A VEGETATION INVENTORY AND HABITAT QUALITY ASSESSMENT OF LILY LAKE WETLAND IN KARURA FOREST RESERVE, KENYA

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Study area

- Karura Forest has an area of approximately 1,063 ha.
- The forest is drained by several streams, including Thigirie, Getathuru, RuiRuaka and Karura; all tributaries of Nairobi River.
- Lily lake wetland is found in the southwest part of Karura forest.
- The wetland pond measures approximately 2400m^2 in area during the dry period and over 3000m^2 when flooded during the rainy season

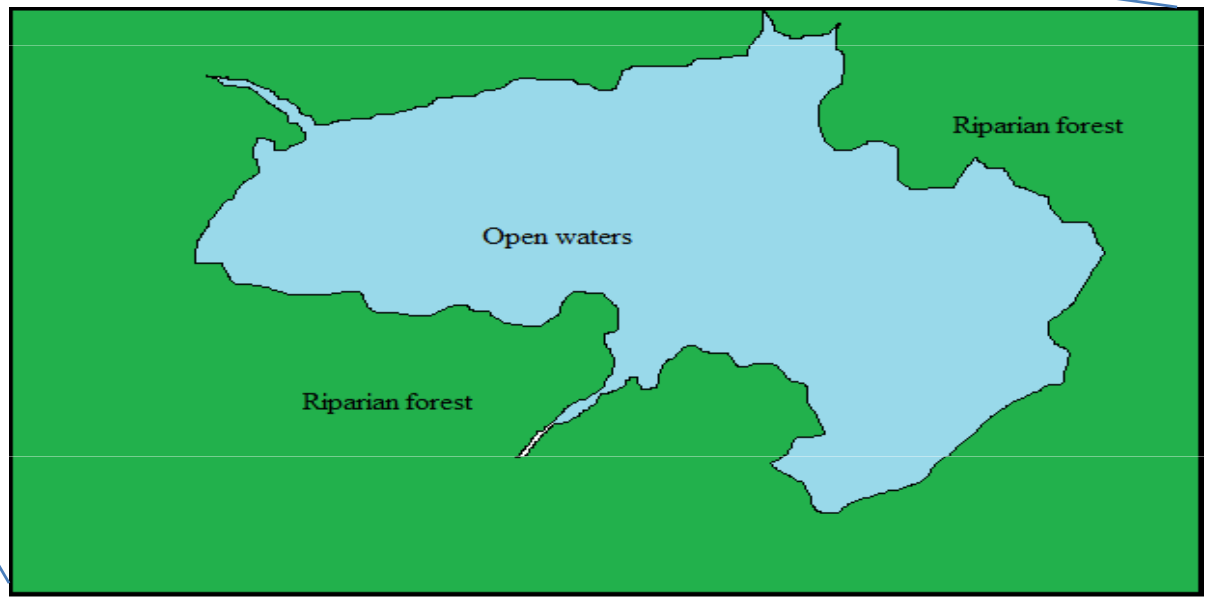


Fig 1. (left)map of karura forest
(Below)sketch of lily lake wetland

Study area continued

- Permanent wetland and receives most of its water from surface runoff and seepage from the surrounding forest catchment ,with no permanent water inlet.
- Its morphology is a natural depression found within the forest.

Project Objectives

- To assess the wetland vegetation community structure.
- To determine the forest plant community bordering the wetland.
- To determine the animal species inhabiting the wetland.
- To determine the physical water characteristics of the wetland.

AIM: To establish the ecological importance of the wetland and provide baseline data to guide future monitoring studies.

Study methods

Assessment of plant community

- Line transects
- 1m by 1m quadrat

Physical water parameters

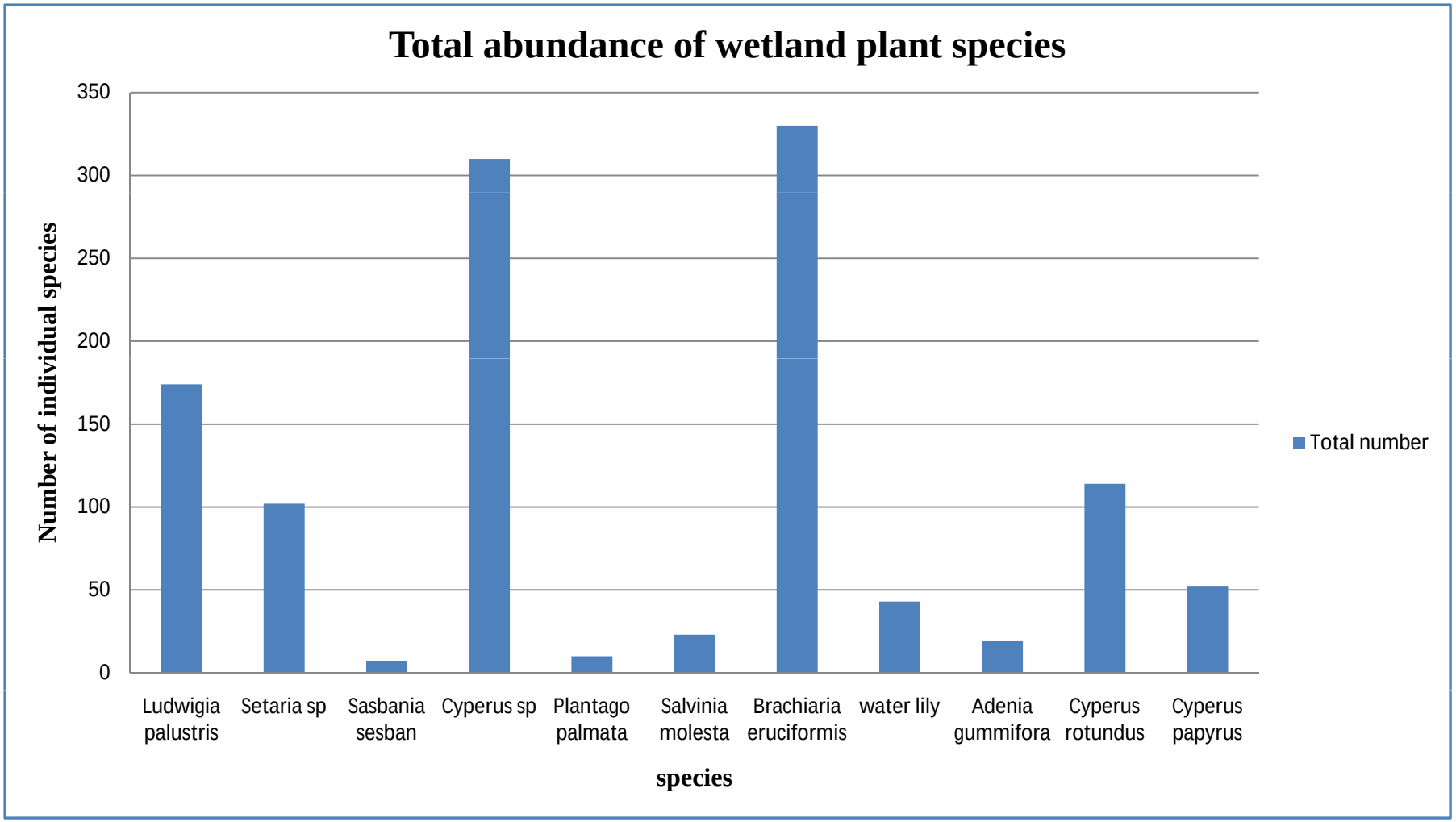
- Ph meter
- Secchi disk
- Bulb thermometer

Sampling of animal community

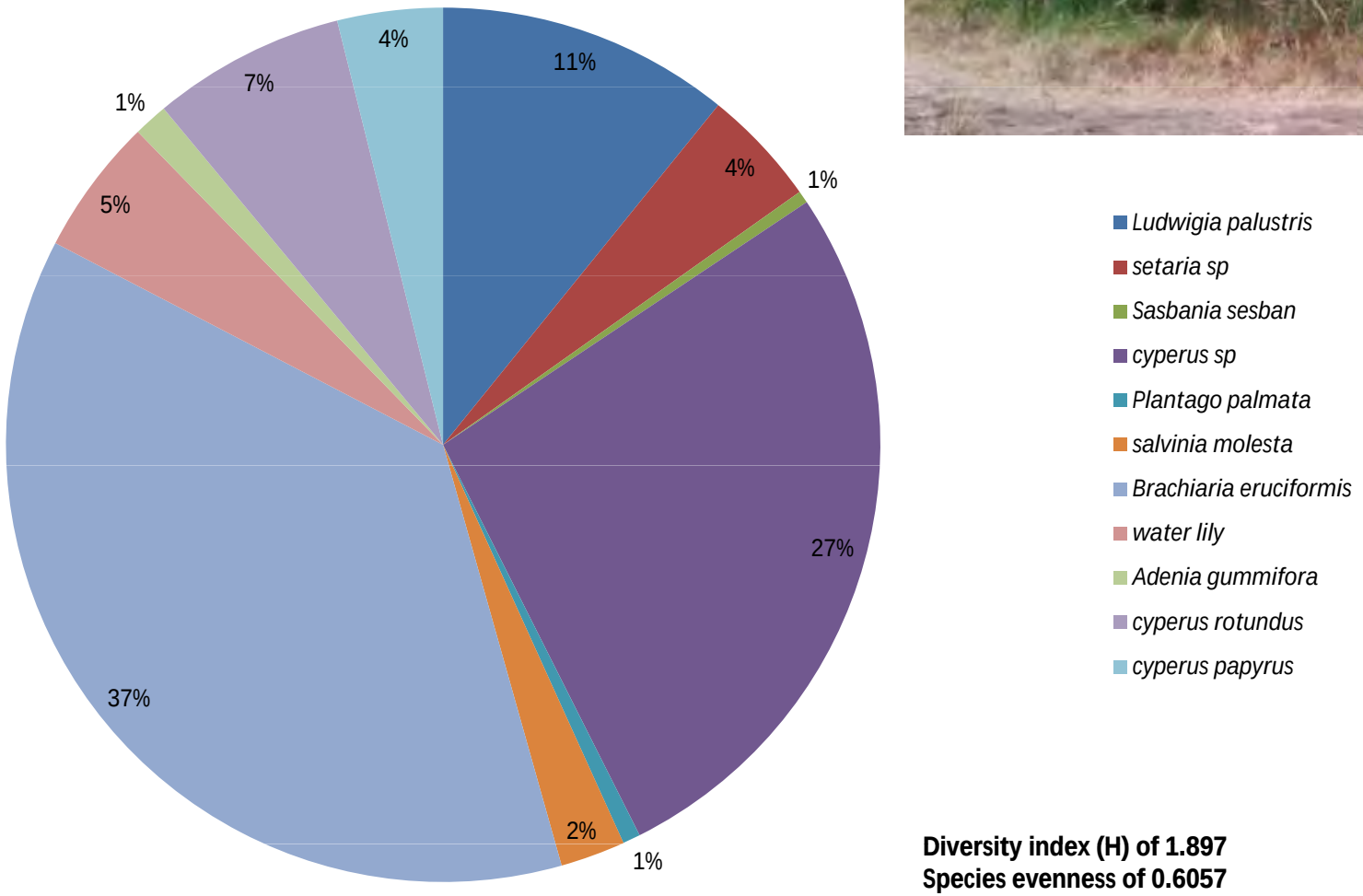
- Sweep nets- invertebrate communities
- Visual cues-birds, amphibians and small mammals

Results

1. Wetland vegetation

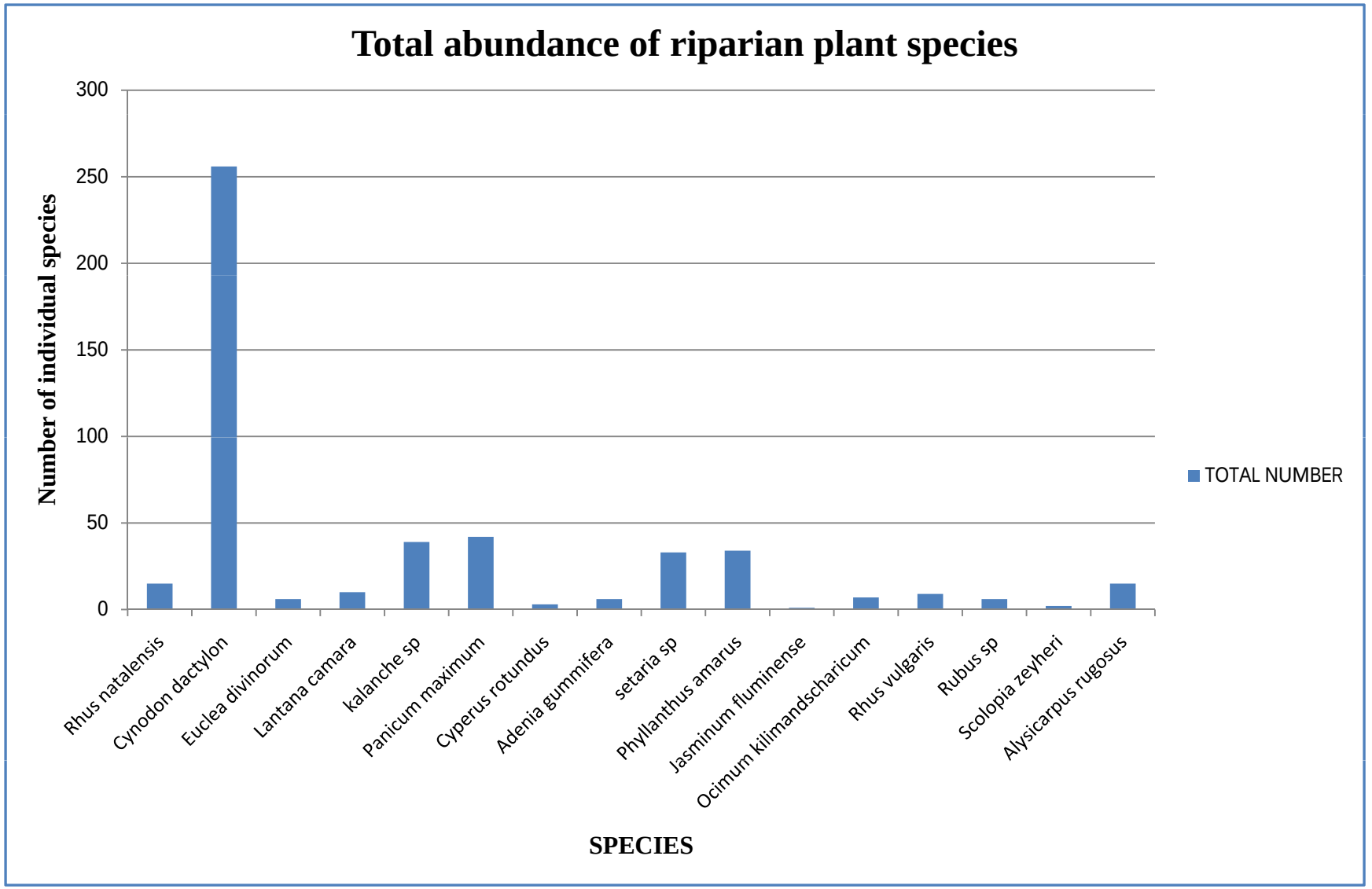


Wetland vegetation cover in%

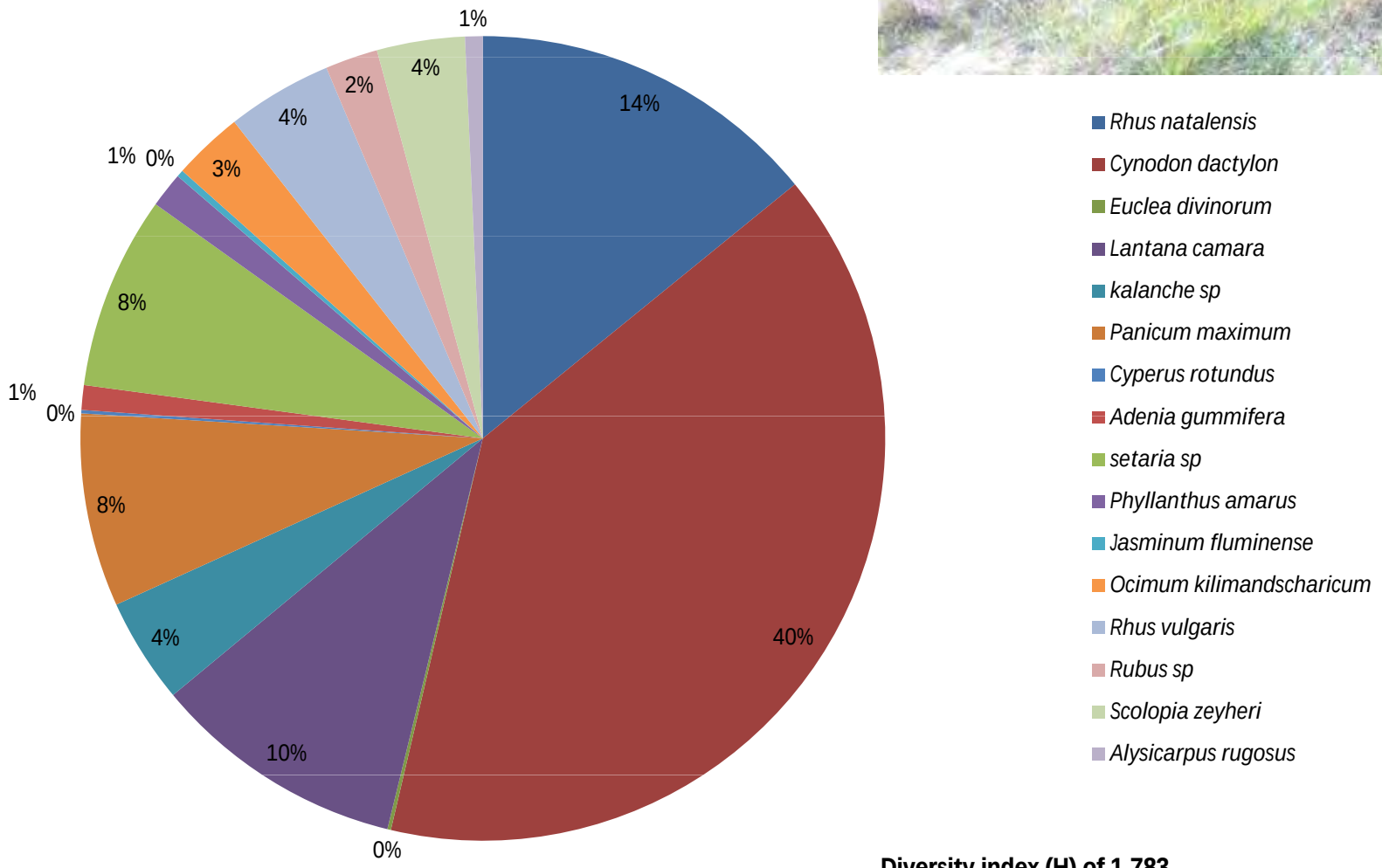


Diversity index (H) of 1.897
Species evenness of 0.6057

2. Riparian vegetation

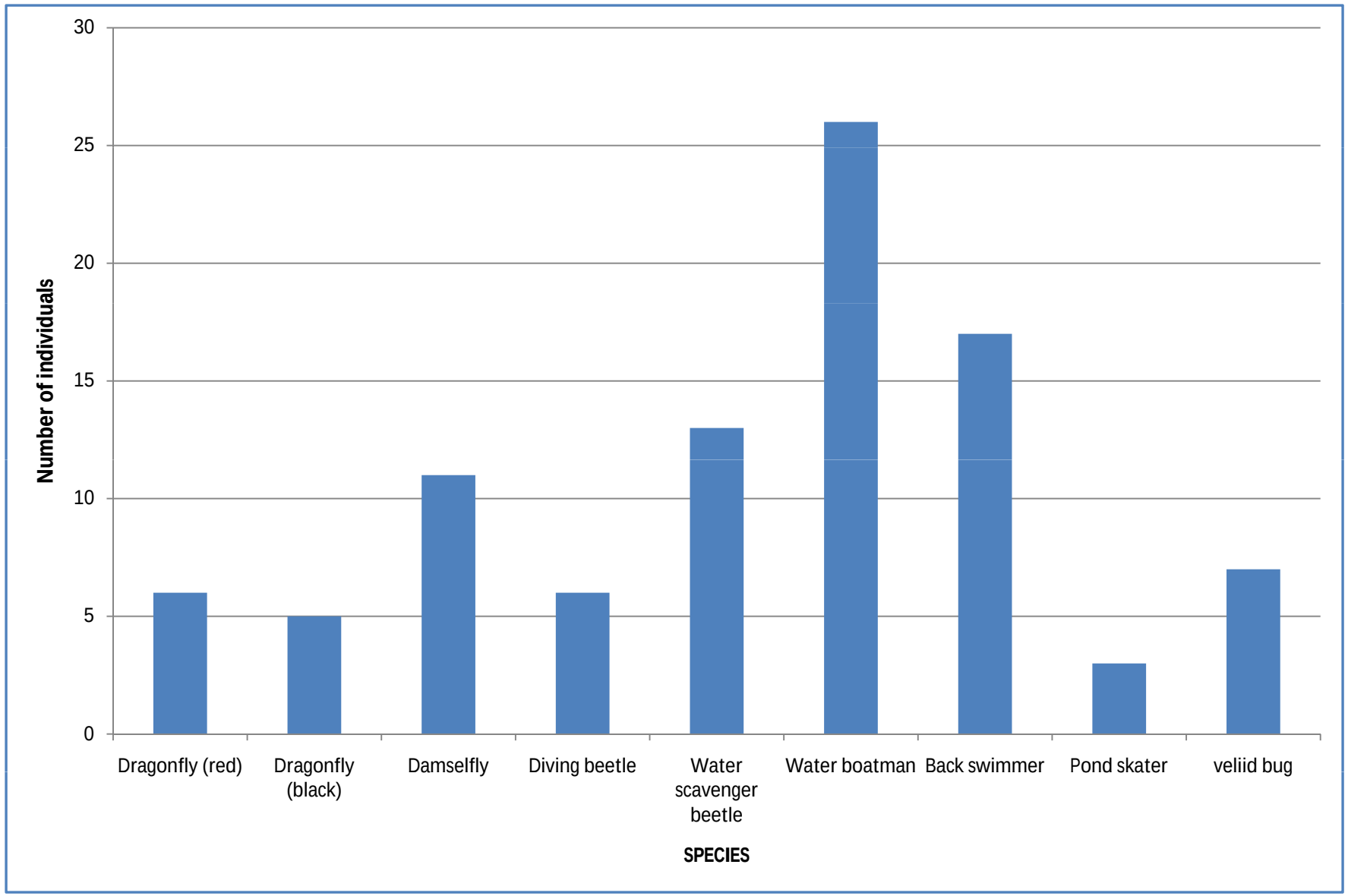


Riparian vegetation cover in%



Diversity index (H) of 1.783
Species evenness of 0.3716

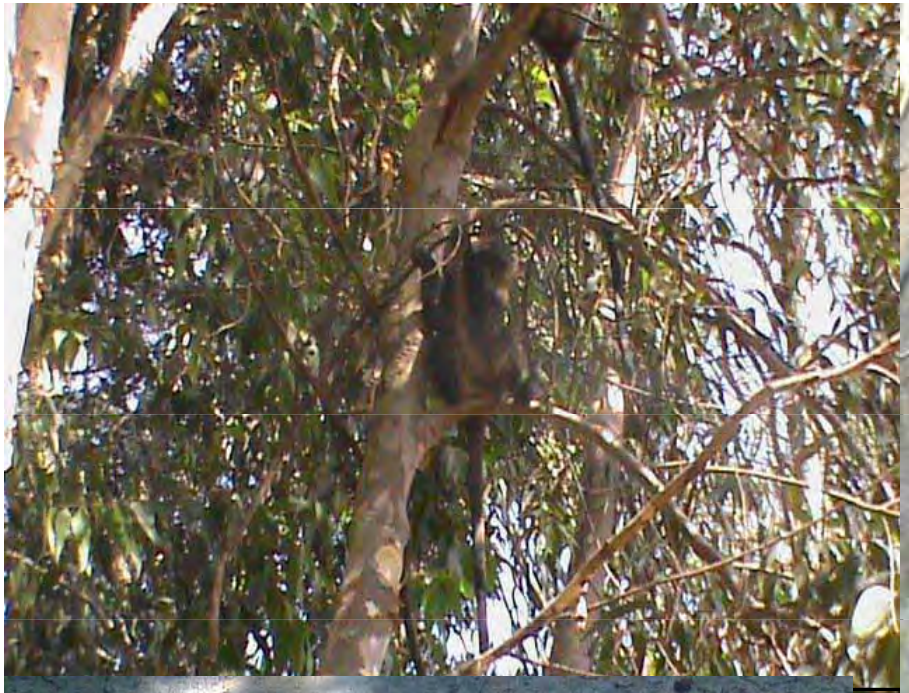
3. Invertebrates within the wetland

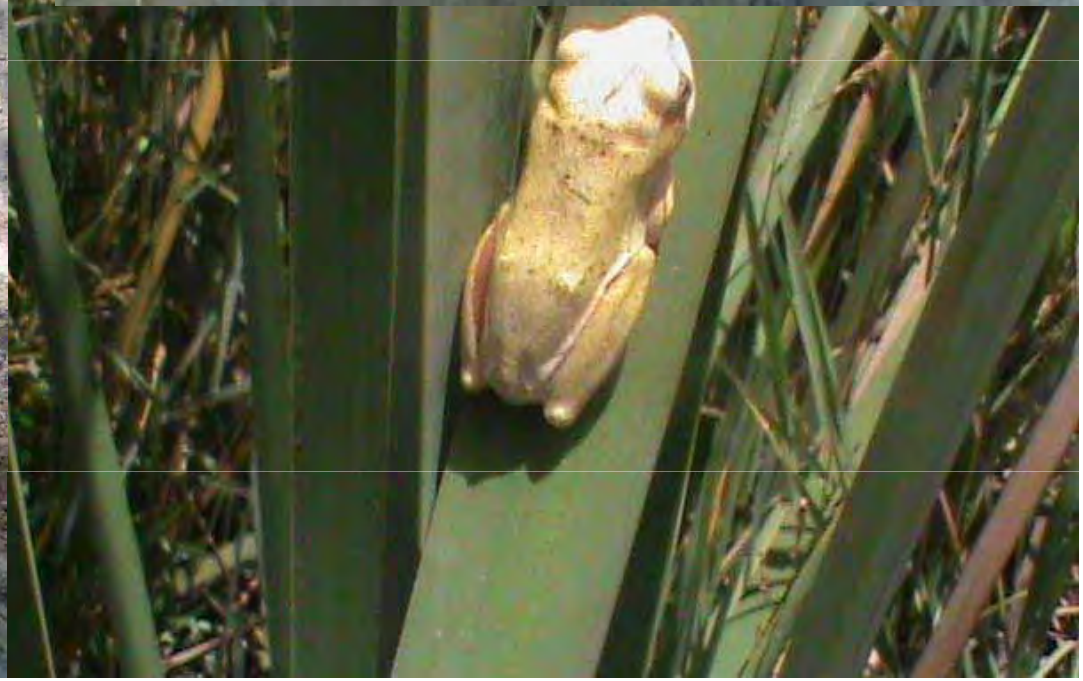


COMMON NAME	SPECIES ORDER	TOLERANCE LEVEL
Dragonfly (red)	Odonata	Moderate
Dragonfly (black)	Odonata	Moderate
Damself fy	Odonata(sub order zygoptera)	Moderate
Diving beetle	Coleoptera	High tolerance
Water scarvanger beetle	Coleoptera	High tolerance
Water boatman	Hemiptera	High tolerance
Back swimmer	Hemiptera	High tolerance
Pond skater	Hemiptera	Moderate
veliid bug	Hemiptera	Moderate
Snails	Molusca	High tolerance
Earth worm	Oligochaete	High tolerance
Fish(gappi)	Poecilidae(family)	Moderate

4. Bird species

Common name	Scientific name	Number
Egyptian goose	*Alopochen egyptiacus*	2
yellow billed duck	*Anas undulata*	5
African black duck	*Anas sparsa*	7
Bronze makinnins	*Lonchura cucullata*	colony
Grey heron	*Ardea cinerea*	1





4. Physical water parameters

	Temperature (°c)	Dissolved oxygen (mg/l)	Turbidity(cm)	Ph
Averages	27.9(surface) 22.8(below)	8.32	24	7.53

Value of the wetland

- Provision of habitat(birds, fish and invertebrates)
- Nutrient cycling
- Educational purposes
- Scenic value
- Water storage and ground water recharge

Challenges

- Clearing of the riparian vegetation to provide space for tree nursery establishment
- Invasion by alien species such as lantana camara.

- Human perturbation through vegetation modification.
- Lack of proper management practices on its catchment.

Way forward

- Reforestation of the riparian area.
- Proper management to prevent spread of invasive species.
- Controlled movement of visitors around the wetland.

THANK YOU