

Theme 12: Energy, Ecology and Environment, Environmental Education

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**TROPHIC MODELING OF A RESERVOIR ECOSYSTEM TO ASSESS
THE IMPACT OF MANAGEMENT MEASURES**

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Most of the Indian reservoirs produce fish much below their potential and majority of them are stocked with fish seeds as a part of management strategy. The resilience of Ravishankarsagar reservoir was carried out to assess the effects of management practices by using trophic modelling. This reservoir located in Chhattisgarh state of India was constructed mainly for irrigation and hydel purpose. The reservoir was stocked with Indian major carps at a rate of 195 No./ha as a routine management practice. This stocking had only a limited impact on the catch structure which is biased in favour of predatory catfishes. The model was constructed using 13 ecological groups which included the most dominant catfishes *Mystus* spp. The trophic level of the reservoir varied between 3.63 and 1.0, with the largest values corresponding to aquatic birds, and the carnivorous fishes (other catfishes and snake-heads) acting as top predators upon system resources at lower trophic levels. The mixed trophic impact routine showed that the *Mystus* spp. had a strong negative impact on the planktivorous fishes (minor carps and minnows) but the other catfishes (*Wallago attu* and *Ompok bimaculatus*) had a slight positive impact on the stocked fishes (major carps). All the ecosystem indices indicate that the system is not resilient to perturbations.