BIODIVERSITY OF LAKE VICTORIA:

ITS CONSERVATION AND SUSTAINABLE USE

[THE UGANDAN VERSION]

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CHAPTER 7

THE DIVERSITY OF AQUATIC FLORA AND THEIR IMPORTANCE IN THE VICTORIA AND KYOGA LAKE BASINS

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Introduction

A great part of Uganda is endowed with water bodies in the forms of rivers and open water lakes. These bodies are never alone. They are either flanked or associated with plants, which are adapted to the wet conditions. They are so characteristic that they are part and parcel of the aquatic ecosystems. They occupy various positions depending on the amount of water in the relevant habitats. Thus various ecological terms are used to describe plants, which occupy each level of inundation:

- **Riparian** denotes a type of vegetation, which flanks rivers or lakes.
- **Rooted** implies plants which anchor their roots in mud or in wet sand,
- **Free-floating** is applied to the plants, which swim on tops or in the water all their lives and
- **Submerged** is given to plants which may anchor at the bottom of an open water body.

In carrying out our studies, we had all these in mind.

Importance:

There is a popular saying that "all meat is but grass". Here grass represents all plant life and covers a great deal of meaning. That is, there is no life without a plant.

- While plants left alone can sustain themselves, other forms of life find it difficult to do so. Therefore, all fish and other aquatic life depend on plants.
- Plants produce oxygen, a producer of *life,*
- They regulate carbondioxide.
- Plants pro'duce food for fish and other mammals,
- They provide shelter for breeding aquatic life and hiding place as they escape from predators.
- A water body without plants is a dead one.
- Plants regulate the flow of rivers and flooding of lakes. In that way, silting of lakes from agricultural land is controlled.

Composition:

The aquatic vegetation composition of any area ending into open water or lake is better illustrated by projecting a transect starting from a dryland or a raised ground through wetland types to the lake. Eggeling 1934 identified the following starting from open water back to the raised ground:

1. Free-floating vegetation of *Ceratophylum, Typha* and *Pistia.*
2. Fringing vegetation of wave action, which may be pushed and lodged against an established Papyrus swamp, which itself is also floating. In such vegetation, young *Vossia* and *Papyrus* community which break from distant communities and are responsible for the formation of floating islands. Of now, it also includes the menacing Water Hyacinth
3. The Papyrus swamp in many places covers large areas and may extend into rivers, which enter the open waters. Climbers, ferns and shrubs, which stand inuandation, are all part of this community.
4. A sedge community, which is composed of stoloniferous, or rhizometous sedges, which form a mat over underlying, water and is a big problem to cross or mover over it.
5. Lymnophyton community sits over shallow waters and is intermixed with *Miscanthidium* which is rooted in mud or sand. *Caldesia* and other alistomataceae members occur in this community. Pools of sanding open water may also be seen covered with a common water fern – the *Azola.* In the same pools, species of *Artelica* and *Nympheae* may also grow rooted in the mud.
6. Miscanthidium community, which is comprised of tufted, grass communities like the *Miscanlhidium* and *Loudalia. Phragmiles* reeds may also occur here.
7. *Echnocloa* community, which forms a dense community, difficult to traverse.
8. The ecotone, which forms a transition zone between swamp and drained ground. In this community, trees and shrubs dominate. Some members are *Alchornea cordi/olia, Bridelia micrantha* and *Phoenix reclinala.*

Eggeling's classification still exists in areas, which have not suffered from degradation.

Factors Influencing Diversity:

- Unimpeded ecosystem development. A water body should be allowed to develop a variety of species without disturbing plant dynamics.
- Once a of plant dynamics is reached should be sustained. That is, there sustainable equity in the whole ecosystem.
- Harvesting the ecosystem should be controlled and rare species should be specially given treatment.
- Protection of water bodies has an influence of diversity in that other aquatic life use a variety of plants for food and shelter.

Study Areas:

In the lake Victoria Basin, the following areas were studied:

I. Napoleon Gulf
2. Rwamafuta Island
3. Lake Mburo
4. Lake Kachera
5. Lake Wamala

In the lake Kyoga Basin the following areas were studied:

I. lyingo - Kyoga major
2. Lake Nawampasa
3. Lake Nakuwa

Figure 1: Species accumulation curve in the Victoria Lake Basin

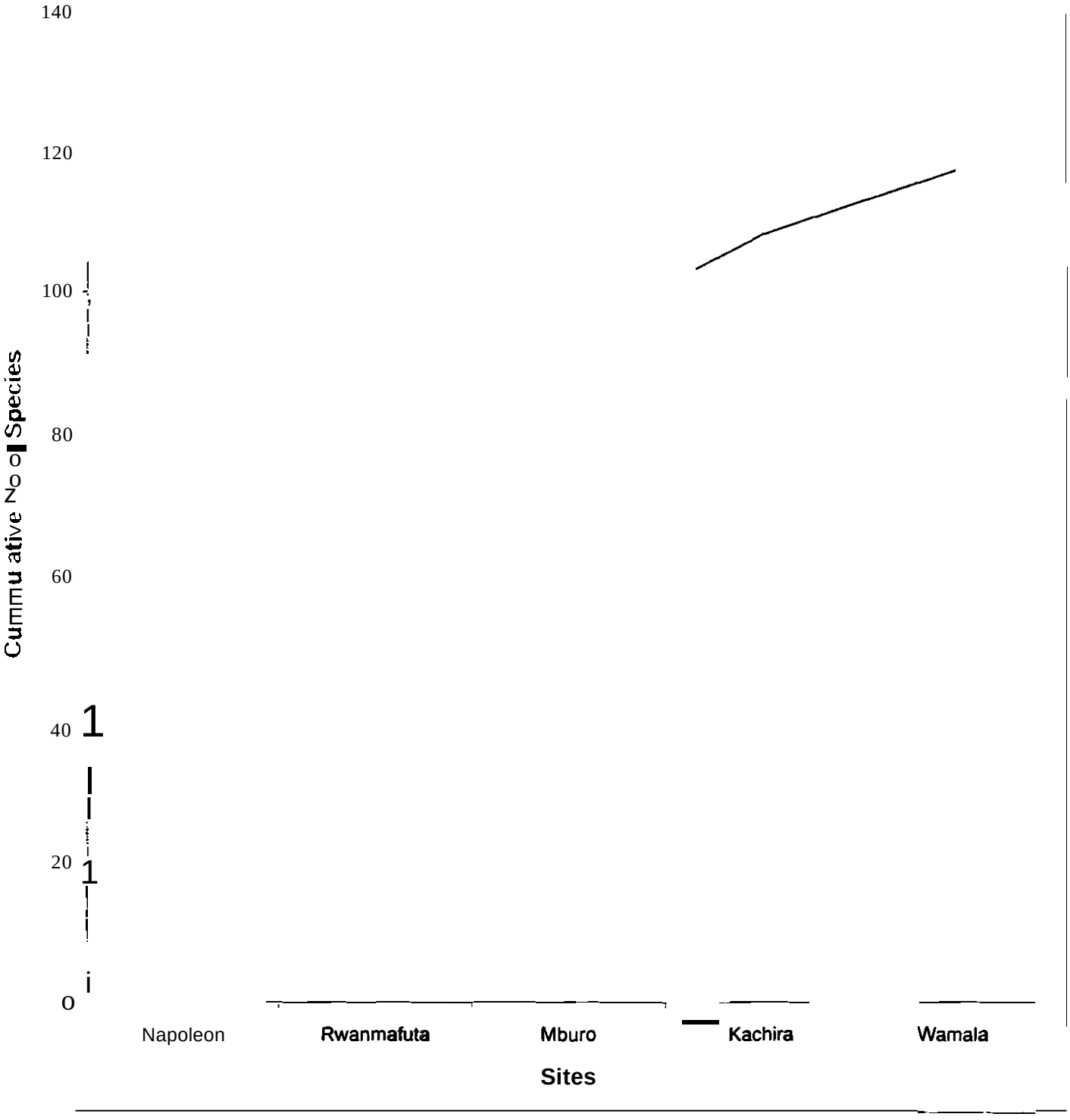


Figure 2: Species accumulation curve in the Kyoga Lake Basin

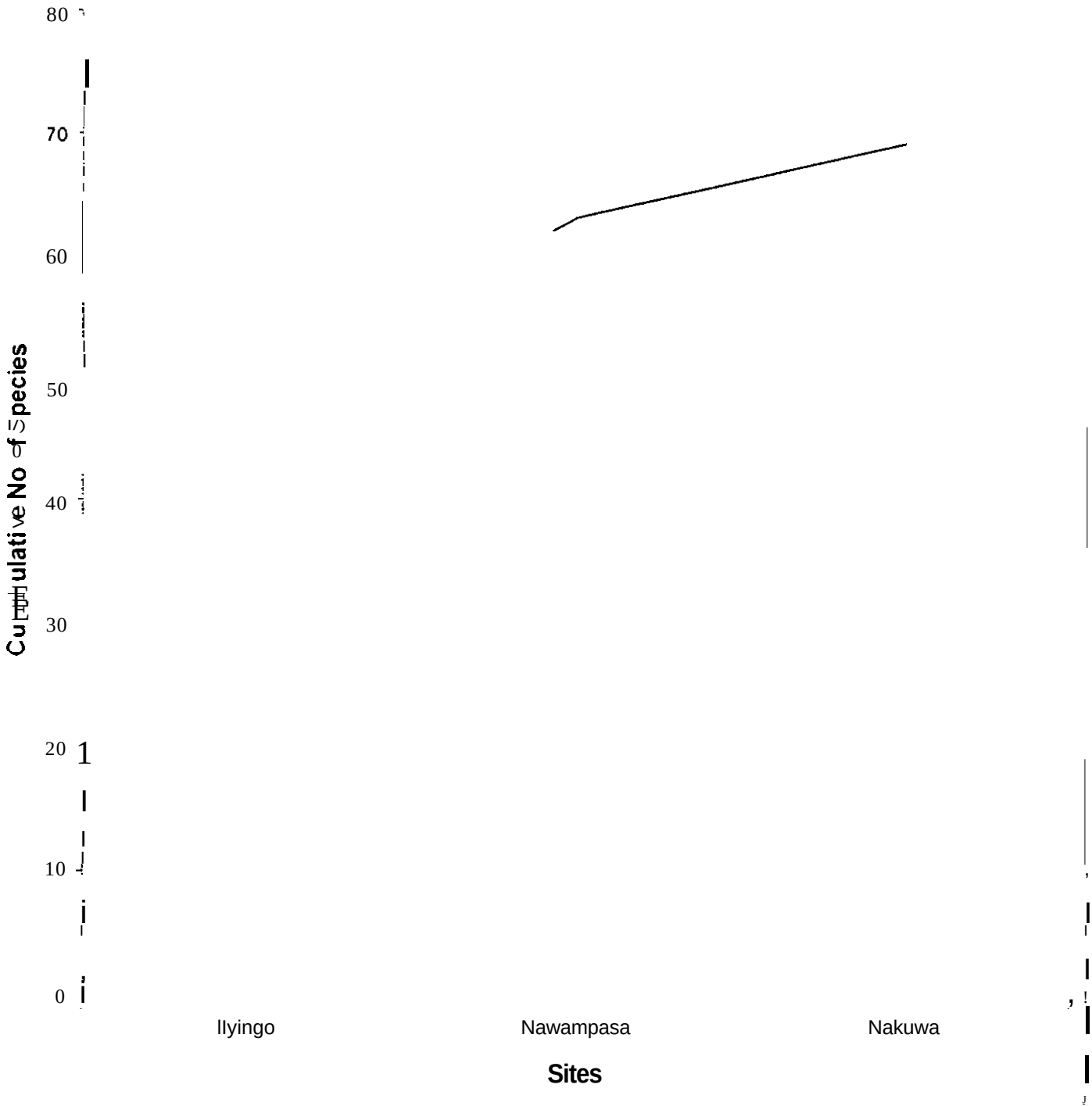


Figure 3: Graph showinfg total number of plant species recorded in each site

