

Ecology

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0303-138. Anandapandian KTK, Rajendran K (Dept Microbio, Thiagarajar Coll, Madurai 625009, Tamil Nadu). **Assessment of microbial diversity in rhizosphere of tree species in south Tamil Nadu.** *Nature Env Polln Techno*, **2**(2)(2003), 153-156 [15 Ref].

The study was undertaken to know the microbial diversity and population in rhizosphere and non-rhizosphere soil of forestry species such as teak, neem, casurina and prosopis trees in south part of Tamil Nadu. The analysis of rhizosphere and non-rhizosphere soil samples showed that both the soil samples contain representative groups of microbial population such as bacteria and fungi having *Azotobacter*, *Beijerinckia* and VAM fungal spores.

0303-139. Ansari AH, Sunil Kumar S (Dept Chem, Saifia PG Coll Sci Edn, Bhopal 462001). **Effect of nitrate input on the release of phosphorus from a tropical lake sediment.** *Dimensions Polln*, **2**(2003), 120-126 [10 Ref].

Study determines the effect of nitrate input on the phosphorous exchange across the sediment water interface of a tropical lake. Aerobic, undisturbed and resuspended sediment cores showed increased release of total phosphorus (TP) and SRP with increases in the addition of nitrate, while anaerobic, undistributed and resuspended sediment cores showed a decreasing trend in the release of TP and SRP with increased concentration of nitrate.

0303-140. Arjariya Amita (Dept Bot, Govt Maharaja Coll, Chhatarpur 471001, MP). **Physico-chemical profile and plankton diversity of Ranital lake, Chhatarpur, M.P.** *Nature Env Polln Techno*, **2**(3)(2003), 327-328 [4 Ref].

Paper presents the results of the physico-chemical and plankton characteristics of Ranital lake in Chhatarpur (M.P.). The data indicate that the lake has a pH in the alkaline range between 7.3 and 8.9. The phytoplankton is dominated mainly by the species of Cyanophyceae, Chlorophyceae and diatoms, which belong to the tolerant species. Zooplankton was represented by 10 genera covering different groups.

0303-141. Borse SK, Lohar PS, Bhawe PV (Dept Zoo, Art Sci Comm Coll, Chopda 425107, Maharashtra). **Hydrobiological study of algae of Aner river, Jalgaon (Maharashtra).** *J Aquat Bio*, **18**(1)(2003), 15-18 [16 Ref].

Water and algal samples were collected fortnightly over a period of one year from two sampling stations. Three groups of algae were recorded from two stations of the river. Algae are pollution indicators, so these can be used for assessing the water quality of the river. The pollution indicating algae were not observed in the river water, so the water can be utilized for drinking and domestic purposes.

0303-142. Chari KB, Abbasi SA* (Cent Polln Contl Energy Techno, Pondicherry Univ, Kalapat, Pondicherry 605014). **Assessment of impact of land use charges as on the plankton community of a shallow fresh water lake in south India by GIS and remote sensing.** *Cheml Environ Res*, **12**(1&2)(2003), 93-112 [38 Ref].

Efforts are made to delineate the land-use and land-cover of Oussudu catchment (Pondicherry, India) using remote sensing, GIS and ground-truth survey and associate the likely implications of land-use on the plankton community during the years 1997, 1999 and 2000. Paper investigates the detailed quantitative and qualitative characteristics of the plankton population during 1999 and 2000. Based on the study some specific recommendations have been made.

0303-143. Das SK (Dept Fishery Bio, WBUAFS, Mohanpur Campus, Nadia 7411252, West Bengal). **Primary production and zooplankton biodiversity in brackish water shrimp culture pond.** *J Ecobio*, **14**(4)(2002), 267-271 [16 Ref].

Dynamics of net primary production of zooplankton biodiversity was monitored at fortnightly intervals for two years in a traditional shrimp culture pond located in northern part of Ganjam district in Orissa. The primary peak of net primary production was during September and other peaks were during late December – early January and April respectively. A significant negative correlation ($P= 0.01$) between net primary production and zooplankton population might be due to grazing.

0303-144. Jha Mohan (Indian Coun Forests Res Edn, Dehra Dun, Uttaranchal). **The preliminary study of ecosystems and biodiversity in Lonar crater.** *Indian Forester*, **129**(10)(2003). 1192-1200 [11 Ref].

The Lonar crater, situated in Buldhana Forest Division in Maharashtra is having many micro ecosystems with fascinating biodiversity. Some preliminary observations in this regard indicate that there exist about nine micro-ecosystems, about fourteen types of blue green algae, five types of alkaliphilic bacteria, 57 birds species, and variety of reptiles, mammals, snakes, bats and colourful butterflies. About 237 plant species belonging to 153 genera and representing 70 families have been recorded in the Lonar crater.

0303-145. Kadam TA, Jadhav VD, Gyananath G (Sch Life Sci, SRTM Univ, Nanded 431606, Maharashtra). **Microbial degradation of dimethoate by gram negative soil isolates from cotton field.** *Polln Res*, **22**(3)(2003), 443-445 [13 Ref].

Dimethoate degrading mixed bacterial culture was enriched from soil with history of dimethoate exposure. Enrichment was obtained by using the insecticide as the sole source of carbon. Chemical hydrolysis was minimized by using strongly buffered culture medium pH (6.8). No growth occurred in control cultures in the absence of dimethoate. Degradation of the insecticide occurred concomitantly with bacterial growth.

0303-146. Kalra Naveen, Jain MC, Joshi HC, Chaudhary R, Kumar Sushil, Pathak H, Sharma SK, Kumar Vinod, Kumar Ravindra, Harit RC, Khan SA, Hussain MZ (Div Environ Sci, Indian Agricul Res Inst, New Delhi 110012). **Soil properties and crop productivity as influenced by flyash incorporation in soil.** *Environ Monit Assess*, **87**(1)(2003), 93-109 [13 Ref].

Field experiments were carried out to evaluate changes in soil characteristics and growth of crops by varying amounts of flyash addition in soils at sowing/transplanting time of crops. Shoot and root growth and yield of test crops at different locations after flyash incorporation resulted in beneficial effects of flyash addition in most cases. The silt dominant texture of flyash improved loamy and to sandy loam textures of the surface soils at the farmers' fields.

0303-147. Kamat Sima V (Dept Bot, PES Coll, Farmagudi, Ponda, Goa 403401). **Bioecological observations of the aquatic macrophytes of the wetlands of Goa.** *Eco Env Conserv*, **9**(3)(2003), 385-390 [13 Ref].

Wetlands are transitional systems. Wetlands in Goa are used for paddy cultivation. Macrophytes growing in these wetlands have different uses, one of them being they form fertilizers for the rice cultivated there in. Maximum growth of macrophytes is noticed in winter season.

0303-148. More YS, Nandan SN (Dept Bot, Kr AMP, Kai NKP Sci Coll, Pimpalner, Dist Dhule 424306). **Hydrobiological study of algae of Panzara Dam (Maharashtra).** *Eco Env Conserv*, **9**(3)(2003), 367-369 [10 Ref].

The Panzara dam water was analysed for its water quality and biological aspects in relation to algae. The dam is situated on Panzara river of Khandesh area of Maharashtra. The most pollution tolerant genera and species of four groups of algae were recorded from three stations of dam were assessed for.

0303-149. Nandan SN, Kumavat MR (PG Dept Bot, SSVPS's LK Dr PR Ghogrey Sci Coll, Dhule 424005, MS). **Limnological study of algae of Aner river of Dhule (Maharashtra), India.** *Eco Env Conserv*, **9**(1)(2003), 105-107 [14 Ref].

Paper studies the limnological aspects of algae of Aner river of Dhule district. The density of population of four groups of algae viz. *Bacillariophyceae*, *Cyanophyceae*, *Chlorophyceae* and *Euglenineae* was estimated at every month. The correlation of physico-chemical parameters with algal composition of four groups was made.

0303-150. Nandi NC, Das SR (Zool Surv India, M Block, New Alipore, Kolkata 700053). **Diversity and population density of macrozoobenthos and zooplankton of south 24-Parganas district, West Bengal.** *J Aquacult Bio*, **18**(1)(2003), 41-46 [15 Ref].

Six man-made brackishwater wetlands (*bheries*) and four natural estuarine wetlands (creek) and adjoining mudflats have been surveyed for diversity and population density of macrozoobenthos and zooplankton of South 24-Parganas district, West Bengal. The population density of zooplankton represents higher values in man-made *bheries* than natural estuarine creeks. In general, there is a tendency of diminishing overall population density of zooplankton with the increase in salinity in the man-made *bheries* systems.

0303-151. Nath A, Verma Prakriti, Chand GB, Sinha Anuja (Cell Bio Toxicol Lab, Dept Zoo, Patna Univ, Patna 800005). **Degenerative changes in the ovarian cells of *Clarias batrachus* due to altered physico chemical parameter of wetlands.** *J Ecophysio Occupl Hlth*, **3**(1&2)(2003), 153-159 [12 Ref].

Various ovarian changes have been encountered in *Clarias batrachus* of a pond near R. N. College, Hazipur (pond B) and compared with the fish of Mithapur Fisheries Research Institute, Patna (pond A) which is free from any anthropogenic pollution. A comparative study of various physico-chemical parameter of both the ponds have clearly shown the altered physico-chemical condition of pond (B). The abnormalities observed have been correlated with the low level of Ca^{++} and DO and enhanced level of BOD, COD and SO_4 .

0303-152. Piska Ravishankar, Venkateshwar C (Dept Zoo, Univ Coll Sci, Osmania Univ, Hyderabad 500007). **Cyanobacterial blooms and their effect on tilapia, *Oreochromis mossambicus*.** *Polln Res*, **22**(3)(2003), 447-449 [14 Ref].

Study deals with the formation of cyanobacterial blooms in eutrophicated waterbodies and their effect on tilapia, *Oreochromis mossambicus*. The size of the waterbody has

no impact on incidence of cyanobacterial blooming. The bioassay experiments on tilapia indicate that fish death occurs in between 18-20 hours after toxin administration. The fish died due to respiratory failure, liver damage and haemorrhages, which indicates neurotoxic and hepatotoxic nature of toxins.

0303-153. Prasad Bijay Bhusan, Singh RB (Aquatotoxicol Lab, SNS Coll, Motihari 845401, Bihar). **Composition abundance and distribution of phytoplankton and zoobenthos in a tropical water body.** *Nature Env Polln Techno*, **2**(3)(2003), 255-258 [15 Ref].

Among algae, six taxa were pollution tolerant, five moderate to pollution and remaining clear water forms. Zoobenthos showed distinct quantitative variations. Number of zoobenthos increased in the summer months while decreased in the winter months. Different groups of zoobenthos exhibited their distinct peaks in different months of the year.

0303-154. Prasad NV (Dept Zoo, Andhra Univ, Visakhapatnam 530003, AP). **Composition and abundance of meroplankton in Coringa mangrove ecosystem, Kakinada, Andhra Pradesh with special reference to aquaculture.** *J Aquat Bio*, **18**(1)(2003), 29-34 [30 Ref].

During the period of investigation on hydrographical and planktonological studies, the meroplanktonic population were encountered in considerable numbers throughout the year. The highly fluctuating hydrographical parameters and tidal circulation play an important role in maintaining the endemic population of these larvae. The post larvae of prawn and crabs shows direct relationship with the abundance of phytoplankton and detritus.

0303-155. Pulle JS, Khan AM (Dept Chem, SGB Coll, Purna, Jn.). **Phytoplanktonic study of Isapur dam water.** *Eco Env Conserv*, **9**(3)(2003), 403-406 [15 Ref].

Paper deals with the study of the seasonal changes in phytoplankton population in Isapur dam. Qualitative and quantitative analysis of phytoplanktons were carried out. Forty three phytoplankton species were recorded out of which the chlorophyceae was represented by 18 species, bacillariophyceae by 10, cyanophyceae by 10 and euglenophyceae by five.

0303-156. Ratha SK, Naik K, Padhi SB (Algal Res Lab, Dept Bot, Berhampur Univ, Berhampur 760007). **Epiphytic algal diversity associated with different aquatic macrophytes of freshwater ponds in and around Berhampur University campus, Orissa.** *Nature Env Polln Techno*, **2**(2)(2003), 205-208 [8 Ref].

The study to search for epiphytic algal diversity associated with aquatic plants from 10 different sites in and around the Berhampur University campus revealed the strong potential epiphytic association in spite of the unfavourable ecological conditions. However, significantly greater number of blue green algae (BGA) with a very marked degree of adaptation to the condition of an aquatic environment have been reported.

0303-157. Raut Narayana S, Pejaver Madhuri K (Dept Zoo, BN Bandodkar Coll Sci, Thane 400601, Maharashtra). **Study on biodiversity of some macrophyte infested lakes from Thane city, Maharashtra.** *Nature Env Polln Techno*, **2**(3)(2003), 277-281 [15 Ref].

The three lakes studied showed abundance of three different species of macrophytes namely *Lemna minor*, *Pistia stratiotes* and *Eichhornia crassipes*. Similarly, from total 35 species of phytoplankton observed, 19 were common to uninfested and infested lakes but 16 species were seen only in infested lakes and 12 only in uninfested lakes. Similarly, among the zooplanktons rotifers, which are considered the pollution indicators, 10 species were found in infested lakes out of which 4 were common to infested and uninfested lakes, proving the change in biodiversity.

0303-158. Reddi EUB (Dept Environ Sci, Andhra Univ, Visakhapatnam 530003). **A study on impact of hinterland farm practices on Coringa mangroves with some eco-economic and sustainable solutions.** *Eco Env Conserv*, **9**(3)(2003), 249-251 [4 Ref].

To identify reasons for the degradation of Coringa mangrove ecosystem, the impacts of changed land use pattern, such as cropping composition in the agriculture and the consequential imbalances and acute shortages in the societal basic resources base viz., fodder, fuel wood and timber in the hinterland area, over mangroves are analysed and some eco-economic and sustainable solutions are offered.

0303-159. Salaskar PB, Yeragi SG (Maharashtra State Angling Assoc, Powai Lake, Powai, Mumbai). **Seasonal fluctuations of plankton population correlated with physico-chemical factors in Powai lake, Mumbai, Maharashtra.** *J Aquat Bio*, **18**(1)(2003), 19-22 [33 Ref].

Limnological survey of Powai lake, Mumbai was undertaken to investigate the various changes in its hydrobiological features during the pre-monsoon, monsoon and post-monsoon seasons and co-related the same with the plankton productivity. The present investigation showed an inverse relationship between pH and free carbon dioxide content, which also appeared to be seasonal. There was also a direct relationship between dissolved oxygen and phytoplankton bloom.

0303-160. Sedamkar Eshwarlal, Angadi SB (Phyco Lab, Dept Bot, Gulbarga Univ, Gulbarga 585106, Karnataka). **Physico-chemical parameters of two fresh waterbodies of Gulbarga-India, with special reference to phytoplankton.** *Polln Res*, **22**(3)(2003), 411-422 [19 Ref].

The physico-chemical parameters with special references to phytoplanktons in two standing fresh waterbodies of Gulbarga were investigated. The observations indicate that high levels of physico-chemical parameters influence the growth of phytoplanktonic groups in Jagat tank. While comparatively low productivity was noticed in mesotrophic Pala tank due to lesser quantity of nutrients. The correlation and inter-correlation among the physico-chemical parameters and phytoplanktonic groups have also been made.

0303-161. Sinha Bikramjit, Islam MR (Eco Lab, Dept Zoo, Cotton Coll, Guwahati 781001, Assam). **Seasonal variation in zooplankton population of two lentic bodies at Assam State Zoo cum Botanical Garden, Guwahati, Assam.** *Eco Env Conserv*, **9**(3)(2003), 391-397 [18 Ref].

Paper presents the result of study on seasonal variation in composition and abundance of zooplankton in relation to temperature and transparency of one fenced and another open pond of Assam State Zoo cum Botanical Garden, Guwahati. The results revealed that the fenced pond is less diverse but more dense than the latter. Both the ponds recorded higher density during autumn. The possible role of temperature and transparency in controlling the zooplankton dynamics is outlined.

0303-162. Sinha RK, Sharma G (Environ Bio Lab, Dept Zoo, Patna Univ, Patna 800005). **Faunal diversity of the river Sarda, Uttar Pradesh, India.** *J Ecophysio Occupl Hlth*, **3**(1&2)(2003), 103-116 [25 Ref].

A survey was conducted in the River Sarda between Sardanagar and Palia to assess the status of faunal diversity of the river during low water season. A total of 33 species of zooplankton were recorded during the survey. Besides, 55 species of fishes, a very rich and diversified turtle fauna (8 species), 44 species of avifauna were recorded during the survey.

0303-163. Suma KP, Joy CM (Dept Bot, SNM Coll, Moliankara 683516, Kerala). **Hydrobiological studies on mangrove flora and associated algae in Vypeen, Kerala.** *Nature Env Polln Techno*, **2**(3)(2003), 269-272 [15 Ref].

Work deals with the distribution and abundance of the mangrove vegetation and mangrove algae at Vypeen (Kerala), under varying hydrographic conditions. The distribution of these species is related to the salinity, pH and tidal action. The study

revealed that the mangrove rhizosphere algae were mainly composed of blue greens. The main reason for this may be eutrophication and warmer climate.