Drowning in a shrinking gene pool
Most tiger populations consist of fewer than 100 individuals and only about 40 per cent of them constitute the breeding population. Inbreeding is the inevitable result, with father/daughter and mother/son matings recorded. Loss of genetic diversity in tiger populations has been shown to lead to decreased litter sizes, lowered cub survival and diminished male fertility.

Traditional practices
It is important to understand that the human threat to the tiger is by no means recent. For example, the hunting ritual of Akhand Shikar is an important event among the people of Orissa in western India. In April and May of each year they make offerings to the deity of the Simlipal mountains and then embark on an orgy of hunting, burning down forests to flush out and kill as many animals as possible.

This ancient practice ends in joyous celebration but it brings no joy to one of India's finest tiger habitats, the Simlipal Reserve. In this stretch of forested hills live 90 tigers, whose existence is perilous so long as Akhand Shikar threatens the tiger and its prey. In the past such a practice was sustainable, but with the other pressures on the tiger it is one more threat the species may not be able to bear. Education programs are accordingly underway and Akhand Shikar alternatives are being sought.

An eye to the future

Ecodevelopment
Saving the tiger in the modern world cannot be addressed without an eye to economic viability. In many instances it is economic pressures that drive people to kill the tiger. Hence, there is a drive for what has been termed 'ecodevelopment', an approach that links environmental protection to sustainable economic development.

Environmental groups, as well as global organisations like the World Bank Group (via the Global Environmental Facility), advocate this approach. Planning is targeted at communities living within, and adjacent to, protected areas and involves development of alternative livelihoods, conservation agreements, joint forest management, education and conservation awareness building.

Nagarjunsagar-Srisailam is the largest tiger reserve in India, covering 3600 square kilometres. The area had been overexploited by the Chenchu people and their cattle so that in 1978 there were just 43 tigers present. Under Project Tiger, Forest Department staff moved in and gradually the tiger numbers increased to 94 by 1989. Unfortunately, the Chenchu felt Project Tiger stopped them using the forests and began poisoning the tigers. By 1995 there were just 35 tigers left.

At this point a program of ecodevelopment was initiated by a local conservation agent. Communication was a first step that subsequently saw the villagers help develop a scheme to conserve water, soil and forests while earning a living.

At Dokkuthanda village, where water shortages were a recurring problem, the construction of dams transformed the area. Three crops a year are now harvested and the villagers have stopped using wood for construction. Instead of a few forest guards, more than 10,000 villagers protect the reserve. Villagers who were barely earning 500 rupees (US$12) a month, now earn 2000 rupees (US$48). This is classic ecodevelopment, whereby people, the land and animals thrive.

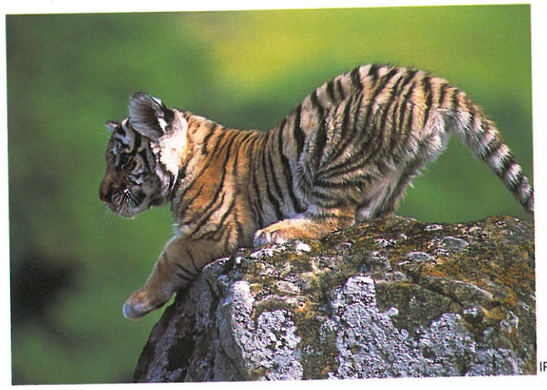
Habitat preservation
An immense amount of work has been carried out by the WWF to identify 159 tiger habitat areas, which have been ranked in order of importance. The top 25 ranked areas are considered to be those places where the tiger stands the best chance of surviving naturally in the wild. This allows for prioritisation of resources and action.

Working with TCM
Ecodevelopment can help reduce the need for poaching, but as long as there is a demand for tiger products, there are likely to be those willing to satisfy the need. In 1998 surveys revealed that half of the retail outlets in Chinese districts of major cities in the USA sold medicines labelled as tiger parts. Thus, considerable discussion and education is required.

In October/November 1999 a symposium was held in Beijing which brought together TCM practitioners, international wildlife experts and government officials. The title of the conference was 'Healthy People, Healthy Planet: An International Conference on Traditional Chinese Medicine and Wildlife Conservation'. Out of the discussions came agreement to work together to tackle the threat to endangered species.

Government action

Throughout regions inhabited by the tiger, governments are showing a willingness to work with conservation groups to achieve tiger preservation. In Bangladesh action is being taken to protect one of the world's largest remaining populations of Bengal tigers, numbering approximately 350. The Bhutan government is acting to protect a smaller group of 80 Bengal tigers in the Himalayan foothills by training wildlife conservation staff, increasing funding and strengthening anti-poaching measures. Similar projects are underway in Cambodia, India, Indonesia, Malaysia, Nepal and Russia.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Braving the future

Biodiversity and ecosystems are sometimes vague concepts in the minds of the urban population. The tiger, however, is something real, a magnificent creature, and at the same time a compelling symbol of courage and fearlessness in the face of danger, with which people worldwide can identify. Hopefully the dangers that threaten the tiger will serve to remind us that our own survival is intricately linked to the preservation of other species and their natural habitats.

* Astrological Years of the Tiger: 1902, 1914, 1926, 1938, 1950, 1962, 1974, 1986, 1998.

Terry Robson is a freelance journalist, media presenter and educator.

KEEN ON NEEM

by Caroline Robertson

What makes a plant so special that multinational corporations are clambering to patent its extracts? A herb so precious that ecologists and herbalists are rallying to protect it from corporate domination, inciting outraged allegations of bio-piracy?

Hailed for millennia in India as 'the village pharmacy', neem's powerful medicinal and agricultural applications are now attracting great interest worldwide. Although India's estimated 18 million neem trees constitute the world's largest neem population, neem's fame now spans many continents, partly as a result of Indian immigrants affectionately planting it in their adopted countries. Grown in Ghana for firewood, Burma for building, the Caribbean and the Middle East for reforestation, and countless countries for its insecticidal, pesticidal and medicinal properties, neem is being labelled a 'wonder plant', even within conservative scientific circles. According to Mumbai's Neem Foundation, "The neem tree seems to be a virtual designer tree — one that could well be the brainchild of a genetic engineer — tailor-made for combating the serious problems confronting society today."

Neem (*Azadirachta Indica*) is an incredibly hardy, leafy and fast-growing perennial tree. It can live for hundreds of years, growing up to 30 metres tall with branches spreading to 20 metres wide. It is rarely leafless, making it a valuable shade tree in tropical countries. In fact, because it offers a pest-free shady shelter, Emperor Ashoka lined his royal promenade with neem in the 3rd century; a Muslim philanthropist planted acres of them for pilgrims to Mecca; and Gandhi conducted ashrama prayer meetings under its beneficent branches.

Neem's amazing resilience enables it to thrive in nearly all climatic conditions, from dry, arid and drought environments with temperatures up to 120 degrees Fahrenheit, down to near-freezing temperatures in fertile soils. Neem naturally repels insects and pests, while nourishing the surrounding soil with its rich carbon, hydrogen, oxygen, nitrogen, phosphorous, potassium, calcium and magnesium stores. This not only fertilises the soil but reduces alkalinity.

As it re-sprouts vigorously after having its top lopped off, neem is a reliable renewable source of timber. After 10 years it also produces annually up to 50 kilos of fruit that's valuable for agricultural and therapeutic purposes. The neem resin is also a strong glue.

Nature's pharmacy

For thousands of years millions of Indians have praised neem for its miraculous healing powers. This potency is reflected by its Sanskrit name, 'Nimba', meaning 'bestower of health'. In Ayurvedic texts it is also often referred to as 'sarva roga nivarini', meaning 'one that can cure all ailments'. The Arabs know it as 'shajar-e-Mubarak', or 'the blessed tree'. In Africa its treasured title is 'mwarubaini', which translates as 'the plant with 40 cures'.

Bursting with medicinal properties, neem has been used for more than 5000 years and is seen as a virtual panacea in the Ayurvedic apothecary. It is effective for human and animal healthcare as well as for beauty therapies. The ancient Ayurvedic texts extol neem's potency as a blood purifier, liver tonic, immune stimulant, wound healer, digestive stimulant, blood thinner, eye tonic and refrigerant, and also praise its anti-microbial, anthelmintic and anti-fungal properties. Neem reduces specific imbalances of pitta (fire and water) and kapha (earth and water) in the body.

Many active constituents have been identified in neem but the main therapeutic agents are suspected to be the terpenoids,