

Feature

Environment

North-West Region Needs Planned Forest Conservation

ENVIRONMENTAL scientists recommend 25 per cent of forest cover to keep the environment appropriate for healthy and sustainable human habitation. In Bangladesh, we have less than nine per cent forest cover. Moreover, the country's small forests are very unevenly distributed and are situated in the eastern and southern region only (Dhaka, Mymensingh, Sylhet, Chittagong, Chittagong Hill Tracts, Khagra, Chhart, Bandarban, Cox's Bazar and Khulna). The north-western Bangladesh practically has no forest cover now. But we know from past accounts that more than 50 per cent of the area was covered with natural vegetation even 100 years ago. At present, the entire northern area of 8542 thousand acres has only 34 thousand acres of forest — a dismal 0.4 per cent — most of which are almost tree-less and encroached upon. For example, of the Barind Tract, which is devoid of substantial tree cover now, almost half the area was covered with Sal forests and thorny jungles only 80 years ago.

In the "Statistical Accounts of Bogra District" Mr W W Hunter (1877) wrote: "There were formerly large forests in this district but they have in most cases been ruthlessly cut down, a few large patches remaining only in the police divisions of Panchbibi and Sherpur. At the same time the country is still fairly wooded, and many valuable forest trees are indigenous to it." About Rajshahi District he wrote: "A large portion of the north-western angle of the district is covered with brush wood." About Rangpur District he mentioned two Sal forests of circumstances of six and eight miles. Mr Hunter also reported, "Sal forests are scattered here and there" in the Dinajpur District. The (Sal) tree found principally along the course of the Karatoya river." He also noted that "Large breadths of pasture lands are scattered throughout the District. A large number of large trees were named to be common in this region: Sal, Bat, Pipul, Pakur, Badam, Jam, Somi, Sonalu, Gab, Kadam, Tetul, Simul, Hariakti, Hijal, and many others. The list of wild animals, fish and birds was very elaborate, rich and includes such animals as tiger, leopard, civet cat, tiger cat, pole cat, wild cat, buffalo, wild hog, large deer, hog deer, jackal, fox, mongoose, alligator, badger, hares etc Major Sherwill reported, "Tigers, leopards and pigs are found all over the district [of Dinajpur]. Buffaloes are common". He further states, "Birds are numerous, and many of the species are very beautiful. Water fowl, snipe, land and wa-

ter rats, peacocks, partridges, quail and plovers, all of which are plentiful, are almost disregarded and made no use of by the native population." The following birds were most popularly known: common wild duck, shoveller, wildgeon, common teal, whistling teal, merganser, Brahman goose, common Indian wild goose, coot, diver, gull, shear water, cormorant, large crane, demoiselle crane, stork, green heron, paddy bird, sand piper, sand-martin, wallers, jackdaw, jay, magpie, wood pecker, kingfisher, water wagtail, hoopoe, skylark, blue and green pigeon, dove, starling, crow, raven, sparrow, kite, vulture osprey, kestrel, sparrow-hawk, eagle, and many others. There is a very long list of fish, reptiles and other animals which were very common at that time. This description

by Dr M I Zuberi

four sites in the Barind, we made a list of 271 species of plants including 43 trees, 41 shrubs, 153 herbs, and 43 climbers (lianas). At least 20 species were identified as endangered from this locality. The list of fish species, threatened by the contraction of river flows, deterioration of ponds, beels and wetlands is even more elaborate and alarming. There is mention of many species in the records of Buchanan-Hamilton and Hunter, which are now completely eliminated. The same is true for wild animals, birds and reptiles.

There are still many species of plants and animals which are represented by a very small number of individuals and need immediate protection before they are eliminated.

forests is currently being emphasized. The Fourth Five Year Plan is said to give special importance on environment protection and conservation of nature. The forest sector included several important programmes with a total allocation of 845 crores but nowhere in the entire chapter, afforestation in the north-western region is mentioned.

The Ministry of Environment and Forest of the Government of Bangladesh and the IUCN had undertaken hectic deliberations to fix "National Conservation Strategy of Bangladesh". A number of background papers were prepared in 1990 by environmental scientists of the country on various sectors on environment and bio-diversity and several seminars were held and a draft report was prepared in July 1991. There

As a result of widespread destruction of nature, we see the northern region most severely effected by annual drought, high fluctuation in temperature, irregular and extreme rainfall variation, extensive soil erosion, soil degradation and nutrient deficiency, low agriculture production, flush floods and widespread poverty.

indicates very rich bio-diversity in nature of this region even less than one hundred years ago.

With the expansion of agriculture and the increase in human population, all these natural forests, jungles and grasslands were destroyed. So has gone the rich bio-diversity associated with it. The workers of the Centre for Environmental Research have been carrying out studies on degradation of environment and erosion of bio-diversity in the region for the last few years. There are no baseline data on the natural resources of the country, so any comparison to determine qualitative and quantitative changes in bio-diversity is difficult. However, taking the description of Rennel, Hunter and Nelson as baseline data, one can get an alarming picture of destruction of natural vegetation cover and erosion of bio-diversity in the region. For example, the valuable 'Sal' tree which was very common in the Dinajpur, Rangpur, Bogra and parts of Rajshahi districts is totally absent from most parts except a handful of protected forests. Other trees which are very difficult to find now are hartaki, bahera, badam, hijal, gab, priahu, keli kadambo, chalta, kanak champa, jarul, sirish, anilaki, rakta chandan, sonalu, palas, asak, chama, and many others. The number of shrubs, herbs, climbers and lianas were numerous and no body knows what is left now. In a very limited pilot survey of

Thus the need of conservation of bio-diversity is of utmost importance to keep our natural resources and part of our culture surviving.

As a result of widespread destruction of nature, we see the northern region most severely effected by annual drought, high fluctuation in temperature, irregular and extreme rainfall variation, extensive soil erosion, soil degradation and nutrient deficiency, low agriculture production, flush floods and widespread poverty. Recent reports by International Union for Conservation of Nature and Natural Resources (IUCN) and Ministry of Environment and Forests (1991) clearly identified the northern Bangladesh, including the Barind Tract, as areas where "evidence of desertification is noticeable in the dry and bare soil conditions... The Barind Tract is considered as an ecologically fragile zone with extremely low vegetation cover. There is practically no tree-cover except in the home-steeds." Many other reports and papers (for example, Report by USAID/WRI, 1990, Papers by: M A Jabber and Associates 1992, Khan F A and Associates, 1988 of SPARRSO) observed a persistent environmental degradation and destruction of bio-diversity in regions of northern Bangladesh.

In view of the continued deforestation and denudation of land and related to destruction of biological diversity, the protection of already existing

were plenty of recommendations and proposals on environment protection, afforestation and conservation of bio-diversity but again no mention of the northern Bangladesh was made.

Proposals for effective management of protected areas (National Park, Wildlife Sanctuary and Game Reserves) covering an area of 1,10,223 hectares were voiced. Out of a total of 12 sites, 11 covering 1,10,173 hectares are in eastern and southern part of the country, only a 'pond', the Ramsagar with an area of 50 hectare was in the northern part. Proposals in writing, were made to include more sites from the Rangpur-Dinajpur forests, the Chalan Beel area and in the Central Barind Tract under protected area at the IUCN - MOEF organised discussion meeting on the First Draft Report but all in vain.

A twenty-year forestry master plan for Bangladesh is currently under preparation with the help of Asian Development Bank, UNDP and Government of Bangladesh. We hear that as part of the ongoing process of 'public consultation' a series of workshops has already been held as well as two national fora. We do not know whether any natural scientists from the various educational institutions, like Rajshahi University were invited any of these.

Any way, let us see the draft copy of the Forestry Master Plan (TA No 1355-BAN, 7 June, 1992). This document

Mayans Protect Belize's Jaguars

by Olga Sheean-Stone

IN Mayan culture, the jaguar's spotted coat represents the stars in the sky from where the animal's spirit surveys the world, like a god.

"This reverence prevents the Mayans from hunting or eating jaguar," said Ernesto Saqui, a Mayan village leader and director of the world's only jaguar reserve. "Instead, we admire its silent agility and stealth in the night, and its opportunistic qualities which make it a leader in the forest world."

This respect and admiration led to the creation of the Cockscomb Basin Wildlife Sanctuary in 1986, which has received substantial funding from WWF since its inception. Located below the Maya Mountain's Cockscomb Range in southern Belize, some 90km from the capital Belmopan, the sanctuary is run exclusively by native Belizeans, with support from the Belize Audubon Society (BAS), as well as WWF. The Cockscomb Sanctuary

contains almost all the major aspects of conservation and identified "Sal forests", as observed there, are the "most critically threatened habitat in the country. They previously supported most of the extinct species." But the report considered only the two already protected Sal forests (Bhawal and Mohupur) as conservation opportunities. Again the teams preparing the draft did not visit any site in the northern Bangladesh — the entire area of Kustia, Jessore, Pabna, Bogra, Rajshahi, Rangpur and Dinajpur were kept out of consideration. The comment on the only protected area, "the Ramsagar National Park" is, "established to protect cultural and historical values, has little value to wildlife or conservation." Here again we see that the entire north-western Bangladesh has no relevance to afforestation, National Park, Wildlife Sanctuary or any other type of conservation activities for future.

the culture that is an effective sand-fly repellent.

Some trees, which have escaped the loggers' axes to tower over the forest canopy, are considered sacred by the Mayans. "Because of their great age and height," says Mr Saqui, "these trees are thought to be able to transmit messages to the 'god of the above,' with whom the Mayans commune in matters relating to infertility and illness."

Although most of Belize's original forest remains intact, the recent influx of refugees from El Salvador and Guatemala is beginning to affect the environment. Traditionally dependent on slash-and-burn agriculture, these migrants are now increasingly seeking employment as unskilled labourers in the lucrative citrus fruit industry.

Citrus can be exported to the US tax-free and fetches high prices. It represents Belize's second-most important export and the industry is growing at an alarming rate. Deforestation of forest reserves has already occurred, leading to accelerated erosion and sedimentation of rivers.

Already, forests on the eastern border of the Cockscomb Basin Wildlife Sanctuary have been felled and replaced with citrus groves. Scientists say that if Cockscomb's forests were to be destroyed, farmers would suffer, and run-off from increased erosion would severely damage Belize's famous barrier reef — the longest in the New World.

And according to Ms Fuller, unless adequate long-term protection is assured for land south and west of the sanctuary, it may soon become a forest island amid a sea of agricultural development.

There are less environmentally damaging alternatives to deforestation, however. Mr Saqui explains that the Mayans in southern Belize have raised citrus within the forests for decades, rather than clearing land for plantation. With appropriate technology, Mr Saqui adds, the Mayan system could be developed on a larger scale to ensure the future survival of important protected areas like the Cockscomb basin Wildlife Sanctuary.

Unfortunately, encroachment by farmers is not the only threat facing the sanctuary. A recent spate of violence has caused concern among wardens and government authorities. Armed intruders, thought to be either immigrant poachers, archaeological looters or marijuana growers, have entered the sanctuary on several occasions, although no tourists or members of the public have encountered any problems.

To combat these problems, special constabulary status has been granted to the three wardens, and two additional guards are being hired with WWF funding. It is hoped that these moves will ensure the safety of sanctuary personnel, and continued protection of the Cockscomb Basin Wildlife Sanctuary. — WWF Features



The Mayans' traditional veneration of the jaguar helped lead to the setting up of Belize's Cockscomb Basin Wildlife Sanctuary, which has the highest population density of jaguars in the world.

We painfully observe that there are seven proposed new protected areas, again all in the east and southern region of the country in the fresh water wetlands and forests of Sylhet, Noakhali, Chittagong, the Chittagong Hill Tracts and the Sunderbans. All this seems to imply that the entire north-western part of the country has nothing to protect or conserve.

The authorities of the Forestry Master Plan Project of Bangladesh and the Ministry of Environment and Forest should ensure participation of natural scientists and experts from northern region of the country to represent this area in the forestry and other planning activities of the country and to select at least 10 sites from this region as protected areas:

Five National Parks in the Sal forests found suitable in the districts of Naogaon (2893 ha. in five thanas), Rangpur, (3195 ha. in seven thanas) and Dinajpur (9538 ha. in 15 thanas) and in the central Barind region and five wildlife sanctuaries in the wetlands of Chalan Beels, wetlands of Chapainawabganj, Jessore and Pabna.

If these protected areas are established and managed as recommend in the Master Plan, the flora and fauna (fish, birds, reptiles) will be protected in this vast and distinctly characteristic agroclimatic region of the country as well as help in the protection of environment of the country.

(Dr M I Zuberi is Professor and Chairman, Department of Botany, University of Rajshahi and Director, Centre for Environmental Research, University of Rajshahi.)

has the highest concentration of jaguars of any area worldwide — around 200 individuals. It also has healthy populations of Baird's tapir, jaguarundi, puma, ocelot, margay and scarlet macaw. These animals are all increasingly rare elsewhere in Central and South America.

The area of the sanctuary has recently been expanded almost 30-fold — from 1,457ha to 41,457ha — following a visit to Belize by WWF-US President, Kathryn Fuller, who urged the Government of Belize to protect the sanctuary from growing pressures for agricultural land. It now represents one of Belize's most important protected areas.

Its main entrance is via the Maya Centre, a small village on the outskirts of the forest. The southern Belize: the South Stann Creek and the Swasey branch of the Monkey River. The rivers stretch over 100km, feeding local communities and providing irrigation for agriculture downstream.

Hundreds of crystal-clear streams and creeks wind their way through the sanctuary, with its majestic hardwood trees. A history of hurricanes and selective logging from 1888 to 1981 has turned the sanctuary into a mosaic of primary and secondary forests, but it still retains a rich repertoire of plants of traditional or medicinal value. One tree species is being used locally with some success in the treatment of malaria; the bark of the "kaway" tree is used for tanning; and oil extracted from

Elephants have a period of "mush" during which they tend to be aggressive and seem not to work, non-pregnant females work year-round.

In some terrains, such as freshwater swamp forests or on very steep hills, elephants are the most cost-efficient means of timber extraction, if not the only means.

The original range of the elephant, the largest land mammal in Asia, extended from the Tigris-Euphrates river systems in the west, across Asia south of the Himalayas, to Indochina and most of southern China in the east. Today, the species is still found in 13 countries: Bangladesh, Bhutan, Myanmar (Burma), Cambodia, China, India, Indonesia (Kalimantan and Sumatra), Laos, Malaysia, Nepal, Sri Lanka, Thailand and Vietnam.

Around the 1900s, there were more than 100,000 elephants in Asia. Today, there are less than half that total now, and shrinking. The reasons are many: indiscriminate hunting, deforestation and slash-and-burn agriculture, and the retaliatory attacks of farmers whose expanding crop lands are frequently devastated by the movements of increasingly hemmed-in elephant populations.

The indiscriminate logging and forest clearance that destroy elephant habitat were the primary cause of the floods that killed hundreds of people in Thailand a few years ago, and led to that country's subsequent ban on logging. In Sumatra, forest clearance in Bengkulu Province was responsible for much of the flash floods in 1988.

— Depthnews Asia

Nuclear Threat Lives on in Arctic Dumping Zone

DECADES of rampant industrialisation and militarisation in the Russian Arctic have destroyed indigenous communities and caused an ecological disaster.

For centuries, Russian and Soviet authorities viewed the northern lands as nothing more than a cornucopia of expensive furs, rare fish, gold, diamonds, nickel, tin and coal.

Native people were considered to be "backward" and were forced into the 20th Century. They were herded into settlements, organised to work on large collective farms and their children were sent away to boarding schools. Now many of the 26 indigenous peoples of the Russian north are on the verge of extinction and some, such as the Ngenasans, have already disappeared.

But over the past few years, the northern peoples have started to take more control of their lives. The Nenets Autonomous Republic has been established and there is a growing movement to prevent the development of new gas and oil fields in the Yamal Peninsula, which are due to begin producing in 1996.

It is feared this development could devastate the region's ecology by causing the permafrost crust to melt. This would deprive Siberia of the climatic buffer which protects it from the extreme Arctic winter and move the taiga, pine-forest between tundra and steppe, hundreds of kilometres further south, thereby destroying farmland.

Centuries of Russian exploitation, followed by 70 years of enforced Soviet-style development, have taken their toll on Chukotka. This region was the centre of a development gold rush in the 1960s and the immigrants soon outnumbered the natives, ten to one.

Now the Chukchi cannot hunt for their food and must eat the Russian staples — potatoes and bread. They are also dependent on scarce medicines to combat the infections they catch through contact with the immigrants. And the Chukchi are turning to alcohol, which is always available, for solace because their traditional way of life has been destroyed.

This region has a radiation level twice the average for the former Soviet Union, due to

by Judith Perera

For decades the Russian Arctic have been a nuclear garbage dump. The region has a radiation level twice the average for the former USSR. The island of Novaya Zemlya was used for nuclear testing by Soviet scientists and nuclear waste has been dumped off its coast. Now, reports Gemini News Service, local people are demanding a clean-up.



43. The average life expectancy of their Alaskan counterparts is 71.

High radiation levels are also a concern in the Archangelsk region. The island of Novaya Zemlya was used for nuclear testing by the former Soviet Union and nuclear waste has been dumped off its coast. Also, nuclear-powered ships are built and repaired in the city of Severodvinsk.

"All of these are potentially dangerous and we will have to tackle them in the future," says Victor Kuznetsov, Deputy Head of the Ecology Committee in Archangelsk. "Already fears about this are causing social tension."

Atmospheric tests were conducted on Novaya Zemlya until 30 years ago, explains Anatoli Tkachev, Director of the Institute of Physiology of the Russian Academy of Sciences in Archangelsk. Since then, many underground tests have been conducted. There is also a greater likelihood that more testing will be conducted in the Arctic following the closure of the Semipalatinsk test site.

Tkachev says: "Research is needed to discover the extent of contamination in order to be able to forecast the long term consequences on health and to make provision for any long-term compensation."

"Some central government research has been done, but this is inadequate because it did not take into account the special conditions and peculiarities of the North."

The new research plan already has the support of the Archangelsk local authorities and is expected to receive further support from the neigh-

bouring Nenets Autonomous Region. It will involve studies to identify congenital abnormalities, effects on the immune system and chromosome damage among children. It will also involve re-analysis of statistics and epidemiological data from several years ago.

Fish and other aquatic animals have also been affected by radioactive pollution. In 1991 Andrei Zolotkov, a deputy for the Murmansk region, released KGB documents confirming that nuclear waste had been routinely dumped in the northern seas between 1964 and 1986.

According to scientists at the Northern Polar Institute in Archangelsk, seals in the White Sea and Barents Sea are dying of leukaemia. Autopsies have revealed that they were exposed to radioactive and other toxic substances.

Conventional military activity has also contaminated the Arctic. An increasing number of rockets are being launched from the cosmodrome at Plesetsk. The first stages of the rockets fall into the Vash lakes, and the toxic fuel they contain kills the fish.

The Arctic oceans have also been used as dumping grounds for old chemical weapons. In 1990, leaking mustard gas weapons are thought to have been responsible for the death of six million starfish, thousands of crabs, 30 seals and 10 beluga whales in the White Sea.

Waste products from the nickel plants have wreaked havoc on nearby forests. There are 3,700 hectares of dead trees around Monchegorsk and 700 hectares of dead trees around Nikel. Another 13,000 hectares are visibly damaged and 130,000 hectares are seriously affected.

The environmental and social problems facing the Arctic peoples, both indigenous and immigrant communities, are daunting. The new Russian government and local officials are just beginning to discover the full extent of the devastation wrought by 70 years of ill-considered development.

— Gemini News

Elephants Less Brutal than Logging Machines

IT is the jungle's four-wheel drive vehicle. And elephants could very well play a big part in forest protection.

Two scientists believe the elephant could be tapped as a less brutal way in cutting down forest trees. Charles Santipallil, senior officer with the World Wide Fund for Nature (WWF) in Indonesia and Widodo Sukohadi Ramono, chief of the Species Conservation Directorate of Forest Protection and Nature Conservation here in Bogor say that the elephant should be tapped in forest conservation.

"Domesticated elephants have been used, in war and peace, all over Asia," they write in a position paper. "In Assam, in northeast India, elephants were put to work plowing farmland and pounding rice. Everywhere in the region, they were the backbone of the timber industry and today, in Burma, more than 5,000 trained elephants are still used in logging teak."

The authors contend it is in logging that elephants could be most useful today, compared with wasteful mechanical logging. The elephant, used selectively for logging operations in sensitive areas, could be the basis for a comparatively being, much less destructive mode of resource extraction," they observe.

Among the elephants' advantages:

- A fully trained elephant is a lifetime investment. In Thailand, it costs US\$6,000 to US\$10,000 to buy a 20-year-old timber elephant, whose working life after purchase may continue another 30 years. In contrast, a crawler tractor costs US\$100,000 to US\$140,000, with a working life of only six years requiring

a continuous supply of air-polluting diesel fuel."

- Using elephants does not require construction of the expensive logging roads needed to permit the entry of heavy machinery. "Such roads not only destroy a great deal of forest growth by itself, but open the interior to slash-and-burn farmers and poachers, who often follow loggers and level whatever forest growth remains after the prime timber has been cut. Elephant-based logging eliminates this danger."
- Unlike machinery, elephants do not rust, corrode or pollute the environment. They don't need expensive spare parts. Elephant dung acts as fertilizer as well as an agent of seed dispersal in the forest, automatically reforesting even as they remove trees.
- The elephants' staple foods include grass and bamboo, which are part of forest undergrowth. Elephant feeding thins the undergrowth and enhances germination and growth of many tree seeds, thus fostering reforestation.
- Elephants cause less damage to the land than heavy machinery, whose wheel and tread cuts create erosion channels and whose weight causes soil compaction.
- Trained elephants can work throughout the year under any weather conditions, even in rain and mud that stop machines. Though bull ele-

phants have a period of "mush" during which they tend to be aggressive and seem not to work, non-pregnant females work year-round.

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— Depthnews Asia