

Outgoing Liberian government passes forest protection laws

On 11 October, just days before the main rebel groups took their seats beside the former Liberian government and Liberian civil society in a 2-year interim government, outgoing Liberian President, Moses Blah, signed three laws aimed at protecting Liberia's forests from deforestation, fragmentation and degradation. The laws – the Protected Forest Area Network Law, the Sapu National Park Act and the Nimba Nature Reserve Act – come into force when printed as handbills and signify a major step forward in nature conservation legislation for Liberia. Until very recently, the country was engaged in a horrific conflict between forces loyal to then-President Charles Taylor and two rebel groups: Liberians United for Reconciliation and Democracy and the Movement for Democracy in Liberia.

Preparation of the laws was led by Fauna & Flora International with technical input from numerous Liberian and international partners, and financial support principally from the European Commission, the Critical Ecosystem Partnership Fund and the Panton Trust. Liberia contains two of the three remaining large blocks of Upper Guinean rainforest: the Lofa-Gola-Mano block in the north-west, contiguous with Sierra Leone, and the south-east Liberian block that extends into Tai National Park of Côte d'Ivoire.

The Upper Guinean rainforest is a coastal rainforest belt covering six countries from western Togo to eastern Sierra Leone. Today over 40% of the original Upper Guinean forest cover survives in Liberia. This forest is exceptionally diverse biologically, with high rates of endemism and other species that are nearly extinct outside the country. Liberia harbours large primate populations, including the Diana monkey, the red colobus and the western chimpanzee. A survey of the forests of the middle Cestos and Senkwehn rivers in early 1999 found dozens of threatened bird species, some thought extinct or whose range had not been established before in Liberia. The recently passed laws provide a framework in which efforts to conserve species such as these can be undertaken.

The first of the laws amends the New National Forestry Act of 2000. It defines a series of eight protected area types and the uses permitted and prohibited for each, establishing for the first time order and coherency

in a previously incoherent legal situation. The second Act expands Sapu National Park – Liberia's only fully protected area, created in 1983 – from 107,300 to 161,40 ha, an increase of 50%. Biological surveys since 2001 have demonstrated that Sapu Park is among West Africa's least disturbed lowland rainforest areas, with populations of free-ranging forest elephants, tool-using chimpanzees, pygmy hippos and other species whose West African ranges have been severely reduced outside Liberia. Botanists who visited the Park in late 2002 found six species new to science in just 10 days (see *Oryx*, 37, 279–284). The third Act creates the Nimba Nature Reserve (c. 13,500 ha) out of the former Nimba East National Forest. This mountainous reserve is contiguous with the Nimba Nature Reserves of Guinea and Côte d'Ivoire, which together were declared a Natural World Heritage Site by UNESCO in 1981. Taken together the three reserves cover over 31,000 ha and provide protection to one of the greatest concentrations of plant and animal species on the African continent, including many species found nowhere outside the Nimba Mountains.

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The impact of traditional Chinese medicine on threatened species

The continuing use by traditional Chinese medicine of the products of threatened animals and plants is having a serious impact on the long-term survival of many species. CITES has documented heavy usage of animal parts in traditional medicines, and traditional Chinese medicine is one of the most high profile medicines in this respect. Approximately 900 animal species have been used in such Chinese medicine, of which c. 60 are commonly used, principally by Asian communities (Han, L., 1992, *A glossary of Chinese-Latin-English Names in Animal Medicine Materials*. Fujian Science & Technology Press, Fuzhou, China). Amongst the 42 animal species that in 1995 were banned from domestic markets by the State Traditional Chinese Medicine Administration Bureau and the Ministry of Public Health in China are the horns of three species of rhinoceros, bones and skin

of tiger *Panthera tigris*, leopard *P. pardus* and snow leopard *Uncia uncia*, the musk, horns, tail and penis of three species of musk deer (*Moschus* spp.), the scales of all seven species of pangolins (*Manis* spp.), the antlers, velvet and horns of a number of species of deer and antelope, the carapace of three species of turtle, the testes and penis of all species of seals, and dried seahorse *Hippocampus kelloggi*. Wild plants at risk through their use in traditional Chinese medicine include five *Dendrobium* spp., *Rhizoma bletilla striata*, *Gastrodia elata*, *Cibotium barometz*, *Radix panax*, *Aloe ferox*, *Podophyllum emodi* and *Saussurea lappa*.

However, recent reports by organizations such as TRAFFIC indicate that illegal trade in these species continues, and is driving the decline of the species. The numbers of all species of rhino have fallen dramatically, even though it has become widely accepted that the keratin of rhino horn has no aphrodisiac or erectile properties. The horn does contain high amounts of the free amino acid arginine, which is said to act as an aphrodisiac. Rhino horn also has a variety of other pharmacological properties, e.g. as a component of a decoction of rhino horn mixed with herbs that has been shown (But, P.P., Tam, Y.K. & Lung, L.C. (1991) Anti-pyretic effects of prescriptions containing rhinoceros horn or water buffalo horn. *Journal of Ethnopharmacology*, 33, 45–50.) to possess significant anti-pyretic action. In this respect water buffalo *Bubalus bubalis* horn can be successfully substituted for rhino horn, as can the horns of several other species including those of domestic cattle *Bos taurus* and, before it became threatened (see *Oryx*, 36, 323), the saiga *Saiga tatarica*.

Amongst the other species used in traditional Chinese medicine, tiger numbers have crashed, driven by the trade in their bones and skin, and all surviving subspecies are on CITES Appendix I (banning all international trade in their products). Threatened Asiatic black bears *Selenarctos thibetanus* are widely farmed for their bile in China, where they are also removed from the wild for captive breeding for their gall bladders. However, the use of bear bile in China is limited, most being exported to Japan, South Korea, Australia, North America, Indonesia, Malaysia, Singapore and Taiwan. Under CITES, the international trade in bile and gall bladders from Chinese bear farms is already illegal, but such trade continues nonetheless. By demonstrating the existence of effective synthetic and herbal alternatives for use in traditional Chinese medicine, attempts are now being made by Middlesex University and such animal welfare organizations as the World Society for the Protection of Animals and the International Fund for Animal Welfare to convince the Chinese government that it is preferable for it to close down the numerous bear farms in China rather than attract increasing international opprobrium.

Populations of threatened animals and plants will continue to decline, and biodiversity will inevitably be lost, if traditional medicines, including that of China, continue to plunder some of the world's most threatened animals and plants. The facts are shocking: the £5 billion illegal trade in animal parts and plants worldwide (much of it for use in traditional Chinese medicine) is second only in value to that of the international drugs trade (Dr Henry Lee, personal communication). In 2000 a total of 52,000 illegal wildlife products were seized in seaports and airports in Britain alone. A major problem in trying to wean people away from the use of traditional medicines containing the parts of threatened animals and plants to those containing synthetic substitutes and non-threatened plants is convincing them that the latter are as efficacious as the tried and tested former, some of which have been in use for thousands of years.

The Chinese Medicine Association of Suppliers (CMAS), which was formed in 1998 to represent and regulate traditional Chinese medicine in the UK and is recognized and supported by the State Administration of Traditional Chinese Medicine in Beijing and by the Medicines Control Agency in the UK, attaches great importance to the concerns of conservation organizations in promoting the protection of threatened species. CMAS requires producers, exporters and importers to comply with the demands of CITES, and is also concerned with the replacement in traditional Chinese medicine of threatened animals and plants by plant species that are not threatened. Attempts are being made to persuade practitioners and patients to use products of equal efficacy that are extracted from non-threatened plant species. In 2000 the European Centre for Traditional Chinese Medicine at Middlesex University, UK, received funding from the British government and other sources to find plant substitutes for rhinoceros horns, tiger bones and skin, and bear gall bladders and bile. One of the ways by which it is hoped that this will be achieved is the widespread cultivation of the 12 plant species listed above; a pilot experimental project has already begun on an organic hill farm in Guangdong Province, China. Identification and classification of the active chemical components of these threatened plants should help to find non-threatened plants with similar attributes.

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Transboundary water issues threaten the Serengeti ecosystem

The 25,000 km² Serengeti ecosystem of Tanzania and Kenya includes a National Park, game reserves, game controlled areas, Ngorongoro Conservation Area and the