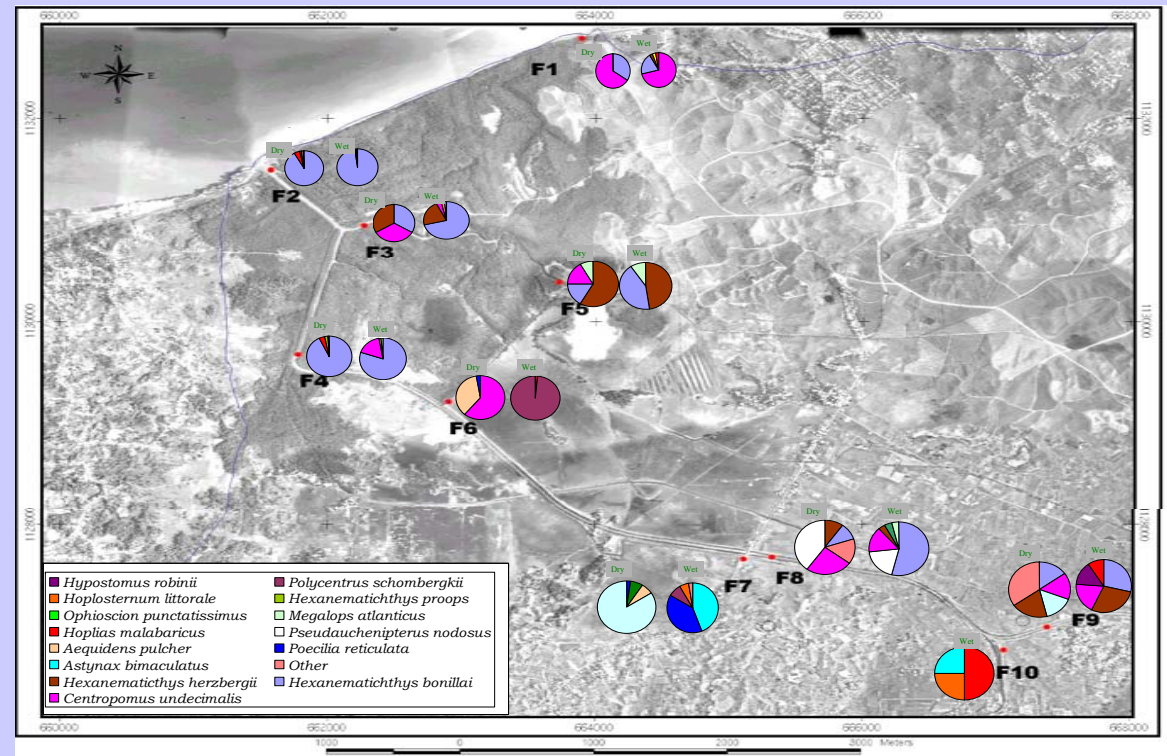


## METHODOLOGY

- Two types of sampling gear
  - seine (1cm stretched mesh)
  - trammel net (6 cm inner mesh, 15 cm outer mesh)
- Stratified random sampling was used to site 10 stations sampled in the dry and wet seasons
- Two trammel nets set at falling tide and allowed to fish from dusk into nightfall for three hours
- All fish caught were identified to species, weighed, measured and sexed
- Ambient data such as salinity, pH, temperature, dissolved oxygen and channel depth at each site
- Shannon-Weiner and Simpson's Diversity Indices used to estimate biodiversity
- Wet and Dry season communities compared using the *Jaccard Coefficient* and *Proportional Similarity Indices* of community similarity to quantify the seasonal changes

## RESULTS AND DATA ANALYSIS

Aerial photo mosaic (1996) of the Godineau Swamp illustrating the relative distribution of species



## DESCRIPTION OF COMMUNITIES

- The fish communities exhibit a seasonal pattern of distribution over the wet and dry seasons
- The *Shannon-Weiner diversity Index* ranged from 0.036-0.967 and *Simpson's Diversity Index* from 0.032-0.912, both showing good agreement
- The *Jaccard Coefficient (CC<sub>J</sub>) of Community Similarity* for trammel net stations is 0.415, implying a significant variation in the composition of the wet and dry communities found at the stations. The CC<sub>J</sub> for seine stations is also low (0.2).
- Proportional Similarity Index of Community Similarity (PS)* for the wet and dry seasons was 78.9% and 11.5% for trammel net and seine net stations respectively.
- There are several species that are very seasonal, found only during wet or dry season as indicated by the low community similarity indices. The bulk major effects of seasonality are felt in the freshwater communities as opposed to the estuarine and marine areas. The estuarine and marine areas tend to have seasonal variation due mainly to species migration.

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