INTRODUCTION
The interest of man in forests goes back to his own origin and history. From stone stage to modern atomic age, there has been a drastic change in the demands of man from the forests ranging from food and shelter to timber fuel, medicines pulp and variety of other products. A sudden explosion in human population and multifauna needs of men have put the existence of forests in danger. Majority of original forests have been reduced to secondary forests with low productivity and extent of wild area is also decreased significantly.

Man became a little independent of forest resource with the early evolution of agriculture. Later; rapid explosion of human population remained responsible for conversion of forest land into cultivated fields, resulting in a complete change in the face of the biosphere. During the nineteenth and twentieth Centuries. In the tropical regions of India forests are being destroyed, indiscriminately because of speedy development of industries in recent years. Its large scale demands for forest raw materials may result in a condition of an extinction of natural forests from large areas.

Realization of this fact has led to a necessity of understanding the forest on a scientific basis. Earlier a number of ecological studies were carried out in different forests of the world, which cover a wide range of problems, but these remained fragmentary and covering aspects like structure and composition of forests, regeneration of certain tree species, nature of succession and climate and influence of edaphic and other factors on forest growth.
Whittaker (1961) considered forests as structural and functional units of ecosystem in which several functional units of ecosystem exist and in which several organisms are linked together carrying out two main-functions i.e. energy flow and cycling of minerals. A detailed study of the forest ecosystem necessarily involves a multidisciplinary approach and a coordinated effort of the research workers of various fields. Obviously forests are an important source of minor as well as major forest products and are next to agriculture in their need of studying regeneration and silviculture of economically important tree species and floral and faunal diversity.

The present investigation was undertaken to study the ecology of protected and some unprotected forest areas in Sagar District (M.P.) with special emphasis on the fauna diversity of these forest areas.

An examination of the forest map of Sagar and the study area, compels one to infer that the entire land surface might have remained covered with forest vegetation a few centuries ago, However, clearing of forests into agricultural fields resulted in fragmentation into patches and these are now surrounded by grassland, agricultural fields. Waste lands and villages, some of these forests are deficient in regeneration and yield of forests products. These forests have been investigated by a number of workers. Same notable contributions on these forests are by Mishra and Joshi (1952), Bhatia (1954, 1958), Saksena (1955), Bhatnagar (1968), and Rathore (1968).
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The functional aspect of local forests as been studied by Kandya (1974), and Sodhia (1974), Dakwale (1975) has studied mineral circulation in grassland ecosystem of Sagar and various forest tree species along with under and above ground biomass. Johri (1977) studied mineral circulation in same forest trees of Sagar with special reference to Aegle marmelos, Anogeissus latifolia, Butea monosperma, Diospyros melanoxylon, Lanne coromandelica and Terminalia tomentosa.

Nayak (1977) carried out a similar type of study in detail on Tectona grandis, Joseph (1977) observed natural decomposition of litter of forest trees by the soil microorganisms, along with phenological events of the trees at Gopalpura forest of Sagar range. Yadav (1978) has studied stem flow through fall and precipitation in dry deciduous forest of Sagar.

Biodiversity:

Dense forests provide habitat for many different animal species. Scientists have however still not understood how the divers of genes, genotypes, species and communities influences ecosystem “function”. Over the past 100 years, geneticists, taxonomists, evolutionists, and ecologists have accumulated much knowledge about diversity. The information gathered attests to the importance of diversity for the proper functioning of many organisms and ecosystems. However a comprehensive, rigorous, and general theory of biodiversity is lacking. Because the threat to biological diversity is now great, scientist must
learn how living systems are influenced by changes in diversity. Given the rapid pace of landscape transformation Worldwide, there is some urgency in obtaining this information, knowledge of biodiversity is also very important for evaluating the impact of global climatic change.


Species diversity is linked to ecosystem structure and function to the different ways in which organisms and population interact with each other, and to those community properties that emerge from these interactions.

Many scientists believe that species diversity is essential for the proper functioning of communities and for the emergence of community level properties.

This is a very old question in ecology, and two apposing views exist, one view is that a community is formed by the species that happened to arrive first-that the mix of species in a community is matter of change. "The vegetation of an area is merely the resultant of two factors the fluctuating and fortuitous immigration of plants, and an equally fluctuating and variable environment". "According to the opposing view". In any fairly limited area, only a fraction of the forms that could theoretically do so actually form a community at any one time. The community really is an organized community in that it has limited membership.

Biodiversity research and conservation figured prominently in the agenda for the 1992 united Nations conference on environment and
development in Rio de Janeiro, Brazil, where conference planners are seeking a substantial increase in financial support for research in biodiversity. It is imperative that biologists and the public learn more about the importance of biodiversity and its role in ecosystem functions, only an international collaborative effort that is supported by adequate resources can accomplish this task. Increased public awareness of the serious implications depletory of biodiversity before its importance is understood is helping to create a climate that may stimulate governments to support national efforts in this field.

The importance of biological diversity as a developing futuristic economic resource of great potential hardly needs to be emphasized. For any one nation in the world, India has perhaps the largest array of environmental situation of her tropical location, varied physical features and climatic types. We thus have the widest variety of biomes, an attribute further enhanced by the meeting of three major biogeographic realms namely Indo-Malayan (the richest in the world) Paleo-Arctic. (Eurasian) and the Afrotropical, in our domains. India owes its unique biodiversity to this unmatched interspersion of biogeographic and environmental values.

Along side these very rich natural attributes our equally unique diversity of land cultures and life styles accounts for an equally rich areas of crop plants and domestic animals. Thus both our natural and domesticated sectors of biodiversity are our national wealth.
However, like all developing countries we are also caught in a vicious cycle of mounting pressures on our shrinking and degrading pressures on our shrinking and degrading natural areas and transforming landscapes, with serious concomitant devastating threats to our biodiversity in both the sectors. In the inhabited areas within the forested, or for that matter, any other type of wilderness region, the loss of biodiversity, of plants and animals by phasing out the primitive cultivars land races is compounded by a marching attrition of land productivity itself from abuse and overuse.

**Ecology and wild life habitat:**

The word ecology is of recent coinage having been first proposed by German biologist Ernst Hoeckel in 1869. It is derived from the Greek word “Oikos” meaning home and logia meaning the study of etymologically implies a study of organisms at home. The broad considerations of ecology are the organism, their homes and the relationships existing between them (Oosting, 1956). The distinction and special function of ecology is to use any such information about organism or environment and to integrate it for greater understanding and interpretation of the relationship between organism and environment is in conceivable since living things have certain requirement that must be satisfied by their surrounding for their sustenance. Thus the environment is the key word and etymologically implies. Surroundings and can be analysed into a number of factors, such as climatic edaphic and biotic (Dubenmire, 1959). These factors
may be studied or measured in terms of their interacting effects upon organism and each other.

The place where an organism or a community of organism lives is its habitat. This term implies a particular set of environment conditions and therefore, is generally used in a more concentrate sense than environment.

The term habitat has wide applicability but in the present content it is used to mean the living space for an organism. The living space or the environment around the organism comprises of abiotic and biotic components, certain biotic components also develop ideal living conditions for other forms of biota. In other words the biotic components are mutually related for co-existence. The brightest example of conditions for several plants as well as animal species. The abiotic habitat components of a place are least variable for that place. In other words the abiotic habitat components are static and the biotic components are dynamic. The non variability of abiotic habitat components depends upon their size and density of thickness.

The thick soil is less variable then water and air. The water is a variable part and directly influences both plants and animals.

The organisms and their habitat have intricate relationship. In course of evolution the organism evolved to higher and higher forms, simultaneously their habitats suddenly got changed due to geological catastrophes, have become extinct. Several species have become extinct
in the recent past and many do not enjoy secured position mainly due
to ravage of their habitats.

Generally the organism live in communities. The living
community and non-living environment [consisting of several locality
factors such as climate, attitude, terrain, geology soil etc] function
together as ecosystem. There are several types of ecosystems depending
upon the existence and types of living communities such as aquatic
[Fresh water and marine water] terrestrial [grassland forest]. Thus,
there is a great variety of organisms living in a variety of habitats.

The organisms in an ecosystem are functionally Inter-related and
while completing their life cycle they perform definite function in the
ecosystem. This is referred to as ecological niche 'which means how the
organism transforms.

Ecological studies:

Wild life conservation is an ecological science basically. The
present day concept of wild life management are based on ecological
principles. A sound knowledge of ecological fundamentals is an
essential prerequisite for wild life management. The primary task of
research is to identify the welfare and decimating factors which in turn
affect the wild life populations.

Biology is the study of living things which leads naturally to a
consideration of living things and environment. The study of the
relationship between organism and environment is ecology. Organism
in turn affect the total of physical and biotic condition influencing the responses of organism (Kendeigh, 1961).

Ecology, the study of the inter-relationship between plant, animals and their environment was first recognized by Erhst Haeckele (1889). According to Kendeigh (1961) the simplest and most comprehensive definition is the study of animals and plant in their relation to each other and to their environment, thus ecology is an important division of biology and together with morphology and phytology is an important and interesting approach for understanding life.

In India several ecological studies have been done on productivity of grasslands Billore (1973, 1978), Mishra (1923), Singh (1976); Singh and Mishra (1969), Singh and Yadav (1974), Singh (1977), and Pandeya (1977), A lot of work has been done on the ecology of forestry, Mishra (1961), Bhatnagar (1968), Kandya (1974) etc. Besides this a host of studies on autecology, ecology of special areas such as wetlands, low laying lands etc. and on various aspects of pollution have been done.

In the present study fauna diversity of the following protected forest areas viz. Nauradehi wild life sanctuary and Ramna reserve forest areas and unprotected forest areas of Garpehra, Rahatgarh, Gopalpur, Bandri and Patharia hills have been selected.

The ecology of these forest areas and fauna diversity with special reference to vertebrate fauna has been studied (Amphibian, Reptiles, Birds and Mammals).