

GIS Method: Approaches to Define the Neolithic Landscapes and Settlement Choice in South India

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Introduction

On any given landscape, a multitude of environmental features, such as the location of potable water sources, fertile land and critical raw materials, can influence where people choose to settle. An important feature of the Neolithic in India, as elsewhere has been the location and use of ecological settings seldom exploited by the humans in the Pleistocene. In archaeological contexts, the examination of settlement choice becomes even more difficult without the benefit of studying the extant settlement system (Wood 1978). However, these choices are reflected by the settlement patterns and, therefore, are able to be examined and discussed. Settlement pattern is a geographical concept introduced in archaeology by Gordon R. Willey, and he defined the term as "the way in which man disposed himself over the landscape on which he lived" (Willey 1953). With these archaeological phenomena a number of studies have been carried out to study the location of the ancient sites, associated with a particular culture and area. The pioneering work by V. S. Shinde titled "Early Settlements in the Central Tapi Basin" breaks fresh ground in Indian archaeology. His work was inspired by model of zonal pattern, the third level of three levels of settlement pattern studies suggested by Bruce Trigger (1968). The results and findings are followed by a description of several soil maps, which mark the area of attractions for settlements.

The means by which such diverse hypotheses have been explored has been – the visual perusal of simple distribution maps. While such maps are undoubtedly useful, as mechanisms for exploring the full complexity of archaeological record they are often far from satisfactory. Simple plotting of distribution maps can show the spatial location of a series of site but say little about them. These traditional strategies are satisfactory until large volumes of information or complex datasets needs to be examined. In such cases researchers find themselves dealing with hundreds of separate plots or a bewildering array of symbols. Further, problems arise if information outside the artifactual sphere, e.g., environmental factors, such as larger attribute data has to be incorporated. Thus, the actual interpretation of such maps often becomes uncritical and subjective for the information to process. How to make use of the carefully recorded spatial and attribute information recovered by archaeologists – is a dynamic and flexible environment within, to integrate, express, analyse and explore the full range of data, both spatial and non - spatial. A firm platform upon which more sophisticated exploratory and vast quantities of data to be managed is the use of Geographic Information Systems (GIS), with the potential to provide precisely the model to examine site and the possible causes of those patterns (Gillings 2001). This study explores the factors that determined South Indian Neolithic settlement patterns in relation to geographic factors using analytical functions in a GIS.

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