

The book cover features a dark blue, textured background. A wide, ornate gold-tooled border frames the cover, consisting of multiple parallel lines with intricate repeating patterns. The spine on the left is also gold-tooled with decorative bands and floral motifs. The title and author's name are printed in gold.

# Aquatic Ecosystems

*Wetland Flora*

Prof. Marina Lochwood

Wetlands are Earth's kidneys, and their flora are master chemists. Common reed (*Phragmites australis*) purifies water through rhizofiltration—its roots absorbing heavy metals while oxygenating anaerobic mud, creating nurseries for dragonfly larvae.

In deeper channels, hornwort (*Ceratophyllum demersum*) thrives without roots, its feathery stems hosting microorganisms that digest agricultural runoff. Most enchanting are white water lilies (*Nymphaea alba*): their thermo-regulatory flowers maintain a constant 30°C to volatilize scent compounds, luring beetles trapped overnight until pollen-coated. Meanwhile, greater spearwort (*Ranunculus lingua*) engineers microhabitats—its submerged stems slow currents, allowing silt deposition where kingfishers nest. Alarmingly, invasive water hyacinth (*Eichhornia crassipes*) now chokes tropical wetlands, doubling biomass every 6 days by cloning itself.

Conservationists combat this with weevils (*Neochetina eichhorniae*) whose larvae devour hyacinth tissues. For indigenous tribes, sweet flag (*Acorus calamus*) remains sacred; its rhizomes contain asarone, a psychoactive compound once chewed for vision quests but now known to cause renal toxicity at high doses.