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SUNDARBANS IS DYING!

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An effective resource management system has to be evolved to save the world's largest mangrove forest that has been declining at an alarming speed over the past 30 years.

THE world's largest mangrove forest is in Bangladesh. True to its name it is one of the most beautiful places on earth. Sprawling over a mudflat of 5770 square kilometres (sq.km.) it is not only the largest forest block (about 40%) of Bangladesh but also a challenge and opportunity for foresters, ecologists, economists, resource managers, conservationists, environmentalists, and a host of other subject specialists. Out of its total area nearly one third i.e. 1820 sq km is river. In the past this forest (mangrove) ecosystem extended far north in Jessore, Khulna and Barisal districts, in addition to 24 Pargana district in West Bengal (India). Large scale deforestation was made by the British during 19th century. The present area is bounded, on the north by a number of small streams (which are silted up) on the east by Baleswar river, on the south by Bay of Bengal and on the west by the Raimangal and Hariabhanga rivers the midstreams of which constitute the international boundary between Bangladesh and India.

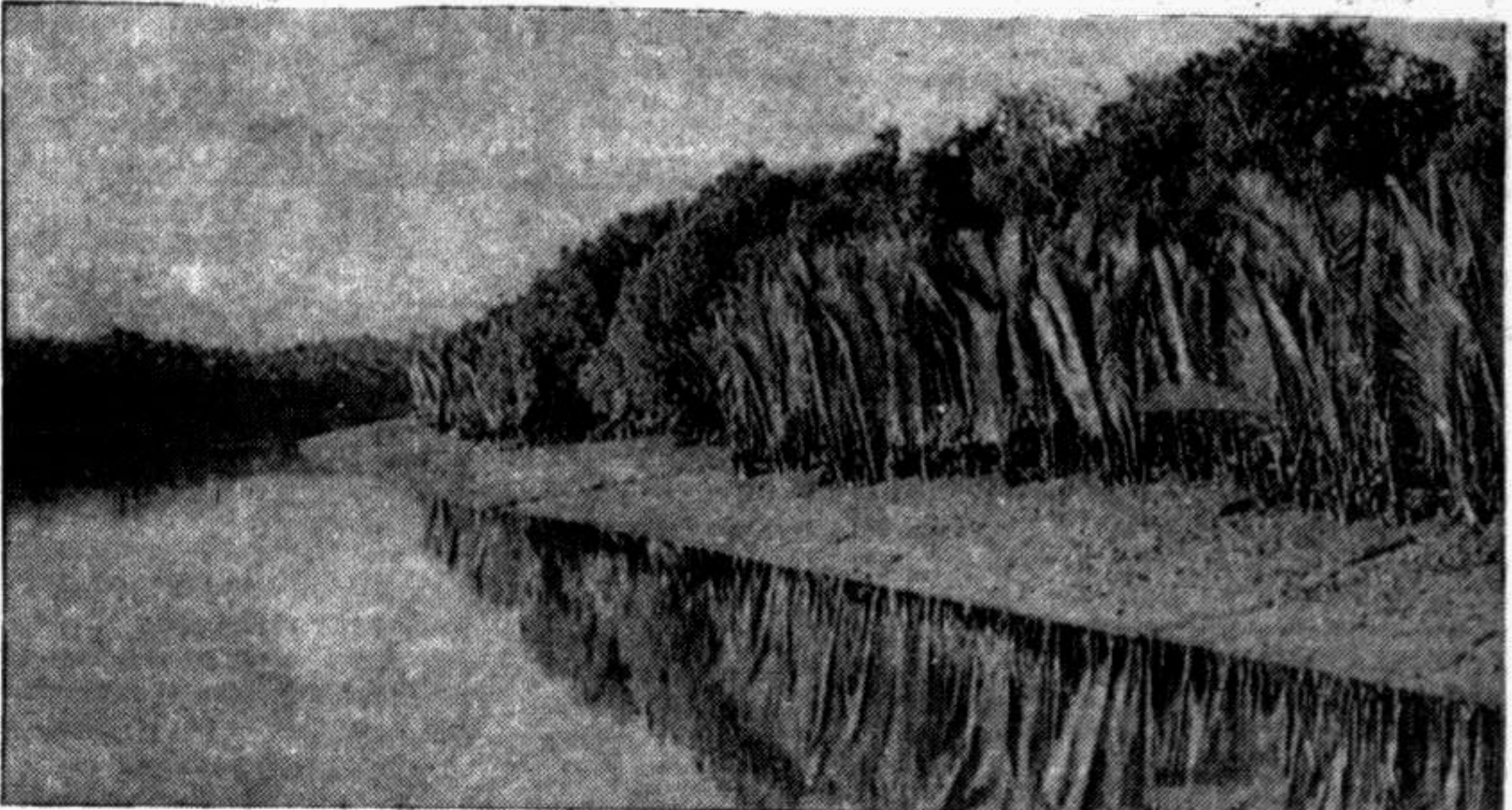
20,000. (6) Estuarine crocodiles (*Crocodylus porosus*)— 100. Snakes (cobra, python, vipers etc.)— 30 species. Birds (including seasonal visitors)— 186 species. Fish— 400 species, and estuarine and marine turtles.

The Status of Mangrove Ecosystem
This collection of flora and fauna have to be viewed as components of a system i.e., the mangrove ecosystem and not as discreet individuals or populations. The mangrove ecosystem grow on the mudflats at this interface of big rivers and the sea. A positive successional regime from grass to big trees is identifiable. The big trees in turn create a microclimate on the forest floor which is conducive for survival, growth and conservation of the

UNESCO and management of Government of Bangladesh. This decision is yet to see the light of the day.

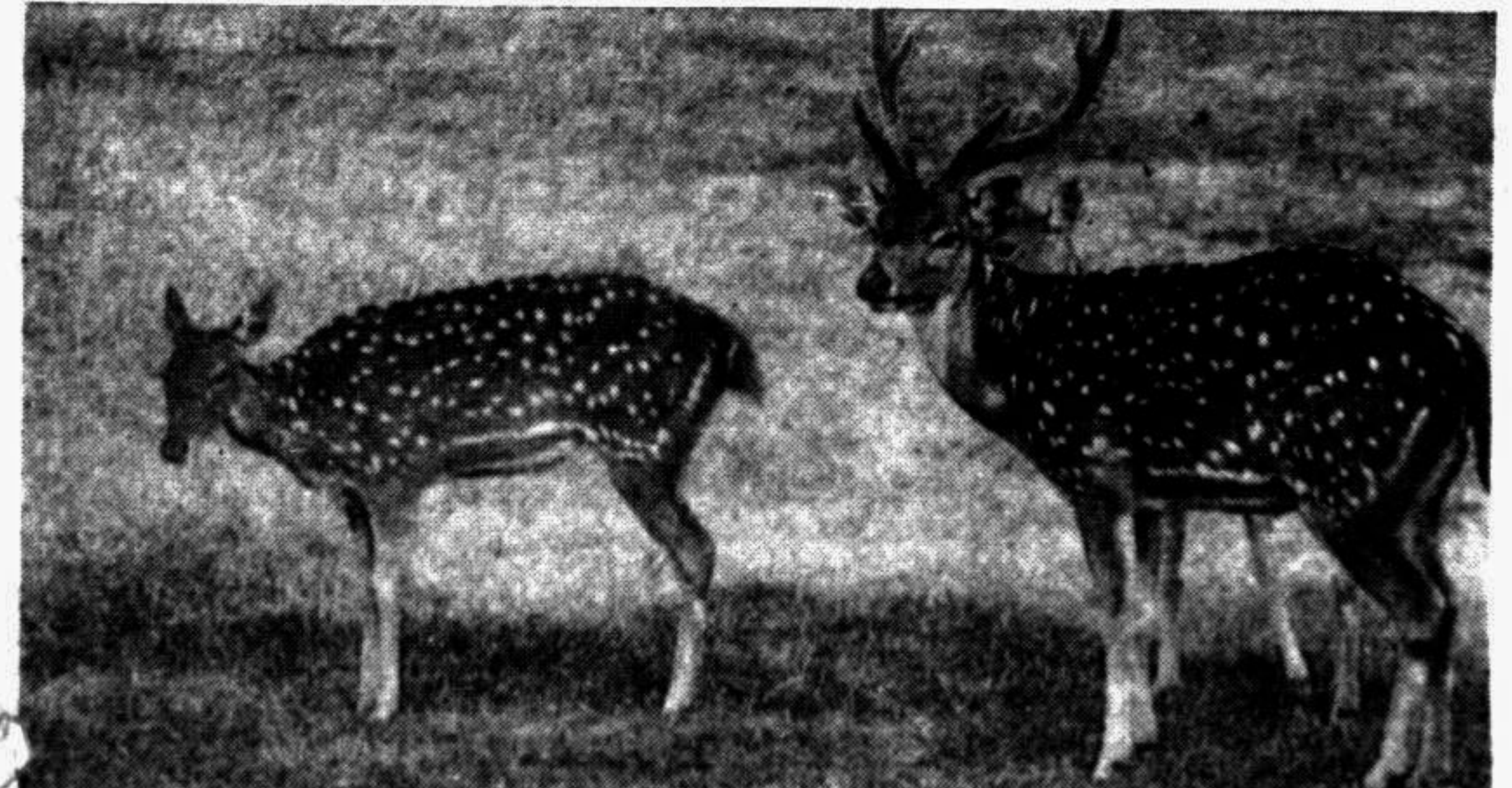
Remedial Measures
It may be asked by many why there should be so much interest in Sundarbans when there are other priority issues awaiting solution. The answer is the Sundarbans is more important than it looks from the point of view of environment, sociology, economics and scientific management. For example, during the last 200 years, the coastal districts (Barisal, Noakhali, Chittagong) have been battered by tropical cyclones 35 times with colossal damage to life and property. But the damage to greater Khulna district which is in the lee of Sundarbans during the same period has been minimal.

proved and their services should be accountable to the nation through the superior administration of government of Bangladesh.
Fourthly, wildlife conservation, tourism and fishery has been given a lip service in the past. These resources must be brought within the purview of conservation i.e., balance in the use of resources. If properly organised Sundarbans can attract terminal tourist trade from all over the world like the national parks and game sanctuaries. A crocodile farm and a herpetarium can be the focus of attraction in the orient.
Lastly, the ageing fleet of launches and river craft need immediate amendment and increase in number in order to cope with large volume of intensive work. Similarly a well-developed infrastructure for supply and maintenance of goods and services to the government personnel, contractors and their labour is an essential pre-requisite for an ideal resource management system, which lie beyond the last outpost of human civilization.



A panoramic view of the Sundarbans.

At this concluding paragraph the writer is strongly of the opinion that management of the Sundarbans with only two graduate foresters is an understaffed organization. Such a large area with peculiarities and specialties of its own require large number of highly qualified personnel working as a team duly supported by a full-fledged Mangrove Research Institute. In the fitness of things it appears that administration, management, conservation and research should be brought under a Senior Officer not below the rank of a full-time Conservator of Forests. The Conservator in turn should be assisted by a retinue of professional graduates specialized in management of renewable resources, conservation specialists (biometric assessors for annual felling and control of felling operations and prescriptions), research in major and minor crop in field and in the proposed research institution, and by other men specialized in marine/mechanical engineering, public relation and miscellaneous linkage effects. It would undoubtedly cost money to introduce such reforms. But additional expenditure through a well-thought-out project will give positive results for economic indices e.g., Benefit: Cost (B.C) ratio, Net Present Value (NPV) and Internal Rate of Return (IRR). This is well supported by Dr Nawajesh Ahamed who has proved that a single tree gives financial and economic benefit of Tk 30 lakh within its lifespan of 40 years (The Daily Star, August 10, 1991).
The author is a Retired Deputy Chief Conservator of Forests.



Spotted deers grazing in a meadow deep inside the forest.

As early as 1903 Dr David Prain listed 198 species of plants in the Sundarbans. The most important of these is Sundari (*Heritiera minor*) which constitute about 77% of the total overwood. The next important species is Gewa (*Excoecaria azallocha*) which account for nearly 20% of tree population. The remaining 3% comprises of Keora (*Sonneratia apetala*), Baen (*Avicennia officinatis*), Goran (*Ceripora Roxburghiana*), Kankra (*Bruguiera gymnorhiza*) and the omnipresent stemless palm *Golpata* (*Nipa frutescens*). In addition there are a large number of ferns, moss, lichens, algae, fungi, bacteria and virus.
The fauna of the Sundarbans is equally rich. These are (1) spotted deers (*Axis axis*)— 80,000. (2) Wild boars (*Sus scrofera*)— 20,000. (3) Royal Bengal Tigers (*Panthera tigris*)— 350 to 450. (4) Rhisus monkey (*Macaca mullatti*)— 4,000. (5) Smooth Indian Otter (*Lutra perspicillata*)—

entire mangrove ecosystem. In this ecosystem every individual acts on its neighbour and associate and is acted upon by its neighbour and associates in a series of nutrition cycles of which man and the carnivores are the end users. The surplus of nutrients and bye products flow to Bay of Bengal and support three rich fishing grounds. By and large the system would be stable within limits of scientific manipulation by man. Unfortunately, however, this stability is being lost during the last 30 years. The world famous mangrove ecosystem of the Sundarbans is manifesting signs of dying incipiently and at places overtly and clearly. The following discussion of dying back of Sundarbans mangrove ecosystem is a positive pointer.
An inventory of the growing stock of the Sundarbans was made in 1958. This investigation revealed the stock position of the main crop as follows:
a. Sundari — 13.04 million cubic metres.

increased. Consequently, it must be concluded that felling has been far in excess of increase, resulting in depletion of the growing stocks i.e., the forest capital. The GOB records of annual felling indicate this situation.
During the last 30 years mature and sub-mature Sundari trees are dying back from top downwards in ever-widening circles. The damage is almost in epidemic proportion and is believed to be caused by diseases. Neither any comprehensive survey has been made to study the extent and cause of damage nor any remedial measure has been undertaken as yet. Only the diseased trees are being removed, which is no solution against the epidemic.
Of late it has been reported that theft of forest produce is rampant all over the Sundarbans, which was unknown in the past. This situation is further confounded due to weak law and regulation, understaffed administrative machinery and outdated logistic support (launches, boats, rivercraft, communication and supply machinery).
At the UNESCO Regional Seminar on Human uses of the Mangrove Environment and Management Implications (Dhaka 1978) it was unanimously decided that a Regional Mangrove Research Institute should be established in Bangladesh under assistance of

Again the Sundarbans has been providing direct employment to about one hundred thousand people during peak working season. This sets a chain of economic activity through transportation, marketing and processing of raw materials in mills and factories. The net benefit reaches to no less than 5 million people in south and south-west and middle of Bangladesh. Lastly, if the forest cover of Sundarbans goes below a critical level the life process and nutrition cycles would be seriously impaired leading to extinction of important species of flora and fauna, as has happened in Chokoria, Sundarbans and Teknaf, Cox's Bazar district (The Daily Star, August 5 and 10, 1991). In order to obviate such a dangerous situation the following suggestions are offered in all humility as concluding remarks, by this retired forester, to whom conservation of forests is an article of a faith.
Firstly, an inventory audit of 1985 inventory should be undertaken to ascertain the population status of important species of trees and the extent of damage due to die back of Sundari. This is to assist future technical policy formulation for Sundarbans.
Secondly, it is of immediate importance to undertake biometric studies to ascertain rate of increment of biomass of important species of trees (flora). Henceforward not more than 75% of the increment should be allowed to be taken out in annual harvest. The balance 25% of increment should be retained for at least 80 years to build up the loss of capital suffered during the last 30 years.
Thirdly, the present staff strength and pattern is obsolete. The staffing has got to be strengthened both in quantity and quality. Young professional graduates and sub-professional supervisors and technicians should be inducted in this forest after intensive training at home and abroad. Their living and working conditions have to be fundamentally im-

General Information

- Area**
Nearly 2400 sq miles or 3600 sq Km
- Forest Limits**
North-Bagerhat, Khulna and Satkhira districts; South-Bay of Bengal; East-Baleswar (or Harin ghata) river, Perajpur, Barisal district, and West-Raimangal and Hariabhanga rivers which partially form Bangladesh boundary with West Bengal in India.
- Main Attractions**
Wild life photography including photography of the famous Royal Bengal Tiger, wild life viewing, boating inside the forest, wild call recordings, nature study, meeting fishermen, woodcutters and honey collectors. Peace and tranquility in the wilderness, seeing the world's largest mangrove forest and the riverine beauty.
- Famous Spots**
Hiron point (Nilkamal) for tiger, deer, monkey, crocodiles, birds and natural beauty.
Katka for deer, tiger, crocodiles, varieties of birds and monkey, morning and evening symphony of wild fowls. Vast expanse of grassy meadows running from Katka to Kachhi-Khali (Tiger Point) provide opportunities for wild tracking.
Tin Kona Island for tiger and deer.
Dublar Char (Island) for fishermen. It is a beautiful island where herds of spotted deer are often seen to graze.
- Means of Communication**
Water transport is the only means of communication for visiting the Sundarbans from Khulna or Mongla Port. Private motor launch, speed boats, country boats as well as mechanised vessel of Mongla Port Authority might be hired for the purpose. From Dhaka visitors may travel by air, road or rocket steamer to Khulna — the gateway to the Sundarbans
- Accommodation Inside the Forest**
Hiron Point : Comfortable three-storied Rest House of the Mongla Port Authority. Prior booking is to be made.
Katka : Forest Department Rest House located here. Prior booking essential.
- Entry Permission**
Prior Permission must be obtained through written application from the Divisional Forest Office, Circuit House Road, Khulna (Phone: 20665, 21173) to visit the Sundarbans. Required entrance fees for visitors, vessel or boat payable at the relevant forest station/range office.
- Guided Tours**
Bangladesh Parjatan Corporation, National Tourism Organization, offers all-inclusive guided package tours from Dhaka to Sundarbans and return during the tourist season (October to March). Group size: Minimum 10 pax.



Tourists on a country boat, used for movement inside Sundarbans.

Most pleasant journey from Dhaka to Khulna is by paddle steamer Rocket presenting a picturesque panorama of rural Bangladesh. Day and night-long coach services by road are also available. The quickest mode is by air from Dhaka to Jessore and then drive to Khulna by road.
Journey Time
It varies depending on tides against or in favour in the river. Usually 6 to 10 hours journey by motor vessel from Mongla to Hiron Point or Katka.
Climate
Climate in the Sundarbans is moderate. Air is humid. Full monsoon is from June to September. The annual rainfall average between 65" and 70". During ebb tide the forest becomes bare by 6-7 feet and at high tide (30 miles an hour) the entire territory of the forest floats on water.
Life in Forest
Only means of transportation inside the forest is boat. There is no road or trail of a path anywhere. The woodcutters make temporary dwellings at the edge of the forest at a height of 8-10 feet for fear of wild animals — others live on boats. In the Chandpai region it is fascinating to see the nomadic fishermen (living with families on boats) catching fish with the help of trained otters. Exciting activities take place in Dublar Char in the forest where fishermen from Chittagong gather for four months (mid Oct. to mid Feb.) to catch and dry fish. But the most daring and exciting of all activities is presented by the honey-collectors who work in groups for just two months (April-May) and it is interesting to see how they locate a hive and then collect honey.
Flora and Fauna
The Sundarbans is endowed by nature with rich flora and fauna. It is a wonderful place to see or to shoot a Royal Bengal Tiger with Camera if one has the time to wait in the forest. There are a good number of tigers in the Sundarbans. Lovely spotted deer are easy to find. Besides there are a wide variety of wild life for which the Sundarbans is so famous.
Visit to the Forest
Permission from the Divisional Forest officer, Khulna is required to visit to the forest. Cholera vaccine is to be taken well in advance. Anti-malarial, anti-diarrhoeal, insect-repellent cream, drinking water, green coconuts, medical kit, light tropical dress, thick rubber soled boots etc. are to be carried with the tourist. It will be wise to take the help of an experienced guide to make the journey fruitful.
Courtesy : BPC.



Forest officers inspecting Sundari trees for the purpose of rural electrification.

DOG-LOVING BRITISH FACE A CRUEL CHOICE

A spate of violence involving dangerous dogs has led the British government to the brink of requiring the destruction of dogs bred for their savagery. This is a serious matter indeed in Britain, a nation of dog lovers besotted with their pets. It could mean that up to 10,000 dogs will have to be killed, although the authorities are hoping to avoid that drastic option.
Some of these 'pets', however, rate as deadly weapons. In the most recent incident a six-year-old girl, Rucksana Khan, was mauled by a pit bull terrier. She is still in hospital, seriously scarred, but at least she her life. Others have not been so lucky.
Not just children and other dogs are at risk. Dangerous dogs are increasingly being used by criminals — in street robberies, to carry drugs and to attack police.
A number of dogs are bred for their ferocity, including the

Mauling by a dog of a small girl has forced Britons — a nation of dog lovers — into facing the fact that some of their canine companions are potential killers. And in fact some of them are specially bred to kill. Gemini News Service reports on the canine crisis facing Britain, and the realisation that killer dogs are now a significant factor in criminal activity. by Ken Hyder
Japanese tosa, which can weigh up to 120 kg. Most vicious of all is the American pit bull terrier.
Police research shows that one pit bull terrier in nine is likely to be involved in a dangerous dog incident each year. That compares with one in 200 rottweilers and one in 300 German shepherds.
And even though rottweilers outnumber pit bulls by 15 to one, pit bull terriers top the list of dangerous dog incidents recorded by Scotland Yard. They account for a quarter of all reported incidents.
Inspector Alan Gerrish, a senior dog handler, says the risk of serious injury is much higher with the pit bull terrier

because it has been specially bred to fight and kill. Its jaws are much more powerful than other breeds.
In London, about 10 dangerous dog incidents are recorded each week, but many more minor incidents take place each day. In all, about a quarter of a million people are bitten each year by some of the country's 7.5 million dogs.
A relatively new development is the increasing number of cases where owners deliberately set their dogs on people. These are often dogs being used in robberies and by drug dealers who put their goods in pouches around dogs' necks. An example of what has been happening occurred in

January when a mounted police constable and his horse were brought down by three Staffordshire bull terriers. Both were injured.
In February a pit bull terrier was deliberately set on a police dog on duty at a football match. The dog handler fought the terrier off twice before grabbing it and pinning it to a tree.
The owner told the policeman: "It's all right — it don't bite people." He was found guilty of criminal damage and cruelty to animals and fined \$200.
In May, at a fair in Kennington, youths harassed police with 30 pit bull terriers, Staffordshire bull terriers, dobermans and rottweilers. A

pit bull set on a police dog and its handler and was later destroyed.
In December a Thamesmead man was charged with wounding after his pit bull terrier bit a policeman following an argument over a bill in a restaurant. The constable was off work for two weeks.
In January, a policeman was bitten while making an arrest during a domestic dispute in Sidcup. The policeman tried to protect himself with a stick but was so badly bitten in the calf that the wound could not be stitched.
In some of the rougher housing estates in London, when police try to make an arrest, crowds appear, including young men who unleash their pit bull terriers or rottweilers.
Police dog handlers are now required to be present at drugs raids to cope with dealers' guard dogs.
When the pit bull terrier first appeared in Britain in 1978, it cost about \$2,000 a

dog. Now the population is estimated at 10,000 and the price has dropped to about \$160 a dog.
Scotland Yard wants the Home Office to beef up the law on dangerous dogs, bringing in a new offence of allowing a dog to be dangerous and not under proper control, covering both private and public places.
They want improved powers to seize, detain and destroy dogs, and courts should be able to make muzzling orders.
Says Inspector Gerrish: "As it is now we have no power to detain a dog which may have bitten someone in the street, unless it has been treated cruelly, or was used in a crime. We can't keep it. If we need it for evidence, we have to photograph it and hand it back."
There is no systematic collection of statistics on dangerous dog attacks in Britain or the United States.