

[Look Up Full Text](#)[Full Text from Publisher](#)[Find PDF](#)[Export...](#)[Add to Marked List](#)

◀ 1 of 1 ▶

Seasonal variations of plankton in Kodiakkarai and Arukattuthurai on the Vedharanyam coast, South India

By: [Rajkumar, M](#) (Rajkumar, Mayalagu)^[1,2]; [Azhagar, S](#) (Azhagar, S.)^[1]; [Sun, J](#) (Sun, Jun)^[3,4]; [Jenkinson, IR](#) (Jenkinson, Ian R.)^[5,6]; [Rahman, MM](#) (Rahman, Mustafizur M.)^[7,8]; [Serebiah, JS](#) (Serebiah, J. Sesh)^[9]

[View Web of Science ResearcherID and ORCID](#)

REGIONAL STUDIES IN MARINE SCIENCE

Volume: 39

Article Number: 101461

DOI: 10.1016/j.rsma.2020.101461

Published: SEP 2020

Document Type: Article

[View Journal Impact](#)

Abstract

Composition and community structure of phyto-, microzoo- and mesozoo-plankton off Kodiakkarai and Arukattuthurai on the Vedharanyam coast, South India were investigated over one year (September 2006 to August 2007). One hundred and sixteen phytoplankton species were observed under different classes: Bacillariophyceae (90 species); Dinophyceae (20); Cyanophyceae (5) and Chrysophyceae (1) were recorded. Phytoplankton abundance varied from 9.9 to 78.1 cells mL⁻¹, with peak Shannon-Weaver diversity, H' of 6.18 during summer (April-June) when there was a stable hydrographical condition. A total of 37 microzooplankton species were recorded (Tintinnids 17, Rotifera 2, Appendicularia 2 and Larval forms 16). Microzooplankton abundance ranged between 3.3 and 27.7 ind. mL⁻¹, with peak diversity of 4.56 during summer. Fifty-five species of mesozooplankton including 42 copepods formed the dominant group. The mesozooplankton abundance ranged between 5.4 and 14.5 and between 11.4 and 52 ind. mL⁻¹ at stations 1 and 2, respectively. Arukattuthurai coastal waters were very rich and mesozooplankton diversity was high (5.22) at station 2 (Arukattuthurai), although slightly lower (4.58) at station 1 (Kodiakkarai). The occurrence of most of the phyto, microzoo- and mesozoo-plankton species in Kodiakkarai and Arukattuthurai coastal waters were distinctly seasonal. Therefore, variations of the micro- and mesozoo-plankton species were subjected to seasonal fluctuations in environmental parameters which were strongly influenced seasonally, including by freshwater influence. The highest values of mesozooplankton abundance and species diversity were found during summer and were positively correlated with salinity. (C) 2020 Elsevier B.V. All rights reserved.

Keywords

Author Keywords: Physico-chemical parameters; Plankton community; Kodiakkarai; Arukattuthurai; India

KeyWords Plus: ARID ZONE MANGROVES; PHYSICO-CHEMICAL CHARACTERISTICS; ENVIRONMENTAL PARAMETERS; PHYTOPLANKTON DIVERSITY; WATER-QUALITY; EAST COAST; PALK BAY; FOOD-WEB; ABUNDANCE; MICROZOOPLANKTON

Author Information

Reprint Address:

Agcy Consultat & Res Oceanog, F-19320 Lavergne, La Roche Canill, France.

Corresponding Address: Jenkinson, IR (corresponding author)

Agcy Consultat & Res Oceanog, F-19320 Lavergne, La Roche Canill, France.

Addresses:

- + [1] Annamalai Univ, Fac Marine Sci, Ctr Adv Study Marine Biol, Parangipettai 608502, Tamil Nadu, India
- [2] Flat 1, Shields Pl 15, Dunkeld Rd, Perth PH1 5RL, Scotland
- + [3] Tianjin Univ Sci & Technol, Coll Marine Sci & Engn, TEDA, 29 13th Ave, Tianjin 300457, Peoples R China
- + [4] China Univ Geosci Wuhan, Coll Marine Sci & Technol, Wuhan 430074, Hubei, Peoples R China
- + [5] Chinese Acad Sci, Inst Oceanol, 7 Nanhai Rd, Qingdao 266071, Peoples R China
- [6] Agcy Consultat & Res Oceanog, F-19320 Lavergne, La Roche Canill, France
- + [7] Int Islamic Univ Malaysia, Fac Sci, Dept Marine Sci, Jalan Istana, Bandar Indera Mahkota 25200, Kuantan Pahang, Malaysia
- + [8] Int Islamic Univ Malaysia, Inst Oceanog & Maritime Studies, Kuantan 26160, Pahang, Malaysia

Citation Network

In Web of Science Core Collection

0

Times Cited

[Create Citation Alert](#)

54

Cited References

[View Related Records](#)

Use in Web of Science

Web of Science Usage Count

1

Last 180 Days

1

Since 2013

[Learn more](#)

This record is from:

Web of Science Core Collection

- Science Citation Index Expanded

[Suggest a correction](#)

If you would like to improve the quality of the data in this record, please [suggest a correction](#).

[9] Jehovah Shamma Ctr Marine & Wildlife Res, 9-3 Mudiveeranpattinam, Ramanathapuram 623513, Tamil Nadu, India

E-mail Addresses: ian.jenkinson@ocean-expert.org

Funding

Funding Agency	Show details	Grant Number
Chinese Academy of Sciences		
Chinese National Foreign Experts Bureau Research Fellowship for Foreign Experts High End Program		
Changjiang Scholar Program of Chinese Ministry of Education		T20104253
National Natural Science Foundation of China (NSFC)		41876134 41276124

[View funding text](#)

Publisher

ELSEVIER, RADARWEG 29, 1043 NX AMSTERDAM, NETHERLANDS

Journal Information

Impact Factor: [Journal Citation Reports](#)

Categories / Classification

Research Areas: Environmental Sciences & Ecology; Marine & Freshwater Biology

Web of Science Categories: Ecology; Marine & Freshwater Biology

See more data fields

◀ 1 of 1 ▶

Cited References: 54

Showing 30 of 54 [View All in Cited References page](#)

(from Web of Science Core Collection)

- Hydrobiology of the inshore waters off Tuticorin in the Gulf of Mannar.** Times Cited: **22**
 By: Asha, P.S.; Diwakar, K.
 Journal of the Marine Biological Association of India Volume: 49 Issue: 1 Pages: 7-11 Published: January-June 2007
- Seasonal variations in physico-chemical parameters in Uppanar estuary, Cuddalore (Southeast coast of India)** Times Cited: **6**
 By: Ashok Prabu, V.; Rajkumar, M.; Perumal, P.
 J. Mar. Biol. Ass. India Volume: 50 Pages: 161-165 Published: 2008
- Diversity of microzooplankton in Parangipettai coastal waters, Southeast coast of India** Times Cited: **6**
 By: Ashok Prabu, V.; Perumal, P.; Rajkumar, M.
 J. Mar. Biol. Ass. India Volume: 47 Pages: 14-19 Published: 2005
- THE ECOLOGICAL ROLE OF WATER-COLUMN MICROBES IN THE SEA** Times Cited: **3,542**
 By: AZAM, F; FENCHEL, T; FIELD, JG; et al.
 MARINE ECOLOGY PROGRESS SERIES Volume: 10 Issue: 3 Pages: 257-263 Published: 1983
- Organic matter of sediments from the retting and the non-retting areas of Kadinamkulam estuary, Southeast coast of India** Times Cited: **5**
 By: BijoyNandan, S.; Abdul Azis, P.K.
 Ind. J. Mar. Sci. Volume: 25 Pages: 25-28 Published: 1994
- Sediment texture and nutrients of Arasalar estuary, Karaikkal, south-east coast of India** Times Cited: **23**
 By: Bragadeeswaran, S.; Rajasegar, M.; Srinivasan, M.; et al.
 JOURNAL OF ENVIRONMENTAL BIOLOGY Volume: 28 Issue: 2 Pages: 237-240 Published: APR 2007
- MICROZOOPLANKTON GRAZING AND SELECTIVITY OF PHYTOPLANKTON IN COASTAL WATERS** Times Cited: **242**
 By: BURKILL, PH; MANTOURA, RFC; LLEWELLYN, CA; et al.
 MARINE BIOLOGY Volume: 93 Issue: 4 Pages: 581-590 Published: 1987