

Plinth area of shed	=	58 sq metre (1500 sq. ft.)
Cost of structure	=	Rs. 8055.00 in 1966
Plinth area rate	=	Rs. 57,80/m ² (Rs. 5.37/sq. ft.)

Such structures appropriate for National Parks are available in the following working drawings.

Green glazed houses in timber, electrical transmission posts, and many timber in nail-jointed construction besides being economical and utilitarian fit in well with the panoramic surroundings of Parks, Gardens, Forests, National Parks, Sanctuaries, etc.

THE ROLE, MANAGEMENT AND ECONOMIC FUNCTION OF A NATIONAL PARK WITH SPECIAL REFERENCE TO KAZIRANGA

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SUMMARY

The United States of America is the first country in the world known to have established a national park namely the Yellow Stone National Park in 1872. This was followed by formation of a number of National Parks in Africa and Europe. In India the first National Park namely the Hailey National Park was established in 1935 in the State of Uttar Pradesh. Assam government have now passed the Assam National Park Act 1968 in order to constitute Kaziranga Wild Life Sanctuary into a National Park. Kaziranga noted for its great Indian rhinoceros holds promise to be one of the best centres of tourist's attractions in India. A well-managed national park may serve many useful purposes to the people. Besides being a place of recreation and enjoyment for the visitors it offers fields for ecological study of flora and fauna of a country. Its economic value also is of considerable importance to a developing country. Besides the value obtained from the disposal of the surplus stock of valuable faunal resources of a national park, the economic benefit derived from the foreign tourists in the form of foreign exchange is also of great value.

In an over populated country like India depending on agricultural economy the protection of the national parks presents a difficult task because of the demand for more land and other natural resources from limited forest land for expanding population. Kaziranga National Park has the same problem as it is surrounded by a large agricultural population. Proper education on the value of the national parks to the country as a whole is a pre-requisite to win their co-operation. The main danger to Kaziranga however remains from the rhino poachers. The trade on rhino horn is flourishing in the East Asian countries. The superstition of the magical healing power of rhino horn would need to be banished from the minds of the people of the east if rhino is to be saved from extinction in near future. The world body like the Survival Service Commission of the I. U. C. N. could perhaps take up some work in this line.

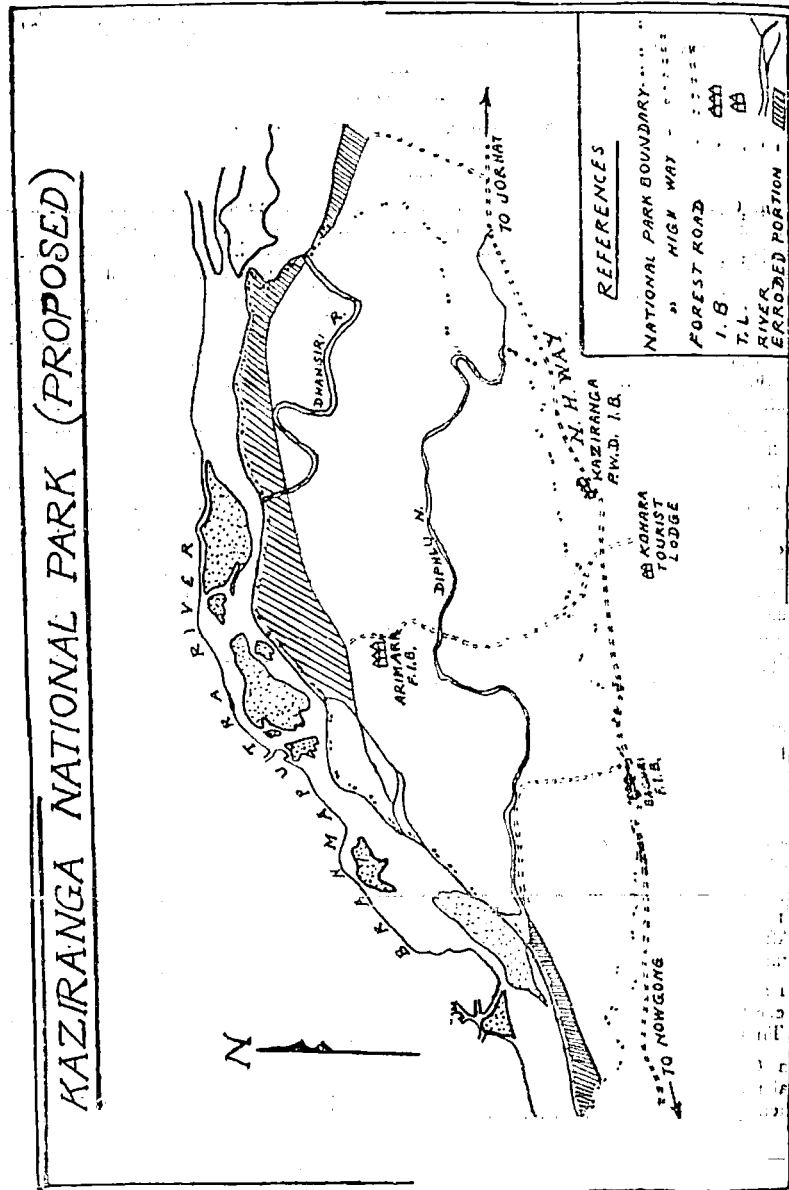
Introduction

The concept of National Park first originated in the United States of America in 1864 when the Congress granted the Yosemite valley near San Francisco to the State of California on condition that it should be held in trust for public use and recreation for all time. The main attraction of this region was its outstanding scenic beauty, and majestic Red wood trees. This was followed by creation of Yellow-stone National Park, also in U.S.A., in 1872 and it was for the first time that official use of the term National Park was introduced.

In Africa the first National Park to be established was the Kruger National Park in South Africa in 1892. This was followed by the Albert National Park in Congo, in 1925. The other major African parks are the Tsavo National Park in Kenya (1948), the Serengeti National Park in Tanzania (1951) and the Queen Elizabeth National Park in Uganda (1952).

In Europe, the Swiss National Park in the Lower Engadine was created in 1914. The Bialowieze Forest in Poland, the home of the rare European Bison, became a National Park in 1947. There are now a number of National Parks all over Europe.

In Canada the oldest park is that of Banff established in 1887. In India the first National Park was constituted in 1935 in Uttar Pradesh and was named Hailey National Park, subsequently named as Corbett National Park.



Need for Establishment of National Park

There have been constant inroads into the natural environment of the world by man. With the population explosion the world's natural resources and environment have often been exploited and misused thereby leading to its ultimate destruction. All over the world this has resulted in barren lands which were once thickly forested. History of any country would give ample evidence of this phenomenon. This gradual destruction of the natural environment has brought about the destruction of many floral and faunal resources of the land. There has been now an awakening all over the world that the natural resources of the world are a heritage which may be enjoyed by the present generations but must also be conserved for the enjoyment of the future generations. While the preservation of game for hunting was known to have existed in the past from the histories of many countries, the idea of large scale conservation for aesthetic, scientific and economic purposes is comparatively recent.

The term National Park connotes different aspects in different countries. In America these are mostly places of outstanding scenic beauty or of natural phenomena. In U.K. these are mostly sites of great natural beauty, of historical and archaeological importance and serve mostly as recreation grounds. In other European countries these are mostly faunal preserves. In India where the idea of national park is of recent origin, the Indian Board of Wild Life has defined it as "An area dedicated by statute for all time to conserve scenery, natural and historical objects of national significance and wild life and where provision is made for the enjoyment of the same by the public". Although India has a number of wild life sanctuaries (the number of the national parks duly constituted are only six at present, i.e., The National Parks of Corbett, the Kanha, the Shivpuri, the Bandhogarh, the Tarora and the Hazaribagh). The seventh National Park will be the Kaziranga in Assam.

India is a vast subcontinent of 1.27 million square miles with more than 500 million people. The floral and faunal resources of the country is of varied nature on account of its wide range of physiographic and climatic conditions. To preserve the various types of natural environment for conservation of its rich heritage of natural resources, a number of national parks scattered over the country would need to be established. But unfortunately the progress in this direction is rather slow. In a country like India where economy is largely based on agriculture, the impact of nature conservation on the rural population is, therefore, of considerable importance. With the present population explosion, the question of setting apart large tracts of areas for the national parks, to the same extent as in Africa or America is, therefore, out of question in this over populated country.

With gradual industrialisation that is coming to the country, a large section of the population would need to be diverted from agriculture to industry if the natural resources of the country are to be preserved for the future generations. With the industrial development, the economy of the country is bound to improve and the standard of living will be raised. But along with the material advance, the people would desire for spiritual and cultural enjoyment in nature's beauty and bounties. In the highly industrialised countries, more and more people are now going to the wilderness of the forest for rest and recreation to make life worth living. There is now, therefore, an awareness in the minds of the administration as well as of the public leader in this country that even against the various odds, the country has to make some progress in the matter of preservation of the floral and faunal resources of the country by creation of the national parks and wild life sanctuaries.

Kaziranga Wild Life Sanctuary

Kaziranga has now been recognised as one of the finest wild life sanctuaries in the South Asia. This is mainly famous for the great Indian rhinoceros (*Rhinoceros unicornis*) which can be seen in considerable numbers within a short time from the elephant back. The other animals usually seen in this sanctuary are wild buffaloes, hog deer, swamp deer, pigs, etc. The wild elephants, tiger, leopard, sambhar, barking deer are also well represented in the sanctuary. The numerous small lakes called "Bheels" or "Beels" locally attract varieties of water birds.

A nesting colony of spotted billed pelicans was first discovered in 1958 inside the sanctuary. This kind of pelicaneries is rather difficult to see in any other sanctuary in the country.

Kaziranga is situated in the grassy plains of the Brahmaputra valley. The area estimated at the time of constitution of the reserved forest to be 165.84 sq. miles (427 sq km). The northern boundary of the sanctuary is formed by the Brahmaputra. Due to annual floods and erosion by the river, the northern boundary of the sanctuary has further receded to the south and as a result the area might be now less than the above estimate. It may be about 150 sq. miles now. It is nearly 25 miles in length along the Brahmaputra river and in width it varies about 1 mile to 8 miles.

Kaziranga was constituted into a reserved forest during 1908 under the Indian Forest Act. This was declared a game sanctuary during 1926. The word "Game" was substituted by "wild life" during 1950. On account of the growing importance of this sanctuary necessary steps have now been taken to declare it as a national park. The necessary legislation has been enacted and the Assam National Park Act 1968 has been passed. Under this act Kaziranga would soon be converted into a National Park. In this act, the object of creation of a National Park has been defined under section 3(1) of the act as follows:—

3(1)—"When it appears to the State Government in respect of an area to be defined under the provisions of section 8 by reason of its floral, faunal, scenic, or other interest or its natural beauty, or its educational, scientific, archaeological, zoological or historical association or importance, that it is desirable to take measures for preserving, protecting and enhancing that beauty or importance of the area and for providing facilities for the enjoyment thereof by persons resorting to it, the State Government may declare by notification in the official gazette their intention to constitute the areas as a National Park".

Census of Wild Life in Kaziranga

Kaziranga was subjected to heavy poaching of rhinos in the past prior to its reservation and as a result the rhino population during 1908 was reported to be about dozen only. A better protection provided to it after it was declared a reserved forest, the rhino population began to grow. The first systematic census of population of rhino and other animals was conducted during 1966 by Mr. J. Juan Spillett with Shri H.K. Nath, the local Divisional Forest Officer with some financial assistance from the World Wild Life Fund. This study revealed the rhino population to be about 400. This shows how the rhino has been redeemed from the verge of extinction. From the above stated census report it is also found that the number of other large mammals are as follows:—

Elephant	375	Hog deer.....	4000-5000
Wild buffaloes.....	550	Sambar.....	300
Swamp deer	250	Wild pig.....	155

Attractions for Tourist

The visitors to Kaziranga are taken on elephant backs and they can invariably see the wild buffaloes, swamp deer, hog deer, pig, etc., grazing together almost side by side. The popularity of Kaziranga has grown from year to year and it has been able to attract tourists from far and near in increasing number as could be seen from the table below:—

Year	Indian	Foreigners	Total
1956-57	631	294	925
1960-61	1738	353	2091
1968-69	5478	628	10106

It is expected that in near future the number of visitors would increase considerably as soon as the present capacity to accommodate tourists in enhanced by building up more tourist lodges and providing more elephant for viewing the park. With the upgrading of the sanctuary to the National Park, the pace of development work is expected to be more rapid and Kaziranga National Park holds promise to be one of the best tourists centre in India.

Role of National Parks

The role of a national park may be manifold. It creates condition for restoration and preservation of the natural environment and thereby helps in survival and rehabilitation of the vanishing flora and fauna of the land. Such a preserve affords fields for scientific study specially on the ecology of plants animals. Such advancement of knowledge in the natural laws may ultimately be utilised for the benefit of the mankind. The national park has often been referred to as 'outdoor laboratory'. An ecological study of the park is, therefore, pre-requisite for its proper management.

By and large a national park is a place for enjoyment and recreation for the general body of population. While in a developing country, this aspect of the role of the national park would need more time to be fully appreciated, people of developed countries crave for such type of enjoyment and recreation, as they have got resources and also can manage time for such indulgence. In the developed countries too much urbanisation following industrial development deprive people of spiritual enjoyment of the nature's bounty. So the national park now created in a developing country would not only serve the people of the country but would attract people from the developed countries.

The national park in a developing country has its great economic value too. In a well managed national park where the ecological balance is maintained, there shall always be some surplus stock of faunal resources for disposal. These would yield considerable revenue to the state exchequer. A rhino from Kaziranga is now sold to a foreign country for 0.1 million rupees equivalent to £ 5555 approximately. The other sources of income from the same are the fees charged to the visitors for viewing wild lives. While the above are the direct financial benefits to the state exchequer the indirect benefits to the country as a whole are considerable. The foreign visitors have to spend a lot of money for their stay in the country in course of their visit to the national park. So, all such spending brings foreign exchange to the country.

National Parks promote tourism in a country. Tourism helps the country's economy considerably, as in the countries like Kenya in East Africa. In the same way many other developing countries in the tropic have great scopes to improve their economy considerably by developing national parks and attracting tourists from the developed countries.

It is however observed that the people living adjacent to a national park have always some grievances against the management of the national park as they often suffer from the depredation of the wild lives to their crops and properties. It is rather difficult to remove their grievances altogether. But their economic lot can be helped by the management of the national park by various ways. This can be done by encouraging the development of local arts and crafts and arranging market for the products to the tourists to the national park. The local cultural shows may add another attraction to the tourists, who would not mind spending some money for such diversions, and thereby helping the economy of the local people.

If the national park is to play its role truly as described above, then its protection and preservation would need to receive the highest consideration at the hands of the administration. In Assam National Park Act 1968, necessary provision has been made to constitute a strong advisory committee where besides the top officials of the Forest and Veterinary and Animal Husbandry Deptts., other non-official wild life conservationists, and a few members of the State Assembly have been associated. This advisory committee will have great responsibilities in the proper management of the park and will have a voice in the matter of policy to be followed and making of rules for management of the park.

A national park should be able to cater to the different needs of the different categories of people. A naturalist visiting a national park would look at things differently from others. While the majority of visitors would normally like to wander about in the park for the sake of thrill and excitement, a naturalist would like to have some quiet corner for scientific study of flora and fauna. So, it is desirable that national park should keep some areas closed to the usual visitors and should try to retain the natural wilderness as much as possible. In this context, it is therefore felt that no attempt should be made to open out the entire area of a national park by making roads to admit visitors. A portion should be kept as much wild as possible. Kaziranga appears to fulfil this position adequately as a large portion of its area is still inaccessible to the visitors. Moreover, the elephant rides as against road drives have put limitation on the number of visitors to be permitted at a time to Kaziranga.

The task of proper control and management of national park in an overpopulated, developing country is rather difficult. Kaziranga presents such an example. Kaziranga is surrounded by a fairly dense rural population. According to 1961 census the density of population near Kaziranga is 207 persons per square mile. These people are entirely dependent on agriculture as there is no industry in this area except a tea estate. While the majority of the population live on agriculture, a section of population live on dairy farming by keeping domestic cattle and buffaloes. Another section live on fishing. Kaziranga being a flat grassy plain with numerous small lakes locally known as 'Beels' or 'Bheels' teeming with fish presents therefore a coveted object to the surrounding population.

Poaching

While the above nature of general difficulties in the preservation of flora and fauna in the national park have to be faced in certain measures, a very potent danger to the wild life contained in it comes from the poachers. In Kaziranga the poaching of rhinos has caused a great deal of concern to the local authority. The number of rhinos poached during the last 3 years are as follows:—

1966	...	6
1967	...	13
1968	...	10

The rhinos are poached for the horn. The value of a rhino horn to a consumer is probably almost equivalent to gold. The highest price obtained in the last departmental auction came up to Rs. 9151.00 per kg. The rhino horn trade is still flourishing although the main consuming country, i.e., China was reported to have banned the use of rhino horn. The price of the rhino horn is so high that its trade will always present an alluring proposition to the anti-social element. The rhino with its bulky body and rather soft skin although apparently looking quite tough presents an easy target for the gun and bullet. The horn again being an epidermal growth resting on the flesh is easily removed by a sharp cut with a big knife. China is still reported to be the main market for rhino horn.

The age old superstition about the medical properties of rhino horn still persists in the east Asian countries. In China it is reported to be a good aphrodisiac. In other East Asian countries the rhino horn is believed to have other medical properties too. It is believed that case child birth of a woman. Water with a small piece of rhino horn soaked in it could be turned into a sort of health giving drink.

The rhino horn is nothing but a conglomeration of compressed hair of Keratin cemented together into a hard compact mass. It is stated that the examination of the horn reported to have been carried out in the Chemical Research laboratories in Basle (Switzerland) has proved that it is devoid of any bio-chemical or hormonal properties. But this has not been able to banish the mysticism of magic touch of rhino horn from the minds of the people of the East and so threat to rhino poaching continues to remain strong. Action to counteract this tendency will have to be taken up very seriously at the highest level if the rhino population of the world is to be saved from extinction. It is a challenge to the world body like the

val Service Commissions of the I.U.C.N. Extensive propaganda by films and literature supported by scientific data to prove the hollowness of the medical properties attributed to rhino horn should go a long way in banishing the superstition from the minds of the people. So the management of Kaziranga National Park would look to this world body for some such steps to enable it to stop the menace of rhino poaching.

In drawing up the management policy of a national park due emphasis needs to be placed on winning the co-operation of the local people. No amount of legislation and enforcement staff can protect a national park if the surrounding population remains apathetic. For this due publicity and public education through the help of people's representatives would be essential. The people will have to be taught to ignore the few disadvantages of restriction imposed on them because of nearness of the national park for the greater benefit to the state and country as a whole. The people should be educated to have a sense of pride in a feeling that they have something at their door-step to attract people from far and abroad. The national park affords an opportunity to the local people to see the people of different countries, and this may help in building up an international fellow feeling. Besides this educative propaganda, the possibilities of taking up some development works for the benefit of the surrounding population of a national park by the national park authority should also be investigated, and such action would appear to be quite fruitful.

For the preservation of wild life in India the constitution of the Kaziranga National Park would perhaps act as a fillip to the other States in India in constituting some more such parks scattered over the country. It is the future generations who would perhaps appreciate such work better and would be grateful to us for preserving one of the nature's heritage for their enjoyment.

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