



Two-day International Conference
on

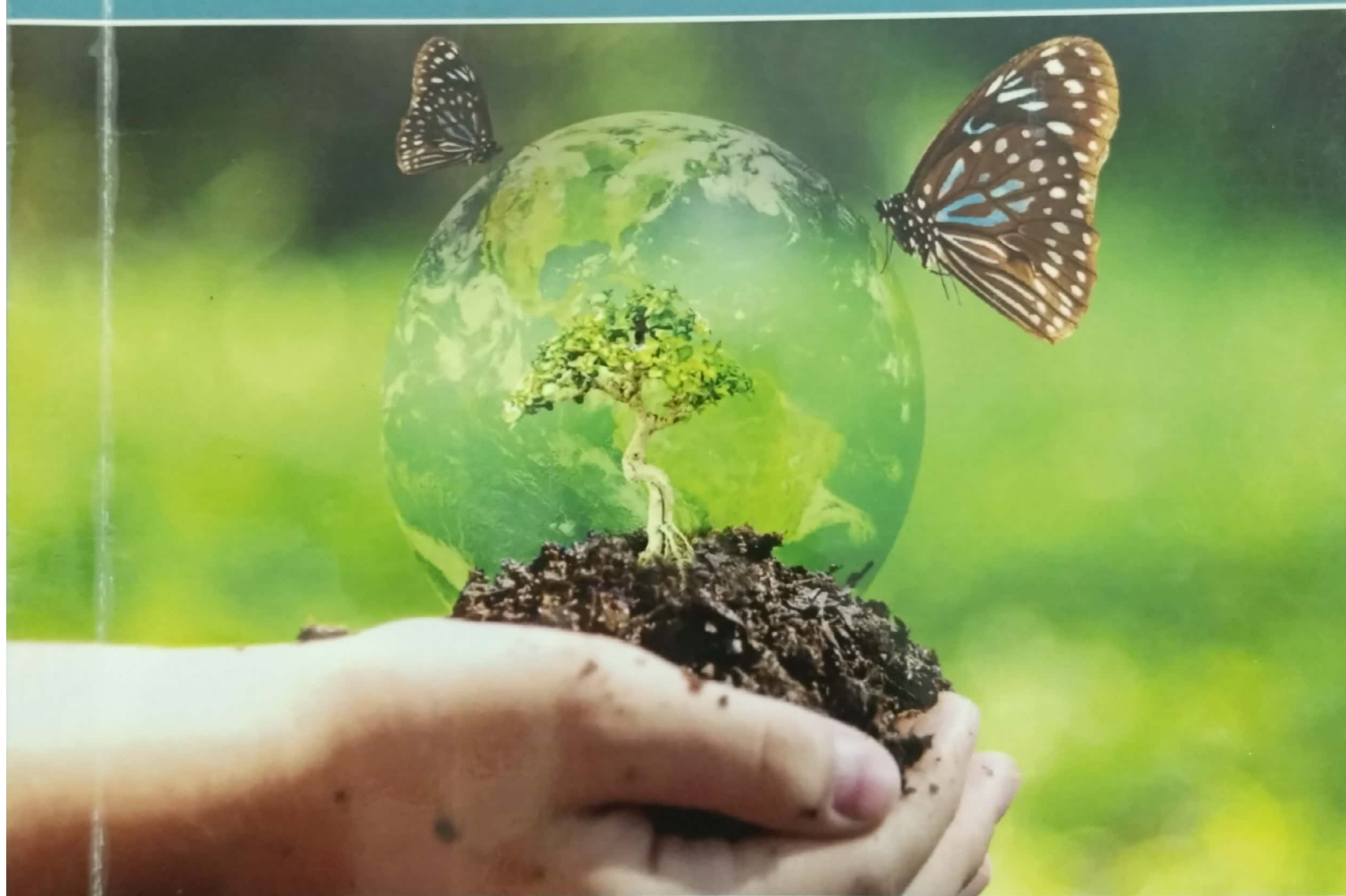


**CONTEMPORARY PERSPECTIVES ON STRATEGIES
FOR CONSERVATION OF
BIODIVERSITY AND REALIZING
SUSTAINABLE DEVELOPMENT GOALS – 2024 (CPSCBRSD)**

04-07-2024 TO 05-07-2024

Sponsored by ONGC & KSPL

ABSTRACTS



Organized by

Department of Botany & Horticulture

**PITHAPUR RAJAH'S GOVERNMENT COLLEGE (AUTONOMOUS),
KAKINADA**

in collaboration with

**DEPARTMENT OF BOTANY
GOVERNMENT DEGREE COLLEGE, RAMACHANDRAPURAM**





**PITHAPUR RAJAH'S GOVERNMENT COLLEGE [AUTONOMOUS]
KAKINADA, ANDHRA PRADESH**
[An outcome based autonomous institution, affiliated to Adikavi Nannaya University]

TWO DAY INTERNATIONAL CONFERENCE

**CONTEMPORARY PERSPECTIVES ON STRATEGIES FOR
CONSERVATION OF BIODIVERSITY AND REALIZING
SUSTAINABLE DEVELOPMENT GOALS – 2024**

CPSCBRSD-2024

(SUSTAINABLE NATURE- 2024)

(Hybrid Mode)

4-5 July 2024

THEME: SCIENCE FOR SUSTAINABLE FUTURE

ABSTRACTS

**Organized by
Dept of Botany & Horticulture, PRGC (A)
in collaboration with
Dept of Botany, GDC,
Ramachandrapuram, AP.**

Tracing Seasonal Shifts: Carbon and Nitrogen Isotopes in Kakinada Bay's Phytoplankton**T. Venkateswara Rao¹, N Sreenivas²**

1. Department of Zoology & Aquaculture, Pithapur Raja's Govt. College, Kakinada, Andhra Pradesh,

2. Lecturer in Zoology, Government Degree College, Ramachandrapuram,

This study investigates the seasonal variability of stable carbon ($\delta^{13}\text{C}$) and nitrogen ($\delta^{15}\text{N}$) isotopes in particulate organic matter (POM) primarily consisting of phytoplankton in Kakinada Bay, Andhra Pradesh, India. We conducted measurements across three distinct seasons: pre-monsoon, monsoon, and post-monsoon. The $\delta^{13}\text{C}$ values recorded were $-21.87 \pm 0.80\text{‰}$, $-22.57 \pm 0.34\text{‰}$, and $-21.69 \pm 0.96\text{‰}$ for the pre-monsoon, monsoon, and post-monsoon periods, respectively. The $\delta^{15}\text{N}$ values were $6.12 \pm 0.56\text{‰}$, $6.7 \pm 0.19\text{‰}$, and $5.42 \pm 0.54\text{‰}$ for the same periods. Changes in $\epsilon^{33}\text{C}$ values over the course of the year suggest that the main sources of energy and the pathways for photosynthesis are also changing, possibly because of changes in the water table. The $\delta^{15}\text{N}$ values reflect changes in nitrogen sources and utilization patterns, potentially linked to monsoonal nutrient inputs and varying degrees of nitrogen fixation. Stable isotope analysis of carbon and nitrogen in POM is critical for understanding the bay's food web and food chain structures. The isotopic signatures provide insights into the sources and cycling of organic matter, allowing researchers to trace the flow of energy and nutrients through different trophic levels. This study highlights the dynamic nature of the bay's ecosystem and underscores the importance of isotopic studies in marine ecological research.