

CONSERVATION PLANNING OF SAMBHAR LAKE, RAJASTHAN USING SATELLITE REMOTE SENSING AND GIS

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ABSTRACT

Conservation of natural resources requires in-depth knowledge of area along with relationship between activities, which are responsible for degradation and development. When we talk about planning of conservation activities, there is need for prioritization the conservation activities. The goal of prioritization depends upon the objectives by considering important issues involved. The conservation planning depends upon multiple factors like intensity of problems, needs of local people, availability of funds and the agencies involved in restoration and rehabilitation work. The present study would be utilized for prioritizing the area for conservation planning and evolving a suitable strategy by using the Remote Sensing and Geographic Information System.

The present study for conservation planning of the Sambhar lake uses the satellite remote sensing data of the year 2003 along with inputs from field observations, information collected from various concerned department engaged in developmental works & the local people. The study uses the digital as well as visual classification techniques of satellite imagery and subsequently using priority analysis to attain its objectives in GIS domain.

The analysis of the area reveals that Sambhar lake and its surrounding areas have been in process of degradation for quite some time. The lake water spread has actually reduced considerably. The lake is under tremendous anthropogenic pressure due to wrongful utilization of its resources. Over utilization of lake water for salt making and degradation of agricultural land, natural degradation and waterfowl habitat degradation are the major concern, which is needed to tackle in phase manner.

The study suggests dividing the entire eco-sensitive area into three important priority zones for carrying out conservation planning. The areas, which require immediate attention for conservation, fall into first category. The second category, which is otherwise, an intermediate area between the first and the third may be considered for prioritization after the first prioritization work is over. The land use/land cover classes falling in the third and the outermost zone are recommended for eco-restoration in the final stage. Since salt making processes has a detrimental effect on lake ecosystem, therefore the areas having such activities has been given highest priority for conservation along with salt affected land and dry lake bed, essentially required for waterfowl conservation.

The result derived from this study will be very useful in enacting the laws for protection of the area, which is under serious threats. Further GIS database can be used for periodic monitoring and studying the impacts of the development works and speedy decision-making at the apex level. The planning for conservation activities in sub-catchments of the lake has been initiated by various State Departments based on earlier study for catchment restoration and rehabilitation. The data can be shared by all the implementing agencies to work in coordinated manner to draw suitable action plan.