I. INTRODUCTION
Introduction

Throughout the world, an increasing concern is being expressed in environmental issues, especially on tropical deforestation. Although the tropical forests occupy only 7% of the earth’s land surface, they sustain more than half of the planets’ life-forms (Myers, 1984), contain as much as 40% of the carbon stored as terrestrial biomass (Dixon, 1994) and account for 30 to 50% of the terrestrial productivity (Grace et al., 2001). Tropical wet forests are rapidly undergoing clear felling, and either replanted with commercial monocultures or being converted to different land-uses (Parthasarathy, 1999; Jha et al., 2000; Rennolls and Laumonier, 2000).

The loss of tropical forests is recognized as one of the serious environmental and economic problems for many countries in the tropical and subtropical region of the world (Hare et al., 1997). Yet, this awareness has not slowed down the rate of deforestation appreciably. The massive destruction of tropical forests worldwide comes at a tragic time when our knowledge on the organization, functional dynamics, and even the alpha taxonomy of many threatened forests is still rudimentary (Hubbell and Foster, 1983; 1992; Prance et al., 2000). Biologically the most-far-reaching result of tropical forest destruction will be the probable extinction of a number of plant and animal species and many of which are listed as endangered (Richards, 1996).

As the steady decline of tropical forests progresses, the need for accurate information about them becomes more pressing. Focussed basic and applied ecological research has a vital and cost-effective role to play in tropical forest conservation and management.
Ecological changes may be gradual and hence, difficult or impossible to detect without careful monitoring. Better understanding of ecological processes such as spatial and temporal variation in patterns of species distribution requires a large sample, and repeated inventory of the permanent plots, which can provide information crucial for conservation and management (Field and Vazquezyanes, 1993; Phillips, 1996).

Studies on tropical forest tree diversity inventories and ecosystem processes through time have accumulated over the past decades. In recent years, the methodological emphasis in the study of tropical forests has been shifted to large-scale permanent forest plots.

Although, India harbors evergreen forests in the Western Ghats, the Eastern Ghats, the northeast region and in the Andaman and Nicobar Islands, ecological inventory of tree diversity and their population changes in these forests are limited. Especially, large-scale inventory of trees in the evergreen forests is lacking. Hence, the present study was undertaken to make a quantitative inventory of trees, the visually dominated growth-form, in a tropical evergreen forest at Varagalaiaor, Anamalais, Western Ghats.

The prime objectives of this study were:

(i) to assess the diversity, density, basal area and dispersion patterns of trees in a large-scale permanent plot of a tropical evergreen forest and

(ii) to determine short-term population changes in tree communities within the plot, two years after the initial inventory.